



*QUICK REFERENCE GUIDE*

## *HR106X DIGITAL REPEATER*



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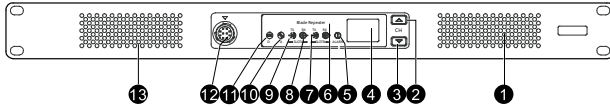
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# Product Overview

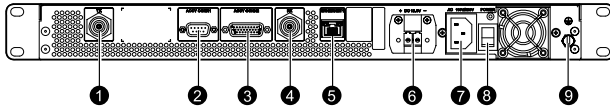
## Front Panel



No.	Part Name	No.	Part Name
1	Air Inlet for PA	8	Timeslot A RX Indicator
2	Volume/Channel + Key	9	Timeslot A TX Indicator
3	Volume/Channel - Key	10	Analog Mode Indicator
4	Seven-segment Display	11	Digital Mode Indicator
5	Alarm Indicator	12	Audio/Programming Interface
6	Timeslot B RX Indicator	13	Air Inlet for Power Supply
7	Timeslot B TX Indicator	/	/

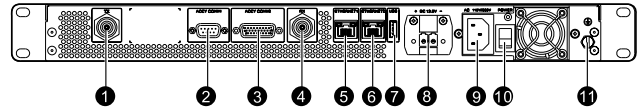
## Rear Panel

### Basic Version



No.	Part Name	No.	Part Name
1	TX Antenna Connector	6	DC Power Inlet
2	Monitor/Tuning Interface	7	AC Power Inlet
3	Accessory Connector	8	AC Power Switch
4	RX Antenna Connector	9	Ground Screw
5	Ethernet Interface	/	/

### Advanced Version



No.	Part Name	No.	Part Name
1	TX Antenna Connector	7	USB Connector
2	Monitor/Tuning Interface	8	DC Power Inlet
3	Accessory Connector	9	AC Power Inlet
4	RX Antenna Connector	10	AC Power Switch
5	Ethernet Interface 1	11	Ground Screw
6	Ethernet Interface 2	/	/

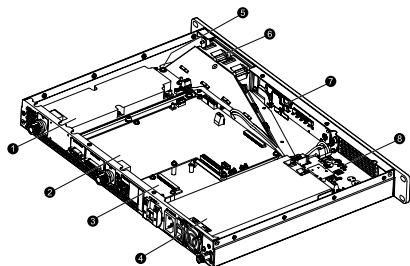


#### NOTE

In routing mode, the Ethernet interface 1 and Ethernet interface 2 must serve as LAN port and WAN port respectively.

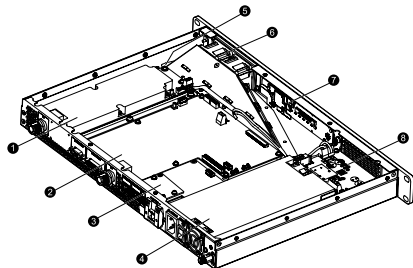
## Internal Parts

### Basic Version



No.	Part Name	No.	Part Name
1	PA Module	5	Wind Scooper
2	Main Board	6	Fan
3	Network Board	7	Control Panel
4	Power Supply Module	8	Float Charging Board

### Advanced Version



No.	Part Name	No.	Part Name
1	PA Module	5	Wind Scooper
2	Main Board	6	Fan
3	Coprocessor	7	Control Panel
4	Power Supply Module	8	Float Charging Board

## Installation

To ensure optimum performance and reliability of the repeater, read the following instructions carefully.

## Installation Requirements

### Environmental Conditions

The repeater must be installed in a dry and well-ventilated place. The operating temperature ranges from  $-30^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ , and the relative humidity is 95%.

### Installation Site

The repeater can be installed in a rack, bracket, and cabinet, or on a desk.



#### NOTE

For more information, refer to the Safety Information Booklet.

## Pre-installation Tasks

### Preparing the Tools

- Phillips screwdriver
- T-10 torx screwdriver
- Spanner
- Anti-static gloves
- Multimeter

### Checking the Power Supply

Before you install the repeater, make sure that the power supply meets the following requirements:

- DC power voltage:  $13.6\pm 15\%$  V

- AC power voltage: 100–240 V

## Installation Procedure

To install the repeater, do as follows:

1. Wear the anti-static gloves.
2. Place the repeater to a proper location.



#### NOTE

If the repeater is installed in outdoor environments with frequent thunderstorms, such as the top of mountains or buildings, you must install an external lightning protection module (optional) on the network interface.

3. Connect the antenna, feed line, power cord and ground cable to the repeater.



#### NOTE

- You must purchase the antenna and feed lines separately.
- You must prepare a ground cable.

4. Ground the repeater through the ground screw located on the rear panel.

## Post-installation Check

To check whether the repeater works properly, do as follows:

1. Turn the repeater on.
2. Observe the LED indicators and the display in the front panel.
  - If the repeater works properly, the power supply indicator on the float charging board glows yellow or blue, and the display shows the current channel.
  - If not, the power supply indicator glows red, and the display shows the alarm code.



#### NOTE

For details, see Checking the Status.

## Basic Operations

### Turning On or Off the Repeater

- If the repeater is connected to a DC power supply, press the power switch on the DC power supply to turn on or off the repeater.  
After turn-on, if the power supply indicator turns red, the repeater goes into locked status. You must switch off the DC power supply for four seconds, and then switch on the power supply again.
- If the repeater is connected to an AC power supply, press the **AC Power Switch** in the rear panel to turn on or off the repeater.  
After turn-on, the power supply indicator turns yellow.

### Changing the Channel

Press the **Volume/Channel +** or **Volume/Channel -** key to change the channel.

The current channel number appears on the display of the repeater.

### Adjusting the Volume

1. Long press the **Volume/Channel +** key for five seconds to switch the repeater from channel mode to volume mode.
2. Press the **Volume/Channel +** or **Volume/Channel -** key to increase or decrease the volume.

If you do not have any operation for greater than five seconds or if you long press the **Volume/Channel +** key again within five seconds, the repeater switches to channel mode.

## Checking the Status

### Repeater

Indicator	Description	Repeater Status
Digital Mode	Blue	The repeater is operating in digital mode.
Analog Mode	Yellow	The repeater is operating in analog mode.
Alarm	Red	The repeater is not working properly, and the display shows the alarm code.
Timeslot A TX	Red	<ul style="list-style-type: none"><li>• Analog mode: The repeater is transmitting.</li><li>• Digital mode: The repeater is transmitting on timeslot A.</li></ul>
Timeslot A RX	Green	<ul style="list-style-type: none"><li>• Analog mode: The repeater is receiving.</li><li>• Digital mode: The repeater is receiving on timeslot A.</li></ul>
Timeslot B TX	Red	Digital mode: The repeater is transmitting on timeslot B.
Timeslot B RX	Green	Digital mode: The repeater is receiving on timeslot B.

### Network Interface

Indicator	Description	Repeater Status
Ethernet Interface	LED 1	Flashing The network interface card is transmitting data.
	LED 2	Glowing The data transmission rate is 1000 Mbps/100 Mbps.
		Off The data transmission rate is 10 Mbps.

## Power Supply

Indicator	Description	Repeater Status
Power Supply (Visible through the Air Inlet for Power Supply)	Yellow	The repeater is supplied by an AC power.
	Blue	The repeater is supplied by a DC power.
	Red	The repeater cannot be turned on.

For details on more features and operations, please visit our website at: <http://www.hytera.com>, or scan the QR code to download the User Manual.



## **FCC Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. Verification of harmful interference by this equipment to radio or television reception can be determined by turning it off and then on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a different circuit to that of the receiver's outlet.
- Consult the dealer or an experienced radio/TV technician for help.

Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Note: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## **Operational Instructions and Training Guidelines**

To ensure optimal performance and compliance with the occupational/controlled environment RF energy exposure limits in the above standards and guidelines, users should transmit not more than 50% of the time and always adhere to the following procedures:

- Antenna gain must not exceed 10dBi.
- The antenna must be installed complying with the requirements of manufacturer or supplier, and it must be at least 200 cm away from human body.

## **FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an occupational/controlled environment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance 200cm between the radiator & your body.

## **ISED Statement**

This device complies with Innovation, Science and Economic Development Canada Compliance license-exempt RSS standard(s). Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

## **ISED Radiation Exposure Statement:**

This equipment complies with ISED RF radiation exposure limits set forth for an occupational/controlled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance 200cm between the radiator & your body.

## **IC exposition aux radiations:**

Cet équipement est conforme avec ISED les limites d'exposition aux rayonnements définies pour un environnement professionnel/contrôlé. Cet émetteur ne doit pas être co-localisés ou fonctionner en conjonction avec une autre antenne ou émetteur. Cet équipement doit être installé et utilisé avec une distance minimale de 200cm entre le radiateur & votre corps.

## **RF Exposure Compliance and Control Guidelines and Operating Instructions**

To control your exposure and ensure compliance with the occupational/controlled environmental exposure limits, always adhere to the following procedures.

Guidelines:

- Do not remove the RF Exposure Label from the device.

- User awareness instructions should accompany device when transferred to other users.

- Do not use this device if the operational requirements described herein are not met.

Operating Instructions:

- Transmit no more than the rated duty factor of 50% of the time.

- Keep the radio unit at least 200 cm away from the human.