Hytera
Respond & Achieve

MD785 / MD785G

DMR mobile radios

The MD785 and MD785G DMR mobile radios offer versatile digital functions that allow you to exchange information in all types of situations.
With their ergonomic design easy-to-operate user interface and remarkable quality, they are the ideal solution for your communication requirements; regardless of whether you are aiming to optimize the efficiency of your company or be able to respond to emergency situations at all times.

DMR
DIGITAL MOBILE RADIO ASSOCIATION

Radio

MD785
MD785G

DMR mobile radios

Highlights

Excellent voice transmission
Thanks to the simultaneous application of narrow band codecs and digital error correction, the MD785/MD785G offers you outstanding audio quality in loud environments and in boundary regions of the radio coverage.

Versatile – supports digital and analog operating modes
The MD785/MD785G has both an analog mode and a digital mode and is compatible with analog radio systems, as a consequence it is very easy for you to change to the digital age.
Along with conventional DMR (DMR Tier II), the radio also supports analog trunked radio as per MPT1327 and DMR trunked radio. In addition it can be used in Hytera XPT systems.

Improved utilization of the frequency spectrum
Thanks to the TDMA process, the MD785/MD785G enables you to assign the available bandwidth with double channel capacity. This has a clear mitigating effect on increasing spectrum scarcity.

Reliability and quality
The MD785/MD785G complies with the standards MIL-STD-810 C/D/E/F/G and meets the IP54 degree of protection. A high degree of reliability is assured even in harsh environments.

Versatile functionality
Besides the traditional communication functions, the MD785/MD785G features numerous digital and optional functions, including text messages, GPS location determination and a lone worker function.

Expansion interface
Thanks to the expansion interface, the range of functions offered by the MD785/MD785G can be expanded by significant key functions. Accessories and applications developed by partners can be connected to this interface.

Intuitive interface and key guidance
The high-resolution LCD screen offers a clear display, even under difficult light conditions. The large keyboard and ergonomic programmable keys facilitate efficient and productive communication.

Upgradeable software
Upgradeable software makes the use of new features possible. By altering the firmware-software, other digital and analog operating modes can be enabled, without the need for purchasing a new radio device.

Functions (excerpt)

Digital encryption
Encryption using encryption algorithm ARC4 (40 bit) in accordance with DMRA or optional algorithms AES128 and AES256 (128 and 256 bit) ensures secure communication.

Versatile voice communication
Thanks to digital signal transmission, the MD785/MD785G allows you to carry out different types of voice communication, including individual calls, group calls and simultaneous communication with all subscribers.

Data services
The MD785/MD785G offers you data services, such as sending text and group messages.

GPS (MD785G)
The MD785G supports GPS location determination and allows GPS location data to be sent as a text message. In addition, the distance and position of other GPS-enabled radios in the DMR radio system can be detected.

Roaming
The MD785/MD785G allows automatic cell re-selection (roaming) at all sites in multi-site systems.

Supplementary services
With the MD785/MD785G, you can utilize various services, such as radio check, remote monitor and call alert.

Various analog signaling types
Using the MD785/MD785G you can use, for example, selective calls, 2-tone and 5-tone dialing, HDC1200 as well as CTCSS/CDCSS.

Different menu languages
e.g. German, English, French, Spanish, Polish, Italian, Russian, Turkish, simplified and traditional Chinese, Korean.

Emergency call
The MD785/MD785G offers you several emergency call options, such as the concealed emergency call.

Powerful loudspeaker
For a clear audio output, the MD785/MD785G features a powerful 5-watt loudspeaker.

Standard accessories


Handheld micro-phone SM16A1


Handheld microphone holder and screws


Mounting clip BKR08


Cable protection POA33


Power cord PWC10


GPS antenna GPS04 (only MD785G)

Optional accessories (excerpt)


External speaker SM09D1


Table microphone SM10A1


Handheld microphone with dialing buttons SM19A1


Programming cable (USB) PC47


In-dash mounting kit (DIN standard) BRK15


External voltage supply PS22002


Mounting kit with IP67 operating head

The illustrations below are for reference purposes only. The products might differ from these illustrations.

Technical Data

General data	
Frequency range	VHF: 136 – 174 MHz UHF: 400 – 470 MHz
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
Channel capacity	1024
Number of zones	64 (with max. 16 channels each)
Channel spacing	12.5 / 20 / 25 kHz (analog) 12.5 kHz (digital)
Operating voltage	13.6 ± 15% V_{DC}
Max. power consumption (in stand by)	≤ 0.6 A
Max. power consumption (during reception)	≤ 2.0 A
Max. power consumption (during transmission)	5 W: ≤ 5 A 25 W: ≤ 8 A 45 W / 50 W: ≤ 12 A
Frequency stability	± 1.5 ppm
Antenna impedance	50 Ω
Dimensions (W × H × L)	174 × 60 × 200 mm
Weight	1,7 kg
LCD display	220 × 176 pixel, 262,000 colors, 2.0 inch, 4 lines

Ambient data	
Operating temperature range	- 30 °C to + 60 °C
Storage temperature range	- 40 °C to + 85 °C
Dust and water protection	IP54
Shock and vibration resistance	MIL-STD-810 C/D/E/F/G
Relative humidity	MIL-STD-810 C/D/E/F/G

GPS (MD785G)	
Time to first position recognition (TTFF) cold start	< 1 minute
Time to first position recognition (TTFF) warm start	< 10 seconds
Horizontal accuracy	< 10 meter

Transmitter	
Transmitting power (adjustable)	VHF: 1 – 25 W / 5 – 25 W / 5 – 50 W UHF: 5 – 25 W / 5 – 45 W
Modulation	11 K0F3E at 12.5 kHz 14 K0F3E at 20 kHz 16 K0F3E at 25 kHz
4FSK digital modulation	12.5 kHz (data only): 7K60FXD 12.5 kHz (data and voice): 7K60FXW
Interfering signals and harmonics	- 36 dBm (< 1 GHz) - 30 dBm (> 1 GHz)
Modulation limiting	± 2.5 kHz at 12.5 kHz ± 4.0 kHz at 20 kHz ± 5.0 kHz at 25 kHz
Hum and noise	40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz
Adjacent channel selectivity	60 dB at 12.5 kHz 70 dB at 20 / 25 kHz
Audio sensitivity	+ 1 to - 3 dB
Nominal audio distortion	≤ 3 %
Digital vocoder type	AMBE +2™

Receiver	
Sensitivity (analog)	0.3 µV (12 dB SINAD) 0.22 µV (typical) (12 dB SINAD) 0.4 µV (20 dB SINAD)
Sensitivity (digital)	0.3 µV / BER 5 %
Adjacent channel selectivity TIA-603 ETSI	 65 dB at 12.5 kHz / 75 dB at 20 / 25 kHz 60 dB at 12.5 kHz / 70 dB at 20 / 25 kHz
Spurious response rejection TIA-603 ETSI	 75 dB at 12.5 / 20 / 25 kHz 75 dB at 12.5 / 20 / 25 kHz
Signal-to-noise ratio (S/N)	40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz
Nominal audio power output	Internal 3 W at 20 Ω, external 7.5 W at 8 Ω
Nominal audio distortion	≤ 3 %
Audio sensitivity	+ 1 to - 3 dB
Conducted spurious emission	- 57 dBm

All technical specifications were tested according to the relevant standards.
Subject to change on the basis of continuous development.

Your Hytera partner:

Further information can be found at:
www.hytera-mobilfunk.com

Contact us if you are interested in sales, distribution or application partnership: ✉ info@hytera.de

SGS certificate DE11/81829313

Hytera
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Hytera Mobilfunk GmbH

Address: Fritz-Hahne-Straße 7, 31848 Bad Münder, Germany
Tel.: + 49 (0)5042 / 998-0 **Fax:** + 49 (0)5042 / 998-105
E-mail: info@hytera.de | **www.hytera-mobilfunk.com**

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