



SUBMERSIBLE LONG RANGE TWO WAY RADIO

YOU'RE COMPLETELY CONNECTED

With this dynamic evolution of Project Telecom digital two-way radios, you're better connected, safer and more productive. The Submersible Series is designed for the skilled professional who refuses to compromise. With high performance integrated voice and data, and advanced features for efficient operation, these next-generation radios deliver complete connectivity to your organisation.

CONNECTED

The Submersible Series is a family of ETSI DMR Standards compliant digital radios that delivers operation-critical voice and data communications. Bluetooth[®] audio lets you talk without wires, integrated Wi-Fi[®] enables remote software updates, and indoor and outdoor location-tracking capabilities give you total visibility of your resources. With support for trunking as well as legacy analogue technology, you can keep your organisation connected as it grows.

SAFE

Safeguard your staff with responsive push-to-talk technology. The prominent orange emergency button on DP4000e Series radios summons help with one touch, using Transmit Interrupt to clear a channel when necessary. An integrated accelerometer senses if you've fallen, and can initiate a call for assistance. The radio is tested tough to military standards and is waterproof to IP68. It won't let you down.

PRODUCTIVE

Text messaging and Work Order Ticketing simplify complex communications, and data capabilities support advanced applications. Featuring a powerful audio amplifier, these radios deliver loud, clear speech, with industrial noise cancellation for better intelligibility. The latest energy technology delivers up to 28 hours of battery life for 3-shift working, and an improved receiver boosts range by up to 8% compared to previous models.



WHAT'S NEW IN THESE NEXT GENERATION RADIOS

- Integrated accelerometer for optional Man Down
- Bluetooth[®] 4.0
- Indoor location tracking
- Multi-constellation GNSS for increased location accuracy¹
- Integrated Wi-Fi[®]
- Over-the-air software updates
- Enhanced audio quality
- Improved expandability
- Better battery life (up to 28 hrs)
- Better range (up to 8%)
- Better waterproofing (IP68)



| Limited Keypad (LKP) Submersible Model | | | |
|--|--------------------------------|----------------------------|-------------|
| Model Number | Submersible Long Range | | |
| Band | VHF | 300MHz | UHF |
| GENERAL SPECIFICATIONS | | | |
| Frequency | 136-174 MHz | 300-360 MHz 350-400 MHz | 403-527 MHz |
| High Power Output | 5 W | 4 W | 4 W |
| Low Power Output | 1 W | 1 W | 1 W |
| Channel Spacing | 12.5, 20 ² , 25 kHz | | |
| Channel Capacity | 1000 | | |
| NiMH 1400mAh IP67 Battery | | | |
| Dimensions with Radio (H x W x D) | 130 x 55 x 39 mm | | |
| Weight with Radio | 405 g | | |
| Digital / Analogue Battery Life ³ | 13.0 / 10.0 hrs | 12.0 / 9.5 hrs | |
| Li-ion 1400mAh Low Temp IP57 Battery | | | |
| Dimensions with Radio (H x W x D) | 130 x 55 x 41 mm | | |
| Weight with Radio | 345 g | | |
| Digital / Analogue Battery Life ³ | 13.0 / 10.0 hrs | 12.0 / 9.5 hrs | |
| Slim IMPRES Li-ion 1650mAh IP67 Battery | | | |
| Dimensions with Radio (H x W x D) | 130 x 55 x 36 mm | | |
| Weight with Radio | 330 g | | |
| Digital / Analogue Battery Life ³ | 16.0 / 12.0 hrs | 15.5 / 11.5 hrs | |
| IMPRES Li-ion 2100mAh IP68 Battery | | | |
| Dimensions with Radio (H x W x D) | 130 x 55 x 36 mm | | |
| Weight with Radio | 330 g | | |
| Digital / Analogue Battery Life ³ | 20.0 / 15.0 hrs | 19.0 / 14.5 hrs | |
| IMPRES Li-ion 2250mAh IP67 Battery | | | |
| Dimensions with Radio (H x W x D) | 130 x 55 x 41 mm | | |
| Weight with Radio | 345 g | | |
| Digital / Analogue Battery Life ³ | 21.5 / 16.5 hrs | 21.0 / 16.0 hrs | |
| IMPRES TIA4950 Li-ion 2900mAh IP68 Battery | | | |
| Dimensions with Radio (H x W x D) | 130 x 55 x 41 mm | | |
| Weight with Radio | 405 g | | |
| Digital / Analogue Battery Life ³ | 28.0 / 21.0 hrs | 27.0 / 20.5 hrs | |
| IMPRES Li-ion 3000mAh LV IP68 Battery | | | |
| Dimensions with Radio (H x W x D) | 130 x 55 x 41 mm | | |
| Weight with Radio | 350 g | | |
| Digital / Analogue Battery Life ³ | 29.0 / 21.5 hrs | 28.0 / 21.5 hrs | |
| IMPRES Li-ion 3000mAh LV IP68 Battery w/Vibrator | | | |
| Dimensions with Radio (H x W x D) | 130 x 55 x 41 mm | | |
| Weight with Radio | 350 g | | |
| Digital / Analogue Battery Life ³ | 29.0 / 21.5 hrs | 28.0 / 21.5 hrs | |

ALL MODELS

| TRANSMITTER SPECIFICATIONS | |
|---|--|
| Channel Spacing | 12.5, 20 ¹ , 25 kHz |
| 4FSK Digital Modulation | 12.5 kHz Data: 7K60F1D and 7K60FXD, 12.5 kHz Voice: 7K60F1E and 7K60FXE, Combination of 12.5 kHz Voice and Data: 7K60F1W |
| Digital Protocol | ETSI TS 102 361-1, -2, -3 |
| Conducted/Radiated Emissions (TIA603D) | -36 dBm < 1GHz, -30 dBm > 1GHz |
| Adjacent Channel Power | 60dB (12.5 kHz) 70dB (20 ² / 25 kHz) |
| Frequency Stability | ± 0.5 ppm |
| RECEIVER SPECIFICATIONS | |
| Analogue Sensitivity (12dB SINAD) | 0.16 uV |
| Digital Sensitivity (5% BER) | 0.14 uV |
| Intermodulation (TIA603D) | 70 dB |
| Adjacent Channel Selectivity, (TIA603A)-1T | 60 dB (12.5 kHz) 70 dB (20 ² / 25 kHz channel) |
| Adjacent Channel Selectivity, (TIA603D)-2T & (TIA603C)-2T | 45 dB (12.5 kHz) 70 dB (20 ² / 25 kHz) |
| Spurious Rejection (TIA603D) | 70 dB |
| AUDIO SPECIFICATIONS | |
| Digital Vocoder Type | AMBE+2™ |
| Audio Response | TIA603D |
| Rated Audio | 0.5 W |
| Audio Distortion at Rated Audio | 3% |
| Hum and Noise | -40 dB (12.5 kHz) -45 dB (20 ² / 25 kHz) |
| Conducted Spurious Emissions (TIA603D) | -57 dBm |

| BLUETOOTH SPECIFICATIONS | |
|---|--|
| Version | 4.0 |
| Range | Class 2, 10 m |
| Supported Profiles | Bluetooth Headset Profile (HSP), Serial Port Profile (SPPP), Motorola fast push-to-talk. |
| Simultaneous Connections | 1 x audio accessory and 1 x data device |
| Permanent Discoverable Mode | Optional |
| GNSS SPECIFICATIONS | |
| Constellation Support | GPS, GLONASS |
| Time To First Fix, Cold Start | < 60 s |
| Time To First Fix, Hot Start | < 10 s |
| Horizontal Accuracy | < 5 m |
| Wi-Fi SPECIFICATIONS | |
| Standards Supported | IEEE 802.11b, 802.11g, 802.11n |
| Security Protocol Supported | WPA, WPA-2, WEP |
| Maximum Number of SSIDs | 128 (64 for LKP and NKP models) |
| ENVIRONMENTAL SPECIFICATIONS | |
| Operating Temperature ⁴ | -30 °C to +60 °C |
| Storage Temperature | -40 °C to +85 °C |
| Electrostatic Discharge | IEC 61000-4-2 Level 4 |
| Dust and Water Intrusion | IEC 60529 - IP68, 2 m for 2 hrs |
| Packaging Test | MIL-STD 810D and E |
| HAZLOC CERTIFICATION | |
| When properly equipped with Motorola UL-Approved battery, UL-Approved to TIA-4950 for use in Hazardous Locations, Division 1, Class I, II, III, Groups C, D, E, F, G; Division 2, Class 1, Groups A, B, C, D, T3C. Tamb = -25°C to +60°C. | |

- ### CONNECTION
- VHF Band, 5 W
 - UHF Band, 4 W
 - 300 MHz Band, 4 W
 - FKP Models: Colour screen, full keypad, 1000 channels
 - LKP Models: Colour screen, limited keypad, 1000 channels
 - NKP models: No screen or keypad, 32 channels
 - Analogue and Digital
 - Voice and Data
 - Integrated Wi-Fi
 - Canned Text Messaging
 - Freeform Text Messaging (FKP models)
 - Work Order Ticketing
 - Multi-constellation GNSS
 - High Efficiency GNSS
 - Event-Driven Location Update
 - Bluetooth Audio
 - Bluetooth Data
 - Bluetooth Permanent Discoverable Mode
 - Bluetooth Indoor Location Tracking
 - Voice Announcement
 - Text to Speech
 - Option Board
 - Vibrate Alert
 - Home Channel Reminder

- ### AUDIO
- Intelligent Audio
 - IMPRES Audio
 - SYNC + Noise Cancellation
 - Acoustic Feedback Suppressor
 - Microphone Distortion Control
 - User-Selectable Audio Profiles
 - Switch Speaker
 - Trill Enhancement

- ### PERSONALISATION
- Wide Range of Accessories
 - Multi-Button PTT
 - 5 Programmable Buttons
 - Emergency Button

- ### MANAGEMENT
- Radio Management
 - Over-the-Air Programming
 - Over-the-Air Software Update
 - IMPRES Energy
 - IMPRES Battery Management
 - Over-the-Air Battery Management

- ### SAFETY
- Integrated Accelerometer
 - Man Down
 - Lone Worker
 - Basic Privacy
 - Enhanced Privacy
 - AES256 Encryption
 - Transmit Interrupt (decode)
 - Transmit Interrupt (encode)
 - Emergency
 - Emergency Search Tone
 - Remote Monitor
 - Radio Disable / Enable
 - TIA4950 HazLoc Certification
 - Waterproof to IP68
 - Rugged to MIL-STD 810

- ### SYSTEMS
- Direct Mode (including Dual Capacity Direct Mode)
 - IP Site Connect (Single and Multi-Site)
 - Capacity Plus (Single and Multi-Site)
 - Capacity Max
 - Connect Plus
 - Standard feature
 - Optional feature

NOTES
1: Bluetooth, GNSS and Wi-Fi only included on DP4401e, DP4601e and DP4801e.
2: 20 kHz channel not available for 300MHz models.
3: Typical battery life, 5/5/90 profile at maximum transmitter power with GNSS, Bluetooth, Wi-Fi and Option Board applications disabled. Actual observed runtimes may vary.
4: Radio only. Specialised low-temperature battery required for operation below -10 °C.

| | MIL-STD 810C | | MIL-STD 810D | | MIL-STD 810E | | MIL-STD 810F | | MIL-STD 810G | |
|-----------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|
| | METHOD | PROCEDURE | METHOD | PROCEDURE | METHOD | PROCEDURE | METHOD | PROCEDURE | METHOD | PROCEDURE |
| Low Pressure | 500.1 | I | 500.2 | II | 500.3 | II | 500.4 | II | 500.5 | II |
| High Temp | 501.1 | I, II | 501.2 | I/A1, II/A1 | 501.3 | I/A1, II/A1 | 501.4 | I/Hot, II/Hot | 501.5 | I/A1, II/A1 |
| Low Temp | 502.1 | I | 502.2 | I/C3, II/C1 | 502.3 | I/C3, II/C1 | 502.4 | I/C3, II/C1 | 502.5 | I/C3, II/C1 |
| Temp Shock | 503.1 | I | 503.2 | A1/C3 | 503.3 | A1/C3 | 503.4 | I | 503.5 | I-C |
| Solar Radiation | 505.1 | II | 505.2 | I/Hot-Dry | 505.3 | I/Hot-Dry | 505.4 | I/Hot-Dry | 505.5 | I/A1 |
| Rain | 506.1 | I, II | 506.2 | I, II | 506.3 | I, II | 506.4 | I, III | 506.5 | I, III |
| Humidity | 507.1 | II | 507.2 | II/Hot-Humid | 507.3 | II/Hot-Humid | 507.4 | - | 507.5 | II/Hot-Humid |
| Salt Fog | 509.1 | I | 509.2 | I | 509.3 | I | 509.4 | - | 509.5 | - |
| Dust | 510.1 | I, II | 510.2 | I, II | 510.3 | I, II | 510.4 | I, II | 510.5 | I, II |
| Vibration | 514.2 | VIII/F, W, XI | 514.3 | I/10, II/3 | 514.4 | I/10, II/3 | 514.5 | I/24, II/5 | 514.6 | I/24, II/5 |
| Shock | 516.2 | II | 516.3 | I, IV | 516.4 | I, IV | 516.5 | I, IV | 516.6 | I, IV |



BLUETOOTH

Connect to your radio without wires, for extra comfort and safety. A full portfolio of Bluetooth headsets and earpieces is available.



REMOTE SPEAKER MICROPHONE

Improve usability with a Remote Speaker Microphone (RSM). Choose from standard, heavy duty and noise-cancelling models, with or without secondary earpiece connector.



SMART ENERGY

Project Telecoms Optimised Energy technology gives you smart batteries to keep your radio powered for longer. Choose from a range of batteries, chargers, and management tools.



EARPIECES

For all-day comfort, choose from our range of earpieces. Lightweight or heavy duty, discreet or rugged, with or without built-in hearing protection.



CARRY SOLUTIONS

However you choose to wear or carry your radio, we have a solution for you. From leather cases to belts and belt clips to bags, straps and pouches.



HEADSETS

In a noisy workplace, you need to protect your workers' hearing. Whether it's heavy duty noise reduction or innovative temple transducer technology, our headsets can help.



VIBRATING BELTCLIP

When it's unacceptable to miss calls in a noisy environment, equip your radios with a powerful vibrating belt clip for an extra physical alert.

