Hytera

Respond & Achieve

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Hytera DMR Series Product Introduction

Hytera, complying with ETSI DMR open standard, brings you versatile DMR series products, including portable radio, mobile radio, repeater, multi-site IP connection, simulcast system and trunking system. Hytera responds to your demands for smoother communication and higher management efficiency with the most valuable solution of leading digital technologies, innovative user-oriented product design, and complete product portfolio.

DMR
DIGITAL MOBILE RADIO ASSOCIATION

Hytera Communications Corporation Limited

EN20130715A

www.hytera.com

Digital Value is Here

Today, the migration from analog to digital is transforming the industry of professional mobile communications.

With features that analog system has difficulties in achiving, digital technologies enable you to communicate smoothly, respond instantly, and operate efficiently with superior performance and versatile applications.

A flexible and scalable digital communication solution is what one expect. So who can deliver the best one?

Hytera, a leading provider of PMR terminal and system equipment, keeps turning mature and advanced technologies into solutions that you can count on for your everyday communication. Attentively and rapidly responding to customer demands, Hytera delivers customized solutions to facilitate your digitization, providing higher organizational efficiency with its complete DMR portfolio fully compliant to ETSI DMR open standard: portable radio, mobile radio, repeater, multi-site IP connection, simulcast system and trunking system*.

To achieve more with Hytera, digital value is right here for you.

MD78X/78X*¹G

PD78X/78X*¹G

PD70X/70X*¹G

PD79X*¹ Ex

X1p

X1e

RD98X*¹

* More products and solutions to be launched soon. For more information please visit our website or contact our local sales representatives.

* X¹=0, 2, 5 6 or 8, model number varies geographically. For details, please contact our regional sales representatives.

DMR
DIGITAL MOBILE RADIO ASSOCIATION

Digital Mobile Radio (DMR) is an open digital radio standard established by European Telecommunication Standards Institute (ETSI). Featured with rich functions, such as voice & data transmission, and various applications in conventional and trunking mode, DMR has received global recognitions.*
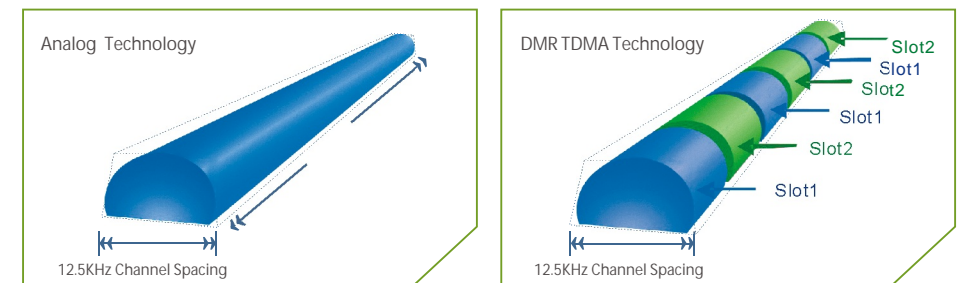
As a premium member of DMR Association, Hytera had mastered this technology. All our DMR products are fully compliant to ETSI DMR requirements and feature innovative applications.

Advanced Digital Technology ››

❶ Higher Spectrum Efficiency

Benefiting from the TDMA technology, our DMR products allow twice the channels based on the same bandwidth. This is a big help to relieve the stress of increasing shortage in spectrum resource.
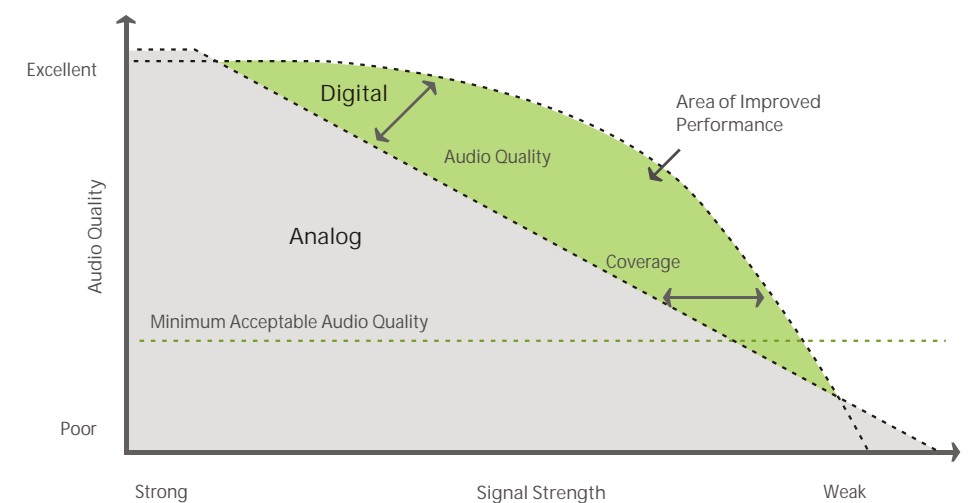
Analog Technology	DMR TDMA Technology
12.5KHz Channel Spacing	Slot2 / Slot1 / Slot2 / Slot1 / Slot2 / Slot1 — 12.5KHz Channel Spacing

❷ Compatible with analog Mode

Our DMR products can operate in either analog or digital mode. It is compatible with the prevalent analog system, ensuring a smooth analog-to-digital transition.

❸ Superior Audio Quality

With the combined application of low rate vocoder and digital error-correction technologies, our DMR products ensure you superior audio quality even in noisy environments or at the edge of the coverage area.

Excellent

Digital

Area of Improved Performance

Audio Quality

Audio Quality

Analog

Coverage

Minimum Acceptable Audio Quality

Poor

Strong   Signal Strength   Weak

* For more information about DMR technology, please visit the official site of DMR Association: www.dmrassociation.org or visit our website for the DMR TechnicalWhitepaper.

❹ Affordable Networking

Another advantage of the DMR TDMA approach is that you get two channels with one repeater, one antenna, and a simple repeater and duplexer. Compared with FDMA solutions, two-slot TDMA allows you to achieve 6.25 kHz efficiency while minimizing investments on network infrastructure.

❺ Secure Communication

Voice signal is easy to be monitored on analog channel. With DMR technology, your communication can be secured by either signalling or ID (up to 16776415 IDs); what's more, our DMR products are equipped with a multi-level privacy mechanism comprising analog scrambler*, software encryption (encryption algorithm up to 256-bit), ensuring confidentiality of your communication.
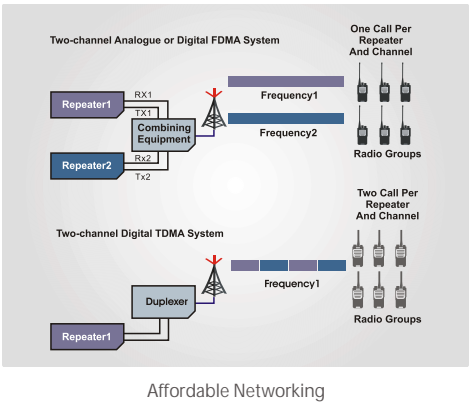
❻ Durable Battery

Compared with analog and FDMA technology, TDMA can improve digital radio battery life by up to 40%.

❼ Rich Data Services

In addition to conventional communication services, our DMR products are powered by rich data services such as Message, GPS and Telemetry.

❽ Versatile Voice Calls

The DMR intelligent signaling can realize various voice calls, including PTT ID, Private Call, Group Call, All Call, Emergency Call, Remote Monitor and Transmit Call Interruput.

Affordable Networking

Innovative Applications ››

❶ Dual-slot Pseudo Trunking

With this unique feature, the free slot can be dynamically allocated to a member who needs to communicate, enhancing frequency efficiency.

❷ Advanced Encryption

Our DMR products provide the 128-bit AES & ARCFOUR (ARC4) encryption with enhanced key management to secure your communication.

Advanced Encryption

❸ Multi-site IP Connection

The scattered repeaters of different frequency bands can be connected via IP to create a wide communication network.

Multi-site IP Connection

❹ Analog/Digital Telephone Interconnect (via DTMF signaling)

The DMR base station supports simplex voice communications between radio and telephone users. It allows a radio user to make a telephone call; or a telephone user to make either a Group or Private call to radio users. This feature utilizes the Commercial Off The Shelf (COTS) Analog Phone Patch boxes and a Plain Old Telephone Service (POTS) line to connect the Repeater to the Corporate Office Phone System (PBX) or Public Switched Telephone Network (PSTN).

Trunking System

Ergonomic Design ››

❶ Large-size Colour Display & Multilingual UI

The large-size TFT LCD display with multilingual UI delivers you favorable accessibility.

❷ User-friendly Menu

The menu gives you quick access to all services and functions. All our DMR products employ the same UI style so that you can learn to operate different models easily.

❸ Globally Patented Antenna Design

The radio antenna and GPS antenna are integrated to ensure convenient operation and better performance.

❹ Separated Knobs

Separated by the antenna, the two knobs of portable radio stand apart from each other, which reduces misoperation when with gloves on or under dim light.
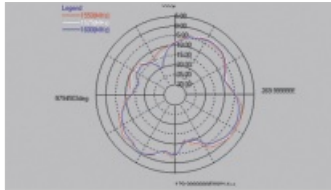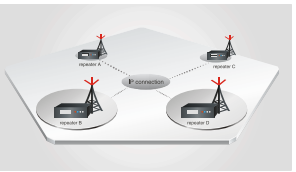
❺ Ergonomic Key

The equipment incorporates big keys for ease of use and precise operation.

❻ 2-in-1 Knob

The 2-in-1 large knob allows easy channel selection and volume control with one knob operation.

Large-size colour Display & User-friendly Menu

Innovative antenna which is integrated to ensure better performance.

Distinctive Knob Design

Ergonomic Key

Prominent Scalability ››

❶ Future Development Port

Our DMR products reserve port for you or any third party to further develop desired functions such as GPS, Call Control and Telemetry.

Further Development Port

❷ Upgradable Software

Authorized dealers can download the Software Upgrade Kit from Hytera official website; this can help end-users upgrade software and enjoy further new enhancements & features*.

❸ Optional Interface

A standard interface is reserved for you or any third party to further develop desired functions (such as Voice recorder, Bluetooth, RFID and Encryption) with the optional board.

Optional Interface
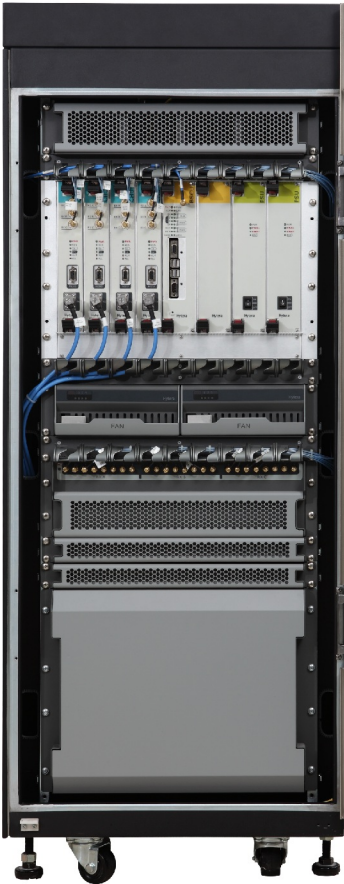
* Indicates functions compatible with HYT analog two-way radios.

*Contact our local sales representative for details.

PD78X/78XG
PD70X/70XG

Professional Digital Portable Two-way Radio

Featured with compact design, IP67 protection, superior audio quality, rich applications and A/D compatibility, the portable radio family will refresh your communication experience!

PD70X/70XG   PD78X/78XG

Ergonomic Design

① Large-size Colour Display
PD78X/PD78XG adopts a 1.8" TFT LCD display (65536 colours), allowing good visibility even under outdoor strong sunlight.

② Ergonomic Key
The radio incorporates big keys for easy of use and precise operation.

③ Distinctive Knob Design
Separated by the antenna, the two knobs of the portable radio stand apart from each other, which reduces accidental activation when changing volume channel.

④ Integrated Antenna
The radio antenna and GPS antenna are integrated to ensure convenience and high performance.

⑤ Rugged and Reliable
Compliant to MIL-STD-810 C/D/E/F/G and HALT (Highly Accelerated Life Test).

⑥ IP67 Compliance
All portable radios comply with IP67 requirements, withstanding immersion testing (1m for up to 30 minutes).

Additional Features

Messaging
PD78X/PD78XG supports multi-line text message transmission, up to 256 characters per message.

GPS
The built-in GPS chipset in PD78XG/PD70XG allows GPS data transmission.

Durable Battery
The supplied 2000mAh Li-Ion battery enables your radio to work for at least 14*[1] hours continuously under the duty cycle of 5-5-90*[2].

Vibration Alert
Quite useful when you are in meeting or noisy environments.

Channel Announcement
The radio can provide a voice announcement for the current channel during channel change.

Man Down
An emergency alarm will be triggered when the radio is down or positioned aslant for a preset time period, improving user safety.

Rich Signaling
HDC1200, DTMF phone , 2-Tone and 5-Tone offers strong scalability, through software upgrade.

Multilingual Menu
The radio supports up to 15 languages, including English, Simplified Chinese, Traditional Chinese, Thai, Arabic, Farsi, Korean, Portuguese, Italian, Russian, Polish, Turkish, French, Spanish and German, allowing you to select as per your need.

One Touch
PD78X/78XG supports One Touch features that comprise of Text Message, Voice Calls and Supplementary Services.

Scan
PD78X/78XG supports scanning of pure Analog voice and signaling, pure Digital voice and data, and also mix mode scan both Analog and Digital activities.

Supplementary Services
PD78X/78XG supports supplementary services of Radio Check, Remote Monitor, Call Alert, Radio Enable and Radio Disable.

Transmit Call Interruput
Enable master radio to over write clear channel for emmergency or urgent communication.

*[1]Above 14 hours in digital mode: Above 10.5 hours in analog mode.
*[2] 5-5-90: 5% for transmitting, 5% for receiving and 90% for standby.

PD79X Ex

IIC Intrinsically Safe Digital Portable Two-way Radio

Hytera PD79X Ex, a portable DMR radio that complies with the world's strictest safety standard. Plastic-encapsulated technology, error- prevention design, and IP67 protection ensure intrinsically safe and reliable communication in hazardous scenes with explosive gas and combustible dusts.

PD79X Ex

Innovative Design

① Improved PCB Circuit Layout & EMC Shielding
To achieve such a high safety standard, Hytera PD79X Ex adopts optimized distributed line design on PCB, minimizing the odds of circuit fault. All the key components on the PCB are covered with shield, and the space between lines, between components, between component and shield are properly spaced , which translates to better EMC performance and less internal interference.

② Innovative Silicone Encapsulating
Silicone encapsulant technology prevents the internal circuits from interface with air and liquid which effectively stops the intrusion of liquid, dust and harmful gas. The silicone encapsulating process is delicate and complicated. As a result, every single PD79X Ex radio spends eight hours in the manufacture line.

③ Innovative Electrostatic Free Design
Hytera applies patent on electrostatic free design and dualmaterial molding technology in this intrinsically safe portable. The static dispersive material (blue) minimizes static accumulation on the surface, thus reducing the probability of static discharge on the radio. Meanwhile the robust material (black) maximizes the ruggedness of the enclosure.

④ IP67
The Ingress Protection reaches IP67 (6: Totally protected against dust; 7: Protected against the effects of immersion up to 1m for 30 minutes). It's the highest IP level for land-based wireless radio application.

⑤ Patent Battery Latch
To disengage the battery from Hytera digital portables, the lock and bolt of the latch need to be moved 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.

Additional Features

• Environmentally Safe and High Reliability
Hytera PD79X Ex is designed upon the strict requirements of European ATEX and North American FM standards. With certifications for ATEX, IECEX, the latest FM and CSA specifications, the radio works safely in most hazardous environments even with the presence of hydrogen and dust particles.The overall design complies with the latest American Military Standard-MIL-STD-810G, which makes it can bear the harshest environments like High/Low Temperature, High Humidity, Vibration, and Shock.

• Enhanced Safety
Hytera PD79X Ex provides a dedicated emergency button. In case of any accident, a press on the button will trigger an alarm and initiate a voice call to a pre-programmed work fellow or group. Built-in Man-down, GPS and Lone Worker functions are also available with the digital portable.

• High-capacity and Safe Li-Ion Battery
Hytera PD79X Ex provides high-capacity Li-Ion battery of 1800mAh with long shift life of 17 hours under 5-5-90 duty cycle. The battery charging and discharging circuits are stringently designed to prevent overcharging or discharging causing high heat, which leads to unstable battery environments. In addition the battery cells are also encapsulated to redistribute single point heat buildup and also prevent air discharge.

• High Audio Quality and Assured Communication Based on DMR Technology
Benefitted from the advantages of DMR digital technology, PD79X Ex provides higher audio quality and stable communication per formance with 40% less battery consumption than analog radios. It provides better communication quality and enhanced privacy, and moreover reduces overall equipment costs.

• Easy to Use
Hytera PD79X Ex is very easy to use. It provides tough and highly readable LCD screen and intuitive user interface. The anti-skidding and fool-proofing ergonomic designs are dedicated for user easy operation. Large PPT button and channel knobs are equally useful for users wearing gloves.

Portable Radio

X1e/X1p
Professional Digital Portable Two-way Radio

Hytera X1e, the world's smallest full power DMR radio; Hytera X1p, ultra-thin full power keypad digital portable radio, complies fully with ETSI open standard. Perfect combination of structural rigidity, versatile functionalities, and refined design; secure communication ensured by AES encryption algorithm & 256 digit dynamic encryption keys; convenient application development facilitated by built-in Bluetooth and USB port; and worry-free handling achieved by IP67 protection.
All comes with a surprisingly small size: 18mm(X1e)/21mm (X1p) (1100mAh Li-ion battery) thin.

X1e   X1p

Innovative Design

① Ease of use
Easy to use with the rugged body as thin as 18mm (X1e)/21mm (X1p), professional wireless headsets or collar microphone, palm controller and flexible antenna.

② IP67
Complies with IP67 requirements, withstanding up to 1m submersion for 30 minutes or more.

③ Rugged & reliable
Complies with MIL-STD-810 C/D/E/F/G standards and passes HALT (Highly Accelerated Life Test)

④ Large-size colour display (X1p).
X1p adopts a 1.8" TFT LCD display (65536 colours), allowing good visibility even under outdoor strong sunlight.

Additional Features

Advanced Encryption
AES encryption algorithm & 256 digits dynamic encryption key ensures secure communication.

Supports Hytera Bluetooth accessories
The radio supports Hytera Bluetooth accessories: EHW02, Bluetooth earpiece; POA47, Bluetooth Ring PTT.

Open USB Interface
Open USB port facilitates secondary and application development.

GPS Positioning
The built-in GPS module supports GIS applications.

Dual Modes (analog & digital)
Dual modes (analog & digital) operation ensures a smooth analog-to-digital migration.

Versatile Voice Calls
Versatile voice calls include individual call, group call and all-call.

Vibration
Vibration alerts the reception of voice call and message.

Rich Signalling
Supports multiple advanced analog signaling, including HDC1200, DTMF phone, 2-Tone and 5-Tone, providing more expansion capacity.

Software Upgradable
Upgrade software enables new features without buying a new radio; X1e/X1p could also be switched into MPT and DMR trunking modes with corresponding license applied in the same hardware.

Mobile Radio

MD78X/78XG
Professional Digital Mobile Two-way Radio

Characterized by superb performance, high reliability and strong scalability, the mobile radio family will enrich your communication experience!

MD78X/78XG

Ergonomic Design

① Large-size Colour Display
2.0" TFT LCD display (260,000 colours).

② 2-in-1 Knob
Easy channel selection and volume control with one knob operation.

③ Rugged and Reliable
Compliant to MIL-STD-810 C/D/E/F/G & IP54 requirements, and passing of HALT. (Highly Accelerated Life Test).

④ LED Indicator
The LED is integrated around the knob to give you clear indication about the radio status.

⑤ Secure MIC Jack
Working with a palm microphone to ensure audio quality.

⑥ Powerful Speaker
The built-in 7W speaker generates loud and clear voice.

⑦ 7 Programmable Keys

⑧ Durable Front Panel

⑨ Standard DB26 Secondary Development Port reserved for further development.

Large-size colour display

Additional Features

Rich Analog Signaling
MD78X/78XG supports various analog signaling types (HDC1200, DTMF phone, 2-Tone and 5-Tone), various squelch control types (CTCSS/CDCSS), thus providing higher function expansion capacity to the analog world.

Switchable Power
50W/25W for VHF and 45W/25W for UHF.

Messaging
MD785/MD785G supports text message transmission, up to 256 characters per message.

GPS
The built-in GPS chipset in MD785G allows GPS data transmission.

Multilingual Menu
The radio supports up to 15 languages, including English, Simplified Chinese, Traditional Chinese, Thai, Arabic, Farsi, Korean, Portuguese, Italian, Russian, Polish, Turkish, French,Spanish and German, allowing you to select as per your need.

One Touch
MD78X/78XG supports One Touch features that comprise of Text Message, Voice Calls and Supplementary Services.

Scan
MD78X/78XG supports scanning of pure Analog voice and signaling, pure Digital voice and data, and also mix mode scan that comprise of Analog and Digital activities.

Supplementary Services
MD78X/78XG supports supplementary services of Radio Check, Remote Monitor, Call Alert, Radio Enable and Radio Disable.

RD98X

Professional Digital Repeater

Distinguished by modularized design, excellent heat dissipation and handy management, the repeater delivers you more than reliability.

Front of RD98X

Rear of RD98X

Ergonomic Design

① Modularized Design
Helpful to enhance reliability and performance.

② Large-size Colour Display & UI Interface
The 2.0"TFT LCD display & UI interface enables you to access and manage the repeater easily.

③ Ergonomic Navigation Knob
Easy access to functions with big navigation knob to facilitate operation.

④ Excellent Heat Dissipation
The unique cooling design combining a built-in heat pipe and a temperature-controlled fan ensures quick heat dissipation, enabling the repeater to work well even with full load.

⑤ LED Indicator
The LED indicators enables you to identify the repeater status clearly.

⑥ Compact Body
The 2RU/19"rack allows more installation flexibility while requiring less space.

⑦ Built-in Duplexer
Enough space is reserved for built-in duplexer, saving installation space.

⑧ 4 Programmable Keys

⑨ Built-in Speaker

Additional Features

Repeater Diagnostic and Control (RDAC)
RD98X supports Remote (via IP port to connect to internet) and Local diagnostic (via USB) PC applications to monitor, diagnose and control the repeater status, thus increasing the maintenance efficiency. Hytera's developed RDAC is able to support multiple master network connection to allow radio administrator to monitor multiple radio network upcoming!

Dual-slot Audio Output
Capable of seamless recording and monitoring of your communication.

Analog Digital Autoswitch
The repeater can be operated in both digital and analog modes, and smartly shift to the right mode according to the type of received signal.

Flexible Networking
The multiple scattered repeaters of different frequencies can be interconnected via IP to form a wireless communication network, allowing automatic roaming and voice & data transmissions for terminals within the network.

Digital-analog Interconnection for Smooth Transition
Back to back interconnection of digital & analog network can be achieved by wired or wireless IP, ensuring a smooth analog-to-digital transition.

RF Output Power up to 50W

16 Channels
RD98X supports decoding up to maximum of 16 CDCSS/CTCSS in Analog channels, allowing repeating of different Analog voice users from various groups.

Supports Operating both in Analog and Digital Mode

Analog Repeater Knockdown
RD98X supports repeater knockdown, that when activated via the repeater's rear accessory pin, will disabled the transmit path of the repeater.

RD96X

Digital Portable Repeater

RD96X is Hytera's first digital/analog portable repeater that is compatible with the DMR standard. Compact and embedded with a mini duplexer, the device is fairly wieldy. It supports a range of power supply plans to guarantee uninterrupted communications during emergencies; its API and 100 Mbps network port combine to support an extended array of applications; the device provides IP67 protection, making it reliable in any hostile operating environment.

RD96X

Innovative Design

① Slim and Portable
Based on a compact design, the device measures only 41mm and weighs less than 3kg.
Built-in Duplexer:Embedded with an optional mini duplexer, RD96X can be slimmer in size.

② External Battery
With an external large-capacity battery, the device delivers an extended battery life to guarantee uninterrupted communications.

③ Emergency Port
The port allows for power connection in emergencies.

④ IP67 Protection
Compatible with the IP67, the device can operate properly under immersion test (1meter for up to 30 minutes).

⑤ Reliable and Durable
Compatible with the American military standard MIL-STD- 810 C/D/E/F/G and HALTverified, the device can perform excellently in hostile operating environments.

⑥ User-friendly Panel
The operating panel provides a wide range of channel status indicators, a button for channel adjustment, and a port for palm microphone or remote speaker microphone.

Additional Features

● Smart Battery (optional)
A 10Ah smart Li-Ion battery can support at least eight hours of work when working at 50% duty cycle and high TX power. Compatible with the smbus1.1 standard, RD96X can monitor battery conditions such as estimated remaining capacity, used capacity percentage, and usage record; the device can also maximize the battery life; through smart charge management, it can automatically recharge the battery for use anytime; powered by three levels of battery protection, the device considerably enhances charging safety and reliability.

● Repeater Diagnostics and Control
Through a PC-based application, the product can monitor, diagnose and control remote (connected to the Internet via an IP port) and local repeaters (via a USB port), thus increasing the productivity. Hytera's RDAC software supports network access at multiple points and allows the administrator to monitor networked two-way radios.

● Voice Input/output via Dual Time Slots: easy for monitoring and voice recording
In digital mode, the device supports voice input and output via dual time slots and enables users to record calls continuously.

● Digital/analog Compatibility and Smart Switching
Back to back interconnection of digital & analog network can be achieved by wired or wireless IP, ensuring a smooth analog-to-digital transition.

● Flexible Networking
By connecting geographically distributed repeaters that run at the same or different frequencies to form an IP-based and location-independent wireless communication network, IP-based repeater interconnection allows mobile radios to obtain voice and data services while roaming.

● 16 Channels
The product supports up to 16 channels. You can switch between channels using PC-based RDAC software, the channel selector knob on the front panel, or the external interface on the repeater.

● Digital-analog Interconnection for Smooth Transition
The feature enables two-way radios with digital and analog capabilities, and digital and analog users to intercommunicate in different operating modes to guarantee users' seamless transition from analog to digital capabilities.

● GPS
The GPS module supports GPS data transmission and enables emergency command centers to monitor the location of a small mobile network in real time.

Repeater

RD98XS
Digital Super Repeater

As an improved version of RD98X DMR digital repeater, RD98XS adopts a more powerful and compatible hardware platform, and can flexibly function as 8 kinds of products by software upgrade, meeting customers' requirements in different periods for higher ROI. The possible functions are:

- Analog conventional repeater
- Analog simulcast transeiver
- MPT trunking transceiver
- MPT trunking simulcast transeiver[*1]
- Digital conventional repeater
- Digital simulcast transeiver[*1]
- DMR trunking transceiver
- DMR trunking simulcast transceiver[*1]

Front of RD98XS

Rear of RD98XS

Ergonomic Design

① Modularized Design
Helpful to enhance reliability and performance.

② Large-size Colour Display & UI Interface
The 2.0"TFT LCD display & UI interface enables you to access and manage the repeater easily.

③ Ergonomic Navigation Knob
Easy access to functions with big navigation knob to facilitate operation.

④ Excellent Heat Dissipation
The unique cooling design combining a built-in heat pipe and a temperature-controlled fan ensures quick heat dissipation, enabling the repeater to work well even with full load.

⑤ LED Indicator
The LED indicators enables you to identify the repeater status clearly.

⑥ Compact Body
The 2RU/19"rack allows more installation flexibility while requiring less space.

⑦ Built-in Duplexer
Enough space is reserved for built-in duplexer, saving installation space.

⑧ 4 Programmable Keys

⑨ Built-in Speaker

Additional Features

Compatible Hardware and Scalable Software
Based on a unified hardware platform, RD98XS enables customers to upgrade software from analog to digital, conventional to simulcast, and conventional to trunking capabilities without purchasing a new repeater.

Repeater Diagnostics and Control
Through a PC-based application, the product can monitor, diagnose and control remote (connected to the Internet via an IP port) and local repeaters (via a USB port), thus increasing the productivity. Hytera's RDAC software supports multi-site connection and allows the administrator to monitor networked repeaters.

Voice via Dual Time Slots (easy for monitoring and voice recording)
In digital mode, RD98XS supports voice input and output through dual time slots and enables users to record calls continuously.

Digital-analog Interconnection for Smooth Transition
Back to back interconnection of digital & analog network can be achieved by wired or wireless IP, ensuring a smooth analog-to-digital transition.

Flexible IP Networking
By connecting geographically distributed repeaters that run at the same or different frequencies to form an IP-based and location-independent wireless communication network, the IP feature allows mobile terminals to obtain voice and data services while roaming.

High Reliability
MTBF of up to 100,000 hours for cyclic and continuous transmission at 50W TX power and 100% duty cycle.

Accessories

Hytera also provides a full line of professional accessories (such as audio accessory, battery, charger and carrying accessory*) to deliver an optimal communication experience.

For Portable Radio ››

High-capacity Battery

BL2006   Li-Ion Battery (2000mAh) (Standard)
BL2503   Li-Ion Battery (2500mAh) (Optional)
BL1807-Ex   Explosion-proof Li-Ion Battery (1800mAh) (Optional)

Carrying Case (LCY003)

Explosion-proof Carrying Case (LCY005)

Power Supply

CH10A04   MCU Rapid-rate Charger (for Li-Ion/Ni-MH batteries) (Standard)
CHV09   Vehicle Power Adapter (Output: 12V 1A)
PS1026   Switching Power Adapter (with a rapid-rate charger) (Output: 12V 1A) (Standard)
MCA06   MCU Multi-unit Rapid-rate Charger (for Li-Ion/Ni-MH batteries)
MCA05   Battery Optimizing System (with LCD)
PS7002   Six-unit Switching Power

MCU Multi-unit Rapid-rate Charger(MCA06)

Carrying Accessories

LCY003   Carrying Case (for thick battery) (leather) (swivel)
LCY005   Explosion-proof Carrying Case (for thick battery) (leather) (swivel)
RO04   Leather Strap (Standard)
BC19   Spring Belt Clip (Standard)

Antenna
GPS Antenna

Data Cables
PC38   Programming cable (USB)

Battery Optimizing System (MCA05)

* Additional GPS board is required when using as simulcast transceiver.

11

* Indicates accessories to be promoted. For more information, please visit our website or contact our local sales representative.

12

ESN10   EHN12   EAN16   EAN17   EAN18

PC37   PC40   PC43   PC47   PC49   BC00004

ELN05-Ex   EBN04-Ex   SM18N2   SM18N4-Ex

Maintenance Kit

PC37   Programming Cable (USB Port)(RoHS)
PC40   Data Transmission Cable (RoHS)
PC43   DB26-connector Dispatching Cable
PC47   Programming Cable(CPS programming and firmware upgrading)
PC49   Back to back data cable

PC61   Multi-functional Data Cable for Mobile Radio
PC60   Ignition Cable for Mobile Radio
BC00004   Programming software kit (programming cable + disk)(RoHS)
POA56   DMR GOB

Audio Accessories

ESN10   Earbud with on-MIC PTT
EHN12   D-earset with on-MIC PTT
EAN16   Earpiece with on-MIC PTT & Transparent Acoustic Tube
EAN17   3-wire Surveillance Earpiece with Transparent Acoustic Tube (Beige)
EAN18   3-wire Surveillance Earpiece with Transparent Acoustic Tube (Black)
SM18N2   Waterproof Remote Speaker Microphone (IP57)

ESS07   Receive-Only Earbud (for use with remote speaker microphone)
ESS08   Receive-Only Earpiece with Transparent Acoustic Tube (for use with remote speaker microphone)
SM18N4-Ex Explosion-proof Palm Microphone (IP67)
ELN05-Ex Explosion-proof Light Weight Throat-vibrating Earpiece
EBN04-Ex Explosion-proof Ear Canal Bone Induction Earpiece

Remote Mount Kit (Without control head, with 3M cable) (RCC06)   Remote Mount Kit (Without control head, with 6M cable) (RCC07)   Remote Mount Kit (with control head, with 3M cable) (RCC04)   Remote Mount Kit (With control head, with 6M cable) (RCC05)   3M cable for remote mount kit (PC46)   6M cable for remote mount kit (PC48)

For Mobile Radio ››

Antenna

GPS04   Mobile GPS Antenna, SMA, 1575MHZ
GPS06   Vehicle GPS/GLONASS Antenna(SMA,1590MHz,3m)

Mobile GPS Antenna (GPS04)

Vehicle installation accessories

BRK08   Vehicle installation kit(RoHS)
RCC04   Remote Mount Kit （with control head, with 3M cable）
RCC05   Remote Mount Kit （With control head, with 6M cable）
PC46   3M cable for remote mount kit
PC48   6M cable for remote mount kit
BRK15   In-Dash Mounting Kit(DIN)(RoHS)
POA33   Fuse(RoHS)
RCC06   Remote Mount Kit （Without control head, with 3M cable） * only applicable for mobile radio ordered since 1st Jan. 2012
RCC07   Remote Mount Kit （Without control head, with 6M cable） * only applicable for mobile radio ordered since 1st Jan. 2012

Vehicle installation kit (RoHS) (BRK08)   In-Dash Mounting Kit (DIN) (RoHS) (BRK15)   Fuse (RoHS) (POA33)

Power supply Accessories

PWC10   Power supply cable for mobile radio(3m)
PS22002   Power Supply for Mobile Radio(300W,Backup Power Supply applicable)

Power Supply for Mobile Radio (PS22002)   Power supply cable for mobile radio (PWC10)

For Repeater ››

Power Cord
PWC11   DC Power Cord for Repeater

Installation Accessories
BRK12   Installation accessory for rack-mounted power supply (2U)(Black)
BRK14   Installation Accessory for Rack-mounted Power Supply (2U)(Gray)
BRK09   Duplexer Installation Kit (For DT11&DT14)
BRK16   Duplexer Installation Kit (For DT11-DT17)

Data Cables
PC37   10pin programming cable (USB)
PC40   DB26 Data Cable (USB)
PC49   Dispatch cable

Palm Microphone (SM16A1)   Water proof Palm Microphone (SM16A2)   Palm Microphone with Keypad(SM19A1)   External Speaker(SM09D1)

Duplexer Installation Kit (For DT11&DT14)   External Power Supply(PS22002)   Installation Kit(2U)(Gray)(Black)

Audio Accessories

SM16A1   Palm microphone, hytera logo(RoHS)
SM16A2   Water proof Palm Microphone(IP67)
SM19A1   Palm microphone with keypad
SM09D1   External Speaker, hytera logo(RoHS)
SM20A1   Telephone Style Handset
SM10A1   Desktop Microphone, hytera logo(RoHS)

Power Supply
PS22002   External Power Supply (300W, applicable to backup batteries. If AC power malfunctions, backup battery will operate as a substitute automatically.)

Duplexer
DT11 for frequency: 380-470MHz; RX-TX spacing: 5-13MHz
DT12 for frequency: 160-174MHz; RX-TX spacing:5MHz
DT13 for frequency: 148-160MHz; RX-TX spacing:5MHz
DT14 for frequency: 336-370MHz; RX-TX spacing: 8-13MHz

DT15 for frequency: 136-148MHz; RX-TX spacing:5MHz
DT16 for frequency: 440-480MHz; RX-TX spacing:5MHz
DT17 for frequency: 480-512MHz; RX-TX spacing:5MHz

Telephone Style Handset(SM20A1)   Desktop Microphone(SM10A1)

Portable Radio / Backpack Repeater

		Portable Radio		Backpack Repeater
		PD79X Ex	**X1e/X1p**	**RD96X**
General	Frequency Range	400-470MHz	UHF1: 400-470MHz; UHF2: 450-520MHz; UHF3: 350-400MHz; UHF5: 806-941MHz *; VHF: 136-174MHz	UHF1:400-470MHz; UHF3:350-400MHz; VHF:136-174MHz
	Channel Capacity	1024	32 (X1e)/1024 (X1p)	16
	Zone Capacity	64 (each with a maximum of 16 channels)	3 (X1e)/64(X1p)(each with a maximum of 16 channels)	–
	Channel Spacing	25/20/12.5KHz		
	Operating Voltage	7.4V (rated)		DC: 13.6 V ± 15% Battery: 14.8V
	Current Drain — Standby	–		<0.5A
	Current Drain — Receive	–		–
	Current Drain — Transmit	–		<2.5A
	Battery	1800mAh (Li-Ion)	1100mAh/1400mAh/1800mAh (Li-Ion)	10Ah (Li-Ion)
	Battery Life(5-5-90 Duty Cycle, High TX Power)	Analog: 14.5h/13h (G) Digital: 17h/15h (G)	Digital about 10 Hours (1100mAh Li-ion battery) Digital about 12 Hours (1400mAh Li-ion battery) Digital about 15 Hours (1800mAh Li-ion battery)	8h
	Frequency Stability	± 1.5ppm		± 0.5ppm
	Antenna Impedance	50 Ω		
	Duty Cycle	–		100%
	Dimensions (H × W × D)	141x55x39mm (with standard battery, without antenna)	X1e: 119.5 X 57 X 18mm (1100mAh Li-ion battery) 119.5 X 57 X 20mm (1400mAh Li-ion battery) 119.5 X 57 X 23mm (1800mAh Li-ion battery) X1p: 119.5 X 57 X 21mm (1100mAh Li-ion battery) 119.5 X 57 X 23mm (1400mAh Li-ion battery) 119.5 X 57 X 26mm (1800mAh Li-ion battery)	301x184x51mm (with protective shell) 291x172x41mm (without protective shell)
	Weight	495g (with antenna & standard battery)	X1e:about 220g (1100mAh Li-ion battery);about 240g (1400mAh Li-ion battery) about 260g (1800mAh Li-ion battery) X1p:about 220g (1100mAh Li-ion battery);about 260g (1400mAh Li-ion battery) about 280g (1800mAh Li-ion battery)	<3.0kg
	LCD Display	160 X 128 pixels, 65536 colour 1.8-inch, 4 rows		–
	Anti-explosion levels	ATEX: II 2G Ex ib IIC T4 II 2D Ex ib IIIC T120℃ IP5X I M2 Ex ib IECEx: Ex ib IIC T4 Ex tb IIIC T120℃ IP5X FM: Class I, Zone 1 Aex ib IIC T4 Class II, III Div 1, Gro up E, F, G T120℃ -20℃ ≤Ta≤50℃		–
Transmitter	RF Power Output	1W	UHF1/UHF2/UHF3 High Power: 4W; UHF5*High Power:3W UHF1/UHF2/UHF3/UHF5* Low Power: 1W VHF High Power: 5W VHF Low Power: 1W	1-10W (adjustable)
	FM Modulation	11K0F3E @ 12.5KHz 14K0F3E @ 20KHz 16K0F3E @ 25KHz		
	4FSK Digital Modulation	12.5KHz Data Only: 7K60FXD; 12.5KHz Data & 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++ or SELP		
	Digital Protocol	ETSI-TS102 361-1, 2&3		
Receiver	Sensitivity — Analog	0.3 μ V (12dB SINAD) : 0.22 μ V (Typical) (12dB SINAD): 0.4 μ V (20dB SINAD)		
	Sensitivity — Digital	0.3 μ V/BER5%		
	Selectivity TIA-603	60dB @ 12.5KHz; 70dB @ 20/25KHz		
	Selectivity ETSI	60dB @ 12.5KHz; 70dB @ 20/25KHz		
	Intermodulation TIA-603	70dB @ 12.5/20/25KHz		
	Intermodulation ETSI	65dB @ 12.5/20/25KHz		
	Spurious Response Rejection TIA-603	70dB @ 12.5/20/25KHz		
	Spurious Response Rejection ETSI	70dB @ 12.5/20/25KHz		
	Blocking TIA-603	80dB		90dB
	Blocking ETSI	84dB		84dB
	S/N	40dB @ 12.5KHz; 43dB @ 20KHz; 45dB @ 25KHz		
	Rated Audio Power Output	0.5W	–	External (@16 ohm load) 1W
	Rated Audio Distortion	≤3%		
	Audio Response	+1 ~ -3dB		
	Conducted Spurious Emission	< -57dBm		
Environmental Specifications	Operating Temperature	-20℃ ~ +50℃	-30℃ ~ +60℃	
	Storage Temperature	-40℃ ~ +85℃		
	ESD	IEC 61000-4-2 (level 4): ± 8kV (contact): ± 15kV (air)		
	American Military Standard	MIL-STD-810 C/D/E/F/G		
	Dust & Water Intrusion	IP67 (non-explosion-proof)	IP67 Standard	
	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		

Portable Radio / Mobile Radio / Repeater

		Portable Radio		Mobile Radio	Repeater
		PD70X/70XG	**PD78X/78XG**	**MD78X/78XG**	**RD98X/RD98XS**
General	Frequency Range(MHz)	UHF1: 400-470MHz; UHF2: 450-520MHz; UHF3: 350-400MHz; UHF5: 806-941MHz *: VHF: 136-174MHz			
	Channel Capacity	32	1024		16
	Zone Capacity	3 (each with a maximum of 16 channels)	64 (each with a maximum of 16 channels)		–
	Channel Spacing	25/20/12.5 KHz			
	Operating Voltage	7.4V (rated)		13.6 V ± 15%	
	Current Drain — Standby	–	–	< 0.6A	< 0.8A
	Current Drain — Receive	–	–	< 2.0A	–
	Current Drain — Transmit	–	–	< 12A (45W/50W) < 8A (25W) < 5A (5W)	<11A
	Battery	2000mAh (Li-Ion)		–	–
	Battery Life(5-5-90 Duty Cycle, High TX Power)	Analog: UHF1: 13.5h/12h (G) UHF2: 12.5h/11h (G) UHF3: 12.5h/11h (G) UHF5*: 9.5h/8.5h(G) VHF: 11h/10h (G)	Digital: UHF1: 15.5h/14h (G) UHF2: 14.5h/12.5h (G) UHF3: 14.5h/12.5h (G) UHF5*: 12h/11h(G) VHF: 13.5h/12h (G)	–	–
	Frequency Stability	± 1.5ppm			± 0.5ppm/ ± 10Hz (transeiver)
	Antenna Impedance	50 Ω			
	Duty Cycle	–			100%
	Dimensions (H × W × D)	125 X 55 X 35mm (with standard battery, without antenna)	125 X 55 X 37mm (with standard battery, without antenna)	60 X 174 X 200mm	88 X 483 X 366mm
	Weight	335g (with antenna & standard battery)	355g (with antenna & standard battery)	1.7Kg	8.5Kg
	Front Case	PC		PC+ABS	–
	LCD Display	–	160 × 128 pixels, 65536 colours 1.8 inch, 4 rows	220 × 176 pixels, 262000 colours 2.0 inch, 4 rows	
Transmitter	RF Power Output	UHF1/UHF2/UHF3 High Power: 4W; UHF5* High Power: 3W: UHF1/UHF2/UHF3/UHF5* Low Power: 1W VHF High Power: 5W VHF Low Power: 1W		Low Power UHF1/UHF2/UHF3/UHF5*: 5-25W; VHF: 5-25W High Power UHF1/UHF2/UHF3: 5-45W;UHF5*: 5-35W VHF: 5-50W	5-50W (adjustable)
	FM Modulation	11K0F3E @ 12.5KHz 14K0F3E @ 20KHz 16K0F3E @ 25KHz			
	4FSK Digital Modulation	12.5KHz Data Only: 7K60FXD; 12.5KHz Data & Voice: 7K60FXW			
	Conducted/Radiated Emission	-36dBm<1GHz -30dBm>1GHz			
	Modulation Limiting	± 2.5kHz @ 12.5 kHz ± 4.0kHz @ 20 kHz ± 5.0kHz @ 25 kHz			
	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++ or SELP			
	Digital Protocol	ETSI-TS102 361-1，2&3			
Receiver	Sensitivity — Analog	0.3 μ V (12dB SINAD) ： 0.22 μ V (Typical) (12dB SINAD) ： 0.4 μ V (20dB SINAD)			
	Sensitivity — Digital	0.3 μ V/BER5%			
	Selectivity TIA-603	60dB @ 12.5KHz; 70dB @ 20/25KHz	65dB @ 12.5KHz; 75dB @ 20/25KHz		65dB @ 12.5KHz; 75dB @ 20/25KHz
	Selectivity ETSI	60dB @ 12.5KHz; 70dB @ 20/25KHz	60dB @ 12.5KHz; 70dB @ 25/20KHz		65dB @ 12.5KHz; 75dB @ 20/25KHz
	Intermodulation TIA-603	70dB @ 12.5/20/25KHz	75dB @ 12.5/20/25KHz		75dB @ 12.5/20/25KHz
	Intermodulation ETSI	65dB @ 12.5/20/25KHz	70dB @ 12.5/20/25KHz		70dB @ 12.5/20/25KHz
	Spurious Response Rejection TIA-603	70dB @ 12.5/20/25KHz	75dB @ 12.5/20/25KHz		80dB @ 12.5/20/25KHz
	Spurious Response Rejection ETSI	70dB @ 12.5/20/25KHz	70dB @ 12.5/20/25KHz		80dB @ 12.5/20/25KHz
	Blocking TIA-603	80dB	90dB		90dB
	Blocking ETSI	84dB	84dB		90dB
	S/N	40dB @ 12.5KHz; 43dB @ 20KHz; 45dB @ 25KHz			
	Rated Audio Power Output	0.5W		Internal (@20ohm load)3W External (@8 ohm load)7.5W	0.5W
	Rated Audio Distortion	≤3%			
	Audio Response	+1 ~ -3dB			
	Conducted Spurious Emission	< -57 dBm			
Environmental Specifications	Operating Temperature	-30℃ ~ +60℃			
	Storage Temperature	-40℃ ~ +85℃			
	ESD	IEC 61000-4-2 (level 4): ± 8kV (contact): ± 15kV (air)			–
	American Military Standard	MIL-STD-810 C/D/E/F/G			–
	Dust & Water Intrusion	IP67 Standard		IP54 Standard	–
	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			–

* This frequency band is only available for DMR trunking mode.

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

X1p

X1e

RD98XS

RD98X

MD78X/78XG

RD96X

PD79X Ex

PD78X/78XG

PD70X/70XG