APX 6500

SINGLE-BAND P25 MOBILE RADIO

STAY INFORMED. STAY SAFE.

You may not know what the next call will entail, but you do know that your team needs communication they can count on. Whether on a motorcycle, in a squad car or a fire truck, the rugged and compact design of the evolved APX™ 6500 mobile radio is designed to maximize the real estate in your vehicle and keep your entire agency safely connected. Now with integrated Wi-Fi, the APX 6500 gives you more ways to manage your radio and stay connected. And when your vehicle sustains a high impact, the radio can automatically alert dispatch.

Security is more important than ever. Criminals are testing you on the streets and over the air. Fight back with multiple levels of protection to encrypt and secure your voice and data communication against eavesdropping.

Stay connected, keep safe and secure your communications with the APX 6500 single-band mobile radio.

MOTOROLA SOLUTIONS

BUILT-IN Wi-Fi

VOICE AND DATA, ALL AT ONCE

Packed with all the connections you need, the APX 6500 keeps your team in touch and within reach of over-the-air updates. Receive new codeplugs, firmware updates and software features at the speed of Wi-Fi – without interruptions to voice communications.

RF antenna port

Accessory connector

GPS | WiFi

GPS

Wi-Fi

DC power

DESIGNED TO SECURE AND PROTECT

KEEP VOICE AND DATA PROTECTED

The APX 6500 secures voice and data using multiple hardware encryption algorithms and the ability to rekey over the air, so it's protected from scanners and eavesdroppers. What's more, P25 Radio Authentication ensures only valid users can access the system while the available two-factor authentication secures database logins.

LIGHTWEIGHT, COMPACT DESIGN

FLEXIBLE, EASY INSTALLATION

The small and light form-factor of the APX 6500 allows for easy installation across a growing ecosystem of vehicles and installations. Users can choose one of several interchangeable control heads to best fit their need. Dual control head configuration enables radio operation from multiple locations within the same vehicle, such as a large fire truck.

O2 CONTROL HEAD

EXTREME USABILITY
The O2 control head provides rugged simplicity for efficient and confident communication. Extreme controls with easy to read color display and a built-in 7.5 watt speaker provides clear visual and audible user experiences. Available in high impact green or black.

Exaggerated design and rugged housing for extreme environments

Full color display with night mode and intelligent lighting

Integrated high density speaker for loud, clear audio

Enlarged multi-function channel / volume knob

Programmable multi-select buttons

O3 HANDHELD CONTROL HEAD

HANDHELD FLEXIBILITY
The O3 corded control head fits all your mobile controls in your hand. With the O3 your radio controls are never out of reach.

Programmable buttons all around

Full color display with intelligent lighting

Programmable menu buttons

Dedicated volume and channel rockers

Fully integrated DTMF keypad

Integrated control head and microphone design

APX 6500 COMPATIBLE CONTROL HEADS

Dedicated volume and channel knobs for quick control

Tri-color display with intelligent lighting

Programmable menu buttons

Full color display with night mode and intelligent lighting

Multi-function channel / volume knob

Integrated controls for siren and lights, PA and gunlock or DTMF keypad

Programmable multi-select buttons

O5 CONTROL HEAD

SIMPLE MULTI-FUNCTIONALITY
The O5 is our most popular control head.
The two-knob configuration provides easy tactile control for channel selection and volume level.

O7 CONTROL HEAD

INTEGRATED MULTI-FUNCTIONALITY
The O7 is a sophisticated control head with a color display and built-in keypad. It can integrate your radio vehicle control into a single ergonomic interface and supports dual radio installations.

FEATURES

GENERAL FEATURES	
Channel Capacity	1,000 channels standard, expandable to 3,000 channels
Wireless Connectivity	GPS/GLONASS, Wi-Fi
WLAN (Wi-Fi) Protocols	802.11 b/g/n (2.4GHz) 802.11 a/n/ac (5GHz)
Encryption Algorithms	ADP (standard), 256-bit AES, DES, DES-XL, DES-OFB, DVP-XL

OPERATING MODES
Digital Trunking: 9600 Baud APCO P25 Phase 1 FDMA and Phase 2 TDMA
Analog Trunking: 3600 Baud SmartNet®, SmartZone®, Omnilink
Digital Conventional: APCO 25
Analog Conventional: Analog MDC 1200, Quik Call II System Configurations
SmartConnect Connectivity

INTEGRATED WI-FI, GPS AND DATA CONNECTIVITY
Wi-Fi 802.11 b/g/n with up to 20 Wi-Fi networks provisioned in the radio[1]
Data Modem Tethering[1]
ASTRO 25 Integrated Voice and Data
Enhanced Data[1]
Integrated GPS/GLONASS for Outdoor Location Tracking
Mission Critical Geofence[1]
Personnel Accountability[1]
SmartConnect[1]
ViQi Virtual Partner[1]

MANAGEMENT
Customer Programming Software (CPS)
Radio Management
Over-the-air Programming (OTAP)[1]

SECURITY
Tactical Inhibit[1]
P25 Authentication[1]
Software Key
Single-key ADP Encryption
Multikey for 128 keys and multi-algorithm[1]
Over-the-air Rekeying (OTAR)[1]

GPS/GNSS SPECIFICATIONS	
Channels	12
Tracking Sensitivity	-164 dBm
Accuracy[2]	<5 meters (95%)
Cold Start[2]	<60 seconds (95%)
Hot Start[2]	<5 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted) GNSS or SBAS

[1] Optional
[2] Measured conductively with >6 satellites visible at a nominal -130 dBm signal strength

ENCRYPTION	
Supported Encryption Algorithms	ADP, AES, DES, DES-XL, DES-OFB, DVP-XL
Encryption Algorithm Capacity	8
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 128 Common KeY Reference (CKR) or 16 PhysicalIdentifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 300 mSec
Encryption Keying	Key Loader
Synchronization	XL – Counter Addressing | OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-2 Level 3, FIPS 197

OTHER FEATURES
Text Messaging
Radio Profiles
Dynamic Zone
Intelligent Priority Scan
Unified Call List
Instant Recall
Data Modem Connection (wired or Wi-Fi)[1]
12 Character RFID Asset Tracking[1]
Digital Tone Signaling[1]
Siren and Light Interface Module[1]

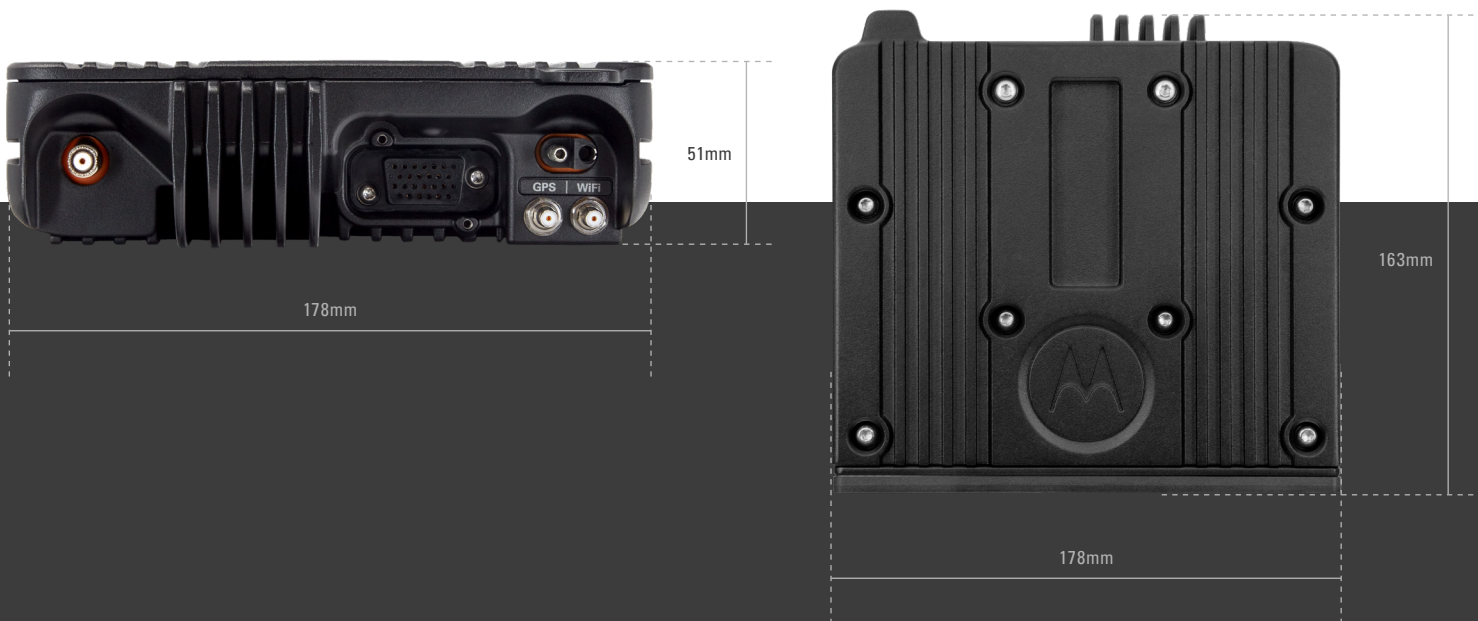| INTEGRATED WI-FI, GPS AND DATA CONNECTIVITY		
Frequency Range/Band splits	WLAN (Wi-Fi): 2412 - 2462 MHz; 5180 - 5320 MHz; 5500 - 5825 MHz	
WLAN (WiFi) 802.11 b/g/n (2.4GHz) 802.11 a/n/ac (5GHz)	Security protocols	WPA-2, WPA, WEP
	SSIDs	Up to 20 pre-provisioned
Integrated GPS/GLONASS for outdoor location tracking		
Data Modem Tethering[1]		

SIGNALING (ASTRO 25 MODE)	
Signalling Rate	9.6 kbps
Digital ID Capacity	10,000,000 Conventional / 48,000 Trunking
Digital Network Access Codes	4,096 network site addresses
ASTRO Digital User Group Addresses	4,096 network site addresses
Project 25 – CAI Digital User Group Addresses	65,000 Conventional / 4,094 Trunking
Error Correction Techniques	Golay, BCH, Reed-Solomon codes
Data Access Control	Slotted CSMA: Utilizes infrastructure-sourced data status bits embedded in both voice and data transmissions

[1] Optional

DIMENSIONS AND WEIGHT

DIMENSIONS AND WEIGHT		
Radio Transceiver	50.8 x 178 x 163 mm (2.0 x 7.0 x 6.4 in)	2.18 kg (4.80 lbs)
Radio Transceiver and O2 Control Head - Dash Mount	69 x 207 x 223 mm (2.7 x 8.1 x 8.8 in)	2.43 kg (5.36 lbs)
Radio Transceiver and O5 Control Head - Dash Mount	51.3 x 178.5 x 202 mm (2 x 7 x 7.95 in)	2.24 kg (4.94 lbs)
Radio Transceiver and O7 Control Head - Dash Mount	51.3 x 178.5 x 208 mm (2 x 7 x 8.19 in)	2.24 kg (4.94 lbs)
Radio Transceiver and Remote Mount	51.3 x 178.5 x 193.6 mm (2 x 7 x 7.62 in)	2.18 kg (4.80 lbs)
O2 Control Head Remote Mount	68.4 x 206 x 52.8 mm (2.7 x 8.1 x 2.1 in)	-
O5 Control Head Remote Mount	50.8 x 180.3 x 63.5 mm (2.0 x 7.0 x 2.5 in)	-
O7 Control Head Remote Mount	50.8 x 178 x 40 mm (2.0 x 7.0 x 1.5 in)	-

51mm

178mm

163mm

178mm

PERFORMANCE AND REGULATORY

TRANSMITTER							
	VHF		**UHF R1**		**700 MHz**		**800 MHz**
Frequency Range/Bandsplits	136-174 MHz		380-470 MHz		764-776, 794-806 MHz		806-825, 851-870 MHz
Rated RF Output Power (Adjustable)	1-50 W		1-40 W		3-30 W		3-35 W
Frequency Stability (-30°C to +60°C; +25°C Ref.)	± 0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM
Emissions	Conducted -85 dBc	Radiated -10 dBm	Conducted -85 dBc	Radiated -20 dBm	Conducted -75/-85 dBc	Radiated -20/-40 dBm	Conducted -75 dBc · Radiated -20 dBm
Modulation Limiting (12.5/20/25 kHz)	±5/±2.5 kHz		±5/±2.5kHz		±5/±2.5 kHz		±5/±2.5 kHz
Modulation Fidelity (C4FM) 12.5 kHz Digital Channel	2.5%		1.50%		1.50%		1.50%
Audio Response	+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)
FM Hum & Noise (12.5 kHz/25 kHz)	-52 dB / -53 dB		-50 dB/ -53 dB		-48 dB / -50 dB		-48 dB / -50 dB
Audio Distortion (12.5 kHz/25 kHz)	0.50%		0.50%		0.50% / 0.50%		0.50% / 0.50%

RECEIVER							
	VHF		**UHF R1**		**700 MHz**		**800 MHz**
Frequency Range/Bandsplits	136-174 MHz		380-470 MHz		764-776 MHz		851-870 MHz
Channel Spacing	12.5/25 kHz		12.5/25 kHz		12.5/25 kHz		12.5/25 kHz
Maximum Frequency Separation	Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit
Audio Output Power at Rated/Max	7.5 / 15 W		7.5 / 15 W		7.5 / 15 W		7.5 / 15 W
Frequency Stability (-30 °C to +60 °C; +25 °C Ref.)	±0.8 ppm		±0.8 ppm		±0.8 ppm		±0.8 ppm
Analog Sensitivity (12db SINAD)	Pre-Amp -123 dBm (0.158µV)	Standard -119 dBm (0.251µV)	Pre-Amp -123 dBm (0.158µV)	Standard -119 dBm (0.251µV)	-121 dB (0.199 µV)		-121 dB (0.199 µV)
5% BER	Pre-Amp -123 dBm (0.158µV)	Standard -119 dBm (0.251µV)	-121.5 dB (0.188 µV)	Pre-Amp -123 dBm (0.158µV)	-121.5 dB (0.188 µV)		-121.5 dB (0.188 µV)
Selectivity (12.5 kHz / 12 kHz)	77 dB / 89 dB / 90 dB		75 dB / 85 dB		75 dB / 85 dB		75 dB / 85 dB
Intermodulation Rejection	Pre-Amp 84dB / 84 dB	Standard 86 dB / 86 dB	Pre-Amp 82 dB / 82dB	Standard 86 dB / 86 dB	82 dB / 82 dB		82dB / 82 dB
Spurious Rejection	95 dB		93 dB		91 dB		91 dB
FM Hum & Noise (12.5 kHz / 25 kHz)	-50 dB / -59 dB		-50 dB / -55 dB		-50 dB / -59 dB		-50 dB / -59 dB
Audio Distortion (12.5 kHz / 25 kHz)	1.2 %		1.5%		1.2 %		1.2 %

POWER AND BATTERY DRAIN			
	VHF	**UHF R1**	**700 MHz**	**800 MHz**
Frequency Range / Bandsplits	136-174 MHz	380-470 MHz	764-775, 794-806 MHz	806-825, 851-870 MHz
RF Power Output	1-50 W	1-40 W	3-30 W	3-35 W
Operation	0.85A	0.85A	0.85A	0.85A
Standby at 13.8V	3.2A	3.2A	3.2A	3.2A
Receive Current at Rated Audio at 13.8V	8 A @ 15 W / 13 A @ 50 W	11 A @ 40 W / 8A @ 15 W	8 A @ 15 W	8 A @ 15 W / 12 A @ 35 W

ENVIRONMENTAL	
Operating Temperature	-30ºC/+60ºC
Storage Temperature	-40ºC/+85ºC
Humidity	Per MIL-STD
ESD	IEC 61000-4-2
Water and Dust Intrusion (w/ O2 control head)	IP56, MIL-STD

RADIO MODEL NUMBER	
700/800 MHz	M25URS9PW1BN
VHF	M25URS9PW1BN
UHF R1	M25URS9PW1BN

FCC/IC TYPE ACCEPTANCE ID	
FCC/IC ID	**Band and Power Level**
FCC ID: AZ492FT7130 IC ID: 109U-92FT7130	136-174 MHz (1-50 W)
FCC ID: AZ492FT7129 IC ID: 109U-92FT7129	380-470 MHz (1-40 W)
FCC ID: AZ492FT7124 IC ID: 109U-92FT7124	764-776 MHz (3-30 W)
	794-806 MHz (3-30 W)
	806-824 MHz (3-35 W)
	851-870 MHz (3-35 W)

RED CERTIFICATION	
Type Designator	**Band and Power Level**
MMCR308PE	136-174 MHz (1-50 W)
MMCR508PE	380-470 MHz (1-40 W)

MOBILE MILITARY STANDARDS 810, C, D, E, F, G & H													
	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G		MIL-STD 810H	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	I/II	500.6	II	500.6	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot	501.6	I/A1, II/A1	501.7	I/A1, II/A1
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.6	I/C3, II/C1	502.7	I/C3, II/C1
Temperature Shock	503.1	I	503.2	1/A1C3	503.3	1/A1C3	503.4	I	503.6	I/C	503.7	I-C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.6	I/A1	505.7	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.6	I, III	506.6	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	-	507.6	II/Aggravated	507.6	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	-	509.6	-	509.7	-
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.6	I	510.7	I
Blowing Sand	-	-	510.2	II	510.3	II		II	510.6	II	510.7	II
Vibration	514.2	VIII, F, W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.7	I/24	514.8	I/24, II/5
Shock	516.2	I, III, V	516.3	I, V, VI	516.4	I, V, VI	516.5	I, V, VI	516.7	I, V, VI	516.8	I,V,VI

For more information, please visit **www.motorolasolutions.com/APX**

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