Hardware Installation Quick Guide

R2000 Dual--

Industrial Dual Module Cellular VPN Router with Power over Ethernet

Package Contents

Before installing the R2000 Dual Router, verify the kit contents as following:

- 1 x Robustel R2000 Dual Industrial Dual Module Cellular VPN Router with Power over Ethernet
- 1 x Terminal block for power
- 1 x *Quick Start Guide* with download link of other documents or tools

Optional Accessories (sold separately)

- AC/DC power adapter
- POE power adapter
- SMA cellular antenna for 3G/4G LTE
- Stubby/magnet RP-SMA Wi-Fi antenna
- Wall mounting kit
- 35 mm DIN rail mounting kit

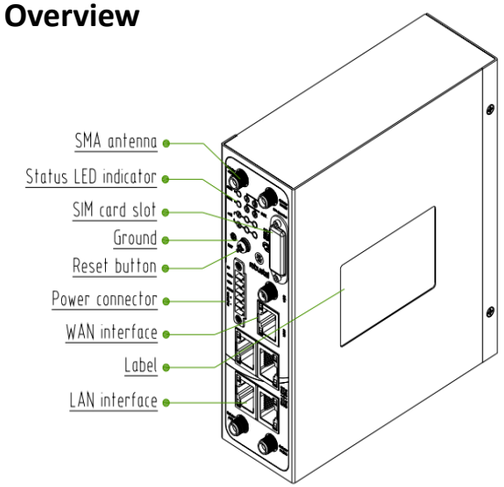
If any of the above items is missing or damaged, please contact your Robustel sales representative

Environmental Requirements

- Power input: 9 to 48V DC
- Power consumption: 100 mA@12 V in idle state;
  800 mA (peak)@12 V in communication state
- Operating temperature: -40 to 70°C
- Relative humidity: 5 to 95% RH

Hardware Introduction

Overview



CAUTION!

- Device should be in accordance with the reliable grounding to avoid lighting strike.
- Use the rated power adapter for the device, and note the power polarity when wiring.
- Pay attention to waterproof in storage, transporting and operating environment.
- Place the device on the horizontal surface.
- Damaging the product's warranty labeling cannot enjoy the free maintenance in warranty period.

Reset Button

Reboot: Press and hold the Reset button for at least 2~7 seconds under the operating status.

Restore to factory default settings: Wait for 5 seconds after powering up the router, press and hold the Reset button by a small non-conductive stick with a blunt end until all twelve LEDs blinking one by one, and release the button within 5 second to return the router to factory defaults.

Ethernet Ports

R2000 Dual Router has five Ethernet ports. Eth0 is a WAN port and Eth1~Eth4 are LAN ports supporting POE feature.

Every Ethernet port has two LED indicators, while each indicator has three states. The yellow one is **Link Indicator** and the green one doesn't mean anything. For details see the table below:

Indicator	State	Description
Link Indicator	On	Connection is working
	On, blinking	Data is being transmitted
	Off	Connection is not working

LEDs

Name	Color	State	Description
RUN	Green	On, 1/2 sec blink	Router is ready
		On, 1 sec blink	Router is booting
		Off	Router is powered off
PPP	Green	LED 1 is on	SIM1 PPP connection is working
		LED 2 is on	SIM2 PPP connection is working
USR	Green	On	OpenVPN: OpenVPN is connected IPsec: IPsec is connected Wi-Fi: Wi-Fi is connected
		Off	OpenVPN: OpenVPN is disconnected IPsec: IPsec is disconnected Wi-Fi: Wi-Fi is disconnected
NET (LED 1 stands for SIM 1, LED 2 stands for SIM 2)	Green	On, blinking green	Unable to connect to the best network. E.g. When R2000 Dual uses the 4G SIM card but cannot connect to the 4G network, the NET LED will always blink. The condition of 3G and 2G network will, too.
		On, solid green	Connect to the best network. E.g. When R2000 Dual uses the 4G SIM card and connects to the 4G network, the NET LED will turn to solid green. The condition of 3G and 2G network will, too.
		Off	Unable to access any network.
Signal Strength (Light 1 stands for SIM 1, light 2 stands for SIM 2)	Green	All LEDs are on	Signal level: 21-31 (Optimum signal level)
	Green	Two LEDs are on	Signal level: 11-20 (Average signal level)
	Green	Only one LED is on	Signal level: 1-10 (Abnormal signal level)
	When the network disconnected, those three signal LEDs are designed as a binary combination code to indicate a series of error report On: 1 Off: 0 001 AT command failed 010 no SIM card detected 011 it need to enter the PIN code 100 it need to enter the PUK code 101 registration failed 110 something wrong happened in the module		

Hardware Installation

Step 1: After opening the package, refer to the following figure to insert the SIM into the router.

Note: Recommended torque for inserting is 0.5 N.m, and the maximum allowed is 0.7N.m.

Step 2: Attach the SMA external antenna to the router's antenna interface and twist tightly.

Make sure the antenna is within the correct frequency range

Note: Recommended torque for mounting is 0.35 N.m.

Step 3: Connect the router to the site ground wire by the ground screw before powering on (Optional) .

Step 4: Connect the router's Ethernet port (Eth0/Eth1/Eth2/Eth3) to a PC via a standard cross-over cable.

Step 5: The router supports flat surface placement, wall mounting and DIN rail mounting.

Wall mounting:

Use 4 pcs of M2.5*4 flat head Phillips screws to fix the wall mounting kits to the router, and then use 2 pcs of M3 drywall screws to mount the router associated with the wall mounting kit on the wall.

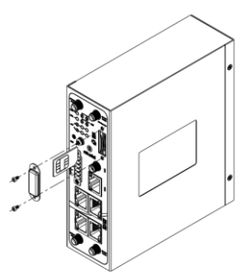
Note: Recommended torque for mounting is 0.5 N.m and the maximum allowed is 0.7 N.m.

Din rail mounting:

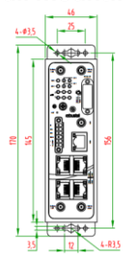
Use 3 pcs of M3*6 flat head Phillips screws to fix the DIN rail to the router, and then hang the DIN rail on the bracket. It is necessary to choose the standard bracket.

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

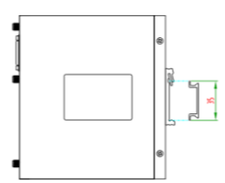
Insert SIM card



Wall mounting



DIN rail mounting

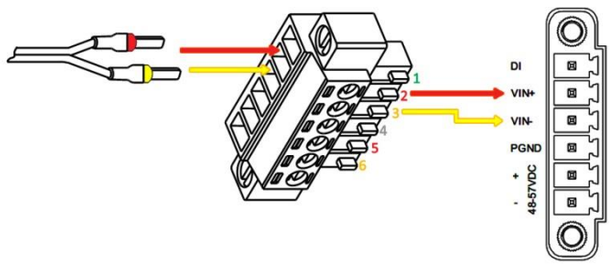


Step 6: R2000 Dual Router supports reverse polarity protection, but always refers to the figure below to connect the power adapter correctly. There are two cables associated with the power adapter. Following to the color of the head, connect the cable marked red to the positive pole through a terminal block, and connect the yellow one to the negative in the same way.

Note: The range of power voltage is 9 to 48V DC.

CONNECTING THE REGULAR POWER SUPPLY

COLOR	POLARITY
RED	+
YELLOW	-

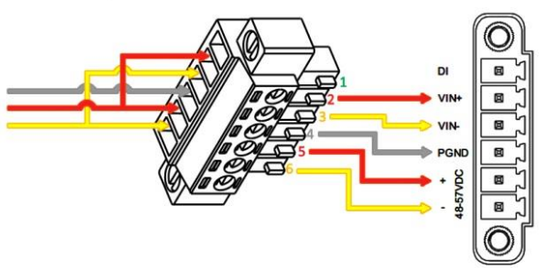


Step 7: R2000 Dual Router also supports POE feature. Please refer to the figure below to connect the power adapter correctly.

Note: The range of power voltage is 48 to 57V DC.

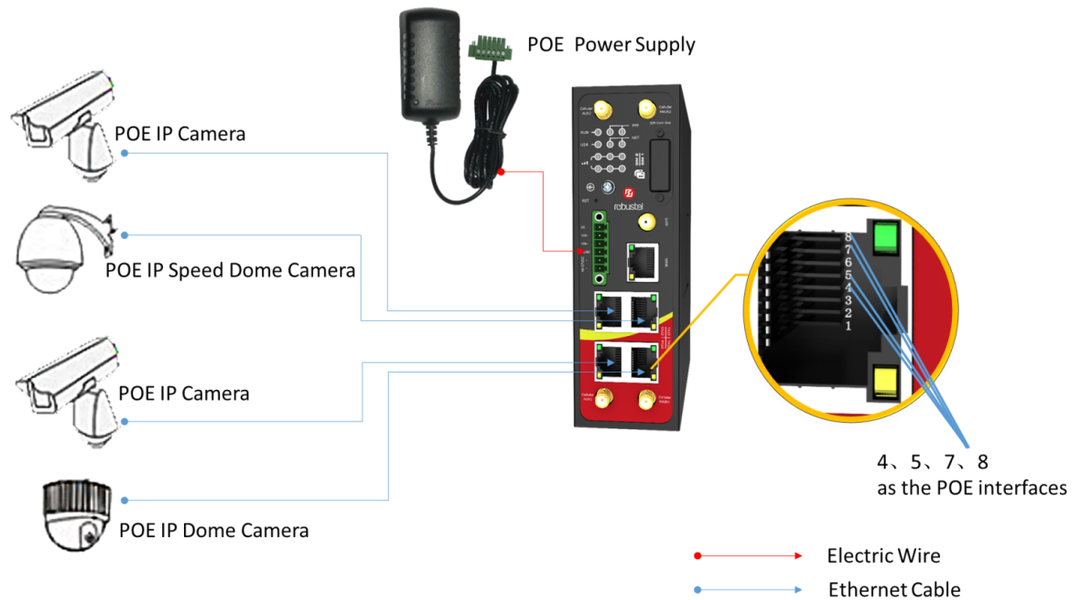
POE CONNECTION

PIN	NAME
1	DI
2	VIN+
3	VIN-
4	PGND
5	POE+
6	POE-



POE Connection (OPTIONAL)

R2000 Dual's four fast Ethernet LAN ports support POE feature (Voltage range: 48 to 57V DC), which can electrify the network terminal devices such as IP camera and other WLAN AP etc. See figure below for more details.



E-mail: support@robustel.com
Web: www.robustel.com