






Introduction

The **IMG-6322GT** is an innovative IEEE802.11 a/b/g/n VPN gateway with one RS-422/485 port, one RS-232/422/485 port, and two 10/100/1000Base-T(X) ports. The combination of two serial ports and two Ethernet port allows the device to connect to serial devices and networked devices at the same time. With a built-in 3.5G/4G cellular modem, the device can be configured to connect to the Internet via 3.5G or 4G connections based on the client's needs. The **IMG-6322GT** is also able to act as a Modbus gateway to convert signals between different Modbus protocols such as Modbus TCP and Modbus RTU via wired or wireless interface. By transferring SSL-encrypted data to up to five host PCs simultaneously, the **IMG-6322GT** assures all critical data is saved in different host PCs to avoid Ethernet downtime or host PC failure.

Package Contents




The device is shipped with the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.

Contents	Pictures	Number
IMG-6322GT-3G/4G		X 1
CD		X 1
QIG		X 1
Mounting Kit		X 2
2.4GHz/5GHz Antenna		X 2
Cellular Antenna		X 1

Preparation

Before you begin installing the device, make sure you have all of the package contents available and a PC with Microsoft Internet Explorer 6.0 or later, for using web-based system management tools.

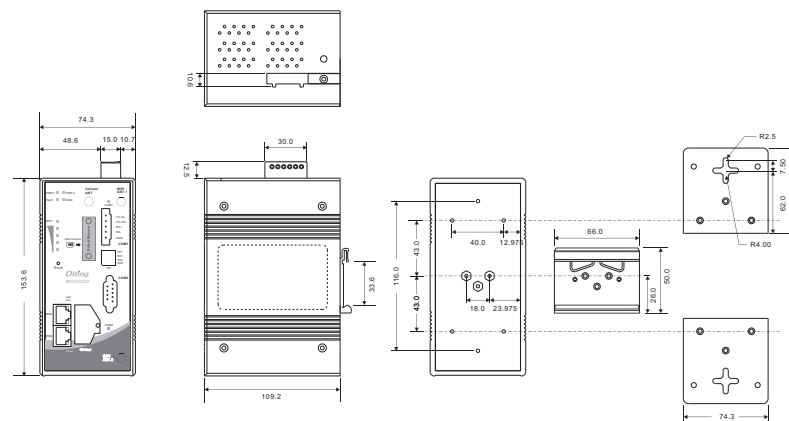
Safety & Warnings

-  **Elevated Operating Ambient:** If installed in a closed environment, make sure the operating ambient temperature is compatible with the maximum ambient temperature (T_{ma}) specified by the manufacturer.
-  **Reduced Air Flow:** Make sure the amount of air flow required for safe operation of the equipment is not compromised during installation.
-  **Mechanical Loading:** Make sure the mounting of the equipment is not in a hazardous condition due to uneven mechanical loading.

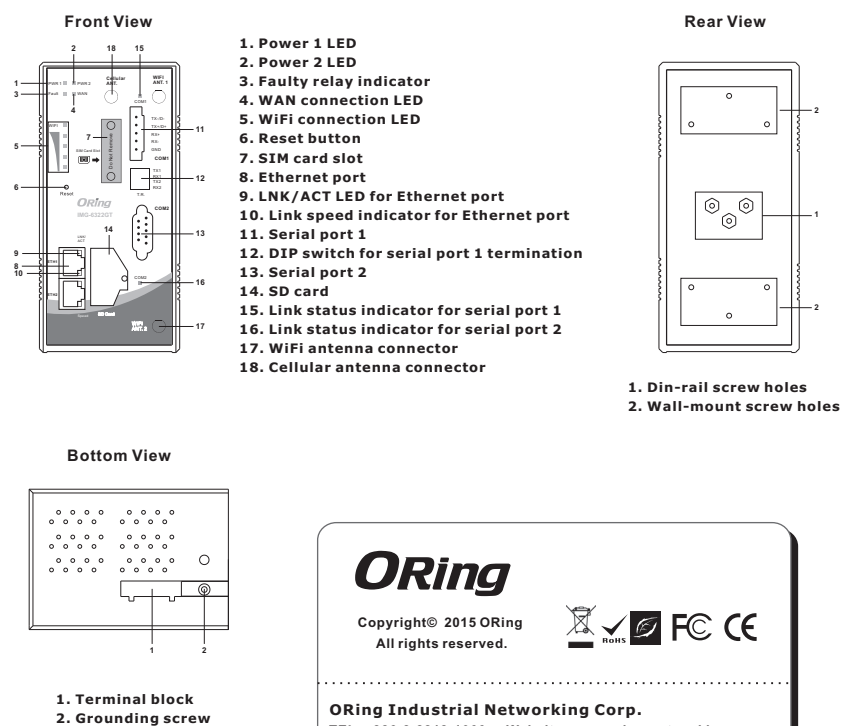


Circuit Overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Dimension



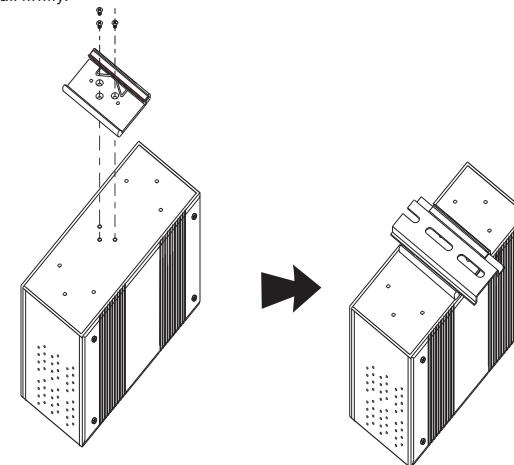
Panel Layouts



Installation

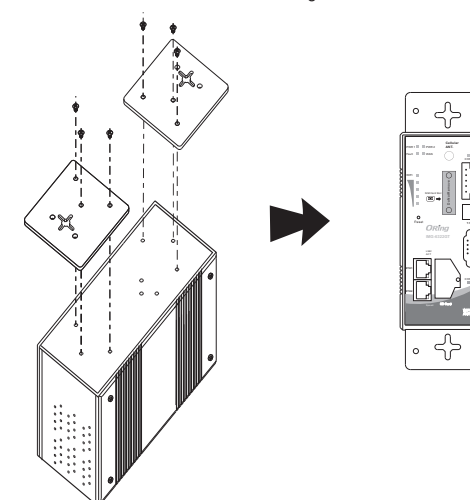
DIN-rail Installation

Step 1: Slant the switch and screw the Din-rail kit onto the back of the switch, right in the middle of the back panel.
Step 2: Slide the switch onto a DIN-rail from the Din-rail kit and make sure the switch clicks into the rail firmly.



Wall-mounting

Step 1: Screw the two pieces of wall-mount kits onto both ends of the rear panel of the switch. A total of six screws are required, as shown below.
Step 2: Use the switch, with wall mount plates attached, as a guide to mark the correct locations of the wall-mounting screws.
Step 3: Insert a screw head through the large part of the keyhole-shaped aperture on the plate, and then slide the switch downwards. Tighten the screw for added stability.



Network Connection

The device has two 10/100/1000Base-T(X) Ethernet ports. According to the link type, the device uses CAT3, 4, 5e, UTP cables to connect to any other network device (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

ORing

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Cable Types and Specifications:

Cable	Type	Max. Length	Connector
10Base-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	RJ-45
100Base-TX	Cat. 5 100-ohm UTP	UTP 100 m (328 ft)	RJ-45
1000Base-T	Cat. 5/Cat 5e 100-ohm UTP	UTP 100 m (328 ft)	RJ-45

For pin assignments for different types of cables, please refer to the following tables.

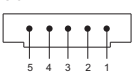
10/100/1000 Base-T(X) RJ-45		1000Base-T RJ-45 port	
Pin Number	Assignment	Pin Number	Assignment
1	TD+	# 1	BI_DA+
2	TD-	# 2	BI_DA-
3	RD+	# 3	BI_DB+
4	Not used	# 4	BI_DC+
5	Not used	# 5	BI_DC-
6	RD-	# 6	BI_DB-
7	Not used	# 7	BI_DD+
8	Not used	# 8	BI_DD-

10/100 Base-T(X) MDI/MDI-X			1000Base-T RJ-45		
Pin Number	MDI port	MDI-X port	Pin Number	MDI port	MDI-X port
1	TD+(transmit)	RD+(receive)	1	BI_DA+	BI_DB+
2	TD-(transmit)	RD-(receive)	2	BI_DA-	BI_DB-
3	RD+(receive)	TD+(transmit)	3	BI_DB+	BI_DA+
4	Not used	Not used	4	BI_DC+	BI_DD+
5	Not used	Not used	5	BI_DC-	BI_DD-
6	RD-(receive)	TD-(transmit)	6	BI_DB-	BI_DA-
7	Not used	Not used	7	BI_DD+	BI_DC+
8	Not used	Not used	8	BI_DD-	BI_DC-

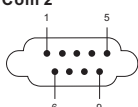
Note: "+" and "-" signs represent the polarity of the wires that make up each wire pair.

Serial Port Pin Definition

Com 1



Com 2



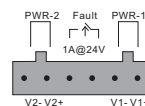
Pin #	RS-232	RS-422	RS-485 (4 wire)	RS-485 (2 wire)
1	DCD	TXD -	TXD -	DATA-
2	RXD	TXD +	TXD +	DATA+
3	TXD	RXD +	RXD +	
4	DTR	RXD -	RXD -	
5	GND	GND	GND	
6	DSR			
7	RTS			
8	CTS			
9	RI			

RS 232 mode act as DTE

Wiring

Power inputs

The switch supports dual redundant power supplies, Power Supply 1 (PWR1) and Power Supply 2 (PWR2). The connections for PWR1, PWR2 and the RELAY are located on the terminal block. **STEP 1:** Insert the negative/positive wires into the V-/V+ terminals, respectively. **STEP 2:** To keep the DC wires from pulling loose, use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.



Relay contact

The two sets of relay contacts of the 6-pin terminal block connector are used to detect user-configured events. The two wires attached to the fault contacts form a close circuit when a user-configured event is triggered. If a user-configured event does not occur, the fault circuit remains opened.

Grounding

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the ground screws to the grounding surface prior to connecting devices.

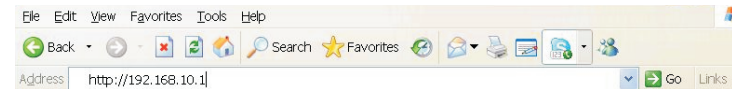
Configurations

After installing the switch, the green power LED should turn on. Please refer to the following table for LED indication.

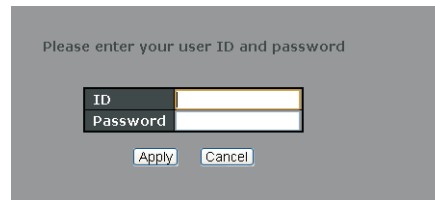
LED	Color	Status	Description
PWR1/2	Green	On	Power is on and function normally
COM 1/2	Green	On	Port is sending data
	Red	On	Port is receiving data
10/100/1000Base-T(X) Ethernet ports			
LNK/ACT	Green	On	Port is connected
	Green	Blinking	Transmitting data
Speed	Green	On	Port running at 1000Mbps.
	Amber	On	Port running at 100Mbps.
	Green/ Amber	Off	Port running at 10Mbps.
Fault	Amber	On	Faulty relay (power failure or port disconnected)
	Green	On	WLAN is activated (Strength: 1<25%, 2<50%, 3<75%, 4<100%)
WLAN	Green	Blinking	Transmitting data
	Green	On	Module detected
WAN	Green	Blinking	Module being activated

Follow the steps to set up the card:

1. Launch the Internet Explorer and type in IP address of the switch. The default static IP address is **192.168.10.1**



2. Log in with default user name and password (both are admin).



3. After logging in, you should see the following screen. For more information on configurations, please refer to the user manual. For information on operating the device using ORing's Open-Vision management utility, please go to ORing website.

Resetting

To restore the switch configurations back to the factory defaults, press the **Reset** button for 5 seconds.

Specifications

ORing M2M Model	IMG-6322GT-3G	IMG-6322GT-4G
Physical Ports		
10/100/1000Base-T(X) Ports in Auto MDI/MDIX		2
SIM card slot		1
Cellular interface		
Cellular Standard	GSM / GPRS / EGPRS / EDGE / WCDMA / HSDPA / HSUPA	GSM / GPRS / EGPRS / EDGE / WCDMA / HSDPA / HSUPA / HSPA+ / LTE

Band options	Dual-band : HSUPA 1900/2100 MHz Quad-band : GSM/GPRS/EDGE 850/900/1800/1900 MHz WCDMA/HSDPA 850/900/1900/2100 MHz	America (US) LTE: 700/1700/2100MHz UMTS/HSDPA/HSUPA/HSPA+/DC-HSPA+ : 800/850/1900/2100MHz GSM/GPRS/EDGE : 850/900/1800/1900MHz Europe (EU) LTE: 700/1700/2100/2600MHz UMTS/HSDPA/HSUPA/HSPA+/DC-HSPA+ : 900/2100MHz GSM/GPRS/EDGE : 900/1800/1900MHz
Antenna Connector (Reverse SMA Female)	1	
Antenna Connector (SMA Female)		1
WLAN Feature		
Antenna Connector	Reverse SMA Female connector x2	
Radio Frequency Type	DSSS, OFDM	
Modulation	IEEE802.11a : OFDM with BPSK, QPSK, 16QAM, 64QAM IEEE802.11b : CCK, DQPSK, DBPSK IEEE802.11g : OFDM with BPSK, QPSK, 16QAM, 64QAM IEEE802.11n : BPSK, QPSK, 16-QAM, 64-QAM	
Frequency Band	America / FCC : 2.412~2.462 GHz (11 channels) 5.180~5.240 GHz & 5.745~5.825 GHz (9 channels) Europe CE / ETSI : 2.412~2.472 GHz (13 channels) 5.180~5.240 GHz (4 channels)	
Transmission Rate	IEEE802.11b: 1 / 2 / 5.5 / 11 Mbps IEEE802.11a/g: 6 / 9 / 12 / 18 / 24 / 36 / 48 / 54 Mbps IEEE802.11n: up to 300Mbps	
Transmit Power	802.11a: 12dBm ± 1.5dBm 802.11b: 17dBm ± 1.5dBm 802.11g: 16dBm ± 1.5dBm 802.11gn HT20: 15dBm ± 1.5dBm@150Mbps 802.11gn HT40: 14dBm ± 1.5dBm@300Mbps 802.11an HT20: 12dBm ± 1.5dBm@150Mbps 802.11an HT40: 11dBm ± 1.5dBm@300Mbps	
Receiver Sensitivity	802.11a: -76dBm ± 2dBm@54Mbps 802.11b: -85dBm ± 2dBm@11Mbps 802.11g: -76dBm ± 2dBm@54Mbps 802.11gn HT20: -75dBm ± 2dBm@150Mbps 802.11gn HT40: -72dBm ± 2dBm@300Mbps 802.11an HT20: -74dBm ± 2dBm@150Mbps 802.11an HT40: -71dBm ± 2dBm@300Mbps	
Encryption Security	WEP: (64-bit ,128-bit key supported) WPA/WPA2 :802.11i(WEP and AES encryption) WPAPSK (256-bit key pre-shared key supported) 802.1X authentication supported TKIP encryption	
Wireless Security	SSID broadcast disable and enable	
Serial Ports		
Connector	Terminal Block x 1 (Port 1), DB9 male x 1 (Port 2)	
Operation Mode	Port 1 : RS-422/RS-485(2W/4W), Which can be configured by utility Port 2 : RS-232/RS-422/RS-485(2W/4W), Which can be configured by utility	
Serial Baud Rate	110 bps to 921.6 Kbps	
Data Bits	7, 8	
Parity	odd, even, none, mark, space	
Stop Bits	1, 1.5, 2	
RS-232	Tx, Rx, RTS, CTS, DTR, DSR, DCD, RI, GND	
RS-422	Tx-, Tx+, Rx-, Rx-, GND	
RS-485	4 wire: Tx+, Tx-, Rx+, Rx-, GND 2 wire: D+, D-	
Power		
Redundant Input power	Dual DC inputs. 12~48VDC on 6 pin terminal block	
Power Consumption(Typ.)	10 Watts	10.5 Watts
Overload current protection	Present	
Reverse polarity protection	Present	
Physical Characteristic		
Enclosure	IP-30	
Dimension (W x D x H)	74.3 (W) x 109.2 (D) x 153.6(H)mm (2.93x4.30x6.05 inch.)	
Weight (g)	1050g	
Environmental		
Storage Temperature	-40 to 85°C (-40 to 185°F)	
Operating Temperature	-25 to 70°C (-13 to 158°F)	
Operating Humidity	5% to 95% Non-condensing	
Regulatory Approvals		
EMI	FCC Part 15, CISPR (EN55022) class A	
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11	
Shock	IEC60068-2-27	
Free Fall	IEC60068-2-32	
Vibration	IEC60068-2-6	
Safety	EN60950-1	
Warranty	5 years	