Hytera

BORN FOR SAFETY

Intrinsically Safe DMR Portable Two-way Radio

HP715Ex IIC

DMR DIGITAL MOBILE RADIO ASSOCIATION IECEx Ex FM C US APPROVED



www.hytera-europe.com

Workers in the oil and gas industry or firefighters in the fire and rescue services work in extreme conditions and are exposed to risks from explosive gases, flammable dusts or chemical vapors. In these dangerous environments, safe, reliable and highly efficient communications are of utmost importance.

The new intrinsically safe portable DMR radio HP715Ex IIC leverages Hytera's 20 years of experience and expertise in explosion protection to take personal safety and mission-critical communications to a new level for workers in the oil and gas, mining, chemical and pharmaceutical industries, as well as other industries with potentially explosive atmospheres.

Certified with IECEx/ATEX, the HP715Ex IIC is the safest radio to keep the workers connected in hazardous environments without causing a fire or explosion. The HP715Ex IIC features an IS circuit, long-lasting explosion-proof battery, superior audio quality, extended radio coverage and advanced ergonomics for easy operation.





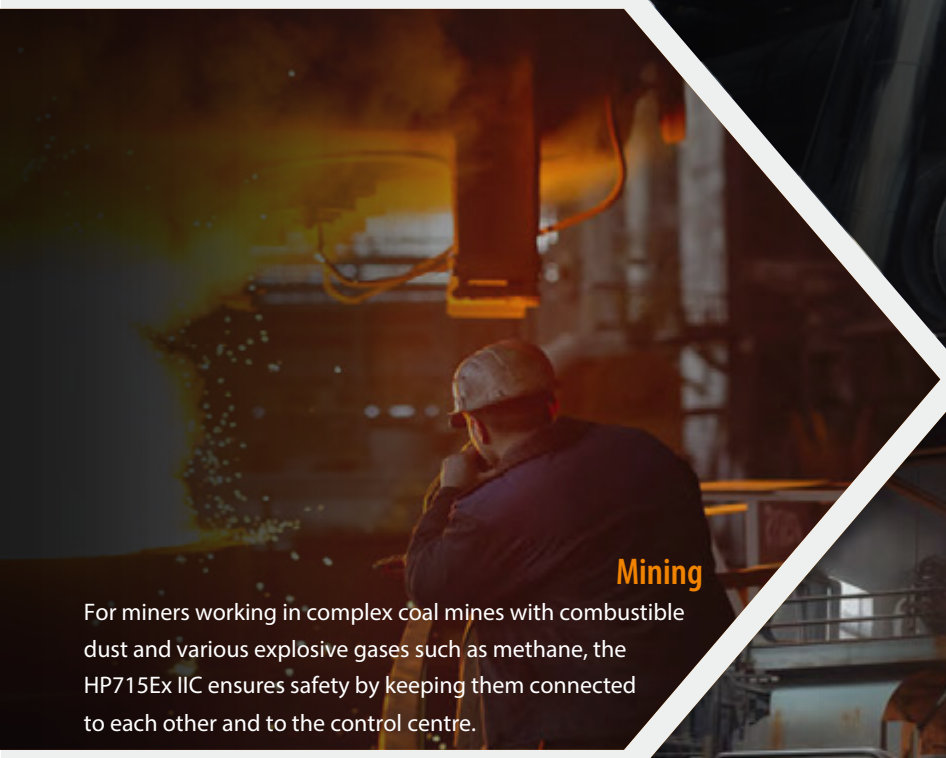
Fire and Rescue

When firefighters need to protect life and property in locations filled with smoke, dust, and even toxic gases, the HP715Ex IIC enables them to communicate safely and effectively.



Oil and Gas

In dangerous environments with flammable liquids and explosive gases, the HP715Ex IIC ensures stable communications for operators, enhancing their safety.



Mining

For miners working in complex coal mines with combustible dust and various explosive gases such as methane, the HP715Ex IIC ensures safety by keeping them connected to each other and to the control centre.



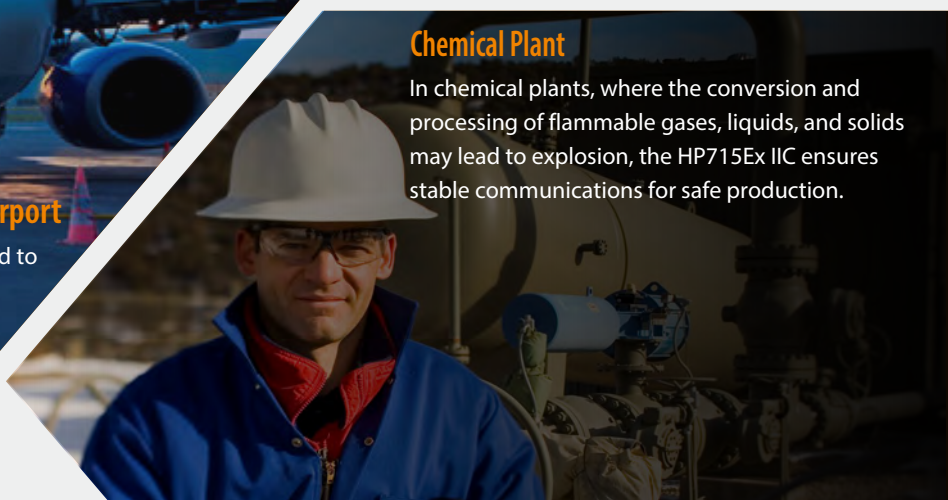
Manufacturing

In pharmaceutical processing, steel plant, food processing, and more industries where the chances of massive dust explosions are high, the HP715Ex IIC with a higher IS level can keep the workers safe by reliable communications.



Airport

In the airport with complex facilities that are exposed to fuels, the HP715Ex IIC offers the staff and on-site fire crew with instant and efficient communications.



Chemical Plant

In chemical plants, where the conversion and processing of flammable gases, liquids, and solids may lead to explosion, the HP715Ex IIC ensures stable communications for safe production.

ULTIMATE SAFETY

The HP715Ex IIC intrinsically safe radio is certified to standards listed by IECEx. It has been developed to provide safe and reliable communication in hazardous environments by adopting the new materials, brand-new structural design and innovative IS circuit. With optimized RF solution and pioneering audio solution, it extends communication range and provides better audio. Moreover, the HP715Ex IIC prepares for the unexpected with features like lone worker, man down, and precise positioning.

IECEx

Ex ib I Mb
Ex ib IIC T4 Gb
Ex ib IIIC T120°C Db
IP66/IP67/IP68, -25°C≤Ta≤+60°C

ATEX

I M2 Ex ib I Mb
II 2G Ex ib IIC T4 Gb
II 2D Ex ib IIIC T120°C Db
IP66/IP67/IP68, -25°C≤Ta≤+60°C

US

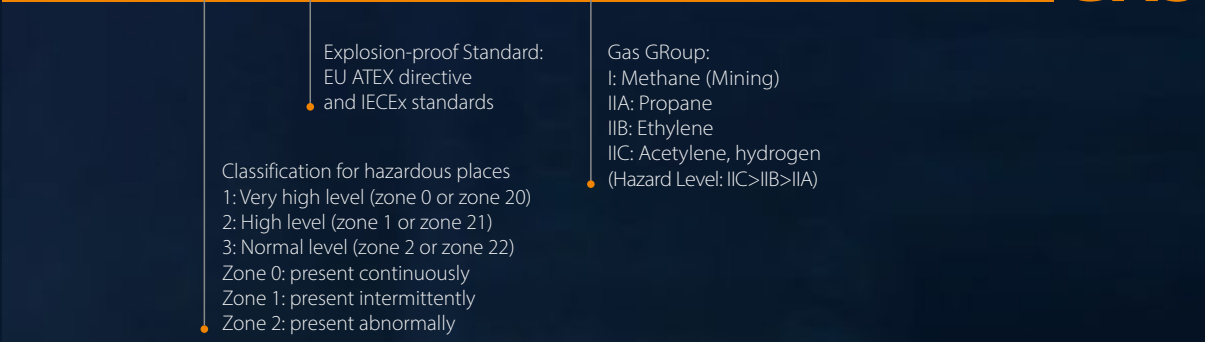
Class I, Zone 1, AEx ib IIC T4 Gb
Zone 21, AEx ib IIIC T120°C Db
IP66/IP67/IP68, -25°C≤Ta≤+60°C

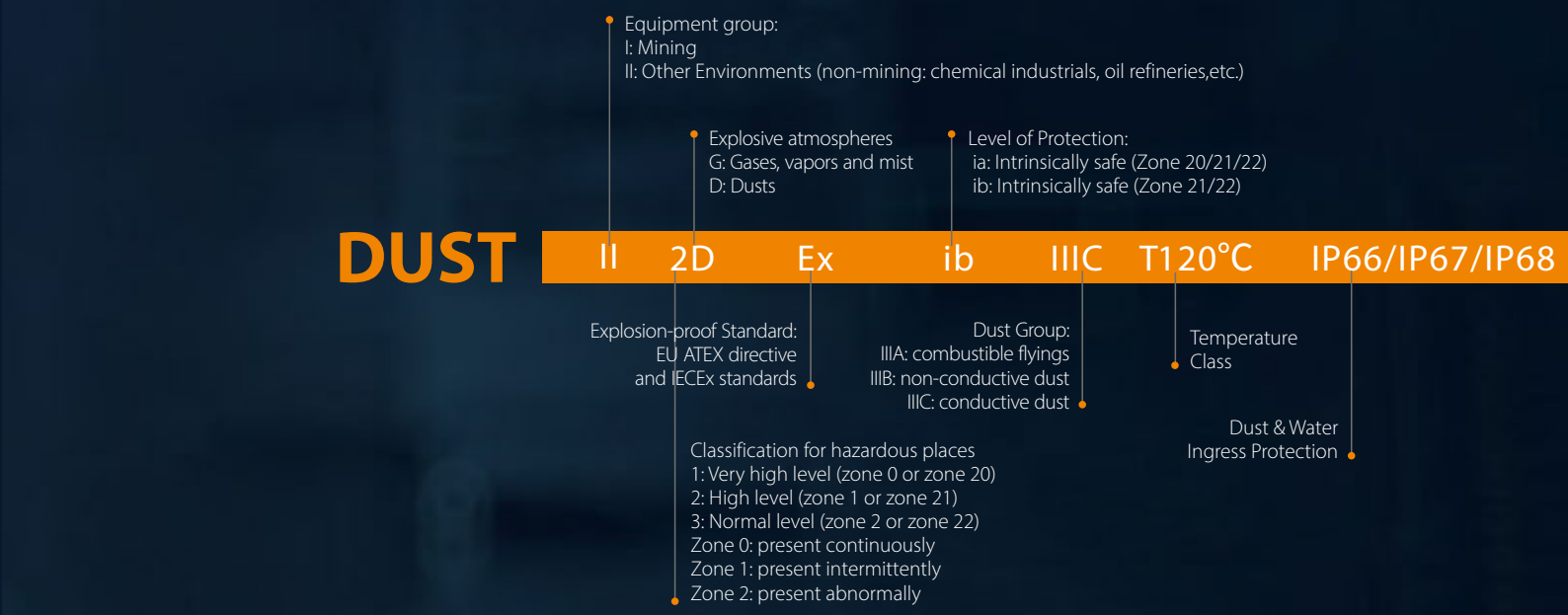
CA

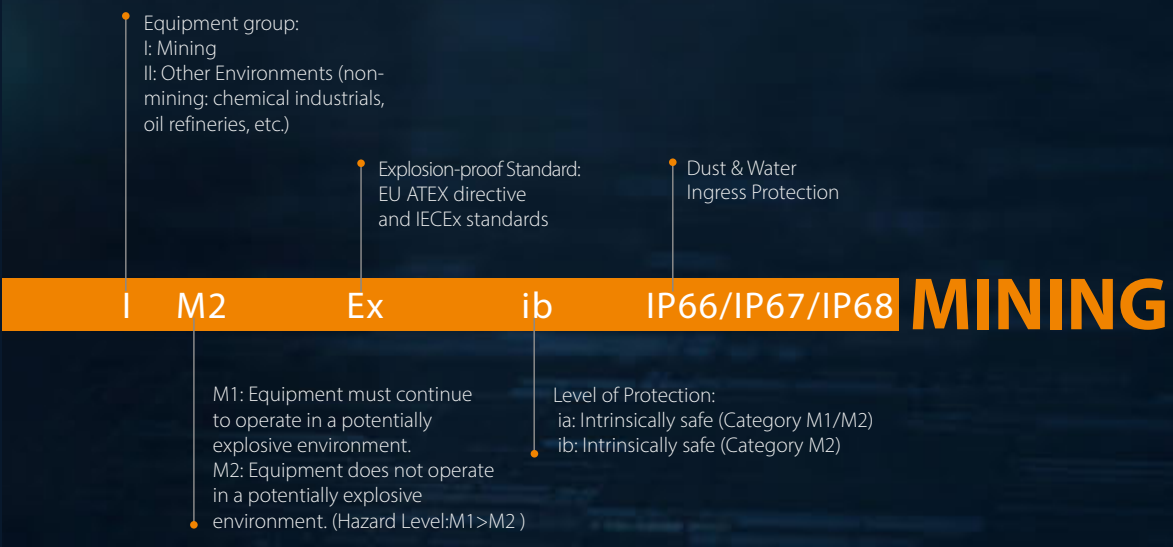
Ex ib IIC T4 Gb
Ex ib IIIC T120°C Db
IP66/IP67/IP68, -25°C≤Ta≤+60°C




Equipment group:
I: Mining
II: Other Environments (non-mining: chemical industrials, oil refineries, etc.)
ExpLosive atmospheres
G: Gases,vapors and mist
D: Dusts
Level of Protection:
ia: Intrinsically safe (Zone 0/1/2)
ib: Intrinsically safe (Zone 1/2)
Temperature Class
T1: 450℃
T2: 300℃
T3: 200℃
T4: 135℃
T5: 100℃
T6: 85℃
Dust & Water Ingress Protection
II
2G
Ex
ib
IIC
T4
IP66/IP67/IP68
GAS


Explosion-proof Standard:
EU ATEX directive
and IECEx standards
Gas GRoup:
I: Methane (Mining)
IIA: Propane
IIB: Ethylene
IIC: Acetylene, hydrogen
(Hazard Level: IIC>IIB>IIA)
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


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Explosive atmospheres
G: Gases, vapors and mist
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Level of Protection:
ia: Intrinsically safe (Zone 20/21/22)
ib: Intrinsically safe (Zone 21/22)
DUST
II
2D
Ex
ib
IIIC
T120°C
IP66/IP67/IP68
Explosion-proof Standard:
EU ATEX directive
and IECEx standards
Dust Group:
IIIA: combustible flyings
IIIB: non-conductive dust
IIIC: conductive dust
Temperature Class
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)
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Equipment group:
I: Mining
II: Other Environments (non-mining: chemical industrials, oil refineries, etc.)
Explosion-proof Standard:
EU ATEX directive
and IECEx standards
Dust & Water
Ingress Protection
I
M2
Ex
ib
IP66/IP67/IP68
MINING
M1: Equipment must continue to operate in a potentially explosive environment.
M2: Equipment does not operate in a potentially explosive environment. (Hazard Level:M1>M2)
Level of Protection:
ia: Intrinsically safe (Category M1/M2)
ib: Intrinsically safe (Category M2)

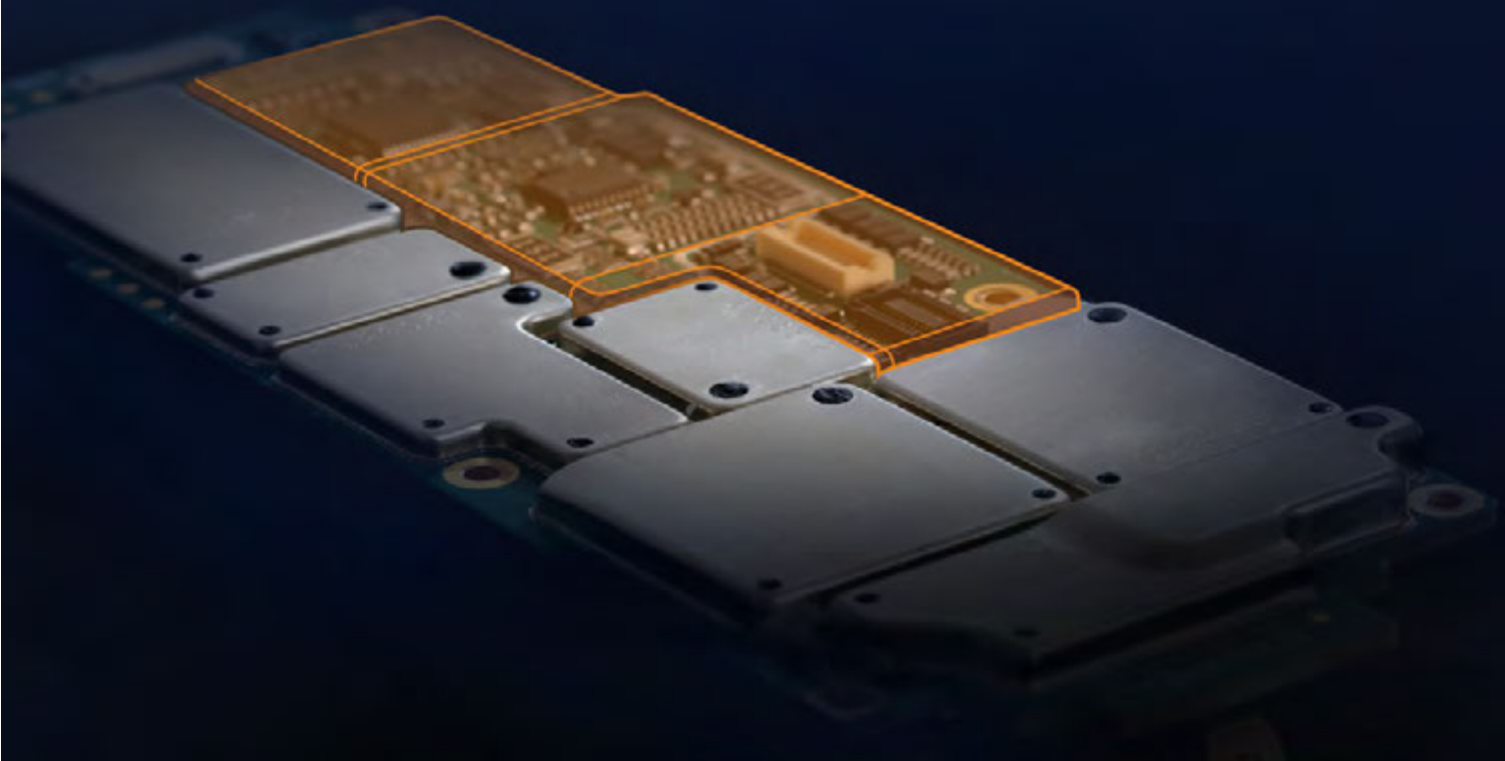
Born for Safety

Wider range of operation temperature (in Ex area)

Thanks to new explosion-proof materials and advanced mechanical design, the HP715Ex IIC is built to operate in temperatures from –25°C to 60°C in explosion-prone areas. With stable and even heat dissipation, the HP715Ex IIC is engineered to perform in the extreme conditions, enhancing safety and efficiency to everyday work.

More powerful intrinsically safe circuit

The HP715Ex IIC adopts innovative silicone encapsulation technology to prevent liquid, inflammable dust, or explosive gas from intruding into internal circuits. With multiple circuit protection mechanisms, the HP715Ex IIC strictly limits the electrical circuit's energy to a non-ignitable level during operation. The newly developed integrated circuits enable a transmission power of 2 W and a maximum audio power of 2 W, thereby increasing communication distance and audio volume.



More rock-solid IS battery

The intrinsically safe battery of the HP715Ex IIC cannot detach from the radio, even if dropped, thanks to a battery protection plate and a battery lock. This design ensures that the battery will never become detached, preventing potential sparks in hazardous circumstances. Additionally, the HP715Ex IIC must not be used with non-original batteries. If a non-original battery is detected, an on-screen prompt and a flashing red LED indicator will alert the user, as the risk of safety to life and property cannot be compromised.

More professional anti-static technology

Electrostatic discharges are a source of ignition in explosive risk areas. With this in mind, the HP715Ex IIC first adopts high-strength, explosion-proof materials to prevent static electricity on the surface. Then, the HP715Ex IIC uses dual-material technology to resist the build-up of static electricity. This ensures that workers can freely use the HP715Ex IIC without worrying about the threats to lives and property from sudden fires or massive explosions.



Reliable to Use

Rugged-tested trust

The HP715Ex IIC is certified with IP6X and MIL-STD-810H after undergoing a comprehensive list of reliability tests, including accelerated life testing, impact testing for the radio with a 1.47-inch screen, and drop testing. It is rugged enough to withstand dust, shock, or sudden drops. Workers can use the radio in any harsh environments they encounter.

Dual antimagnetic mechanism

In areas containing metallic compounds, the HP715Ex IIC resists magnetic metal dust and shavings from damaging the speaker, ensuring superior audio quality and a longer service life. This is all thanks to the dual antimagnetic mechanism.



Built for Personnel Safety

Lone worker

The lone worker feature provides protection and reassurance for those who work alone, especially in dangerous environments, such as oil pipeline worker. If the HP715Ex IIC senses that the worker does not make any movement within a preset time, this radio will automatically alarm and report the location to a companion or the control centre for help.

Man down

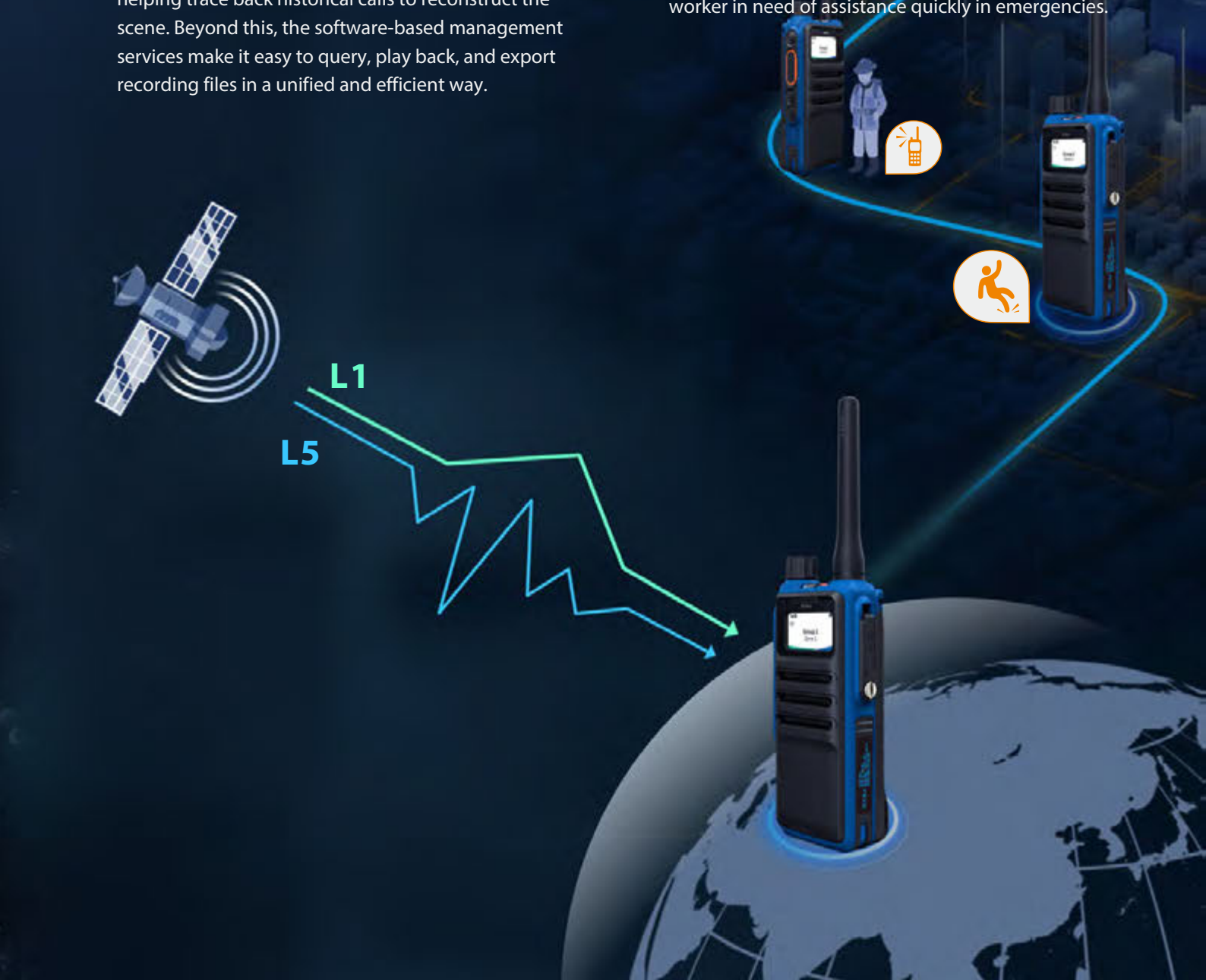
Man Down is ideal for emergency situations. If the worker has fallen, is unconscious, or is unable to move, the HP715Ex IIC automatically detects a sudden tilt towards the ground, and alarms and reports the location to a companion or the control centre for help. This is vital to prevent loss of life.

Voice calls, encrypted and recorded

The HP715Ex IIC offers a perfect solution to protect the privacy and integrity of voice communications — TF card or GOB board. The radio can encrypt critical voice to safeguard your conversation against eavesdropping during voice calls, bringing ultimate peace of mind. Additionally, the radio can record calls in real time, helping trace back historical calls to reconstruct the scene. Beyond this, the software-based management services make it easy to query, play back, and export recording files in a unified and efficient way.

Precise positioning

With the built-in positioning module, the HP715Ex IIC supports the flexible combination of GPS, BDS, GLONASS, and Galileo satellite systems. The HP715Ex IIC also enhances positioning accuracy down to one metre, thanks to the dual-frequency positioning technology. Such reliable and accurate location information helps find the worker in need of assistance quickly in emergencies.





HIGH EFFICIENCY COMMUNICATIONS

The HP715Ex IIC takes critical communications to a new level, with the efforts of Hytera Audio Lab, RF & Antenna Lab, Energy-efficient Lab, and UX Design Lab*. The HP715Ex IIC keeps the workers always connected, from superior audio quality to extended radio range. The HP715Ex IIC is always operational thanks to the long-lasting battery. Moreover, the HP715Ex IIC facilitates the usage and management in terms of versatile connectivity and easy-to-use design.

* Hytera Professional Lab.

Superior Audio Quality

Super loudness

Most explosion-prone environments are noisy, thus how to provide clear and loud audio is the key to ensure effective communication among team members. The HP715Ex IIC, with a lighter and slimmer body, has a 2W speaker to deliver louder audio to improve team collaboration and work efficiency.

Ultra Clarity

With cutting-edge audio processing technology adopted, the HP715Ex IIC delivers crisp, clear audio even in complex environments, ensuring more reliable mission-critical and business-critical communications.

AI-based noise cancellation

The HP715Ex IIC adopts the most advanced AI-based noise cancellation algorithm and utilises machine learning. After learning and training thousands of noise samples, the HP715Ex IIC can quickly separate the human voice from the noise, ensuring workers receive the correct commands from the first word.

Automatic gain control

Automatic gain control (AGC) automatically increases or decreases microphone gain to ensure consistently loud and clear audio output, regardless of how softly or loudly the workers are speaking into the microphone.

Water-porting design

The speaker features a unique water-porting design that can automatically expel water from the speaker's acoustic cavity fast. Even in heavy downpours, the HP715Ex IIC can still deliver clear audio.

Howling suppression

Using the innovative howling suppression algorithm, the HP715Ex IIC eliminates screeching feedback when two radios are too close, even as close as 30 cm to each other.



Long-lasting Battery

The standard 2150 mAh battery, together with the cutting-edge low power consumption technology, can outlast the shift. Workers can check the remaining battery and battery health on the radio and extend the battery life using the smart charger.

Extended Radio Range

Thanks to the newly designed powerful IS circuits and RF optimisation solution, the HP715Ex IIC features 2W transmitting power and industry-leading receiving sensitivity (0.16μV), providing smoother communications even at a distance or in edge areas, further enhancing personal safety and work efficiency.



Versatile Connectivity

BT

BT 5.3

The HP715Ex IIC can connect to wireless IS accessories* more quickly and stably, without the hassle of wires and cables. Moreover, the HP715Ex IIC can run the BT-based applications developed by the third parties to meet more scenarios.

* Not provided by Hytera.
The radio adapts to third-party wireless IS accessories.

WLAN

WLAN

The HP715Ex IIC facilitates remote management through WLAN, such as programming*, upgrading*, and log management*. It is a smarter way to manage radios in batches without moving them back and forth between the field and the office, greatly reducing operational expenses.

* Coming soon.

NFC

NFC

The HP715Ex IIC can be easily recognised and managed via NFC tag as per actual requirements.

Easy to Use



About 390g (with standard battery and antenna)

- Comfortable for long-time grip

1.47-inch LCD screen

- Intuitive to operate the radio or view the info

Textured housing on the back

- Maintain a secure grip

U-shaped groove

- Quick to attach and release the belt clip

Large LED indicator

- Easy to get the radio status

Vibration pattern

- Never miss any call and message

User-friendly UI

- Channel and User Group Visual Selection
- Status information clear at a glance

Purpose-built knob and keys

- Volume/channel selector knob
- Enlarged emergency key
- Three programmable keys

At a Glance


LED Indicator
Channel/Volume Knob
Microphone
1.4-Inch Display
Speaker
Battery Lock
Accessory Connector
Belt Clip Groove
Emergency Button
Strap Hole
Programmable Key
PTT Key
Programmable Keys
NFC Tag
Li-ion Battery
Group 1
Zone 1

SPECIFICATIONS

General	
Frequency Range	UHF:400-480MHz; VHF:136-174MHz
Channel Capacity	1024
Zone Capacity	64
Channel Spacing	12.5kHz/20kHz/25kHz
Operating Voltage	7.4V (rated)
Battery	2150 mAh IIC intrinsically safe Li battery (Typical)
Battery Life (5/5/90)	24h (GNSS OFF) 21h (GNSS ON)
Frequency Stability	±0.5ppm
Antenna Impedance	50Ω
Dimensions (H x W x D)	130 x 55 x 37mm
Weight (with antenna & battery)	about 390g
Display	1.47 inch LCD, 172*320 pixel, 262000 colors
Connectivity	BT 5.3 BLE+EDR/WLAN 2.4G/NFC: ISO/IEC 15693
Receiver	
Sensitivity	Analog: 0.16μV(12dB SINAD) 0.14μV(Typical)(12dB SINAD)
	Digital: 0.16μV/BER5%
Adjacent Channel Selectivity	TIA-603: 60dB@12.5kHz; 70dB@20/25kHz ETSI: 60dB@12.5kHz; 70dB@20/25kHz
Intermodulation	TIA-603: 70dB@12.5/20/25kHz ETSI: 65dB@12.5/20/25kHz
Spurious Response Rejection	TIA-603: 70dB@12.5/20/25kHz ETSI: 70dB@12.5/20/25kHz
Blocking	TIA-603: 80dB ETSI: 84dB
Hum and Noise	40dB@12.5kHz; 43dB@20kHz; 45dB@25kHz
Rated Audio Power Output	0.5W
Rated Audio Distortion	≤3%
Audio Response	+1 ~ -3dB
Conducted Spurious Emission	<-57dBm
Transmitter	
RF Power Output	2W/1W
FM Modulation	11K0F3E@12.5kHz 14K0F3E@20kHz 16K0F3E@25kHz
4FSK Digital Modulation	12.5kHz Data Only: 7K60FXD 12.5kHz Data and Voice: 7K60FXW
Conducted/Radiated Emission	-36dBm<1GHz; -30dBm>1GHz
Modulation Limiting	±2.5kHz@12.5kHz;±4.0kHz@20kHz; ±5.0kHz@25kHz
FM Hum & Noise	40dB@12.5kHz; 43dB@20kHz; 45dB@25kHz
Adjacent Channel Power	60dB@12.5kHz; 70dB@20/25kHz
Audio Response	+1 to -3dB
Audio Distortion	≤3%
Digital Vocoder Type	AMBE+2™
Digital Protocal	ETSI-TS102 361-1, -2, -3
Environmental	
Operating Temperature	–30°C to +60°C (in non-hazardous area) –25°C to +60°C (in hazardous area)
Storage Temperature	-40°C~ +85°C
ESD	IEC 61000-4-2 (Level 4) ±8kV (contact); ±15kV (air)
Dustproof & Waterproof	IP64/IP65/IP66/IP67/IP68 per IEC-60079-0:2017 & IEC-60529
Humidity	MIL-STD-810H
Shock and Vibration	MIL-STD-810H
Location Services	
GNSS	GPS, BDS, GLONASS, Galileo
TTFF(Time To First Fix) Cold Start	<35 seconds
TTFF(Time To First Fix) Hot Start	<1 second
Horizontal Accuracy	1 m (dual-frequency GNSS, 95% probable, -130 dBm, ≥ 22 operational satellites)

Accuracy specs are for long-term tracking
(95th percentile values>5 satellites visible at a nominal -130dBm signal strength)

Standard Accessories



Battery
(Standard Capacity)



Charger



Power Adapter



Antenna



Belt Clip



Strap

Optional Accessories



Remote speaker
Microphone



Earpiece



Carry Case



Intrinsically Safe
Hamlet Heavy Duty
Noise-cancelling Headset kit



Intrinsically
Safe and Adjustable Earset



Intrinsically
Safe Large PTT

Hytera
Respond & Achieve

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