



# 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.



# 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, transfective 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).

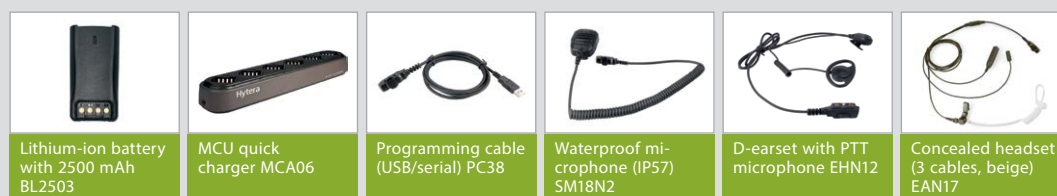
### Dustproof and waterproof

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



## Optional accessories (excerpt)



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<br>UHF: 400 - 470 MHz   |
| Supported operating modes   | <ul style="list-style-type: none"> <li>DMR Tier II in acc. with ETSI TS 102 361-1/2/3</li> <li>Simulcast</li> <li>DMR Tier III in acc. with ETSI TS 102 361-1/2/3/4</li> <li>Analog, MPT 1327</li> </ul> |
| Channel capacity  | 1024   |
| Zone capacity   | 64 (with up to 16 channels each)   |
| Channel spacing   | 12.5 / 20 / 25 kHz (analog)<br>12.5 kHz (digital)  |
| Operating voltage   | 7.4V (nominal)   |
| Standard battery  | 2000 mAh (lithium-ion battery)   |
| Battery service life (analog)<br>(5-5-90 operating cycle, high transmitting power, standard battery)  | VHF: ca. 11 h / 10 h (GPS operation)<br>UHF: ca. 13.5 h / 12 h (GPS operation)   |
| Battery service life (digital)<br>(5-5-90 operating cycle, high transmitting power, standard battery) | VHF: ca. 13.5 h / 12 h (GPS operation)<br>UHF: ca. 15.5 h / 14 h (GPS operation)   |
| Frequency stability   | ± 1.5 ppm  |
| Antenna impedance   | 50 Ω   |
| Dimensions (H x W x D) (with standard battery, without antenna)                                       | 125 x 55 x 37 mm   |
| Weight (with antenna and standard battery)  | 355 g  |
| LCD display   | 160 x 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  |

Your Hytera partner:



### 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](http://www.hytera-mobilfunk.com)

| Transmitter                       |   |
|-----------------------------------|---|
| Transmitting power                | VHF: 1 / 5 W<br>UHF: 1 / 4 W  |
| Modulation                        | 11 KΦF3E at 12.5 kHz<br>14 KΦF3E at 20 kHz<br>16 KΦF3E at 25 kHz    |
| 4FSK digital modulation           | 12.5 kHz (data only): 7K6ΦFXD<br>12.5 kHz (data and voice): 7K6ΦFXW |
| Interfering signals and harmonics | -36 dBm (< 1 GHz)<br>-30 dBm (> 1 GHz)                              |
| Modulation limiting               | ± 2.5 kHz at 12.5 kHz<br>± 4.0 kHz at 20 kHz<br>± 5.0 kHz at 25 kHz |
| Hum and noise                     | 40 dB at 12.5 kHz<br>43 dB at 20 kHz<br>45 dB at 25 kHz             |
| Adjacent channel selectivity      | 60 dB at 12.5 kHz<br>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)<br>0.22 μV (typical) (12 dB SINAD)<br>0.4 μV (20 dB SINAD)      |
| Sensitivity (digital)                                  | 0.3 μV / BER 5 %   |
| <b>Adjacent channel selectivity</b><br>TIA-603<br>ETSI | 60 dB at 12.5 kHz / 70 dB at 20 / 25 kHz<br>60 dB at 12.5 kHz / 70 dB at 20 / 25 kHz |
| <b>Intermodulation</b><br>TIA-603<br>ETSI              | 70 dB at 12.5 / 20 / 25 kHz<br>65 dB at 12.5 / 20 / 25 kHz                           |
| <b>Spurious response rejection</b><br>TIA-603<br>ETSI  | 70 dB at 12.5 / 20 / 25 kHz<br>70 dB at 12.5 / 20 / 25 kHz                           |
| Hum and noise  | 40 dB at 12.5 kHz<br>43 dB at 20 kHz<br>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.

Distributore Autorizzato per l'Italia:

**ADVANTEC**  
**Advantec Srl**  
 Via Caduti per la Libertà, 13  
 10060 Pinasca TO - Italy  
 Tel. +39 0121326770  
 info@advantec.it - www.advantec.it



Hytera Mobilfunk GmbH reserves the right to modify the product design and the specifications. In case of a printing error, Hytera Mobilfunk GmbH does not accept any liability. All specifications subject to change without notice.

Encryption features are optional and have to be configured separately; they also are subject to German and European export regulations.

**HYT** Hytera are registered trademarks of Hytera Co. Ltd. ACCESSNET® and all derivatives are protected trademarks of Hytera Mobilfunk GmbH. © 2014 Hytera Mobilfunk GmbH. All rights reserved.