Hytera
Respond & Achieve

PD785 / PD785G

DMR handheld radios

The PD785 and PD785G (variant with GPS) handheld radios are designed according to the DMR standard and are characterized by their ergonomic design, extensive digital functions and high quality. They make communication an exciting experience and allow you to quickly react to new situations.

DMR
DIGITAL MOBILE RADIO ASSOCIATION

www.hytera-mobilfunk.com

Radio

PD785
PD785G

DMR handheld radios

Highlights

Improved use of the audio frequency spectrum
Thanks to the TDMA process, the PD785/PD785G enables you to assign the available bandwidth with double channel capacity. This has a clear mitigating effect on increasing spectrum scarcity.

Ergonomic design
Hytera's PD785 and PD785G (variant with GPS) handheld radios offer ease of operation and reliability, which is indispensable in critical situations. The worldwide patented industry and antenna design makes them convenient to use and provides remarkable GPS properties.

Versatile services
In addition to conventional communication services, the PD785/PD785G offers extensive data services and functions, such as text messages, scanning, emergency calls, Man Down alarm (optional) and lone worker functions.

Reliability
The PD785/PD785G meets all requirements of the open ETSI standard DMR, as well as of MIL810-C/D/E/F/G and degree of protection IP67. The device series thus offers excellent features even under harsh operating conditions.

Ease of use
Large pushbuttons ensure the handheld radio is easy and convenient to use. The large TFT color display enables good readability even when light conditions are poor. More than 20 programmable keys allow quick access to the various services and functions.

Powerful battery
Compared to the analog technology and the FDMA process, with TDMA the battery service life can be improved by approximately 40%.

Excellent voice quality
With the combined application of the narrow band codec and digital technologies for error correction, the PD785/PD785G ensures excellent voice quality even in loud environments and in peripheral areas of radio coverage.

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)

- Optional analog or digital operation
- Versatile voice calls: Individual call, group call, broadcast call, emergency call
- GPS functions (PD785G only)
  - Retrieve GPS position data
  - Send GPS text messages
  - Display distance and position of other GPS radios
- Data services
  - Text messages
  - Group text messages
  - Control of the radio via API
- Different analog dialing methods
  - HDC1200, DTMF, 2-tone and 5-tone dialing
  - Squelch procedure/tone call CTCSS/CDCSS
- Supplementary services, radio check, remote monitor, call alert, radio disable/enable
- Different menu languages available (e.g. German, English, French, Spanish, Polish, Italian, Russian, Turkish, simplified and traditional Chinese, Korean)
- One-touch functions (incl. text messages, voice calls and supplementary services)
- Scanning
  - of analog voice and signaling
  - of digital voice and data
  - mixed scanning of analog and digital activities
- Automatic cell re-selection (roaming) in IP multi-site systems
- Analog scrambling
- Secure encryption with encryption algorithm ARC4 (40 bit) in accordance with DMRA or with optional algorithms AES128 and AES256 (128 and 256 bit)
- Upgradeable software

Separate control buttons
The two control buttons on the handheld radio are separated from each other by the antenna. This makes it easier to use the device while wearing gloves.

Large color display
The high-resolution, transflective 1.8" LCD color display offers good readability even under very bright light conditions.

Ergonomic keypad
The robust handheld radios have a large keypad and are easy to use even under difficult operating conditions.

Integrated antenna
The integrated radio and GPS antenna provides improved convenience and remarkable GPS features.

Robustness and reliability
The devices meet the requirements of MIL-STD-810 C/D/E/F/G-standards and passed the HALT-tests (Highly Accelerated Life Test).

Dustproof and waterproof
The PD705/PD705G is waterproof and dustproof in accordance with an IP67 degree of protection, which means it is capable of withstanding a water depth of one meter for at least half an hour.

Standard accessories


Lithium-ion battery with 2000 mAh BL2006


Charging station CH10A04


Power adapter PS1018


Antenna


Hand strap (leather) RO04


Belt clip BC19

Optional accessories (excerpt)


Lithium-ion battery with 2500 mAh BL2503


MCU quick charger MCA06


Programming cable (USB/serial) PC38


Waterproof microphone (IP57) SM18N2


D-earset with PTT microphone EHN12


Concealed headset (3 cables, beige) EAN17

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 • DMR Tier III in acc. with ETSI TS 102 361-1/2/3/4 • Analog, MPT 1327
Channel capacity	1024
Zone capacity	64 (with up to 16 channels each)
Channel spacing	12.5 / 20 / 25 kHz (analog) 12.5 kHz (digital)
Operating voltage	7.4 V (nominal)
Standard battery	2000 mAh (lithium-ion battery)
Battery service life (analog) (5-5-90 operating cycle, high transmitting power, standard battery)	VHF: ca. 11 h / 10 h (GPS operation) UHF: ca. 13.5 h / 12 h (GPS operation)
Battery service life (digital) (5-5-90 operating cycle, high transmitting power, standard battery)	VHF: ca. 13.5 h / 12 h (GPS operation) UHF: ca. 15.5 h / 14 h (GPS operation)
Frequency stability	± 1.5 ppm
Antenna impedance	50 Ω
Dimensions (H × W × D) (with standard battery, without antenna)	125 × 55 × 37 mm
Weight (with antenna and standard battery)	355 g
LCD display	160 × 128 pixels, 65,536 colors, 4.57 cm, 4 lines

Ambient data	
Operating temperature range	- 30 °C to + 60 °C
Storage temperature range	- 40 °C to + 85 °C
ESD	IEC 61000-4-2 (level 4), ± 8 kV (contact), ± 15 kV (air)
Dust and water protection	IP67
Shock and vibration resistance	MIL-STD-810 C/D/E/F/G
Relative humidity	MIL-STD-810 C/D/E/F/G

GPS (PD785G only)	
Time to first fix (TTFF) cold start	< 1 minute
Time to first fix (TTFF) warm start	< 10 seconds
Horizontal accuracy	< 10 meters

Transmitter	
Transmitting power	VHF: 1 / 5 W UHF: 1 / 4 W
Modulation	11 KΦF3E at 12.5 kHz 14 KΦF3E at 20 kHz 16 KΦF3E at 25 kHz
4FSK digital modulation	12.5 kHz (data only): 7K6ΦFXD 12.5 kHz (data and voice): 7K6ΦFXW
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 dB to - 3 dB
Nominal audio distortion	≤ 3%
Digital vocoder type	AMBE++

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	 60 dB at 12.5 kHz / 70 dB at 20 / 25 kHz 60 dB at 12.5 kHz / 70 dB at 20 / 25 kHz
Intermodulation TIA-603 ETSI	 70 dB at 12.5 / 20 / 25 kHz 65 dB at 12.5 / 20 / 25 kHz
Spurious response rejection TIA-603 ETSI	 70 dB at 12.5 / 20 / 25 kHz 70 dB at 12.5 / 20 / 25 kHz
Hum and noise	40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz
Nominal audio power output	0.5 W
Nominal audio distortion	≤ 3 %
Audio sensitivity	+ 1 dB 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

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