



## *XPR™ 6500/6550/6300/6350 Portable Radios*

# MOTOTRBO™



**MOTOTRBO™**

# ***ACCELERATE PERFORMANCE.***



## ***Introducing MOTOTRBO™ Professional Digital Two-Way Radio System. The future of two-way radio.***

The next-generation professional two-way radio communications solution is here, with more performance, productivity and value—thanks to digital technology that delivers increased capacity and spectrum efficiency, integrated data communications and enhanced voice communications. MOTOTRBO is ideal for professional organizations that need a customizable, business-critical communication solution using licensed spectrum.



## Unique MOTOTRBO System Benefits for Enhanced Productivity

MOTOTRBO offers a private, standards-based, cost-effective solution that can be tailored to meet your unique coverage and feature needs. This versatile portfolio provides a complete system of portable radios, mobile radios, repeaters, accessories, applications and services—a complete solution.

The MOTOTRBO portable radio:

- Uses Time-Division Multiple-Access (TDMA) technology to provide **twice the calling capacity** (as compared to analog or FDMA radios) for the price of one license. A second call doesn't require a second repeater, saving you equipment costs.
- **Integrates voice and data** to increase your operational efficiency and support integrated applications including MOTOTRBO Text Messaging Services and MOTOTRBO Location Services (GPS location tracking).
- Provides **clearer voice communications** throughout the coverage area as compared to analog radios, rejecting static and noise.
- Offers **enhanced battery life**. Digital TDMA two-way portable radios can operate up to 40 percent longer between recharges compared to typical analog radios.
- Enables **additional functionality** including dispatch data, and enhanced call signaling.
- Provides **easy migration** from analog to digital with the ability to operate in both analog and digital modes.
- Meets **demanding specifications**—IP57 for submersibility in water (portable models), U.S. Military 810 C, D, E and F, and Motorola standards for durability and reliability.
- Is **intrinsically safe** and can be used in locations where flammable gas, vapors or combustible dust may be present. Approved FM battery option is a 1500 mAh slim Lilon FM battery.
- Utilizes Motorola's **state-of-the-art IMPRES™ technology** in batteries, chargers and audio accessories, providing longer talk time and clearer audio delivery.
- Is **fully backed** by a two-year Standard Warranty plus one-year Repair Service Advantage (US only)/ Extended Warranty (Canada only).
- Is **fully backed** by at least a one-year Workmanship Warranty for IMPRES chargers and an 18-month Capacity Warranty for IMPRES batteries when used exclusively with IMPRES chargers.

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## XPR™ 6500/6550 Display Portable Radios

- 1 Flexible, menu-driven interface with user-friendly icons or two lines of text for ease of reading text messages and navigating through the menus.
- 2 Tri-color LED indicator for clear, visible feedback of calling, scanning and monitoring features.
- 3 Emergency button alerts supervisor or dispatcher in an emergency situation. With XPR 6550, location coordinates can be sent to the dispatcher using the MOTOTRBO Location Services application.
- 4 New accessory connector meets IP57 submersibility specifications and incorporates RF, USB and IMPRES™ audio capability.
- 5 XPR 6550 includes integrated GPS modem.
- 6 Large, easy-to-use navigation buttons allow easy access to intuitive menu-driven interfaces.
- 7 Meets IP57 specifications; submersible in 1 meter of fresh water up to 30 minutes.
- 8 Powerful, front projecting speaker that transmits digital TDMA audio or 12.5/25 kHz analog audio.
- 9 Three side and two front programmable buttons for easy access to favorite features. New features such as one-touch calling and quick text messaging are made even easier through programmable button access.
- 10 Large, textured push-to-talk button provides good tactile response and easy access, even when wearing gloves.
- 11 160 channels.

### Display Portable Radio Standard Package

- Display Portable Radio
- Antenna—Standard whip included with XPR 6500; Standard whip with GPS included with XPR 6550
- IMPRES™ Li-ion 1500 mAh Submersible Battery
- IMPRES™ Single Unit Charger
- 2.5" Belt Clip
- User Guide CD Kit (English and French Canadian)
- Two-year Standard Warranty plus one-year Repair Service Advantage (US only) / Extended Warranty (Canada only)

### Additional Features

- Enhanced call management  
Encode/decode: call alert emergency, remote monitor, push-to-talk ID, radio check, private call, all call, radio disable
- Dual-mode analog and/or digital scan—facilitates a smooth migration from analog to digital
- Short free-form and quick text messaging
- Contacts list accommodates up to 256 contacts

## XPR™ 6300/6350\* Non-Display Portable Radios



- 1 Tri-color LED indicator for clear, visible feedback of calling, scanning and monitoring features.
- 2 Emergency button to alert supervisor or dispatcher in an emergency situation. With XPR 6350, location coordinates can be sent to the dispatcher using the MOTOTRBO Location Services application.
- 3 New accessory connector meets IP57 submersibility specifications and incorporates RF, USB and IMPRES™ audio capability.
- 4 XPR 6350 includes integrated GPS modem.
- 5 Meets IP57 specifications; submersible in 1 meter of fresh water up to 30 minutes.
- 6 Powerful, front projecting speaker that transmits digital TDMA audio or 12.5/25 kHz analog audio.
- 7 Three side programmable buttons for easy access to favorite features. New features such as one-touch calling and quick text messaging are made even easier through programmable button access.
- 8 Large, textured push-to-talk button provides good tactile response and easy access, even when wearing gloves.
- 9 32 channels.

\*XPR 6350 coming soon.

### Non-Display Portable Radio Standard Package

- Non-Display Portable Radio
- Antenna—Standard whip included with XPR 6300; Standard whip with GPS included with XPR 6350
- IMPRES™ Li-ion 1500 mAh Submersible Battery
- IMPRES™ Single Unit Charger
- 2.5" Belt Clip
- User Guide CD Kit (English and French Canadian)
- Two-year Standard Warranty plus one-year Repair Service Advantage (US only) / Extended Warranty (Canada only)

### Additional Features

- Enhanced call management
  - Encode/Decode: private call, call alert
  - Encode only: emergency, push-to-talk ID
  - Decode only: radio check, remote monitor, radio disable, all call
- Dual-mode analog and/or digital scan—facilitates a smooth migration from analog to digital
- Send quick text messages via programmable buttons

# *MOTOTRBO™ Integrated Data Enables Advanced Applications*

MOTOTRBO is changing the way businesses communicate. You can gain the productivity of powerful data applications such as MOTOTRBO Location Services and Text Messaging now, and with additional applications from Motorola's Application Developer Program, you'll be able to leverage ongoing new capabilities—and get the most from your communications investment.



## **MOTOTRBO Location Services**

Location Services provides the ability to track people and assets, such as vehicles. This advanced approach takes advantage of the GPS modem and receiver integrated within both the portable and mobile radios, combined with the MOTOTRBO Location Services software application.

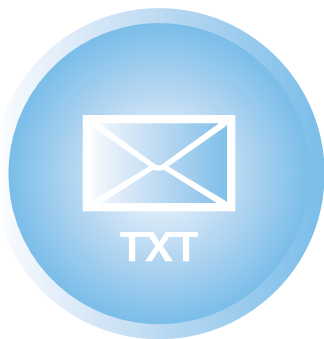
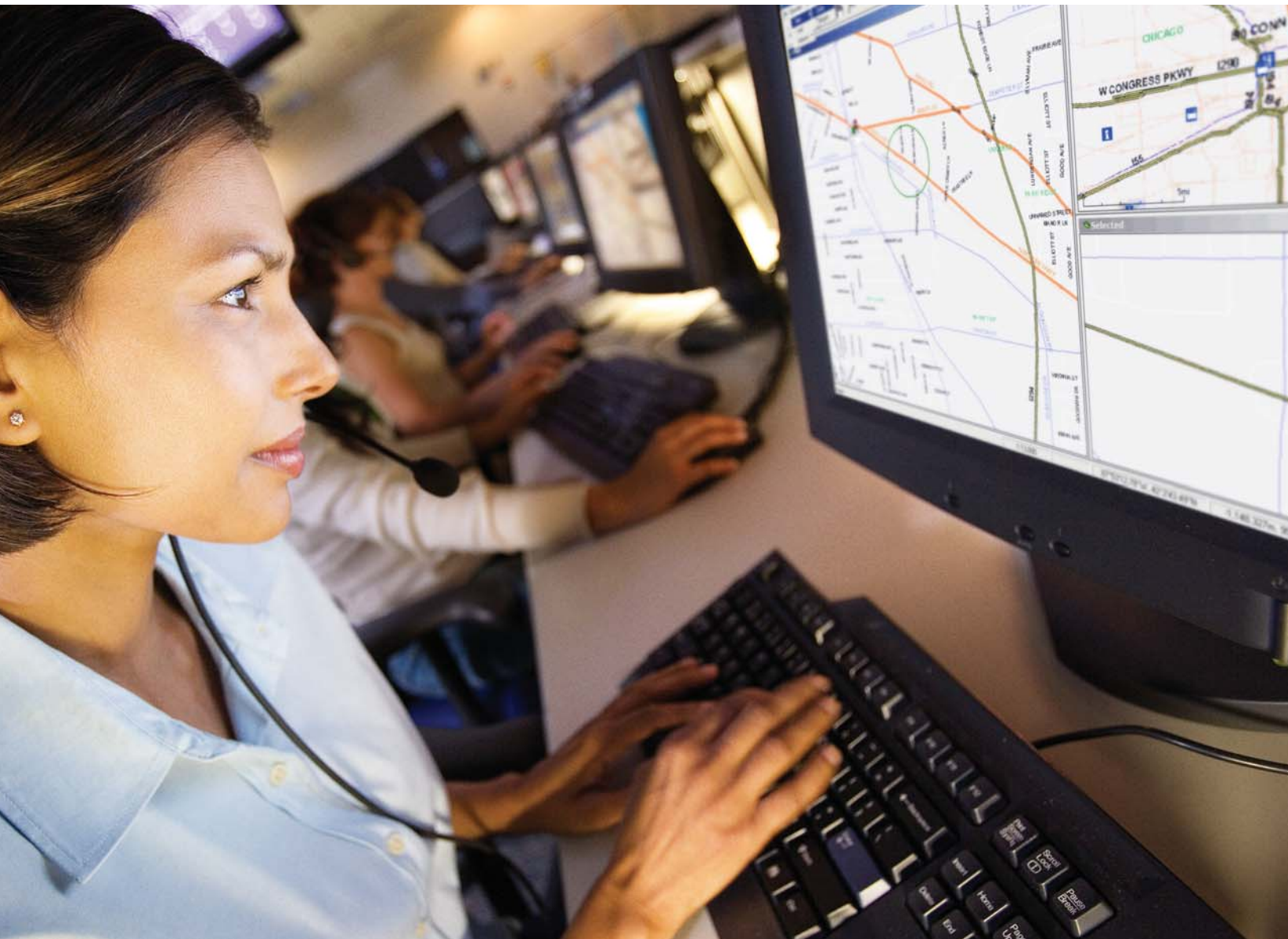
GPS-equipped portable and mobile radios can be configured to transmit their geographical coordinates at pre-programmed intervals, on demand and in case of an emergency. MOTOTRBO Location Services software applications provide dispatchers with a real-time display of fleet activity on a customized, high-resolution, color-coded map. With MOTOTRBO Location Services, you can enjoy the benefits of location tracking with no monthly fees or cumbersome external GPS devices to install and maintain.



## **MOTOTRBO Application Developer Program**

Third-party developers play an important role in supporting the market growth of the MOTOTRBO platform and in creating customized applications that will add value to you. Developers will extend the capabilities of MOTOTRBO and provide niche solutions that will satisfy a broad range of your needs. To encourage the





### **MOTOTRBO Text Messaging Services**

The MOTOTRBO Text Messaging Services allows communication between radios and dispatch systems, between radios and email-addressable devices, and to remote PC clients attached to radios. This application allows you to utilize another form of communication for your business—whether it's the need for discreet communication or the ability to send quick text messages. Thus enabling you to focus on the business at hand. Furthermore, the dispatcher PC can act as a gateway to email, enabling messaging between email-addressable devices and radios.

development of a broad portfolio of user focused solutions and continuing innovation, Motorola will provide support to its Application Developer Program, giving accredited developers access to the MOTOTRBO protocol and Application Programming Interface (API) documentation as well as online support. For more information, visit the MOTODEV website at <http://developer.motorola.com>.

Portable Radio

Part Number	Description	Benefits	
<b>Audio</b>			
PMMN4025	IMPRES Remote Speaker Microphone	These advanced Remote Speaker Microphones utilize advanced windporting technology that can help reduce background noise in windy conditions. The PMMN4024 and PMMN4025 have an earjack located on the microphone head to eliminate long wires. The PMMN4040 has a higher IP57 water intrusion rating that helps provide first responders with high reliability in emergency situations.	
PMMN4024	Remote Speaker Microphone		
PMMN4040	Remote Speaker Microphone - Submersible (IP57)	Police and other emergency services professionals will appreciate the enhanced coverage and exceptional reliability of these public safety microphones. The PSM allows users to talk and listen without removing the radio from the belt, case or charger. Incorporates an earjack. For use with UHF frequency bands only.	
PMMN4041	IMPRES Public Safety Microphone - 30' cable		
PMMN4042	IMPRES Public Safety Microphone - 24' cable		
PMMN4043	IMPRES Public Safety Microphone - 18' cable		
RMN5058	Lightweight Headset	Lightweight headsets offer comfortable, extended wear use while providing high clarity and discreet communication in moderate noise environments.	
RLN5878	Receive Only Surveillance Kit, Black	These compact units offer tremendous audio dynamics and leave hands free and face unobscured, so the user retains the ability for direct hearing and speaking.	
RLN5879	Receive Only Surveillance Kit, Beige		
RLN5880	IMPRES 2 Wire Surveillance Kit, Black		
RLN5881	IMPRES 2 Wire Surveillance Kit, Beige		
RLN5882	IMPRES 2 Wire Surveillance Kit with Translucent Tube, Black		
RLN5883	IMPRES 2 Wire Surveillance Kit with Translucent Tube, Beige		
RLN4760	Small Custom Earpiece, Right Ear, for Surveillance Kits		
RLN4761	Medium Custom Earpiece, Right Ear, for Surveillance Kits		
RLN4762	Large Custom Earpiece, Right Ear, for Surveillance Kits		
RLN4763	Small Custom Earpiece, Left Ear, for Surveillance Kits		
RLN4764	Medium Custom Earpiece Left Ear, for Surveillance Kits		
RLN4765	Large Custom Earpiece, Left Ear, for Surveillance Kits		
RLN5886	Surveillance Low Noise Kit		
RLN5887	Surveillance Extreme Noise Kit		
RLN4941	Receive Only Earpiece		These receive only earpieces plug into the PMMN4024 and PMMN4025 Remote Speaker Microphones and allow the user to receive communications discretely.
AARLN4885	Receive Only Earbud		
WADN4190	Over the Ear Receiver		
PMLN4620	D-Shell Receive Only Earpiece		
<b>Batteries</b>			
PMNN4066	IMPRES Li-ion 1500 mAh Submersible (IP57) Battery	Offer superior, long lasting performance. Automated maintenance and a six month extended capacity warranty when used with IMPRES chargers. Can be charged and reconditioned without being removed from the radio.	
PMNN4069	IMPRES Li-ion 1400 mAh Submersible (IP57) Battery - Intrinsically Safe (FM)		
PMNN4065	NiMH 1300 mAh Submersible (IP57) Battery	NiMH chemistry offers an attractive combination of capacity, weight and cost.	
<b>Chargers</b>			
WPLN4232	IMPRES Single Unit Charger	Provides adaptive, automatic reconditioning for IMPRES batteries to maximize talk time and cycle life. Advanced charging algorithm keeps analog and/or digital batteries cooler so that they can be kept in the charger for extended periods. Display models provide real time charge status information.	
WPLN4212	IMPRES Multi Unit Charger		
WPLN4219	IMPRES Multi Unit Charger with Displays		
<b>Carry Devices</b>			
PMLN4651	2" Belt Clip	Durable leather or nylon carry cases keep your radio and battery securely in place while permitting audio to be heard clearly. Fixed belt loop and nylon cases feature D rings that allow the case to be attached to a carrying strap. Swivel cases secure to a belt loop and allow the case to swing freely from side to side. The swivel latch system allows fast, easy radio/case removal by simply inverting the case and lifting it up from the belt loop.	
PMLN4652	2.5" Belt Clip		
PMLN5015	Nylon Carry Case with 3" Fixed Belt Loop for Display Radio		
PMLN5021	Hard Leather Carry Case with 3" Fixed Belt Loop for Display Radio		
PMLN5019	Hard Leather Carry Case with 2.5" Swivel Belt Loop for Display Radio		
PMLN5020	Hard Leather Carry Case with 3" Swivel Belt Loop for Display Radio		
PMLN5024	Nylon Carry Case with 3" Fixed Belt Loop for Non-Display Radio		
PMLN5030	Hard Leather Carry Case with 3" Fixed Belt Loop for Non-Display Radio		
PMLN5028	Hard Leather Carry Case with 2.5" Swivel Belt Loop for Non-Display Radio		
PMLN5029	Hard Leather Carry Case with 3" Swivel Belt Loop for Non-Display Radio		
PMLN5022	2.5" Replacement Swivel Belt Loop		
PMLN5023	3" Replacement Swivel Belt Loop		
HLN6602	Universal Chest Pack		Includes convenient radio holder and Velcro secured pocket for carrying additional items.
RLN4570	Break-A-Way Chest Pack		All the features of the original Universal Chest Pack (HLN6602) plus break-a-way tabs that allow the entire pack to be pulled off with approximately 10 lbs. of pressure.
1505596Z02	Replacement Strap for RLN4570 and HLN6602 Chest Packs		
RLN4815	Universal RadioPAK and Utility Case (fanny pack)		Holds portables or cell phones close at hand, includes 6" by 8" zippered pouch for on-the-job necessities.
4280384F89	Universal RadioPAK Extension Belt		Extension to lengthen belt of RadioPAK (used with RLN4815). For waists larger than 40 inches.
NTN5243	Shoulder Strap (attaches to D-rings on carry case)	Allows easy carrying of radio when not wearing a belt. Used typically over the shoulder.	
HLN9985	Waterproof bag, includes large carry strap	Protects your radio from moisture, includes a large carrying strap.	
RLN4295	Small Clip, Epaulet Strap	Secures speaker mic to epaulet strap.	
4200865599	Belt	1.75" wide black leather belt.	
<b>Antennas</b>			
PMAE4018	Combination GPS / UHF 403-433 MHz Folded Monopole Antenna	Optimum length antenna designed for higher gain to maximize range. This rugged, stylish, capless design provides maximum flexibility and build in capability to operate at GPS frequencies.	
PMAE4024	Combination GPS / UHF 430-470 MHz Folded Monopole Antenna		
PMAE4021	Combination GPS / UHF 403-433 MHz Stubby Antenna	Short, nonobtrusive stubby antennas are ideal for situations when radios are worn on the user's belt. These rugged helical antennas feature a capless sheath that allows for maximum flexibility. Built in GPS capability.	
PMAE4023	Combination GPS / UHF 430-470 MHz Stubby Antenna		
PMAE4022	UHF 403-470 MHz Whip Antenna	Flexible whip antennas have a one piece finish, steel core and spiral wound conductor for optimal radiation characteristics.	





# *New Audio Accessory Connector Enables Enhanced Performance and Capabilities*

Motorola digital technology enables breakthrough radio performance and features. And our new audio connector means MOTOTRBO™ accessories can offer you enhanced performance and capabilities—now and into the future.

- **IMPRES™ Smart Audio System**—Motorola’s state-of-the-art IMPRES technology allows communication between the radio and the audio accessory. The result is optimal accessory performance assuring the highest quality communications.

Optimal Audio Performance: When an IMPRES accessory is attached, accessory identification is sent to the radio enabling the radio to optimize its output for each type of audio accessory. This results in more consistent output across all audio accessory types.

Customization: Accessory programmable buttons can be programmed to any feature available in the radio CPS, rather than being linked to radio programmable button programming. This allows accessory programmable buttons to have independent programmable features. The radio can be customized to fit your specific applications and needs.

- **Submersibility**—The new connector design meets IP57 submersibility requirements. This allows for use with submersible accessories, such as the submersible remote speaker microphone, which provides optimal message delivery even in wet conditions.
- **Future Applications**—The new portable connector design incorporates the antenna signal within the audio connector, which will allow for easy use of accessories that require an antenna signal, such as public safety speaker microphones. The built in USB capability will allow the use of USB-capable accessories. The new audio accessory interface is the Motorola standard audio accessory interface for mid- to high-tier two-way radios. Future accessory development will be based upon this new connector interface. You will be able to take advantage of future releases of new audio accessories.



# MOTOTRBO™ Portable Radio Specifications



## Display UHF

**Non-GPS**  
XPR™ 6500

**GPS**  
XPR™ 6550



## Non-Display UHF

**Non-GPS**  
XPR™ 6300

**GPS**  
XPR™ 6350\*

### General Specifications

	Display UHF XPR 6500 / XPR 6550	Non-Display UHF XPR 6300 / XPR 6350*
Channel Capacity	160	32
Frequency	403-470 MHz	403-470 MHz
Dimensions (HxWxD) w/ Lilon non-FM Battery	131.5 x 63.5 x 35.2 mm	131.5 x 63.5 x 35.2 mm
Weight (with Lilon non-FM Battery) (with Lilon FM Battery) (with NiMH Battery)	12.7 oz (360 g) 13 oz (370 g) 15.2 oz (430 g)	11.63 oz (330 g) 11.98 oz (340 g) 14.09 oz (400 g)
Power Supply	7.2 V nominal	7.2 V nominal
FCC Description	AZ489FT4876	AZ489FT4876
IC Description	109U-89FT4876	109U-89FT4876
Average battery life at 5/5/90 duty cycle with battery saver enabled in carrier squelch and transmitter in high power.		
IMPRES 1500 mAh Lilon Battery	Analog: 9 hrs Digital: 13 hrs	Analog: 9 hrs Digital: 13 hrs
IMPRES FM 1400 mAh Battery	Analog: 8.5 hrs Digital: 12 hrs	Analog: 8.5 hrs Digital: 12 hrs
NIMH 1300 mAh Battery	Analog: 8 hrs Digital: 11 hrs	Analog: 8 hrs Digital: 11 hrs

### Receiver

	Display UHF XPR 6500 / XPR 6550	Non-Display UHF XPR 6300 / XPR 6350*
Frequencies	403-470 MHz	403-470 MHz
Channel Spacing	12.5 kHz/ 25 kHz	12.5 kHz/ 25 kHz
Frequency Stability (-30° C, +60° C, +25° C)	+/- 1.5 ppm (XPR 6500) +/- 0.5 ppm (XPR 6550)	+/- 1.5 ppm (XPR 6300) +/- 0.5 ppm (XPR 6350)*
Analog Sensitivity (12 dB SINAD)	0.35 uV 0.22 uV (typical)	0.35 uV 0.22 uV (typical)
Digital Sensitivity	5% BER: 0.3 uV	5% BER: 0.3 uV
Intermodulation (TIA603C)	70 dB	70 dB
Adjacent Channel Selectivity TIA603 TIA603C	60 dB @ 12.5 kHz, 70 dB @ 25 kHz 45 dB @ 12.5 kHz, 70 dB @ 25 kHz	60 dB @ 12.5 kHz, 70 dB @ 25 kHz 45 dB @ 12.5 kHz, 70 dB @ 25 kHz
Spurious Rejection (TIA603C)	70 dB	70 dB
Rated Audio	500 mW	500 mW
Audio Distortion @ Rated Audio	3% (typical)	3% (typical)
Hum and Noise	-40 dB @ 12.5 kHz -45 dB @ 25 kHz	-40 dB @ 12.5 kHz -45 dB @ 25 kHz
Audio Response	TIA603C	TIA603C
Conducted Spurious Emission (TIA603C)	-57 dBm	-57 dBm

\*Coming Soon

Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements. Version 4 03/07

## Transmitter

	Display UHF XPR 6500 / XPR 6550	Non-Display UHF XPR 6300 / XPR 6350*
Frequencies	403-470 MHz	403-470 MHz
Channel Spacing	12.5 kHz/ 25 kHz	12.5 kHz/ 25 kHz
Frequency Stability (-30° C, +60° C, +25° C)	+/- 1.5 ppm (XPR 6500) +/- 0.5 ppm (XPR 6550)	+/- 1.5 ppm (XPR 6300) +/- 0.5 ppm (XPR 6350)*
Power Output Low Power High Power	1 W 4 W	1 W 4 W
Modulation Limiting	+/- 2.5 kHz @ 12.5 kHz +/- 5.0 kHz @ 25 kHz	+/- 2.5 kHz @ 12.5 kHz +/- 5.0 kHz @ 25 kHz
FM Hum and Noise	-40 dB @ 12.5 kHz -45 dB @ 25 kHz	-40 dB @ 12.5 kHz -45 dB @ 25 kHz
Conducted / Radiated Emission	-36 dBm < 1 GHz -30 dBm > 1 GHz	-36 dBm < 1 GHz -30 dBm > 1 GHz
Adjacent Channel Power	60 dB @ 12.5 kHz 70 dB @ 25 kHz	60 dB @ 12.5 kHz 70 dB @ 25 kHz
Audio Response	TIA603C	TIA603C
Audio Distortion	3%	3%
FM Modulation	12.5 kHz: 11K0F3E 25 kHz: 16K0F3E	12.5 kHz: 11K0F3E 25 kHz: 16K0F3E
4FSK Digital Modulation	12.5 kHz Data Only: 7K60FXD 12.5 kHz Data & Voice: 7K60FXE	12.5 kHz Data Only: 7K60FXD 12.5 kHz Data & Voice: 7K60FXE
Digital Vocoder Type	AMBE++	AMBE++
Digital Protocol	ETSI-TS102 361-1	ETSI-TS102 361-1

## GPS

Accuracy specs are for long-term tracking (95th percentile values > 5 satellites visible at a nominal -130 dBm signal strength)

TTF (Time To First Fix) Cold Start	< 1 minute	< 1 minute
TTF (Time To First Fix) Hot Start	< 10 seconds	< 10 seconds
Horizontal Accuracy	< 10 meters	< 10 meters

## Military Standards

Applicable MIL-STD	810E		810F	
	Methods	Procedures	Methods	Procedures
Low Pressure	500.3	II	500.4	II
High Temperature	501.3	I/A, II/A1	501.4	I/Hot, II/Hot
Low Temperature	502.3	I/C3, II/C1	502.4	I/C3, II/C1
Temperature Shock	503.3	I/A, 1C3	503.4	I
Solar Radiation	505.3	I	505.4	I
Rain	506.3	I,II	506.4	I, III
Humidity	507.3	II	507.4	-
Salt Fog	509.3	I	509.4	I
Dust	510.3	I	510.4	I
Vibration	514.4	I/10, II/3	514.5	I/24
Shock	516.4	I, IV	516.5	I, IV

## Environmental Specifications

Operating Temperature	-30° C / +60° C
Storage Temperature	-40° C / +85° C
Thermal Shock	Per MIL-STD
Humidity	Per MIL-STD
ESD	IEC-801-2KV
Water Intrusion	IEC 60529 - IP57
Packaging Test	MIL-STD 810D and E

## Factory Mutual Approvals

MOTOTRBO XPR Portable series radios have been certified by FM Approvals in accordance with Canada and U.S. Codes as intrinsically safe for use in Class I, II, III, Division 1, Groups C,D,E,FG, when properly equipped with a Motorola FM approved battery option. They are also approved for use in Class I, Division 2, Groups A, B, C, D.



\*Coming Soon

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**MOTOROLA**

Motorola, Inc.  
United States:  
1309 E. Algonquin Road  
Schaumburg, Illinois 60196  
Phone: 1-800-422-4210  
TTY: 1-800-522-5210  
Fax: 1-800-622-6210