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EMPOWER YOUR OPERATION
HM785
NEXT GENERATION DIGITAL RADIO

www.hytera-europe.com

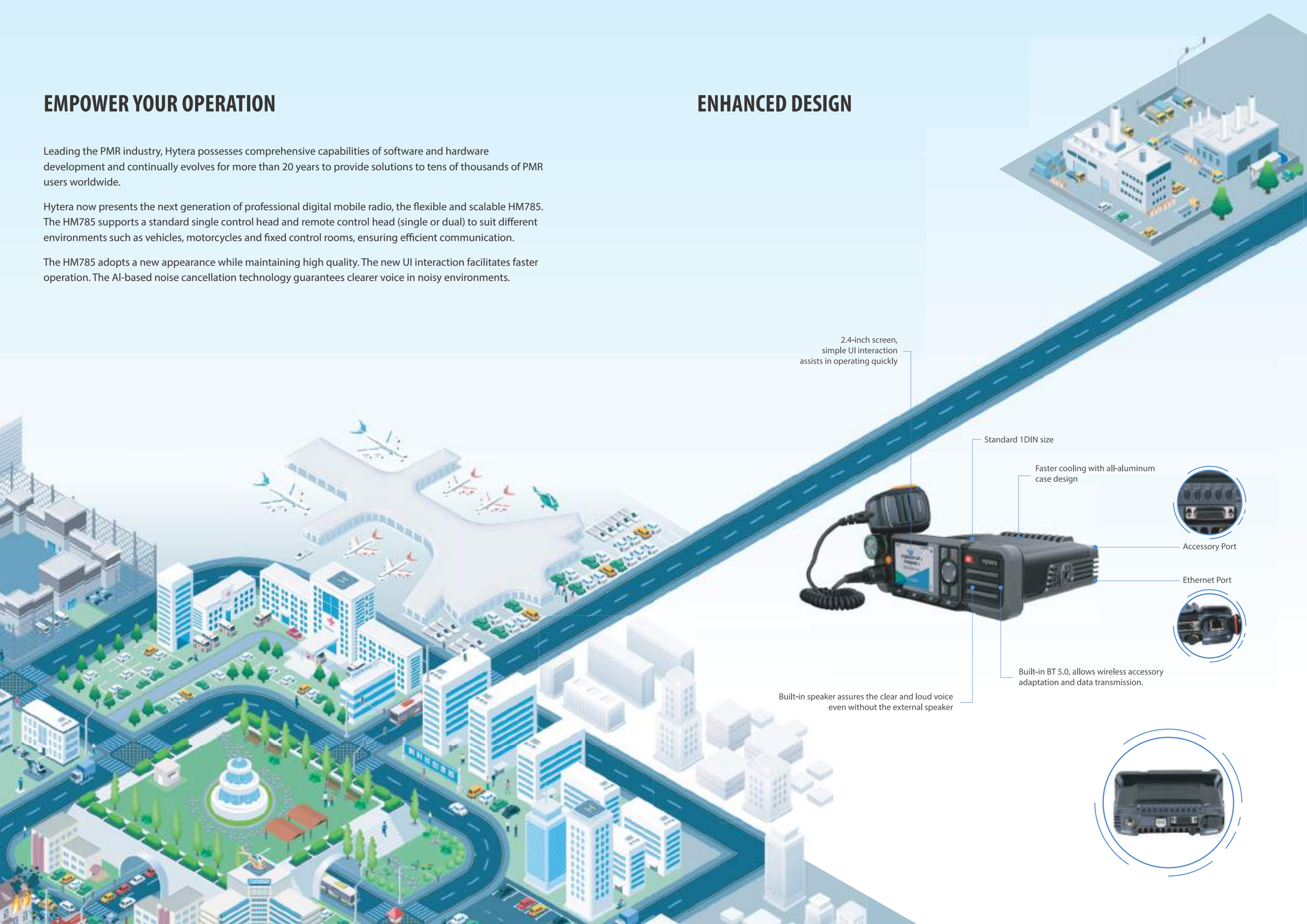
EMPOWER YOUR OPERATION

Leading the PMR industry, Hytera possesses comprehensive capabilities of software and hardware development and continually evolves for more than 20 years to provide solutions to tens of thousands of PMR users worldwide.

Hytera now presents the next generation of professional digital mobile radio, the flexible and scalable HM785. The HM785 supports a standard single control head and remote control head (single or dual) to suit different environments such as vehicles, motorcycles and fixed control rooms, ensuring efficient communication.

The HM785 adopts a new appearance while maintaining high quality. The new UI interaction facilitates faster operation. The AI-based noise cancellation technology guarantees clearer voice in noisy environments.

ENHANCED DESIGN



PRODUCT HIGHLIGHTS

MORE FLEXIBLE INS TALLATION

With the flexible control heads and accessories, the HM785 can be installed in various environments to satisfy different use requirements. The connection cable of the remote control head can be either 3m, 10m or 40m as standard. A connection cable of up to 120m is also available (customisation required).

Form	Standard control head	**Remote control head (single or dual) Connection cable (3m, 1 Om, or 40ml**	Fixed station
Application	Small vehicles, motorcycles	Ambulance, fire engine, truck, large bus	desktop office

AI-BASED NOISE CANCELLATION FOR CLEARER AUDIO

The HM785 adopts AI noise cancellation technology to filter out background noise (such as road noise), eliminate echoes, extract human voices from noise, and reduce howling and exhalation sounds at close proximity. With this technology, the mobile radio provides crisper and clearer audio for the other party.

The advantages of AI noise cancellation are as follows.

- **Clearer**
  Extremely high noise cancellation on steady and unsteady noise, up to 30dB
  Can reduce howling outside 30cm
- **Faster**
  Accurately extract human voices from noise in milliseconds or even without delay
- **Flexible**
  With deep learning ability, suitable for more noise 10-level adjustable noise reduce level

MAIN FEATURES

Operating Mode

- Conventional(digital/analog)
- Digital trunking

Text Message

- Private message
- Group message
- Quick text

Solution

- IP Transit
- Back to back
- Wireless link
- Clarity Transmission

Voice Service

- Private call
- Group call
- All call

Security

- Emergency alarm
- Lone worker
- Authentication
- Over the air encryption
- E2EE
  - Basic encryption
  - Full encryption
  - Hardware encryption

GPIO Pins

- Public Address
- Horn & Lights
- Voice notify
- Ignition sense

Supplementary

- Alert call(conventional)
- Remote monitor
- Enable/Disable
- Radio check

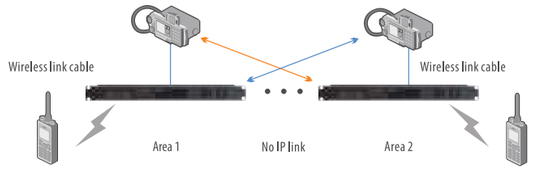
Analog Mode

- 2-Tone signaling
- HDC1200

MORE FLEXIBLE INS TALLATION

HM785 supports multiple connections through BT, and the accessory and network (Ethernet) ports. It also supports Clarity Transmission and back to back connections which will greatly facilitate your solutions. Examples include:

- Allow for collection of data from equipment (Wired or BT) and facilitate transmission of this data to the background platforms using either the IP or radio network.
- The coverage in conventional digital mode can be extended by IP Transit.

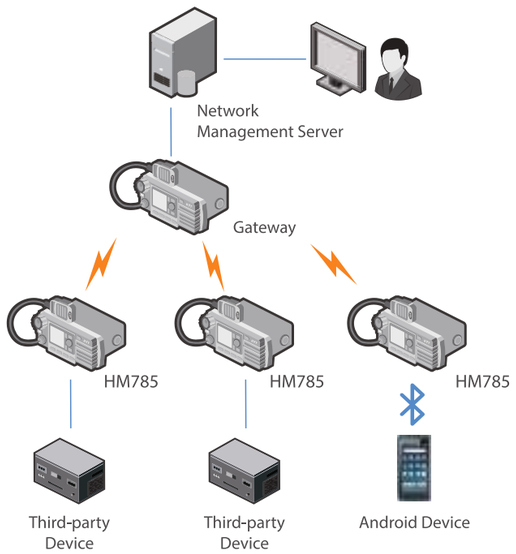


- Cross-band or cross-system communication can be achieved through Back-to-Back or IP Transit.
- For situations where repeaters cannot be connected via IP or the cost of doing so is too high, the repeaters can be connected via cable to MD785s to create a wireless link between regions. This could be useful in industries such as oil extraction where offshore oil rigs are used.

APPLICATION SOLUTION

Clarity Transmission

The data Clarity Transmission feature provides a transparent channel for data transmission without any change to the integrity of the data being sent. As a part of the data acquisition and monitoring control system, the HM785 provides customers with solutions for monitoring and controlling industrial production processes.

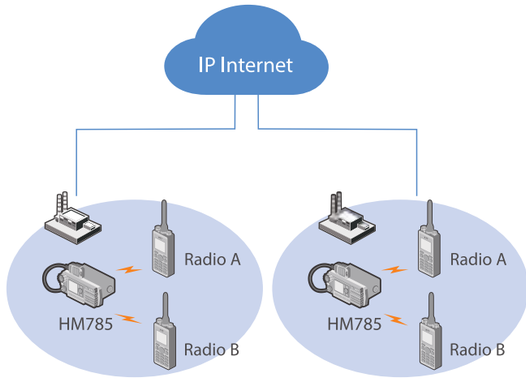


IP Transit Solution

With the Ethernet network interface of HM785, IP Transit offers an economical and simple networking solution that complements the existing two-way radio system. This solution works in direct mode operation (DMO) and expands the communication range of the radios through the IP network. It can effectively solve the communication problems across regions, complex terrains, or in buildings where signals are difficult to penetrate. This solution greatly saves on cost due to only requiring one frequency and it removes the need for additional infrastructure and complex configuration.

The IP Transit solution supports the following services:

- All voice calls (ncluding calls with acknowledgement)
- All data services
- All signaling



Motorcycles Application

Police Car Application

Fire Engine Application

Conventional(digital/analog)
Digital trunking

SPECIFICATIONS

General			
Frequency Range		UHFv: 350-470MHz , VHF:136-174MHz	
Channel Capacity		1024	
Zone Capacity		64(each with a maximum of 256 channels)	
Channel Spacing		12.5kHz/20kHz/25kHz	
Operating Voltage		13.6 V ±15%	
Current Drain	Standby	< 0.5A	
	Receive	< 2.0A	
	Transmit	1W	<3A
		5W	<4A
		25W	<8A
		45W/50W	<12A
Frequency Stability		±0.5 ppm	
Antenna Impedance		50Ω	
Dimensions (H x W x D)		61.5 x 177 x 179 mm	
Weight		1520g	
LCD Display		2.4 inch	

Receiver			
Sensitivity	Analog	0.18μV(12dB SINAD) 0.16μV(Typical)(12dB SINAD)	
	Digital	0.18μV/BER5%	
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	70dB@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		Internal (20 Ohm load)	3W
		External (8 Ohm load)	7.5W
Max Audio Power Output		Internal (20 Ohm load)	8W
		External (8 Ohm load)	20W
Rated Audio Distortion		≤3%	
Audio Response		+1 ~ -3dB	
Conducted Spurious Emission		<-57dBm	

Transmitter	
RF Power Output	Low power: UHF: 1-25W, VHF: 5-25W High power: UHF: 1-45W, VHF: 5-50W
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~ -3dB
Audio Distortion	≤3%
Digital Vocoder Type	AMBE+2™
Digital Protocol	ETSI-TS102 361-1,-2,-3

Environmental	
Operating Temperature	-30°C~+60°C
Storage Temperature	-40°C~+85°C
ESD	IEC 61000-4-2 (Level 4) ±8kV (Contact) ±15kV (Air)
American Military Standard	MIL-STD-810 G
Dustproof & Waterproof	IP54
Humidity	Per MIL-STD-810 G Standard
Shock & Vibration	Per MIL-STD-810 G Standard

Location Service	
GNSS	GPS, GPS+GLONASS, GPS+BDS
TTFF (Time To First Fix) Cold Start	<1minute
TTFF (Time To First Fix) Hot Start	<10seconds
Horizontal Accuracy	<5meters

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

ACCESSORIES

Standard

- Conventional model: palm microphone without keypad(SM16A1)
- Trunking model: palm microphone with keypad(SM19A1)
- Mounting bracket(BRK08)
- Power cord(PWC10)
- Fuse(P0A33)
- Model with GPS: GPS antenna(GPS04)

Optional

External Speaker SM09D1

Desktop Microphone SM10A1

External Power Supply PS22002 (L)

Programming Cable (USB Port) PC37

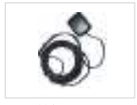
Data Cable PC40

Foot Switch (external PTT)

Wireless Earpiece ESW01

Ignition Cable PC60

Antenna


GPS Antenna

1DIN vehicle mounting bracket

Dispatch cable

Mobile Radio Remote Mount Kit

Cabinet Power Supply

Wireless remote speaker microphone

Wireless PTT POA121