



# PD785 / PD785G

DMR hand-held radios

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



# Radio

## PD785 PD785G

DMR hand-held radios



### Highlights

#### Improved use of the radio spectrum

Thanks to the TDMA process the PD785/PD785G allows an assignment of the available bandwidth with double channel capacity. This results in a clear relief of the increasing spectrum scarcity.

#### Ergonomic design

The hand-held radios PD785 and PD785G (variant with GPS) by Hytera offer high ease of operation and reliability which is indispensable in critical situations. The worldwide patented industry and antenna design ensures ease of operation and remarkable GPS features.

#### Versatile services

In addition to conventional communication services, PD785/PD785G offers functions such as rich-data services, test messages, scanning, emergency callsman down function and lone worker function (optional).

#### Reliability

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 rough operating conditions.

#### Ease of use

Large pushbuttons allow an easy and comfortable use of the hand-held radio. The large TFT colour display provides a good readability even under difficult light conditions. More than 20 programmable keys allows quick access to the various services and functions.

#### Powerful battery

Compared to the analog technology using FDMA, with TDMA the battery life can be improved by approx. 40%.

#### Excellent voice quality

With the combined application of the narrow band codex and digital technologies for error correction the PD785/785G ensures an excellent voice quality even in loud environment and in peripheral areas of radio coverage.



## Functions (excerpt)

- Optionally analog or digital operation
- Versatile voice calls: Individual call, group call, broadcast call, emergency call
- GPS functions (PD785G only)
  - Query GPS position data
  - Send GPS text messages
- 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
- Additional services, radio check, remote monitor, call alert, radio disable/enable
- Different menu languages available (among others 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 signalling
  - of digital voice and data
  - mixed scanning of analog and digital activities
- Automatic cell re-selection (roaming) in IP multi-site systems
- Analogue scrambling and digital encryption for voice and data using the Advanced Encryption Standard (AES) and ARCFOUR (ARC4) processes
- Upgradeable software

The features marked by \* will be available in future versions of the PD785/PD785G.

## Innovative design

### Separate control buttons

The two control buttons are separated from each other by the antenna. This facilitates easy operation, even with gloves.

### Large colour display

The high-resolution, transfective 1.8" LCD colour display provides a good readability even under very bright lighting conditions.

### Ergonomic keypad

The robust hand-held radios have a large keypad and are easy to operate even under difficult operating conditions.



### Integrated antenna

The integrated radio and GPS antenna provides improved comfort 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).

### Dust and waterproof

PD785/PD785G meets the requirements of degree of protection IP67 and passed the corresponding immersion test: up to 30 minutes in a water depth of 1 meter.

## Standard accessories



## Optional accessories (excerpt)



The illustrations shown above are only for reference purposes. The products themselves may vary from these representations.

## Technical Data

General data	
Frequency ranges	UHF1: 400 – 470 MHz UHF2: 450 – 520 MHz UHF3: 350 – 400 MHz VHF: 136 – 174 MHz
Channel capacity	1024
Number of zones	64 (each with max. 16 channels)
Channel spacing	12.5 / 20 / 25 kHz
Operating voltage	7.4 V (nominal)
Battery	2000 mAh (Lithium-ion battery)
Battery service life (5-5-90 operating cycle, high transmitting power)	<b>Analogue:</b> UHF1: 13.5h / 12h (G) UHF2 / UHF3: 12.5h / 11h (G) VHF: 11h / 10h (G) <b>Digital:</b> UHF1: 15.5h / 14h (G) UHF2 / UHF3: 14.5h / 12.5h (G) VHF: 13.5h / 12h (G)
Frequency stability	± 1.5 ppm
Antenna impedance	50 Ω
Dimensions (H×W×D) (with standard battery, without antenna)	125 × 55 × 37 mm
Weight (with standard battery and antenna)	355 g
LCD monitor	160 × 128 Pixel, 65,536 colours, 4,57 cm, 4 rows

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 %
Blocking	TIA-603: 80 dB, ETSI: 84 dB
<b>Adjacent channel selectivity</b> 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: 70 dB at 12.5 / 20 / 25 kHz ETSI: 65 dB at 12.5 / 20 / 25 kHz
Spurious response rejection	TIA-603: 70 dB at 12.5 / 20 / 25 kHz ETSI: 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 to -3 dB
Conducted spurious emission	< -57 dBm

Transmitter	
RF transmitting power	VHF high capacity: 5 W VHF low capacity: 1 W UHF1 / UHF2 / UHF3 high capacity: 4 W UHF1 / UHF2 / UHF3 low capacity: 1 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
Noise suppression	-40 dB at 12.5 kHz -43 dB at 20 kHz -45 dB at 25 kHz
Capacity of the adjacent channel	60 dB at 12.5 kHz, 70 dB at 20 / 25 kHz
Audio sensitivity	+1 to -3 dB
Audio distortion	≤ 3 %
Digital vocoder type	AMBE ++ / SELP
Digital protocol	ETSI-TS102 361-1, 2 & 3

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)
American military standard	MIL-STD-810 C / D / E / F / G
Protection against dust and moisture	Degree of protection IP67
Shock and vibration resistance	According to MIL-STD-810 C / D / E / F standards
Relative humidity	According to MIL-STD-810 C / D / E / F standards

GPS (PD785G)	
Time to first fix (TTFF) cold start-up	< 1 minute
Time to first fix (TTFF) warm start	< 10 seconds
Horizontal precision	< 10 meters

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

Your Hytera partner:



### Hytera Mobilfunk GmbH

Address: Fritz-Hahne-Straße 7, 31848 Bad Münder, Germany  
Phone: +49 (0)5042 / 998-0 Fax: +49 (0)5042 / 998-105 E-Mail: info@hytera.de  
www.hytera.de/en

For more information visit: [www.hytera.de/en](http://www.hytera.de/en)

Contact us when you are interested in buying Hytera products, sales partnership or application partnership: ✉ [info@hytera.de](mailto:info@hytera.de)



SGS Certificate DE11/81829313

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