



# Fixed Wireless Phones

*User's Manual*



**Fujian Star-net Communication Company Limited**

## ***Preface***

Thank you for choosing our product. This Fixed wireless terminal series product is developed by Fujian Star-net Communication Company Limited. Before using this product, please read this Manual carefully.

Should you have any questions, you may inquiry by visiting our local customer care branches or reach us at toll free (STAR-NET) number 8008581096.

## ***Copyright Announcement***

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Information Edition: **UG –HR8100 (3X) TG - 1.0**

# Catalog

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# CHAPTER 1 GENERAL

## 1.1 INTRODUCTION

Fixed Wireless Terminal applies to GSM digital mobile communication networks, serving as Fixed wireless terminal devices with functions of phone call , GSM fax sending or receiving, caller ID display, off-power bypass and intelligent routing etc. No wiring is required. It is featured by easy and quick installation, plug-and-play within coverage of CDMA digital mobile telecommunication networks.

Fixed wireless terminal applies to tourist spots, islands, cars, trains and ships where wiring is of difficulty or unavailability, or to other places where public telephone service is temporarily required such as playgrounds and large exhibition. It also applies to small and middle-sized enterprises, or personal regular telephone and fax users.

Fixed wireless terminal products:

HR8100 (30) TG: Externally connected regular telephone set, featuring wireless phone call in and call out and off-power bypass functions.

HR8100 (31) TG: Externally connected regular phone set and G3 fax machine, featuring wireless phone call in and call out and wireless fax receiving and sending functions.

HR8100 (32) TG: Externally connected with PBX (telephone exchange machine), extension telephones can realize

wireless call in and callout via HR8100 (32) TG.

## 1.2 Functions and Features

- Supporting dual-mode voice access (mobile network GSM and telecom network PSTN platforms)
- GSM Fax function
- Supporting conventional PBX access
- Dynamic echo deletion, perfect voice quality guaranteed
- Off-power bypass functions (when power is off, system switches to PSTN network automatically)
- Intelligent routing (able to set up dialing regulation to make voice or fax intelligent routing)
- Dialing control (able to set up several special phone numbers, restricted numbers)
- Key in or prompt line setting up, convenient operation.
- Incoming call display function
- Auto-dialing function
- Internal calling forward function
- Real time displaying of wireless network signal power
- Software upgrade

## 1.3 Technical Specification

Frequency Bands

- EGSM900 and GSM1800(Phase2+)

### Transmission Power

- EGSM 900 Class4 2W
- GSM 1800 Class1 1W

### Frequency Range

- EGSM 900 880~915MHz (Uplink)  
925~960MHz (Downlink)
- GSM 1800 1710~1785MHz (Uplink)  
1805~1880MHz (Downlink)

### Power Consumption

- Average power consumption < 5W

### Working Environment

- Ambient temperature 0°C ~ 45°C
- Humidity: 5% ~ 95%

### Power Supply

- DC5V, 1.2A, 50/60Hz

### Dimension and Weight

- L x W x H 20.5cm×15cm×4cm
- 0.3kg

## 1.4 Safety

1. Please avoid using wireless telephone and fax functions of this product in areas where wireless transmission equipment is restricted (such as hospital, health care facilities and on board of aircraft).
2. Please avoid using wireless telephone and fax functions of this product in gas stations, bunkers and places of chemical storage.
3. Please avoid using wireless telephone and fax functions of this product in chemical plants or any other places with hazard of explosion (such as gas leakage site).

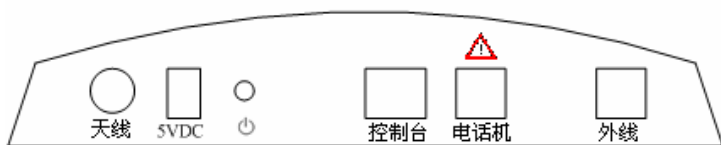
4. Please avoid use this product on any metal surface that might weaken power of received signal
5. Please avoid using PSTN network during thunderstorm, or it might cause remote electric shock.

# CHAPTER 2 INSTALLATION

## INSTRUCTION


### 2.1 Interface description


#### 2.1.1 HR8100 (30) TG Interfacing



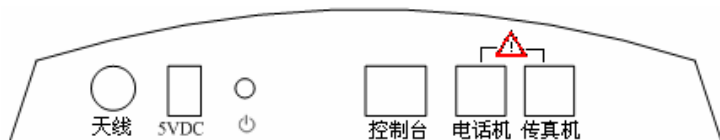
HR8100 (30) TG Back plane

H8100 (30) TG Back plane interface description:

Antenna	.....	Antenna port
5VDC	.....	Power supply
	.....	Power switch
Console	.....	Serial port control panel interface
Telephone	.....	Telephone socket, hooking up regular phone set
External line	.....	External telephone socket, hooking up external line


 Caution: do NOT plug in external line into Telephone socket, or it may cause device damage.


## 2.1.2 HR8100 (31) TG Interfacing



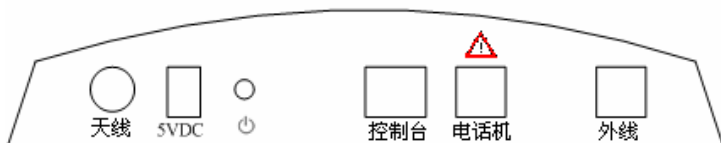
HR8100 (31) TG Back plane

H8100 (31) TG Back plane interfacing description:

Antenna	.....	Antenna port
5VDC	.....	Power supply
	.....	Power switch
Console	.....	Serial port control panel interface
Telephone	.....	Telephone socket, hooking up regular phone set
External line	.....	External telephone socket, hooking up external G3 fax machine


 Caution: do NOT plug in external line into Telephone socket, or it may cause device damage.

## 2.1.3 HR8100 (32) TG Interface description



HR8100 (32) TG Back plane

H8100 (32) TG Back plane interfacing description:

Antenna	.....	Antenna port
5VDC	.....	Power supply
	.....	Power switch
Console	.....	Serial port control panel interface
Telephone	.....	PBX (Telephone exchange machine)
external interface		
External line	.....	Connecting telephone subscriber or PBX
internal interface		



Caution: do NOT plug in external line into Telephone socket, or it may cause device damage.

## 2.2 Indicators



Indicators

There are 8 indicators on front panel of fixed wireless terminal, functioning as follows:



..... indicating GSF status. In normal case, they indicate signal power strength – one lit indicator refers to weak signal and 4 lit indicators refer to strong signal; In fault case, the first indicator flashes, rest of them (2, 3, 4) identify error code.

010: registry network failure

- 011: wrong PIN code
- 100: Handset serial code not match
- 101: PUK code required
- 110: SIM card improperly inserted
- others: all four indicators blinking

“1” refers to steadily on, “0” refers to steadily off.

Indicator are numbered 1, 2, 3, 4 from left to right in sequence.

POWER ..... Power indicator, lit up when power is on.

PHONE..... Telephone socket status indicator.

ON --- indicating socket is on service or hand set is picked up.

Slow flashing --- indicating socket has calling in, bell is ringing.

OFF --- indicating socket is out of service or hand set is hung up.

FAX ..... Fax machine socket status indicator. (valid for HR8100 (31) TG FAX )

ON --- indicating socket is on service or hand set is picked up.

Slow flashing --- indicating socket has calling in, bell is ringing.

OFF --- indicating socket is out of service or hand set is hung up.

STATUS..... Device start up status indicator

ON -- indicating device is started up successfully

Slow flashing – indicating device is starting up or start up failure.

OFF -- indicating device is not powered on or is starting up and the STATUS indicator is still OFF

After 15 seconds on power switched on, then becomes slowly flashing.

## 2.3 LCD display

(some type products have no this option)

1. 7 seconds after power is switched on, LCD shows 8888... (totally 14 digits). Another 7 seconds later, appear 16 '8'. Upon successfully start up, LCD shows 'Hr8100'. Start up takes about 30 seconds.
2. When user picks up handset and calls up, LCD back light is ON, screen clears up, showing user's key in characters.
3. When there is an incoming call, LCD displays incoming phone number. (network or SIM card should support incoming call function)
4. When hung up, LCD displays 'Hr8100' and back light is off in 3 seconds.

## 2.4 Hardware Installation Steps

Following we take HR8100 (30) TG installation as an example to introduce hardware installation.

1. Connect regular telephone line one end into a telephone set, other end into 'Telephone' socket indicated on HR8100 (30) TG back plane.
2. Connect telephone entrance line to 'External line' socket indicated

on HR8100 (30) TG back plane. **Caution: do NOT plug in external line into Telephone socket, or it may cause device damage.**

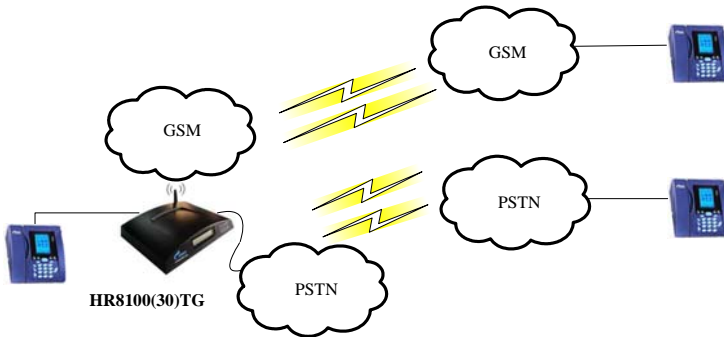
3. Connect and screw up firmly the companied antenna onto SMA terminator marked “Antenna” indicated on HR8100 (30) TG back plane.
4. Make sure power switch is in OFF position on the back plane. Afterwards, plug one end of companied power adapter into AC220V power socket, and plug the other end into “5VDC ” power interface indicated on the back plane. **Caution: AC220V socket must be star type socket with proper grounding, or voice quality might be impacted.**
5. Switch on power. Device enters start up status. When STATUS indicator is on, device start up is successful and ready to use.

**Caution: In order to avoid radio interference on voice communication, make sure antenna and telephone line not twisted. Make sure telephone set is not place too close to HR8100 (30) TG antenna, over 1 meter distance is recommended.**

## CHAPTER 3 APPLICATIONS

### 3.1 HR8100 (30) TG APPLICATION

HR8100 (30) TG device connects regular telephone via Telephone socket and connects telephone entrance line via PSTN socket. In normal situation, user can call in and call out while telephone routes GSM network. When power is off, device switches to PSTN network automatically to realize emergency calling in and out. Application solution is proposed as following:

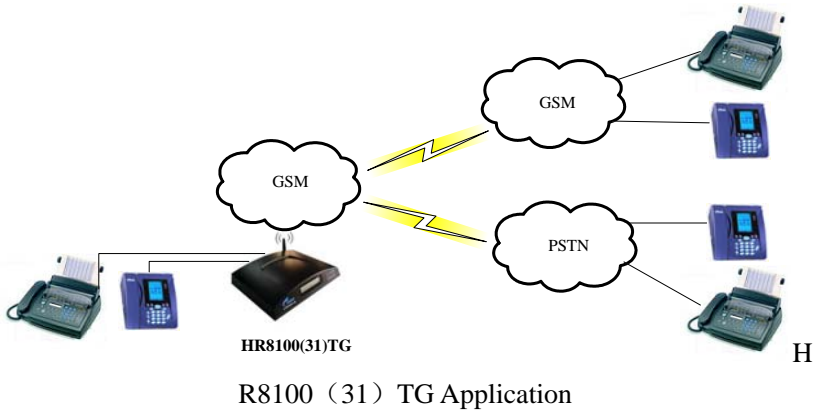


HR8100 (30) TG Application

### 3.2 HR8100 (31) TG Application

HR8100 (31) TG device connects regular telephone via Telephone socket and connects G3 fax machine via FAX socket. User can call in and call out while telephone routes GSM network and send or receive faxes

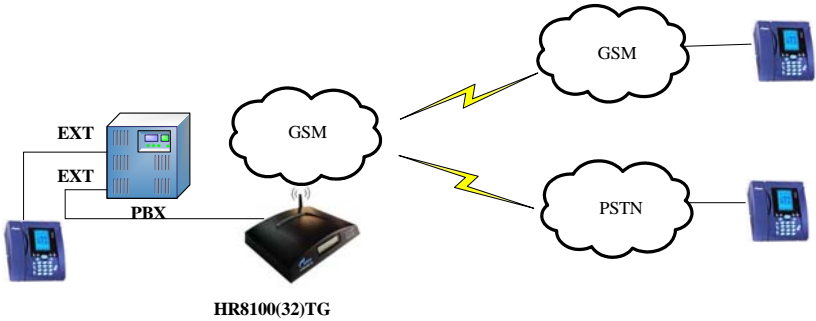
by Fax machine via GSM network. Application solution is proposed as following:



### 3.3 HR8100 (32) TG Application

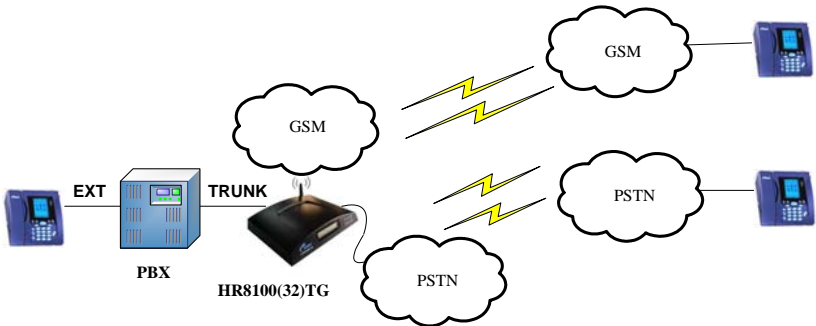
HR8100 (32) TG device has 2 application solutions:

Plan A: External socket connects PBX (telephone exchange machine) internal interface (EXT ports). PBX extension may make connection to the extension which linked to the access terminal and then realize calling in or out by means of access terminal via GSM network. Application plan A is show as follows:



HR8100 (32) TG Plan A

Plan B: Telephone socket connects to PBX external interface (TRUNK). External socket connects to external entrance line. In normal case, PBX internal extension may realize call in or out with the help of access terminal via GSM network. When power is off, device automatically switches to PSTN network in order to maintain emergency calling in or out. Application plane B is show as bellow:



HR8100 (32) TG Application plan B

# CHAPTER 4 OPERATION

## INSTRUCTION

### 4.1 Telephone Function

#### 4.1.1 Making a phone call

- 1) Lift up the handset, you will hear a dialing tone.
- 2) Dial up: Dial your desired number, system will send out your dialed number automatically.
- 3) Conversation: when recipient picks up handset at the other end, voice communication is established.
- 4) Hang up: hang up and communication is disconnected.

Note: You may also make a phone call via Fax interface, but must add ‘\*’ key first.

#### 4.1.2 Receiving a phone call

When phone bell is ringing, PHONE indicator is blinking, pick up handset and start talking.

## 4.2 Fax function

### 4.2.1 Sending a fax

User can send fax by fax machine connected to fixed wireless terminal. Operation is identical to regular fax machine.

### 4.2.2 Receiving a fax

User can receive fax by fax machines connected to the fixed wireless terminal. Operation is identical to regular fax machine.

Note: HR8100TG (3x) does NOT support GSM voice/Fax switch-over. This function requires GSM network supporting TS61 (allowing user to use voice and fax functions in one call). As a result, when sending a fax, please press START key immediately after you complete dialing numbers; When receiving faxes, please set fax machine to auto operation mode.

### 4.2.3 Fax setting up

#### 4.2.3.1 Synchronization receiving of faxes and

#### Asynchronization receiving mode

Synchronization receiving mode refers to, access terminal and fax machine receive fax synchroniznly, i.e., fax negotiation, training and receiving procedures are synchronized between fax machine and the terminal. This mode has the advantage of ensuring user end and remote

end negotiating fax ability at maximum. The disadvantage is success rate is easily affected by network.

Asynchronization receiving mode refers to, there is no synchronization during receiving of a fax between fax machine and access terminal, i.e., access terminal furnishes fax negotiation, training and receiving procedures in advance before forwarding the received data to fax machine. In comparison with synchronization receiving mode, this mode has the advantage of enhanced fax send/receive success rate, disadvantage is longer fax operation time.

For method of setting up fax receiving mode, please refer to ‘3. Setting Fax Receiving mode’ of section ‘4.3 Keyboard setting command’

### **4.2.3.2 Fax rate setting up**

Under synchronization mode, access terminal does not support fax re-training, hence, provides manual setting function of fax transmission rate.

For fax transmission rate setting up method, refer to ‘4. Setting fax rate’ of ‘3. Setting Fax Receiving mode’ on section ‘4.3 Keyboard setting command’.

## **4.3 Keyboard setting command**

User may set command by using keyboard of telephone connected to Telephone socket.

### 1. Set dialing delay

Command: #\*20\* <seconds> #

Description: set up dialing overtime and auto sending-out time upon completely entry of numbers, default setting 3 seconds.

<seconds>      Setpoint range: 1-20 seconds.

2. GSM signal quality display

Command:##\*30#

Description: display GSM signal quality, GSM signal quality usually ranges between 0-31, 99 refers to unknown signal.

3. Setting fax receiving mode

Command:##\*41\*<mode>#

Description: set fax receiving mode

<mode>      0, synchronization mode; 1, asynchronization mode, default 0.

4. Setting fax rate

Command:##\*50\*<rate>#

Description: setting fax rate, default 9600bps

<rate>    96, 9600bps

          72, 7200bps

          48, 4800bps

          24, 2400bps

5. Fax socket dialing telephone switch

Command:##\*60\*<enable/disable>#

Description: dial up telephone number via Fax socket. Add '\*' key prior to telephone numbers.

<enable/disable> 0, disable; 1, enable, default, enable

6. Version display

Command: #\*80#

Description: display software and hardware and module version numbers

Display mode: 100-100-01 software-hardware-module

7. GSM module version display

Command: #\*81#

Description: display GSM module version number

8. Setting external line flash key delay

Command: #\*102#<delay>#

Description: set external line flash key delay, default, 700ms

<delay> 0~2000 ms

9. External line flash key delay Display

Command: #\*102#

Description: display external line flash key delay

10. Setting GSM output volume

Command: #\*22#<level>#

Description: set GSM output voice volume, default is 4<level>.

Setpoint range: 0-4. The higher the value, the larger the volume.

11. GSM output voice volume

Command: #\*22#

Description: display GSM output voice volume.

## CHAPTER 5 Frequently Asked

### Questions

1. How long do I wait till I am able to make a phone call or fax?

A: HR8100TG(3x) usually takes 30 seconds for start up. System goes into normal operation when LCD and indicators shows “Hr8100”.

2. What will happen if I make a wrong connection to Telephone socket and External line socket?

A: No mistake is allowed for connections of Telephone socket (connecting telephone) and External line socket (TRUNK). Wrong connection may cause system failure even burn down hardware chips seriously.

3. Is it possible to send and receive fax when fax machine connected to Telephone socket?

A: When fax machine is hooked to Telephone socket, fax receiving/sending is only realized by external line socket, not able to fax via GSM network.

4. My fax machine is hooked to Fax socket, and telephone to Telephone socket. Can I make a phone call via fax machine in this case?

A: Yes you can. But be minded that add star ‘\*’ key first.

5. Is it possible to transmit fax via GSM by any SIM card?

A: Before using GSM fax function, make sure that:

(a) For sending faxes, ensure SIM card data transmission service is available (GSM network support is required)

For receiving, ensure SIM card fax receiving service is available. (GSM network support is required, usually this function needs dual

number with one SIM card – one voice number and one fax number. For fax receiving, only fax number is used. Voice number is not expected for fax receiving.)

6. What type of fax machine do I need to use?

A: HR8100TG(3x) is in line with G3 fax criteria. Any compatible G3 standard fax machine is OK.

7. When I use GSM fax, is it possible to fax like desktop fax machine, i.e. make a phone call before sending faxes?

A: Not possible. HR8100TG(3x) does not support GSM voice/ fax switch over function. This function requires GSM network supporting TS61 (allowing user to make phone call while faxing). So, when sending faxes, please press down Start key immediately after complete your number; When receive faxes, please set fax machine to Auto receive mode.

## Appendix: Warranty / Warranty Card

### Warranty

Dear User:

Thank you for choosing the fixed wireless terminal of our company. In order for you to enjoy our complete service, please read the following warranty conditions carefully.

#### **Product warranty conditions:**

1. From the date you purchased this product, unless otherwise damaged by intention, we offer one (1) year free of charge warranty. Warranty starts from the date of purchase, which is indicated on invoice. In case of no such invoice available, warranty starts from production date.
2. Within 15 days from purchasing, if not intentionally damaged, the product could be claimed for a change with Warranty card or Invoice.
3. If the product is defective, user must bring with the product to the distributor or dealer by himself or herself to make a change or repair, or go to the local customer service center to make a change or repair.

Warranty Notes:

1. Warranty is subject to normal operation of the product. Any man-made /intentional damage (including but not limited to: user self demounting or assembling, refit, repair, dropping and operation not as per user guide etc.) is not liable to the warranty service.

2. The product warranty card is not valid without completely filling out and distributor's stamping.
3. Do not damage or modify the production date label. Or we are not responsible for relevant service.
4. Our company has the final authority for explanation of the product service terms.

## Warranty Card

User is required to fill out the form carefully and keep it in a safe place, for future repair claim.

<b>Customer Name</b>		<b>Tel:</b>	
<b>Product Type</b>		<b>Device No.</b>	
<b>Dealer</b>		<b>Purchase Date</b>	_____(Y)_____ (M) (D) (Seal of Distributor/Dealer)