Hytera
Respond & Achieve

PD7 Series ATEX

Intrinsically-safe DMR handheld radio

For many workers, two-way radios are an indispensible tool. For those working in environments containing explosive gases, combustible dust or mining vapours, they are safety critical.

With their market leading, robust design and intrinsic safety, the PD715Ex and PD795Ex handheld radios from Hytera guarantee reliable communication in the most hazardous of environments.

www.hytera.co.uk

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 impressive, robust design, guarantee reliable communication, even 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, these two-way radios are 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 rugged and long lasting to keep up with you in tough conditions.

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. A full intrinsically safe accessory portfolio is available to improve your user experience.

Meticulous encapsulation
Both the radios and their batteries are encapsulated, 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 can 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 detach.

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

Upgradeable software
Upgradeable software future proofs your purchase an enables further updates. Access enhanced encruption and Hytera DMR Trunking (Tier III) via chargeable licenses.

In-built safety features
As well as GPS location services, both radios also offer lone worker, man down and emergency mode to help safeguard the workforce.

Functions

- Various operating modes, choice between conventional analogue 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 analogue 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-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 analogue operating modes

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

In the box

Lithium-ion battery 1800 mAh BL1807Ex

MCU Rapid Rate Single Charger CH10A04

Universal Standard Switching Power Adapter PS1044

Optional accessories

Various ATEX audio accessories

Various antennae (UHF or VHF)

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 (via chargeable licence) in acc. with ETSI TS 102 361-1/2/3/4 • Analogue, 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 (analogue) 12.5 kHz (digital)
Operating voltage	7.4 V (nominal)
Standard battery	1800 mAh (lithium-ion battery)
Battery life (5-5-90 duty cycle, high transmitting power, standard battery)	PD715 Ex: • approx. 14 h (analogue) • approx. 17 h (digital) PD795 Ex: • approx. 13 h (analogue) • 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

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 (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	 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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Further information can be found at:
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Encryption features are optional and have to be configured separately. They are also subject to European export regulations.

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Ref. no: PD7A_EN_017D_050117