Hytera

Respond & Achieve

ISO 9001

Hytera Communications Corporation Limited

Stock Code: 002583.SZ

Address: Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, P.R.C

Tel: +86-755-2697 2999 **Fax:** +86-755-8613 713 **Post:**518057

Https://www-hytera.com **marketing@hytera.com**

Hytera

Hytera DMR System Product Catalog

DMR

DIGITAL MOBILE RADIO ASSOCIATION

www.hytera.com

Hytera DMR System Overview

DMR Core Network MSO

DS-6210 DMR Trunking Pro Base Station

DS-6211 DMR Trunking Lite Base Station

DS-6250 DMR Trunking Cube Base Station

DS-6250S DMR Trunking Cube Base Station

DS-6310 DMR Simulcast Base Station

DS-9300 Bi-directional Amplifier

NM-6000 Centralized Network Management System (CNMS)

empowR SCADA DMR Data Transmission Solution

SmartOne Dispatch

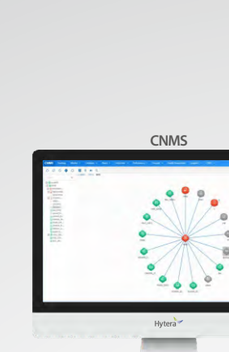
Multimedia Recording and Playback System (MRPS)

Application

Core Network

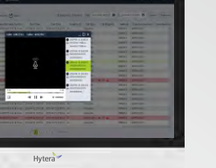
MSO

Access Network



DS-6210
DMR Trunking Pro Base Station

DS-6211
DMR Trunking Lite Base Station



DS-6310
DMR Simulcast Base Station

DS-6250
DMR Trunking Cube Base Station

DS-6250S
DMR Trunking Cube Base Station

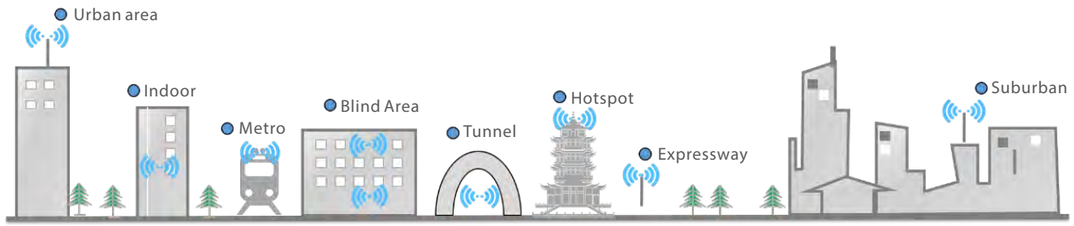
DS-9300
Bi-directional Amplifier

DMR System Product Portfolio

Hytera DMR System Overview

As a leader in the private network communication, Hytera has been committed to providing innovative DMR products and solutions since the initial release of DMR standard. In 2010, Hytera launched the world's first DMR trunking system, DMR Trunking Pro, since then DMR in Hytera grows much faster. Today, Hytera has a rich DMR product range, can provide one-stop solutions that includes radio terminals, DMR systems and applications. Hytera's DMR solutions have been widely used in more than 100 countries and regions around the world.

Hytera provides customers with more advanced, safer and more efficient DMR radio communication solutions to meet the needs of customers from public security, emergency rescue, energy, transportation, etc.



DMR Product Features

One-stop solution

Hytera delivers a one-stop solution covering the terminal, system trunking, accessory equipment, repeater equipment, background management, application and command & control system. Its product design is more suitable to private network users and its rich experience in private network industry enables it to bring users with in-depth customized solutions.

Demand-orientated product design

Hytera products are industry and customer specific, and better meet the customized requirements.

Innovative simulcast solution

Simulcast technology enables multiple sites to reuse the same frequency resources to provide a wide range of network coverage. All Hytera's DMR trunking systems support the simulcast networking mode, it also provides the DMR conventional simulcast system solution, which can well meet the networking requirements under various frequency resource constraints.

Safer communication

The requirements for a secure, encrypted and reliable network is now more important than ever, Hytera DMR trunking network provides a variety of security services such as authentication, end-to-end encryption, air interface encryption, to ensure the security of communications

Open Platform

Open APIs allow you to develop more helpful functions based on actual requirements.

DMR Core Network

MSO

DMR core network MSO is in charge of interconnection and data switch between each base station, which can achieve the inter-site/system calls, user management, equipment monitoring and maintenance, and priority management. The MSO logically consists of central control unit, soft switch unit, database unit, network management unit, dispatch unit, MTU and gateway.

Highlights

Rich service functions

It has mobility management capabilities such as registration, handover, roaming, dynamic reorganization and control channel reselection. Provide voice services such as individual call, group call, emergency call, broadcast call, all call, etc. Support data services such as short message, long text, GPS pull-up, status message and emergency alarm. Provide rich secondary development interfaces.

High reliability design

MSO supports local and geographic redundancy. When the primary equipment fails, the standby equipment can take over the business in real time.

Ultra-large user capacity

Could Support up to 4096 carriers per MSO, 100000 radios per MSO, 512 MSO interconnect.

Capacity expandable

MSO adopts general computer server hardware, the capacity of a MSO is expandable through adding server hardware.

Specifications

System	Trunking Pro	Trunking Lite		Tier II Simulcast
		Centralized	Non-centralized	
Max. BS capacity per MSO	512	50	5	500
Max. network capacity (carrier) per MSO	4,096	200	20	500
Dispatcher capacity (pcs) per MSO	50,000	20	5	50
Network Management Clients capacity (pcs) per MSO	64	20	5	32

DMR Trunking Pro Base Station

DS-6210

The DS-6210 DMR Trunking Pro base station is responsible for air interface protocol to work with the wireless terminal to establish communication. Control the call setup within the base stations, maintenance, control of inter-base station connecting the call, the radio resource management, base station equipment maintenance, operation of base stations and core network interfaces between the control and other functions. Compared with the traditional system, this system is more powerful. It is base station with its own user database and a higher level cluster control functions. It can support all single-station business without the participation of independent MSO.

Highlights

Superior Reliability

- Modularized blade design and Multi-level fault-tolerant capability for enhanced reliability and efficiency.
- Interference monitoring and link detection features guarantee the high performance of the system.
- Redundancy capability for key modules such as base station control unit, power supply unit, control channel, and traffic channel, etc.

Scalable and Large Capacity

From 1 to 48 carriers could be selectable.

Wider Coverage

- Fully Compliant with DMR Tier 3 technology which born with the advantage of wider coverage over other technologies.
- Non-linear amplifier.
- Innovative triple-diversity receiving technology with 3-5dB gain.

Specifications

Frequency range	U1: 400-470 MHz U2: 450-520 MHz U3: 350-400 MHz U5: 806-941 MHz V1: 136-174 MHz
Carrier capacity per BS	Up to 48 carriers
Static sensitivity	-118dBm@BER5%
Dynamic sensitivity	-108dBm@BER5%

Maximum power consumption	4-carrier: ≤1000 W 8-carrier: ≤2000 W 16-carrier: ≤4000 W
Rated TX power	1-50 W
Operating temperature	-15°C to +35°C -30°C to +60°C (extreme)
Dimensions (H x W x D)	600 mm x 600 mm x 1430 mm (29U) 600 mm x 600 mm x 2000 mm (42U)

DMR Trunking Lite Base Station

DS-6211

Hytera DS-6211 DMR Trunking Lite Base Station is developed based on ETSI open standard DMR Tier 3. The base station is special in regarding smooth evolution, flexible networking, and powerful secondary development. With its capability to meet the customized requirements of various industries and effectively solve the problems of compatibility and multi-network convergence, it is an ideal product for small and medium wireless communication users.

Highlights

Features Flexible networking

It supports trunking networks including centralized network, non-centralized network, single base station, and multiple base stations. The simplified network architecture reduces network construction costs.

Interconnection of heterogeneous systems

It can interconnect with multiple systems such as MPT system, conventional system, and PSTN network, allowing it to play a key role in government emergency, and command & control.

Standard rack-mounted cabinet

The standard rack mounted cabinet design is adopted to allow the customers to install the cabinet neatly in the existing equipment room.

Smooth evolution

Based on the RD980S hardware platform, evolution of the conventional repeater, channel unit (CHU), and the trunking CHU can be implemented by license upgrade. Therefore, the same core hardware can be adapted to different projects.

Versatile equipment, flexible configuration

The system adopts modular equipment with high versatility. The multi-level license supports optional authorization. It allows dealers to prepare the basic part and flexibly adapt to different projects. It also allows customers and dealers to purchase and manage non-critical equipment.

Specifications

Frequency range	350-400 MHz; 400-470 MHz; 136-174 MHz
Carrier capacity per BS	Up to 24 CH
Max. power consumption	2-carrier: ≤600 W 4-carrier: ≤1200 W 8-carrier: ≤2400 W

Static sensitivity	-118dBm@BER≤5%
TX power	1-50W, 100W high-power version available for U1 and VHF
Operating temperature	Normal: -15°C to 35°C Extreme: -30°C to 60°C
Overall dimensions	4-carrier: 600 mm x 600 mm x 1800 mm (38U) 8-carrier: 600 mm x 600 mm x 1800 mm (38U x 2)

DMR Trunking Cube Base Station

DS-6250

The integrated base station DS-6250 adopts a complete new design with high integration of hardware. Its compact structure makes wireless communication deployment more efficient and flexible. It enables rapid deployment in major events, which effectively improves network capacity and coverage area. Multiple product deployment forms and IP67 design make it apply to more environments, providing a better solution for the seamless coverage and blind area supplement of the DMR trunking network.

Highlights

All in One

Based on multicarrier technology, DS-6250 DMR Trunking Cube Base Station is highly integrated and is able to be powered on to work upon arrival, saving you time and money on installation and deployment.

Flexible deployment

Various deployment options are available: Wall-mounted, Pole-mounted, Vehicle-mounted for emergency situations and Trailer-mounted for temporary operation.

Wider coverage

DS-6250 DMR Trunking Cube Base Station can provide excellent coverage. It supports diversity receiving and can be directly mounted on antenna masts or towers, reducing signal loss.

High spectrum efficiency

Based on multicarrier technology, channel spacing is only 50 KHz instead of the traditional 250 KHz plus. What's more, it can work in DMR trunking simulcast mode, which means all base stations implemented in a single network can adopt the same frequencies.

Scalable capacity

DS-6250 DMR Trunking Cube Base Station adopts multi-carrier technology and SDR technology, it can support capacity expansion from 1 to 8 carriers by software configuration.

Eco-friendly

The highly integrated components ensure power consumption is less than 550W, supported with the eye-catching blade heat sink design to guarantee good heat dissipation.

Specifications

Protocol	DMR Tier3
Frequency	UHF1:400-470MHz
Carrier capacity	8
Multi-access method	TDMA
Vocoder	AMBE+2TM/NVOC
Time synchronization	GPS/Beidou/IEEE 1588 V2
Duplex spacing	10 MHz
RF power	2CH<40W; 4CH<20W; 6CH<13W; 8CH<10W
Static sensitivity	-122dBm@BER5%
Power supply	DC-48V/AC220V

Power consumption	≤ 550W
Operating temperature	-40°C to +55°C
Storage temperature	-40°C to +85°C
Operating humidity	5%RH-100%RH
Atmospheric pressure	70-106 kPa
Protection Class	IP67
Wind resistant	240 km/h
Weight	< 26 kg
Dimensions	435 mm x 340 mm x 157.5 mm
MTBF	≥100,000 hours

DMR Trunking Cube Base Station

DS-6250S

The integrated base station DS-6250S adopts a complete new design with high integration of hardware. Its compact structure makes wireless communication deployment more efficient and flexible. It enables rapid deployment in major events, which effectively improves network capacity and coverage area. Multiple product deployment forms and IP68 design make it apply to more environments, providing a better solution for the seamless coverage and blind area supplement of the DMR network.

Highlights

All in One Design

Based on multicarrier technology, DS-6250S DMR Trunking Cube Base Station is highly integrated and is able to be powered on to work upon arrival, saving you time and money on installation and deployment.

Flexible deployment

Various deployment options are available: Wall-mounted, Pole-mounted, Vehicle-mounted for emergency situations and Trailer-mounted for temporary operation.

Large coverage

DS-6250S DMR Trunking Cube Base Station can provide excellent coverage. It supports diversity receiving and can be directly mounted on antenna masts or towers, reducing feeder cable loss.

High spectrum efficiency

Based on multicarrier technology, channel spacing is only 50 KHz instead of the traditional 250 KHz plus. What's more, it can work in DMR trunking simulcast mode, which means all base stations implemented in a single network can adopt the same frequencies.

Scalable capacity

DS-6250S DMR Trunking Cube Base Station adopts multi-carrier technology and SDR technology, a single unit can support capacity expansion from 1 to 8 carriers by software configuration. It also supports expansion up to 24 carriers with 3 units connect together as one site.

Eco-friendly

The highly integrated components ensure power consumption is less than 350W, supported with the eye-catching blade heat sink design to guarantee good heat dissipation.

Specifications

Protocol	DMR Tier3
Frequency	RX: 351-356 MHz, TX: 361-366 MHz; RX:372-377 MHz, TX: 382-387 MHz
Carrier capacity	8
Multi-access method	TDMA
Vocoder	AMBE++
Time synchronization	GPS/Beidou/GLONASS/Galileo/PTP
Duplex spacing	10 MHz
RF power	2CH<50W; 4CH<25W; 6CH<13W; 8CH<10W
Static sensitivity	-125dBm@BER5%
Power supply	DC-48V/AC220V

Power consumption	≤ 350W
Operating temperature	-40°C to +55°C
Storage temperature	-40°C to +85°C
Operating humidity	5%RH-100%RH
Atmospheric pressure	70-106 kPa
Protection Class	IP68
Wind resistant	240 km/h
Weight	< 16.7 kg
Dimensions	447 mm x 357 mm x 125 mm
MTBF	≥100,000 hours

Digital Simulcast Base Station

DS-6310

The DS-6310 digital simulcast base station is launched based on the DMR standard. It enables communication for large area command and control in the case of insufficient frequency resources. The DS-6310 can meet the wireless command & control requirements of highway traffic police, firemen, and other professional user groups, and can be used as a public security emergency backup network.

Highlights

Fewer frequencies

The DS-6310 uses only one pair of frequencies. By using the TDMA dual-slot technology, it provides two traffic channels.

Dynamic voting

The DS-6310 can automatically vote and deliver the best voice signals to ensure communication quality for the terminal.

Seamless roaming

The terminal can roam and switch seamlessly between base stations without call interruption.

Flexible Subnetting

The DS-6310 can provide subnet based on user requirements, to allow departments to communicate independently without mutual impact.

Dynamic modes (analog + digital)

The DS-6310 supports work in both digital and analog simulcast mode and ensures smooth evolution of analog to digital.

Multiple synchronization schemes

The DS-6310 supports standard GPS clock synchronization scheme, and also provides a PTP clock synchronization scheme for special application environments (e.g., tunnel, mine) that cannot get GPS signals.

Advanced functions

Simulcast system provides comprehensive advanced functions, such as MSO local/remote backup, multiple dialing schemes (simple or complex, applicable to magnitude and industry applications), channel monitoring, and alarm management.

Specifications

Frequency range	U1: 400-470 MHz U3: 330-400 MHz V1: 136-174 MHZ
Duplex space	UHF: 10 MHz; VHF: 5.3 MHz
Rated TX power	5-50 W
RF port type	N-Female

Interface with MSO	BNC-Female (E1) / RJ-45 (Ethernet)
Operating temperature	-30°C to +60°C
Max. power consumption	1-carrier: ≤ 200W 2-carrier: ≤ 400W Wireless BS: ≤ 400W
Power supply	AC: 100 V to 240 V; DC: -40 V to -60 V

Bi-Directional Amplifier

DS-9300

BDA (Bi-Directional Amplifier) is used to provide bidirectional communication between radio terminals and the base station in order to fit in any kind of environments. It can be used outdoors to extend the coverage range of base station, making communication services available in areas with no or weak signals. Additionally, it can be used indoors as the signal source to improve signal strength. With a multichannel selecting unit, BDA can selectively amplify the signals, ensuring the frequency purity of repeated signals and the stability of output power. It has been widely used in scenarios such as tunnels, along roads and railways, indoor areas, outskirt areas and congested residential areas. It has excellent compatibility, widely used in trunking communication systems such as DMR, TETRA, APCO25, MPT-1327, as well as conventional communication system.

Highlights

Compact structure, convenient installation

The system features in compact structure and excellent heat dissipation, and is waterproof, dustproof, and salt-spray proof. It can be wall-mounted or pole-mounted.

Excellent performance, strong anti-interference capability

The performance of key indicators is excellent. With fewer intermodulation products of multiple carriers, it has strong carrier out-of-band rejection and good anti-interference capabilities.

Diversified management and simple configuration

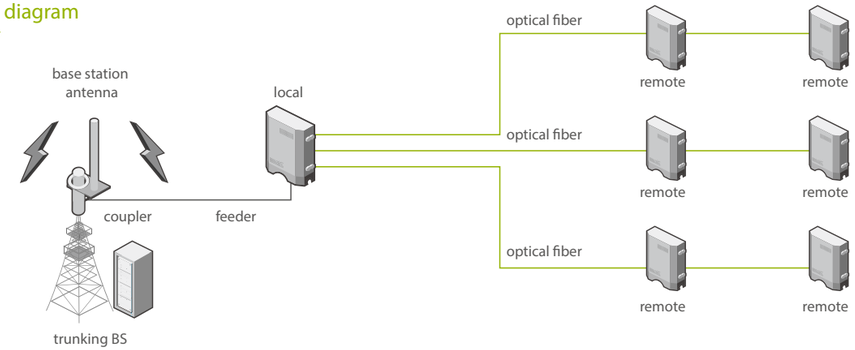
It can be managed locally (RS232 serial port) or remotely (IP network). It supports single point query, setting, upgrade, and local (RS232 serial port) monitoring.

Flexible networking, comprehensive functions

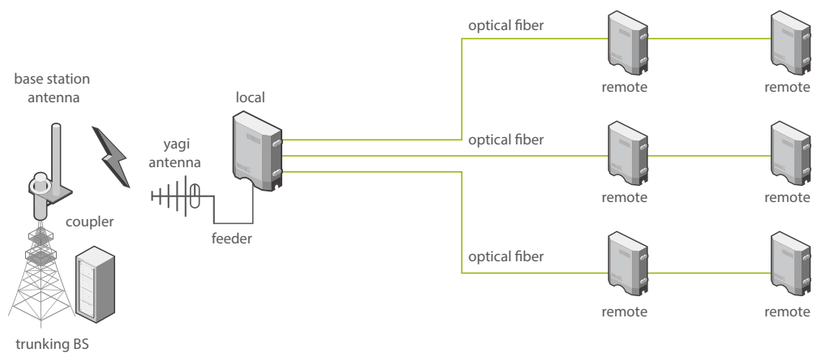
The system supports star, chain, ring, and hybrid networking. Its comprehensive functions include uplink squelch, delay compensation, carrier suppression, digital multicarrier, and closed-loop redundancy.

Networking diagram

Coupling directly



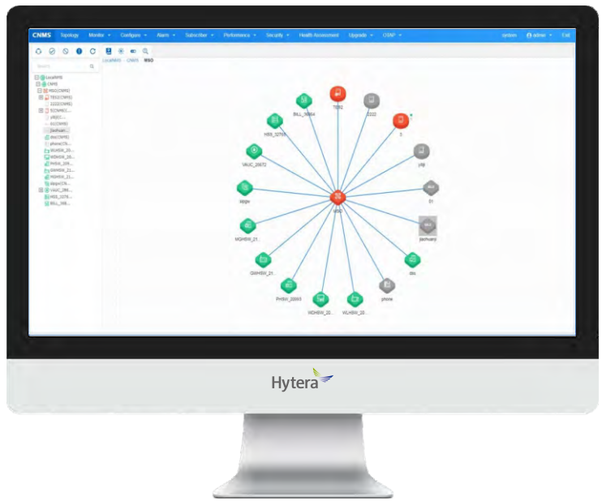
Coupling by air



Centralized Network Management System (CNMS)

NM6000

NM6000 is a new-generation of centralized network management system (CNMS) capable of managing multiple digital mobile radio (DMR) systems by using a single platform. With browser-server architecture and powerful monitoring and analyzing tools, CNMS eases the work, enhances the efficiency, and reduces the cost for management.



Highlights

Centralized Management of Multi-systems

CNMS enables centralized management of multiple DMR systems over a single platform.

Rich Management Features

- Security Management
- Topology
- Alarm Management
- Subscriber and Group
- Performance Statistics
- OTAP
- Health Assessment
- Remote Upgrade

Role-based Access Control

CNMS users are assigned with different roles and different permissions. This restricts system access to authorized users, ensuring security of the system.

Cross-system Subscriber/Group Creation

CNMS supports creating an account for a subscriber or group in local system and other systems simultaneously. This makes the cross–system management of subscribers and groups easy.

High Service Assurance

- All devices in all DMR systems are monitored on the same platform in unified manner.
- Simultaneous management of multiple DMR systems on the same platform greatly increases the fault removal efficiency.
- Smart alarm analysis achieves accurate fault locating.

High Data Reliability

CNMS supports local and geographic redundancy, ensuring

SCADA data transmission solution

empowR

As a control center, the Supervisory Control and Data Acquisition (SCADA) system monitors and controls the industrial production process. It can improve the production efficiency, operation reliability, security, and economic benefits, and is favorable for accelerating decision making and implementing production automation. Now, it is more widely used in industries of power dispatching, oil & gas, and transportation. In addition, the network works as a connector between the digital device and control center and is the basis for production automation and intelligence.

Hytera SCADA data transmission solution is specifically designed for the SCADA application scenarios mentioned above. It provides a reliable and cost-effective network with wide coverage, multiple services, and flexible applications. In addition, it supports command & control, emergency repair, and routine inspection to meet communication requirements for industries such as electric power, oil, gas, and water conservancy.

Highlights

- Functions such as end-to-end encryption, AES256, authentication, WiFi security protection, stun, and revive ensure the network security.
- Large power and wide coverage reduce the number of base stations and cut construction costs.
- It supports multiple services and protocols, including IEC, DNP and Modbus.
- It has two network interfaces and two serial ports, which can access RTUs with different types of interfaces at the same time.
- The dedicated data transmission channel ensures the capacity of the data service system.
- OTAP remote configuration simplifies O&M.
- WiFi access of local network management for upgrade configuration and alarm query improves the equipment management efficiency.
- Trunking voice and command & control functions are provided.

System Composition

The system consists of the DMR core network, DMR base station, SCADA gateway, DTM-6000 SCADA modem, IP bearer network, SCADA application system, and remote terminal unit.

Core Products

DMR digital trunking system

SCADA gateway

DTM-6000 SCADA modem

Local gateway

Network management system

SmartOne Dispatch

SmartOne dispatch platform empowers dispatcher to communicate across multiple standards and multiple private and public systems, and deliver a wide range of audio, video, and data services. The platform is thoughtfully designed to ensure that your work force across radios and systems are interconnected and enable your dispatchers to coordinate efficiently.

Highlights

Comprehensive convergence and efficient communication

- Private network communication system: LTE trunking, DMR trunking, TETRA trunking, DMR trunking, Digital conventional, analog conventional, simulcast, etc.
- Public network communication system: POC, PSTN, VOIP, satellite telephone, etc.
- Video systems and terminals: video surveillance, video conference, 4G body-worn camera, etc.

Flexible deployment

- Modular design, flexible for deployment and expansion
- Server and gateway support 1+1 redundancy to ensure reliable performance
- Support multi-level dispatch and management

Voice dispatch

- Voice dispatch via all sorts of networks, e.g. DMR, TETRA, MPT, POC, conventional, PSTN, and IP network
- Individual call, group call, call monitoring, all call, priority call, emergency call, broadcast call, and ambient listening
- Advanced functions such as conference and group call

Short message dispatch

- Text message, status message, call alert
- Support integrate with the comprehensive police information system to search people and vehicles information

Map-based dispatch service

- Supporting mapX, PGIS, OpenStreetMap and Google maps
- Online display and track playback of terminals
- Click to dispatch and marquee on the map

Open Platform

- Supports access of third-party systems through APIs or by standard protocols such as CSSI, ISSI, or SIP
- Supports being invoked by third-party systems through APIs, SIP interfaces, web services, or OCX interfaces

Multi-media Recording Playback System

MRPS

MRPS is used to collect and store all kinds of data, including audio, videos, messages, and radios' online/offline information across your dispatch work. Adopting the browser/server architecture, the MRPS allows you to search for recorded data anywhere and anytime with network access.

Highlights

Network-wide Recording

Access multiple communication and application systems to collect, record and store voice, video, short message and registration information in these systems.

Multilevel Deployment

The MRPS can be installed at different administrative levels. The MRPS at the upper level can query and play back data of the MRPS at the lower level.

Easy to Query and Play Back

Operate the MRPS in your web browser anytime and anywhere with network access; query all recorded data in a unified and streamlined interface; query call recordings by different criteria; play back call recordings and view messages online.

Flexible Downloading

MRPS supports downloading and batch downloading audio and video files and exporting multimedia short message, registration information from the query list.

High Reliability

MRPS recording server supports 1+1 local or remote redundancy to provide highly reliable recording services.