

Contents

1 Introduction.....	1
2 Quick installation.....	1
How to link with a phone.....	2
How to link with PBX.....	2
How to link with a billing machine/charger.....	3
How to link with PC for GPRS.....	3
How to install the software (for PRGS)	4
3 Adjust volume.....	5
To adjust the volume for outgoing calls.....	5
To adjust the volume for incoming calls.....	5
4 Module RF receive sensitivity.....	5
Frequency Receive sensitivity.....	5
Module receive/transmit frequency.....	5
5 Antenna interface.....	6
6 Electrical, reliability and radio characteristics.....	6
Absolute maximum rates.....	6
Parameter.....	6
7 Temperatures.....	6
8 Power supply.....	6
Power mode.....	6
Battery backup.....	6
Current consumption.....	6
9 SIM card interface.....	7
10 Other specifications.....	7
11 Trouble shooting.....	8
The all LED are off.....	8
The unit can't be started. (The power LED (Red) lights only)	8
The all LED lights (Power, IN USE, IN COME, REGISTER)	8
The register LED doesn't flash.....	8
Can't make calls (no power)	9
No ring	9
No billing (No reversal polarity signal)	9
Can't hear the voice at FCT11Q but the another end can hear FCT11Q.....	9
Can hear the voice at FCT11Q but the another end can't hear FCT11Q).....	9
Can't make calls (There is busy tone after dialing a number.).....	10
Can't dial numbers (There is tone after dialing a number.).....	10
The battery can't be charged.....	10
Noise/ interfere.....	10
PS: Drawings.....	11

1 Introduction

This unit can conveniently access to the available GSM system network. This system possesses such a high receiving sensitivity and a large transmitting power that it expands the effective coverage of the cellular network to a larger. The unit has been extensively used in the fixed access to the cellular network to solve the wired communications problems in the rural areas. It can also be used to develop fast radio public telephone services to satisfy the communications for the time being and work as the CO relay to simplify the registrations and lower the cost. Furthermore it can meet the requirement of mobile communications onboard vehicles, ships, trains, etc. All these enlarge the number of the network subscribers considerably so that it can utilize the resources better.

2 Quick installation

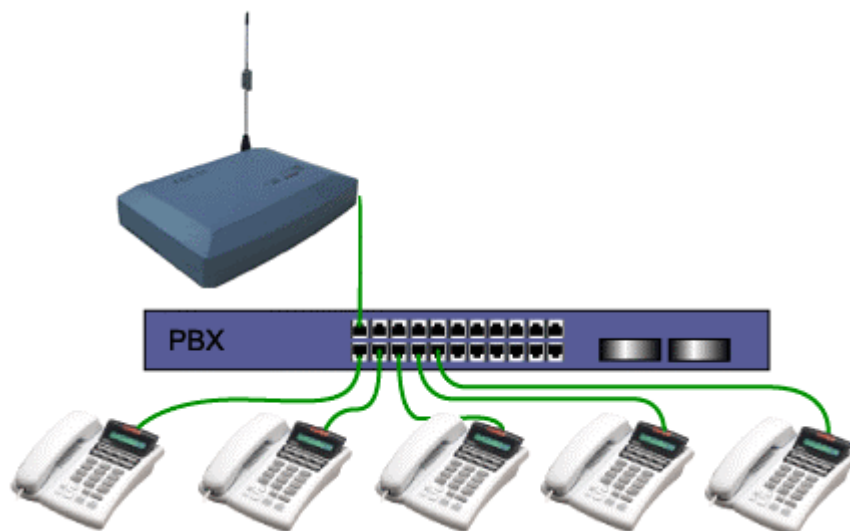
How to link with a phone

1. Take off the cover of the SIM card holder then insert the SIM card into the SIM card holder.
2. Link with the RJ11 cable between a phone and FCT11Q
3. Install the antenna, please screw the antenna tightly into the connector of FCT11Q
4. Connect the power supply and put power switch ON.



How to link with PBX

1. Take off the cover of the SIM card holder then insert the SIM card into the SIM card holder.
2. Link with the RJ11 cable between FCT11Q and PBX
3. Install the antenna, please screw the antenna tightly into the connector of FCT11Q
4. Connect the power supply and put power switch ON.



Fixed Cellular Terminal

Model: FCT11Q

Sky Microwave

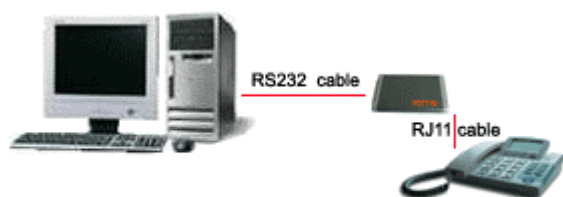
How to link with a billing machine/charger

1. Take off the cover of the SIM card holder then insert the SIM card into the SIM card holder.
5. Link with the RJ11 cable between FCT11Q and billing machine/charger and one RJ11 cable between a machine/charger and a phone.
6. Install the antenna, please screw the antenna tightly into the connector of FCT11Q
7. Connect the power supply and put power switch ON.



How to link with PC (for GPRS)

1. Take off the cover of the SIM card holder then insert the SIM card into the SIM card holder.
2. Link with the RS232 cable between FCT11Q and PC
3. Link with one RJ11 cable between FCT11Q and a phone
4. Install the antenna, please screw the antenna tightly into the connector of FCT11Q
5. Connect the power supply and put power switch ON.
6. Install the software (this software is existing in your PC, it's in Win98/2000/XP)



Note: When the phone is in use, GPRS can't be used
and when GPRS is in use, the phone can't be used.

How to install the software (for PRGS)

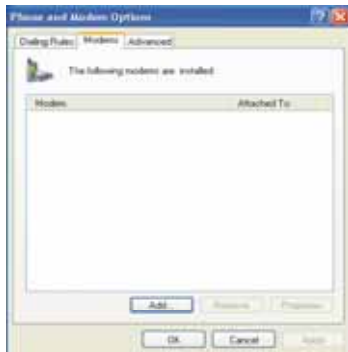
An example installation on WindowXP, (**Note:** Please install it as the simply same way as to install a modem.)

Fixed Cellular Terminal

Model: FCT11Q

Sky Microwave

a) Choose "Settings" then Click "Control Panel" and "Phone and modem options"



b) Don't need to detect the modem



c) Choose the standard 19200 modem



d) Choose Com



e) Input the comments on the Advanced AT+CGDCONT=1, "IP" "CMNET"



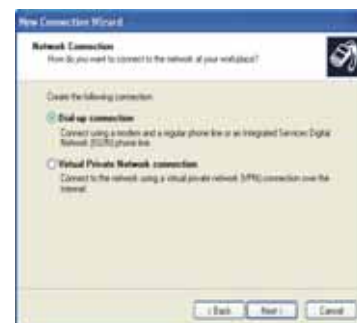
f) Setup the connecting



g) Choose the connect type



h) Dial-up connection



Fixed Cellular Terminal

Model: FCT11Q

i) Input a connecting name



k) The user name and the password are given by the local operator



Sky Microwave

j) This number is given by the your local operator



l) RS232 cable



3 Adjust volume

To adjust the volume for outgoing calls

Pick up the receiver, press #*X# (X = 0-9. 9 is the Max. volume.)

To adjust volume for incoming calls

Pick up the receiver, press ##X# (X = 0-9. 9 is the Max. volume.)

4 Module RF receive sensitivity

Frequency Receive sensitivity

GSM850 < -106dBm

E-GSM900 < -106dBm

DCS1800 < -104dBm

PCS1900 < -104dBm

Module receive/transmit frequency

Frequency Receive Transmit

GSM850 869 ~ 894MHz 824 ~ 849 MHz

E-GSM900 925 ~ 960MHz 880 ~ 915MHz

DCS1800 1805 ~ 1880MHz 1710 ~ 1785MHz

PCS1900 1930 ~ 1990MHz 1850 ~ 1910MHz

Fixed Cellular Terminal

Model: FCT11Q

Sky Microwave

5 Antenna interface

Frequency range: 890 ~ 960MHz; 1710 ~ 1880MHz

Bandwidth: 70MHz, 170MHz

Gain: 2.15dBi with 3m cable (5.5dBi with 6m cable is optional)

Impedance: 50 Ohm

Max Power: 50W

Connector Type: SMA Weight: 120g



analog

6 Electrical, reliability and radio characteristics

Absolute maximum ratings

Absolute maximum rating for power supply and voltage on digital and pins of SIM340 are

list in follows:

Parameter

Peak current of power supply 0 4.0 A

RMS current of power supply (during one TDMA- frame) 0 0.7 A

Voltage at digit pins -0.3 3.3 V

Voltage at analog pins -0.3 3.0 V

Voltage at digit/analog pins in POWER DOWN mode -0.25 0.25 V

7 Temperatures

Operating temperature: -20 +55C

Storage temperature: -40 +85C

Relative humidity: 5%~95%

8 Power supply

Power mode: AC to DC

- Switch adaptor (without battery) 110-260V to 7.5V, 50/60Hz, 1.25A
- Switch adaptor (with Ni-MH battery) 110- 260V to 7.5V, 50/60Hz, 1.0A

Battery backup

- Standby: 20Hrs(Appro.)
- Continued Talking: 2Hrs(Appro.)
- Battery information: 5pcs/AA size/rechargeable/1300mAh.

Note:

- The battery will work when the normal power is off and the battery power will be off when the normal power is On.
- The users can use any batteries with AA size, rechargeable and the capacity around 1300mAh.

Current Consumption

Voice Call

GSM850/GSM 900 @power level #5 <350mA, Typical 240mA

@power level #10, Typical 130mA

@power level #19, Typical 86mA

GSM1800/1900 @power level #0 <300mA, Typical 200mA

@power level #10, Typical 87mA

@power level #15,Typical 80mA

GPRS Data

DATA mode, GPRS (1 Rx,1 Tx)

GSM850/GSM 900 @power level #5 <350mA,Typical 230mA

@power level #10,Typical 125mA

@power level #19,Typical 84mA

GSM1800/1900 @power level #0 <300mA,Typical 180mA

@power level #10,Typical 83mA

@power level #15,Typical 76mA

DATA mode, GPRS (3 Rx, 2 Tx)

GSM850/GSM 900 @power level #5 <550mA,Typical 450mA

@power level #10,Typical 225mA

@power level #19,Typical 142mA

GSM1800/1900 @power level #0 <450mA,Typical 340mA

@power level #10,Typical 140mA

@power level #15,Typical 127mA

DATA mode, GPRS (4 Rx,1 Tx)

GSM850/GSM 900 @power level #5 <350mA,Typical 270mA

@power level #10,Typical 160mA

@power level #19,Typical 120mA

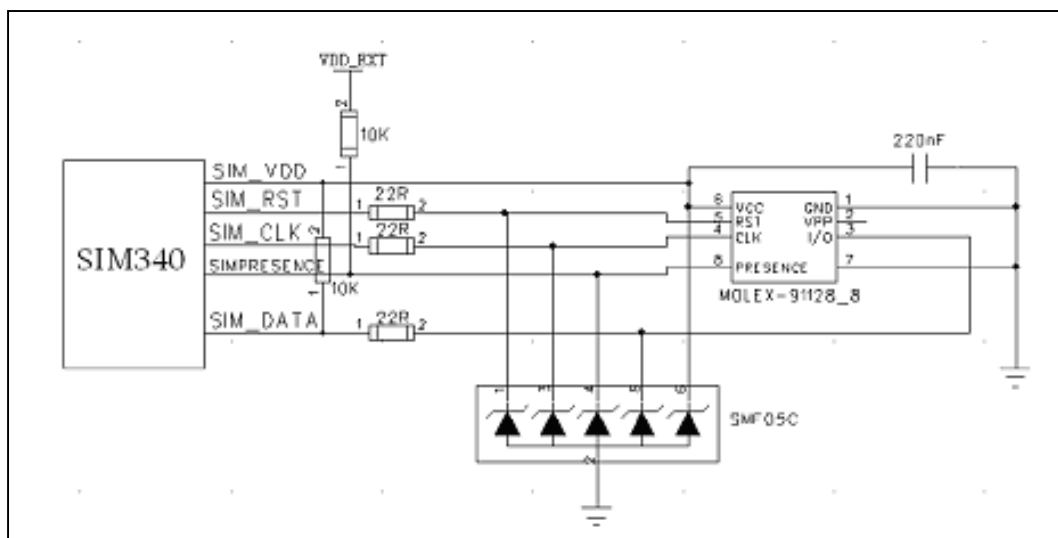
GSM1800/1900 @power level #0 <300mA,Typical 220mA

@power level #10,Typical 120mA

@power level #15,Typical 113mA

9 SIM card interface

If you don't use the SIM card detection function, you can let the SIM_PRESENCE pin NC or connect to the GND. The reference circuit about 6 pins SIM card illustrate as following figure.



10 Other specifications

Plastic cover: blue

Size : 183mm × 124mm × 32mm(l\w\h)

G.Weight : 1.0Kg

Contents: Main unit: 1pc; RJ11: 1pc; RS232 cable: 1pc; Antenna: 1pc; Power supply: 1pc; Battery: 5pcs

11 Trouble shooting

1. The problem: The all LED are off

Solution:

- 1) Check the power supply. (The normal power is 7.5V)
- 2) Check the switch of the power
- 3) Check the LED
- 4) Check if there are any short circuit/break/dry solder at the power supply circuit of PU1
- 5) Check if the input/output voltage of PU1 (KA78R05), the normal voltage are: pin 1 is 7.3V(appro.) and pin 2 is 5V
- 6) Check if the voltage of U3 (SM8958AC25R).(the normal voltage is: pin 40 is 5V)
- 7) Check the voltage of Y2 (Oscillator), the normal voltage is 2.5V(appro.). If the voltage is around 2.5V, please check C10 and C11(capacity) (Oscillator value is 22.1184M)
- 8) Change U1. U1 contents a driver made by the factory, please contact Sky Microwave Co. for the new one.
- 9) Check if the circuit of the LED connect well with the motherboard.

2. The problem: The unit can't be started. (The power LED (Red) lights only)

Solution:

- 1) Check the input/output voltage of PU3(PQ30RV11)(The normal voltage is: pin 1 is around 7.3V, pin 2 is around 4.2V)
- 2) Check the value of the PR3 and PR2 (the normal value is: PR3=22K and PR2=51k).
- 3) Check the power supply circuit of the module (Simcom), if there are any short circuit/break/dry solder
- 4) Check the power supply voltage of the module (The normal voltage are: pin 1, 43, 42, 41 is 4.2V each)
- 5) Check the pin 33 and pin 34 of the module, if the pin 33 connect well with pin 11 and pin 34 connect well with 10 of U1
- 6) If the all above are normal, please change the module.

3. The problem: The all LED lights (Power, IN USE, IN COME, REGISTER)

Solution:

- 1) Check if the program switch is putted to the side of "W" (this switch has to be always at the side of "W" when the unit ready is working)
- 2) Check if the program switch has problem.
- 3) Check the pin 5, 6 of U4 (AT24C64) if the pin 5 is connected well with the pin 5 of U1 and pin 6 is connected well with pin 6 of U1.
- 4) Check if the pin 5 and 6 of U4 are short-circuited with the other components and lines.
- 5) If the above all are normal, please change U4.

4. The problem: The register LED doesn't flash.

Solution:

- 1) Check if the SIM card is available.
- 2) Check if the SIM card is locked
- 3) Check if the SIM card pins are connected well with the SIM card holder

- 4) Change the module if the above all have no problems

5. The problem: Can't make calls (no power)

Solution:

- 1) Check if the telephone has problem.
- 2) Check if the cable has problem between the unit and the phone.
- 3) Check the voltage of U7 ((SLIC 480)) (the normal voltage: Pin 13 is 5V and pin 11 is around 4.8V)
- 4) Check the output voltage of U7 (The normal voltage is: The DC voltage is 45V between pin 1 and pin 2)

Note: The direction of U7(SLIC 480) is from up to down.

6. The problem: No ring.

Solution:

- 1) Check if the phone has problem.
- 2) Check if the unit connects well with the phone.
- 3) Check the voltage of U7 ((SLIC 480)) (the normal voltage is: Pin 13 is 5V and pin 11 is around 4.8V)
- 4) Check if the output voltage of U7(SLIC 480) during the ring. (The AC voltage between pin 1 and pin 2 is around 60V)
- 5) If the all are normal, please change U7(SLIC 480).

Note: The direction of U7(SLIC 480) is from up to down.

7. The problem: No billing (No reversal polarity signal)

Solution:

- 1) Check your billing machine.
- 2) Check if the pin 3 of U7(SLIC 480) is connected well with the pin 28 of U1 and the pin 4 of U7 is connected well with the pin 27 of U1.
- 3) Check if the voltage of U7(SLIC 480)) is normal. The normal voltage of the pin 13 is 5V and, the pin 11 is around 4.85V
- 4) Check the polarity voltage of U7(SLIC 480), the polarity voltage should be positive or negative when the call is getting through or hang up.

8. The problem: Can't hear the voice (FCT11Q can't hear the another end but the another end can hear FCT11Q.)

Solution:

- 1) Check if the phone has problem.
- 2) Check the volume setup, #X# is the volume adjusting code, X=0=5, 0 is the lowest volume.
- 3) Check if there are any dry-solders at the pins 20,21 of the module.
- 4) Check if T2 has problem
- 5) Check if there any short-circuited/broken/day-soldered at the circuit of C13
- 6) Check if there any short-circuited/broken/day-soldered at the circuit of Q1
- 7) Change U7(SLIC 480)
- 8) Change the module

9. The problem: Can't hear the voice (FCT11Q can hear the another end but the another end can't hear FCT11Q)

Solution:

- 1) Check if the phone has the problem.
- 2) Check if there are any short circuit/broken/dry-soldered at pin 16,17 of the module
- 3) Check if T1 has problem
- 4) Check if there are any short circuit/broken/dry-soldered at R9
- 5) Change U7

- 6) Change the module

10. The problem: Can't make calls (There is busy tone after dialing a number.)

Solution:

- 1) Check if the SIM card is available.
- 2) Check if the calling number is programmed to a block number. (Please view the manual for blocking number feature)
- 3) Check the RF cable (the cable between the module and antenna), if it's in good condition. (The register LED won't flash if there is any problem)
- 4) Check the module.

11. The problem: Can't dial numbers (There is tone after dialing a number.)

Solution:

- 1) Check the phone
- 2) Check the output voltage of U7.
- 3) Check if the voltage of Y1(Oscillator), The voltage is around 2.2V. If it's no problem. Please check capacity of C17 and C19.

Note: The value of Oscillator is 3.579545M

- 4) Check if there are any short-circuited/broken/dry-soldered or damage at R13,R16,R20,C14,C21.
- 5) Check if U2 (HT9170) has problem.
- 6) If the above all has no problem, please change U7.

12. The problem: The battery can't be charged

Solution:

- 1) Check if the battery has problem
- 2) Check if the voltage of the power supply is 7.5V
- 3) Check if there are any short-circuited/broken/dry-soldered at D2-D3, PR1, PJ2.

13. The problem: Noise/ interfere

Solution:

- 1) To keep the antenna and the phone in the good position.
- 2) To check if the model is fixed on the board (The two screws should be fixed tight).

PS: Drawings

