

# EMPOWER YOUR OPERATION

## HM78X

### NEXT GENERATION DIGITAL RADIO





# 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 HM78X. The HM78X 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. Moreover, it provides various connections, through which rich applications can be integrated into existing services to improve work efficiency.

The HM78X 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

2.4-inch screen,  
simple UI interaction  
assists in operating quickly

Standard 1DIN size

Faster cooling with all-aluminum  
case design



Accessory Port

Ethernet Port



Built-in BT 5.0, allows wireless accessory  
adaptation and data transmission.

Built-in speaker assures clear and loud voice  
even without an external speaker





# PRODUCT HIGHLIGHTS

## MORE FLEXIBLE INSTALLATION

With the flexible control heads and accessories, the HM78X 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, 10m, or 40m)	 Fixed station
Application	Small vehicles, motorcycles	Ambulance, fire engine, truck, large bus	desktop office

## AI-BASED NOISE CANCELLATION FOR CLEARER AUDIO

The HM78X 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 Modes

- 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

## RICH SCALABLE APPLICATION

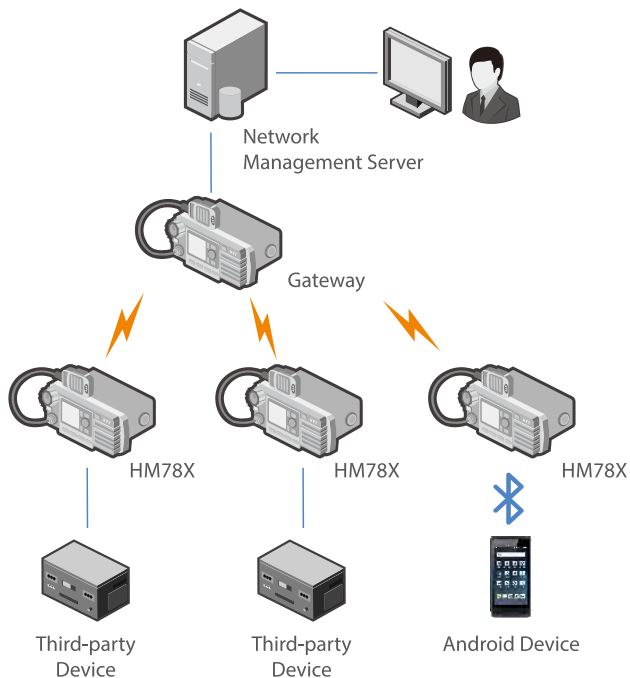
HM78X supports multiple connections through BT, and the accessory and network (Ethernet) ports. It also supports Clarity Transmission and back to back connections which will greatly facilitate your solutions. Examples include:

- 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 MD78X 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. As a part of the data acquisition and monitoring control system, the HM78X provides customers with solutions for monitoring and controlling industrial production processes.

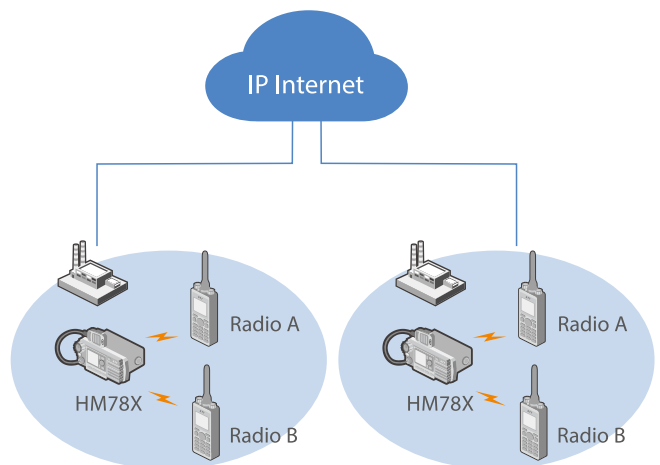


### IP Transit Solution

With the Ethernet network interface of HM78X, 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 (including 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	UHF: 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, VHF1:5-25W High power: UHF:1-45W, VHF1:5-50W
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

## 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	DIN vehicle mounting bracket	Dispatch cable	Mobile Radio Remote Mount Kit	Cabinet Power Supply	Wireless remote speaker microphone	Wireless PTT POA121



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