WORK
SAFER
PROTECT & ENABLE
ANYWHERE & ANYTIME

Hytera
Respond & Achieve

For more information on the PD715IS/PD75IS Series radios, please visit **www. hytera.co.uk**

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Hytera

PD715IS/PD795IS

Intrinsically Safe Digital Portable Two-Way Radio

- World's First Intrinsically Safe DMR Radio
- ATEX/IECEx/FM/CSA/CQST IIC Certificated
- Designed for Hazardous Working Environments

DMR DIGITAL MOBILE RADIO ASSOCIATION · Ex · FM C US APPROVED · IECEx

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Whether on an oil rig, in a coal-mine, gas station or any other potentially explosive working environment, investing in safe and reliable communications is paramount. Hytera deeply understands the challenges for users in hazardous and harsh environments.

In order to meet the increasing requirements of intrinsically safe and reliable communications, Hytera brings you PD715IS/PD795IS, the ia explosion-proof DMR radio.

PD715IS/PD795IS
DESIGNED FOR THE MISSION

Hytera PD715IS/PD795IS Intrinsically Safe Digital Portable Two-Way Radio is designed to comply with the highest grade "ia"

PD715IS/PD795IS works in environments which contain various long-standing explosive mixed gases, even coal mine methane. Such places include but not limited to coal mine, gas stations, oil platforms, chemical plants, flour mills, airport and other inflammable or explosive conditions.

Oil & Gas

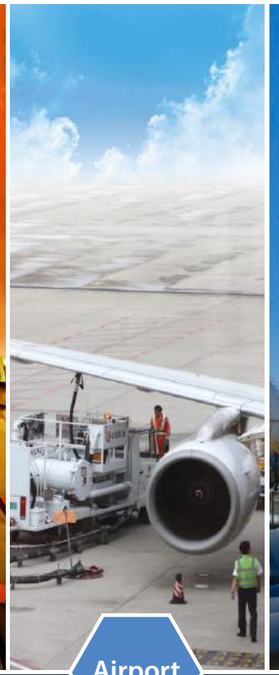
Working environment within the oil & gas industries often contain flammable and explosive gases and liquids, putting the workers at risk. Therefore, reliable and high explosion-proof radios are required.

Mining

Mining industry environment is very complex. It always contains various long-standing explosive gases and dusts. Especially the methane in coal mine makes the environment very hazardous. Therefore, reliable and safe communications are in urgent need. Hytera PD715IS/PD795IS ia explosion-proof radio can meet the demands of a challenging environment.

Fire & Rescue

A fire accident will produce smokes, dusts, and even explosive and toxic gases, which bring high risks for communications of fire rescue. Hytera ATEX radios used in this working environment can provide effective and safe communication services to the firefighters.



Airport

Airports are complex facilities where effective and reliable communications are of great importance. And there is a risk of explosion because of the potential exposure to fuel. Hytera ATEX radios are used in areas where workers and on-site fire crews are in close proximity to aviation fuel to keep them safe.

Chemical Plant

Flammable gases, liquids and solids are converted and processed in many different processes in the chemical industry. These processes may give rise to explosive mixtures.

ia M1

Intrinsic safety (IS) is a protection technique for safe operation of electrical equipment in hazardous areas by limiting the energy, electrical and thermal, available for ignition. "ia" is the strictest explosion-proof standard of intrinsic safety; it lets PD795IS work in every type of hazardous and harsh places which contain various long-standing explosive mixed gases and dusts.

ia

"ia" is the highest level of intrinsic safety, which means the circuit has three protective measures. An "ia" radio be used in zone 0/1/2 areas, allowing for the occurrence of two faults during operation.

M1

Methane and mine powder are the main risks in coal mines. PD795IS has the highest level of protection. It is unlikely to become an ignition source in normal operation. During expected malfunctions or during rare malfunctions, it provides safe instant communication services even in the presence of an outbreak of gas.

GAS

II 1G Ex ia IIC T3

- II — Equipment group: I: Mining; II: Other Environments(non-mining: chemical industrials, oil refineries,etc.)
- 1G — Explosive atmospheres: G: Gases, vapors and mist; D: Dusts
- Ex — Explosion-proof Standard: EU ATEX directive and IECEx standards
- ia — Level of Protection: ia: Intrinsically safe (Zone 0/1/2); ib: Intrinsically safe (Zone 1/2)
- IIC — Gas group: I: Methane(Mining); IIA: Propane; IIB: Ethylene; IIC: Acetylene, hydrogen (Hazard Level: IIC>IIB>IIA)
- T3 — Temperature Class: T1: 450°C; T2: 300°C; T3: 200°C; T4: 135°C; T5: 100°C; T6: 85°C

Classification for hazardous places
1: Very high level(zone 0 or zone 20)
2: High level(zone 1 or zone 21)
3: Normal level(zone 2 or zone 22)
Zone 0: present continuously
Zone 1: present intermittently
Zone 2: present abnormally

DUST

II 1D Ex ia IIIC T160 IP5X

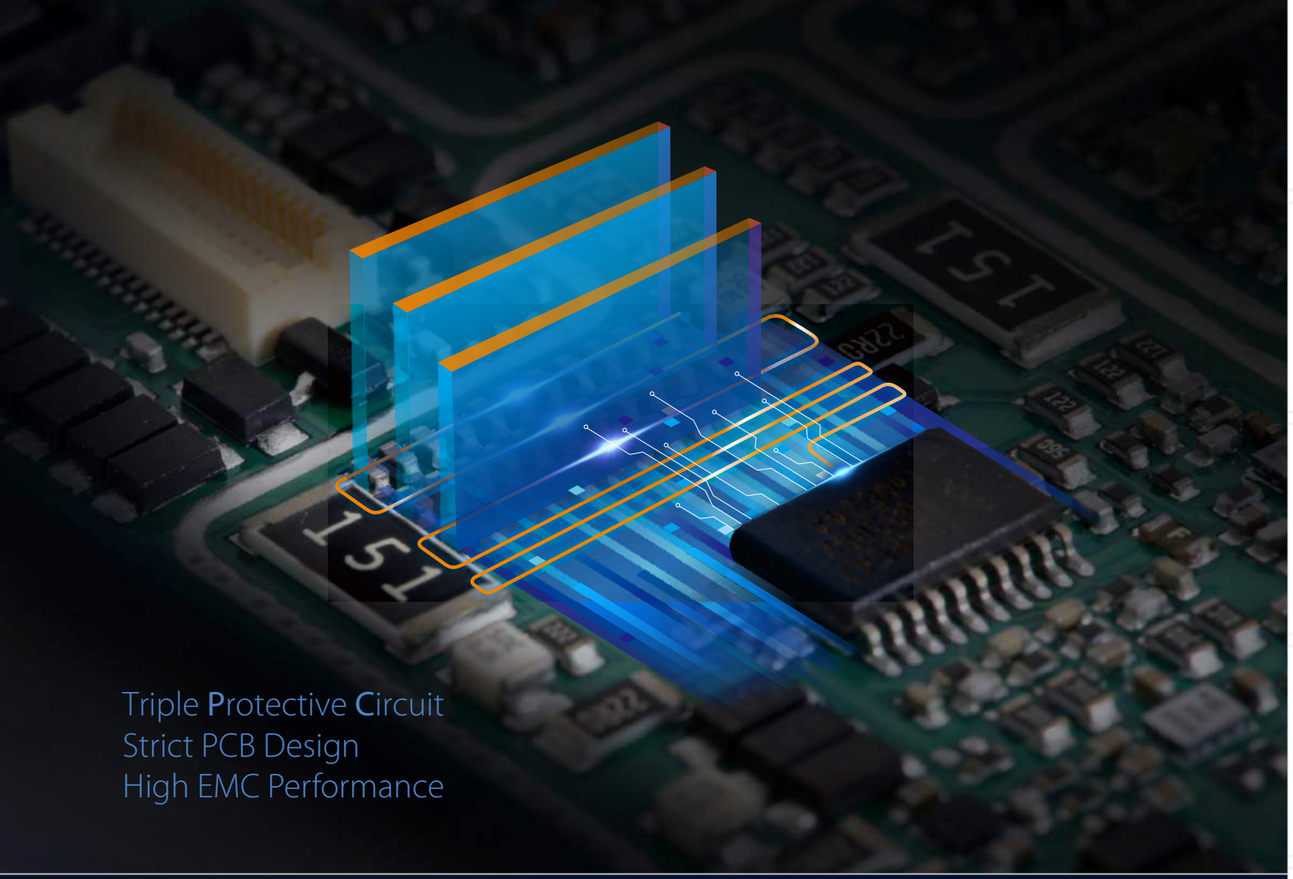
- II — Equipment group: I: Mining; II: Other Environments(non-mining: chemical industrials, oil refineries, etc.)
- 1D — Explosive atmospheres: G: Gases,vapors and mist; D: Dusts
- Ex — Explosion-proof Standard: EU ATEX directive and IECEx standards
- ia — Level of Protection: ia: Intrinsically safe(Zone 0/1/2); ib: Intrinsically safe(Zone 1/2)
- IIIC — Dust Group: IIIA: combustible fiber; IIIB: non-conductive dust; IIIC: conductive dust
- T160 — Temperature Class
- IP5X — Dust & Water Ingress Protection

Classification for hazardous places
1: Very high level(zone 0 or zone 20)
2: High level(zone 1 or zone 21)
3: Normal level(zone 2 or zone 22)
Zone 0: present continuously
Zone 1: present intermittently
Zone 2: present abnormally

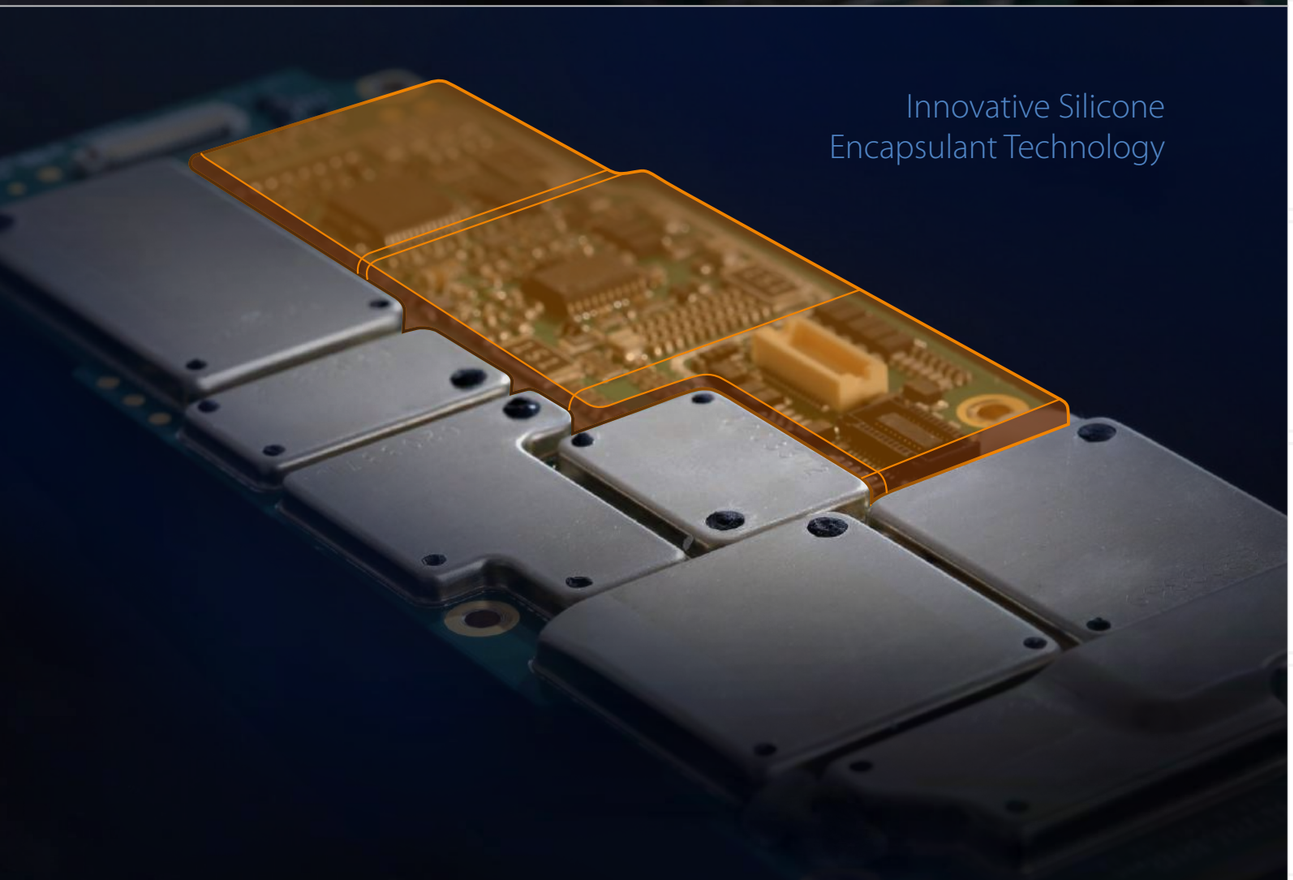
MINING

I M1 Ex ia

- I — Equipment group: I: Mining; II: Other Environments(non-mining: chemical industrials, oil refineries, etc.)
- Ex — Explosion-proof Standard: EU ATEX directive and IECEx standards
- M1 — M1: Equipment must continue to operate when a potentially explosive atmosphere is present. M2: Equipment does not operate when a potentially explosive atmosphere is present . (Hazard Level: M1>M2)
- ia — Level of Protection: ia: Intrinsically safe(Gategory M1/M2); ib: Intrinsically safe(Gategory M2)



Triple **P**rotective **C**ircuit
Strict PCB Design
High EMC Performance



Innovative Silicone
Encapsulant Technology

PD795IS

Intrinsically Safe Digital Portable Two-Way Radio

Easily-accessible rotary volume knob and channel selection knob

Friendly UI, large screen easy-to-use menu

Screen & keypad protection

Unique covert speaker design, compact & better audio quality

Patented antenna design

Dedicated orange emergency key

New current-limited design of accessory connector with enhanced explosion-proof ability

Ex ia IIC T3Ga
Ex ia IIIC T160°C
Ex ia I

Double color PTT, noticeable & enhanced safety

WORK SAFER
WORK, PROTECT & ENABLE
WORK ANYWHERE & ANYTIME

WORK SAFER

ia Protection Classification

The **complete** radio with battery is designed to comply with the highest grade "ia". It can work in the places which contain various long-standing explosive mixed gases and dusts; it has passed ATEX, FM, and IECEx certification.

Innovative Silicone Encapsulation Technology

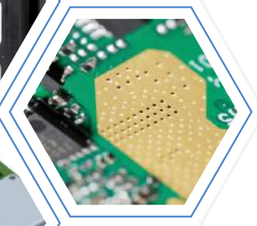
Silicone encapsulation technology can prevent the internal circuits from interface with air and liquid, which effectively stops the intrusion of liquid, inflammable dust and explosive gas.

Innovative Antistatic Design

The PD795IS display adopts anti-static material and the shell adopts anti-static patent design of dual material molding technology. These can reduce the possibility of static discharge on the radio.

Structure Design of Screw Internal Trapping

The screw of the belt clip is designed as internal trapping. It ensures **there is** no contact between the metal and the ground in case of drop, and avoids discharge.

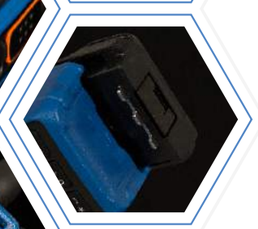


Strict PCB Design and High EMC Performance

To achieve a higher explosion-proof safety level, Hytera PD795IS adopts optimal PCB layout design. All the key components of PCB are covered with shield, which minimizes the circuit fault probability and features better performance of EMC.

Light Metal Design

PD795IS shell is made of light metal to ensure no mechanical spark; it can effectively maximize the reliability in explosive environments.



Patented Battery Latch Design

To disengage the battery from the radio, you need to move the lock and bolt of the latch along two different axes. Such a patented design ensures no disengagement of the battery pack from the main radio in case of dropping that might cause spark.

Screen

The PD795IS screen is made of tough and crack-proof material.

WORK, PROTECT & ENABLE

GNSS Positioning

The built-in GNSS module supports GPS, GLONASS, and Beidou (*GLONASS and Beidou will be supported on R8.5). The tracking sensitivity is up to -164 dBm, and the accuracy is within 2 meters.

Man Down

When a user falls down, the radio automatically alerts other team members.

Lone Worker

To ensure the safety of the terminal user, the emergency function is triggered automatically when there is no operation on the terminal during the preset period of time.

Innovative Ergonomic Design

Separated by the antenna, channel knob and volume knob stand apart from each other. They are designed in different sizes to enhance the operation accuracy, which greatly reduces accidental operation with gloves or in dark environments. Compact and large textured keys on PD795IS provide an excellent tactile feeling.

Friendly User Interface

Hytera PD795IS provides a 1.8 inch and 65536 color LCD screen, which can be clearly displayed under bright sunlight.

Up to 20 programmable keys are flexibly configurable for quick access through one-button operations.

Long Cycle Life

Hytera PD795IS provides an 1800 mAh large capacity Li-ion battery, which can last more than 20 hours under 5-5-90 duty cycle. Strict overcharge and over-discharge protection design protects the battery against instability caused by overheating. In addition, the battery cells are also encapsulated to redistribute single point heat buildup and prevent air discharge as well.

Standard

Li-Ion Battery
BL807-Ex

Power Adapter

MCU Charger CH10A07

Belt Clip
BC19

Leather Wrist Strap
RO04

Antenna

WORK ANYWHERE & ANYTIME

IOP

Hytera PD795IS enables quick access to DMR network and roaming, offering safe and efficient communication services. It also provides powerful interoperability with base stations and terminals of different manufacturers.

Rugged and Reliable

PD795IS is designed to comply with MILSTD-810 C/D/E/ F/G and IP67 dust & water protection, which ensures its best performance even in the toughest conditions and environments.

Skid-proof Design

The rear part of the terminal battery and both sides of the shell are in skid-proof design to prevent dropping and ensure easy grab.

Patented Antenna Design

PD795IS has a globally patented industrial design with antenna in the middle position, and its omni-directional antenna pattern ensures better coverage. Antenna used in PD795IS is short in length and built-in with GPS antenna.

Optional

Intrinsically Safe Remote Speaker Microphone (IP67)

Carrying Case LCY009

Programming Cable (USB Port) PC38

Anti-explosion adjustable earhook earbulb EHN12-Ex

MCU 6-unit charger MCA08

Dual pocket MCU charger CH10A06

FEATURES & SPECIFICATION

GENERAL		
Frequency Range	UHF1 400-470 MHz; VHF: 136-174 MHz	
Channel Capacity	1024	
Zone Capacity	PD715IS: 16 (each with a maximum of 16 channels) PD795IS: 64 (each with a maximum of 256 channels)	
Channel Spacing	12.5 kHz / 20 kHz / 25 kHz	
Operating Voltage	7.4V (rated)	
Battery	1800 mAh (Li-Ion)	
Battery Life (5-5-90 Duty Cycle, High TX Power) High-capacity 1800 mAh Li-Ion Battery	Analogue: about 14.5 H / 13 H (GPS) Digital: about 17 H / 15 H (GPS)	
Frequency Stability	±1.5 ppm	
Antenna Impedance	50Ω	
Dimensions (H×W×D) (with standard battery, without antenna)	141 x 55 x 37mm (PD71X IS) 141 x 55 x 39mm (PD79X IS)	
Weight (with antenna & standard battery)	485g (PD715IS) 495g (PD795IS)	
LCD display	160 x 128 pixels, 65536 color, 1.8-inch, 6 rows	
Explosion-proof level	ATEX	II 1 G Ex ia IIC T3 I M1 Ex ia I II 1 G Ex ia IIC T3 II 1 D Ex ia IIIC T160°C II 2 G Ex ib IIC T4 II 2 D Ex ib IIIC T120°C
	IECEx	Ex ia IIC T3 Ga Ex ia I Ma Ex ia I Mb Ex ia IIC T3 Ga Ex ia IIIC T160°C Da Ex ib IIC T4 Gb Ex ib IIIC T120°C Db
	FM/CSA	Class I, Division 1, Groups A,B,C,D T3B Class I,II,III, Division 1, Groups A,B,C,D,E,F,G T3C Class I, Division 2, Groups A,B,C,D T4 Class II,III Division 2, Groups E,F,G T4A Class I, Zone 0, AEx ia IIC T3 Class II, Zone 0, AEx ia IIIC T160°C Class I, Zone 1, AEx ib IIC T4 Class II, Zone 1, Ex ib IIIC T120°C

ENVIRONMENTAL SPECIFICATIONS	
Operating Temperature	-30°C to +60°C (non-hazardous environment) -20°C to +50°C (hazardous environment) -20°C to +55°C (hazardous environment only in Gas T3)
Storage Temperature	-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
Dust & Water Intrusion	IP67 (non-explosion-proof)
Humidity	Per MIL-STD-810 C/D/E/F/G Standard
Shock & Vibration	Per MIL-STD-810 C/D/E/F/G Standard

GPS	
TTFF (Time To First Fix) Cold Start	< 1 minute
TTFF (Time To First Fix) Hot Start	< 10 seconds
Horizontal Accuracy	< 10 meters

Transmitter	
RF Power Output	1 W (rated)
FM Modulation	11K0F3E @ 12.5 kHz 14K0F3E @ 20 kHz 16K0F3E @ 25 kHz
4FSK Digital Modulation	12.5 kHz Data Only: 7K60FXD 12.5 kHz Data & Voice: 7K60FXW
Conducted/Radiated Emission	-36 dBm<1GHz -30 dBm>1GHz
Modulation Limiting	2.5kHz @ 12.5 kHz 4.0kHz @ 20 kHz 5.0kHz @ 25 kHz
FM Noise	40 dB @ 12.5 kHz 43 dB @ 20 kHz 45 dB @ 25 kHz
Adjacent Channel Power	60 dB @ 12.5 kHz; 70 dB @ 20/25 kHz
Audio Response	+1 to -3 dB
Audio Distortion	3%
Digital Vocoder Type	AMBE++ or SELP
Digital Protocol	ETSI-TS102 361-1,-2,-3

Receiver		
Sensitivity	Analogue	0.3 µV (12 dB SINAD) 0.22 µV (typical) (12 dB SINAD) 0.4 µV (20 dB SINAD)
	Digital	0.3 µV /BER5%
Selectivity TIA-603 ETSI		60 dB @ 12.5 kHz/70 dB @ 20 & 25 kHz 60 dB @ 12.5 kHz/70 dB @ 20 & 25 kHz
Intermodulation TIA-603 ETSI		70 dB @ 12.5/20/25 kHz 65 dB @ 12.5/20/25 kHz
Spurious Response Rejection TIA-603 ETSI		70 dB @ 12.5/20/25 kHz 70 dB @ 12.5/20/25 kHz
Hum and Noise		40 dB @ 12.5 kHz 43 dB @ 20 kHz 45 dB @ 25 kHz
Rated Audio Power Output		0.5W
Rated Audio Distortion		≤ 3%
Audio Response		+1 to -3 dB
Conducted Spurious Emission		< -57dBm

All specifications are subject to change without notice due to continuous development.