Hytera
Respond & Achieve



MD785 / MD785G

Digital mobile radios



The MD785/MD785G mobile radios offer versatile digital functions that allow the exchange of information in all manner of situations, improving operations and incident response rates

With their ergonomic design, easy to operate interface and remarkable quality, the MD785/MD785G are the ideal solution for for in-vehicle or desktop communication requirements.

DMR
DIGITAL MOBILE RADIO ASSOCIATION

www.hytera.co.uk

Radio

MD785
MD785G

Digital mobile radios









Highlights

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

Supports digital and analogue operating modes
The MD785/MD785G operates in both analogue and digital modes, and is compatible with analogue radio systems, ensuring a smooth and seamless migration between the two technologies.
Along with conventional DMR (DMR Tier II), the radio also supports analogue trunked radio as per MPT1327 and DMR (Tier III) trunked radio. In addition, it can be used with Hytera XPT systems.

Improved utilisation 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 MIL-STD-810 C/D/E/F/G standards, and meets the IP54 degree of protection. Because of this, a high degree of reliability is ensured, even in harsh environments.

Versatile functionality
As well as traditional communication functions, the MD785/MD785G features numerous digital and optional services, including text messages, GPS location determination and a lone worker function (MD785G only).

Expansion interface
Thanks to interface expansion, the wide range of functionality offered by the MD785/MD785G can be increased further, through programmable key functions. Accessories and applications developed by Hytera partners can be connected to this interface with ease.

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
Keep your device updated with the latest software via your Hytera dealer to access the latest features, or update with chargeable licenses to access Tier III trunking and enhanced encryption.

Functions

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 analogue 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 and 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.

- DMR services
  - Remote monitor
  - Radio enable
  - Radio disable
  - Call alert



In the box


Handheld microphone SM16A1


Mounting clip BKR08


Replacement fuse POA33


Power cord PWC10

Optional accessories


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

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 • Analogue, MPT 1327
Channel capacity	1024
Number of zones	64 (with max. 16 channels each)
Channel spacing	12.5 / 20 / 25 kHz (analogue) 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 (analogue)	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.