



PD7 Series ATEX

Intrinsically safe DMR-handheld radio

For many experts two-way radios represent an indispensable tool in their day-to-day work. For those working in environments containing explosive gases, combustible dust, or in the mining industry, safety is of particular importance.

With their outstandingly robust design and intrinsic safety The DMR PD715 Ex and PD795 Ex handheld radios from Hytera guarantee reliable communication in such hazardous environments.



Radios

PD715 EX
PD795 EX

DMR handheld radios (ATEX)



The PD715 Ex and PD795 Ex handheld radios are compliant with the open ETSI standard for DMR. Compliance with the European ATEX Directives, the FM standard, the IEC standard as well as its outstandingly robust design, guarantee reliable communication in hazardous environments where explosive gases and combustible dust are likely to occur.

Highlights

Durability

Besides meeting the requirements of the European ATEX and IEC Directives, as well as the North-American FM standard, the two-way radios are also compliant with the MIL-STD-810C/D/E/F/G standard and are dust and water-resistant to protection class IP67. Both radios are therefore outstandingly suitable for safe and reliable use even where the ambient conditions are potential hazardous.

Fail-safe design

The use of batteries or accessory components with a lower level of protection automatically triggers an alarm so that errors of this type cannot occur.

Plastic encapsulation

Both the radios and their batteries are encapsulated in plastic, so that all internal switches are protected from and sealed against hazardous explosive gases and dust particles.

High-strength LCD protective cover (PD795 Ex)

The high-strength LCD protective cover is extremely scratch-resistant and would even withstand being struck by a 1-kg hammer.

Innovative battery latch

The patented battery locking system ensures that if the radio falls onto a hard surface, the battery cannot fall out.

Integrated GPS as standard

The integral GPS module means that both radios are able to send location data to a dispatcher system, for example. Dispatchers can evaluate this information and use functions such as geofencing, radio localization and GPS tracking.

Upgradeable software

The 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)

- Various operating modes, choice between conventional analog or digital radio (DMR), as well as MPT, XPT and DMR trunked radio.
- Versatile voice calls: Individual call, group call, broadcast call, emergency call
- GPS functions (retrieving and sending location data)
- Data services (text messages, group text messages, control of the radio via API)
- Various 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 (PD795 Ex)
- One-touch functions (incl. text messages, voice calls and supplementary services)
- Scanning
- Automatic cell re-selection (roaming) in IP multi-site systems
- Secure encryption with encryption algorithm ARC4 (40 bit) in accordance with DMRA or with optional algorithms AES128 and AES256 (128 and 256 bit)

ATEX certification

All radios used in potentially explosive environments must comply with the European Union's ATEX directives. The PD715 Ex and the PD795 Ex are compliant with the ATEX Directives:

ATEX Gas Protection: II 2 G Ex ib IIC T4

| | |
|-----|--|
| II | Device group (gases, vapors, mist and dust) |
| 2 | Device category, protection level: very high |
| G | for explosible atmospheres (gas, vapor, mist) |
| Ex | explosion-protected, ATEX and IECEx-certified |
| ib | Intrinsic safety protection, transmitting power and surface temperature are restricted |
| IIC | Explosion group (Acetylene, Hydrogen) |
| T4 | Temperature class, surface temperature limited to 135°C |

ATEX Dust Protection: II 2 D Ex ib IIIC T120 °C

| | |
|--------|--|
| II | Device group (gases, vapors, mist and dust) |
| 2 | Device category, protection level: very high |
| D | for explosible atmospheres (dust) |
| Ex | explosion-protected, ATEX and IECEx-certified |
| ib | Intrinsic safety protection, transmitting power and surface temperature are restricted |
| IIIC | Explosion group IIIC (coal dust, metal dust) |
| T120°C | Temperature class, surface temperature limited to 120°C |

ATEX Protection for Mining Application: I M2 Ex ib I

| | |
|----|--|
| I | Device group (mining) |
| M2 | Device category: methane and dust, protection level: very high |
| Ex | explosion-protected, ATEX and IECEx-certified |
| ib | Intrinsic safety protection, transmitting power and surface temperature are restricted |
| I | Explosion group I (methane) |



Ergonomic product design

Even in low ambient light situations the PD795 Ex display is easy to see. The big keys and non-slip surface on both radio models ensure that they can be reliably and safely operated, even when wearing gloves.

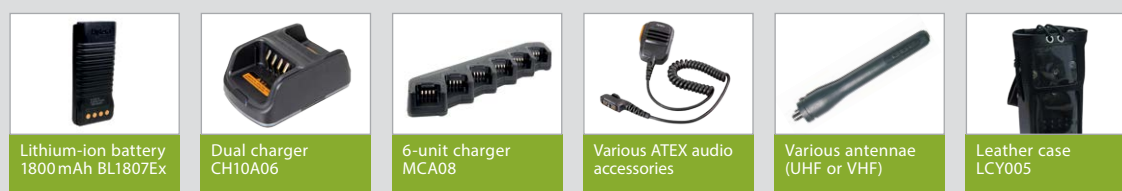
Dustproof and waterproof

The two radios are resistant to water and dust in accordance with protection class IP67 and can therefore withstand a water depth of one meter for at least half an hour.

Different digital and analog operating modes

In addition to conventional DRM radio (DMR Tier II) and analog radio, both radios support operation in DMR trunked radio (DMR Tier III), XPT Digital Trunking, Simulcast and MPT 1327.

Available 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 / UHF 400 – 470 MHz |
| Supported operating modes | <ul style="list-style-type: none"> 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 (Up to 16 channels in each zone) | 16 (PD715 Ex) 64 (PD795 Ex) |
| Channel spacing | 12.5 / 20 / 25 kHz (analog) 12.5 kHz (digital) |
| Operating voltage | 7.4V (nominal) |
| Standard battery | 1800 mAh (lithium-ion battery) |
| Battery service life (5-5-90 duty cycle, high transmitting power, standard battery) | PD715 Ex: <ul style="list-style-type: none"> approx. 14 h (analog) approx. 17 h (digital) PD795 Ex: <ul style="list-style-type: none"> approx. 13 h (analog) approx. 15 h (digital) |
| Frequency stability | ± 1.5 ppm |
| Antenna impedance | 50 Ω |
| Dimensions (H × B × T, without antenna) | 141 x 55 x 37 mm (PD715 Ex) 141 x 55 x 39 mm (PD795 Ex) |
| Weight (with antenna and standard battery) | 485 g (PD715 Ex) 495 g (PD795 Ex) |
| LCD display (only PD795 Ex) | 1.8 inch, 160 × 128 pixel, 65,536 colors |
| Programmable keys | 3 (PD715 Ex) / 5 (PD795 Ex) |
| Environmental conditions | |
| Operating temperature range | -20 °C to +50 °C |
| Storage temperature range | -40 °C to +85 °C |
| ESD | IEC 61000-4-2 (Level 4), ± 8 kV (contact), ± 15 kV (air) |
| Protection against dust and moisture | IP67 |
| Shock and vibration resistance | MIL-STD-810 C/D/E/F/G |
| Relative humidity | MIL-STD-810 C/D/E/F/G |
| Explosion protection | Gas: II 2G Ex ib IIC T4 Dust: II 2D Ex ib IIIC T120°C IP5x Mine: I M2 Ex ib I |
| GPS | |
| Time to first position fix (TTFF) | < 1 Minute (cold start) < 10 seconds (warm start) |
| Horizontal accuracy | < 10 meter |

Your Hytera partner:



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| Transmitter | |
|--|--|
| Transmitting power | 1 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 dB at - 3 dB |
| 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 | 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 |
| Signal-noise ratio (S/N) | 40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz |
| Nominal audio power output | 0.5 W |
| Audio distortion | ≤ 3 % |
| Audio sensitivity | + 1 dB at - 3 dB |
| Conducted spurious emission | < -57 dBm |

All technical information was determined at the factory and in accordance with the corresponding standards. Subject to change on the basis of continuous development.

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SGS certificate DE11/81829313

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

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