**THE FUTURE OF BUSINESS COMMUNICATION, DELIVERED TODAY**

# MOTOTRBO™ DIGITAL TWO-WAY MOBILE RADIOS

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. In fact, the leading-edge IMPRES™ technology in our audio accessories also ensures clearer audio delivery.

## 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 mobile radios are backed by a two-year Standard Warranty, one-year Repair Service Advantage (US)/Extended Warranty (Canada) and minimum 1-year warranty for accessories.


**XPR™ 4550 / XPR 4580**
Display Mobile Radios

**XPR 4350 / XPR 4380**
Numeric Display Mobile Radios

## 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 | 1-25 W | 1-25 W | — | 1-25 W | 1-25 W | — |
| High Power | 25-45 W | 25-40 W | 1-40 W | 25-45 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 | | 2.01 in H x 6.89 in W x 8.11 in L<br>(51 mm H x 175 mm W x 206 mm L) | | | 2.01 in H x 6.89 in W x 8.11 in L<br>(51 mm H x 175 mm W x 206 mm L) | |
| Weight | | 4.0 lbs (1.8 kg) | | | 4.0 lbs (1.8 kg | |
| Current Drain: | | | | | | |
| Standby | 0.81 A max | 0.81 A max | 0.81 A max | 0.81 A max | 0.81 A max | 0.81 A max |
| Rx @ Rated Audio | 2 A max | 2 A max | 2 A max | 2 A max | 2 A max | 2 A max |
| Transmit | 1-25 W: 11.0 A max<br>25-45 W: 14.5 A max | 1-25 W: 11.0 A max<br>25-40 W: 14.5 A max | 1-40 W: 14.5 A max<br>(11.0 A max < 25 W) | 1-25 W: 11.0 A max<br>25-45 W: 14.5 A max | 1-25 W: 11.0 A max<br>25-40 W: 14.5 A max | 1-40 W: 14.5 A max<br>(11.0 A max < 25 W) |
| FCC Description | 1-25 W: ABZ99FT3083<br>25-45 W: ABZ99FT3082 | 1-25 W: ABZ99FT4081<br>25-40 W: ABZ99FT4080 | 1-40 W: ABZ99FT4083 | 1-25 W: ABZ99FT3083<br>25-45 W: ABZ99FT3082 | 1-25 W: ABZ99FT4081<br>25-40 W: ABZ99FT4080 | 1-40 W: ABZ99FT4083 |
| IC Description | 1-25 W: 109AB-99FT3083<br>25-45 W: 109AB-99FT3082 | 1-25 W: 109AB-99FT4081<br>25-40 W: 109AB-99FT4080 | 1-40 W: 109AB-99FT40830 | 1-25 W: 109AB-99FT3083<br>25-45 W: 109AB-99FT3082 | 1-25 W: 109AB-99FT4081<br>25-40 W: 109AB-99FT4080 | 1-40 W: 109AB-99FT4083 |

## RECEIVER: DISPLAY XPR 4550 & NUMERIC DISPLAY XPR 4350

| | | | |
|---|---|---|---|
| Frequencies | 136-174 MHz | 403-470 MHz | 450-512 MHz |
| Channel Spacing | | 12.5 kHz / 25 kHz* | |
| Frequency Stability<br>(-30° C, +60° C, +25° C) | | +/- 0.5 ppm | |
| Analog Sensitivity<br>(12dB SINAD) | | 0.3 uV<br>0.22 uV (typical) | |
| Digital Sensitivity | | 5% BER: 0.3 uV | |
| Intermodulation (TIA603C) | 78 dB | 75 dB | |
| Adjacent Channel Selectivity | | | |
| TIA603 | 65 dB @12.5 kHz, 80 dB @25 kHz* | 65 dB @ 12.5 kHz, 75 dB @ 25 kHz* | |
| TIA603C | 50 dB @12.5 kHz, 80 dB @25 kHz* | 50 dB @ 12.5 kHz, 75 dB @ 25 kHz* | |
| Spurious Rejection (TIA603C) | 80 dB | 75 dB | |
| Rated Audio | | 3 W (Internal) | |
| | | 7.5 W (External - 8 ohms) | |
| | | 13 W (External - 4 ohms) | |
| Audio Distortion @ Rated Audio | | 3% (typical) | |
| Hum and Noise | | -40 dB @ 12.5 kHz | |
| | | -45 dB @ 25 kHz* | |
| Audio Response | | TIA603C | |
| Conducted Spurious Emission<br>(TIA603C) | | -57 dBm | |

## TRANSMITTER: DISPLAY XPR 4550 & NUMERIC DISPLAY XPR 4350

| | | | |
|---|---|---|---|
| Frequencies | 136-174 MHz | 403-470 MHz | 450-512 MHz |
| Channel Spacing | | 12.5 kHz / 25 kHz* | |
| Frequency Stability<br>(-30° C, +60° C, +25° C Ref.) | | +/- 0.5 ppm | |
| Low Power Output | 1-25 W | 1-25 W | — |
| High Power Output | 25-45 W | 25-40 W | 1-40 W |
| Modulation Limiting | | +/- 2.5 kHz @ 12.5 kHz<br>+/- 5.0 kHz @ 25 kHz* | |
| FM Hum and Noise | | -40 dB @ 12.5 kHz<br>-45 dB @ 25 kHz* | |
| Conducted / Radiated Emission | | -36 dBm < 1 GHz<br>-30 dBm > 1 GHz | |
| Adjacent Channel Power | | 60 dB @ 12.5 kHz<br>70 dB @ 25 kHz* | |
| Audio Response | | TIA603C | |
| 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 | |

## GPS: DISPLAY XPR 4550 & NUMERIC DISPLAY XPR 4350

| | |
|---|---|
| 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: DISPLAY XPR 4550 & NUMERIC DISPLAY XPR 4350

| | **810E** | | **810F** | |
|---|---|---|---|---|
| Applicable MIL–STD | 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: DISPLAY XPR 4550 & NUMERIC DISPLAY XPR 4350

| | |
|---|---|
| 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 1/1/2013.
Specifications subject to change without notice. All specifications shown are typical.
Radio meets applicable regulatory requirements. Version 9 03/10

## GENERAL SPECIFICATIONS

| | DISPLAY XPR 4580 | NUMERIC DISPLAY XPR 4380 |
|---|---|---|
| Channel Capacity | Up to 1,000 | Up to 32 |
| Typical RF Output | 806-870 MHz 10-35 W<br>896-941 MHz* 10-30 W | 806-870 MHz 10-35 W<br>896-941 MHz* 10-30 W |
| Frequency Bamd | 800 and 900 MHz | 800 and 900 MHz |
| Dimensions | 2.01 in H x 6.89 in W x 8.11 in L<br>(51 mm H x 175 mm W x 206 mm L) | 2.01 in H x 6.89 in W x 8.11 in L<br>(51 mm H x 175 mm W x 206 mm L) |
| Weight | 4.0 lbs (1.8 kg) | 4.0 lbs (1.8 kg) |
| Current Drain: | | |
| Standby | 0.81 A max | 0.81 A max |
| Rx @ Rated Audio | 2 A max | 2 A max |
| Transmit | 12.0 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

| | |
|---|---|
| Frequencies | 800 MHz: 854-866 MHz and 869-870 MHz<br>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 (12dB SINAD) | 0.22 uV |
| Digital Sensitivity | 5% BER: 0.28 uV |
| Intermodulation (TIA603C) | 78 dB |
| Adjacent Channel Selectivity<br>TIA603<br>TIA603C | <br>65 dB @ 12.5 kHz, 75 dB @ 25 kHz<br>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 (TIA603C) | -57 dBm |

## TRANSMITTER

| | |
|---|---|
| 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 |
| Channel Spacing | 800 MHz: 12.5 and 25 kHz / 900 MHz: 12.5 kHz |
| Frequency Stability (-30° C, +60° C, +25° C Ref.) | +/- 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<br>-45 dB @ 25 kHz |
| Conducted / Radiated Emission | -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 | 3% |
| FM Modulation | 12.5 kHz: 11K0F3E / 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 |

## 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)<br>Cold Start | < 1 minute |
| TTFF (Time To First Fix)<br>Hot Start | < 10 seconds |
| Horizontal Accuracy | < 10 meters |

## MILITARY STANDARDS

| | 810E | | 810F | |
|---|---|---|---|---|
| Applicable MIL–STD | 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 |

## 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 |

*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

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

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