Figure 118: Installing Volume and Frequency Knobs

5. Slot in the following parts and ensure that they are fully seated into the front housing:

Figure 119: Power Button and Indicator Lights assembly [9][10][11]

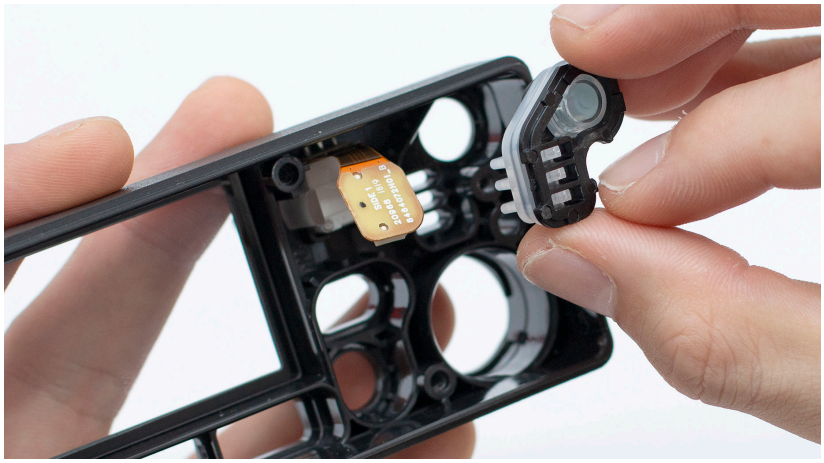


Figure 120: Programmable Button [12] and Programmable Button Retainer [13]

Figure 121: Menu Button [18] and Menu Button Retainer [19]

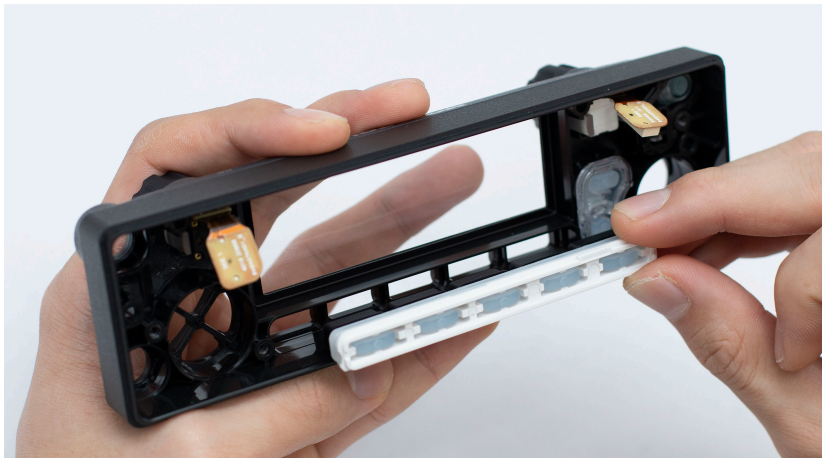


Figure 122: Navigation Button [16] and Navigation Button Retainer [17]

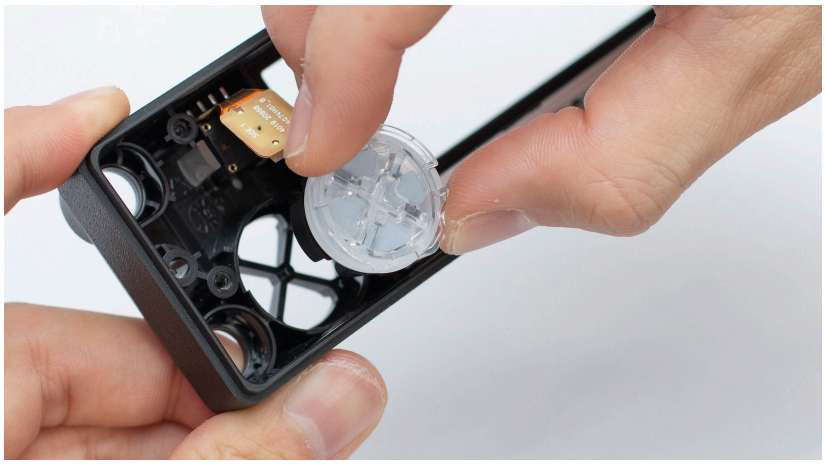
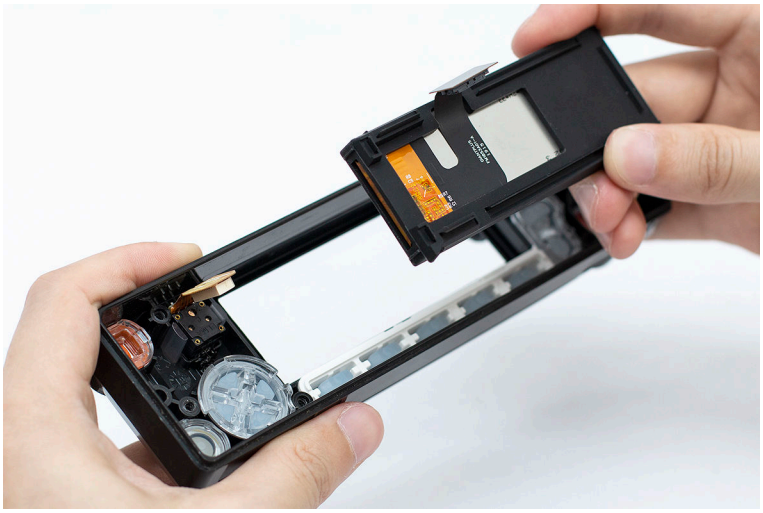


Figure 123: Home Button [14] and Home Button Retainer [15]

Figure 124: Emergency Button [20] and Emergency Button Retainer [21]

6. Install the color display module in the front housing.

Figure 125: Color Display Module



7. Place the Main Board PCB and Main Board retainer in the front housing and ensure that the flex assemblies are not covered.

Figure 126: Main Board PCB

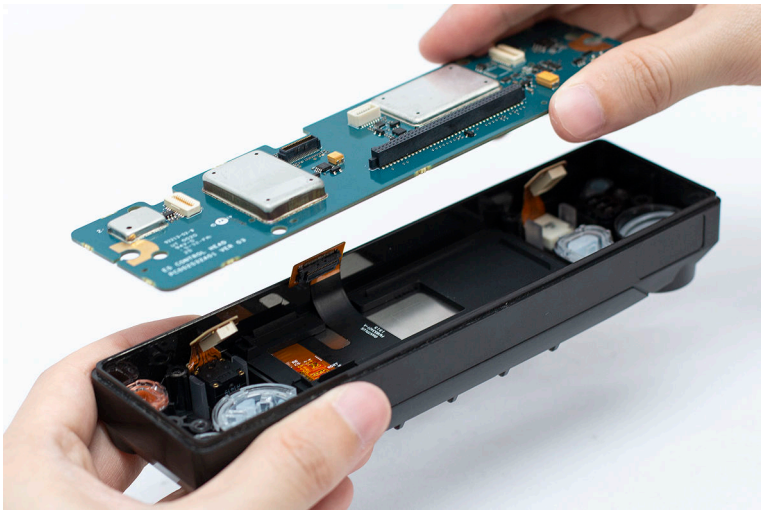
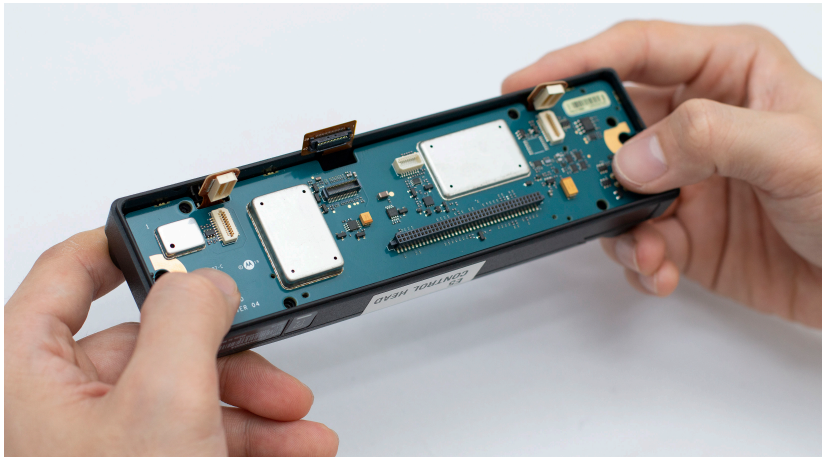


Figure 127: Volume, Frequency and Color Display Module Flex Assemblies



8. Plug in the frequency assembly flex, color display module encoder flex, and the volume assembly flex onto the Main Board PCB.

Figure 128: Frequency Assembly Flex

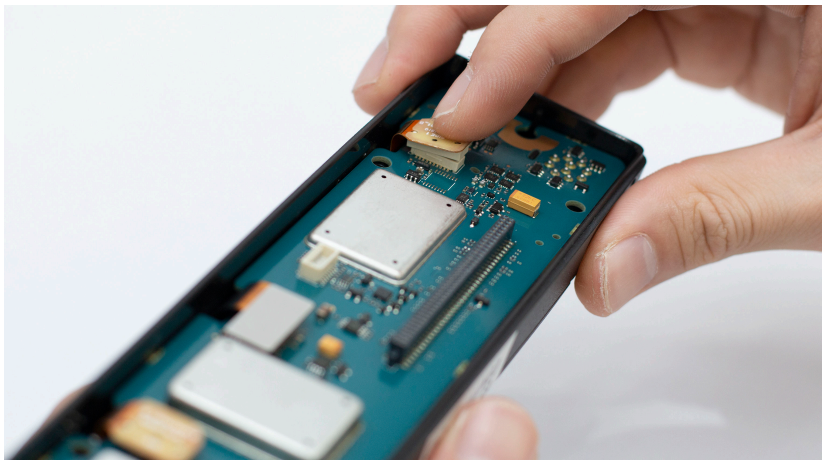


Figure 129: Color Display Module Flex

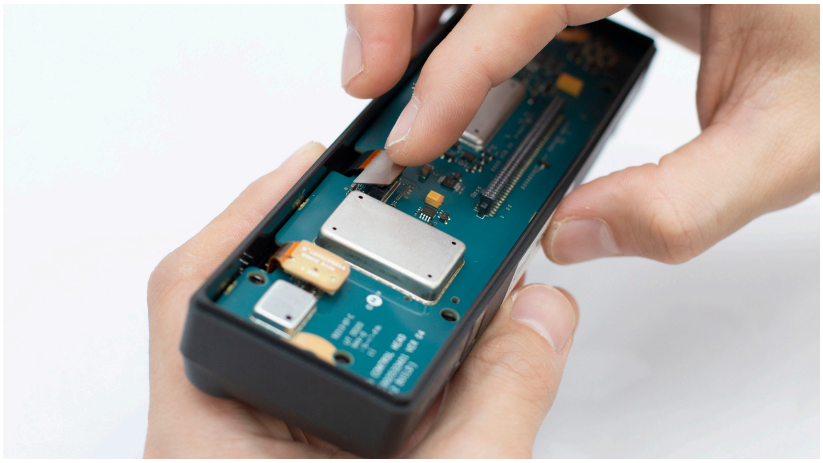
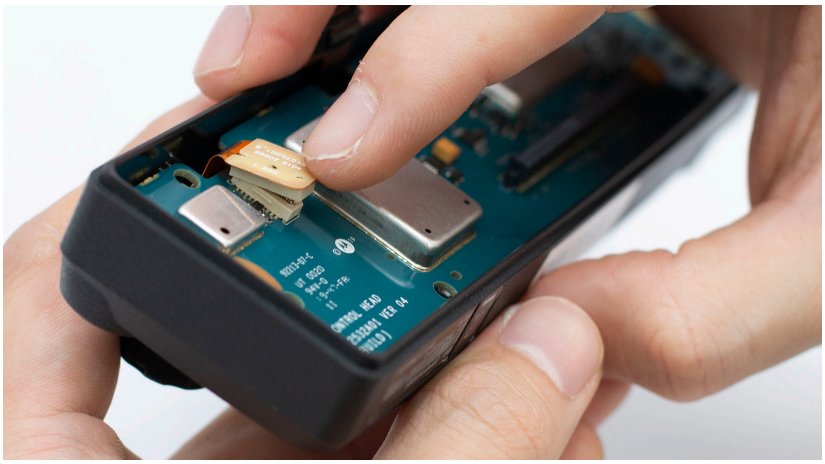
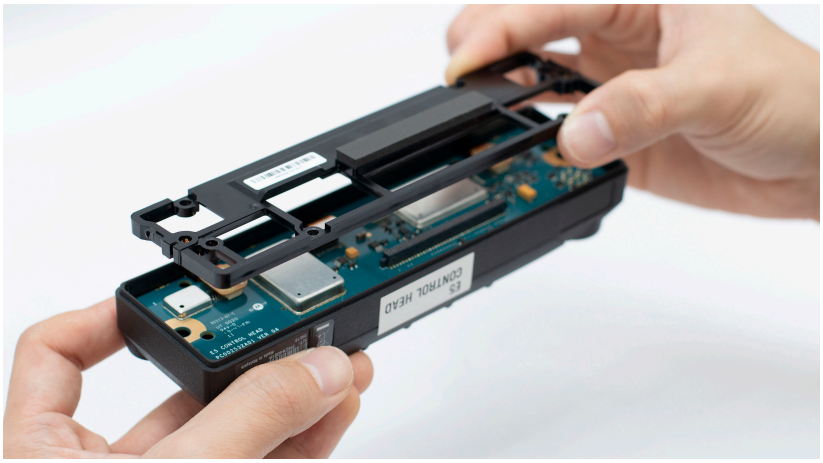


Figure 130: Volume Assembly Flex



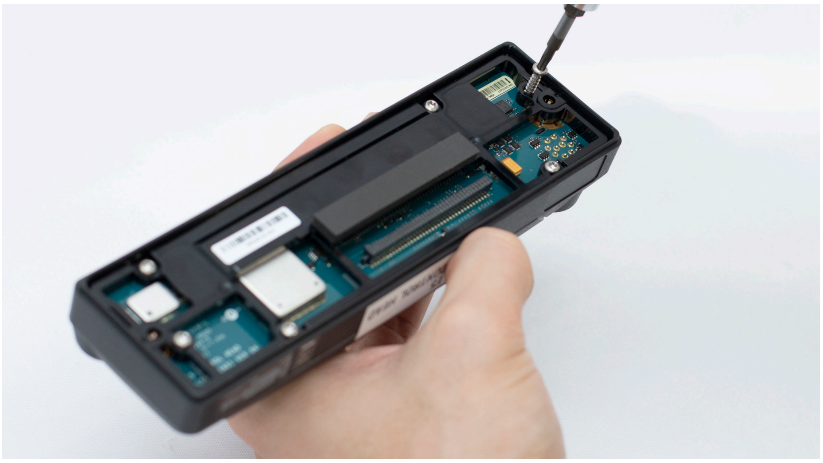
9. Place the main PCB retainer in the front housing, and it all the way to the left to ensure the screw bosses align with the corresponding holes in PCB and retainer.

Figure 131: Main PCB Retainer



10. Using a Torx T10 screwdriver, fasten the six PCB screws (torque to 6 in. lbs.).

Figure 132: Main PCB Retainer Screws



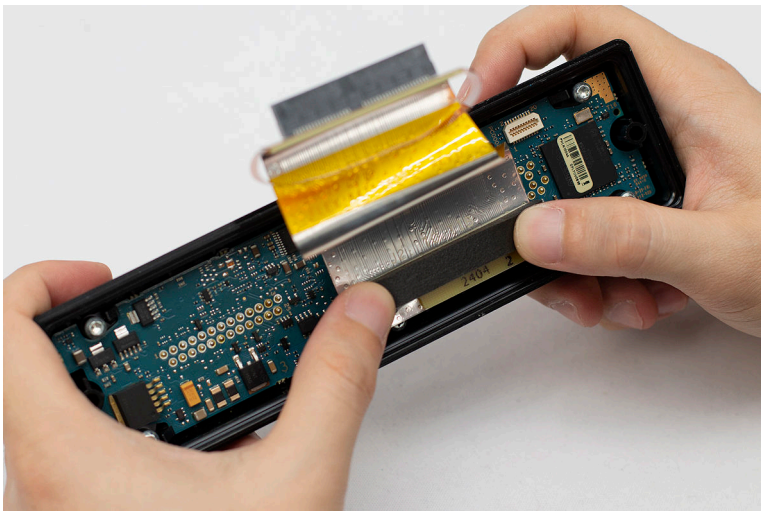
8.1.3.6

Reassembling the Transceiver Interface Board

Procedure:

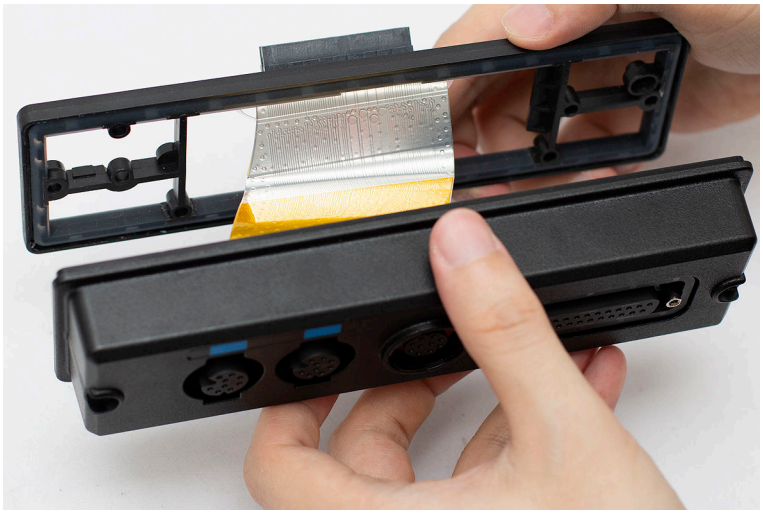
1. Attach the Transceiver Interface Board (TIB) flex edge card connector to the edge card. Be sure to properly align the edge card connector to the exposed edge card.

   Figure 133: Installing Flex into the Controller PCB



2. Align the frame seal to the TIB. Compress the TIB and frame seal together to be fully seated.

Figure 134: Aligning frame seal to the TIB



3. Install the TIB flex to the TIB. Be sure to properly align connectors before connecting.

Figure 135: Installing the TIB Flex to TIB

4. Align the TIB to the front of chassis using the frame seal. Install two (2) TIB screws. Be sure the TIB screws each have one (1) washer and one (1) seal installed. Torque down the TIB screws to 8-10 in-lbf.

Figure 136: Aligning TIB Front of Chassis, and Installing the TIB Screws

8.2 Chassis Thermal Pad Replacement

Figure 137: Chassis Thermal Pad and Grease Locations

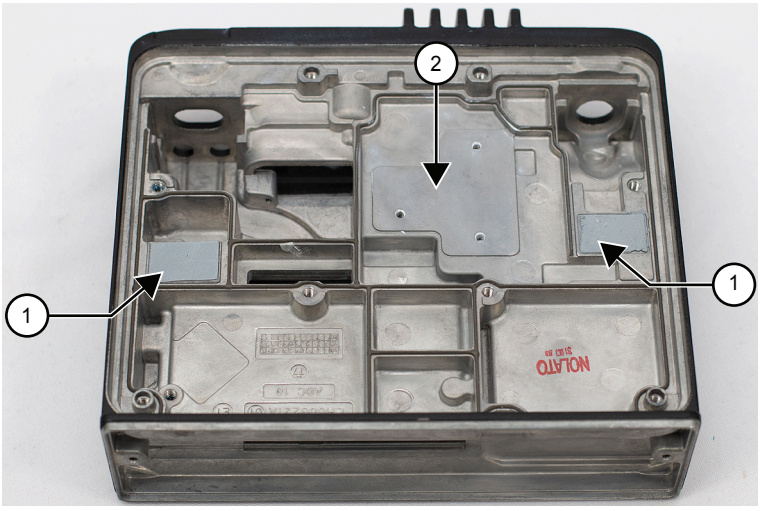


Table 57: Chassis Thermal Pad and Grease Part Numbers

Item No.	Part No.	Description
1	75012190001	Pad, Thermal
2	1110022D23	Thermal Grease

8.2.1
Replacing the Chassis Thermal Pad

Procedure:

1. Use a plastic flat-edge tool (like a black-stick solder aid) to lift the pad from the chassis surface.
2. Discard the old pad. Use a soft cloth to remove any remaining residue. Alcohol can also be used, if necessary. Care should be taken to minimize any cleaning-agent contact with the surrounding shield gasket.
3. Once the surface is clean and dry, use a pair of tweezers to remove a new pad from the shipping liner, and place it yellow-side down on the chassis.
4. Apply pressure to the pad to activate the pressure-sensitive adhesive. If applicable, remove the blue liner with a pair of tweezers.

CAUTION: Use of a metal tool will scratch the heat sink surface and reduce the thermal effectiveness of the thermal pad which is used to heat sink heat-sensitive components. Loss of thermal effectiveness of the thermal pads could result in the overheating of heat-sensitive radio components and result in their damage.

8.3
Fastener Torque Chart

Table 58: Fastener Torque Chart on page 165 lists the various fasteners by part number and description, followed by the torque values and the location where used. Torque all fasteners to the recommended value when assembling the radio.

Table 58: Fastener Torque Chart

Part Number	Description	Repair Torque (in.–lbs.)	Locations Used In A Radio
0310909A33	Screw, Torx M3x10	6–8	RF Board
0364332H02	Screw, Torx M3. 0xP0.5x32.5	8–10	TIB to Chassis/O5 Control Head
0371838H01	Screw, Torx M2.5xP0.45x12.0	6–8	Accessory Connector to External Chassis
02009258001	GPS and Wi-Fi Hex Nut	12–14	GPS and Wi-Fi Connector
0104054J54	Screw, Torx M4.0xP0.7x15.0	29–31	Enhanced Single Band Mobile Radio Top and Bottom Cover
03012052001	Screw, Torx M3.0xP0.5x26.0	12–14	O2 Rear Housing
03012063001	Screw, Torx M4.0xP0.7x18.0	8–10	O2 Control Head
03012062001	Screw, Torx M3.0xP0.5x38.0	8–10	O7 Control Head

Chapter 9

Radio PINOUT Functions, Error Codes, and Basic Troubleshooting

This section can help you isolate a problem to the board level. Board-level troubleshooting does not attempt to isolate problems to the component level.

Component-level service information can be found in the respective detailed service manual. (See Related Publications on page 20 section of this manual for the specific manual number.)

NOTE: To access the various connector pins, use the housing eliminator/test fixture along with the diagrams found in this section of the manual. (See Service Aids and Recommended Tools on page 70 for the appropriate Motorola Solutions service aids and tools parts numbers.)

CAUTION:
Except for some inputs on service monitors, a suitable attenuator rated at 100 W or more should always be used with all test equipment connected to the RF connector. Failure to do so can result in test equipment damage.

When performing both transmit and receive tests, the radio transmitter can possibly damage the equipment. Damages could occur under the following conditions:

- Trunking-mode affiliation
- Missing emergency jumper
- Defective PTT button
- Unintentional PTT activations
- Circuit board malfunction

Therefore, an attenuator is always recommended.

9.1 External Connectors

This section describes the external connectors that are supported on this radio.

9.1.1 J600 TIB – Data and Audio Interface

The J600 is on the Transceiver Interface Board (TIB). This connector is the legacy accessory interface, but contains some additional pin functionality.

Figure 138: J600 Connector on page 167 and Table 59: J600 Remote Mount Accessory Connector on page 167 illustrate and describe the connector and the function of each pin.

Figure 138: J600 Connector

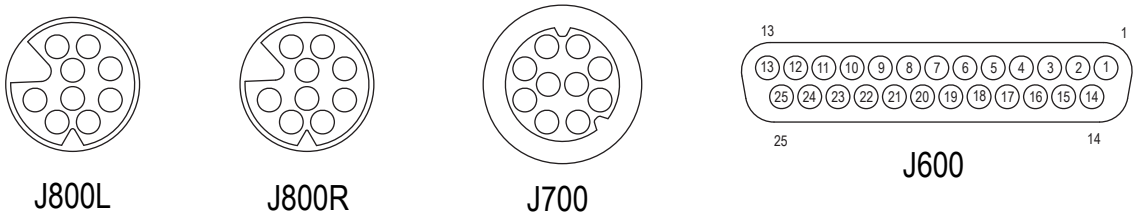


Table 59: J600 Remote Mount Accessory Connector

Pin #	Pin Name		Pin Function
1	AUX_PTT	Auxiliary PTT input	Pulling this line to ground activates the PTT function normally selecting AUX_MIC input. Jumpers exist on the TIB to change this pin to Ignition sense (ACC) or VIP_IN 1 at 3.3 V levels.
2	RS232_TXD_9V	RS232 Transmit Data	Part of the 4-wire RS232 interface to external data accessories, programming cables, and others. An output normally -9 V no load. A jumper exists on the TIB to change this pin to shield connection.
3	RS232_RXD_9V	RS232 Receive Data	Part of the 4-wire RS232 interface to external data accessories, programming cables, and others. A jumper exists on the TIB to change this pin to REMOTE IGNITION.
4	RS232_CTS_9V	RS232 Clear-To-Send	Part of the 4-wire RS232 interface to external data accessories, programming cables, and others. Jumpers exist on the TIB to change this pin to AUX_MIC, MIC_IN, or VIPOUT_1 (passthrough). MIC_IN routes to the transceiver MIC_HI input.
5	BUS+/ RS232_TXD_5V	SB9600 BUS+/ RS232 Transmit	Part of the Motorola Solutions SB9600 communications bus to connect external devices. RS232 is made available instead of SB9600 with a Motorola Solutions "RS232-activation" cable, without the need to remove any jumpers on the TIB.
6	RX_AUDIO/ IGN_SENS	Receive Filtered Audio Out	This is a fixed level (independent of volume level) received audio signal, including alert tones. Flat or de-emphasis is programmed by the CPS. Output voltage is approximately 100 mVrms per 1 kHz of deviation. The DC offset is 1.4 V. Formerly called RX_Filtered_Audio. Change jumper at TIB to become IGN_SENS line.
7	EMERG_SENSE/GND		Default EMERG_SENSE line. Change jumper at TIB to become GND line.
8	AUX_TX		Formerly called TX_audio. This pin is an input to the radio. This input is routed to the transmitter through multiplexed lines that are controlled by the microprocessor. Nominal input level is 300 mVrms.
9	RX_AUDIO/ IGN_SENS		This pin is the same as pin 6. A jumper exists to change this pin to VIP_IN 2 at 3.3 V levels. Change jumper at TIB to become IGN_SENS line.

Pin #	Pin Name		Pin Function
10	GND	Ground	N/A
11	GND		
12	DAC_AUDIO_OUT & AUX_MIC		Audio spoken from the operator is OUTPUT from the radio. When the radio detects the SB9600 PTT command, this pin switches into an audio INPUT line (during PTT) and is routed into the AUX_MIC path of the radio. AUX_PTT does not turn this pin into an INPUT pin. Jumpers exist on the TIB to change this pin to AUX_MIC or MIC_IN (MIC_IN=MIC_HI inside radio).
13	EMERGENCY	Emergency	Input used to detect emergency activation. To use this input, remove the shorting jumper on the TIB that grounds this input. After the jumper is removed, emergency operation is possible at either this connector or at the J2 connector.
14	BUS-/ RS232_RXD_5V	SB9600 BUS- / RS232 Receive	Part of the Motorola Solutions SB9600 communications bus to connect external devices. RS232 is made available instead of SB9600 with a Motorola Solutions “RS232-activation” cable, without the need to remove any jumpers on the TIB. Idles at 0 V.
15	AUX_MIC	Auxiliary microphone input	VIPOUT_1 as the default state of this pin. The nominal input level for AUX_MIC is 80 mVrms for 60% deviation when used for motorcycle, but can also support 300 mVrms for future APCO accessories. The DC impedance is 1560 ohms and the AC impedance is 560 ohms, 1 Vrms max 9 VDC with no input load. Jumpers exist on the TIB to change this pin to AUX_MIC, MIC_IN, DAC_AUDIO_OUT, and VIPOUT_1 (passthrough). MIC_IN routes to the transceiver MIC_HI input.
	VIPOUT_1	Vehicle Interface Port 1	
16	REMOTE IGNITION	Front Ignition sense (ACC) which is independent of the Rear Ignition sense (ACC) at the J2 connector	Connecting to the ACC line controlled by the ignition switch of the vehicle allows CPS ignition features such as “ignition required for turn on” to be used. Connecting this line to the car battery defeats the CPS ignition features.
17	RS232_RTS_9V	RS232 Request to Send	Part of the 4-wire RS232 interface to external data accessories, programming cables, and others. An output normally +9 V no load. A jumper exists on the TIB to change this pin to VIPOUT_2 (passthrough).
18	GND	Ground	N/A
19	RESET/ RS232_RTS_5v	SB9600 RESET/ RS232 Ready to Send	Part of the Motorola Solutions SB9600 communications bus to connect external devices. RS232 is made available instead of SB9600 with a Motorola Solutions “RS232-activation” cable, without the need to remove any jumpers on the TIB.

Pin #	Pin Name		Pin Function
20	A+	Battery Voltage	N/A
21	GND	Ground	N/A
22	SWB+	Switched Battery Voltage	This voltage is available when the radio is switched on.
23	BUSY/ RS232_CTS_5V	SB9600 BUSY/ RS232 Clear to Send	Part of the Motorola Solutions SB9600 communications bus to connect external devices. RS232 is made available instead of SB9600 with a Motorola Solutions “RS232-activation” cable, without the need to remove any jumpers on the TIB.
24	SPKR-	Speaker-	Used along with SPKR+ to connect an external speaker. The audio PA is a bridge amplifier. Refer to the Radio Specifications page for speaker impedances and loads.
25	SPKR+	Speaker+	Used along with SPKR- to connect an external speaker. The audio PA is a bridge amplifier. Refer to the Radio Specifications page for speaker impedances and loads.

9.1.2

J700 TIB – Mobile Microphone Port

The Mobile Microphone Port (MMP) connector is on the O2, O7, O5, O9, and E5 control heads and the Transceiver Interface Board (TIB).

The following figure and table illustrate the connector and the function of each pin.

Figure 139: J700 MMP Connector

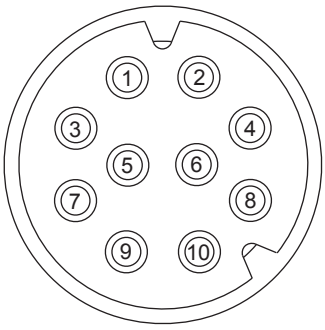


Table 60: MMP Connector Signal Descriptions

Pin #	Pin Name		Pin Function
	Control Head (J1)	TIB (J700)	
1	1-Wire®	1-Wire®	Signal used to identify an accessory.
2	PTT	PTT_GPIO3	Active low Push-To-Talk input. Asserting this input results in MIC_HI microphone input use. Distinguished from PTT at the rear J2 MAP connector, which uses the AUX_MIC microphone input.

Pin #	Pin Name		Pin Function
	Control Head (J1)	TIB (J700)	
3	SPK	SPK	Receive audio out designed to drive a 150 Ω load.
4	USB_D-/ RS232_RX_5v	USB_D-/ RS232_RX_5v	Multiplexed USB D- and RS232 receive signal. The interface used is based on a 1-Wire® read of the connected accessory. The RS232 signals are CMOS levels, 0-5 V.
5	GND	GND	Ground.
6	VBUS/OPT_5V	VBUS/OPT_5V	On both the control head and the TIB, when the MMP port is configured as a device, this pin is the VBUS input used for enumeration. When the MMP port is configured as a host, this pin is the VBUS output, capable of sourcing 500 mA.
7	MIC_HI	MIC_HI	Microphone audio input (80 mVrms nominal) associated with the PTT signal at pin 2. Distinguished from AUX_MIC at the rear J2 MAP connector.
8	USB_D+/ RS232_TX_5v	USB_D+/ RS232_TX_5v	Multiplexed USB D+ and RS232 transmit signal. The interface used is based on a 1-Wire® read of the connected accessory. The RS232 signals are CMOS levels, 0–5 V.
9	HUB/KEYFAIL	KEYFAIL/ GPIO_4	Multiplexed HUB and KEYFAIL lines on the control head. The TIB has KEYFAIL or GPIO_4 functionality.
10	GPIO_0	GPIO_0	General Purpose Input/Output 0.

9.1.3
J2 Mid Power Transceiver – Data and Audio Rear Interface

J2 or MAP interface is located at the back of the radio.

The following figure and table illustrate the connector and the function of each pin. Order the Male crimping pin according to the wire gauge for the accessory. Order part number 3980034F05 for 22–28 gauge wire and 3980034F04 for 18–20 gauge wire.

Figure 140: J2 Rear Accessory Connector

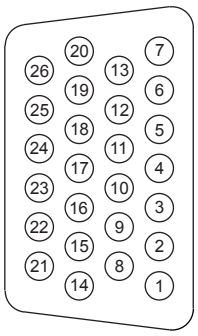


Table 61: J2 Rear Accessory Connector Signal and Voltage Descriptions

Pin #	Pin Name		Pin Function
1	GROUND	Ground	Preferred ground for any digital lines on J2.
2	BUS+ or USB2+	SB9600 BUS+ or USB2+	Part of the Motorola Solutions SB9600 communications bus to connect external devices. It is used for the USB host interface. Defaults to BUS+. Idles at +5 V.
3	BUS- or USB2-	SB9600 BUS- or USB2-	Part of the Motorola Solutions SB9600 communications bus to connect external devices. It is used for the USB host interface. Defaults to BUS-. Idles at 0 V.
4	RS232_TX_9V	RS232 Transmit Data	Part of the 4-wire RS232 interface to the external data accessories, programming cables, and other accessories.
5	RS232_RX_9V	RS232 Receive Data	Part of the 4-wire RS232 interface to external data accessories, programming cables, and other accessories.
6	USB-	USB-Data	Part of the 2-wire USB device differential data bus that is used to connect to items such as a programming cable or a modem.
7	USB+	USB+Data	
8	RESET/ USB2_VBUS_H	SB9600 RESET or USB2_VBUS_HOST	Part of the Motorola Solutions SB9600 communications bus to connect to the external devices. In USB Host mode, this signal is the 5 V VBUS supply to a downstream device. Defaults to RESET.
9	BUSY	SB9600 BUSY	Part of the Motorola Solutions SB9600 communications bus to connect to the external devices. Defaults to BUSY.
10	RS232_RTS_9V or AUX_TX	RS232 Request-To-Send or AUX_TX	Part of the 4-wire RS232 interface to external data accessories. An output of normally +9 V no load. It is also known as TX_audio. This pin is an input to the radio. This input is routed to the transmitter through multiplexed lines that are controlled by the microprocessor. Nominal input level is 300 mVrms.
11	RS232_CTS_9V	RS232 Clear-To-Send	Part of the 4-wire RS232 interface to external data accessories. An input normally at +9 V no load.
12	USB_VBUS_D	USB_VBUS_DEVICE	5 V VBUS input for USB connectivity, supplied by the USB Host such as a programming cable.
13	CHAN ACT	Channel Activity	Active low output used to indicate detection or unsquelching of a qualified received signal (idles at 5 V).

Pin #	Pin Name		Pin Function
			It can be configured as an optional logic input or output signal.
14	GROUND	Ground	Preferred ground for any of the analog lines on J2.
15	EMERGENCY	Emergency	Input used to detect emergency activation. This pin must be connected to the ground by a cable if emergency is disabled. If enabled, this line must be grounded through a switch that is normally closed.
16	AUX PTT	Push-To-Talk	Pulling this line to ground activates PTT function, normally selecting the AUX_MIC input.
17	ONE WIRE	1-Wire® data	0–5 V bidirectional data used for identification of smart accessories or cables.
18	VIP OUT 1	Vehicular Interface Output	High-voltage open drain output used for enabling relays used for accessories such as horn/lights.
19	VIP OUT 2	Vehicular Interface Output	
20	SPKR+	Speaker +	Used along with SPKR- to connect an external speaker. The audio PA is a bridge amplifier. See Radio Specifications for speaker impedance and loads.
21	RX FILT AUDIO	Receive Filtered Audio Out	Signal is a fixed level (independent of volume level) received audio signal, including alert tones. Flat or de-emphasis is programmed by the CPS. Output voltage is approximately 100 mVrms per 1 kHz of deviation.
22	MONITOR	Monitor overrides PL	Active low input used to detect when a rear microphone accessory is taken 'off-hook' to over-ride PL to alert the user to busy traffic before transmitting (idles at 5 V). It can be configured as an optional logic input or output signal.
23	AUX MIC	Rear microphone input	The nominal input level is 80 mVrms for 60% deviation for motorcycle and support 300 mVrms for future APCO accessories. The DC impedance is 1560 Ω and the AC impedance is 560 Ω, 1 Vrms max. 9 VDC with no input load.
24	SW B+	Switched Battery Voltage	A+ battery voltage is available when the radio is switched on. Used as supply for certain J2 accessories.
25	IGN sense (ACC)	Vehicle Ignition sense (ACC)	Connecting to the ACC line controlled by the vehicle ignition switch that allows CPS ignition features such as “ignition required for turn on” to be used. Connecting this line to the car battery defeats the CPS ignition features.

Pin #	Pin Name		Pin Function
26	SPKR-	Speaker -	Used with SPKR+ to connect an external speaker. The audio PA is a bridge amplifier. See Radio Specifications for speaker impedance and loads.

9.1.4

J800 TIB – Controller Area Network (CAN) Interface

The J800L and J800R are on the Transceiver Interface Board (TIB). These two connectors are identical, to aid in future daisy-chaining of other CAN bus accessories. They provide the data, digital audio, and power on/off/reset commands for the control head to radio communications.

Refer to the *Installation Manual* to order part numbers for various lengths of the CAN remote mount cables. The following figure and table illustrate the connector and the function of each pin.

Figure 141: J800 Controller Area Network (CAN) Connector on TIB

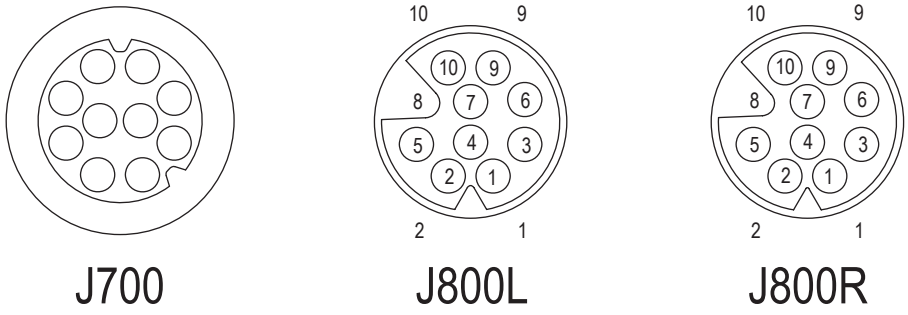


Table 62: J800 Controller Area Network Connector Pin Functions

Pin #	Pin Name	Pin Function
1	CAN_1_HIGH	TX+ (AUDIO)
2	CAN_1_LOW	TX- (AUDIO)
3	CAN_3_HIGH	TX+ (PWR) Dedicated for System ON/OFF/RESET commands.
4	CAN termination detect pin	Pin 4 shorted to GND inside each end of the CAN cable.
5	A+	Only routed on the “03” CAN cable
6	CAN_3_LOW	TX- (PWR) Dedicated for System ON/OFF/RESET commands.
7	GND	Drain wire wrapped around GND shield
8	NO PIN	N/A
9	CAN_2_HIGH	TX+ (DATA)
10	CAN_2_LOW	TX- (DATA)

9.2

Replacement Board Procedures

Once a problem has been isolated to a specific board, use one of the following recommended repair procedures:

- Install a good board from your inventory into the radio.
- Order a replacement board from Radio Products Services Division at 1-800-422-4210. Refer to Replacement Parts Ordering on page 222 for further information.

9.3

Power-Up Error Codes

When the radio is turned on (power-up), the radio performs cursory tests to determine if its basic electronics and software are in working order. Problems detected during these tests are presented as error codes on the radio display.

The presence of an error should prompt the user that a problem exists and that a service technician should be contacted.

Self-test errors are classified as either fatal or non-fatal. Fatal errors inhibit user operation and non-fatal errors do not inhibit user operation. Use the following table to aid in understanding particular power-up error code displays.

Table 63: Power-Up Error Codes

Error Code	Description	Corrective Action
01/02	FLASH ROM Codeplug Checksum Non-Fatal Error	Reprogram the codeplug.
01/12	Security Partition Checksum Non-Fatal Error	Send radio to depot.
01/81	Host ROM Checksum Fatal Error	Send radio to depot.
01/82	FLASH ROM Codeplug Checksum Fatal Error	Reprogram the codeplug.
01/88	External RAM Fatal Error **NOTE:** Not a checksum failure	Send radio to depot.
01/90	General Hardware Failure Fatal Error	Turn off the radio, then turn it on.
01/92	Security Partition Checksum Fatal Error	Send radio to depot.
01/93	FLASHport Authentication Code Failure	Send radio to depot.
01/94	Internal EEPROM blank. Fatal Error	Send radio to depot.
01/98	Internal RAM Fail Fatal Error	Send radio to depot.
01/A2	Tuning Codeplug Checksum Fatal Error	Send radio to depot.
02/81	DSP ROM Checksum Fatal Error	Send radio to depot.
02/88	DSP RAM Fatal Error **NOTE:** Not a checksum failure	Send radio to depot.

Error Code	Description	Corrective Action
02/90	General DSP Hardware Failure (DSP startup message not received correctly)	Turn the radio off, then turn it on.
09/10	Secure Hardware Error	Turn the radio off, then turn it on. May have keyload required in CPS for encryption.
09/90	Secure Hardware Fatal Error	Turn the radio off, then turn it on.
15/10	External Accessory Non-Fatal Error External Accessory is not present on power-up or did not power up correctly, and the external accessory feature is enabled in the codeplug.	Verify that the external accessory is connected and powered up. Turn the radio off, then turn it on.
15/90	External Accessory Fatal Error External Accessory is not present on power-up or did not power up correctly, and the external accessory feature is enabled in the codeplug.	Verify that the external accessory is connected and powered up. Turn the radio off, then turn it on.
SW/HW Mismatch	Control Head hardware does not match the radio software.	Update the radio software to a version that matches the Control Head hardware. Send the radio to depot if issue persists.

9.4
Operational Error Codes

The radio performs dynamic tests to determine if the radio is working properly when it is in operation. Problems detected during these tests are presented as error codes on the radio display.

The presence of an error code should prompt a user that a problem exists and that a service technician should be contacted.

Table 64: Operational Error Codes

Error Code	Description	Error Type	Corrective Action
FAIL 001	Synthesizer Out-of-Lock	NON-FATAL	Reprogram the codeplug. Send the radio to depot if issue persists.
FAIL 002	Personality checksum or system block error	NON-FATAL	Reprogram the codeplug.

9.5
Transmitter Troubleshooting

The following table can help you troubleshoot problems that might occur in the transmitter section of your radio.

Table 65: Transmitter Troubleshooting Chart

Symptom	Possible Cause	Correction or Test (Measurements Taken at Room Temperature)
No RF Power Output	Tx Power Level Programming	Check Tx power level programming (from the appropriate Customer Programming Software).
	Radio Transceiver or Transmitter Board	• Send radio to depot for repair.
Distorted Modulation	Bandwidth	• Ensure that the correct bandwidth is selected (use the appropriate Customer Programming Software). • Ensure that the radio is properly tuned. (See Radio Alignment Procedures on page 90)
	Compensation Not Set/Working (DPL Distorted)	Check the compensation setting. If compensation will not adjust, refer to "Cannot Set Compensation".
	Radio Transceiver or Transmitter Board	• Send radio to depot for repair.
No Modulation, Bad Microphone Sensitivity	Check Deviation and Compensation	Retune, if necessary. (See Radio Alignment Procedures on page 90)
	Microphone	• Verify that the microphone is correctly plugged into the MMP connector. Replace if necessary. • Send radio to depot for repair.
No/Low Signaling (PL, DPL, Trunking, MDC)	Check Programming or Radio Transceiver Board	• Send radio to depot for repair.
Cannot Set Compensation	Deviation and Compensation	Vary deviation and compensation controls from maximum to minimum using softpots in the **Tx Deviation Balance** screen and **Tx Deviation Limit** screen (using the appropriate radio-programming software – see Radio Alignment Procedures on page 90).
	Radio Transceiver Board	• Send radio to depot for repair.

9.6
Receiver Troubleshooting

The following table can help you troubleshoot problems that might occur in the receiver section of your radio.

Table 66: Receiver Troubleshooting Chart

Symptom	Possible Cause	Correction or Test (Measurements Taken at Room Temperature)
Radio does not power-up	Blown power fuse	Check the fuse in the red cable.
	Blown ignition fuse	Check the fuse in the ignition cable, yellow cable from CHIB, red cable from transceiver J2 connection. Note that the IGNITION field in the codeplug would need to be set to REQUIRED or IGN ONLY for the ignition fuse to affect power-up.
	Control Head	Refer to the *Detailed Service Manual* for control head troubleshooting. In addition, if the control head powers-up then powers-down roughly 8 seconds later (without displaying an error), the control head has failed. There may also be a failure on the dash flex between the head and the radio. Send control head to depot.
	Radio transceiver or transmitter board	If the radio does not draw at least 1 A during power-up, there may be a failure on either the transceiver board or the A+ connection between the transmitter/transceiver boards. Send radio to depot.
	CAN Cable	Ensure that the CAN cable is connected in remote systems.
Radio does not power-down	Radio Transceiver Board	Send radio to depot.
No Receiver Audio or Receive Does Not Unsquelch	Code Plug	Check the codeplug to ensure correct frequency and signaling (PL, DPL) is enabled (use the appropriate radio-programming software).
	Speaker	Check for speaker leads shorted to ground or open speaker wires. Replace, if necessary.
	Radio Transceiver Board	Refer to the *Detailed Service Manual*. Send radio to depot.
Audio Distorted or Not Loud Enough	Codeplug	Ensure the codeplug is properly configured, including bandwidth and signaling.
	Synthesizer Not On Frequency/Working	See Aligning the Reference Oscillator on page 96.
	Radio Transceiver	Refer to the *Detailed Service Manual*. Send radio to depot.
RF Sensitivity Poor	Synthesizer Not On Frequency/Working	Check the local oscillator frequency. See Aligning the Reference Oscillator on page 96.
	Radio Transceiver	Refer to the *Detailed Service Manual*. Send radio to depot.
Radio does not Squelch	Codeplug	Check the offending channel for spurious activity by monitoring with a known-good radio or service monitor. If possible, remove the offending source (computer, etc.). If not, increase the squelch level using the appropriate radio-programming software.

9.7

Controller Troubleshooting

The following table helps you to troubleshoot problems that might occur in the controller section of your radio.

Table 67: Controller Troubleshooting Chart

Symptom	Possible Cause	Correction or Test (Measurements Taken at Room Temperature)
Control head display says `Maintenance Mode`	Remote mount CAN cable attached may be disconnected.	Verify that all cables are securely attached, including power to the radio.
	Flexes inside radio or control head may be loose.	Open Control Head and check if flex is securely attached.
Radio resets when PTT	Vehicle battery voltage too low to allow radio to transmit.	Try radio on bench with power tuned down, and power supply rated to at least 20 A. Try new vehicle battery.
Radio will not turn on	Incorrect codeplug setting for vehicle Ignition sense (ACC).	Reprogram the radio through CPS and refer to the Help section on possible Ignition settings and their functions. Verify that the Ignition sense (ACC) wire is attached at either the control head or the radio.

Chapter 10

Functional Block Diagrams and Connectors

This chapter contains the APX Mobile Radio functional block diagrams and connector locations.

10.1 APX Mobile Radio Transceiver Functional Block Diagram

Figure 142: APX Mobile Radio VHF Transceiver Functional Block Diagram

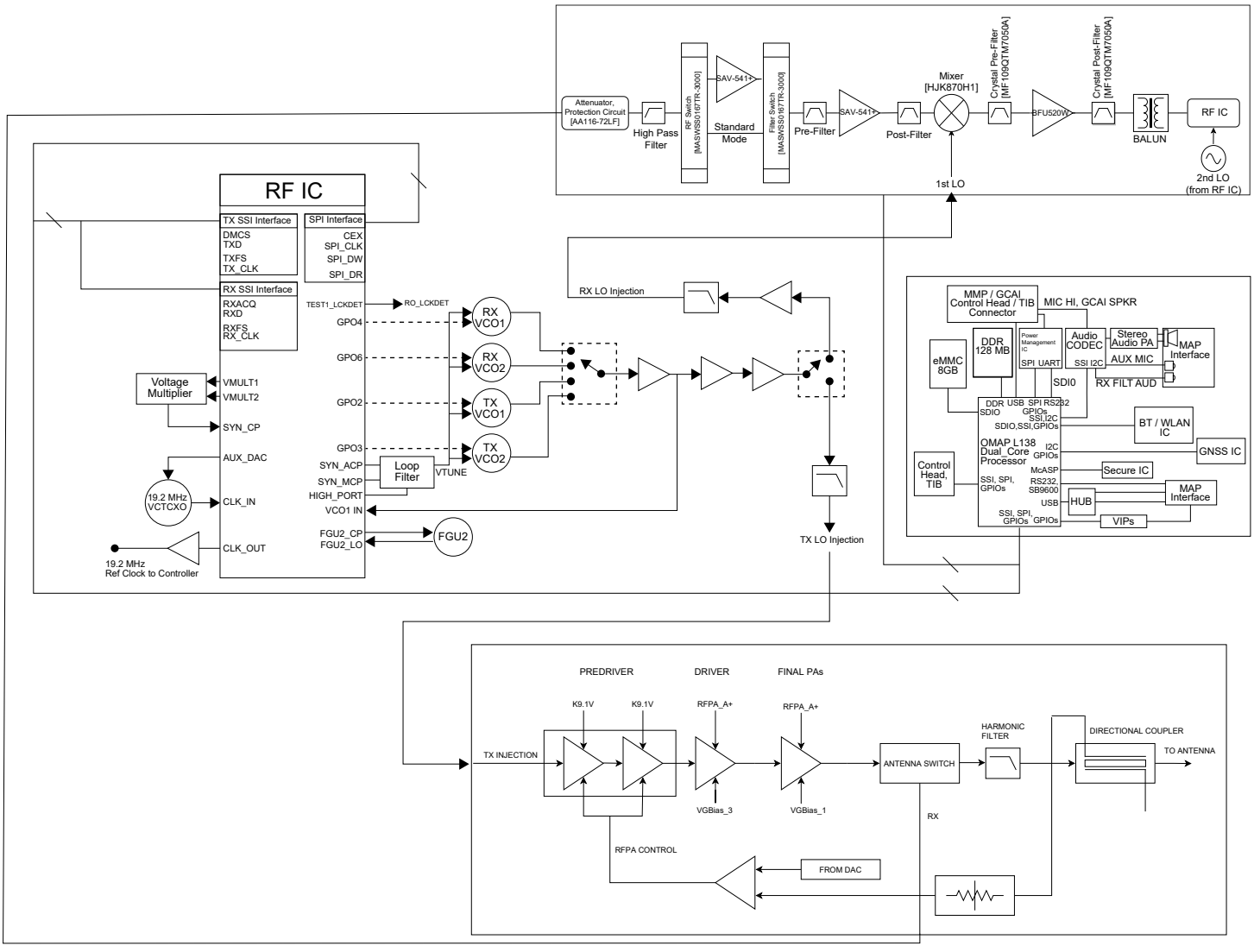


Figure 143: APX Mobile Radio UHF1 Transceiver Functional Block Diagram

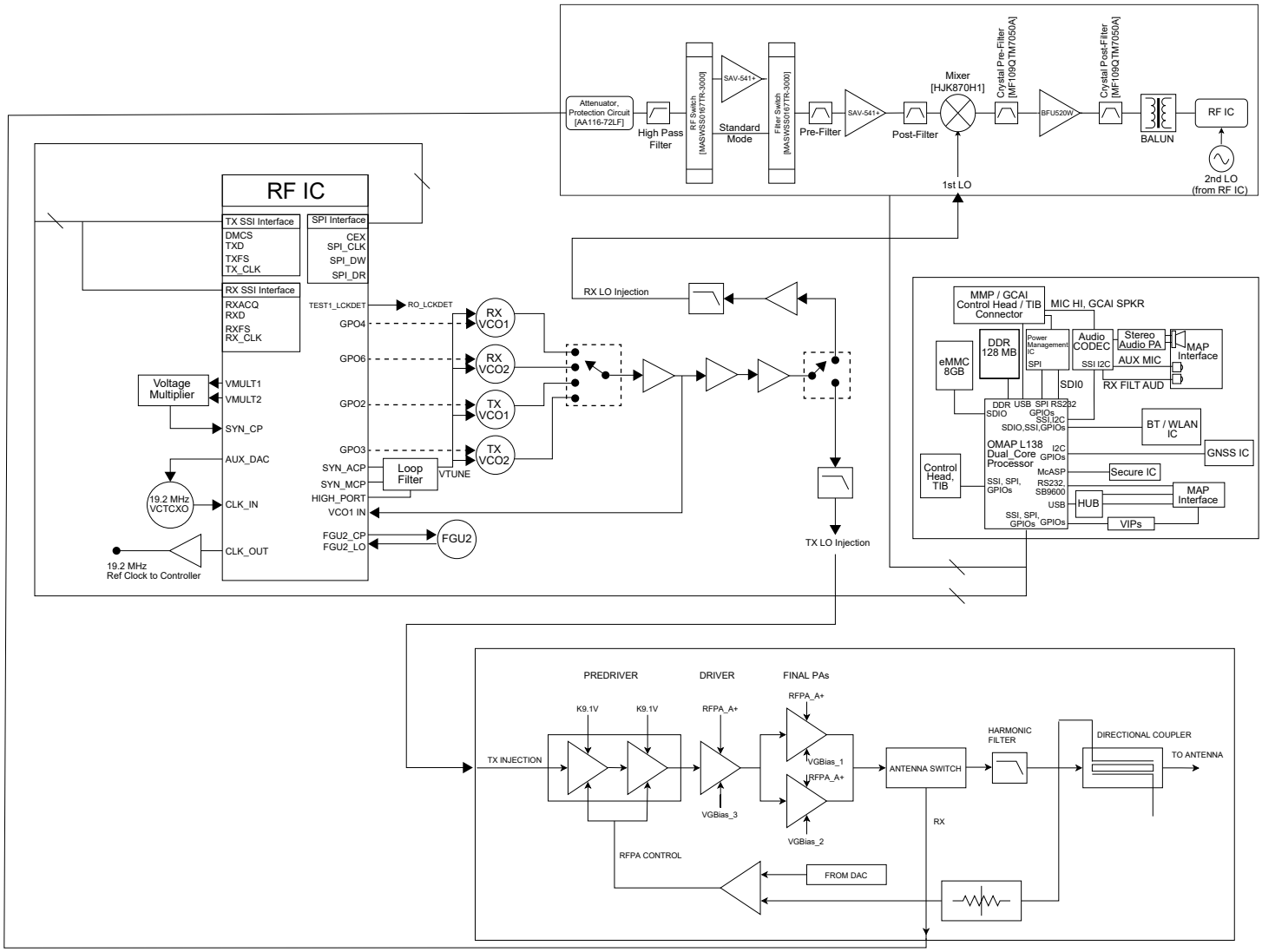


Figure 144: APX Mobile Radio UHF2 Transceiver Functional Block Diagram

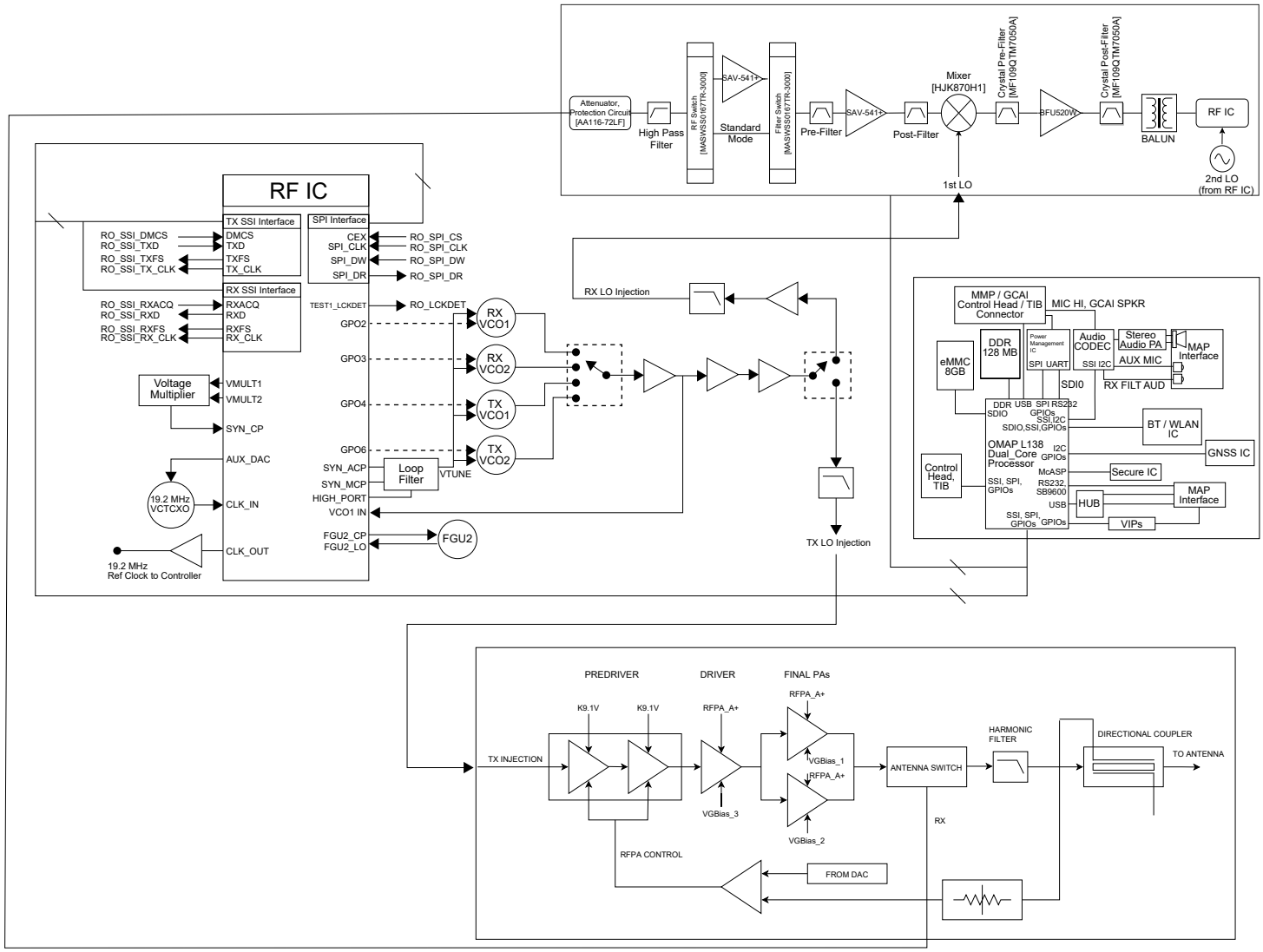


Figure 145: APX Mobile Radio 700–800 MHz Transceiver Functional Block Diagram

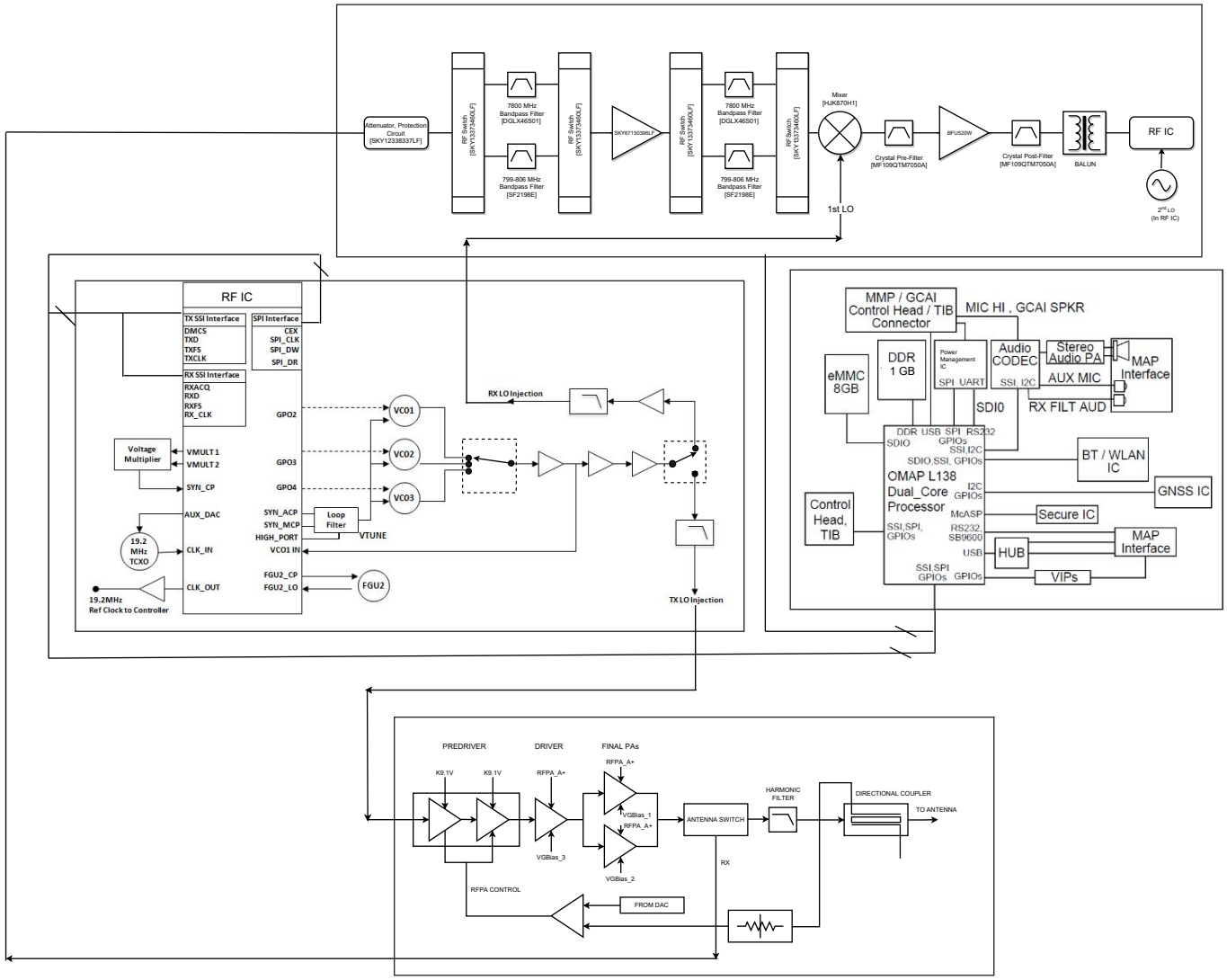
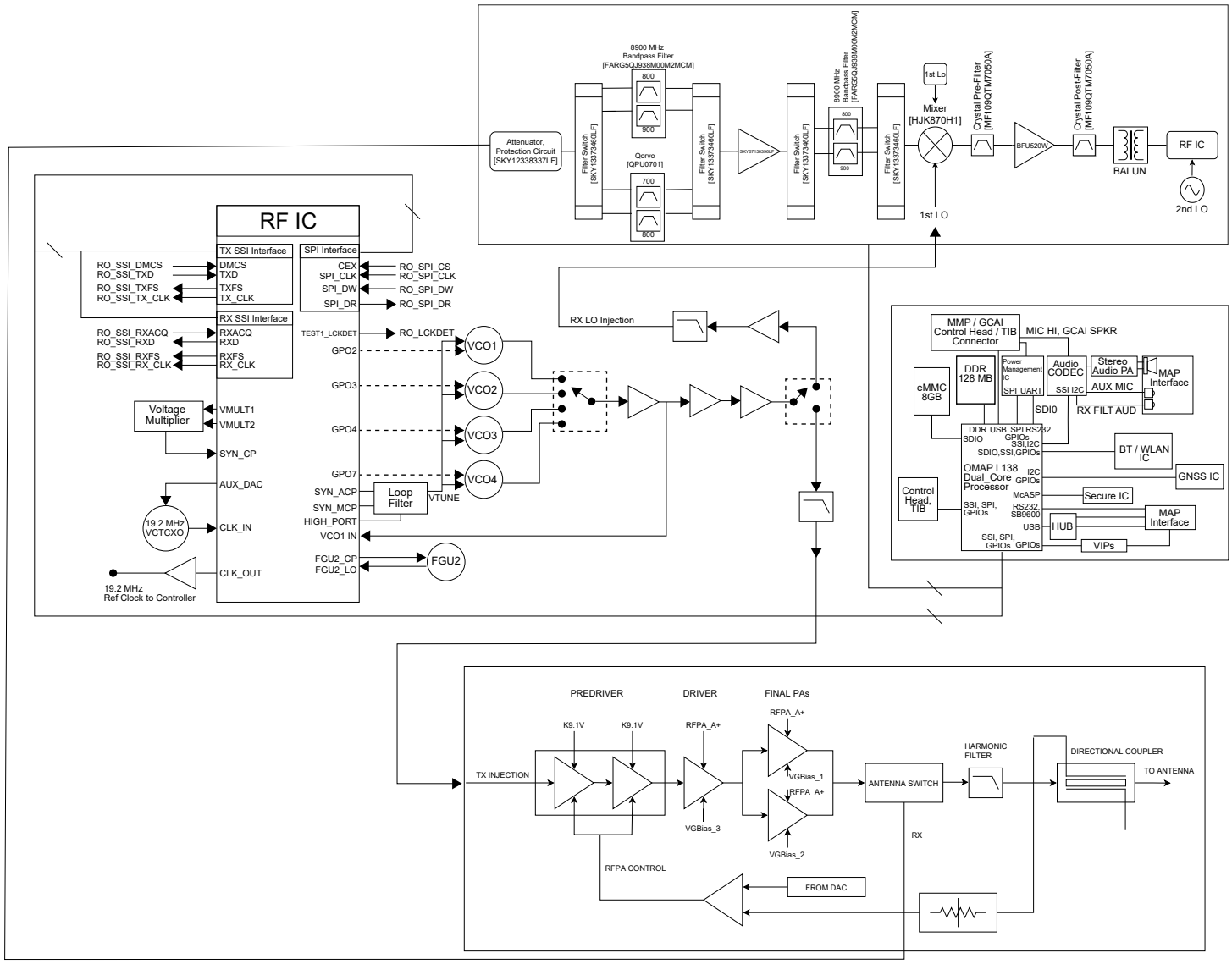


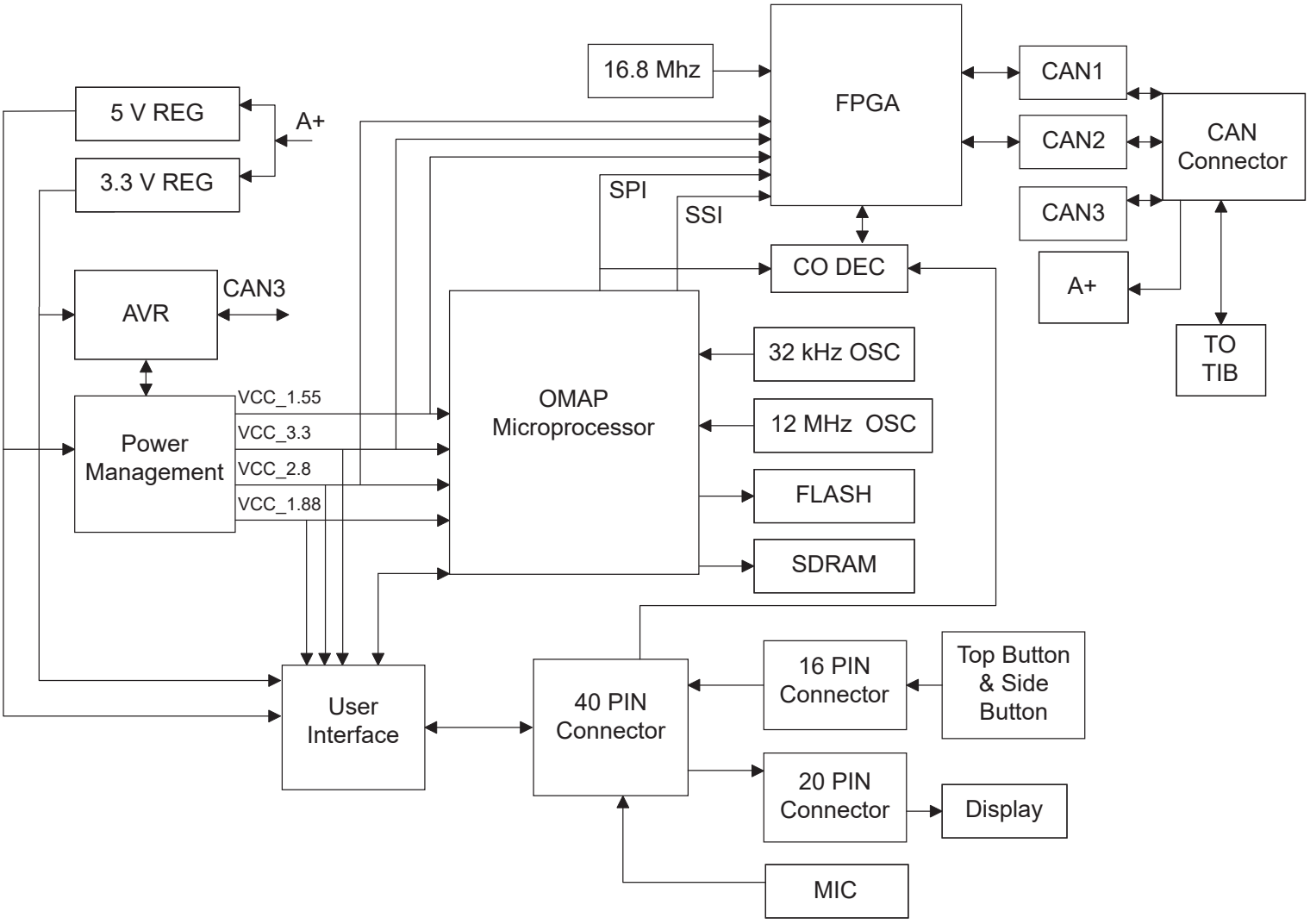
Figure 146: APX Mobile Radio 800-900 MHz Transceiver Functional Block Diagram



10.2

O3 Remote Control Head Functional Block Diagram

Figure 147: O3 Remote Control Head Functional Block Diagram



10.3

APX Mobile Radio Transceiver Interface Board (TIB) Functional Block Diagram

Figure 148: Transceiver Interface Board (TIB) CAN Functional Block Diagram

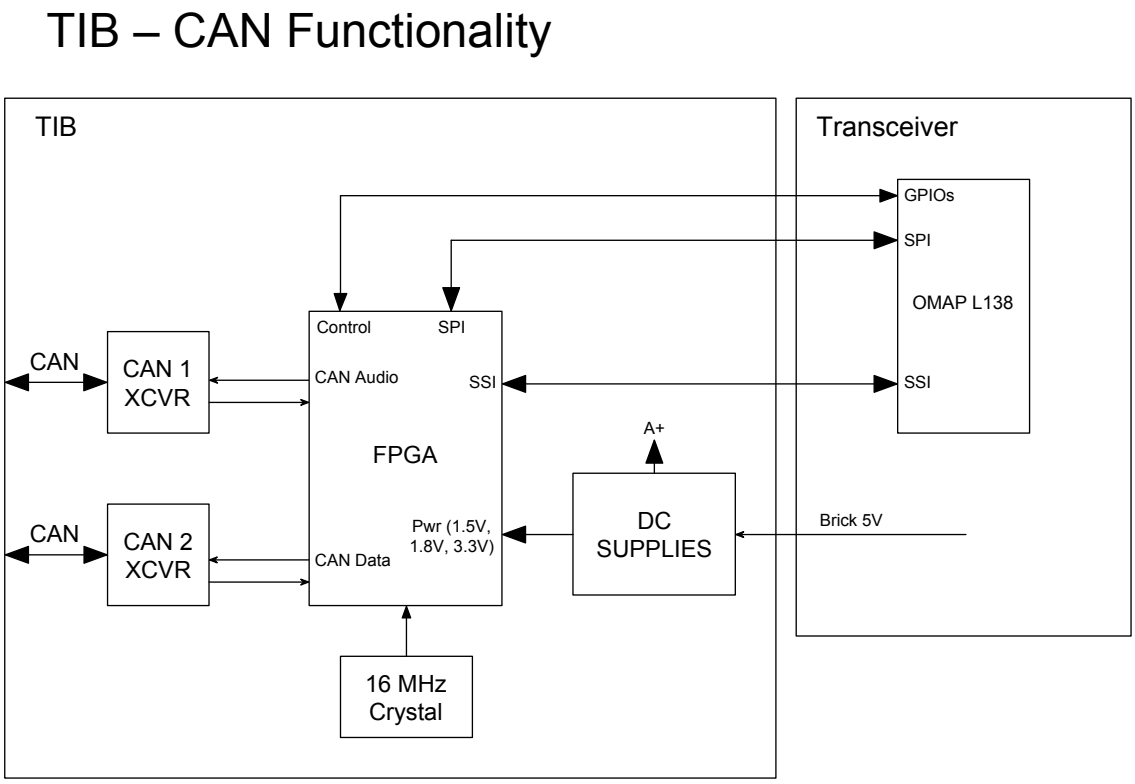


Figure 149: Transceiver Interface Board (TIB) CAN Functional Block Diagram Applicable to PMUN1083 rev D and Onwards

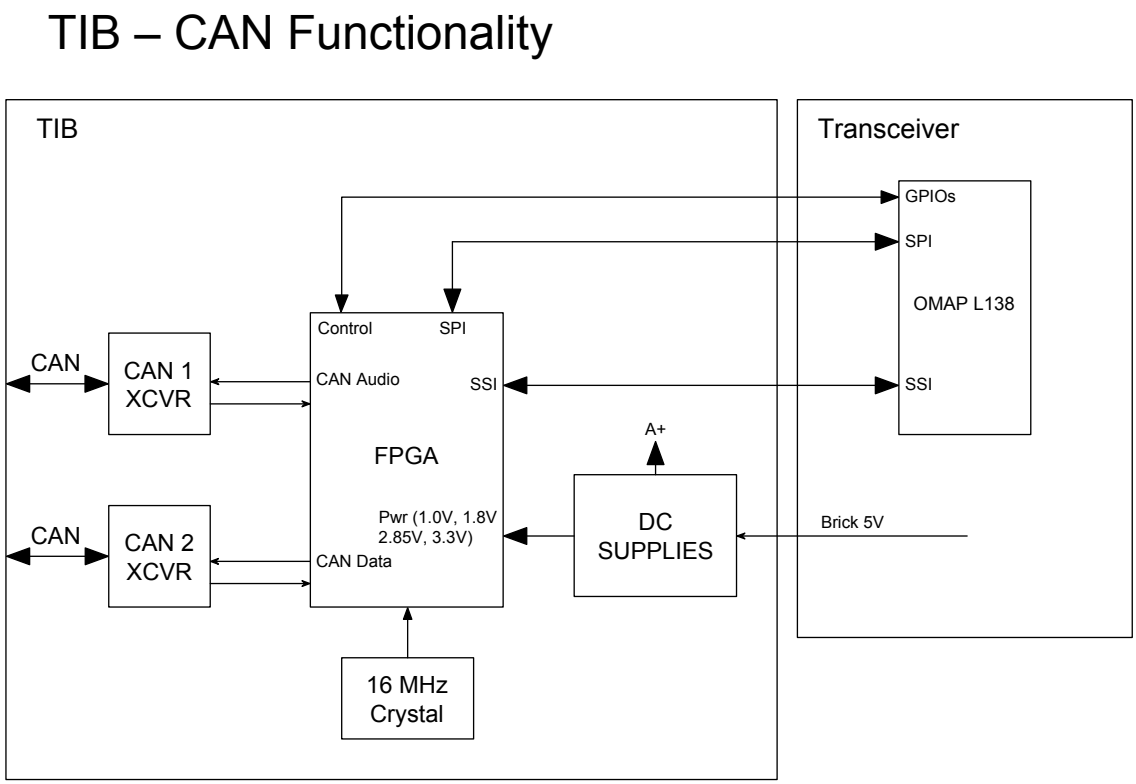
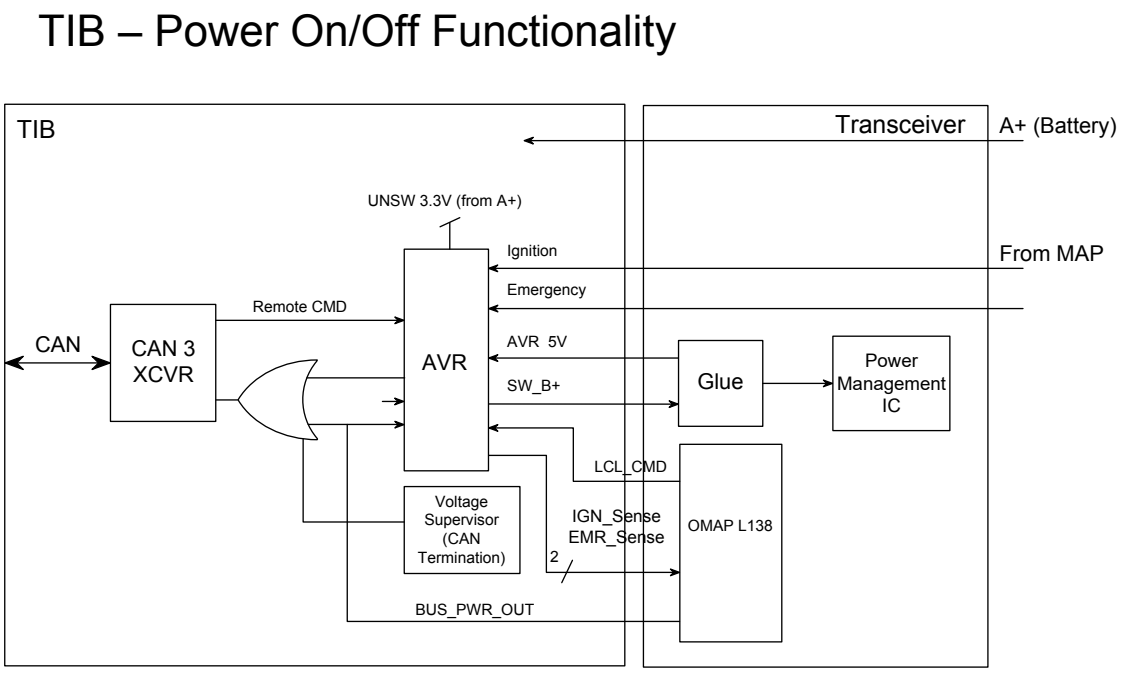


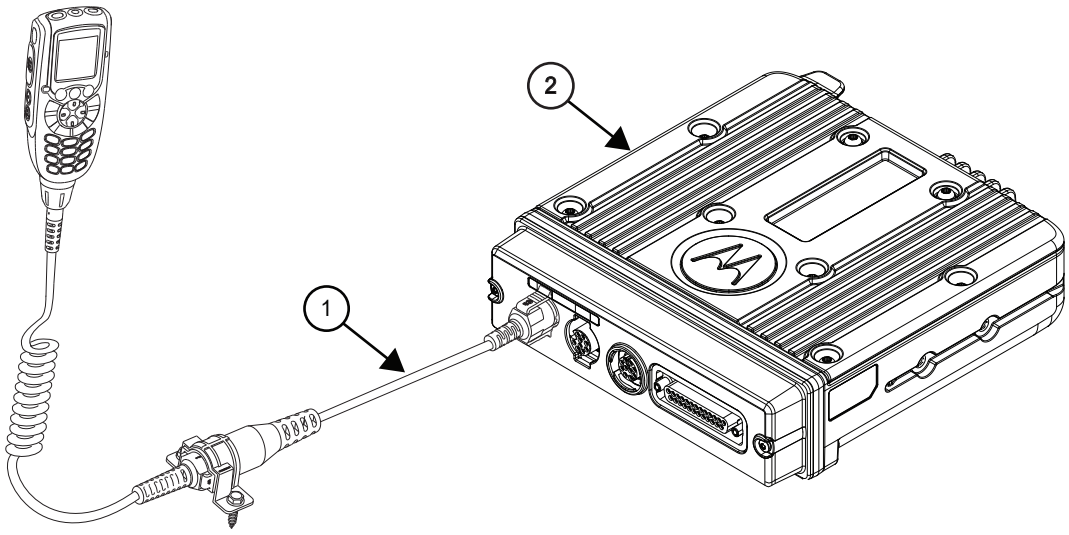
Figure 150: Transceiver Interface Board (TIB) Power On/Off Functional Block Diagram



10.4

O3 Radio Connector Locations

Figure 151: O3 Remote-Mount Radio Connector Locations

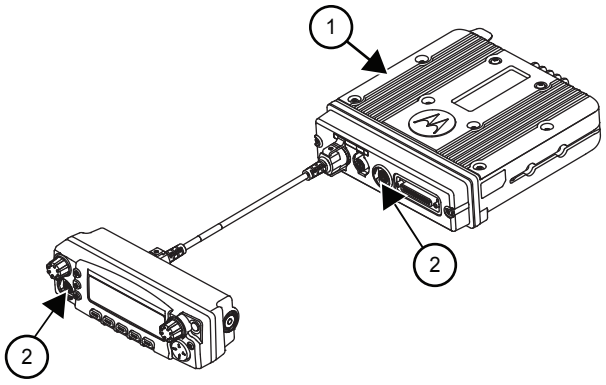


No.	Description
1	5 m (17 ft) Extension Cable
2	ASTRO 25 Subscribers Enhanced Single Band Mobile Radio

10.5

O5 Radio Connector Locations

Figure 152: O5 Remote-Mount Radio Connector Locations



No.	Description
1	ASTRO 25 Subscribers Enhanced Single Band Mobile Radio
2	MMP

10.6

E5 Radio Connector Locations

Mid Power Only

Figure 153: E5 Dash-Mount Radio Connector Locations

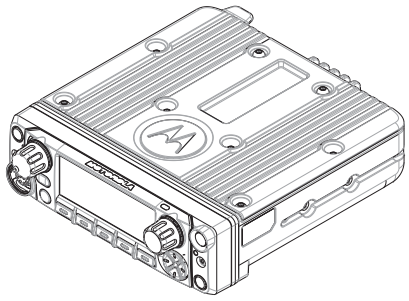
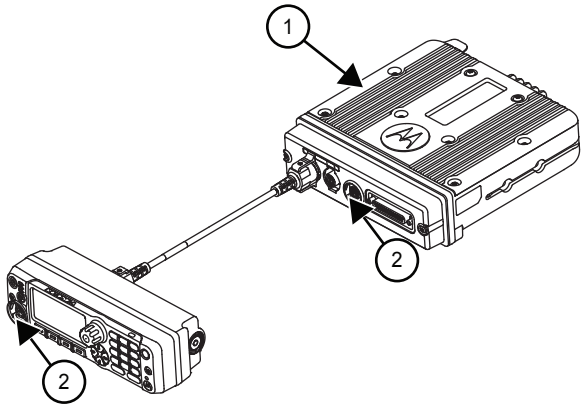


Figure 154: E5 Remote-Mount Radio Connector Locations

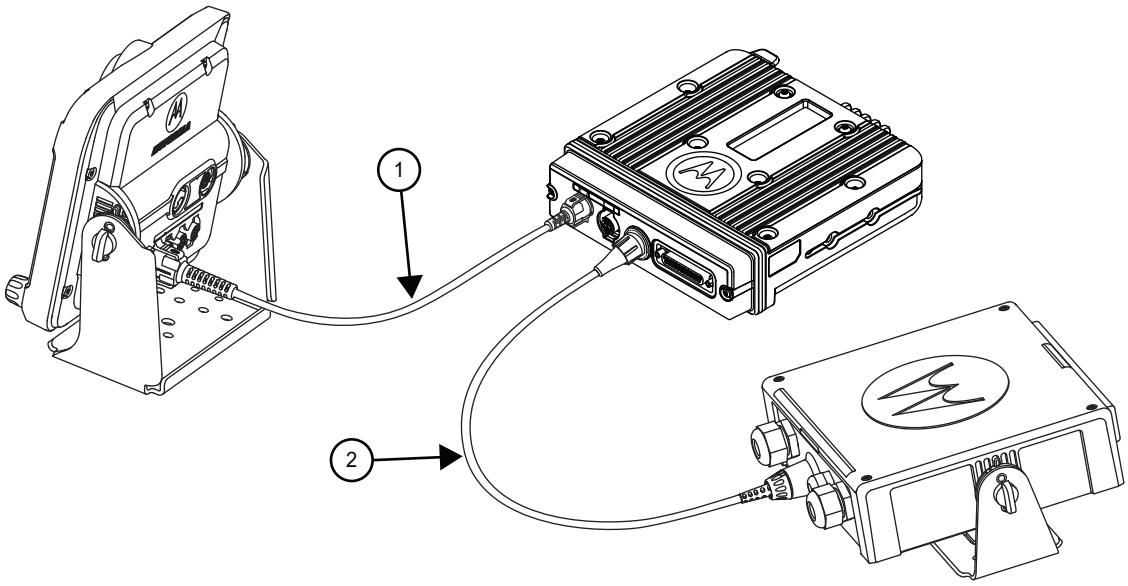


No.	Description
1	ASTRO 25 Subscribers Enhanced Single Band Mobile Radio
2	MMP

10.7

O9 Transceiver Interface

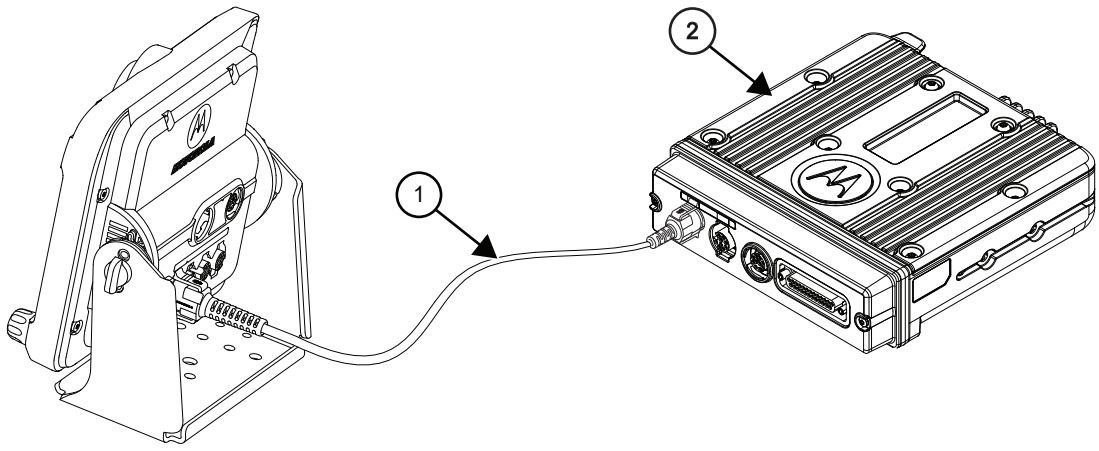
Figure 155: Transceiver Interface Board (TIB), Universal Relay Controller and Control Head View



No.	Description
1	5 m (17 ft) Extension Cable
2	O9 to URC Cable

NOTE: URC is an optional accessory

Figure 156: O9 Remote-Mount Radio Connector Locations



No.	Description
1	5 m (17 ft) Extension Cable
2	ASTRO 25 Subscribers Enhanced Single Band Mobile

Chapter 11

Exploded Views and Parts Lists

This chapter contains the exploded views and associated parts lists for the ASTRO mobile radios and accessories.

11.1 O2 Control Head Exploded View and Parts List

Figure 157: O2 Control Head Exploded View

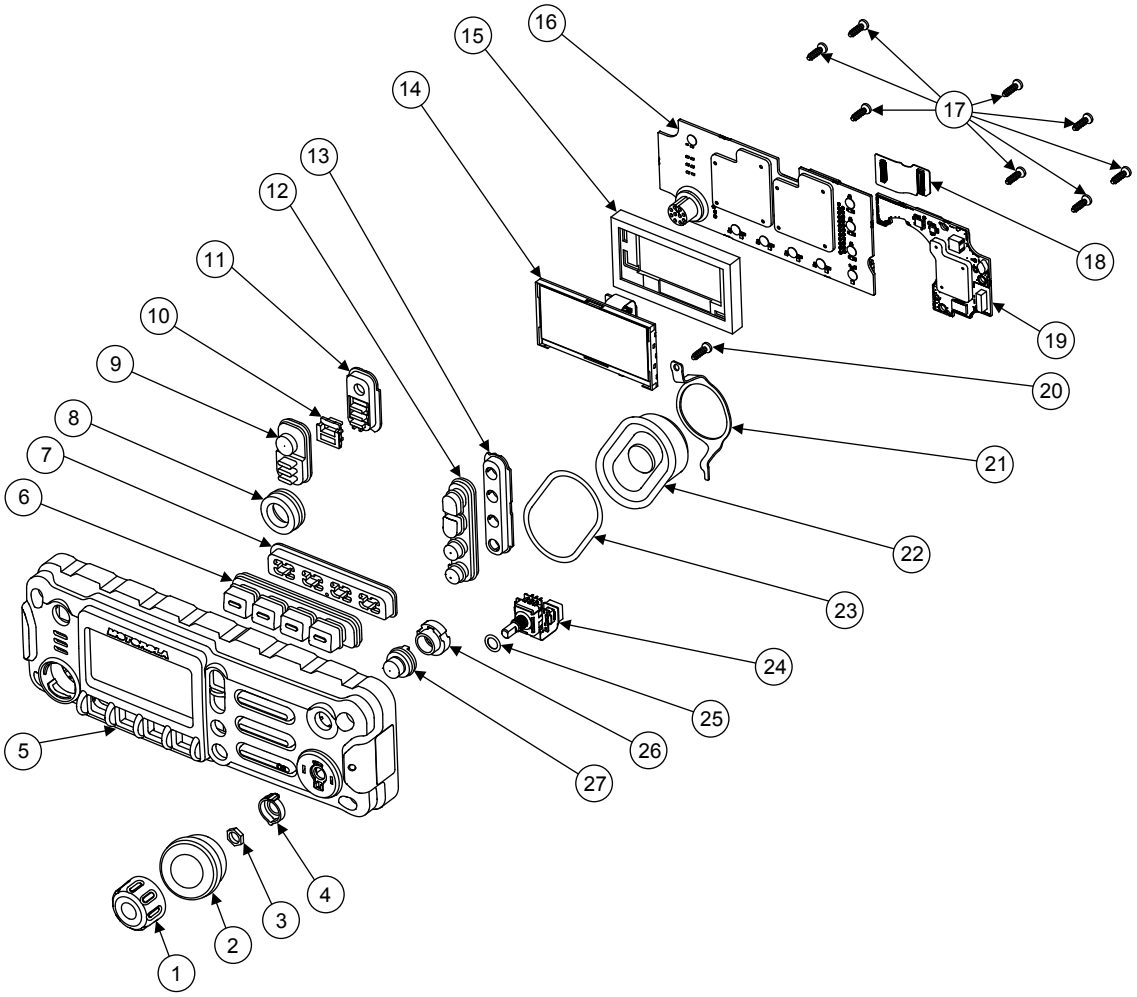


Table 68: O2 Control Head Parts List

Item No.	Motorola Solutions Part No.	Description
1	36012023002	Knob, Encoder
2	36012035001	Knob[4], Emergency

Item No.	Motorola Solutions Part No.	Description
3	02012021001	Nut, Hex
4	42012071001	Spring, Detent
5	0104058J01 (Grey) 0104058J02 (Green)	Housing, Front Assembly (Includes LIGHT GUIDE, Encoder, 61012062001 and LENS, Display, 61012060001)
6	75012155002	Keypad, Soft Key
7	42012066002	Retainer, Soft Key Keypad
8	3264133H01	Seal, GCAI
9	38012028001	Keypad, Power and Status Indicator
10	07012039001	Light Isolator, Status Indicator
11	07012040001	Retainer, Power and Status Indicator Keypad
12	38012029002	Keypad, Home, Dimmer, P1 and P2
13	07012038001	Retainer, Home, Dimmer, P1 and P2 Keypad
14	72012018002	Display Module, LCD
15	75012151001	Dampener, LCD Display Module
16	PMLN5901_[5]	PCB, Control Head, Main
17	03012055001	Screw, PCB, Main and Option Board
18	0104046J24	Flex, Option Board
19	PMLN6054_[6]	PCB, Option Board
20	03012055001	Screw, Speaker Retention
21	42012070001	Retainer, Speaker
22	5015134H01	Speaker
23	11012103001	Adhesive, Speaker
24	0104046J20	Potentiometer, Encoder Assembly
25	32012152001	Seal, O-ring, Encoder
26	07012041001	Retainer, Emergency Button Keypad
27	38012030001	Keypad, Emergency Button

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

[4] This is an optional part, and it can only be used with APX 6500/6500Li/4500/4500Li/1500. This item cannot be ordered individually. It is included in the O2 EMERGENCY KNOB KIT_PMBN4135.
[5] These items cannot be ordered individually. They are included in PMLN6342_.
[6] These items cannot be ordered individually. They are included in PMLN6341_.

11.2

O3 Control Head Exploded View and Parts List

Figure 158: O3 Control Head Exploded View

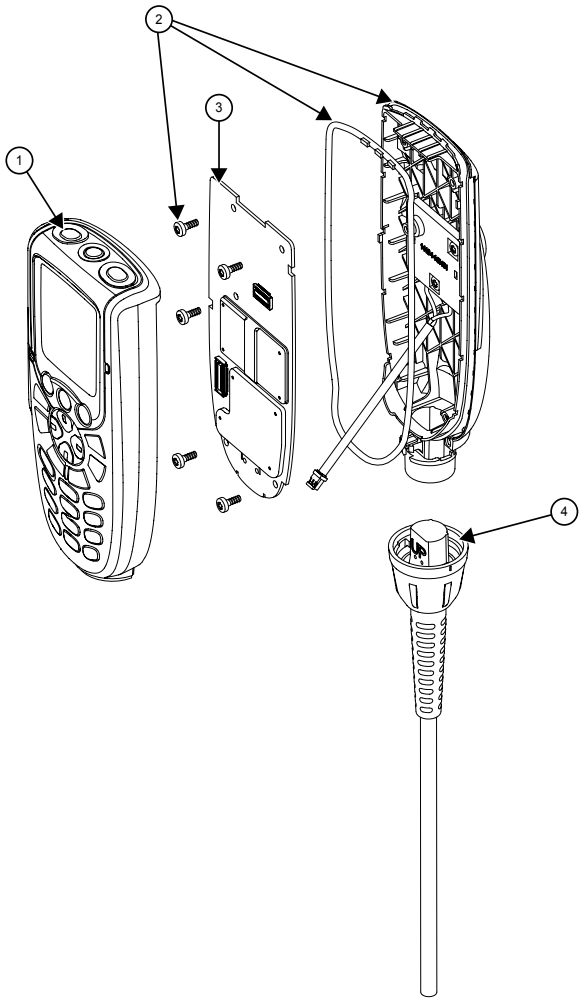


Table 69: O3 Control Head Parts List

Item No.	Motorola Solutions Part No.	Description
1	PMHN4082_	Housing, Front, Service Kit for PMUN1034A & PMUN1034B (English)
	PMHN4174_	Housing, Front, Service Kit for PMUN1034C or above (English)
	PMHN4199_	Housing, Front, Service Kit for PMUN1052B or above (Hebrew)
	PMHN4198_	Housing, Front, Service Kit for PMUN1053A or above (Cyrillic)
	PMHN4202_	Housing, Front, Service Kit for PMUN1054A or above (Arabic)
	PMHN4235_	Housing, Front, Service Kit for PMUN4227A or above (Siren & Lights)
2	PMHN4083_	Housing, Back, Service Kit (Includes O-ring [Quantity 1] and screws, 0310944A02 [Quantity 5])

Item No.	Motorola Solutions Part No.	Description
3	PMLN5035_	PCB Service Kit (for PMUN1034A and PMUN1034B)
	PMLN5848_	PCB Service Kit (for PMUN1034C or above, PMUN1052B or above, PMUN1053A or above, PMUN1054A or above, PMUN4227A or above)
4	PMLN4961_	Cable, Coiled, Kit

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

11.3
O5 Control Head Exploded View and Parts List

Figure 159: O5 Control Head Exploded View

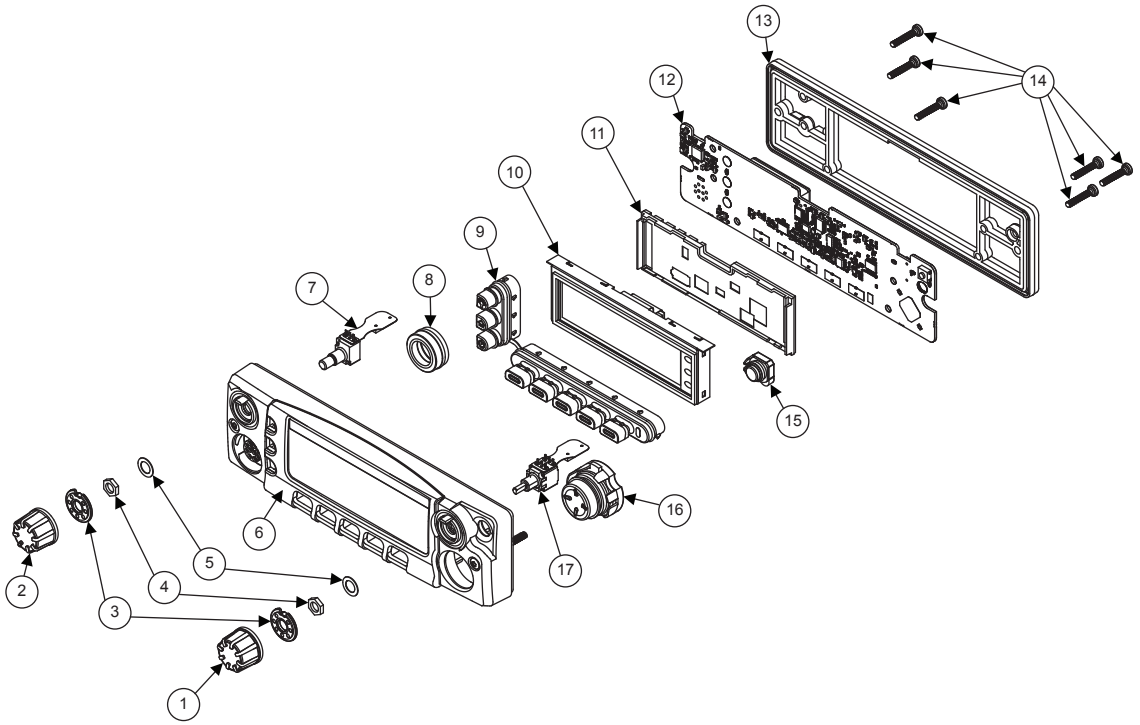


Table 70: O5 Control Head Parts List

Item No.	Motorola Solutions Part No.	Description
1	3664445H01	Knob, Mode
2	3664022H01	Knob, Volume
3	0415285H01	Washer, Torque
4	0215000C01	Nut, Hex, Special
5	0402838X01	Washer, 3 Wave

Item No.	Motorola Solutions Part No.	Description
6	1564047H06	Housing, Front Assembly (Includes Light pipe, Vol/Select, 6164056H02, [Quantity 2])
7	1864069H01	Potentiometer, Volume Assembly
8	3264133H01	Seal, O-Ring, MMP
9	3864503H05	Buttons, Main Assembly
10	7264052H05	Display, LCD
11	2675960A01	Shield, LCD
12	HLN6911_	PCB, Control Head Main
13	3264059H02	Seal, Overmolded Frame
14	0310944A14	Screws, Mounting
15	3864502H02	Button, Emergency
16	3864499H04	Button, Navigation Assembly
17	4064073H01	Switch, Frequency Assembly

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

11.4

O7 Control Head Exploded View and Parts List

Figure 160: O7 Control Head Exploded View

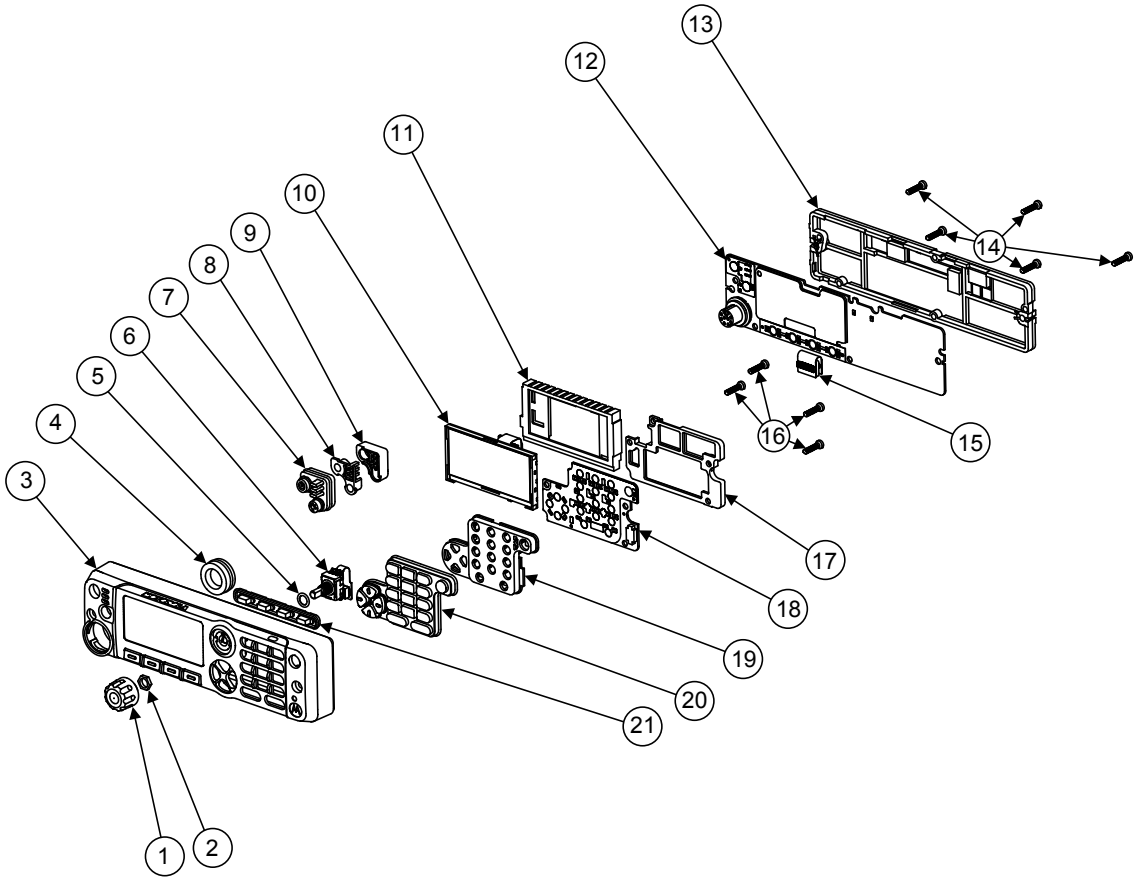


Table 71: O7 Control Head Parts List

Item No.	Motorola Solutions Part No.	Description
1	36012022001	Knob, Encoder
2	02012021001	Nut, Hex
3	0104047J41	Housing, Front Assembly (Includes LIGHT GUIDE, Encoder, 61012059001, LENS, Display, 61012061001 and SNAP PLUNGERS, Softkey, 55012025001)
4	3264133H01	Seal, GCAI
5	32012152001	Seal, O-ring, Encoder
6	0104046J14	Potentiometer, Encoder Assembly
7	75012149001	Keypad, Power, Dimmer and Status Indicator
8	61012058001	Light Guide, Power, Dimmer and Status Indicator
9	42012065001	Retainer, Power, Dimmer and Status Indicator Keypad
10	72012018002	Display Module, LCD

Item No.	Motorola Solutions Part No.	Description
11	75012152001	Dampener, LCD Display Module
12	PMLN5900_[7]	PCB, Control Head, Main
13	42012067001	Retainer, PCB, Main
14	0371370L02	Screws, Retention, PCB, Main
15	0104046J27	Flex, Bluetooth
16	03012055001	Screws, Retention, PCB, Bluetooth
17	42012069001	Retainer, PCB, Bluetooth
18	PMLN5983_[8]	PCB, Bluetooth
19	42012068001	Retainer, DTMF Keypad
20	75012157001 (English) 75012157002 (English_Chinese) 75012157003 (English_Cyrillic) 75012157004 (English_Hebrew) 75012157005 (Siren and Light) 75012157006 (English_Arabic)	Keypad, DTMF
21	75012153001	Keypad Rubber, Soft Key

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

[7] These items cannot be ordered individually. They are included in PMLN6340_.
[8] These items cannot be ordered individually. They are included in PMLN6343_.

11.5

O9 Control Head Exploded View and Parts List

Figure 161: O9 Control Head Exploded View

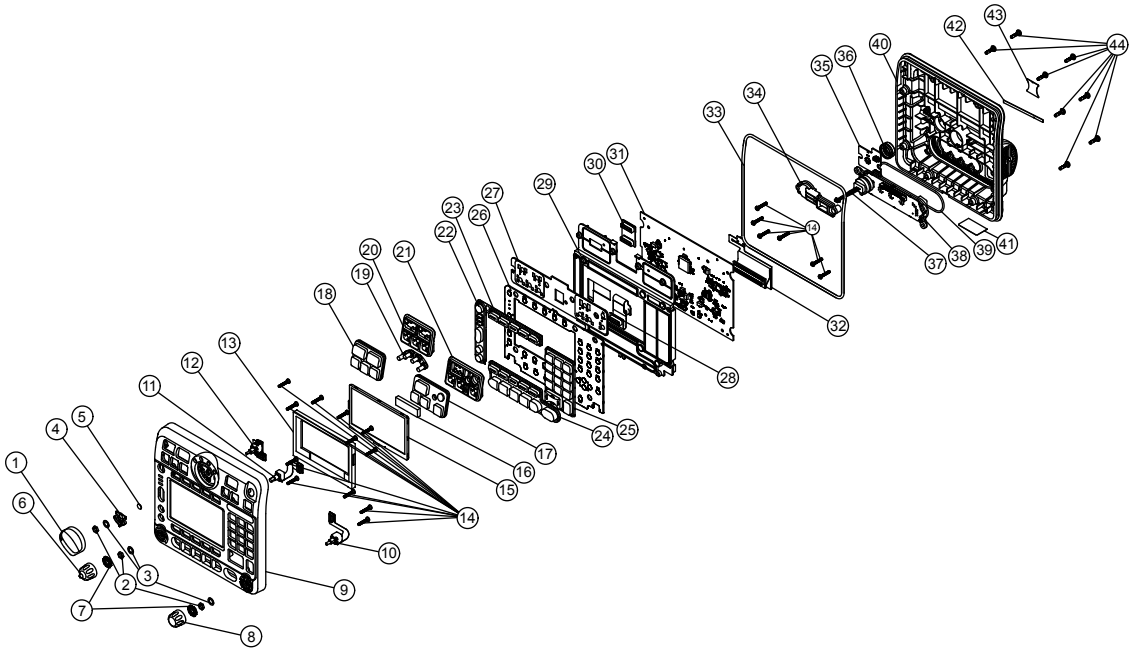


Table 72: O9 Control Head Parts List

Item No.	Motorola Solutions Part No.	Description
1	3675872M02	Top Pursuit Knob
2	0215000C01	Nut
3	0402838X01	Washer
4	42012000001	Pursuit Spring
5	3205472M02	Gore Port Seal
6	3675893M01	Volume Knob
7	3275895M01	Torque Enhancer
8	3675898M01	Frequency Knob
9	PMHN4143_	Front Housing Assembly (with light guides)
10	0104031J86	Frequency Flex Assembly
11	0104031J85	Volume Flex Assembly
12	0104033J49	Top Pursuit Switch Flex Assembly
13	7575913M01	Rubber jacket/ Rubber Boot
14	0371370L02	Screw, Tapping, K30X1.34X16
15	7275224M01	LCD Module/Display
16	32012043001	Conductive Pad, LCD

Item No.	Motorola Solutions Part No.	Description
17	7575866M01	Top Pursuit Light Bar Keypad
18	7575867M01	Top Pursuit Siren Keypad
19	6175865M01	Indicator Light Guide
20	4275869M01	Top Pursuit Siren Keypad Retainer
21	4275868M01	Top Pursuit Light Bar Keypad Retainer
22	7575911M02	Menu, Brightness Control Keypad
23	7575912M02	DEK Silicone Keypad
24	7575911M01	Programmable Control Keypad
25	7575912M01	Alpha Numeric Silicone Keypad
	7575912M03	Alpha Numeric Silicone Keypad, Arabic
26	PMLN5601_	Front Keypad PCB Kit (with mylar)
27	PMLN5602_	Top keypad PCB Kit (with mylar)
28	0104033J13	Front Keypad Flex
29	2775878M02	Chassis with Thermal Pad
30	0104031J84	Top Keypad Flex Assembly
31	PMLN5637_	Main PCB Kit
32	0104033J12	Main Flex Assembly
33	3275880M01	Main O-ring
34	4278089A01	USB/GCAI Retainer
35	PMLN5638_	GCAI PCB Kit
36	3264133H01	GCAI Seal
37	0964098H01	USB Overmold
38	HLN6914_	CHUC PCB Kit
39	3264096H01	CHUC Seal
40	1575879M02	Back Housing with Screw Insert
41	54012001001	Label, Serial
42	3364425H01	Label Color Code
43	5475881M01	Label Connector
44	0378014A01	Screw Assembly (M3X0.5X14 mm)

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

11.6

E5 Control Head Exploded View and Parts List

Figure 162: E5 Control Head Exploded View

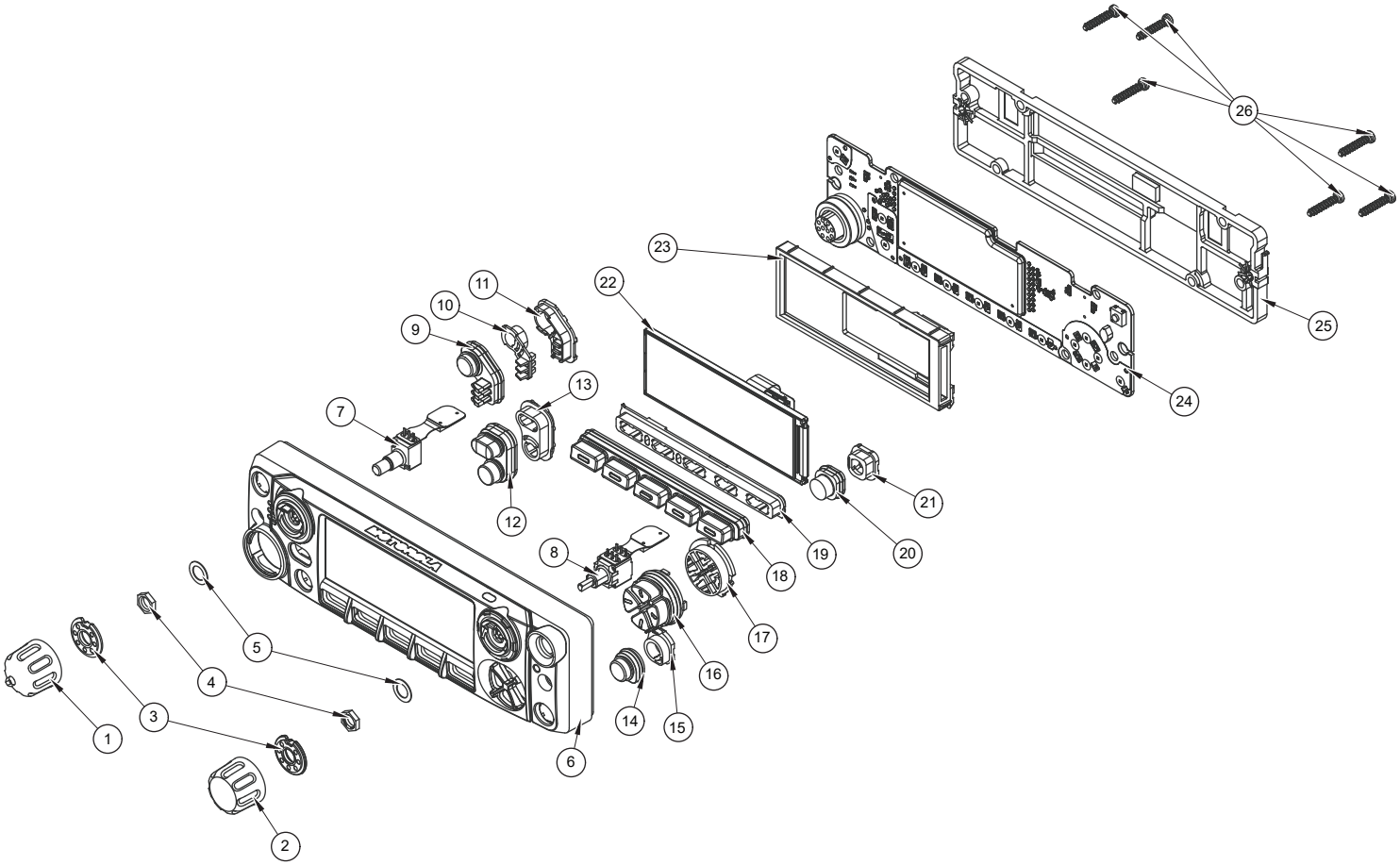


Table 73: E5 Control Head Parts List

Item No.	Motorola Solutions Part No.	Description
1	HW002144A01	Knob, volume, E5
2	HW002145A01	Knob, Frequency, E5
3	0415285H01	Washer, Torque
4	0215000C01	Nut, Hex, M6, Steel, Hex, Special
5	0402838X01	Washer, 3 Wave
6	0104080J95	E5 Front Housing Assembly
7	1864069H01	Potentiometer, Volume Assembly
8	4064073H01	Switch, Frequency Assembly
9	KP000186A01	Button, Light Indicator, Power

Item No.	Motorola Solutions Part No.	Description
10	HW002156A01	Light Guide, Power
11	HW002150A01	Retainer, Power Button
12	KP000183A01	Button, Programmable
13	HW002147A01	Retainer, Programmable
14	KP000188A01	Button, Home
15	HW002163A01	Retainer, Home
16	KP000184A01	Button, Navigation
17	HW002148A01	Retainer, Navigation
18	KP000182A01	Button, Menu
19	HW002146A01	Retainer, Menu
20	KP000185A01	Button, Emergency
21	HW002149A01	Retainer, Emergency
22	DM000141A01	Color Display Module, 160 RGBx480 TFT, Transmissive
23	HW002169A01	Display Rubber Boot
24	PMLN7988_[9]	PCB, Main Board
25	HW002151A01	PCB Retainer
26	0371370L02	Screw, K30 PT Thread

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

[9] This item cannot be ordered individually. It is included in PPMLN7988_

11.7

O2 CHIB and CHUC Exploded View and Parts List

Figure 163: O2 CHIB and CHUC Exploded View

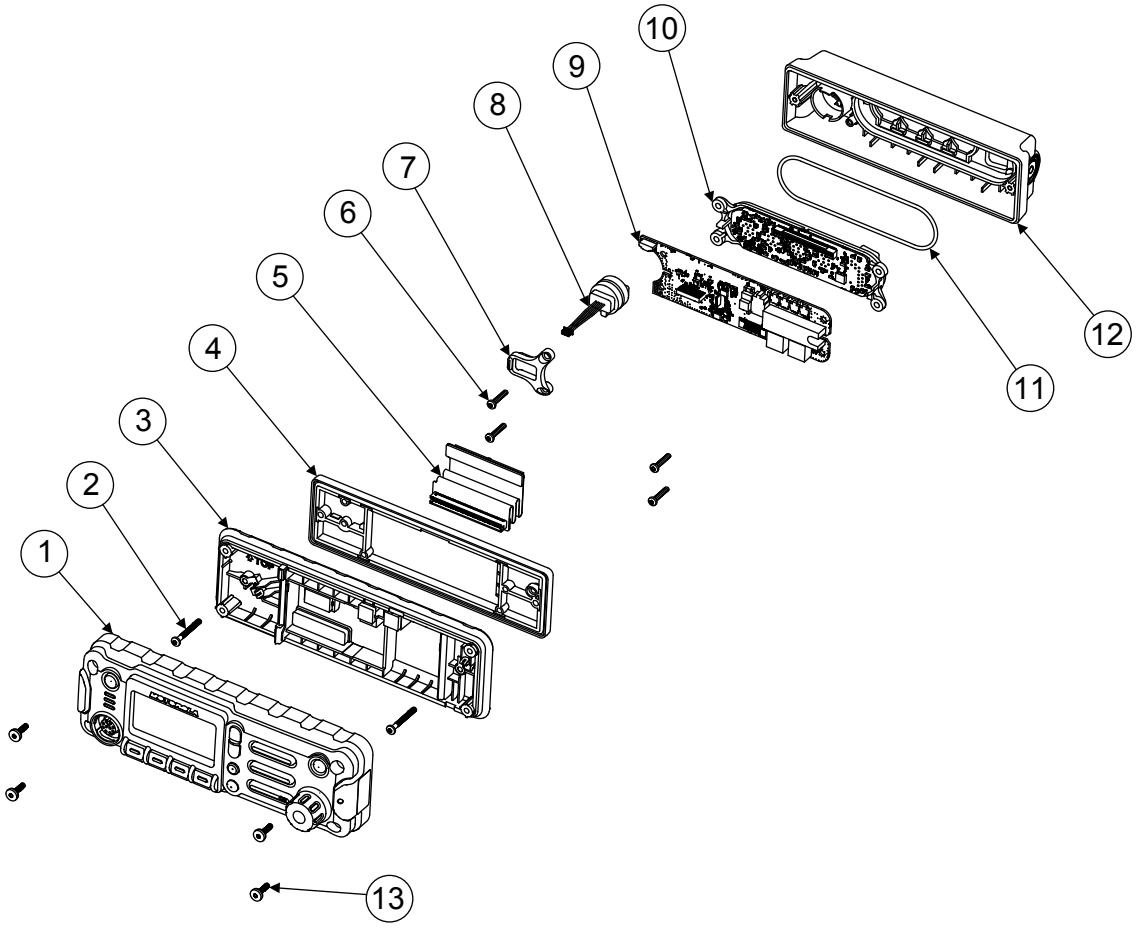


Table 74: O2 CHIB and CHUC Parts List

Item No.	Motorola Solutions Part No.		Description
1		PMHN4193_	O2 Control Head Grey
		PMHN4195_	O2 Control Head Green
2		03012052001	Transceiver Screws
3		0104046J72	O2 Back Housing Sub-assembly
4		3264059H03	I-Seal
5		0104046J13	Remote Mount Flex Assembly
6	PMUN1057_/ PHCN4003_**[10]	0310909F21	Screw, Tapping (4)
7		0764091H01	Bracket, USB Connector
8		0964098H01	USB Connector[11]

[10] When ordering, refer to your specific kit number and suffix letter to ensure compatibility.

Item No.	Motorola Solutions Part No.		Description
9	PMUN1057_/ PHCN4003_**[10]	PMLN5927_ / PMLN8045_[12]	CHIB Board Assembly
10		HLN6914_	CHUC Board Assembly
11		3264096H01	Seal, Moisture, Silicone
12		1564090H01	Housing
13		03012063001	Housing Retention Screws
*		KT000272A01	Kit, Dust Caps, Remote

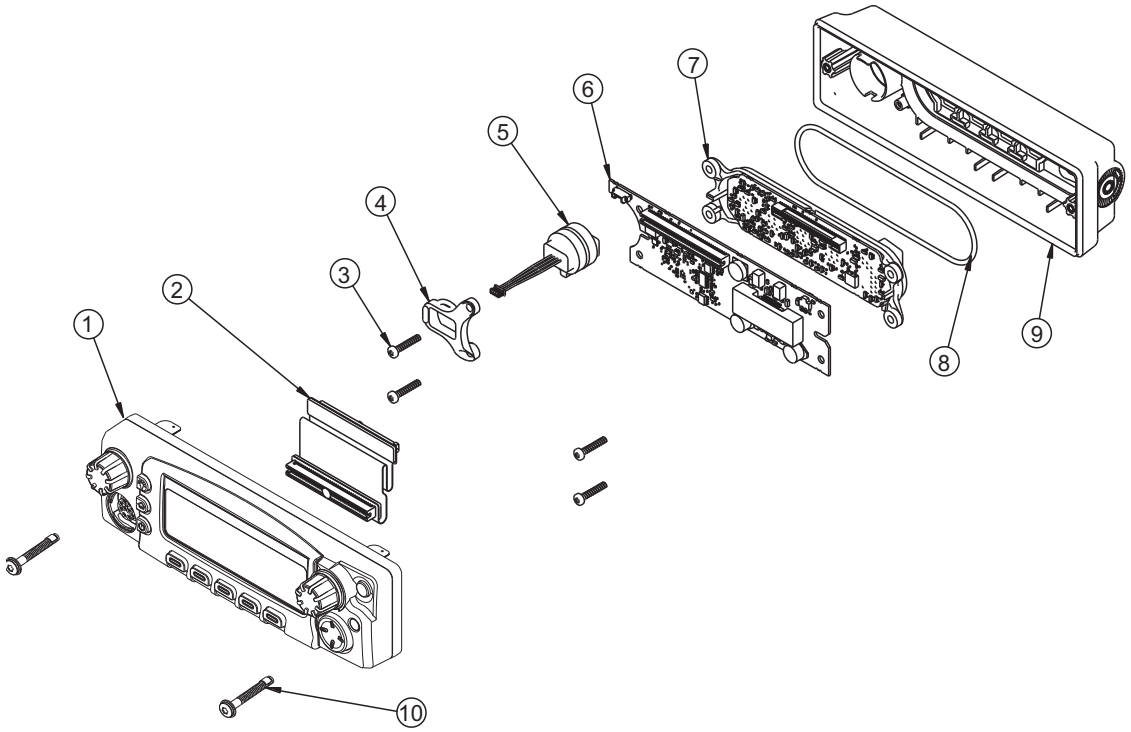
NOTE:

- The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.
- The double asterisk (**) indicates newer kit revision than PHCN4003E.

For more information on the compatibiliy of the Control Head and CHIB, refer to Table 26: Control Head and CHIB Compatibility on page 62.

11.8
O5 CHIB and CHUC Exploded View and Parts List

Figure 164: O5 CHIB and CHUC Exploded View



[11] This item is not applicable for PHCN4003_**.
[12] This item cannot be ordered individually. This item is included in PMUN1057_/ PHCN4003_**.

Table 75: O5 CHIB and CHUC Parts List

Item No.	Motorola Solutions Part No.	Description
1	PHCN4000_	Control Head
2	HKN6191_	Flex Assembly
3	PHLN1002_ 0310909F21	Screw
4	0764091H01	Retainer Bracket
5	0964098H01	USB Adapter
6	HLN7041_[13]	CHIB
7	HLN6914_	CHUC
8	3264096H01	Moisture Seal
9	1564090H01	Rear Housing
10	0364332H02	Main Screws
*	KT000272A01	Kit, Dust Caps, Remote
*	NNTN7279_	Sun Shield

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

[13] This item cannot be ordered individually. It is included in PHLN1002_.

11.9

O7 CHIB and CHUC Exploded View and Parts List

Figure 165: O7 CHIB and CHUC Exploded View

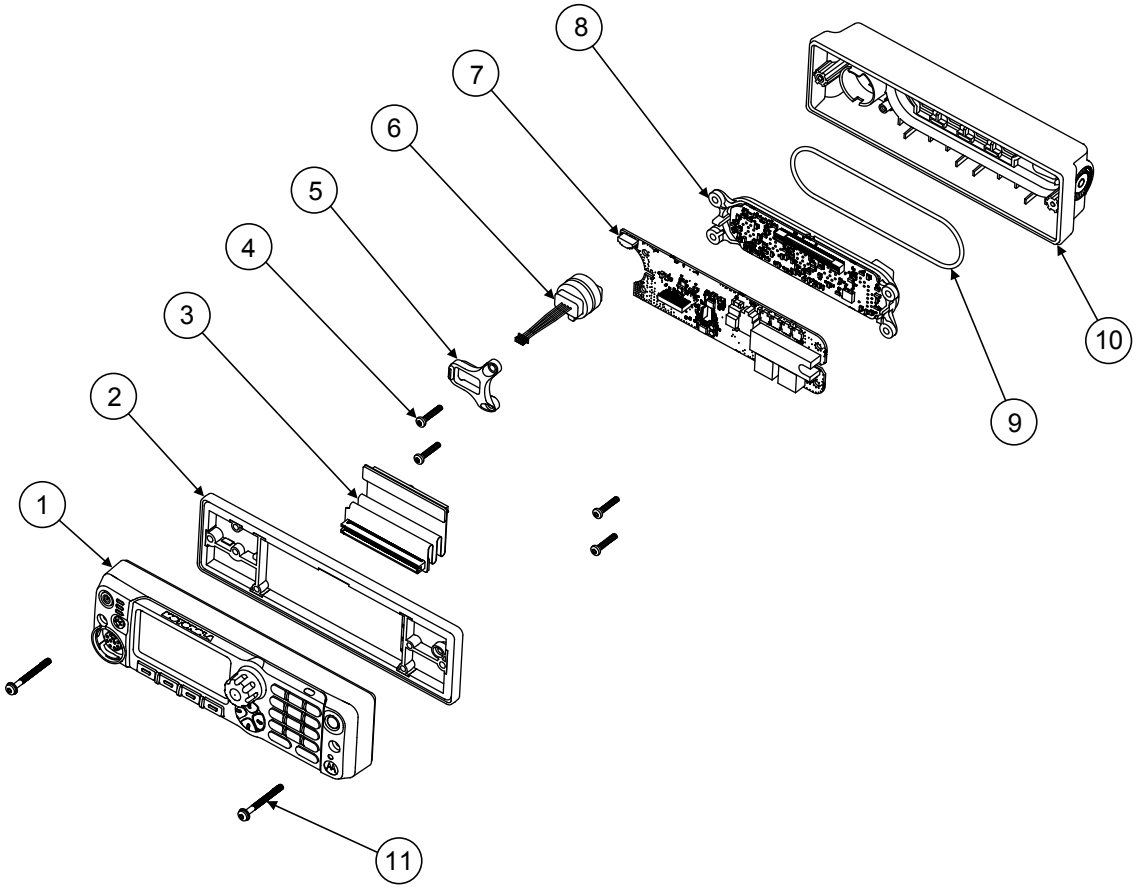


Table 76: O7 CHIB and CHUC Parts List

Item No.	Motorola Solutions Part No.		Description
1		PMHN4194_	O7 Control Head English
		PMHN4192_	O7 Control Head English_Chinese
		PMHN4197_	O7 Control Head English_Cyrillic
		PMHN4196_	O7 Control Head English_Hebrew
		PMHN4191_	O7 Control Head Siren and Light
		PMHN4229_	O7 Control Head English_Arabic
2		3264059H03	I-Seal
3		0104046J13	Remote Mount Flex Assembly
4	PMUN1057_/ PHCN4003_**[14]	0310909F21	Screw, Tapping (4)
5		0764091H01	Bracket, USB Connector

[14] When ordering, refer to your specific kit number and suffix letter to ensure compatibility.

Item No.	Motorola Solutions Part No.		Description
6		0964098H01	USB Connector[15]
7	PMUN1057_/ PHCN4003_**[14]	PMLN5927_/ PMLN8045_[16]	CHIB Board Assembly
8		HLN6914_	CHUC Board Assembly
9		3264096H01	Seal, Moisture, Silicone
10		1564090H01	Housing
11		03012062001	Transceiver Screws
*		KT000272A01	Kit, Dust Caps, Remote

NOTE:

- The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.
- The double asterisk (**) indicates newer kit revision than PHCN4003E.

For more information on the compatibiliy of the Control Head and CHIB, refer to Table 26: Control Head and CHIB Compatibility on page 62.

[15] This item is not applicable for PHCN4003_**.
[16] This item cannot be ordered individually. This item is included in PMUN1057_/ PHCN4003_**.

11.10

E5 CHIB and CHUC Exploded View and Parts List

Figure 166: E5 CHIB and CHUC Exploded View

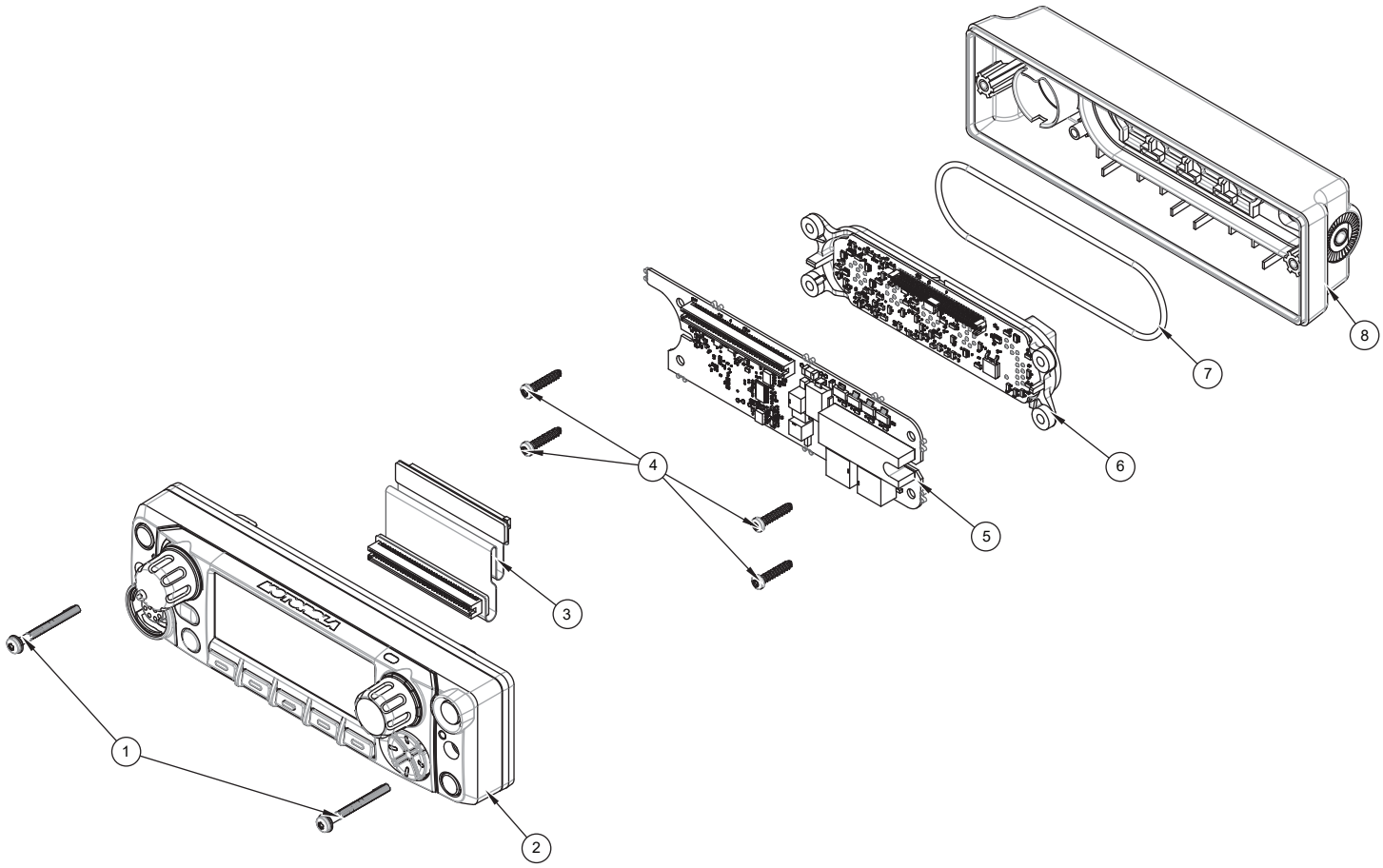


Table 77: E5 CHIB and CHUC Parts List

Item No.	Motorola Solutions Part No.	Description
1	3012062002	Screw Assembly, Transceiver, E5
2	PHCN4001A	E5 Control Head
3	PA002638A01	E5 Remote Flex
4	0310909F21[17]	Screw
5	PMLN8045_[17]	E5 CHIB Board
6	PMLN8052A[17]	E5 CHUC Board
7	3264096H01[17]	Seal, O-ring CHUC
8	1564090H02[17]	E5 Remote Mount Housing

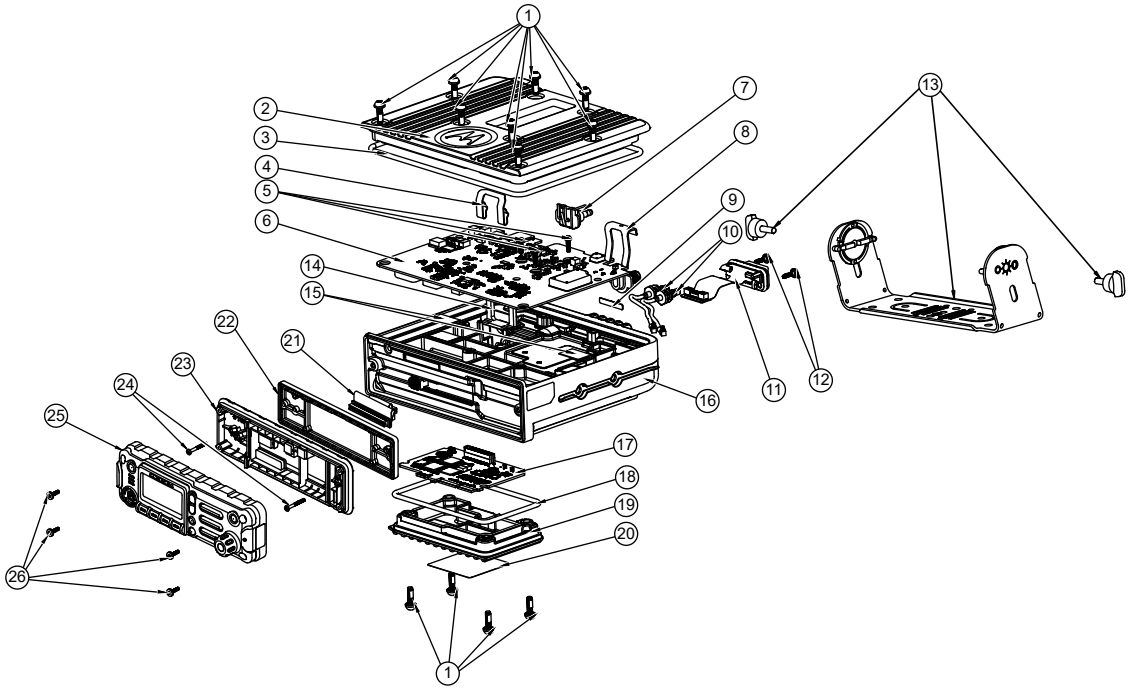
[17] This item cannot be ordered individually. It is included in PHCN4003_.

Item No.	Motorola Solutions Part No.	Description
*	KT000272A01	Kit, Dust Caps, Remote

11.11

O2 Dash Mount Radio Exploded View

Figure 167: O2 Dash Mount Radio Exploded View



11.11.1

O2 Dash Mount Radio Parts List

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

Table 78: O2 Dash Mount Radio Parts List

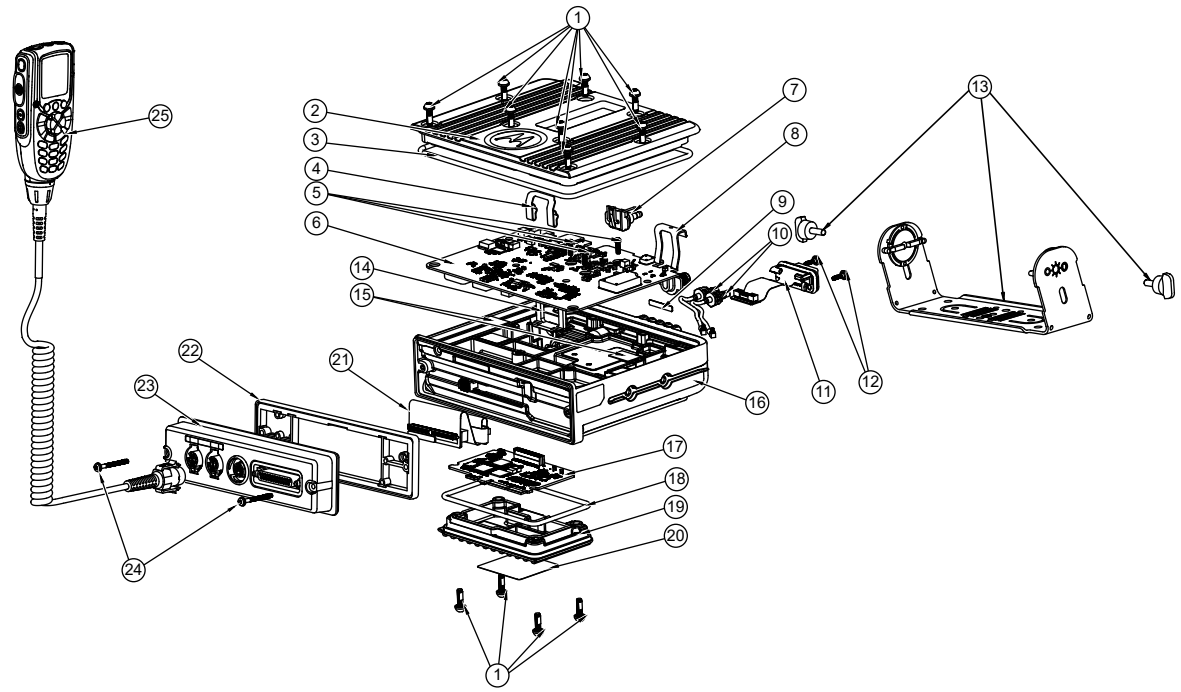
Item No.	Motorola Solutions Part No.	Description
1	0104054J54	Assembly screw sealing
2	0104080J01	Top cover assembly
3	32012219001	Top cover seal
4	HW000571A01	DC clip
5	0310909A33	Heat spreader screw
6	PPMLF4214_	RF board (7/800Mhz)
	PPMLE5285_	RF board (UHF R1)

Item No.	Motorola Solutions Part No.	Description
	PPMLD8920_	RF board (VHF)
	PPMLF4223_	RF board (8/900Mhz)
	PPMLE5343_	RF board (UHF R2)
7	09009344005	Connector DC Power
8	4285702E01	RF clip
9	LB001278A01	Wi-Fi GPS label
	LB001278A02	GPS label
10	CB000798A01	QMA connector assembly
11	PA002376A01	Rear accessory flex
12	0371838H01	Accessory flex screw
13	HLN6861_	Trunnion Installation Kit
14	BR000379A01	Plastic retainer bracket
15	75012190001	Thermal pad
16	0104080J03	Main chassis assembly
17	PPMLN7950_	Controller board
18	32012220001	Bottom cover seal
19	0104080J02	Bottom cover assembly
20	-	FCC Label
21	PA002533A01	Dash flex
22	3264059H03	I-Seal
23	0104046J72	O2 Control Head Back Housing Assembly
24	03012052001	O2 Transceiver Screw
25	PMHN4193_	O2 Control Head Grey
	PMHN4195_	O2 Control Head Green
26	03012063001	O2 Housing Retention Screw

11.12

O3 Radio Exploded View

Figure 168: O3 Radio Exploded View



11.12.1

O3 Radio Parts List

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

Table 79: O3 Radio Parts List

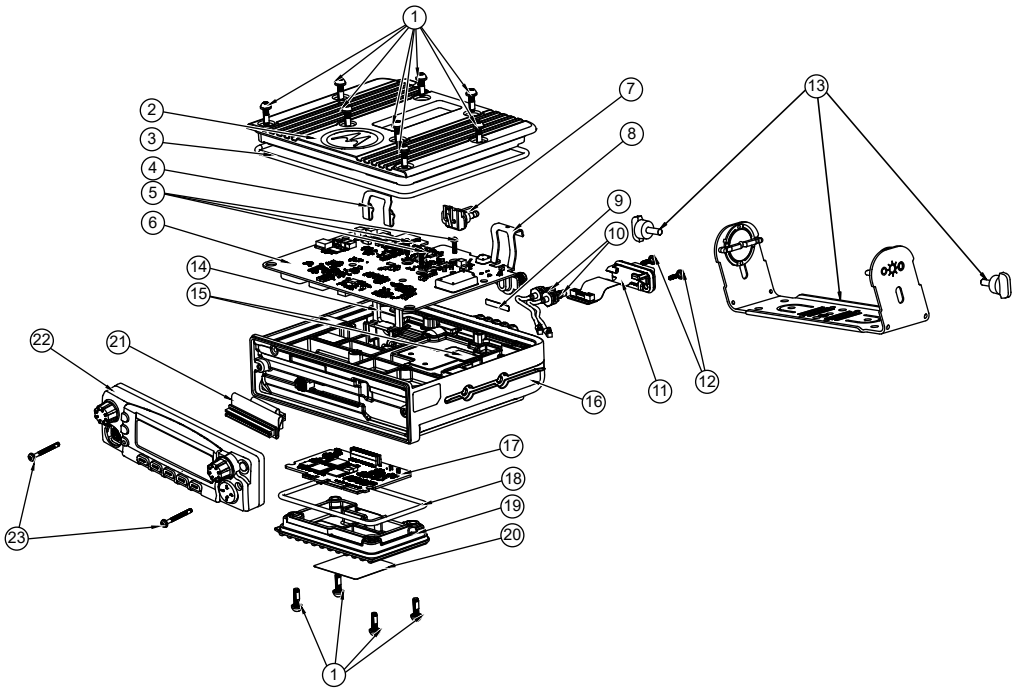
Item No.	Motorola Solutions Part No.	Description
1	0104054J54	Assembly screw sealing
2	0104080J01	Top cover assembly
3	32012219001	Top cover seal
4	HW000571A01	DC clip
5	0310909A33	Heat spreader screw
6	PPMLF4214_	RF board (7/800 MHz)
	PPMLE5285_	RF board (UHF R1)
	PPMLD8920_	RF board (VHF)
	PPMLF4223_	RF board (8/900Mhz)
	PPMLE5343_	RF board (UHF R2)

Item No.	Motorola Solutions Part No.	Description
7	09009344005	Connector DC Power
8	4285702E01	RF clip
9	LB001278A01	Wi-Fi GPS label
	LB001278A02	GPS label
10	CB000798A01	QMA connector assembly
11	PA002376A01	Rear accessory flex
12	0371838H01	Accessory flex screw
13	HLN6861_	Trunnion installation kit
14	BR000379A01	Plastic retainer bracket
15	75012190001	Thermal pad
16	0104080J03	Main chassis assembly
17	PPMLN7950_	Controller board
18	32012220001	Bottom cover seal
19	0104080J02	Bottom cover assembly
20	-	FCC Label
21	PA002555A01	TIB flex
22	3264059H03	I-Seal
23	PMUN1083_	Standard TIB Mp
24	0364332H02	TIB Screws
25	PMUN1034_	O3 Control Head (English)
	PMUN1052_	O3 Control Head (Hebrew)
	PMUN1053_	O3 Control Head (Cyrillic)
	PMUN1054_	O3 Control Head (Arabic)
	PMUN4227_	O3 Control Head (Siren and Lights)

11.13

O5 Dash Mount Radio Exploded View

Figure 169: O5 Dash Mount Radio Exploded View



11.13.1

O5 Dash Mount Radio Parts List

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

Table 80: O5 Dash Mount Radio Parts List

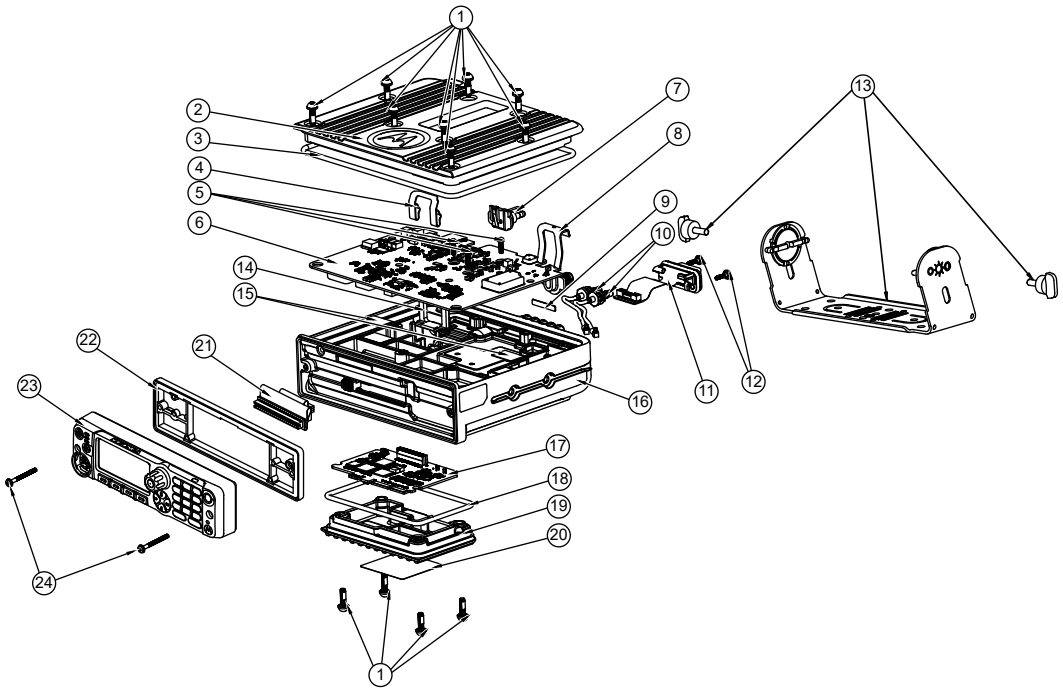
Item No.	Motorola Solutions Part No.	Description
1	0104054J54	Assembly screw sealing
2	0104080J01	Top cover assembly
3	32012219001	Top cover seal
4	HW000571A01	DC clip
5	0310909A33	Heat spreader screw
6	PPMLF4214_	RF board (7/800 MHz)
	PPMLE5285_	RF board (UHF R1)
	PPMLD8920_	RF board (VHF)
	PPMLF4223_	RF board (8/900Mhz)
	PPMLE5343_	RF board (UHF R2)

Item No.	Motorola Solutions Part No.	Description
7	09009344005	Connector DC Power
8	4285702E01	RF clip
9	LB001278A01	Wi-Fi GPS label
	LB001278A02	GPS label
10	CB000798A01	QMA connector assembly
11	PA002376A01	Rear accessory flex
12	0371838H01	Accessory flex screw
13	HLN6861_	Trunnion installation kit
14	BR000379A01	Plastic retainer bracket
15	75012190001	Thermal pad
16	0104080J03	Main chassis assembly
17	PPMLN7950_	Controller board
18	32012220001	Bottom cover seal
19	0104080J02	Bottom cover assembly
20	-	FCC Label
21	PA002534A01	Dash flex kit
22	PHCN4000_	O5 Control Head
23	0364332H02	TIB Screws

11.14

O7 Dash Mount Radio Exploded View

Figure 170: O7 Dash Mount Radio Exploded View



11.14.1

O7 Dash Mount Radio Parts List

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

Table 81: O7 Dash Mount Radio Parts List

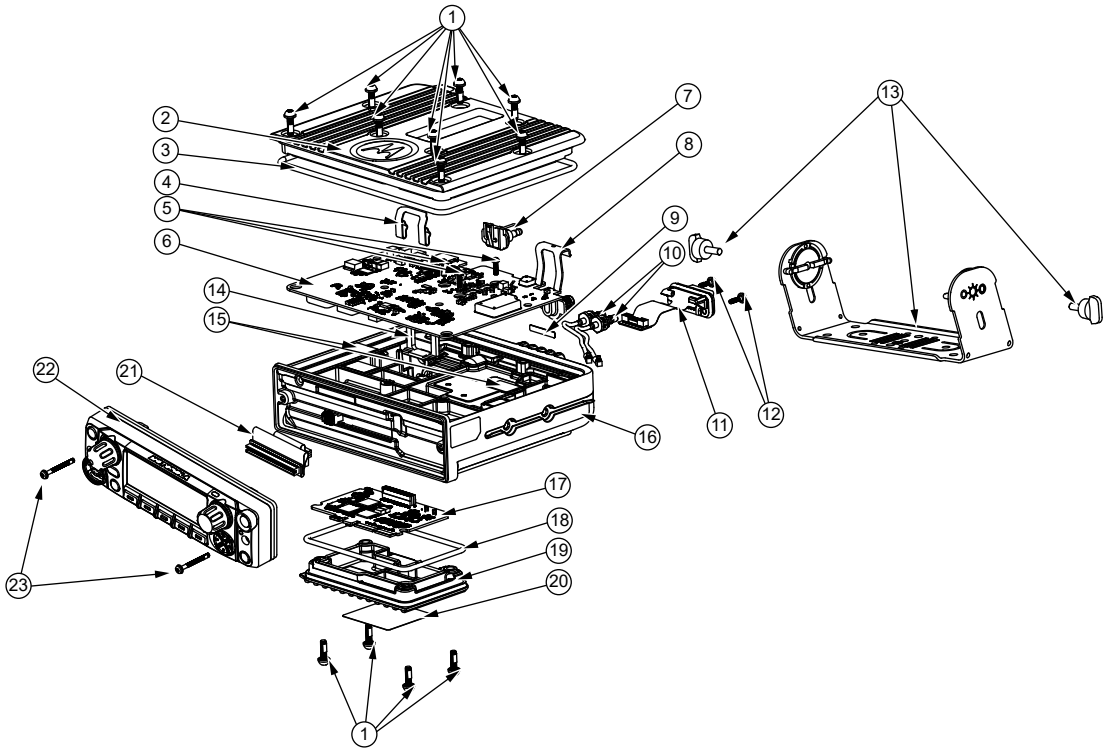
Item No.	Motorola Solutions Part No.	Description
1	0104054J54	Assembly screw sealing
2	0104080J01	Top cover assembly
3	32012219001	Top cover seal
4	HW000571A01	DC clip
5	0310909A33	Heat spreader screw
6	PPMLF4214_	RF board (7/800Mhz)
	PPMLE5285_	RF board (UHF R1)
	PPMLD8920_	RF board (VHF)
	PPMLF4223_	RF board (8/900Mhz)
	PPMLE5343_	RF board (UHF R2)

Item No.	Motorola Solutions Part No.	Description
7	09009344005	Connector DC Power
8	4285702E01	RF clip
9	LB001278A01	Wi-Fi GPS label
	LB001278A02	GPS label
10	CB000798A01	QMA connector assembly
11	PA002376A01	Rear accessory flex
12	0371838H01	Accessory flex screw
13	HLN6861_	Trunnion Installation Kit
14	BR000379A01	Plastic retainer bracket
15	75012190001	Thermal pad
16	0104080J03	Main chassis assembly
17	PPMLN7950_	Controller board
18	32012220001	Bottom cover seal
19	0104080J02	Bottom cover assembly
20	-	FCC Label
21	PA002533A01	Dash flex
22	3264059H03	I-Seal
23	PMHN4194_	O7 Control Head English
	PMHN4192_	O7 Control Head English/Chinese
	PMHN4197_	O7 Control Head English/Cyrillic
	PMHN4196_	O7 Control Head English/Hebrew
	PMHN4191_	O7 Control Head Siren and Light
	PMHN4229_	O7 Control Head English Arabic
24	03012062001	Transceiver Screws

11.15

E5 Dash Mount Radio Exploded View

Figure 171: E5 Dash Mount Radio Exploded View



11.15.1

E5 Dash Mount Radio Parts List

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

Table 82: E5 Dash Mount Radio Parts List

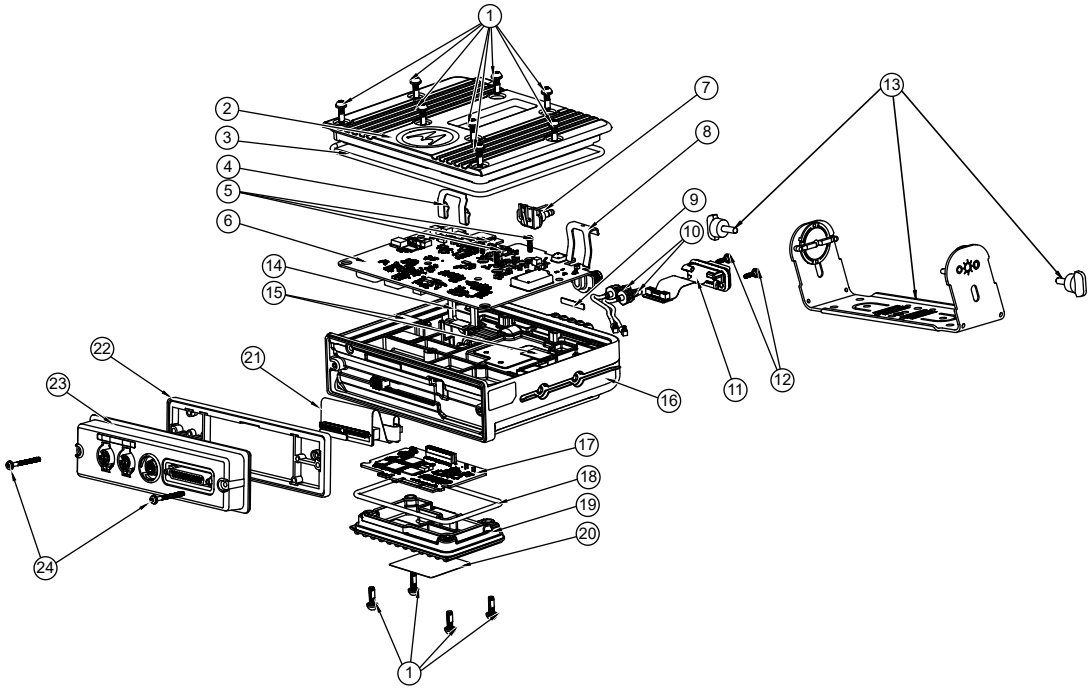
Item No.	Motorola Solutions Part No.	Description
1	0104054J54	Assembly screw sealing
2	0104080J01	Top cover assembly
3	32012219001	Top cover seal
4	HW000571A01	DC clip
5	0310909A33	Heat spreader screw
6	PPMLF4214_	RF board (7/800 MHz)
	PPMLE5285_	RF board (UHF R1)
	PPMLD8920_	RF board (VHF)
	PPMLF4223_	RF board (8/900Mhz)

Item No.	Motorola Solutions Part No.	Description
	PPMLE5343_	RF board (UHF R2)
7	09009344005	Connector DC Power
8	4285702E01	RF clip
9	LB001278A01	Wi-Fi GPS label
	LB001278A02	GPS label
10	CB000798A01	QMA connector assembly
11	PA002376A01	Rear accessory flex
12	0371838H01	Accessory flex screw
13	HLN6861_	Trunnion installation kit
14	BR000379A01	Plastic retainer bracket
15	75012190001	Thermal pad
16	0104080J03	Main chassis assembly
17	PPMLN7950_	Controller board
18	32012220001	Bottom cover seal
19	0104080J02	Bottom cover assembly
20	-	FCC Label
21	PA002534A01	Dash flex kit
22	PHCN4001_	E5 Control Head
23	03012062002	Transceiver Screws

11.16

TIB Radio Exploded View

Figure 172: Transceiver Interface Board (TIB) Radio Exploded View



11.16.1

TIB Radio Parts List

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

Table 83: Transceiver Interface Board (TIB) Radio Parts List

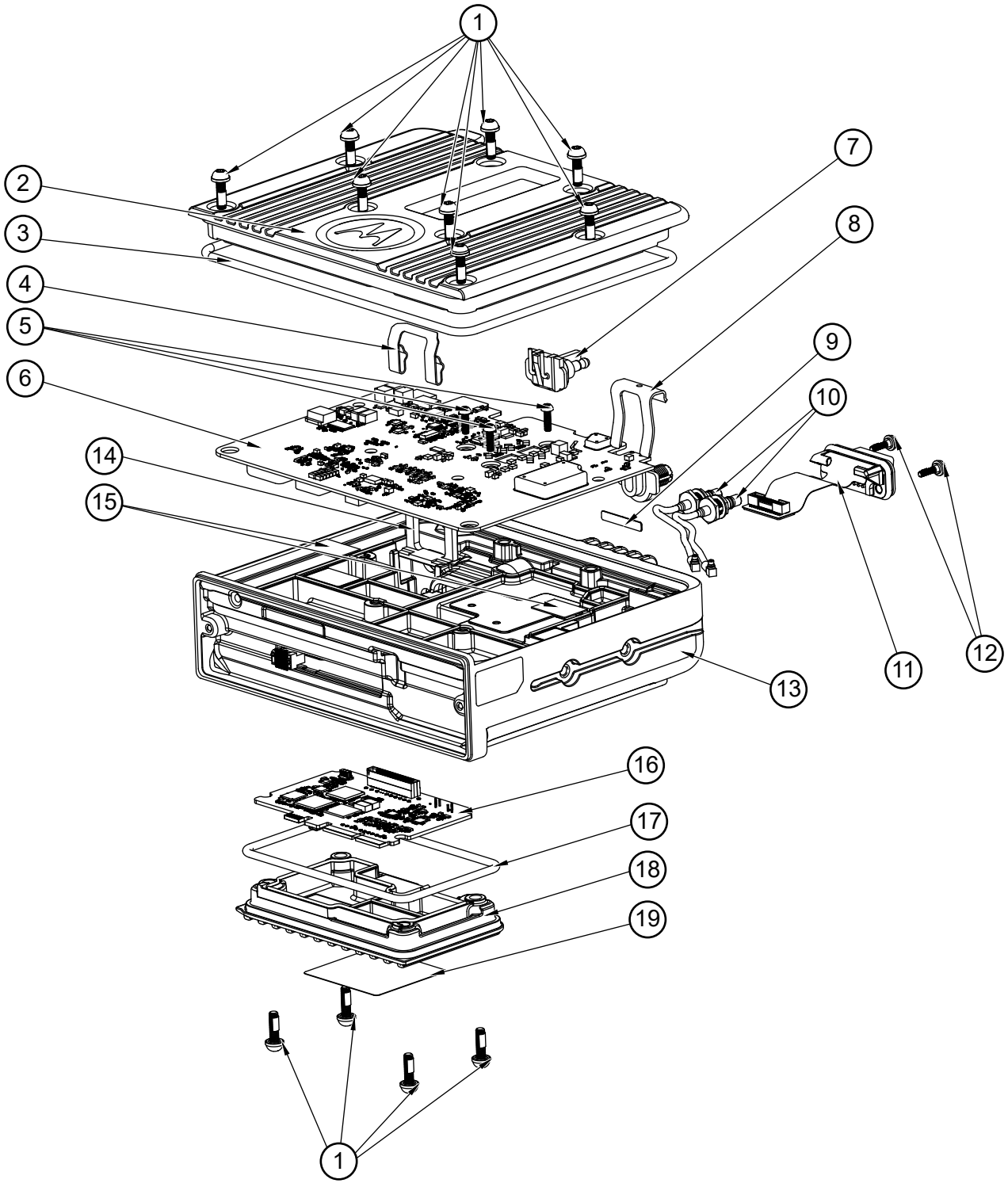
Item No.	Motorola Solutions Part No.	Description
1	0104054J54	Assembly screw sealing
2	0104080J01	Top cover assembly
3	32012219001	Top cover seal
4	HW000571A01	DC clip
5	0310909A33	Heat spreader screw
6	PPMLF4214_	RF board (7/800 MHz)
	PPMLE5285_	RF board (UHF R1)
	PPMLD8920_	RF board (VHF)
	PPMLF4223_	RF board (8/900Mhz)
	PPMLE5343_	RF board (UHF R2)

Item No.	Motorola Solutions Part No.	Description
7	09009344005	Connector DC Power
8	4285702E01	RF clip
9	LB001278A01	Wi-Fi GPS label
	LB001278A02	GPS label
10	CB000798A01	QMA connector assembly
11	PA002376A01	Rear accessory flex
12	0371838H01	Accessory flex screw
13	HLN6861_	Trunnion installation kit
14	BR000379A01	Plastic retainer bracket
15	75012190001	Thermal pad
16	0104080J03	Main chassis assembly
17	PPMLN7950_	Controller board
18	32012220001	Bottom cover seal
19	0104080J02	Bottom cover assembly
20	-	FCC Label
21	PA002555A01	TIB flex
22	3264059H03	I-Seal
23	PMUN1083_	Standard TIB Mp
24	0364332H02	TIB Screws

11.17

Enhanced Single Band Mobile Radio Exploded View

Figure 173: Enhanced Single Band Mobile Radio Exploded View



11.17.1

Enhanced Single Band Mobile Radio Parts Lists

NOTE: The underscore (_) used at the end of the kit number is replaced with the kit revision letter. When ordering, refer to your specific kit for this suffix letter.

Table 84: Enhanced Single Band Mobile Radio Parts List

Item Number	Motorola Solutions Part No.	Description
1	0104054J54	Assembly screw sealing
2	0104080J01	Top cover assembly
3	32012219001	Top cover seal
4	HW000571A01	DC clip
5	0310909A33	Heat spreader screw
6	PPMLF4214_	RF board (7/800 MHz)
	PPMLE5285_	RF board (UHF R1)
	PPMLD8920_	RF board (VHF)
	PPMLF4223_	RF board (8/900Mhz)
	PPMLE5343_	RF board (UHF R2)
7	09009344005	Connector DC Power
8	4285702E01	RF clip
9	LB001278A01	Wi-Fi GPS label
	LB001278A02	GPS label
10	CB000798A01	QMA connector assembly
11	PA002376A01	Rear accessory flex
12	0371838H01	Accessory flex screw
13	0104080J03	Main chassis assembly
14	BR000379A01	Plastic retainer bracket
15	75012190001	Thermal pad
16	PPMLN7950_	Controller board
17	32012220001	Bottom cover seal
18	0104080J02	Bottom cover assembly
19	-	FCC Label

Appendix A

Replacement Parts Ordering

Basic Ordering Information

When ordering replacement parts or equipment information, the complete identification number should be included. This applies to all components, kits, and chassis. If the component part number is not known, the order should include the number of the chassis or kit of which it is a part, and sufficient description of the desired component to identify it.

The ASTRO APX Mobile Radio Basic Service Manual includes complete parts lists and part numbers.

Refer to Table of Content for applicable manual numbers.

Motorola Solutions Service and Support

For general support, users can access:

- Motorola Solutions Products and Services Support
- Contact Motorola Solutions
- APX™ 6500 Single-Band P25 Mobile Radio
- APX™ 4500 Single-Band P25 Mobile Radio
- APX™ 1500 Single-Band P25 Mobile Radio

To register for online access:

- Domestic customers: please call 800-814-0601 (U.S. and Canada).
- PCAT (Product Catalog)

As a registered user, you have access to the product catalog for purchasing accessories and radios. Visit the following web site: APX™ 6500 Single-Band P25 Mobile Radio, APX™ 4500 Single-Band P25 Mobile Radio, APX™ 1500 Single-Band P25 Mobile Radio.

Accessories Aftermarket Division (AAD)

The Accessories Aftermarket Division (AAD) is able to provide Motorola Solutions Branded accessories for all your radio needs. After you have a KIT number from the Motorola Solutions website, contact Motorola Solutions at: 1-888-325-9336.

Motorola Solutions provides the following approved optional accessories to improve the productivity of the APX Mobile Radios.

For a complete list of Motorola Solutions-approved antennas, cables, and other accessories, visit the following web site: APX Series P25 Two-Way Radios

On the website, search for APX Mobile Radios and you will see the accessories information beside the specifications of the radio. You can also contact your dealer for more details.

Appendix B

Environmental Information

The ASTRO Digital APX mobile radios control head and radio was designed using Design for Environment (DfE) principles.

- Motorola Solutions has used halogen-reduced printed circuit board material in the production of this product.
- Motorola Solutions has used No-lead solder in the production of this product.
- There are no embedded batteries in this product.
- Motorola Solutions encourages reuse or recycling of the material used to manufacture this product. Contact Motorola Solutions at 1-888-567-7347 or your local sales representative for rebate programs and for the latest disassembly and recycling strategies.
- Do not dispose this product into a landfill.

Glossary

This glossary contains an alphabetical listing of terms and their definitions that are applicable to portable and mobile subscriber radio products. All terms do not necessarily apply to all radios, and some terms are merely generic in nature.

Active Channel
A channel that has traffic on it.

ACK
Acknowledgment of communication.

analog-to-digital conversion
Conversion of an instantaneous dc voltage level to a corresponding digital value.

Analog-to-Digital Converter A device that converts analog signals into digital data. Also known as codec.

Abbreviation:ADC

Automatic Level Control
A circuit in the transmit RF path that controls RF power amplifier output, provides leveling over frequency and voltage, and protects against high VSWR.

Autoscan
A feature that allows the radio to automatically scan the members of a scan list.

Band Frequencies allowed for a specific purpose.

Baseband interface port
Synchronous serial interface to the transceiver board used to transfer transmit and receive audio data.

Call Alert
Privately paging an individual by sending an audible tone.

Carrier Squelch
Feature that responds to the presence of an RF carrier by opening or unmuting (turning on) a receiver's audio circuit. A squelch circuit silences the radio when no signal is being received so that the user does not have to listen to “noise.”

Central Controller
A software-controlled, computer-driven device that receives and generates data for the trunked radios assigned to it. It Monitors and directs the operations of the trunked repeaters.

Channel
A group of characteristics, such as transmit/receive frequency pairs, radio parameters, and encryption encoding.

CAN
A group of characteristics, such as transmit/receive frequency pairs, radio parameters, and encryption encoding.

CHIB
Control Head Interface Board.

CHUC
Control Head Universal Connector. A separate board which provides connectivity to the CHIB and control head.

Coded Squelch Used on conventional channels to ensure that the receiver hears only those communications intended for the receiver.

Coder/Decoder (CPCAP)
A device that encodes or decodes a signal.

Control Channel
In a trunking system, one of the channels that is used to provide a continuous, two-way/data-communications path between the central controller and all radios on the system.

Conventional
Typically refers to radio-to-radio communications, sometimes through a repeater. Frequencies are shared with other users without the aid of a central controller to assign communications channels.

Conventional Scan List
A scan list that includes only conventional channels.

Cursor
A visual tracking marker (a blinking line) that indicates a location on a display.

Customer Programming Software (CPS) Software with a graphical user interface containing the feature set of a radio.

Deadlock
Displayed by the radio after three failed attempts to unlock the radio.The radio must be powered off and on prior to another attempt.

Default A pre-defined set of parameters.

DEK
Direct Entry Keyboard

Digital Refers to data that is stored or transmitted as a sequence of discrete symbols from a finite set; most commonly this means binary data represented using electronic or electromagnetic signals.

digital-to-analog conversion

Conversion of a digital signal to a voltage that is proportional to the input value.

Digital-to-Analog Converter
A device that converts digital data into analog signals.

Digital Private-Line (DPL) A type of digital communications that utilizes privacy call, as well as memory channel and busy channel lock out to enhance communication efficiency.

Digital Signal Processor
A microcontroller specifically designed for performing the mathematics involved in manipulating analog information, such as sound, that has been converted into a digital form. DSP also implies the use of a data compression technique.

Digital signal processor code
Object code executed by the Digital Signal Processor in a subscriber radio. The DSP is responsible for computation-intensive tasks, such as decoding signaling.

Dispatcher
An individual who has radio-system management duties and responsibilities.

Dynamic Regrouping
A feature that allows the dispatcher to temporarily reassign selected radios to a single special channel so they can communicate with each other.

Failsoft
A backup system that allows communication in a non-trunked, conventional mode if the trunked system fails.

FCC
Federal Communications Commission.

Firmware
Code executed by an embedded processor such as the Host or DSP in a subscriber radio. This type of code is typically resident in non-volatile memory and as such is more difficult to change than code executed from RAM.

Flash
A non-volatile memory device similar to an EEPROM. Flash memory can be erased and reprogrammed in blocks instead of one byte at a time.

FLASHcode
A 13-digit code which uniquely identifies the System Software Package and Software Revenue Options that are enabled in a particular subscriber radio. FLASHcodes are only applicable for radios which are upgradeable through the FLASHport process.

FLASHport
A Motorola Solutions term that describes the ability of a radio to change memory. Every FLASHport radio contains a FLASHport EEPROM memory chip that can be software written and rewritten to, again and again.

Frequency Number of times a complete electromagnetic-wave cycle occurs in a fixed unit of time (usually one second).

Frequency generation unit
This unit generates ultra-stable, low-phase noise primary clock and other derived synchronization clocks that are distributed throughout the communication network.

FGPA
Field Programmable Gate Array.

General-Purpose Input/Output
Pins whose function is programmable.

GLONASS
GLObalnaya NAvigatsionnaya Sputnikovaya Sistema, The Russian Global Navigation satellite system: Consisting of at least 24 operational satellites which fly in medium Earth orbit at an altitude of approximately 19,130 km. Each satellite circles the Earth slightly faster than twice a day. GLONASS provides Time and Location to anywhere on Earth, where there is an unobstructed line of sight to four or more GPS satellites. A GLONASS receiver triangulates its position using these satellites.

Global Navigation Satellite System GNSS uses satellites from the GPS, GLONASS and BeiDou systems.

- Global Positioning System (GPS)
  - It includes Satellite Based Augmentation System (SBAS).
  - Method of location based on reception of multiple satellite signals by a device on the ground or in an airplane.
- Global Navigation Satellite System (GLONASS)
- BeiDou Navigation Satellite System (BDS)
  - Chinese Satellite Navigation System.

Global Positioning System (GPS) System of 24 satellites that identify earth locations, launched by the U.S. Department of Defense. By triangulating signals from three of the satellites, a GPS receiving unit can pinpoint its current location anywhere on earth to within a few meters.

Hang up
Disconnect.

Home Display
The first information display shown after a radio completes its self test.

Host Code
Object code executed by the host processor in a subscriber radio. The host is responsible for control-oriented tasks such as decoding and responding to user inputs.

IF
Intermediate Frequency.

IMBE
A sub-band, voice-encoding algorithm used in digital voice.

Inbound Signaling Word
Data transmitted on the control channel from a subscriber unit to the central control unit.

Integrated Circuit
An assembly of interconnected components on a small semiconductor chip, usually made of silicon. One chip can contain millions of microscopic components and perform many functions.

Key-Variable Loader
A device used to load encryption keys into a radio.

kilohertz (kHz) One thousand cycles per second. Used especially as a radio-frequency unit.

Light Emitting Diode (LED)
An electronic device that lights up when electricity is passed through it.

LO
Local oscillator.

Local Oscillator
Oscillator used in a super heterodyne receiver to down-convert a received signal to the intermediate frequency.

Low-speed Handshake 150-baud digital data sent to the radio during trunked operation while receiving audio.

MAP
Mobile Accessory Port (26 pin Trapazoid). Used to connect accessories and programming cables to the radio.

Secondary In Primary Out
SPI data line from a peripheral to the MCU.

Primary Out Secondary In
SPI data line from the MCU to a peripheral.

MDC
Motorola Solutions Digital Communications.

MDI
MCU/DSP Interface internal to the microprocessor.

Menu Entry

A software-activated feature shown at the bottom of the display. Selection of a feature is controlled by the programming of the buttons on the side of the radio.

Megahertz (MHz) One million cycles per second. Used especially as a radio-frequency unit.

Microcontroller Unit (MCU)

MCU-Also written as µC. A microprocessor that contains RAM and ROM components, as well as communications and programming components and peripherals.

MMP

Mobile Microphone Port 10 pin round. Used to connect accessories and programming cables to the control head and the TIB.

Mode A programmed combination of operating parameters; for example, a channel or talkgroup.

Mode Secondary A radio programmed to automatically provide the proper operation for a given selected mode.

Monitoring

Used in conventional operation where the programmed Monitor button is pressed to listen to another user who is active on a channel. This prevents one user from interfering with another user’s conversation.

Multiplexer

An electronic device that combines several signals for transmission on some shared medium.

Network Access Code

Network Access Code (NAC) operates on digital channels to reduce voice channel interference between adjacent systems and sites.

Non-tactical/revert

The user will talk on a preprogrammed emergency channel. The emergency alarm is sent out on this same channel.

OMAP

An ARM core microcontroller.

Open Architecture

A controller configuration that utilizes a microprocessor with extended ROM, RAM, and EEPROM.

Oscillator

An electronic device that produces alternating electric current and commonly employs tuned circuits and amplifying components.

Outbound Signaling Word

Data transmitted on the control channel from the central controller to the subscriber unit.

Over-The-Air Rekeying

Allows the dispatcher to remotely reprogram the encryption keys in the radio.

PA
Power amplifier.

Page
A one-way alert with audio and/or display messages.

Paging One-way communication that alerts the receiver to retrieve a message.

PC Board
Printed Circuit Board. Also referred to as a PCB.

Personality
A set of unique features specific to a radio.

phase-locked loop
A circuit in which an oscillator is kept in phase with a reference, usually after passing through a frequency divider.

Power Control IC
The power control IC is intended for closed-loop bias control of power amplifiers. The device facilitates accurate control of the current delivered to the power amplifier (PA) via a control voltage.

Preprogrammed
A software feature that has been activated by a qualified radio technician.

Private (Conversation) Call
A feature that lets you have a private conversation with another radio user in the group.

Private-Line Tone Squelch (PL) A continuous sub-audible tone that is transmitted along with the carrier.

Programmable
A radio control that can have a radio feature assigned to it.

Programmable Read-Only Memory
A memory chip on which data can be written only once. Once data has been written onto a PROM, it remains there forever.

Programming Cable A cable that allows the computer to communicate directly with certain radios using USB.

Push-to-Talk The switch or button on the radio which, when pressed, causes the radio to transmit. When the switch or button is released, the unit returns to receive operation.

Abbreviation: PTT

Radio Frequency

RF-The portion of the electromagnetic spectrum between audio sound and infrared light (approximately 10 kHz to 10 GHz).

Radio frequency power amplifier
Amplifier having one or more active devices to amplify radio signals.

Real-time Clock
A module that keeps track of elapsed time even when a computer is turned off.

Receiver Electronic device that amplifies RF signals. A receiver separates the audio signal from the RF carrier, amplifies it, and converts it back to the original sound waves.

Registers
Short-term data-storage circuits within the microcontroller unit or programmable logic IC.

Repeater Remote transmit/receive facility that re-transmits received signals in order to improve communications range and coverage (conventional operation).

Repeater/Talkaround
A conventional radio feature that permits communication through a receive/transmit facility, which re-transmits received signals in order to improve communication range and coverage.

RESET
Reset line: an input to the microcontroller that restarts execution.

RS232
A common interface standard for data communications equipment.

RSSI
Received Signal Strength Indicator.

RX
Receive.

RX DATA
Receive digital data line.

Selective Call
A feature that allows you to call a selected individual, intended to provide privacy and to eliminate the annoyance of having to listen to conversations of no interest to you.

Selective Switch
Any digital P25 traffic having the correct Network Access Code and the correct talkgroup.

Serial Audio Port
SSI to and from the CODEC used to transfer transmit and receive audio data.

Serial Peripheral Interface
How the microcontroller communicates to modules and ICs through the CLOCK and DATA lines.

Signal An electrically transmitted electromagnetic wave.

Signal Qualifier mode
An operating mode in which the radio is muted, but still continues to analyze receive data to determine RX signal type.

Software
Computer programs, procedures, rules, documentation, and data pertaining to the operation of a system.

software potentiometer
A computer-adjustable electronic attenuator.

Spectrum Frequency range within which radiation has specific characteristics.

Squelch Muting of audio circuits when received signal levels fall below a pre-determined value. With carrier squelch, all channel activity that exceeds the radio's preset squelch level can be heard.

SSI Synchronous Serial Interface

Standby mode
An operating mode in which the radio is muted but still continues to Monitor data.

Static RAM
A type of memory used for volatile, program/data memory that does not need to be refreshed.

Status Calls
Pre-defined text messages that allow the user to send a conditional message without talking.

Synchronous Serial Interface (SSI)
DSP interface to peripherals that consists of a clock signal line, a frame synchronization signal line, and a data line.

System Central Controllers
Main control unit of the trunked dispatch system; handles ISW and OSW messages to and from subscriber units.

Tactical/non-revert
The user will talk on the channel that was selected before the radio entered the emergency state.

TalkAround
Bypassing a repeater and talking directly to another unit for local unit-to-unit communications.

Talkgroup
An organization or group of radio users who communicate with each other using the same communications path.

Talkgroup Scan List A scan list that can include both talkgroups (trunked) and channels (conventional).

Thin Small-outline Package
A type of dynamic random-access memory (DRAM) package that is commonly used in memory applications.

Transceiver Interface Board (TIB) Provides connectivity between radio and the CAN cable. Also, interface for accessories when TIB is used on a highpower radio.

Time-out Timer (TOT) A timer that limits the length of a transmission.

Tone A continuous, sub-audible tone transmitted with the carrier.

Transceiver Transmitter-receiver: A device that both transmits and receives signals.

Abbreviation:XCVR

Transmitter Electronic equipment that generates and amplifies an RF carrier signal, modulates the signal, and then radiates it into space.

Triangulation
A method of determining the relative positions of points in space by measuring the distances, and sometimes angles, between those points and other reference points whose positions are known. Triangulation involves the use of trigonometry. It is commonly used in the navigation of vehicles, aircraft and boats, and is the method used in the Global Positioning System, in which the reference points are satellites.

Trunking
The automatic sharing of communications paths between a large number of users. Allows users to share a smaller number of frequencies because a repeater or communications path is assigned to a talkgroup for the duration of a conversation.

Trunking Priority Monitor scan list
A scan list that includes talkgroups that are all from the same trunking system.

TX
Transmit.

UHF
Ultra-High Frequency.

USK
Unique shadow key.

Universal Asynchronous Receiver Transmitter (UART)
A computer peripheral used to send and receive data. It is asynchronous in that a clock is not used and a device connected to this peripheral can send data at any time.

Ultra-High Frequency (UHF) The term for the International Telecommunication Union (ITU) Radio Band with a frequency range of 300 to 3000 MHz.

Universal Serial Bus (USB) An external bus standard that supports data transfer rates of 12 Mbps.

UCM Universal Crypto Module

VCOB IC
Voltage-Controlled Oscillator Buffer IC.

VHF
Very-High Frequency.

VIP
Vehicle Interface Port.

Vocoder
An electronic device for synthesizing speech by implementing a compression algorithm particular to voice.

Vocoder/Controller
A PC board that contains a microcontroller, DSP, memory, audio and power functions, and interface support circuitry.

Voice Encoder
The DSP-based system for digitally processing analog signals, and includes the capabilities of performing voice compression algorithms or voice encoding.

Voltage-controlled Oscillator (VCO)
An oscillator in which the frequency of oscillation can be varied by changing a control voltage.

Waypoint
Geographic Coordinates of a specific location. It can also be an Intermediate point on a route or line of travel.

Wi-Fi
Wireless Data Transmission protocol 802.11.

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Attachment 57 - Local and Remote Control Option Documentation

RFP # 549

December 18, 2025

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Section 1

RFP Section 3.42.8.2.A Local and Remote-Control Option Documentation

Local Control

If local control is required, both the Consolette and Mobile-in-a-tray option allow access to all channels in the transceiver through the O5 or E5 control head.

Remote Control Capability

There are multiple options available for Remote Control. A Consolette allows for full remote control. The Mobile-in-a-tray can be combined with an external Tone Remote Adaptor and Tone Remote Deskset to allow for limited remote control capability. MCD 5000 Deskset can be used for remote control capability with direct Ethernet through port labeled LAN (up to 100 ft) or unlimited distance over an IP network.

Remote Control from Dispatch Console

The Wireline Interface can be used in conjunction with the ACIM Interface. The Wireline is for audio and the ACIM Interface is for digital control messages. The user may initiate the following commands to a Consolette from a Console via the ACIM interface (or Conventional Channel Gateway):

- Channel Select
- Secure On/Off
- PTT Press/Release
- Monitor On
- Monitor Off (based on PTT release)
- Encryption Key (CKR) Select1
- Outbound Call Alerts
- Emergency Alarm ACK Encode

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Attachment 58 - Training Plan

RFP # 549

December 18, 2025

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Section 1

Training Plan

1.1 Training Overview

Partnering with Motorola Solutions will enable the City of Fort Lauderdale to build personnel competency and maximize return on investment.

Effective training ensures successful implementation and use of your communications system by all personnel for the life of the system. The training plan furnished to the City of Fort Lauderdale is comprised of targeted coursework developed and delivered by our expert instructors. This plan, included below, will effectively provide the City of Fort Lauderdale's personnel with a comprehensive understanding of the proposed system and user equipment.

We will collaborate with the City of Fort Lauderdale to tailor a final training plan to enable the City of Fort Lauderdale's organization to operate, configure, and manage the proposed solution effectively and efficiently.

1.2 Motorola Solutions Training

Motorola Solutions provides an expanding portfolio of training delivery methods, tools, and courses to support the training needs of our customers. The figure below shows the elements of our training methodology that qualify us as the leader in the communications training industry.

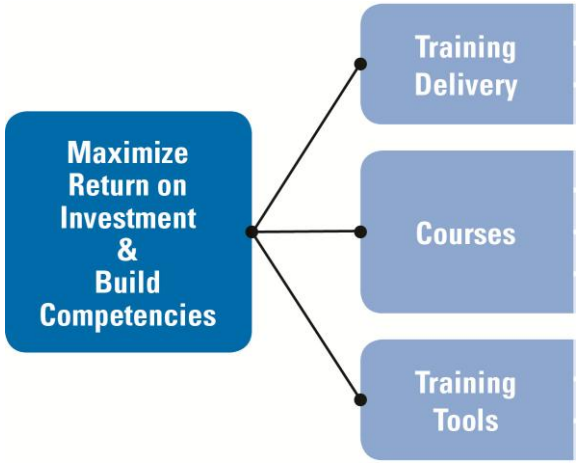

Figure: Build the competencies of the City of Fort Lauderdale personnel and maximize your return on investment with Motorola Solutions' expanding portfolio of training delivery methods, tools, and courses.

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1.2.1 Training Delivery

Training Methods

Motorola Solutions' training experience and expertise enables our customers to gain the training they need to use during critical times in a variety of methods. As shown in the figure below, we offer three interactive methods of training: Online Self-Paced, Virtual Instructor-Led, and Instructor-Led.

Figure 1-1: Motorola Solutions offers a variety of interactive training methods that cater to different learning techniques, allowing more effective ways to give personnel the skills they need.

These training approaches ensure our customers receive the understanding they need for the practical aspects of their jobs.

Delivery Options

Field

Field class delivery is "tailored" to the customer's specific system. We are providing classes which are not offered as standard "Open Resident" classes at our training facilities. The students benefit from working on their own systems, at their home location and within their schedules.

Motorola Facility

Resident classes are open to all Motorola customers, seating is based on availability, and participant guides and required pre-work when applicable are included in the tuition. These courses are comprehensive and are not tailored to any one customer's system. Students benefit from other students' experiences and are allowed to take systems out of service. These courses provide optimal "hands-on" training.

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Motorola Facility Closed Sessions-Customer Specific

Special Resident classes are closed sessions for a particular Motorola Solutions customer. The customer is essentially renting the classroom. These courses are tailored to the customer's system as much as possible. The instructor will require the customer's system diagrams prior to the class taking place. The students will receive their ASTRO 25 IV&D manuals on CD-ROM and hard copy participant guides. Class manuals, participant guides, and required pre-work are included in the pricing of the class per student. The students are allowed to take systems out of service, which provides optimal "hands-on" training.

Motorola Solutions Instructors

We have approximately 40 instructor resources distributed across North America. These instructors are available to train customers in our Technical Training Center located in Schaumburg, Illinois, while specific training courses are available at our facility in Plantation, Florida. Training can also be delivered directly on-site at customer locations. All instructors undergo an Instructional Skills and Technical Knowledge Program, which is a globally-recognized training and instructor assessment program.

Consultative Services

Motorola Solutions provides consultative services for our customers, which includes personalized training plans and other training-related services. Our dedicated training consultant team works with our customers and Motorola Solutions account teams to identify and meet the training needs of technical, administrative end users, and other audiences.

1.2.2 Training Courses

Motorola Solutions offers a wide range of training courses to help our customers improve their proficiency with our expanding portfolio and get the most from their training system.

Our specialized courses/curriculums are designed for our customers' role. Whether they are an administrator, technician or user, Motorola Solutions makes sure our customers are equipped with foundational and advances skills.

General overviews of product and/or solution training offered are listed below:

Foundational Radio and Networking Training

Foundational Radio and Networking training provides new hires or staff from different skilled backgrounds fundamental knowledge. Some of these courses are online/self-paced while others are instructor led. Some topics include: Radio System Basics, Basic Networking, Communication System Concepts, Networking Essentials and Applied Networking. This allows Motorola Solutions to offer training before installation, during installation and after your solution is operational.

ASTRO 25 Infrastructure Training Courses

ASTRO 25 Infrastructure Training provides participants with a full curriculum that will enable them to maintain/service the new solution, and will give them the skills required to manage and operate the solution to obtain its fullest potential and capabilities.

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ASTRO 25 Patch Management Training Course

ASTRO 25 Patch Management Training provides ASTRO 25 Land Mobile Radio (LMR) system administrators the information needed to access and patch their radio network infrastructure, update antivirus definitions, and review log files.

Console Training Courses

Console Training provides participants with a curriculum that will enable them to obtain a high-level understanding of the system configuration, general console operation, how to perform basic tasks, operating procedures for specific features, and the knowledge and skills necessary to manage and maintain the system.

Mobile and Portable Radio Training Courses

Mobile and Portable Radio Training provides participants with an introduction to the radio, the knowledge and skills necessary to perform basic radio operation, common operational tasks, operating procedures for specific features of the radio, and technical programming and maintenance of radios.

MOTOTRBO Training Courses

MOTOTRBO Training provides participants with a full curriculum that will enable them to maintain/service the new solution, and will give them the skills required to manage and operate the solution to obtain its fullest potential and capabilities.

CallWorks Training Courses

CallWorks Training provides participants with an overview of the components and functionality of the main application, operation, troubleshooting, a high-level understanding of the software, and configuration and maintenance of components of the CallWorks solution.

PremierOne Training Courses

PremierOne Training provides participants with sufficient knowledge of the PremierOne solution and its tools, giving them the skills necessary to operate and maintain the PremierOne solution.

LTE Training Courses

LTE Training provides participants a high-level understanding of the Public Safety LTE system and the network elements that comprise the system. Participants will gain knowledge of LTE architecture, signaling, system administration, and applied networking.

WAVE Training Courses

WAVE Training provides participants with an overview of the WAVE solution. It offers a basic understanding of how WAVE delivers a Radio-over-IP solution; describes features, hardware, and software requirements; how to use applications; and provides instruction in designing, integrating, and troubleshooting the WAVE solution.

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1.2.3 Training Tools

Training Kits

Training kits are essential suitcase equipment, labs and exercises that apply to some of the ASTRO, MOTOTRBO, WAVE and LTE solutions. These kits are used in addition to equipment, in order to prevent solution downtime while training is conducted. As part of specific on-site classes, shown in Table, kits are included and shipped to our customers to allow students an in-depth, hands-on experience.

Table: Field Classes Training Kit Availability

Field Classes Training Kit Availability	
Networking Essentials	Server Virtualization
Applied Systems Networking	WAVE Certified Integration Engineer
Domain Controller	MOTOTRBO™ Systems Applied Networking

Tracking and Evaluation

All customer training is tracked and evaluated. The Project Manager and training team tracks and records all courses completed through the implementation of the project. Surveys are given to trainees to evaluate the trainers. Feedback is given and placed on our customer shared website.

End User Training Kit (EUTK)

The End User Training Kit is a knowledge-transfer tool designed to accelerate learning through customizability. Using the EUTK allows trainers to customize user/operator training to match unique button, feature programming, and displays provided in the system and radio codeplug. These tailored materials are developed by Motorola Solutions trainers using training kits that allow customer trainers to modify training materials when radio or console features change. Personnel are taught how to maneuver through and tailor the EUTK screens. The tailored selections are saved to an electronic file that the Motorola Solutions training team provides to the customer.

For a more detailed view of the training Motorola Solutions provides, please see our Product and System Technical Training Course Catalog: https://learning.motorolasolutions.com/catalog/56280enus

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Learning Subscription Solution Description

1. Overview

Conducting effective training can be a complex challenge, especially if course content is stored in multiple systems with no tool for delivering that content or tracking course completion. To supply users with a central training platform, City of Fort Lauderdale will need a solution that can meet each team's unique role, operational alignment, and technology training requirements. Thus, on top of the proposed training, Motorola has included the cost for 1 year of LMS subscription for up to 3 people so the City of Fort Lauderdale team can take trainings at their pace and thus **EXCEED** the RFP training requirements.

Motorola Solutions' Learning Subscription simplifies training with our Learning eXperience Portal (LXP), an agency specific training tool. This central, cloud-based platform hosts training courses and documentation for multiple technologies, roles, and organizations. Customizable training paths guide users through the courses they need to complete for their role. As users complete courses, the LXP tracks their progress.

The subscription includes one or more Learning Hub, providing unlimited access to on-demand training courses for one year. This includes self-paced, repeatable learning courses and training documents from Motorola Solutions. This learning content uses easily consumed mediums to teach personnel how to use Motorola Solutions technology and products.

2. Learning Hub

1. ASTRO 25

To best operate, administer, and maintain ASTRO® 25 systems and user radios, users need a source of effective, up to date learning content. The ASTRO 25 Learning Hub offers a variety of courses, including targeted training for end users, technical staff, and administrators. These courses educate their target audience in how to work with infrastructure elements, user radios, and ASTRO 25 services in their role. Several curated Learning Paths are available to help develop necessary skills, including:

- APX NEXT™ Technician.
- APX NEXT User.
- APX™ 6500 Administrator.
- APX 6500 Technician.
- APX 6500 User.
- APX 8000 Technician.

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- APX 8000 User.
- Core Site Administrator.
- RF Site Technician.
- Dispatch Administrator.
- Dispatch User.

As the capabilities of ASTRO 25 systems evolve, and new devices become available, Motorola Solutions updates available training. This will help current users to understand new features and functionality, as well as give new users the most up to date information available.

Cybersecurity

Gaps in knowledge can create vulnerabilities in even the most robust cybersecurity defenses. With training, personnel can more effectively work with cybersecurity tools and be better prepared for attacks like social engineering. Since security threats and defenses change rapidly, training regimens must keep pace in order to remain effective.

The Learning Subscription provides access to Motorola Solutions' library of cybersecurity training courses, built based on NIST and NICE frameworks. These courses range from basic training, such as Cyber Essentials, to advanced education in preparing for and recognizing a cyber attack. The cybersecurity Learning Hub provides access to Motorola Solutions' course library, with topic-based learning paths available for:

- Introduction to Cybersecurity.
- Malware Prevention.
- Threats and Attacks.
- Incident Response.
- Cybersecurity Investigations and Network Forensics.
- Vulnerability Assessments.

To keep the City of Fort Lauderdale in sync with cybersecurity industry standards, Motorola Solutions updates courses as new regulations, cybersecurity standards, and cyber threats emerge. This avoids the pitfalls of one-time training and static course content, so users can more effectively handle cyber threats and attacks.

Learning eXperience Portal Functions

The Learning Subscription provides a foundation for a continuous training program. Learning Subscriptions make training more efficient with several key functions. These functions include:

- Delivering self-paced courses, documentation, and other training content to users in one easy-to-use interface.
- Guiding user training with role and task-based learning pathways.
- Providing administrative capabilities for training. Administrators can assign training, track progress, and view reports on completed training.

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- Hosting virtual professor sessions for users to discuss solutions with expert instructors.
- Ability to bring your own training, eliminating the need to access more than one location for training.

With Learning Subscriptions, City of Fort Lauderdale can combine Motorola Solutions-provided self-paced online training with agency compliance training. Users will be able to access their training from one system, simplifying access and completion tracking.

Courses included with the Learning Subscription can be grouped to create a complete learning path for specific user roles. Motorola Solutions builds these paths, adding courses to the path based on City of Fort Lauderdale's specifications. Over time, these learning pathways can be updated to match new role needs and responsibilities.

To verify training progress, administrators can track users' training course completion. Completion tracking is available for Motorola Solutions-provided training, and for training City of Fort Lauderdale has added. Training transcripts summarize completion, and help find any areas for potential improvement.

The Learning Subscription includes one Learning Hub. A Learning Hub provides training for a specific Motorola Solutions technology. If needed, City of Fort Lauderdale can add Learning Hubs for other Motorola Solutions technologies at discounted rates. In addition to Learning Hub discounts, there are also discounts for in-person or virtual instructor-led training.

5. Subscription Services

The subscription includes ongoing technical support for the LXP and services to create and change user learning paths. Throughout the subscription, Motorola Solutions will provide technical support and walk you through system functions. A team of support experts will help to address any issues, and help maximize the benefits provided by the Learning Subscription.

Proposed Training Overview for the City of Fort Lauderdale

In order to achieve the training goals identified by the City of Fort Lauderdale, we propose the following courses.

It is necessary that participants bring their laptop computers for all system administrator and technician classes. Materials will be delivered electronically.

Note: The Customer's installed and operational system is required for training.

1.2.4 System Administrator/Technician Training Plan

Course Title	Target	Sessions	Duration	Location	Date	Participants

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	Audience					
ASTRO® 25 IV&D System Overview Course#: AST1038 (Self-paced; Online)	System Administrators and Technicians	1	1.5 hours	Self-paced; Online	Prior to workshops and remaining classes	12
ASTRO® 25 Systems Applied Networking Course#: AST4104 (Instructor-led)	System Administrators and Technicians	1	4.5 days	Fort Lauderdale, FL	Prior to managing	Up to 12
ASTRO® 25 IV&D Radio System Administrator Workshop Course#: AST4102 (Instructor-led)	System Administrators	1	4.5 days	Fort Lauderdale, FL	Prior to managing	Up to 12
ASTRO® 25 IV&D System Core Workshop Course#: AST4103 (Instructor-led)	System Core Master Site Technicians	1	4.5 days	Fort Lauderdale, FL	Prior to maintaining	Up to 12
ASTRO® 25 IV&D DBR RF Technical Workshop Course#: AST2046 (Instructor-led)	Technicians	1	3 days	Fort Lauderdale, FL	Prior to maintaining	Up to 12
ASTRO® Virtualized Simulcast Prime Site Workshop Course#: AST0098 (Instructor-led)	Simulcast Site Technicians	1	3 days	Fort Lauderdale, FL	Prior to maintaining	Up to 12
ASTRO® 25 IV&D IP Based Digital Simulcast Workshop Course#: AST4217 (Instructor-led)	Technicians	1	3 days	Fort Lauderdale, FL	Prior to maintaining	Up to 12
ASTRO® 25 IV&D Secure Communications Workshop Course#: AST4207 (Instructor-led)	System Administrators and Technicians	1	4.5 days	Fort Lauderdale, FL	Prior to managing	Up to 12
ASTRO® 25 Domain Controller Administration Course#: AST2015 (Instructor-led)	System Administrators and Technicians	1	3 days	Fort Lauderdale, FL	Prior to managing	Up to 12
ASTRO® 25 ISSI 8000 - CSSI 8000 Feature Overview Course#: AST2005	Technicians	1	2 hours	Self-paced; Online	Prior to maintaining	12

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(Self-paced; Online)						
CommandCentral AXS Dispatch Console Technical Workshop Course#: AST0092 (Instructor-led)	Technicians	1	3 days	Fort Lauderdale, FL	Prior to maintaining	Up to 12

1.2.5 WAVE Training Plan

Course Title	Target Audience	Sessions	Duration	Location	Date	Participants
WAVE 5000 End User Train-the-Trainer Course Code: AST2026N (Instructor-led)	WAVE Communicator Trainers	1	1 day	Fort Lauderdale, FL	Prior to cutover	Up to 12

1.2.6 Optional Planning Stage

Course Title	Target Audience	Sessions	Duration	Location	Date	Participants
Optional: ASTRO® 25 Systems Fleetmapping Course#: RDS1017 Virtual Session (Instructor Led, Online)	System Managers and Technicians	1	3 hours a day for 5 days	Virtual Session (Instructor Led, Online)	Prior to remaining classes	Up to 12

1.2.7 Optional System Administrator/Technician Training Plan

Course Title	Target Audience	Sessions	Duration	Location	Date	Participants
Optional: APX CPS Programming And Template Building with APX™ Radio Management Workshop Course #: APX7001 and RDS2017 (Instructor-led)	Technicians	1	4 days	Fort Lauderdale, FL	Prior to programming radios	Up to 12

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Optional: RadioCentral Overview Course#: AST0137 (Self-paced; Online)	Technicians	1	1.5 hours	Self-paced; Online	Prior to the RadioCentral Workshop	Up to 12
Optional: RadioCentral Workshop Course#: AST0139 (Instructor Led)	System Managers and Technicians	1	3 days	Fort Lauderdale, FL	Prior to maintaining	Up to 12
Optional: APX Technical Subscriber Academy Course #: APX010 (Instructor-led)	Technicians	1	4.5 days	Fort Lauderdale, FL	Prior to programming radios	Up to 12

1.2.8 Console Operator and Supervisor Training Plan

Course Title	Target Audience	Sessions	Duration	Location	Date	Participants
CommandCentral AXS Dispatch Console ADMIN and CommandCentral AXS Dispatch Console Operator with ASTRO/APX Mobile Consolette 3 training consoles Ratio: 2 per training console (Instructor-led)	Console Supervisors	1 (8-hour session)	1 day	Fort Lauderdale, FL	Prior to training Operators	4
CommandCentral AXS Dispatch Console Operator with ASTRO/APX Mobile Consolette 3 training consoles Ratio: 2 per training console (Instructor-led)	Console Operators	7 (4-hour sessions)	3.5 days	Fort Lauderdale, FL	Prior to Cutover	38 (5-6 per Session)

1.2.9 Radio User Training Plan

Course Title	Target Audience	Sessions	Duration	Location	Date	Participants
APX N30 Portable (1 Model) APX N50 Portable (1 Model)	Radio Trainers	1 (16 hr Session)	2 days	Fort Lauderdale, FL	Prior to training Radio Users	4

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APX N70 Portable (1 Model) **APX6500 Mobile (1 Model)** Train-the-Trainer Utilizing the End User Training Kit (Instructor-led)						
APX N30 Portable (1 Model) **APX N50 Portable (1 Model)** **APX N70 Portable (1 Model)** **APX6500 Mobile (1 Model)** Utilizing the End User Training Kit (Instructor-led)	Radio Users	2 (8 hr Sessions) (An 8 hour Session for the first group, and an 8 hour Session for the 2nd group) Each 8 hour Session will be broken up into 2 (4 hr) Mini-Sessions.	2 days There will be 4 (4 hr) Mini-Sessions in all. 2 (4hr) Mini-Sessions per day for 2 days	Fort Lauderdale, FL	Prior to cutover	20 (10 participants per each 8-hour Session)

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1.2.10 Course Descriptions for the City of Fort Lauderdale

Course descriptions for the City of Fort Lauderdale are included on the following pages.

1.2.10.1 ASTRO® 25 IV&D System Overview

AST1038

Course Synopsis and Objectives:	The ASTRO® 25 IV&D System Overview course will provide participants with knowledge and understanding of the ASTRO® 25 IV&D system. The System architecture, components and features will be explained. This course does not cover K Core material. For more information on K Core, please refer to AST3038. At the end of this course, the participant should: ▪ Describe the general architecture of an ASTRO 25 Radio System ▪ List key features available in the ASTRO 25 Zone Core ▪ Define components of the ASTRO 25 system ▪ Summarize site components in the ASTRO 25 system ▪ Explain the features, capabilities and components of dispatch consoles in the ASTRO 25 system ▪ Recognize Mobility and Call Processing in the ASTRO 25 System ▪ Identify applications and features for managing the ASTRO 25 system
Delivery Method:	OLT = Online Training
Duration:	1.5 hours
Participants:	This course is intended for Professionals who need to get an understanding of the architecture, components, and features of the ASTRO®25 IV&D System.
Class Size:	Class Size varies by region
Prerequisite:	None
Curriculum:	Course Modules: Module 1 – System Architecture Module 2 – System Features and Options Module 3 – Zone Core Components Module 4 – Sites Module 5 – Site Status Module 6 – Information Types and Paths Module 7 – Mobility Management Module 8 – Voice Call Processing Module 9 – Data Call Processing Module 10 – Applications Overview

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1.2.10.2 ASTRO® 25 Systems Applied Networking

AST4104

Course Synopsis and Objectives:	The ASTRO® 25 Systems Applied Networking course provides technicians with the necessary networking information required for understanding the network components installed in modern Motorola communications systems. The course includes familiarization with basic networking concepts, and the networking components deployed in the ASTRO® 25 System. After completing this course, the student will be able to: ▪ Describe ASTRO® 25 topologies. ▪ Describe ASTRO® 25 traffic flows. ▪ Describe TCP/IP addressing in an ASTRO® 25 network. ▪ Configure switches and verify switch operation. ▪ Configure routers and verify router operation. ▪ Compare Motorola GGM 8000 routers and Juniper routers. ▪ Perform common maintenance tasks for switches and routers. ▪ Describe IP Multicast addresses and talkgroup operation. ▪ Describe network management functions and applications. ▪ Describe Information Assurance in ASTRO® 25. ▪ Describe extended topologies such as the Data Subsystem and ISSI.
Delivery Method:	ILT = Instructor Led Training
Duration:	4.5 days
Participants:	Technical System Managers and Technicians
Class Size:	Up to 12
Prerequisite:	Completion of the following course(s) or equivalent experience: - Networking Essentials in Motorola Communications Equipment (NST762).
Curriculum:	▪ Module 1 Introduction to ASTRO® 25 Systems ▪ Module 2 TCP/IP Addressing and Operation ▪ Module 3 Switching in ASTRO® 25 Systems ▪ Module 4 Routing in ASTRO® 25 Systems ▪ Module 5 Motorola Routers in ASTRO® 25 Systems ▪ Module 6 ASTRO® 25 Traffic Flows ▪ Module 7 Managing the ASTRO® 25 Network Infrastructure ▪ Module 8 Information Assurance (IA) Overview ▪ Module 9 Extended Topologies

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1.2.10.3 ASTRO® 25 IV&D Radio System Administrator Workshop

AST4102

Course Synopsis and Objectives:	This workshop covers administrator functions for an ASTRO 25 Integrated Voice and Data (IV&D) System. Learning activities in this course focus on how to use the different ASTRO 25 IV&D System Management applications. Participants will be provided with an opportunity to discuss how to structure their organization and personnel for optimal ASTRO 25 IV&D system use. After completing the course the participant will be able to: - Describe the relationship between radio programming, console administration and system management, and the impact of this relationship on system planning. - List the network management tools applicable at each phase of the system life cycle. - Identify the advantages and disadvantages of options available for the configuration of system infrastructure and user parameters. - Use the report and real-time data to monitor performance and make adjustments necessary to maintain acceptable system performance levels.
Delivery Method:	ILT - Instructor-led Training
Duration:	4.5 days
Participants:	- System Administrators - Technical System Administrators - System Technicians - Other Application Users
Class Size:	Up to 12
Prerequisite:	Completion of the following courses or equivalent knowledge: - Bridging the Knowledge Gap – System Administrators (ACT101E). - Networking Essentials in Communication Equipment (NST762). - ASTRO 25 Systems Applied Networking (AST4104). - ASTRO 25 IV&D System Overview (AST1038).
Curriculum:	- Module 1: Subscriber Provisioning - Module 2: Talkgroup Provisioning - Module 3: Radio System Application User Access - Module 4: Zone Watch - Module 5: Affiliation Display - Module 6: Radio Control Manager - Module 7: Reports - Module 8: License Manager - Module 9: UNC Network Manager - Module 10: UNC User Accounts - Module 11: Unified Event Manager - Module 12: UEM User Accounts

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1.2.10.4 ASTRO® 25 IV&D System Core Workshop

AST4103

Course Synopsis and Objectives:	The ASTRO 25 IV&D with ASTRO 25 System Core course teaches advanced troubleshooting skills and best practices for the Trunked Large Systems. The course also focuses on gathering and analyzing system information to implement appropriate action(s) that return a system to full operational status. After completing this course, the participant will be able to: - Describe the ASTRO 25 System architecture. - Identify the functional and radio subsystems that comprise the ASTRO 25 System. - Explain and discuss call flow and data flow through Large System Core devices and their subsystems. - Perform recommended routine maintenance procedures for the ASTRO 25 Large System Core. - Utilize the troubleshooting tools to diagnose a fault and restore the Large System Core to the level of the Motorola-supported service strategy.
Delivery Method:	ILT = Instructor Led Training
Duration:	4.5 days
Participants:	System Core Master Site Technicians
Class Size:	Up to 12
Prerequisite:	Completion of the following courses or equivalent knowledge: - Bridging the Knowledge Gap (ACT100 or ACT101) - Networking Essentials in Communication Equipment (NST762) - ASTRO 25 Systems Applied Networking (AST4104) - ASTRO 25 IV&D System Overview (AST1038)
Curriculum:	FOUNDATIONS: Introduction to ASTRO® 25 System Core Required Subsystems Optional Subsystems Optional Services IP Addresses and ASTRO® 25 Networks Call Control and Audio Paths MAINTENANCE TOOLS: Tools Maintenance Unified Event Manager UNC Maintenance NETWORK TRANSPORT: Network Transport Subsystem Switch Maintenance Routers Overview Backhaul Connectivity Overview Routers Maintenance VMS AND DAS: Virtual Management Server Overview Virtual Management Server Maintenance DAS Overview DAS Maintenance iLO vSphere

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	RAIDar/DAS VMS and DAS (HPE DL380 G10 and MSA2060) Virtual Management Server Overview (HPE DL380 G10 and MSA2060) Virtual Management Server Maintenance (HPE DL380 G10 and MSA2060) DAS Overview (HPE DL380 G10 and MSA2060) DAS Maintenance (HPE DL380 G10 and MSA2060) iLO (HPE DL380 G10 and MSA2060) vSphere (HPE DL380 G10 and MSA2060) DAS (HPE DL380 G10 and MSA2060) DETAILED CALL CONTROL: Detailed Call Control Multizones DATA SUBSYSTEM: Data Subsystem Overview TROUBLESHOOTING: Methodology Tools Backup and Restore Hardware Replacement Hardware Replacement (HPE DL380 G10 and MSA2060)

1.2.10.5 ASTRO® 25 IV&D DBR RF Technical Workshop

AST2046

Course Synopsis and Objectives:	This workshop describes the components in the ASTRO® 25 IV&D DBR M12 RF Site. This course also presents how the DSC 8500 site controller operates and explains the tools and methods available for troubleshooting components within the subsystem. After completing this course, the participant will be able to: ▪ Describe the ASTRO® 25 IV&D DBR M12 RF Site configurations and components. ▪ Describe the functionality of the DBR M12 RF Site. ▪ Identify the DSC 8500 Site Controller functions and configuration requirements. ▪ Describe the DSC 8500 connections and interfaces. ▪ Demonstrate usage of the PCA (Provisioning and Configuration Agent) and OPSH (On Premises Software Hub) ▪ Configure and troubleshoot the ASTRO® 25 DBR M12 RF Site.
Delivery Method:	ILT = Instructor Led Training
Duration:	3 days
Participants:	DBR RF Site Technicians
Class Size:	Up to 12
Prerequisite:	Completion of the following courses or equivalent experience: ▪ Networking Essentials in Communication Equipment (NST762) ▪ ASTRO® 25 Systems Applied Networking (AST4104) ▪ ASTRO® 25 IV&D System Overview (AST1038)

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Curriculum:	▪ Module 1: Installation ▪ Module 2: Configuration ▪ Module 3: Maintenance ▪ Module 4: Troubleshooting

1.2.10.6 ASTRO® Virtualized Simulcast Prime Site Workshop

AST0098

Course Synopsis and Objectives:	The ASTRO® 25 IV&D Virtualized Simulcast Prime Site workshop provides an understanding of the components that comprise the ASTRO® 25 IV&D Virtualized Simulcast Prime Site subsystem, and how they operate in conjunction with each other. The workshop also explains the tools and methods available for troubleshooting components within the Virtualized Simulcast Prime Site subsystem. After completing this course, the participant will be able to: ▪ Recognize the flow of message and control data within an ASTRO® 25 IV&D IP Digital Simulcast subsystem with Virtualized Simulcast Prime Site ▪ Identify the major components and connections within an ASTRO® 25 IV&D IP Digital Simulcast subsystem Virtualized Prime and Remote Sites ▪ Recognize how calls are processed within an ASTRO® 25 IV&D IP Digital Simulcast subsystem with Virtualized Simulcast Prime Site ▪ Perform maintenance and troubleshooting of selected components in an ASTRO® 25 IV&D IP Digital Simulcast subsystem with Virtualized Simulcast Prime Site.
Delivery Method:	ILT (Instructor-Led Training)
Duration:	3 days
Participants:	Simulcast Site Technicians
Class Size:	Up to 12 (Class Size may vary by region)
Prerequisite:	Completion of the following courses or equivalent experience: ▪ Bridging the Knowledge Gap – Technicians (ACT100E) ▪ Networking Essentials in Motorola Communications Equipment (NST762) ▪ ASTRO® 25 IV&D System Overview (AST1038) ▪ ASTRO® 25 Systems Applied Networking (AST4104)
Curriculum:	Course Modules: Installation: - RF Site - GTR 8000 Base Radio - DSC 8000 Controller - Radio Frequency Distribution System (RFDS) - Simulcast Site Reference (TRAK) - Network Transport - Edge Availability Configuration: - On-Premises Software Hub - Provisioning and Configuration Agent (PCA) - Unified Network Configurator (UNC) Maintenance: - GTR 8000 Base Radio Diagnostics - DSC 8000 Controller Diagnostics

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	- Radio Frequency Distribution System (RFDS) Diagnostics - Simulcast Site Reference (TRAK) Diagnostics - Network Transport Diagnostics Troubleshooting: - Troubleshooting Overview - PCA Diagnostics - CSS Diagnostics - Unified Event Manager

1.2.10.7 ASTRO® 25 IV&D IP Based Digital Simulcast Workshop

AST4217

Course Synopsis and Objectives:	The ASTRO® 25 IV&D IP Based Digital Simulcast workshop provides an understanding of the components that comprise the ASTRO® 25 IV&D IP Simulcast subsystem, and how they operate in conjunction with each other. The workshop also explains the tools and methods available for troubleshooting components within the IP Based Simulcast subsystem. After completing this course, the participant will be able to: ▪ Recognize the flow of message and control data within an ASTRO® 25 IV&D IP Digital Simulcast subsystem. ▪ Identify the major components and connections within an ASTRO® 25 IV&D IP Digital Simulcast subsystem prime and remote sites. ▪ Recognize how calls are processed within an ASTRO® 25 IV&D IP Digital Simulcast subsystem. ▪ Perform maintenance and troubleshooting of select components in an ASTRO® 25 IV&D Digital Simulcast subsystem.
Delivery Method:	ILT = Instructor Led Training
Duration:	3 days
Participants:	Simulcast Site Technicians
Class Size:	Up to 12
Prerequisite:	Completion of the following courses or equivalent experience: ▪ Bridging the Knowledge Gap – Technicians (ACT100) ▪ Networking Essentials in Communication Equipment (NST762) ▪ ASTRO® 25 Systems Applied Networking (AST4104) ▪ ASTRO® 25 IV&D System Overview (AST1038)
Curriculum:	▪ Section: Installation: ○ Module: RF Site ○ Module: GCP 8000 Site Controller ○ Module: GTR 8000 Base Radio ○ Module: GCM 8000 Comparator ○ Module: Radio Frequency Distribution System (RFDS) ○ Module: Simulcast Site Reference (TRAK) ○ Module: Network Transport ○ Module: Edge Availability Installation ▪ Section: Configuration: ○ Module: Software Download (SWDL) ○ Module: CSS ○ Module: UNC ▪ Section: Maintenance: ○ Module: GCP 8000 Site Controller Diagnostics ○ Module: GTR 8000 Base Radio Diagnostics ○ Module: GCM 8000 Comparator Diagnostics ○ Module: Radio Frequency Distribution System (RFDS) Diagnostics ○ Module: Simulcast Site Reference (TRAK) Diagnostics

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	○ Module: Network Transport Diagnostics ▪ Section: Troubleshooting: ○ Module: Overview ○ Module: CSS Diagnostics ○ Module: Unified Event Manager

1.2.10.8 ASTRO® 25 IV&D Secure Communications Workshop

AST4207

Course Synopsis and Objectives:	This workshop describes planning, installation, configuration, operations, and troubleshooting of Secure Communications within the ASTRO 25 IV&D System. After completing the course the participant will be able to: ▪ Plan, organize, and implement Secure Communications in an ASTRO 25 IV&D system. ▪ Install and configure a Key Management Facility (KMF) system and related components. ▪ Demonstrate centralized key management using Over-the-Air-Rekeying (OTAR). ▪ Perform System Administrator functions using the KMF server and KMF client. ▪ Troubleshoot installation and configuration problems for the KMF server, KMF client, and KMF database.
Delivery Method:	Instructor-led
Duration:	4.5 days
Participants:	▪ System Technicians ▪ System Administrators ▪ Technical System Managers
Class Size:	Up to 12
Prerequisite:	▪ Completion of the following courses or equivalent knowledge: ▪ Bridging the Knowledge Gap—Technicians (ACT100-E) ▪ Networking Essentials in Communication Equipment (NST762)
Curriculum:	▪ Module 1: Secure Communications Foundation ▪ Module 2: Secure Communications Organization ▪ Module 3: Secure Communications Equipment ▪ Module 4: Secure Communications Configuration ▪ Module 5: Secure Rekeying Operations ▪ Module 6: Secure KMF Performance Monitoring ▪ Module 7: Secure KMF Troubleshooting

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1.2.10.9 ASTRO® 25 Domain Controller Administration

AST2015

Course Synopsis and Objectives:	This workshop covers the administrator and management functions in the ASTRO 25 Domain Controller and how these functions affect both users and computers in the ASTRO 25 system. Learning activities in this course focus on how to use the Domain Controllers to authenticate, administer, and authorize users and devices in the ASTRO 25 System. Group Policies and Organizational Units, RADIUS, and DNS structure will be addressed during this course. After completing the course the participant will be able to: ▪ Understand the Domain Controller server platform ▪ Understand the DNS Hierarchy in the ASTRO 25 system ▪ Implement RADIUS authentication in applicable devices in an ASTRO 25 system ▪ Use Active Directory to control users in the ASTRO 25 system ▪ Understand Group Policy objects and how they impact users in the ASTRO 25 Domain
Delivery Method:	ILT = Instructor Led Training
Duration:	3 days
Participants:	System Administrators, Technical System Administrators and System Technicians Please Note: The applications in this course only apply to customers with releases 7.4 or newer.
Class Size:	Up to 12
Prerequisite:	Completion of the following courses or equivalent knowledge: ASTRO® 25 IV&D System Overview (AST1038)
Curriculum:	▪ Module 1: Course Introduction ▪ Module 2: Underlying Administrative Software ▪ Module 3: Domain Controller Software ▪ Module 4: Authentication and Authorization ▪ Module 5: Domain Controller Implementation ▪ Module 6: Groups, Users, and Policies ▪ Module 7: Troubleshooting Issues

1.2.10.10 ASTRO® 25 ISSI 8000 / CSSI 8000 Feature Overview

AST2005

Course Synopsis and Objectives:	The ISSI 8000 / CSSI 8000 Feature Overview self-paced course describes the optional Inter-RF Subsystem Interface available in an ASTRO 25 IV&D System. It presents a description of the feature, its benefits and components, call processing scenarios, and an overview of the installation process. After completing the course the participant will be able to: ▪ Describe the ISSI 8000 / CSSI 8000 feature. ▪ Describe the components of the ISSI 8000 / CSSI 8000 feature. ▪ Describe the communication scenarios if this feature is enabled. ▪ Follow the installation and configuration process if this feature is added to an ASTRO system.
Delivery Method:	OLT = Online Training
Duration:	2 hours
Participants:	System Managers, Technical System Managers, System Technicians, Application Users
Class Size:	Class sizes vary by region.
Prerequisite:	Completion of the following courses: ▪ ACT100 - Bridging the Knowledge Gap – Technicians

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	▪ AST1038 - ASTRO® 25 IV&D System Overview
Curriculum:	**Course Modules:** ▪ Module 1: ISSI 8000 / CSSI 8000 Overview ▪ Module 2: Theory of Operation ▪ Module 3: Installation ▪ Module 4: Operation and Administration ▪ Module 5: Maintenance

1.2.10.11 CommandCentral AXS Dispatch Console Technical Workshop

AST0092

Course Synopsis and Objectives:	This workshop provides training for technicians in troubleshooting and repair functions, operating procedures, and hardware and software applications for the CommandCentral AXS console. The focus is on a detailed discussion of console hardware and practical activities with the installation and configuration of the CommandCentral AXS console. By the end of this course, the student will be able to: ▪ Install and configure the hardware and software components of the CommandCentral AXS Dispatch Console Subsystem. ▪ Troubleshoot installation and configuration problems for the CommandCentral AXS Dispatch Console.
Delivery Method:	ILT – Instructor-led training
Duration:	3 days
Participants:	System Managers, Radio System and Console Service Personnel
Class Size:	Up to 12
Prerequisite:	▪ Knowledge of basic two-way FM communication theory and logic circuits ▪ Familiarity with local area networks concepts ▪ Knowledge of Linux, Docker Containers, and Red Hat OpenShift will greatly benefit the student.
Curriculum:	Course Modules: ▪ Module 1: Overview ▪ Module 2: Dispatch Console Installation and Configuration ▪ Module 3: Aux I/O ▪ Module 4: Conventional Channel Gateway ▪ Module 5: CommandCentral AXS Dispatch Console Administrator ▪ Module 6:Maintenance and Troubleshooting ▪ Module 7: Addendum

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1.2.10.12 WAVE 5000 End User Train-the-Trainer

AST2026N

Course Synopsis and Objectives:	This course is to teach trainers how to teach the five basic WAVE 5000 Communicator Applications By the end of the course, you will be able to: ▪ Be able to teach the concepts of WAVE 5000 Communicator Advanced Desktop ▪ Be able to teach the concepts of WAVE 5000 Communicator Desktop ▪ Be able to teach the concepts of WAVE 5000 Communicator Mobile Android ▪ Be able to teach the concepts of WAVE 5000 Communicator iOS ▪ Be able to teach the concepts of WAVE 5000 Communicator Web Communicator
Delivery Method:	ILT = Instructor Led Training
Duration:	8 hours
Participants:	WAVE 5000 Communicator trainers
Class Size:	Up to 12
Prerequisite:	Basic ASTRO Concepts
Curriculum:	▪ Module 1: WAVE 5000 Communicator Advanced Desktop ▪ Module 2: WAVE 5000 Communicator Desktop ▪ Module 3: WAVE 5000 Communicator Mobile Android ▪ Module 4: WAVE 5000 Communicator iOS ▪ Module 5: WAVE 5000 Communicator Web

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1.2.10.13 ASTRO® 25 Systems Fleetmapping Workshop

RDS1017

Course Synopsis and Objectives:	This workshop addresses topics necessary for the effective planning and mapping of an ASTRO® 25 IV&D Radio System. During this course, the participants will learn about ASTRO® 25 features, capabilities, and restrictions in order to effectively plan for a new or upgraded ASTRO® 25 System. After completing the course, the participant will be able to: ▪ Define what a fleetmap is and why one is needed. ▪ Discuss the methodologies used to configure radio users groups with the goal of optimizing the system resources. ▪ Describe the content to assist with fleetmapping decisions. ▪ Discuss frequency band plan, organization, and management. ▪ Describe basic planning requirements and complete a simple Fleetmap information template. ▪ Complete worksheets required to create a fleetmap based on sample operational requirement information.
Delivery Method:	VILT – Virtual Instructor-led training
Duration:	3 hours a day for 5 days (15 hours)
Participants:	This course is intended for technical support staff who are involved in planning and mapping of an ASTRO® 25 IV&D radio system.
Class Size:	Up to 12
Prerequisite:	None
Curriculum:	▪ Module 1: Fleetmap Scenarios ▪ Module 2: ASTRO® 25 System, APX Radio Roaming ▪ Module 3: Fleetmapping Overview ▪ Module 4: Talkgroups, Multigroups, and Agencygroups ▪ Module 5: Fleetmap Planning and Configuration ▪ Module 6: Console and Radio Configuration ▪ Module 7: APX Radio Programming Template Development

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1.2.10.14 APX™ CPS Programming And Template Building

APX7001

Course Synopsis and Objectives:	The APX™ CPS Radio Programming and Template Building course provides communications management personnel and technicians with the knowledge and training necessary to build templates and program the APX family of radios in the most efficient way possible. After completing this course, the student will be able to: - Navigate through the user interface of the APX™ Customer Programming Software (CPS). - Build the APX family of programming templates using the APX™ CPS programming software. - Program the specific conventional and trunking parameters related to the various system types in which the radios will operate. - Program the radios using typical APX™ CPS features and functions, such as cloning and drag and drop operations. - Use additional APX™ CPS related functions such as codeplug comparison, radio flashing, Advance System Key Administrator, and codeplug merging.
Delivery Method:	VILT – Virtual Instructor-led Training Can also be taught as ILT –Instructor-led Training
Duration:	2 days in the field 4 days total when combined with Radio Management (RDS2017) VILT – 2.5 hours per day for 5 days
Participants:	You should attend this training course if you are a radio technician or system manager who needs to: - Perform APX radios programming. - Gain knowledge of the APX CPS navigation, tools, options and features. - Have a better understanding of APX subscriber operating in Conventional, Single Site trunking, Simulcast, SmartZone or ASTRO 25 IV&D TDMA and ASTRO 25 IV&D x2.
Class Size:	Up to 12
Prerequisite:	Knowledge of the basic features and options of two-way radios and the basic concepts of trunking.
Curriculum:	- Module 1: Introduction and installation of APX CPS - Module 2: APX CPS Navigation - Module 3: APX CPS Data Transfer - Module 4: Codeplug Configuration - Module 5: Additional CPS Functionality

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1.2.10.15 APX™ Radio Management Workshop

RDS2017

Course Synopsis and Objectives:	Participants will learn the capabilities, features, and functions of the APX™ Radio Management Suite. In addition, the course will contain networking labs and Radio Management labs that will focus on installation, configuration, and operation using wired, Wi-Fi, and POP25 updates to APX Subscriber radios in both a LAN and WAN environment. After completing this course, the student will be able to: - Describe the APX Radio Management Suite operations and required software and hardware components - Describe all deployment options for APX Radio Management Suite - Configure a basic APX Radio Management system using a single PC, multiple PCs on a LAN, and multiple PCs on a WAN. - Troubleshoot common APX Radio Management installation, configuration, and operation issues - Use Best Practices to implement and optimize Radio Management Performance
Delivery Method:	ILT–Instructor-led Training (Classroom), Can also be taught as VILT – Virtual Instructor-led Training
Duration:	2.5 days as ILT, Or 5 hours a day for 3 days as VILT
Participants:	Radio Technicians, System Managers, Radio Programmers
Class Size:	Up to 12
Prerequisite:	Completion of the following courses or equivalent experience in radio communications: APX CPS Programming and Template Building (APX7001V)
Curriculum:	Module 1: Introduction to the APX Radio Management Module 2: Deployment of RM System Components Module 3: APX Radio Management Suite Installation Module 4: APX Radio Management Configuration Module 5: APX Radio Management Provisioning and Operation Module 6: Troubleshooting in APX Radio Management Module 7: Best Practices

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1.2.10.16 RadioCentral™ Overview

AST0137

Course Synopsis and Objectives:	This course provides an overview of the RadioCentral Programming solution. You will learn how to navigate through RadioCentral Programming, use its main features and functions, to make your radio on-boarding and fleet management efficient and easy. After completing this training course you will be able to: ▪ Get started with the RadioCentral Programming. ▪ Onboard new radios and convert codeplugs from the On-Prem System. ▪ Manage the devices and schedule their jobs. ▪ Organize your fleet and manage user permissions. ▪ Import and export data.
Delivery Method:	OLT – Online Training
Duration:	1.5 hours
Participants:	This course is intended for those who need to learn the characteristics and capabilities of RadioCentral Programming.
Class Size:	Class Size may vary by region
Requisite:	Knowledge of radio fleet management and programming.
Prerequisite:	None
Curriculum:	Course Modules: ▪ Module 1 - RadioCentral Introduction ▪ Module 2 - Building New Templates ▪ Module 3 - Managing Devices ▪ Module 4 - Scheduling a Device Job ▪ Module 5 - Organizing Your Fleet ▪ Module 6 - User Management for Data and Operation Permissions ▪ Module 7 - Import and Export

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1.2.10.17 RadioCentral™ Workshop

AST0139

Course Synopsis and Objectives:	In this workshop, you will learn how to navigate through RadioCentral and have hands-on experience using RadioCentral to set up and program the radios. You will also learn about the features and functions of RadioCentral to better manage your radio fleet. After completing this training course you will be able to: ▪ Navigate through RadioCentral. ▪ Onboard new radios. ▪ Reuse and build codeplug. ▪ Manage the devices and schedule a device job. ▪ Organize your fleet and manage user permissions. ▪ Import and export data.
Delivery Method:	ILT – Instructor Led Training
Duration:	3 days
Participants:	System Managers, Radio Administrators, and Technical Staffs responsible for managing the radios.
Class Size:	Up to 12
Requisite:	None
Prerequisite:	AST0137_RadioCentral™ Overview
Curriculum:	Course Modules: ▪ Module 1 - RadioCentral Introduction ▪ Module 2 - Building New Templates ▪ Module 3 - Managing Devices ▪ Module 4 - Scheduling a Device Job ▪ Module 5 - Organizing Your Fleet ▪ Module 6 - User Management for Data and Operation Permissions ▪ Module 7 - Import and Export

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1.2.10.18 APX™ Technical Subscriber Academy

APX010

Course Synopsis and Objectives:	Participants will learn the capabilities, features and functions of the APX™ family of radios as well as how to correctly complete performance checks, radio alignments, maintenance and troubleshooting. This Academy will also focus on a Level 2 (block level) theory of operation for the APX™ family of radios and provide a review of APX™ CPS and Radio Management programming. In addition to lecture, large amounts of hands on with scenario based lab work will be used to reinforce knowledge transfer. After completing this course, the student will be able to: ▪ Distinguish between the features and specifications of APX™ portable and mobile radios. ▪ Verify the correct operations of the various radio's within the APX™ family of subscribers by completing Performance Checks and Alignment procedures ▪ Maintain and troubleshoot radios within the APX family of subscribers.
Delivery Method:	ILT–Instructor-led Training (Classroom), Can also be taught as VILT – Virtual Instructor-led Training
Duration:	4.5 days as ILT, Or Approx. 4 hours a day for 5 days as VILT
Participants:	This course is intended for who would like to get familiar with the features, operation principles, and troubleshooting steps of the APX™ family of radios.
Class Size:	Up to 12
Prerequisite:	Completion of the following courses or equivalent experience in Radio Communications: ▪ NST021 - Communication Systems Concepts ▪ APX7001V - APX CPS Programming and Template Building Overview
Curriculum:	Course Overview - Radio Introduction - Customer Programming Software (CPS) Overview - Performance Checks - Radio Alignments - Theory of Operations - Radio Troubleshooting

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1.2.10.19 CommandCentral AXS Dispatch Console Administrator

Course Synopsis and Objectives:	This course provides students with an introduction to the Command Central AXS dispatch console, its basic operation and tailored job aids which will be available for assistance in administration. Through facilitation and hands-on activities, the user learns how to perform common tasks associated with the console administration. The students will be able to operate, administer and configure a CommandCentral AXS Dispatch position for daily use within an organization. By the end of the course, the student will be able to: • Describe the purpose of the CommandCentral AXS Dispatch application • Identify the hardware components that make up the dispatcher position • Identify elements that make up the menu and toolbar structure within the Dispatch software • Perform administrator operations: 1. Configuring dispatch screen layouts 2. Configure various peripheral devices for use with a dispatch position (e.g., speakers, microphone, headsets, footswitch)
Delivery Method:	ILT – Instructor-led training
Duration:	4 hours – CommandCentral AXS Dispatch Console Operator plus 4 hours – CommandCentral AXS Dispatch Console Administrator
Participants:	Dispatch Console Administrators, Console Service Personnel.
Class Size:	Based on number of Training Consoles available (2 students per Console)
Prerequisite:	None
Curriculum:	Course Modules: - CommandCentral AXS Console Basics - CommandCentral AXS Software Administration

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1.2.10.20 CommandCentral AXS Dispatch Console Operator

Course Synopsis and Objectives:	This training has been designed for new users of the CommandCentral AXS Dispatch Console. It provides participants with an introduction to the dispatch console, its basic operation and tailored job aids which will be available for assistance in operation. After completing this training course, you will be able to: - Perform basic operational tasks of the dispatch console. - Utilize the provided job aids to perform specific tasks associated with the console. - Understand a high level view of the system configuration. - Understand a high-level overview of the customer system configuration. - Understand general console operation. - Understand proper operating procedures for specific customer features.
Delivery Method:	ILT – Instructor-led training
Duration:	4 hours
Participants:	Dispatch Console Operators and Supervisors who perform the daily operations of the CommandCentral AXS Dispatch Console.
Class Size:	Based on number of Training Consoles available (2 students per Console)
Prerequisite:	None
Curriculum:	Course Modules: ▪ AXS Dispatch Console Basics ▪ Radio Transmission ▪ Group Operations ▪ Emergency Alarms ▪ Customizing User Interface During a Dispatch Session ▪ Peripheral Configuration Tool ▪ Simulations

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1.2.10.21 APX NEXT / APX N-Series Train-the-Trainer

Course Synopsis and Objectives:	This course provides radio trainers with an introduction to the APX NEXT / APX N-Series radio, its basic operation and tailored job aids available for assistance in operation. The learning experience is a mix of facilitation and hands-on activities to help users perform common tasks associated with the APX NEXT / APX N-Series operation. Segmentation between user groups (i.e. Police, Fire/EMS, and Public Service) is encouraged to help focus instruction on the specific operational issues of the individual user group. This course is geared for customers who have an experienced dedicated training staff in their organization. It provides the customer's identified training personnel with the knowledge and practice applying training techniques that will enable them to successfully train their students. Trainers will use audio visual (Interactive End User Toolkits – iEUTK), facilitation and "hands-on" activities to facilitate learning events supported by tailored or customized training materials and job aides. They will become proficient in discussing common tasks associated with the operation of the customer's radios. After completing the course the participant will be able to: - Understand a high-level overview of the customer system configuration. - Understand the general radio operation. - Understand proper operating procedures for specific customer features. - Perform basic operational tasks of the radio. - Utilize the provided job aids to perform specific tasks associated with the radio.
Delivery Method:	ILT - Instructor-led training
Duration:	8 hours
Participants:	Trainers, Supervisors and Support Personnel
Class Size:	Up to 15
Prerequisite:	Previous two-way radio and training experience
Curriculum:	**Basics:** - Controls - Buttons - Switches - Setting up APX NEXT / APX N-Series - Mics/Speakers - Indicators **Using APX NEXT / APX N-Series:** - On/Off/Standby - SmartTouch/OnScreen keyboard - Widgets - Adjustments - Battery Management - Updates **Specific Features:** - Changing Talkgroups/Channels - Changing Zones - Mute tones of keypad - Talkgroup Call - Private Call - Accessing Private Call Feature - Initiating Private Call - Call List Programming - Announcement/All Call (Calls involving Multiple Talkgroups) - Initiating Announcement/All Call - Direct/Talkaround - Failsoft - Radio Profiles

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	- Accessing and changing Radio Profile - Secure Operations - ARS **Optional Features:** - Scan - Scan program - Priority Scan - Dynamic Priority - Telephone Interconnect - Accessing Telephone Interconnect Feature - Initiating a Phone Call - Phone List Programming - Contacts **Services:** - Smart Connect - ViQI Voice Control - ViQi Virtual Partner - SmartLocate - Radio Central - SmartProgramming **Connectivity** - LTE - WiFi - Bluetooth **Data Services:** - Text Messaging - Accessing the Text Messaging Feature - Creating a Free Form Text Message - Sending a “Canned “ Text Message - GPS - OTAP User Interface - Encryption - Emergency

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1.2.10.22 APX Portable And APX Mobile Train-the-Trainer

Course Synopsis and Objectives:	This course provides APX radio trainers with an introduction to their radio, its basic operation and tailored job aids available for assistance in operation. The learning experience is a mix of facilitation and hands-on activities to help users perform common tasks associated with their radio operation. Segmentation between user groups (i.e. Police, Fire/EMS, and Public Service) is encouraged to help focus instruction on the specific operational issues of the individual user group. This course is geared for customers who have an experienced dedicated training staff in their organization. It provides the customer's identified training personnel with the knowledge and practice applying training techniques that will enable them to successfully train their students. Trainers will use audio visual (Interactive End User Toolkits–iEUTK), facilitation and "hands-on" activities to facilitate learning events supported by tailored or customized training materials and job aides. They will become proficient in discussing common tasks associated with the operation of the customer's radios. After completing the course the participant will be able to: ▪ Understand a high-level overview of the customer system configuration ▪ Understand the general radio operation ▪ Understand proper operating procedures for specific customer features ▪ Perform basic operational tasks of the radio ▪ Utilize the provided job aids to perform specific tasks associated with the radio
Delivery Method:	ILT - Instructor-led training
Duration:	8 hours
Participants:	APX Trainers, Supervisors and Support Personnel
Class Size:	Up to 15
Prerequisite:	Previous two-way radio and training experience
Curriculum:	▪ Basics: ○ Controls ○ Top and Side Buttons ○ Switches ○ 3 Position toggle ○ 2 Position Concentric ○ Home key ○ Data Key ○ Display ○ Front Display ○ Top Display ○ Display light ○ Intelligent Lighting ○ Push to Talk or Accessory PTT found on the microphone ○ Hub, hang up box (Mobile) ▪ Menu: ○ Menu Screen Anatomy ○ Navigating Menu Screen ○ Recent Call List (Model 3.5) ○ Unified Call List - Contacts (Model 3.5) ○ Dual Sided Radio (Model 3.5) ○ Dual Mics ○ Dual Speakers ○ Accessory Connector ▪ Specific Features: ○ Changing Talkgroups/Channels ○ Changing Zones ○ Mute tones of keypad ○ Talkgroup Call ○ Private Call ○ Accessing Private Call Feature

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	○ Initiating Private Call ○ Call List Programming ○ Announcement/All Call (Calls involving Multiple Talkgroups) ○ Initiating Announcement/All Call ○ Direct/Talkaround ○ Failsoft ○ Radio Profiles ○ Accessing and changing Radio Profile ▪ Optional Features: ○ Scan ○ Scan program ○ Priority Scan ○ Dynamic Priority ○ Telephone Interconnect ○ Accessing Telephone Interconnect Feature ○ Initiating a Phone Call ○ Phone List Programming ▪ Data Services: ○ Text Messaging ○ Accessing the Text Messaging Feature ○ Creating a Free Form Text Message ○ Sending a “Canned “ Text Message ○ GPS ○ OTAP User Interface ○ Encryption ○ Emergency

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1.2.10.23 APX Portable And APX Mobile Users

Course Synopsis and Objectives:	This course provides APX mobile and portable radio users with an introduction to their radio, its basic operation and tailored job aids available for assistance in operation. The learning experience is a mix of facilitation and hands-on activities to help users perform common tasks associated with their radio operation. Segmentation between user groups (i.e. Police, Fire/EMS and Public Service) is encouraged to help focus instruction on the specific operational issues of the individual user group. After completing the course the participant will be able to: - Understand a high-level overview of the customer system configuration - Understand the general radio operation - Understand proper operating procedures for specific customer features - Perform basic operational tasks of the radio - Utilize the provided job aids to perform specific tasks associated with the radio
Delivery Method:	ILT - Instructor-led Training
Duration:	Normally 4 hours for one mobile and one portable radio product
Participants:	APX portable and mobile radio users, supervisors and support personnel
Class Size:	Up to 15
Prerequisite:	**Required Pre-work:** None **Recommended Prerequisites:** None

Curriculum:	- Basics
	  ○ Controls
	  • Top and Side Buttons
	  • Switches
	  ▪ 3 Position toggle
	  ▪ 2 Position Concentric
	  • Home key
	  • Data Key
	  ○ Display
	  • Front Display
	  • Top Display
	  • Display light
	  • Intelligent Lighting
	  ○ Push To Talk or Accessory PTT found on the microphone
	  ○ Hub, hang up box (Mobile)
	  ○ Menu
	  • Menu Screen Anatomy
	  • Navigating Menu Screen
	  ○ Recent Call List (Model 3.5)
	  ○ Unified Call List - Contacts (Model 3.5)
	  ○ Dual Sided Radio (Model 3.5)
	  • Dual Mics
	  • Dual Speakers
	  ○ Accessory Connector
	
	- Specific Features
	
	  ○ Changing Talkgroups/Channels

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- Changing Zones
- Mute tones of keypad
- Talkgroup Call
- Private Call
  - Accessing Private Call Feature
  - Initiating Private Call
  - Call List Programming
- Announcement/All Call (Calls involving Multiple Talkgroups)
  - Initiating Announcement/All Call
- Direct/Talkaround
- Failsoft
- Radio Profiles
  - Accessing and changing Radio Profile

- Optional Features

- Scan
  - Scan program
  - Priority Scan
  - Dynamic Priority
- Telephone Interconnect
  - Accessing Telephone Interconnect Feature
  - Initiating a Phone Call
  - Phone List Programming
- Data Services
  - Text Messaging
    - Accessing the Text Messaging Feature
    - Creating a Free Form Text Message
    - Sending a “Canned Text Message
  - GPS
  - User interface with OTAP
- Encryption

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City of Fort Lauderdale

Attachment 59 - Training Staff Resumes

RFP #549

December 18, 2025

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Section 1
RFP Section 3.42.9.6 Training Staff Resumes

Sherri Martin – Training Manager/Coordinator	
Date of Hire:	April 2003
Motorola Solutions Professional Experience:	**Training Manager/Coordinator** *04/2003 to Present, Motorola Solutions* Provided training plans and materials for various types of communications systems including the following recent projects: • Training proposal, plan, schedule, and materials for Bucks County, PA. • Training proposal, plan, schedule, and materials for Burks County, PA. • Training proposal, plan, schedule, and materials for Montgomery County, PA. • Training proposal, plan, schedule, and materials for Northampton County, PA. • Training proposal, plan, schedule, and materials for Schuylkill County, PA. • Training proposal, plan, schedule, and materials for Commonwealth of Pennsylvania (STARNet). • Training proposal, plan, schedule, and materials for NC VIPER System. • Training proposal, plan, schedule, and materials for City of Asheville, NC. • Training proposal, plan, schedule, and materials for Burke County, NC. • Training proposal, plan, schedule, and materials for City of Charlotte, NC. • Training proposal, plan, schedule, and materials for Douglas County, GA. • Training proposal, plan, schedule, and materials for Augusta/Richmond County, GA. • Training proposal, plan, schedule, and materials for Hall County, GA. • Training proposal, plan, schedule, and materials for Flagler County, FL. • Training proposal, plan, schedule, and materials for Columbia County, FL. • Training proposal, plan, schedule, and materials for Martin County, FL. • Training proposal, plan, schedule, and materials for Clay County, FL. • Training proposal, plan, schedule, and materials for Palm Beach County, FL. • Training proposal, plan, schedule, and materials for St. Johns County, FL. • Training plan, schedule, and materials for Calvert County, MD. • Training plan, schedule, and materials for State of MD. • Training plan, schedule, and materials for State of TN. **Mobile Data Computer Trainer** 07/1999 to 05/2003

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Other Professional Experience:	**Waco Police Department, Commissioned Police Officer** *1981 to 1999* Customer Project Manager for two radio–related projects; six years on the 800 MHz radio system, and four years on the mobile data system.
Education:	**University of Houston** Bachelors of Finance and Economics
Training, Certifications, & Memberships:	OSHA Certification

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City of Fort Lauderdale

Attachment 60 - Sample Test and Acceptance Plan

RFP # 549

December 18, 2025

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Signoff Certificate

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Section 1

RFP Section 3.44.1.8.I Sample Test and Acceptance Plan

1.1 Sample Staging Test Plan

The following is a sample Functional Acceptance Test Plan provided to show a subset of the variety of tests that will be used to demonstrate the features provided to the City of Fort Lauderdale with the proposed ASTRO 25 system. The actual ATP will be mutually agreed upon between the City of Fort Lauderdale and Motorola Solutions and updated after the final design has been agreed to.

Sample Acceptance Test Plan, City of Fort Lauderdale, ASTRO 25 Draft

1.2 Wide Area Trunking FDMA/TDMA Mixed Sites

Talkgroup Call

1. DESCRIPTION	2. TEST
The Talkgroup is the primary level of organization for communications on a trunked radio system. Radios with Talkgroup call capability will be able to communicate with other members of the same Talkgroup. This provides the effect of a private channel down to the Talkgroup level. This test will demonstrate that a Talkgroup transmission initiated by a radio user will only be heard by system users, which have, the same Talkgroup selected. As with other types of calls, Talkgroup calls can take place from anywhere in the system. SETUP RADIO-1 - SITE 1 - TALKGROUP 1 RADIO-2 - SITE 1 - TALKGROUP 1 RADIO-3 - SITE	Step 1. Initiate a Wide Area Call with RADIO-1 in TALKGROUP 1. Step 2. Observe that only RADIO-2 will be able to monitor and respond to the call. Step 3. Initiate a Wide Area Call with RADIO-3 in TALKGROUP 2. Step 4. Observe that only RADIO-4 will be able to monitor and respond the call. Pass_____ Fail_____

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1 - TALKGROUP 2 RADIO-4 - SITE 1 - TALKGROUP 2 VERSION #1.040	

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Secure Operation

1. DESCRIPTION	2. TEST
Digital encryption is used to scramble a transmission so only properly equipped and configured radios can monitor the conversation. A "Key" is used to encrypt the transmit audio. Only radios with the same "Key" can decrypt the audio and listen to it. SETUP RADIO-1 - TALKGROUP 1 (SECURE TX MODE) RADIO-2 - TALKGROUP 1 (SECURE TX MODE) RADIO-3 - TALKGROUP 1 (SECURE MODE and no, or incorrect key) RADIO-4 - TALKGROUP 1 (Clear TX Mode) Note: The identical secure mode must be programmed into RADIO-1, RADIO-2, RADIO-4 and that RADIO-3 has no secure code loaded or has a unique secure code from the other testing radios. VERSION #1.020	Step 1. Initiate a secure wide area call with RADIO-1 on TALKGROUP 1. Keep this call in progress until instructed to end the call. Step 2. Observe that RADIO-2 will be able to monitor the call. Step 3. Observe that RADIO-3 does not receive the call. Step 4. Observe that RADIO-4 will also receive the call even with the secure switch set to the non-secure mode of operation. Step 5. End the call from RADIO-1. Step 6. Respond with RADIO-2 and verify that RADIO-1 receives the response audio but RADIO-3 cannot. Pass_____ Fail_____

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Dynamic FDMA/TDMA Talkgroup Call Mode Change

1. DESCRIPTION	2. TEST
The Talkgroup is the primary level of organization for communications on a trunked radio system. Radios with Talkgroup Call capability will be able to communicate with other members of the same Talkgroup. This provides the effect of a private channel down to the Talkgroup level. The FDMA/TDMA mode of the call depends on Talkgroup programming, the capabilities of radios registered to the talkgroup and the capabilities of the sites at which they are registered. The FDMA/TDMA mode of a "Dynamic" Talkgroup call depends on the capabilities of the radios registered to the Talkgroup. A TDMA to FDMA mode change is preceded by transmission trunking. A call in the FDMA mode remains in that mode until the call drops. An FDMA call will not be transmission trunked and changed to a TDMA call. Note: The FDMA/TDMA mode of a call can not change during a PTT. TALKGROUP 1 and TALKGROUP 2 are programmed for "Dynamic". SITE 1 and SITE 1 must be TDMA capable. SETUP RADIO-1 (TDMA) - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 (TDMA) - TALKGROUP 1 RADIO-2 - SITE - SITE 1 RADIO-3 (TDMA) - TALKGROUP 2 RADIO-3 - SITE - SITE 1 RADIO-8 (FDMA-only) - TALKGROUP 1 RADIO-8 - SITE - SITE 1	Step 1. Turn off RADIO-8. Step 2. Initiate a wide area call with RADIO-1 on TALKGROUP 1. Keep the call in progress until instructed to end it. Step 3. Observe that only RADIO-2 will be able to monitor and respond to the call. Observe that the channel is assigned in the TDMA mode since there are no FDMA-only radios in the call. Step 4. Turn on RADIO-8. Note that RADIO-8 cannot hear the call which is still in the TDMA mode. Step 5. Dekey RADIO-1. Observe that the channel dekeys immediately. Step 6. Initiate a wide area call with RADIO-1 on TALKGROUP 1. Keep the call in progress until instructed to end it. Step 7. Observe that both RADIO-2 and RADIO-8 will now be able to monitor and respond to the call. Observe that the channel is now assigned in the FDMA mode. Step 8. Turn off RADIO-8. Step 9. Dekey RADIO-1 and have RADIO-2 initiate the call during the hangtime. Observe that the channel is still assigned in the FDMA mode. Pass_____ Fail_____

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VERSION #1.010

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Continuous Assignment Updating

1. DESCRIPTION	2. TEST
When a talkgroup is assigned a voice channel, the site controller continues to transmit the channel assignment on the control channel for the duration of the talkgroup call. Radios coming into use on the system are automatically sent to voice channels with conversations in progress involving their selected talkgroups. SETUP RADIO-1 - TALKGROUP 1 RADIO-2 - TALKGROUP 1 RADIO-3 - TALKGROUP 1 VERSION #1.010	Step 1. Turn OFF RADIO-1. Step 2. Initiate a Talkgroup Call using RADIO-2 and verify RADIO-3 hears the audio. Step 3. While the Talkgroup Call is in progress, turn ON RADIO-1. Step 4. Observe RADIO-1, which was just brought back into service, joins the Talkgroup Call already in progress. Step 5. End the talkgroup call. Step 6. Switch RADIO-1 to another talkgroup. Step 7. Initiate a Talkgroup Call from RADIO-2 to RADIO-3. Step 8. While the Talkgroup Call is in progress, set RADIO-1 back to TALKGROUP 1. Step 9. Observe that RADIO-1 joins the Talkgroup Call already in progress. Pass_____ Fail_____

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Call Alert

1. DESCRIPTION	2. TEST
Call Alert is a tone page that allows a user to selectively alert another radio unit. The initiating radio will receive notification from the trunked system as to whether or not the page was received by the target radio. Units receiving a Call Alert will sound an alert tone. As with other types of calls, Call Alerts can take place from anywhere in the system. SETUP RADIO-1 - TALKGROUP 1 RADIO-2 - TALKGROUP 2 RADIO-3 - TALKGROUP 3 VERSION #1.010	Step 1. Using RADIO-1, press the page button. Step 2. Enter the unit ID of RADIO-2 with the keypad, or scroll to the location where this ID is stored Step 3. Press the PTT to initiate the call alert. Verify that the RADIO-1 user receives audible indication that the Call Alert was sent. Step 4. Verify that RADIO-2 user receives an audible indication of an incoming Call Alert was sent but RADIO-3 does not. Step 5. Verify RADIO-1 gets an audible indication that the Call Alert was successfully received at the target radio. Step 6. Turn off RADIO-2. Send a Call Alert from RADIO-1 to RADIO-2. Step 7. Verify that the RADIO-1 user receives audible indication that the Call Alert was sent. Step 8. Verify RADIO-1 receives a "No Acknowledgement" indication that the Call Alert was not received at the target radio. Pass_____ Fail_____

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Multigroup Call in Wait Mode

1. DESCRIPTION	2. TEST
This trunking feature allows an equipped radio user to transmit an announcement to several different talkgroups simultaneously. The multigroup (ATG) call can be flagged for Wait Mode in the Provisioning Manager (PM) database forcing all attached talkgroups to finish calls in progress before the trunked system will process the multigroup call. The system does not permit inactive, attached talkgroups to initiate Talkgroup Calls during the "wait" timeframe. As with other types of calls, multigroup calls can take place from anywhere in the system. SETUP RADIO-1 - TALKGROUP 1 RADIO-2 - TALKGROUP 2 RADIO-3 - RANDOM (Not part of MG) RADIO-4 - ATG 1 * TALKGROUP 1 and TALKGROUP 2 are members of ATG 1. * RANDOM is any talkgroup not a member of ATG 1. * Multigroups are set up through both the Provisioning Manager (PM) and the Subscriber Programming software. VERSION #1.020	Step 1. Verify ATG 1 is set for the Wait mode. Step 2. Using RADIO-1, initiate a call on TALKGROUP 1. Step 3. While RADIO-1 is keyed, attempt to initiate a multigroup call using RADIO-4 on ATG 1. Verify RADIO-4 receives a busy tone because one of the talkgroups attached to ATG 1 is involved in a Talkgroup Call. Step 4. Key RADIO-2 and verify that a busy tone is received because the ATG 1 call is in queue. Step 5. Dekey RADIO-1 and verify RADIO-4 receives a callback. Step 6. Key RADIO-4 and verify both RADIO-1 and RADIO-2 hear the multigroup call while RADIO-3 does not unmute. Pass_____ Fail_____

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Multigroup Call in Interrupt Mode

1. DESCRIPTION	2. TEST
This trunking feature allows an equipped radio user to transmit an announcement to several different talkgroups simultaneously. When the multigroup (MG) is flagged for Interrupt Mode the trunked system does not wait for attached talkgroups to finish calls in progress. Upon dekeying, the interrupted radios will join the multigroup call in progress. As with other types of calls, multigroup calls can take place from anywhere in the system. NOTE: A receiver interference failure may appear if RADIO-1 is not immediately dekeyed. This test is not recommended for single site systems as RF contention will occur. SETUP RADIO-1 - TALKGROUP 3 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 4 RADIO-2 - SITE - SITE 1 RADIO-3 - RANDOM (Not part of MG) RADIO-3 - SITE - SITE 1 RADIO-4 - ATG 2 RADIO-4 - SITE - SITE 1 * TALKGROUP 3 and TALKGROUP 4 are members of ATG 2. * RANDOM is any talkgroup not a member of ATG 2. VERSION #1.010	Step 1. Verify ATG 2 is set for the Interrupt mode. Step 2. Using RADIO-1, initiate a call on TALKGROUP 3. Step 3. While RADIO-1 is keyed, initiate a multigroup call using RADIO-4 on ATG 2. Verify RADIO-2 receives the call but RADIO-3 does not unmute. Step 4. Dekey RADIO-1 and verify RADIO-1 unmutes and joins the multigroup call in progress. Pass_____ Fail_____

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Dynamic FDMA/TDMA Multigroup Call

1. DESCRIPTION	2. TEST
This trunking feature allows an equipped radio user to transmit an announcement to several different talkgroups simultaneously. As with other types of calls, multigroup calls can take place from anywhere in the system. A Dynamic multigroup can contain FDMA-only, TDMA-only and Dynamic talkgroups. The FDMA/TDMA mode of a "Dynamic" multigroup will be determined by the capabilities of the radios affiliated to the talkgroups and multigroup and the capabilities of the sites where the radios are affiliated. Note: TALKGROUP 1, TALKGROUP 2 are members of ATG 1 and programmed as "Dynamic". SITE 1 and SITE 1 must be TDMA capable. ATG 1 is programmed as Dynamic. SETUP RADIO-1 (TDMA) - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 (TDMA) - TALKGROUP 2 RADIO-2 - SITE - SITE 1 RADIO-4 (TDMA) - ATG 1 RADIO-4 - SITE - SITE 1 RADIO-8 (FDMA-only) - TALKGROUP 2 RADIO-8 - SITE - SITE 1 VERSION #1.010	Step 1. Turn off RADIO-8. Step 2. Using RADIO-4, initiate a call on ATG 1. Step 3. Observe that RADIO-1 and RADIO-2 can monitor the call. Observe that the channel is assigned in the TDMA mode since there are no FDMA radios affiliated to either talkgroup. Step 4. Dekey RADIO-4 and turn on RADIO- 8. Step 5. Using RADIO-4, initiate a call on ATG 1. Step 6. Observe that RADIO-1, RADIO-2 and RADIO- 8 can monitor the call. Observe that the channel is now assigned in the FDMA mode. Pass_____ Fail_____

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Dynamic FDMA/TDMA Busy Queue Conversion

1. DESCRIPTION	2. TEST
If no voice channel resources are available, radios requesting channels for new conversations are placed in a queue. Users of the same priority will move through the queue in a FIFO (first in, first out) sequence. When a voice channel becomes available, the radio at the top of the busy queue gets a channel assignment and generates a callback tone if the FDMA/TDMA mode of the call can be supported by the available resource. While the call is waiting in the busy queue, the FDMA/TDMA mode of a talkgroup at a site in site trunking can be change as radios join or leave the talkgroup. NOTE: All radios and talkgroups should start with default priorities. The Default is 10. SETUP RADIO-1 (TDMA) - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 (TDMA) - TALKGROUP 1 RADIO-2 - SITE - SITE 1 RADIO-8 (FDMA-only) - TALKGROUP 2 RADIO-8 - SITE - SITE 1 RADIO-9 (FDMA-only) - TALKGROUP 2 RADIO-9 - SITE - SITE 1 VERSION #1.010	Step 1. Simulate a busy system by disabling all channels at SITE 1 with the exception of the control channel and one voice channel. Step 2. Initiate a TALKGROUP 2 call using RADIO-9. Verify RADIO-8 receives the call. Keep the call in progress until instructed to end it. Observe that the channel is assigned in the FDMA mode. Step 3. Initiate a TALKGROUP 1 call using RADIO-1 and observe that the radio receives a busy. Step 4. Dekey RADIO-9 and observe that RADIO-1 receives a callback and can make the call. Observe that the channel is assigned in the TDMA mode since there are no FDMA-only radios in the call. Step 5. Initiate a TALKGROUP 2 call using RADIO-9 and observe that the radio receives a busy. Step 6. Dekey RADIO-1 and observe that RADIO-9 receives a callback and can make the call. Observe that the channel is assigned in the FDMA mode. Pass_____ Fail

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Dynamic FDMA/TDMA Busy Queuing and Callback with 10 Talkgroup Priority Levels

1. DESCRIPTION	2. TEST
If no voice channel resources are available, radios requesting channels for new conversations are placed in a queue. Users of the same priority will move through the queue in a first in, first out sequence; however, users of higher priority will be inserted ahead of lower priority users in queue. When a voice channel becomes available, the radio at the top of the busy queue gets a channel assignment and generates a callback tone if the FDMA/TDMA mode of the call can be supported by the available resource. Otherwise, the first call in the queue that can use the available resource gets assigned. The callback tone alerts the user that a channel assignment was made and transmitting is now possible on the selected talkgroup. In this test case, the available resource cannot support the FDMA call mode. NOTE: An Emergency Call has the highest priority at level 1. The highest assignable priority is 2 and 10 is the lowest. All radios and talkgroups should start with default priorities. The default is 10. SITE 1 must be TDMA capable. SETUP RADIO-1 (TDMA) - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 (TDMA) - TALKGROUP 2 RADIO-2 - SITE - SITE 1 RADIO-4 (TDMA) - TALKGROUP 4 RADIO-4 - SITE - SITE 1	Step 1. Simulate a busy system by disabling all channels at SITE 1 with the exception of the control channel and one voice channel. Step 2. Verify the priority level for TALKGROUP 6's template is configured as priority 9. Step 3. Initiate Talkgroup Calls with RADIO-1 and with RADIO-2. Keep these calls in progress until instructed to end them. Both calls are assigned in the TDMA mode to the single voice channel. Step 4. Key RADIO-8 and observe that the radio receives a busy. Step 5. Key RADIO-4 and observe that the radio receives a busy. Step 6. End the call on RADIO-1. Step 7. Observe RADIO-4 receives the first callback and can now make a call because the available resource can not support an FDMA call. Step 8. End the calls on RADIO-2 and RADIO-4. Step 9. Observe RADIO-8 now receives a callback and can make a call upon receipt of the callback indication since there is now a FDMA channel available. Pass_____ Fail_____

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RADIO-8 (FDMA-only) - TALKGROUP 6 RADIO-8 - SITE - SITE 1 Note: TALKGROUP 1, TALKGROUP 2 and TALKGROUP 6 are programmed for "Dynamic". VERSION #1.020	

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Dynamic FDMA/TDMA Emergency Alarm and Call with Top of Queue - FDMA Call in Queue

1. DESCRIPTION	2. TEST
Users in life threatening situations can use the Emergency button on the radio to immediately send a signal to the dispatcher and be assigned the next available voice channel if the FDMA/TDMA mode of the call can be supported by the available resource. Otherwise, the first call in the queue that can use the available resource gets assigned. An Emergency Call can be set to either Top of Queue or Ruthless Preemption operation. To accomplish this, an Emergency Alarm and Call will be initiated from a subscriber which will be received by a subscriber affiliated at any site of any zone in the system. In this case, the first available resource CANNOT support the emergency call mode. NOTE: If the subscriber does not have the Display option, the Emergency ID will not be displayed. All radios and talkgroups should start with default priorities. Default is 10. SITE 1 must be TDMA capable. SETUP RADIO-1 (TDMA) - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 (TDMA) - TALKGROUP 2 RADIO-2 - SITE - SITE 1 RADIO-3 (TDMA) - TALKGROUP 3 RADIO-3 - SITE - SITE 1 RADIO-4 (TDMA) - TALKGROUP 4 RADIO-4 SITE - SITE 1	Step 1. Verify the emergency type for TALKGROUP 1's template must be set up as Top of Queue. Step 2. Simulate a busy system by disabling all channels at SITE 1 with the exception of the control channel and one voice channel. Step 3. Initiate a call with both RADIO-2 and RADIO-4 and hold the PTT switches until instructed to release. Step 4. Key RADIO-3 and verify the radio receives a busy tone. Release the PTT switch on RADIO-3. Step 5. Using RADIO-1 send an Emergency Call by pressing the emergency switch and then the PTT switch. Observe that RADIO-1 cannot transmit due to the voice channel being busy. Step 6. Release the PTT switch on RADIO-2. Observe that RADIO-3 receives the call back before RADIO-1 and is able to proceed with the call because the available channel resource is already busy with one TDMA call and can only support another TDMA call. Step 7. Dekey RADIO-4 and RADIO-3. Step 8. Observe that RADIO-1 receives the callback and is able to proceed with the call. Step 9. Observe that the display on RADIO-8 denotes an emergency and the unit ID of RADIO-1.

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RADIO-8 (FDMA-only) - TALKGROUP 1 RADIO-8 - SITE - SITE 1 Note: TALKGROUP 1, TALKGROUP 2, TALKGROUP 3 and TALKGROUP 4 are programmed for "Dynamic". VERSION #1.010	Step 10. Dekey RADIO-1 and exit the Emergency mode by holding down the Emergency button on RADIO-1 until an alert tone sounds. Verify RADIO-1 returns to normal operation. Pass_____ Fail_____

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Emergency Alarm and Call with Talkgroup Revert

1. DESCRIPTION	2. TEST
Users in life threatening situations can use the Emergency button on the radio to immediately send a signal to the dispatcher and be assigned the next available voice channel. An Emergency Call can be set to either Top of Queue or Ruthless Preemption operation. During an emergency call the Emergency ID will appear on the display of the subscribers. To demonstrate this, an Emergency Alarm and Call will be initiated from a subscriber which will be received by a subscriber affiliated at any site of any zone in the system. This test will demonstrate a subscriber has the ability to revert to a specific talkgroup when an emergency is initiated. This is useful when the users have a designated talkgroup for handling emergencies. The revert talkgroup must be set in the subscriber via software. NOTE: If the subscriber does not have the Display option, the Emergency ID will not be displayed. SETUP RADIO-1 - TALKGROUP 4 RADIO-2 - TALKGROUP 4 RADIO-3 - EMERGENCY TG * EMERGENCY TG is the talkgroup programmed for emergency reverts. VERSION #1.020	Step 1. Initiate a call on TALKGROUP 4 from RADIO- 1 and verify RADIO-2 can hear the audio. Verify RADIO-3 does not hear the audio. Step 2. Dekey RADIO-1. Step 3. Using RADIO-1, send an Emergency Call by depressing the emergency switch and then the PTT switch. Step 4. Observe the display on RADIO-3 denotes an emergency and the unit ID or alias of the unit sending the emergency and that RADIO-3 can hear RADIO-1's audio. Step 5. In addition observe that RADIO-2 cannot hear RADIO-1's audio. Step 6. Release the PTT switch on RADIO-1 and end the Emergency Call by holding down the Emergency button. Pass_____ Fail_____

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Private Call Management - DDM/TDMA Channel

1. DESCRIPTION	2. TEST
This test demonstrates the capability to limit RF resource usage by private calls on per RF site basis. A limit setting is entered from Unified Network Configurator Wizard (UNCW) and sent to Zone Controller for enforcement. The capability only works on a trunked system and when RF sites are in wide trunking mode. RF site types that support this capability are ISR, IP Simulcast, and Trunked 3600 sites. Note that on a dynamic dual mode (DDM) RF channel, number of RF resources used by a call depends upon the type of the call: FDMA or TDMA. An FDMA call will consume two RF resources while a TDMA call will consume only one RF resources. For demonstration purpose, this test will use DDM channels. Radios will access the DDM channels using TDMA. SETUP A supported RF site (see above) with at least 2 DDM - only channels UNCW RADIO-1 – TALKGROUP 1 RADIO-1 – SITE – SITE 1 RADIO-2 – TALKGROUP 1 RADIO-2 – SITE – SITE 1	Step 1. Use UNCW to set “Maximum Number of Resources for Private Call” to a value of 1. Step 2. RADIO-1 initiates a Private Call to RADIO-2. Step 3. Observe the call is successful, Radio-1 and RADIO-2 can communicate normally. Step 4. While RADIO-1 and RADIO-2 are still in Private call, RADIO-3 tries to initiates another Private Call with RADIO-4. Step 5. Observe the Private Call request by RADIO-3 is busied by the system. Step 6. RADIO-1 and RADIO-2 end their Private Call. Step 7. Observe RADIO-3 received a call back. Initiate a private call with RADIO-4. Step 8. Observe the Private Call between RADIO-3 and RADIO-4 is successful. Pass_____ Fail_____

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RADIO-3 – TALKGROUP 1 RADIO-3 – SITE – SITE 1 RADIO-4 – TALKGROUP 1 RADIO-4 – SITE – SITE 1 VERSION #1.040	

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Site Access Control/"Individual Only" Site Access Denial

1. DESCRIPTION	2. TEST
The system can be used to limit radio or talkgroup access to selected valid sites. Control can be exercised to restrict radio users or talkgroups to certain sites, or to steer radio activity away from smaller sites in an effort to avoid busies. System flags establish which sites are valid for each individual radio user, talkgroup and multigroup. An overall Site Access Denial flag for the system governs how these radio and talkgroup settings affect the affiliation or rejection of radios to individual sites. Once a subscriber unit has been denied at a site it will not attempt to access that site unless power is cycled or the user changes talkgroups. Four possible values for the Site Access Denial flag exist: Individual Only, Talkgroup Only, Either, or Both. "Individual Only" Site Access Denial dictates that a radio will not be allowed to affiliate to a particular site if the radio user does not have access to that site. If the Site Access Denial flag is set to "Individual Only", the talkgroup record for valid sites is not used in the determination of actual site affiliation permissions. NOTE: Site Denial flags are not cleared from the subscriber until the power is cycled or the talkgroup is changed. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 1	Step 1. Set the Site Access Denial Flag to Individual Only. Verify that the change has completed. Step 2. Cycle power to RADIO-1 and RADIO-2 to force them to affiliate, this will clear any site denials they may hold in memory. Step 3. Initiate a Private Call from RADIO-2 to RADIO-1. Verify that the Private Call occurs since RADIO-2 is valid at SITE 2. End the Private Call. Step 4. Set SITE 2 to be a non-valid site for RADIO-2. Verify that the change has completed. Step 5. Initiate a Private Call from RADIO-2 to RADIO-1. Verify that RADIO-2 receives a reject, (Note: this may happen quickly and not be noticeable if the radio is not site locked. If site locked, the radio will not roam until the site lock is removed.) and roams to a valid site. RADIO-2 is not allowed to make the Private Call from SITE 2 since it is no longer valid at SITE 2. Step 6. Set SITE 2 to be a valid site for RADIO-2. Verify that the change has completed. Step 7. Cycle power to RADIO-1 and RADIO-2 to force them to affiliate, this will clear any site denials they may hold in memory.

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VERSION #1.010	Step 8. Return the system to the original settings. Pass_____ Fail____

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Site Access Control/"Talkgroup Only" Site Access Denial

1. DESCRIPTION	2. TEST
The system can be configured to limit radio or talkgroup access to selected valid sites. Control can be exercised to restrict radio users or talkgroups to certain sites, or to steer radio activity away from smaller sites in an effort to avoid busies. System flags establish which sites are valid for each individual radio user, talkgroup and multigroup. An overall Site Access Denial flag for the system governs how these radio and talkgroup settings affect the affiliation or rejection of radios to individual sites. Four possible values for the Site Access Denial flag exist: Individual Only, Talkgroup Only, Either, or Both. "Talkgroup (TG) Only" Site Access Denial dictates that a radio will not be allowed to affiliate to a particular site if its affiliated talkgroup does not have access to that site. In this case, the individual radio user setting for valid sites is not used in the determination of actual site affiliation permissions. NOTE: Site Denial flags are not cleared from the subscriber until the power is cycled or the talkgroup is changed. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 1 VERSION #1.020	Step 1. Set the Site Access Denial Flag to Talkgroup Only. Step 2. Verify that the change completed. Step 3. Set SITE 2 to be a valid site for RADIO-2. Set SITE 2 to be a non-valid site for TALKGROUP 1. Step 4. Attempt to force RADIO-2 to scan to SITE 2. Verify that RADIO-2 cannot affiliate to SITE 2 since TALKGROUP 1 is a non-valid talkgroup for SITE 2. Step 5. Set SITE 2 to be a valid site for TALKGROUP 1. Set SITE 2 to be a non-valid site for RADIO-2. Step 6. Cycle the power to RADIO-2 then attempt to force RADIO-2 to scan to SITE 2. Verify that RADIO-2 is now allowed to affiliate to SITE 2 since the talkgroup record determines site access. Step 7. Initiate a call from RADIO-2. Verify that RADIO-2 is allowed to make the call from SITE 2 since TALKGROUP 1 is valid at SITE 2. Also verify that RADIO-1 hears the audio. Step 8. Set SITE 2 to be a valid site for RADIO-2. Return the Site Access Denial Flag to "Both". Pass_____ Fail_____

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1.4 Site Trunking FDMA/TDMA Mixed Sites

Site Trunking Indication

1. DESCRIPTION	2. TEST
When a remote site loses its link or does not have a link to the Zone Controller, the affected site will enter "Site Trunking" mode of operation. Radios locked onto this site will be serviced locally within this site's coverage area. NOTE: If the subscriber does not have the Display option, the "Site Trunking" indication will not be displayed. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 2 RADIO-2 - SITE - SITE 1 Lock the subscribers to SITE 1 if more than one site exists on the system. VERSION #1.010	Step 1. Place SITE 1 into the Site Trunking mode. Step 2. Verify that RADIO-1 and RADIO-2 are displaying the "Site Trunking" indication. Step 3. Return the site to Wide Area Trunking unless the next test requires Site Trunking. Pass_____ Fail_____

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Talkgroup Call (Single Site)

1. DESCRIPTION	2. TEST
When a site goes into Site Trunking, radios with Talkgroup Call capability will be able to communicate with other members of the same talkgroup at that same site. (Members of the same talkgroup at other sites will not be able to monitor those conversations.) SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 1 RADIO-3 - TALKGROUP 2 RADIO-3 - SITE - SITE 1 RADIO-4 - TALKGROUP 2 RADIO-4 - SITE - SITE 1 * All Radios should be "Site Locked" VERSION #1.010	Step 1. Place SITE 1 into the Site Trunking mode. Step 2. Initiate a Talkgroup Call with RADIO-1 on TALKGROUP 1 at SITE 1. Step 3. Observe that only RADIO-2 will be able to monitor and respond to the call. Note that RADIO-3 AND RADIO-4 are not able to monitor the call since they are on another Talkgroup. Step 4. Initiate a Talkgroup Call with RADIO-3 on TALKGROUP 2 at SITE 1. Step 5. Observe that only RADIO-4 will be able to monitor and respond to the call. Step 6. Return the site to Wide Area Trunking unless the next test requires Site Trunking. Pass_____ Fail_____

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Call Alert

1. DESCRIPTION	2. TEST
Call Alert is a tone page that allows a user to selectively alert another radio unit. When a site is in Site Trunking, Radios at the site will only be able to Call Alert other radios at the same site. The initiating radio will receive notification from the trunked system as to whether or not the page was received by the target radio. SETUP RADIO-1 - TALKGROUP 1 RADIO- 1 - SITE - SITE 1 RADIO-2 - TALKGROUP 2 RADIO- 2 - SITE - SITE 1 Note: All Radios should be "Site Locked" VERSION #1.010	Step 1. Place SITE 1 into the Site Trunking mode. Step 2. Using RADIO-1, press the page button. Step 3. Enter the Unit ID of RADIO-2 with the keypad, or scroll to the location where this ID is stored. Step 4. Press the PTT to initiate the Call Alert. Step 5. Verify that RADIO-2 received the Call Alert. Step 6. Exit the Call Alert mode and return to normal talkgroup mode. Step 7. Return the site to Wide Area Trunking unless the next test requires Site Trunking. Pass_____ Fail_____

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Continuous Assignment Updating

1. DESCRIPTION	2. TEST
When a talkgroup is assigned a voice channel, the site controller continues to transmit the channel assignment on the control channel for the duration of the Talkgroup Call. Radios coming into use on the system are automatically sent to voice channels with conversations in progress involving their selected talkgroups. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 1 RADIO-3 - TALKGROUP 1 RADIO-3 - SITE - SITE 1 Note: All Radios should be "Site Locked" VERSION #1.010	Step 1. Place SITE 1 into the Site Trunking mode. Step 2. Turn OFF RADIO-1. Step 3. Initiate a Talkgroup Call using RADIO-2. Step 4. While the Talkgroup Call is in progress, turn on RADIO-1. Step 5. Observe that RADIO-1, which was just brought back into service, joins the Talkgroup Call already in progress. Step 6. Release the PTT of RADIO-2. Switch RADIO- 1 to TALKGROUP 2. Step 7. Initiate a Talkgroup Call using RADIO-2. Step 8. While the Talkgroup Call is in progress, turn RADIO-1 back to TALKGROUP 1. Step 9. Observe that RADIO-1, which was just set back to TALKGROUP 1, joins the Talkgroup Call already in progress. Step 10. Return the site to Wide Area Trunking unless the next test requires Site Trunking. Pass_____ Fail_____

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Dynamic FDMA/TDMA Busy Queue Conversion

1. DESCRIPTION	2. TEST
If no voice channel resources are available, radios requesting channels for new conversations are placed in a queue. Users of the same priority will move through the queue in a first in, first out sequence. When a voice channel becomes available, the radio at the top of the busy queue gets a channel assignment and generates a callback tone if the FDMA/TDMA mode of the call can be supported by the available resource. While the call is waiting in the busy queue, the FDMA/TDMA mode of a talkgroup at a site in site trunking can be change as radios join or leave the talkgroup. NOTE: All radios and talkgroups should start with default priorities. The Default is 10. SETUP RADIO-1 (TDMA) - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-8 (FDMA-only) - TALKGROUP 1 RADIO-8 - SITE - SITE 1 RADIO-9 (FDMA-only) - TALKGROUP 2 RADIO-9 - SITE - SITE 1 VERSION #1.020	Step 1. Place SITE 1 into Site Trunking and simulate a busy system by disabling all channels at SITE 1 with the exception of the control channel and one voice channel. Turn off RADIO-8 Step 2. Initiate a Talkgroup Call with RADIO-9 and keep the call in progress until instructed to end it. Step 3. Key RADIO-1 and observe that the radio receives a busy. Step 4. Dekey RADIO-9 and observe that RADIO-1 receives a callback and can make the call. Observe that the channel is assigned through CSS in the TDMA mode since there are no FDMA-only radios in the call Step 5. Dekey RADIO-1. Step 6. Initiate a Talkgroup Call with RADIO-9 and keep the call in progress until instructed to end it. Step 7. Turn on RADIO-8. Step 8. Key RADIO-1 and observe that the radio receives a busy. Step 9. Dekey RADIO-9 and observe that RADIO-1 receives a callback and can make the call. Observe that the channel is now assigned in the FDMA mode.

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	Step 10. Return the site to Wide Area Trunking unless the next test requires Site Trunking. Pass_____ Fail_____

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Wide Area Recovery

1. DESCRIPTION	2. TEST
A site in Site Trunking will transition to Wide Area Trunking when all failures have been cleared. All subscribers should transition from Site Trunking to Wide Area Trunking and continue to process calls. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 1 RADIO-3 - TALKGROUP 1 RADIO-3 - SITE - SITE 2 RADIO-4 - TALKGROUP 1 RADIO-4 - SITE - SITE 2 CONSOLE-1 - TALKGROUP 1 Note: All Radios should be "Site Locked" VERSION #1.020	Step 1. Set the status of SITE 1 to Wide Area and clear any system errors that may have placed SITE 1 into Site Trunking. Step 2. Verify that the status of SITE 1 has transitioned into Wide Area Trunking. Step 3. Verify that RADIO-1 and RADIO-2 no longer display Site Trunking. Step 4. Verify Wide Area communications between RADIO-1, RADIO-2, RADIO-3, RADIO-4 and CONSOLE-1. Pass_____ Fail_____

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1.6 AXS Dispatch

Talkgroup Selection and Call

1. DESCRIPTION	2. TEST
The Talkgroup Call is the primary level of organization for communications on a trunked radio system. Dispatchers with Talkgroup Call capability will be able to communicate with other members of the same talkgroup. This provides the effect of an assigned channel down to the talkgroup level. When a Talkgroup Call is initiated from a subscriber unit, the call is indicated on each dispatch operator position that has a channel control resource associated with the unit's channel/talkgroup. SETUP RADIO-1 - TALKGROUP 1 RADIO-2 - TALKGROUP 2 RADIO-3 - TALKGROUP 1 RADIO-4 - TALKGROUP 2 CONSOLE-1 - TALKGROUP 1 CONSOLE-2 - TALKGROUP 2 VERSION #1.010	Step 1. Initiate a wide area call from CONSOLE-1 on TALKGROUP 1. Step 2. Observe that RADIO-1 and RADIO-3 will be able to monitor the call. Dekey the console and have either radio respond to the call. Step 3. Observe that all consoles with TALKGROUP 1 can monitor both sides of the conversation. Step 4. Initiate a wide area call from CONSOLE-2 on TALKGROUP 2. Step 5. Observe that RADIO-2 and RADIO-4 will be able to monitor the call. Dekey the console and have either radio respond to the call. Step 6. Observe that all consoles with TALKGROUP 2 can monitor both sides of the conversation. Pass_____ Fail_____

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PTT Unit ID/Alias Display

1. DESCRIPTION	2. TEST
Console operator positions contain various resources such as talkgroup, multigroup, Private Call which enables the dispatcher to communicate with the subscriber units. If activity occurs on one of these operator position resources, the unit ID or associated alias of the initiating radio appears at the console resource. SETUP RADIO-1 - TALKGROUP 1 RADIO-2 - TALKGROUP 1 CONSOLE-1 - TALKGROUP 1 CONSOLE- 2 - TALKGROUP 1 VERSION #1.010	Step 1. Select the resource for TALKGROUP 1 on CONSOLE-1. Step 2. Initiate a call on TALKGROUP 1 from RADIO- 2 and observe that the alias is seen at CONSOLE-1 in the resource window as well as in the Activity Log window. Step 3. Initiate a call from RADIO-1 and observe that the alias of RADIO-1 is seen at CONSOLE-1 in the resource window as well as in the Activity Log window. Step 4. Modify RADIO-2's alias. Make sure to give enough time for the alias change to propagate to the Zone Controller. Step 5. Initiate a call from RADIO-2 and observe the new alias of RADIO-2 is seen at CONSOLE-1 in the list in the resource window as well as in the Activity Log window. Step 6. Return RADIO-2's alias to its original state. Pass Fail_____

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Talkgroup Selection and Call - Secure

1. DESCRIPTION	2. TEST
The Talkgroup Call is the primary level of organization for communications on a trunked radio system. Dispatchers with Talkgroup Call capability will be able to communicate with other members of the same talkgroup. This provides the effect of an assigned channel down to the talkgroup level. When a Talkgroup Call is initiated from a subscriber unit, the call is indicated on each dispatch operator position that has a channel control resource associated with the unit's channel/talkgroup. Digital encryption is used so only properly equipped and configured subscribers can monitor the conversation. A "Key" is used to encrypt the transmit audio. Only radios and Consoles with the same "Key" can decrypt the audio and listen to it. SETUP RADIO-1 - TALKGROUP 1 (Secure TX Mode) RADIO-2 - TALKGROUP 2 (Secure TX Mode) RADIO-3 - TALKGROUP 2 (No Keys) RADIO-4 - TALKGROUP 1 (Clear TX Mode with Keys loaded) CONSOLE-1 - TALKGROUP 1 and TALKGROUP 2 (Secure TX Mode) VERSION #1.040	Step 1. Initiate a wide area secure call from CONSOLE-1 on TALKGROUP 1. Step 2. Verify RADIO-1 can monitor and respond to the secure call. Step 3. Verify RADIO-4 can monitor and respond to the secure call because even though it is in clear mode the correct encryption keys are loaded for the secure call. Step 4. Initiate a wide area secure call from CONSOLE-1 on TALKGROUP 2. Step 5. Verify that RADIO-2 can monitor and respond to the secure call. Note that RADIO-3 cannot monitor the call. Pass_____ Fail_____

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Secure/Clear Cross-Mode Indication

1. DESCRIPTION	2. TEST
This test validates the ability of the console to show a visual indication of a Secure and Clear mode mismatch during the following conditions: 1. Talkgroup on the Console is in secure transmit mode but receiving clear audio. 2. Talkgroup on the Console is in clear transmit mode but receiving secure audio. SETUP RADIO-1 - TALKGROUP 1 (Secure TX mode) CONSOLE-1 - TALKGROUP 1 (Secure TX mode) VERSION #1.010	Step 1. Initiate a secure call on RADIO-1. Step 2. Verify CONSOLE-1 is able to receive audio from RADIO-1. Step 3. Place RADIO-1 in clear TX mode. Step 4. Initiate a call on RADIO- 1. Step 5. Verify CONSOLE-1 is able to receive audio from RADIO-1 and displays a secure mode mismatch indication. Step 6. Place RADIO-1 in secure transmit mode and place CONSOLE-1 in clear transmit mode. Step 7. Initiate a secure call on RADIO-1. Step 8. Verify CONSOLE-1 is able to receive audio from RADIO-1 and displays a secure Cross-Mode Indication. Pass_____ Fail_____

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Multigroup Call

1. DESCRIPTION	2. TEST
This trunking feature allows an equipped console operator position to transmit an announcement to several different talkgroups simultaneously. As with Talkgroup Calls, multigroup calls operate across sites as well as within the same site. SETUP RADIO-1 - TALKGROUP 1 RADIO- 2 - TALKGROUP 2 RADIO-3 - RANDOM CONSOLE-1 - ATG 1 Note: TALKGROUP 1 and TALKGROUP 2 are members of ATG 1. RANDOM is any talkgroup not a member of ATG 1. VERSION #1.010	Step 1. Using CONSOLE-1, select the ATG 1 resource. Step 2. Initiate the Multigroup Call from CONSOLE-1. Step 3. Observe that RADIO-1 and RADIO-2 receive the Multigroup Call. Step 4. Verify that RADIO-3 does not receive the Multigroup Call because it is not a member of ATG 1. Step 5. Answer the Multigroup Call using RADIO-1 and observe CONSOLE-1 receives the response. Step 6. Verify that if the call is answered within the repeater hang time, the console will receive the call on the ATG 1 resource tile, otherwise the console will receive the call on the TALKGROUP 1 tile. Step 7. Verify that if the call is answered within the repeater hang time, RADIO-2 will monitor the call. Pass_____ Fail_____

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Multi-Select Operation

1. DESCRIPTION	2. TEST
Multi-Select (Msel) allows the console operator to group a number of channels/talkgroups together such that when the general transmit bar is depressed, all of the multi-selected channels/talkgroups will transmit at the same time with the same information. Multi-Select is one way communication call. If a radio user responds to a Multi-Select call the talkgroup the user is affiliated to will be the only one to hear the call. There is no super-group formed, so radio communication is still at the single talkgroup level. Multi-Select is utilized to send an APB to several channels/talkgroups. A Multi-Select has a limit of twenty (20) trunking/conventional resources SETUP RADIO-1 - TALKGROUP 1 RADIO- 2 - TALKGROUP 2 CONSOLE-1 - TALKGROUP 1, TALKGROUP 2 VERSION #1.010	Step 1. From CONSOLE-1, create an Msel group with TALKGROUP 1 and TALKGROUP 2. Step 2. Transmit on the Msel using the Msel instant transmit button. Step 3. Verify that RADIO-1 and RADIO-2 hear the call. Step 4. Initiate a call with RADIO-1. Step 5. Verify the call is heard on CONSOLE-1 but not on RADIO-2. Step 6. Initiate a call with RADIO-2. Step 7. Verify the call is heard on CONSOLE-1 but not on RADIO-1. Step 8. On CONSOLE-1 dissolve the Msel. Pass_ Fail_____

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Talkgroup Patch

1. DESCRIPTION	2. TEST
Talkgroup Patch allows a dispatcher to merge several talkgroups together on one voice channel to participate in a single conversation. This can be used for situations involving two or more talkgroups that need to communicate with each other. Using the Patch feature, the console operator can talk and listen to all of the selected talkgroups grouped; in addition, the members of the individual talkgroups can also talk or listen to members of other talkgroups. Patched talkgroups can communicate with the console dispatcher and other members of different talkgroups because of the "supergroup" nature of the Patch feature. NOTE : If "secure" and "clear" resources are patched together, one repeater for each mode may be assigned per site. SETUP RADIO-1 - TALKGROUP 1 RADIO-2 - TALKGROUP 2 RADIO-3 - TALKGROUP 1 RADIO-4 - TALKGROUP 2 CONSOLE-1 - TALKGROUP 1 and TALKGROUP 2 Note: All 4 Radios must have the same home zone. VERSION #1.010	Step 1. Using CONSOLE-1 create a patch between TALKGROUP 1 and TALKGROUP 2. Step 2. Initiate a patch call from CONSOLE-1. Step 3. Verify RADIO-1, RADIO-2, RADIO-3, and RADIO-4 can monitor the call. Step 4. Initiate several calls between the radios and verify successful communication. Step 5. Dissolve the patch created in step 1. Pass___ Fail_____

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Talkgroup Patch - Secure

1. DESCRIPTION	2. TEST
Talkgroup Patch allows a dispatcher to merge several talkgroups together on one voice channel to participate in a single conversation. This can be used for situations involving two or more talkgroups that need to communicate with each other. Using the Patch feature, the console operator can talk and listen to all of the selected talkgroups grouped; in addition, the members of the individual talkgroups can also talk or listen to members of other talkgroups. Patched talkgroups can communicate with the console dispatcher and other members of different talkgroups because of the "supergroup" nature of the Patch feature. SETUP RADIO-1 - TALKGROUP 1 (Secure TX Mode) RADIO-2 - TALKGROUP 2 (Secure TX Mode) RADIO-3 - TALKGROUP 1 (No secure keys loaded) RADIO-4 - TALKGROUP 2 (Clear TX Mode with keys loaded) CONSOLE-1 - TALKGROUP 1 and TALKGROUP 2 (Secure TX Mode) Note: All 4 Radios must have the same home zone. VERSION #1.010	Step 1. Using CONSOLE-1 create a secure patch between TALKGROUP 1 and TALKGROUP 2. Step 2. Initiate a patch call from CONSOLE-1. Step 3. Verify RADIO-1, RADIO-2 and RADIO-4 can monitor the call. Step 4. Initiate a talkgroup call on TALKGROUP 1 from RADIO-1. Step 5. Observe that all radios are able to hear RADIO-1 except RADIO-3. Step 6. Dissolve the patch. Pass_____ Fail_____

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Talkgroup Patch with Conventional

1. DESCRIPTION	2. TEST
Talkgroup Patch allows a dispatcher to merge several talkgroups together on one voice channel to participate in a single conversation. This can be used for situations involving two or more channels or talkgroups that need to communicate with each other. Using the Patch feature, the console operator can talk and listen to all of the selected talkgroups grouped; in addition, the members of the individual channels/talkgroups can also talk or listen to members of other channels/talkgroups. Patched resources can communicate with the console dispatcher and other members of different channels/talkgroups because of the "supergroup" nature of the Patch feature. NOTE : If "secure" and "clear" resources are patched together, one repeater for each mode may be assigned per site. SETUP RADIO-1 - TALKGROUP 1 RADIO-2 - CONVENTIONAL CHANNEL 1 RADIO-3 - TALKGROUP 1 RADIO-4 - CONVENTIONAL CHANNEL 1 CONSOLE-1 - TALKGROUP 1 and CONVENTIONAL CHANNEL 1 VERSION #1.010	Step 1. Using CONSOLE-1 create a patch between TALKGROUP 1 and CONVENTIONAL CHANNEL 1. Step 2. Initiate a patch call from CONSOLE-1. Step 3. Verify RADIO-1, RADIO-2, RADIO-3, and RADIO-4 can monitor the call Step 4. Initiate several calls between the radios and verify successful communication Step 5. Dissolve the patch created in step 1. Pass___ Fail_____

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Console Initiated Private Call to Subscriber

1. DESCRIPTION	2. TEST
Private Conversation is a selective calling feature which allows a dispatcher or radio user to carry on one-to-one conversation that is heard only by the two parties involved. Subscriber units receiving a private call will sound an alert tone. As with other call types, Private Calls operate across sites as well as within the same site. SETUP RADIO-1 - TALKGROUP 1 RADIO-2 - TALKGROUP 1 CONSOLE-1 - TALKGROUP 1 VERSION #1.020	Step 1. Using CONSOLE-1, select the "PRIVATE- CALL" tile and click the Private Call function. Step 2. Select the unit to be Private Called, in this case RADIO-1. (or select the numeric keypad and enter the Unit ID to be Private Called.) Step 3. Click the Send button. Step 4. Answer the Private Call with RADIO-1 and respond to the console. Step 5. Verify RADIO-2 does not hear the private conversation. Step 6. After completing the Private Call, return to the normal talkgroup mode. Pass_____ Fail_____

Instant Recall Recorder (IRR) Operation

1. DESCRIPTION	2. TEST

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The Instant Recall Recorder (IRR) allows for audio from a radio call to be played back at the CC HUB Console position. Playback recorded audio is accessible via the Activity Log tab. Audio is kept for 24 hours and then it is flushed out. Audio is recorded on all resources affiliated with the dispatch position. SETUP RADIO-1 - TALKGROUP 1 RADIO-2 - TALKGROUP 1 CONSOLE-1 - TALKGROUP 1 Note: In order to see outbound calls and parallel Consoles calls you need to configure Activity log settings via Admin mode. VERSION #1.010	Step 1. Make sure Activity Log tab is available for selected configuration. Step 2. Initiate radio communication between RADIO- 1 and RADIO-2. Step 3. Verify a new entry appears in the Activity Log. Step 4. Select the new entry from the Activity Log list. Step 5. Press play and verify conversation replay. Pass_____ Fail

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15 Default Alert Tones Available for Transmission

1. DESCRIPTION	2. TEST
This test demonstrates momentary transmission of the alert tones. It also demonstrates the availability of 15 default tones for transmission SETUP RADIO-1 – TALKGROUP 1 CONSOLE-1 – TALKGROUP 1 CONSOLE- 2 – TALKGROUP 1 VERSION #1.070	Step 1. Configure CONSOLE-1 for default alert tone transmission. Step 2. Observe that 15 default alert tones are present. Step 3. Observe that the alert tones can be selected from the alert tone pull down. Step 4. Observe that the alert tones can be selected from the alert tone buttons. Step 5. Observe that the tool tip pops up when the mouse is place over an alert tone button. Step 6. Transmit from any alert tone from 1 to 15 for alert tone transmission. Step 7. Observe the alert tone can be heard both by RADIO-1 and CONSOLE-2. Pass_____ Fail_____

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CC Hub Redundant Network Interface Operation

1. DESCRIPTION	2. TEST
This test will demonstrate the CC Hub's ability to maintain its networking capability and transmit/receive audio when individual network interfaces within the (optional) redundant network interface pair are disconnected at the console. SETUP CONSOLE-1 – TALKGROUP 1 (Selected), TALKGROUP 2 (Unselect mode) RADIO-1 – TALKGROUP 1 CONSOLE-1 –TALKGROUP 1 VERSION #1.010	Step 1. Verify CONSOLE-1 active network status using nmcli command via command line. Step 2. Disconnect primary NIC interface at CONSOLE-1 Step 3. Initiate a wide area call from CONSOLE-1 on TALKGROUP 1. Step 4. Observe that RADIO-1 is able to monitor the call. Dekey the console and have RADIO-1 respond to the call. Step 5. Observe that the radio transmission on TALKGROUP 1 can be monitored at CONSOLE-1. Dekey RADIO-1. Step 6. Reconnect primary NIC interface at CONSOLE-1. Disconnect redundant NIC interface at CONSOLE-1. Pass_____ Fail_____

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Activity Log Operation with Resource Preview Functionality - Trunking

1. DESCRIPTION	2. TEST
The Console activity log will show all inbound radio traffic for the resource assigned to that console to include the time, radio alias, TG, PTT ID and Emergency Call. The dispatcher has the capability of open resource preview for entry in activity log in order to perform any action for the resource. The Resource Preview option allows for quick access to resource functionality from Activity Log. It opens a pop-up window with default resource preview from Activity Log entry. All operations are supported from the Resource Preview. Note: In order to see outbound calls and parallel Consoles calls you need to configure Activity log settings via Admin mode. SETUP RADIO-1 - TALKGROUP 1 RADIO-2 - TALKGROUP 1 CONSOLE-1 - TALKGROUP 1 VERSION #1.010	Step 1. Make sure the Activity Log tab is available for selected configuration. Step 2. Initiate radio communication between RADIO- 1 and RADIO-2. Step 3. Verify that a new entry appears in the Activity Log. and proper information about time, radio ID/Alias, TG are displayed. Step 4. Select the new entry from the Activity Log list and press the resource preview button. Step 5. Verify that pop-up window with TALKGROUP 1 resource opened up. Step 6. Initiate a Instant Transmit from CONSOLE-1 on TALKGROUP 1 via resource in the pop-up window. Step 7. Observe that RADIO-1 and RADIO-3 is able to monitor the call. Dekey the console and have RADIO-1 respond to the call. Pass_____ Fail_____

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Active Microphone Selection

1. DESCRIPTION	2. TEST
If a desktop microphone is connected to a dispatch position while one or two headsets are connected, then the desktop microphone is only active during a transmit function if its transmit button is pressed. This prevents the desktop microphone from picking up unwanted background sound while the dispatcher is using a headset to transmit. SETUP RADIO-1 - TALKGROUP 1 CONSOLE-1 - TALKGROUP 1 Note: CONSOLE-1 has Headset 1, headset 2 and desktop microphone connected to CCHub Headset 1 Mic, Headset 2 Mic and desktop Mic are configured in PCT VERSION #1.000	Step 1. Select TALKGROUP 1 resource on AXS Step 2. Press General Transmit on AXS UI Step 3. Speak to Headset 1 microphone and verify that RADIO-1 hears audio from Headset 1 microphone Step 4. Speak to Headset 2 microphone and verify that RADIO-1 hears audio from Headset 2 microphone Step 5. Speak to Desktop microphone and verify that RADIO-1 does not hear audio from Desktop microphone Step 6. Release General Transmit button on AXS UI Step 7. Press PTT on Desktop microphone Step 8. Speak to Headset 1 microphone and verify that RADIO-1 does not hear audio from Headset 1 microphone Step 9. Speak to Headset 2 microphone and verify that RADIO-1 does not hear audio from Headset 2 microphone Step 10. Speak to Desktop microphone and verify that RADIO-1 hears audio from Desktop microphone Pass_____ Fail

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Acoustic Crossmute – Mute Speaker and Headset

1. DESCRIPTION	2. TEST
Acoustic crossmuting means that selected operator positions will not hear outbound transmissions from operator positions with which they are cross-muted. This feature is used when operator positions are located in the same dispatch site. This test case verifies operation when the Acoustic Cross Mute RF Cross Mute Scope parameter is set to “Speaker and Headset” under PCA of AXS Cluster. When configured as such Acoustic Crossmute causes the muting of both the speakers and headset. The consoles under test can be AXS Console. SETUP RADIO-1 - TALKGROUP 1 CONSOLE-1 - TALKGROUP 1 CONSOLE-2 - TALKGROUP 1 CONSOLE-3 - TALKGROUP 1 CONSOLE-4 - TALKGROUP 1 VERSION #1.010	Step 1. Verify Acoustic Crossmute is not configured for CONSOLE-1 and CONSOLE-2. Step 2. Select TALKGROUP 1 resource on CONSOLE-1 and CONSOLE-2 Step 3. Without Acoustic Crossmute configured, with the select speakers of CONSOLE-1 and CONSOLE-2 turned to maximum volume, initiate a call on TALKGROUP 1 using CONSOLE-1. Step 4. Confirm feedback is heard on the operator positions and RADIO-1 hears feedback on TALKGROUP 1. Step 5. Turn the volume to minimum on CONSOLE-1 and CONSOLE-2. Step 6. Verify Acoustic Crossmute is configured for CONSOLE-3 and CONSOLE-4 and that the Acoustic Cross Mute RF Cross Mute Scope parameter is set to “Speakers and Headset” for CONSOLE-4 in a PCA for AXS Cluster. Step 7. Select TALKGROUP 1 resource on CONSOLE-3 and CONSOLE-4. Step 8. With Acoustic Crossmute configured, with the select speakers of CONSOLE-3 and CONSOLE-4 turned to maximum volume, initiate a call on TALKGROUP 1 using CONSOLE-3.

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	Step 9. Verify no feedback is heard at CONSOLE-3 and CONSOLE-4 and that RADIO-1 hears any feedback on TALKGROUP 1. Step 10. Plug a headset into CONSOLE-4 and verify that TALKGROUP 1 audio is not heard in the headset. Pass_____ Fail_____

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Acoustic Crossmute - Mute Speaker Only

1. DESCRIPTION	2. TEST
Acoustic crossmuting means that selected operator positions will not hear outbound transmissions from operator positions with which they are cross-muted. This feature is used when operator positions are located in the same dispatch site. This test case will demonstrate operation when the Acoustic Cross Mute RF Cross Mute Scope parameter is set to the default value of “Speaker”. When configured as such Acoustic Crossmute causes the muting of the speakers only. The consoles under test can be AXS Console. SETUP RADIO-1 - TALKGROUP 1 CONSOLE-1 - TALKGROUP 1 CONSOLE-2 - TALKGROUP 1 CONSOLE-3 - TALKGROUP 1 CONSOLE-4 - TALKGROUP 1 The Consoles are located within the same dispatch site. VERSION #1.010	Step 1. Verify Acoustic Crossmute is not configured for CONSOLE-1 and CONSOLE-2. Step 2. Select TALKGROUP 1 resource on CONSOLE-1 and CONSOLE-2 Step 3. Without Acoustic Crossmute configured, with the select speakers of CONSOLE-1 and CONSOLE-2 turned to maximum volume, initiate a call on TALKGROUP 1 using CONSOLE-1. Step 4. Confirm feedback is heard on the operator positions and RADIO-1 hears feedback on TALKGROUP 1. Step 5. Turn the volume to minimum on CONSOLE-1 and CONSOLE-2. Step 6. Verify Acoustic Crossmute is configured for CONSOLE-3 and CONSOLE-4 and that the Acoustic Cross Mute RF Cross Mute Scope parameter is set to the default value of “Speakers” for CONSOLE-4 in a PCA for AXS Cluster. Step 7. Select TALKGROUP 1 resource on CONSOLE-3 and CONSOLE-4. Step 8. With Acoustic Crossmute configured, with the select speakers of CONSOLE-3 and CONSOLE-4 turned to maximum volume, initiate a call on TALKGROUP 1 using CONSOLE-3.

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	Step 9. Verify no feedback is heard at CONSOLE-3 and CONSOLE-4 and that RADIO-1 hears any feedback on TALKGROUP 1. Step 10. Plug a headset into CONSOLE-4 and verify that TALKGROUP 1 audio is heard in the headset. Pass_____ Fail_____

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1.8 Radio Control Manager (RCM) Features

Radio Check (Single Site)

1. DESCRIPTION	2. TEST
Radio Check is a RCM command used to verify that a radio is active in the trunking system. The Radio Check command causes the Zone Controller to poll for the radio requesting that the radio re-affiliate. When the radio re-affiliates, the RCM then has the knowledge that the radio is powered on and within system range. If the radio is involved in a conversation, whether group or interconnect, the RCM application displays a message to that effect. The information displayed by the RCM in response to the Radio Check command is: current talkgroup affiliation, the multigroup that the talkgroup is attached to (assuming the talkgroup belongs to a multigroup), and the site where the radio is affiliated. If the radio does not respond to the Radio Check command, a message to that effect displays. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 1 VERSION #1.030	Step 1. Select the Status menu and then select the Radio Check item to open the Radio Check window. Step 2. Enter the ID or alias of RADIO-2 into the entry box and click the Apply button. Step 3. Observe the radio is polled and the current radio information is displayed on the RCM. Step 4. Turn off RADIO-1. Step 5. Enter the ID or alias of the RADIO-1 into the entry box and click the Apply button. Step 6. Observe that the RCM displays "Radio Not Found." Step 7. Depress and hold the PTT button of RADIO-2 until instructed to release. Step 8. Enter the ID or alias of RADIO-2 into the entry box and click the Apply button. Observe that a busy for the radio is displayed on the RCM. Step 9. Release the PTT button on RADIO-2. Step 10. Observe the radio is polled and the current radio information is displayed on the RCM.

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	Pass_____ Fail_____

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Radio Status

1. DESCRIPTION	2. TEST
This optional feature allows the Radio Control Manager (RCM) to view status information sent in by subscribers. Statuses are used to indicate the Radio operator's operational state (e.g. off duty). The information that will be displayed includes the radio alias, talkgroup alias, hour and minute time stamp, status number or message number, and the customer entered translation for the specific status. Status input is displayed in chronological order, independent of the type of status number. SETUP RADIO-1 - TALKGROUP 1 RADIO- 1 - SITE - SITE 1 * Configure RADIO-1 in the manager to use a particular status set. * Configure the assigned status set (via the status set manager configuration objects) to include text translations for a few different statuses. * The RCM user needs to be assigned the dispatch attachment group that matches the radio user's assigned dispatch attachment group. VERSION #1.020	Step 1. Initiate a Status transmission from RADIO-1. Step 2. Verify the RCM displays the proper Status text. Pass_____ Fail_____

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Selective Radio Inhibit

1. DESCRIPTION	2. TEST
The INHIBIT command issued by the Radio Control Manager (RCM) disables a radio, preventing it from transmitting or receiving any audio. All of the radio's functionality ceases while a radio is inhibited by the RCM. Once inhibited, the radio cannot be used to monitor voice channels or for any other radio user initiated activity. Note that an inhibited radio still monitors the control channel so that it can be re- enabled with the Cancel Inhibit command. Upon receiving the Cancel Inhibit command from the RCM, the radio returns to its normal operation. SETUP RADIO-1 - TALKGROUP 1 RADIO- 1 - SITE - SITE 1 VERSION #1.030	Step 1. With the RCM open from the main Command tab click on the “+” button. Step 2. Enter the IDs or aliases of RADIO-1. Step 3. Select "Selective Inhibit" button. Step 4. Once all desired radio information is entered and appears in the command window click the submit to initiate the command. Step 5. Observe RADIO-1 is inhibited and appears to be dead. Step 6. Observe that the Inhibit task appears in the Command tab. Step 7. Cancel the Inhibit by selecting the task in the Command tab and clicking the Revert button to submit the task. Step 8. Observe that the Cancel Inhibit task appears in the Command tab and that RADIO-1 is returned to normal operation. Pass_____ Fail

Dynamic Regrouping (Single Site)

1. DESCRIPTION	2. TEST

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Dynamic Regrouping allows the RCM to assign individual radios operating in different talkgroups to a temporary talkgroup via the Regroup command.

Network managers or supervisors can override individual radio talkgroup selections by steering regrouped subscribers to a new talkgroup containing users which need to communicate on a temporary basis. After receiving a Regroup command, a radio will ignore the current setting of the talkgroup selector and move to the target talkgroup specified in the Regroup command. Unless the supervisor issues a LOCK command, the radio user can deselect the target talkgroup by selecting another talkgroup using the radio selector. A unique location on the radio selector is reserved for the target talkgroup following a Regroup command.

Dynamic Regrouping assignments can be initiated rapidly, but not instantaneously. Regrouping is best suited for planned activities or occasional changes from normal routines. It is not intended for immediate responses such as high speed chases or for a rapid deployment on a per incident basis.

Regrouped radios receiving a second Regroup command will move to the new target talkgroup specified in the second command. When a regrouped radio receives a Regroup command, all information pertaining to the previous Regroup command is lost. A Cancel Regroup command or a Revert returns an individual radio to its normal operation.

Note - RCM user must be attached to primary and target talkgroup.

SETUP

RADIO-1 -
TALKGROUP 1 RADIO-
1 - SITE - SITE 1
RADIO-2 -

Step 1. With the RCM open from the main Command tab click on the “+” button . Choose Regroup.

Step 2. Enter TALKGROUP 3 in the target field.

Step 3. Enter the IDs or aliases of RADIO-1, RADIO- 2, RADIO-3 and RADIO-4.

Step 4. Once all desired radio information is entered and appears in the command window click the submit to initiate the command.

Step 5. Observe all radios are regrouped and are able to communicate on TALKGROUP 3.

Step 6. Switch the Subscriber to the Dynamic Regroup channel to acknowledge the group request.

Step 7. Observe that the radios are able to select different talkgroups and are not locked onto the regrouped mode. Note- The Talkgroup selector knob has to be set to the dynamic regroup position before switching to any other talkgroup.

Step 8. Observe that the Regroup task appears in the Command tab.

Step 9. Issue a Selector Lock command all four radios and verify their selectors have been locked.

Step 10. Revert both commands and verify the radios have returned to normal operation.

Pass_____ Fail_____

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TALKGROUP 1 RADIO-2 - SITE - SITE 1 RADIO-3 - TALKGROUP 2 RADIO-3 - SITE - SITE 1 RADIO-4 - TALKGROUP 2 RADIO-4 - SITE - SITE 1 VERSION #1.030	

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Storm Plans (Single Site)

1. DESCRIPTION	2. TEST
Storm Plans represent any number of preprogrammed Dynamic Regrouping combinations constructed in advance to anticipate a unique need, such as a disaster, or to make a needed adjustment for an infrequent yet repeated event, like a parade or election. When implemented, a Storm Plan will automatically assign individual radios operating in different talkgroups to a temporary talkgroup, containing the radios specified by the stored Dynamic Regrouping command. Storm Plans are deactivated by selecting the revert option in the Command window. Note - Radios are not required to be locked to a specific site for this test. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 1 RADIO-3 - TALKGROUP 2 RADIO-3 - SITE - SITE 1 RADIO-4 - TALKGROUP 2 RADIO-4 - SITE - SITE 1 Create a storm plan in the Provisioning Manager (PM) that regroups RADIO-1 and RADIO-2 to TALKGROUP 2. VERSION #1.030	Step 1. With the Radio Control Manager (RCM) open from the main tab select the Storm Plan item to open the Storm Plan Window. Step 2. Select the Storm Plan. Step 3. Click on OK or Apply to invoke the Storm Plan. Step 4. Observe that the Storm Plan appears in the Command tab. Step 5. Observe RADIO-1 and RADIO-2 are regrouped. Step 6. Initiate a call from RADIO-1. Step 7. Observe that RADIO-2. RADIO-3 and RADIO- 4 are able to listen to the call. Step 8. Observe that RADIO-1, RADIO-2, RADIO-3 and RADIO-4 are able to initiate and receive calls on TALKGROUP 2. Step 9. Un-regroup the radios by selecting the task in the Command tab and clicking on the Revert button to submit the task. Step 10. Observe that the regrouping of the radios is now dissolved. Pass_____ Fail

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1.10 Fault Management

Unified Event Manager - Base Views

1. DESCRIPTION	2. TEST
The Unified Event Manager (UEM) in its base configuration provides a number of views. The purpose of this test is to demonstrate the key views available from the UEM. The Physical Summary and Detail View (Physical Map) and Service Summary and Detail View (Service Map) in previous releases are deprecated and are replaced by the Zone Map. Custom views can be saved and retrieved by other NM Client users. SETUP NMclient01 - UEM session up and running. VERSION #1.010	Step 1. Alarms View: In the navigation pane expand Fault Management and select Alarms. The view displays active alarms for managed resources, displaying impacted managed resources and specific objects on the managed resource along with selected alarm properties. Step 2. Alarm View Search: Customize the Active Alarms display by selecting the View option from the menu bar, then select Search. Perform a Managed Resource search for channels, site controllers and routers by entering "Contains" and ch, sc, and z00 respectively in the search fields to perform the three separate searches. For each of the three searches a filtered alarm view is displayed that contains alarms for the appropriate device in the search. Step 3. Network Events View: In the navigation pane expand Fault Management and select Network Events. The view displays recent events reported for managed resources, displaying impacted managed resources and specific object on the managed resource along with selected event properties. Alarming events are base for creating alarm objects. Step 4. Physical Summary View: In the navigation pane expand Zone Views and Physical, then select Physical Summary View. The Physical Summary View provides an aggregated alarm severity status of the devices located at all subnets in the Zone. Step 5. Service Summary View: In the navigation pane expand Zone Views and Service, then select Service Summary View. The Service Summary View provides a quick summary of the service status of sites in a Zone, including access to Channel status.

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	Step 6. Zone Map: In the navigation pane, expand Zone Views and select Zone Map. The Zone Map view provides an aggregated alarm severity status of the devices located at discovered sites in the Zone. Step 7. Network Database: In the navigation pane select Network Database. The Network Database displays a list of all discovered Managed Resources and Sites. The display includes properties of each resource as well as overall severity of all objects and/or sub resources Pass_____ Fail_____

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Station Power Amp Failure Reports to the Unified Event Manager (UEM)

1. DESCRIPTION	2. TEST
This test will demonstrate that the Unified Event Manager (UEM) alarms view is able to capture information about various failures at the system and zone level. A station will be keyed while the output is unloaded to simulate a power amp failure. The failures will be monitored on the UEM. Note: For safety, either power down the station or TX Inhibit it before disconnecting or re-connecting the dummy load to prevent accidental keying of the station. Note: This test should be done on a site with more than 2 channels. Failsoft will occur if the test is done on a 2 channel site. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 2 RADIO-2 - SITE - SITE 1 NMclient01 - UEM session up and running. * All Radios should be "Site Locked" VERSION #1.030	Step 1. Verify that the power amp of the station to be tested has no active alarms against it. Step 2. Disconnect the dummy load/antenna from the station. Step 3. Make several talkgroup calls using RADIO-1 until the test station has been keyed. Step 4. Observe that an alarm indicating a Power Amp failure appears on the UEM alarms view. Step 5. Reconnect the dummy load/antenna disconnected in Step 3. Step 6. In approximately 5 minutes, observe the changes to the alarm on the UEM, indicating the module is restored to service. Pass_____ Fail

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Site Path Failure (Ethernet) Reports to the Unified Event Manager

1. DESCRIPTION	2. TEST
This test will demonstrate that the Unified Event Manager (UEM) alarms view is able to capture information about various failures at the system and zone level. This test simulates a microwave/transport failure by removing a customer selected site data link and monitoring the alerts. Note: If using a Simulcast site, this test refers to the Prime Site links. While failures would be seen at the subsite level if a Subsite link were failed, the site would not drop into Site Trunking. SETUP RADIO-1 - TALKGROUP 1 RADIO- 1 - SITE - SITE 1 NMclient01 - UEM session up and running. * RADIO-1 should be "Site Locked" VERSION #1.030	Step 1. Remove the Ethernet cable(s) to the SITE 1 router(s) (If Simulcast, this refers to the Prime Site router(s)) at the site where RADIO-1 is affiliated. Be certain to remove the Ethernet cable from both routers if redundant site links are being utilized. Step 2. Observe the UEM reports CommFailure alarms for the devices at the affected site. Step 3. In addition, observe that the site is now in the Site Trunking mode. Step 4. Reconnect the Ethernet cable(s) disconnected in Step 1. Step 5. Observe the site returns to the Wide Area Trunking mode. Step 6. Observe the topology and alarms/events that appear in the UEM, indicating the site is in recovery and after a period of time has recovered. Pass_____ Fail_____

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Ethernet Site Link Round Trip Delay Fault Reports to the Unified Event Manager – Juniper

1. DESCRIPTION	2. TEST
When the average round trip IPTD(delay) statistic exceeds the IPTD Fault Threshold for an Ethernet Site/Interzone Link, an event is sent to the Unified Event Manager (UEM). NOTE: This test is only valid if it is executed on a real Ethernet Site/Interzone Link that has 10ms or more of round trip delay. 10ms is the minimum configurable value. SETUP No prior setup is necessary. Note: This test will not be practical to run in staging because the link delays would not exceed the threshold in most cases even at the minimum settings. This test, if used, should be reserved for execution in the field under real conditions. VERSION #1.010	Step 1. On both routers at each end of the Ethernet Site/Interzone Link(ie Core & Site Router for a site link), configure the IPTD(delay) threshold for the minimum value of 10ms. (Follow step 2 procedure) Step 2. In the UNC, right-click on each router and select SetTWAMP Round Trip Delay Threshold and Enable Trap from the Saved Commands. After selecting the Saved Commands option, navigate using the Up button and double clicking on folders within the folder list to get to: LibraryManager>System > Motorola > Juniper router>TWAMP. This folder contains additional folders specific for the link type so choose the proper one. Step 3. After the end of next full measurement interval(approximately 30 minutes) check for the event reporting. In UEM, select Fault Management > Events. Step 4. Verify Unified Event Manager displays an event for the configured routers indicating that the IPTD Fault Threshold has been exceeded, including the IPTD(delay) value. Step 5. Using the procedure in Step #1, set the trap threshold to the appropriate value for the Ethernet Site/Interzone link. This value is determined during system planning and provisioning of the customer backhaul network. The default value is 40ms. Pass_____ Fail_____

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Unified Event Manager - Digital Notifications for Events (Email)

1. DESCRIPTION	2. TEST
The Unified Event Manager (UEM) is an element management system which manages network elements of the ASTRO® 25 Network. One of the main functions of the UEM is to receive events from network elements, process them, correlate events to alarms, and present them to the operator. The UEM supports the Digital Notification functionality which allows sending an e-mail notification upon receiving an event or alarm matching user-defined criteria. The e-mails are sent to an external mail server using Simple Mail Transfer Protocol (SMTP). This test demonstrates the configuration for digital notifications and that they get routed to the proper destination. SETUP UEM with the digital notification option VERSION #1.040	Step 1. On a UEM client session, configure a digital notification rule for a logical element and a physical device. On the UEM select, Fault Management and then Alarms. Select Edit from toolbar at top of window. Next select configure and then Alarm Filter. Enter your configuration parameters and alarm filtering information. Step 2. Perform action(s) on the system (including the logical element, physical device, and other managed objects) that would cause events to be generated. Step 3. Verify the alarms are displayed in the UEM. Step 4. Verify only the events from the specified logical element and physical device are forwarded to the external system (such as the configured Email Server). Step 5. Verify events from other managed objects which do not have any digital notification rules are not forwarded. Step 6. Return the system to normal operation. (Clear the alarm conditions) Verify that the alarms clear in the UEM. Pass_____ Fail_____

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Alarm Processing – Acknowledged/Un-acknowledge Alarm

1. DESCRIPTION	2. TEST
The Unified Event Manager (UEM) provides the user the ability to acknowledge alarms raised against managed resources and their objects. The operation is available for users with appropriate permissions and audited. This is the base UEM alarm acknowledgement functionality available in all UEM deployments. It is further enhanced if Enhanced Navigation is enabled. SETUP No prior setup is required. VERSION #1.040	Step 1. Login to UEM Client as user with permissions to perform alarm acknowledge operation. Step 2. Create an alarm condition by simulating an alarm on a managed device in the system. Step 3. Navigate to Alarms View and sort by clicking on the header of Ack Status column. Step 4. Review all not acknowledged alarms and locate test alarm that has been generated. Step 5. Double-Click on the alarm to open Alarm details window. Step 6. Ack status value should be set to Not acknowledged. Step 7. Click Acknowledge button to acknowledge this alarm and verify that Acknowledge status has changed to include information on the current user and timestamp of the operation. The Alarms view should show alarm status as Acknowledged. Step 8. Click Unacknowledged button and verify that Acknowledge status has changed to Unacknowledged and includes information on the current user and timestamp of the operation. Step 9. Restore the system to normal operation and verify the alarm clears.

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	Pass_____ Fail_____

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Alternative for SRX Edge Router Failure Reports to the Unified Event Manager

1. DESCRIPTION	2. TEST
This test will demonstrate that the Unified Event Manager (UEM) alarms view is able to capture information about various failures at the system and zone level. An Edge Router will be powered down to simulate a failure. The system health will be monitored on UEM. NOTE: Powering down Edge Router 1 or 2 down will affect both the Site Connections and the InterZone Routing functions. Powering down Edge routers 3 – 8 only impact site connections SETUP NMclient01 - UEM session up and running. VERSION #1.020	Step 1. Verify that the Edge Router to be tested displays without failures (normal) on UEM. The Edge Router is contained in the specific subnet that it is physically collocated with in the network. Step 2. Power down the Edge Router from the Command Line Interface. Step 3. Observe that an alarm indicating a Edge Router failure appears on the UEM alarms view. Step 4. Power up the Edge Router from the Power Button Step 5. Observe the changes to the alarm in UEM, indicating the Edge Router is enabling. Step 6. Observe that alarm view updates in the UEM, indicating the Edge Router has recovered and is enabled. Pass_____ Fail_____

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Alternate Redundant Site Router Failure at a BR Site with Juniper SRX Routers

1. DESCRIPTION	2. TEST
BR site with redundant Routers continues to function after losing one of the Routers. SETUP Zone Core Conventional Subsystem with a BR Site Radio-1 Radio-2 Conventional Channel-1 All radios and Conventional Channels are members of the same conventional subsystem and are not external to the conventional subsystem. Conventional channels can be digital or CCGW based Analog, MDC1200, or Mixed Mode. The test cases may be executed using any of the following methods: 1) Radio-1 to Radio-2 through channels patched at the Console 2) Radio 1 through voting channels routed thru the conventional subsystem in repeat mode to Radio-2 3) Radio-1 to console or console to Radio-2 VERSION #1.020	Step 1. Initiate a Conventional call from Radio-1 on Conventional Channel-1. Step 2. Verify that Radio-2 receives the audio. Step 3. Power down the BR Router from the Command Line Interface. Step 4. Observe, in the Unified Event Manager that, one Site Router has failed. Step 5. Initiate a Conventional call from Radio-1 on Channel Resouce-1. Step 6. Verify that Radio-2 receives the audio. Step 7. Power up the BR Router. Pass_____ Fail_____

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1.12 System Reliability Features

Multiple Control Channels

1. DESCRIPTION	2. TEST
A maximum of four channels are eligible for assignment as control channel at each site. In the event that the assigned control channel fails at any remote site, the Zone Controller automatically selects one of the other control capable channels as the active control channel for that site. A Control Channel Preference Level can be used to rank the control capable channels where 1 is the highest ranking and 4 the lowest. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 1 RADIO-3 - TALKGROUP 2 RADIO-3 - SITE - SITE 1 RADIO-4 - TALKGROUP 2 RADIO-4 - SITE - SITE 1 VERSION #1.020	Step 1. Initiate a Talkgroup Call with RADIO-1 on TALKGROUP 1. Step 2. Observe that only RADIO-2 will be able to monitor and respond to the call. Step 3. Initiate a Talkgroup Call with RADIO-3 on TALKGROUP 2. Step 4. Observe that only RADIO-4 will be able to monitor and respond to the call. Step 5. Power off the control channel at SITE 1. Step 6. Observe that the control channel rotates to the next available channel capable of acting as a control channel. Step 7. Initiate a Talkgroup Call with RADIO-1 on TALKGROUP 1. Step 8. Observe that only RADIO-2 will be able to monitor and respond to the call. Step 9. Initiate a Talkgroup Call with RADIO-3 on TALKGROUP 2. Step 10. Observe that only RADIO-4 will be able to monitor and respond to the call. Power up the channel previously powered off to return the system to normal operation.

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	Pass_____ Fail_____

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Transmitter Power Failure Shutdown

1. DESCRIPTION	2. TEST
The repeaters can detect a loss or decrease in transmitter output power of all trunked repeaters connected to it. Each trunked repeater contains an internal wattmeter element. Once the forward power has decreased past the threshold set, the repeater instructs the Zone Controller to take the channel out of service. If reflected power increases past the threshold set, the repeater will also instruct the Zone Controller to take the channel out of service. Once the station threshold has been exceeded and the station taken out of service a 5 minute timer will start. At the timer expiration a transmitter test will start to perform a self check on the station. This self check lasts for 20 seconds. If the station passes the self check it will be placed back into service. Note: This test should be done on a site with more than 2 channels. Failsoft will occur if the test is done on a 2 channel site. SETUP RADIO-1 - TALKGROUP 1 VERSION #1.010	Step 1. Select a channel to disconnect the transmit antenna connection to the trunked repeater. (This will cause a high VSWR condition) Step 2. Key RADIO-1 so that the selected channel is assigned, and verify that the channel disables due to an alarm condition. Verify that this alarm is reported at the Unified Event Manager (UEM). Step 3. Wait 30 seconds after the failure then restore the transmit antenna connection to the trunked repeater. Step 4. Using the station LEDs, verify that the time it takes from the corrected connection to the station being placed back in service is within 5 minutes. Step 5. Verify the Unified Event Manager (UEM) also reports the station being back in service. Pass_____ Fail_____

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Redundant Zone Controller Switching/Automatic Switchover

1. DESCRIPTION	2. TEST
In a non-DSR configuration the Zone Controller subsystem uses two Zone Controllers in a redundant configuration. The backup Zone Controller is made active either upon the loss of the active ZC or upon a user command from the Unified Network Configurator (UNC). In a DSR configuration there are 4 Zone Controllers in a redundant configuration. Any one of the 4 could be active to keep the Zone Sites in Wide Area Trunking. If using the Dynamic Resilience Zone configuration the Unified Event Manager will report the Zone Controller switchover in both Unified Event Managers (UEM). SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 2 RADIO-3 - TALKGROUP 1 RADIO-3 - SITE - Site3 (Site3 should be in another Zone if applicable.) * The Zone Controllers should be successfully synchronized before performing this procedure. VERSION #1.030	Step 1. Verify the state of the current Zone Controllers is Active or Standby in the Unified Network Configurator (UNC). (There will be 2 Zone Controllers in single Zone or 4 in the case of DSR zones.) Step 2. Reset the active Zone Controller application via the Unified Event Manager (UEM) diagnostic. Step 3. Verify using UNC, UEM and ZoneWatch (if applicable) that the standby Zone Controller becomes active and brings all sites back wide. Wait for the Radios to settle out the site affiliations. Step 4. Key RADIO-1 and verify that RADIO-2 and RADIO-3 hear the audio. Step 5. End the call from RADIO-1. Step 6. Verify that Zone Controller that was reset comes back up to a “Standby” state. Pass_____ Fail_____

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Primary Prime Site Link Failure – Simulcast GEO Prime Site to Zone Core Ethernet Link

1. DESCRIPTION	2. TEST
This test shows that in the event of a failure of the link between the primary prime site and the zone core, the voice traffic from the primary prime site is rerouted through the secondary prime site to the zone core. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 2 VERSION #1.040	Step 1. Initiate a talkgroup call from RADIO-1 on TALKGROUP 1. Keep the radio keyed up until instructed to dekey. Observe that RADIO-2 receives the audio. Step 2. Create a site link failure (prime site to zone core) by disconnecting the Ethernet LAN cable from the Prime Site Router at the primary prime SITE 1. Step 3. Worst case, observe an audio hole in from RADIO-1 to RADIO-2, but that the call continues. Dekey RADIO-1. Step 4. Observe, in the Unified Event Manager, that the site link has failed. Step 5. Observe that the SITE 1 continues to operate in Wide Area Trunking. Step 6. Initiate a talkgroup call from RADIO-1 on TALKGROUP 1. Keep the radio keyed up until instructed to dekey. Observe that RADIO-2 receives the audio. Step 7. Reconnect the Ethernet LAN cable to the Prime Site Router at the primary prime SITE 1. Step 8. Observe that SITE 1 continues to operate in Wide Area Trunking.

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	Step 9. Observe that RADIO-2 receives the audio from RADIO-1. Step 10. Dekey RADIO-1. Pass_ Fail__

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Single Comparator Failure at Primary GEO-Prime Site

1. DESCRIPTION	2. TEST
This test shows that in the event of a failure of any comparator at the primary prime site, channel capacity will be restored via the redundant comparator at the secondary prime site. Simulcast remote site audio for that channel is rerouted to the corresponding comparator at the secondary prime site and that comparator assumes voting functionality for that channel. SETUP NOTE: If there are a large number of channels, you may want to reduce the number of available channels. RADIO-1 TALKGROUP 1 - SITE 1 RADIO-2 TALKGROUP 1 - SITE 1 VERSION #1.040	Step 1. Initiate a talkgroup call from RADIO-1 on TALKGROUP 1 on the channel to be demonstrated. Keep the radio keyed until instructed to release. Observe that RADIO-2 receives the audio. Step 2. Create a comparator failure at the primary prime site by disconnecting the Ethernet LAN cable between the comparator and the corresponding Prime Site LAN Switch. Step 3. Observe the call is dropped. Step 4. Observe, in the Unified Event Manager, that the comparator has failed. Step 5. Observe that the channel returns to service after a brief outage. Step 6. Using RADIO-1, initiate talkgroup calls until the test channel is assigned. Observe that RADIO-2 receives the audio. Step 7. Dekey RADIO-1. Step 8. Reconnect the Ethernet LAN cable between the comparator and the Prime Site LAN switch at the primary prime site. Observe that the comparator is brought back online and that any alarms are cleared in the UEM. Step 9. Observe that the channel remains in service

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	Step 10. Using RADIO-1, initiate talkgroup calls until the test channel is assigned. Observe that RADIO-2 receives the audio. Dekey RADIO-1. Pass_____ Fail_____

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1.14 System Management Tests

ZoneWatch (Single Site)

1. DESCRIPTION	2. TEST
ZoneWatch is an administration tool for monitoring radio traffic on a system. A system manager can use ZoneWatch to analyze traffic patterns for load distribution and troubleshoot radio and site problems. ZoneWatch is used to view current radio traffic activity for the system. This activity is displayed in graphical format, color-coded for easy identification of the type of activity occurring on the system. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 1 RADIO-3 - TALKGROUP 1 RADIO-3 - SITE - SITE 1 RADIO-4 - TALKGROUP 1 RADIO-4 - SITE - SITE 1 VERSION #1.010	Step 1. Verify that ZoneWatch has been configured for the Grid and Multi Site Scroll windows to display system activity. Step 2. From the PC Application Launcher, select a zone folder. Step 3. From within that zone, select ZoneWatch. Step 4. Select the appropriate profile to be able to view the channel usage on the system. Step 5. Initiate several calls with the radios and observe that the appropriate channel usage information is displayed. Pass_____ Fail_____

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Affiliation Display (Single Site)

1. DESCRIPTION	2. TEST
Affiliation Display is a Private Radio Network Management (PRNM)application that monitors the mobility of radios for a particular zone. Mobility describes how radio users travel between different sites in a zone and how they communicate with other members of their assigned talkgroup or even with members outside of their talkgroup. A radio can be viewed in more than one zone. As a radio roams from one site to another or changes talkgroups, Affiliation Display updates and displays the affiliation and de- affiliation information for a monitored radio. This information can be useful for the troubleshooting and tracking of radios in the system and for monitoring the movement of traffic within a zone. The Affiliation Display is divided into three sections: Site Viewer, Talkgroup Viewer, and Radio Viewer. - The Site Viewer displays the number of talkgroups and number of radios affiliated to that site. - The Talkgroup Viewer displays how many radios are affiliated to that talkgroup and the number of sites at which the talkgroup has radios affiliated. - The Radio Viewer window displays affiliation information for a custom list of radios. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 1 RADIO-3 - TALKGROUP 2 RADIO-3 - SITE - SITE 1 RADIO-4 -	Step 1. Add RADIO-1,RADIO-2,RADIO-3, and RADIO-4 to the Affiliation Display. Step 2. Verify that RADIO-1 and RADIO-2 show they are affiliated to SITE 1 and TALKGROUP 1. Step 3. Verify that RADIO-3 and RADIO-4 show they are affiliated to SITE 1 and TALKGROUP 2. Step 4. Change the talkgroup of RADIO-1 and RADIO-2 to TALKGROUP 2. Step 5. Verify that RADIO-1 and RADIO-2's affiliated talkgroup changes to TALKGROUP 2 on the Affiliation Display. Pass_____ Fail_____

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TALKGROUP 2 RADIO-4 - SITE - SITE 1 VERSION #1.010	

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Configuration Management - Subscriber Capabilities

1. DESCRIPTION	2. TEST
The Provisioning Manager (PM) controls the parameters for all radio users and dispatchers on the system. Within the Subscriber section, the Radio User Configuration Window enables the network manager to tailor SmartZone subscribers' capabilities. Multigroup, Secure, Call Alert, Private Call, and Telephone Interconnect are some of the features that can be enabled or disabled. The features that could be unique to the particular user are configured directly in the Radio User Configuration Window. The features that could be configured the same for a group of users are placed into records called profiles. The network manager references the profile which contains the desired setup for these features from the Radio User Configuration Window. Note - A profile must already exist to be referenced through the Radio Configuration Window but can be modified later if needed. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 2 * Flag both radios to be capable of Call Alert, Private Call, and Dispatch Calls. * Set the "User Enabled" flag to YES for both RADIO- 1 and RADIO-2.	Step 1. Initiate a Call Alert (PAGE) from RADIO-1 to RADIO-2. Verify that RADIO-2 receives the Call Alert. Step 2. Change the Call Alert Enabled flag to NO for RADIO-1 via the PM. Step 3. Initiate a Call Alert from RADIO-2 to RADIO-1. Verify that RADIO-2 receives a reject when attempting to Call Alert RADIO-1. Step 4. Change the Call Alert Enabled flag back to YES for RADIO-1 via the PM. Step 5. Initiate a Call Alert from RADIO-2 to RADIO-1. Verify that RADIO-1 now receives the Call Alert. Step 6. Initiate a Private Call (CALL) from RADIO-1 to RADIO-2. Verify that RADIO-2 receives the Private Call. Step 7. Change the Private Call Enabled flag to NO for RADIO-1 via the PM. Step 8. Initiate a Private Call from RADIO-2 to RADIO-1. Verify that RADIO-2 receives a reject when attempting to Private Call RADIO-1. Step 9. Change the Private Call Enabled flag back to YES for RADIO-1 via the PM.

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VERSION #1.010	Step 10. Initiate a Private Call from RADIO-2 to RADIO-1. Verify that RADIO-1 now receives the Private Call. Pass_____ Fail_____

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Configuration Management - Talkgroup Capabilities

1. DESCRIPTION	2. TEST
The Provision Manager (PM) controls the parameters for all radio users and dispatchers on the system. Within the Subscriber section, the Talkgroup Configuration Window enables the network manager to tailor SmartZone Talkgroup Capabilities. Emergency, Secure and Priority Monitor are some of the features that can be enabled or disabled. The features that could be unique to the particular user are configured directly in the Talkgroup Configuration Window. The features that could be configured the same for a group of users are placed into records called profiles. The network manager references the profile which contains the desired setup for these features from the Talkgroup Configuration Window. NOTE: A profile must already exist to be referenced through the Talkgroup Configuration Window but can be modified later if needed. SETUP RADIO-1 - TALKGROUP 1 RADIO- 1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO- 2 - SITE - SITE 2 * Set the "Talkgroup Enabled" flag to YES for TALKGROUP 1 in the PM. VERSION #1.030	Step 1. Initiate a call from RADIO-1 on TALKGROUP 1. Verify that RADIO-2 hears the RADIO-1 audio. Step 2. Change the Talkgroup Enabled flag to NO for TALKGROUP 1 via the PM. Step 3. Initiate a call from RADIO-1 or RADIO-2 on TALKGROUP 1. Verify that neither radio can initiate a call because of the change in status of the Group Enabled Flag of TALKGROUP 1. Step 4. Initiate an Emergency call from RADIO-1. Verify that both the console (if present) and RADIO-2 can hear the transmission. Step 5. Dekey RADIO-1. Step 6. Change the Talkgroup Enabled flag back to YES for TALKGROUP 1 via the PM. Step 7. Initiate a call from RADIO-1 on TALKGROUP 1. Verify that both the console (if present) and RADIO- 2 hear RADIO-1. Pass_____ Fail_____

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Unified Event Manager - Diagnostics - Multisite Site

1. DESCRIPTION	2. TEST
The purpose of this test is to demonstrate diagnostic commands can be sent to a Radio Frequency (RF) site and the proper status is reported at the Unified Event Manager (UEM). All commands are initiated from the UEM. For this test the MultiSite configurations will be demonstrated. SETUP NMclient01 - UEM session up and running in the Network Database view. VERSION #1.000	Step 1. From the UEM, right click on a MultiSite Site managed resource and select the Command option. Step 2. The command window opens for the Multisite Site managed resource with the following commands available: Site Trunking, Site Off, Wide Trunking, and Site Failsoft. Step 3. Select Site Trunking and click the Apply button. Step 4. The command execution status is displayed in the command window. After the command is executed, the site enters site trunking mode. The event is displayed in the Network Events Browser. An alarm is displayed in the Alarms Browser. Step 5. Select Site Off and click the Apply button. Step 6. The command execution status is displayed in the command window. After the command is executed, the site enters site off mode. The event is displayed in the Network Events Browser. An alarm is displayed in the Alarms Browser. Step 7. Select Wide Trunking and click the Apply button. Step 8. The command execution status is displayed in the command window. After the command is executed, the site enters wide trunking mode. The event is displayed in the Network Events Browser.

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	Pass_____ Fail_____

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1.16 Dynamic System Resilience

Automatic Registration Server (Presence Notifier) Registration

1. DESCRIPTION	2. TEST
This test shows that in the event of a Primary HA Packet Data Gateway failure, the (ARS) will continue to operate using the Secondary HA Packet Data Gateway to reach its Presence clients. Note: This test applies to IV&D only. During the switchover, some data packets may be lost as the Primary PDG is switched. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 VERSION #1.030	Step 1. Register with Automatic Registration Server (ARS). Step 2. In the vCenter Application or at the Unified Event Manager, verify that the Packet Data Gateway on VMS01 is Primary. Note: for M1 only the single Ethernet link between PDG and GGSN needs to be disconnected Step 3. In the VMWare ESXi Web UI for VMS01, select 'Reboot'. Step 4. Observe that the Unified Event Manager remains in communication with the Packet Data Gateway 1 and verify Packet Data Gateway 1's Redundancy state is 'Active' using the Unified Network Configurator (UNC) "Quick Commands". Step 5. Observe in the Unified Event Manager the Link Status of the Packet Data Gateway's common managed links do not change. Step 6. Verify that RADIO-1 remains registered with the ARS. Pass_____ Fail_____

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Primary Core Link Failure - Ethernet Console Site Link

1. DESCRIPTION	2. TEST
This test will demonstrate that in the event of a failure of a link to the Primary Core, the Console Site Router routes packets through the Backup Core to the Primary Core. The Site Control Paths are unaffected by the failure. NOTE: This test is not applicable in a system with combined Core/Exit Router/Gateways. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 2 CONSOLE-1 - TALKGROUP 1 CONSOLE-1 - SITE - CONSITE 1 Zone Controller 1: Active Zone Controller 2: Standby (Does not apply for M1 DSR) Zone Controller 3: Standby Zone Controller 4: Standby (Does not apply for M1 DSR) VERSION #1.030	Step 1. Initiate a Talkgroup call from CONSOLE-1 on TALKGROUP 1. Verify that RADIO-1 and RADIO-2 receive audio. Step 2. Pull the power cords to both the Core Routers in the Primary Core. Step 3. Observe, in both Unified Event Managers, both the Core Routers in the Primary Core have failed. Step 4. Verify, via the Unified Event Manager (e.g. in the Primary Core), that Zone Controllers 1 and 2, and the Consoles in the site are unaffected by the Console site link outage. The Zone Controller state can also be found using the UNC "Quick Command" feature. Note: For M1 ZC2 is not present Step 5. Initiate a Talkgroup call from CONSOLE-1 on TALKGROUP 1. Verify that RADIO-1 and RADIO-2 receive audio. Step 6. Plug in the power cords to both the Core Routers in the Primary Core. Upon restoration of the link, the Console Site Router routes packets to the Primary Core. Step 7. Initiate a Talkgroup call from CONSOLE-1 on TALKGROUP 1. Verify that RADIO-1 and RADIO-2 receive audio. Pass_____ Fail_____

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Single Ethernet Link RF Site Router Path Failure

1. DESCRIPTION	2. TEST
This test will demonstrate in the event of a failure of an RF Site Router's Ethernet link path to the Primary Core, in a single site router configuration, the RF Site Router routes packets through the Backup Core to the Primary Core. The Site Control Paths are unaffected by the failure. NOTE: This test is not applicable in a system with combined Core/Exit Router/Gateways. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 2 Zone Controller 1: Active Zone Controller 2: Standby (Does not apply for M1 DSR) Zone Controller 3: Standby Zone Controller 4: Standby (Does not apply for M1 DSR) VERSION #1.030	Step 1. Initiate a Talkgroup call from RADIO-1 on TALKGROUP 1. Verify that RADIO-2 receives the audio. Step 2. Pull the power cords to both the Core Routers in the Primary Core. Note: For M1 this is only one Core Router in the primary and one Core Router in the backup core. Step 3. Observe, in both Unified Event Managers, both the Core Routers in the Primary Core have failed. Step 4. Verify, via the Unified Event Manager (e.g. in the Primary Core), that Zone Controllers 1 and 2, Packet Data Gateway1 and the RF sites are unaffected by the RF site link outage. Step 5. Initiate a Talkgroup call from RADIO-1. Verify RADIO-2 receives the audio. Step 6. Plug the power cords in to both the Core Routers in the Primary Core. Note: For M1 this is only one Core Router in the primary and one Core Router in the backup core. Pass_____ Fail_____

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Primary Core Failure - Switchover to Back-up Core (Voice and Data Services)

1. DESCRIPTION	2. TEST
Dynamic System Resilience (DSR) allows a system to continue to function with minimal loss of voice and/or Data communications due to the failure of any controlling master site. This test will demonstrate in the event of a complete Primary Core failure, the Backup Core takes over in order to return the system back to wide area trunking. Some of the Backup Core equipment automatically takes over while the Network Management servers like the Provisioning Manager Server and Unified Network Configurator require manual switchover. Note: This test case applies to the following data services - Trunking IV&D and Conventional IV&D data. The test case can be executed with any or all of the supported data services and should include the appropriate packet data gateways, sites and the radio personalities in the setup of the test case. SETUP RADIO-1 - TALKGROUP 1 RADIO-1 - SITE - SITE 1 RADIO-2 - TALKGROUP 1 RADIO-2 - SITE - SITE 1 RADIO-5 - TALKGROUP 1 Mobile Data Terminal (MDT) connected to RADIO-5 UDP Tool installed on both the MDT and Host computers Zone Controller 1: Active Zone Controller 2: Standby Zone Controller 3: Standby Zone Controller 4: Standby Packet Data Gateway 1: Active Packet Data Gateway 2: Standby	Step 1. Initiate a TALKGROUP 1 call from RADIO-1. Verify that RADIO-2 receives the audio. Step 2. Using RADIO-5 MDT, configure the data application for periodic inbound data messages. (1 message every 30 seconds) Observe at the Host PC that data messages are received. Step 3. Pull the power cords to the Primary Core LAN Switches 1 & 2. (Also the redundant power supply (RPS) if equipped.) Step 4. In the Unified Network Configurator (UNC), select Zone Controllers 1 through 4 and check the redundancy state using the Quick Command feature. (Note: In a single Zone system or when the test is run on the Zone with the primary core system servers the backup UNC will need to be manually enabled to run the quick command.) Step 5. Verify that Zone Controller (ZC) 3 is Active. (Note that the transition of ZC 3 to the "Active" state causes the currently active ZC to reset and the sites will temporarily lose Wide Area Trunking while the connection to ZC 3 is established.) Step 6. In the Unified Network Configurator, select any of the Packet Data Gateways 1 and 2 and check the redundancy state using the Quick Command feature. Step 7. Verify that Packet Data Gateway 2 is Active. Step 8. Initiate a TALKGROUP 1 call from RADIO-1. Verify that RADIO-2 receives the audio.

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Unified Network Configurator 1: Active Unified Network Configurator 2: Standby User Configuration Manager: Active User Configuration Manager 2: Standby System Statistics Server 1: Active System Statistics Server 2: Active VERSION #1.050	Step 9. Observe at the Host PC that received data messages have continued. Step 10. If the backup servers were enabled for the test, they should now be disabled. Return the system to normal by powering up the core switches. Verify once the Zone Controllers start to communicate only 1 Zone Controller will be active. Pass_____ Fail_____

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Provisioning Manager and Unified Network Configurator Switchover

1. DESCRIPTION	2. TEST
Configuration management is performed through the Provisioning Manager and Unified Network Configurator (UNC) applications. In a system with DSR, a redundant Provisioning Management Server is added to the backup core of the master site that contains the primary Provisioning Manager. If the system contains more than two master site pairs, the Provisioning Manager (PM) may be located at any one zone's primary/backup master sites. Only one PM/UNC can be active at a time, determined by the network manager or operator. Therefore, one PM/UNC is configured to be in the active state and the other in warm standby state.	Step 1. Log into the primary and secondary Provisioning Manager Server's Administration Menu. Verify from the Administration Menu that the primary server is "Enabled" and the backup is "Disabled".
This test will demonstrate that in the event of a failure of the Provisioning Manager or the Unified Network Configurator in the Primary Core, the Backup Core counterparts can take over in order to continue providing configuration services. This switchover requires the user to de-activate the Unified Network Configurator and Provisioning Manager, and activate both the Provisioning Manager and Unified Network Configurator in the Backup Core.	Step 2. Log into the primary and secondary Unified Network Configurator's Administration Menu. Verify from the Administration Menu that the primary server is "Enabled" and the backup is "Disabled".
SETUP	Step 3. On the primary Provisioning Manager Server's Administration Menu select the option to disable the application. Verify that the server disables from the menu.
Provisioning Manager 1: Active Provisioning Manager 2: Standby Unified Network Configurator 1: Active Unified Network Configurator 2: Standby	Step 4. On the primary Unified Network Configurator Administration Menu, select the option to disable the application. Verify that the server disables from the menu.
For a M3 Mixed Zone (nonDSR and DSR zones in system). PM 1 and UNC 1 should be placed in a nonDSR zone and PM2 and UNC 2 should be placed in a backup core of a DSR zone.	Step 5. Verify that the current Unified Network Configurator and Provisioning Management applications are no longer available on a Network Management client.
VERSION #1.030	Step 6. On the secondary (DSR) Provisioning Manager Server's Administration Menu select the option to enable the application. Verify that the server enables from the menu.
	Step 7. On the secondary (DSR) Unified Network Configurator Administration Menu, select the option to enable the application. Verify that the server enables from the menu.

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	Step 8. From the provisioning manager perform a "Force initialize" on the required devices. Step 9. Verify from a Network Management client that the Unified Network Configurator and Provisioning Management applications are now available, running on the backup servers. (The Motorola application may need to be restarted.) Step 10. Return the system to normal operation. Pass_____ Fail____

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Signoff Certificate

By their signatures below, the following witnesses certify they have observed the system Acceptance Test Procedures.

Signatures

WITNESS: _____ Date: _____

Please Print Name: _____ _____

Initials:

Please Print Title: _____

WITNESS: _____ Date: _____

Please Print Name: _____ _____

Initials:

Please Print Title: _____

WITNESS: _____ Date: _____

Please Print Name: _____ _____

Initials:

Please Print Title: _____

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City of Fort Lauderdale

Attachment 61 - Warranty and Post-Warranty Matrix

RFP # 549

December 18, 2025

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Section 1

RFP Section 3.45.1.1.A1a Warranty and Post-Warranty Matrix

Warranty and Post-Warranty Services

Service	Warranty	Post Warranty
Network Monitoring	✔ **Exceed – Five Year Coverage**	✔
System Technical Support	✔ **Exceed – Five Year Coverage**	✔
Dispatch Services	✔ **Exceed – Five Year Coverage**	✔
On-site – Premier (2 Hour)	✔ **Exceed – Five Year Coverage**	✔
Infrastructure Repair	✔ **Exceed – Five Year Coverage**	✔
Third Party Equipment (Eventide, MW, MPLS, Eltek DC Power, VSS)	✔ **Exceed – Five Year Coverage**	✔
System Update Service (SUS)	✔ **Exceed – Five Year Coverage**	✔
Remote SUS	✔ **Exceed – Five Year Coverage**	✔
Annual Preventive Maintenance	✔ **Exceed – Five Year Coverage**	✔
Managed Detection and Response (MDR) / EDR	**OPTIONAL**	**OPTIONAL**
System Upgrade Agreement	✔ **Comply**	✔

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City of Fort Lauderdale

Attachment 62 - 3.45.6.2 Per-Site Granular Detail (Includes Cost Proposal)

RFP # 549

December 18, 2025

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Section 1

RFP Section 3.45.6.2 Per-Site Granular Detail

The Cost Proposal Page and pricing are provided in the following pages.

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1.1 Cost Proposal Page

SECTION VI - COST PROPOSAL PAGE

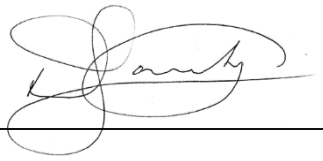
Proposer Name: Motorola Solutions, Inc.

Proposer agrees to supply the products and services at the prices proposed in accordance with the terms, conditions and specifications contained in this RFP.

Cost to the City: Contractor shall quote firm, fixed, costs for all services/products identified in this request for proposal. These firm fixed costs for the project include any costs for travel and miscellaneous expenses. No other costs will be accepted.

See attached Excel document **358 – Pricing Worksheet Template** to provide the comprehensive breakdown of costs including but not limited to labor, equipment, materials, parts, and maintenance.

Submitted by:

Daniel Sanchez	
Name (printed)	Signature
December 18, 2025	Vice President, MSSSI & Director of Sales
Date	Title

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1.2 Pricing Summary

System Cost Summary - City of Fort Lauderdale P25 System			
SYSTEM INFRASTRUCTURE SUMMARY			
Description	**Total Equipment**	**Total Services**	**Total Price - Equipment and Services**
Cost Summary - Master Site & Co-Located Remote Sites (City of Fort Lauderdale Core):			
Core Site Equipment and System Services Including Shelter with 6ft Platform - City of Fort Lauderdale Core - State of Florida Tower	$4,880,404	$2,386,280	$7,266,684
DSR Site Equipment and System Services - City of Fort Lauderdale DSR Core - Utilities Tower	$1,331,364	$812,683	$2,144,047
Cost Summary - Antenna Sites:			
Remote Site 3 Equipment and Services - Point of Americas	$647,141	$699,629	$1,346,771
Remote Site 4 Equipment and Services - Playa Del Sol	$646,807	$698,495	$1,345,302
Cost Summary - Dispatch (Primary & Backup)			
Dispatch Equipment and Services - 1300 W Broward Dispatch	$765,845	$384,542	$1,150,386
Dispatch Equipment and Services - 2200 Executive Airport Way	$816,000	$384,542	$1,200,541
Cost Summary - Spare Equipment			
Recommended Spare Equipment	$416,021	-	$416,021

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Cost Summary - Other System Items:			
Spectrum Fingerprinting & Noise Floor Testing	-	$62,857	$62,857
Coverage Testing (CATP)	-	$301,257	$301,257
Frequency Licensing (Forms, Licensing, Fees)	-	$72,886	$72,886
Video Site Security (4 Sites)	-	$135,469	$135,469
Subscriber Re-programming for existing Subs	-	$146,683	$146,683
Training	-	$267,382	$267,382
Microwave Services & Site Services: Path and Site Surveys, Engineering, FCC Coordination, Project Management - All Sites	-	$577,437	$577,437
Broadband Connectivity Gateway / Critical Connect Equipment, Services, and Subscription - Years 6-20 ** in the Outyears Section	-		$456,000
ASTRO Connectivity Equipment, Services, and Subscription - Years 6-20 ** in the Outyears Section	-		$240,850
Generator Allowance for Condo Building Sites* - *See note below*	-		$650,000
Total System Infrastructure Cost (before incentives)	**$9,503,582**	**$6,930,142**	**$17,780,574**
City of Fort Lauderdale P25 Contract Incentives:			
All infrastructure items as proposed with purchase of SUA and maintenance outyears			-$1,893,477
One time additional discount for **infrastructure items** as proposed			-$1,562,118
One time **customer loyalty** discount with purchase of all infrastructure items as proposed			-$568,043
One time discount for **ASTRO Core** with purchase of all infrastructure items as proposed			-$710,054
One time discount for **Equipment Trade In** with purchase of all infrastructure items as proposed			-$473,328

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One time discount for **Enhancing in Building Coverage** with purchase of all infrastructure items as proposed			-$93,822
Total System Infrastructure Cost (after incentives)			**$12,479,733**
Performance / Payment Bond & Freight			$90,559
Total System Infrastructure Cost (Including 5-Year Warranty)			**$12,570,292**
REQUIRED OUTYEARS SUMMARY			
Description			**Total Price**
Year 1-5 Infrastructure Warranty - All Provided Equipment Including 3rd Party			Included
Critical Connect			
Year 1 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			Included
Year 2 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			Included
Year 3 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			Included
Year 4 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			Included
Year 5 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			Included

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Year 6 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$60,241
Year 7 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$60,639
Year 8 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$61,054
Year 9 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$61,485
Year 10 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$61,934
Year 11 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$64,410
Year 12 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$64,896
Year 13 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$65,400
Year 14 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$65,925
Year 15 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$66,471

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Year 16 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$69,130
Year 17 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$69,720
Year 18 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$70,335
Year 19 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$70,973
Year 20 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses			$71,638
ASTRO Connectivity Services - Year 1			Included
ASTRO Connectivity Services - Year 2			Included
ASTRO Connectivity Services - Year 3			Included
ASTRO Connectivity Services - Year 4			Included
ASTRO Connectivity Services - Year 5			Included
ASTRO Connectivity Services - Year 6			$23,936
ASTRO Connectivity Services - Year 7			$23,936
ASTRO Connectivity Services - Year 8			$23,936
ASTRO Connectivity Services - Year 9			$23,936
ASTRO Connectivity Services - Year 10			$23,936
ASTRO Connectivity Services - Year 11			$24,655
ASTRO Connectivity Services - Year 12			$24,655
ASTRO Connectivity Services - Year 13			$24,655

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ASTRO Connectivity Services - Year 14			$24,655
ASTRO Connectivity Services - Year 15			$24,655
ASTRO Connectivity Services - Year 16			$25,394
ASTRO Connectivity Services - Year 17			$25,394
ASTRO Connectivity Services - Year 18			$25,394
ASTRO Connectivity Services - Year 19			$25,394
ASTRO Connectivity Services - Year 20			$25,394
Total Services (Years 1-20)			**$1,354,176**
LIFECYCLE SUMMARY			
Year 6 Infrastructure Lifecycle (SUA)			$183,942
Year 7 Infrastructure Lifecycle (SUA)			$191,299
Year 8 Infrastructure Lifecycle (SUA)			$198,951
Year 9 Infrastructure Lifecycle (SUA)			$206,910
Year 10 Infrastructure Lifecycle (SUA)			$215,185
Year 11 Infrastructure Lifecycle (SUA)			$223,793
Year 12 Infrastructure Lifecycle (SUA)			$232,745
Year 13 Infrastructure Lifecycle (SUA)			$242,055
Year 14 Infrastructure Lifecycle (SUA)			$251,737
Year 15 Infrastructure Lifecycle (SUA)			$261,806
Year 16 Infrastructure Lifecycle (SUA)			$272,279
Year 17 Infrastructure Lifecycle (SUA)			$283,170
Year 18 Infrastructure Lifecycle (SUA)			$294,497
Year 19 Infrastructure Lifecycle (SUA)			$306,278
Year 20 Infrastructure Lifecycle (SUA)			$318,529

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Total Lifecycle (SUA)			**$3,683,176**
MAINTENANCE SUMMARY			
Year 6 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$598,221
Year 7 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$750,040
Year 8 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$758,817
Year 9 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$684,941
Year 10 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$785,594
Year 11 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$742,763
Year 12 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$772,452
Year 13 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$803,643
Year 14 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$1,025,198
Year 15 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$870,899
Year 16 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$1,334,543
Year 17 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$948,956
Year 18 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$991,079

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Year 19 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$1,035,440
Year 20 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party			$1,082,172
Total Maintenance (Years 5-20)			**$13,184,758**
Total System Infrastructure Cost with Years 1-20 Maintenance and Lifecycle			**$30,792,402**
Cost Savings Options (Estimates ONLY)			
Remove Hot Standby			-$67,368
Re-Use Existing GTR's Till End of Life and Upgrade to DBR in 2031			-$956,788
Remove 3 NM Clients			-$70,719
Remove Raised Platform for the State of Florida Shelter			-$243,600
Remove Microwave for 2 Dispatch Sites	-$346,296	-$189,387	-$535,683
Remove Relevant Microwave Civil scope for 2 Dispatch Sites	-$50,544	-$335,118	-$385,662
Remove Primary and Backup Dispatch	-$1,581,845	-$878,592	-$2,460,437
Motorola has not priced an option to add on to the Broward County Core due to the compliance with the RFP, however that option can be priced at a later stage if desired by the City			
Motorola can provide the City with leasing options at a later stage based on the options chosen and the final sale price			

** Note: Motorola Solutions has included an allowance of $650,000 for generators at the Condo Sites per the following parameters:*

Motorola Solutions has included an allowance to address the potential necessity of generators at each of the Condo Sites. Motorola Solutions and the City of Fort Lauderdale will work together to determine further generator requirements.

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If the actual generator costs exceed the allowance, Motorola Solutions will invoice the additional cost to City of Fort Lauderdale for payment. If the actual generator costs are less than the stated allowance, Motorola Solutions will provide a Technology Credit to the City of Fort Lauderdale"

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1.3 State of Florida – Core Prime RF1

Future State of Florida Tower- Core/Virtual Prime/RF Site - 1						
Primary/Redundant Site						
Equipment	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Transmitters	10	$69,404	$694,037	24.99%	$52,088	$520,881
Transmitter Antenna System	2	$11,772	$23,544	25%	$8,828	$17,657
Receiver Antenna System	1	$28,910	$28,910	25%	$21,683	$21,683
Network Equipment	1	$154,298	$154,298	25%	$115,723	$115,723
Mutual Aid System	1	$140,141	$140,141	24.79%	$105,387	$105,387
Microwave Interface Equipment	1	$1,246,837	$1,246,837	25%	$935,128	$935,128
Base Station Gateway	1	$12,320	$12,320	10%	$11,088	$11,088
Inter SubSystem Interface (ISSI)	1	$4,050,000	$4,050,000	82.44%	$711,200	$711,200
DC Power	1	$280,464	$280,464	25%	$210,348	$210,348
Network Management	1	$5,634	$5,634	14.46%	$4,819	$4,819
DVRS	5	$25,394	$126,970	26.11%	$18,764	$93,822
						$2,747,736
Compound/Room	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Core	1	$1,022,438	$1,022,438	24.99%	$766,891	$766,891
Prime	1	$491,181	$491,181	24.94%	$368,667	$368,667
KVL	1	$10,896	$10,896	24.86%	$8,187	$8,187
						$1,143,745
Compound/Room	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Equipment Shelter (Greenfield)	1	$1,177,289	$1,177,289	16%	$988,923	$988,923
						$988,923
On-Site Work	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Site Civil Modifications; includes A&E; MW Dish installs; Shelter Install	LOT					$286,392

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						$286,392
Administration and Engineering	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Project Management	LOT					$487,348
System Engineering and Technologist, Documentation, Engineering Studies, Optimization, Networking, Travel, Staging, Equipment Installation	LOT					$1,384,813
BDA Allowance* - *See Note Below*	LOT					$227,727
						$2,099,888
					Total Equipment and Labor	$7,266,684

** Note: Motorola Solutions has included an allowance for BDAs per the following parameters:*

Based on the coverage prediction, Motorola Solutions has included an allowance to address the buildings that have a high probability of needing an inbuilding BDA solution. Motorola Solutions and City of Fort Lauderdale will work together after testing of the buildings is complete to determine further BDA requirements.

If the actual BDA costs exceed the allowance, Motorola Solutions will invoice the additional cost to City of Fort Lauderdale for payment. If the actual BDA costs are less than the stated allowance, Motorola Solutions will provide a Technology Credit to the City of Fort Lauderdale

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1.4 Utilities Tower – DSR Geo Prime RF2

Utilities Tower - DSR/Geo Prime Site/RF Site 2						
Primary/Redundant Site						
Equipment	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Transmitters	10	$694,037	$694,037	24.95%	$52,088	$520,881
Transmitter Antenna System	1	$11,344	$11,344	25%	$8,508	$8,508
Receiver Antenna System	1	$27,821	$27,821	25%	$20,866	$20,866
Base Station Gateway	1	$12,320	$12,320	10%	$11,088	$11,088
DC Power	1	$198,234	$198,234	25%	$148,675	$148,675
Network Management	1	$5,634	$5,634	14.46%	$4,819	$4,819
						$714,837
Compound/Room	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
DSR Core	1	$386,129	$386,129	25%	$289,597	$289,597
Geo-Redundant Prime	1	$435,531	$435,531	24.94%	$326,930	$326,930
						$616,527
On-Site Work	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Site Civil Modifications; includes A&E; MW Dish installs	LOT					$140,094
						$140,094
Administration and Engineering	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Project Management	LOT					$158,954
System Engineering and Technologist, Documentation, Engineering Studies, Optimization, Networking, Travel, Staging, Equipment Installation	LOT					$513,635
						$672,589
					Total Equipment and Labor	$2,144,047

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1.5 Dispatch Consoles – Primary & Backup

Dispatch Site - Consoles (Primary & Backup)						
1300 W Broward Dispatch						
Equipment	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Base Station Gateway	1	$12,320	$12,320	10%	$11,088	$11,088
Dispatch Consoles	6	$94,486	$566,913	24.99%	$70,875	$425,249
Gateway Control Stations	6	$22,179	$133,071	25.80%	$16,457	$98,744
Logging	1	$201,275	$201,275	24.97%	$151,026	$151,026
Network Equipment	1	$82,890	$82,890	17.11%	$68,708	$68,708
Network Management	1	$8,740	$8,740	20.04%	$6,988	$6,988
Power Distribution	1	$5,389	$5,389	25%	$4,042	$4,042
						$765,845
2200 Executive Airport Way						
Equipment	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Base Station Gateway	1	$12,320	$12,320	10%	$11,088	$11,088
Dispatch Consoles	8	$ 94,486	$755,884	24.99%	$70,875	$566,998
Gateway Control Stations	8	$20,942	$167,534	25.84%	$15,530	$124,244
Network Equipment	1	$60,829	$60,829	18.33%	$49,677	$49,677
Network Management	1	$11,964	$11,964	21.37%	$9,406	$9,406
Power Distribution	1	$5,389	$5,389	25%	$4,042	$4,042
						$765,455
Compound/Room	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Monopole Tower	1	$386,129	$386,129	25%	$50,544	$50,544
						$50,544
On-Site Work	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Site Civil Modifications; includes A&E; MW Dish installs	LOT					$199,476
						$199,476

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Administration and Engineering	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Project Management	LOT					$139,783
System Engineering and Technologist, Documentation, Engineering Studies, Optimization, Networking, Travel, Staging, Equipment Installation	LOT					$429,825
						$569,608
					Total Equipment and Labor	$2,350,928

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1.6 RF3 – Point of Americas

Point of Americas - Site 3						
RF Site						
Equipment	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Base Station Gateway	1	$12,320	$12,320	10%	$11,088	$ 11,088
DC Power	1	$111,956	$111,956	25%	$83,967	$ 83,967
Network Management	1	$5,634	$5,634	14.46%	$4,819	$ 4,819
Power Distribution	1	$4,060	$4,060	25%	$3,045	$ 3,045
Receiver Antenna System	1	$25,187	$25,187	25%	$18,891	$ 18,891
Transmitter Antenna System	1	$5,935	$5,935	25%	$4,450	$ 4,450
Transmitters	10	$69,404	$694,037	24.95%	$52,088	$ 520,881
						$ 647,141
On-Site Work	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Site Civil Modifications; includes A&E; MW Dish installs	LOT					$ 219,552
						$ 219,552
Administration and Engineering	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Project Management	LOT					$ 106,253
System Engineering	LOT					$ 373,825
						$ 480,078
					Total Equipment and Labor	$ 1,346,771

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1.7 RF4 – Playa Del Sol

Playa Del Sol - Site 4						
RF Site						
Equipment	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Base Station Gateway	1	$12,320	$12,320	10%	$11,088	$ 11,088
DC Power	1	$111,956	$111,956	25%	$83,967	$ 83,967
Network Management	1	$5,634	$5,634	14.46%	$4,819	$ 4,819
Power Distribution	1	$4,060	$4,060	25%	$3,045	$ 3,045
Receiver Antenna System	1	$25,187	$24,003	25%	$18,003	$ 18,003
Transmitter Antenna System	1	$5,935	$6,673	25%	$5,004	$ 5,004
Transmitters	10	$69,404	$694,037	24.95%	$52,088	$ 520,881
						$ 646,807
On-Site Work	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Site Civil Modifications; includes A&E; MW Dish installs	LOT					$ 218,417
						$ 218,417
Administration and Engineering	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Project Management	LOT					$ 106,253
System Engineering	LOT					$ 373,825
						$ 480,078
					Total Equipment and Labor	$ 1,345,302

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1.8 Broadband Licenses

Broadband Connectivity Gateway			
	Number Req'd	**Unit Cost**	**Extended Cost**
Equipment, Project Management, Systems Engineering & Technologist Services	LOT		$456,000
Total One Time Cost			**$456,000**
Description - Annual Subscription Services			
Year 1 Device Subscription	100	Included	Included
Year 1 On-Site Service	1	Included	Included
Year 2 Device Subscription	100	Included	Included
Year 2 On-Site Service	1	Included	Included
Year 3 Device Subscription	100	Included	Included
Year 3 On-Site Service	1	Included	Included
Year 4 Device Subscription	100	Included	Included
Year 4 On-Site Service	1	Included	Included
Year 5 Device Subscription	100	Included	Included
Year 5 On-Site Service	1	Included	Included
Year 6 Device Subscription	100	Included	Included
Year 6 On-Site Service	1	$ 60,241	$ 60,241
Year 7 Device Subscription	100	Included	Included
Year 7 On-Site Service	1	$ 60,639	$ 60,639
Year 8 Device Subscription	100	Included	Included
Year 8 On-Site Service	1	$ 61,054	$ 61,054
Year 9 Device Subscription	100	Included	Included
Year 9 On-Site Service	1	$ 61,485	$ 61,485
Year 10 Device Subscription	100	Included	Included
Year 10 On-Site Service	1	$ 61,934	$ 61,934
Year 11 Device Subscription	100	Included	Included
Year 11 On-Site Service	1	$ 64,410	$ 64,410

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Year 12 Device Subscription	100	Included	Included
Year 12 On-Site Service	1	$ 64,896	$ 64,896
		$ -	$ -
Year 13 Device Subscription	100	Included	Included
Year 13 On-Site Service	1	$ 65,400	$ 65,400
Year 14 Device Subscription	100	Included	Included
Year 14 On-Site Service	1	$ 65,925	$ 65,925
Year 15 Device Subscription	100	Included	Included
Year 15 On-Site Service	1	$ 66,471	$ 66,471
Year 16 Device Subscription	100	Included	Included
Year 16 On-Site Service	1	$ 69,130	$ 69,130
Year 17 Device Subscription	100	Included	Included
Year 17 On-Site Service	1	$ 69,720	$ 69,720
		$ -	$ -
Year 18 Device Subscription	100	Included	Included
Year 18 On-Site Service	1	$ 70,335	$ 70,335
Year 19 Device Subscription	100	Included	Included
Year 19 On-Site Service	1	$ 70,973	$ 70,973
Year 20 Device Subscription	100	Included	Included
Year 20 On-Site Service	1	$ 71,638	$ 71,638
Total Price - Annual Subscription Services			**$ 984,251**

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1.9 ACS

ASTRO Connectivity Services (ACS)			
	Number	**Unit**	**Extended**
Description	**Req'd**	**Cost**	**Cost**
Equipment, Project Management, Systems Engineering & Technologist Services	LOT	-	$240,850
Total One Time Cost	-	-	$240,850
Annual Subscription Services			
ASTRO Connectivity Services - Year 1	1	-	Included
ASTRO Connectivity Services - Year 2	1	-	Included
ASTRO Connectivity Services - Year 3	1	-	Included
ASTRO Connectivity Services - Year 4	1	-	Included
ASTRO Connectivity Services - Year 5	1	-	Included
ASTRO Connectivity Services - Year 6	1	-	$23,936
ASTRO Connectivity Services - Year 7	1	-	$23,936
ASTRO Connectivity Services - Year 8	1	-	$23,936
ASTRO Connectivity Services - Year 9	1	-	$23,936
ASTRO Connectivity Services - Year 10	1	-	$23,936
ASTRO Connectivity Services - Year 11	1	-	$24,655
ASTRO Connectivity Services - Year 12	1	-	$24,655
ASTRO Connectivity Services - Year 13	1	-	$24,655
ASTRO Connectivity Services - Year 14	1	-	$24,655
ASTRO Connectivity Services - Year 15	1	-	$24,655
ASTRO Connectivity Services - Year 16	1	-	$25,394
ASTRO Connectivity Services - Year 17	1	-	$25,394
ASTRO Connectivity Services - Year 18	1	-	$25,394
ASTRO Connectivity Services - Year 19	1	-	$25,394
ASTRO Connectivity Services - Year 20	1	-	$25,394
Total Price Years 1-20 ASTRO Connectivity Services Subscription			**$369,925**

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1.10 System Maintenance

SYSTEM MAINTENANCE - OEM MANUFACTURED EQUIPMENT																							
YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	Subtotal	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	Subtotal	YEAR 11	YEAR 12	YEAR 13	YEAR 14	YEAR 15	Subtotal	YEAR 16	YEAR 17	YEAR 18	YEAR 19	YEAR 20	Subtotal	Total
Included	Included	Included	Included	Included	Included	$69,504	$72,282	$75,171	$78,176	$81,303	$376,436	$84,555	$87,937	$91,455	$95,113	$98,918	$457,978	$102,874	$106,989	$111,269	$115,720	$120,348	$557,200	$1,391,614
Included	Included	Included	Included	Included	Included	$87,793	$91,302	$94,951	$98,747	$102,696	$475,489	$106,804	$111,076	$115,519	$120,140	$124,945	$578,484	$129,943	$135,141	$140,547	$146,168	$152,015	$703,814	$1,757,787
Included	Included	Included	Included	Included	Included	$31,613	$32,876	$34,190	$35,557	$36,979	$171,215	$38,458	$39,997	$41,596	$43,260	$44,991	$208,302	$46,790	$48,662	$50,609	$52,633	$54,738	$253,432	$632,949
Included	Included	Included	Included	Included	Included	$291,086	$302,721	$314,820	$327,406	$340,500	$1,576,533	$354,120	$368,285	$383,016	$398,337	$414,270	$1,918,028	$430,841	$448,075	$465,998	$484,638	$504,023	$2,333,575	$5,828,136
Included	Included	Included	Included	Included	Included	$182,390	$189,680	$197,261	$205,147	$213,352	$987,830	$221,886	$230,762	$239,992	$249,592	$259,575	$1,201,807	$269,958	$280,757	$291,987	$303,667	$315,813	$1,462,182	$3,651,819
Included	Included	Included	Included	Included	Included	$42,841	$44,553	$46,334	$48,186	$50,113	$232,027	$52,118	$54,202	$56,371	$58,625	$60,970	$282,286	$63,409	$65,946	$68,583	$71,327	$74,180	$343,445	$857,758
Included	Included	Included	Included	Included	Included	$64,127	$66,690	$69,355	$72,128	$75,012	$347,312	$78,013	$81,133	$84,379	$87,754	$91,264	$422,543	$94,915	$98,711	$102,660	$106,766	$111,037	$514,089	$1,283,944
Included	Included	Included	Included	Included	Included	$84,414	$87,788	$91,296	$94,946	$98,744	$457,188	$102,693	$106,801	$111,073	$115,516	$120,137	$556,220	$124,942	$129,940	$135,137	$140,543	$146,165	$676,727	$1,690,135
Included	Included	Included	Included	Included	Included	$347,080	$360,963	$375,401	$390,417	$406,036	$1,879,897	$422,276	$439,168	$456,733	$475,003	$494,003	$2,287,183	$513,764	$534,315	$555,687	$577,913	$601,031	$2,782,710	$6,949,790
Included	Included	Included	Included	Included	Included	$1,200,848	$1,248,855	$1,298,779	$1,350,710	$1,404,735	$6,503,927	$1,460,923	$1,519,361	$1,580,134	$1,643,340	$1,709,073	$7,912,831	$1,777,436	$1,848,536	$1,922,477	$1,999,375	$2,079,350	$9,627,174	$24,043,932
YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	Subtotal	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	Subtotal	YEAR 11	YEAR 12	YEAR 13	YEAR 14	YEAR 15	Subtotal	YEAR 16	YEAR 17	YEAR 18	YEAR 19	YEAR 20	Subtotal	Total
Included	Included	Included	Included	Included	Included	$36,835	$38,307	$39,839	$41,431	$43,088	$199,500	$44,812	$46,604	$48,468	$50,407	$52,423	$242,714	$54,520	$56,701	$58,969	$61,328	$63,781	$295,299	$737,513
Included	Included	Included	Included	Included	Included	$46,527	$48,387	$50,321	$52,333	$54,426	$251,994	$56,603	$58,867	$61,222	$63,670	$66,217	$306,579	$68,866	$71,621	$74,485	$77,465	$80,563	$373,000	$931,573
Included	Included	Included	Included	Included	Included	$16,754	$17,423	$18,120	$18,844	$19,598	$90,739	$20,382	$21,197	$22,045	$22,927	$23,844	$110,395	$24,797	$25,789	$26,821	$27,894	$29,010	$134,311	$335,445
Included	Included	Included	Included	Included	Included	$154,267	$160,433	$166,845	$173,515	$180,455	$835,515	$187,673	$195,180	$202,987	$211,106	$219,551	$1,016,497	$228,333	$237,466	$246,965	$256,843	$267,117	$1,236,724	$3,088,736
Included	Included	Included	Included	Included	Included	$96,661	$100,525	$104,542	$108,722	$113,070	$523,520	$117,593	$122,297	$127,188	$132,276	$137,567	$636,921	$143,070	$148,793	$154,744	$160,934	$167,371	$774,912	$1,935,353
Included	Included	Included	Included	Included	Included	$26,243	$27,291	$28,382	$29,517	$30,697	$142,130	$31,925	$33,202	$34,530	$35,912	$37,348	$172,917	$38,842	$40,396	$42,011	$43,692	$45,440	$210,381	$525,428
Included	Included	Included	Included	Included	Included	$33,985	$35,343	$36,756	$38,225	$39,754	$184,063	$41,344	$42,998	$44,718	$46,507	$48,367	$223,934	$50,302	$52,314	$54,406	$56,583	$58,846	$272,451	$680,448
Included	Included	Included	Included	Included	Included	$44,737	$46,525	$48,384	$50,319	$52,331	$242,296	$54,424	$56,601	$58,865	$61,220	$63,669	$294,779	$66,216	$68,864	$71,619	$74,483	$77,463	$358,645	$895,720
Included	Included	Included	Included	Included	Included	$183,942	$191,299	$198,951	$206,910	$215,185	$996,287	$223,793	$232,745	$242,055	$251,737	$261,806	$1,212,136	$272,279	$283,170	$294,497	$306,278	$318,529	$1,474,753	$3,683,176
Included	Included	Included	Included	Included	Included	$639,951	$665,533	$692,140	$719,816	$748,604	$3,466,044	$778,549	$809,691	$842,078	$875,762	$910,792	$4,216,872	$947,225	$985,114	$1,024,517	$1,065,500	$1,108,120	$5,130,476	$12,813,392
Included	Included	Included	Included	Included	Included	$1,200,848	$1,248,855	$1,298,779	$1,350,710	$1,404,735	$6,503,927	$1,460,923	$1,519,361	$1,580,134	$1,643,340	$1,709,073	$7,912,831	$1,777,436	$1,848,536	$1,922,477	$1,999,375	$2,079,350	$9,627,174	$24,043,932
N/A	N/A	N/A	N/A	N/A		46.71%	46.71%	46.71%	46.71%	46.71%		46.71%	46.71%	46.71%	46.71%	46.71%		46.71%	46.71%	46.71%	46.71%	46.71%		
Included	Included	Included	Included	Included	Included	$639,951	$665,533	$692,140	$719,816	$748,604	$3,466,044	$778,549	$809,691	$842,078	$875,762	$910,792	$4,216,872	$947,225	$985,114	$1,024,517	$1,065,500	$1,108,120	$5,130,476	$12,813,392.00

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1.11 3rd Party Equipment Maintenance

3RD PARTY EQUIPMENT MAINTENANCE																							
POST-WARRANTY MAINTENANCE SERVICE	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	Subtotal	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	Subtotal	YEAR 11	YEAR 12	YEAR 13	YEAR 14	YEAR 15	Subtotal	YEAR 16	YEAR 17	YEAR 18	YEAR 19	YEAR 20	Subtotal	Total
Third Party Maintenance (Eventide)	Included	Included	Included	Included	Included	Included	$32,904	$32,904	$32,904	$32,904	$32,904	$164,520	$35,536	$35,536	$35,536	$35,536	$35,536	$177,680	$37,313	$39,179	$41,138	$43,195	$45,355	$206,180	$548,380
Third Party Maintenance (Infinity Microwave)	Included	Included	Included	Included	Included	Included	$41,227	$41,227	$154,081	$54,560	$54,560	$345,655	$54,560	$54,560	$54,560	$54,560	$54,560	$272,800	$480,169	$54,560	$54,560	$54,560	$54,560	$698,409	$1,316,864
Third Party Maintenance (Tower Maintenance)	Included	Included	Included	Included	Included	Included	$2,958	$3,076	$3,200	$3,328	$3,461	$16,023	$3,599	$3,743	$3,893	$4,048	$4,210	$19,493	$4,379	$4,554	$4,736	$4,926	$5,123	$23,718	$59,234
Third Party Maintenance (Eltek DC Power)	Included	Included	Included	Included	Included	Included	$24,852	$26,105	$27,421	$28,803	$30,254	$137,435	$31,779	$33,381	$35,063	$36,830	$38,687	$175,740	$40,636	$42,685	$44,836	$47,096	$49,469	$224,722	$537,897
Third Party Maintenance (VSS)	Included	Included	Included	Included	Included	Included	$40,271	$172,494	$48,022	$52,440	$130,996	$444,223	$62,533	$68,286	$74,568	$270,199	$88,920	$564,506	$97,100	$106,034	$115,789	$126,441	$138,074	$583,438	$1,592,167
Yearly Total	Included	Included	Included	Included	Included	Included	$142,212	$275,806	$265,628	$172,035	$252,175	$1,107,856	$188,007	$195,506	$203,620	$401,173	$221,913	$1,210,219	$659,597	$247,012	$261,059	$276,218	$292,581	$1,736,467	$4,054,542

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1.12 Spares

SPARE EQUIPMENT						
Equipment Description	**Number Req'd**	**List Unit Cost**	**Total List**	**Discount**	**Unit Cost**	**Extended Cost**
Core Spares	LOT				$191,908	$191,908
RF Site Spares	LOT				$96,834	$96,834
Dispatch Site Spares	LOT				$80,744	$80,744
Virtual Prime Site Spares	LOT				$46,535	$46,535
SPARE EQUIPMENT SUBTOTAL						
Subtotal Equipment						$416,021

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1.13 Training

Training						
	# of Students	**List Unit Cost**	**Total List**	**Discount**	**Unit Cost**	**Extended Cost**
Dispatch Console Operator Training - On Site Fort Lauderdale	-					
CommandCentral AXS Dispatch Console Technical Workshop	Up to 12					$20,718
WAVE 5000 End User Train-the-Trainer	Up to 12					$9,418
CommandCentral AXS Dispatch Console ADMIN with CommandCentral AXS Dispatch Console Operator with ASTRO APX Mobile Consolette	4					$3,488
CommandCentral AXS Dispatch Console Operator 7 (4 hr) Sessions ASTRO APX Mobile Consolette	38					$11,825
System Administrator Training - On Site Fort Lauderdale; 2 Students						
ASTRO 25 System Overview - Online	Up to 12					Included
ASTRO 25 Applied Networking	Up to 12					$32,016
ASTRO 25 IV&D Admin Workshop	Up to 12					$32,016
ASTRO® 25 IV&D System Core Workshop	Up to 12					$32,016
ASTRO® 25 IV&D DBR RF Technical Workshop	Up to 12					$20,718
ASTRO® Virtualized Simulcast Prime Site Workshop	Up to 12					$20,718
ASTRO® 25 IV&D IP Based Digital Simulcast Workshop	Up to 12					$20,718
ASTRO® 25 IV&D Secure Communications Workshop	Up to 12					$32,016
ASTRO® 25 Domain Controller Administration	Up to 12					$20,718
ASTRO® 25 ISSI 8000 - CSSI 8000 Feature Overview	Up to 12					$2,183
Shipping & Leasing of all Training Equipment to City of Fort Lauderdale	Up to 12					$8,814
ASTRO Learning Subscription (All ASTRO and County Self-Paced Content Included) - 1 Year Subscription	Up to 12					Included
Total End-User and System Administrator Training						$267,382

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1.14 Subscribers

Subscribers							
Equipment Description	**Subscriber Model**	**Number Req'd**	**List Unit Cost**	**Total List**	**Discount**	**Unit Cost**	**Extended Cost**
High Tier - All Band Mobile - Dash Mount with 3 Yr Warranty	APX8500 Dash Mount	1	$7,613	$7,613	27%	$5,557	$ 5,557
High Tier Mobile Encryption - AES Encryption		1	$560	$560	27%	$409	$ 409
High Tier Mobile Multikey		1	$436	$436	27%	$318	$ 318
High Tier Mobile TDMA Operation		1	$530	$530	27%	$387	$ 387
High Tier Mobile Wi-Fi Operation		1	$353	$353	27%	258	$ 258
High Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$436	$436	27%	$318	$ 318
High Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$118	$118	27%	$86	$ 86
High Tier Software/Features required but not listed above		1	$2,726	$2,726	27%	$1,990	$ 1,990
High Tier Mobile Peripherals incl. all band antenna, auxiliary speaker and standard palm microphone		1	$634	$634	27%	$ 463	$ 463
Subscriptions as proposed:		1	$96	$96	0%	$ 96	$ 96
							$ 9,882
		-					

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High Tier - All Band Mobile - Remote Mount with 3 Yr Warranty	APX8500 Remote	1	$ 7,963	$ 7,963	27%	$ 5,813	$ 5,813
High Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
High Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
High Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
High Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
High Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
High Tier Mobile Peripherals incl. all band antenna, auxiliary speaker and standard palm microphone		1	$ 634	$ 634	27%	$ 463	$ 463
Subscriptions as proposed:		1	$ 96	$ 96	0%	$ 96	$ 96
							$ 10,137
		-					
High Tier - All Band Mobile - Dual Head Mount with 3 Yr Warranty	APX 8500 Remote D CH	1	$ 8,634	$ 8,634	27%	$ 6,303	$ 6,303
High Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
High Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387

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High Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
High Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
High Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
High Tier Mobile Peripherals incl. all band antenna, auxiliary speaker and standard palm microphone		1	$ 826	$ 826	27%	$ 603	$ 603
Subscriptions as proposed:		1	$ 96	$ 96	0%	$ 96	$ 96
							$ 10,767
		-					
High Tier - All Band Mobile - Motorcycle Mount with 3 Yr Warranty	APX 8500 Motorcycle	1	$ 7,613	$ 7,613	27%	$ 5,557	$ 5,557
High Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
High Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
High Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
High Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
High Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990

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High Tier Mobile Peripherals incl. all band antenna, helmet headset, and handlebar PTT		1	$ 1,314	$ 1,314	27%	$ 959	$ 959
Subscriptions as proposed:		1	$ 96	$ 96	0%	$ 96	$ 96
							$ 10,378
		-					
Mid Tier - All Band Mobile - Dash Mount with 3 Yr Warranty	APX 8500 DASH	1	$ 7,613	$ 7,613	27%	$ 5,557	$ 5,557
Mid Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
Mid Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
Mid Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
Mid Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
Mid Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
Mid Tier Mobile Peripherals incl. all band antenna, auxiliary speaker and standard palm microphone		1	$ 634	$ 634	27%	$ 463	$ 463
							$ 9,786
		-					
Mid Tier - All Band Mobile - Remote Mount with 3 Yr Warranty	APX8500 Remote	1	$ 7,963	$ 7,963	27%	$ 5,813	$ 5,813
Mid Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
Mid Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318

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Mid Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
Mid Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
Mid Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
Mid Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
Mid Tier Mobile Peripherals incl. all band antenna, auxiliary speaker and standard palm microphone		1	$ 634	$ 634	27%	$ 463	$ 463
							$ 10,041
		-					
Mid Tier - All Band Mobile - Dual Head Mount with 3 Yr Warranty	APX 8500 Remote D CH	1	$ 8,634	$ 8,634	27%	$ 6,303	$ 6,303
Mid Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
Mid Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
Mid Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
Mid Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
Mid Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
Mid Tier Mobile Peripherals incl. all band antenna, auxiliary		1	$ 826	$ 826	27%	$ 603	$ 603

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speaker and standard palm microphone							
							$ 10,671
		-					
Mid Tier - All Band Mobile - Motorcycle Mount with 3 Yr Warranty	APX 8500 Motorcycle	1	$ 7,613	$ 7,613	27%	$ 5,557	$ 5,557
Mid Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
Mid Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
Mid Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
Mid Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
Mid Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
Mid Tier Mobile Peripherals incl. all band antenna, helmet headset, and handlebar PTT		1	$ 1,314	$ 1,314	27%	$ 959	$ 959
							$ 10,282
High Tier Portable with 3 Yr Warranty	APX N70	1	$ 8,488	$ 8,488	27%	$ 6,196	$ 6,196
High Tier Portable Encryption - AES Encryption		1	$ 1,227	$ 1,227	27%	$ 896	$ 896
High Tier Portable Multikey		1	$ -	$ -	0%	$ -	$ -
High Tier Portable TDMA Operation		1	$ -	$ -	0%	$ -	$ -

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High Tier Mobile Wi-Fi Operation		1	$ -	$ -	0%	$ -	$ -
High Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ -	$ -	0%	$ -	$ -
High Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ -	$ -	0%	$ -	$ -
High Tier Software/Features required but not listed above		1	$ 300	$ 300	27%	$ 219	$ 219
High Tier Portable Accessories incl. additional battery, single unit charger, remote speaker microphone and swivel case		1	$ 1,315	$ 1,315	27%	$ 960	$ 960
							$ 8,271
		-					
Mid Tier Portable with 3 Yr Warranty	APX N50	1	$ 5,897	$ 5,897	27%	$ 4,305	$ 4,305
Mid Tier Portable Encryption - AES Encryption		1	$ 1,277	$ 1,277	27%	$ 932	$ 932
Mid Tier Portable Multikey		1	$ -	$ -	0%	$ -	$ -
Mid Tier Portable TDMA Operation		1		$ -	0%	$ -	$ -
Mid Tier Mobile Wi-Fi Operation		1		$ -	0%	$ -	$ -
Mid Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1		$ -	0%	$ -	$ -
Mid Tier Mobile Over-the-Air-Programming (OTAP) Operation		1		$ -	0%	$ -	$ -
Mid Tier Software/Features required but not listed above		1	$ 96	$ 96	27%	$ 70	$ 70
Mid Tier Portable Accessories incl. additional battery, single unit charger, remote speaker microphone and swivel case		1	$ 987	$ 987	27%	$ 721	$ 721

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							$ 6,028
		-					
Multi-unit Charger	MUC - DESKTOP N70	1	$ 1,925	$ 1,925	27%	$ 1,405	$ 1,405
Single-unit Charger	SUC- DESKTOP	1	$ 222	$ 222	27%	$ 162	$ 162
Additional Battery		1		$ -	0%	$ -	$ -
Remote Speaker Microphone	VXP750 RSM	1	$ 543	$ 543	27%	$ 396	$ 396
Swivel Case	holster case	1	$ 40	$ 40	27%	$ 30	$ 30
Belt Clip	clip	1	$ 40	$ 40	27%	$ 30	$ 30
							$ 2,023
		-					
Control Station with 3 Yr Warranty	APX Consolette	1	$ 14,228	$ 14,228	27%	$ 10,386	$ 10,386
Control Station Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
Control Station Multikey		1	$ -	$ -	0%	$ -	$ -
Control Station TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
Mid Tier Mobile Wi-Fi Operation		1	$ 412	$ 412	27%	$ 301	$ 301
Mid Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 871	$ 871	27%	$ 636	$ 636
Mid Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
Mid Tier Software/Features required but not listed above		1	$ 960	$ 960	27%	$ 701	$ 701
							$ 12,906
Control Station Antenna Assembly		1		$ -		$ -	Included
		-					$ -

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Portable Programming and Optimization	All	1	-	$ -	-	$ 162	$ 162
Mobile Programming, Optimization, Install, (and Decommission if required) - Dash Mount		1	-	$ -	-	$ 1,428	$ 1,428
Mobile Programming, Optimization, Install, (and Decommission if required) - Remote Mount		1	-	$ -	-	$ 1,686	$ 1,686
Mobile Programming, Optimization, Install, (and Decommission if required) - Dual Head Mount		1	-	$ -	-	$ 2,086	$ 2,086
Mobile Programming, Optimization, Install, (and Decommission if required) - Motorcycle Mount		1	-	$ -	-	$ 1,686	$ 1,686
Control Station Programming, Optimization, Installation, Antenna Assembly (and Decommission if required)		1	-	$ -	-	$ 1,718	$ 1,718
	-	-					$ -
Subtotal Equipment							$ 111,171
Subtotal Labor							$ 8,765
Total Equipment/Labor							**$ 119,936**

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1.15 Subscriber Maintenance

Subscriber Post-Warranty and Preventative Maintenance																
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Subscriber Services																
APX N70 - ASTRO Device Managed Services w/ Accidental Damage	Included	Included	Included	Included	Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	$0.00
APX N50 - ASTRO Device Managed Services w/ Accidental Damage	Included	Included	Included	Included	Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	$0.00
APX N30 - ASTRO Device Managed Services w/ Accidental Damage	Included	Included	Included	Included	Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	$0.00
APX6500 - Essentials Services	Included	Included	Included	Included	Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	$0.00
APX4500 - Essentials Services w/ Accidental Damage	Included	Included	Included	Included	Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	$0.00
APX8500 - Essentials Services	Included	Included	Included	Included	Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	$0.00
															Subtotal	$0.00

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1.16 Other Optional Pricing

Optionally Proposed Equipment & Services			
Equipment Description	**Quantity Req**	**List Unit Cost**	**Extended Cost**
Subscribers - Equipment, Installation, Programming, Disposal of existing Equipment, ASTRO Device Services N70 - Qty(1971) N50 - Qty(103) N30 - Qty(108) APX8500 - Qty(16) APX6500 - Qty(327) APX4500 - Qty(12)	LOT	$24,613,710	$24,613,710
Total Subscriber Equipment/Labor (before incentives)			**$24,613,710**
Subscriber Cost Incentives:			
*One time subscriber discount for purchase of all subscribers as proposed **with purchase of system**			-$12,972,338
*One Time Subscriber 5-Year Essential Services Discount with Purchase of all Subscribers as proposed			-$1,441,371
Total Subscriber Equipment and Labor (after incentives)			**$10,200,001**
Total Subscriber, Infrastructure, Warranty & Maintenance (1-20 Years) with all items as proposed			**$40,992,403**
Equipment Description	**Quantity Req**	**List Unit Cost**	**Extended Cost**
KMF	LOT	$165,426	$165,426
IMW	LOT	$124,979	$124,979
TDMA Channel Licensing, per channel	1	$101,760	$101,760
Equipment for Critical Connect Redundancy on DSR	1	$60,844	$60,844
Subscription for Incremental WAVE PTX Users (1 year)	3000	$468,000	$468,000

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Contingency ACS Link for Backup EOC if Monopole fails FAA Approval (Equipment, Project Management, Systems Engineering & Technologist Services, plus Years 1-5)	1	$86,764	$86,764

City Of Fort Lauderdale, FL Cyber Security & Cirrus Management Option

WARRANTY & MAINTENANCE SERVICES	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL (YRS 1 - 5)
Cyber Security (MDR) - OPTIONAL	$73,104	$76,029	$79,070	$82,235	$85,525	$482,762
Cirrus Central Management - OPTIONAL	$46,000	$47,840	$49,754	$51,747	$53,813	$249,154
Contingency ACS Link for Backup EOC - OPTIONAL	Included w/ Optional ACS Scope	Included w/ Optional ACS Scope	Included w/ Optional ACS Scope	Included w/ Optional ACS Scope	Included w/ Optional ACS Scope	Included w/ Optional ACS Scope
WARRANTY & MAINTENANCE SERVICES	**YEAR 6**	**YEAR 7**	**YEAR 8**	**YEAR 9**	**YEAR 10**	**TOTAL (YRS 6 - 10)**
Cyber Security (MDR) - OPTIONAL	$88,946	$92,506	$96,206	$100,051	$105,053	$482,762
Cirrus Central Management - OPTIONAL	$55,966	$58,205	$60,532	Not Included	Not Included	$174,703
Contingency ACS Link for Backup EOC - OPTIONAL	$11,983	$11,983	$11,983	$11,983	$11,983	$59,915
WARRANTY & MAINTENANCE SERVICES	**YEAR 11**	**YEAR 12**	**YEAR 13**	**YEAR 14**	**YEAR 15**	**TOTAL (YRS 11 - 15)**
Cyber Security (MDR) - OPTIONAL	$110,306	$115,821	$121,612	$127,693	$134,078	$609,510
Contingency ACS Link for Backup EOC - OPTIONAL	$12,701	$12,701	$12,701	$12,701	$12,701	$63,505
WARRANTY & MAINTENANCE SERVICES	**YEAR 16**	**YEAR 17**	**YEAR 18**	**YEAR 19**	**YEAR 20**	**TOTAL (YRS 16 - 20)**
Cyber Security (MDR) - OPTIONAL	$140,782	$147,821	$155,212	$162,972	$171,121	$777,908
Contingency ACS Link for Backup EOC - OPTIONAL	$13,456	$13,456	$13,456	$13,456	$13,456	$67,280

Use or disclosure of this proposal is subject to the restrictions on the cover page.
Motorola Solutions

**Motorola reserves the right to re-price any optionally priced items not committed to at the time of initial contract execution*

Use or disclosure of this proposal is subject to the restrictions on the cover page.
Motorola Solutions

1.17 Future Pricing

City of Fort Lauderdale, FL FUTURE PURCHASE CONSIDERATION	
Purchase Price Discount Years 6 - 10	
Fixed Site Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Antenna Related Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Console Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Control Station Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Spare Parts	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Managed & Support Services	10% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Purchase Price Discount Years 11-15	
Fixed Site Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Antenna Related Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Console Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Control Station Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Spare Parts	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Managed & Support Services	10% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Purchase Price Discount Years 16-20	
Fixed Site Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Antenna Related Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Microwave Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Console Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment

Use or disclosure of this proposal is subject to the restrictions on the cover page.
Motorola Solutions

Network Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Control Station Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Spare Parts	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Managed & Support Services	10% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment

Use or disclosure of this proposal is subject to the restrictions on the cover page.
Motorola Solutions

NON-COLLUSION STATEMENT

By signing this offer, the vendor/contractor certifies that this offer is made independently and *free* from collusion. Vendor shall disclose below any City of Fort Lauderdale, FL officer or employee, or any relative of any such officer or employee who is an officer or director of, or has a material interest in, the vendor's business, who is in a position to influence this procurement.

Any City of Fort Lauderdale, FL officer or employee who has any input into the writing of specifications or requirements, solicitation of offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement.

For purposes hereof, a person has a material interest if they directly or indirectly own more than 5 percent of the total assets or capital stock of any business entity, or if they otherwise stand to personally gain if the contract is awarded to this vendor.

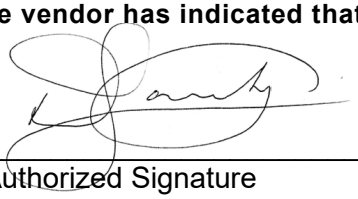
In accordance with City of Fort Lauderdale, FL Policy and Standards Manual, 6.10.8.3,

> 3.3. City employees may not contract with the City through any corporation or business entity in which they or their immediate family members hold a controlling financial interest (e.g., ownership of five (5) percent or more).
>
> 3.4. Immediate family members (spouse, parents, and children) are also prohibited from contracting with the City subject to the same general rules.

Failure of a vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the City Procurement Code.

NAME	RELATIONSHIPS
_____	_____
_____	_____
	_____
	_____

In the event the vendor does not indicate any names, the City shall interpret this to mean that the vendor has indicated that no such relationships exist.



Authorized Signature

Territory Vice President

Title

Daniel Sanchez

Name (Printed)

11/26/2025

Date

Rev 10-2025

CONTRACTOR'S CERTIFICATE OF COMPLIANCE WITH NON-DISCRIMINATION PROVISIONS OF THE CONTRACT

The completed and signed form should be returned with the Contractor's submittal. If not provided with submittal, the Contractor must submit within three business days of City's request. Contractor may be deemed non-responsive for failure to fully comply within stated timeframes.

Pursuant to City Ordinance Sec. 2-17(a)(i)(ii), bidders must certify compliance with the Non-Discrimination provision of the ordinance.

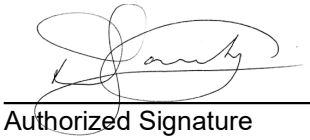
A. Contractors doing business with the City shall not discriminate against their employees based on the employee's race, color, religion, gender (including identity or expression), marital status, sexual orientation, national origin, age, disability, or any other protected classification as defined by applicable law.

Contracts. Every Contract exceeding $100,000, or otherwise exempt from this section shall contain language that obligates the Contractor to comply with the applicable provisions of this section.

The Contract shall include provisions for the following:

(i) The Contractor certifies and represents that it will comply with this section during the entire term of the contract.

(ii) The failure of the Contractor to comply with this section shall be deemed to be a material breach of the contract, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.



Authorized Signature

Daniel Sanchez, Territory Vice President

Print Name and Title

11/26/2025

Date

E-VERIFY AFFIRMATION STATEMENT

Solicitation/Bid /Contract No: 549

Project Description:

P25 Radio Communication System Refresh-Replacement - Rebid

Contractor/Proposer/Bidder acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of,

A. all persons employed by Contractor/Proposer/Bidder to perform employment duties within Florida during the term of the Contract, and,

B. all persons (including subcontractors/vendors) assigned by Contractor/Proposer/Bidder to perform work pursuant to the Contract.

The Contractor/Proposer/Bidder acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the Contract is a condition of the Contract.

Contractor/Proposer/ Bidder Company Name: Motorola Solutions, Inc.

Authorized Company Person's Signature:

Authorized Company Person's Title: Territory Vice President

Date: 11/26/2025

CITY OF FORT LAUDERDALE BID/PROPOSAL CERTIFICATION

Please Note: It is the sole responsibility of the bidder/proposer to ensure that their response is submitted electronically through the City's on-line strategic sourcing platform prior to the bid opening date and time listed. Paper bid submittals will not be accepted. All fields below must be completed. If the field does not apply to you, please note N/A in that field.

If you are a foreign corporation, you may be required to obtain a certificate of authority from the department of state, in accordance with Florida Statute §607.1501 (visit http://www.dos.state.fl.us/).

Company: (Legal Registration) Motorola Solutions, Inc. EIN (Optional): 36-1115800

Address: 500 West Monroe Street, Ste 4400

City: Chicago State: IL Zip: 60661

Telephone No.: 847-576-5000 FAX No.: _____ Email: _____

Delivery: Calendar days after receipt of Purchase Order **(section 1.02 of General Conditions)**: _____

Total Bid Discount **(section 1.05 of General Conditions)**: _____

Check box if your firm qualifies for DBE **(section 1.09 of General Conditions)**: ❑

ADDENDUM ACKNOWLEDGEMENT - Proposer acknowledges that the following addenda have been received and are included in the proposal:

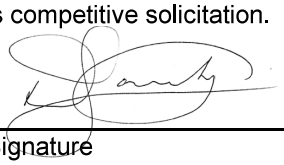
Addendum No.	Date Issued	Addendum No.	Date Issued	Addendum No.	Date Issued	Addendum No.	Date Issued
1	December 1, 2025						
2	December 1, 2025						
3	December 12, 2025						

VARIANCES: If you take exception or have variances to any term, condition, specification, scope of service, or requirement in this competitive solicitation you must specify such exception or variance in the space provided below or reference in the space provided below all variances contained on other pages within your response. Additional pages may be attached if necessary. No exceptions or variances will be deemed to be part of the response submitted unless such is listed and contained in the space provided below. The City does not, by virtue of submitting a variance, necessarily accept any variances. If no statement is contained in the below space, it is hereby implied that your response is in full compliance with this competitive solicitation. If you do not have variances, simply mark N/A.

The below signatory hereby agrees to furnish the following article(s) or services at the price(s) and terms stated subject to all instructions, conditions, specifications addenda, legal advertisement, and conditions contained in the bid/proposal. I have read all attachments including the specifications and fully understand what is required. By submitting this signed proposal, I will accept a contract if approved by the City and such acceptance covers all terms, conditions, and specifications of this bid/proposal. The below signatory also hereby agrees, by virtue of submitting or attempting to submit a response, that in no event shall the City's liability for respondent's direct, indirect, incidental, consequential, special or exemplary damages, expenses, or lost profits arising out of this competitive solicitation process, including but not limited to public advertisement, bid conferences, site visits, evaluations, oral presentations, or award proceedings exceed the amount of Five Hundred Dollars ($500.00). This limitation shall not apply to claims arising under any provision of indemnification or the City's protest ordinance contained in this competitive solicitation.

Submitted by:

Daniel Sanchez
Name (printed)


Signature

December 18, 2025
Date

Territory Vice President
Title

City of Fort Lauderdale • Procurement Services Department
101 NE 3rd Avenue, Suite 1650 • Fort Lauderdale, Florida 33301
954-828-5933 • Fax 954-828-5576 • purchase@fortlauderdale.gov

ADDENDUM NO. 1

RFP EVENT No. 549
TITLE: P25 Radio Communication System Refresh-Replacement - Rebid

ISSUED: December 1, 2025

The Specifications and Requirements have been revised. Words in strikethrough are deletions from the existing text and words in bold underline are additions to the existing text (~~strikethrough~~ removed; **underlined bolded** is added).

This addendum is being issued to make the following change(s):

1. By 5 pm on December 1, 2025, we are requesting all proposers who will be attending the pre-bid conference to provide a list of attendees representing your firm. Please include their Name(s), Title, Email Adress, and Phone #, and email this information to LPLatkin@fortlauderdale.gov.

2. **Section 2.48 Remedies** shall now read as follows:

2.48 Remedies

Remedies shall be part of any Contract awarded and negotiated with the Successful Vendor.

2.48.1 The scope of these remedies will become part of a negotiated contract and shall minimally include a graduated set of monetary penalties for unexcused late or delayed performance by the Contractor.

2.48.2 The project schedule's indicated completion date shall be the basis for assessment of completion remedies.

2.48.3 Project Manager must include on file as to how they derived to each of the liquidated damages amount.

2.48.4 ~~**2.48.3**~~ Remedies shall be applied as follows:

2.48.4.1 ~~**2.48.3.1**~~ Unexcused project completion delays of between 1 day and 30 days beyond the Contract's indicated completion date shall be assessed a penalty of $1,000 per day.

2.48.4.2 ~~**2.48.3.2**~~ Unexcused completion delays that extend from Day 31 through Day 70 beyond the Contract's indicated completion date shall be assessed with a penalty of $1,500 per day.

2.48.4.3 ~~**2.48.3.3**~~ Unexcused completion delays beyond 70 days shall be assessed as a remedy of $2,000 per day.

2.48.4.4 ~~**2.48.3.4**~~ Any unexcused project completion delay that exceeds 180 days from the Contract's indicated completion date shall trigger an automatic default of the Contract.

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2.48.4.5 ~~**2.48.3.5**~~ If the Contractor is unable to cure the reason for its completion failure within 45 additional days, the Contract will self-cancel and the Owner will initiate action against the Contractor's performance bond unless some acceptable accommodation is reached by the Contractor with the Owner. During the 45-day default period, remedies will be assessed at the rate of $3,000 per day. Remedies shall also apply to warranty repair service.

2.48.4.6 ~~**2.48.3.6**~~ The RFP and its subsequent contract with the Successful Vendor will include a mandatory warranty period where repair services performed in the field will be necessary. This RFP contains response time periods within which the Contractor is required to provide services and materials. A failure to perform on the part of the Contractor to meet its contracted response time requirements shall result in a financial penalty of the scope and amount indicated by this RFP or as modified during contract negotiations.

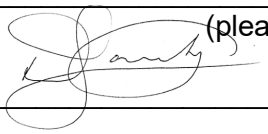
3. Section **3.1.4 Vendor Standards** shall now read as follows:

3.1.4 ~~Vendor~~ Additional Requirements and Standards

All other terms, conditions, and specifications remain unchanged.

Laurie Platkin
Senior Procurement Specialist

Company Name: Motorola Solutions, Inc.
(please print)

Bidder's Signature: 

Date: December 18, 2025

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ADDENDUM NO. 2

RFP EVENT No. 549
TITLE: P25 Radio Communication System Refresh-Replacement - Rebid

ISSUED: December 1, 2025

The Specifications and Requirements have been revised. Words in strikethrough are deletions from the existing text and words in bold underline are additions to the existing text (~~strikethrough~~ removed; **underlined bolded** is added).

This addendum is being issued to make the following change(s):

1. ~~General Conditions~~ attachment replaced with **1. General Conditions - Rev 12-2025**

All other terms, conditions, and specifications remain unchanged.

Laurie Platkin
Senior Procurement Specialist

Company Name: Motorola Solutions, Inc.
(please print)

Bidder's Signature: _____

Date: December 18, 2025

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ADDENDUM NO. 3

RFP EVENT No. 549
TITLE: P25 Radio Communication System Refresh-Replacement - Rebid

ISSUED: December 12, 2025

The Specifications and Requirements have been revised. Words in strikethrough are deletions from the existing text and words in bold underline are additions to the existing text (~~strikethrough~~ removed; **underlined bolded** is added).

This addendum is being issued to make the following change(s):

1. Attaching Sign-in sheets from Pre-Bid Conference.

2. In response to Question 6, **Section 3.3.2.22** shall now read as follows:

   3.3.2.22 Microwave paths utilizing a spur configuration shall be permitted only as an approved alternative or cost-savings option and shall not compromise overall network reliability or redundancy. **Spurs may be utilized for dispatch console locations.**

3. In response to Question 4, **Section 3.22.4** has been added:

   3.21 Fallback Control Stations

   3.22.1 Each dispatch and supervisory position shall be equipped with a P25 trunked control station to permit radio dispatch operations to continue in the event of radio console equipment or connectivity failures.

   *Attach Fallback Control Station documentation for this section

   3.22.2 These control stations, in addition to the minimum requirements specified by the Control Station Specifications section of this RFP, must contain an alphanumeric display to provide information on talk-group selection and emergency call alerts.

   3.22.3 Each control station shall be operated either by a stand-alone footswitch and headset jack or be integrated to the console and operate with the console footswitch and headset jack.

   3.22.4 Control stations should be located in radio rooms at corresponding locations.

4. In response to Question 5, attaching updated drawings for the new PD headquarters radio room on the roof and antenna grid.

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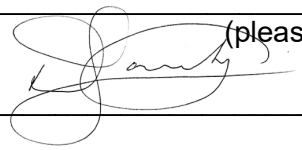
All other terms, conditions, and specifications remain unchanged.

Laurie Platkin
Senior Procurement Specialist

Company Name: Motorola Solutions, Inc.
(please print)

Bidder's Signature: 

Date: December 18, 2025

FINANCE DEPARTMENT

RFP PRE-PROPOSAL MEETING SIGN-IN SHEET

WE BUILD COMMUNITY

DATE: 12/02/2025 **TIME:** 09:00 (●) AM ( ) PM

OPENING DATE: 12/18/2025 **PROCUREMENT CONTACT:** Laurie Platkin

RFP#: 549 **RFP TITLE:** P25 Radio Communication System Refresh-Replacement - Rebid

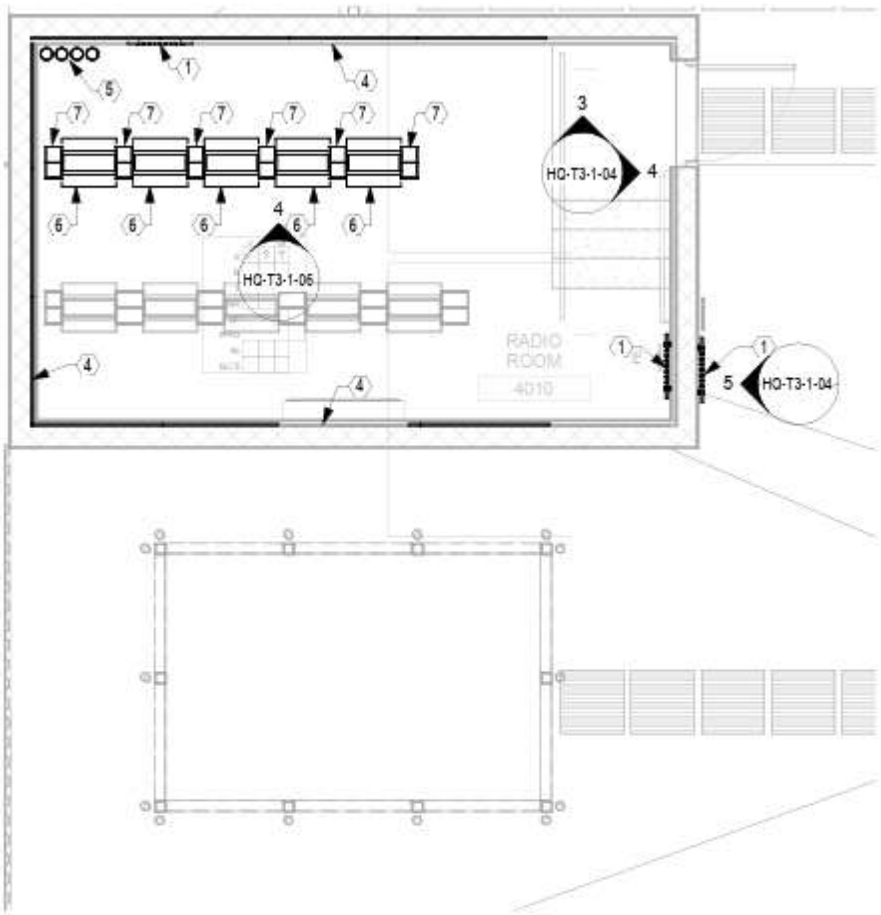
NAME	COMPANY	PHONE	EMAIL
Laurie Platkin	City of Fort Lauderdale	954-828-5138	lplatkin@fortlauderdale.gov
Jason Swift	City of Fort Lauderdale	954-828-5790	jswift@fortlauderdale.gov
James Baker	City of Fort Lauderdale	954-828- 5732	jbaker@fortlauderdale.gov
Wayne Gomez	II	954-828-3553	WGomez@fortlauderdale.gov

549 - P25 Radio Communication System Refresh-Replacement – Rebid

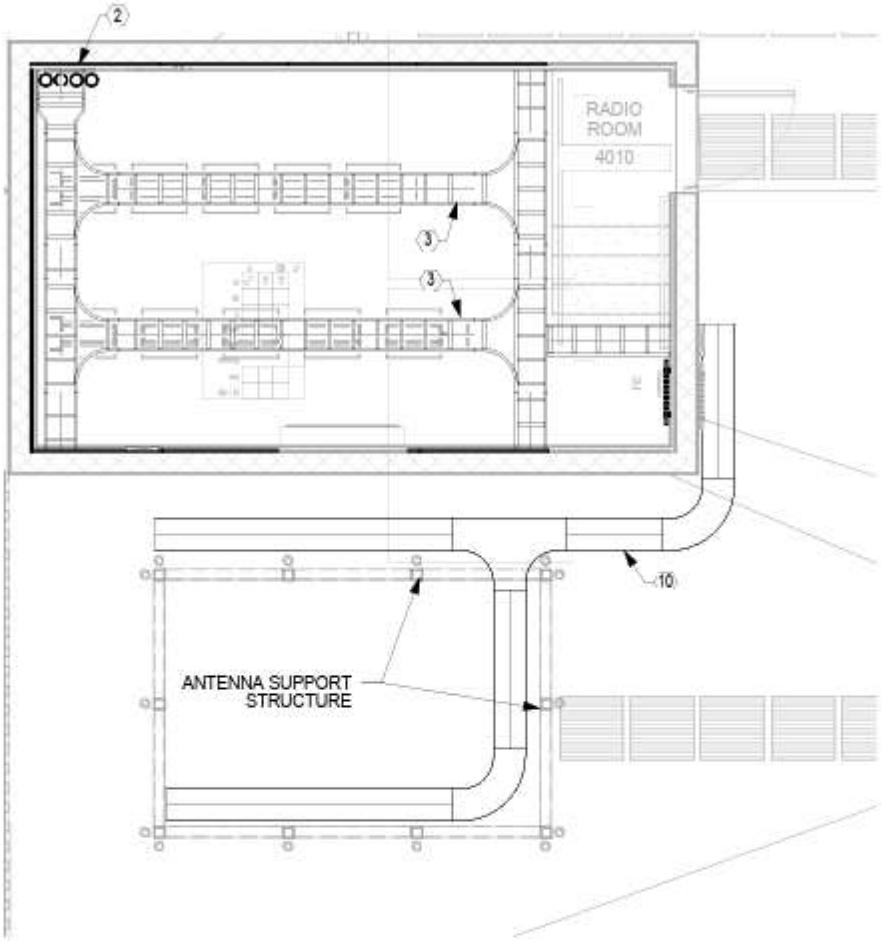
Additional Meeting Attendees

Laurie Platkin	City of Fort Lauderdale	954-828-5138	lplatkin@fortlauderdale.gov
Cindy York	EF Johnson Technologies, Inc.	214.288.8208	cyork@efji.com
Matt Koelker	EF Johnson Technologies, Inc.	469-556-7666	matt.koelker@efji.com
Marshall Paisner	Highland Wireless	561.400.9011	marshall@highlandwireless.com
Joe Warner	Motorola Solutions	312-204-9300	joseph.warner@motorolasolutions.com
Ben Denby	Motorola Solutions	561-719-1562	ben.dembyiii@motorolasolutions.com
Ishaan Kohli	Motorola Solutions	765-413-8773	ishaan.kohli@motorolasolutions.com
Andrew Dent	Motorola Solutions	954-632-9640	andrew.dent@motorolasolutions.com
Jason Weihrich	Motorola Solutions	561-339-5733	jason.weihrich@motorolasolutions.com
Rick Wolochatiuk	Communications Intl.	772-205-5863	rwolochatiuk@ask4ci.com
Mark Stanley	Communications Intl.	772-321-7203	mstanley@ask4ci.com
Steve Fisher	Communications Intl.	772-321-4150	sfisher@ask4ci.com
Harry Kirms	Kirms Communications	561-577-8827	harrykirms@hotmail.com
Tim Baker	Kirms Communications	561-577-8827	harrykirms@hotmail.com

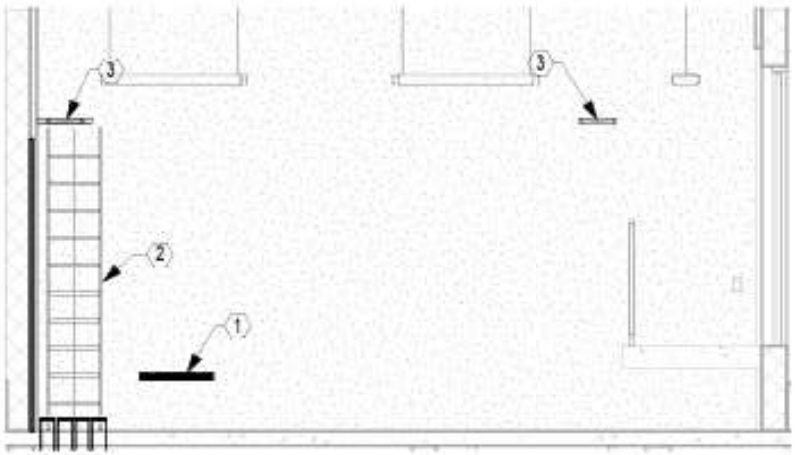
Rooftop Radio Room Detail (A)



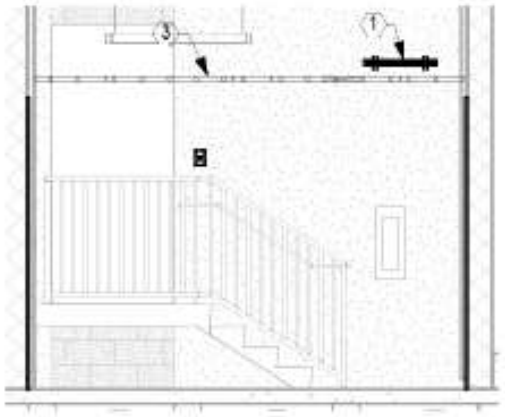
1 | HQ BLDG - RADIO RM 4010 - EQUIPMENT LAYOUT
HQ-T2-1-4D
Scale: 1/4" = 1'-0"



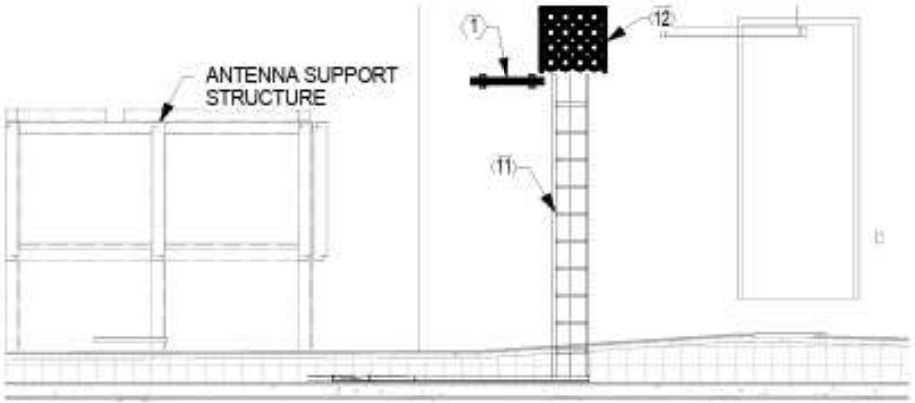
2 | HQ BLDG - RADIO RM 4010 - CABLE PATHWAY LAYOUT
Scale: 1/4" = 1'-0"



3 | RADIO RM 4010 - NORTH WALL ELEVATION
HQ-T3-1-04 | Scale: 1/4" = 1'-0"

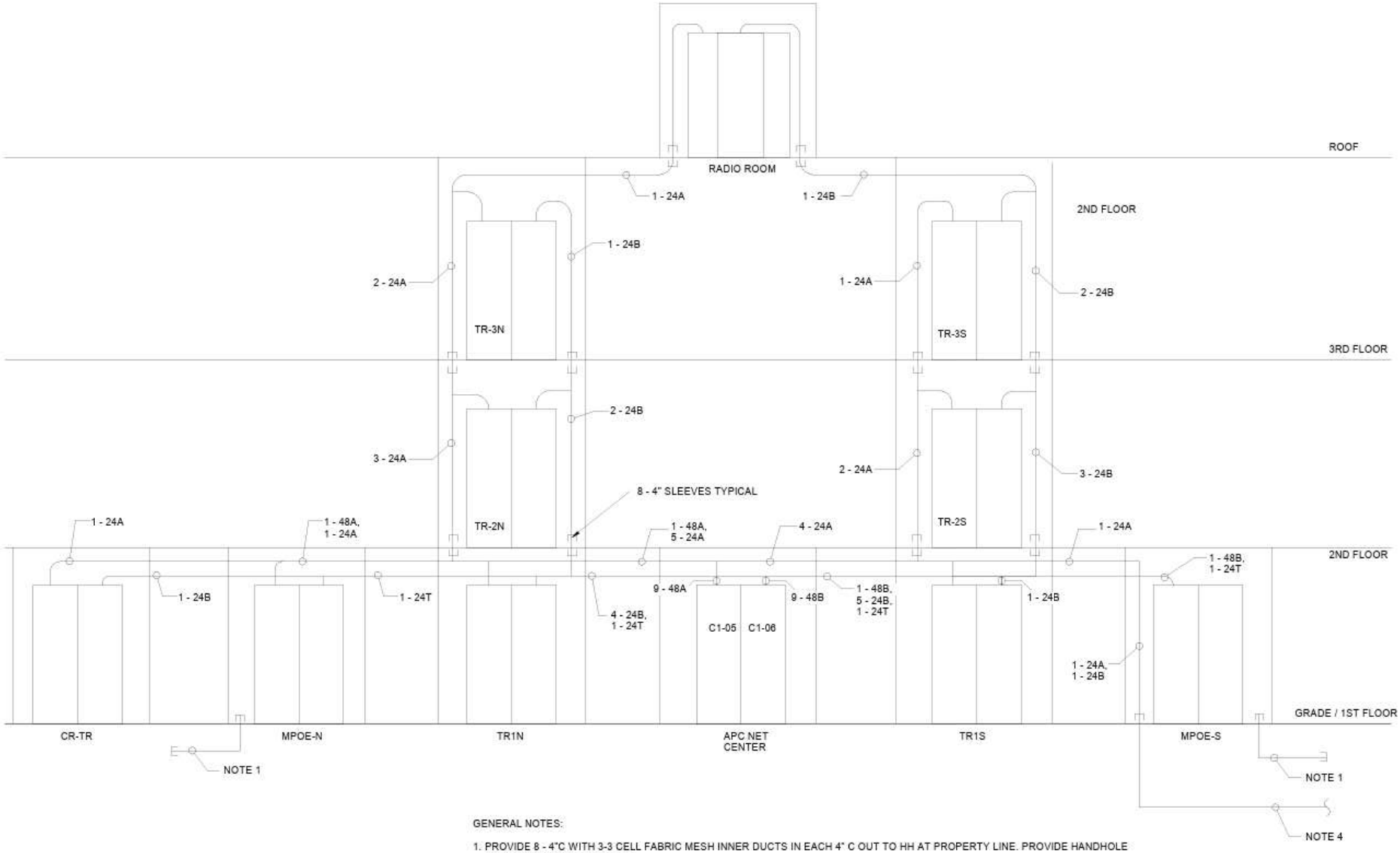


4 | RADIO RM 4010 - EAST WALL ELEVATION
HQ-T3-1-04 | Scale: 1/4" = 1'-0"



5 | RADIO RM 4010 - OUTSIDE WALL ELEVATION
HQ-T3-1-04 | Scale: 1/4" = 1'-0"

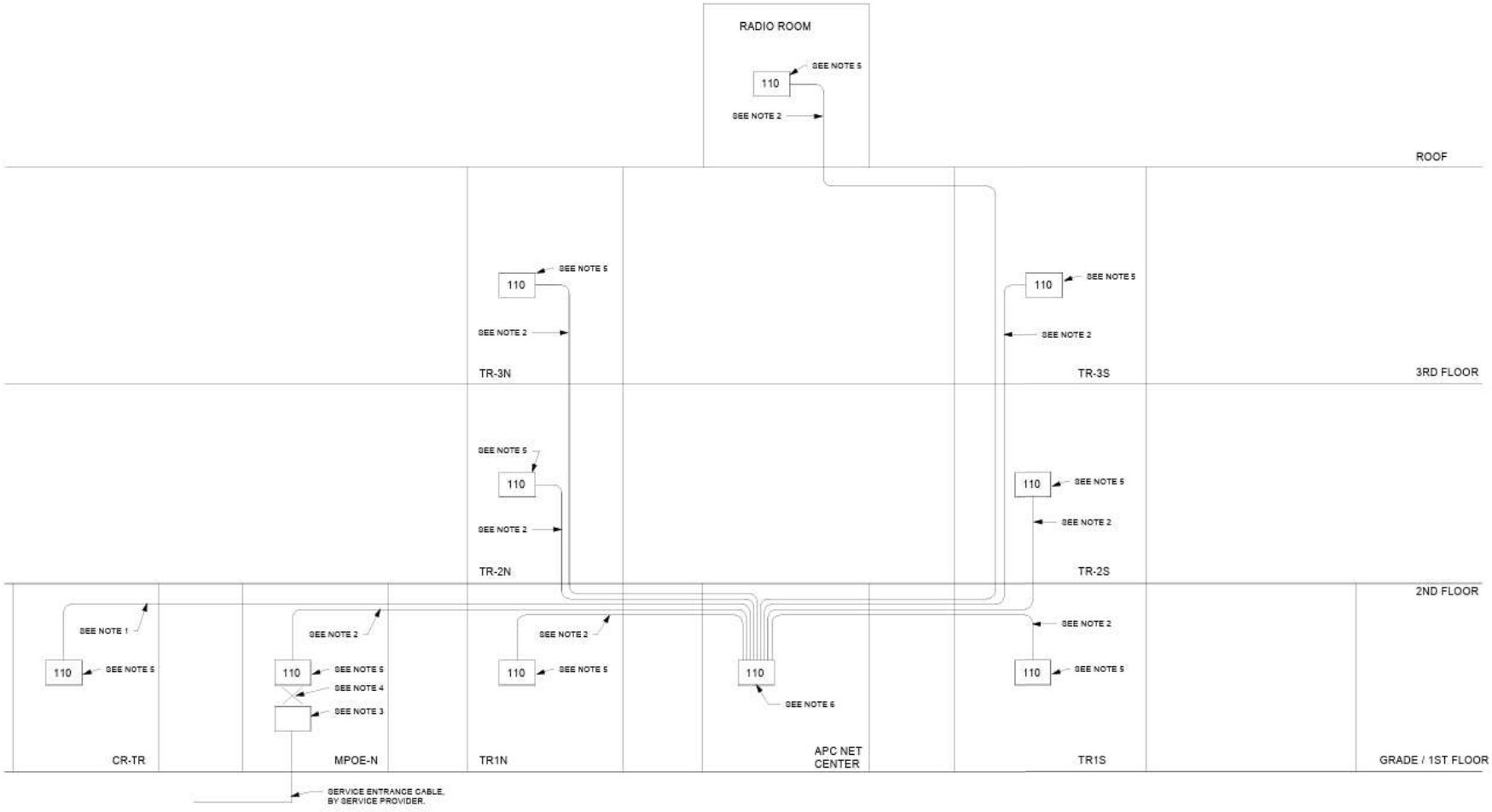
Fiber Connectivity



GENERAL NOTES:

1. PROVIDE 8 - 4"C WITH 3-3 CELL FABRIC MESH INNER DUCTS IN EACH 4" C OUT TO HH AT PROPERTY LINE. PROVIDE HANDHOLE (HH) WITH LOCKABLE COVER.
2. ALL QUANTITIES SHOWN ARE SMF. ALL RISER SHALL BE 24 STRAND SMF TYPICAL.
3. A = A PATH. B = B PATH. T = TIE (AB). N = NORTH. S = SOUTH.
4. PROVIDE 2 - 4" C, 1 - 24A, 1 - 24B TO GARAGE TR 6 - 01. PROVIDE 1 - 3 CELL FABRIC MESH INNER DUCT IN EACH 4" C.
5. ALL "A" AND "B" PATH FIBER SHALL BE DIVERSE ROUTED.

Copper Riser

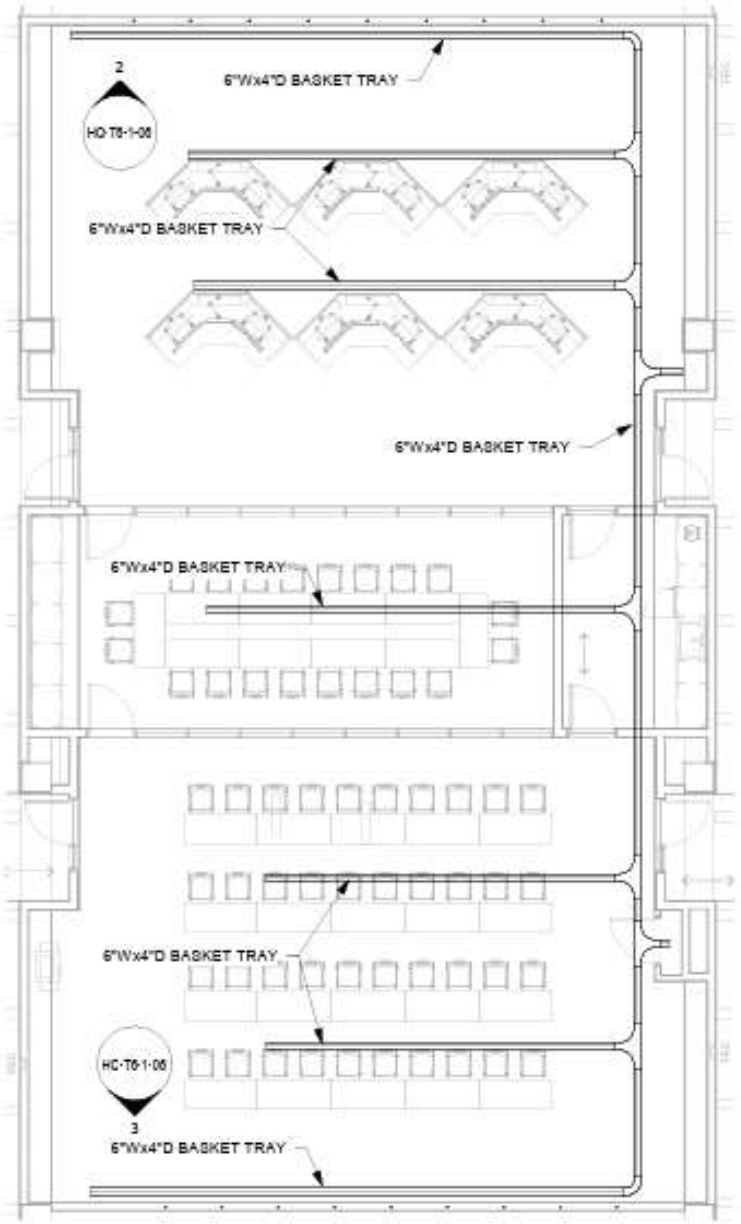


SHEET NOTES:

1. PROVIDE 25 PAIR CATEGORY 5e COPPER BACKBONE CABLE.
2. PROVIDE 100 PAIR CATEGORY 5e COPPER BACKBONE CABLE.
3. PROVIDE WALL MOUNTED 100 PAIR SURGE PROTECTION.
4. PROVIDE CROSS CONNECT WIRING.
5. PROVIDE WALL MOUNTED 100 PAIR 110 BLOCK.
6. PROVIDE WALL MOUNTED 300 PAIR 110 BLOCK.

1 **FLPH COPPER RISER DIAGRAM**
NTS

Operations Center Layout (3rd Floor)



1 HQ-T2-1-3C

LEVEL 03 - OPERATIONS CENTER A-B - UNDER RAISED FLOOR TRAY LAYOUT

Scale: 1/8" = 1'-0"

Panel: LC4A

Location: RADIO ROOM 4010
Supply From: LC3D
Mounting: SURFACE
Enclosure: PER SPECIFICATIONS
Type: CRITICAL

Volts: 208/120 Wye
Phases: 3
Wires: 4
Neutral: 200%

A.I.C. Rating: 10,000
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 100 A

Notes:

CKT	Load Type	Circuit Description	Brk	P	Wire Size	Cond. Size	A (Kva)		B (Kva)		C (Kva)		Cond. Size	Wire Size	P	Brk	Circuit Description	Load Type	CKT
1	MISC	RADIO RACK	30 A	1	10	3/4"	3.00	3.00					3/4"	10	1	30 A	RADIO RACK	MISC	2
3	MISC	RADIO RACK	30 A	1	10	3/4"			3.00	3.00			3/4"	10	1	30 A	RADIO RACK	MISC	4
5	MISC	RADIO RACK	30 A	1	10	3/4"					3.00	3.00	3/4"	10	1	30 A	RADIO RACK	MISC	6
7	MISC	RADIO RACK	30 A	1	10	3/4"	3.00	3.00					3/4"	10	1	30 A	RADIO RACK	MISC	8
9	MISC	RADIO RACK	30 A	1	10	3/4"			3.00	3.00			3/4"	10	1	30 A	RADIO RACK	MISC	10
11	RP	RADIO ROOM RECEPTACLES	20 A	1	12	1/2"					0.36	0.36	1/2"	12	1	20 A	RADIO ROOM RECEPTACLES	RP	12
13		SPARE	20 A	1	--	--	0.00	0.00					--	--	1	20 A	SPARE		14
15		SPARE	20 A	1	--	--			0.00	0.00			--	--	1	20 A	SPARE		16
17		SPARE	20 A	1	--	--					0.00	0.00	--	--	1	20 A	SPARE		18
19		SPARE	20 A	1	--	--	0.00	0.00					--	--	1	20 A	SPARE		20
21		SPARE	20 A	1	--	--			0.00	0.00			--	--	1	20 A	SPARE		22
23		SPARE	20 A	1	--	--					0.00	0.00	--	--	1	20 A	SPARE		24
25		SPARE	20 A	1	--	--	0.00	0.00					--	--	1	20 A	SPARE		26
27		SPARE	20 A	1	--	--			0.00	0.00			--	--	1	20 A	SPARE		28
29		SPARE	20 A	1	--	--					0.00	0.00	--	--	1	20 A	SPARE		30
31		SPARE	20 A	1	--	--	0.00	0.00					--	--	1	20 A	SPARE		32
33		SPARE	20 A	1	--	--			0.00	0.00			--	--	1	20 A	SPARE		34
35		SPARE	20 A	1	--	--					0.00	0.00	--	--	1	20 A	SPARE		36
37		SPARE	20 A	1	--	--	0.00	0.00											38
39		SPARE	20 A	1	--	--			0.00	0.00			--	--	3	30 A	SPD		40
41		SPARE	20 A	1	--	--					0.00	0.00							42
					Total kVA p...		12.0 kVA		12.0 kVA		6.7 kVA								
					Total Amps...		106.8 A		106.8 A		56.0 A								

TOTAL CONNECTED LOAD: 30.7 kVA

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
MISC	30.0 kVA	100.00%	30.0 kVA		
RP - Receptacles	0.7 kVA	100.00%	0.7 kVA	**Total Conn. Load:**	30.7 kVA
				Total Est. Demand:	30.7 kVA
				Total Conn.:	85 A
				Total Est. Demand:	85 A

Panel: LC4B

Location: RADIO ROOM 4010
Supply From: LC3C
Mounting: SURFACE
Enclosure: PER SPECIFICATIONS
Type: CRITICAL

Volts: 208/120 Wye
Phases: 3
Wires: 4
Neutral: 200%

A.I.C. Rating: 10,000
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 100 A

Notes:

CKT	Load Type	Circuit Description	Brk	P	Wire Size	Cond. Size	A (Kva)		B (Kva)		C (Kva)		Cond. Size	Wire Size	P	Brk	Circuit Description	Load Type	CKT
1	MISC	RADIO RACK	30 A	1	10	3/4"	3.00	3.00					3/4"	10	1	30 A	RADIO RACK	MISC	2
3	MISC	RADIO RACK	30 A	1	10	3/4"			3.00	3.00			3/4"	10	1	30 A	RADIO RACK	MISC	4
5	MISC	RADIO RACK	30 A	1	10	3/4"					3.00	3.00	3/4"	10	1	30 A	RADIO RACK	MISC	6
7	MISC	RADIO RACK	30 A	1	10	3/4"	3.00	3.00					3/4"	10	1	30 A	RADIO RACK	MISC	8
9	MISC	RADIO RACK	30 A	1	10	3/4"			3.00	3.00			3/4"	10	1	30 A	RADIO RACK	MISC	10
11	RP	RADIO ROOM RECEPTACLES	20 A	1	12	1/2"					0.36	0.36	1/2"	12	1	20 A	RADIO ROOM RECEPTACLES	RP	12
13		SPARE	20 A	1	--	--	0.00	0.00					--	--	1	20 A	SPARE		14
15		SPARE	20 A	1	--	--			0.00	0.00			--	--	1	20 A	SPARE		16
17		SPARE	20 A	1	--	--					0.00	0.00	--	--	1	20 A	SPARE		18
19		SPARE	20 A	1	--	--	0.00	0.00					--	--	1	20 A	SPARE		20
21		SPARE	20 A	1	--	--			0.00	0.00			--	--	1	20 A	SPARE		22
23		SPARE	20 A	1	--	--					0.00	0.00	--	--	1	20 A	SPARE		24
25		SPARE	20 A	1	--	--	0.00	0.00					--	--	1	20 A	SPARE		26
27		SPARE	20 A	1	--	--			0.00	0.00			--	--	1	20 A	SPARE		28
29		SPARE	20 A	1	--	--					0.00	0.00	--	--	1	20 A	SPARE		30
31		SPARE	20 A	1	--	--	0.00	0.00					--	--	1	20 A	SPARE		32
33		SPARE	20 A	1	--	--			0.00	0.00			--	--	1	20 A	SPARE		34
35		SPARE	20 A	1	--	--					0.00	0.00	--	--	1	20 A	SPARE		36
37		SPARE	20 A	1	--	--	0.00	0.00											38
39		SPARE	20 A	1	--	--			0.00	0.00			--	--	3	30 A	SPD		40
41		SPARE	20 A	1	--	--					0.00	0.00							42
					Total kVA p...		12.0 kVA		12.0 kVA		6.7 kVA								
					Total Amps...		106.8 A		106.8 A		56.0 A								

TOTAL CONNECTED LOAD: 30.7 kVA

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
MISC	30.0 kVA	100.00%	30.0 kVA		
RP - Receptacles	0.7 kVA	100.00%	0.7 kVA	**Total Conn. Load:**	30.7 kVA
				Total Est. Demand:	30.7 kVA
				Total Conn.:	85 A
				Total Est. Demand:	85 A

Moss & Associates LLC
6363 NW 6th Way
Fort Lauderdale, Florida 33309
P: (954) 524-5678

Project: B372302 Fort Lauderdale Police Headquarters
1300 W Broward Blvd
Fort Lauderdale, Florida 33312

Submittal #051200-22.2 - 051200 - STRUCTURAL STEEL- ANTENNA ARRAY STEEL FRAMING

Revision	2	**Submittal Manager**	Angel Lopez (Moss & Associates LLC)
Type	Shop Drawing	**Spec Section**	051200 - STRUCTURAL STEEL
Status	Open	**Responsible Contractor**	Bostic Steel, Inc.
Submit By		**Received From**	Kyle Thomas (Bostic Steel, Inc.)
Issue Date	Sep 15, 2025	**Lead Time**	
Received Date	Sep 8, 2023		
Final Due Date	Sep 29, 2025		
Priority Status			
Distribution	Angel Lopez (Moss & Associates LLC), Caroline Yeakel (City of Fort Lauderdale), Kyle Thomas (Bostic Steel, Inc.), Matthew Kane (Moss & Associates LLC), Ron Stein (City of Fort Lauderdale)		
Description			

Submittal Workflow

Name	Sent Date	Due Date	Returned Date	Response	Attachments
General Information Attachments					
Angel Lopez		Sep 15, 2025		Pending	
Ambar Escoto Hernandez		Sep 29, 2025		Pending	
Evan Siegel		Sep 29, 2025		Pending	
Yanique Virgo		Sep 29, 2025		Pending	

Moss Construction Stamp

CONSTRUCTION MANAGER
MOSS & ASSOCIATES, LLC

Submittal No. 051200-22.2 - 051200 - STRUCTURAL STEEL- ANTENNA ARRAY STEEL FRAMING

- [x] Reviewed
- [ ] Reviewed as Noted
- [ ] Reviewed as Noted - Resubmit
- [ ] Not Approved - Resubmit

Review of this submittal is for general conformance with contract requirements. Subcontractor/Vendor is responsible for dimensions, quantities, & coordination with other trades. Approval does not relieve Subcontractor/Vendor of his responsibilities to fully comply with the contract documents.

By: Angel Lopez Date: 09/15/2025

Architect of Record Stamp

Consultant Stamp (if applicable)

Consultant Stamp (if applicable)

Consultant Stamp (if applicable)

Consultant Stamp (if applicable)

STRUCTURAL SUBMITTAL REVIEW

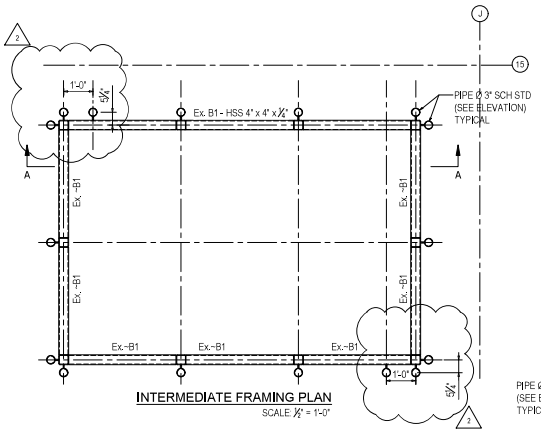
- [x] APPROVED
- [ ] APPROVED AS NOTED
- [ ] REVISE AND RESUBMIT
- [ ] NOT APPROVED

THORNTON TOMASETTI'S APPROVAL IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR: DIMENSIONS AND QUANTITIES WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE, FABRICATION PROCESSES AND TECHNIQUES OF THE CONSTRUCTION, COORDINATION OF THEIR WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF THEIR WORK.

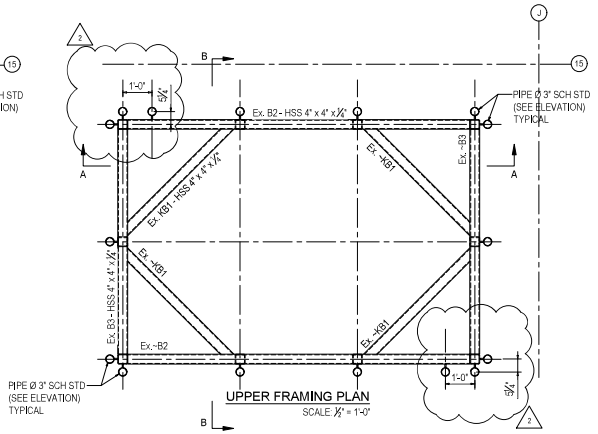
THIS REVIEW DOES NOT BROADEN OUR SCOPE OF SERVICES OR ELEVATE THE APPLICABLE STANDARD OF CARE.

Thornton Tomasetti

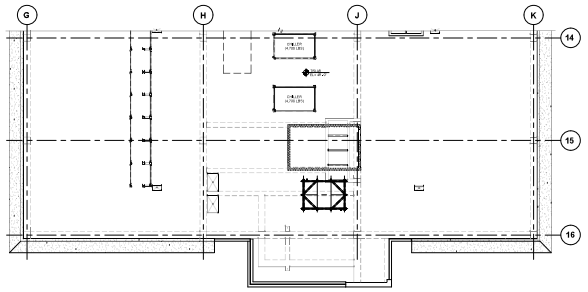
BY: ES DATE: 09/16/2025



INTERMEDIATE FRAMING PLAN
SCALE: ½" = 1'-0"

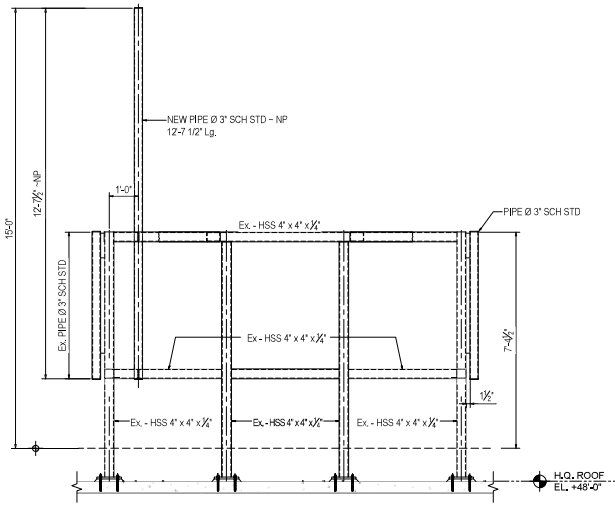


UPPER FRAMING PLAN
SCALE: ½" = 1'-0"

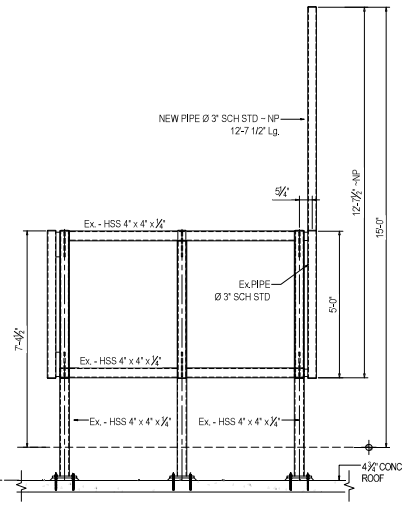


1S LATERAL COLUMN BRACING [SOUTH BOUND]
Scale: 3/8" = 1'-0"

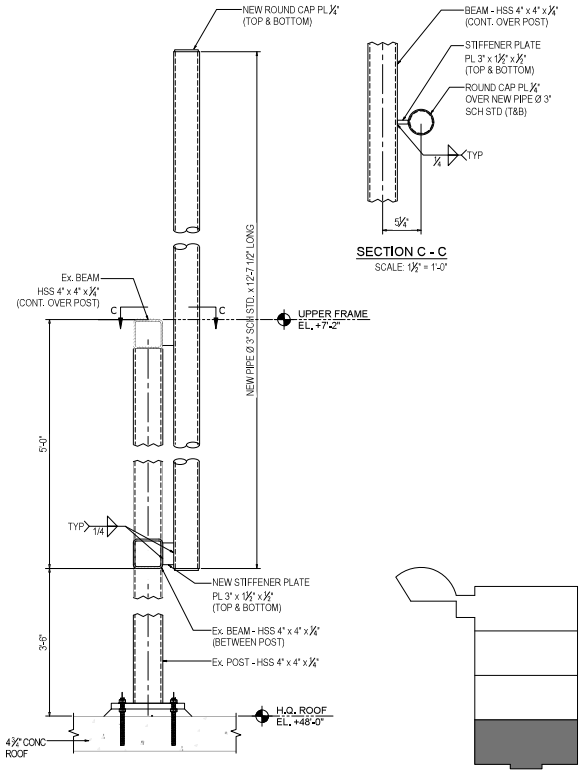
- ALL DIMENSIONS TO BE FIELD VERIFIED PRIOR TO START ANY FABRICATION.
- ALL STEEL SHALL BE HOT-DIPPED GALVANIZED.



SECTION A - A
SCALE: ½" = 1'-0"

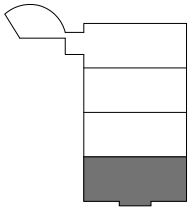


ELEVATION B - B
SCALE: ½" = 1'-0"



SECTION THRU
SCALE: 1½" = 1'-0"

SECTION C - C
SCALE: 1½" = 1'-0"



KEYPLAN
N.T.S

STRUCTURAL SUBMITTAL REVIEW
APPROVED
APPROVED AS NOTED
MAKE AND RESUBMIT
NOT APPROVED
Thornton Tomasetti
ES 09/9/2025

CAM #26-0710
Exhibit 4D
Page 297 of 447

BOSTIC STEEL

7740 N.W. 34 STREET
MIAMI, FL. 33122
PH: (305) 592-7276
E-MAIL OFFICE@BOSTICSTEEL.COM

REVISION
1 12/22/2023
2 09/08/2025
3

[x] FOR APPROVAL
[X] FOR ERECTION
[ ] FOR FABRICATION

PM KT Date 9/8/25
Delivery Date:

[ ] FURNISH ONLY
[X] FURNISH & INSTALL

MATERIAL: STEEL
FINISH: GALVANIZED
REF. DWGS: -
Drawn By: AH | Checked By
Date: 12.22.23 | Date:
Architect: AECOM
Customer: MOSS
Drawing Contents: ANTENNA ARRAY STEEL FRAMING
Job: FT. LAUDERDALE POLICE HQ & PARKING GARAGE
1300 W BROWARD BLVD., FL 33312
Job # 2228 | RCO 25

Moss & Associates LLC
2101 N. Andrews Avenue
Fort Lauderdale, Florida 33311
P: (954) 524-5678

Project: B372302 Fort Lauderdale Police Headquarters
1300 W Broward Blvd
Fort Lauderdale, Florida 33312

Submittal #051200-22.0 - 051200 - STRUCTURAL STEEL- ANTENNA ARRAY STEEL FRAMING
051200 - STRUCTURAL STEEL

Revision	0	**Submittal Manager**	Vanessa Navarrete (Moss & Associates LLC - FLL)
Status	Submitted by GC	**Date Created**	Oct 26, 2023
Issue Date	Oct 26, 2023	**Spec Section**	051200 - STRUCTURAL STEEL
Responsible Contractor	Bostic Steel, Inc.	**Received From**	Tyler Siwek (Bostic Steel, Inc.)
Received Date	Oct 23, 2023	**Submit By**	
Final Due Date	Nov 9, 2023	**Lead Time**	
Sub Job		**Cost Code**	
Location		**Type**	Shop Drawing
Approvers	Yanique Virgo (AECOM)		
Ball in Court	Vanessa Navarrete (Moss & Associates LLC - FLL)		
Distribution	Vanessa Navarrete (Moss & Associates LLC - FLL), Michael Perez-Gurri (Moss & Associates LLC - FLL), Matthew Kane (Moss & Associates LLC - FLL), Jennifer Escobar (Moss & Associates LLC - FLL), David Lovern (City of Fort Lauderdale), D'von Nottage (Moss & Associates LLC - FLL), Angel Lopez (Moss & Associates LLC - FLL)		
Description			

Submittal Workflow

Name	Sent Date		Attachments
General Information Attachments			
Vanessa Navarrete			
Yanique Virgo			

AECOM

- [ ] A REVIEWED NO EXCEPTIONS TAKEN
- [ ] B REVIEWED EXCEPTIONS NOTED, RESUBMISSION NOT REQUIRED
- [x] C REVIEWED EXCEPTIONS NOTED, RESUBMISSION REQUIRED
- [ ] D REJECTED, RESUBMISSION REQUIRED
- [ ] E FOR INFORMATION ONLY, NO REVIEW REQUIRED

This review was performed only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Modifications or comments made on the shop drawings during this review do not relieve the Contractor from compliance with the requirements of the Contract Documents. Approval of a specific item does not include approval of the assembly of which the item is a component. Contractor is responsible for dimensions to be confirmed and correlated at the jobsite, information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction, coordination of the work of all trades and for performing all work in a safe and satisfactory manner.

60639620
PROJECT NUMBER

Evan Siegel
REVIEWED BY

Nov 8, 2023
DATE

The contractor shall review and comply with notes and comments on submittals in addition to notes provided on attached submittal transmittal/review form.

STRUCTURAL SUBMITTAL REVIEW

- [ ] APPROVED
- [x] APPROVED AS NOTED
- [ ] REVISE AND RESUBMIT
- [ ] NOT APPROVED

THORNTON TOMASETTI'S APPROVAL IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR: DIMENSIONS AND QUANTITIES WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE, FABRICATION PROCESSES AND TECHNIQUES OF THE CONSTRUCTION, COORDINATION OF THEIR WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF THEIR WORK.

THIS REVIEW DOES NOT BROADEN OUR SCOPE OF SERVICES OR ELEVATE THE APPLICABLE STANDARD OF CARE.

Thornton Tomasetti

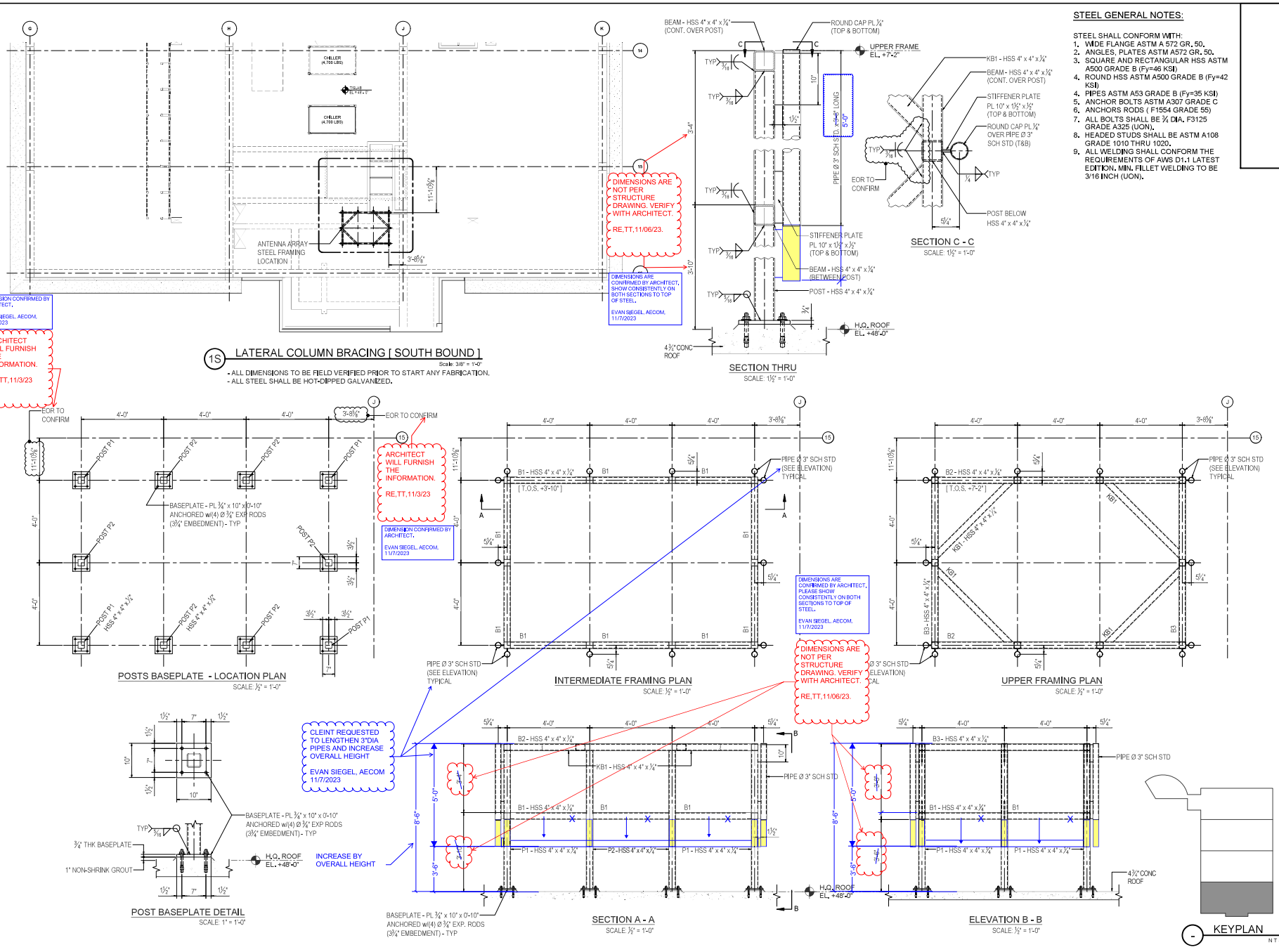
BY: RE DATE: 11/03/23

SHOP DRAWING REVIEW

THIS IS TO CERTIFY THAT THIS SUBMISSION HAS BEEN CHECKED FOR ACCURACY, COMPLETENESS, AND COMPLIANCE WITH THE CONTRACT REQUIREMENTS. THIS CERTIFICATION DOES NOT RELIEVE THE SUB-CONTRACTOR / VENDOR OF THEIR RESPONSIBILITY FOR COMPLYING FULLY WITH THE CONTRACT DOCUMENTS. THE SUBCONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY FOR DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE ARCHITECTS APPROVAL OF THIS SUBMITTAL UNLESS SUB-CONTRACTOR HAS SPECIFICALLY INFORMED THE CONTRACTOR AND ARCHITECT IN WRITING OF SUCH DEVIATIONS AT THE TIME OF SUBMITTAL.

BY: Vanessa Navarrete **DATE:** 10.26.23

JOB NO.: FLPH - Job No. B372302
SUBMITTAL No:
DESCRIPTION: 051200- STRUCTURAL STEEL - ANTENNA ARRAY STEEL FRAMING



STEEL GENERAL NOTES:

STEEL SHALL CONFORM WITH:

1. WIDE FLANGE ASTM A 572 GR. 50.
2. ANGLES, PLATES ASTM A572 GR. 50.
3. SQUARE AND RECTANGULAR HSS ASTM A500 GRADE B (Fy=46 KSI)
4. ROUND HSS ASTM A500 GRADE B (Fy=42 KSI)
4. PIPES ASTM A53 GRADE B (Fy=35 KSI)
5. ANCHOR BOLTS ASTM A307 GRADE C
6. ANCHORS RODS (F1554 GRADE 55)
7. ALL BOLTS SHALL BE ¾ DIA. F3125 GRADE A325 (UON).
8. HEADED STUDS SHALL BE ASTM A108 GRADE 1010 THRU 1020.
9. ALL WELDING SHALL CONFORM THE REQUIREMENTS OF AWS D1.1 LATEST EDITION. MIN. FILLET WELDING TO BE 3/16 INCH (UON).

BOSTIC STEEL
7740 N.W. 34 STREET
MIAMI, FL. 33122
PH: (305) 592-7276
E-MAIL OFFICE@BOSTICSTEEL.COM

REVISION

- [X] FOR APPROVAL
- [ ] FOR ERECTION
- [ ] FOR FABRICATION

PM TS Date 10/25/23

Delivery Date:

- [ ] FURNISH ONLY
- [X] FURNISH & INSTALL

MATERIAL: STEEL

FINISH: GALVANIZED

REF. DWGS: HQ-S8-1-03, HQ-S2-2-4D

Drawn By: YT | Checked By TS

Date: 10/25/2023 | Date: 10/25/23

Architect: AECOM

Customer: MOSS

Drawing Contents: ANTENNA ARRAY STEEL FRAMING

Job: FT. LAUDERDALE POLICE HQ & PARKING GARAGE
1300 W BROWARD BLVD., FL 33312

Job # 2228 | E-9.0

CAM #26-0710 Exhibit 4D

Page 299 of 447

ITEM # 9

AFFIDAVIT OF COMPLIANCE WITH FOREIGN ENTITY LAWS
(Florida Statute- §287.138, 692.201, 692.202, 692.203, and 692.204)

The undersigned, on behalf of the entity listed below ("Entity"), hereby attests under penalty of perjury as follows:

1. Entity is not owned by the government of a foreign country of concern as defined in Section 287.138, Florida Statutes. (Source:§ 287.138(2)(a), Florida Statutes)

2. The government of a foreign country of concern does not have a controlling interest in Entity. (Source:§ 287.138(2)(b), Florida Statutes)

3. Entity is not organized under the laws of, and does not have a principal place of business in, a foreign country of concern. (Source: § 287.138(2)(c), Florida Statutes)

4. Entity is not owned or controlled by the government of a foreign country of concern, as defined in Section 692.201, Florida Statutes. (Source:§ 288.007(2), Florida Statutes)

5. Entity is not a partnership, association, corporation, organization, or other combination of persons organized under the laws of or having its principal place of business in a foreign country of concern, as defined in Section 692.201, Florida Statutes, or a subsidiary of such entity. (Source: § 288.007(2), Florida Statutes)

6. Entity is not a foreign principal, as defined in Section 692.201, Florida Statutes. (Source: § 692.202(5)(a)(l), Florida Statutes)

7. Entity is in compliance with all applicable requirements of Sections 692.202, 692.203, and 692.204, Florida Statutes.

8. ***(Only applicable if purchasing real property)*** Entity is not a foreign principal prohibited from purchasing the subject real property. Entity is either (a) not a person or entity described in Section 692.204(1)(a), Florida Statutes, or (b) authorized under Section 692.204(2), Florida Statutes, to purchase the subject property. Entity is in compliance with the requirements of Section 692.204, Florida Statutes. (Source:§§ 692.203(6)(a), 692.204(6)(a), Florida Statutes)

9. The undersigned is authorized to execute this affidavit on behalf of Entity.

Name: Daniel Sanchez Title: Territory Vice President Entity: Motorola Solutions, Inc.

Signature: _____ Date: 11/26/2025

NOTARY PUBLIC ACKNOWEDGEMENT SECTION

STATE OF Pennsylvania

COUTY OF Philadelphia

The foregoing instrument was acknowledged before me, by means of ☐ physical presence or ☑ online notarization, this 26th day of November 20 25, by Daniel Sanchez, as Territory Vice President for Motorola Solutions, Inc., who is personally known to me or who has produced Drivers License as identification.

Commonwealth of Pennsylvania - Notary Seal
Lauryn Grayes, Notary Public
Philadelphia County
My commission expires February 24, 2029
Commission Number 1457117

Notary Public Signature: _____ (Notary Seal)

Print Name: Lauryn Grayes My commission expires: 02/24/2029

Notarized remotely online using communication technology via Proof.

CITY OF FORT LAUDERDALE

ANTI-HUMAN TRAFFICKING AFFIDAVIT

Rev Date: 02/04/2025

The undersigned, on behalf of Motorola Solutions, Inc.,
(Print entity's complete legal name as registered with suffix: INC, LLC, LTD, LP, PA, etc.)

a Delaware nongovernmental entity ("Nongovernmental Entity"), under penalty of perjury,
(State entity is registered)
hereby deposes and says:

1. My name is Daniel Sanchez.
(Print complete name of corporate officer/authorized representative)

2. I am an ____ officer or X authorized representative (Select one) of the Nongovernmental Entity. My title is: Territory Vice President.
(Print title of corporate officer/authorized representative)

3. I attest that the Nongovernmental Entity does not use coercion for labor or services as defined in Section 787.06, Florida Statutes (2024), as may be amended or revised.

Under penalties of perjury, I declare that I have read the foregoing Anti-Human Trafficking Affidavit and that the facts stated in it are true.

Signature of Officer or Representative: _____

Office Address: 500 W Monroe Street, Ste 4400

Email Address: daniel.sanchez@motorolasolutions.com

Main Phone Number: 847-576-5000 FEIN No.: 36-1115800

STATE OF Pennsylvania
COUNTY OF Philadelphia

Sworn to and subscribed before me by means of ☐ physical presence or ☑ online notarization, this 26th day of November, 2025, by Daniel Sanchez.
(Print name of corporate officer/representative)

Commonwealth of Pennsylvania - Notary Seal
Lauryn Grayes, Notary Public
Philadelphia County
My commission expires February 24, 2029
Commission Number 1457117

Lauryn Grayes
(Signature of Notary Public – State of Pennsylvania)

(NOTARY SEAL)

Lauryn Grayes
Print, Type or Stamp Commissioned Name of Notary Public)

Personally Known ☐ OR Produced Identification ☑

Type of Identification Produced Drivers License

Page 1 of 1

Notarized remotely online using communication technology via Proof.

AIA® Document A310™ – 2010

Bid Bond

CONTRACTOR:
(Name, legal status and address)
MOTOROLA SOLUTIONS, INC.
500 W. Monroe Street, 44th Floor
Chicago, IL 60661

SURETY:
(Name, legal status and principal place of business)
TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA
One Tower Square, MN06-740
Hartford, CT 06183

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:
(Name, legal status and address)
CITY OF FORT LAUDERDALE

401 SE 21st Street, Fort Lauderdale, FL 33316

BOND AMOUNT: Five Percent of Amount bid
(5% of Amount Bid)

PROJECT:
(Name, location or address, and Project number, if any)
P25 Radio Communication System Refresh-Replacement - Rebid
RFP Event # 549

Project Number, if any:

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 10th day of December, 2025

(Witness)	MOTOROLA SOLUTIONS, INC.
	(Principal) Tangy McGee *(Seal)*
	(Title) Executive Assistant
(Witness) K. Hannigan	TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA
	(Surety) *(Seal)*
	(Title) Tara A. Maquinto, Attorney in Fact

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TRAVELERS

Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Tara A Maquinto** of **CHICAGO**, **Illinois**, their true and lawful Attorney(s)-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **21st** day of **April**, **2021**.

State of Connecticut

By: _____
Robert L. Raney, Senior Vice President

City of Hartford ss.

On this the **21st** day of **April**, **2021**, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of each of the Companies, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of said Companies by himself as a duly authorized officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June**, **2026**

_____
Anna P. Nowik, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of each of the Companies, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of each of the Companies, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this **10th** day of **December**, **2025**.

_____
Kevin E. Hughes, Assistant Secretary

To verifythe authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney(s)-in-Fact and the details of the bond to which this Power of Attorney is attached.

MOTOROLA SOLUTIONS

City of Fort Lauderdale

MSRP Price Book

RFP # 549

December 22, 2025

The design, technical, and price information furnished with this proposal is proprietary information of Motorola Solutions, Inc. (Motorola). Such information is submitted with the restriction that it is to be used only for the evaluation of the proposal, and is not to be disclosed publicly or in any manner to anyone other than those required to evaluate the proposal, without the express written permission of Motorola Solutions, Inc.

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Section 1

MSRP Pricing and System Integration

1.1 MSRP Pricing List

SUB SYSTEM	LOCATION/CLASS	QTY	NOMENCLATURE	DESCRIPTION	Unit MSRP	Ext MSRP
Zone Core	State of Florida Site	1	SQM01SUM0323A	ASTRO MASTER SITE	$0	$0
Zone Core	State of Florida Site	1	CA03515AE	ADD: NEW PRIMARY ZONE CORE AN2024.X	$0	$0
Zone Core	State of Florida Site	1	CA03515AE-P	ADD: NEW PRIMARY ZONE CORE AN2024.X PRICE	$352,800	$352,800
Zone Core	State of Florida Site	1	CA03507AA	ADD: RACK	$0	$0
Zone Core	State of Florida Site	4	UA00153AB	ADD: ASTRO 25 FDMA SITE LICENSE	$33,600	$134,400
Zone Core	State of Florida Site	4	UA00159AB	ADD: P25 PHASE 2 TDMA TRKNG OP SITE LIC	$33,600	$134,400
Zone Core	State of Florida Site	4	UA00160AA	ADD: PHASE 2 DYNAMIC TG ASGNMT SITE LIC	$20,160	$80,640
Zone Core	State of Florida Site	3	UA00156AA	ADD: 5 CONSOLE OPS: AXS, MCC7500/E AND AIS	$5,600	$16,800
Zone Core	State of Florida Site	1	CA01499AB	ADD:DSR NOTIFICATION	$11,200	$11,200

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Zone Core	State of Florida Site	6	UA00152AA	ADD:500 RADIO USER LICENSES	$8,400	$50,400
Zone Core	State of Florida Site	10	CA01316AA	ADD:UNC ADDTL DEVICE LIC (QTY 10)	$1,680	$16,800
Zone Core	State of Florida Site	3	UA00146AA	ADD: UNIFIED EVENT MANAGER (UEM)	$22,400	$67,200
Zone Core	State of Florida Site	1	UA00225AA	ADD: UEM ENHANCED NAVIGATION	$56,000	$56,000
Zone Core	State of Florida Site	1	UA00149AA	ADD: RADIO CONTROL MANAGER	$16,800	$16,800
Zone Core	State of Florida Site	1	UA00141AA	ADD: ZONEWATCH GRID & CTRL	$28,000	$28,000
Zone Core	State of Florida Site	1	UA00138AA	ADD: FLEXIBLE ATIA	$22,400	$22,400
Zone Core	State of Florida Site	1	T8742A	MCAFEE FOR WINDOWS CLIENT, A2019.2 +PLUS	$165	$165
Zone Core	State of Florida Site	1	T8806A	WINDOWS SUPP. TRANSPARENT, A2022.1	$0	$0
Zone Core	State of Florida Site	1	DSTRAK88353M	GPS CLOCK, 10MHZ, RUBIDIUM, 48V INCL ANT AND 50' COAX W--DONGLE ADAPTER	$20,871	$20,871
Zone Core	State of Florida Site	1	DLN6455R	KIT,CONFIGURATION SERVICE SOFTWARE	$25	$25
Zone Core	State of Florida Site	1	DVN4046B	MASTER SYSTEM KEY STARTER KIT	$535	$535
KVL	State of Florida Site	1	T8476B	KVL 5000	$8,346	$8,346

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KVL	State of Florida Site	1	CA00182AW	ADD: AES ENCRYPTION SOFTWARE	$0	$0
KVL	State of Florida Site	1	CA03358AA	ADD: ASTRO 25 MODE	$0	$0
KVL	State of Florida Site	1	CA03467AA	ADD: NORTH AMERICA MICRO USB CHARGER 100--240V	$0	$0
KVL	State of Florida Site	1	X423AG	ADD: DES--DES-XL--DES-OFB ENCRYPTION	$883	$883
KVL	State of Florida Site	1	CA00243AJ	ADD: ADP PRIVACY	$353	$353
KVL	State of Florida Site	1	HA00673AA	ADD: 5YR ESSENTIAL	$500	$500
KVL	State of Florida Site	1	HKN6182B	KEYLOADING CABLE CGAI ADAPTOR	$225	$225
KVL	State of Florida Site	1	PMKN4013C	RADIO TEST AND ALIGNMENT CABLE	$103	$103
KVL	State of Florida Site	1	WPLN6904A	PORTABLE KEYLOAD CABLE	$127	$127
KVL	State of Florida Site	1	TKN8531C	CABLE, KEYLOAD	$358	$358
Zone Core	State of Florida Site	1	TRN7343A	RACK 7.5'	$708	$708
Zone Core	State of Florida Site	1	TT4270B	Z2 MINI G9 WORKSTATION GEN14 PROCESSOR	$2,857	$2,857
Zone Core	State of Florida Site	1	T8941A	A2024.X NM CLIENT SW	$952	$952
Zone Core	State of Florida Site	1	DSF2B56AA	USB EXTERNAL DVD DRIVE	$172	$172
Zone Core	State of Florida Site	1	DSTG191B	TECH GLOBAL EVOLUTION SERIES 19INCH NON TOUCH	$1,644	$1,644

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Inter SubSystem Interface (ISSI)	State of Florida Site	1	T7776A	ISSI 8000--CSSI 8000 SOFTWARE	$0	$0
Inter SubSystem Interface (ISSI)	State of Florida Site	1	UA00005AA	ADD:ISSI AUTOMATIC ROAMING LICENSE (FOR FIRST SYSTEM)	$2,000,000	$2,000,000
Inter SubSystem Interface (ISSI)	State of Florida Site	1	UA00184AA	ADD:ISSI AUTOMATIC ROAMING LICENSE (FOR SYSTEMS 2-5)	$2,000,000	$2,000,000
Inter SubSystem Interface (ISSI)	State of Florida Site	1	UA00006AA	ADD: ISSI +10 ADDITION SIMULTANEOUS TALK GROUP CAPACITY LICENSE	$50,000	$50,000
Inter SubSystem Interface (ISSI)	State of Florida Site	1	UA00042AA	ADD: ISSI 8000 CSSI 8000 REDUNDANT SOFTWARE LICENSE	$0	$0
Zone Core	State of Florida Site	1	DSB07001619	TRIPP LITE 16 PORT RACK CONSOLE KVM S 19IN RACKMOUNT SWITCH	$3,596	$3,596
Zone Core	State of Florida Site	1	DSB078101USB1	USB SINGLE SRVR INTERFACE UNIT VIRTUAL MEDIA KVM SWITCH HD15 USB RJ4	$186	$186

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Zone Core	State of Florida Site	1	DSFG40F	5 X GE RJ45 PORTS (INCLUDING , 1 X WAN PORT, 4 X INTERNAL PORTS)	$640	$640
Zone Core	State of Florida Site	1	DSFC100040F8090236	FORTIGATE - 40F 3 YEAR ENTERPRISE PROTECTION	$1,470	$1,470
Zone Core	State of Florida Site	1	DSSPRACKTRAY02	RACK MOUNT TRAY FOR ALL FORTIGATE E SERIES AND F SERIES DESKTOP MODELS AND BACKWARD COMPATIBLE WITH SP-RACKTRAY-01. FOR LIST OF COMPATIBLE FORTIGATE PRODUCTS, VISIT DOCUMENTATION WEBSITE	$265	$265
Zone Core	State of Florida Site	1	DSFTK2105	FORTITOKEN-210 FIVE PIECES ONE-TIME PASSWORD TOKEN, TIME BASED PASSWORD GENERATOR. PERPETUAL LICENSE, COMPATIBLE WITH FORTIGATE, FORTIAUTHENTICATOR AND FORTITOKEN CLOUD. ENCRYPTED SEED FILE IS	$511	$511

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				AVAILABLE VIA CUSTOMER SUPPORT REQUEST.		
Microwave	State of Florida Site	1	DQ-TEMP-MICROWAVE1	Microwave Wavence (9500 Microwave Packet Radio) MPT-HLC/UBT-I	$353,089	$353,089
Network Equipment	State of Florida Site	1	DQ-TEMP-MICROWAVE1	MPLS - 7705 Service Aggregation Router (SAR)	$152,873	$152,873
Microwave	State of Florida Site	1	DQ-TEMP-MICROWAVE1	Microwave Antennas, Line, and Hardware	$243,464	$243,464
Microwave	State of Florida Site	1	DQ-TEMP-MICROWAVE1	Microwave DC Power Systems	$174,487	$174,487
Microwave		1	DQ-TEMP-MICROWAVE1	Microwave Ancillary Equipment	$15,493	$15,493
DSR Site	Utilities Site	1	SQM01SUM0324A	DYNAMIC SYSTEM RESILIENCE	$0	$0
DSR Site	Utilities Site	1	CA03520AE	ADD: DSR ZONE CORE AN2024.X	$0	$0
DSR Site	Utilities Site	1	CA03520AE-P	ADD: DSR ZONE CORE AN2024.X PRICE	$352,800	$352,800
DSR Site	Utilities Site	1	CA03507AA	ADD: RACK	$0	$0
DSR Site	Utilities Site	1	T8742A	MCAFEE FOR WINDOWS CLIENT, A2019.2 +PLUS	$165	$165
DSR Site	Utilities Site	1	T8806A	WINDOWS SUPP. TRANSPARENT, A2022.1	$0	$0

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DSR Site	Utilities Site	1	DSTRAK88353M	GPS CLOCK, 10MHZ, RUBIDIUM, 48V INCL ANT AND 50' COAX W--DONGLE ADAPTER	$20,871	$20,871
DSR Site	Utilities Site	1	TT4270B	Z2 MINI G9 WORKSTATION GEN14 PROCESSOR	$2,857	$2,857
DSR Site	Utilities Site	1	T8941A	A2024.X NM CLIENT SW	$952	$952
DSR Site	Utilities Site	1	DSF2B56AA	USB EXTERNAL DVD DRIVE	$172	$172
DSR Site	Utilities Site	1	DSTG191B	TECH GLOBAL EVOLUTION SERIES 19INCH NON TOUCH	$1,644	$1,644
DSR Site	Utilities Site	1	DSB07001619	TRIPP LITE 16 PORT RACK CONSOLE KVM S 19IN RACKMOUNT SWITCH	$3,596	$3,596
DSR Site	Utilities Site	1	DSB078101USB1	USB SINGLE SRVR INTERFACE UNIT VIRTUAL MEDIA KVM SWITCH HD15 USB RJ4	$186	$186
DSR Site	Utilities Site	1	DSFG40F	5 X GE RJ45 PORTS (INCLUDING , 1 X WAN PORT, 4 X INTERNAL PORTS)	$640	$640
DSR Site	Utilities Site	1	DSFC100040F8090236	FORTIGATE - 40F 3 YEAR ENTERPRISE PROTECTION	$1,470	$1,470
DSR Site	Utilities Site	1	DSSPRACKTRAY02	RACK MOUNT TRAY FOR ALL FORTIGATE E	$265	$265

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				SERIES AND F SERIES DESKTOP MODELS AND BACKWARD COMPATIBLE WITH SP-RACKTRAY-01. FOR LIST OF COMPATIBLE FORTIGATE PRODUCTS, VISIT DOCUMENTATION WEBSITE		
DSR Site	Utilities Site	1	DSFTK2105	FORTITOKEN-210 FIVE PIECES ONE-TIME PASSWORD TOKEN, TIME BASED PASSWORD GENERATOR. PERPETUAL LICENSE, COMPATIBLE WITH FORTIGATE, FORTIAUTHENTICATOR AND FORTITOKEN CLOUD. ENCRYPTED SEED FILE IS AVAILABLE VIA CUSTOMER SUPPORT REQUEST.	$511	$511
Spares	Spares	1	CVN6565A	SPARE CABINET ASTRO 7.9 & BEYOND	$6,272	$6,272
Spares	Spares	1	DLN8006A	FRU: DL380 G10 POWER SUPPLY	$672	$672
Spares	Spares	1	DLN8007A	FRU: DL380 G10 FAN	$336	$336

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Spares	Spares	1	DLN6942A	1.2 TB HARD DRIVE	$1,925	$1,925
Spares	Spares	1	DLN6971A	FRU: HPE 9.5MM SATA DVD-RW OPTICAL DRIVE	$283	$283
Spares	Spares	1	DLN7018A	DL 380 G9 ETHERNET CARD	$616	$616
Spares	Spares	1	DLN8052A	FRE: MSA2060 DAS	$35,840	$35,840
Spares	Spares	1	DLN8053A	FRE: MSA2060 JBOD ENCLOSURE (HC UNC	$14,560	$14,560
Spares	Spares	1	DLN8054A	FRU: BARE CHASSIS, MSA2060 DAS	$2,352	$2,352
Spares	Spares	1	DLN8055A	FRU: POWER SUPPLY, MSA2060 DAS	$1,232	$1,232
Spares	Spares	1	DLN8057A	FRU: JBOD MODULE, MSA2060	$1,848	$1,848
Spares	Spares	1	DLN8056A	FRU: SAS CONTROLLER, MSA2060 DAS	$14,000	$14,000
Spares	Spares	1	DLN8058A	FRU: 600GB HARD DRIVE FOR MSA2060 DAS	$1,008	$1,008
Spares	Spares	1	CKN6975A	CABLE, MINI-SAS HD TO MINI-SAS HD, LENGTH 1 METER , AWG30	$146	$146
Spares	Spares	1	CLN9053A	TERMINAL SERVER, SLC8000 16 PORT	$9,454	$9,454

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Spares	Spares	1	T8493A	ROUTER, EDGE & HUB ROUTER & FIREWALL - AC	$19,001	$19,001
Spares	Spares	1	CA03445AA	ADD: MISSION CRITICAL HARDENING	$3,696	$3,696
Spares	Spares	1	CA03448AA	ADD: STATEFUL FIREWALL	$1,120	$1,120
Spares	Spares	1	T8492A	ROUTER, RADIO SITE ROUTER AND FIREWALL - AC	$2,342	$2,342
Spares	Spares	1	CA03445AA	ADD: MISSION CRITICAL HARDENING	$3,696	$3,696
Spares	Spares	1	CA03448AA	ADD: STATEFUL FIREWALL	$1,120	$1,120
Spares	Spares	1	T8910A	FIREWALL, JUNIPER SRX 345 WITH SSD, NON TAA	$4,684	$4,684
Spares	Spares	1	CLN9067A	NETWORK SWITCH, 48-PORT EX4100 NON TAA	$14,672	$14,672
Spares	Spares	1	DQ-TEMP-MICROWAVE1	Microwave and MPLS Spares	$55,194	$55,194
Spares	Spares	1	DSSPSPTPS600A01	SMARTPACK S CONTROLER W/A01 PROFILE: 48V UNITY STD CONFIG	$1,063	$1,063
Spares	Spares	1	DS241115105	FLATPACK 2 48/2000 HE RECTIFIER	$859	$859

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Spares	Spares	1	DS275843	INVERTER, 1.5KVA, 120VAC, 48VDC INVERTER MOD	$2,475	$2,475
Spares	Spares	1	_INVSIERRA	Inverter Module Sierra 1000VA	$2,200	$2,200
Spares	Spares	1	DSCBB020E	CIRCUIT BREAKER, 20 AMP, E TRIP	$48	$48
Spares	Spares	1	DSCBB100E	CIRCUIT BREAKER, 100 AMP, E-TRIP	$48	$48
Spares	Spares	1	DSCBB025E	CIRCUIT BREAKER, 25 AMP, E TRIP	$48	$48
Spares	Spares	1	DSTRAK88353M	GPS CLOCK, 10MHZ, RUBIDIUM, 48V INCL ANT AND 50' COAX W/DONGLE ADAPTER	$20,871	$20,871
Spares	Spares	1	SQM01SUM0341A	WAVE SERVER HARDWARE 2022	$15,500	$15,500
Power Distribution	1300 W Broward Dispatch	1	DS11011188	PDU, 120/240 SPLIT PH OR N+1 REDUNDANT, 60A MAX PER PHASE, SIX DEDICAT	$3,852	$3,852
Power Distribution	1300 W Broward Dispatch	6	DS3750295	BREAKER, 5 AMP, CB UL 489 LISTED FOR AC EDGE II (1101-1188)	$82	$492
Power Distribution	1300 W Broward Dispatch	3	DS3750296	BREAKER, 10 AMP, CB UL 489 LISTED FOR AC EDGE II (1101-1188)	$93	$279

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Power Distribution	1300 W Broward Dispatch	3	DS3750297	BREAKER, 15 AMP, CB UL 489 LISTED FOR AC EDGE II (1101-1188)	$84	$252
Power Distribution	1300 W Broward Dispatch	2	DS1101990	SPD, SHIELDED RJ-45 JACK, SINGLE LINE GBE (1000MBPS) R56 COMPLIANT	$189	$378
Power Distribution	1300 W Broward Dispatch	1	DSTSJADP	RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS	$136	$136
Dispatch Consoles	1300 W Broward Dispatch	6	HKVN4729A	AXS DISPATCH CONSOLE LICENSE	$8,374	$50,244
Dispatch Consoles	1300 W Broward Dispatch	6	HKVN4730A	AXS TRUNKING SERVICES LICENSE	$6,996	$41,976
Dispatch Consoles	1300 W Broward Dispatch	6	HKVN4731A	AXS ADVANCED CONVENTIONAL SERVICES LICENSE	$4,198	$25,188
Dispatch Consoles	1300 W Broward Dispatch	6	HKVN4732A	AXS SECURE VOICE SERVICES LICENSE	$7,765	$46,590
Dispatch Consoles	1300 W Broward Dispatch	6	HKVN4733A	LICENSE,AXS INTEGRATED IRR	$3,392	$20,352
Dispatch Consoles	1300 W Broward Dispatch	6	HKVN4736A	AXS AMBE+2 VOCODER ROYALTY AND LICENSE	$53	$318
Dispatch Consoles	1300 W Broward Dispatch	6	HKVN4739A	AXS SECURE OTEK SERVICES LICENSE	$5,151	$30,906

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Dispatch Consoles	1300 W Broward Dispatch	6	HKVN4737A	AXS STANDARD LEVEL RADIO RESOURCE CAPACITY LICENSE	$21,942	$131,652
Dispatch Consoles	1300 W Broward Dispatch	3	B1957A	AXS SOFTWARE DVD	$265	$795
Dispatch Consoles	1300 W Broward Dispatch	6	B1951B	DISPATCH DESKTOP MICROPHONE, USB	$629	$3,772
Dispatch Consoles	1300 W Broward Dispatch	6	CA03412AA	ADD: USB CABLE, TYPE C TO TYPE C, 4.5M	$44	$264
Dispatch Consoles	1300 W Broward Dispatch	12	B1952B	DISPATCH DESKTOP SPEAKER, USB	$675	$8,098
Dispatch Consoles	1300 W Broward Dispatch	12	CA03413AA	ADD: USB CABLE, TYPE A TO TYPE C, 4.5M	$33	$401
Dispatch Consoles	1300 W Broward Dispatch	6	SQM01SUM0342A	CCHUB W/INTERNAL ENCRYPTION HW	$0	$0
Dispatch Consoles	1300 W Broward Dispatch	6	B1956A	COMMANDCENTRAL HUB, W/CLIENT PC	$5,880	$35,280
Dispatch Consoles	1300 W Broward Dispatch	6	CA03850AA	ADD: WINDOWS OS FOR MCC7500E CONSOLE	$784	$4,704
Dispatch Consoles	1300 W Broward Dispatch	6	CA03553AA	ADD: AC LINE CORD, NORTH AMERICA	$15	$90
Dispatch Consoles	1300 W Broward Dispatch	6	CA03547AA	ADD: BRACKET, MOUNTING 2RU	$84	$504
Dispatch Consoles	1300 W Broward Dispatch	6	CA03548AA	ADD: TWO CABLES, POWER 24VDC	$84	$504

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Dispatch Consoles	1300 W Broward Dispatch	6	CA03572AA	ADD: CABLE RETENTION BRACKET	$73	$438
Dispatch Consoles	1300 W Broward Dispatch	6	CA04101AA	ADD USB HSM KEY STORAGE	$0	$0
Dispatch Consoles	1300 W Broward Dispatch	6	CA04101AA-P	ADD USB HSM KEY STORAGE PRICE	$18,352	$110,112
Dispatch Consoles	1300 W Broward Dispatch	12	B1913A	MCC SERIES HEADSET JACK	$224	$2,688
Dispatch Consoles	1300 W Broward Dispatch	6	L3226A	COMPUTER MOUSE, CERTIFIED OPTICAL WHEEL MOUSE FOR RSD SERVERS AND WORKSTATIONS	$30	$180
Dispatch Consoles	1300 W Broward Dispatch	6	L3225A	CERTIFIED KEYBOARD FOR RSD SERVERS AND WORKSTATIONS	$35	$210
Dispatch Consoles	1300 W Broward Dispatch	3	DSF2B56AA	USB EXTERNAL DVD DRIVE	$172	$516
Dispatch Consoles	1300 W Broward Dispatch	6	DSTWIN6328A	PROVIDES ONE DUAL PEDAL FOOTSWITCH	$613	$3,678
Dispatch Consoles	1300 W Broward Dispatch	6	3071114H01	CABLE ASSY, EXTENDER	$107	$644
Dispatch Consoles	1300 W Broward Dispatch	6	DSEV241B	TECH GLOBAL EVOLUTION SERIES 24INCH WITH TOUCH	$5,149	$30,894
Dispatch Consoles	1300 W Broward Dispatch	6	T8742A	MCAFEE FOR WINDOWS CLIENT, A2019.2 +PLUS	$165	$990

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Motorola Solutions

Dispatch Consoles	1300 W Broward Dispatch	6	T8806A	WINDOWS SUPP. TRANSPARENT, A2022.1	$0	$0
Network Equipment	1300 W Broward Dispatch	1	T8639A	JUNIPER CONTROL ROOM FIREWALL	$4,684	$4,684
Network Equipment	1300 W Broward Dispatch	1	T8669A	RECOVERY MEDIA, JUNIPER CONTROL ROOM FIREWALL	$112	$112
Network Equipment	1300 W Broward Dispatch	2	CLN9066A	NETWORK SWITCH, JUNIPER EX4100 24-PORT NON TAA	$5,831	$11,661
Network Equipment	1300 W Broward Dispatch	2	CLN9105A	CABLE FRU, 1 METER JUNIPER DAC CABLE	$55	$110
Network Equipment	1300 W Broward Dispatch	2	T8492A	ROUTER, RADIO SITE ROUTER AND FIREWALL - AC	$2,342	$4,684
Network Equipment	1300 W Broward Dispatch	2	CA03445AA	ADD: MISSION CRITICAL HARDENING	$3,696	$7,392
Network Equipment	1300 W Broward Dispatch	2	CA03448AA	ADD: STATEFUL FIREWALL	$1,120	$2,240
Network Equipment	1300 W Broward Dispatch	1	T8810A	STANDALONE DSC 8000 CONTROLLER	$0	$0
Network Equipment	1300 W Broward Dispatch	1	CA04079AA	ADD: ASTRO NEXT SYSTEM RELEASE 2024.X	$0	$0
Network Equipment	1300 W Broward Dispatch	1	CA03801AA	ADD: DSC 8000 CONVENTIONAL SITE CONTROLLER	$5,830	$5,830

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Motorola Solutions

Network Equipment	1300 W Broward Dispatch	1	UA00787AA	ADD: DSC 8000 CONVENTIONAL SITE CONTROLLER SW	$8,480	$8,480
Network Equipment	1300 W Broward Dispatch	1	CA03832AA	ADD: NM--DISPATCH SITE	$0	$0
Network Equipment	1300 W Broward Dispatch	1	T8811A	DSC AC POWER SUPPLY CHASSIS	$1,802	$1,802
Network Equipment	1300 W Broward Dispatch	1	CA03800AA	ADD: SINGLE POWER SUPPLY FOR DSC	$1,166	$1,166
Network Equipment	1300 W Broward Dispatch	1	CA03533AA	ADD: DSC AC POWER CABLE - US, 12 FT	$0	$0
Base Station Gateway	1300 W Broward Dispatch	1	SQM01SUM0333A	MCG 8000 CONVENTIONAL GATEWAY	$5,600	$5,600
Base Station Gateway	1300 W Broward Dispatch	1	CA03714AA	ADD: AC POWER	$0	$0
Base Station Gateway	1300 W Broward Dispatch	8	CA03717AA	ADD: ACIM INTERFACE	$840	$6,720
Network Equipment	1300 W Broward Dispatch	1	DSB07001619	TRIPP LITE 16 PORT RACK CONSOLE KVM S 19IN RACKMOUNT SWITCH	$3,596	$3,596
Network Management	1300 W Broward Dispatch	3	DSB078101USB1	USB SINGLE SRVR INTERFACE UNIT VIRTUAL MEDIA KVM SWITCH HD15 USB RJ4	$186	$558

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Network Management	1300 W Broward Dispatch	1	T8742A	MCAFEE FOR WINDOWS CLIENT, A2019.2 +PLUS	$165	$165
Network Management	1300 W Broward Dispatch	1	T8806A	WINDOWS SUPP. TRANSPARENT, A2022.1	$0	$0
Logging	1300 W Broward Dispatch	1	B1933A	MOTOROLA VOICE PROCESSOR MODULE	$13,350	$13,350
Logging	1300 W Broward Dispatch	1	CA00147AF	ADD: MCC 7500 SECURE OPERATION	$4,805	$4,805
Logging	1300 W Broward Dispatch	1	CA01220AA	ADD: MCC 7500 -- MCC 7100 OTEK OPERATION	$4,953	$4,953
Logging	1300 W Broward Dispatch	1	CA00288AB	ADD: MCC 7500 AIS SOFTWARE LICENSE	$22,266	$22,266
Logging	1300 W Broward Dispatch	1	CA00143AC	ADD: DES-OFB ALOGRITHM	$1,109	$1,109
Logging	1300 W Broward Dispatch	1	CA00182AB	ADD: AES ALOGRITHM	$1,109	$1,109
Logging	1300 W Broward Dispatch	1	CA00245AA	ADD: ADP ALGORITHM	$1,109	$1,109
Logging	1300 W Broward Dispatch	1	CA00140AA	ADD: AC LINE CORD, NORTH AMERICAN	$0	$0
Logging	1300 W Broward Dispatch	1	BLN1297A	VPM POWER SUPPLY MOUNTING KIT	$280	$280
Logging	1300 W Broward Dispatch	1	DSF2B56AA	USB EXTERNAL DVD DRIVE	$172	$172
Logging	1300 W Broward Dispatch	1	TT4270B	Z2 MINI G9 WORKSTATION GEN14 PROCESSOR	$2,857	$2,857

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Motorola Solutions

Logging	1300 W Broward Dispatch	1	DDN9748A	19 INCH BLACK SHELF	$690	$690
Logging	1300 W Broward Dispatch	1	T8742A	MCAFEE FOR WINDOWS CLIENT, A2019.2 +PLUS	$165	$165
Logging	1300 W Broward Dispatch	1	T8806A	WINDOWS SUPP. TRANSPARENT, A2022.1	$0	$0
Logging	1300 W Broward Dispatch	1	DQ-TEMP-LOGGING	EVENTIDE NEXLOG 740 DX LOGGING RECORDER CONFIGURATION	$148,410	$148,410
Network Management	1300 W Broward Dispatch	1	F0016A	MC IOT MAIN MODEL	$1,119	$1,119
Network Management	1300 W Broward Dispatch	1	VA01945AA	ADD: MC EDGE AS AUX I--O SERVER	$0	$0
Network Management	1300 W Broward Dispatch	1	VA00985AA	ADD: NO PIGGY_ MC-EDGE	$0	$0
Network Management	1300 W Broward Dispatch	1	VA00147AA	ADD: FRONT CABLE COVERS	$12	$12
Network Management	1300 W Broward Dispatch	3	VA00989AA	ADD: MIXED DIGITAL _ 8DO EE 16DI 5-18 V -- DRY	$642	$1,926
Network Management	1300 W Broward Dispatch	1	VA00009AA	ADD: AC POWER SUPPLY 12V--120W DC OUT	$265	$265

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Network Management	1300 W Broward Dispatch	1	VA00153AA	ADD:I--O MODULE EXTRACTOR TOOL	$12	$12
Network Management	1300 W Broward Dispatch	1	VA01968AA	MC_EDGE DC POWER CABLE 7.5A	$80	$80
Network Management	1300 W Broward Dispatch	1	VA01967AA	INC: MC_EDGE CPU PACKING	$0	$0
Network Management	1300 W Broward Dispatch	1	VA00341AA	INC:MC-EDGE MAIN FILE SYSTEM	$0	$0
Network Management	1300 W Broward Dispatch	1	VA00142AA	INC:EXTREMDB LICENSE	$0	$0
Network Management	1300 W Broward Dispatch	3	VA00049AA	INC: I--O MODULE CABLE COVER	$0	$0
Network Management	1300 W Broward Dispatch	1	VA00974AA	INC: IOT MC-EDGE CPU PACKAGE	$0	$0
Network Management	1300 W Broward Dispatch	1	VA00442AA	INC:MC-EDGE SYSTEM SW FILES	$0	$0
Network Management	1300 W Broward Dispatch	1	VA01383AA	INC: FRONT CABLE COVERS FOR MC EDGE	$0	$0
Network Management	1300 W Broward Dispatch	1	FHN0057A	DIN RAIL STOPPER	$17	$17

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Motorola Solutions

Network Management	1300 W Broward Dispatch	1	DSIABDIN4	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT	$308	$308
Network Management	1300 W Broward Dispatch	3	FHN1668A	TERM BLOCK & CONN WIRED M25T68L	$99	$297
Network Management	1300 W Broward Dispatch	1	TT4270B	Z2 MINI G9 WORKSTATION GEN14 PROCESSOR	$2,857	$2,857
Network Management	1300 W Broward Dispatch	1	T8941A	A2024.X NM CLIENT SW	$952	$952
Network Management	1300 W Broward Dispatch	1	DSF2B56AA	USB EXTERNAL DVD DRIVE	$172	$172
Network Equipment	1300 W Broward Dispatch	2	TRN7343A	RACK 7.5'	$708	$1,417
Network Equipment	1300 W Broward Dispatch	1	_NETCLOCK	Safran NetClock SecureSync Model 2402-013	$16,047	$16,047
Dispatch Consoles	1300 W Broward Dispatch	6	_STATUS_LIGHT_TOWER	WATSON STATUS LIGHT R/Y/G WITH POWER SUPPLY	$2,201	$13,208
Dispatch Consoles	1300 W Broward Dispatch	6	_UPS_EC850LCD	PLACEHOLDER FOR CyberPower EX850LCD UPS	$286	$1,716
Power Distribution	2200 Executive Airport Way	1	DS11011188	PDU, 120/240 SPLIT PH OR N+1 REDUNDANT, 60A MAX PER PHASE, SIX DEDICAT	$3,852	$3,852

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Power Distribution	2200 Executive Airport Way	6	DS3750295	BREAKER, 5 AMP, CB UL 489 LISTED FOR AC EDGE II (1101-1188)	$82	$492
Power Distribution	2200 Executive Airport Way	3	DS3750296	BREAKER, 10 AMP, CB UL 489 LISTED FOR AC EDGE II (1101-1188)	$93	$279
Power Distribution	2200 Executive Airport Way	3	DS3750297	BREAKER, 15 AMP, CB UL 489 LISTED FOR AC EDGE II (1101-1188)	$84	$252
Power Distribution	2200 Executive Airport Way	2	DS1101990	SPD, SHIELDED RJ-45 JACK, SINGLE LINE GBE (1000MBPS) R56 COMPLIANT	$189	$378
Power Distribution	2200 Executive Airport Way	1	DSTSJADP	RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS	$136	$136
Dispatch Consoles	2200 Executive Airport Way	8	HKVN4729A	AXS DISPATCH CONSOLE LICENSE	$8,374	$66,992
Dispatch Consoles	2200 Executive Airport Way	8	HKVN4730A	AXS TRUNKING SERVICES LICENSE	$6,996	$55,968
Dispatch Consoles	2200 Executive Airport Way	8	HKVN4731A	AXS ADVANCED CONVENTIONAL SERVICES LICENSE	$4,198	$33,584
Dispatch Consoles	2200 Executive Airport Way	8	HKVN4732A	AXS SECURE VOICE SERVICES LICENSE	$7,765	$62,120
Dispatch Consoles	2200 Executive Airport Way	8	HKVN4733A	LICENSE,AXS INTEGRATED IRR	$3,392	$27,136

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Dispatch Consoles	2200 Executive Airport Way	8	HKVN4736A	AXS AMBE+2 VOCODER ROYALTY AND LICENSE	$53	$424
Dispatch Consoles	2200 Executive Airport Way	8	HKVN4739A	AXS SECURE OTEK SERVICES LICENSE	$5,151	$41,208
Dispatch Consoles	2200 Executive Airport Way	8	HKVN4737A	AXS STANDARD LEVEL RADIO RESOURCE CAPACITY LICENSE	$21,942	$175,536
Dispatch Consoles	2200 Executive Airport Way	4	B1957A	AXS SOFTWARE DVD	$265	$1,060
Dispatch Consoles	2200 Executive Airport Way	8	B1951B	DISPATCH DESKTOP MICROPHONE, USB	$629	$5,030
Dispatch Consoles	2200 Executive Airport Way	8	CA03412AA	ADD: USB CABLE, TYPE C TO TYPE C, 4.5M	$44	$352
Dispatch Consoles	2200 Executive Airport Way	16	B1952B	DISPATCH DESKTOP SPEAKER, USB	$675	$10,798
Dispatch Consoles	2200 Executive Airport Way	16	CA03413AA	ADD: USB CABLE, TYPE A TO TYPE C, 4.5M	$33	$535
Dispatch Consoles	2200 Executive Airport Way	8	SQM01SUM0342A	CCHUB W/INTERNAL ENCRYPTION HW	$0	$0
Dispatch Consoles	2200 Executive Airport Way	8	B1956A	COMMANDCENTRAL HUB, W/CLIENT PC	$5,880	$47,040
Dispatch Consoles	2200 Executive Airport Way	8	CA03850AA	ADD: WINDOWS OS FOR MCC7500E CONSOLE	$784	$6,272
Dispatch Consoles	2200 Executive Airport Way	8	CA03553AA	ADD: AC LINE CORD, NORTH AMERICA	$15	$120

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Dispatch Consoles	2200 Executive Airport Way	8	CA03547AA	ADD: BRACKET, MOUNTING 2RU	$84	$672
Dispatch Consoles	2200 Executive Airport Way	8	CA03548AA	ADD: TWO CABLES, POWER 24VDC	$84	$672
Dispatch Consoles	2200 Executive Airport Way	8	CA03572AA	ADD: CABLE RETENTION BRACKET	$73	$584
Dispatch Consoles	2200 Executive Airport Way	8	CA04101AA	ADD USB HSM KEY STORAGE	$0	$0
Dispatch Consoles	2200 Executive Airport Way	8	CA04101AA-P	ADD USB HSM KEY STORAGE PRICE	$18,352	$146,816
Dispatch Consoles	2200 Executive Airport Way	16	B1913A	MCC SERIES HEADSET JACK	$224	$3,584
Dispatch Consoles	2200 Executive Airport Way	8	L3226A	COMPUTER MOUSE, CERTIFIED OPTICAL WHEEL MOUSE FOR RSD SERVERS AND WORKSTATIONS	$30	$240
Dispatch Consoles	2200 Executive Airport Way	8	L3225A	CERTIFIED KEYBOARD FOR RSD SERVERS AND WORKSTATIONS	$35	$280
Dispatch Consoles	2200 Executive Airport Way	4	DSF2B56AA	USB EXTERNAL DVD DRIVE	$172	$688
Dispatch Consoles	2200 Executive Airport Way	8	DSTWIN6328A	PROVIDES ONE DUAL PEDAL FOOTSWITCH	$613	$4,904
Dispatch Consoles	2200 Executive Airport Way	8	3071114H01	CABLE ASSY, EXTENDER	$107	$858
Dispatch Consoles	2200 Executive Airport Way	8	DSEV241B	TECH GLOBAL EVOLUTION SERIES 24INCH WITH TOUCH	$5,149	$41,192

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Dispatch Consoles	2200 Executive Airport Way	8	T8742A	MCAFEE FOR WINDOWS CLIENT, A2019.2 +PLUS	$165	$1,320
Dispatch Consoles	2200 Executive Airport Way	8	T8806A	WINDOWS SUPP. TRANSPARENT, A2022.1	$0	$0
Network Equipment	2200 Executive Airport Way	2	CLN9066A	NETWORK SWITCH, JUNIPER EX4100 24-PORT NON TAA	$5,831	$11,661
Network Equipment	2200 Executive Airport Way	2	CLN9105A	CABLE FRU, 1 METER JUNIPER DAC CABLE	$55	$110
Network Equipment	2200 Executive Airport Way	2	T8492A	ROUTER, RADIO SITE ROUTER AND FIREWALL - AC	$2,342	$4,684
Network Equipment	2200 Executive Airport Way	2	CA03445AA	ADD: MISSION CRITICAL HARDENING	$3,696	$7,392
Network Equipment	2200 Executive Airport Way	2	CA03448AA	ADD: STATEFUL FIREWALL	$1,120	$2,240
Network Equipment	2200 Executive Airport Way	1	T8810A	STANDALONE DSC 8000 CONTROLLER	$0	$0
Network Equipment	2200 Executive Airport Way	1	CA04079AA	ADD: ASTRO NEXT SYSTEM RELEASE 2024.X	$0	$0
Network Equipment	2200 Executive Airport Way	1	CA03801AA	ADD: DSC 8000 CONVENTIONAL SITE CONTROLLER	$5,830	$5,830
Network Equipment	2200 Executive Airport Way	1	UA00787AA	ADD: DSC 8000 CONVENTIONAL SITE CONTROLLER SW	$8,480	$8,480

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Network Equipment	2200 Executive Airport Way	1	CA03832AA	ADD: NM--DISPATCH SITE	$0	$0
Network Equipment	2200 Executive Airport Way	1	T8811A	DSC AC POWER SUPPLY CHASSIS	$1,802	$1,802
Network Equipment	2200 Executive Airport Way	1	CA03800AA	ADD: SINGLE POWER SUPPLY FOR DSC	$1,166	$1,166
Network Equipment	2200 Executive Airport Way	1	CA03534AA	ADD: DSC AC POWER CABLE - US, 6 FT.	$0	$0
Network Equipment	2200 Executive Airport Way	1	CA03763AA	ADD: CABINET MOUNTING HARDWARE	$0	$0
Base Station Gateway	2200 Executive Airport Way	1	SQM01SUM0333A	MCG 8000 CONVENTIONAL GATEWAY	$5,600	$5,600
Base Station Gateway	2200 Executive Airport Way	1	CA03714AA	ADD: AC POWER	$0	$0
Base Station Gateway	2200 Executive Airport Way	8	CA03717AA	ADD: ACIM INTERFACE	$840	$6,720
Network Management	2200 Executive Airport Way	1	DSB07001619	TRIPP LITE 16 PORT RACK CONSOLE KVM S 19IN RACKMOUNT SWITCH	$3,596	$3,596
Network Management	2200 Executive Airport Way	1	DSB078101USB1	USB SINGLE SRVR INTERFACE UNIT VIRTUAL MEDIA KVM SWITCH HD15 USB RJ4	$186	$186

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Motorola Solutions

Network Management	2200 Executive Airport Way	1	T8742A	MCAFEE FOR WINDOWS CLIENT, A2019.2 +PLUS	$165	$165
Network Management	2200 Executive Airport Way	1	T8806A	WINDOWS SUPP. TRANSPARENT, A2022.1	$0	$0
Network Management	2200 Executive Airport Way	1	F0016A	MC IOT MAIN MODEL	$1,119	$1,119
Network Management	2200 Executive Airport Way	1	VA01945AA	ADD: MC EDGE AS AUX I--O SERVER	$0	$0
Network Management	2200 Executive Airport Way	1	VA00985AA	ADD: NO PIGGY_ MC-EDGE	$0	$0
Network Management	2200 Executive Airport Way	1	VA00147AA	ADD: FRONT CABLE COVERS	$12	$12
Network Management	2200 Executive Airport Way	3	VA00989AA	ADD: MIXED DIGITAL _ 8DO EE 16DI 5-18 V -- DRY	$642	$1,926
Network Management	2200 Executive Airport Way	1	VA00009AA	ADD: AC POWER SUPPLY 12V--120W DC OUT	$265	$265
Network Management	2200 Executive Airport Way	1	VA00153AA	ADD:I--O MODULE EXTRACTOR TOOL	$12	$12
Network Management	2200 Executive Airport Way	1	VA01968AA	MC_EDGE DC POWER CABLE 7.5A	$80	$80

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Network Management	2200 Executive Airport Way	1	VA01967AA	INC: MC_EDGE CPU PACKING	$0	$0
Network Management	2200 Executive Airport Way	1	VA00341AA	INC:MC-EDGE MAIN FILE SYSTEM	$0	$0
Network Management	2200 Executive Airport Way	1	VA00142AA	INC:EXTREMDB LICENSE	$0	$0
Network Management	2200 Executive Airport Way	3	VA00049AA	INC: I--O MODULE CABLE COVER	$0	$0
Network Management	2200 Executive Airport Way	1	VA00974AA	INC: IOT MC-EDGE CPU PACKAGE	$0	$0
Network Management	2200 Executive Airport Way	1	VA00442AA	INC:MC-EDGE SYSTEM SW FILES	$0	$0
Network Management	2200 Executive Airport Way	1	VA01383AA	INC: FRONT CABLE COVERS FOR MC EDGE	$0	$0
Network Management	2200 Executive Airport Way	1	FHN0057A	DIN RAIL STOPPER	$17	$17
Network Management	2200 Executive Airport Way	1	DSIABDIN4	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT	$308	$308
Network Management	2200 Executive Airport Way	3	FHN1668A	TERM BLOCK & CONN WIRED M25T68L	$99	$297

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Motorola Solutions

Network Management	2200 Executive Airport Way	1	TT4270B	Z2 MINI G9 WORKSTATION GEN14 PROCESSOR	$2,857	$2,857
Network Management	2200 Executive Airport Way	1	T8941A	A2024.X NM CLIENT SW	$952	$952
Network Management	2200 Executive Airport Way	1	DSF2B56AA	USB EXTERNAL DVD DRIVE	$172	$172
Network Equipment	2200 Executive Airport Way	2	TRN7343A	RACK 7.5'	$708	$1,417
Network Equipment	2200 Executive Airport Way	1	_NETCLOCK	Safran NetClock SecureSync Model 2402-013	$16,047	$16,047
Dispatch Consoles	2200 Executive Airport Way	8	_STATUS_LIGHT_TOWER	WATSON STATUS LIGHT R/Y/G WITH POWER SUPPLY	$2,201	$17,611
Dispatch Consoles	2200 Executive Airport Way	8	_UPS_EC850LCD	PLACEHOLDER FOR CyberPower EX850LCD UPS	$286	$2,288
Spares	Spares	1	B1951B	DISPATCH DESKTOP MICROPHONE, USB	$629	$629
Spares	Spares	1	CA03412AA	ADD: USB CABLE, TYPE C TO TYPE C, 4.5M	$44	$44
Spares	Spares	1	B1952B	DISPATCH DESKTOP SPEAKER, USB	$675	$675

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Motorola Solutions

Spares	Spares	1	CA03413AA	ADD: USB CABLE, TYPE A TO TYPE C, 4.5M	$33	$33
Spares	Spares	1	SQM01SUM0342A	CCHUB W/INTERNAL ENCRYPTION HW	$0	$0
Spares	Spares	1	B1956A	COMMANDCENTRAL HUB, W/CLIENT PC	$5,880	$5,880
Spares	Spares	1	CA03850AA	ADD: WINDOWS OS FOR MCC7500E CONSOLE	$784	$784
Spares	Spares	1	CA03553AA	ADD: AC LINE CORD, NORTH AMERICA	$15	$15
Spares	Spares	1	CA03548AA	ADD: TWO CABLES, POWER 24VDC	$84	$84
Spares	Spares	1	CA04101AA	ADD USB HSM KEY STORAGE	$0	$0
Spares	Spares	1	CA04101AA-P	ADD USB HSM KEY STORAGE PRICE	$18,352	$18,352
Spares	Spares	1	B1913A	MCC SERIES HEADSET JACK	$224	$224
Spares	Spares	1	L3226A	COMPUTER MOUSE, CERTIFIED OPTICAL WHEEL MOUSE FOR RSD SERVERS AND WORKSTATIONS	$30	$30
Spares	Spares	1	L3225A	CERTIFIED KEYBOARD FOR RSD SERVERS AND WORKSTATIONS	$35	$35

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Motorola Solutions

Spares	Spares	1	DSTWIN6328A	PROVIDES ONE DUAL PEDAL FOOTSWITCH	$613	$613
Spares	Spares	1	DSEV241B	TECH GLOBAL EVOLUTION SERIES 24INCH WITH TOUCH	$5,149	$5,149
Spares	Spares	1	T8742A	MCAFEE FOR WINDOWS CLIENT, A2019.2 +PLUS	$165	$165
Spares	Spares	1	T8806A	WINDOWS SUPP. TRANSPARENT, A2022.1	$0	$0
Spares	Spares	1	T8639A	JUNIPER CONTROL ROOM FIREWALL	$4,684	$4,684
Spares	Spares	1	T8669A	RECOVERY MEDIA, JUNIPER CONTROL ROOM FIREWALL	$112	$112
Spares	Spares	1	CLN9066A	NETWORK SWITCH, JUNIPER EX4100 24-PORT NON TAA	$5,831	$5,831
Spares	Spares	1	CLN9105A	CABLE FRU, 1 METER JUNIPER DAC CABLE	$55	$55
Spares	Spares	1	T8492A	ROUTER, RADIO SITE ROUTER AND FIREWALL - AC	$2,342	$2,342
Spares	Spares	1	CA03445AA	ADD: MISSION CRITICAL HARDENING	$3,696	$3,696
Spares	Spares	1	CA03448AA	ADD: STATEFUL FIREWALL	$1,120	$1,120

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Motorola Solutions

Spares	Spares	1	T8810A	STANDALONE DSC 8000 CONTROLLER	$0	$0
Spares	Spares	1	CA04079AA	ADD: ASTRO NEXT SYSTEM RELEASE 2024.X	$0	$0
Spares	Spares	1	CA03801AA	ADD: DSC 8000 CONVENTIONAL SITE CONTROLLER	$5,830	$5,830
Spares	Spares	1	UA00787AA	ADD: DSC 8000 CONVENTIONAL SITE CONTROLLER SW	$8,480	$8,480
Spares	Spares	1	CA03832AA	ADD: NM--DISPATCH SITE	$0	$0
Spares	Spares	1	T8811A	DSC AC POWER SUPPLY CHASSIS	$1,802	$1,802
Spares	Spares	1	CA03800AA	ADD: SINGLE POWER SUPPLY FOR DSC	$1,166	$1,166
Spares	Spares	1	CA03534AA	ADD: DSC AC POWER CABLE - US, 6 FT.	$0	$0
Spares	Spares	1	CA03763AA	ADD: CABINET MOUNTING HARDWARE	$0	$0
Spares	Spares	1	SQM01SUM0333A	MCG 8000 CONVENTIONAL GATEWAY	$5,600	$5,600
Spares	Spares	1	CA03714AA	ADD: AC POWER	$0	$0
Spares	Spares	8	CA03717AA	ADD: ACIM INTERFACE	$840	$6,720

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Spares	Spares	1	B1934A	MCC 7500 VOICE PROCESSOR MODULE FRU	$13,250	$13,250
Spares	Spares	1	F0016A	MC IOT MAIN MODEL	$1,119	$1,119
Spares	Spares	1	VA01945AA	ADD: MC EDGE AS AUX I--O SERVER	$0	$0
Spares	Spares	1	VA00973AA	ADD: IOT MC-EDGE ENHANCED COMM PLUG-IN BOARD	$177	$177
Spares	Spares	1	VA00147AA	ADD: FRONT CABLE COVERS	$12	$12
Spares	Spares	3	VA00989AA	ADD: MIXED DIGITAL _ 8DO EE 16DI 5-18 V -- DRY	$642	$1,926
Spares	Spares	1	VA00009AA	ADD: AC POWER SUPPLY 12V--120W DC OUT	$265	$265
Spares	Spares	1	VA01968AA	MC_EDGE DC POWER CABLE 7.5A	$80	$80
Spares	Spares	1	VA01967AA	INC: MC_EDGE CPU PACKING	$0	$0
Spares	Spares	1	VA00341AA	INC:MC-EDGE MAIN FILE SYSTEM	$0	$0
Spares	Spares	1	VA00142AA	INC:EXTREMDB LICENSE	$0	$0
Spares	Spares	3	VA00049AA	INC: I--O MODULE CABLE COVER	$0	$0
Spares	Spares	1	VA00974AA	INC: IOT MC-EDGE CPU PACKAGE	$0	$0

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Spares	Spares	1	VA00442AA	INC:MC-EDGE SYSTEM SW FILES	$0	$0
Spares	Spares	1	VA01383AA	INC: FRONT CABLE COVERS FOR MC EDGE	$0	$0
Spares	Spares	1	FHN0057A	DIN RAIL STOPPER	$17	$17
Spares	Spares	1	DSIABDIN4	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT	$308	$308
Spares	Spares	1	DSB07001619	TRIPP LITE 16 PORT RACK CONSOLE KVM S 19IN RACKMOUNT SWITCH	$3,596	$3,596
Spares	Spares	1	DSB078101USB1	USB SINGLE SRVR INTERFACE UNIT VIRTUAL MEDIA KVM SWITCH HD15 USB RJ4	$186	$186
Gateway Control Stations	1300 W Broward Dispatch	1	DSDS8A03CS36UN	800 CONTROL STATION ANTENNA. 3 DBD	$1,298	$1,298
Gateway Control Stations	1300 W Broward Dispatch	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61
Gateway Control Stations	1300 W Broward Dispatch	2	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50	$40	$80
Gateway Control Stations	1300 W Broward Dispatch	2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	$100	$201

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Gateway Control Stations	1300 W Broward Dispatch	300	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$1,227
Gateway Control Stations	1300 W Broward Dispatch	2	DSNF50V12	CONNECTOR, N FEMALE INTERFACE FOR EC4-50	$40	$80
Gateway Control Stations	1300 W Broward Dispatch	6	DSGKNS	STANDARD GROUND KIT FOR 1/2" (15.5-16.5MM) EW180,WE191 & E185 CABLE, INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2-HOLE LUG	$48	$288
Gateway Control Stations	1300 W Broward Dispatch	2	DSHG12L	PRE-LACED HOISTING GRIP FOR 1/2" STANDARD CABLES, EACH	$31	$62
Gateway Control Stations	1300 W Broward Dispatch	10	DSBH12	BH-12 BUTTERFLY HANGER FOR 1/2 AIRCELL COAX,PKG OF 10	$95	$949
Gateway Control Stations	1300 W Broward Dispatch	1	DS1090501WA	RF SPD, 700-1000MHZ BROADBAND 15 VDC PASS NM ANT, NF EQUIP PIP, ASIG	$224	$224
Gateway Control Stations	1300 W Broward Dispatch	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$120

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Gateway Control Stations	1300 W Broward Dispatch	2	DSNM50B12X	CONNECTOR, N MALE INTERFACE FOR EC4-50-HF	$61	$122
Gateway Control Stations	1300 W Broward Dispatch	1	DSCS74860805SN	HYBRID CONTROL STATION COMBINER, 746-869 MHZ 8 CH.	$14,818	$14,818
Gateway Control Stations	1300 W Broward Dispatch	1	DSDS8A03CS36UN	800 CONTROL STATION ANTENNA. 3 DBD	$1,298	$1,298
Gateway Control Stations	1300 W Broward Dispatch	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61
Gateway Control Stations	1300 W Broward Dispatch	2	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50	$40	$80
Gateway Control Stations	1300 W Broward Dispatch	2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	$100	$201
Gateway Control Stations	1300 W Broward Dispatch	300	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$1,227
Gateway Control Stations	1300 W Broward Dispatch	2	DSNF50V12	CONNECTOR, N FEMALE INTERFACE FOR EC4-50	$40	$80
Gateway Control Stations	1300 W Broward Dispatch	6	DSGKNS	STANDARD GROUND KIT FOR 1/2" (15.5-16.5MM) EW180,WE191 & E185 CABLE,	$48	$288

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				INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2-HOLE LUG		
Gateway Control Stations	1300 W Broward Dispatch	2	DSHG12L	PRE-LACED HOISTING GRIP FOR 1/2" STANDARD CABLES, EACH	$31	$62
Gateway Control Stations	1300 W Broward Dispatch	10	DSBH12	BH-12 BUTTERFLY HANGER FOR 1/2 AIRCELL COAX,PKG OF 10	$95	$949
Gateway Control Stations	1300 W Broward Dispatch	1	DS1090501WA	RF SPD, 700-1000MHZ BROADBAND 15 VDC PASS NM ANT, NF EQUIP PIP, ASIG	$224	$224
Gateway Control Stations	1300 W Broward Dispatch	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$120
Gateway Control Stations	1300 W Broward Dispatch	2	DSNM50B12X	CONNECTOR, N MALE INTERFACE FOR EC4-50-HF	$61	$122
Gateway Control Stations	2200 Executive Airport Way	1	DSDS8A03CS36UN	800 CONTROL STATION ANTENNA. 3 DBD	$1,298	$1,298
Gateway Control Stations	2200 Executive Airport Way	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61

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Gateway Control Stations	2200 Executive Airport Way	2	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50	$40	$80
Gateway Control Stations	2200 Executive Airport Way	2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	$100	$201
Gateway Control Stations	2200 Executive Airport Way	200	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$818
Gateway Control Stations	2200 Executive Airport Way	2	DSNF50V12	CONNECTOR, N FEMALE INTERFACE FOR EC4-50	$40	$80
Gateway Control Stations	2200 Executive Airport Way	5	DSGKNS	STANDARD GROUND KIT FOR 1/2" (15.5-16.5MM) EW180,WE191 & E185 CABLE, INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2-HOLE LUG	$48	$240
Gateway Control Stations	2200 Executive Airport Way	1	DSHG12L	PRE-LACED HOISTING GRIP FOR 1/2" STANDARD CABLES, EACH	$31	$31
Gateway Control Stations	2200 Executive Airport Way	7	DSBH12	BH-12 BUTTERFLY HANGER FOR 1/2 AIRCELL COAX,PKG OF 10	$95	$665

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Gateway Control Stations	2200 Executive Airport Way	1	DS1090501WA	RF SPD, 700-1000MHZ BROADBAND 15 VDC PASS NM ANT, NF EQUIP PIP, ASIG	$224	$224
Gateway Control Stations	2200 Executive Airport Way	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$120
Gateway Control Stations	2200 Executive Airport Way	2	DSNM50B12X	CONNECTOR, N MALE INTERFACE FOR EC4-50-HF	$61	$122
Gateway Control Stations	2200 Executive Airport Way	1	DSCS74860805SN	HYBRID CONTROL STATION COMBINER, 746-869 MHZ 8 CH.	$14,818	$14,818
Gateway Control Stations	2200 Executive Airport Way	1	DSDS8A03CS36UN	800 CONTROL STATION ANTENNA. 3 DBD	$1,298	$1,298
Gateway Control Stations	2200 Executive Airport Way	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61
Gateway Control Stations	2200 Executive Airport Way	2	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50	$40	$80
Gateway Control Stations	2200 Executive Airport Way	2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	$100	$201
Gateway Control Stations	2200 Executive Airport Way	200	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$818

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Gateway Control Stations	2200 Executive Airport Way	2	DSNF50V12	CONNECTOR, N FEMALE INTERFACE FOR EC4-50	$40	$80
Gateway Control Stations	2200 Executive Airport Way	5	DSGKNS	STANDARD GROUND KIT FOR 1/2" (15.5-16.5MM) EW180,WE191 & E185 CABLE, INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2-HOLE LUG	$48	$240
Gateway Control Stations	2200 Executive Airport Way	1	DSHG12L	PRE-LACED HOISTING GRIP FOR 1/2" STANDARD CABLES, EACH	$31	$31
Gateway Control Stations	2200 Executive Airport Way	7	DSBH12	BH-12 BUTTERFLY HANGER FOR 1/2 AIRCELL COAX,PKG OF 10	$95	$665
Gateway Control Stations	2200 Executive Airport Way	1	DS1090501WA	RF SPD, 700-1000MHZ BROADBAND 15 VDC PASS NM ANT, NF EQUIP PIP, ASIG	$224	$224
Gateway Control Stations	2200 Executive Airport Way	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$120
Gateway Control Stations	2200 Executive Airport Way	2	DSNM50B12X	CONNECTOR, N MALE INTERFACE FOR EC4-50-HF	$61	$122

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Gateway Control Stations	1300 W Broward Dispatch	180	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$862
Gateway Control Stations	1300 W Broward Dispatch	12	DSNM50B12X	CONNECTOR, N MALE INTERFACE FOR EC4-50-HF	$61	$732
Gateway Control Stations	2200 Executive Airport Way	240	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$1,150
Gateway Control Stations	2200 Executive Airport Way	16	DSNM50B12X	CONNECTOR, N MALE INTERFACE FOR EC4-50-HF	$61	$976
Transmitters	Playa del Sol Site	1	SQM01SUM0338A	7/800 DBR M12 MULTI-CARRIER SITE	$8,480	$8,480
Transmitters	Playa del Sol Site	1	CA04069AA	ADD: NEW DBR SITE	$0	$0
Transmitters	Playa del Sol Site	1	CA03873AA	ADD: SYSTEM RELEASE AN2024.X	$0	$0
Transmitters	Playa del Sol Site	1	CA03875AA	ADD: DBR M12 PRIMARY RACK	$7,420	$7,420
Transmitters	Playa del Sol Site	10	CA03887AA	ADD: ANTENNA 1 CHANNELS	$6,466	$64,660
Transmitters	Playa del Sol Site	6	CA03891AA	ADD: 800 MHZ POWER AMPLIFIER	$7,420	$44,520
Transmitters	Playa del Sol Site	2	CA03895AA	ADD: INTEGRATED GNSS TIMING REF W/ RB	$12,720	$25,440
Transmitters	Playa del Sol Site	1	CA03906AA	ADD: 7.5 FOOT OPEN RACK	$1,590	$1,590

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Transmitters	Playa del Sol Site	1	CA03879AA	ADD: 800 MHZ TX ANTENNA 1 FILTER	$3,180	$3,180
Transmitters	Playa del Sol Site	1	CA03899AA	ADD: RMC EXPANSION PRE-WIRE	$1,908	$1,908
Transmitters	Playa del Sol Site	2	UA00866AA	ADD: SIMULCAST SUB-SITE CONTROLLER SW	$8,692	$17,384
Transmitters	Playa del Sol Site	10	UA00868AA	ADD: SIMULCAST SUB-SITE BR SOFTWARE	$36,570	$365,700
Transmitters	Playa del Sol Site	4	UA00869AA	ADD: P25 TDMA SOFTWARE	$16,960	$67,840
Transmitters	Playa del Sol Site	4	UA00870AA	ADD: DYNAMIC CHANNEL ASSIGNMENT SOFTWARE	$12,720	$50,880
Transmitters	Playa del Sol Site	2	UA00871AA	ADD: DSC 8500 RUBIDIUM SW LICENSE	$4,770	$9,540
Transmitters	Playa del Sol Site	2	CA03902AA	ADD: SRX345 SITE ROUTER	$0	$0
Transmitters	Playa del Sol Site	2	CA03902AA-P	ADD: SRX345 SITE ROUTER PRICE	$8,277	$16,554
Transmitters	Playa del Sol Site	2	DSIX2L1M1DC48IG	SITE EQUIPMENT,PD, HPD GPS DATA LINE, 48VDC, HARD WIRE WITH ISOLATED GROUNDING	$247	$494
Transmitters	Playa del Sol Site	1	DLN8081A	FRU: RED/EXP XCVR 7-12 KIT	$3,657	$3,657
Transmitters	Playa del Sol Site	2	DSP04268	ALUMINUM 6061-T6. PIPE 1 INCH SCHED 40	$16	$33

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Transmitters	Playa del Sol Site	2	DSWM4	HEAVY DUTY W STYLE WALL MOUNT WITH 4 INCH STAND-OFF	$92	$184
Transmitters	Playa del Sol Site	2	CB001133A05	CABLE,ASTRO: 125' REMOTE GPS CABLE	$867	$1,733
Transmitters	Playa del Sol Site	2	PMUG1018A	GNSS REMOTE RECEIVER ASSY	$1,066	$2,132
Transmitter Antenna System	Playa del Sol Site	1	DSDS7C11PPYU6M	764-869 MHZ 11 DB GAIN 8' PANEL LOW-PIM/PIP, OFFSET, 4.3-10 CONNECTOR, 6-DEG DT	$4,549	$4,549
Transmitter Antenna System	Playa del Sol Site	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61
Transmitter Antenna System	Playa del Sol Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Transmitter Antenna System	Playa del Sol Site	2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	$100	$201
Transmitter Antenna System	Playa del Sol Site	40	DSEC650A	COAXIAL CABLE, "A" SERIES 1-1/4" 50 OHM CORRUGATED COPPER	$14	$540
Transmitter Antenna System	Playa del Sol Site	2	DS4310F50V114N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC6-50-A	$165	$330

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Transmitter Antenna System	Playa del Sol Site	3	DSGKN114C2	STANDARD GROUND KIT FOR 1-1/4", INCLUDES 2' LEAD WITH ATTACHED 3/8" 2-HOLE LUG	$36	$108
Transmitter Antenna System	Playa del Sol Site	1	DSHG114L	PRE-LACED HOISTING GRIP FOR 1-1/4 AIRCELL COAX	$129	$129
Transmitter Antenna System	Playa del Sol Site	2	DSBH114	BH-114 BUTTERFLY HANGER FOR 1-1/4 AIRCELL COAX,PKG OF 10	$95	$190
Transmitter Antenna System	Playa del Sol Site	1	DSTSX4310FMP	4.3-10 M/F BULKHEAD COAX RF SURGE PROTECTOR, 698MHZ - 2.7GHZ PIM	$258	$258
Transmitter Antenna System	Playa del Sol Site	1	DSBF4310	KIT FLANGE/BLKH ADAPTER 4.3-10	$53	$53
Transmitter Antenna System	Playa del Sol Site	25	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$102
Transmitter Antenna System	Playa del Sol Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Receiver Antenna System	Playa del Sol Site	1	DSDS7C12P36UM	764-869MHZ ANTENNA, OMNIDIRECTIONAL 11.5 DBD, LOW-PIM/HI-PIP, 4.3-10 FEMALE	$6,233	$6,233

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Receiver Antenna System	Playa del Sol Site	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61
Receiver Antenna System	Playa del Sol Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Receiver Antenna System	Playa del Sol Site	5	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	$100	$502
Receiver Antenna System	Playa del Sol Site	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61
Receiver Antenna System	Playa del Sol Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Receiver Antenna System	Playa del Sol Site	40	DSEC550A	COAXIAL CABLE, "A" SERIES 7/8 IN 50 OHM CORRUGATED COPPER W/ BLACK PE	$8	$309
Receiver Antenna System	Playa del Sol Site	2	DS4310F50V78N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC5-50-A	$54	$108
Receiver Antenna System	Playa del Sol Site	3	DSGKNM	STANDARD GROUND KIT FOR 5/8", 7/8" (21.3-28.7MM) EW85, EW90, WE108, EW127, WE130, E130, EW132 AND WE150 CABLE,	$47	$141

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				INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2- HOLE LUG		
Receiver Antenna System	Playa del Sol Site	1	DSHG78L	HOISTING GRIP, PRE-LACED, 7/8 IN CORRUGATED COAX	$117	$117
Receiver Antenna System	Playa del Sol Site	40	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$164
Receiver Antenna System	Playa del Sol Site	1	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$38
Receiver Antenna System	Playa del Sol Site	1	DS4310F50V12N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC4-50	$38	$38
Receiver Antenna System	Playa del Sol Site	3	DSGKNS	STANDARD GROUND KIT FOR 1/2" (15.5-16.5MM) EW180,WE191 & E185 CABLE, INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2-HOLE LUG	$48	$144
Receiver Antenna System	Playa del Sol Site	1	DSHG12L	PRE-LACED HOISTING GRIP FOR 1/2" STANDARD CABLES, EACH	$31	$31
Receiver Antenna System	Playa del Sol Site	2	DSBH12	BH-12 BUTTERFLY HANGER FOR 1/2	$95	$190

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				AIRCELL COAX,PKG OF 10		
Receiver Antenna System	Playa del Sol Site	2	DSBH78	BH-78 BUTTERFLY HANGER FOR 7/8 AIRCELL COAX,PKG OF 10	$95	$190
Receiver Antenna System	Playa del Sol Site	2	DSTSXDC4310FM	DC PASS, BIDIRECTIONAL FEMALE/MALE 698MHZ - 2.7GHZ, PIM RATED	$298	$596
Receiver Antenna System	Playa del Sol Site	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$120
Receiver Antenna System	Playa del Sol Site	2	DS4310M50B12X	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50-HF	$56	$112
Receiver Antenna System	Playa del Sol Site	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$120
Receiver Antenna System	Playa del Sol Site	2	DS4310M50B12X	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50-HF	$56	$112
Receiver Antenna System	Playa del Sol Site	1	DS440030221	TTA 440, MOTOROLA TOWER TOP UNIT, 794-824 MHZ, 4.3-10 CONNS, AUTOQUAD	$7,795	$7,795
Receiver Antenna System	Playa del Sol Site	1	DS440037633	TTA 440, MOTOROLA CU (ESS), 794-824 MHZ, BYPASS, TEST PORT,	$6,670	$6,670

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				2DC, 4.3-10 TTA CONNECTORS		
Base Station Gateway	Playa del Sol Site	1	SQM01SUM0333A	MCG 8000 CONVENTIONAL GATEWAY	$5,600	$5,600
Base Station Gateway	Playa del Sol Site	1	CA03715AA	ADD: DC POWER	$0	$0
Base Station Gateway	Playa del Sol Site	8	CA03717AA	ADD: ACIM INTERFACE	$840	$6,720
Network Management	Playa del Sol Site	1	F0016A	MC IOT MAIN MODEL	$1,119	$1,119
Network Management	Playa del Sol Site	1	VA01946AA	ADD: MC EDGE AS NFM	$535	$535
Network Management	Playa del Sol Site	1	VA00973AA	ADD: IOT MC-EDGE ENHANCED COMM PLUG-IN BOARD	$177	$177
Network Management	Playa del Sol Site	1	VA00147AA	ADD: FRONT CABLE COVERS	$12	$12
Network Management	Playa del Sol Site	1	VA00150AA	ADD:12DI--8AI HW ONLY	$642	$642
Network Management	Playa del Sol Site	1	VA00151AA	ADD:0 - 5V DI--AI	$0	$0

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Network Management	Playa del Sol Site	3	VA00989AA	ADD: MIXED DIGITAL _ 8DO EE 16DI 5-18 V -- DRY	$642	$1,926
Network Management	Playa del Sol Site	1	VA00991AA	ADD: DC--DC - [48 >>24] PS W--O HOUSING	$530	$530
Network Management	Playa del Sol Site	1	VA00155AA	ADD:DC POWER CABLE 5A	$59	$59
Network Management	Playa del Sol Site	1	VA00153AA	ADD:I--O MODULE EXTRACTOR TOOL	$12	$12
Network Management	Playa del Sol Site	1	VA01967AA	INC: MC_EDGE CPU PACKING	$0	$0
Network Management	Playa del Sol Site	1	VA00341AA	INC:MC-EDGE MAIN FILE SYSTEM	$0	$0
Network Management	Playa del Sol Site	1	VA00142AA	INC:EXTREMDB LICENSE	$0	$0
Network Management	Playa del Sol Site	4	VA00049AA	INC: I--O MODULE CABLE COVER	$0	$0
Network Management	Playa del Sol Site	1	VA00974AA	INC: IOT MC-EDGE CPU PACKAGE	$0	$0
Network Management	Playa del Sol Site	1	VA00047AA	INC: 12DI--8AI 0-5V	$0	$0

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Network Management	Playa del Sol Site	1	VA00442AA	INC:MC-EDGE SYSTEM SW FILES	$0	$0
Network Management	Playa del Sol Site	1	VA01383AA	INC: FRONT CABLE COVERS FOR MC EDGE	$0	$0
Network Management	Playa del Sol Site	1	FHN0057A	DIN RAIL STOPPER	$17	$17
Network Management	Playa del Sol Site	1	DSIABDIN4	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT	$308	$308
Network Management	Playa del Sol Site	3	FHN1668A	TERM BLOCK & CONN WIRED M25T68L	$99	$297
Transmitters	Playa del Sol Site	1	TRN7343A	RACK 7.5'	$708	$708
DC Power	Playa del Sol Site	1	DQ-TEMP-DC-POWER	CUSTOM DC POWER PLANT	$111,956	$111,956
Power Distribution	Playa del Sol Site	1	DS570SA16FNRJ1S	Liebert Indoor - 120/240V 1-PH Type 1 surge protector	$2,320	$2,320
Power Distribution	Playa del Sol Site	1	DS560SA16FNRJ1S	Liebert Indoor - 120/240 VAC 1-PHASE Type 2 surge protector	$1,740	$1,740
Transmitters	Utilities Site	1	SQM01SUM0338A	7/800 DBR M12 MULTI-CARRIER SITE	$8,480	$8,480
Transmitters	Utilities Site	1	CA04069AA	ADD: NEW DBR SITE	$0	$0

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Transmitters	Utilities Site	1	CA03873AA	ADD: SYSTEM RELEASE AN2024.X	$0	$0
Transmitters	Utilities Site	1	CA03875AA	ADD: DBR M12 PRIMARY RACK	$7,420	$7,420
Transmitters	Utilities Site	10	CA03887AA	ADD: ANTENNA 1 CHANNELS	$6,466	$64,660
Transmitters	Utilities Site	6	CA03891AA	ADD: 800 MHZ POWER AMPLIFIER	$7,420	$44,520
Transmitters	Utilities Site	2	CA03895AA	ADD: INTEGRATED GNSS TIMING REF W/ RB	$12,720	$25,440
Transmitters	Utilities Site	1	CA03906AA	ADD: 7.5 FOOT OPEN RACK	$1,590	$1,590
Transmitters	Utilities Site	1	CA03879AA	ADD: 800 MHZ TX ANTENNA 1 FILTER	$3,180	$3,180
Transmitters	Utilities Site	1	CA03899AA	ADD: RMC EXPANSION PRE-WIRE	$1,908	$1,908
Transmitters	Utilities Site	2	UA00866AA	ADD: SIMULCAST SUB-SITE CONTROLLER SW	$8,692	$17,384
Transmitters	Utilities Site	10	UA00868AA	ADD: SIMULCAST SUB-SITE BR SOFTWARE	$36,570	$365,700
Transmitters	Utilities Site	4	UA00869AA	ADD: P25 TDMA SOFTWARE	$16,960	$67,840
Transmitters	Utilities Site	4	UA00870AA	ADD: DYNAMIC CHANNEL ASSIGNMENT SOFTWARE	$12,720	$50,880
Transmitters	Utilities Site	2	UA00871AA	ADD: DSC 8500 RUBIDIUM SW LICENSE	$4,770	$9,540

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Transmitters	Utilities Site	2	CA03902AA	ADD: SRX345 SITE ROUTER	$0	$0
Transmitters	Utilities Site	2	CA03902AA-P	ADD: SRX345 SITE ROUTER PRICE	$8,277	$16,554
Transmitters	Utilities Site	2	DSIX2L1M1DC48IG	SITE EQUIPMENT,PD, HPD GPS DATA LINE, 48VDC, HARD WIRE WITH ISOLATED GROUNDING	$247	$494
Transmitters	Utilities Site	1	DLN8081A	FRU: RED/EXP XCVR 7-12 KIT	$3,657	$3,657
Transmitters	Utilities Site	2	DSP04268	ALUMINUM 6061-T6. PIPE 1 INCH SCHED 40	$16	$33
Transmitters	Utilities Site	2	DSWM4	HEAVY DUTY W STYLE WALL MOUNT WITH 4 INCH STAND-OFF	$92	$184
Transmitters	Utilities Site	2	CB001133A05	CABLE,ASTRO: 125' REMOTE GPS CABLE	$867	$1,733
Transmitters	Utilities Site	2	PMUG1018A	GNSS REMOTE RECEIVER ASSY	$1,066	$2,132
Transmitter Antenna System	Utilities Site	1	DSDS7C10P36U3M	764-869 MHZ, SINGLE ANTENNA, OMNIDIRECTIONAL, 10 DB GAIN, LOW-PIM/HI-PIP, 4.3-10 FEMALE, 3 DEG DT	$5,848	$5,848
Transmitter Antenna System	Utilities Site	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61

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Transmitter Antenna System	Utilities Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Transmitter Antenna System	Utilities Site	2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	$100	$201
Transmitter Antenna System	Utilities Site	230	DSEC650A	COAXIAL CABLE, "A" SERIES 1-1/4" 50 OHM CORRUGATED COPPER	$14	$3,105
Transmitter Antenna System	Utilities Site	2	DS4310F50V114N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC6-50-A	$165	$330
Transmitter Antenna System	Utilities Site	6	DSGKN114C2	STANDARD GROUND KIT FOR 1-1/4", INCLUDES 2' LEAD WITH ATTACHED 3/8" 2-HOLE LUG	$36	$216
Transmitter Antenna System	Utilities Site	2	DSHG114L	PRE-LACED HOISTING GRIP FOR 1-1/4 AIRCELL COAX	$129	$258
Transmitter Antenna System	Utilities Site	8	DSBH114	BH-114 BUTTERFLY HANGER FOR 1-1/4 AIRCELL COAX,PKG OF 10	$95	$759
Transmitter Antenna System	Utilities Site	1	DSTSX4310FMP	4.3-10 M/F BULKHEAD COAX RF SURGE PROTECTOR, 698MHZ - 2.7GHZ PIM	$258	$258

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Transmitter Antenna System	Utilities Site	1	DSBF4310	KIT FLANGE/BLKH ADAPTER 4.3-10	$53	$53
Transmitter Antenna System	Utilities Site	25	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$102
Transmitter Antenna System	Utilities Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Receiver Antenna System	Utilities Site	1	DSDS7C12P36UM	764-869MHZ ANTENNA, OMNIDIRECTIONAL 11.5 DBD, LOW-PIM/HI-PIP, 4.3-10 FEMALE	$6,233	$6,233
Receiver Antenna System	Utilities Site	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61
Receiver Antenna System	Utilities Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Receiver Antenna System	Utilities Site	5	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	$100	$502
Receiver Antenna System	Utilities Site	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61

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Receiver Antenna System	Utilities Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Receiver Antenna System	Utilities Site	230	DSEC550A	COAXIAL CABLE, "A" SERIES 7/8 IN 50 OHM CORRUGATED COPPER W/ BLACK PE	$8	$1,778
Receiver Antenna System	Utilities Site	2	DS4310F50V78N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC5-50-A	$54	$108
Receiver Antenna System	Utilities Site	6	DSGKNM	STANDARD GROUND KIT FOR 5/8", 7/8" (21.3-28.7MM) EW85, EW90, WE108, EW127, WE130, E130, EW132 AND WE150 CABLE, INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2- HOLE LUG	$47	$282
Receiver Antenna System	Utilities Site	2	DSHG78L	HOISTING GRIP, PRE-LACED, 7/8 IN CORRUGATED COAX	$117	$234
Receiver Antenna System	Utilities Site	230	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$941
Receiver Antenna System	Utilities Site	1	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$38

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Receiver Antenna System	Utilities Site	1	DS4310F50V12N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC4-50	$38	$38
Receiver Antenna System	Utilities Site	6	DSGKNS	STANDARD GROUND KIT FOR 1/2" (15.5-16.5MM) EW180,WE191 & E185 CABLE, INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2-HOLE LUG	$48	$288
Receiver Antenna System	Utilities Site	2	DSHG12L	PRE-LACED HOISTING GRIP FOR 1/2" STANDARD CABLES, EACH	$31	$62
Receiver Antenna System	Utilities Site	8	DSBH12	BH-12 BUTTERFLY HANGER FOR 1/2 AIRCELL COAX,PKG OF 10	$95	$759
Receiver Antenna System	Utilities Site	8	DSBH78	BH-78 BUTTERFLY HANGER FOR 7/8 AIRCELL COAX,PKG OF 10	$95	$759
Receiver Antenna System	Utilities Site	2	DSTSXDC4310FM	DC PASS, BIDIRECTIONAL FEMALE/MALE 698MHZ - 2.7GHZ, PIM RATED	$298	$596
Receiver Antenna System	Utilities Site	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$120

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Receiver Antenna System	Utilities Site	2	DS4310M50B12X	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50-HF	$56	$112
Receiver Antenna System	Utilities Site	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$120
Receiver Antenna System	Utilities Site	2	DS4310M50B12X	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50-HF	$56	$112
Receiver Antenna System	Utilities Site	1	DS440030221	TTA 440, MOTOROLA TOWER TOP UNIT, 794-824 MHZ, 4.3-10 CONNS, AUTOQUAD	$7,795	$7,795
Receiver Antenna System	Utilities Site	1	DS440037633	TTA 440, MOTOROLA CU (ESS), 794-824 MHZ, BYPASS, TEST PORT, 2DC, 4.3-10 TTA CONNECTORS	$6,670	$6,670
Base Station Gateway	Utilities Site	1	SQM01SUM0333A	MCG 8000 CONVENTIONAL GATEWAY	$5,600	$5,600
Base Station Gateway	Utilities Site	1	CA03715AA	ADD: DC POWER	$0	$0
Base Station Gateway	Utilities Site	8	CA03717AA	ADD: ACIM INTERFACE	$840	$6,720
Network Management	Utilities Site	1	F0016A	MC IOT MAIN MODEL	$1,119	$1,119

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Network Management	Utilities Site	1	VA01946AA	ADD: MC EDGE AS NFM	$535	$535
Network Management	Utilities Site	1	VA00973AA	ADD: IOT MC-EDGE ENHANCED COMM PLUG-IN BOARD	$177	$177
Network Management	Utilities Site	1	VA00147AA	ADD: FRONT CABLE COVERS	$12	$12
Network Management	Utilities Site	1	VA00150AA	ADD:12DI--8AI HW ONLY	$642	$642
Network Management	Utilities Site	1	VA00151AA	ADD:0 - 5V DI--AI	$0	$0
Network Management	Utilities Site	3	VA00989AA	ADD: MIXED DIGITAL _ 8DO EE 16DI 5-18 V -- DRY	$642	$1,926
Network Management	Utilities Site	1	VA00991AA	ADD: DC--DC - [48 >>24] PS W--O HOUSING	$530	$530
Network Management	Utilities Site	1	VA00155AA	ADD:DC POWER CABLE 5A	$59	$59
Network Management	Utilities Site	1	VA00153AA	ADD:I--O MODULE EXTRACTOR TOOL	$12	$12
Network Management	Utilities Site	1	VA01967AA	INC: MC_EDGE CPU PACKING	$0	$0

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Network Management	Utilities Site	1	VA00341AA	INC:MC-EDGE MAIN FILE SYSTEM	$0	$0
Network Management	Utilities Site	1	VA00142AA	INC:EXTREMDB LICENSE	$0	$0
Network Management	Utilities Site	4	VA00049AA	INC: I--O MODULE CABLE COVER	$0	$0
Network Management	Utilities Site	1	VA00974AA	INC: IOT MC-EDGE CPU PACKAGE	$0	$0
Network Management	Utilities Site	1	VA00047AA	INC: 12DI--8AI 0-5V	$0	$0
Network Management	Utilities Site	1	VA00442AA	INC:MC-EDGE SYSTEM SW FILES	$0	$0
Network Management	Utilities Site	1	VA01383AA	INC: FRONT CABLE COVERS FOR MC EDGE	$0	$0
Network Management	Utilities Site	1	FHN0057A	DIN RAIL STOPPER	$17	$17
Network Management	Utilities Site	1	DSIABDIN4	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT	$308	$308
Network Management	Utilities Site	3	FHN1668A	TERM BLOCK & CONN WIRED M25T68L	$99	$297

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Transmitters	Utilities Site	1	TRN7343A	RACK 7.5'	$708	$708
DC Power	Utilities Site	1	DQ-TEMP-DC-POWER	CUSTOM DC POWER PLANT	$198,234	$198,234
Transmitters	Point of Americas Site	1	SQM01SUM0338A	7/800 DBR M12 MULTI-CARRIER SITE	$8,480	$8,480
Transmitters	Point of Americas Site	1	CA04069AA	ADD: NEW DBR SITE	$0	$0
Transmitters	Point of Americas Site	1	CA03873AA	ADD: SYSTEM RELEASE AN2024.X	$0	$0
Transmitters	Point of Americas Site	1	CA03875AA	ADD: DBR M12 PRIMARY RACK	$7,420	$7,420
Transmitters	Point of Americas Site	10	CA03887AA	ADD: ANTENNA 1 CHANNELS	$6,466	$64,660
Transmitters	Point of Americas Site	6	CA03891AA	ADD: 800 MHZ POWER AMPLIFIER	$7,420	$44,520
Transmitters	Point of Americas Site	2	CA03895AA	ADD: INTEGRATED GNSS TIMING REF W/ RB	$12,720	$25,440
Transmitters	Point of Americas Site	1	CA03906AA	ADD: 7.5 FOOT OPEN RACK	$1,590	$1,590
Transmitters	Point of Americas Site	1	CA03879AA	ADD: 800 MHZ TX ANTENNA 1 FILTER	$3,180	$3,180
Transmitters	Point of Americas Site	1	CA03899AA	ADD: RMC EXPANSION PRE-WIRE	$1,908	$1,908
Transmitters	Point of Americas Site	2	UA00866AA	ADD: SIMULCAST SUB-SITE CONTROLLER SW	$8,692	$17,384

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Transmitters	Point of Americas Site	10	UA00868AA	ADD: SIMULCAST SUB-SITE BR SOFTWARE	$36,570	$365,700
Transmitters	Point of Americas Site	4	UA00869AA	ADD: P25 TDMA SOFTWARE	$16,960	$67,840
Transmitters	Point of Americas Site	4	UA00870AA	ADD: DYNAMIC CHANNEL ASSIGNMENT SOFTWARE	$12,720	$50,880
Transmitters	Point of Americas Site	2	UA00871AA	ADD: DSC 8500 RUBIDIUM SW LICENSE	$4,770	$9,540
Transmitters	Point of Americas Site	2	CA03902AA	ADD: SRX345 SITE ROUTER	$0	$0
Transmitters	Point of Americas Site	2	CA03902AA-P	ADD: SRX345 SITE ROUTER PRICE	$8,277	$16,554
Transmitters	Point of Americas Site	2	DSIX2L1M1DC48IG	SITE EQUIPMENT,PD, HPD GPS DATA LINE, 48VDC, HARD WIRE WITH ISOLATED GROUNDING	$247	$494
Transmitters	Point of Americas Site	1	DLN8081A	FRU: RED/EXP XCVR 7-12 KIT	$3,657	$3,657
Transmitters	Point of Americas Site	2	DSP04268	ALUMINUM 6061-T6. PIPE 1 INCH SCHED 40	$16	$33
Transmitters	Point of Americas Site	2	DSWM4	HEAVY DUTY W STYLE WALL MOUNT WITH 4 INCH STAND-OFF	$92	$184
Transmitters	Point of Americas Site	2	CB001133A05	CABLE,ASTRO: 125' REMOTE GPS CABLE	$867	$1,733

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Transmitters	Point of Americas Site	2	PMUG1018A	GNSS REMOTE RECEIVER ASSY	$1,066	$2,132
Transmitter Antenna System	Point of Americas Site	1	DSDS7C08PPVU6M	764-869 MHZ 8 DB GAIN 4' PANEL LOW-PIM/PIP, BI-DIR, 4.3-10 CONNECTOR, 6-DEG DT	$2,775	$2,775
Transmitter Antenna System	Point of Americas Site	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61
Transmitter Antenna System	Point of Americas Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Transmitter Antenna System	Point of Americas Site	2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	$100	$201
Transmitter Antenna System	Point of Americas Site	100	DSEC650A	COAXIAL CABLE, "A" SERIES 1-1/4" 50 OHM CORRUGATED COPPER	$14	$1,350
Transmitter Antenna System	Point of Americas Site	2	DS4310F50V114N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC6-50-A	$165	$330
Transmitter Antenna System	Point of Americas Site	4	DSGKN114C2	STANDARD GROUND KIT FOR 1-1/4", INCLUDES 2' LEAD WITH ATTACHED 3/8" 2-HOLE LUG	$36	$144

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Transmitter Antenna System	Point of Americas Site	1	DSHG114L	PRE-LACED HOISTING GRIP FOR 1-1/4 AIRCELL COAX	$129	$129
Transmitter Antenna System	Point of Americas Site	4	DSBH114	BH-114 BUTTERFLY HANGER FOR 1-1/4 AIRCELL COAX,PKG OF 10	$95	$380
Transmitter Antenna System	Point of Americas Site	1	DSTSX4310FMP	4.3-10 M/F BULKHEAD COAX RF SURGE PROTECTOR, 698MHZ - 2.7GHZ PIM	$258	$258
Transmitter Antenna System	Point of Americas Site	1	DSBF4310	KIT FLANGE/BLKH ADAPTER 4.3-10	$53	$53
Transmitter Antenna System	Point of Americas Site	25	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$102
Transmitter Antenna System	Point of Americas Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Receiver Antenna System	Point of Americas Site	1	DSDS7C12P36UM	764-869MHZ ANTENNA, OMNIDIRECTIONAL 11.5 DBD, LOW-PIM/HI-PIP, 4.3-10 FEMALE	$6,233	$6,233
Receiver Antenna System	Point of Americas Site	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61

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Receiver Antenna System	Point of Americas Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Receiver Antenna System	Point of Americas Site	5	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	$100	$502
Receiver Antenna System	Point of Americas Site	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61
Receiver Antenna System	Point of Americas Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Receiver Antenna System	Point of Americas Site	100	DSEC550A	COAXIAL CABLE, "A" SERIES 7/8 IN 50 OHM CORRUGATED COPPER W/ BLACK PE	$8	$773
Receiver Antenna System	Point of Americas Site	2	DS4310F50V78N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC5-50-A	$54	$108
Receiver Antenna System	Point of Americas Site	4	DSGKNM	STANDARD GROUND KIT FOR 5/8", 7/8" (21.3-28.7MM) EW85, EW90, WE108, EW127, WE130, E130, EW132 AND WE150 CABLE, INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2- HOLE LUG	$47	$188

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Receiver Antenna System	Point of Americas Site	1	DSHG78L	HOISTING GRIP, PRE-LACED, 7/8 IN CORRUGATED COAX	$117	$117
Receiver Antenna System	Point of Americas Site	100	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$409
Receiver Antenna System	Point of Americas Site	1	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$38
Receiver Antenna System	Point of Americas Site	1	DS4310F50V12N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC4-50	$38	$38
Receiver Antenna System	Point of Americas Site	4	DSGKNS	STANDARD GROUND KIT FOR 1/2" (15.5-16.5MM) EW180,WE191 & E185 CABLE, INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2-HOLE LUG	$48	$192
Receiver Antenna System	Point of Americas Site	1	DSHG12L	PRE-LACED HOISTING GRIP FOR 1/2" STANDARD CABLES, EACH	$31	$31
Receiver Antenna System	Point of Americas Site	4	DSBH12	BH-12 BUTTERFLY HANGER FOR 1/2 AIRCELL COAX,PKG OF 10	$95	$380

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Receiver Antenna System	Point of Americas Site	4	DSBH78	BH-78 BUTTERFLY HANGER FOR 7/8 AIRCELL COAX,PKG OF 10	$95	$380
Receiver Antenna System	Point of Americas Site	2	DSTSXDC4310FM	DC PASS, BIDIRECTIONAL FEMALE/MALE 698MHZ - 2.7GHZ, PIM RATED	$298	$596
Receiver Antenna System	Point of Americas Site	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$120
Receiver Antenna System	Point of Americas Site	2	DS4310M50B12X	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50-HF	$56	$112
Receiver Antenna System	Point of Americas Site	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$120
Receiver Antenna System	Point of Americas Site	2	DS4310M50B12X	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50-HF	$56	$112
Receiver Antenna System	Point of Americas Site	1	DS440030221	TTA 440, MOTOROLA TOWER TOP UNIT, 794-824 MHZ, 4.3-10 CONNS, AUTOQUAD	$7,795	$7,795
Receiver Antenna System	Point of Americas Site	1	DS440037633	TTA 440, MOTOROLA CU (ESS), 794-824 MHZ, BYPASS, TEST PORT, 2DC, 4.3-10 TTA CONNECTORS	$6,670	$6,670

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Base Station Gateway	Point of Americas Site	1	SQM01SUM0333A	MCG 8000 CONVENTIONAL GATEWAY	$5,600	$5,600
Base Station Gateway	Point of Americas Site	1	CA03715AA	ADD: DC POWER	$0	$0
Base Station Gateway	Point of Americas Site	8	CA03717AA	ADD: ACIM INTERFACE	$840	$6,720
Network Management	Point of Americas Site	1	F0016A	MC IOT MAIN MODEL	$1,119	$1,119
Network Management	Point of Americas Site	1	VA01946AA	ADD: MC EDGE AS NFM	$535	$535
Network Management	Point of Americas Site	1	VA00973AA	ADD: IOT MC-EDGE ENHANCED COMM PLUG-IN BOARD	$177	$177
Network Management	Point of Americas Site	1	VA00147AA	ADD: FRONT CABLE COVERS	$12	$12
Network Management	Point of Americas Site	1	VA00150AA	ADD:12DI--8AI HW ONLY	$642	$642
Network Management	Point of Americas Site	1	VA00151AA	ADD:0 - 5V DI--AI	$0	$0
Network Management	Point of Americas Site	3	VA00989AA	ADD: MIXED DIGITAL _ 8DO EE 16DI 5-18 V -- DRY	$642	$1,926

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Network Management	Point of Americas Site	1	VA00991AA	ADD: DC--DC - [48 >>24] PS W--O HOUSING	$530	$530
Network Management	Point of Americas Site	1	VA00155AA	ADD:DC POWER CABLE 5A	$59	$59
Network Management	Point of Americas Site	1	VA00153AA	ADD:I--O MODULE EXTRACTOR TOOL	$12	$12
Network Management	Point of Americas Site	1	VA01967AA	INC: MC_EDGE CPU PACKING	$0	$0
Network Management	Point of Americas Site	1	VA00341AA	INC:MC-EDGE MAIN FILE SYSTEM	$0	$0
Network Management	Point of Americas Site	1	VA00142AA	INC:EXTREMDB LICENSE	$0	$0
Network Management	Point of Americas Site	4	VA00049AA	INC: I--O MODULE CABLE COVER	$0	$0
Network Management	Point of Americas Site	1	VA00974AA	INC: IOT MC-EDGE CPU PACKAGE	$0	$0
Network Management	Point of Americas Site	1	VA00047AA	INC: 12DI--8AI 0-5V	$0	$0
Network Management	Point of Americas Site	1	VA00442AA	INC:MC-EDGE SYSTEM SW FILES	$0	$0

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Network Management	Point of Americas Site	1	VA01383AA	INC: FRONT CABLE COVERS FOR MC EDGE	$0	$0
Network Management	Point of Americas Site	1	FHN0057A	DIN RAIL STOPPER	$17	$17
Network Management	Point of Americas Site	1	DSIABDIN4	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT	$308	$308
Network Management	Point of Americas Site	3	FHN1668A	TERM BLOCK & CONN WIRED M25T68L	$99	$297
Transmitters	Point of Americas Site	1	TRN7343A	RACK 7.5'	$708	$708
DC Power	Point of Americas Site	1	DQ-TEMP-DC-POWER	CUSTOM DC POWER PLANT	$111,956	$111,956
Power Distribution	Point of Americas Site	1	DS570SA16FNRJ1S	Liebert Indoor - 120/240V 1-PH Type 1 surge protector	$2,320	$2,320
Power Distribution	Point of Americas Site	1	DS560SA16FNRJ1S	Liebert Indoor - 120/240 VAC 1-PHASE Type 2 surge protector	$1,740	$1,740
Transmitters	State of Florida Site	1	SQM01SUM0338A	7/800 DBR M12 MULTI-CARRIER SITE	$8,480	$8,480
Transmitters	State of Florida Site	1	CA04069AA	ADD: NEW DBR SITE	$0	$0
Transmitters	State of Florida Site	1	CA03873AA	ADD: SYSTEM RELEASE AN2024.X	$0	$0

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Transmitters	State of Florida Site	1	CA03875AA	ADD: DBR M12 PRIMARY RACK	$7,420	$7,420
Transmitters	State of Florida Site	10	CA03887AA	ADD: ANTENNA 1 CHANNELS	$6,466	$64,660
Transmitters	State of Florida Site	6	CA03891AA	ADD: 800 MHZ POWER AMPLIFIER	$7,420	$44,520
Transmitters	State of Florida Site	2	CA03895AA	ADD: INTEGRATED GNSS TIMING REF W/ RB	$12,720	$25,440
Transmitters	State of Florida Site	1	CA03906AA	ADD: 7.5 FOOT OPEN RACK	$1,590	$1,590
Transmitters	State of Florida Site	1	CA03879AA	ADD: 800 MHZ TX ANTENNA 1 FILTER	$3,180	$3,180
Transmitters	State of Florida Site	1	CA03899AA	ADD: RMC EXPANSION PRE-WIRE	$1,908	$1,908
Transmitters	State of Florida Site	2	UA00866AA	ADD: SIMULCAST SUB-SITE CONTROLLER SW	$8,692	$17,384
Transmitters	State of Florida Site	10	UA00868AA	ADD: SIMULCAST SUB-SITE BR SOFTWARE	$36,570	$365,700
Transmitters	State of Florida Site	4	UA00869AA	ADD: P25 TDMA SOFTWARE	$16,960	$67,840
Transmitters	State of Florida Site	4	UA00870AA	ADD: DYNAMIC CHANNEL ASSIGNMENT SOFTWARE	$12,720	$50,880
Transmitters	State of Florida Site	2	UA00871AA	ADD: DSC 8500 RUBIDIUM SW LICENSE	$4,770	$9,540
Transmitters	State of Florida Site	2	CA03902AA	ADD: SRX345 SITE ROUTER	$0	$0

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Transmitters	State of Florida Site	2	CA03902AA-P	ADD: SRX345 SITE ROUTER PRICE	$8,277	$16,554
Transmitters	State of Florida Site	2	DSIX2L1M1DC48IG	SITE EQUIPMENT,PD, HPD GPS DATA LINE, 48VDC, HARD WIRE WITH ISOLATED GROUNDING	$247	$494
Transmitters	State of Florida Site	1	DLN8081A	FRU: RED/EXP XCVR 7-12 KIT	$3,657	$3,657
Transmitters	State of Florida Site	2	DSP04268	ALUMINUM 6061-T6. PIPE 1 INCH SCHED 40	$16	$33
Transmitters	State of Florida Site	2	DSWM4	HEAVY DUTY W STYLE WALL MOUNT WITH 4 INCH STAND-OFF	$92	$184
Transmitters	State of Florida Site	2	CB001133A05	CABLE,ASTRO: 125' REMOTE GPS CABLE	$867	$1,733
Transmitters	State of Florida Site	2	PMUG1018A	GNSS REMOTE RECEIVER ASSY	$1,066	$2,132
Mutual Aid System	State of Florida Site	1	SQM01SUM0338A	7/800 DBR M12 MULTI-CARRIER SITE	$8,480	$8,480
Mutual Aid System	State of Florida Site	1	CA04069AA	ADD: NEW DBR SITE	$0	$0
Mutual Aid System	State of Florida Site	1	CA03873AA	ADD: SYSTEM RELEASE AN2024.X	$0	$0
Mutual Aid System	State of Florida Site	1	CA03876AA	ADD: DBR M12 EXPANSION RACK 1	$9,752	$9,752
Mutual Aid System	State of Florida Site	5	CA03887AA	ADD: ANTENNA 1 CHANNELS	$6,466	$32,330

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Mutual Aid System	State of Florida Site	3	CA03891AA	ADD: 800 MHZ POWER AMPLIFIER	$7,420	$22,260
Mutual Aid System	State of Florida Site	1	CA03906AA	ADD: 7.5 FOOT OPEN RACK	$1,590	$1,590
Mutual Aid System	State of Florida Site	1	CA03879AA	ADD: 800 MHZ TX ANTENNA 1 FILTER	$3,180	$3,180
Mutual Aid System	State of Florida Site	1	CA03899AA	ADD: RMC EXPANSION PRE-WIRE	$1,908	$1,908
Mutual Aid System	State of Florida Site	5	UA00868AA	ADD: SIMULCAST SUB-SITE BR SOFTWARE	$36,570	$182,850
Mutual Aid System	State of Florida Site	2	DSIX2L1M1DC48IG	SITE EQUIPMENT,PD, HPD GPS DATA LINE, 48VDC, HARD WIRE WITH ISOLATED GROUNDING	$247	$494
Mutual Aid System	State of Florida Site	2	DSP04268	ALUMINUM 6061-T6. PIPE 1 INCH SCHED 40	$16	$33
Mutual Aid System	State of Florida Site	2	DSWM4	HEAVY DUTY W STYLE WALL MOUNT WITH 4 INCH STAND-OFF	$92	$184
Mutual Aid System	State of Florida Site	2	CB001133A05	CABLE,ASTRO: 125' REMOTE GPS CABLE	$867	$1,733
Mutual Aid System	State of Florida Site	2	PMUG1018A	GNSS REMOTE RECEIVER ASSY	$1,066	$2,132
Mutual Aid System	State of Florida Site	5	_TRUNKINGADJ2	REMOVE TRUNKING LICENSES FOR CONVENTIONAL CHANNELS	-$34,500	-$172,500

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Mutual Aid System	State of Florida Site	5	_ANALOGCONV	ADD: ANALOG CONVENTIONAL SITE REPEATER BR SOFTWARE	$9,143	$45,715
Transmitter Antenna System	State of Florida Site	1	DSDS7C10P36U3M	764-869 MHZ, SINGLE ANTENNA, OMNIDIRECTIONAL, 10 DB GAIN, LOW-PIM/HI-PIP, 4.3-10 FEMALE, 3 DEG DT	$5,848	$5,848
Transmitter Antenna System	State of Florida Site	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61
Transmitter Antenna System	State of Florida Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Transmitter Antenna System	State of Florida Site	2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	$100	$201
Transmitter Antenna System	State of Florida Site	200	DSEC650A	COAXIAL CABLE, "A" SERIES 1-1/4" 50 OHM CORRUGATED COPPER	$14	$2,700
Transmitter Antenna System	State of Florida Site	2	DS4310F50V114N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC6-50-A	$165	$330
Transmitter Antenna System	State of Florida Site	5	DSGKN114C2	STANDARD GROUND KIT FOR 1-1/4", INCLUDES 2' LEAD	$36	$180

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				WITH ATTACHED 3/8" 2-HOLE LUG		
Transmitter Antenna System	State of Florida Site	1	DSHG114L	PRE-LACED HOISTING GRIP FOR 1-1/4 AIRCELL COAX	$129	$129
Transmitter Antenna System	State of Florida Site	7	DSBH114	BH-114 BUTTERFLY HANGER FOR 1-1/4 AIRCELL COAX,PKG OF 10	$95	$665
Transmitter Antenna System	State of Florida Site	1	DSTSX4310FMP	4.3-10 M/F BULKHEAD COAX RF SURGE PROTECTOR, 698MHZ - 2.7GHZ PIM	$258	$258
Transmitter Antenna System	State of Florida Site	1	DSBF4310	KIT FLANGE/BLKH ADAPTER 4.3-10	$53	$53
Transmitter Antenna System	State of Florida Site	25	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$102
Transmitter Antenna System	State of Florida Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Transmitter Antenna System	State of Florida Site	1	DSDS7C12P36UM	764-869MHZ ANTENNA, OMNIDIRECTIONAL 11.5 DBD, LOW-PIM/HI-PIP, 4.3-10 FEMALE	$6,233	$6,233
Transmitter Antenna System	State of Florida Site	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED	$4	$61

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				COPPER WITH BLACK PE JACKET		
Transmitter Antenna System	State of Florida Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Transmitter Antenna System	State of Florida Site	2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	$100	$201
Transmitter Antenna System	State of Florida Site	300	DSEC650A	COAXIAL CABLE, "A" SERIES 1-1/4" 50 OHM CORRUGATED COPPER	$14	$4,050
Transmitter Antenna System	State of Florida Site	2	DS4310F50V114N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC6-50-A	$165	$330
Transmitter Antenna System	State of Florida Site	6	DSGKN114C2	STANDARD GROUND KIT FOR 1-1/4", INCLUDES 2' LEAD WITH ATTACHED 3/8" 2-HOLE LUG	$36	$216
Transmitter Antenna System	State of Florida Site	2	DSHG114L	PRE-LACED HOISTING GRIP FOR 1-1/4 AIRCELL COAX	$129	$258
Transmitter Antenna System	State of Florida Site	10	DSBH114	BH-114 BUTTERFLY HANGER FOR 1-1/4 AIRCELL COAX,PKG OF 10	$95	$949
Transmitter Antenna System	State of Florida Site	1	DSTSX4310FMP	4.3-10 M/F BULKHEAD COAX RF SURGE	$258	$258

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				PROTECTOR, 698MHZ - 2.7GHZ PIM		
Transmitter Antenna System	State of Florida Site	1	DSBF4310	KIT FLANGE/BLKH ADAPTER 4.3-10	$53	$53
Transmitter Antenna System	State of Florida Site	25	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$102
Transmitter Antenna System	State of Florida Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Receiver Antenna System	State of Florida Site	1	DSDS7C12P36UM	764-869MHZ ANTENNA, OMNIDIRECTIONAL 11.5 DBD, LOW-PIM/HI-PIP, 4.3-10 FEMALE	$6,233	$6,233
Receiver Antenna System	State of Florida Site	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61
Receiver Antenna System	State of Florida Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Receiver Antenna System	State of Florida Site	5	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	$100	$502
Receiver Antenna System	State of Florida Site	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$61

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Receiver Antenna System	State of Florida Site	2	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$76
Receiver Antenna System	State of Florida Site	290	DSEC550A	COAXIAL CABLE, "A" SERIES 7/8 IN 50 OHM CORRUGATED COPPER W/ BLACK PE	$8	$2,242
Receiver Antenna System	State of Florida Site	2	DS4310F50V78N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC5-50-A	$54	$108
Receiver Antenna System	State of Florida Site	6	DSGKNM	STANDARD GROUND KIT FOR 5/8", 7/8" (21.3-28.7MM) EW85, EW90, WE108, EW127, WE130, E130, EW132 AND WE150 CABLE, INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2- HOLE LUG	$47	$282
Receiver Antenna System	State of Florida Site	2	DSHG78L	HOISTING GRIP, PRE-LACED, 7/8 IN CORRUGATED COAX	$117	$234
Receiver Antenna System	State of Florida Site	290	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	$4	$1,186
Receiver Antenna System	State of Florida Site	1	DS4310M50V12N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	$38	$38

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Receiver Antenna System	State of Florida Site	1	DS4310F50V12N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC4-50	$38	$38
Receiver Antenna System	State of Florida Site	6	DSGKNS	STANDARD GROUND KIT FOR 1/2" (15.5-16.5MM) EW180,WE191 & E185 CABLE, INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2-HOLE LUG	$48	$288
Receiver Antenna System	State of Florida Site	2	DSHG12L	PRE-LACED HOISTING GRIP FOR 1/2" STANDARD CABLES, EACH	$31	$62
Receiver Antenna System	State of Florida Site	10	DSBH12	BH-12 BUTTERFLY HANGER FOR 1/2 AIRCELL COAX,PKG OF 10	$95	$949
Receiver Antenna System	State of Florida Site	10	DSBH78	BH-78 BUTTERFLY HANGER FOR 7/8 AIRCELL COAX,PKG OF 10	$95	$949
Receiver Antenna System	State of Florida Site	2	DSTSXDC4310FM	DC PASS, BIDIRECTIONAL FEMALE/MALE 698MHZ - 2.7GHZ, PIM RATED	$298	$596
Receiver Antenna System	State of Florida Site	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$120

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Receiver Antenna System	State of Florida Site	2	DS4310M50B12X	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50-HF	$56	$112
Receiver Antenna System	State of Florida Site	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	$5	$120
Receiver Antenna System	State of Florida Site	2	DS4310M50B12X	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50-HF	$56	$112
Receiver Antenna System	State of Florida Site	1	DS440030221	TTA 440, MOTOROLA TOWER TOP UNIT, 794-824 MHZ, 4.3-10 CONNS, AUTOQUAD	$7,795	$7,795
Receiver Antenna System	State of Florida Site	1	DS440037633	TTA 440, MOTOROLA CU (ESS), 794-824 MHZ, BYPASS, TEST PORT, 2DC, 4.3-10 TTA CONNECTORS	$6,670	$6,670
Base Station Gateway	State of Florida Site	1	SQM01SUM0333A	MCG 8000 CONVENTIONAL GATEWAY	$5,600	$5,600
Base Station Gateway	State of Florida Site	1	CA03715AA	ADD: DC POWER	$0	$0
Base Station Gateway	State of Florida Site	8	CA03717AA	ADD: ACIM INTERFACE	$840	$6,720
Network Management	State of Florida Site	1	F0016A	MC IOT MAIN MODEL	$1,119	$1,119

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Network Management	State of Florida Site	1	VA01946AA	ADD: MC EDGE AS NFM	$535	$535
Network Management	State of Florida Site	1	VA00973AA	ADD: IOT MC-EDGE ENHANCED COMM PLUG-IN BOARD	$177	$177
Network Management	State of Florida Site	1	VA00147AA	ADD: FRONT CABLE COVERS	$12	$12
Network Management	State of Florida Site	1	VA00150AA	ADD:12DI--8AI HW ONLY	$642	$642
Network Management	State of Florida Site	1	VA00151AA	ADD:0 - 5V DI--AI	$0	$0
Network Management	State of Florida Site	3	VA00989AA	ADD: MIXED DIGITAL _ 8DO EE 16DI 5-18 V -- DRY	$642	$1,926
Network Management	State of Florida Site	1	VA00991AA	ADD: DC--DC - [48 >>24] PS W--O HOUSING	$530	$530
Network Management	State of Florida Site	1	VA00155AA	ADD:DC POWER CABLE 5A	$59	$59
Network Management	State of Florida Site	1	VA00153AA	ADD:I--O MODULE EXTRACTOR TOOL	$12	$12
Network Management	State of Florida Site	1	VA01967AA	INC: MC_EDGE CPU PACKING	$0	$0

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Network Management	State of Florida Site	1	VA00341AA	INC:MC-EDGE MAIN FILE SYSTEM	$0	$0
Network Management	State of Florida Site	1	VA00142AA	INC:EXTREMDB LICENSE	$0	$0
Network Management	State of Florida Site	4	VA00049AA	INC: I--O MODULE CABLE COVER	$0	$0
Network Management	State of Florida Site	1	VA00974AA	INC: IOT MC-EDGE CPU PACKAGE	$0	$0
Network Management	State of Florida Site	1	VA00047AA	INC: 12DI--8AI 0-5V	$0	$0
Network Management	State of Florida Site	1	VA00442AA	INC:MC-EDGE SYSTEM SW FILES	$0	$0
Network Management	State of Florida Site	1	VA01383AA	INC: FRONT CABLE COVERS FOR MC EDGE	$0	$0
Network Management	State of Florida Site	1	FHN0057A	DIN RAIL STOPPER	$17	$17
Network Management	State of Florida Site	1	DSIABDIN4	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT	$308	$308
Network Management	State of Florida Site	3	FHN1668A	TERM BLOCK & CONN WIRED M25T68L	$99	$297

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Transmitters	State of Florida Site	1	TRN7343A	RACK 7.5'	$708	$708
DC Power	State of Florida Site	1	DQ-TEMP-DC-POWER	CUSTOM DC POWER PLANT	$280,464	$280,464
Equipment Shelter (with 6 foot platform)	State of Florida Site	1	DQ-TEMP-SHELTER-CONC	TEMPORARY PLACEHOLDER FOR SITE STRUCTURE: EQUIPMENT SHELTER (CONCRETE)	$887,289	$887,289
Equipment Shelter (with 6 foot platform)	State of Florida Site	1	DQ-TEMP-SHELTER-CONC	TEMPORARY PLACEHOLDER FOR SITE STRUCTURE: EQUIPMENT SHELTER (CONCRETE)	$290,000	$290,000
Spares	Spares	1	F0016A	MC IOT MAIN MODEL	$1,119	$1,119
Spares	Spares	1	VA01946AA	ADD: MC EDGE AS NFM	$535	$535
Spares	Spares	1	VA00973AA	ADD: IOT MC-EDGE ENHANCED COMM PLUG-IN BOARD	$177	$177
Spares	Spares	1	VA00150AA	ADD:12DI--8AI HW ONLY	$642	$642
Spares	Spares	1	VA00151AA	ADD:0 - 5V DI--AI	$0	$0
Spares	Spares	3	VA00989AA	ADD: MIXED DIGITAL _ 8DO EE 16DI 5-18 V -- DRY	$642	$1,926
Spares	Spares	1	VA00991AA	ADD: DC--DC - [48 >>24] PS W--O HOUSING	$530	$530
Spares	Spares	1	VA00155AA	ADD:DC POWER CABLE 5A	$59	$59

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Spares	Spares	1	VA01967AA	INC: MC_EDGE CPU PACKING	$0	$0
Spares	Spares	1	VA00341AA	INC:MC-EDGE MAIN FILE SYSTEM	$0	$0
Spares	Spares	1	VA00142AA	INC:EXTREMDB LICENSE	$0	$0
Spares	Spares	1	VA00974AA	INC: IOT MC-EDGE CPU PACKAGE	$0	$0
Spares	Spares	1	VA00047AA	INC: 12DI--8AI 0-5V	$0	$0
Spares	Spares	1	VA00442AA	INC:MC-EDGE SYSTEM SW FILES	$0	$0
Spares	Spares	1	FHN0057A	DIN RAIL STOPPER	$17	$17
Spares	Spares	1	DSIABDIN4	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT	$308	$308
Spares	Spares	1	T8547A	SITE ROUTER & FIREWALL, DC POWER	$3,461	$3,461
Spares	Spares	1	CA03445AA	ADD: MISSION CRITICAL HARDENING	$3,696	$3,696
Spares	Spares	1	CA03448AA	ADD: STATEFUL FIREWALL	$1,120	$1,120
Spares	Spares	1	DSNMA01450	N MALE, PLENUM & ULTRA FLEXIBLE FOR 1/4" CABLE (USE WITH PST014 TOOL)	$47	$47
Spares	Spares	1	PMUG1018A	GNSS REMOTE RECEIVER ASSY	$1,066	$1,066

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Spares	Spares	1	DLN1447A	FRE: DSC 8500 W/ RUBIDIUM	$27,560	$27,560
Spares	Spares	1	PMHN4398AS	FAN ASSEMBLY SERVICE KIT,DSC8000	$53	$53
Spares	Spares	1	DLN8061A	FRU: DBR MCPA 800 MHZ	$15,900	$15,900
Spares	Spares	1	DLN8065A	FRU: XCVR 7/800 MHZ	$2,968	$2,968
Spares	Spares	1	DLN8032A	FRU: DBR MCPA FAN KIT	$848	$848
Spares	Spares	1	DLN8042A	FRU: DBR FAN FILTER REPLACEMENT KIT	$265	$265
Spares	Spares	1	DLN8063A	FRU: SITE RMC 7/800 MHZ	$636	$636
Spares	Spares	1	DLN8064A	FRU: CABINET RMC 7/800 MHZ	$424	$424
Spares	Spares	1	DLN8066A	FRU: 2-3 WAY COMBINER 800 MHZ	$1,908	$1,908
Spares	Spares	1	DLN8068A	FRU: 4-6 WAY COMBINER 800 MHZ	$2,968	$2,968
Spares	Spares	1	DLN8070A	FRU: 2-3 WAY SPLITTER 800 MHZ	$1,060	$1,060
Spares	Spares	1	DLN8072A	FRU: 4-6 WAY SPLITTER 800 MHZ	$1,590	$1,590
Spares	Spares	1	DLN8074A	FRU: PRESELECTOR 7/800 MHZ	$1,908	$1,908
Spares	Spares	1	DLN8075A	FRU: POSTFILTER 800 MHZ	$3,922	$3,922

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Spares	Spares	1	DLN8077A	SOFTWARE,ON-PREMISES SOFTWARE HUB SW	$27	$27
Spares	Spares	1	DS440030221	TTA 440, MOTOROLA TOWER TOP UNIT, 794-824 MHZ, 4.3-10 CONNS, AUTOQUAD	$7,795	$7,795
Spares	Spares	1	DS440037633	TTA 440, MOTOROLA CU (ESS), 794-824 MHZ, BYPASS, TEST PORT, 2DC, 4.3-10 TTA CONNECTORS	$6,670	$6,670
Spares	Spares	1	DSDS8A03CS36UN	800 CONTROL STATION ANTENNA. 3 DBD	$1,298	$1,298
Spares	Spares	1	DSDS7C11PPYU6M	764-869 MHZ 11 DB GAIN 8' PANEL LOW-PIM/PIP, OFFSET, 4.3-10 CONNECTOR, 6-DEG DT	$4,549	$4,549
Spares	Spares	1	DSDS7C12P36UM	764-869MHZ ANTENNA, OMNIDIRECTIONAL 11.5 DBD, LOW-PIM/HI-PIP, 4.3-10 FEMALE	$6,233	$6,233
Spares	Spares	1	DSDS7C10P36U3M	764-869 MHZ, SINGLE ANTENNA, OMNIDIRECTIONAL, 10 DB GAIN, LOW-PIM/HI-PIP, 4.3-10 FEMALE, 3 DEG DT	$5,848	$5,848

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Spares	Spares	1	DSDS7C08PPVU6M	764-869 MHZ 8 DB GAIN 4' PANEL LOW-PIM/PIP, BI-DIR, 4.3-10 CONNECTOR, 6-DEG DT	$2,775	$2,775
Spares	Spares	1	DSCS74860805SN	HYBRID CONTROL STATION COMBINER, 746-869 MHZ 8 CH.	$14,818	$14,818
Prime	State of Florida Site	1	SQM01SUM0320A	VIRTUALIZED PRIME SITE	$10,070	$10,070
Prime	State of Florida Site	1	CA03524AA	ADD: NEW PRIME SITE	$0	$0
Prime	State of Florida Site	1	CA03525AA	ADD: HW SUPPORT UP TO 18 CARRIERS	$22,260	$22,260
Prime	State of Florida Site	1	CA03529AA	ADD: INT. GPS TIMING REFERENCE W/ RUBIDIUM	$25,440	$25,440
Prime	State of Florida Site	1	CA03532AA	ADD: PRIME SITE DC POWER	$0	$0
Prime	State of Florida Site	1	CA03873AA	ADD: SYSTEM RELEASE AN2024.X	$0	$0
Prime	State of Florida Site	10	UA00702AA	ADD: TRUNKING MULTISITE VOTING LICENSE, PER CARRIER	$19,610	$196,100
Prime	State of Florida Site	1	UA00704AA	ADD: MULTISITE PRIME TRUNKING LICENSE	$132,500	$132,500
Prime	State of Florida Site	4	UA00706AA	ADD : TDMA VOTING LICENSE, PER CARRIER	$16,960	$67,840

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Prime	State of Florida Site	1	UA00707AA	ADD: DSC INTERNAL RUBIDIUM LICENSE	$9,540	$9,540
Prime	State of Florida Site	1	CA03546AA	ADD: SINGLE JUNIPER SRX1500 ROUTERS FOR GEO REDUNDANT	$0	$0
Prime	State of Florida Site	1	CA03546AA-P	ADD: SINGLE JUNIPER SRX1500 ROUTERS FOR GEO REDUNDANT PRICE	$17,024	$17,024
Prime	State of Florida Site	1	CA03552AA	ADD: SINGLE BACKHAUL SWITCH	$0	$0
Prime	State of Florida Site	1	CA03552AA-P	ADD: SINGLE BACKHAUL SWITCH PRICE	$5,831	$5,831
Prime	State of Florida Site	2	DSIX2L1M1DC48IG	SITE EQUIPMENT,PD, HPD GPS DATA LINE, 48VDC, HARD WIRE WITH ISOLATED GROUNDING	$247	$494
Prime	State of Florida Site	2	DSP04268	ALUMINUM 6061-T6. PIPE 1 INCH SCHED 40	$16	$33
Prime	State of Florida Site	2	DSWM4	HEAVY DUTY W STYLE WALL MOUNT WITH 4 INCH STAND-OFF	$92	$184
Prime	State of Florida Site	2	CB001133A05	CABLE,ASTRO: 125' REMOTE GPS CABLE	$867	$1,733
Prime	State of Florida Site	2	PMUG1018A	GNSS REMOTE RECEIVER ASSY	$1,066	$2,132

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Geo Prime	Utilities Site	1	SQM01SUM0320A	VIRTUALIZED PRIME SITE	$10,070	$10,070
Geo Prime	Utilities Site	1	CA03524AA	ADD: NEW PRIME SITE	$0	$0
Geo Prime	Utilities Site	1	CA03525AA	ADD: HW SUPPORT UP TO 18 CARRIERS	$22,260	$22,260
Geo Prime	Utilities Site	1	CA03529AA	ADD: INT. GPS TIMING REFERENCE W/ RUBIDIUM	$25,440	$25,440
Geo Prime	Utilities Site	1	CA03532AA	ADD: PRIME SITE DC POWER	$0	$0
Geo Prime	Utilities Site	1	CA03873AA	ADD: SYSTEM RELEASE AN2024.X	$0	$0
Geo Prime	Utilities Site	10	UA00702AA	ADD: TRUNKING MULTISITE VOTING LICENSE, PER CARRIER	$19,610	$196,100
Geo Prime	Utilities Site	1	UA00708AA	ADD: MULTISITE GEO-REDUNDANT PRIME TRUNKING LICENSE	$76,850	$76,850
Geo Prime	Utilities Site	4	UA00706AA	ADD : TDMA VOTING LICENSE, PER CARRIER	$16,960	$67,840
Geo Prime	Utilities Site	1	UA00707AA	ADD: DSC INTERNAL RUBIDIUM LICENSE	$9,540	$9,540
Geo Prime	Utilities Site	1	CA03546AA	ADD: SINGLE JUNIPER SRX1500 ROUTERS FOR GEO REDUNDANT	$0	$0
Geo Prime	Utilities Site	1	CA03546AA-P	ADD: SINGLE JUNIPER SRX1500 ROUTERS	$17,024	$17,024

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				FOR GEO REDUNDANT PRICE		
Geo Prime	Utilities Site	1	CA03552AA	ADD: SINGLE BACKHAUL SWITCH	$0	$0
Geo Prime	Utilities Site	1	CA03552AA-P	ADD: SINGLE BACKHAUL SWITCH PRICE	$5,831	$5,831
Geo Prime	Utilities Site	2	DSIX2L1M1DC48IG	SITE EQUIPMENT,PD, HPD GPS DATA LINE, 48VDC, HARD WIRE WITH ISOLATED GROUNDING	$247	$494
Geo Prime	Utilities Site	2	DSP04268	ALUMINUM 6061-T6. PIPE 1 INCH SCHED 40	$16	$33
Geo Prime	Utilities Site	2	DSWM4	HEAVY DUTY W STYLE WALL MOUNT WITH 4 INCH STAND-OFF	$92	$184
Geo Prime	Utilities Site	2	CB001133A05	CABLE,ASTRO: 125' REMOTE GPS CABLE	$867	$1,733
Geo Prime	Utilities Site	2	PMUG1018A	GNSS REMOTE RECEIVER ASSY	$1,066	$2,132
Spares	Spares	1	T8555A	EDGE & HUB ROUTER & FIREWALL - DC	$19,001	$19,001
Spares	Spares	1	CA03445AA	ADD: MISSION CRITICAL HARDENING	$3,696	$3,696
Spares	Spares	1	CA03448AA	ADD: STATEFUL FIREWALL	$1,120	$1,120

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Spares	Spares	1	DLN8021A	FRU: SRX1500 DC SWAPPABLE POWER SUPPLY	$1,241	$1,241
Spares	Spares	1	CLN9066A	NETWORK SWITCH, JUNIPER EX4100 24-PORT NON TAA	$5,831	$5,831
Spares	Spares	1	CLN9105A	CABLE FRU, 1 METER JUNIPER DAC CABLE	$55	$55
Spares	Spares	1	DSIX2L1M1DC48IG	SITE EQUIPMENT,PD, HPD GPS DATA LINE, 48VDC, HARD WIRE WITH ISOLATED GROUNDING	$247	$247
Spares	Spares	1	PMUG1018A	GNSS REMOTE RECEIVER ASSY	$1,066	$1,066
Spares	Spares	1	DLN1445B	FRE: DSC 8000, W/ RUBIDIUM 28-60V	$23,850	$23,850
Microwave	State of Florida Site	1	DQ-TEMP-MICROWAVE1	Microwave Wavence (9500 Microwave Packet Radio) MPT-HLC/UBT-I	$137,055	$137,055
Network Equipment	State of Florida Site	1	DQ-TEMP-MICROWAVE1	MPLS - 7705 Service Aggregation Router (SAR)	$1,425	$1,425
Microwave	State of Florida Site	1	DQ-TEMP-MICROWAVE1	Microwave Antennas, Line, and Hardware	$146,563	$146,563
Microwave	State of Florida Site	1	DQ-TEMP-MICROWAVE1	Microwave DC Power Systems	$167,987	$167,987
Microwave	State of Florida Site	1	DQ-TEMP-MICROWAVE1	Microwave Ancillary Equipment	$8,699	$8,699

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Tower	2200 Executive Airport Way	1	DQ-TEMP-TOWER	TEMPORARY PLACEHOLDER FOR SITE STRUCTURE: COMMUNICATION TOWERS	$67,393	$67,393
Network Equipment	1300 W Broward Dispatch	2	CLN9066A	NETWORK SWITCH, JUNIPER EX4100 24-PORT NON TAA	$5,831	$11,661
Network Equipment	1300 W Broward Dispatch	2	CLN9105A	CABLE FRU, 1 METER JUNIPER DAC CABLE	$55	$110
Network Equipment	1300 W Broward Dispatch	14	DSIGSFPP10GSRC	SFP+, 10G-SR TRANSCEIVER PERP	$87	$1,218
Network Equipment	1300 W Broward Dispatch	2	DSMW3EM07641AB	FIBER OPTIC JUMPER CABLE, LC TO LC, 2 METER, MULTI MODE	$340	$680
DVRS	State of Florida Site	5	M93USS9PW1AN	DVR-LX 700MHZ.	$14,076	$70,380
DVRS	State of Florida Site	5	QA09259AA	ADD: FOR USE WITH SINGLE BAND APX MOBILE.	$0	$0
DVRS	State of Florida Site	5	QA09345AA	ADD: NOTCH FILTER DVR-LX 700/800.	$4,004	$20,020
DVRS	State of Florida Site	5	QA09418AA	ADD: FOR USE WITH O7 CONTROL HEAD.	$0	$0
DVRS	State of Florida Site	5	QA09408AA	ADD: SUITCASE IN-BAND 120V O2/E5/O7.	$6,474	$32,370
DVRS	State of Florida Site	5	QA09113AB	ADD: BASELINE RELEASE SW.	$0	$0

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DVRS	State of Florida Site	5	QA09263AA	ADD: DVR-LX STANDARD BLACK SUITCASE.	$0	$0
DVRS	State of Florida Site	5	QA09280AA	ADD: DVR-LX STANDARD 120VAC POWER SUPPLY.	$0	$0
DVRS	State of Florida Site	5	LSV01S04105A	DVR-LX ESSENTIAL WARRANTY (3/5/7 YR).	$840	$4,200
Gateway Control Stations	1300 W Broward Dispatch	6	L37TSS9PW1AN	MOBILE RADIO ALL BAND CONSOLETTE.	$10,330	$61,980
Gateway Control Stations	1300 W Broward Dispatch	6	GA09001AC	ADD: WI-FI CAPABILITY CONSOLETTE.	$385	$2,310
Gateway Control Stations	1300 W Broward Dispatch	6	G851AG	ADD: AES/DES-XL/DES-OFB ENCRYP APX AND ADP.	$879	$5,274
Gateway Control Stations	1300 W Broward Dispatch	6	GA01513AB	ADD: ALL BAND MOBILE ANTENNA (7/8/V/U).	$105	$630
Gateway Control Stations	1300 W Broward Dispatch	6	GA00580AA	ADD: TDMA OPERATION.	$495	$2,970
Gateway Control Stations	1300 W Broward Dispatch	6	GA01787AB	ADD: APX8500 CONSOLETTE ETHERNET.	$450	$2,700
Gateway Control Stations	1300 W Broward Dispatch	6	GA00255AD	ADD: 5Y ESSENTIAL ACCIDENTAL DAMAGE.	$670	$4,020

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Gateway Control Stations	1300 W Broward Dispatch	6	CA01598AB	ADD: AC LINE CORD US.	$0	$0
Gateway Control Stations	1300 W Broward Dispatch	6	G51AT	SOFTWARE LICENSE ENH:SMARTZONE.	$1,650	$9,900
Gateway Control Stations	1300 W Broward Dispatch	6	L999AG	ADD: FULL FP W/E5/KEYPAD/CLOCK/ VU.	$868	$5,208
Gateway Control Stations	1300 W Broward Dispatch	6	G298AS	SOFTWARE LICENSE ENH: ASTRO 25 OTAR W/ MULTIKEY.	$814	$4,884
Gateway Control Stations	1300 W Broward Dispatch	6	G806BL	SOFTWARE LICENSE ENH: ASTRO DIGITAL CAI OP APX.	$567	$3,402
Gateway Control Stations	1300 W Broward Dispatch	6	GA01767AG	ADD: RADIO AUTHENTICATION.	$110	$660
Gateway Control Stations	1300 W Broward Dispatch	6	QA09113AB	ADD: BASELINE RELEASE SW.	$0	$0
Gateway Control Stations	1300 W Broward Dispatch	6	GA01630AA	ADD: SMARTCONNECT.	$0	$0
Gateway Control Stations	1300 W Broward Dispatch	6	W382AM	ADD: CONTROL STATION DESK GCAI MIC.	$186	$1,116
Gateway Control Stations	1300 W Broward Dispatch	6	G361AH	SOFTWARE LICENSE ENH: P25 TRUNKING SOFTWARE APX.	$330	$1,980

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Gateway Control Stations	1300 W Broward Dispatch	1	HKN6233C	MOBILE RADIO APX CONSOLETTE RACK MOUNT KIT.	$200	$200
Gateway Control Stations	2200 Executive Airport Way	8	L37TSS9PW1AN	MOBILE RADIO ALL BAND CONSOLETTE.	$10,330	$82,640
Gateway Control Stations	2200 Executive Airport Way	8	GA09001AC	ADD: WI-FI CAPABILITY CONSOLETTE.	$385	$3,080
Gateway Control Stations	2200 Executive Airport Way	8	G851AG	ADD: AES/DES-XL/DES-OFB ENCRYP APX AND ADP.	$879	$7,032
Gateway Control Stations	2200 Executive Airport Way	8	GA01513AB	ADD: ALL BAND MOBILE ANTENNA (7/8/V/U).	$105	$840
Gateway Control Stations	2200 Executive Airport Way	8	GA00580AA	ADD: TDMA OPERATION.	$495	$3,960
Gateway Control Stations	2200 Executive Airport Way	8	GA01787AB	ADD: APX8500 CONSOLETTE ETHERNET.	$450	$3,600
Gateway Control Stations	2200 Executive Airport Way	8	GA00255AD	ADD: 5Y ESSENTIAL ACCIDENTAL DAMAGE.	$670	$5,360
Gateway Control Stations	2200 Executive Airport Way	8	CA01598AB	ADD: AC LINE CORD US.	$0	$0
Gateway Control Stations	2200 Executive Airport Way	8	G51AT	SOFTWARE LICENSE ENH:SMARTZONE.	$1,650	$13,200

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Gateway Control Stations	2200 Executive Airport Way	8	L999AG	ADD: FULL FP W/E5/KEYPAD/CLOCK/ VU.	$868	$6,944
Gateway Control Stations	2200 Executive Airport Way	8	G298AS	SOFTWARE LICENSE ENH: ASTRO 25 OTAR W/ MULTIKEY.	$814	$6,512
Gateway Control Stations	2200 Executive Airport Way	8	G806BL	SOFTWARE LICENSE ENH: ASTRO DIGITAL CAI OP APX.	$567	$4,536
Gateway Control Stations	2200 Executive Airport Way	8	GA01767AG	ADD: RADIO AUTHENTICATION.	$110	$880
Gateway Control Stations	2200 Executive Airport Way	8	QA09113AB	ADD: BASELINE RELEASE SW.	$0	$0
Gateway Control Stations	2200 Executive Airport Way	8	GA01630AA	ADD: SMARTCONNECT.	$0	$0
Gateway Control Stations	2200 Executive Airport Way	8	W382AM	ADD: CONTROL STATION DESK GCAI MIC.	$186	$1,488
Gateway Control Stations	2200 Executive Airport Way	8	G361AH	SOFTWARE LICENSE ENH: P25 TRUNKING SOFTWARE APX.	$330	$2,640
APX N70	Portable Radio	1613	H35UCT9PW8AN	PORTABLE RADIO APX N70 7/800 MODEL 4.5.	$5,365	$8,653,745
APX N70	Portable Radio	1613	Q157AR	ADD: DATA CABLE.	$91	$146,783

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APX N70	Portable Radio	1613	QA09030AA	ADD: MOTOROLA HOSTED RADIOCENTRAL W CPS.	$0	$0
APX N70	Portable Radio	1613	H499KC	ENH: SUBMERSIBLE (DELTA T).	$0	$0
APX N70	Portable Radio	1613	BD00001AA	ADD: CORE BUNDLE.	$3,323	$5,359,999
APX N70	Portable Radio	1613	BD00010AB	ADD: SECURITY BUNDLE.	$1,227	$1,979,151
APX N70	Portable Radio	1613	BD00037AA	ADD: AUDIO BUNDLE.	$287	$462,931
APX N70	Portable Radio	1613	Q387CB	ADD: MULTICAST VOTING SCAN.	$0	$0
APX N70	Portable Radio	1613	QA01767BL	ADD: P25 LINK LAYER AUTHENTICATION.	$0	$0
APX N70	Portable Radio	1613	QA01833AH	ADD: EXTREME 1-SIDED NOISE REDUCTION.	$0	$0
APX N70	Portable Radio	1613	QA03399AK	ADD: ENHANCED DATA.	$0	$0
APX N70	Portable Radio	1613	QA08676AA	ADD: ADAPTIVE SPEAKER VOLUME.	$0	$0
APX N70	Portable Radio	1613	QA09001AM	ADD: WIFI CAPABILITY.	$0	$0
APX N70	Portable Radio	1613	QA09006AA	ADD: ADAPTIVE NOISE SUPPRESSION.	$0	$0
APX N70	Portable Radio	1613	QA09028AA	ADD: VIQI VC RADIO OPERATION.	$0	$0

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APX N70	Portable Radio	1613	H797DW	SOFTWARE LICENSE ENH: DVP-XL ENCRYPTION AND ADP.	$0	$0
APX N70	Portable Radio	1613	Q15AK	ADD: AES/DES-XL/DES-OFB ENCRYPTION AND ADP.	$0	$0
APX N70	Portable Radio	1613	QA08827AA	ADD: SINGLE UNIT PACKAGING.	$0	$0
APX N70	Portable Radio	1613	Q498BN	SOFTWARE LICENSE ENH: ASTRO 25 OTAR W/ MULTIKEY.	$0	$0
APX N70	Portable Radio	1613	QA07680AA	ADD: MULTI SYSTEM OTAR.	$0	$0
APX N70	Portable Radio	1613	H38DA	ADD: SMARTZONE OPERATION.	$0	$0
APX N70	Portable Radio	1613	Q361CD	ADD: P25 9600 BAUD TRUNKING.	$0	$0
APX N70	Portable Radio	1613	Q806CH	ADD: ASTRO DIGITAL CAI OPERATION.	$0	$0
APX N70	Portable Radio	1613	QA00580BA	ADD: TDMA OPERATION.	$0	$0
APX N70	Portable Radio	1613	QA09016AA	ADD: LTE FOR VERIZON LTE SERVICE.	$0	$0
APX N70	Portable Radio	1	PSV01S02944A	PROVISIONING SUPPORT.	$0	$0

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APX N70	Portable Radio	1613	LSV01S03061A	APX N70 DMS ESSENTIAL W ACC DMG.	$665	$1,072,322
APX N70	Portable Radio	1	PSV01S01742A	RADIOCENTRAL TRAINING VIRTUAL (1 SEAT).	$2,385	$2,385
APX N70	Portable Radio	1613	LSV01S03082A	RADIOCENTRAL PROGRAMMING.	$160	$258,403
APX N70	Portable Radio	1613	SSV01S01407A	SMARTPROGRAMMING.	$375	$604,875
APX N70	Portable Radio	1613	SSV01S01406A	APX NEXT SMARTCONNECT SUBSCRIPTION.	$375	$604,875
APX N70	Portable Radio	1613	SSV01S01476A	SMARTLOCATE.	$375	$604,875
APX N70	Portable Radio	1613	SSV01S01907A	SMARTMAPPING.	$375	$604,875
APX N70	Portable Radio	1	PMNN4816A	PORTABLE RADIO BATTERY IMPRES 2 LI-ION IP68 3200T.	$226	$226
APX N70	Portable Radio	1613	PMMN4158C	WM800 WIRELESS RSM WITH BATTERY.	$602	$971,026
APX N70	Portable Radio	1613	PMNN4817A	PORTABLE RADIO BATTERY IMPRES 2 LI-ION IP68 4400T.	$248	$400,105
APX N70	Portable Radio	1613	PMPN4604A	CHARGER, DESKTOP SINGLE UNIT IMPRES 2 FAST, US/NA.	$222	$357,505

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APX N70	Portable Radio	1613	PMLN5408A	2.75" REPLACEMENT SWIVEL BELT LOOP.	$18	$28,889
APX N50	Portable Radio	103	H25UCF9PW6AN	PORTABLE RADIO APX N50 7/800 MODEL 2.	$3,496	$360,088
APX N50	Portable Radio	103	BD00032AA	ADD: ESSENTIAL CORE BUNDLE.	$2,401	$247,303
APX N50	Portable Radio	103	QA02756AB	SOFTWARE LICENSE ENH: 3600 OR 9600 TRUNKING BAUD SINGLE SYSTEM.	$0	$0
APX N50	Portable Radio	103	G996AU	ADD: PROGRAMMING OVER P25 (OTAP).	$0	$0
APX N50	Portable Radio	103	Q387CB	ADD: MULTICAST VOTING SCAN.	$0	$0
APX N50	Portable Radio	103	QA00580BA	ADD: TDMA OPERATION.	$0	$0
APX N50	Portable Radio	103	QA09001AM	ADD: WIFI CAPABILITY.	$0	$0
APX N50	Portable Radio	103	QA08715AA	ADD:BASIC VOICE CONTROL.	$0	$0
APX N50	Portable Radio	103	QA03399AK	ADD: ENHANCED DATA.	$0	$0
APX N50	Portable Radio	103	QA00982AH	ADD: SITE SELECTABLE ALERT FOR P25 TRUNKING.	$0	$0
APX N50	Portable Radio	103	QA09007AD	ADD: OUT OF THE BOX WIFI PROVISIONING.	$0	$0
APX N50	Portable Radio	103	BD00035AB	ADD: ADVANCED SECURITY BUNDLE.	$1,277	$131,531

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APX N50	Portable Radio	103	H02BC	SOFTWARE LICENSE ENH: TACTICAL RADIO STW-STUN/KILL.	$0	$0
APX N50	Portable Radio	103	H797DW	SOFTWARE LICENSE ENH: DVP-XL ENCRYPTION AND ADP.	$0	$0
APX N50	Portable Radio	103	QA07680AA	ADD: MULTI SYSTEM OTAR.	$0	$0
APX N50	Portable Radio	103	Q498BN	SOFTWARE LICENSE ENH: ASTRO 25 OTAR W/ MULTIKEY.	$0	$0
APX N50	Portable Radio	103	Q15AK	ADD: AES/DES-XL/DES-OFB ENCRYPTION AND ADP.	$0	$0
APX N50	Portable Radio	103	BD00033AA	ADD: ESSENTIAL SECURITY BUNDLE.	$667	$68,701
APX N50	Portable Radio	103	QA01767BL	ADD: P25 LINK LAYER AUTHENTICATION.	$0	$0
APX N50	Portable Radio	103	BD00037AA	ADD: AUDIO BUNDLE.	$287	$29,561
APX N50	Portable Radio	103	QA09006AA	ADD: ADAPTIVE NOISE SUPPRESSION.	$0	$0
APX N50	Portable Radio	103	QA01833AH	ADD: EXTREME 1-SIDED NOISE REDUCTION.	$0	$0
APX N50	Portable Radio	103	QA08676AA	ADD: ADAPTIVE SPEAKER VOLUME.	$0	$0
APX N50	Portable Radio	103	QA09113AA	ADD: BASELINE RELEASE SW.	$0	$0

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APX N50	Portable Radio	103	QA08688AA	ADD:SINGLE UNIT PACKAGING.	$0	$0
APX N50	Portable Radio	103	QA08853AA	ADD: CPS ENABLEMENT.	$0	$0
APX N50	Portable Radio	103	QA07682AC	ADD: SMARTCONNECT N30/N50.	$0	$0
APX N50	Portable Radio	1	PMNN4813B	PORTABLE RADIO BATTERY IMPRES 2 LI-ION IP68 2850T.	$196	$196
APX N50	Portable Radio	1	PSV01S01987A	RADIO MANAGEMENT (RM) TRAINING VIRTUAL (1 SEAT).	$1,500	$1,500
APX N50	Portable Radio	103	LSV01S03085A	APX N50/30 DMS ESSENTIAL W ACC DMG.	$512	$52,777
APX N50	Portable Radio	103	SSV01S01663A	APX SMART CONNECT.	$480	$49,440
APX N30	Portable Radio	108	H15UCF9PW6AN	PORTABLE RADIO APX N30 7/800 MODEL 2.	$2,635	$284,580
APX N30	Portable Radio	108	BD00032AA	ADD: ESSENTIAL CORE BUNDLE.	$2,401	$259,308
APX N30	Portable Radio	108	QA00580BA	ADD: TDMA OPERATION.	$0	$0
APX N30	Portable Radio	108	QA02756AB	SOFTWARE LICENSE ENH: 3600 OR 9600 TRUNKING BAUD SINGLE SYSTEM.	$0	$0
APX N30	Portable Radio	108	G996AU	ADD: PROGRAMMING OVER P25 (OTAP).	$0	$0
APX N30	Portable Radio	108	QA09001AM	ADD: WIFI CAPABILITY.	$0	$0

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APX N30	Portable Radio	108	QA09007AD	ADD: OUT OF THE BOX WIFI PROVISIONING.	$0	$0
APX N30	Portable Radio	108	Q387CB	ADD: MULTICAST VOTING SCAN.	$0	$0
APX N30	Portable Radio	108	QA08715AA	ADD:BASIC VOICE CONTROL.	$0	$0
APX N30	Portable Radio	108	QA03399AK	ADD: ENHANCED DATA.	$0	$0
APX N30	Portable Radio	108	QA00982AH	ADD: SITE SELECTABLE ALERT FOR P25 TRUNKING.	$0	$0
APX N30	Portable Radio	108	QA07682AC	ADD: SMARTCONNECT N30/N50.	$0	$0
APX N30	Portable Radio	108	BD00033AA	ADD: ESSENTIAL SECURITY BUNDLE.	$667	$72,036
APX N30	Portable Radio	108	QA01767BL	ADD: P25 LINK LAYER AUTHENTICATION.	$0	$0
APX N30	Portable Radio	108	H869DB	SOFTWARE LICENSE ENH: MULTIKEY.	$0	$0
APX N30	Portable Radio	108	QA06653AA	SOFTWARE LICENSE ENH: AES 256 SW ENCRYPTION AND ADP.	$0	$0
APX N30	Portable Radio	108	QA09113AA	ADD: BASELINE RELEASE SW.	$0	$0
APX N30	Portable Radio	108	QA08781AA	ADD:SINGLE UNIT PACKAGING.	$0	$0
APX N30	Portable Radio	108	QA08853AA	ADD: CPS ENABLEMENT.	$0	$0

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APX N30	Portable Radio	1	PMNN4813B	PORTABLE RADIO BATTERY IMPRES 2 LI-ION IP68 2850T.	$196	$196
APX N30	Portable Radio	108	LSV01S03085A	APX N50/30 DMS ESSENTIAL W ACC DMG.	$512	$55,339
APX N30	Portable Radio	108	SSV01S01663A	APX SMART CONNECT.	$480	$51,840
APX N70	Portable Radio	358	H35UCT9PW8AN	PORTABLE RADIO APX N70 7/800 MODEL 4.5.	$5,365	$1,920,670
APX N70	Portable Radio	358	QA09030AA	ADD: MOTOROLA HOSTED RADIOCENTRAL W CPS.	$0	$0
APX N70	Portable Radio	358	QA09017AA	ADD: LTE WITH ACTIVE SERVICE AT&T US.	$0	$0
APX N70	Portable Radio	358	H499KC	ENH: SUBMERSIBLE (DELTA T).	$0	$0
APX N70	Portable Radio	358	BD00001AA	ADD: CORE BUNDLE.	$3,323	$1,189,634
APX N70	Portable Radio	358	BD00010AB	ADD: SECURITY BUNDLE.	$1,227	$439,266
APX N70	Portable Radio	358	BD00037AA	ADD: AUDIO BUNDLE.	$287	$102,746
APX N70	Portable Radio	358	Q387CB	ADD: MULTICAST VOTING SCAN.	$0	$0
APX N70	Portable Radio	358	QA01767BL	ADD: P25 LINK LAYER AUTHENTICATION.	$0	$0
APX N70	Portable Radio	358	QA01833AH	ADD: EXTREME 1-SIDED NOISE REDUCTION.	$0	$0

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APX N70	Portable Radio	358	QA03399AK	ADD: ENHANCED DATA.	$0	$0
APX N70	Portable Radio	358	QA08676AA	ADD: ADAPTIVE SPEAKER VOLUME.	$0	$0
APX N70	Portable Radio	358	QA09001AM	ADD: WIFI CAPABILITY.	$0	$0
APX N70	Portable Radio	358	QA09006AA	ADD: ADAPTIVE NOISE SUPPRESSION.	$0	$0
APX N70	Portable Radio	358	QA09028AA	ADD: VIQI VC RADIO OPERATION.	$0	$0
APX N70	Portable Radio	358	QA01427AM	ALT: APX N70 XE HOUSING GREEN.	$30	$10,740
APX N70	Portable Radio	358	H797DW	SOFTWARE LICENSE ENH: DVP-XL ENCRYPTION AND ADP.	$0	$0
APX N70	Portable Radio	358	Q15AK	ADD: AES/DES-XL/DES-OFB ENCRYPTION AND ADP.	$0	$0
APX N70	Portable Radio	358	QA02006AG	ADD: APX N70 XE M4.5 RUGGED RADIO.	$824	$294,992
APX N70	Portable Radio	358	Q498BN	SOFTWARE LICENSE ENH: ASTRO 25 OTAR W/ MULTIKEY.	$0	$0
APX N70	Portable Radio	358	QA07680AA	ADD: MULTI SYSTEM OTAR.	$0	$0
APX N70	Portable Radio	358	H38DA	ADD: SMARTZONE OPERATION.	$0	$0
APX N70	Portable Radio	358	Q361CD	ADD: P25 9600 BAUD TRUNKING.	$0	$0

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APX N70	Portable Radio	358	Q806CH	ADD: ASTRO DIGITAL CAI OPERATION.	$0	$0
APX N70	Portable Radio	358	QA00580BA	ADD: TDMA OPERATION.	$0	$0
APX N70	Portable Radio	1	PSV01S02944A	PROVISIONING SUPPORT.	$0	$0
APX N70	Portable Radio	358	LSV01S03061A	APX N70 DMS ESSENTIAL W ACC DMG.	$665	$237,998
APX N70	Portable Radio	358	LSV01S03082A	RADIOCENTRAL PROGRAMMING.	$224	$80,292
APX N70	Portable Radio	358	SSV01S01407A	SMARTPROGRAMMING .	$375	$134,250
APX N70	Portable Radio	358	SSV01S01406A	APX NEXT SMARTCONNECT SUBSCRIPTION.	$375	$134,250
APX N70	Portable Radio	358	SSV01S01476A	SMARTLOCATE.	$375	$134,250
APX N70	Portable Radio	358	SSV01S01907A	SMARTMAPPING.	$375	$134,250
APX N70	Portable Radio	1	PMNN4818A	BATT IMPRES 2 LIION TIA4950 IP68 3650T.	$270	$270
APX N70	Portable Radio	358	PMMN4172A	XVE500M DIV 1 REMOTE SPEAKER MICROPHONE, HIGH IMPACT GREEN WITHOUT KNOB, UL, GCAI MINI.	$756	$270,648
APX 6500	Mobile Radio	327	M25URS9PW1BN	MOBILE RADIO APX6500 ENHANCED 7/800 MHZ.	$3,764	$1,230,828

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APX 6500	Mobile Radio	327	GA00318AF	ENH: 5 YEAR ESSENTIAL SVC.	$480	$156,960
APX 6500	Mobile Radio	327	GA00250AA	ADD: GNSS/BT-WIFI THRU MNT ANT, 17FT LOW LOSS PFP-100A/240, QMA.	$118	$38,586
APX 6500	Mobile Radio	327	GA01576AB	ADD: SMA TO QMA ADAPTER.	$22	$7,194
APX 6500	Mobile Radio	327	G51AU	SOFTWARE LICENSE ENH: SMARTZONE OPERATION APX6500.	$1,412	$461,724
APX 6500	Mobile Radio	327	B18CR	ADD: AUXILIARY SPKR 7.5 WATT APX.	$71	$23,217
APX 6500	Mobile Radio	327	G444AH	ADD: APX CONTROL HEAD SOFTWARE.	$0	$0
APX 6500	Mobile Radio	327	G335AW	ADD: ANT 1/4 WAVE 762-870MHZ.	$16	$5,232
APX 6500	Mobile Radio	327	G806BL	SOFTWARE LICENSE ENH: ASTRO DIGITAL CAI OP APX.	$607	$198,489
APX 6500	Mobile Radio	327	GA01670AA	ADD: APX E5 CONTROL HEAD.	$767	$250,809
APX 6500	Mobile Radio	327	GA01693AA	ADD : LEGACY TRUNNION SCREW KIT.	$12	$3,924
APX 6500	Mobile Radio	327	G361AH	SOFTWARE LICENSE ENH: P25 TRUNKING SOFTWARE APX.	$353	$115,431
APX 6500	Mobile Radio	327	QA01648AA	ADD: HW KEY SUPPLEMENTAL DATA.	$6	$2,099

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APX 6500	Mobile Radio	327	G851AG	ADD: AES/DES-XL/DES-OFB ENCRYP APX AND ADP.	$941	$307,707
APX 6500	Mobile Radio	327	G892AB	ENH:HAND MIC,GCAI WTR RESISTANT APX.	$85	$27,795
APX 6500	Mobile Radio	327	GA09007AA	ADD: OUT OF THE BOX WIFI PROVISIONING.	$0	$0
APX 6500	Mobile Radio	327	GA00580AA	ADD: TDMA OPERATION.	$530	$173,310
APX 6500	Mobile Radio	327	GA09001AA	ADD: WI-FI CAPABILITY.	$353	$115,431
APX 6500	Mobile Radio	327	GA01630AA	ADD: SMARTCONNECT.	$0	$0
APX 6500	Mobile Radio	327	G66BJ	ADD: DASH MOUNT E5 APXM.	$148	$48,396
APX 6500	Mobile Radio	327	QA09113AB	ADD: BASELINE RELEASE SW.	$0	$0
APX 6500	Mobile Radio	327	G298AS	SOFTWARE LICENSE ENH: ASTRO 25 OTAR W/ MULTIKEY.	$871	$284,817
APX 4500	Mobile Radio	12	M22URS9PW1BN	MOBILE RADIO APX4500 ENHANCED 7/800 MHZ.	$2,356	$28,272
APX 4500	Mobile Radio	12	GA09008AA	ADD: GROUP SERVICES.	$177	$2,124
APX 4500	Mobile Radio	12	G851AG	ADD: AES/DES-XL/DES-OFB ENCRYP APX AND ADP.	$941	$11,292

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APX 4500	Mobile Radio	12	G996AS	SOFTWARE LICENSE ENH: OVER THE AIR PROVISIONING.	$118	$1,416
APX 4500	Mobile Radio	12	GA00250AA	ADD: GNSS/BT-WIFI THRU MNT ANT, 17FT LOW LOSS PFP-100A/240, QMA.	$118	$1,416
APX 4500	Mobile Radio	12	G66BF	ADD: DASH MOUNT O2 APXM.	$148	$1,776
APX 4500	Mobile Radio	12	GA00255AC	ADD: 5Y ESSENTIAL ACCIDENTAL DAMAGE.	$527	$6,324
APX 4500	Mobile Radio	12	QA02756AD	ADD: 3600 OR 9600 TRUNKING BAUD SINGLE SYSTEM.	$1,848	$22,176
APX 4500	Mobile Radio	12	G298AS	SOFTWARE LICENSE ENH: ASTRO 25 OTAR W/ MULTIKEY.	$871	$10,452
APX 4500	Mobile Radio	12	B18CR	ADD: AUXILIARY SPKR 7.5 WATT APX.	$71	$852
APX 4500	Mobile Radio	12	GA00804AA	ADD: APX O2 CH (GREY).	$579	$6,948
APX 4500	Mobile Radio	12	G444AH	ADD: APX CONTROL HEAD SOFTWARE.	$0	$0
APX 4500	Mobile Radio	12	QA03399AA	ADD: ENHANCED DATA APX.	$177	$2,124
APX 4500	Mobile Radio	12	W22BA	ADD: STD PALM MICROPHONE APX.	$85	$1,020
APX 4500	Mobile Radio	12	QA09113AB	ADD: BASELINE RELEASE SW.	$0	$0

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APX 4500	Mobile Radio	12	G308AD	ADD:USB DATA INTFC CABLE-DASH APEX.	$59	$708
APX 4500	Mobile Radio	12	GA00589AA	ADD: GCAI EXTENSION CABLE 2 FT.	$35	$420
APX 4500	Mobile Radio	12	G174AD	ADD: ANT 3DB LOW-PROFILE 762-870.	$50	$600
APX 4500	Mobile Radio	12	HKVN4912A	LICENSE,LICENSE, IMW PRESENCE (PER USER).	$22	$264
APX 4500	Mobile Radio	12	HKVN4917A	LICENSE,LICENSE, IMW LOCATION (PER USER).	$65	$780
APX 4500	Mobile Radio	12	HKVN4916A	LICENSE,LICENSE, LOCATION ON PTT/VOICE (PER USER).	$11	$132
APX 4500	Mobile Radio	12	HKVN4914A	LICENSE,LICENSE, IMW GROUP MANAGEMENT.	$24	$288
APX 4500	Mobile Radio	12	HKVN4913A	LICENSE,LICENSE, TRUNKED RADIO USER (PER USER).	$22	$264
APX 8500	Mobile Radio	16	M37TSS9PW1CN	APX8500 ALL BAND MP MOBILE.	$6,558	$104,928
APX 8500	Mobile Radio	16	GA09007AA	ADD: OUT OF THE BOX WIFI PROVISIONING.	$0	$0
APX 8500	Mobile Radio	16	G996AS	SOFTWARE LICENSE ENH: OVER THE AIR PROVISIONING.	$118	$1,888

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APX 8500	Mobile Radio	16	GA00250AA	ADD: GNSS/BT-WIFI THRU MNT ANT, 17FT LOW LOSS PFP-100A/240, QMA.	$118	$1,888
APX 8500	Mobile Radio	16	GA00580AA	ADD: TDMA OPERATION.	$530	$8,480
APX 8500	Mobile Radio	16	GA01513AB	ADD: ALL BAND MOBILE ANTENNA (7/8/V/U).	$112	$1,792
APX 8500	Mobile Radio	16	G66BN	ADD: DASH MOUNT E5.	$148	$2,368
APX 8500	Mobile Radio	16	G51AT	SOFTWARE LICENSE ENH:SMARTZONE.	$1,766	$28,256
APX 8500	Mobile Radio	16	G78AT	ENH: 3 YEAR ESSENTIAL SVC.	$288	$4,608
APX 8500	Mobile Radio	16	GA09001AA	ADD: WI-FI CAPABILITY.	$353	$5,648
APX 8500	Mobile Radio	16	G298AS	SOFTWARE LICENSE ENH: ASTRO 25 OTAR W/ MULTIKEY.	$871	$13,936
APX 8500	Mobile Radio	16	B18CR	ADD: AUXILIARY SPKR 7.5 WATT APX.	$71	$1,136
APX 8500	Mobile Radio	16	G843AH	ADD: AES ENCRYPTION AND ADP.	$560	$8,960
APX 8500	Mobile Radio	16	G444AH	ADD: APX CONTROL HEAD SOFTWARE.	$0	$0
APX 8500	Mobile Radio	16	GA01517AA	DEL: NO J600 ADAPTER CABLE NEEDED.	$0	$0

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APX 8500	Mobile Radio	16	G806BL	SOFTWARE LICENSE ENH: ASTRO DIGITAL CAI OP APX.	$607	$9,712
APX 8500	Mobile Radio	16	GA01670AA	ADD: APX E5 CONTROL HEAD.	$767	$12,272
APX 8500	Mobile Radio	16	W22BA	ADD: STD PALM MICROPHONE APX.	$85	$1,360
APX 8500	Mobile Radio	16	QA09113AB	ADD: BASELINE RELEASE SW.	$0	$0
APX 8500	Mobile Radio	16	GA01630AA	ADD: SMARTCONNECT.	$0	$0
APX 8500	Mobile Radio	16	G361AH	SOFTWARE LICENSE ENH: P25 TRUNKING SOFTWARE APX.	$353	$5,648
DVR-LX	DVR-LX	5	M93USS9PW1AN	DVR-LX 700MHZ.	$14,076	$70,380
DVR-LX	DVR-LX	5	QA09259AA	ADD: FOR USE WITH SINGLE BAND APX MOBILE.	$0	$0
DVR-LX	DVR-LX	5	QA09345AA	ADD: NOTCH FILTER DVR-LX 700/800.	$4,004	$20,020
DVR-LX	DVR-LX	5	QA09418AA	ADD: FOR USE WITH O7 CONTROL HEAD.	$0	$0
DVR-LX	DVR-LX	5	QA09408AA	ADD: SUITCASE IN-BAND 120V O2/E5/O7.	$6,474	$32,370
DVR-LX	DVR-LX	5	QA09113AB	ADD: BASELINE RELEASE SW.	$0	$0
DVR-LX	DVR-LX	5	QA09263AA	ADD: DVR-LX STANDARD BLACK SUITCASE.	$0	$0

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DVR-LX	DVR-LX	5	QA09280AA	ADD: DVR-LX STANDARD 120VAC POWER SUPPLY.	$0	$0
DVR-LX	DVR-LX	5	LSV01S04105A	DVR-LX ESSENTIAL WARRANTY (3/5/7 YR).	$840	$4,200

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1.2 System Integration Services

Sub System	Location/Class	QTY	Description	Unit Price	Ext Price
On-Site Work	State of Florida Site	LOT	Site Civil Modifications; includes A&E; MW Dish installs; Shelter Install	$286,392	$286,392
Administration and Engineering	State of Florida Site	LOT	Project Management	$487,348	$487,348
Administration and Engineering	State of Florida Site	LOT	System Engineering and Technologist, Documentation, Engineering Studies, Optimization, Networking, Travel, Staging, Equipment Installation	$1,384,813	$1,384,813
Administration and Engineering	State of Florida Site	LOT	BDA Allowance* - See Notes in Attachment 2.	$227,727	$227,727
On-Site Work	Utilities Site	LOT	Site Civil Modifications; includes A&E; MW Dish installs; Shelter Install	$140,094	$140,094
Administration and Engineering	Utilities Site	LOT	Project Management	$158,954	$158,954
Administration and Engineering	Utilities Site	LOT	System Engineering and Technologist, Documentation, Engineering Studies, Optimization, Networking, Travel, Staging, Equipment Installation	$513,635	$513,635
On-Site Work	Dispatch Sites	LOT	Site Civil Modifications; includes A&E; MW Dish installs; Shelter Install	$199,476	$199,476
Administration and Engineering	Dispatch Sites	LOT	Project Management	$139,783	$139,783
Administration and Engineering	Dispatch Sites	LOT	System Engineering and Technologist, Documentation, Engineering Studies, Optimization, Networking, Travel, Staging, Equipment Installation	$429,825	$429,825

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On-Site Work	Point of Americas Site	LOT	Site Civil Modifications; includes A&E; MW Dish installs; Shelter Install	$219,552	$219,552
Administration and Engineering	Point of Americas Site	LOT	Project Management	$106,253	$106,253
Administration and Engineering	Point of Americas Site	LOT	System Engineering and Technologist, Documentation, Engineering Studies, Optimization, Networking, Travel, Staging, Equipment Installation	$373,825	$373,825
On-Site Work	Playa del Sol Site	LOT	Site Civil Modifications; includes A&E; MW Dish installs; Shelter Install	$218,417	$218,417
Administration and Engineering	Playa del Sol Site	LOT	Project Management	$106,253	$106,253
Administration and Engineering	Playa del Sol Site	LOT	System Engineering and Technologist, Documentation, Engineering Studies, Optimization, Networking, Travel, Staging, Equipment Installation	$373,825	$373,825
Systemwide System Integration Services	Systemwide	LOT	Spectrum Fingerprinting & Noise Floor Testing	$62,857	$62,857
Systemwide System Integration Services	Systemwide	LOT	Coverage Testing (CATP)	$301,257	$301,257
Systemwide System Integration Services	Systemwide	LOT	Frequency Licensing (Forms, Licensing, Fees)	$72,886	$72,886
Systemwide System Integration Services	Systemwide	LOT	Video Site Security (4 Sites)	$135,469	$135,469
Systemwide System Integration Services	Systemwide	LOT	Subscriber Re-programming for existing Subs	$146,683	$146,683
Systemwide System Integration Services	Systemwide	LOT	Training	$267,382	$267,382

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Systemwide System Integration Services	Systemwide	LOT	Microwave Services & Site Services: Path and Site Surveys, Engineering, FCC Coordination, Project Management - All Sites	$577,437	$577,437
Systemwide System Integration Services	Systemwide	LOT	Broadband Connectivity Gateway / Critical Connect Equipment, Services, and Subscription - Years 6-20 ** in the Outyears Section	$456,000	$456,000
Systemwide System Integration Services	Systemwide	LOT	ASTRO Connectivity Equipment, Services, and Subscription - Years 6-20 ** in the Outyears Section	$240,850	$240,850
Systemwide System Integration Services	Systemwide	LOT	Generator Allowance for Condo Building Sites* - See note in Attachment 2	$650,000	$650,000

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Section 2

Pricing Worksheets

2.1 Training

Training	# of Students	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Dispatch Console Operator Training - On Site Fort Lauderdale						
CommandCentral AXS Dispatch Console Technical Workshop	Up to 12					$ 20,718
WAVE 5000 End User Train-the-Trainer	Up to 12					$ 9,418
CommandCentral AXS Dispatch Console ADMIN with CommandCentral AXS Dispatch Console Operator with ASTRO APX Mobile Consolette	4					$ 3,488
CommandCentral AXS Dispatch Console Operator 7 (4 hr) Sessions ASTRO APX Mobile Consolette	38					$ 11,825
System Administrator Training - On Site Fort Lauderdale; 2 Students						
ASTRO 25 System Overview - Online	Up to 12					Included
ASTRO 25 Applied Networking	Up to 12					$ 32,016
ASTRO 25 IV&D Admin Workshop	Up to 12					$ 32,016
ASTRO® 25 IV&D System Core Workshop	Up to 12					$ 32,016
ASTRO® 25 IV&D DBR RF Technical Workshop	Up to 12					$ 20,718
ASTRO® Virtualized Simulcast Prime Site Workshop	Up to 12					$ 20,718
ASTRO® 25 IV&D IP Based Digital Simulcast Workshop	Up to 12					$ 20,718

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ASTRO® 25 IV&D Secure Communications Workshop	Up to 12	$ 32,016
ASTRO® 25 Domain Controller Administration	Up to 12	$ 20,718
ASTRO® 25 ISSI 8000 - CSSI 8000 Feature Overview	Up to 12	$ 2,183
Shipping & Leasing of all Training Equipment to City of Fort Lauderdale	Up to 12	$ 8,814
ASTRO Learning Subscription (All ASTRO and County Self-Paced Content Included) - 1 Year Subscription	Up to 12	Included
Total End-User and System Administrator Training		$ 267,382

2.2 Broadband Connectivity Gateway

Broadband Connectivity Gateway

	Number Req'd	Unit Cost	Extended Cost
Equipment, Project Management, Systems Engineering & Technologist Services	LOT		$456,000
Total One Time Cost			**$456,000**
Description - Annual Subscription Services			
Year 1 Device Subscription	100	Included	Included
Year 1 On-Site Service	1	Included	Included
Year 2 Device Subscription	100	Included	Included
Year 2 On-Site Service	1	Included	Included
Year 3 Device Subscription	100	Included	Included
Year 3 On-Site Service	1	Included	Included
Year 4 Device Subscription	100	Included	Included
Year 4 On-Site Service	1	Included	Included
Year 5 Device Subscription	100	Included	Included
Year 5 On-Site Service	1	Included	Included
Year 6 Device Subscription	100	Included	Included

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Year 6 On-Site Service	1	$ 60,241	$ 60,241
Year 7 Device Subscription	100	Included	Included
Year 7 On-Site Service	1	$ 60,639	$ 60,639
Year 8 Device Subscription	100	Included	Included
Year 8 On-Site Service	1	$ 61,054	$ 61,054
Year 9 Device Subscription	100	Included	Included
Year 9 On-Site Service	1	$ 61,485	$ 61,485
Year 10 Device Subscription	100	Included	Included
Year 10 On-Site Service	1	$ 61,934	$ 61,934
Year 11 Device Subscription	100	Included	Included
Year 11 On-Site Service	1	$ 64,410	$ 64,410
Year 12 Device Subscription	100	Included	Included
Year 12 On-Site Service	1	$ 64,896	$ 64,896
Year 13 Device Subscription	100	Included	Included
Year 13 On-Site Service	1	$ 65,400	$ 65,400
Year 14 Device Subscription	100	Included	Included
Year 14 On-Site Service	1	$ 65,925	$ 65,925
Year 15 Device Subscription	100	Included	Included
Year 15 On-Site Service	1	$ 66,471	$ 66,471
Year 16 Device Subscription	100	Included	Included
Year 16 On-Site Service	1	$ 69,130	$ 69,130
Year 17 Device Subscription	100	Included	Included
Year 17 On-Site Service	1	$ 69,720	$ 69,720
Year 18 Device Subscription	100	Included	Included
Year 18 On-Site Service	1	$ 70,335	$ 70,335
Year 19 Device Subscription	100	Included	Included

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Year 19 On-Site Service	1	$ 70,973	$ 70,973
Year 20 Device Subscription	100	Included	Included
Year 20 On-Site Service	1	$ 71,638	$ 71,638
Total Price - Annual Subscription Services			**$ 984,251**

2.3 ASTRO Connectivity Services (ACS)

ASTRO Connectivity Services (ACS)

Description	Number Req'd	Unit Cost	Extended Cost
Equipment, Project Management, Systems Engineering & Technologist Services	LOT	-	$240,850
Total One Time Cost	-	-	$240,850
Annual Subscription Services			
ASTRO Connectivity Services - Year 1	1	-	Included
ASTRO Connectivity Services - Year 2	1	-	Included
ASTRO Connectivity Services - Year 3	1	-	Included
ASTRO Connectivity Services - Year 4	1	-	Included
ASTRO Connectivity Services - Year 5	1	-	Included
ASTRO Connectivity Services - Year 6	1	-	$23,936
ASTRO Connectivity Services - Year 7	1	-	$23,936
ASTRO Connectivity Services - Year 8	1	-	$23,936
ASTRO Connectivity Services - Year 9	1	-	$23,936
ASTRO Connectivity Services - Year 10	1	-	$23,936
ASTRO Connectivity Services - Year 11	1	-	$24,655
ASTRO Connectivity Services - Year 12	1	-	$24,655
ASTRO Connectivity Services - Year 13	1	-	$24,655

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ASTRO Connectivity Services - Year 14	1	-	$24,655
ASTRO Connectivity Services - Year 15	1	-	$24,655
ASTRO Connectivity Services - Year 16	1	-	$25,394
ASTRO Connectivity Services - Year 17	1	-	$25,394
ASTRO Connectivity Services - Year 18	1	-	$25,394
ASTRO Connectivity Services - Year 19	1	-	$25,394
ASTRO Connectivity Services - Year 20	1	-	$25,394

Total Price Years 1-20 ASTRO Connectivity Services Subscription **$369,925**

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2.4 System Maintenance – OEM Manufactured Equipment

OPTIONAL POST-WARRANTY MAINTENANCE SERVICES - LIST	Network Monitoring	Technical Support	Dispatch Services	On-Site Premier (2 Hour)	Infrastructure Repair	Annual Preventive Maintenance	System Update Service (SUS)	Remote System Update Service (RSUS)	SUA	Subtotal - List Price
YEAR 1	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR 2	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR 3	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR 4	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR 5	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Subtotal	**Included**	**Included**	**Included**	**Included**	**Included**	**Included**	**Included**	**Included**	**Included**	**Included**
YEAR 6	$69,504	$87,793	$31,613	$291,086	$182,390	$42,841	$64,127	$84,414	$347,080	$1,200,848
YEAR 7	$72,282	$91,302	$32,876	$302,721	$189,680	$44,553	$66,690	$87,788	$360,963	$1,248,855
YEAR 8	$75,171	$94,951	$34,190	$314,820	$197,261	$46,334	$69,355	$91,296	$375,401	$1,298,779
YEAR 9	$78,176	$98,747	$35,557	$327,406	$205,147	$48,186	$72,128	$94,946	$390,417	$1,350,710
YEAR 10	$81,303	$102,696	$36,979	$340,500	$213,352	$50,113	$75,012	$98,744	$406,036	$1,404,735
Subtotal	**$376,436**	**$475,489**	**$171,215**	**$1,576,533**	**$987,830**	**$232,027**	**$347,312**	**$457,188**	**$1,879,897**	**$6,503,927**
YEAR 11	$84,555	$106,804	$38,458	$354,120	$221,886	$52,118	$78,013	$102,693	$422,276	$1,460,923
YEAR 12	$87,937	$111,076	$39,997	$368,285	$230,762	$54,202	$81,133	$106,801	$439,168	$1,519,361
YEAR 13	$91,455	$115,519	$41,596	$383,016	$239,992	$56,371	$84,379	$111,073	$456,733	$1,580,134
YEAR 14	$95,113	$120,140	$43,260	$398,337	$249,592	$58,625	$87,754	$115,516	$475,003	$1,643,340
YEAR 15	$98,918	$124,945	$44,991	$414,270	$259,575	$60,970	$91,264	$120,137	$494,003	$1,709,073
Subtotal	**$457,978**	**$578,484**	**$208,302**	**$1,918,028**	**$1,201,807**	**$282,286**	**$422,543**	**$556,220**	**$2,287,183**	**$7,912,831**
YEAR 16	$102,874	$129,943	$46,790	$430,841	$269,958	$63,409	$94,915	$124,942	$513,764	$1,777,436
YEAR 17	$106,989	$135,141	$48,662	$448,075	$280,757	$65,946	$98,711	$129,940	$534,315	$1,848,536
YEAR 18	$111,269	$140,547	$50,609	$465,998	$291,987	$68,583	$102,660	$135,137	$555,687	$1,922,477
YEAR 19	$115,720	$146,168	$52,633	$484,638	$303,667	$71,327	$106,766	$140,543	$577,913	$1,999,375
YEAR 20	$120,348	$152,015	$54,738	$504,023	$315,813	$74,180	$111,037	$146,165	$601,031	$2,079,350
Subtotal	**$557,200**	**$703,814**	**$253,432**	**$2,333,575**	**$1,462,182**	**$343,445**	**$514,089**	**$676,727**	**$2,782,710**	**$9,627,174**
Total	**$1,391,614**	**$1,757,787**	**$632,949**	**$5,828,136**	**$3,651,819**	**$857,758**	**$1,283,944**	**$1,690,135**	**$6,949,790**	**$24,043,932**

****Discounted System Maintenance pricing is in Attachment 2.**

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2.5 3rd Party Equipment Maintenance

POST-WARRANTY MAINTENANCE SERVICES	Third Party Maintenance (Eventide)	Third Party Maintenance (Infinity Microwave)	Third Party Maintenance (Tower Maintenance)	Third Party Maintenance (Eltek DC Power)	Third Party Maintenance (VSS)	Yearly Total
YEAR 1	Included	Included	Included	Included	Included	Included
YEAR 2	Included	Included	Included	Included	Included	Included
YEAR 3	Included	Included	Included	Included	Included	Included
YEAR 4	Included	Included	Included	Included	Included	Included
YEAR 5	Included	Included	Included	Included	Included	Included
Subtotal	Included	Included	Included	Included	Included	Included
YEAR 6	$32,904	$41,227	$2,958	$24,852	$40,271	$142,212
YEAR 7	$32,904	$41,227	$3,076	$26,105	$172,494	$275,806
YEAR 8	$32,904	$154,081	$3,200	$27,421	$48,022	$265,628
YEAR 9	$32,904	$54,560	$3,328	$28,803	$52,440	$172,035
YEAR 10	$32,904	$54,560	$3,461	$30,254	$130,996	$252,175
Subtotal	$164,520	$345,655	$16,023	$137,435	$444,223	$1,107,856
YEAR 11	$35,536	$54,560	$3,599	$31,779	$62,533	$188,007
YEAR 12	$35,536	$54,560	$3,743	$33,381	$68,286	$195,506
YEAR 13	$35,536	$54,560	$3,893	$35,063	$74,568	$203,620
YEAR 14	$35,536	$54,560	$4,048	$36,830	$270,199	$401,173
YEAR 15	$35,536	$54,560	$4,210	$38,687	$88,920	$221,913
Subtotal	$177,680	$272,800	$19,493	$175,740	$564,506	$1,210,219
YEAR 16	$37,313	$480,169	$4,379	$40,636	$97,100	$659,597
YEAR 17	$39,179	$54,560	$4,554	$42,685	$106,034	$247,012

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YEAR 18	$41,138	$54,560	$4,736	$44,836	$115,789	$261,059
YEAR 19	$43,195	$54,560	$4,926	$47,096	$126,441	$276,218
YEAR 20	$45,355	$54,560	$5,123	$49,469	$138,074	$292,581
Subtotal	$206,180	$698,409	$23,718	$224,722	$583,438	$1,736,467
Total	$548,380	$1,316,864	$59,234	$537,897	$1,592,167	$4,054,542

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System Cost Summary - City of Fort Lauderdale P25 System

SYSTEM INFRASTRUCTURE SUMMARY

Description	Total Equipment	Total Services	Total Price - Equipment and Services
Cost Summary - Master Site & Co-Located Remote Sites (City of Fort Lauderdale Core):			
Core Site Equipment and System Services Including Shelter with 6ft Platform - City of Fort Lauderdale Core - State of Florida Tower	$4,880,404	$2,386,280	$7,266,684
DSR Site Equipment and System Services - City of Fort Lauderdale DSR Core - Utilities Tower	$1,331,364	$812,683	$2,144,047
Cost Summary - Antenna Sites:			
Remote Site 3 Equipment and Services - Point of Americas	$647,141	$699,629	$1,346,771
Remote Site 4 Equipment and Services - Playa Del Sol	$646,807	$698,495	$1,345,302
Cost Summary - Dispatch (Primary & Backup)			
Dispatch Equipment and Services - 1300 W Broward Dispatch	$765,845	$384,542	$1,150,386
Dispatch Equipment and Services - 2200 Executive Airport Way	$816,000	$384,542	$1,200,541
Cost Summary - Spare Equipment			
Recommended Spare Equipment	$416,021	-	$416,021
Cost Summary - Other System Items:			
Spectrum Fingerprinting & Noise Floor Testing	-	$62,857	$62,857
Coverage Testing (CATP)	-	$301,257	$301,257
Frequency Licensing (Forms, Licensing, Fees)	-	$72,886	$72,886
Video Site Security (4 Sites)	-	$135,469	$135,469
Subscriber Re-programming for existing Subs	-	$146,683	$146,683
Training	-	$267,382	$267,382
Microwave Services & Site Services: Path and Site Surveys, Engineering, FCC Coordination, Project Management - All Sites	-	$577,437	$577,437
Broadband Connectivity Gateway / Critical Connect Equipment, Services, and Subscription - Years 6-20 ** in the Outyears Section	-		$456,000
ASTRO Connectivity Equipment, Services, and Subscription - Years 6-20 ** in the Outyears Section	-		$240,850
Generator Allowance for Condo Building Sites* - *See note below*	-		$650,000
Total System Infrastructure Cost (before incentives)	**$9,503,582**	**$6,930,142**	**$17,780,574**

City of Fort Lauderdale P25 Contract Incentives:	
All infrastructure items as proposed with purchase of SUA and maintenance outyears	-$1,893,477
One time additional discount for **infrastructure items** as proposed	-$1,562,118
One time **customer loyalty** discount with purchase of all infrastructure items as proposed	-$568,043
One time discount for **ASTRO Core** with purchase of all infrastructure items as proposed	-$710,054
One time discount for **Equipment Trade In** with purchase of all infrastructure items as proposed	-$473,328
One time discount for **Enhancing in Building Coverage** with purchase of all infrastructure items as proposed	-$93,822
Total System Infrastructure Cost (after incentives)	**$12,479,733**
Performance / Payment Bond & Freight	$90,559
Total System Infrastructure Cost (Including 5-Year Warranty)	**$12,570,292**
	$11,920,292

REQUIRED OUTYEARS SUMMARY

Description	Total Price
Year 1-5 Infrastructure Warranty - All Provided Equipment Including 3rd Party	Included
Critical Connect	
Year 1 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	Included
Year 2 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	Included
Year 3 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	Included
Year 4 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	Included
Year 5 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	Included
Year 6 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$60,241
Year 7 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$60,639
Year 8 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$61,054
Year 9 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$61,485
Year 10 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$61,934
Year 11 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$64,410

Year 12 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$64,896
Year 13 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$65,400
Year 14 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$65,925
Year 15 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$66,471
Year 16 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$69,130
Year 17 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$69,720
Year 18 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$70,335
Year 19 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$70,973
Year 20 Critical Connect Basic Subscription - 3 Unique Connections, 13 Simultaneous Talk Paths, WAVE 100 Licenses	$71,638
ASTRO Connectivity Services - Year 1	Included
ASTRO Connectivity Services - Year 2	Included
ASTRO Connectivity Services - Year 3	Included
ASTRO Connectivity Services - Year 4	Included
ASTRO Connectivity Services - Year 5	Included
ASTRO Connectivity Services - Year 6	$23,936
ASTRO Connectivity Services - Year 7	$23,936
ASTRO Connectivity Services - Year 8	$23,936
ASTRO Connectivity Services - Year 9	$23,936
ASTRO Connectivity Services - Year 10	$23,936
ASTRO Connectivity Services - Year 11	$24,655
ASTRO Connectivity Services - Year 12	$24,655
ASTRO Connectivity Services - Year 13	$24,655
ASTRO Connectivity Services - Year 14	$24,655
ASTRO Connectivity Services - Year 15	$24,655
ASTRO Connectivity Services - Year 16	$25,394
ASTRO Connectivity Services - Year 17	$25,394
ASTRO Connectivity Services - Year 18	$25,394
ASTRO Connectivity Services - Year 19	$25,394
ASTRO Connectivity Services - Year 20	$25,394
Total Services (Years 1-20)	**$1,354,176**
LIFECYCLE SUMMARY	
Year 6 Infrastructure Lifecycle (SUA)	$183,942
Year 7 Infrastructure Lifecycle (SUA)	$191,299
Year 8 Infrastructure Lifecycle (SUA)	$198,951
Year 9 Infrastructure Lifecycle (SUA)	$206,910
Year 10 Infrastructure Lifecycle (SUA)	$215,185
Year 11 Infrastructure Lifecycle (SUA)	$223,793
Year 12 Infrastructure Lifecycle (SUA)	$232,745
Year 13 Infrastructure Lifecycle (SUA)	$242,055
Year 14 Infrastructure Lifecycle (SUA)	$251,737
Year 15 Infrastructure Lifecycle (SUA)	$261,806
Year 16 Infrastructure Lifecycle (SUA)	$272,279
Year 17 Infrastructure Lifecycle (SUA)	$283,170
Year 18 Infrastructure Lifecycle (SUA)	$294,497
Year 19 Infrastructure Lifecycle (SUA)	$306,278
Year 20 Infrastructure Lifecycle (SUA)	$318,529
Total Lifecycle (SUA)	**$3,683,176**
MAINTENANCE SUMMARY	
Year 6 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$598,221
Year 7 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$750,040
Year 8 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$758,817
Year 9 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$684,941
Year 10 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$785,594
Year 11 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$742,763
Year 12 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$772,452
Year 13 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$803,643
Year 14 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$1,025,198
Year 15 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$870,899
Year 16 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$1,334,543

Year 17 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$948,956
Year 18 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$991,079
Year 19 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$1,035,440
Year 20 Maintenance Total - NM, Tech Support, Dispatch, On Site, IR, PM, SUS, RSUS, and Third Party	$1,082,172

Total Maintenance (Years 5-20)			**$13,184,758**

Total System Infrastructure Cost with Years 1-20 Maintenance and Lifecycle			**$30,792,402**

Cost Savings Options (Estimates ONLY)			
Remove Hot Standby			-$67,368
Re-Use Existing GTR's Till End of Life and Upgrade to DBR in 2031			-$956,788
Remove 3 NM Clients			-$70,719
Remove Raised Platform for the State of Florida Shelter			-$243,600
Remove Microwave for 2 Dispatch Sites	-$346,296	-$189,387	-$535,683
Remove Relevant Microwave Civil scope for 2 Dispatch Sites	-$50,544	-$335,118	-$385,662
Remove Primary and Backup Dispatch	-$1,581,845	-$878,592	-$2,460,437

Motorola has not priced an option to add on to the Broward County Core due to the compliance with the RFP, however that option can be priced at a later stage if desired by the City
Motorola can provide the City with leasing options at a later stage based on the options chosen and the final sale price

** Note: Motorola Solutions has included an allowance of $650,000 for generators at the Condo Sites per the following parameters:*

Motorola Solutions has included an allowance to address the potential necessity of generators at each of the Condo Sites. Motorola Solutions and the City of Fort Lauderdale will work together to determine further generator requirements.

If the actual generator costs exceed the allowance, Motorola Solutions will invoice the additional cost to City of Fort Lauderdale for payment. If the actual generator costs are less than the stated allowance, Motorola Solutions will provide a Technology Credit to the City of Fort Lauderdale"

Future State of Florida Tower- Core/Virtual Prime/RF Site - 1

Primary/Redundant Site						
Equipment	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Transmitters	10	$ 69,404	$ 694,037	24.99%	$ 52,088	$ 520,881
Transmitter Antenna System	2	$ 11,772	$ 23,544	25%	$ 8,828	$ 17,657
Receiver Antenna System	1	$ 28,910	$ 28,910	25%	$ 21,683	$ 21,683
Network Equipment	1	$ 154,298	$ 154,298	25%	$ 115,723	$ 115,723
Mutual Aid System	1	$ 140,141	$ 140,141	24.79%	$ 105,387	$ 105,387
Microwave Interface Equipment	1	$ 1,246,837	$ 1,246,837	25%	$ 935,128	$ 935,128
Base Station Gateway	1	$ 12,320	$ 12,320	10%	$ 11,088	$ 11,088
Inter SubSystem Interface (ISSI)	1	$ 4,050,000	$ 4,050,000	82.44%	$ 711,200	$ 711,200
DC Power	1	$ 280,464	$ 280,464	25%	$ 210,348	$ 210,348
Network Management	1	$ 5,634	$ 5,634	14.46%	$ 4,819	$ 4,819
DVRS	5	$ 25,394	$ 126,970	26.11%	$ 18,764	$ 93,822
						$ 2,747,736

Compound/Room	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Core	1	$ 1,022,438	$ 1,022,438	24.99%	$ 766,891	$ 766,891
Prime	1	$ 491,181	$ 491,181	24.94%	$ 368,667	$ 368,667
KVL	1	$ 10,896	$ 10,896	24.86%	$ 8,187	$ 8,187
						$ 1,143,745

Compound/Room	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Equipment Shelter (Greenfield)	1	$ 1,177,289	$ 1,177,289	16%	$ 988,923	$ 988,923
						$ 988,923

On-Site Work	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Site Civil Modifications; includes A&E; MW Dish installs; Shelter Install	LOT					$ 286,392
						$ 286,392

Administration and Engineering	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Project Management	LOT					$ 487,348
System Engineering and Technologist, Documentation, Engineering Studies, Optimization, Networking, Travel, Staging, Equipment Installation	LOT					$ 1,384,813
BDA Allowance* - *See Note Below*	LOT					$ 227,727
						$ 2,099,888

Total Equipment and Labor	$ 7,266,684

** Note: Motorola Solutions has included an allowance for BDAs per the following parameters:*

Based on the coverage prediction, Motorola Solutions has included an allowance to address the buildings that have a high probability of needing an inbuilding BDA solution. Motorola Solutions and City of Fort Lauderdale will work together after testing of the buildings is complete to determine further BDA requirements.

If the actual BDA costs exceed the allowance, Motorola Solutions will invoice the additional cost to City of Fort Lauderdale for payment. If the actual BDA costs are less than the stated allowance, Motorola Solutions will provide a Technology Credit to the City of Fort Lauderdale

Utilities Tower - DSR/Geo Prime Site/RF Site 2

Primary/Redundant Site

Equipment	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Transmitters	10	$ 694,037	$ 694,037	24.95%	$ 52,088	$ 520,881
Transmitter Antenna System	1	$ 11,344	$ 11,344	25%	$ 8,508	$ 8,508
Receiver Antenna System	1	$ 27,821	$ 27,821	25%	$ 20,866	$ 20,866
Base Station Gateway	1	$ 12,320	$ 12,320	10%	$ 11,088	$ 11,088
DC Power	1	$ 198,234	$ 198,234	25%	$ 148,675	$ 148,675
Network Management	1	$ 5,634	$ 5,634	14.46%	$ 4,819	$ 4,819
						$ 714,837

Compound/Room	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
DSR Core	1	$ 386,129	$ 386,129	25%	$ 289,597	$ 289,597
Geo-Redundant Prime	1	$ 435,531	$ 435,531	24.94%	$ 326,930	$ 326,930
						$ 616,527

On-Site Work	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Site Civil Modifications; includes A&E; MW Dish installs	LOT					$ 140,094
						$ 140,094

Administration and Engineering	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Project Management	LOT					$ 158,954
System Engineering and Technologist, Documentation, Engineering Studies, Optimization, Networking, Travel, Staging, Equipment	LOT					$ 513,635
						$ 672,589

Total Equipment and Labor	$ 2,144,047

Dispatch Site - Consoles (Primary & Backup)

1300 W Broward Dispatch

Equipment	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Base Station Gateway	1	$ 12,320	$ 12,320	10%	$ 11,088	$ 11,088
Dispatch Consoles	6	$ 94,486	$ 566,913	24.99%	$ 70,875	$ 425,249
Gateway Control Stations	6	$ 22,179	$ 133,071	25.80%	$ 16,457	$ 98,744
Logging	1	$ 201,275	$ 201,275	24.97%	$ 151,026	$ 151,026
Network Equipment	1	$ 82,890	$ 82,890	17.11%	$ 68,708	$ 68,708
Network Management	1	$ 8,740	$ 8,740	20.04%	$ 6,988	$ 6,988
Power Distribution	1	$ 5,389	$ 5,389	25%	$ 4,042	$ 4,042
						$ 765,845

2200 Executive Airport Way

Equipment	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Base Station Gateway	1	$ 12,320	$ 12,320	10%	$ 11,088	$ 11,088
Dispatch Consoles	8	$ 94,486	$ 755,884	24.99%	$ 70,875	$ 566,998
Gateway Control Stations	8	$ 20,942	$ 167,534	25.84%	$ 15,530	$ 124,244
Network Equipment	1	$ 60,829	$ 60,829	18.33%	$ 49,677	$ 49,677
Network Management	1	$ 11,964	$ 11,964	21.37%	$ 9,406	$ 9,406
Power Distribution	1	$ 5,389	$ 5,389	25%	$ 4,042	$ 4,042
						$ 765,455

Compound/Room	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Monopole Tower	1	$ 386,129	$ 386,129	25%	$ 50,544	$ 50,544
						$ 50,544

On-Site Work	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Site Civil Modifications; includes A&E; MW Dish installs	LOT					$ 199,476
						$ 199,476

Administration and Engineering	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Project Management	LOT					$ 139,783
System Engineering and Technologist, Documentation, Engineering Studies, Optimization, Networking, Travel, Staging, Equipment Installation	LOT					$ 429,825
						$ 569,608

Total Equipment and Labor	$ 2,350,928

Point of Americas - Site 3

RF Site						
Equipment	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Base Station Gateway	1	$ 12,320	$ 12,320	10%	$ 11,088	$ 11,088
DC Power	1	$ 111,956	$ 111,956	25%	$ 83,967	$ 83,967
Network Management	1	$ 5,634	$ 5,634	14.46%	$ 4,819	$ 4,819
Power Distribution	1	$ 4,060	$ 4,060	25%	$ 3,045	$ 3,045
Receiver Antenna System	1	$ 25,187	$ 25,187	25%	$ 18,891	$ 18,891
Transmitter Antenna System	1	$ 5,935	$ 5,935	25%	$ 4,450	$ 4,450
Transmitters	10	$ 69,404	$ 694,037	24.95%	$ 52,088	$ 520,881
						$ 647,141

On-Site Work	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Site Civil Modifications; includes A&E; MW Dish installs	LOT					$ 219,552
						$ 219,552

Administration and Engineering	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Project Management	LOT					$ 106,253
System Engineering and Technologist, Documentation, Engineering Studies, Optimization, Networking, Travel	LOT					$ 373,825
						$ 480,078

Total Equipment and Labor	$ 1,346,771

Playa Del Sol - Site 4

RF Site						
Equipment	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Base Station Gateway	1	$ 12,320	$ 12,320	10%	$ 11,088	$ 11,088
DC Power	1	$ 111,956	$ 111,956	25%	$ 83,967	$ 83,967
Network Management	1	$ 5,634	$ 5,634	14.46%	$ 4,819	$ 4,819
Power Distribution	1	$ 4,060	$ 4,060	25%	$ 3,045	$ 3,045
Receiver Antenna System	1	$ 25,187	$ 24,003	25%	$ 18,003	$ 18,003
Transmitter Antenna System	1	$ 5,935	$ 6,673	25%	$ 5,004	$ 5,004
Transmitters	10	$ 69,404	$ 694,037	24.95%	$ 52,088	$ 520,881
						$ 646,807

On-Site Work	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Site Civil Modifications; includes A&E; MW Dish installs	LOT					$ 218,417
						$ 218,417

Administration and Engineering	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Project Management	LOT					$ 106,253
System Engineering and Technologist, Documentation, Engineering Studies, Optimization, Networking, Travel	LOT					$ 373,825
						$ 480,078

Total Equipment and Labor	$ 1,345,302

Broadband Connectivity Gateway

	Number Req'd	Unit Cost	Extended Cost
Equipment, Project Management, Systems Engineering & Technologist Services	LOT		$456,000
Total One Time Cost			**$456,000**
Description - Annual Subscription Services			
Year 1 Device Subscription	100	Included	Included
Year 1 On-Site Service	1	Included	Included
Year 2 Device Subscription	100	Included	Included
Year 2 On-Site Service	1	Included	Included
Year 3 Device Subscription	100	Included	Included
Year 3 On-Site Service	1	Included	Included
Year 4 Device Subscription	100	Included	Included
Year 4 On-Site Service	1	Included	Included
Year 5 Device Subscription	100	Included	Included
Year 5 On-Site Service	1	Included	Included
Year 6 Device Subscription	100	Included	Included
Year 6 On-Site Service	1	$ 60,241	$ 60,241
Year 7 Device Subscription	100	Included	Included
Year 7 On-Site Service	1	$ 60,639	$ 60,639
Year 8 Device Subscription	100	Included	Included
Year 8 On-Site Service	1	$ 61,054	$ 61,054
Year 9 Device Subscription	100	Included	Included
Year 9 On-Site Service	1	$ 61,485	$ 61,485
Year 10 Device Subscription	100	Included	Included
Year 10 On-Site Service	1	$ 61,934	$ 61,934
Year 11 Device Subscription	100	Included	Included
Year 11 On-Site Service	1	$ 64,410	$ 64,410
Year 12 Device Subscription	100	Included	Included
Year 12 On-Site Service	1	$ 64,896	$ 64,896
Year 13 Device Subscription	100	Included	Included
Year 13 On-Site Service	1	$ 65,400	$ 65,400
Year 14 Device Subscription	100	Included	Included
Year 14 On-Site Service	1	$ 65,925	$ 65,925
Year 15 Device Subscription	100	Included	Included
Year 15 On-Site Service	1	$ 66,471	$ 66,471
Year 16 Device Subscription	100	Included	Included
Year 16 On-Site Service	1	$ 69,130	$ 69,130
Year 17 Device Subscription	100	Included	Included
Year 17 On-Site Service	1	$ 69,720	$ 69,720
Year 18 Device Subscription	100	Included	Included
Year 18 On-Site Service	1	$ 70,335	$ 70,335
Year 19 Device Subscription	100	Included	Included
Year 19 On-Site Service	1	$ 70,973	$ 70,973
Year 20 Device Subscription	100	Included	Included
Year 20 On-Site Service	1	$ 71,638	$ 71,638
Total Price - Annual Subscription Services			**$ 984,251**

ASTRO Connectivity Services (ACS)

Description	Number Req'd	Unit Cost	Extended Cost
Equipment, Project Management, Systems Engineering & Technologist Services	LOT	-	$240,850
Total One Time Cost	-	-	$240,850
Annual Subscription Services			
ASTRO Connectivity Services - Year 1	1	-	Included
ASTRO Connectivity Services - Year 2	1	-	Included
ASTRO Connectivity Services - Year 3	1	-	Included
ASTRO Connectivity Services - Year 4	1	-	Included
ASTRO Connectivity Services - Year 5	1	-	Included
ASTRO Connectivity Services - Year 6	1	-	$23,936
ASTRO Connectivity Services - Year 7	1	-	$23,936
ASTRO Connectivity Services - Year 8	1	-	$23,936
ASTRO Connectivity Services - Year 9	1	-	$23,936
ASTRO Connectivity Services - Year 10	1	-	$23,936
ASTRO Connectivity Services - Year 11	1	-	$24,655
ASTRO Connectivity Services - Year 12	1	-	$24,655
ASTRO Connectivity Services - Year 13	1	-	$24,655
ASTRO Connectivity Services - Year 14	1	-	$24,655
ASTRO Connectivity Services - Year 15	1	-	$24,655
ASTRO Connectivity Services - Year 16	1	-	$25,394
ASTRO Connectivity Services - Year 17	1	-	$25,394
ASTRO Connectivity Services - Year 18	1	-	$25,394
ASTRO Connectivity Services - Year 19	1	-	$25,394
ASTRO Connectivity Services - Year 20	1	-	$25,394
Total Price Years 1-20 ASTRO Connectivity Services Subscription			**$369,925**

SYSTEM MAINTENANCE - OEM MANUFACTURED EQUIPMENT																								
OPTIONAL POST-WARRANTY MAINTENANCE SERVICES - LIST	**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**	**Subtotal**	**YEAR 6**	**YEAR 7**	**YEAR 8**	**YEAR 9**	**YEAR 10**	**Subtotal**	**YEAR 11**	**YEAR 12**	**YEAR 13**	**YEAR 14**	**YEAR 15**	**Subtotal**	**YEAR 16**	**YEAR 17**	**YEAR 18**	**YEAR 19**	**YEAR 20**	**Subtotal**	**Total**
Network Monitoring	Included	Included	Included	Included	Included	Included	$69,504	$72,282	$75,171	$78,176	$81,303	$376,436	$84,555	$87,937	$91,455	$95,113	$98,918	$457,978	$102,874	$106,989	$111,269	$115,720	$120,348	$557,200	$1,391,614
Technical Support	Included	Included	Included	Included	Included	Included	$87,793	$91,302	$94,951	$98,747	$102,696	$475,489	$106,804	$111,076	$115,519	$120,140	$124,945	$578,484	$129,943	$135,141	$140,547	$146,168	$152,015	$703,814	$1,757,787
Dispatch Services	Included	Included	Included	Included	Included	Included	$31,613	$32,876	$34,190	$35,557	$36,979	$171,215	$38,458	$39,997	$41,596	$43,260	$44,991	$208,302	$46,790	$48,662	$50,609	$52,633	$54,738	$253,432	$632,949
On-Site Premier (2 Hour)	Included	Included	Included	Included	Included	Included	$291,086	$302,721	$314,820	$327,406	$340,500	$1,576,533	$354,120	$368,285	$383,016	$398,337	$414,270	$1,918,028	$430,841	$448,075	$465,998	$484,638	$504,023	$2,333,575	$5,828,136
Infrastructure Repair	Included	Included	Included	Included	Included	Included	$182,390	$189,680	$197,261	$205,147	$213,352	$987,830	$221,886	$230,762	$239,992	$249,592	$259,575	$1,201,807	$269,958	$280,757	$291,987	$303,667	$315,813	$1,462,182	$3,651,819
Annual Preventive Maintenance	Included	Included	Included	Included	Included	Included	$42,841	$44,553	$46,334	$48,186	$50,113	$232,027	$52,118	$54,202	$56,371	$58,625	$60,970	$282,286	$63,409	$65,946	$68,583	$71,327	$74,180	$343,445	$857,758
System Update Service (SUS)	Included	Included	Included	Included	Included	Included	$64,127	$66,690	$69,355	$72,128	$75,012	$347,312	$78,013	$81,133	$84,379	$87,754	$91,264	$422,543	$94,915	$98,711	$102,660	$106,766	$111,037	$514,089	$1,283,944
Remote System Update Service (RSUS)	Included	Included	Included	Included	Included	Included	$84,414	$87,788	$91,296	$94,946	$98,744	$457,188	$102,693	$106,801	$111,073	$115,516	$120,137	$556,220	$124,942	$129,940	$135,137	$140,543	$146,165	$676,727	$1,690,135
SUA	Included	Included	Included	Included	Included	Included	$347,080	$360,963	$375,401	$390,417	$406,036	$1,879,897	$422,276	$439,168	$456,733	$475,003	$494,003	$2,287,183	$513,764	$534,315	$555,687	$577,913	$601,031	$2,782,710	$6,949,790
Subtotal - List Price	Included	Included	Included	Included	Included	Included	$1,200,848	$1,248,855	$1,298,779	$1,350,710	$1,404,735	$6,503,927	$1,460,923	$1,519,361	$1,580,134	$1,643,340	$1,709,073	$7,912,831	$1,777,436	$1,848,536	$1,922,477	$1,999,375	$2,079,350	$9,627,174	$24,043,932

OPTIONAL POST-WARRANTY MAINTENANCE SERVICES - DISCOUN	**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**	**Subtotal**	**YEAR 6**	**YEAR 7**	**YEAR 8**	**YEAR 9**	**YEAR 10**	**Subtotal**	**YEAR 11**	**YEAR 12**	**YEAR 13**	**YEAR 14**	**YEAR 15**	**Subtotal**	**YEAR 16**	**YEAR 17**	**YEAR 18**	**YEAR 19**	**YEAR 20**	**Subtotal**	**Total**
Network Monitoring	Included	Included	Included	Included	Included	Included	$36,835	$38,307	$39,839	$41,431	$43,088	$199,500	$44,812	$46,604	$48,468	$50,407	$52,423	$242,714	$54,520	$56,701	$58,969	$61,328	$63,781	$295,299	$737,513
Technical Support	Included	Included	Included	Included	Included	Included	$46,527	$48,387	$50,321	$52,333	$54,426	$251,994	$56,603	$58,867	$61,222	$63,670	$66,217	$306,579	$68,866	$71,621	$74,485	$77,465	$80,563	$373,000	$931,573
Dispatch Services	Included	Included	Included	Included	Included	Included	$16,754	$17,423	$18,120	$18,844	$19,598	$90,739	$20,382	$21,197	$22,045	$22,927	$23,844	$110,395	$24,797	$25,789	$26,821	$27,894	$29,010	$134,311	$335,445
On-Site Premier (2 Hour)	Included	Included	Included	Included	Included	Included	$154,267	$160,433	$166,845	$173,515	$180,455	$835,515	$187,673	$195,180	$202,987	$211,106	$219,551	$1,016,497	$228,333	$237,466	$246,965	$256,843	$267,117	$1,236,724	$3,088,736
Infrastructure Repair	Included	Included	Included	Included	Included	Included	$96,661	$100,525	$104,542	$108,722	$113,070	$523,520	$117,593	$122,297	$127,188	$132,276	$137,567	$636,921	$143,070	$148,793	$154,744	$160,934	$167,371	$774,912	$1,935,353
Annual Preventive Maintenance	Included	Included	Included	Included	Included	Included	$26,243	$27,291	$28,382	$29,517	$30,697	$142,130	$31,925	$33,202	$34,530	$35,912	$37,348	$172,917	$38,842	$40,396	$42,011	$43,692	$45,440	$210,381	$525,428
System Update Service (SUS)	Included	Included	Included	Included	Included	Included	$33,985	$35,343	$36,756	$38,225	$39,754	$184,063	$41,344	$42,998	$44,718	$46,507	$48,367	$223,934	$50,302	$52,314	$54,406	$56,583	$58,846	$272,451	$680,448
Remote System Update Service (RSUS)	Included	Included	Included	Included	Included	Included	$44,737	$46,525	$48,384	$50,319	$52,331	$242,296	$54,424	$56,601	$58,865	$61,220	$63,669	$294,779	$66,216	$68,864	$71,619	$74,483	$77,463	$358,645	$895,720
SUA	Included	Included	Included	Included	Included	Included	$183,942	$191,299	$198,951	$206,910	$215,185	$996,287	$223,793	$232,745	$242,055	$251,737	$261,806	$1,212,136	$272,279	$283,170	$294,497	$306,278	$318,529	$1,474,753	$3,683,176
Subtotal - After Discount	Included	Included	Included	Included	Included	Included	$639,951	$665,533	$692,140	$719,816	$748,604	$3,466,044	$778,549	$809,691	$842,078	$875,762	$910,792	$4,216,872	$947,225	$985,114	$1,024,517	$1,065,500	$1,108,120	$5,130,476	$12,813,392

Total List Price per Year	Included	Included	Included	Included	Included	Included	$1,200,848	$1,248,855	$1,298,779	$1,350,710	$1,404,735	$6,503,927	$1,460,923	$1,519,361	$1,580,134	$1,643,340	$1,709,073	$7,912,831	$1,777,436	$1,848,536	$1,922,477	$1,999,375	$2,079,350	$9,627,174	$24,043,932
DISCOUNT	N/A	N/A	N/A	N/A	N/A		46.71%	46.71%	46.71%	46.71%	46.71%		46.71%	46.71%	46.71%	46.71%	46.71%		46.71%	46.71%	46.71%	46.71%	46.71%		
Yearly Total	Included	Included	Included	Included	Included	Included	$639,951	$665,533	$692,140	$719,816	$748,604	$3,466,044	$778,549	$809,691	$842,078	$875,762	$910,792	$4,216,872	$947,225	$985,114	$1,024,517	$1,065,500	$1,108,120	$5,130,476	$12,813,392

3RD PARTY EQUIPMENT MAINTENANCE																								
POST-WARRANTY MAINTENANCE SERVICES	**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**	**Subtotal**	**YEAR 6**	**YEAR 7**	**YEAR 8**	**YEAR 9**	**YEAR 10**	**Subtotal**	**YEAR 11**	**YEAR 12**	**YEAR 13**	**YEAR 14**	**YEAR 15**	**Subtotal**	**YEAR 16**	**YEAR 17**	**YEAR 18**	**YEAR 19**	**YEAR 20**	**Subtotal**	**Total**
Third Party Maintenance (Eventide)	Included	Included	Included	Included	Included	Included	$32,904	$32,904	$32,904	$32,904	$32,904	$164,520	$35,536	$35,536	$35,536	$35,536	$35,536	$177,680	$37,313	$39,179	$41,138	$43,195	$45,355	$206,180	$548,380
Third Party Maintenance (Infinity Microwave)	Included	Included	Included	Included	Included	Included	$41,227	$41,227	$154,081	$54,560	$54,560	$345,655	$54,560	$54,560	$54,560	$54,560	$54,560	$272,800	$480,169	$54,560	$54,560	$54,560	$54,560	$698,409	$1,316,864
Third Party Maintenance (Tower Maintenance	Included	Included	Included	Included	Included	Included	$2,958	$3,076	$3,200	$3,328	$3,461	$16,023	$3,599	$3,743	$3,893	$4,048	$4,210	$19,493	$4,379	$4,554	$4,736	$4,926	$5,123	$23,718	$59,234
Third Party Maintenance (Eltek DC Power)	Included	Included	Included	Included	Included	Included	$24,852	$26,105	$27,421	$28,803	$30,254	$137,435	$31,779	$33,381	$35,063	$36,830	$38,687	$175,740	$40,636	$42,685	$44,836	$47,096	$49,469	$224,722	$537,897
Third Party Maintenance (VSS)	Included	Included	Included	Included	Included	Included	$40,271	$172,494	$48,022	$52,440	$130,996	$444,223	$62,533	$68,286	$74,568	$270,199	$88,920	$564,506	$97,100	$106,034	$115,789	$126,441	$138,074	$583,438	$1,592,167
Yearly Total	Included	Included	Included	Included	Included	Included	$142,212	$275,806	$265,628	$172,035	$252,175	$1,107,856	$188,007	$195,506	$203,620	$401,173	$221,913	$1,210,219	$659,597	$247,012	$261,059	$276,218	$292,581	$1,736,467	$4,054,542

SPARE EQUIPMENT						
Equipment Description	**Number Req'd**	**List Unit Cost**	**Total List**	**Discount**	**Unit Cost**	**Extended Cost**
Core Spares	LOT				$191,908	$ 191,908
RF Site Spares	LOT				$ 96,834	$ 96,834
Dispatch Site Spares	LOT				$ 80,744	$ 80,744
Virtual Prime Site Spares	LOT				$ 46,535	$ 46,535
SPARE EQUIPMENT SUBTOTAL						
Subtotal Equipment						$ 416,021

Training

	Students	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
Dispatch Console Operator Training - On Site Fort Lauderdale						
CommandCentral AXS Dispatch Console Technical Workshop	Up to 12					$ 20,718
WAVE 5000 End User Train-the-Trainer	Up to 12					$ 9,418
CommandCentral AXS Dispatch Console ADMIN with CommandCentral AXS Dispatch Console Operator with ASTRO APX Mobile Consolette	4					$ 3,488
CommandCentral AXS Dispatch Console Operator 1 (1 Hr) Sessions ASTRO APX Mobile Consolette	38					$ 11,825

System Administrator Training - On Site Fort Lauderdale; 2 Students						
ASTRO 25 System Overview - Online	Up to 12					Included
ASTRO 25 Applied Networking	Up to 12					$ 32,016
ASTRO 25 IV&D Admin Workshop	Up to 12					$ 32,016
ASTRO® 25 IV&D System Core Workshop	Up to 12					$ 32,016
ASTRO® 25 IV&D DBR RF Technical Workshop	Up to 12					$ 20,718
ASTRO® Virtualized Simulcast Prime Site Workshop	Up to 12					$ 20,718
ASTRO® 25 IV&D IP Based Digital Simulcast Workshop	Up to 12					$ 20,718
ASTRO® 25 IV&D Secure Communications Workshop	Up to 12					$ 32,016
ASTRO® 25 Domain Controller Administration	Up to 12					$ 20,718
ASTRO® 25 ISSI 8000 - CSSI 8000 Feature Overview	Up to 12					$ 2,183
Shipping & Leasing of all Training Equipment to City of Fort Lauderdale	Up to 12					$ 8,814
ASTRO Learning Subscription (All ASTRO and County Self Paced Content Included) - 1 Year Subscription	Up to 12					Included
Total End-User and System Administrator Training						$ 267,382

Subscribers

Equipment Description	Subscriber Model	Number Req'd	List Unit Cost	Total List	Discount	Unit Cost	Extended Cost
High Tier - All Band Mobile - Dash Mount with 3 Yr Warranty	APX8500 Dash Mount	1	$ 7,613	$ 7,613	27%	$ 5,557	$ 5,557
High Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
High Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
High Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
High Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
High Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
High Tier Mobile Peripherals incl. all band antenna, auxiliary speaker and standard palm microphone		1	$ 634	$ 634	27%	$ 463	$ 463
Subscriptions as proposed:		1	$ 96	$ 96	0%	$ 96	$ 96
							$ 9,882
High Tier - All Band Mobile - Remote Mount with 3 Yr Warranty	APX8500 Remote	1	$ 7,963	$ 7,963	27%	$ 5,813	$ 5,813
High Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
High Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
High Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
High Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
High Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
High Tier Mobile Peripherals incl. all band antenna, auxiliary speaker and standard palm microphone		1	$ 634	$ 634	27%	$ 463	$ 463
Subscriptions as proposed:		1	$ 96	$ 96	0%	$ 96	$ 96
							$ 10,137
High Tier - All Band Mobile - Dual Head Mount with 3 Yr Warranty	APX 8500 Remote D CH	1	$ 8,634	$ 8,634	27%	$ 6,303	$ 6,303
High Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
High Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
High Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
High Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
High Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
High Tier Mobile Peripherals incl. all band antenna, auxiliary speaker and standard palm microphone		1	$ 826	$ 826	27%	$ 603	$ 603
Subscriptions as proposed:		1	$ 96	$ 96	0%	$ 96	$ 96
							$ 10,767
High Tier - All Band Mobile - Motorcycle Mount with 3 Yr Warranty	APX 8500 Motorcycle	1	$ 7,613	$ 7,613	27%	$ 5,557	$ 5,557
High Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
High Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
High Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
High Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
High Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
High Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
High Tier Mobile Peripherals incl. all band antenna, helmet headset, and handlebar PTT		1	$ 1,314	$ 1,314	27%	$ 959	$ 959
Subscriptions as proposed:		1	$ 96	$ 96	0%	$ 96	$ 96
							$ 10,378
Mid Tier - All Band Mobile - Dash Mount with 3 Yr Warranty	APX 8500 DASH	1	$ 7,613	$ 7,613	27%	$ 5,557	$ 5,557
Mid Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
Mid Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
Mid Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
Mid Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
Mid Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
Mid Tier Mobile Peripherals incl. all band antenna, auxiliary speaker and standard palm microphone		1	$ 634	$ 634	27%	$ 463	$ 463
							$ 9,786

Mid Tier - All Band Mobile - Remote Mount with 3 Yr Warranty	APX8500 Remote	1	$ 7,963	$ 7,963	27%	$ 5,813	$ 5,813
Mid Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
Mid Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
Mid Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
Mid Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
Mid Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
Mid Tier Mobile Peripherals incl. all band antenna, auxiliary speaker and standard palm microphone		1	$ 634	$ 634	27%	$ 463	$ 463
							$ 10,041
Mid Tier - All Band Mobile - Dual Head Mount with 3 Yr Warranty	APX 8500 Remote D CH	1	$ 8,634	$ 8,634	27%	$ 6,303	$ 6,303
Mid Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
Mid Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
Mid Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
Mid Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
Mid Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
Mid Tier Mobile Peripherals incl. all band antenna, auxiliary speaker and standard palm microphone		1	$ 826	$ 826	27%	$ 603	$ 603
							$ 10,671
Mid Tier - All Band Mobile - Motorcycle Mount with 3 Yr Warranty	APX 8500 Motorcycle	1	$ 7,613	$ 7,613	27%	$ 5,557	$ 5,557
Mid Tier Mobile Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
Mid Tier Mobile Multikey		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
Mid Tier Mobile Wi-Fi Operation		1	$ 353	$ 353	27%	$ 258	$ 258
Mid Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 436	$ 436	27%	$ 318	$ 318
Mid Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
Mid Tier Software/Features required but not listed above		1	$ 2,726	$ 2,726	27%	$ 1,990	$ 1,990
Mid Tier Mobile Peripherals incl. all band antenna, helmet headset, and handlebar PTT		1	$ 1,314	$ 1,314	27%	$ 959	$ 959
							$ 10,282
High Tier Portable with 3 Yr Warranty	APX N70	1	$ 8,488	$ 8,488	27%	$ 6,196	$ 6,196
High Tier Portable Encryption - AES Encryption		1	$ 1,227	$ 1,227	27%	$ 896	$ 896
High Tier Portable Multikey		1	$ -	$ -	0%	$ -	$ -
High Tier Portable TDMA Operation		1	$ -	$ -	0%	$ -	$ -
High Tier Mobile Wi-Fi Operation		1	$ -	$ -	0%	$ -	$ -
High Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ -	$ -	0%	$ -	$ -
High Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ -	$ -	0%	$ -	$ -
High Tier Software/Features required but not listed above		1	$ 300	$ 300	27%	$ 219	$ 219
High Tier Portable Accessories incl. additional battery, single unit charger, remote speaker microphone and swivel case		1	$ 1,315	$ 1,315	27%	$ 960	$ 960
							$ 8,271
Mid Tier Portable with 3 Yr Warranty	APX N50	1	$ 5,897	$ 5,897	27%	$ 4,305	$ 4,305
Mid Tier Portable Encryption - AES Encryption		1	$ 1,277	$ 1,277	27%	$ 932	$ 932
Mid Tier Portable Multikey		1	$ -	$ -	0%	$ -	$ -
Mid Tier Portable TDMA Operation		1		$ -	0%	$ -	$ -
Mid Tier Mobile Wi-Fi Operation		1		$ -	0%	$ -	$ -
Mid Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1		$ -	0%	$ -	$ -
Mid Tier Mobile Over-the-Air-Programming (OTAP) Operation		1		$ -	0%	$ -	$ -
Mid Tier Software/Features required but not listed above		1	$ 96	$ 96	27%	$ 70	$ 70
Mid Tier Portable Accessories incl. additional battery, single unit charger, remote speaker microphone and swivel case		1	$ 987	$ 987	27%	$ 721	$ 721
							$ 6,028
Multi-unit Charger	MUC - DESKTOP	1	$ 1,925	$ 1,925	27%	$ 1,405	$ 1,405
Single-unit Charger	SUC- DESKTOP	1	$ 222	$ 222	27%	$ 162	$ 162
Additional Battery		1		$ -	0%	$ -	$ -
Remote Speaker Microphone	VXP750 RSM	1	$ 543	$ 543	27%	$ 396	$ 396
Swivel Case	holster case	1	$ 40	$ 40	27%	$ 30	$ 30
Belt Clip	clip	1	$ 40	$ 40	27%	$ 30	$ 30
							$ 2,023
Control Station with 3 Yr Warranty	APX Consolette	1	$ 14,228	$ 14,228	27%	$ 10,386	$ 10,386
Control Station Encryption - AES Encryption		1	$ 560	$ 560	27%	$ 409	$ 409
Control Station Multikey		1	$ -	$ -	0%	$ -	$ -
Control Station TDMA Operation		1	$ 530	$ 530	27%	$ 387	$ 387
Mid Tier Mobile Wi-Fi Operation		1	$ 412	$ 412	27%	$ 301	$ 301
Mid Tier Mobile Over-the-Air-Rekeying (OTAR) Operation		1	$ 871	$ 871	27%	$ 636	$ 636
Mid Tier Mobile Over-the-Air-Programming (OTAP) Operation		1	$ 118	$ 118	27%	$ 86	$ 86
Mid Tier Software/Features required but not listed above		1	$ 960	$ 960	27%	$ 701	$ 701
							$ 12,906

Control Station Antenna Assembly		1		$ -		$ -		Included
							$	-
Portable Programming and Optimization	All	1	-	$ -	-	$ 162	$	162
Mobile Programming, Optimization, Install, (and Decommission if required) - Dash Mount		1	-	$ -	-	$ 1,428	$	1,428
Mobile Programming, Optimization, Install, (and Decommission if required) - Remote Mount		1	-	$ -	-	$ 1,686	$	1,686
Mobile Programming, Optimization, Install, (and Decommission if required) - Dual Head Mount		1	-	$ -	-	$ 2,086	$	2,086
Mobile Programming, Optimization, Install, (and Decommission if required) - Motorcycle Mount		1	-	$ -	-	$ 1,686	$	1,686
Control Station Programming, Optimization, Installation, Antenna Assembly (and Decommission if required)		1	-	$ -	-	$ 1,718	$	1,718
							$	-
Subtotal Equipment							$	111,171
Subtotal Labor							$	8,765
Total Equipment/Labor							**$**	**119,936**

Subscriber Post-Warranty and Preventative Maintenance

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Subscriber Services																
APX N70 - ASTRO Device Managed Services w/ Accidental Damage	Included	Included	Included	Included	Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	$0.00
APX N50 - ASTRO Device Managed Services w/ Accidental Damage	Included	Included	Included	Included	Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	$0.00
APX N30 - ASTRO Device Managed Services w/ Accidental Damage	Included	Included	Included	Included	Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	$0.00
APX6500 - Essentials Services	Included	Included	Included	Included	Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	$0.00
APX4500 - Essentials Services w/ Accidental Damage	Included	Included	Included	Included	Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	$0.00
APX8500 - Essentials Services	Included	Included	Included	Included	Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	Not Included	$0.00
															Subtotal	$0.00

Optionally Proposed Equipment & Services

Equipment Description	Quantity Req	List Unit Cost	Extended Cost
Subscribers - Equipment, Installation, Programming, Disposal of existing Equipment, ASTRO Device Services N70 - Qty(1971) N50 - Qty(103) N30 - Qty(108) APX8500 - Qty(16) APX6500 - Qty(327) APX4500 - Qty(12)	LOT	$24,613,710	$24,613,710
Total Subscriber Equipment/Labor (before incentives)			**$24,613,710**
Subscriber Cost Incentives: *One time subscriber discount for purchase of all subscribers as proposed **with purchase of system**			-$12,972,338
*One Time Subscriber 5-Year Essential Services Discount with Purchase of all Subscribers as proposed			-$1,441,371
Total Subscriber Equipment and Labor (after incentives)			**$10,200,001**
Total Subscriber, Infrastructure, Warranty & Maintenance (1-20 Years) with all items as proposed			**$40,992,403**

Equipment Description	Quantity Req	List Unit Cost	Extended Cost
KMF	LOT	$165,426	$165,426
IMW	LOT	$124,979	$124,979
TDMA Channel Licensing, per channel	1	$101,760	$101,760
Equipment for Critical Connect Redundancy on DSR	1	$60,844	$60,844
Subscription for Incremental WAVE PTX Users (1 year)	3000	$468,000	$468,000
Contingency ACS Link for Backup EOC if Monopole fails FAA Approval (Equipment, Project Management, Systems Engineering & Technologist Services, plus Years 1-5)	1	$86,764	$86,764

City Of Fort Lauderdale, FL Cyber Security & Cirrus Management Option

WARRANTY & MAINTENANCE SERVICES	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL (YRS 1 - 5)
Cyber Security (MDR) - OPTIONAL	$73,104	$76,029	$79,070	$82,235	$85,525	$482,762
Cirrus Central Management - OPTIONAL	$46,000	$47,840	$49,754	$51,747	$53,813	$249,154
Contingency ACS Link for Backup EOC - OPTIONAL	Included w/ Optional ACS Scope	Included w/ Optional ACS Scope	Included w/ Optional ACS Scope	Included w/ Optional ACS Scope	Included w/ Optional ACS Scope	Included w/ Optional ACS Scope

WARRANTY & MAINTENANCE SERVICES	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	TOTAL (YRS 6 - 10)
Cyber Security (MDR) - OPTIONAL	$88,946	$92,506	$96,206	$100,051	$105,053	$482,762
Cirrus Central Management - OPTIONAL	$55,966	$58,205	$60,532	Not Included	Not Included	$174,703
Contingency ACS Link for Backup EOC - OPTIONAL	$11,983	$11,983	$11,983	$11,983	$11,983	$59,915

WARRANTY & MAINTENANCE SERVICES	YEAR 11	YEAR 12	YEAR 13	YEAR 14	YEAR 15	TOTAL (YRS 11 - 15)
Cyber Security (MDR) - OPTIONAL	$110,306	$115,821	$121,612	$127,693	$134,078	$609,510
Contingency ACS Link for Backup EOC - OPTIONAL	$12,701	$12,701	$12,701	$12,701	$12,701	$63,505

WARRANTY & MAINTENANCE SERVICES	YEAR 16	YEAR 17	YEAR 18	YEAR 19	YEAR 20	TOTAL (YRS 16 - 20)
Cyber Security (MDR) - OPTIONAL	$140,782	$147,821	$155,212	$162,972	$171,121	$777,908
Contingency ACS Link for Backup EOC - OPTIONAL	$13,456	$13,456	$13,456	$13,456	$13,456	$67,280

**Motorola reserves the right to re-price any optionally priced items not committed to at the time of initial contract execution*

City of Fort Lauderdale, FL FUTURE PURCHASE CONSIDERATION

Purchase Price Discount Years 6 - 10	
Fixed Site Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Antenna Related Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Console Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Control Station Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Spare Parts	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Managed & Support Services	10% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Purchase Price Discount Years 11-15	
Fixed Site Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Antenna Related Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Console Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Control Station Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Spare Parts	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Managed & Support Services	10% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Purchase Price Discount Years 16-20	
Fixed Site Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Antenna Related Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Microwave Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Console Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Network Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Control Station Equipment	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Spare Parts	25% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment
Managed & Support Services	10% on Motorola Solutions Manufactured Equipment; 10% on 3rd Party Equipment