



# MOTOTRBO™ DIGITAL TWO-WAY PORTABLE RADIOS

THE FUTURE OF BUSINESS COMMUNICATION, DELIVERED TODAY



Make technology more productive and personal. You asked for a forward-thinking way to connect your people to their work, wherever they go. An innovative business tool that increases their efficiency while lowering your costs. Versatile and powerful, MOTOTRBO combines the best of two-way radio functionality with the latest digital technology. It integrates voice and data seamlessly, offers enhanced features that are easy to use and delivers increased capacity to meet your communication needs from the field to the factory floor. With exceptional voice quality and long battery life, MOTOTRBO keeps your work teams connected when communication is a must.

## HIGH-POWERED PERFORMANCE

Because MOTOTRBO uses TDMA digital technology, it delivers integrated voice and data, twice the calling capacity plus clearer voice communications. When it comes to battery performance, MOTOTRBO radios operate 40 percent longer between recharges compared to analog. In fact, the leading-edge IMPRES™ technology in our batteries, chargers and audio accessories also ensures longer talk time and clearer audio.

## INDUSTRY-LEADING APPLICATIONS

Motorola's Application Developer Program offers customized data applications so you can adapt your radios to your unique business needs. Because we've created the largest developer program in the industry, we can provide nimble applications that address your challenges and answer your objectives – from work order ticket management to network management, email gateways to location tracking, dispatch consoles to telephony integration, and beyond.

Whether you want to send text messages or track work order information, pinpoint work crew locations with integrated GPS or manage your fleet from a central dispatch location, MOTOTRBO paves the way – with customizable data applications on one convenient device.



### ADDED FUNCTIONALITY

MOTOTRBO offers added functionality, including dispatch capability with the MIP 5000 VoIP console, enhanced call signaling, basic and enhanced privacy-scrambling, option board expandability and compatibility with SCADA solutions for utility and public service monitoring and alarms. Plus digital telephone interconnect capability to enable communication between radios and landline or mobile phones as well as a transmit interrupt suite – with voice interrupt, emergency voice interrupt or data over voice interrupt – to prioritize critical communication the moment you need it.

### EXPANDED CAPACITY AND COVERAGE

Your workforce is hard at work every day – picking up loads, making road repairs, providing security, responding to guest requests or restoring power after a storm. That’s why you need the proven performance of MOTOTRBO radio systems for non-stop communication no matter the size of your work force, no matter where they go.

MOTOTRBO’s IP Site Connect dramatically improves customer service and productivity by using the Internet to extend coverage to users anywhere in the world. Our scalable, single-site Capacity Plus solution expands capacity to over 1,000 users without adding new frequencies. Connect Plus multi-site digital trunking enables you to

accommodate the high volume, wide area communication your business requires. Whether you need coverage at a single site or across multiple sites, MOTOTRBO can be scaled to meet your needs.

### MIGRATE AT YOUR OWN PACE

Keeping operations running smoothly during a change in communication systems is vital to your business. It’s easy to migrate to digital with MOTOTRBO because radios operate in analog and digital mode while the dynamic mixed mode repeater functionality streamlines automatic switching between analog and digital calls. So you can begin using MOTOTRBO radios and repeaters on your existing analog system, and when your time and budget allow you can begin migrating to digital at your own pace.

### RELIABLE DURABILITY

MOTOTRBO meets the most demanding specs, including IP57 for water submersibility (portables) and U.S. Military 810 C, D, E and F. It’s “intrinsically safe” when purchased and equipped with an FM/CSA battery, for use where flammable gas, vapors or combustible dust may be present. And backed by a two-year Standard Warranty, one-year Repair Service Advantage (US)/Extended Warranty (Canada) and minimum 1-year warranty for accessories.

**XPR 6550 / XPR 6580**  
Display Portable Radios



**XPR 6350 / XPR 6380**  
Non-Display Portable Radios



**PRODUCT SPEC SHEET**

**MOTOTRBO™ XPR™ 6550/XPR 6350 PORTABLE RADIOS**



| 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   | 5.18 in H x 2.5 in W x 1.39 in L<br>(131.5 mm H x 63.5 mm W x 35.2 mm L) |               |               | 5.18 in H x 2.5 in W x 1.39 in L<br>(131.5 mm H x 63.5 mm W x 35.2 mm L)   |                    |               |
| Weight (with IMPRES Li-Ion 1500 mAh Battery)   | 12.7 oz (360 g)  |               |               | 11.63 oz (330 g)   |                    |               |
| (with IMPRES Li-Ion 1400 mAh FM Battery)   | 13 oz (370 g)  |               |               | 11.98 oz (340 g)   |                    |               |
| (with IMPRES Li-Ion 2150 mAh Battery)  | 13.17 oz (375 g)   |               |               | 12.12 oz (345 g)   |                    |               |
| (with NiMH 1300 mAh Battery)   | 15.2 oz (430 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<br>Digital: 13 hrs   |               |               | Analog: 9 hrs<br>Digital: 13 hrs   |                    |               |
| IMPRES Li-Ion FM 1400 mAh Battery  | Analog: 8.5 hrs<br>Digital: 12 hrs                                       |               |               | Analog: 8.5 hrs<br>Digital: 12 hrs   |                    |               |
| IMPRES Li-Ion 2150 mAh Battery   | Analog: 13.5 hrs<br>Digital: 19 hrs                                      |               |               | Analog: 13.5 hrs<br>Digital: 19 hrs  |                    |               |
| NiMH 1300 mAh Battery  | Analog: 8 hrs<br>Digital: 11 hrs   |               |               | Analog: 8 hrs<br>Digital: 11 hrs   |                    |               |
| RECEIVER: DISPLAY XPR 6550 & NON-DISPLAY XPR 6350  |  |               |               | GPS: DISPLAY XPR 6550 & NON-DISPLAY XPR 6350   |                    |               |
| Frequencies  | 136-174 MHz  | 403-470 MHz   | 450-512 MHz   | Accuracy specs are for long-term tracking (95th percentile values > 5 satellites visible at a nominal -130 dBm signal strength)  |                    |               |
| Channel Spacing  | 12.5 kHz / 25 kHz*   |               |               | TTF (Time To First Fix)<br>Cold Start  | < 2 minutes        |               |
| Frequency Stability<br>(-30° C, +60° C, +25° C)  | +/- 0.5 ppm  |               |               | TTF (Time To First Fix)<br>Hot Start   | < 10 seconds       |               |
| Analog Sensitivity<br>(12dB SINAD)   | 0.35 uV<br>0.22 uV (typical)   |               |               | Horizontal Accuracy  | < 10 meters        |               |
| Digital Sensitivity  | 5% BER: 0.3 uV   |               |               |  |                    |               |
| Intermodulation (TIA603C)  | 70 dB  |               |               | MILITARY STANDARDS: DISPLAY XPR 6550 & NON-DISPLAY XPR 6350  |                    |               |
| Adjacent Channel Selectivity   |  |               |               | 810E   |                    | 810F          |
| TIA603   | 60 dB @ 12.5 kHz, 70 dB @25 kHz*   |               |               | Applicable MIL-STD   | Methods            | Procedures    |
| TIA603C  | 45 dB @ 12.5 kHz, 70 dB @25 kHz*   |               |               | Low Pressure   | 500.3              | II            |
| Spurious Rejection (TIA603C)   | 70 dB  |               |               | High Temperature   | 501.3              | I/A, II/A1    |
| Rated Audio  | 500 mW   |               |               | Low Temperature  | 502.3              | I/C3, II/C1   |
| Audio Distortion @ Rated Audio   | 3% (typical)   |               |               | Temperature Shock  | 503.3              | I/A, 1C3      |
| Hum and Noise  | -40 dB @ 12.5 kHz<br>-45 dB @ 25 kHz*                                    |               |               | Solar Radiation  | 505.3              | I             |
| Audio Response   | TIA603C  |               |               | Rain   | 506.3              | I, II         |
| Conducted Spurious Emission (TIA603C)  | -57 dBm  |               |               | Humidity   | 507.3              | II            |
|  |  |               |               | Salt Fog   | 509.3              | I             |
|  |  |               |               | Dust   | 510.3              | I             |
|  |  |               |               | Vibration  | 514.4              | I/10, II/3    |
|  |  |               |               | Shock  | 516.4              | I, IV         |
| TRANSMITTER: DISPLAY XPR 6550 & NON-DISPLAY XPR 6350   |  |               |               | ENVIRONMENTAL SPECIFICATIONS: DISPLAY XPR 6550 & NON-DISPLAY XPR 6350  |                    |               |
| Frequencies  | 136-174 MHz  | 403-470 MHz   | 450-512 MHz   | Operating Temperature  | -30° C / +60° C    |               |
| Channel Spacing  | 12.5 kHz / 25 kHz*   |               |               | Storage Temperature  | -40° C / +85° C    |               |
| Frequency Stability (-30° C, +60° C, +25° C Ref.)  | +/- 0.5 ppm  |               |               | Thermal Shock  | Per MIL-STD        |               |
| Low Power Output   | 1 W  | 1 W           |               | Humidity   | Per MIL-STD        |               |
| High Power Output  | 5 W  | 4 W           |               | ESD  | IEC-801-2KV        |               |
| Modulation Limiting  | +/- 2.5 kHz @ 12.5 kHz<br>+/- 5.0 kHz @ 25 kHz*                          |               |               | Dust and Water Intrusion   | IEC 60529 - IP57   |               |
| FM Hum and Noise   | -40 dB @ 12.5 kHz<br>-45 dB @ 25 kHz*                                    |               |               | Packaging Test   | MIL-STD 810D and E |               |
| Conducted / Radiated Emission  | -36 dBm < 1 GHz<br>-30 dBm > 1 GHz                                       |               |               | Testing completed using portable radio with attached battery and antenna.  |                    |               |
| Adjacent Channel Power   | 60 dB @ 12.5 kHz<br>70 dB @ 25 kHz*                                      |               |               | FACTORY MUTUAL APPROVALS: DISPLAY XPR 6550 & NON-DISPLAY XPR 6350  |                    |               |
| Audio Response   | TIA603C  |               |               | MOTOTRBO XPR Series portable radios have been certified by FM and CSA 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. |                    |               |
| Audio Distortion   | 3%   |               |               |  |                    |               |
| FM Modulation  | 12.5 kHz: 11K0F3E<br>25 kHz*: 16K0F3E                                    |               |               |  |                    |               |
| 4FSK Digital Modulation  | 12.5 kHz Data Only: 7K60FXD<br>12.5 kHz Data & Voice: 7K60FXE            |               |               |  |                    |               |
| Digital Vocoder Type   | AMBE +2™   |               |               |  |                    |               |
| Digital Protocol   | ETSI TS 102 361-1, -2, -3  |               |               |  |                    |               |

\*As of 1/1/2013, 25 kHz is no longer available on new equipment in the United States.  
 \*\*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 11 01/14



**PRODUCT SPEC SHEET**

**MOTOTRBO™ XPR™ 6580/XPR 6380 PORTABLE RADIOS**

| GENERAL SPECIFICATIONS   |  |  | MILITARY STANDARDS   |                    |                    |                    |                   |  |
|--|--|--|--|--------------------|--------------------|--------------------|-------------------|--|
|  | DISPLAY XPR 6580   | NON-DISPLAY XPR 6380   | 810E   |                    | 810F               |                    |                   |  |
| Channel Capacity   | Up to 1000   | Up to 32   | Applicable MIL-STD   | Methods            | Procedures         | Methods            | Procedures        |  |
| Frequency Band   | 800 and 900 MHz  | 800 and 900 MHz  | Low Pressure   | 500.3              | II                 | 500.4              | II                |  |
| Dimensions with Li-Ion Battery   | 5.18 in H x 2.5 in W x 1.39 in L<br>(131.5 mm H x 63.5 mm W x 35.2 mm L)                               | 5.18 in H x 2.5 in W x 1.39 in L<br>(131.5 mm H x 63.5 mm W x 35.2 mm L) | High Temperature   | 501.3              | I/A, II/A1         | 501.4              | I/Hot, II/Hot     |  |
| Weight with IMPRES Li-Ion 2150 mAh Battery   | 13.17 oz (375 g)   | 12.12 oz (345 g)   | Low Temperature  | 502.3              | I/C3, II/C1        | 502.4              | I/C3, II/C1       |  |
| Power Supply   | 7.5 V nominal  | 7.5 V nominal  | Temperature Shock  | 503.3              | I/A, 1C3           | 503.4              | I                 |  |
| FCC Description  | ABZ99FT5011  | ABZ99FT5011  | Solar Radiation  | 505.3              | I                  | 505.4              | I                 |  |
| IC Description   | 109AB-99FT5011   | 109AB-99FT5011   | Rain   | 506.3              | I, II              | 506.4              | I, III            |  |
| Average battery life at 5/5/90 duty cycle with battery saver enabled in carrier squelch and transmitter in high power. |  |  | Humidity   | 507.3              | II                 | 507.4              | -                 |  |
| IMPRES Li-Ion 2150 mAh Battery   | Analog: 13 hrs / Digital: 17 hrs   | Analog: 13 hrs / Digital: 17 hrs   | Salt Fog   | 509.3              | I                  | 509.4              | I                 |  |
| IMPRES Li-Ion 1400 mAh Battery   | Analog: 9 hrs / Digital: 12 hrs  | Analog: 9 hrs / Digital: 12 hrs  | Dust   | 510.3              | I                  | 510.4              | I                 |  |
| <b>RECEIVER</b>  |  |  | Vibration  | 514.4              | I/10, II/3         | 514.5              | I/24              |  |
| Frequencies  | 800 MHz: 854-866 MHz and 869-870 MHz / 900 MHz: 935-941 MHz  |  | Shock  | 516.4              | I, IV              | 516.5              | I, IV             |  |
| Channel Spacing  | 800 MHz: 12.5 and 25 kHz / 900 MHz: 12.5 kHz   |  | <b>ENVIRONMENTAL SPECIFICATIONS</b>  |                    |                    |                    |                   |  |
| Frequency Stability (-30° C, +60° C, +25° C)   | +/- 0.5 ppm  |  | Operating Temperature  | -30° C / +60° C    |                    |                    |                   |  |
| Analog Sensitivity (12 dB SINAD) Typical   | 0.25 uV  |  | Operating Temperature (w/ IMPRES Li-Ion battery)   | -10° C to +60° C   |                    |                    |                   |  |
| Digital Sensitivity  | 5% BER: 0.3 uV   |  | Storage Temperature  | -40° C to +85° C   |                    |                    |                   |  |
| Intermodulation (TIA603C)  | 70 dB  |  | Thermal Shock  | Per MIL-STD        |                    |                    |                   |  |
| Adjacent Channel Selectivity (TIA603) - 1T   | 60 dB @ 12.5 kHz / 70 dB @ 25 kHz  |  | Humidity   | Per MIL-STD        |                    |                    |                   |  |
| Adjacent Channel Selectivity (TIA603C) - 2T  | 45 dB @ 12.5 kHz / 70 dB @ 25 kHz  |  | ESD  | IEC-801-2KV        |                    |                    |                   |  |
| Spurious Rejection (TIA603C)   | 70 dB  |  | Dust and Water Intrusion   | IEC 60529 - IP54   |                    |                    |                   |  |
| Rated Audio  | 5 W  |  | Packaging Test   | MIL-STD 810D and E |                    |                    |                   |  |
| Audio Distortion @ Rated Audio   | 3% (typical)   |  | Testing completed using portable radio with attached battery and antenna.  |                    |                    |                    |                   |  |
| Hum and Noise  | -40 dB @ 12.5 kHz / -45 dB @ 25 kHz  |  | <b>FACTORY MUTUAL APPROVALS</b>  |                    |                    |                    |                   |  |
| Audio Response   | TIA603C  |  | MOTOTRBO XPR Series portable radios have been certified by FM and CSA 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. |                    |                    |                    |                   |  |
| Conducted Spurious Emission (ETSI)   | -57 dBm  |  |    |                    |                    |                    |                   |  |
| <b>TRANSMITTER</b>   |  |  | <b>ONLY THE FOLLOWING FREQUENCIES ARE SUPPORTED BY THE XPR 6580 / XPR 6380</b>   |                    |                    |                    |                   |  |
| Frequencies  | 800 MHz: 809-821 MHz, 824-825 MHz, 854-866 MHz and 869-870 MHz<br>900 MHz: 896-902 MHz and 935-941 MHz |  | <b>Band</b>  | <b>Receive</b>     | <b>Transmit</b>    |                    |                   |  |
| Channel Spacing  | 800 MHz: 12.5 and 25 kHz / 900 MHz: 12.5 kHz   |  | 800 MHz  | 851.0125           | 806.0125           | 851.0125           |                   |  |
| Frequency Stability (-30° C, +60° C)   | +/- 0.5 ppm  |  |  | 851.5125           | 806.5125           | 851.5125           |                   |  |
| Low Power Output   | 1 W  |  |  | 852.0125           | 807.0125           | 852.0125           |                   |  |
| High Power Output  | 2.5 W  |  |  | 852.5125           | 807.5125           | 852.5125           |                   |  |
| Modulation Limiting  | +/- 2.5 kHz @ 12.5 kHz / +/- 5.0 kHz @ 25 kHz  |  |  | 853.0125           | 808.0125           | 853.0125           |                   |  |
| FM Hum and Noise   | -40 dB @ 12.5 kHz / -45 dB @ 25 kHz  |  |  | 854.000 - 865.9875 | 809.000 - 820.9875 | 854.000 - 865.9875 |                   |  |
| Conducted / Rated Emission (ETSI)  | -36 dBm < 1 GHz / -30 dBm > 1 GHz  |  |  | 866.0125           | 821.0125           | 866.0125           |                   |  |
| Adjacent Channel Power   | -60 dB @ 12.5 kHz / -70 dB @ 25 kHz  |  |  | 866.5125           | 821.5125           | 866.5125           |                   |  |
| Audio Response   | TIA603C  |  |  | 867.0125           | 822.0125           | 867.0125           |                   |  |
| Audio Distortion (per EIA)   | 3%   |  |  | 867.5125           | 822.5125           | 867.5125           |                   |  |
| FM Modulation  | 12.5 kHz: 11K0F3E / 25 kHz: 16K0F3E  |  |  | 868.0125           | 823.0125           | 868.0125           |                   |  |
| 4FSK Digital Modulation  | 12.5 kHz Data Only: 7K60FXD / 12.5 kHz Data & Voice: 7K60FXE   |  |  | 869.000 - 870.000  | 824.000 - 825.000  | 869.000 - 870.000  |                   |  |
| Digital Vocoder Type   | AMBE +2™   |  |  | 900 MHz            | 935.000 - 941.000  | 896.000 - 902.000  | 935.000 - 941.000 |  |
| Digital Protocol   | ETSI TS 102 361-1, -2, -3  |  |  |                    |                    |                    |                   |  |
| <b>GPS</b>   |  |  | 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   | < 2 minutes  |  |  |                    |                    |                    |                   |  |
| TTF (Time To First Fix) Hot Start  | < 10 seconds   |  |  |                    |                    |                    |                   |  |
| Horizontal Accuracy  | < 10 meters  |  |  |                    |                    |                    |                   |  |

Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements. Version 3 01/14

For more information on how to make your business more efficient and better connected, visit .

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Recommended Dealer: **HKRSolutions**  
www.hkrsolutions.com Two-way Radio & Accessories Specialist