

MD785i

DMR mobile radio



Higher sensitivity and frequency stability

Compared to the MD785, the MD785i has significantly improved performance. Its further developed technology increases both the range and the reliability.

Optimized GPS protocol

To accelerate the determination of the location of radios, the way the radio sends its GPS position has been significantly improved. As a result, more GPS information than before can be sent to the control center via a timeslot, provided only position data are required.

Communication via the accessory port

Users can access the option board using the application CPS (Customer Programming Software) to transfer data to external devices.

Communication using "wireless link"

The mobile radios can be connected to repeaters using a special UART cable to provide a "wireless link" for the transfer of digital services (voice, data or signaling). This function can be used in scenarios in which IP multi-site connection is not available due to Internet connection restrictions and the repeaters are connected wirelessly to expand the communications coverage.

Over the Air Encryption

Encryption of the signaling protects against unauthorized access to the repeater and interception of the connection data using a DMR scanner.



Technical Data MD785i

General data		Transmitter
Frequency range	UHF: 400–470 MHz VHF: 136 – 174 MHz	Transmitting power (adjustable) VHF: 1–25 W/1–50 W UHF: 1–25 W/1–45 W
Supported operating modes	▪ DMR Tier II in acc. with ETSI TS 102 361-1/2/3 ▪ Simulcast ▪ XPT Digital Trunking ▪ DMR Tier III in acc. with ETSI TS 102 361-1/2/3/4 ▪ Analog, MPT 1327	Modulation 11 KOF3E at 12.5 kHz 14 KOF3E at 20 kHz 16 KOF3E at 25 kHz
Number of channels	1024	4FSK digital modulation 12.5 kHz (data only): 7K60FXD 12.5 kHz (data and voice): 7K60FXW
Number of zones (Up to 256 channels in each zone)	64	Interfering signals and harmonics - 36 dBm (< 1 GHz) - 30 dBm (> 1 GHz)
Channel spacing	12.5 / 20 / 25 kHz (analog) 12.5 kHz (digital)	Modulation limiting ± 2.5 kHz at 12.5 kHz ± 4.0 kHz at 20 kHz ± 5.0 kHz at 25 kHz
Operating voltage	13.6 ± 15% V _{DC}	Noise cancellation 40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz
Max. power consumption (in stand by)	≤ 0.6 A	Adjacent channel selectivity 60 dB at 12.5 kHz 70 dB at 20 / 25 kHz
Max. power consumption (during reception)	≤ 2.0 A	Audio response (TIA-603D) +1 dB to -3 dB
Max. current consumption (during transmission)	1 W: ≤ 2 A 25 W: ≤ 8 A 45 W / 50 W: ≤ 12 A	Audio distortion ≤ 3 %
Frequency stability	± 0.5 ppm	Digital vocoder type AMBE +2™
Antenna impedance	50 Ω	
Dimensions (H x W x D)	174 x 60 x 200 mm	
Weight	1.7 kg	
LCD display	220 x 176 pixels, 262,000 colors, 2.0 inches, 4 rows	
Environmental conditions		Receiver
Operating temperature range	-30 °C to +60 °C	Sensitivity (analog) 0.22 µV (12 dB SINAD) 0.18 µV (typical) (12 dB SINAD) 0.35 µV (20 dB SINAD)
Storage temperature range	-40 °C to +85 °C	Sensitivity (digital) 0.22 µV / BER 5 %
ESD	IEC 61000-4-2 (Level 4) ±8V (Contact), ±15V (Air)	Adjacent channel selectivity TIA-603 65 dB at 12.5 kHz / 75dB at 20 and 25 kHz 60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz
Protection against dust and moisture	IP54	ETSI 60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz
Shock and vibration resistance	MIL-STD-810 C/D/E/F/G	Spurious response rejection TIA-603 75 dB at 12.5 / 20 / 25 kHz ETSI 70 dB at 12.5/20/25 kHz
Relative humidity	MIL-STD-810 C/D/E/F/G	Intermodulation TIA-603 75 dB at 20 / 25 kHz ETSI 70 dB at 20 / 25 kHz
GPS		Blocking TIA-603 ETSI 90 dB 84 dB
Time to first fix (TTFF)	< 1 Minute (cold start) < 10 seconds (warm start)	Signal-noise ratio (S/N) 40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz
Horizontal accuracy	< 5 meter	Nominal audio power output 3 W at 20 Ω (internal) 7.5 W at 8 Ω (external)
		Maximum audio power output 8 W at 20 Ω (internal) 20 W at 8 Ω (external)
		Audio distortion ≤ 3 %
		Audio response (TIA-603D) +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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Encryption features are optional and require the device to be configured separately; they are also subject to German and European export regulations.

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