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 maximise the real estate in your vehicle and keep your entire agency safely connected. Now with integrated Wi-Fi and Bluetooth, 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.

DATA SHEET | APX 6500

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 — Wi-Fi/Bluetooth — DC power

GPS | WiFi

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.

DEVICE MANAGEMENT SERVICES

ALL THE SUPPORT YOU NEED

Motorola Solutions offers three levels of service plans – Essential, Advanced and Premier. From simple support for technical troubleshooting to a complete transfer of optimisation and maintenance services to Motorola Solutions, you choose the level of support that suits you best.

O2 CONTROL HEAD

EXTREME USABILITY

The O2 control head provides rugged simplicity for efficient and confident communication. Extreme controls with easy to read colour 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 colour 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

Programmable buttons all around

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.

Full colour 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

Easy to read, anti-reflective colour display

Programmable menu buttons

Full colour display with night mode and intelligent lighting

Multi-function channel / volume knob

Programmable multi-select buttons

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

E5 CONTROL HEAD

UNMATCHED READABILTY. OPTIMISED USABILITY.

A bright colour display and intelligent lighting makes the E5 easy to read under any condition while the optimised tactility and button placement reduces inadvertent actuations.

O7 CONTROL HEAD

INTEGRATED MULTI-FUNCTIONALITY

The O7 is a sophisticated control head with a colour 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[1]

Mission Critical Geofence[1]

Personnel Accountability[1]

SmartConnect[1]

ViQi Virtual Partner[1]

Bluetooth (Version 4.2)

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

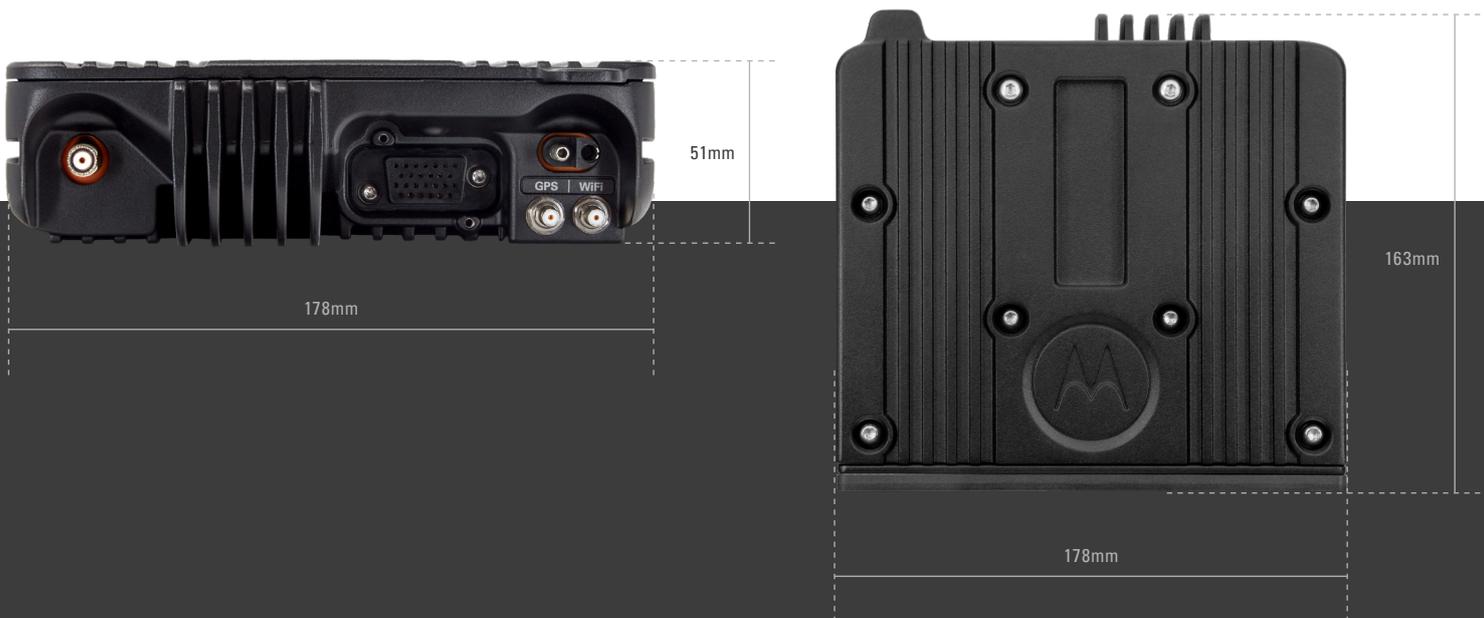|		
Frequency Range/Band splits	WLAN (Wi-Fi): 2412 - 2462 MHz; 5180 - 5320 MHz; 5500 - 5825 MHz	
WLAN (WiFi) 802.11 b/g/n (2.4GHz) 802.11 a/n/ac (5GHz)	Security protocols	WPA-2, WPA, WEP
	SSIDs	Up to 20 pre-provisioned
Integrated GPS/GLONASS for outdoor location tracking[1]		
Data Modem Tethering[1]		
Bluetooth Version 4.2	2402-2480 MHz Supports MPP Pairing with E5 control head and compatible with HSP, DUN and SPP Profiles found in off-the-shelf Bluetooth accessories. Supports up to 6 data connections and 1 audio connection.	

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: Utilises infrastructure-sourced data status bits embedded in both voice and data transmissions

[1] Optional

DIMENSIONS AND WEIGHT

Radio Transceiver	51 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 E5 Control Head - Dash Mount	51 x 178 x 209 mm (2.0 x 7.0 x 8.2 in)	2.24 kg (4.94 lbs)
Radio Transceiver and O7 Control Head - Dash Mount	51 x 178 x 208 mm (2 x 7 x 8.19 in)	2.24 kg (4.94 lbs)
Radio Transceiver and Remote Mount	51 x 178 x 194 mm (2 x 7 x 7.62 in)	2.18 kg (4.80 lbs)
O2 Control Head Remote Mount	68 x 206 x 53 mm (2.7 x 8.1 x 2.1 in)	-
E5 Control Head Remote Mount	51 x 178 x 64 mm (2.0 x 7.0 x 2.5 in)	-
O7 Control Head Remote Mount	51 x 178 x 40 mm (2.0 x 7.0 x 1.5 in)	-

PERFORMANCE AND REGULATORY

TRANSMITTER

	VHF		UHF R1		UHF R2		700 MHz		800 MHz	
Frequency Range/Bandsplits	136-174 MHz		380-470 MHz		450-520 MHz		764-776, 794-806 MHz		806-825, 851-870 MHz	
Rated RF Output Power (Adjustable)	1-50 W 1-25 W[3]		1-40 W 1-25 W[3]		1-45 W 1-25 W[3]		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		±0.8 PPM	
Emissions	Conducted -85 dBc	Radiated -10 dBm	Conducted -85 dBc	Radiated -20 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/±2.5kHz		±5/±2.5 kHz		±5/±2.5 kHz	
Modulation Fidelity (C4FM) 12.5 kHz Digital Channel	2.5%		1.50%		1.50%		1.50%		1.50%	
Audio Response	+1, -3 dB (EIA)		+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		-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%		0.50% / 0.50%	

RECEIVER

	VHF		UHF R1		UHF R2		700 MHz	800 MHz
Frequency Range/Bandsplits	136-174 MHz		380-470 MHz		450-520 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	12.5/25 kHz
Maximum Frequency Separation	Full Bandsplit		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	7.5 / 15 W
Frequency Stability (-30 °C to +60 °C; +25 °C Ref.)	±0.8 ppm		±0.8 ppm		±0.8ppm		±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)	Pre-Amp -123 dBm (0.158 μV)	Standard -119 dBm (0.251 μV)	-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)	Standard -119 dBm (0.251 μV)	-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		72 dB / 83 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	Pre-Amp 82 dB / 82 dB	Standard 86 dB / 86 dB	82 dB / 82 dB	82dB / 82 dB
Spurious Rejection	95 dB		93 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 / -55 dB		-50 dB / -59 dB	-50 dB / -59 dB
Audio Distortion (12.5 kHz / 25 kHz)	1.2 %		1.5%		1.50%		1.2 %	1.2 %

POWER AND BATTERY DRAIN

	VHF	UHF R1	UHF R2	700 MHz	800 MHz
Frequency Range / Bandsplits	136-174 MHz	380-470 MHz	450-520 MHz	764-775, 794-806 MHz	806-825, 851-870 MHz
RF Power Output	1-50 W 1-25 W[3]	1-40 W 1-25 W[3]	450-485 MHz: 1-45W 485-512 MHz: 1-40W 512-520 MHz: 1-25W	3-30 W	3-35 W
Operation	0.85A	0.85A	0.85A	0.85A	0.85A
Standby at 13.8V	3.2A	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	11A @ 40 8A @ 15 W	8 A @ 15 W	8 A @ 15 W 12 A @ 35 W

ENVIRONMENTAL

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

RADIO MODEL NUMBER

VHF	M25KSS9PW1BN
UHF R1	M25QSS9PW1BN
UHF2 R2	M25SSS9PW1BN
700/800 MHz	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: AZ492FT4967 IC ID: 109U-92FT4967	450-520 MHz (1-45 W)
	485-512 MHz (1-40 W)
	512-520 MHz (1-25 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)

[3] 1-25W applies to countries with a 25W maximum limit.

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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