

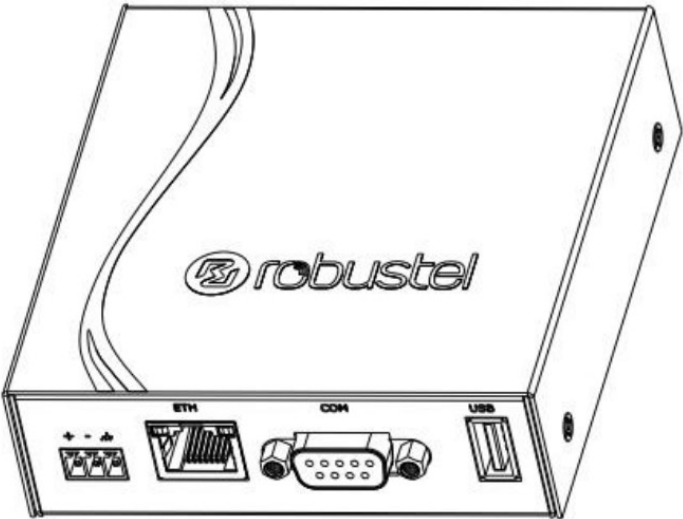


# robustel R3000 Lite IoT VPN 4G Cellular Gateway Router User Manual

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Regulatory and Type Approval Information Table 1: Directives

2011/65/EC	<p>The European RoHS 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.</p>
	<p>On June 4, 2015, the Official Journal of the European Union published the RoHS2.0 Amendment Directive (EU)</p>
	<p>In 2015/863, four phthalates (DEHP, BBP, DBP, DIBP) were officially included in the list of restricted substances in Appendix II of RoHS 2.0 (2011/65/EU).</p> <p>From July 22, 2019, all electronic and electrical products exported to Europe (except medical and monitoring equipment) must meet this restriction; from July 22, 2021, medical equipment and monitoring equipment will also be included in the scope of control.</p>
2012/19/EU	<p>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</p>

Table 2: Toxic or Hazardous Substances or Elements with Defined Concentration Limits

Name of the Part	Hazardous Substances					
	(Pb)	(Hg)	(Cd)	(Cr (VI) )	(PBB)	(PBDE)
Metal parts	o	o	o	o	o	o
Circuit modules	o	o	o	o	o	o
Cables and cable assemblies	o	o	o	o	o	o
Plastic and polymeric parts	o	o	o	o	o	o
<p>o:</p> <p>Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in 2011/65/EU and SJ/T11363-2006.</p> <p>x:</p> <p>Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials for this part <i>might exceed</i> the limit requirement in 2011/65/EU and SJ/T11363-2006.</p>						

## Radio Specifications

RF technologies	2G, 3G, 4G	
	<b>4G:</b> LTE FDD: B1/B2/B3/B4/B5/B7/B8/B28	
	LTE TDD: B40	Oceania
	<b>3G:</b> WCDMA: B1/B2/B5/B8	South America
	<b>2G:</b> GSM: B2/B3/B5/B8	
Cellular Frequency*	<b>4G:</b> LTE FDD: B2/B4/B5/B13/B17 <b>3G:</b> UMTS: B2/B5	USA
	<b>4G:</b> LTE FDD: B1/B3/B5/B7/B8/B20	
	LTE TDD: B38/B40/B41 <b>3G:</b> WCDMA: B1/B5/B8	EMEA
	<b>2G:</b> GSM: B3/B8	
	<b>4G:</b> LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/	EMEA

	B13/B18/B19/B20/B25/B26/B28 LTE TDD: B38/B39/B40/B41 <b>3G:</b> WCDMA: B1/B2/B4/B5/B6/B8/B19 <b>2G:</b> GSM: B2/B3/B5/B8	
	<b>4G:</b> LTE FDD: B1/B3/B8/B18/B19/B26 LTE TDD: B41 <b>3G:</b> WCDMA: B1/B6/B8/B19	Japan
	<b>4G:</b> LTE FDD: B1/B3/B7/B8/B20/B28A <b>3G:</b> WCDMA: B1/B8 <b>2G:</b> GSM: B3/B8	EMEA
Max RF power	35 dBm@GSM, 25 dBm@WCDMA, 25.7 dBm@LTE	

\* ***May vary on difference models.***

## 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/](http://www.robustel.com/certifications/)

## FCC Declaration of Conformity

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

- This device may not cause harmful
- This device must accept any interference received, including interference that may cause undesired

## 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:

- This device may not cause
- This device must accept any interference, including interference that may cause undesired operation of the

## Radio Frequency Exposure Statement for IC

This device complies with IC exposure limits set forth for an uncontrolled environment. This device shall be installed and operated with minimum distance 20cm between the radiator & body.

## Related download link

Find more product documents or tools at: [www.robustel.com/en/documentations/](http://www.robustel.com/en/documentations/)

## Technical Support

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## 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 28, 2022	5.0.0	1.0.0	Initial release.

## Overview

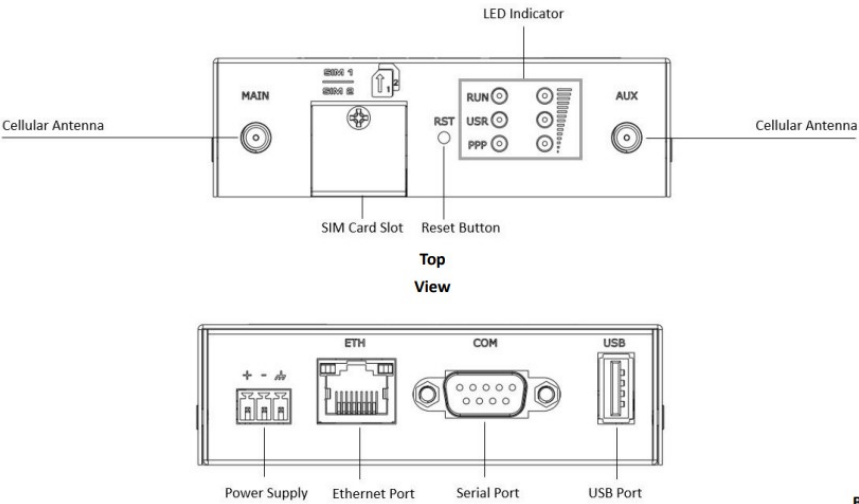
The Robustel Industrial Dual SIM Cellular VPN Router (R3000 Lite) is a rugged cellular router offering state-of-the-art mobile connectivity for machine to machine (M2M) applications. R3000 Lite is a powerful router developed from RobustOS, a Robustel self-developed and Linux-based operating system which is designed to be used in Robustel hardware routers.

Package Checklist

Before commencing installation ensure your package has the following components:

Device	3PIN Terminal Block	RCMS Card	Quick Start Guide Card	Mounting Kit (Optional)
Cellular Antenna (Optional)	Power Supply (Optional)	Ethernet Cable (Optional)		

Panel Layout (May Vary on Different Models)



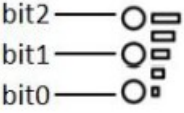
Interface Descriptions

1 .LED

Name	Color	Status	Description
RUN	Green	On, fast blinking (250ms blink time)	Router is powered on (System is initializing)

		On, blinking (500ms blink time)	Router starts operating
		Off	Router is powered off
USR-SIM	Green	On, solid	Main Card is being used
		On, blinking	Backup card is being used
		Off	NO SIM card
USR-NET	Green	On, solid	Network is joined successfully and worked in an optimum one
		On, blinking	Network is joined successfully but worked in a lower-level than standard
		Off	Network is not joined or joining
USR-OpenVPN	Green	On, solid	OpenVPN connection is established
		Off	OpenVPN connection is not established
USR-IPsec	Green	On, solid	IPsec connection is established



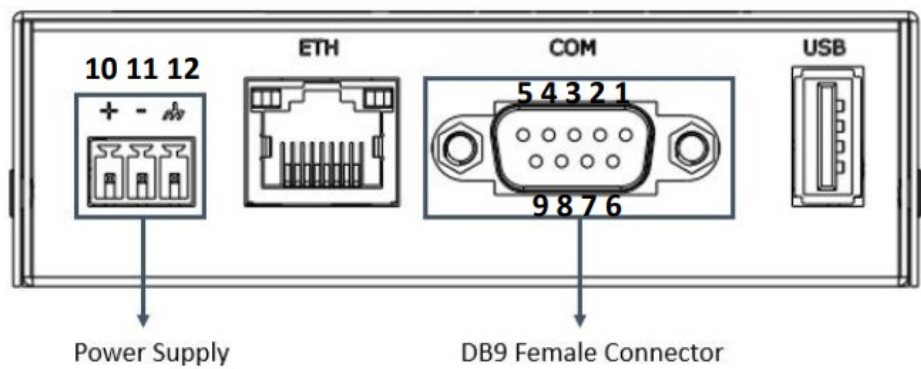
		Off	IPsec connection is not established
PPP	Green	On, solid	Link connection is established
		Off	Link connection is not established
	Green	Three lights are solid green	High signal strength (21-31) is available
		Two lights are solid green	Medium signal strength (11-20) is available
		One light is solid green	Low signal strength (1-10) is available
		Off	No signal
	<p>When the network is disconnected, those three signal LEDs are designed as a binary combination code to indicate a series of error report.</p> <p>Blinking: 1                      Off: 0 bit2 bit1 bit0</p> <p>0 0 1    AT command failed</p> <p>0 1 0    no SIM card detected</p> <p>0 1 1    need to enter the PIN code</p> <p>1 0 0    need to enter the PUK code</p> <p>1 0 1    registration failed</p> <p>1 1 0    module error</p> <p>1 1 1    not support the module</p>		

Note: You can choose the display type of USB LED. For more details, please refer to **RT123\_SM\_RobustOS Software Manual Service > Advanced > System > System Settings > User LED Type.**

2. USB Interface.

Function	Operation
Firmware upgrade	USB interface is used for batch firmware upgrading, but cannot be used for sending or receiving data from slave devices which connected to it. You can insert a USB storage device into the router's USB interface, such as a U disk or a hard disk. If there have a supported configuration file or a router firmware in this USB storage device, the router will automatically update the configuration file or the firmware. For more details, see <i>RT123_SM_RobustOS Software Manual</i> .

3. PIN Assignment



PIN	Debug (232)	RS-232	RS485 (2 Line)	Direction
1			Data+(A)	—
2		RXD		Router→Device
3		TXD		Router←Device
4	DRXD			Router←Device
5	GND	GND	GND	
6			Data-(B)	—
7		RTS		Router←Device
8		CTS		Router→Device
9	DTXD			Router→Device

#### 4. Reset Button

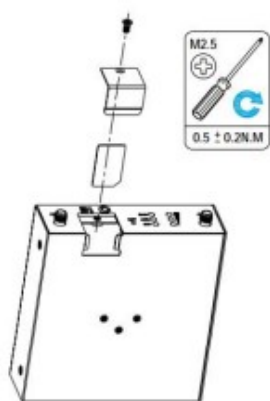
Function	Operation
Reboot	Press and hold the RST button for 2~ 5 seconds under the operating status.
Restore to default configuration	Press and hold the RST button for 5~10 seconds, the RUN LED starts blinking quickly, the router will restore to default configuration.
Restore to factory default settings	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 <b><i>RT123_SM_RobustOS Software Manual, 2.3 Factory Reset.</i></b>	

5. Ethernet Ports. R3000 Lite Router has one Ethernet port with two LED indicators. The yellow one is link indicator and the green one is speed indicator. For details about status, see the table below.

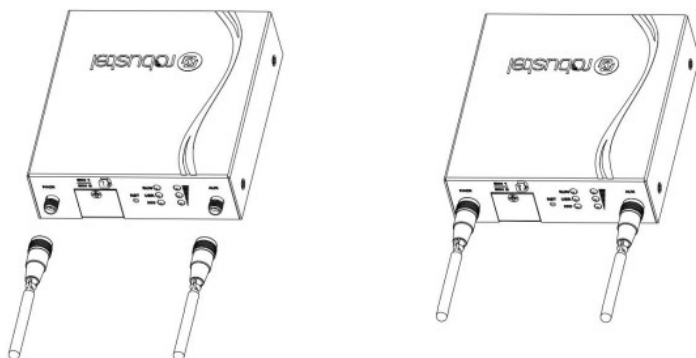
Indicator	Status	Description
Link indicator	On, solid	Connection is established
	On, blinking	Data is being transferred
	Off	Connection is not established
Speed indicator	On, solid	100 Mbps mode
	Off	10 Mbps mode

## Hardware Installation

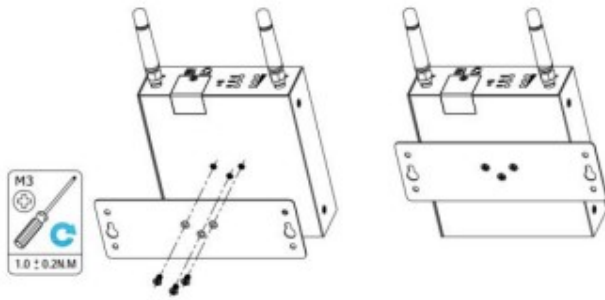
1. SIM Card Installation. Loosen the screws associated with the cover by using a screwdriver and then find the SIM card slot. Press the card with finger until you hear a click and then tighten the screws associated with the cover by using a screwdriver. Put back the cover and tighten the screws associated with the cover by using a screwdriver



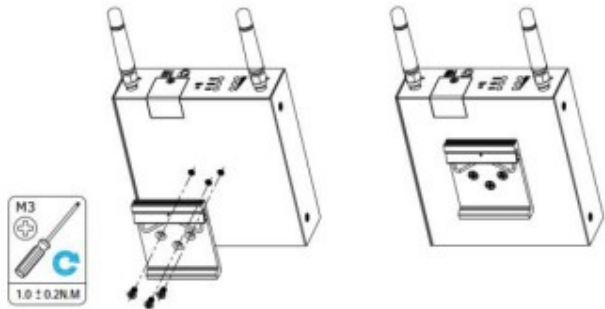
2. Antenna Installation. Rotate the antenna into the antenna connector accordingly



### 3. Mounting Kit installation. (Optional) Wall mountin



#### • DIN rail mounting

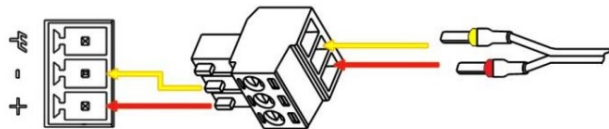


### 4. Power Supply installation. Following to the color of the head, connect the cable marked red to the positive pole through a terminal block, and connect the yellow one to the negative in the same way.

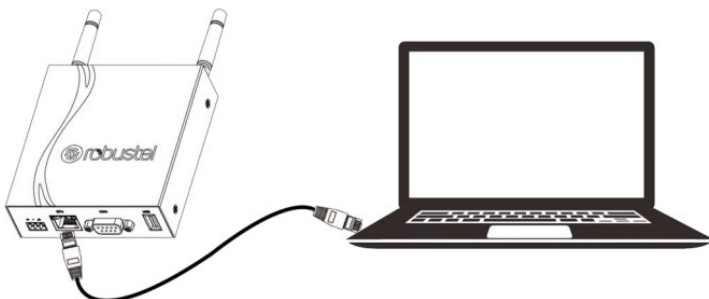
Note: The range of power voltage is 9 to 36V DC.

#### CONNECTING THE POWER CABLE

COLOR	POLARITY
RED	+
YELLOW	-

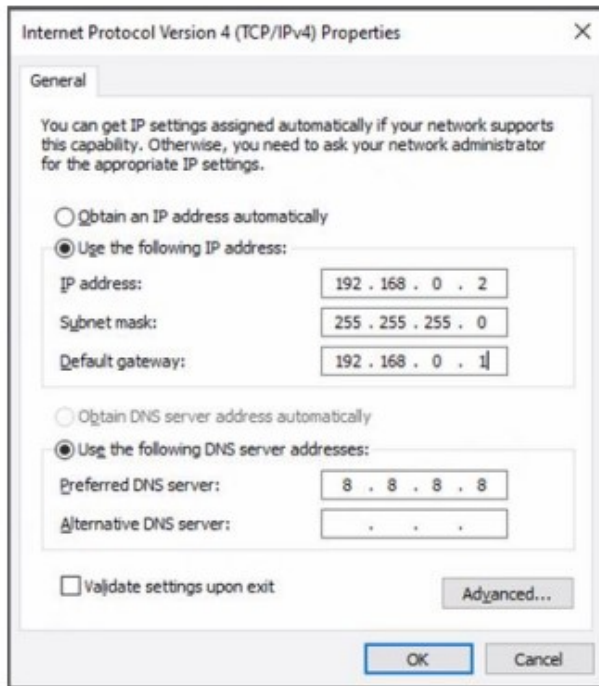


### 5. Connect the Router to a Computer. Connect an Ethernet cable to the port marked ETH at the bottom of the R3000 Lite, and connect the other end of the cable to your computer.



## Login to the Device

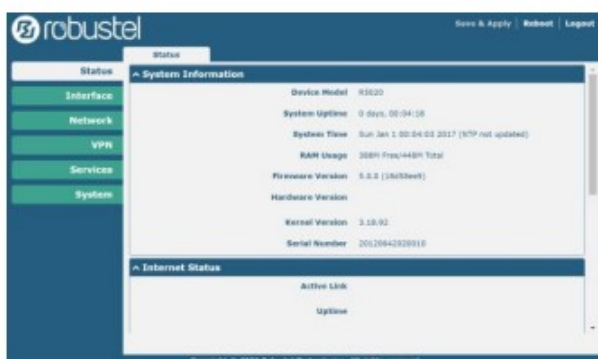
1. Connect the router's Ethernet port to a PC with a standard Ethernet cable.
2. Before logging in, manually configure the PC with a static IP address on the same subnet as the gateway address, click and configure "Use the following IP address".



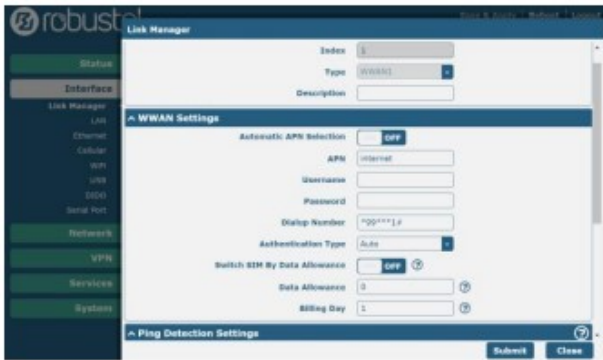
3. To enter the gateway's web interface, type <http://192.168.0.1> into the URL field of your Internet browser.
4. Use login information shown in the product label when prompted for authentication



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)

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	<p><a href="#">robustel R3000 Lite IoT VPN 4G Cellular Gateway Router</a> [pdf] User Manual</p> <p>R3000 Lite IoT VPN 4G Cellular Gateway Router, R3000 Lite, R3000 Lite Gateway Router, IoT VPN 4G Cellular Gateway Router, 4G Cellular Gateway Router, Gateway Router, Gateway, Router</p>
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**References**

- [4G/LTE/5G/Cellular Routers, Gateways and Modems for Industrial IoT - Robustel](#)
- [Certifications - Robustel](#)