Preface

Thanks for your favor in our product. This manual provides guidance for you to use the product.

This manual is applicable to the following product:

E-PRAD(G)

Icon Conventions

The following icons are available through this manual:

⚠️ **Caution**： Indicates situations that could cause data loss or equipment damage.

✏️ **Note**： Indicates references that can further describe the related topics.

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FCC Regulations

Federal Communication Commission (FCC) requires that all radio communication products should meet the requirements set forth in the above standards before they can be marketed in the U.S, and the manufacturer shall post a RF label on the product to inform users of operational instructions, so as to enhance their occupational health against exposure to RF energy.

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: 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 3.5dBi.
- The antenna must be installed complying with the requirements of manufacturer or supplier, and it must be at least 40cm away from human body.

Compliance with RF Exposure Standards

Hytera's radio complies with the following RF energy exposure standards and guidelines:

United States Federal Communications Commission, Code of Federal Regulations; 47 CFR § 1.1307, 1.1310 and 2.1091

American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95. 1:2005; Canada RSS102 Issue 5 March 2015

Institute of Electrical and Electronic Engineers (IEEE) C95.1:2005 Edition

ISEDC 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

ISEDC Radiation Exposure Statement:

This device must be restricted to work related operations in an Occupational/Controlled RF exposure Environment.

This equipment should be installed and operated with minimum distance 40cm between the antenna & your body.

ISEDC exposition aux radiations:

Ce dispositif doit être limité aux opérations liées au travail dans un environnement d'exposition RF professionnel/contrôlé.

Cet équipement doit être installé et utilisé avec un minimum de 40cm de distance entre le antenne et votre corps.

EU Regulatory Conformance

As certified by the qualified laboratory, the product is in compliance with the essential requirements and other relevant provisions of the Directive:
- 2014/53/EU

Please note that the above information is applicable to EU countries only.

The maximum antenna gain is 3.5dBi, which is calculated in the EIRP. The distance from observation point to the antenna is 50cm.

Restrict use warning:

AT	BE	CY	CZ	DK
EE	FI	FR	DE	EL
HU	IE	IT	LV	LT
LU	MT	NL	PL	PT
SK	SI	ES	SE	UK
BG	RO	HR		

Contents

1. Packing List

Please unpack carefully and check that all items listed below are received. If any item is missing or damaged, please contact us or your dealer.

Name	Qty.	Name	Qty.
Main unit	1	AC power cord	1
RF cable	1	DC power cord	1
Network cable	1	User manual	1
GSM antenna	1	DMR antenna	1

📝 **Note**

Pictures listed in this manual are for reference only.

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2. Product Overview

No.	Component	Description
1	Public network antenna interface	Connects to 850MHz / 1900MHz public network antenna.
2	SIM card interface	Receives SIM card.
3	Debug interface	Reserved
4	Ethernet port	10 MHz/100 MHz adaptive network port, used for program update, log output and connection to center.
5	Private network antenna interface	Connects to private network antenna. The antenna frequency band is subject to actual situation.
6	DC power inlet	Provides 13.6V±15%(5A) DC power.
7	AC power inlet	Provides 100–240 V (0.7A)AC power.
8	Power switch	The switch has three positions: AC, OFF, and DC (from up to down respectively).
9	Type button	After the device is powered on, press this button to select the mode. For

No.	Component	Description
		details, see 4.4
10	RESET button	Press this button to restart the device.
11	CONFIG button	Press and hold this button for 3s to restore the factory settings. Press and hold this button and power on the device to enter the private network programming mode.
12	LED indicator	For details, see the following table.
13	Programming port	Connects to the programming cable for device programming or upgrade (connection to the palm microphone is not supported).
14	Operating Temperature Range	-20~50℃

The LED indicators are described in the following table.

Icon	Color	Status	Description
RUN	Green	Flashing slowly	The device works properly.
		Flashing quickly	The device is updating the program.
		On	GSM link is established successfully (the device is in test mode when the RUN, RX and TX are on at the same time).
ALM	Red	On	DMR network component malfunctions.
		Off	DMR network component works properly.

Icon	Color	Status	Description
RX	Green	On	The device is receiving data of the private network. re
TX	Red	On	The device is transmitting data of the private network.
Ψ	Green	On	Indicates the GSM signal strength. More bars indicate stronger signal.

3. Installation

You only need to correctly connect cables to E-PRAD(G) before using it.

4. Basic Operations

4.1 Powering on

Toggle the power switch to the "AC" or "DC" position.

4.2 Powering off

Toggle the power switch to the "OFF" position.

4.3 Establishing GSM Link

The E-PRAD(G) is able to establish a GSM link. Do as follows:

1. Insert the SIM card.

2. Power the device on and check indicators' color.

    If **RUN** indicator is on and **ALM** indicator is off, it indicates that GSM link is established successfully. More signal bars indicate stronger signal.

4.4 Switching Mode

Press **TYPE** to select the operation mode of the device access according to actual situation.

- 0: PDT or DMR digital conventional, for interconnection between private and public networks, determined before leaving the factory

- 1: analog conventional, for interconnection between private and public networks

- 2: MPT trunking, for interconnection between private and public networks

- 3: PDT or DMR digital trunking, for interconnection between private and public networks, determined before leaving the factory

- 4: PDT or DMR digital conventional, for interconnection between private network and center, determined before leaving the factory

- 5: analog conventional, for interconnection between private network and center

- 6: MPT trunking, for interconnection between private network and center

- 7: PDT or DMR digital trunking, for interconnection between private network and center, determined before leaving the factory

- C: 2G, for interconnection between public network and center

5. Troubleshooting

Phenomena	Possible Cause	Solution
Programming fails.	E-PRAD(G) is not in the programming mode.	Press and hold **TYPE**, and start E-PRAD(G). Release **TYPE** when **RUN** indicator is on. **TX** and **RX** indicators are on at the same time, indicating that E-PRAD(G) enters the programming mode.
GSM link cannot be established.	GSM signal is poor.	If GMS signal bars are off, check whether public network antenna is connected. If it is connected but GSM signal is still poor, you are advised to move the public network antenna or device to an open area. Tests show that the drop rate is relatively high when the number of signal bars is 3 or less (in this case, the BS has a signal strength of about -75dBm)
	E-PRAD(G) has already been connected to other devices.	If **RUN** indicator is on, GSM connection is established. In this case, stop ongoing communication or restart the device.
	GSM whitelist feature is enabled.	Add the number of calling device to the whitelist. When the auto-call feature is enabled, the E-PRAD(G)

Phenomena	Possible Cause	Solution
		cannot answer any incoming call and can only call the preset number.
Stand-alone Network Management System cannot access the device.	The PC on which the Standalone Network Management System runs and device are not on the same network segment	Change the PC IP address to the same network segment as the device IP address. The device IP address is "192.168.40.110" by default. You can press and hold **CONFIG** button to restore the factory settings.
Voice communication fails when GSM network is connected.	The device frequency is inconsistent with the portable radio frequency.	Set the device frequency to be consistent with the portable radio frequency.
	In the PDT/DMR mode, interconnection group call number of the device is inconsistent with that of the portable radio.	Set the group call number of the device to be consistent with that of the portable radio.
	The device's vocoder is inconsistent with the portable radio's vocoder.	Set the device's vocoder to be consistent with the portable radio's vocoder.
	In the PDT/DMR or MPT trunking mode, private network registration fails.	Check device parameters to ensure that the device registers with the PDT/DMR or MPT trunking system successfully.
	In the conventional mode, channels are configured incorrectly.	The channel 1 of area 1 must be set to digital channel, and channel 2 of area 2 must be set to analog channel.
	In private network settings, whitelist feature is enabled.	Add the group call number of the calling portable radio to the whitelist.

Phenomena	Possible Cause	Solution
ALM indicator is on.	Trunking system registration fails.	Check whether device parameters are correctly configured.
	The device is not supplied with power properly.	Send the device back for repair.

If the above solutions cannot solve your problems, or you may have some other queries, please contact us or your local dealer for more technical support.

6. Care and Cleaning

To guarantee optimum performance as well as a long service life of the product, please follow the tips below.

Product Care

● Do not pierce or scrape the product.

● Keep the product away from substances that can corrode the circuitry.

Product Cleaning

⚠️**Caution**
    Cut off the power supply before cleaning.

● Clean up the dust and fine particles on the product surface and charging piece with a clean and dry lint-free cloth or a brush regularly.

● Use a non-woven cloth with neutral cleanser to clean the device after long-time use. Do not use chemical preparations such as stain removers, alcohol, sprays or oil preparations, so as to avoid potential damage on the surface.

● Make sure the product is completely dry before use.

7. Optional Accessories

Contact your local dealer for the optional accessories of the product.

⚠️**Caution**
    Use the accessories specified by the Company only; otherwise, we shall not be liable for any losses or damages arising out of the use of any unauthorized accessories.

8. Warranty

For Hytera products, if any defects arise in material or manufacturing process under normal operation and maintenance, you can enjoy warranty service stipulated in the contact from the purchase date on.