MOTOROLA

MOTOTRBO™

PROFESSIONAL DIGITAL TWO-WAY RADIO SYSTEM

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.

- **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**. Digital TDMA 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 and utilizing the **Dynamic Mixed Mode*** repeater functionality allows for automatic switching between analog and digital mode on the same repeater.
- 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 —to help prioritize critical communication exactly when needed.
- The **IP Site Connect*** digital solution uses the Internet to extend coverage of your MOTOTRBO communication system to users anywhere in the world for dramatically improved customer service and increased productivity.
- **Capacity Plus*** is a scalable, single-site digital trunking solution that can expand the capacity of your MOTOTRBO communication to over a thousand radio users without adding new frequencies.
- **Motorola's Application Developer Program** enables the development of customized data applications that adapt MOTOTRBO radios to meet the unique needs of your business.

*Optional feature, please indicate it when placing the radio order

General Specifications*

	XiR P8260 Display Non GPS Model XiR P8268 Display GPS Model			XiR P8200 Non-Display Non-GPS Model XiR P8208 Non-Display GPS Model		
	UHF		**VHF**	**UHF**		**VHF**
Channel Capacity	1000			32		
Frequency	403-470 MHz	450-512 MHz	136-174 MHz	403-470 MHz	450-512 MHz	136-174 MHz
Dimension (HxWxT) w/ 1500 mAh LiIon Battery	131.5 x 63.5 x 35.2 mm			131.5 x 63.5 x 35.2 mm		
Weight (with 1500 mAH LiIon Battery)	360g (12.7 oz)			360g (12.7 oz)		
(with 2200 mAh LiIon Battery)	361g (12.8 oz)			361g (12.8 oz)		
(with 1400 mAh LiIon FM Battery)	370g (13 oz)			370g (13 oz)		
Power Supply	7.5V nominal			7.5V nominal		
FCC Description	AZ489FT4876	AZ489FT4884	AZ489FT3815	AZ489FT4876	AZ489FT4884	AZ489FT3815
Average battery life at 5/5/90 duty cycle with battery saver enabled in carrier squelch and transmitter in high power.						
IMPRES 1500 mAh LiIon Battery	Analog: 9 hrs Digital: 13 hrs			Analog: 9 hrs Digital: 13 hrs		
IMPRES 2200 mAh LiIon Battery	Analog: 13.5 hrs Digital: 19 hrs			Analog: 13.5 hrs Digital: 19 hrs		
IMPRES FM 1400 mAh Battery	Analog: 8.5 hrs Digital: 12 hrs			Analog: 8.5 hrs Digital: 12 hrs		

Receiver						
Frequencies	403-470 MHz	450-512 MHz	136-174 MHz	403-470 MHz	450-512 MHz	136-174 MHz
Channel Spacing	12.5 kHz/ 25 kHz			12.5 kHz/ 25 kHz		
Frequency Stability	+/- 1.5 ppm (XiR P8260)			+/- 1.5 ppm (XiR P8200)		
(-30° C, +60° C, +25° C)	+/- 0.5 ppm (XiR P8268)			+/- 0.5 ppm (XiR P8208)		
Analog Sensitivity	0.35 uV (12 dB SINAD) 0.4 uV (20 dB SINAD) 0.22 uV (typical)			0.35 uV (12 dB SINAD) 0.4 uV (20 dB SINAD) 0.22 uV (typical)		
Digital Sensitivity	5% BER: 0.3 uV			5% BER: 0.3 uV		
Intermodulation						
TIA603C	70 dB			70 dB		
ETSI	65 dB			65 dB		
Adjacent Channel Selectivity	60 dB @ 12.5 kHz 70 dB @ 25 kHz			60 dB @ 12.5 kHz 70 dB @ 25 kHz		
Spurious Rejection	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	+ 1, -3 dB			+ 1, -3 dB		
Conducted Spurious Emission	-57 dBm			-57 dBm		

Transmitter						
Frequencies	403-470 MHz	450-512 MHz	136-174 MHz	403-470 MHz	450-512 MHz	136-174 MHz
Channel Spacing	12.5 kHz / 25 kHz			12.5 kHz/ 25 kHz		
Frequency Stability	+/- 1.5 ppm (XiR P8260)			+/- 1.5 ppm (XiR P8200)		
(-30° C, +60° C, +25° C)	+/- 0.5 ppm (XiR P8268)			+/- 0.5 ppm (XiR P8208)		
Power Output						
Low Power	1W		1W	1W		1W
High Power	4W		5W	4W		5W
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 and < 4GHz			-36 dBm < 1 GHz -30 dBm > 1 GHz and < 4GHz		
Adjacent Channel Power	-60 dB @ 12.5 kHz -70 dB @ 25 kHz			-60 dB @ 12.5 kHz -70 dB @ 25 kHz		
Audio Response	+1, -3 dB			+1, -3 dB		
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-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)	
TTFF (Time To First Fix) Cold Start	< 2 minutes
TTFF (Time To First Fix) Hot Start	< 10 seconds
Horizontal Accuracy	< 10 meters

Factory Mutual Approvals

MOTOTRBO XiR Portable series radios have been certifi ed 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.

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

*Specifications subject to change without notice. All specifications shown are typical.Radio meets applicable regulatory requirements.

Conforms to
EC 1999/5/EC (R&TTE - Radio and Telecommunications Terminal Equipment)
EN 300 086
EN 300 113

MOTOTRBO™
Mobile Radio

General Specifications*

	XiR M8260 Display Non GPS Model XiR M8268 Display GPS Model			XiR M8220 Non-Display Non-GPS Model XiR M8228 Non-Display GPS Model		
	UHF		**VHF**	**UHF**		**VHF**
Channel Capacity	1000			32		
Frequencies	403-470 MHz	450-512 MHz	136-174 MHz	403-470 MHz	450-512 MHz	136-174 MHz
Dimension (HxWxT)	51 x 175 x 206 mm			51 x 175 x 206 mm		
Weight	1.8 kg (4.0 lbs)			1.8 kg (4.0 lbs)		
Current Drain (High Power)						
Standby	0.81 A max			0.81 A max		
Rx @ Rated Audio	2 A max			2 A max		
Tx @ Rated Audio	14.5 A max			14.5 A max		
Power Supply	13.8 VDC			13.8 VDC		
FCC Description	1-25W : ABZ99FT4081 25-40W : ABZ99FT4080	1-40W: ABZ99FT4083	1-25W : ABZ99FT3083 25-45W : ABZ99FT3082	1-25W : ABZ99FT4081 25-40 W : ABZ99FT4080	1-40W: ABZ99FT4083	1-25 W : ABZ99FT3083 5-45 W : ABZ99FT3082

Receiver

Frequencies	403-470 MHz	450-512 MHz	136-174 MHz	403-470 MHz	450-512 MHz	136-174 MHz
Channel Spacing	12.5 kHz/ 25 kHz			12.5 kHz/ 25 kHz		
Frequency Stability (-30° C, +60° C, +25° C)	+/- 1.5 ppm (XiR M8260) +/- 0.5 ppm (XiR M8268)			+/- 1.5 ppm (XiR M8220) +/- 0.5 ppm (XiR M8228)		
Analog Sensitivity	0.3 uV (12 dB SINAD) 0.4 uV (20 dB SINAD) 0.22 uV (typical)			0.3 uV (12 dB SINAD) 0.4 uV (20 dB SINAD) 0.22 uV (typical)		
Digital Sensitivity	5% BER: 0.3 uV			5% BER: 0.3 uV		
Intermodulation						
TIA603C	75 dB		78 dB	75 dB		78 dB
ETS	60 dB		60 dB	60 dB		60 dB
Adjacent Channel Selectivity (TIA603, ETS)	60 dB @ 12.5 kHz 70 dB @ 25 kHz			60 dB @ 12.5 kHz 70 dB @ 25 kHz		
Spurious Rejection						
TIA603C	75 dB		80 dB	75 dB		80 dB
ETS	70 dB		70 dB	70 dB		70 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	+ 1, -3 dB			+ 1, -3 dB		
Conducted Spurious Emission	-57 dBm			-57 dBm		

Transmitter

Frequencies	403-470 MHz	450-512 MHz	136-174 MHz	403-470 MHz	450-512 MHz	136-174 MHz
Power Output						
Low Power	1-25 W	1-40 W	1-25 W	1-25 W	1-40 W	1-25 W
High Power	25-40 W		25-45 W	25-40 W		25-45 W
Channel Spacing	12.5 kHz/ 25 kHz			12.5 kHz/ 25 kHz		
Frequency Stability (-30° C, +60° C, +25° C)	+/- 1.5 ppm (XiR M8260) +/- 0.5 ppm (XiR M8268)			+/- 1.5 ppm (XiR M8220) +/- 0.5 ppm (XiR M8228)		
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	+1, -3 dB			+1, -3 dB		
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-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)	
TTFF (Time To First Fix) Cold Start	< 2 minutes
TTFF (Time To First Fix) Hot Start	< 10 seconds
Horizontal Accuracy	< 10 meters

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
Packaging Test	MIL-STD 810D and E

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MOTOTRBO™
Repeater Radio

General Specifications*

	XiR R8200		
	UHF		**VHF**
Channel Capacity	16		
Frequencies	403-470 MHz	450-512 MHz	136-174 MHz
Dimension (H x W x L)	132.6 x 482.6 x 296.5 mm 5.22 x 19 x 11.67 in		
Voltage requirements	100 - 240 VAC, 50/60Hz		
Weight	14 kg (31 lbs)		
Current Drain Standby Transmit	 1.0A (100 VAC), 0.5A (240 VAC) 4.0A (100 VAC), 1.8A (240 VAC)		
Operating Temperature Range	-30°C to +60°C		
Max Duty Cycle	100%		
FCC Description	1-25 W : ABZ99FT4026 25-40 W : ABZ99FT4025	1-40W : ABZ99FT4027	1-25 W : ABZ99FT3026 25-45 W : ABZ99FT3025

Receiver			
Frequencies	403-470 MHz	450-512 MHz	136-174 MHz
Channel Spacing	12.5 kHz/ 25 kHz		
Frequency Stability (-30° C, +60° C, +25° C)	 +/- 0.5 ppm		
Analog Sensitivity	0.3 uV (12 dB SINAD) 0.4 uV (20 dB SINAD) 0.22 uV (typical)		
Digital Sensitivity	5% BER: 0.3 uV		
Intermodulation TIA603C ETS	 75 dB 70 dB		
Adjacent Channel Selectivity	60 dB @ 12.5 kHz 70 dB @ 25 kHz		
Spurious Rejection TIA603C ETS	 75 dB 70 dB		80 dB 70 dB
Audio Distortion @ Rated Audio	3% (typical)		
Hum and Noise	-40 dB @ 12.5 kHz -45 dB @ 25 kHz		
Audio Response	+ 1, -3 dB		
Conducted Spurious Emission	-57 dBm		

Transmitter			
Frequencies	403-470 MHz	450-512 MHz	136-174 MHz
Channel Spacing	12.5 kHz/ 25 kHz		
Frequency Stability (-30° C, +60° C, +25° C)	 +/- 0.5 ppm		
Power Output Low Power High Power	 1-25 W 25-40 W	 1-40 W	 1-25 W 25-45 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	-60 dB @ 12.5 kHz -70 dB @ 25 kHz		
Audio Response	+1, -3 dB		
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-TS102 361-1		

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