

# PROFESSIONAL DMR REPEATER HR106X

EMPOWER YOUR OPERATION

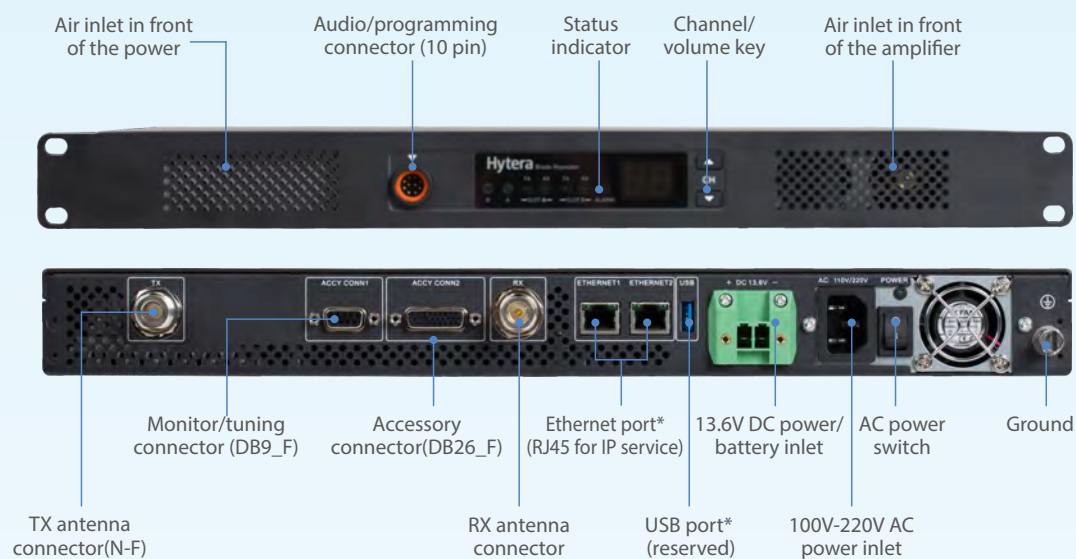


# EMPOWER YOUR OPERATION

In order to better meet the evolving needs of customers and bring greater value to customers, Hytera continuously evolves and upgrades its products and technologies.

HR106X improves its functionality and performance while simplifying its network structure and maintenance methods. Compact 1U height design, saving installation space, easy for mobile mounting in limited vehicle space. A built-in power adapter supports 220V AC power supply, providing low deployment cost and automatic DC/AC power supply switch, easy to achieve power backup. The enhanced version adds a coprocessor to improve system performance, integrates router and SIP gateway functions, and supports Web-based management method, simplifying the network structure and greatly reducing networking and O&M costs.





#### Connectivity to more applications

\*Ethernet 2nd port and USB port are only supported in Enhanced version.



## GENERAL HIGHLIGHTS



### Economical 1U Structure

The 1U height of HR106X makes it compact, reducing space requirements for installation which is quite helpful especially when deploying the repeater in vehicle with limit space such as SUV (Sport Utility Vehicle).



### Analog & Digital Auto Switch

HR106X can support mixed channel mode to detect the receiving signal, then automatically switch between analog and digital mode. This feature offers the compatibility with analog terminals and an easy way to migrate to digital from analog to protect legacy investment of devices.



### AC/DC Auto Switch

HR106X equipped built-in power adapter support 100-240V AC power supply that reduce the deployment cost and support also the backup battery which connected to DC input port. The repeater can charge the backup batteries during AC power supply works and switch automatically to backup batteries if AC power supply fails to keep repeater un-interrupt. Users don't have to use UPS power, just install a 12V battery that reduce the cost of investment by 90 percent.



### Wide Coverage

The communication range of HR106X series is extended with enhanced Rx sensitivity. And the Ethernet port enables access to IP networks, which provides the capability for the HR106X to connect multiple repeaters to cover larger areas.

## ENHANCED VERSION HIGHLIGHTS

HR106X series repeater offers standard version and an enhanced version. Both versions support all the general features , while the enhanced version bring more advanced features as below.

\* The standard version can be upgraded to enhanced version with an add-on co-processor module board.



### WEB-based Management

In the enhanced version a web-based back end platform has been designed to simplify repeater management. Configuration can be completed through a web browser, which is ideal for remote management.



### Integrated SIP+Router Feature

The enhanced version of HR106X is integrated with router and SIP gateway features. Less devices and simplified management. It offers a cost-effective solution for your network construction.



### High Security

The enhanced version supports SNMP V3 which used to manage the repeater from NMS. SNMPV3 use authentication and encryption algorithm to enhance communication security and protect all the data between the repeater and NMS.

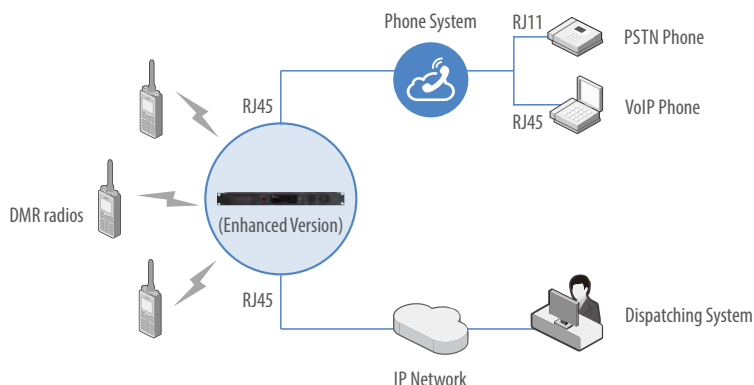
## GENERAL SOLUTIONS

Hytera offers a wide range of solutions to enrich functionality for the HR106X series repeater. Dispatching system, a back-to-back solution for cross-band communication. Additionally the open API of HR106X can also be provided for third party development to realize customization requirements.



### Flexible Interconnection

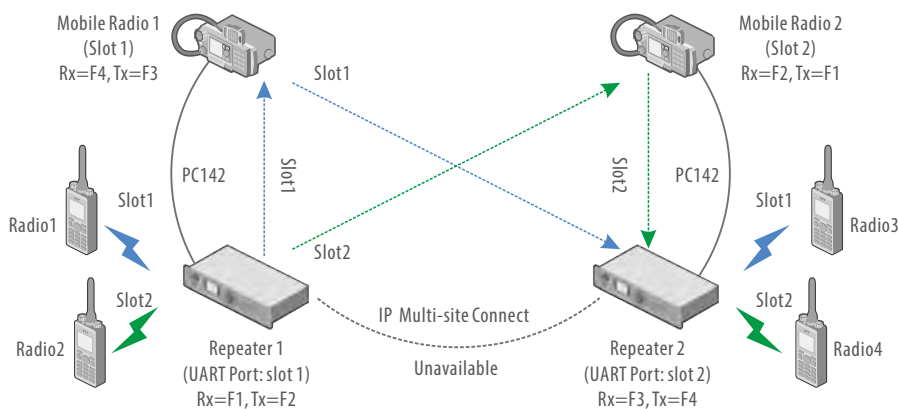
The HR106X series repeater is designed as an intelligent communication platform. It is flexible in its ability to connect with a variety of systems to provide seamless communication. The repeater can work as a gateway to connect the radio to VoIP phone, and dispatcher.



### Dual-repeaters wireless link solution

The wireless link communication is a solution to establish wireless link for voice, data, and signaling transmission over the air, the repeater connects with corresponding mobile radio through the cable. The solution is applicable to the area where two repeaters at dispersed locations cannot be connected through IP Multi-site Connect due to the lack of IP link of optical fiber or microwave.

Users are suggested to deploy the directional antennas for Mobile radios and omnidirectional antennas for repeaters to ensure the communication quality.



## ACCESSORIES

### Standard



AC power cable

### Optional



Palm microphone



DB26-DB26 cable connects two repeater for backup function



DB26-DB9 cable connects mobile radio and repeater for wireless link solution



DB26-DB26 cable connects two repeater to realize cross-band (VHF-UHF) or cross mode (analog-digital) communication



Programming cable



External duplexer



Feeder connects external  
duplexer and repeater



1/2 RF feeder



1/2 RF connector



Lightning arrester



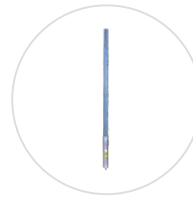
Sinclair, Yagi directional SY203 series,  
VHF, 7.6dBi, 200W N-Connector,  
length < 2m air transportation



Sinclair, Yagi directional SY350,  
UHF, 9.6dBi, 150W N-Connector,  
length < 1.1m air transportation



Sinclair, EC245 series, VHF, 6.6dBi,  
125W N-Connector, Length < 5m,  
2-sections, air transportation



Sinclair, SC366 series, UHF, 8.1dBi,  
500W DIN-Connector,  
Length < 5m, air transportation



DC power cable connects to  
battery or dc power supply

## SPECIFICATIONS

| General                 |                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------|
| Frequency Range         | UHF: 350-400MHz; 400-470MHz; 450-527MHz<br>VHF: 136-174MHz                           |
| Channel Capacity        | 1024                                                                                 |
| Channel Spacing         | 12.5KHz/ 20KHz/ 25KHz                                                                |
| Operating Voltage       | DC: 13.6V±15%<br>AC: 100-240V                                                        |
| Current Consumption(DC) | Standby: ≤0.9A<br>Transmitting: ≤12A                                                 |
| Current Consumption(AC) | Standby: ≤0.35A<br>Transmitting: ≤1.2A                                               |
| Frequency Stability     | ≤±0.5ppm                                                                             |
| Antenna Impedance       | 50Ω                                                                                  |
| Duty Cycle              | 100%                                                                                 |
| Dimensions(H×W×D)       | 44×483×366 mm                                                                        |
| Weight                  | 5.8kg                                                                                |
| Ethernet Port           | 1 x RJ45 Ethernet Port(Standard Version)<br>2 x RJ45 Ethernet Port(Enhanced Version) |
| USB Port                | 1 x USB Port(Enhanced Version)                                                       |

| Receiver                    |                                         |                                                   |
|-----------------------------|-----------------------------------------|---------------------------------------------------|
| Sensitivity                 | Analog                                  | 0.18μV(12dB SINAD)<br>0.16μV(Typical)(12dB SINAD) |
|                             | Digital                                 | 0.18μV/BER5%                                      |
| Selectivity                 | TIA-603                                 | 65dB@12.5kHz / 75dB@20/25kHz                      |
|                             | ETSI                                    | 60dB@12.5kHz / 70dB@20/25kHz                      |
| Inter-Modulation            | TIA-603                                 | 75dB@12.5/20/25kHz                                |
|                             | ETSI                                    | 70dB@12.5/20/25kHz                                |
| Spurious Response Rejection | TIA-603                                 | 80dB@12.5/20/25kHz                                |
|                             | ETSI                                    | 80dB@12.5/20/25kHz                                |
| Blocking                    | 90dB                                    |                                                   |
| Hum and Noise               | 40dB@12.5kHz;<br>43dB@20kHz, 45dB@25kHz |                                                   |
| Conducted Spurious Emission | ≤1GHz                                   | ≤-57dBm                                           |
|                             | >1GHz                                   | ≤-47dBm                                           |
| Audio Distortion            | ≤3%                                     |                                                   |
| Audio Response              | +1 ~ -3dB                               |                                                   |

| Transmitter                     |                                                               |       |        |
|---------------------------------|---------------------------------------------------------------|-------|--------|
| RF Power Output                 | 5-50W(adjustable)                                             |       |        |
| FM Modulation                   | 11K0F3E @12.5kHz;<br>14K0F3E @ 20kHz; 16K0F3E @ 25kHz         |       |        |
| 4FSK Digital Modulation         | 12.5kHz Data Only: 7K60FXD<br>12.5kHz Data and Voice: 7K60FXW |       |        |
| Conducted/<br>Radiated Emission | Operating                                                     | ≤1GHz | -36dBm |
|                                 |                                                               | >1GHz | -30dBm |
|                                 | Standby                                                       | ≤1GHz | -57dBm |
|                                 |                                                               | >1GHz | -47dBm |
| Modulation Limiting             | ±2.5kHz @ 12.5kHz; ±4.0kHz @ 20kHz;<br>±5.0kHz @ 25kHz        |       |        |
| FM Hum & Noise                  | 40dB @ 12.5kHz; 43dB @ 20kHz<br>45dB @ 25kHz                  |       |        |
| Adjacent Channel Power          | 60dB @ 12.5kHz; 70dB @ 20/25kHz                               |       |        |
| Audio Response                  | +1 ~ -3dB                                                     |       |        |
| Audio Distortion                | ≤3%                                                           |       |        |
| Digital Vocoder Type            | AMBE+2™/SELP                                                  |       |        |
| Digital Protocol                | ETSI-TS102 361-1,-2,-3                                        |       |        |

| Environmental Specifications |             |
|------------------------------|-------------|
| Operating Temperature        | -30°C~+60°C |
| Storage Temperature          | -40°C~+85°C |

20kHz and 25kHz channels not available in USA

All Specifications are tested according to applicable standards, and subject to change without notice due to continuous development.



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