WLINK

User Manual

---Apply to D82 Dual-COM 4G/3G IP Modem

Caution

Due to product updates or functional upgrading, we may renew the content of this file, and this file only for reference. All statement, information, suggestion.etc in this file do not compose any form of guarantee and we WLINK reserves the right of final explanation.

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Product Introduction

1.1 Product Overview

The rugged D82 Dual-COM(Data Terminal Unit) which is a cellular modem have been developed especially for M2M application. It provides one RS232 and one RS-485 interfaces, three DI and one DO ports as default, and equipped with PPP, TCP/IP protocol, it could convert the user data into 4G/3G/2G network and transmits the data to the customer's data service center through complete transparent data channel, allows a simple and rapid integration of cellular network connectivity into M2M application.

With the robust, reliable, long life and compact metal case design, the D82 ideally adapts to onboard standard, easy to deploy and maintenance, it has been widely applied in many fields worldwide, such as power SCADA, oil field, coal mine, weather forecast, environment protection, water conservancy, heating, natural gas, petroleum and so on.

1.2 Typical Application Diagram

WLINK 4G/3G/2G D82 widely used in AMR, Oil, transportation, power grid, mining and other industries fields.
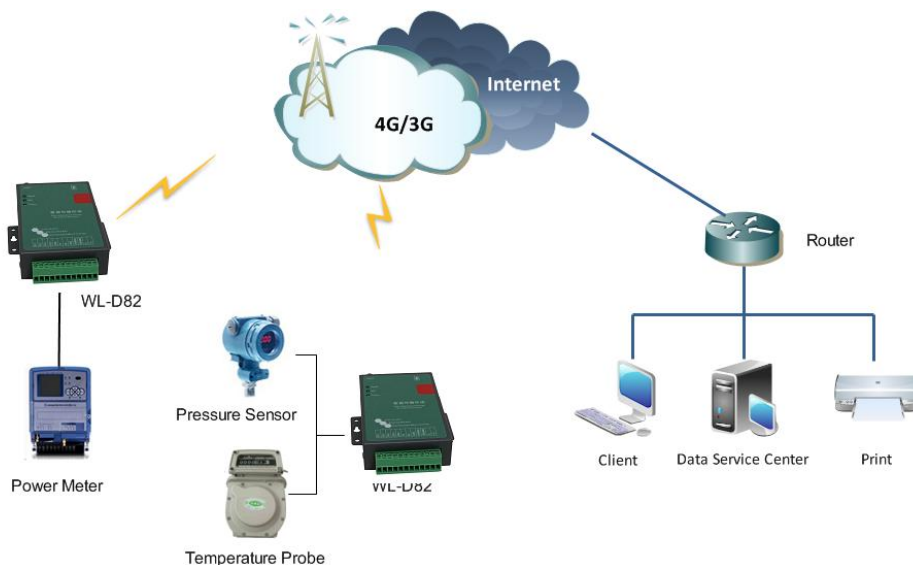
Figure 1-1 Network Topology

1.3 **Features**

- Various cellular module optional, 4G/3G/2G optional

- Optimized EMC design

- Standard PPP, TCP/IP and UDP/IP protocol

- Industrial pluggable terminal block

- Industrial 4G/3G/2G wireless module

- Support One RS232 and one RS485 ports as default

- Support 2 DI and 2 DO ports

- Support APN and VPDN wireless private network

- Support short message service (SMS)

- Support transparent data transmission

- Support data service center with dynamic IP address

- Support LED status indication

- Wide range voltage input

- Smart power management

- External power on/off control

- Reliable, flexible and easy to deploy

2 Hardware Installation

This chapter is mainly for installation introduction, there would be some difference between the scheme and real object. But the difference doesn't have any influence to products performance.

2.1 LED Status

LED indicator Status

Silk-screen	Status	Indication
Signal	Light Off	CSQ<12, no signal or weak signal
	Blinking	13<CSQ<22, common CSQ
	Constant Light	23<CSQ<31, good signal
Net	Light on 2s,Light off 1s	Standby
	Light on 1s, Light off 2s	Online
	Blinking	Self-checking
Power	Constant Light	D82 system running

2.2 **Dimension**
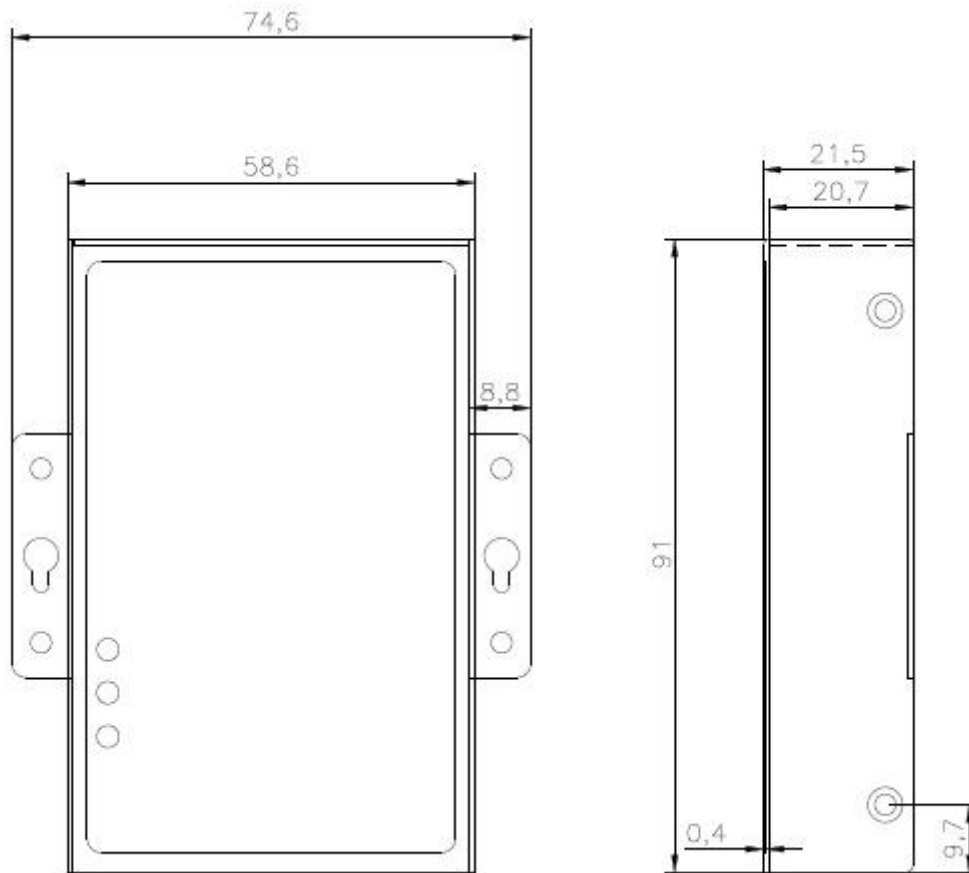
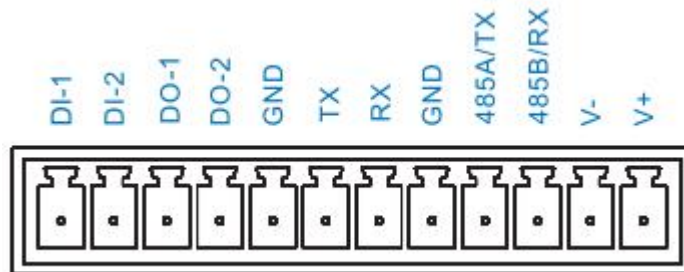## 2.3 **How to Install**

2.3.1 SIM/UIM card installation

Open SIM shelter by screw-driver, then insert SIM/UIM card.

SIM/UIM Card

CAUTION

Before connecting, please disconnect any power resource of D82

2.3.2 Interface Panel

Pin	Interface	Description
1	V+	Power Vin+, Anti reverse
2	V-	Power Vin-, Anti reverse
3	RS484 B	RS485 B, 57600bps as default
4	RS485 A	RS485 A RX, 57600bps as default
5	GND	GND for serial port communication
6	TX	RS232 TX, 57600bps as default
7	RX	RS232 RX, 57600bps as default
8	GND	GND for serial port communication
9	DO2	Digital Output, 0~3.3V
10	D01	Digital Output(0~+5V), Dry Contact

| 11 | DI2 | Digital Output(0~+5V), Dry Contact |
| 12 | DI1 | Digital Output(0~+5V), Dry Contact |

2.3.4 Power Supply

In order to get high reliability, adapt wide voltage input: +7.5V～+32VDC, support hot plug and complex application environment.

2.3.5 Review

After insert the SIM/UIM card, connect serial cable, necessary antenna, then connect power cable.

👁 **CAUTION**

Please connect the antenna before connect the power cable, otherwise because of impedance mismatching, the signal maybe poor.
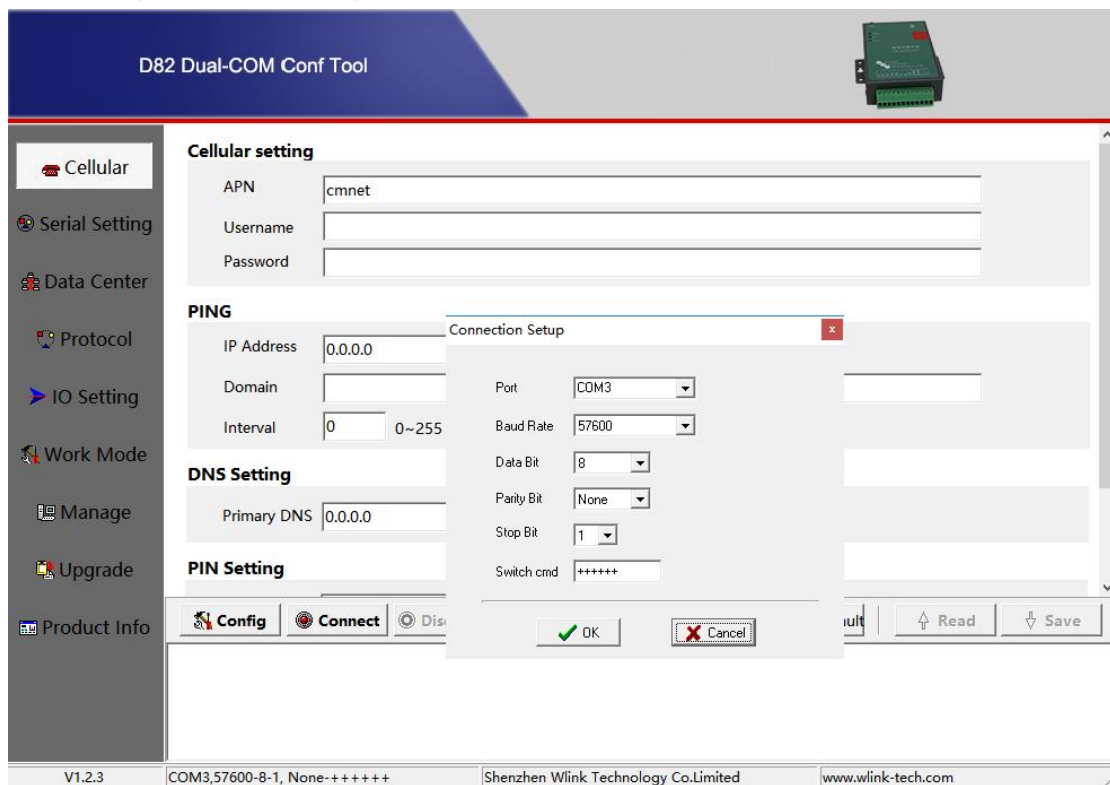
Notice:

Step 1   Check antenna connection.

Step 2   Check SIM/UIM card, configure SIM/UIM card is available.

Step 3   Power on D82.

3 Configuration

3.1 Serial Port Settings

Run D82 Dual-COM Conf Tool and select serial port, then setup serial port parameters in the bottom of Config Tool as below.

Run Config Tool, click Config button to setup serial port parameters as below.
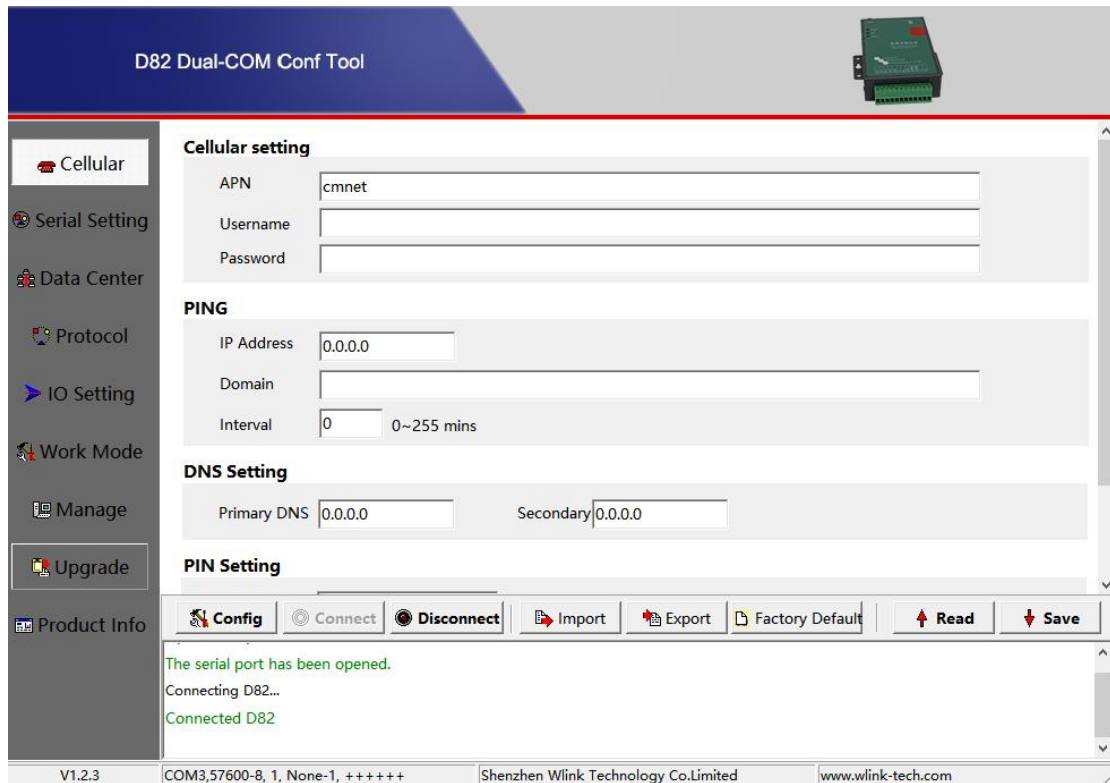

Baud Rate: 57600bps

Data Bit: 8bit

Parity: None

Stop Bit: 1bit

NOTE

Click Connect button, modem will be connected to the tool and enter configuration mode. If the connection is successful, it will display Connected dialog box as below.

【Config】Tool Serial port configuration.

【Connect】Connect D82.

【Disconnect】Close serial port to leave configuration mode.

【Import】Import configuration file into Config tool.

【Export】Export current settings to file. It's convenient for butch setup.

【Factory Default】Setup D82 to default settings.

【Read】Inquiry current D82 setting.

【Save】Save settings to D82.

3.2 **D82 Dual-COM Modem Configuration**

3.2.1 **Cellular Settings**

Cellular settings instruction

Parameters	Description	Instruction	Default
APN	SIM information for dial up	1~63bytes	cmnet
User name		0~63bytes	NULL
Password		0~63bytes	NULL
Ping IP address	Check destination IP address		0.0.0.0
Domain Name	Check destination domain name. If IP 0.0.0.0 and domain name is null, Ping is disable.	0~63byts	NULL
Interval	PING check interval when idle.	0~255mins 0 indicates PING is disable status.	0
Primary DNS	Defined Primary DDNS server IP address	If configured 0.0.0.0, D82 will use default DNS IP address as domain name resolution server.	0.0.0.0
Secondary DNS	Defined secondary DDNS server IP address	If main DNS for 0.0.0.0, the secondary DNS will be invalid.	0.0.0.0

Parameters	Description	Instruction	Default
PIN	SIM card PIN code	If SIM card is defined PIN code. It need to be configured the correct PIN code in D82. Otherwise, D82 won't identify SIM. If configured an error PIN code in D82, SIM card will be damage. We suggest not pre-configure PIN code in SIM card.	NULL
Network Type	Network type options.	**[AUTO]** Modem will automatically connect cellular network regarding to local network signal **[4G]** Force modem to connect 4G **[3G]** Force modem to connect 3G. **[2G]** Force modem to connect 2G.	

3.2.2 Serial Settings

COM1 settings instruction.

Parameters	Description	Instruction	Default
Baud rate	Serial port properties	300/600/1200/2400/4800/9600/19200/38400/57600/115200 optional. RS232 Port for 115200bps as default. RS485 Port for 115200bps as default.	
Data bits		8	8
Stop bits		1/2	1

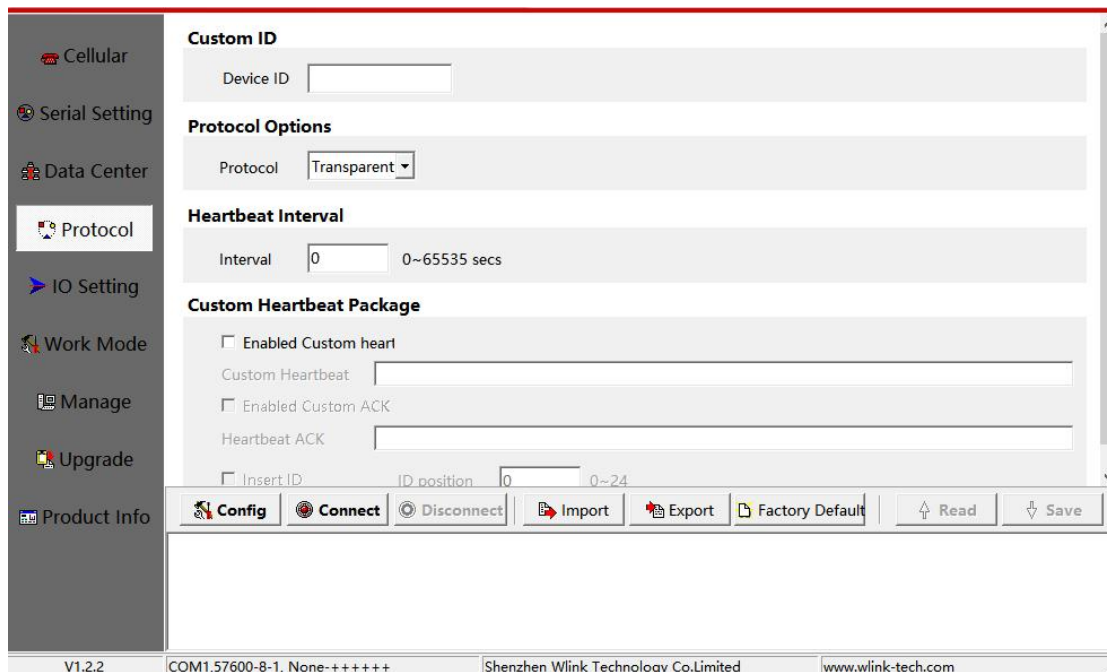| Parameters	Description	Instruction	Default
Parity		NULL/ODD/EVEN	NULL
Protocol	Transmission protocol between D82 and device. Under command mode, terminal might setup D82 configuration.	Transparent and Command modem are optional. The default is for transparent protocol.	Transparent
Max Package Length	The max transmission unit. Once data package length exceeds to MTU, D82 will split data package as MTU.	1~1024bytes	1024bytes
Min Internal	The Min Interval is the waiting time interval for transmitting the data package that is less the MTU. If the last package equals to the MTU, D82 will transmit it immediately.	100~1000ms	300ms

3.2.3 Data Center Settings

COM2 settings instruction.

Parameters	Description	Instruction	Default
Data center IP	Data server center IP address(static IP address)	D82 will transmit COM1 data to Data center 2	0.0.0.0
Port		0~65535	40001
Protocol	UDP/TCP		UDP
Domain name	No static IP for server	It's just available when center IP is configured as 0.0.0.0,	NULL

Parameters	Description	Instruction	Default
Data Transmission	The data flow direction from serial port to data or from data to serial port.	[Serial to Data Center] Defined serial port data direction such as one-to-one, Data center1, Data center2 or mass. [Data Center to Serial] Defined Data Center data direction such as one-to-one, Serial1, Serial2 or mass.	

3.2.4 Protocol settings

Communication Protocol settings instruction

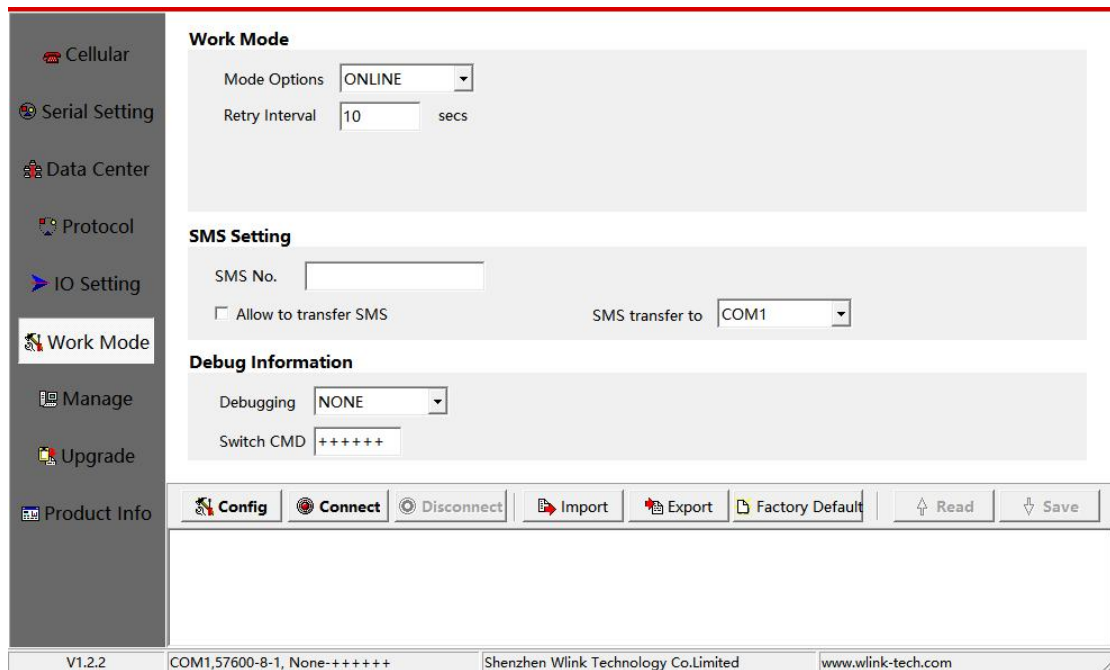| Parameters	Description	Instruction	Default
Custom ID	Identify D82 in data server center	4byte length	NULL
Protocol Options	Transparent/WLINK/DDP	[Transparent] Transparent transmission. [WLINK]WLINK transmission protocol. [HDDDP] Reserved	Transparent
fID Position	ID insert data package in order to identify which D82 sent data.	0~24bytes	1
Heartbeat Interval	0~65535s	D82 will automatically send heartbeat to data server as defined setting. It will keep the connection between D82 and data center. 0 means no heartbeat	0

Parameters	Description	Instruction	Default
ID Position	ID insert data package in order to identify which D82 sent data.	0~24bytes	0
Custom Heartbeat Package	D82 log in data center server and keep connection.	0~24bytes	NULL
Custom ACK Package	D82 receive ACK after sent heartbeat. If no ACK 3times in succession, D82 will reconnect to data center server.	0~24bytes	NULL

3.2.5 IO Settings

IO Control settings instruction

Parameters	Description	Instruction	Default
DI Alarm	Trigger DI to alarm.	Disabled/Rising-edge/falling-edge options	disabled
Triggered Action		SMS/LOW High options	SMS
Alarm SMS	Configure Action for SMS	Short massage content, Max 64byts	NULL

3.2.6 Work Mode Setting

Parameters	Description	Instruction	Default
Mode Select	ONLINE/WAKEUP	**[ONLINE]** After powered on, D82 automatically connect and reconnect to data center server to keep online always. **[WAKEUP]** After Powered on, D82 will work on standby mode. Once D82 received wake up short message from defined phone number, or received the triggering data from terminal, D82 will dial up and connect to data center server. After idle time, D82 will re-enter wake up mode. **[SMS]** DTU works short message mode.	NULL
Retry Interval	D82 reconnect to data center server after interval time when connection is failed.	5~65535s	300s
Idle Interval		5~65535s	300s
Discard WAKEUP DATA			
SMS No.	Short message and call wake up and short message configuration from the specified number.	0~31bytes	NULL
Allow to Transfer SMS	D82 will transmit any short message to terminal	Enable/Disable	Disable
Transfer SMS	Transfer SMS to COM1/COM2	COM1/COM2 Options	COM1
Debugging	Control serial port debug information	NONE/DEBUG/STATUS/AT. Configure AT	

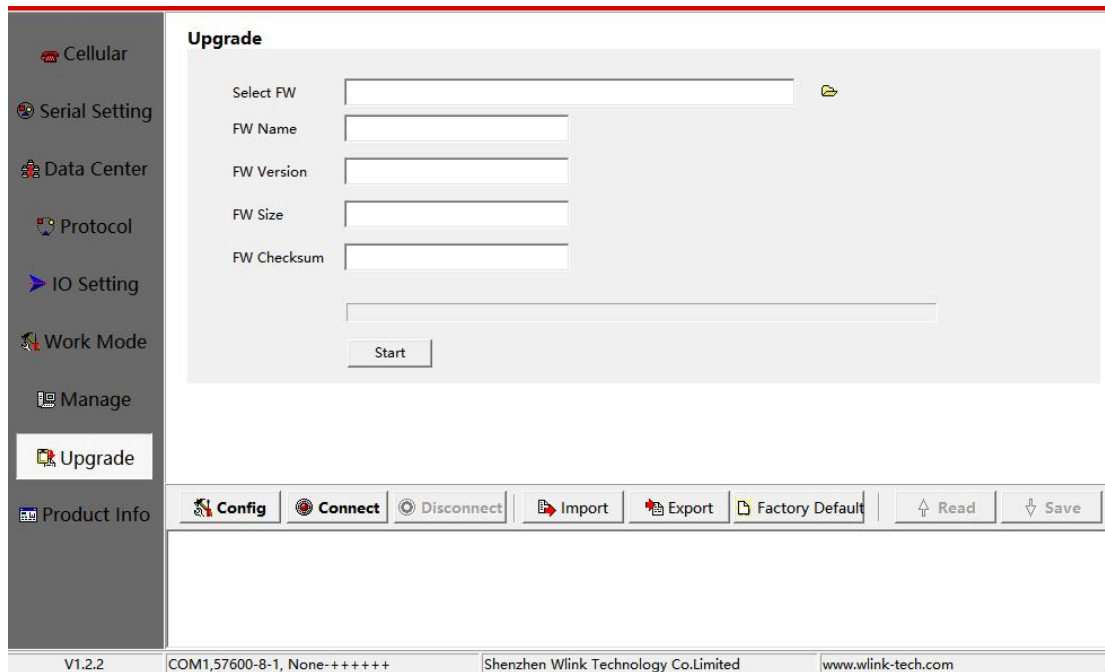| Parameters	Description	Instruction	Default
		level during testing with PC. Configure NULL, then connect D82 to device. **[NONE]** D82 won't send any information to serial port. **[DEBUG]**D82 sends simple information to serial port. It's convenient to test D82. **[Status]**D82 sends operation status, signal strength to serial. **[AT]** D82 sends all debug information to serial port. It's convenient to test D82	
Switch CMD	D82 will be switched to configuration mode from transmission mode. After switched to configuration mode, The D82 will enter command mode to communicate with terminal.	6 visible characters	++++++

3.2.7 Manage settings

Remote management settings instruction

Parameters	Description	Instruction	Default
Run Mode		Online/Timing mode options	Online
Start Interval	D82 will connect to remote management software as this start interval time.	0 means this function is invalid.	
Reconnection	D82 will reconnect to remote	0~65535s	1440s

Parameters	Description	Instruction	Default
	management software as this interval time when the connection is down.		
Remote IP	WLINK remote management platform IP address in HQ	D82 will automatically login WLINK management platform so that customers might manage and monitor D82 in platform	0.0.0.0
Port		0~65535	51010
Domain Name	No static IP in HQ	Domain name is available when the IP address is setup 0.0.0.0	NULL

3.2.8 Upgrade settings

Upgrade settings instruction

Parameters	Description	Instruction	Default
Select Firmware	Select firmware	The firmware is Bin file	
Firmware Name	Firmware name		
Firmware Version	Firmware version		
Firmware Size	Firmware size		
Firmware Checksum	Firmware Verification		
Start	Upgrade firmware	Click Start button to upgrade firmware. Restart D82 modem after upgrade is	

Parameters	Description	Instruction	Default
		completed.	

3.2.9 Production Info

Information instruction

Parameters	Description	Instruction	Default
Product Name			
Product Model			
Serial Port Type			
Version			
SN			

---End