MOTOROLA

MOTOTRBO™

PROFESSIONAL DIGITAL TWO-WAY RADIO SYSTEM

ACCELERATE PERFORMANCE

MOTOTRBO™ PROFESSIONAL DIGITAL TWO-WAY RADIO SYSTEM
THE FUTURE OF TWO-WAY RADIO

Motorola is a company of firsts with a rich heritage of innovation. We continue to invent what's next—connecting people, delivering mobility and making technology personal. Versatile and powerful, MOTOTRBO combines the best in two-way radio functionality with digital technology, making it the ideal communication solution for your business. You get enhanced features, increased capacity, integrated data applications, exceptional voice quality and extended battery performance. This means more productive employees and lower operating costs for your business.

THE DIGITAL DIFFERENCE

Two-way radio has been a successful analog communication solution for generations, and it proves itself every day in countless deployments around the world.

But in today's technologically advanced environment, a new platform is possible—a digital platform that breaks through to new levels of performance and productivity.

In the same way digital technology has transformed other media, it is now revolutionizing the way mobile professionals communicate. The time to take advantage of digital two-way radio technology is now.

TAKE ADVANTAGE OF DIGITAL

Digital two-way radios offer several advantages over analog solutions, to name a few:

• Clearer audio to help assure messages are understood without background noise and static
• Integrated data applications such as text messaging, GPS-based location tracking, work order ticket management and much more
• 40% longer battery life for extended work shifts
• Increased capacity – twice the number of users for the price of one frequency license

TDMA – THE BEST CHOICE

There are two primary digital radio technologies: Time-Division Multiple-Access (TDMA) and Frequency-Division Multiple-Access (FDMA).

While both digital technologies provide significant benefits over analog, TDMA is the best choice.

TDMA technology delivers advantages over FDMA

• *Double your capacity per channel with less than half the infrastructure per channel*
TDMA divides your existing channels into two time slots enabling you to double the number of users on your system or utilize data applications. A second call does not require a second repeater, resulting in lower costs for you, as you do not need to purchase, install and maintain additional infrastructure equipment.

• *Double your capacity without the hassle*
TDMA provides two time slots on your existing licensed channels, doubling your capacity. There is no increased risk of interference, and there is no need for new licenses—simply amend your existing licenses to specify digital. Compatibility with all legacy radios working in 12.5 kHz analog channels is also maintained by TDMA.

• *Longer battery life*
TDMA uses only half of the transmitter's capacity, resulting in longer battery life. During long work shifts or where productivity enhancing data applications place an increased power demand on the radio, this extended battery life is invaluable.

• *Advanced features*
TDMA enables smart control features like "transmit interrupt" that makes it possible to interrupt lower priority communication so critical instructions can be delivered exactly when they're needed. And to help you maximize your infrastructure investment, TDMA can transmit voice and data on the same channel.

STANDARDS BASED, FUTURE READY SOLUTION

MOTOTRBO is designed to comply with the globally recognized European Telecommunications Standard Institute (ETSI) Digital Mobile Radio (DMR) Tier 2 standard for professional two-way radio users.

DMR is widely backed by industry leading two-way radio manufacturers, and it is the most widely deployed digital mobile radio technology for professional radio users around the world. This open standard assures long-term stability and develops a community of manufacturers who build interchangeable equipment that can compete on features, benefits and price.

The DMR Association represents a collection of companies and organizations that manufacture DMR equipment, supply related products and service or support the standard in other ways. Motorola is an active member of the DMR Association so you can be assured that MOTOTRBO will always be a robust and future-ready digital radio solution.

DMR
DIGITAL MOBILE RADIO ASSOCIATION

UNIQUE MOTOTRBO™ SYSTEM BENEFITS FOR ENHANCED PRODUCTIVITY

MOTOTRBO offers a robust, standards-based 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, data applications, and services—a comprehensive communication solution for your business. MOTOTRBO:

- **Integrates voice and data** into one device to increase your operational efficiency and support integrated applications including MOTOTRBO Text Messaging Services. Also features an integrated GPS module for use with third-party location-tracking applications.

- Uses Time-Division Multiple-Access (TDMA) digital technology to provide **twice the calling capacity** (as compared to analog or FDMA radios) for the price of one frequency license. A second call doesn't require a second repeater, saving you equipment costs.

- In digital mode, provides **clearer voice communications** throughout the coverage area, as compared to analog radios, rejecting static and noise.

- Offers **enhanced battery life.** MOTOTRBO digital two-way portable radios can operate up to 40 percent longer between recharges compared to typical analog radios.

- Provides **easy migration** from analog to digital with the ability to operate in both analog and digital modes.

- **Enables additional functionality** including dispatch data, enhanced call signaling, basic and enhanced privacy-scrambling and option board expandability.

- 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**, when purchased and equipped with an FM battery, and can be used in locations where flammable gas, vapors or combustible dust may be present.

- Utilizes Motorola's **state-of-the-art IMPRES™ technology** in batteries, chargers and audio accessories, providing longer talk time and clearer audio delivery.

- Features the **transmit interrupt** suite - voice interrupt, remote voice dekey, emergency voice interrupt or data over voice interrupt - to help prioritize critical communication exactly when needed.

EXTENDED COVERAGE WITH IP SITE CONNECT

Imagine using your MOTOTRBO digital two-way radio to speak instantly to a colleague in a plant on the other side of the world.

The IP Site Connect digital solution uses the Internet to extend the coverage of your MOTOTRBO communication system no matter where you may be located.

You can communicate easily among geographically dispersed locations located across the city, state or country. You can create wide area coverage and automatically roam from one coverage area to another with no manual intervention. Or you can simply enhance coverage at a single site like a high-rise building that contains physical barriers.

IP Site Connect enables you to extend the voice and data communication capability of your workforce far beyond what two-way radio has ever achieved before. This means dramatically improved customer service and increased productivity.

INCREASED CAPACITY WITH CAPACITY PLUS SINGLE-SITE TRUNKING

As a scalable, single-site digital trunking solution, Capacity Plus expands the capacity of your MOTOTRBO communication system even further. Over a thousand radio users can quickly and efficiently share business-critical voice and data communication on the same system without having to add new frequencies.

MOTOTRBO INTEGRATED DATA ENABLES ADVANCED APPLICATIONS

ONE DEVICE FOR VOICE AND DATA

In addition to voice, MOTOTRBO supports text messaging, GPS location tracking capability, and custom applications from Motorola's Application Developer Program such as telephony, dispatch, work order ticket solutions and much more. MOTOTRBO keeps your employees connected to the information they need to be more efficient—with the convenience of one device.

CONVENIENT AND DISCREET MOTOTRBO TEXT MESSAGING

Text messaging enables your employees to quickly and easily share information when voice communication isn't practical. It is ideal in loud environments, for delivering messages that don't need an immediate response, or when voice communication could be disrupting to guests, students, customers, or patients.

MOTOTRBO text messaging communicates between radios, radios and dispatch systems, and even radios to any email capable device.

TRACK VEHICLES AND PEOPLE WITH INTEGRATED GPS

Every MOTOTRBO radio has an integrated GPS module to use for tracking people outside your facility, vehicles or other remote assets operating in your coverage area. Unlike other GPS capable radios, MOTOTRBO's module is integrated into the handset so there is no clumsy additional equipment to attach, carry or maintain.

This enables you to better manage your mobile work force and quickly respond to incidents by locating the nearest employee and dispatching them to the scene. It also makes it easier to manage your fleet so you can make deliveries and drive routes more efficiently.

For utility crews, taxi services, the hospitality industry, and countless other industries, the ability to see where your vehicles and employees are located with just a glance is invaluable. Your employees will be far more efficient and your customer service can improve significantly.

CUSTOM DATA APPLICATIONS WITH MOTOROLA'S APPLICATION DEVELOPER PROGRAM

MOTOTRBO offers an optional expansion card which can accommodate custom data applications that adapt the radios to support your specific business tasks.

You can, for example, work with third-party developers or your own IT staff to extend the functionality of MOTOTRBO using Motorola's Application Developer Program.

With this development tool you can create unique applications such as a program to help you manage your work order tickets, to integrate your dispatch and billing systems, to link your MOTOTRBO radios to your telephone system, or to connect to email.

MOTOTRBO is a powerful tool for communication with the flexibility to adapt to your work force, your customers and your business.

MOTOTRBO™ SYSTEM COMPONENTS AND BENEFITS

XPR™ 6550 / XPR™ 6580
DISPLAY PORTABLE RADIO

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, roaming and monitoring features.

3 Emergency button alerts supervisor or dispatcher in an emergency situation.

4 Accessory connector meets IP57 submersibility specifications and incorporates RF, USB and IMPRES™ audio capability.

5 Integrated GPS module enables the use of location-tracking data applications.*

6 Large, easy-to-use navigation buttons allow easy access to intuitive menu-driven interfaces.

7 Radio housing meets IP57 specifications; submersible in 1 meter of fresh water up to 30 minutes. Offers intrinsically safe FM battery options for use in locations where flammable gas, vapors or combustible dust may be present.

8 Powerful, front projecting speaker.

9 Three side and two front programmable buttons for easy access to frequently used features.

10 Large, textured push-to-talk button provides good tactile response and easy access, even when wearing gloves.

11 Up to 1,000 channels.

ADDITIONAL FEATURES

• Enhanced call management
  Digital calling features*
    Encode/Decode: call alert, emergency, push-to-talk ID, radio check, remote monitor, private call, all call, transmit interrupt (voice interrupt, remote voice dekey, emergency voice interrupt or data over voice interrupt), radio disable
  MDC 1200 analog calling features
    Encode/decode: push-to-talk ID, emergency, call alert
  Quik-Call II™ analog calling features
    Encode/decode: call alert, call alert with voice, select call

• Dual-mode analog and/or digital scan and mixed mode priority scan*—facilitates a smooth migration from analog to digital

• Optional Expansion Card for added capabilities

• Basic or Enhanced privacy—built-in scrambling for increased security*

• Free-form and quick text messaging*

• Contacts list accommodates up to 1,000 contacts

• Voice Activated Transmit (VOX) hands-free communication

• Seamless site roaming with IP Site Connect*

• Increased voice and data capacity with Capacity Plus single-site trunking*

*Digital mode only

DISPLAY PORTABLE RADIO STANDARD PACKAGE

• Display Portable Radio
  Digital/Analog radio or Analog only radio model

• Antenna—Standard whip with GPS

• IMPRES Li-Ion Submersible Battery
    1500 mAh - XPR 6550
    2150 mAh - XPR 6580

• IMPRES Single Unit Charger

• 2.5" Belt Clip

• Built-In Expansion Card* (XPR 6580 only)

• Two-year Standard Warranty plus one-year Repair Service Advantage (US only) / Extended Warranty (Canada only)

XPR™ 6350 / XPR™ 6380
NON-DISPLAY PORTABLE RADIO

1 Tri-color LED indicator for clear, visible feedback of calling, scanning, roaming and monitoring features.

2 Emergency button to alert supervisor or dispatcher in an emergency situation.

3 Accessory connector meets IP57 submersibility specifications and incorporates RF, USB and IMPRES audio capability.

4 Integrated GPS module enables the use of location-tracking data applications.*

5 Radio housing meets IP57 specifications; submersible in 1 meter of fresh water up to 30 minutes. Offers intrinsically safe FM battery options for use in locations where flammable gas, vapors or combustible dust may be present.

6 Powerful, front projecting speaker.

7 Three side programmable buttons for easy access to frequently used features.

8 Large, textured push-to-talk button provides good tactile response and easy access, even when wearing gloves.

9 32 channels.

NON-DISPLAY PORTABLE RADIO STANDARD PACKAGE

- Non-Display Portable Radio
  Digital/Analog radio or Analog only radio model
- Antenna—Standard whip with GPS
- IMPRES Li-Ion Submersible Battery
      1500 mAh - XPR 6350
      2150 mAh - XPR 6380
- IMPRES Single Unit Charger
- 2.5" Belt Clip
- Built-In Expansion Card* (XPR 6380 only)
- Two-year Standard Warranty plus one-year Repair Service Advantage (US only) / Extended Warranty (Canada only)

*Digital mode only

ADDITIONAL FEATURES

- Enhanced call management
    Digital calling features*
        Encode/Decode: private call, call alert, all call, transmit interrupt (voice interrupt, remote voice dekey, emergency voice interrupt or data over voice interrupt)
        Encode only: emergency, push-to-talk ID
        Decode only: radio check, remote monitor, radio disable
    MDC 1200 analog calling features
        Encode/decode: call alert
        Encode only: push-to-talk ID, emergency
    Quik-Call II™ analog calling features
        Decode only: call alert, call alert with voice, select call
- Dual-mode analog and/or digital scan and mixed mode priority scan*— facilitates a smooth migration from analog to digital
- Optional Expansion Card for added capabilities
- Basic or Enhanced privacy—built-in scrambling for increased security*
- Send quick text messages via programmable buttons*
- Voice Activated Transmit (VOX) hands-free communication
- Seamless site roaming with IP Site Connect*
- Increased voice and data capacity with Capacity Plus single-site trunking*

MOTOTRBO™ PORTABLE RADIO SPECIFICATIONS

DISPLAY
VHF/UHF

XPR™ 6550
With integrated GPS
module

NON-DISPLAY
VHF/UHF

XPR 6350
With integrated GPS
module

General Specifications

	Display XPR 6550			Non-Display XPR 6350		
	VHF	UHF Band I	UHF Band II	VHF	UHF Band I	UHF Band II
Channel Capacity		Up to 1,000			32	
Frequency	136-174 MHz	403-470 MHz	450-512 MHz	136-174 MHz	403-470 MHz	450-512 MHz
Dimensions (HxWxT) w/ Li-Ion Battery		5.18 x 2.50 x 1.39 in (131.5 x 63.5 x 35.2 mm)			5.18 x 2.50 x 1.39 in (131.5 x 63.5 x 35.2 mm)	
Weight (with IMPRES Li-Ion 1500 mAh Battery) (with IMPRES Li-Ion 1400 mAh FM Battery) (with IMPRES Li-Ion 2150 mAh Battery) (with NiMH 1300 mAh Battery)		12.7 oz (360 g) 13 oz (370 g) 13.17 oz (375 g) 15.2 oz (430 g)			11.63 oz (330 g) 11.98 oz (340 g) 12.12 oz (345 g) 14.09 oz (400 g)	
Power Supply		7.5 V nominal			7.5 V nominal	
FCC Description	AZ489FT3815	AZ489FT4876	AZ489FT4884	AZ489FT3815	AZ489FT4876	AZ489FT4884
IC Description	109U-89FT3815	109U-89FT4876	109U-89FT4884	109U-89FT3815	109U-89FT4876	109U-89FT4884
Average battery life at 5/5/90 duty cycle with battery saver enabled in carrier squelch and transmitter in high power.						
IMPRES Li-Ion 1500 mAh Battery		Analog: 9 hrs Digital: 13 hrs			Analog: 9 hrs Digital: 13 hrs	
IMPRES Li-Ion FM 1400 mAh Battery		Analog: 8.5 hrs Digital: 12 hrs			Analog: 8.5 hrs Digital: 12 hrs	
IMPRES Li-Ion 2150 mAh Battery		Analog: 13.5 hrs Digital: 19 hrs			Analog: 13.5 hrs Digital: 19 hrs	
NiMH 1300 mAh Battery		Analog: 8 hrs Digital: 11 hrs			Analog: 8 hrs Digital: 11 hrs	

Receiver

	Display XPR 6550			Non-Display XPR 6350		
	VHF	UHF Band I	UHF Band II	VHF	UHF Band I	UHF Band II
Frequencies	136-174 MHz	403-470 MHz	450-512 MHz	136-174 MHz	403-470 MHz	450-512 MHz
Channel Spacing		12.5 kHz/ 25 kHz*			12.5 kHz/ 25 kHz*	
Frequency Stability (-30° C, +60° C, +25° C)		+/- 0.5 ppm			+/- 0.5 ppm	
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	

*25 kHz will not be available on new equipment in the U.S. after 1/1/2011.
Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements. Version 9   03/10

Transmitter

	Display XPR 6550			Non-Display XPR 6350		
	VHF	UHF Band I	UHF Band II	VHF	UHF Band I	UHF Band II
Frequencies	136-174 MHz	403-470 MHz	450-512 MHz	136-174 MHz	403-470 MHz	450-512 MHz
Channel Spacing	12.5 kHz/ 25 kHz*			12.5 kHz/ 25 kHz*		
Frequency Stability (-30° C, +60° C, +25° C Ref.)	+/- 0.5 ppm			+/- 0.5 ppm		
Power Output Low Power High Power	1 W 5 W	1 W 4 W		1 W 5 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+2™			AMBE+2™		
Digital Protocol	ETSI TS 102 361-1, -2, -3			ETSI TS 102 361-1, -2, -3		

GPS

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

TTFF (Time To First Fix) Cold Start	< 2 minutes	< 2 minutes
TTFF (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

Testing completed using portable radio with attached battery and antenna.

Factory Mutual Approvals

MOTOTRBO XPR Series portable 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, F, G, 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.

*25 kHz will not be available on new equipment in the U.S. after 1/1/2011.
**Radio only. Li-Ion battery -10° C; NiMH battery -20° C.
Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements. Version 9 03/10

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MOTOTRBO™ PORTABLE RADIO SPECIFICATIONS

DISPLAY
800 / 900 MHz

XPR™ 6580
With integrated GPS module

NON-DISPLAY
800 / 900 MHz

XPR™ 6380
With integrated GPS module

General Specifications

	XPR™ 6580 Display Portable	XPR™ 6380 Non-Display Portable
Channel Capacity	Up to 1,000	Up to 32
Frequency Band	800 and 900 MHz	800 and 900 MHz
Dimensions (H x W x L) with Li-Ion Battery	5.18 x 2.50 x 1.39 in (131.5 x 63.5 x 35.2 mm)	5.18 x 2.50 x 1.39 in (131.5 x 63.5 x 35.2 mm)
Weight with IMPRES Li-Ion 2150 mAh Battery	13.17 oz (375 g)	12.12 oz (345 g)
Power Supply	7.5 V Nominal	7.5 V Nominal
FCC Description	ABZ99FT5011	ABZ99FT5011
IC Description	109AB-99FT5011	109AB-99FT5011
Average battery life at 5/5/90 duty cycle with battery saver enabled in carrier squelch and transmitter in high power.		
IMPRES Li-Ion 2150 mAh Battery	Analog: 13 hours Digital: 17 hours	Analog: 13 hours Digital: 17 hours
IMPRES Li-Ion 1400 mAh FM Battery	Analog: 9 hours Digital: 12 hours	Analog: 9 hours Digital: 12 hours

Receiver

	XPR 6580 Display Portable	XPR 6380 Non-Display Portable
Frequencies	800 MHz: 854-866 MHz and 869-870 MHz 900 MHz: 935-941 MHz	
Channel Spacing	800 MHz: 12.5 and 25 kHz 900 MHz: 12.5 kHz	
Frequency Stability (-30° C, +60° C, +25° C)	+/- 0.5 ppm	
Analog Sensitivity (12 dB SINAD) Typical	0.25 UV	
Digital Sensitivity	5% BER: 0.3uV	
Intermodulation (TIA603C)	70 dB	
Adjacent Channel Selectivity (TIA603) - 1T	60 dB @ 12.5 kHz 70 dB @ 25 kHz	
Adjacent Channel Selectivity (TIA603C) - 2T	45 dB @ 12.5 kHz 70 dB @ 25 kHz	
Spurious Rejection (TIA603C)	70 dB	
Rated Audio	.5 W	
Audio Distortion @ Rated Audio	3% (typical)	
Hum and Noise	-40 dB @ 12.5 kHz -45 dB @ 25 kHz	
Audio Response	TIA603C	
Conducted Spurious Emission (ETSI)	-57 dBm	

Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements. Version 1   03/10

Transmitter

	XPR 6580 Display Portable	XPR 6380 Non-Display Portable
Frequencies	800 MHz: 809-821 MHz, 824-825 MHz, 854-866 MHz and 869-870 MHz 900 MHz: 896-902 MHz and 935-941 MHz	
Channel Spacing	800 MHz: 12.5 and 25 kHz 900 MHz: 12.5 kHz	
Frequency Stability (-30° C, +60° C)	+/- 0.5 ppm	
Low Power Output	1 W	
High Power Output	2.5 W	
Modulation Limiting	+/- 2.5 kHz @ 12.5 kHz +/- 5.0 kHz @ 25 kHz	
FM Hum and Noise	-40 dB @ 12.5 kHz -45 dB @ 25 kHz	
Conducted / Rated Emission (ETSI)	-36 dBm < 1 GHz -30 dBm > 1 GHz	
Adjacent Channel Power	-60 dB @ 12.5 kHz -70 dB @ 25 kHz	
Audio Response	TIA603C	
Audio Distortion (per EIA)	3%	
FM Modulation	12.5 kHz: 11K0F3E 25 kHz: 16K0F3E	
4FSK Digital Modulation	12.5 kHz Data Only: 7K60FXD 12.5 kHz Data & Voice: 7K60FXE	
Digital Vocoder Type	AMBE+2™	
Digital Protocol	ETSI TS 102 361-1, -2, -3	

GPS

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

TTFF (Time To First Fix) Cold Start	< 2 minutes	< 2 minutes
TTFF (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

	XPR 6580 Display Portable	XPR 6380 Non-Display Portable
Operating Temperature (Radio Only)	-30deg. C to + 60 deg. C	
Operating Temperature (with IMPRES Li-Ion battery)	-10deg. C to + 60 deg. C	
Storage Temperature	-40deg. C to + 85 deg. 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	

Testing completed using portable radio with attached battery and antenna.

Factory Mutual Approvals

MOTOTRBO XPR Series portable 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, F, G, 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.

◇ FM ◇
C   US
APPROVED

Only the following frequencies are supported by the XPR 6580 / XPR 6380

Band	Receive	Transmit	
800 MHz	851.0125	806.0125	851.0125
	851.5125	806.5125	851.5125
	852.0125	807.0125	852.0125
	852.5125	807.5125	852.5125
	853.0125	808.0125	853.0125
	854.000 - 865.9875	809.000 - 820.9875	854.000 - 865.9875
	866.0125	821.0125	866.0125
	866.5125	821.5125	866.5125
	867.0125	822.0125	867.0125
	867.5125	822.5125	867.5125
	868.0125	823.0125	868.0125
	869.000 - 870.000	824.000 - 825.000	869.000 - 870.000
900 MHz	935.000 - 941.000	896.000 - 902.000	935.000 - 941.000

Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements. Version 1   03/10

MOTOTRBO™ SYSTEM COMPONENTS AND BENEFITS

XPR™ 4550 / XPR™ 4580 DISPLAY MOBILE RADIO

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 Multi-colored LED indicators for clear, visible feedback of calling, scanning, roaming and monitoring features.

3 Large, easy-to-use volume knob.

4 Integrated GPS module enables the use of location-tracking data applications.*

5 Up to **1,000 channels.**

6 Powerful, front-projecting speaker.

7 Large, easy-to-use navigation buttons allow easy access to intuitive, menu-driven interfaces.

8 Accessory connector supports USB and IMPRES™ audio capability.

9 Four programmable/replaceable buttons for easy access to frequently used features.

10 Compact and ergonomically friendly microphone.

DISPLAY MOBILE RADIO STANDARD PACKAGE

- Mobile Radio with Display Control Head Digital/Analog radio or Analog only radio model
- Compact Microphone
- Mounting Trunnion
- 10-Foot Power Cable
- Replacement Button Kit: monitor, scan, backlight, emergency, talkaround, text message, contacts
- Built-In Expansion Card* (XPR 4580 only)
- Two-year Standard Warranty plus one-year Repair Service Advantage (US only) / Extended Warranty (Canada only)

ADDITIONAL FEATURES

- Enhanced call management
  Digital calling features*
    Encode/Decode: call alert, emergency, remote monitor, push-to-talk ID, radio check, private call, all call, transmit interrupt (voice interrupt, remote voice dekey, emergency voice interrupt or data over voice interrupt), radio disable
  MDC 1200 analog calling features
    Encode/decode: push-to-talk ID, emergency, call alert
  Quik-Call II™ analog calling features
    Encode/decode: call alert, call alert with voice, select call
- Dual-mode analog and/or digital scan and mixed mode priority scan*—facilitates a smooth migration from analog to digital
- Optional Expansion Card for added capabilities
- Basic or Enhanced privacy—built-in scrambling for increased security*
- Free-form (requires keypad microphone) and quick text messaging*
- Remote mount control head kit for easier access and installation
- Seamless site roaming with IP Site Connect*
- Increased voice and data capacity with Capacity Plus single-site trunking*

*Digital mode only

XPR™ 4350 / XPR™ 4380 NUMERIC DISPLAY MOBILE RADIO

1 32 channels; channel number is easy to read on large, clear numeric two-digit display.

2 Multi-colored LED indicators for clear, visible feedback of calling, scanning, roaming and monitoring features.

3 Large, easy-to-use volume knob.

4 Integrated GPS module enables the use of location-tracking data applications.*

5 Large, easy-to-use channel navigation buttons.

6 Powerful, front-projecting speaker.

7 Accessory connector supports USB and IMPRES audio capability.

8 Two programmable/replaceable buttons for easy access to frequently used features.

9 Compact and ergonomically friendly microphone.

NUMERIC DISPLAY MOBILE RADIO STANDARD PACKAGE

- Mobile Radio with Numeric Display Control Head Digital/Analog radio or Analog only radio model
- Compact Microphone
- Mounting Trunnion
- 10-Foot Power Cable
- Replacement Button Kit: monitor, scan
- Built-In Expansion Card* (XPR 4380 only)
- Two-year Standard Warranty plus one-year Repair Service Advantage (US only) / Extended Warranty (Canada only)

*Digital mode only

ADDITIONAL FEATURES

- Enhanced call management
  Digital calling features*
    Encode/Decode: private call, call alert, all call, transmit interrupt (voice interrupt, remote voice dekey, emergency voice interrupt or data over voice interrupt)

    Encode only: emergency, push-to-talk ID
    Decode only: radio check, remote monitor, radio disable

  MDC 1200 analog calling features
    Encode/decode: call alert
    Encode only: push-to-talk ID, emergency

  Quik-Call II™ analog calling features
    Decode only: call alert, call alert with voice, select call

- Dual-mode analog and/or digital scan and mixed mode priority scan*—facilitates a smooth migration from analog to digital
- Optional Expansion Card for added capabilities
- Basic or Enhanced privacy—built-in scrambling for increased security*
- Send quick text messages via programmable buttons*
- Remote mount control head kit for easier access and installation
- Seamless site roaming with IP Site Connect*
- Increased voice and data capacity with Capacity Plus single-site trunking*

MOTOTRBO™ MOBILE RADIO SPECIFICATIONS

DISPLAY VHF/UHF

XPR™ 4550
With integrated GPS module

NUMERIC DISPLAY VHF/UHF

XPR 4350
With integrated GPS module

General Specifications

	Display XPR 4550			Numeric Display XPR 4350		
	VHF	UHF Band I	UHF Band II	VHF	UHF Band I	UHF Band II
Channel Capacity	Up to 1,000			32		
Typical RF Output Low Power High Power	1-25 W 25-45 W	1-25 W 25-40 W	— 1-40 W	1-25 W 25-45 W	1-25 W 25-40 W	— 1-40 W
Frequency	136-174 MHz	403-470 MHz	450-512 MHz	136-174 MHz	403-470 MHz	450-512 MHz
Dimensions (HxWxL)	2.01 x 6.89 x 8.11 in (51 x 175 x 206 mm)			2.01 x 6.89 x 8.11 in (51 x 175 x 206 mm)		
Weight	4.0 lbs. (1.8 kg)			4.0 lbs. (1.8 kg)		
Current Drain: Standby Rx @ Rated Audio Transmit	0.81 A max 2 A max 1-25 W: 11.0 A max 25-45 W: 14.5 A max	0.81 A max 2 A max 1-25 W: 11.0 A max 25-40 W: 14.5 A max	0.81 A max 2 A max 1-40 W: 14.5 A max (11.0 A max < 25 W)	0.81 A max 2 A max 1-25 W: 11.0 A max 25-45 W: 14.5 A max	0.81 A max 2 A max 1-25 W: 11.0 A max 25-40 W: 14.5 A max	0.81 A max 2 A max 1-40 W: 14.5 A max (11.0 A max < 25 W)
FCC Description	1-25 W: ABZ99FT3083 25-45 W: ABZ99FT3082	1-25 W: ABZ99FT4081 25-40 W: ABZ99FT4080	1-40 W: ABZ99FT4083	1-25 W: ABZ99FT3083 25-45 W: ABZ99FT3082	1-25 W: ABZ99FT4081 25-40 W: ABZ99FT4080	1-40 W: ABZ99FT4083
IC Description	1-25 W: 109AB-99FT3083 25-45 W: 109AB-99FT3082	1-25 W: 109AB-99FT4081 25-40 W: 109AB-99FT4080	1-40 W: 109AB-99FT4083	1-25 W: 109AB-99FT3083 25-45 W: 109AB-99FT3082	1-25 W: 109AB-99FT4081 25-40 W: 109AB-99FT4080	1-40 W: 109AB-99FT4083

Receiver

	Display XPR 4550			Numeric Display XPR 4350		
	VHF	UHF Band I	UHF Band II	VHF	UHF Band I	UHF Band II
Frequencies	136-174 MHz	403-470 MHz	450-512 MHz	136-174 MHz	403-470 MHz	450-512 MHz
Channel Spacing	12.5 kHz / 25 kHz*			12.5 kHz / 25 kHz*		
Frequency Stability (-30° C, +60° C, +25° C)	+/- 0.5 ppm			+/- 0.5 ppm		
Analog Sensitivity (12dB SINAD)	0.3 uV 0.22 uV (typical)			0.3 uV 0.22 uV (typical)		
Digital Sensitivity	5% BER: 0.3 uV			5% BER: 0.3 uV		
Intermodulation (TIA603C)	78 dB	75 dB		78 dB	75 dB	
Adjacent Channel Selectivity TIA603 TIA603C	65 dB @12.5 kHz, 80 dB @25 kHz* 50 dB @12.5 kHz, 80 dB @25 kHz*	65 dB @ 12.5 kHz, 75 dB @ 25 kHz* 50 dB @ 12.5 kHz, 75 dB @ 25 kHz*		65 dB @12.5 kHz, 80 dB @25 kHz* 50 dB @12.5 kHz, 80 dB @25 kHz*	65 dB @ 12.5 kHz, 75 dB @ 25 kHz* 50 dB @ 12.5 kHz, 75 dB @ 25 kHz*	
Spurious Rejection (TIA603C)	80 dB	75 dB		80 dB	75 dB	
Rated Audio	3 W (Internal) 7.5 W (External - 8 ohms) 13 W (External - 4 ohms)			3 W (Internal) 7.5 W (External - 8 ohms) 13 W (External - 4 ohms)		
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		

*25 kHz will not be available on new equipment in the U.S. after 1/1/2011.

Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements. Version 9   03/10

Transmitter

	Display XPR 4550			Numeric Display XPR 4350		
	VHF	UHF Band I	UHF Band II	VHF	UHF Band I	UHF Band II
Frequencies	136-174 MHz	403-470 MHz	450-512 MHz	136-174 MHz	403-470 MHz	450-512 MHz
Channel Spacing	12.5 kHz / 25 kHz*			12.5 kHz / 25 kHz*		
Frequency Stability (-30° C, +60° C, +25° C Ref.)	+/- 0.5 ppm			+/- 0.5 ppm		
Power Output Low Power High Power	1-25 W 25-45 W	1-25 W 25-40 W	— 1-40 W	1-25 W 25-45 W	1-25 W 25-40 W	— 1-40 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 (TIA603C)	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+2™			AMBE+2™		
Digital Protocol	ETSI TS 102 361-1, -2, -3			ETSI TS 102 361-1, -2, -3		

GPS

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

TTFF (Time To First Fix) Cold Start	< 1 minute
TTFF (Time To First Fix) Hot Start	< 10 seconds
Horizontal Accuracy	< 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/A1C3	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
Dust and Water Intrusion	IEC 60529 - IP54
Packaging Test	MIL-STD 810D and E

*25 kHz will not be available on new equipment in the U.S. after 1/1/2011.

Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements. Version 9   03/10

MOTOTRBO™ MOBILE RADIO SPECIFICATIONS

DISPLAY 800 / 900 MHz

XPR™ 4580
With integrated GPS module

NUMERIC DISPLAY
800 / 900 MHz

XPR 4380
With integrated GPS module

General Specifications

	XPR™ 4580 Display Mobile	XPR™ 4380 Numeric Display Mobile
Channel Capacity	Up to 1,000	Up to 32
Typical RF Output	806-870 MHz 10-35 W 896-941 MHz* 10-30 W	806-870 MHz 10-35 W 896-941 MHz* 10-30 W
Frequency Band	800 and 900 MHz	800 and 900 MHz
Dimensions (H x W x L)	2.01 x 6.89 x 8.11 in (51 x 175 x 206 mm)	2.01 x 6.89 x 8.11 in (51 x 175 x 206 mm)
Weight	4.0 lbs. (1.8 Kg)	4.0 lbs (1.8 Kg)
Current Drain: Standby Rx @ Rated Audio Transmit	0.81 A max 2 A max 12.0 A max	0.81 A max 2 A max 12.0 A max
Power Supply	12 V dc Negative Ground	12 V dc Negative Ground
FCC Description	ABZ99FT5010	ABZ99FT5010
IC Description	109AB-99FT5010	109AB-99FT5010

Receiver

	XPR 4580 Display Mobile	XPR 4380 Numeric Display Mobile
Frequencies	800 MHz: 854-866 MHz and 869-870 MHz 900 MHz: 935-941 MHz	
Channel Spacing	800 MHz: 12.5 and 25 kHz 900 MHz: 12.5 kHz	
Frequency Stability (-30° C, +60° C, +25° C)	+/- 0.5 ppm	
Analog Sensitivity (12 dB SINAD) Typical	0.22 UV	
Digital Sensitivity	5% BER: 0.28 uV	
Intermodulation (TIA603C)	78 dB	
Adjacent Channel Selectivity (TIA603) - 1T	65 dB @ 12.5 kHz 75 dB @ 25 kHz	
Adjacent Channel Selectivity (TIA603C) - 2T	50 dB @ 12.5 kHz 75 dB @ 25 kHz	
Spurious Rejection (TIA603C)	75 dB	
Rated Audio	3 W (internal)	
Audio Distortion @ Rated Audio	3% (typical)	
Hum and Noise	-45 dB @ 12.5 kHz -45 dB @ 25 kHz	
Audio Response	TIA603C	
Conducted Spurious Emission (ETSI)	-57 dBm	

*For frequencies 901–902, 940–941 MHz, FCC Rule Part 24 limits power to 7W ERP.

Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements. Version 1   03/10

Transmitter

	XPR 4580 Display Mobile	XPR 4380 Numeric Display Mobile
Frequencies	800 MHz: 809-821 MHz, 824-825 MHz, 854-866 MHz and 869-870 MHz 900 MHz: 896-902 MHz and 935-941 MHz	
Channel Spacing	800 MHz: 12.5 and 25 kHz 900 MHz: 12.5 kHz	
Frequency Stability (-30° C, +60° C)	+/- 0.5 ppm	
Low Power Output	10 W	
High Power Output	800 MHz: 35W 900 MHz: 30W	
Modulation Limiting	+/- 2.5 kHz @ 12.5 kHz +/- 5.0 kHz @ 25 kHz	
FM Hum and Noise	-40 dB @ 12.5 kHz -45 dB @ 25 kHz	
Conducted / Rated Emission (ETSI)	-36 dBm < 1 GHz -30 dBm > 1 GHz	
Adjacent Channel Power	-50 dB @ 12.5 kHz -60 dB @ 25 kHz	
Audio Response	TIA603C	
Audio Distortion (per EIA)	3%	
FM Modulation	12.5 kHz: 11K0F3E 25 kHz: 16K0F3E	
4FSK Digital Modulation	12.5 kHz Data Only: 7K60FXD 12.5 kHz Data & Voice: 7K60FXE	
Digital Vocoder Type	AMBE+2™	
Digital Protocol	ETSI TS 102 361-1, -2, -3	

GPS

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

TTFF (Time To First Fix) Cold Start	< 1 minute
TTFF (Time To First Fix) Hot Start	< 10 seconds
Horizontal Accuracy	< 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/A1C3	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

	XPR 4580 Display Mobile	XPR 4380 Numeric Display Mobile
Operating Temperature (Radio Only)	-30deg. C to + 60 deg. C	
Operating Temperature (with IMPRES Li-Ion battery)	N/A	
Storage Temperature	-40deg. C to + 85 deg. C	
Thermal Shock	per MIL-STD	
Humidity	per MIL-STD	
ESD	IEC-801-2KV	
Water Intrusion	IEC 60529 - IP54	
Packaging Test	MIL STD 810D and E	

Only the following frequencies are supported by the XPR 4580 / XPR 4380

Band	Receive	Transmit	
800 MHz	851.0125	806.0125	851.0125
	851.5125	806.5125	851.5125
	852.0125	807.0125	852.0125
	852.5125	807.5125	852.5125
	853.0125	808.0125	853.0125
	854.000 - 865.9875	809.000 - 820.9875	854.000 - 865.9875
	866.0125	821.0125	866.0125
	866.5125	821.5125	866.5125
	867.0125	822.0125	867.0125
	867.5125	822.5125	867.5125
	868.0125	823.0125	868.0125
	869.000 - 870.000	824.000 - 825.000	869.000 - 870.000
900 MHz	935.000 - 941.000	896.000 - 902.000	935.000 - 941.000

Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements. Version 1   03/10

MOTOTRBO™ SYSTEM COMPONENTS AND BENEFITS

XPR™ 8300 / XPR™ 8380 REPEATER

1 100% continuous duty at 40W/UHF, 45W/VHF and 35W/800 MHz.

2 Supports two simultaneous voice or data paths in digital TDMA mode.

3 Integrated power supply with connector for optional external DC battery backup.

4 Operates in analog or digital mode—bright, clear, colored LEDs indicate mode.

5 LEDs clearly indicate transmit and receive modes in both channel slots.

6 Rack- or wall-mountable—compatible with desktop housing as well.

7 Sturdy handles make installation and handling easier.

REPEATER STANDARD PACKAGE

• Repeater
• 120V AC Power Cord
• Two-year Standard Warranty

ADDITIONAL FEATURES

• Automated battery back-up (battery sold separately)
• Seamless site roaming with IP Site Connect*
• Increased voice and data capacity with Capacity Plus single-site trunking*
• Dynamic mixed mode capability allows for automatic switching between analog and digital mode
• Repeater diagnostic and control software provides remote or local site monitoring

*Digital mode only

MOTOTRBO REPEATER SPECIFICATIONS

VHF/UHF

XPR 8300

General Specifications

	XPR 8300		
	VHF	UHF Band I	UHF Band II
Channel Capacity	1		
Typical RF Output: Low Power High Power	1-25 W 25-45 W	1-25 W 25-40 W	— 1-40 W
Frequency	136-174 MHz	403-470 MHz	450-512 MHz
Dimensions (HxWxL)	5.22 x 19 x 11.67 in (132.6 x 482.6 x 296.5 mm)		
Weight	31 lbs (14 kg)		
Voltage Requirements	100-240 V AC (13.6 V DC)		
Current Drain During Standby: Low Power High Power	1 A (1 A DC typical) 1 A (1 A DC typical)		
Current Drain During Transmit: Low Power High Power	3 A (7.5 A DC typical) 4 A (12 A DC typical)		
Operating Temperature Range	-30°C to +60°C		
Max Duty Cycle	100%		
FCC Description	1-25 W: ABZ99FT3026 25-45 W: ABZ99FT3025	1-25 W: ABZ99FT4026 25-40 W: ABZ99FT4025	1-40 W: ABZ99FT4027
IC Description	1-25 W: 109AB-99FT3026 25-45 W: 109AB-99FT3025	1-25 W: 109AB-99FT4026 25-40 W: 109AB-99FT4025	1-40 W: 109AB-99FT4027

Receiver

	XPR 8300		
	VHF	UHF Band I	UHF Band II
Frequencies	136-174 MHz	403-470 MHz	450-512 MHz
Channel Spacing	12.5 kHz / 25 kHz*		
Frequency Stability (-30° C, +60° C, +25° C)	+/- 0.5 ppm		
Analog Sensitivity (12 dB SINAD)	0.30 uV 0.22 uV (typical)		
Digital Sensitivity	5% BER: 0.3 uV		
Intermodulation (TIA603C)	78 dB	75 dB	
Adjacent Channel Selectivity: TIA603 TIA603C	65 dB @ 12.5 kHz, 80 dB @ 25 kHz* 50 dB @ 12.5 kHz, 80 dB @ 25 kHz*	65 dB @ 12.5 kHz, 75 dB @ 25 kHz* 50 dB @ 12.5 kHz, 75 dB @ 25 kHz*	
Spurious Rejection	80 dB	75 dB	
Audio Distortion @ Rated Audio	3% (typical)		
Hum and Noise	-40 dB @ 12.5 kHz -45 dB @ 25 kHz*		
Audio Response	TIA603C		
Conducted Spurious Emission	-57 dBm		

Transmitter

	XPR 8300		
	VHF	UHF Band I	UHF Band II
Frequencies	136-174 MHz	403-470 MHz	450-512 MHz
Channel Spacing	12.5 kHz / 25 kHz*		
Frequency Stability (-30° C, +60° C, +25° C Ref.)	+/- 0.5 ppm		
Power Output: Low Power High Power	1-25 W 25-45 W	1-25 W 25-40 W	— 1-40 W
Modulation Limiting	+/- 2.5 kHz @ 12.5 kHz +/- 5.0 kHz @ 25 kHz*		
FM Hum and Noise	-40 dB @ 12.5 kHz -45 dB @ 25 kHz*		
Conducted / Radiated Emission	-36 dBm < 1 GHz -30 dBm > 1 GHz		
Adjacent Channel Power (TIA603C)	60 dB @ 12.5 kHz 70 dB @ 25 kHz*		
Audio Response	TIA603C		
Audio Distortion	3%		
FM Modulation	12.5 kHz: 11K0F3E 25 kHz*: 16K0F3E		
4FSK Digital Modulation	12.5 kHz Data Only: 7K60FXD 12.5 kHz Data & Voice: 7K60FXE		
Digital Vocoder Type	AMBE+2™		
Digital Protocol	ETSI TS 102 361-1, -2, -3		

*25 kHz will not be available on new equipment in the U.S. after 1/1/2011.
Specifications subject to change without notice. All specifications shown are typical. Repeater meets applicable regulatory requirements. Version 9   03/10

MOTOTRBO™ REPEATER SPECIFICATIONS

800 MHz

XPR™ 8380

General Specifications

		XPR 8380
		800 MHz
Channel Capacity		1
Typical RF Output:	Low Power	-
	High Power	10-35 W
Frequency		806-870 MHz
Dimensions (HxWxL)		5.22 x 19 x 11.67 in (132.6 x 482.6 x 296.5 mm)
Weight		31 lbs (14 kg)
Voltage Requirements		100–240 V AC 47–63 Hz (13.6 V DC)
Current Drain During Standby:		1.0 A (100 V AC) 0.5 A (240 V AC) 1.0 A (typical)(13.4 V DC)
Current Drain During Transmit:	Low Power	3.0 A (100 V AC) 1.5 A (240 V AC) 10 A (typical)(13.4 V DC)
	High Power	4.0 A (100 V AC) 1.8 A (240 V AC) 12 A (typical)(13.4 V DC)
Operating Temperature Range		-30°C to +60°C
Max Duty Cycle		100%
FCC Description		10–35 W: ABZ99FT5029
IC Description		10–35 W: 109AB-99FT5029

Receiver

		XPR 8380
		800 MHz
Frequencies		806–825 MHz
Channel Spacing		12.5 kHz/25 kHz
Frequency Stability (-30° C, +60° C, +25° C)		+/- 0.5 ppm
Analog Sensitivity (12 dB SINAD)		0.22 uV (typical)
Digital Sensitivity		5% BER: 0.28 uV
Intermodulation (TIA603C)		78 dB
Adjacent Channel Selectivity:	TIA603	65 dB @ 12.5 kHz, 75 dB @ 25 kHz
	TIA603C	50 dB @ 12.5 kHz, 75 dB @ 25 kHz
Spurious Rejection (TIA603C)		75 dB
Audio Distortion @ Rated Audio		3% (typical)
Hum and Noise		-45 dB @ 12.5 kHz -45 dB @ 25 kHz
Audio Response		TIA603C
Conducted Spurious Emission (TIA603C)		-57 dBm

Only the following frequencies are supported by the XPR 8380

Band	Receive		Transmit	
800 MHz	806.0125	821.0125	851.0125	866.0125
	806.5125	821.5125	851.5125	866.5125
	807.0125	822.0125	852.0125	867.0125
	807.5125	822.5125	852.5125	867.5125
	808.0125	823.0125	853.0125	868.0125
	809.000 - 820.9875	824.000 - 825.000	854.000 - 865.9875	869.000 - 870.000

Transmitter	
	XPR 8380
	800 MHz
Frequencies	851–870 MHz
Channel Spacing	12.5 kHz / 25 kHz
Frequency Stability (-30° C to +60° C)	+/- 0.5 ppm
Power Output: Low Power High Power	10W 35 W
Modulation Limiting	+/- 2.5 kHz @ 12.5 kHz +/- 5.0 kHz @ 25 kHz
Digital Modulation Fidelity (4FSK)	FSK Error 5% FSK Magnitude 1%
FM Hum and Noise	-40 dB @ 12.5 kHz -45 dB @ 25 kHz
Conducted / Radiated Emission	-36 dBm < 1 GHz -30 dBm > 1 GHz
Adjacent Channel Power (TIA603C)	-50 dB @ 12.5 kHz -60 dB @ 25 kHz
Audio Response	TIA603C
Audio Distortion	3%
FM Modulation	12.5 kHz: 11K0F3E 25 kHz: 16K0F3E
4FSK Digital Modulation	12.5 kHz Data Only: 7K60FXD 12.5 kHz Data & Voice: 7K60FXE
Digital Vocoder Type	AMBE+2™
Digital Protocol	ETSI TS 102 361-1 ETSI TS 102 361-2 ETSI TS 102 361-3

Specifications subject to change without notice. All specifications shown are typical. Repeater meets applicable regulatory requirements. Version 1   03/10

MOTOTRBO SERVICE OFFERINGS

SUBSCRIBER REPAIR

Managing the in-house repair and maintenance of your subscriber radios takes a dedicated staff of technicians, as well as an ongoing investment in diagnostic equipment, repair tools, and the technical training to keep up to speed on the latest technology. Motorola has made that investment and can help you easily and cost effectively keep your radios in top operating condition to ensure optimal efficiency and productivity.

Our subscriber repair service offerings allow you to budget for your repairs, preventing unexpected service and maintenance costs. Repair Service Advantage (RSA) and Repair Service Advantage Comprehensive (RSA Comprehensive) repairs receive priority service and meet committed cycle times.

• Repair Service Advantage (RSA):

Repair Service Advantage is a post-warranty service offering that extends the service coverage of Motorola portable or mobile subscriber radios. RSA can be purchased as an option to new radio purchases and is available in 1, 2 or 3-year increments. (U.S. only)

• Repair Service Advantage Comprehensive:

Motorola portable and mobile radios are designed to take a lot of abuse. They are built to withstand the chaos and conditions inherent in a fire or natural disaster response and recovery effort. But even the best radios are subject to occasional 'above and beyond' wear and tear. That's why Motorola Subscriber Repair Services has introduced RSA Comprehensive.

RSA Comprehensive offers all the protection of a standard RSA support plan with even more coverage that includes chemical, liquid and other physical damage to your Motorola portable and mobile subscriber radios. RSA Comprehensive is available as an option to the radio purchase for 3 years of coverage. (U.S. only, not available on repeaters)

• Extended Warranty:

In addition to the 2-year standard warranty, Extended Warranty is available for a total of 3 or 5 year coverage. (Canada only)

MOTOTRBO™ SYSTEM COMPONENTS AND BENEFITS

MTR3000 UHF BASE STATION / REPEATER

1 100% continuous duty cycle (Integrated 100W Power Amp)

2 Supports two simultaneous voice or data paths in digital TDMA mode with 16 channels*

3 Integrated AC/DC power supply

4 Operates in analog or digital mode

5 LEDs clearly indicate transmit and receive modes and overall station status

6 Rack-or-cabinet mountable

7 Front access speaker port for serviceability ease

8 Front access microphone port for routine service

9 Standard USB port for station configuration

BASE STATION / REPEATER STANDARD PACKAGE

- MTR3000 Base Station / Repeater
- AC Power Cord
- MOTOTRBO Repeater Installation Guide
- Two-year Standard Warranty

MTR2000 UPGRADE

For systems currently using the high power MTR2000 base station/repeater, a simple MTR3000 upgrade kit is available so the station can operate in a MOTOTRBO system while allowing you to to leverage your current investment.

MTR2000 UPGRADE STANDARD PACKAGE

- Upgrade hardware with pre-loaded software
- MOTOTRBO Quick Start Guide
- MOTOTRBO Installation & User Guide
- Two-year Standard Warranty

*Digital mode only

ADDITIONAL FEATURES

- Convenient access to station ports, shortening installation and maintenance time
- 12.5 or 25 kHz programmable channel spacing
- 6.25e Compliant
- Integrated 100W Power Amplifier and AC/DC Power Supply minimizes cabling, rack space, expense, and overall complexity
- Software based design simplifies feature upgrades
- Power supply functions over a wide range of voltages
- Supports MOTOTRBO Capacity Plus single site trunking without a separate hardware controller*
- Seamless site roaming with IP Site Connect*
- Repeater diagnostic and control software provides remote or local site monitoring
- Automated battery back up (charger sold separately)
- Restriction of Hazardous Substances (RoHS) compliant

MTR3000 BASE STATION / REPEATER SPECIFICATIONS

General Specifications

		T3000A	T2003A - Upgrade kit for MTR2000 stations
Number of Frequencies		Up to 16	
Modulation		FM & 4FSK	
Frequency Generation		Synthesized	
Channel Spacing	Analog	12.5 kHz, 25 kHz*	
	Digital	12.5 kHz (6.25e compliant)	
Mode of Operation		Semi-duplex / Duplex	
Temperature Range		–30ºC to +60ºC	
Antenna Connectors		Transmit and Receive, Type "N" Female	
AC Operation		85-264 VAC, 47-63 Hz	
DC Operation		28.6 VDC (25.7-30.7 VDC full rated output power)	
		Dimensions	**Weight**
Base Station Repeater		5.25 x 19 x 16.5 in. (133 x 483 x 419 mm)	40 lbs (19 kg)

Receiver

		T3000A	T2003A - Upgrade kit for MTR2000 stations
Frequency		403-470, 450-524 MHz	403-470 MHz
Selectivity (TIA603)	25 kHz*	80 dB (86 dB typical)	
	12.5 kHz	75 dB (78 dB typical)	
Selectivity (TIA603D)	25 kHz*	75 dB (85 dB typical)	
	12.5 kHz	45 dB (60 dB typical)	
Analog Sensitivity 12 dB SINAD		0.30 uV (0.22 uV typical)	
Digital Sensitivity 5% BER		0.30 µV (0.20 uV typical)	
Signal Displacement Bandwidth 12.5 / 25 kHz		1 kHz / 2 kHz	
Intermodulation Rejection 12.5 and 25 kHz		85 dB	
Spurious and Image Response Rejection		85 dB (typical 95 dB)	
Audio Response		+1,-3 dB from 6 dB per octave de-emphasis; 300-3000 Hz referenced to 1000 Hz at line output	
Audio Distortion		Less than 3% (1.5% typical) at 1000 Hz, 60% RSD	
Line Output		330 mV (RMS) @ 60% RSD	
FM Hum and Noise (750µs de-emphasis)	25 kHz*	50 dB nominal	
	12.5 kHz	45 dB nominal	
RF Input Impedance		50 Ohms	

Transmitter

		T3000A	T2003A - Upgrade kit for MTR2000 stations
Frequency		403-470, 470-524 MHz	403-435, 435-470 MHz
Power Output (Continuous Duty)		8-100 watts	25-100 watts
Electronic Bandwidth		Full Band	
Output Impedance		50 Ohms	
Intermodulation Attenuation		55 dB	
Maximum Deviation (RSD)	25 kHz*	±5 kHz	
	12.5 kHz	±2.5 kHz	
Audio Sensitivity		60% RSD @ 80 mV RMS	
Spurious and Harmonic Emissions Attenuation		85 dB	
FM Hum and Noise (750 µs de-emphasis)	25 kHz*	50 dB nominal	
	12.5 kHz	45 dB nominal	
Frequency Stability (for temperature and aging variation)		1.5 PPM/External Ref (optional)	
Audio Response		+1,-3 dB from 6 dB per octave pre-emphasis; 300-3000 Hz referenced to 1000 Hz at line output	
Audio Distortion		Less than 3% (1% typical) at 1000 Hz; 60% RSD	
Emission Designators		FM Modulation: 12.5 kHz: 11K0F3E; 25 kHz*: 16K0F3E 4FSK Modulation: 12.5 kHz - Data Only: 7K60FXD; 12.5 kHz - Data & Voice: 7K60FXE	
Digital Vocoder Type		AMBE +2™ Vocoder	
Digital Protocol		ETSI 102 361-1, -2, -3	

UHF Input Power

	AC Line 117 Volts / 220 Volts	28 VDC D/C Battery Revert, Neg. Gnd.
100 W Standby	0.4A/0.2A	0.8A
100 W Transmit	3.3A/1.8A	11.5A

FCC Type Acceptance

Frequency Range in MHz	Type	Power Output in Watts	US Type Acceptance Number
403-470	Transmitter	8-100	ABZ89FC4823
403-470	Receiver	N/A	ABZ89FC4824
470-524	Transmitter	8-100	ABZ89FC4825
450-524	Receiver	N/A	ABZ89FC4826

*25 kHz will not be available on new equipment in the U.S. after 1/1/2011.
Specifications subject to change without notice. All specifications shown are typical.
Repeater meets applicable regulatory requirements. Version 1   03/10

Industry Canada Approval: ICID 109AB-T3000; IC model T3000-UHFR1
Specifications per TIA/EIA 603D unless otherwise noted
Product meets ETSI 300-086 & ETSI 300-113

CE Certification Pending
UL Listed
RoHS compliant

IMPRES™ SMART AUDIO SYSTEM— EXCLUSIVE AUDIO TECHNOLOGY THAT ENABLES HIGH QUALITY COMMUNICATIONS

Motorola digital technology enables breakthrough radio performance and features. Our state-of-the-art IMPRES audio technology allows communication between the radio and audio accessories, enabling enhanced performance and capabilities, both in analog and digital modes—now and into the future.

• **IMPRES Smart Audio System**—Provides businesses and agencies with a solution that optimizes key aspects of two-way audio quality— loudness, clarity and intelligibility.

Optimal Audio Performance: When an IMPRES accessory is attached, the accessory parameters are sent to the MOTOTRBO™ 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. For example, the IMPRES remote speaker microphone capitalizes on the MOTOTRBO radio's intelligent signal processing for outstanding noise suppression, speech clarity, and loudness – even in difficult weather conditions.

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 accessories with programmable buttons to have independently programmed features. This flexibility allows the radio to be customized to fit your specific applications and needs.

Enhanced Audio Gain Capability (AGC): IMPRES audio accessories have significantly enhanced audio gain capability. When you are speaking either quietly or speaking in a normal volume but not directly into the microphone, IMPRES audio technology can detect that condition and will automatically increase the microphone gain. AGC eliminates the need to adjust volume levels repeatedly.

• **Built-in Antenna Signal**—The portable connector design incorporates the antenna signal within the audio connector, eliminating the need for an external radio frequency (RF) adapter for public safety microphones.

• **Submersibility**—This connector design meets IP57 submersibility requirements. This allows for use with submersible accessories, such as the submersible remote speaker microphone, which provides reliable communications even in wet conditions.

• **Future Applications**—The portable connector design also incorporates built-in USB capability to allow for the use of USB-capable accessories. The audio accessory interface is now the Motorola standard audio accessory interface for mid- to high-tier two-way radios. Future accessory development is based on this interface so you will be able to take advantage of future releases of new audio accessories.

IMPRES SMART ENERGY SYSTEM—A UNIQUE BATTERY CHARGING AND RECONDITIONING SOLUTION

Motorola's state-of-the-art IMPRES technology allows communication between the battery and the charger to automate battery maintenance. The result—prolonged life of your batteries and maximized talk time.

- **Automated battery maintenance**—Manual tracking and recording of battery use are a thing of the past. IMPRES uses a unique communications protocol to facilitate adaptive reconditioning—the charger evaluates the details of the battery's usage pattern to determine the optimal reconditioning interval. This automated process works to diminish memory effect and optimize the cycle life of the battery and maximize talk time.

- **Long-term safe charging**—IMPRES batteries may be left in IMPRES chargers for extended periods without heat damage from the charger. Charge levels are also monitored by the charger, so that radios are charged to the appropriate level and ready to go whenever needed.

- **Chargers that communicate**—IMPRES chargers are available with a two-line display module. You now have access to valuable information such as:
  - ~ Battery capacity (in mAh and percent of minimum rated capacity) and voltage while charging and at completion of charge
  - ~ Time remaining to complete rapid charging (NiCd and NiMH only)
  - ~ Current battery charge status
  - ~ The battery's unique serial number, part number and chemistry

  - ~ Knowledge is power. You can make informed decisions on battery replacement and asset management.

- **Extended warranty**—When used exclusively with IMPRES chargers, MOTOTRBO IMPRES batteries have an 18 month capacity warranty coverage—six months longer than Motorola Premium Li-Ion batteries.

- **Proven Tough**—IMPRES batteries are subjected to the same rigorous testing and held to the same high standards as all Motorola Premium batteries. Actual results of Drop, Vibration and ESD (Electrostatic Discharge) tests prove Motorola batteries outperform the competition.

- **Environmentally Friendly**—IMPRES chargers have technology that avoids overcharging and our single-unit IMPRES chargers with external power supplies consume 40 percent less energy in standby mode than required by the U.S. Energy Independence and Security Act of 2007.

MOTOTRBO™ ACCESSORIES

PORTABLE RADIO

To complement the MOTOTRBO portables, Motorola Original® accessories are specifically designed for your critical communication needs. Whether it is harsh working conditions, noisy environments, long shifts or the focus is on discreet communication, a MOTOTRBO accessory is available to meet the challenge.

It is recommended that your MOTOTRBO radio always be paired with Motorola approved batteries or accessories. Use of non-Motorola approved batteries or accessories may result in RF energy exposure standards being exceeded. Use of non-Motorola approved batteries or accessories may cause your Motorola radios to become non-compliant to other regulations and standards, for example, EMC or FM.
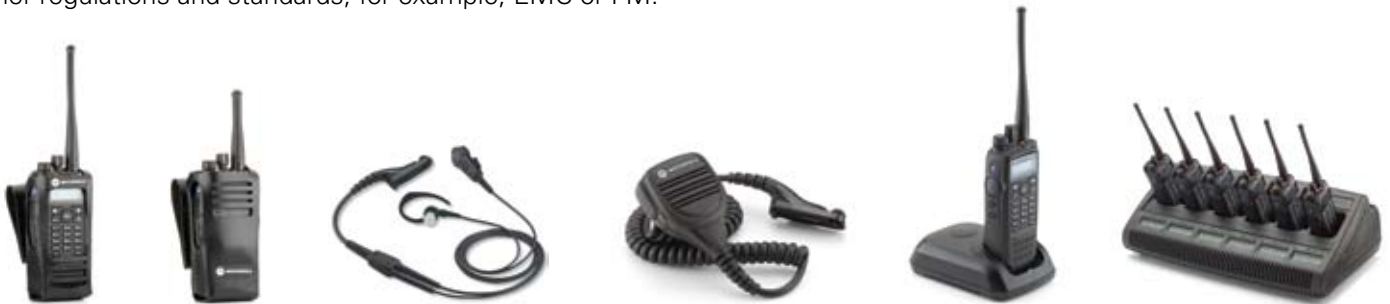
AUDIO SOLUTIONS

Remote and Public Speaker Microphones are versatile and reliable accessories that allow users to remain in full contact without removing the radio from the belt or carry case. Motorola offers a range of these speaker microphones that provide features such as IMPRES™, Windporting, IP57 submersibility and noise-canceling acoustics.

Motorola also offers a wide range of earpieces, surveillance kits, headsets and temple transducers to ensure you have the right audio accessory for your specific business need.

BATTERY AND CHARGING SOLUTIONS

IMPRES batteries are designed to maximize talk time and optimize battery life. Four batteries are available to meet your specific power needs. Complementing the battery portfolio are a range of IMPRES charging solutions from single-unit chargers, multi-unit chargers and vehicular chargers.

CARRYING SOLUTIONS

The ability to perform the job while staying in contact requires good carrying solutions. MOTOTRBO offers a wide range of solutions including belt clips, nylon- and leather carry cases, shoulder straps and chest packs. All designed to increase comfort and enhance functionality such as ruggedness as well as water and dust resistance.

MOBILE RADIO

A range of Motorola accessories are available to support the MOTOTRBO mobile radios. Accessories are an important piece of the mobile solution to meet even the most challenging installation and operational requirements. These MOTOTRBO mobile accessories can enable hands free communication in the vehicle, dispatch-enabled communication and convenient installation options.

AUDIO SOLUTIONS

Various mobile microphones are available for different needs. The IMPRES keypad microphone allows the user to navigate the mobile menu, dial phone numbers and send text messages, the heavy duty microphone provides enhanced durability and easier handling while wearing gloves. The IMPRES visor microphone enables hands-free and discreet communications.

The desktop microphone, tray and external speaker allow users to convert MOTOTRBO mobiles into simple base stations offering an optimal solution for transportation and dispatch users.

Other accessories are available for MOTOTRBO with specific needs in mind. An emergency footswitch is available allowing users to discretely notify about an emergency situation. External speaker and push-button PTT are available when operating in noisy environments or if hands free operation is required.

REMOTE MOUNTING SOLUTIONS

Remote Mount cables enable you to mount the mobile in a trunk, a critical accessory when space is limited in the vehicle or in covert operations.

ANTENNA SOLUTIONS

A wide variety of antenna options are available to support your specific mobile configuration. Standalone radio frequency (RF) antennas, standalone GPS antennas or combination GPS/RF antennas are all available in the frequency band you require.

MOTOROLA

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To learn more about MOTOTRBO, visit:
www.motorola.com/mototrbo