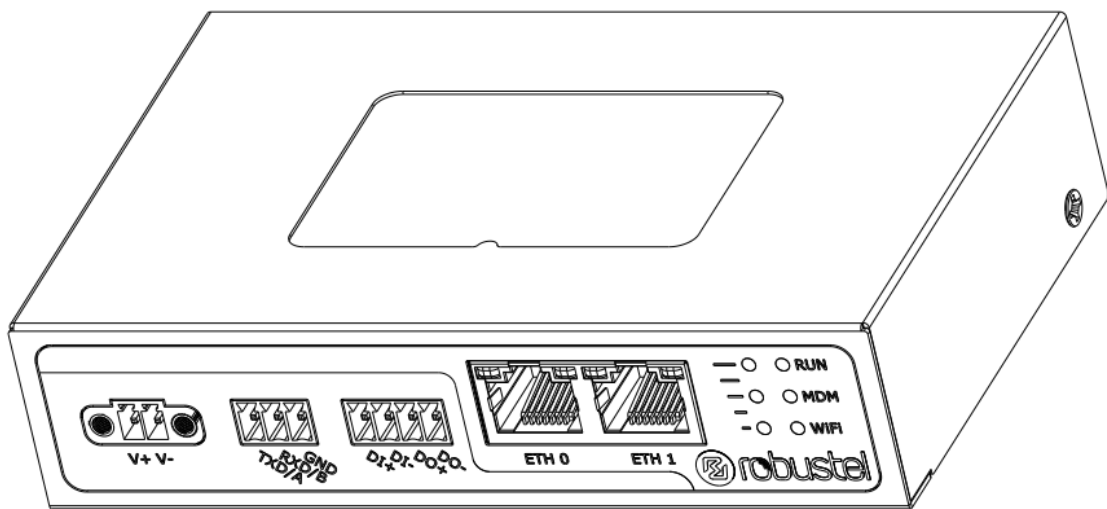# R2010

Hardware Manual

Version: 1.0.1

Date: Nov. 11, 2022

Regulatory and Type Approval Information

Table 1: Toxic or Hazardous Substances or Elements with Defined Concentration Limits

Name of the part	Hazardous Substances									
	(Pb)	(Hg)	(Cd)	(Cr(VI))	(PBB)	(PBDE)	(DEHP)	(BBP)	(DBP)	(DIBP)
Metal parts	o	o	o	o	-	-	-	-	-	-
Circuit modules	o	o	o	o	o	o	o	o	o	o
Cables and cable assemblies	o	o	o	o	o	o	o	o	o	o
Plastic and polymeric parts	o	o	o	o	o	o	o	o	o	o
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. X: 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.										

Radio Specifications

RF technologies	2G, 3G, 4G, Wi-Fi
Cellular Frequency*	2G GSM: B3/B8
	3G WCDMA: B1/B8
	4G LTE FDD: B1/B3/B7/B8/B20/B28A LTE-TDD: B38/B40/B41
Max RF power	33 dBm$\pm$2dB@2G, 24 dBm+1/-3dB@WCDMA, 23 dBm$\pm$2 dBm@LTE,

* *May vary on difference models.*

Caution: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Declaration of Conformity

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) L'appareil ne doit pas produire de brouillage;

(2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

IC Declaration of Conformity

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

(1)This device may not cause interference.

(2)This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) L' appareil ne doit pas produire de brouillage;

(2) L' appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d' en compromettre le fonctionnement.

FCC& IC Radiation Exposure Statement

This equipment complies with FCC and Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Déclaration d'IC sur l'exposition aux radiations

Cet équipement est conforme aux limites d'exposition aux radiations définies par le Canada pour des environnements non contrôlés. Cet équipement doit être installé et utilisé à une distance minimum de 20 cm entre l'antenne et votre corps.

Cet émetteur ne doit pas être installé au même endroit ni utilisé avec une autre antenne ou un autre émetteur.

Simplified EU Declaration of Conformity

We, Guangzhou Robustel Co., Ltd. are located at 501, Building #2, 63 Yongan Road, Huangpu District, Guangzhou, China, declare that this radio equipment complies with all applicable EU directives. The full text of the EU DoC is available at the following internet address:

www.robustel.com/certifications/

Related download link

Find more product documents or tools at:

www.robustel.com/en/documentations/

Technical Support

Tel: +86-20-82321505

Email: support@robustel.com

Web: www.robustel.com

Document History

Updates between document versions are cumulative. Therefore, the latest document version contains all updates made to previous versions.
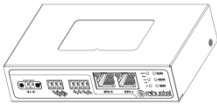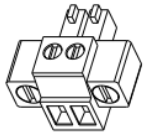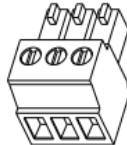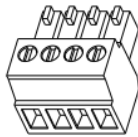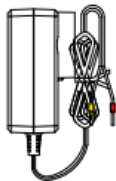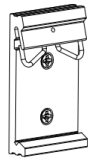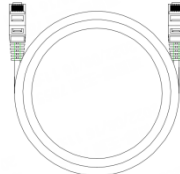
Date	Firmware Version	Document Version	Change Description
July. 6, 2022	5.0.0	1.0.0	Initial release.
Nov. 11, 2022	5.0.0	1.0.1	Added declaration for product.

Overview

The Robustel R2010 Industrial Dual SIM Cellular Gateway is a rugged, versatile 4G gateway with dual Ethernet ports, dual SIM single standby capability and a range of advanced functions for mission critical IoT or M2M applications.

Package Checklist

Before commencing installation ensure your package has the following components:

Device	2PIN Terminal Block	3PIN Terminal Block	4PIN Terminal Block	Wi-Fi Antenna

Cellular Antenna	Power Supply (Optional)	Mounting Kit (Optional)	Ethernet Cable (Optional)	
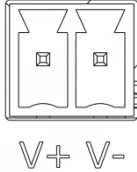
Note: The accessories could be different on specific order.

Panel Layout (May vary on difference models)

Front View   Back View
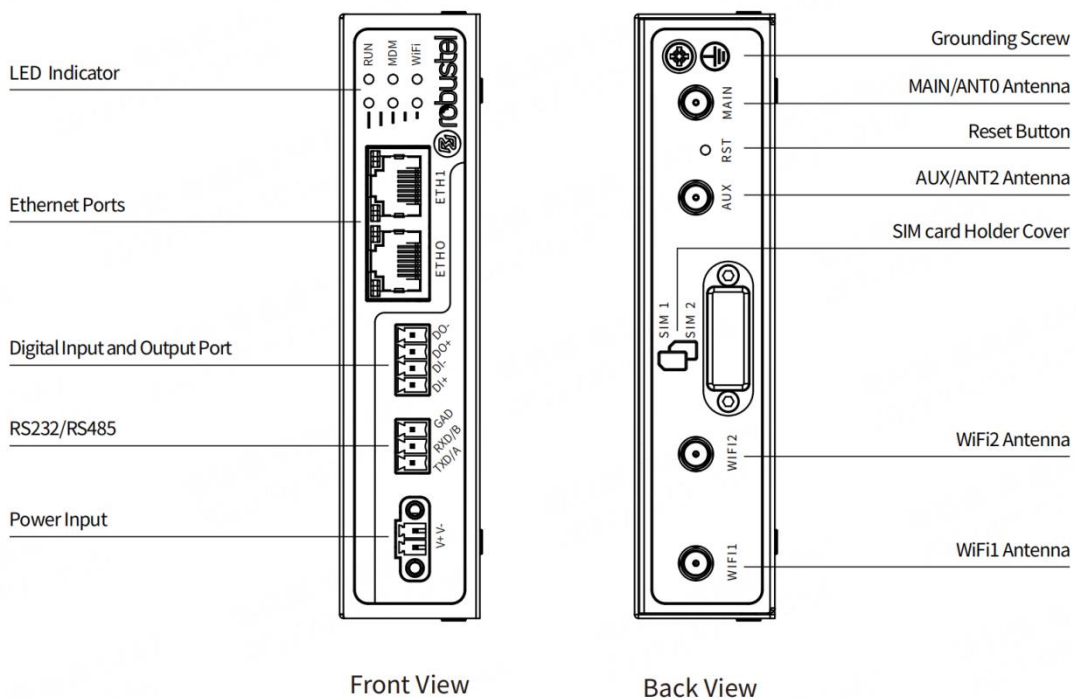
Interface Descriptions

1. **Power Supply.** 2PIN 3.5mm pitch terminal block.

PIN	Description	Note	
1	V+	Power Supply Positive	
2	V-	Power Supply Negative	
			Note: The voltage input range is 9~36V.

2. **LED Indicator.**

Name	Color	Status	Description
RUN	Green	On, solid	Gateway is powered on (System is initializing)
		On, blinking	Gateway starts operating
		Off	Gateway is powered off
MDM	Green	On, solid	Successful link connection
		On, blinking	Link connection is working
		Off	Link connection is not working
Wi-Fi	Green	On, solid	Backup card is being used
		Off	Main card is being used
RSSI	Green	Three lights on	Signal Level: Best Signal Level
			Wireless module: 21-31dB (signal strength)
		Two lights on	Signal Level: Average Signal Level
			Wireless module: 11-20dB (signal moderate)
		One light on	Signal Level: Abnormal Signal Level
			Wireless module: 21-31dB (signal weak)
		Off	No signal

Note: You can choose the display type of USR LED. For more details, please refer to

RT123_SM_RobustOS Software Manual, **Services > Advanced > System >System Settings > User LED Type.**

3. Reset Button.

Function	Operation
Reboot	Press and hold the RST button for 2~ 5 seconds under the operating status.
Restore to default configuration	Press and hold the RST button for 5~10 seconds, the RUN LED starts blinking quickly, the router will restore to default configuration.
Restore to factory default settings	Once the operation of restoring default configuration is performed twice within one minute, the router will restore to factory default settings.
Note: The more details please refer to *RT123_SM_RobustOS Software Manual, 2.3 Factory Reset.*	

4. Ethernet Ports.
There are two Ethernet ports on R2010 Gateway, including ETH0 (WAN/LAN) and ETH1. Each has two LED indicators. The green one is a link indicator but the yellow one with on mean. For details about status, see the table below.

Ethernet LED Indicator	Status	Description
Link indicator (Green)	On, solid	Connection is established
	On, blinking	Data is being transferred
	Off	Connection is not established

5. Serial Port

PIN	Description	Note
1	TXD/A	RS232 data sending/RS485_A.
2	RXD/B	RS232 data receiving/RS485_B.
3	GND	Signal Ground

6. DI&DO

| PIN	Description	Note
1	DI1+	Digital Input Positive
2	DI1-	Digital Input Negative
3	DO1+	Digital Output Positive
4	DO1-	Digital Output Negative
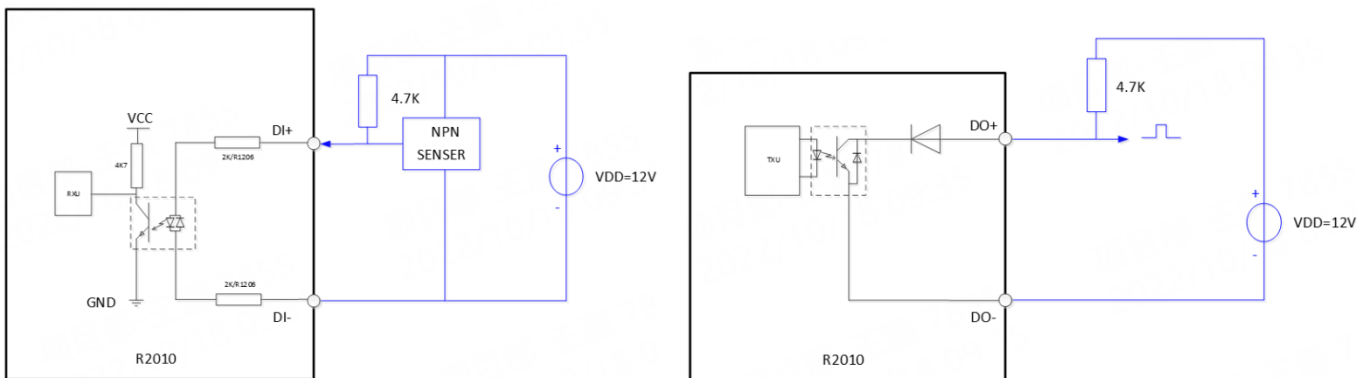
DI (Maximum absolute voltage: 30V, maximum absolute current: 10mA)   DO (Maximum absolute voltage: 30V, maximum absolute current: 100mA)
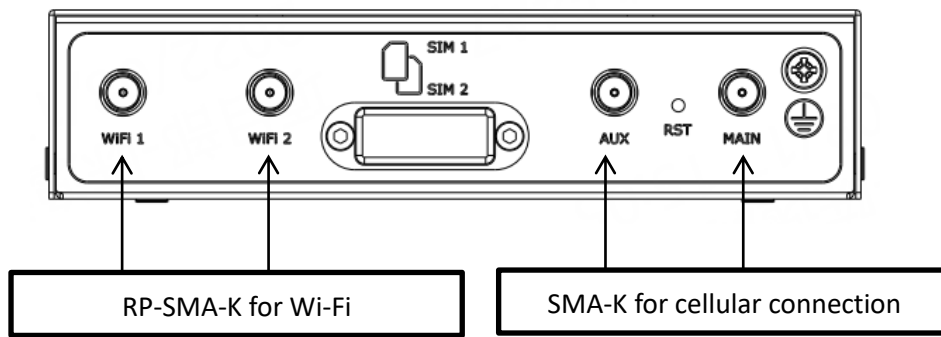
DI&DO Typical Connection Diagram
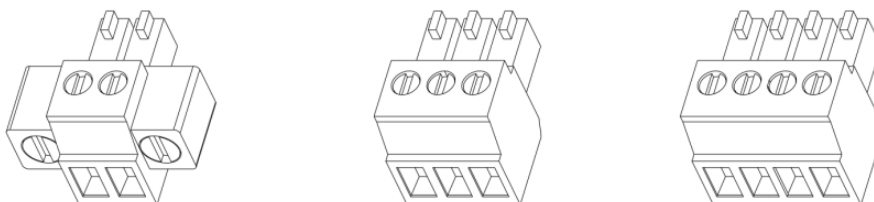
Hardware Installation

1. **SIM Card Installation**. Remove the SIM card cover to insert the SIM cards into the device, then screw up the cover.
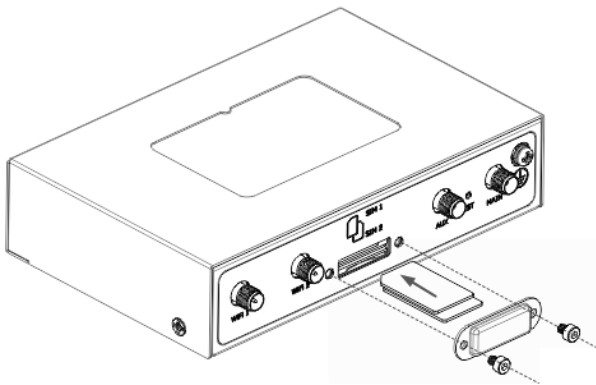
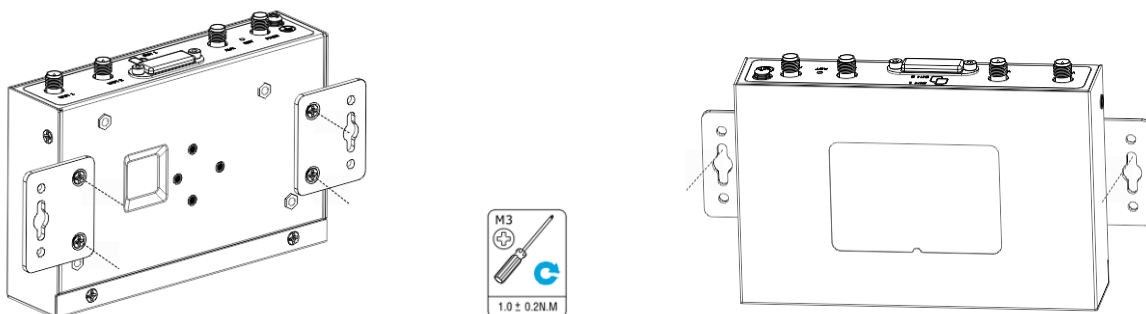2. **Antenna Installation.** Rotate the antenna into the antenna connector accordingly.

RP-SMA-K for Wi-Fi

SMA-K for cellular connection

3. **Terminal Block Installation.** Insert the terminal blocks into the interface's connector.

4. **Mounting Kit installation.**
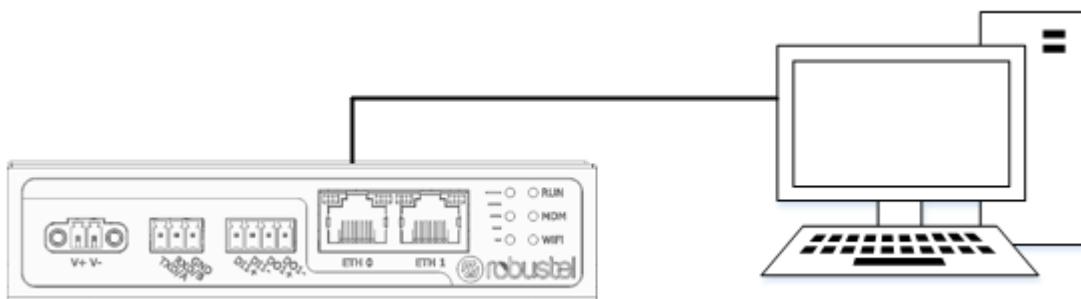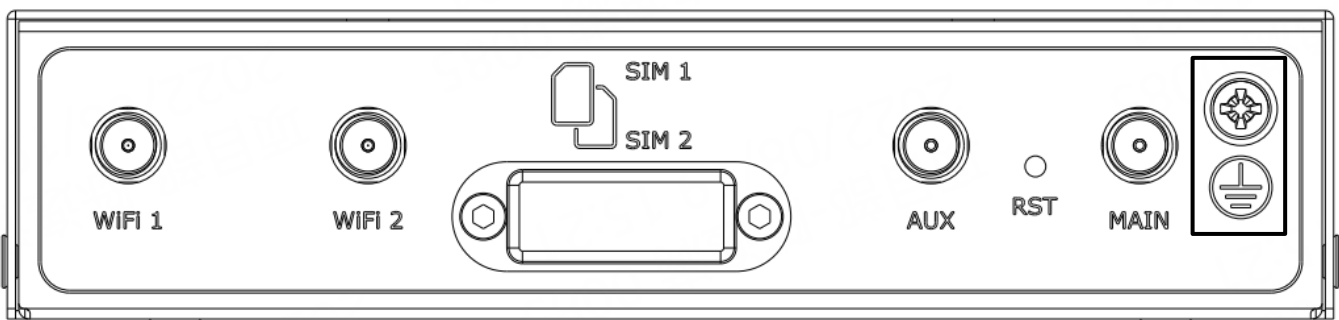   ① Wall mounting

② DIN rail mounting
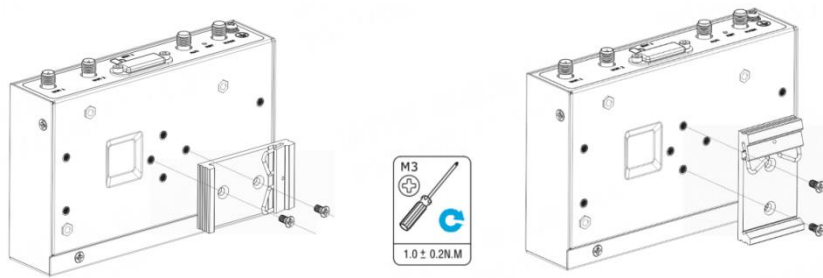
5. **Connect R2010 to a Computer**

Connect the gateway's Ethernet port (ETH0~ETH1) to a PC with a standard Ethernet cable.

6. **Grounding the Device.** Grounding will help to prevent the noise effect due to electromagnetic interference (EMI). Connect the device to the site ground wire by the grounding screw before powering on.
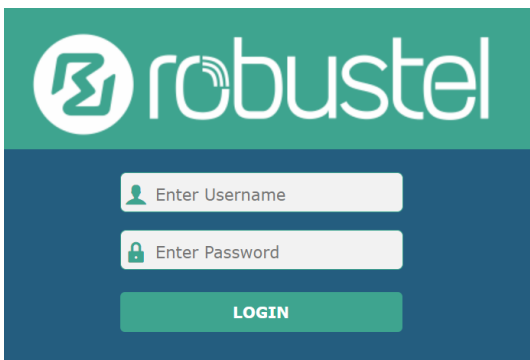
Login to the Device

1. Connect the router's Ethernet port to a PC with a standard Ethernet cable.

2. Before logging in, manually configure the PC with a static IP address on the same subnet as the gateway address, click and configure "Use the following IP address".
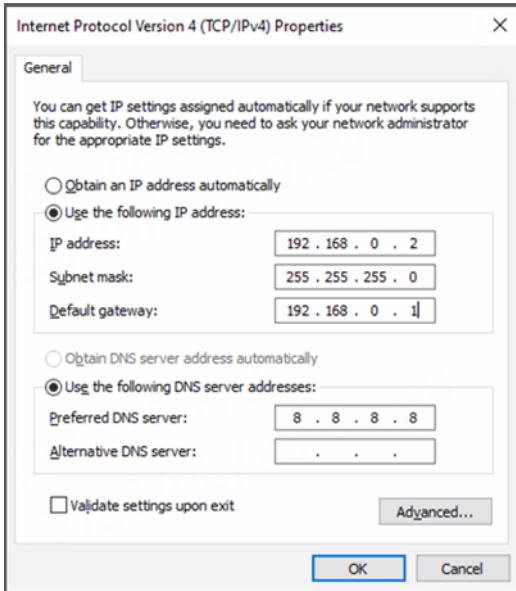

3. To enter the gateway's web interface, type http://192.168.0.1 into the URL field of your Internet browser.

4. Use login information shown in the product label when prompted for authentication.

5. After logging in, the home page of the web interface is displayed, then you can view system information and perform configuration on the device.

6. The automatic APN selection is ON by default, if need to specify your own APN, please go to the menu **Interface->Link Manager->Link Setting->WWAN Settings** to finish the specific setting.
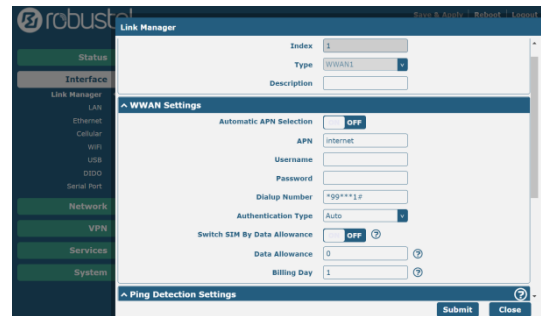
7. The more configuration details please refer to *RT123_SM_RobustOS Software Manual*.
(END)