

## BD505

DMR handheld radio



### Getting started easily

The BD series of radios is a new device class for getting started in digital technology (DMR). The BD505 offers functions comparable to simple analog radios in the same price class, but with the advantages of digital transmission technology.

### Excellent performance

Thanks to its innovative design, the BD505 offers better performance than analog radios. Its excellent reception properties ensure trouble-free voice communication.

### Robust and durable

The BD505 was developed and tested in compliance with the military standard MIL-810 G. The dust and water-proof construction as per IP54 ensures reliability in different environments.

### Clear voice

Use of digital coding and correction technology makes it possible to transmit voices without any interference – even over large distances.

### Simple operation

Ergonomically optimized volume keys ensure easy operation, even while wearing gloves.

# Technical Data BD505

| General data                               |   |
|--|---|
| Frequency range                            | VHF: 136 – 174 MHz<br>UHF: 400 - 470 MHz  |
| Supported operating modes                  | <ul style="list-style-type: none"> <li>▪ DMR Tier II in acc. with ETSI TS 102 361-1/2/3</li> <li>▪ Simulcast</li> <li>▪ XPT Digital Trunking</li> <li>▪ Analog</li> </ul> |
| Number of channels                         | 48  |
| Number of zones                            | 3   |
| Channel spacing                            | 12.5 kHz (analog)<br>25 kHz (digital)   |
| Operating voltage                          | 7.2 V   |
| Battery service life (5/5/90 duty cycle)   | approx. 12 hours at 1500 mAh;<br>approx. 16 hours at 2000 mAh;<br>approx. 16 hours at 1500 mAh;<br>approx. 22 hours at 2000 mAh;  |
| analog                                     |   |
| digital                                    |   |
| Standard battery                           | 1500 mAh (lithium-ion battery)<br>2000 mAh (lithium-ion battery)  |
| Frequency stability                        | ± 0.5 ppm   |
| Antenna impedance                          | 50 Ω  |
| Dimensions (H × W × D)                     | 108 × 54 × 29 mm  |
| Weight (with antenna and standard battery) | approx. 220 g   |

| Environmental conditions             |   |
|--------------------------------------|---|
| Operating temperature range          | -30 °C to +60 °C  |
| Storage temperature range            | -40 °C to +85 °C  |
| ESD                                  | IEC 61000-4-2 (Level 4),<br>± 8 kV (contact), ± 15 kV (air) |
| Protection against dust and moisture | IP54  |
| Shock and vibration resistance       | MIL-STD-810 G   |
| Relative humidity                    | MIL-STD-810 G   |

| Transmitter                       |   |
|-----------------------------------|---|
| Transmitting power                | VHF: 1 / 5 W<br>UHF: 1 / 4 W  |
| Modulation                        | 11K0F3E at 12.5 kHz<br>16K0F3E at 25 kHz                            |
| 4FSK digital modulation           | 12.5 kHz (data only): 7K60FXD<br>12.5 kHz (data and voice): 7K60FXW |
| Interfering signals and harmonics | - 36 dBm (< 1 GHz)<br>- 30 dBm (> 1 GHz)                            |
| Modulation limiting               | ± 2.5 kHz at 12.5 kHz<br>± 5.0 kHz at 25 kHz                        |
| Noise cancellation                | 40 dB at 12.5 kHz<br>45 dB at 25 kHz                                |
| Adjacent channel selectivity      | 60 dB at 12.5 kHz<br>70 dB at 25 kHz                                |
| Audio sensitivity                 | +1 dB to -3 dB  |
| Audio distortion                  | ≤ 5 %   |
| Digital vocoder type              | AMBE +2™  |
| Digital protocol                  | ETSI-TS102 361-1,2,3  |

| Receiver                            |   |
|-------------------------------------|---|
| Sensitivity (analog)                | 0.22 µV (typical) (12 dB SINAD)<br>0.4 µV (20 dB SINAD) |
| Sensitivity (digital)               | 0.22 µV / BER 5%  |
| Adjacent channel selectivity (ETSI) | 60 dB at 12.5 kHz<br>70 dB at 25 kHz                    |
| Intermodulation                     | 65 dB at 12.5/25 kHz                                    |
| Spurious response rejection (ETSI)  | 70 dB at 12.5/25 kHz                                    |
| Signal-noise ratio (S/N)            | 40 dB at 12.5 kHz<br>45 dB at 25 kHz                    |
| Nominal audio power output          | 0.5 W   |
| Audio distortion                    | ≤ 3 %   |
| Audio sensitivity                   | +1 dB to -3 dB  |
| Conducted spurious emission         | < -57 dBm   |

All technical information was determined at the factory and in accordance with the corresponding standards. Subject to change on the basis of continuous development.



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