Solution User Guide

M1200

Smart Industrial IoT Gateway 2 SIM + 2 DI + 1 DO + 1 RS-232 + 1 RS-485 + 1 Mini USB





Guangzhou Robustel LTD www.robustel.com

About This Document

This document provides hardware and software information of the Robustel M1200, including introduction, installation, configuration and operation.

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Important Notice

Due to the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors) or be totally lost. Although significant delays or losses of data are rare when wireless devices such as the gateway is used in a normal manner with a well-constructed network, the gateway should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Robustel accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using the gateway, or for failure of the gateway to transmit or receive such data.

Safety Precautions

General

- The gateway generates radio frequency (RF) power. When using the gateway, care must be taken on safety issues related to RF interference as well as regulations of RF equipment.
- Do not use your gateway in aircraft, hospitals, petrol stations or in places where using cellular products is prohibited.
- Be sure that the gateway will not be interfering with nearby equipment. For example: pacemakers or medical equipment. The antenna of the gateway should be away from computers, office equipment, home appliance, etc.
- An external antenna must be connected to the gateway for proper operation. Only uses approved antenna with the gateway. Please contact authorized distributor on finding an approved antenna.
- Always keep the antenna with minimum safety distance of 20 cm or more from human body. Do not put the antenna inside metallic box, containers, etc.
- RF exposure statements
 - 1. For mobile devices without co-location (the transmitting antenna is installed or located more than 20cm away from the body of user and nearby person)
- FCC RF Radiation Exposure Statement
 - 1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
 - 2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and human body.

Note: Some airlines may permit the use of cellular phones while the aircraft is on the ground and the door is open. Gateway may be used at this time.

Using the gateway in Vehicle

- Check for any regulation or law authorizing the use of cellular devices in vehicle in your country before installing the gateway.
- The driver or operator of any vehicle should not operate the gateway while driving.
- Install the gateway by qualified personnel. Consult your vehicle distributor for any possible interference of electronic parts by the gateway.
- The gateway should be connected to the vehicle's supply system by using a fuse-protected terminal in the vehicle's fuse box.
- Be careful when the gateway is powered by the vehicle's main battery. The battery may be drained after extended period.

Protecting Your Gateway

To ensure error-free usage, please install and operate your gateway with care. Do remember the following:

- Do not expose the gateway to extreme conditions such as high humidity / rain, high temperature, direct sunlight, caustic / harsh chemicals, dust, or water.
- Do not try to disassemble or modify the gateway. There is no user serviceable part inside and the warranty would be void.
- Do not drop, hit or shake the gateway. Do not use the gateway under extreme vibrating conditions.
- Do not pull the antenna or power supply cable. Attach/detach by holding the connector.
- Connect the gateway only according to the instruction manual. Failure to do it will void the warranty.
- In case of problem, please contact authorized distributor.

Regulatory and Type Approval Information

Table 1: Directives

2011/65/EU	The European RoHS2.0 2011/65/EU Directive was issued by the European parliament and the European Council on 1 July 2011 on the restriction of the use of certain Hazardous substances in electrical and electronic equipment.	RoH5 compliant
2012/19/EU	The European WEEE 2012/19/EU Directive was issued by the European parliament and the European Council on 24 July 2012 on waste electrical and electronic equipment.	
2013/56/EU	The European 2013/56/EU Directive is a battery Directive which published in the EU official on 10 December 2013. The button battery used in this product conforms to the state 2013/56/EU directive.	-

Table 2: Standards of the electronic industry of the People's Republic of China

SJ/T	The electronic industry standard of the People's Republic of China SJ/T 11363-2006 "Requirements
11363-2006	for Concentration Limits for Certain Toxic and Hazardous Substances in Electronic Information
	Products" issued by the ministry of information industry of the People's Republic of China on
	November 6, 2006, stipulates the maximum allowable concentration of toxic and hazardous
	substances in electronic information products.
	Please see Table 3 for an overview of toxic or hazardous substances or elements that might be
	contained in product parts in concentrations above the limits defined by SJ/T 11363-2006.
SJ/T	The electronic industry standard of the People's Republic of China SJ/T 11364-2014 "Labeling
11364-2014	Requirements for Restricted Use of Hazardous Substances in Electronic and Electrical Products"
	issued by the ministry of Industry and information technology of the People's Republic of China on
	July 9, 2014, stipulates the Labeling requirements of hazardous substances in electronic and
	electrical products, environmental protection use time limit and whether it can be recycled.
	This standard is applicable to electronic and electrical products sold within the territory of the
	People's Republic of China, and can also be used for reference in the logistics process of electronic
	and electrical products.
	The orange logo below is used for Robustel products:
	Indicates its warning attribute, that is, some hazardous substances are contained in the product.
	The "10" in the middle of the legend refers to the environment-friendly Use Period (EFUP) * of
	electronic information product, which is 10 years. It can be used safely during the
	environment-friendly Use Period. After the environmental protection period of use, it should enter
	the recycling system.
	*The term of environmental protection use of electronic information products refers to the term
	during which the toxic and hazardous substances or elements contained in electronic information
	products will not be leaked or mutated and cause serious pollution to the environment or serious
	damage to people and property under normal conditions of use.

Name of	Hazardo	ous Substa	nces							
the Part	(Pb)	(Hg)	(Cd)	(Cr(VI))	(PBB)	(PBDE)	(DEHP)	(BBP)	(DBP)	(DIBP)
Metal parts	0	0	0	0	-	-	-	-	-	-
Circuit modules	0	0	0	0	0	0	0	0	0	0
Cables and cable assemblie s	0	0	0	0	0	0	0	0	0	0
Plastic and polymeric parts	0	0	0	0	0	0	0	0	0	0

Table 3: Toxic or Hazardous Substances or Elements with Defined Concentration Limits

o:

Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in RoHS2.0.

Х:

Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials for this part *might exceed* the limit requirement in RoHS2.0.

-:

Indicates that it does not contain the toxic or hazardous substance.

Document History

Updates between document versions are cumulative. Therefore, the latest document version contains all updates made to previous versions.

Date	Firmware Version	Document Version	Change Description
12 Mar., 2018	1.0.0	v.1.0.0	Initial release
4 Apr., 2018	1.0.0	v.1.0.1	Updated product name
9 Apr., 2018	1.0.0	v.1.0.2	Updated EMI information
16 Apr., 2018	1.0.0	v.1.0.3	Added certification and VPN information
23 Apr., 2018	1.0.0	v.1.0.4	 Updated Key Features Updated USB information Updated PC configuration
29 Jun., 2018	1.0.0	v.1.0.5	Revised the company name
20 Sept., 2018	1.0.1	v.1.0.6	 Rectified the contents of Configure PC Added AT Over COM Added Work Mode Added Chapter 4
12 Dec., 2018	1.0.3	v.1.0.7	Added the description of the BG96 module
30 Jan., 2019	1.0.3	v.1.0.8	Revised the approvals
27 Mar., 2019	1.0.3	v.1.0.9	 Revised the Regulatory and Type Approval Information Revised the Disclaimer Revised the description of PIN in Chapter 2.1 Added the description of DIOD, RS232 and RS485 in Chapter 2.1 Revised the Configure the PC in Chapter 3.1 Revised the Dial Configuration of PC under Modem Mode in Chapter 5
28 May., 2019	1.0.3	v.1.1.0	Revised the approvals
14 Jun., 2019	1.0.3	v.1.1.1	Revised the related picture in chapter 2.1.2 DI/DO
1 Apr., 2020	1.0.3	V.1.1.2	 Revised the description of LED in Modem mode Revised the Regulatory and Type Approval Information Deleted some redundant descriptions in product specifications Revised the key features

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Chapter 1 Product Overview

1.1 Key Features

The Robustel Smart Industrial IoT Gateway M1200 is a compact cellular gateway based on 2G/3G/4G networks. This dual-SIM gateway enables remote data transmission of local serial ports and I/O, and supports multiple interfaces such as RS-232, RS-485 and mini-USB. It can be used in a variety of applications such as energy, transportation, municipal, and agriculture.

1.2 Package Contents

Before installing your M1200, verify the kit contents as following. **Note**: The following pictures are for illustration purposes only, not based on their actual sizes.

• 1 x Robustel Smart Industrial IoT Gateway M1200



• 1 x 10-pin 3.5 mm RP male terminal block with lock for DI/DO connections



• 1 x Quick Start Guide with download link of other documents or tools



Note: If any of the above items is missing or damaged, please contact your Robustel sales representative.

Optional Accessories (sold separately)

 3G/4G SMA cellular antenna (stubby/magnet optional) Stubby antenna 1
 Stubby antenna 2





• Wall mounting kit



• 35 mm DIN rail mounting kit



• Mini USB converter



• AC/DC power adapter (12V DC, 1.5 A; EU/US/UK/AU plug optional)



1.3 Specifications

Cellular Interface

- Number of antennas: 1
- Connector: SMA-K
- SIM slot: 2 (3.0 V & 1.8 V)

Serial Interface

- Number of ports: 1 x RS-232 + 1 x RS-485
- Connector: 10-pin 3.5 mm RP female socket with lock
- Baud rate: 300 bps to 115200 bps
- RS-232: TxD, RxD, GND
- RS-485: A (Data+), B (Data-)

Digital Input / Digital Output

- Number of ports: 2 x DI (wet contact) + 1 x DO (wet contact)
- Connector: 10-pin 3.5 mm RP female socket with lock
- ESD withstand level: contact: ±6 K, air: ±8 K
- Absolute maximum VDC: "V+" +5V DC (DI), 30V DC (DO)

USB Port

- Number of ports: 1 x Mini USB for configuration
- Connector: Mini Female
- Speed: 2.0 high speed up to 480 Mbit/s

Others

- LED indicators: 1 x RUN + 1 x RSSI (red/green bi-color light)
- Built-in: RTC, Watchdog, Timer

Power Supply and Consumption

- Connector: 10-pin 3.5 mm RP female socket with lock
- Input voltage: 9 to 36V DC
- Power consumption: Idle: 50 to 70 mA@12 V

Data link: 300 mA (peak) @12 V

Physical Characteristics

- Ingress protection: IP30
- Housing & Weight: Plastic, 106 g
- Dimensions: 85 x 75 x 28.5 mm
- Installations: Desktop, wall mounting and 35 mm DIN rail mounting

1.4 Dimensions



Chapter 2 Hardware Installation

2.1 PIN Description

2.1.1 PIN Assignment



PIN	Power	Function	RS-232	RS-485	Direction
1	V+				M1200 ← Device
2	V-				M1200 ← Device
3		DO1			$M1200 \rightarrow Device$
4		DI1			M1200 ← Device
5		DI2			M1200 ← Device
6			TXD		M1200 ← Device

7	 	RXD		$M1200 \rightarrow Device$
8	 	GND		$M1200 \leftrightarrow Device$
9	 		Data+(A)	$M1200 \leftrightarrow Device$
10	 		Data- (B)	$M1200 \leftrightarrow Device$

2.1.2 DI/DO

The M1200 has two digital input connectors and one digital output connector. Please refer to the wiring diagram on the right

DI supports two inputs, the default state is 1.

- (1) NPN sensor open collector (OC) input, the emitter of the NPN sensor must be connected to the V- of the M1200.
- (2) Switch signal input, one end of the switch is connected to DI, and the other end must be connected to V- of M1200.

DO is an open collector (OC) output and must limit the current on DO to no more than 10 mA. The negative pole of the DC power supply should be connected to the "GND" port.



2.1.3 RS-232

The M1200 supports an RS-232 serial communication. Please refer to the wiring diagram on the right.



2.1.4 RS-485

The M1200 supports an RS-485 serial communication. Please refer to the wiring diagram on the right.



2.2 LED Indicators



Name	Color	status	Description in DTU mode	Description in Modem mode
	Yellow	On, solid	Power on	Power on
	Yellow	Fast blinking (2Hz)	System initializing	System initializing
	Yellow	On, blinking (1Hz)	Initialization completed, device	Initialization completed, device
RUN			operating normally	operating normally
	Green	On, blinking	Device operating normally, GPRS	Device operating normally, GPRS
			connected	connected
	Red	Fast blinking	Device in abnormal state	Device in abnormal state
	None	Off	CSQ value 0 or 99, not registered	
			on the network	
RSSI	Red	On, solid	CSQ 1-10, poor signal	off (The RSSI LED status is off)
	Yellow	On, solid	CSQ 11-20, normal signal	
	Green	On, solid	CSQ 21-31, good signal	

2.3 USB interface



Function	Operation
Data communication	Use a USB cable to connect the gateway's mini USB interface to an external
	communication device.

2.4 Insert or Remove SIM Card





Please confirm before inserting the SIM card. When the SIM card is turned on and the device is configured without the correct PIN, the SIM card is unavailable.

• Insert SIM card

- 1. Make sure gateway is powered off.
- 2. To insert SIM card, press the card with finger until you hear a click

Remove SIM card

- 1. Make sure gateway is powered off.
- 2. To remove SIM card, press the card with finger until it pops out and then take out the card.

Note:

- 1. Recommended torque for inserting is 0.5 N.m, and the maximum allowed is 0.7 N.m.
- 2. Use the specific card when the device is working in extreme temperature (temperature exceeding 40 °C), because the regular card for long-time working in harsh environment will be disconnected frequently.
- 3. Do not touch the metal of the card surface in case information in the card will lose or be destroyed.
- 4. Do not bend or scratch the card.
- 5. Keep the card away from electricity and magnetism.
- 6. Make sure gateway is powered off before inserting or removing the card.

2.5 Attach External Antenna (SMA Type)

Attach an external SMA antenna to the gateway's antenna connector and twist tightly. Make sure the antenna is within the correct frequency range provided by the ISP and with 50 Ohm impedance. **Note:** Recommended torque for tightening is 0.35 N.m.



2.6 Mount the Gateway

The gateway can be placed on a desktop or mounted to a wall or a 35 mm DIN rail.

Two methods for mounting the gateway

Wall mounting (measured in mm)





Use 3 pcs of ST2.9*6 flat head self-tapping Phillips screws to fix the wall mounting kit to the gateway, and then use 2 pcs of M3 drywall screws to mount the gateway associated with the wall mounting kit on the wall. **Note:** Recommended torque for mounting is 1.0 N.m, and the maximum allowed is 1.2 N.m.

• DIN rail mounting (measured in mm)



Use 3 pcs of ST3*8 flat head self-tapping Phillips screws to fix the DIN rail to the gateway, and then hang the DIN rail on the mounting bracket. It is necessary to choose a standard bracket.

Note: Recommended torque for mounting is 1.0 N.m, and the maximum allowed is 1.2 N.m.

2.7 Connect the Gateway to a Computer



Connect a USB cable to the gateway's mini USB interface to an external controller or computer's USB port

2.8 Power Supply



M1200 supports reverse polarity protection, but always refers to the figure above to connect the power adapter correctly. There are two cables associated with the power adapter. Following to the color of the head, connect the cable marked red to the positive pole through a terminal block, and connect the yellow one to the negative in the same way.

Note: The range of power voltage is 9 to 36V DC.

Chapter 3 Initial Configuration

The DTU supports webpage configuration. The supported browsers are IE8.0 or above, Google Chrome, Firefox, etc. The supported operating system is Windows 7 and Windows 10. For M1200, the method of connecting to the gateway is that the device connects to the PC through the USB port, so that users can configure it on the web page through the mini usb port.

3.1 Configure the PC

M1200 connects to the PC through the USB port. The PC automatically obtains the IP address of the same network segment as the M1200 to access the device page.

3.1.1 Windows 7 System

This part takes **the Windows 7** as the example; the configuration of Windows system is similar.

1. Click "Start > Control Panel > Device Manager". After the device USB is connected to the computer, check the identified serial port and attempt to install the driver;



2. Press the right button to select "Update Driver Software", and select "Browse my computer for driver software";



3. Select "Let me pick from a list of device drivers on my computer";



4. Select "Network Adapter" in the list and click "Next";



5. Find "Microsoft Corporation" on the left Manufacture, and select "Remote NDIS Compatible Device" on the right Network Adapter, then click "Next";



6. After installation, the newly added network adapter as shown below;



7. Click "Start > Control Panel > Network and Sharing Center > Change Adapter Settings" to view the new network;



8. Double-click on the newly added network to view the "Details";

📮 本地连接 2 Status		×
General		
Connection		-
IPv4 Connectivity:	No network access	
IPv6 Connectivity:	No network access	
Media State:	Enabled	
Duration:	00:02:35	
Speed:	425.9 Mbps	
Details		
Activity		-
	Sent — Received	
Packets:	0 0	
Properties	Disable Diagnose	
	Close	

9. The default gateway is the device login page address when you see the automatically acquired IP address in network connection details (different MAC addresses get different IP addresses).

DHCP Enabled	Value Remote NDIS Compatible Device 52-15-0E-3B-04-1B
Description Physical Address DHCP Enabled	-
Physical Address DHCP Enabled	-
DHCP Enabled	52-15-0E-3B-04-1B
	Yes
Pv4 Address	192.168.0.5
Pv4 Subnet Mask	255.255.255.0
ease Obtained	2019年3月17日 23:18:45
Lease Expires	2019年3月18日 1:18:44
Pv4 Default Gateway	192.168.0.1
Pv4 DHCP Server	192.168.0.1
Pv4 DNS Server	192.168.0.1
Pv4 WINS Server	
NetBIOS over Tcpip En	Yes
ink-local IPv6 Address	fe80::fc53:cfa6:cb2e:612f%34
Pv6 Default Gateway	
Pv6 DNS Server	

10. Open the browser and enter 192.168.0.1 to login to the device page for configuration.

3.1.2 Windows 10 System

1. Click "Start > Control Panel > Device Manager". After the device is connected to the computer, the PC check the identified serial port and attempt to install the driver;



2. Press the right button to select "Update Driver Software", and select "Browse my computer for driver software";

	×
←	
How do you want to search for drivers?	
→ Search automatically for updated driver software Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.	2
→ Browse my computer for driver software Locate and install driver software manually.	
	Cancel

3. Select "Let me pick from a list of available drivers on my computer ";

		×
~	Update Drivers - Base System Device	
	Browse for drivers on your computer	
	Search for drivers in this location:	
	✓ Browse	
	☑ Include subfolders	
ſ		
	ightarrow Let me pick from a list of available drivers on my computer	
	This list will show available drivers compatible with the device, and all drivers in the same category as the device.	
	Next	Cancel

4. Select "Network Adapter" in the list and click "Next";

	Update Drivers - Base System Device	
S	elect your device's type from the list below.	
C	ommon hardware types:	
	Multifunction adapters	^
	🛱 Multi-port serial adapters	
ļ	Retwork adapters	
P	- Network Client	
	Network Protocol	
2	Potwork Service	
	🗃 Non-Plug and Play drivers	
1	CPOS Legacy Device	
	PCMCIA adapters	
	Perception Simulation Controllers	
1	Persistent memory disks	
	- Portable Devices	~

5. Find "Microsoft" in the manufacturer on the left, select "Remote NDIS compatible device" in the right network adapter, and click "Next";

			×
Update Drivers - USB RNDIS6	适配	20 10	
Select the device driver y	ou v	vant to install for this hardware.	
			a
Manufacturer	^	Model	^
Mellanox Technologies Ltd.		RAS Async Adapter	
Microsoft Microsoft		Remote NDIS based Internet Sharing Device	
Motorola Inc. ≪	· *	Surface Ethernet Adapter	~
-		Have Disk	
<u>Tell me why driver signing i</u>	s imp	<u>ortant</u>	
		Next Canc	el
	Select the device driver ye Select the manufacture disk that contains the of Manufacturer Mellanox Technologies Ltd. Microsoft Motorola Inc. Microsoft Motorola Inc. Microsoft Motorola Inc. Microsoft	Select the device driver you v Select the manufacturer and disk that contains the driver Manufacturer Mellanox Technologies Ltd. Microsoft Motorola Inc.	Mellanox Technologies Ltd. Microschip Technology Inc. Microsoft Metorola Inc This driver is digitally signed. Tell me why driver signing is important Metorola Inc Metorola Inc

6. After installation, the new network adapter as shown below;

		-	
Computer Management		- C	×
File Action View Help			
🗢 🄿 🙋 🖬 📓 💭			
🜆 Computer Management (Local	V 🗄 DESKTOP-36LG5QN	Actions	
✓ [™] System Tools	> 💻 Computer	Device Manager	
> 🕑 Task Scheduler	> 👝 Disk drives	-	-
> 🛃 Event Viewer	> 🖙 Display adapters	More Actions	•
> 👸 Shared Folders	> 🞽 Firmware		
> 🕭 Local Users and Groups	> 🗛 Human Interface Devices		
> 🔊 Performance	> 🦏 IDE ATA/ATAPI controllers		
🕂 Device Manager	> Keyboards		
✓ Storage	Mice and other pointing devices		
📅 Disk Management	> Monitors		
> a Services and Applications	V 💭 Network adapters		
	Intel(R) Ethernet Connection (7) I219-V Remote NDIS Compatible Device		
	TAP-Windows Adapter V9		
	Ports (COM & LPT)		
	> Print queues		
	> Processors		
	Software devices		
	> 🖬 Sound, video and game controllers		
	> Storage controllers		
	> To System devices		
	> 🖗 Universal Serial Bus controllers		
< >			

7. Click "Start > Control Panel > Network and Sharing Center" to view the new network;

😨 Network Connections		-		×
	~ ∂	Sea	rch Ne	, р
Organize 🔻		•		•
U大明 2 即語 3 Intel(R) Ethernet Connection (7) L. Vindows Adapter V9 EX大明 2 印語 22 Remote NDIS Compatible Device Here in the interval interv				
3 items				E:: 💌

8. Click "Ethernet 2" (the specific name is vary from the computer), and click "Details";

🏺 以太网 2 Status	F A781		×
General			
Connection			
IPv4 Connectiv	ity:	No Inte	rnet access
IPv6 Connectiv	ity:	No netv	work access
Media State:			Enabled
Duration:			00:00:44
Speed: Details]		425.9 Mbps
Activity			
	Sent —	!	Received
Bytes:	3,295	ľ	3,445
Properties	Disable	Diagnose	
			Close

9. The default gateway is the device login page address when you see the automatically acquired IP address in network connection details (different MAC addresses get different IP addresses);

Network Connection Details			×
Network Connection Details	:		
Property	Value		
Connection-specific DN			
Description	Remote NDIS (Compatible Device	
Physical Address	5A-67-5A-8C-4	B-FB	
DHCP Enabled	Yes		
IPv4 Address	192.168.0.74		
IPv4 Subnet Mask	255.255.255.0		
Lease Obtained	Sunday, March	17, 2019 6:58:01 PM	
Lease Expires	Sunday, March	17, 2019 8:58:01 PM	
IPv4 Default Gateway	192.168.0.1		
IPv4 DHCP Server	192.168.0.1		
IPv4 DNS Server	192.168.0.1		
IPv4 WINS Server			
NetBIOS over Tcpip En	Yes		
Link-local IPv6 Address	fe80::3071:615	b:3ac0:879c%14	
IPv6 Default Gateway			
IPv6 DNS Server			
		Close	

10. Open the browser and enter 192.168.0.1 to login to the device page for configuration;

3.2 Factory Default Settings

Item	Description	
Username	admin	
Password	admin	

Before configuring your gateway, you need to know the following default settings.

3.3 Log in the Gateway

To log in to the management page and view the configuration status of your gateway, please follow the steps below.On your PC, open a web browser such as Internet Explorer, Google and Firebox, etc.

2. From your web browser, type the IP address of the gateway into the address bar and press enter. The default IP address of the gateway is <u>192.168.0.1</u>, though the actual address may vary.

Note: If a SIM card with a public IP address is inserted in the gateway, enter this corresponding public IP address in the browser's address bar to access the gateway wirelessly.



3. In the login page, enter the username and password, choose language and then click **LOGIN**. The default username and password are "admin".

Note: If enter the wrong username or password over six times, the login web will be locked for 5 minutes.



3.4 Control Panel

10 robust	el		Save & Apply Reboot	Logout
	🔬 It is s	strongly recommended to change the	e default password.	×
	Status			
Status		System Uptime	0 days, 00:32:01	*
Interface		System Time	Tue Feb 27 10:21:44 2018 (NTP not updated)	
Services		RAM Usage	28M Free/64M Total	
Evotore		Firmware Version	1.0.0_0205beta (Rev 74)	
System		Hardware Version	1.0	
		Kernel Version	3.10.106	
		Serial Number		
	∧ Internet Statu	IS		E
		Active Link	WWAN1	
		Uptime	0 days, 00:31:13	
		IP Address	10.230.111.211/255.255.255.255	
		Gateway	10.64.64.64	
		DNS	120.80.80.80 221.5.88.88	
		ight © 2017 Robustel Technologies. /		

After logging in, the home page of the M1200's web interface is displayed, for example.

Using the original password to log in the gateway, the page will pop up the following tab

 ${
m
m
m A}$ It is strongly recommended to change the default password.

It is strongly recommended for security purposes that you change the default username and/or password. To change your username and/or password, see **3.25 System > User Management**.

	Control Panel					
Item	Description	Button				
Save & Apply	Click to save the current configuration into gateway's flash and apply the	Save & Apply				
	modification on every configuration page, to make the modification					
	taking effect.					
Reboot	Click to restart the gateway.	Reboot				
Logout	Click to log the current user out safely.	Logout				
Submit	Click to save the modification on current configuration page.	Submit				
Cancel	Click to cancel the modification on current configuration page.	Cancel				

×

Note: The steps of how to modify configuration are as bellow:

- 1. Modify in one page;
- 2. Click Submit under this page;
- 3. Modify in another page;
- 4. Click Submit under this page;
- 5. Complete all modification;
- 6. Click Save & Apply.

3.5 Status

This page allows you to view the System Information, Internet Status and LAN Status of your gateway.

System Information

∧ System Information			
Device Model	m1200		
System Uptime	0 days, 00:32:01		
System Time	Tue Feb 27 10:21:44 2018 (NTP not updated)		
RAM Usage	28M Free/64M Total		
Firmware Version	1.0.0_0205beta (Rev 74)		
Hardware Version	1.0		
Kernel Version	3.10.106		
Serial Number			
System Information			

System Information		
Item	Description	
Device Model	Show the model name of your device.	
System Uptime	Show the current amount of time the gateway has been connected.	
System Time	Show the current system time.	
RAM Usage	Show the free memory and the total memory.	
Firmware Version	Show the firmware version running on the gateway.	
Hardware Version	Show the current hardware version.	
Kernel Version	Show the current kernel version.	
Serial Number	Show the serial number of your device.	

Internet Status

∧ Internet Status	
Active Link	WWAN1
Uptime	0 days, 01:12:38
IP Address	10.230.111.211/255.255.255.255
Gateway	10.64.64.64
DNS	120.80.80.80 221.5.88.88

Internet Status		
Item	Description	
Active Link	Show the current active link.	
Uptime	Show the current amount of time the link has been connected.	
IP Address	Show the IP address of current link.	
Gateway	Show the gateway address of the current link.	
DNS	Show the current primary DNS server and secondary server.	
3.6 Interface > Link Manager

This section allows you to setup the link connection.

Link Manager	Status	
∧ General Settin	gs	
	Primary Li	nk WWAN1 🤍 🦻
	Backup Li	nk WWAN2 v
	Backup Mo	de Cold Backup 🗸
	Revert Interv	al 0 🤇
	Emergency Rebo	ot OFF

General Settings @ Link Manager							
Item	Description	Default					
Primary Link	Select from "WWAN1" or "WWAN2".	WWAN1					
	WWAN1: Select to make SIM1 as the primary wireless link						
	WWAN2: Select to make SIM2 as the primary wireless link						
Backup Link	Select from "WWAN1", "WWAN2", or "None".	WWAN2					
	 WWAN1: Select to make SIM1 as backup wireless link 						
	WWAN2: Select to make SIM2 as backup wireless link						
	None: Do not select any backup link						
Backup Mode	Can only select from "Cold Backup".						
	Cold Backup: The inactive link is offline on standby	Backup					
Revert Interval	Specify the number of minutes that elapses before the primary link is	0					
	checked if a backup link is being used in cold backup mode. 0 means disable						
	checking.						
Emergency Reboot	Click the toggle button to enable/disable this option. Enable to reboot the	OFF					
	whole system if no links available.						

Note: Click 🕝 for help.

Link Settings allows you to configure the parameters of link connection, including WWAN1/WWAN2, WAN and WLAN. It is recommended to enable Ping detection to keep the gateway always online. The Ping detection increases the reliability and also costs the data traffic.

∧ Link Se	∧ Link Settings					
Index	Туре	Description	Connection Type			
1	WWAN1		DHCP			
2	WWAN2		DHCP			

Click Con the right-most of WWAN1/WWAN2 to enter the configuration window.

WWAN1/WWAN2

∧ Link Se	ettings		
Index	Туре	Description	Connection Type
1	WWAN1		DHCP
2	WWAN2		DHCP

The window is displayed as below when enabling the "Automatic APN Selection" option.

∧ WWAN Settings						
	Automatic APN Selection	ON OFF				
	Dialup Number	(*99***1#				
	Authentication Type	Auto				
Swit	ch SIM By Data Allowance	ON OFF				
	Data Allowance	0 7				
	Billing Day					

The window is displayed as below when disabling the "Automatic APN Selection" option.

∧ WWAN Settings	
Automatic APN Selection	ON OFF
APN	internet
Username	
Password	
Dialup Number	*99***1#
Authentication Type	Auto
Switch SIM By Data Allowance	OFF ?
Data Allowance	0 ?
Billing Day	1
	୭
∧ Ping Detection Settings Enable	
	ON OFF
Primary Server	8.8.8.8
Secondary Server	114.114.114
Interval	300 🧿
Retry Interval	5 🤇
Timeout	3
Max Ping Tries	3

Advanced Settings	
NAT Enable	ON OFF
Upload Bandwidth	10000
Download Bandwidth	10000
Overrided Primary DNS	
Overrided Secondary DNS	
Debug Enable	ON OFF
Verbose Debug Enable	ON OFF

Link Settings (WWAN)						
Item	em Description					
General Settings						
Index	Indicate the ordinal of the list.					
Туре	Show the type of the link.	WWAN1				
Description	Enter a description for this link.	Null				
	WWAN Settings					
Automatic APN	Click the toggle button to enable/disable the "Automatic APN Selection"	ON				
Selection	option. After enabling, the device will recognize the access point name					
	automatically. Alternatively, you can disable this option and manually add					
	the access point name.					
APN	Enter the Access Point Name for cellular dial-up connection, provided by	internet				
	local ISP.					
Username	Enter the username for cellular dial-up connection, provided by local ISP.	Null				
Password	Enter the password for cellular dial-up connection, provided by local ISP.					
Dialup Number	Enter the dialup number for cellular dial-up connection, provided by local					
	ISP.					
Authentication Type	Select from "Auto", "PAP" or "CHAP" as the local ISP required.	Auto				
Switch SIM By Data	Click the toggle button to enable/disable this option. After enabling, it will	OFF				
Allowance	switch to another SIM when the data limit reached.					
	Note: Only used for dual-SIM backup.					
Data Allowance	Set the monthly data traffic limitation. The system will record the data	0				
	traffic statistics when data traffic limitation (MiB) is specified. The traffic					
	record will be displayed in Interface > Link Manager > Status > WWAN					
	Data Usage Statistics. 0 means disable data traffic record.					
Billing Day	Specify the monthly billing day. The data traffic statistics will be	1				
	recalculated from that day.					
	Ping Detection Settings					
Enable	Click the toggle button to enable/disable the ping detection mechanism, a	ON				
	keepalive policy of the gateway.					
Primary Server	Gateway will ping this primary address/domain name to check that if the	8.8.8.8				
	current connectivity is active.					

Link Settings (WWAN)						
Item	Description	Default				
Secondary Server	Gateway will ping this secondary address/domain name to check that if the	114.114.11				
	current connectivity is active.	4.114				
Interval	Set the ping interval.	300				
Retry Interval	Set the ping retry interval. When ping failed, the gateway will ping again every retry interval.	5				
Timeout	Set the ping timeout.	3				
Max Ping Tries	Set the max ping tries. Switch to another link or take emergency action if	3				
	the max continuous ping tries reached.					
	Advanced Settings					
Overrided Primary DNS	Override primary DNS will override the automatically obtained DNS.	Null				
Overrided Secondary DNS	Override secondary DNS will override the automatically obtained DNS.	Null				
Debug Enable	Click the toggle button to enable/disable this option. Enable for debugging information output.	ON				
Verbose Debug Enable	Click the toggle button to enable/disable this option. Enable for verbose debugging information output.	OFF				

Status

This page allows you to view the status of link connection and clear the monthly data usage statistics.

^ Link St	∧ Link Status					
Index	Link	Status	Uptime	IP Address		
1	WWAN1	Connected	0 days, 01:23:30	10.230.111.211/255.255.255.255		
2	WWAN2	Disconnected				

Click the right-most button •••• to select the connection status of the current link.



Click the row of the link, and it will show the details information of the current link connection under the row.

Link St	tatus					•••	
Index	Link	Status	Uptir	ne	IP Address		
1	WWAN1	Connected	0 days, 01	1:23:30	10.230.111.211/255.255.255.255		
			Index	1			
			Link	WWAN	1		
			Status	Connec	ted		
			Interface	wwan			
			Uptime	0 days	01:23:30		
			IP Address	10.230	.111.211/255.255.255.255		
			Gateway	10.64.6	64.64		
			DNS	120.80	.80.80 221.5.88.88		
			RX Packets	39			
			TX Packets	41			
			RX Bytes	2121			
			TX Bytes	2181			
2	WWAN2	Disconnected					
^ WWAN	A WWAN Data Usage Statistics						
		WWAN1 Mont	thly Stats	Clear			
		WWAN2 Mont	thly Stats	Clear			

Click the **Clear** button to clear SIM1 or SIM2 monthly data traffic usage statistics. Data statistics will be displayed

only if enable the Data Allowance function in Interface > Link Manager > Link Settings > WWAN Settings > Data Allowance.

3.7 Interface > Cellular

This section allows you to set the related parameters of Cellular. M1200 has two SIM card slots, but do not support two SIM cards online simultaneously due to its single-module design. If insert single SIM card at the first time, SIM1 slot and SIM2 slots are available.

Cellul	ar	Status	AT Debug		
Advan	ced Cellula	ar Settings			
Index	SIM Card	Phone Number	Network Type	Band Select Type	
1	SIM1		Auto	All	S
2	SIM2		Auto	All	

Click of SIM 1 to edit the parameters.

Cellular	
∧ General Settings	
Index	1
SIM Card	SIM1 V
Phone Number	
PIN Code	0
Extra AT Cmd	0
Telnet Port	0 0

The window is displayed as below when choosing "Auto" as the network type.

∧ Cellular Network Settings				
Network Type	Auto 🗸 🧭			
Band Select Type	All 🗸 🖓			
Advanced Settings				
Debug Enable	ON OFF			
Verbose Debug Enable	ON OFF			

The window is displayed as below when choosing "Specify" as the band select type.

∧ Cellular Network Settings		
Network Type	Auto v 🖓	
Band Select Type	Specify V	

∧ Band Settings	
GSM 850	ON OFF
GSM 900	ON OFF
GSM 1800	ON OFF
GSM 1900	ON OFF
WCDMA 800	ON OFF
WCDMA 850	ON OFF
WCDMA 900	ON OFF
WCDMA 1900	ON OFF
WCDMA 2100	ON OFF
∧ Advanced Settings	
Debug Enable ON	
Verbose Debug Enable	OFF

Note: When the device selection module is BG96, the options in "Network Type" are as follows.

Cellular Network Settings		
Network Type	Auto v	0
Band Select Type	Auto 2G Only M1 Only	0
✓ Advanced Settings	NB Only	

Cellular			
Item Description Defa		Default	
	General Settings		
Index	Indicate the ordinal of the list.		
SIM Card	Show the currently editing SIM card. SIM1		
Phone Number	Enter the phone number of the SIM card. Null		
PIN Code	Enter a 4-8 characters PIN code used for unlocking the SIM.	Null	
Extra AT CmdEnter the AT commands used for cellular initialization.Null		Null	
Telnet Port	Telnet Port Specify the Port listening of telnet service, used for AT over Telnet. 0		
Cellular Network Settings			

Cellular				
Item	Description	Default		
Network Type	Select the cellular network type, which is the network access order. Select from	Auto		
	"Auto", "2G Only", "2G First", "3G Only", "3G First".			
	Auto: Connect to the best signal network automatically			
	2G Only: Only the 2G network is connected			
	2G First: Connect to the 2G Network preferentially			
	3G Only: Only the 3G network is connected			
	3G First: Connect to the 3G Network preferentially			
	Note: When the device selection module is BG96, select from "Auto", "2G Only",			
	M1 only", "NB Only".			
	• Auto: Connect to the best signal network automatically			
	2G Only: Only the 2G network is connected			
	M1 Only: Only the CAT M1 network is connected			
	NB Only: Only the NB-IOT network is connected			
Band Select Type	Select from "All" or "Specify". You may choose certain bands if choosing	All		
	"Specify".			
Advanced Settings				
Debug Enable	Click the toggle button to enable/disable this option. Enable for debugging	ON		
	information output.			
Verbose Debug	Click the toggle button to enable/disable this option. Enable for verbose OFF			
Enable	debugging information output.			

This section allows you to view the status of the cellular connection.

Cellula	r Statu	IS AT	Debug	
∧ Status				
Index	Modem Status	Modem Model	IMSI	Registration
1	Ready	UC20	460015896619780	Registered to home network

Click the row of status, the details status information will be displayed under the row.

∧ Status				
Index	Modem Status	Modem Model	IMSI	Registration
1	Ready	UC20	460015896619780	Registered to home net
		Index	1	
		Modem Status	Ready	
		Modem Model	UC20	
		Current SIM	SIM1	
		Phone Number		
		IMSI	460015896619780)
		Registration	Registered to hom	e network
	Net	work Provider	CHN-UNICOM	
		Network Type	WCDMA	
	5	Signal Strength	19 (-75dBm)	
		Bit Error Rate	99	
		PLMN ID	46001	
Local Area Code		A507		
		Cell ID	1476286	
		IMEI	867060030689273	3
	Fin	mware Version	UC20GQBR03A14E	1G

Status		
Item	Description	
Index	Indicate the ordinal of the list.	
Modem Status	Show the status of the radio module.	
Modem Model	Show the model of the radio module.	
Current SIM	Show the SIM card that your gateway is using.	
Phone Number	Show the phone number of the current SIM.	
	Note: This option will be displayed if enter manually in Cellular > Advanced Cellular	
	Settings > SIM1/SIM2 > General Settings > Phone Number.	
IMSI	Show the IMSI number of the current SIM.	
Registration	Show the current network status.	
Network Provider	Show the name of Network Provider.	
Network Type	Show the current network service type, e.g. WCDMA.	

Status		
Item	Description	
Signal Strength	Show the signal strength detected by the mobile.	
Bit Error Rate	Show the current bit error rate.	
PLMN ID	Show the current PLMN ID.	
Local Area Code	Show the current local area code used for identifying different area.	
Cell ID	Show the current cell ID used for locating the gateway.	
IMEI	Show the IMEI (International Mobile Equipment Identity) number of the radio	
	module.	
Firmware Version	Show the current firmware version of the radio module.	

This page allows you to check the AT Debug.

Cellular	Status	AT Debug	
∧ AT Debug			
Command			
Result			
			-
			Send

AT Debug					
Item	Description	Default			
Command	Enter the AT command that you want to send to cellular module in this text box.	Null			
Result	Show the AT command responded by cellular module in this text box.	Null			
Send	Click the button to send AT command.				

3.8 Interface > DIDO

This section allows you to set the DI and DO parameters. Digital Input and Digital Output are the specific interfaces for M1200. The DI interface can be used for triggering alarm, while the DO can be used for controlling the slave device so as to realize real-time monitoring.

DI

DI		DO		Status		
∧ DI Set	tings					
Index	Enable	Mode	Inversion			
1	false	ON-OFF	false			l.
2	false	ON-OFF	false			l.

Click the right-most 🗹 button of index 1 as below. The default mode is "ON-OFF".

DI	
∧ General Settings	
Index	1
Enable	ON OFF
Mode	ON-OFF v
Inversion	ON OFF
Alarm On Content	Alarm On
Alarm Off Content	Alarm Off

The window is displayed as below when choosing "Counter" as the mode.

∧ General Settings	
Index	1
Enable	ON OFF
Mode	Counter
Inversion	ON OFF
Threshold Value	0
Alarm On Content	Alarm On
Alarm Off Content	Alarm Off

General Settings @ DI					
Item	Description	Default			
Index	Indicate the ordinal of the list.				
Enable	Click the toggle button to enable/disable this DI.	OFF			
Mode	Select from "ON-OFF" or "Counter".	ON-OFF			

General Settings @ DI					
Item	Description				
	ON-OFF: DI interface support ON and OFF mode (high or low level				
	electrical) trigger DI alarm. The mode default to ON, and OFF mode is				
	available only when enabling the inversion feature				
	ON—Under this mode, DI alarm status will be triggered to ON when DI				
	interface open from GND or input a high level electrical (logic 1), on the				
	contrary DI alarm status will be trigged to OFF when DI interface connect				
	to GND or input a low level electrical (logic 0)				
	OFF—Under this mode, DI alarm status will be triggered to ON when DI				
	interface connect to GND or input a low level electrical (logic 0), on the				
	contrary DI alarm status will be trigged to OFF when DI interface open				
	from GND or input a high level electrical (logic 1)				
	Counter: Event counter mode				
Inversion	Click the toggle button to enable/disable this option. Enable to set DI mode as	OFF			
	OFF mode.				
Threshold Value	Set the threshold vale. It will trigger alarm when event counter reaches this	Null			
	figure. After triggering alarm, DI will keep counting but not trigger alarm				
	again. Enter 0 to 65535 digits. (0=will not trigger alarm)				
	Note : This option is only available when DI under the "Counter" mode.				
Alarm on Content	When alarm is on, show its content	Alarm On			
Alarm off Content	When alarm is off, show its content.	Alarm Off			

Note: It defaults as high alarm, while turns to low alarm after enabling the "Inversion" button.

DO

DO Setting	js					
Index E	nable Ala	rm On Action	Alarm Off Action	Initial State	Alarm Source	
1	false	High	Low	Last	DI1 Alarm	

Click 🗹 to enter the DO configuration window.

DO	
∧ General Settings	
Index	1
Enable	ON OFF
Alarm On Action	High
Alarm Off Action	Low
Initial State	Last
Delay	0 7
Hold Time	0 7
Alarm Source	DI1 Alarm V

The window is displayed as below when choosing "Pulse" as the ala	arm on action.
---	----------------

DO	
∧ General Settings	
Index	1
Enable	ON OFF
Alarm On Action	Pulse
Alarm Off Action	Low
Initial State	Last
Delay	0 7
Hold Time	0 7
Low-level Width	10 🝞
High-level Width	10 🦻
Alarm Source	DI1 Alarm v

The window is displayed as below when choosing "Pulse" as the alarm off action.

∧ General Settings	
Index	1
Enable	ON OFF
Alarm On Action	High
Alarm Off Action	Pulse
Initial State	Last
Delay	0 7
Hold Time	0 7
Low-level Width	10
High-level Width	10 🕜
Alarm Source	DI1 Alarm V

General Settings @ DO					
Item	Description	Default			
Index	Indicate the ordinal of the list.				
Enable	Click the toggle button to enable/disable this DO.	OFF			
Alarm On Action	 Digital Output initiates when there is an alarm. Selected from "High", "Low" or "Pulse". High: a high electrical level output Low: a low electrical level output Pulse: Generates a square wave as specified in the pulse mode parameters when triggered 	High			

General Settings @ DO			
Item	Description	Default	
Alarm Off Action	Digital Output initiates when alarm removed. Selected from "High", "Low" or "Pulse".	Low	
	High: a high electrical level output		
	Low: a low electrical level output		
	• Pulse: Generates a square wave as specified in the pulse mode parameters when triggered		
Initial State	Specify the Digital Output status when powered on. Selected from "Last", "High" or "Low".	Low	
	Last: DO's status will consist with the status of last power off		
	High: DO interface is in high electrical level		
	Low: DO interface is in low electrical level		
Delay	Set the delay time for DO alarm start-up. The first pulse will be generated after a "Delay". Enter from 0 to 30000ms. (0=generate pulse without delay)	0	
Hold Time	Set the hold time of DO status (Alarm On Action/Alarm Off Action). When the action	0	
	time reach this specified time, DO will stop the action. Enter from 0 to 255 seconds.		
	(0=keep on until the next action)		
Low-level Width	Set the low-level width. It is available when enabling Pulse as "Alarm On	10	
	Action/Alarm Off Action". In Pulse Output mode, the selected digital output channel		
	will generate a square wave as specified in the pulse mode parameters. The low		
	level widths are specified here. Enter from 1 to 300000 ms.		
High-level Width	Set the high-level width. It is available when enabling Pulse as "Alarm On	10	
	Action/Alarm Off Action". In Pulse Output mode, the selected digital output channel		
	will generate a square wave as specified in the pulse mode parameters. The high		
	level widths are specified here. Enter from 1 to 300000 ms.		
Alarm Source	Digital Output initiates according to different alarm source. Selected from "DI1	DI1	
	Alarm", "DI2 Alarm". DI1/DI2 Alarm: Digital Output triggers the related action when there is alarm from Digital Input.	Alarm	

Status

This window allows you to view the status of DO and DI interfaces. It also can clear the counter alarm of DI in here. Click Clear button to clear DI1 or DI2 monthly usage statistics info for counter alarm.

DI		DO	Stat	us	
∧ DI Stat	us				
Index	Level	Status	Count		
1	High	Alarm off			
2	High	Alarm off			
Action	Of Clear				
		Count	ter Alarm Of DI 1	Clear	3
		Count	ter Alarm Of DI 2	Clear	3
∧ DO Sta	tus				
Index	Level	Low-level \	Width High-leve	l Width	
1	Low				

Click one row to view.

∧ DI Status				
Index	Level	Status	Count	
1	High	Alarm off		
			Index	1
			Level	High
			Status	Alarm off
			Count	
2	High	Alarm off		

3.9 Interface > Serial Port

This section allows you to set the serial port parameters. M1200 supports one RS-232s and one RS-485. Serial port provides a way to transfer serial data to IP data, or vice versa, and transmit these data via wired or wireless network to achieve data transparent transmission.

Serial P	ort	Statu	5		
^ Serial P	ort Settir	ngs			
Index	Port	Enable	Baud Rate	Application Mode	
1	COM1	false	115200	Transparent	
2	COM2	false	115200	Transparent	

Click the edit button of COM1.

Serial Port		
Serial Port Application Settings		
Index	1	
Port	COM1 V	
Enable	ON OFF	
Baud Rate	115200 V	
Data Bits	8	
Stop Bits		
Parity	None	
Flow Control	None	
^ Data Packing		
Packing Timeout	50 🧿	
Packing Length	1200	
∧ Server Setting		
Application Mode	Transparent v	
Protocol	TCP Client V	
Server Address		
Server Port		

• The window is displayed as below when choosing "Transparent" as the application mode and "TCP Client" as the protocol.

∧ Server Setting	
Application Mode	Transparent v
Protocol	TCP Client v
Server Address	
Server Port	

The window is displayed as below when choosing "Transparent" as the application mode and "TCP Server" as the protocol.

∧ Server Setting	
Application Mode	Transparent v
Protocol	TCP Server v
Local IP	
Local Port	

The window is displayed as below when choosing "Transparent" as the application mode and "UDP" as the

protocol.	
∧ Server Setting	
Application Mode	Transparent v
Protocol	UDP
Local IP	
Local Port	
Server Address	
Server Port	

• The window is displayed as below when choosing "Modbus RTU Gateway" as the application mode and "TCP Client" as the protocol.

∧ Server Setting	
Application Mode	Modbus RTU Gatewa v
Protocol	TCP Client v
Server Address	
Server Port	

The window is displayed as below when choosing "Modbus RTU Gateway" as the application mode and "TCP Server" as the protocol.

∧ Server Setting	
Application Mode	Modbus RTU Gatewa
Protocol	TCP Server v
Local IP	
Local Port	

The window is displayed as below when choosing "Modbus RTU Gateway" as the application mode and "UDP" as the protocol.

∧ Server Setting	
Application Mode	Modbus RTU Gatewa
Protocol	UDP
Local IP	
Local Port	
Server Address	
Server Port	

• The window is displayed as below when choosing "Modbus ASCII Gateway" as the application mode and "TCP Client" as the protocol.

∧ Server Setting	
Application Mode	Modbus ASCII Gatev v
Protocol	TCP Client v
Server Address	
Server Port	

The window is displayed as below when choosing "Modbus ASCII Gateway" as the application mode and "TCP Server" as the protocol.

∧ Server Setting	
Application Mode	Modbus ASCII Gatev v
Protocol	TCP Server v
Local IP	
Local Port	

The window is displayed as below when choosing "Modbus ASCII Gateway" as the application mode and "UDP" as the protocol.

∧ Server Setting	
Application Mode	Modbus ASCII Gatev v
Protocol	UDP
Local IP	
Local Port	
Server Address	
Server Port	

Serial Port				
Item Description				
	Serial Port Application Settings			
Index	Indicate the ordinal of the list.			
Port	Show the current serial's name, read only.			
Enable	Click the toggle button to enable/disable this serial port. When	OFF		
	the status is OFF, the serial port is not available.			
Baud Rate	Select from "300", "600", "1200", "2400", "4800", "9600", 115200			
	"19200", "38400", "57600" , "115200" or "230400".			
Data Bits	Select from "7" or "8".	8		
Stop Bits	Select from "1" or "2". 1			
Parity	Select from "None", "Odd" or "Even". None			
Data Packing				
Packing Timeout	Set the packing timeout. The serial port will queue the data in the 50			
	buffer and send the data to the Cellular WAN/Ethernet WAN			

Serial Port					
Item	Description	Default			
	when it reaches the Interval Timeout in the field.				
	Note: Data will also be sent as specified by the packet length				
	even when data is not reaching the interval timeout in the field.				
Packing Length	Set the packet length. The Packet length setting refers to the	1200			
	maximum amount of data that is allowed to accumulate in the				
	serial port buffer before sending. When a packet length between				
	1 and 3000 bytes is specified, data in the buffer will be sent as				
	soon it reaches the specified length.				
	Server Setting				
Application Mode	 Select from "Transparent", "Modbus RTU Gateway" or "Modbus ASCII Gateway". Transparent: gateway will transmit the serial data 	Transparent			
	 Modbus RTU Gateway: gateway will translate the Modbus 				
	RTU data to Modbus TCP data and sent out, and vice versa				
	 Modbus ASCII Gateway: gateway will translate the Modbus 				
	ASCII data to Modbus TCP data and sent out, and vice versa				
Protocol	 Select from "TCP Client", "TCP Server" or "UDP". TCP Client: Gateway works as TCP client, initiate TCP connection to TCP server. Server address supports both IP and domain name TCP Server: Gateway works as TCP server, listening for connection request from TCP client UDP: Gateway works as UDP client 	TCP Client			
Server Address	Enter the address of server which will receive the data sent from gateway's serial port. IP address or domain name will be available.	Null			
Server Port	Enter the specified port of server which is used for receiving the serial data.	Null			
Local IP	Enter the IP of TCP or UDP.	Null			
Local Port	Enter the port of TCP or UDP.	Null			

Click the "Status" column to view the current serial port type.

Serial P	ort	Status			
^ Serial P	ort Statı	IS			
Index	Туре	ТХ	RX	Connection Status	
1	RS232	OB	OB		
2	RS485	OB	OB		

3.10 Services > Syslog

This section allows you to set the syslog parameters. The system log of the gateway can be saved in the local, also supports to be sent to remote log server and specified application debugging. By default, the "Log to Remote" option is disabled.

Syslog		
∧ Syslog Settin	igs	
	Enable	ON OFF
	Syslog Level	Debug
	Save Position	RAM V 🖓
	Log to Remote	ON OFF ?

The window is displayed as below when enabling the "Log to Remote" option.

Syslog		
∧ Syslog Settin	gs	
	Enable	ON OFF
	Syslog Level	Debug v
	Save Position	RAM V 🖓
	Log to Remote	
	Add Identifier	ON OFF ?
	Remote IP Address	
	Remote Port	514

Syslog Settings				
Item	Description	Default		
Enable	Click the toggle button to enable/disable the Syslog settings option.	OFF		
Syslog Level	Select from "Debug", "Info", "Notice", "Warning" or "Error", which from low to	Debug		
	high.			
	Note: The lower level will output more syslog in details.			
Save Position	Select the save position from "RAM", "NVM" or "Console". Choose "RAM". The	RAM		
	data will be cleared after reboot.			
	Note: It's not recommended that you save syslog to NVM for a long time.			
Log to Remote	Click the toggle button to enable/disable this option. Enable to allow gateway	OFF		
	sending syslog to the remote syslog server. You need to enter the IP and Port of			
	the syslog server.			
Remote IP Address	Enter the IP address of syslog server when enabling the "Log to Remote" option.	Null		
Remote Port	Enter the port of syslog server when enabling the "Log to Remote" option.	514		

3.11 Services > Event

This section allows you to set the event parameters. Event feature provides an ability to send alerts by SMS or Email when certain system events occur.

Event	Notification	Query	
∧ General Setti	ngs		
	Signal Quality	Threshold 0	0

General Settings @ Event			
Item Description Default			
Signal Quality ThresholdSet the threshold for signal quality. Gateway will generate a log event when0			
the actual threshold is less than the specified threshold. 0 means disable			
	this option.		

Event		Notification	Qu	e ry			
∧ Event N	otification	Group Sett	ings				
Index	Description	Send SMS	Send Email	Save t	o NVM		+

Click + button to add an Event parameters.

Notification	
^ General Settings	
Index	1
Description	
Send SMS	ON OFF
Send Email	ON OFF
Save to NVM	OK OFF ?
▲ Event Selection	(2)
System Startup	OFF
System Reboot	OFF
System Time Update	OFF
Configuration Change	ON OFF
Cellular Network Type Change	ON OFF
Cellular Data Stats Clear	ON OFF
Cellular Data Traffic Overflow	ON OFF
Poor Signal Quality	ON OFF
Link Switching	ON OFF
WWAN UP	ON OFF
WWAN Down	ON OFF
DDNS Update Success	ON OFF

DDNS Update Fail	ON OFF
Received SMS	ON OFF
SMS Command Execute	ON OFF
DI 1 ON	ON OFF
DI 1 OFF	ON OFF
DI 1 Counter Overflow	ON OFF
DI 2 ON	ON OFF
DI 2 OFF	ON OFF
DI 2 Counter Overflow	ON OFF

General Settings @ Notification			
Item	Description	Default	
Index	Indicate the ordinal of the list.		
Description	Enter a description for this group.	Null	
Sent SMS	Click the toggle button to enable/disable this option. When enabled, the gateway will send notification to the specified phone numbers via SMS if event occurs. Set the related phone number in "3.14 Services > Email", and use ';'to separate each number.	OFF	
Phone Number	Enter the phone numbers used for receiving event notification. Use a semicolon (;) to separate each number.	Null	
Send Email	Click the toggle button to enable/disable this option. When enabled, the gateway will send notification to the specified email box via Email if event occurs. Set the related email address in "3.14 Services > Email".	OFF	
Email Address	Enter the email addresses used for receiving event notification. Use a space to separate each address.	Null	
Save to NVM	Click the toggle button to enable/disable this option. Enable to save event to nonvolatile memory.	OFF	

In the following window you can query various types of events record. Click **Refresh** to query filtered events while click **Clear** to clear the event records in the window.

Event	Notification	Query		
∧ Event Details				
	Sav	e Position RAM	v	
		Filtering		
	system startup switch link, from N switch link, from N			
			Clear	r Refresh

Event Details		
Item	Description	Default
Save Position	Select the events' save position from "RAM" or "NVM".	RAM
	RAM: Random-access memory	
	NVM: Non-Volatile Memory	
Filtering	Enter the filtering message based on the keywords set by users. Click the "Refresh"	Null
	button, the filtered event will be displayed in the follow box. Use "&" to separate	
	more than one filter message, such as message1&message2.	

3.12 Services > NTP

This section allows you to set the related NTP (Network Time Protocol) parameters, including Time zone, NTP Client and NTP Server.

NTP	Status		
∧ Timezone Sett	ings		
		Time Zone	UTC+08:00 V
	Ехр	ert Setting	
∧ NTP Client Set	tings		
		Enable	ON OFF
	Primary	NTP Server	pool.ntp.org
	Secondary	NTP Server	
	NTP Upda	te Interval	0 7
∧ NTP Server Se	ttings		
		Enable	ON OFF

NTP				
Item Description Default				
	Timezone Settings			
Time Zone	Click the drop down list to select the time zone you are in.	UTC +08:00		
Expert Setting	Specify the time zone with Daylight Saving Time in TZ environment	Null		
	variable format. The Time Zone option will be ignored in this case.			
	NTP Client Settings			
Enable	Click the toggle button to enable/disable this option. Enable to	ON		
	synchronize time with the NTP server.			
Primary NTP Server	Enter primary NTP Server's IP address or domain name.	pool.ntp.org		
Secondary NTP Server	Enter secondary NTP Server's IP address or domain name.	Null		
NTP Update interval	Enter the interval (minutes) synchronizing the NTP client time with the	0		
	NTP server's. Minutes wait for next update, and 0 means update only			
	once.			
NTP Server Settings				

Enable	Click the toggle button to enable/disable the NTP server option.	OFF
		-

This window allows you to view the current time of gateway and also synchronize the gateway time. Click **Sync** button to synchronize the gateway time with the PC's.

NTP	Status	
∧ Time		
	Syst	stem Time 2017-01-01 01:11:41
		PC Time 2018-01-24 15:31:15 Sync
	Last Upd	date Time Not Updated

3.13 Services > SMS

This section allows you to set SMS parameters. Gateway supports SMS management, and user can control and configure their gateways by sending SMS.

SMS	SMS Testing			
∧ SMS Management Settings				
	Enable	ON OFF		
	Authentication Type	Password v		
	Phone Number			

SMS Management Settings			
Item	Description		
Enable	Click the toggle button to enable/disable the SMS Management option.	ON	
	Note: If this option is disabled, the SMS configuration is invalid.		
Authentication Type	Select Authentication Type from "Password", "Phonenum" or "Both".	Password	
	• Password: Use the same username and password as WEB manager for		
	authentication. For example, the format of the SMS should be "username:		
	password; cmd1; cmd2;"		
	Note: Set the WEB manager password in System > User Management		
	section.		
	• Phonenum: Use the Phone number for authentication, and user should		
	set the Phone Number that is allowed for SMS management. The format		
	of the SMS should be "cmd1; cmd2; …"		
	• Both: Use both the "Password" and "Phonenum" for authentication. User		
	should set the Phone Number that is allowed for SMS management. The		
	format of the SMS should be "username: password; cmd1; cmd2;"		
Phone Number	Set the phone number used for SMS management, and use '; 'to separate each	Null	
	number.		
	Note : It can be null when choose "Password" as the authentication type.		

User can test the current SMS service whether it is available in this section.

SMS	SMS Testing	
∧ SMS Testing		
Phone Number		
Message		
Result		
		Send

SMS Testing			
Item	Description	Default	
Phone Number	Enter the specified phone number which can receive the SMS from gateway.	Null	
Message	Enter the message that gateway will send it to the specified phone number.	Null	
Result	The result of the SMS test will be displayed in the result box.	Null	
Send	Click the button to send the test message.		

3.14 Services > Email

Email function supports to send the event notifications to the specified recipient by ways of email.

Email		
∧ Email Setting	S	
	Enable	ON OFF
	Enable TLS/SSL	ON OFF ?
	Outgoing Server	
	Server Port	25
	Username	
	Password	
	From	
	Subject	

Email Settings			
Item	Description	Default	
Enable	Click the toggle button to enable/disable the Email option.	OFF	
Enable TLS/SSL	Click the toggle button to enable/disable the TLS/SSL option.	OFF	
Outgoing server	Enter the SMTP server IP Address or domain name.	Null	

Email Settings			
Item	Description	Default	
Server port	Enter the SMTP server port.	25	
Username	Enter the username which has been registered from SMTP server.	Null	
Password	Enter the password of the username above.	Null	
From	Enter the source address of the email.	Null	
Subject	Enter the subject of this email.	Null	

3.15 Services > WakeUp

Gateway supports a variety of wake-up dialing policies, including regular wake-up, interval wake-up, serial data wake-up, and SMS wake-up. Here, users can set different wake-up policies.

WakeUp					
~ WakeUp Set	∧ WakeUp Settings				
		Enable	OM OFF		
^ Timing					
Index	Enable	Tim	ing	+	
∧ Periodical					
		Enable	ON OFF		
		Interval	5	0	
∧ Serial Data					
		Enable	ON OFF		
^ SMS					
		Enable	ON OFF		
		Enable SMS Reply	OM OFF		
		Phonenum		0	
		Password			

Click on the right side 🕂 of the Timing to add a wake-up time point. Up to 3 can be added.

WakeUp		Ű.	
A General Settings	i		
	Index	1	
	Enable	ON OFF	
	Timing	0	
		WakeUp	
Item	Description		Defa

WakeUp			
Item	Description		
	General Settings		
	Click the toggle button to enable/disable this option. When it is		
Enable	set to ON, the current link is disconnected, while set to OFF, the	OFF	
	device restarts GPRS dial-up.		
	Timing General Settings		
Index	Display number.		
Enable	Click the toggle button to enable/disable this option. When it is	OFF	
Ellable	set to ON, the gateway make GPRS dial-up on the set timing.	OFF	
Timing	Every day at the timing (HH:MM) the gateway makes GPRS	Null	
Timing	dial-up.	null	
	Periodical		
Periodical WakeUp	Click the toggle button to enable/disable this option. When it is	OFF	
	set to ON, the gateway will periodically make GPRS dial-up.	OFF	
Interval	Set the interval time for Periodical WakeUp, ranging 3-720 min. $_{\circ}$	5	
Serial Data			
	Click the toggle button to enable/disable this option. When it is		
Serial Data WakeUp	set to ON, while sending data to the serial port, the gateway	OFF	
	make GPRS dial-up.		
	SMS	1	
	Click the toggle button to enable/disable this option. When it is		
SMS WakeUp	set to ON, while gateway receives SMS from the set phone	OFF	
	number, the gateway make GPRS dial-up.		
	Click the toggle button to enable/disable this option. When it is		
Enable SMS Penky	set to ON, while the gateway makes GPRS dial-up via SMS	OFF	
Enable SMS Reply	WakeUp, it will send a reply message to the WakeUp phone	OFF	
	number.		
Phonenum	The phone number which is allowed to wake up the gateway,	Null	
Filohenum	separated each number by a ';' character.	inuli	
	The phone number needs to send the password to the gateway.		
Password	If the sent content and the set password do not match, the GPRS	Null	
	dial-up cannot be performed.		

3.16 Services > DDNS

This section allows you to set the DDNS parameters. The Dynamic DNS function allows you to alias a dynamic IP address to a static domain name, allows you whose ISP does not assign them a static IP address to use a domain name. This is especially useful for hosting servers via your connection, so that anyone wishing to connect to you may use your domain name, rather than having to use your dynamic IP address, which changes from time to time. This dynamic IP address is the WWAN IP address of the gateway, which is assigned to you by your ISP. The service provider defaults to "DynDNS", as shown below.

DDNS	Status	
∧ DDNS Settings		
	Enable	ON OFF
	Service Provider	DynDNS
	Hostname	
	Username	
	Password	

When "Custom" service provider chosen, the window is displayed as below.

A DDNS Settings		
	Enable	ON OFF
	Service Provider	Custom
	URL	

DDNS Settings			
Item	tem Description Default		
Enable	Click the toggle button to enable/disable the DDNS option.	OFF	
Service Provider	Select the DDNS service from "DynDNS", "NO-IP", "3322" or DynDNS		
	"Custom".		
	Note: the DDNS service only can be used after registered by		
	Corresponding service provider.		
Hostname	Enter the hostname provided by the DDNS server.	Null	
Username	Enter the username provided by the DDNS server.	Null	
Password	Enter the password provided by the DDNS server. Null		
URL	Enter the URL customized by user.	Null	

Click "Status" bar to view the status of the DDNS.

DDNS	Status	
∧ DDNS Status		
	Status	Disabled
	Last Update Time	

DDNS Status		
Item Description		
Status Display the current status of the DDNS.		
Last Update TimeDisplay the date and time for the DDNS was last updated successfully.		

3.17 Services > SSH

SSH	Keys Management	
∧ SSH Settings		
	Enable	ON OFF
	Port	22
	Disable Password Logins	OMOFF

Gateway supports SSH password access and secret-key access.

SSH Settings			
Item Description Defa			
Enable	Click the toggle button to enable/disable this option. When enabled, you can	ON	
	access the gateway via SSH.		
Port	Set the port of the SSH access.	22	
Disable Password Logins	Click the toggle button to enable/disable this option. When enabled, you OFF		
cannot use username and password to access the gateway via SSH. In this			
	case, only the key can be used for login.		

SSH	Keys Management		
∧ Import Au	thorized Keys		
	Authorized Keys	Choose File No file chosen	Import

Import Authorized Keys		
Item Description		
Authorized Keys	Click on "Choose File" to locate an authorized key from your computer, and then	
click "Import" to import this key into your gateway.		
Note: This option is valid when enabling the password logins option.		

3.18 Service > AT Over COM

This part is used for setting parameters in AT Over COM.

AT Over COM		
∧ AT Over COM	Settings	
	Enable	ON OFF
	Com Type	RS232 V
	Baud Rate	115200 V
	Data Bits	8 V
	Stop Bits	1 v
	Parity	None v

Settings of AT Over COM			
Items Description Default		Default	
Enable	Click switch button to enable/disable the AT Over COM function.	OFF	
Com Type	Select between "RS232" and "RS485".	RS232	
Baud Rate	Select among "300", "600", "1200", "2400", "4800", "9600", "19200", "38400", "57600", "115200" and "230400".	115200	
Data Bits	Select between "7" and "8".	8	
Stop Bits	Select between "1" and "2".	1	
Parity	Select among "None", "Odd Parity" and "Even Parity".	None	

3.19 Services > Web Server

This section allows you to modify the parameters of Web Server.

Web Server	Certificate Management		
∧ General Settin	∧ General Settings		
	HTTP Port	80 🤇	
	HTTPS Port	443 🥱	

General Settings @ Web Server		
Item	Description	Default
HTTP Port	Enter the HTTP port number you want to change in gateway's Web Server. On	80
a Web server, port 80 is the port that the server "listens to" or expects to		
	receive from a Web client. If you configure the gateway with other HTTP Port	

	number except 80, only adding that port number then you can login gateway's Web Server.	
HTTPS Port	Enter the HTTPS port number you want to change in gateway's Web Server. On a Web server, port 443 is the port that the server "listens to" or expects to receive from a Web client. If you configure the gateway with other HTTPS Port number except 443, only adding that port number then you can login gateway's Web Server. Note : HTTPS is more secure than HTTP. In many cases, clients may be exchanging confidential information with a server, which needs to be secured in order to prevent unauthorized access. For this reason, HTTP was developed by Netscape corporation to allow authorization and secured transactions.	443

This section allows you to import the certificate file into the gateway.

Web Server	Certificate Management		
∧ Import Certi	ficate		
	Import Type	CA	
	HTTPS Certificate	Choose File No file chosen	Import

Import Certificate		
Item Description Defa		Default
Import Type	Select from "CA" and "Private Key".	CA
	CA: a digital certificate issued by CA center	
	Private Key: a private key file	
HTTPS Certificate	Click on "Choose File" to locate the certificate file from your computer, and then	
	click "Import" to import this file into your gateway.	

3.20 Service > Work Mode

This part is used for setting work mode, including DTU and Modem.

Mode		
∧ Device Work	Mode Setting	
	Device Current Mode	V VTU

Mode			
A Device Work	^ Device Work Mode Setting		
	Device Current Mode	Modem	
	AT Port	USB	
	Baud Rate	115200 V	
	Data Bits	8 4	
	Stop Bits	1 🗸	
	Parity	None v	
	Debug Enable	ON OFF	

Settings of Work Mode				
Items	Description	Default		
Device Current Mode	Select between "DTU" and "Modem".			
AT Port	 Select between "USB", "RS232" and "RS485". USB: dial through USB, and configure CLI through RS232 RS232: dial through RS232, configure CLI through USB RS485: dial through RS485, configure CLI through RS232 	USB		
Baud Rate	Select between "300", "600", "1200", "2400", "4800", "9600", "19200", "38400", "57600", "115200" and "230400".	115200		
Data Bits	Select between "7" and "8".	8		
Stop Bits	Select between "1" and "2".	1		
Parity	Select among "None", "Odd Parity" and "Even Parity".	None		
Debug Enable	Click switch button to enable/disable logs.	OFF		

3.21 Services > Advanced

This section allows you to set the reboot.

System	Reboot	
∧ Periodic Rebo	ot Settings	
	Periodic Reboot	0 7
Daily Reboot Time		

Periodic Reboot Settings		
Item Description D		Default
Periodic Reboot	Set the reboot period of the gateway by every X hours. 0 means disable.	0
Daily Reboot Time	Set the daily reboot time of the gateway. You should follow the format as HH:	Null
	MM, in 24h time frame. Leave it empty means disable.	

3.22 System > Debug

Syslog			
∧ Syslog Detail	s		
	Log Level	Debug v	
	Filtering		
00:02:23 router web_server: pam 00:02:23 router user admin Jan router user.deb [2089]: OK Jan from modemd Jan state Disconnec disconnected Ja switch link (WW WWAN1 try recon web_server: pam 00:02:36 router user admin Jan session opened	<pre>dc? Jan 1 00:02:23 router user. : user.debug modemd[2089]: OK Ja _unix(login:session): session of : authpriv.info web_server: pam 1 00:02:26 router user.debug m bug modemd[2089]: +CGREG: 2,3 Ja 1 00:02:26 router user.debug la 1 00:02:26 router user.debug ted Jan 1 00:02:26 router user.info IAN1:10 - WWAN2:20) Jan 1 00:02 unect firstly, wait 600 seconds unix(login:session): session of : authpriv.info web_server: pam 1 00:02:43 router authpriv.inf for user admin by (uid=0) Jan session): session closed for us</pre>	<pre>n 1 00:02:23 router authoms and 1 00:02:23 router authoms admin by (nunix(login:session): session and a session a session and a set a session and a set a</pre>	priv.info uid=0) Jan 1 ion closed for n 1 00:02:26 .debug modemd ction disconnected t link WWAN1,]: WWAN1 is no need to nk manager[2051]: thpriv.info uid=0) Jan 1 ion closed for gin:session):
		Manual Refresh v	Clear Refresh

This section allows you to check and download the syslog details.

∧ Syslog I	Files			
Index	File Name	File Size	Modification Time	
1	messages	26328	Wed Oct 11 16:56:29 2017	•
∧ System Diagnostic Data				
	System I	Diagnostic Data Gene	rate	
	System I	Diagnostic Data Down	nload	

Syslog				
Item	Description	Default		
	Syslog Details			
Log Level	Select from "Debug", "Info", "Notice", "Warn", "Error" which from low to high.	Debug		
	The lower level will output more syslog in detail.			
Filtering	Enter the filtering message based on the keywords. Use "&" to separate more	Null		
	than one filter message, such as "keyword1&keyword2".			
Refresh	Select from "Manual Refresh", "5 Seconds", "10 Seconds", "20 Seconds" or "30	Manual		
	Seconds". You can select these intervals to refresh the log information displayed	Refresh		
in the follow box. If selecting "manual refresh", you should click the refresh				
	button to refresh the syslog.			
Clear	Click the button to clear the syslog.			
Refresh	Click the button to refresh the syslog.			
	Syslog Files			
Syslog Files List	It can show at most 5 syslog files in the list, the files' name range from message0			
	to message 4. And the newest syslog file will be placed on the top of the list.			

System Diagnosing Data				
	Generate Click to generate the syslog diagnosing file			
	Download Click to download system diagnosing file.			

3.23 System > Update

This section allows you to upgrade the firmware of your gateway. Click **System > Update > System Update**, and click on "Choose File" to locate the firmware file to be used for the upgrade. Once the latest firmware has been chosen, click "Update" to start the upgrade process. The upgrade process may take several minutes. Do not turn off your gateway during the firmware upgrade process.

Note: To access the latest firmware file, please contact your technical support engineer.

Update			
∧ System Update			
	File	Choose File No file chosen	Update

3.24 System > App Center

This section allows you to add some required or customized applications to the gateway. Import and install your applications to the App Center, and reboot the device according to the system prompts. Each installed application will be displayed under the "Services" menu.

Note: After importing the applications to the gateway, the page display may have a slight delay due to the browser cache. It is recommended that you clear the browser cache first and log in the gateway again.

Арр С	enter					
For more information about App, please refer to http://www.robustel.com/products/app-center/.						
App 1	^ App Install					
			File		Browse Install	
^ Insta	A Installed Apps					
Index	Name	Version	Status	Description		
1	language_chinese	3.0.0	Stopped	Chinese language		×

App Center			
Item	Description	Default	
	App Install		
File	Click on "Choose File" to locate the App file from your computer, and then click		
	Install to import this file into your gateway.		
	Note: File format should be xxx.rpk, e.g. M1200-robustlink-1.0.0.rpk.		
Installed Apps			
Index	Indicate the ordinal of the list.		

App Center		
Item	Description	Default
Name	Show the name of the App.	Null
Version	Show the version of the App.	Null
Status	Show the status of the App.	Null
Description	Show the description for this App.	Null

3.25 System > Tools

This section provides users three tools: Ping, Traceroute and Sniffer.

Ping	Traceroute	Sniffer
∧ Ping		
	IP A	ddress
	Number of R	equest 5
	ті	imeout 1
	L	ocal IP
		Start Stop

Ping					
Item	Description	Default			
IP address	Enter the ping's destination IP address or destination domain.				
Number of Requests	Specify the number of ping requests.				
Timeout	Specify the timeout of ping requests.	1			
Local IP	Specify the local IP from cellular WAN, Ethernet WAN or Ethernet LAN. Null				
	stands for selecting local IP address from these three automatically.				
Start	Click this button to start ping request, and the log will be displayed in the	Null			
	follow box.				
Stop	Click this button to stop ping request.				

Ping	Traceroute Snit	fer
∧ Traceroute		
	Trace Address	
	Trace Hops	30
	Trace Timeout	1
		Start Stop

Traceroute					
Item	Description	Default			
Trace Address	Enter the trace's destination IP address or destination domain.	Null			
Trace Hops	ce Hops Specify the max trace hops. gateway will stop tracing if the trace hops has met				
	max value no matter the destination has been reached or not.				
Trace Timeout	Specify the timeout of Traceroute request.	1			
Start	Click this button to start Traceroute request, and the log will be displayed in				
	the follow box.				
Stop	Click this button to stop Traceroute request.				

Pin	ng Traceroute	Sniff	fer			
∧ Sniffe	er					
	Pac	Interface Host kets Request Protocol	all 1000 All	× 		
∧ Captu	ure Files	Status	0		Start	Stop
Index	File Name	File Siz	e	Modification Tim	ie	
1	17-01-01_00-05-01.cap	24		Sun Jan 1 00:05:01 2	2017	
Sniffer						
-----------------	--	---------				
Item	Description	Default				
Interface	Select the interface according to the "Ethernet" configuration and select from "All", "PPP1", "WWAN" and "IO".	All				
Host	Filter the packet that contain the specify IP address.	Null				
Packets Request	Set the packet number that the gateway can sniffer at a time.	1000				
Protocol	Select from "All", "IP", "TCP", "UDP" and "ARP".	All				
Status	Show the current status of sniffer.	Null				
Start	Click this button to start the sniffer.					
Stop	Click this button to stop the sniffer. Once you click this button, a new log file will be displayed in the following List.					
Capture Files	Every times of sniffer log will be saved automatically as a new file. You can find the file from this Sniffer Traffic Data List and click sto download the log, click to delete the log file. It can cache a maximum of 5 files.	Null				

3.26 System > Profile

Profile	Rollback	
∧ Import Conf	iguration File	
	Reset Other Settings to Default	OFF 7
	Ignore Invalid Settings	OFF ?
	XML Configuration File	Choose File No file chosen Import
∧ Export Confi	guration File	
	Ignore Disabled Features	OM OFF 7
	Add Detailed Information	OFF 7
	Encrypt Secret Data	OFF 7
	XML Configuration File	Generate
	XML Configuration File	Export
∧ Default Conf	iguration	
Save	Running Configuration as Default	Save 🦻
	Restore to Default Configuration	Restore

This section allows you to import or export the configuration file, and restore the gateway to factory default setting.

Profile			
Item	Description	Default	
	Import Configuration File		
Reset Other Settings to	Click the toggle button as "ON" to return other parameters to default	OFF	
Default	settings.		
Ignore Invalid Settings	Click the toggle button as "OFF" to ignore invalid settings.	OFF	
XML Configuration File	Click on Choose File to locate the XML configuration file from your		
	computer, and then click Import to import this file into your gateway.		
Export Configuration File			
Ignore Disabled Features	Click the toggle button as "OFF" to ignore the disabled features.	OFF	
Add Detailed Information	Click the toggle button as "On" to add detailed information.	OFF	
Encrypt Secret Data	Click the toggle button as "ON" to encrypt the secret data.	OFF	
XML Configuration File	Click Generate button to generate the XML configuration file, and click		
	Export the XML configuration file.		
Default Configuration			
Save Running Configuration	Click this button to save the current running parameters as default		
as Default	configuration.		
Restore to Default	Click this button to restore the factory defaults.		
Configuration			

Profile	Rollback			
Configuration Rollback				
	Save as a Rollba	ackable Archive Save	0	
∧ Configu	ration Archive Files			
Index	File Name	File Size	Modification Time	
1	config1.tgz	3274	Sun Jan 1 00:00:03 2017	Ð
2	config2.tgz	3274	Mon Jan 22 00:00:00 2018	Ð
3	config3.tgz	3274	Sun Jan 21 00:00:00 2018	Ð
4	config4.tgz	3274	Sat Jan 20 00:00:00 2018	Ð

Rollback		
Item	Description	Default
Configuration Rollback		
Save as a Rollbackable	Create a save point manually. Additionally, the system will create a save	
Archive	point every day automatically if configuration changes.	
Configuration Archive Files		
Configuration Archive	View the related information about configuration archive files, including	
Files	name, size and modification time.	

3.27 System > User Management

This section allows you to change your username and password, and create or manage user accounts. One gateway has only one super user who has the highest authority to modify, add and manage other common users. **Note:** Your new password must be more than 5 character and less than 32 characters and may contain numbers, upper and lowercase letters, and standard symbols.

Super User	Common User	
∧ Super User Set	ttings	
	New Username	0
	Old Password	0
	New Password	0
	Confirm Password	

Super User Settings		
Item	Description	Default
New Username	Enter a new username you want to create; valid characters are a-z, A-Z, 0-9,	Null
	@, ., -, #, \$, and *. If you do not want to modify the username, leave it blank.	
Old Password	Enter the old password of your gateway. The default is "admin".	Null
New Password	Enter a new password you want to create; valid characters are a-z, A-Z, 0-9, @, ., -, #, \$, and *.	Null
Confirm Password	Enter the new password again to confirm.	Null

Super Us	er	Common User	
∧ Commo	n User Se	ttings	
Index	Role	Username	

Click + button to add a new common user. The maximum rule count is 5.

Common User	
∧ Common Users Settings	
Index	1
Role	Visitor
Username	⑦
Password	

Common User Settings		
Item	Description	Default
Index	Indicate the ordinal of the list.	
Role	Select from "Visitor" and "Editor".	Visitor
	Visitor: Users only can view the configuration of gateway under this level	
	• Editor: Users can view and set the configuration of gateway under this level	
Username	Set the Username; valid characters are a-z, A-Z, 0-9, @, ., -, #, \$, and *.	Null
Password	Set the password which at least contains 5 characters; valid characters are a-z, A-Z,	Null
	0-9, @, ., -, #, \$, and *.	

Chapter 4 Dial Configuration of PC under Modem Mode

When M1200 is working under the Modem mode, PC can dial to access internet through device. After the first successful configuration of the same PC, the same dial-up connection does not need to be configured again. Different operating systems need to be configured differently. This chapter describes the Modem mode dialing configuration of Windows system and Linux system in detail.

Note: Under the Modem mode, only SIM1 is used for dialing.

4.1 Window System

This chapter sets Windows 7 as the example to introduce how PC dials to access internet through device.

1. Install the serial port driver

(1) After device is connected, PC checked the new serial port and attempted to install the driver. As shown below, if PC cannot automatically install the driver, the user can manually add the driver and operate according to the readme under m1200_ppp_configure\usb_driver, and the related appendix can be downloaded on the official website or request for the technical support.

File Action View Help	
Computer Management (Local System Tools Task Scheduler Event Viewer Computer Management Computer Management Storage Disk Management Services and Applications Services and Applications Mice and other pointing devices Mice and other pointing devices Monitors Mice and other pointing devices Microsoft Virtual WiFi Miniport Adapter #4 Nicrosoft Virtual WiFi Miniport Adapter Remote NDIS based Internet Sharing Device Sound, video and game controllers System devices Universal Serial Bus controllers System devices Universal Serial Bus controllers	Actions Device Manager More Actions

(2) After USB is connected to the PC, check the identified serial port. Different ports of different USB interfaces are different. Right-click and select "Properties" to set the serial port speed to 115200, and click "OK";

Computer Management	
File Action View Help	
 Computer Management (Local System Tools Task Scheduler Task Scheduler Task Scheduler Stared Folders Local Users and Groups Performance Device Manager Tosk Management Tosk Services and Applications Microsoft Virtual WiFi Minipott Adapter Microsoft Virtual WiFi Minipott Adapter Network Adapter Reattek PCIe GBE Family Controller Remote NDIS based Internet Sharing Device Ports (COM & LPT) Stand Janagement Strice Services and Applications 	Landi USB2UART (COM3) Properties

2. Add a Modem

(1) In the Control Panel, select "Phone and Modem", and add a modem;





(2) Click "Dialing Rules" \rightarrow "New" to add a new location;

Ø Phone and Modem	×			
Dialing Rules Modems Advanced				
The list below displays the locations you have specified. Select the location from which you are dialing.				
Locations:				
Location	Area Code			
My Location	020			
New	Edit Delete			
ОК	Cancel Apply			

(3) Fill in the location name (optional), the dialing location is based on the actual selected country/region, fill in the correct area code and click "OK";

Wew Location	×
General Area Code Rules Calling Card	
Location name: 02	
Specify the location from which you will be dialing.	
Country/region:	Area code:
China 🗸	020
When dialing from this location, use the following rules: To access an outside line for local calls, dial: To access an outside line for long-distance calls, dial: Use this carrier code to make long-distance calls: Use this carrier code to make international calls: To disable call waiting, dial:	
Dial using: 💿 Tone 💿 Pulse	
OK Cancel	Apply

(4) Enter into the "Modem" item and click "Add";

Phone and Mo	dem			×
Dialling Rules Mo	dems Advanced			
State of the fo	llowing <u>m</u> odems are	installed:		
Modem			Attached To	
	Add	i 믿 <u>R</u> e	move	Properties
			1000	_iopenies
	(ОК	Cancel	Apply

(5) Select "Don't detect my modem, I will select it from a list" and click "Next";

Install New Modem Do you want Window	vs to detect your modem?	
	 Windows will now try to detect your modem. Before continuing, you should: 1. If the modem is attached to your computer, make sure that it is turned on. 2. Quit any programs that may be using the modem. 	
	Click Next when you are ready to continue.	
		Cancel

(6) Select the correct manufacturer and model according to the content shown in the figure. If the Standard Modem Types list does not exit, please refer to the readme under m1200_ppp_configure\ modem_inf, and the related appendix can be downloaded on the official website or requested for the technical support.

Install New Modem		
Select the manufactu an installation disk, cl	rer and model of your modem. If your modem is not l ick Have Disk.	isted, or <mark>if</mark> you have
Manufacturer (Standard Modem Types)	Models	•
	Standard 33600 bps Modern	
This driver is digitally sign <u>Tell me why driver signing</u>		Have Disk

(7) According to the COM port corresponding to the device in step 1, select the actual corresponding port and click next.

Add Hardware Wizard	
Install New Modem Select the port(s) yo	u want to install the modem on.
	You have selected the following modem: Standard 33600 bps Modem On which ports do you want to install it? All ports Selected ports COM3
	< Back Next > Cancel

(8) After the modem is installed, click "Finish";

dd Hardware Wizard	
Install New Modern Modern installation	
	Your modern has been set up successfully.
	If you want to change these settings, double-click the Phone and Modem Options icon in Control Panel, click the Modems tab, select this modem, and then click Properties.
	< Back Finish Cancel

(9) Enter into the device manager of your computer and see the newly added modem.



3. Configuring the modem

Right click on the new added modem and select "Properties" to configure it:

(1) Select the "Modem" item and select "115200" for the maximum port speed;

Standard 33600 bps Modem Properties
General Modem Diagnostics Advanced Driver Details
Port: COM3
Speaker volume
Low High
Maximum Port Speed
115200 💌
Dial Control
Wait for dial tone before dialing
OK Cancel

(2) Select the "Advanced" item and click "Change default preferences";

Standard 33600 bps Modem Properties						
General Modem Diagnostics Advanced Driver Details						
Extra Settings						
Extra initialization commands:						
Initialization commands may lead to the exposure of sensitive information in the modern log. Consult your modern's instruction manual for more details.						
Change Default Preferences						
OK Cancel						

(3) Enter the "General" item, set the port speed to "115200", and select "None" for the data flow control;

Standard 33600 bps Modem Default Preferences
General Advanced
Call preferences
Disconnect a call if idle for more than mins
Cancel the call if not connected within secs
Data Connection Preferences
Port speed: 115200 -
Data Protocol:
Compression:
Flow control: None
OK Cancel

- (4) Modem configuration is complete, click OK.
- 4. Create a new dial-up connection
- (1) Open your computer's Network Sharing Center, under "Change network settings," select "Set up a new connection or network";



(2) Select "Connect to the Internet" and click Next;



(3) In the new pop-up window, select " Set up a new connection anyway";



You are already connected to the Internet





Cancel

(4) Click "No, create a new connection" and click Next;

				\times
←	Connect to the Internet			
	Do you want to use a connection that you already have?			
	No, <u>create a new connection</u>			
	○ Yes, I'll choose an <u>e</u> xisting connection			
	Dial-up Connection Communications cable between two computers			
	1	<u>l</u> ext	Cano	el

(5) Select the "Dial-up" connection;

	—		\times
~	Connect to the Internet		
	How do you want to connect?		
	Broadband (PPPoE) Connect using DSL or cable that requires a username and password.		
	Dial-up Connect using a dial-up modem or ISDN.		
		Ca	ncel

(6) Dial the phone number and fill in "*99***1#". Fill in the connection name according to actual needs. Click "connect".

Type the information f	rom your Internet service provider	(ISP)
Dial-up phone number:	*99***1#	Dialing Rules
User name:	[Name your ISP gave you]	
Password:	[Password your ISP gave you]	
	Show characters	
Connection name:	m1200	
😵 📃 Allow other people to		
This option allows any	one with access to this computer to use this	connection.

(7) After the connection fails, click "Always set up connection" to close this page.

Connect to the Internet	720		
A connection to the remote computer the network settings for this connection	r could not be established. Y	You might need to change	•
Try again			*
Set up the connection and	iyway		

5. Dial-up connection

(1) Open your computer's "Network Sharing Center", under "Change network settings," select "Set up a new connection or network" ;



(2) Select the newly established dial-up connection in the new pop-up box, right-click and select "Properties";

Not connected	42
Connections are available	
Dial-up and VPN	^
m1200	(2)
Open Network and Sharing Center	

(3) Under "General", select the added modem, confirm that the phone number is added correctly, and click "Configure";

m1200 Properties
General Options Security Networking Sharing
Connect using:
Modem - Standard 33600 bps Modem (COM3)
Configure
Area code: Phone number:
Country/region code:
Use dialing rules Dialing Rules
See our online <u>privacy statement</u> for data collection and use information.
OK Cancel

(4) The maximum speed is selected as "115200", and the hardware function is unchecked "Enable Hardware Flow Control", as shown below;

Modem Configuration	×	
Communications cable	e between two computers (COM6)	
<u>M</u> aximum speed (bps):	115200 ~	
Modem <u>p</u> rotocol	~	
Hardware features		
Enable mo <u>d</u> em speaker	OK Cancel	

(5) After the configuration is complete, click "Connect" and select "Dial-up" in the pop-up page box to establish a connection with the device

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Not connected 5
Dial-up and VPN
m1200
Open Network and Sharing Center

4.2 Linux System

The M1200 modem mode supports Linux system. This part takes R3000 (the device uses Linux system) as an example, dialing through RS 232 serial port.

1. Verify device connectivity

Connect M1200 with R3000 through RS 232 serial port. If the connection is completed, input command in R3000: microcom -s 115200 /dev/ttyCOM1, and then the command window will return CSQ value continually as shown below, CTRL + X can stop AT port.

```
~ # microcom -s 115200 /dev/ttyCOM1
+CSQ: 15,99
OK
+CSQ: 15,99
OK
+CSQ: 15,99
OK
+CSQ: 15,99
OK
```

2. Dial interface configuration

(1) Input Is -I /dev/ttyCOM1 to view the name of COM1 port, which same as the name of the script.

~ # ls -l /dev/ttyCOM1							
lrwxrwxrwx 1 root	root	10 Jan	1	1970	/dev/ttyCOM1 ->	/dev/tty54	

(2) Copy the U disk which with the dialing script to the corresponding content through the USB port of R3000, the details as shown below:

~ # cp /mnt/usb/dialscript/modem.chat /etc/ppp

~ # cp /mnt/usb/dialscript/modem.options /etc/ppp/peers/

~ # In -s /etc/ppp/resolv.conf /etc/resolv.conf

(3) The script content as shown below. The red box mark in the figure changes according to the actual situation. The name of interface and baud rate are required to same as the configuration of M1200:



	modem	options × modem.chat	×	
1	ABORT	BUSY		
2	ABORT	'NO CARRIER'		
3	ABORT	ERROR		
4	REPORT	CONNECT		
5	TIMEOUT	10		
6		"AT"		
7	ОК	"ATE0"		
8	ОК	'AT+CGDCONT=1,"IP","3gnet"'		
9	TIMEOUT	30		
10	ОК	"ATD*99***1#"		
11	CONNECT			

- Enter the dialing command to dial
 ~ # pppd call modem.options
- View the dialing logs
 ~ # cat /tmp/m1200_modem_log
- 5. If it needs dial again, input ps command to view the process number of pppd process, then kill the process, input dial command to dial again.

			-	
	1022	root	0:00	-sh
	1103	root	0:00	[kworker/u2:0]
	1257	root	0:00	[kworker/0:1H]
	1479	root	0:00	[kworker/u2:1]
	1986	root	0:00	link_manager
	1999	root		[kworker/0:0]
	2244	root	0:00	syslogd -L -b 5 -s 1024 -l 8 -f /var/etc/syslog.conf
	2246	root		klogd
	2389	root	0:00	modemd
	2529	root		qmi wwan
	2531	root		/usr/shin/slassdk_0
	2757	root	0:00	pppd call modem.options
ľ	2862		0:00	ps
2		ill 2757		
2	~#pp	opd call mod	dem.op	otions

4.3 CLI to Change the Configuration of Modem

When device is under the mode of Modem, it can be configured through CLI command. If the current "selection of dialing port" (i.e. at_port), input the following command and keep it:

1. view the current mode by inputting show mode all:

```
# show mode all
current_mode = modem
at_port = rs232
baud_rate = 115200
data_bits = 8
stop_bits = 1
parity = none
debug_enable = true
```

2. Revise the parameter of Modem.

For example, revise "selection of dialing port" (i.e. at_port), input the following command and keep it:

set mode at_port rs232
config save_and_apply

Revise the baud rate of the device:
 # set mode baud_rate 115200
 # config save_and_apply

To modify other parameters, modify the at_port and the parameters that follow it.

4. Switch to the DTU mode

There are two ways:

(1) Configured to DTU mode via CLI settings:
Set the mode to DTU mode:
set mode current_mode dtu
Save the configuration:
config save_and_apply
Reboot the device:
reboot

(2) Send commands through the dial interface to configure DTU mode:
_dtu

Reboot the device:

_rbt

Description:

(1) USB is used as at_port. At this time, you can log in to the device through RS232 and configure the device to DTU mode by using the CLI.

(2) RS232 is used as the at_port. At this time, the command can be sent to the RS232 (the command is sent through the dial interface) to configure the DTU mode. In this case, the USB cannot log in to the device.

Glossary

Description
Alternating Current
Access Point Name
American Standard Code for Information Interchange
Conformité Européene (European Conformity)
Challenge Handshake Authentication Protocol
Command Line Interface for batch scripting
Circuit Switched Data
Clear to Send
Decibel
Decibel Relative to an Isotropic radiator
Direct Current
Data Carrier Detect
Data Communication Equipment (typically modems)
Digital Cellular System, also referred to as PCN
Digital Input
Digital Output
Data Set Ready
Data Terminal Equipment
Dual Tone Multi-frequency
Data Terminal Ready
Enhanced Data rates for Global Evolution of GSM and IS-136
Electromagnetic Compatibility
Electro-Magnetic Interference
Electrostatic Discharges
European Telecommunications Standards Institute
Evolution-Data Optimized
Frequency Division Duplexing Long Term Evolution
Ground
General Packet Radio Service
generic route encapsulation
Global System for Mobile Communications
High Speed Packet Access
identification data
International Mobile Equipment Identity
Internet Protocol
Internet Protocol Security
kbits per second
Layer 2 Tunneling Protocol

Abbr.	Description
LAN	local area network
LED	Light Emitting Diode
LoRa	Long Range
LoRaWAN	LoRa Wide Area Network
LPWAN	Low Power Wide Area Network
M2M	Machine to Machine
MAX	Maximum
Min	Minimum
MO	Mobile Originated
MS	Mobile Station
MT	Mobile Terminated
OpenVPN	Open Virtual Private Network
РАР	Password Authentication Protocol
PC	Personal Computer
PCN	Personal Communications Network, also referred to as DCS 1800
PCS	Personal Communication System, also referred to as GSM 1900
PDU	Protocol Data Unit
PIN	Personal Identity Number
PLCs	Program Logic Control System
РРР	Point-to-point Protocol
РРТР	Point to Point Tunneling Protocol
PSU	Power Supply Unit
PUK	Personal Unblocking Key
R&TTE	Radio and Telecommunication Terminal Equipment
RF	Radio Frequency
RTC	Real Time Clock
RTS	Request to Send
RTU	Remote Terminal Unit
Rx	Receive Direction
SDK	Software Development Kit
SIM	subscriber identification module
SMA antenna	Stubby antenna or Magnet antenna
SMS	Short Message Service
SNMP	Simple Network Management Protocol
TCP/IP	Transmission Control Protocol / Internet Protocol
TE	Terminal Equipment, also referred to as DTE
Тх	Transmit Direction
UART	Universal Asynchronous Receiver-transmitter
UMTS	Universal Mobile Telecommunications System
USB	Universal Serial Bus
USSD	Unstructured Supplementary Service Data
VDC	Volts Direct current

Abbr.	escription	
VLAN	Virtual Local Area Network	
VPN	Virtual Private Network	
VSWR	Voltage Stationary Wave Ratio	
WAN	Wide Area Network	

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