

(Fixed Wireless Terminal)

4G LTE FWT ETS-8848

User's Manual

4G LTE FWT ETS-8848 Version 1.0 -2020

1, General Description

4G LTE FWT ETS-8848 is a 4G Lte to Analog Converter, the device can produce a FXS line to allow a regular phone to be connected and used just like a local land line(PSTN) except your calls will go out from the 4G network. This device can both receive and make calls.

The main applications are: Connecting the RJ-11 FXS line to an ordinary telephone set for voice call; to connect PBX for call extensions; to connect billing systems for public phone use; to connect VoIP FXO gateway to realize VoIP call termination; to connect alarm system for security purpose, etc.

It is a 4G LTE Fixed Wireless Terminal that produces an analog FXS phone line .

Module employed:

Quectel 4G LTE Standard EC2x (EC25、EC21、EC20 R2.0 and EC20 R2.1) /EG21-G/EC200T etc.for different countries and networks.

Appearance and Structure

Item	4G LTE FWT ETS-8848	Remark
Appearance		White/black
Material	ABS (Acrylonitrile Butadiene Styrene)	
Dimension	170mm×118mm×30mm	Excluding antenna
Weight	250g	Weight of Main unit

Power Switch	Rocker switch	
Power Socket	12V DC input	
Phone interface	RJ11	2 RJ-11 ports
Antenna interface	SMA - Female	
LED display	No.1: Power, No.2.in use, No.3, in talk, No.4, Battery, if have, No. 5-7, Signal strength	From left to right(front side view)
Front side	LEDs display for Signal strength, Power, Working Status,Talking and Battery indicator;	
Rear side	1 piece SMA antenna connectors, 2 RJ-11 output, Power port and switch;	
Bottom side	1 piece SIM slot	

2, Features:

- 1) It is a 1 port 4G LTE fixed wireless terminal which has 2 RJ-11 outputs for extensions;
- 2) It supports VoLTE function.
- 3) It can connect with ordinary telephone set, PBX , VOIP Gateway, Billing meter etc.
- 4) Employ industrial module Quectel EC2X series to make
- 5) Simple to install and easy to maintain
- 6) Steady module and reliable design ensures good performance
- 7) Provides optimized circuit directly connecting the exchange device for extensions

- 8) Compatible to most telephones, PBX device.
- 9) Strong signals with high gain antenna
- 10) Attractive plastic casing
- 11) SIM card supported (1.8V, 3V)
- 12) Caller ID display
- 13) Support DTMF/FSK
- 14) Provides reversal polarity signal for metering
- 15) No noise and clear voice
- 16) Suitable for wide voltage range and low power consumption
- 17) Suitable for all kinds of weather and environment
- 18) Locking PIN / network (optional)

3,Technical Specifications:

Air interface standard:

Quectel 4G LTE standard module EC2X is a wireless module which is designed for the global market.it can be designed in many kinds of applications which can work on 4G LTE network.

Quectel 4G LTE module EC2X support the Bands as the following:

EC25-EUX for example :

LTE FDD: B1/B3/B7/B8/B20/B28A

LTE TDD: B38/B40/B41

WCDMA: B1/B8

GSM/EDGE: B3/B8

For other modules,please refer Quectel website <http://www.quectel.com> to choose the correct module.

Phone interface: supply RJ-11 Phone Interface

Hanging voltage: 45V

Picking off voltage: 30mA / 41mA

Dialing tone Frequency: 450Hz

Antenna interface: Antenna amplifying>2.5db

Sensitivity:<-104DBM

Transmitting power<3W

Color: White /Black (optional)

AC-Adapter interface: Input: AC100-240V 50/60Hz 0.4A Max

Output: 12.0VDC = 1.0A.

AC-Adapter type: EU, US, AU, British type (can be optional)

Back up battery: Li-ion battery 900mAh 7.4V 6.7WH (Can be optional)

4, Operation Circumstance:

Operation temperature: -10c~60C

Storage temperature:-20C~70C

Operation humidity:45%-95%

Atmosphere pressure:86-106Kpa

Environment noise: <60DB

Transmitting Power:2W

Sensitivity: <-104dbm

Antenna Amplifying: >2.5db

Dialing frequency: 450Hz

Hanging voltage: 45V

Picking current: 30mA/41mA

5, Packing List

Name	Quantity	Remark
4G LTE FWT ETS-8848	1 piece	4G LTE
Ac- adapter	1 piece	AC100-240V, DC12V/1A
Antenna	1 piece	Magnetic based Antenna with 3m cable
User's Manual	1 piece	English
G.W: 0.75kg per unit. 20pcs/Carton, 16kg /Carton		
Carton Box Size: 55cmX34.5cmX32.5cm		

6,Installation And Connection

The Condition for Installation

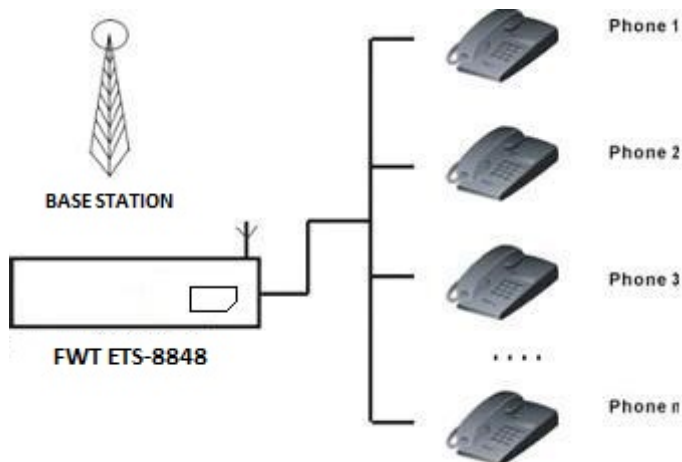
The terminal asks for 110- 220V AV power supply. It must be installed in the area where the 4G network can cover. The strength of the signal can affect the quality of voice.

1. Insert SIM card into the SIM card holder at the back of the terminal.
2. Install antenna. In order to ensure the quality of voice, antenna must be put beyond 1.5 from the telephone and terminal.

3. One end of the telephone line connects to the "Phone" port of the terminal, the other end connects to telephone.
4. "Power" port connects to power adapter that is connected to 110-220V AC power supply.

1) The Installation for Connecting to Ordinary Telephone

The Sketch for connecting ordinary Telephone

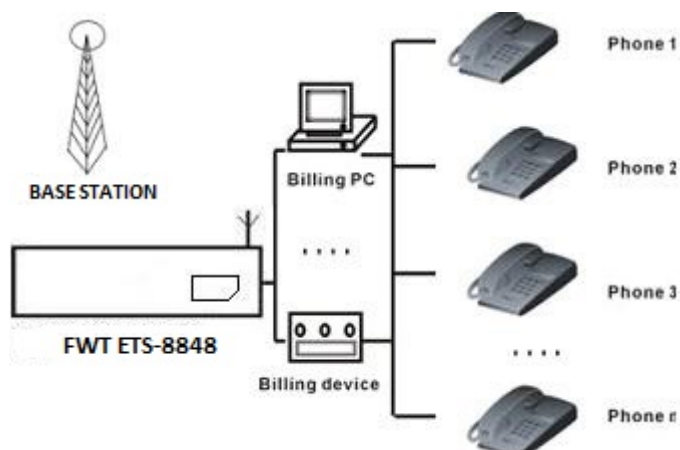


Draw your attention: Because there are many types of ordinary telephone and their electric parameters are different. In order to avoid mutual disturbance between telephone and terminal and affect voice quality. The distance between telephone and terminal is 1.5m at least.

2) The installation for connecting to billing device for metering

If the users demand to register cost during calls, billing device can be connected between terminal and ordinary telephone. Billing device register cost according to the anti-polarity signal that is provided by the terminal.

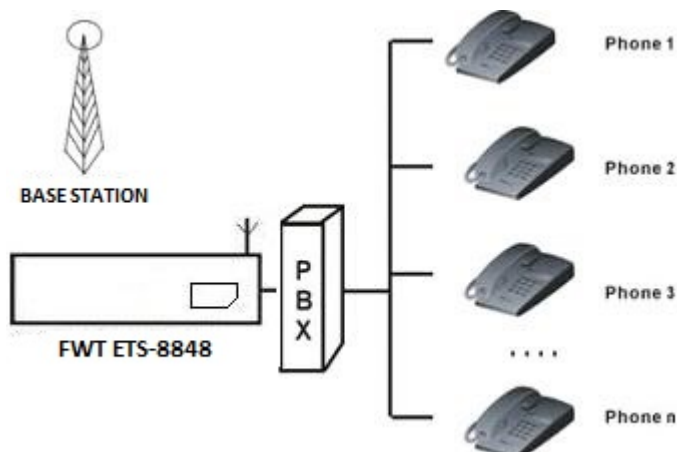
The sketch for connecting to Billing device or Computer charging system



3) The installation for connecting to PBX for call extensions

If users want to connect small PBX to this terminal, connect terminal's "Phone port" to the PBX.

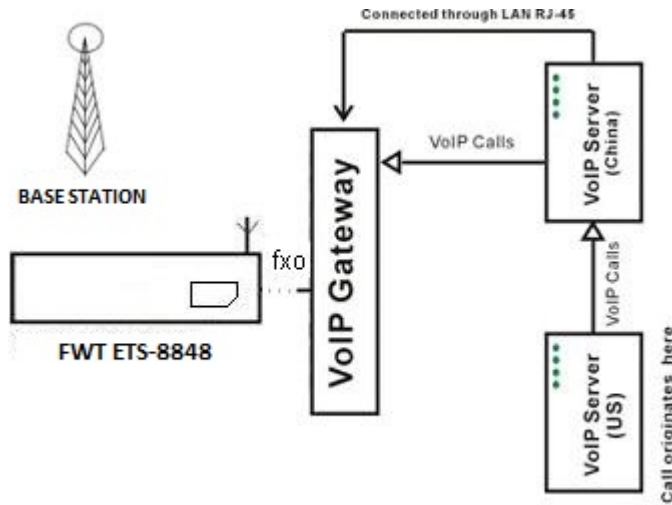
The sketch for connecting to PBX device.



4) The installation for connecting VoIP gateway for Call Termination

Suppose a VoIP call originates from US, which was transferred from US Server to China Server on VoIP, finally the call will be terminated from internet to 4G LTE network and to be sent out to the destination answer side.

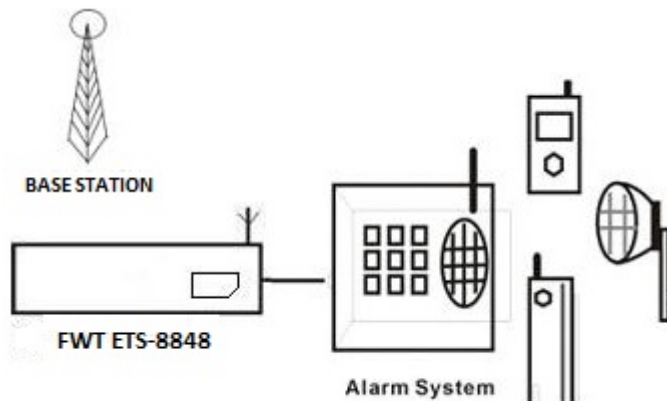
The sketch for connecting to VoIP gateway



5) The installation for connecting to alarm system for Security

The 4G LTE FWT can substitute the PSTN for connecting to alarm system for security purpose when PSTN failure or not available.

The sketch for connecting to alarm system



7, Function Setting

Before you do the following function settings, Lift handset or press hands free key of telephone set, then you can press the buttons according to the following instructions to finish setting, you will hear 2 beeps after you finish, that means

set successfully.

Before you start to make setting, Enter *****28167031#**, Then you can do the following settings according to your needs.

1) Restore to factory default setting

*#99#99# restore to factory default setting.

2) Adjust dial interval

*#01#30# , 01--command, 30--time, Max 9.9 seconds, Min 0.5 seconds, default setting is 3 seconds.

*If you use 4G LTE FWT ETS-8848 for connecting to VoIP gateway, you can set dial interval as 0.5 second, it can make PDD<5 sec (Method: *#01#05#);

*If you use 4G LTE FWT ETS-8848 for connecting telephone, PBX, billing device, you can set dial interval as 3 seconds or 5 seconds as you like (Method: *#01#30#, set the dial interval as 3 seconds).

3) Adjust Earphone Volume

*#02#15# 02--command, 15--volume, Max 16, Min 1, default setting is 15.

4) Adjust Mic. Volume (sensitivity)

*#03#10# 03--command, 10--amount, Max 16, Min 1, default setting is 10.

5) Setting local area code

*#04#*0755# 10--command, *0755—area code, Max 5 numbers, use "*" instead if area code is less than 5 digits.

6) Setting IP numbers

#05#17911# 05--command, 17911—IP numbers, Max 5 numbers, use "" instead if IP number is less than 5 digit.

7) Hide Caller ID (been sent out)Setting

*#13#01# 13--command, 01--value, Max-02, Min-00 Default setting is 00

00-- presentation indicator is used according to the subscription of the CLIR service

01 – CLIR allowed

02 – CLIR prohibited

Notice: This Setting must need carrier's support.

8) Bar incoming call Setting

*#14#00# 14--command, 00--value, 00--no barring, 01--set barring default setting --00

9)FSK setting (optional) (should confirm before order)

*#17#00# setting caller ID

17-order, 00-value, 00-DTMF, 01-FSK, default setting is 00

This setting need terminal has FSK Chip set support

10) Billing Mode setting

*#15#00#

15--command, 00-value, 01-reversal polarity, 02-12 KHz, 03-16 KHz, default setting-- 01

11) Pin Lock &Network Lock Setting (optional)(Should confirm before order)**1)PIN Lock****1, Set to open PIN code check and automatic PIN lock function**

*#07#*1234# 07-command, 1234- the current SIM card PIN code

If set sucessfully, the device will open PIN code check, and automatically change the current SIM Card into "PIN on" from "PIN off"

2, Set to close PIN code check and auomatic PIN lock function

*#08#*1234# 08-command, 1234- the current SIM card PIN code

If set sucessfully, the device will close PIN code check and automatic PIN lock function.

3, Set to change PIN code, open automatic PIN lock function

*#09#1234*56785678# 09-command, 1234- the current sim card PIN code, 5678-new PIN code. (5678 can be any other 4 digits number, suppose you can use 2009).

If set successfully, the device will change the current sim card PIN code as you want.5678, or the any other 4 digit PIN codes, and open automatic PIN lock function.

2)Network Lock**1,Set to open Network lock function**

*#10#01234# 10-command, 01234-password

2,Set to close Network lock function

***#11#01234#** 11-command,01234-password

3,Set the Network codes

***#12#1*46003*46003#** 12-command,1--No. Of IMSI, 46003--the IMSI code for China Telecom

***#12#2*46000*46000#** 12-command, 2--No. Of IMSI, 46000--the IMSI code for China Mobile

8,Making Calls and Answer Incoming Calls

Making Calls

1. Lift the handset or press “hand-free” key, you will hear dialing tone, then you can dial the telephone numbers you want to call.
2. Dialing: dialing the telephone numbers you want to call
3. On completion of dialed digits, you can press “#” to transmit the called telephone numbers. If you don’t dial any key for continual 3 seconds during the dialing, terminal transmits called telephone numbers automatically.
4. During calls, if the telephone numbers is not free ones, the terminal sends out anti-polarity signal.
5. If the calling party or called party hangs up, the terminal stops sending out anti-polarity signal.

Answering Incoming Calls

When a call is coming in, if the connected telephone has the function of displaying incoming call, the telephone rings and displays the incoming telephone number. Now the user can lift the handset or press “hand-free” to answer it.

Warranty Card

Please fill in the blanks carefully, and keep it properly as the voucher for warranty.

Type of Equipment	4G LTE FWT ETS-8848		
User's name		Contact with:	
Contact Tel.no.			
Address			
Date of Ex-works			
Date of Maintenance	Damage	Management	Maintainer
Sales Agent (Stamp)		Purchasing Date	

FCC Warning Statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and 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 circuit different from that to which the receiver is connected.
- - Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RF Exposure Statement

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance of 20cm the radiator your body. This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.