

## Industrial IoT LTE LPWAN Gateway with IEEE 802.11 b/g/n and 2x10/100Base-T(X) 1xRS-232/422/485

### Features

- Provide 2x10/100Base-T(x) port and single SIM card slot
- **LTE CAT-M1/CAT-NB1 modem included**
- Support 1xRS-232/422/485 in DB9 connector
- **Support MQTT/LWM2M\* IoT protocol**
- **Support Modbus TCP/RTU industrial protocol**
- High Speed Air Connectivity: WLAN interface support 802.11 b/g/n up to 150Mbps link speed
- Support DHCP forwarding through PPTP function
- Versatile modes & event alarm by e-mail.
- Event warning by Syslog, Email, SNMP Trap
- Redundant multiple host devices:  
5 host devices: Virtual COM, TCP Server, TCP Client mode, UDP mode(4 IP Ranges)
- 12~48VDC power input on terminal block
- 1KV isolation for PoE P.D. (IMG-4312+-MN)
- Rigid IP-30 housing design
- Din-Rail and panel mounting enabled.
- Support OpenWRT SDK for project

\*under Development

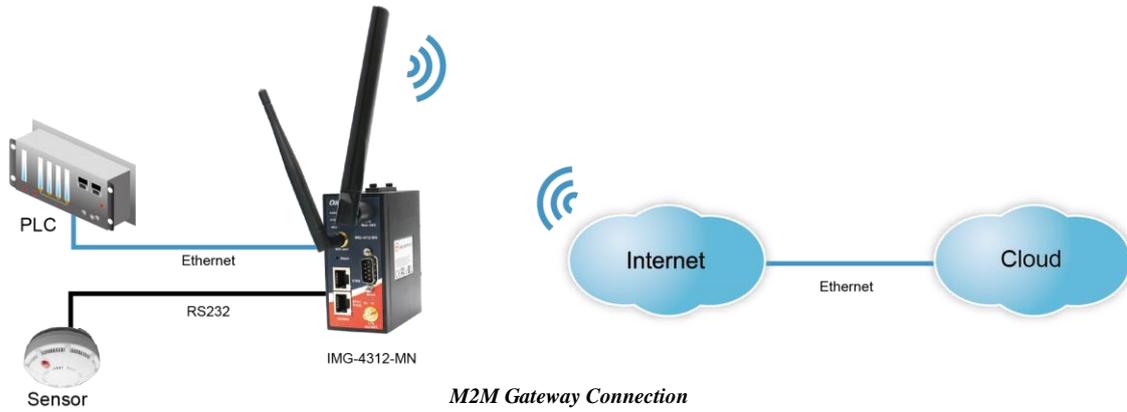


### Introduction

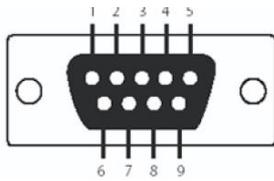
IMG-4312 LPWAN series is an innovative 1 port RS-232/422/485 and LTE LPWAN IoT Gateway with 2 port 10/100Base-T(X) port. IMG-4312 also provide IEEE802.11 b/g/n WiFi interface which has 150Mbps link speed. It could be configured to connect to the Internet by dialing up LTE Cat-M1/CAT-NB1 cellular modem to fulfill demands of various applications rapidly. In addition, IMG-4312+ also provides P.D. feature on ETH1 port which is fully compliant with IEEE802.3af PoE P.D. specification. Therefore, IMG-4312 is one of the best solutions for applications of wireless and serial communication.

## Application

IMG-4312 supports LTE Cat-M1 or Cat-NB Modem dial up. The utility- M2M-Tool which is used to manage and monitor all of the serial ports on IMG-4312.



## Pin Definition

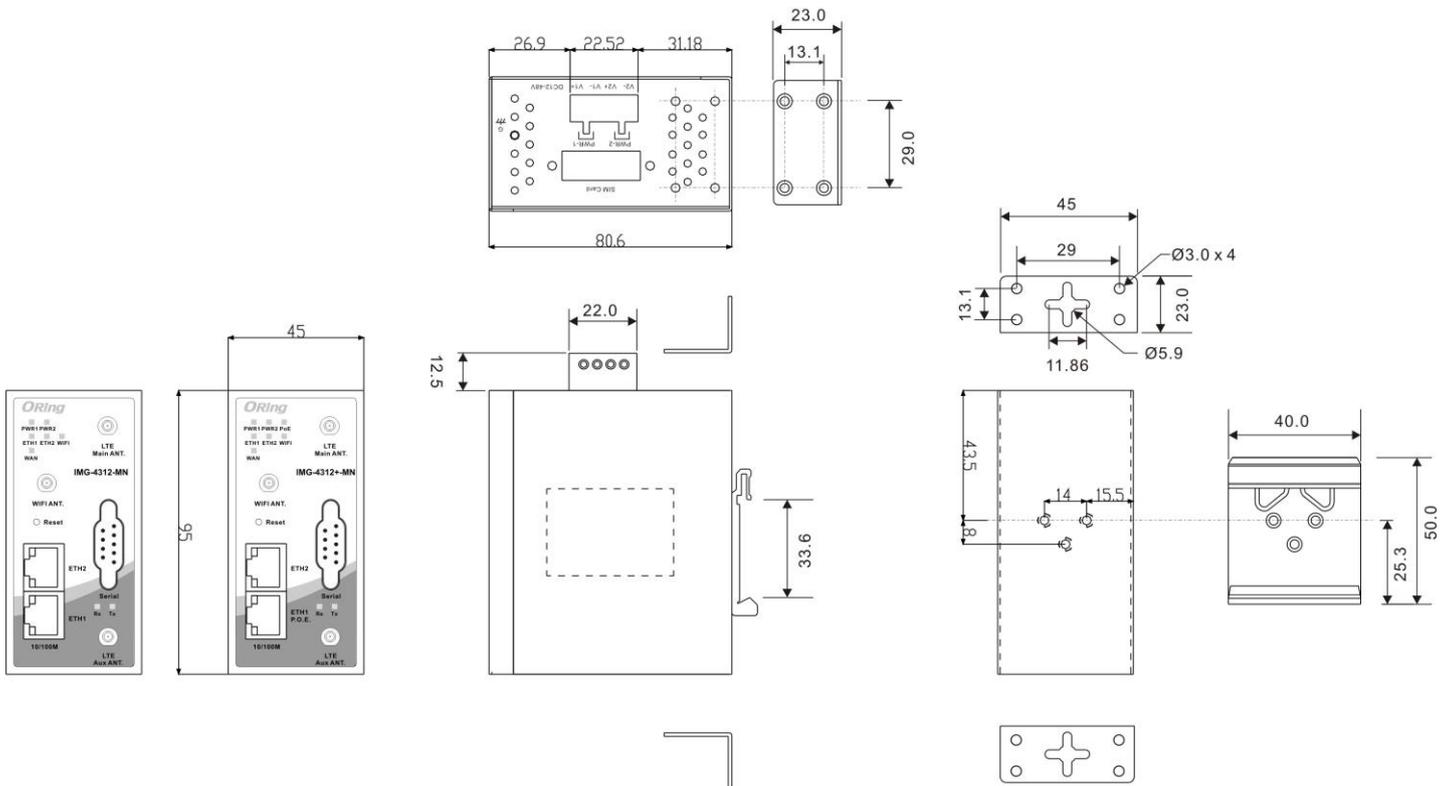


**DB9 connector**

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

## Dimension

Dimension (Unit =mm)



## Specifications

ORing Device Server Model	IMG-4312-MN
<b>Physical Ports</b>	
10/100 Base-T(X) Ports in RJ45 Auto MDI/MDIX	2
PoE P.D Port (for IMG-4312+-MN model)	P.O.E.Present at ETH1 Power Device (IEEE 802.3af): IEEE 802.3af compliant input interface Over load & short circuit protection Isolation Voltage: 1000 VDC min. Isolation Resistance : 10 <sup>8</sup> ohms min
Sim card slot	1
<b>Cellular Interface</b>	
Antenna Connector	1 x SMA Female
Cellular Standard	LTE Cat-M1/Cat-NB1
Download/Upload Rate	LTE Cat-M1:300 / 375 Kbps LTE Cat-NB1: 32 / 70 Kbps
Band options	<b>LTE Cat-M1/Cat-NB1 :</b> LTE FDD:

	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 <b>LTE Cat-M1 :</b> LTE TDD :B39
<b>Wifi Interface</b>	
Antenna Connector	1 x RP-SMA Female
Modulation	IEEE802.11b: CCK/DQPSK/DBPSK IEEE802.11g: OFDM IEEE802.11n: BPSK, QPSK, 16-QAM, 64-QAM
Frequency Band	America / FCC: 2.412~2.462 GHz ( 11 channels ) Europe CE / ETSI: 2.412~2.472 GHz ( 13 channels )
Transmission Rate	802.11b: 1/2/5.5/11 Mbps 802.11g: 6/9/12/18/24/36/48/54 Mbps 802.11n(40MHz): UP to 150 Mbps
Transmit Power	802.11b: 19dBm ±1.5dBm 802.11g: 17dBm ±1.5dBm 802.11n(2.4G@20MHz): 16dBm ±1.5dBm 802.11n(2.4G@40MHz): 14dBm ±1.5dBm
Receiver Sensitivity	802.11b: -90dBm ±2dBm@1Mbps 802.11g: -72dBm ±2dBm@54Mbps 802.11n(2.4G@40MHz,MCS7): -68dBm ±2dBm
Encryption Security	WEP: (64-bit ,128-bit key supported) WPA/WPA2 :802.11i(WEP and AES encryption) WPA-PSK (256-bit key pre-shared key supported) 802.1X Authentication supported TKIP encryption
<b>Serial Ports</b>	
Connector	DB9 x 1
Operation Mode	RS-232/422/485
Serial Baud Rate	110 bps to 115.2 Kbps
Data Bits	7, 8
Parity	odd, even, none, mark, space
Stop Bits	1, 1.5, 2
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
Flow Control	XON/XOFF, RTS/CTS, DTR/DSR
<b>Network Protocol</b>	
Protocol	ICMP, IP, TCP, UDP, DHCP, BOOTP, SSH, DNS, SNMP V1/V2c, HTTPS, SMTP, DDNS, PPPoE
<b>LED indicators</b>	
Power indicator	3 x LEDs, PWR 1(2)(PoE) / Ready: Green On: Power is on
10/100TX RJ45 port indicator	2 x LEDs, Green for port Link/Act at 100Mbps.
Serial TX / RX LEDs:	Red: Serial port is receiving data Green: Serial port is transmitting data
WIFI LED	1 x LED, Green: WIFI Link /ACT
WAN LED	1 x LED, Green On : Power is on and functioning Normal
<b>Power</b>	
Redundant Input power	Dual DC inputs. 12-48VDC on 6-pin terminal block
Power consumption (Typ.)	3.5W
Overload current protection	Present
Reverse polarity protection	Present on terminal block
<b>Physical Characteristic</b>	
Enclosure	IP-30
Dimension (W x D x H)	45(W)x80.6(D)x95(H) mm
Weight (g)	372
<b>Environmental</b>	
Storage Temperature	-40 to 85°C (-40 to 185°F)

Operating Temperature	-10 to 60°C (14 to 140°F)
Operating Humidity	5% to 95% Non-condensing
<b>Regulatory approvals</b>	
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	IEC60068-2-31
Vibration	IEC60068-2-6
Safety	EN60950-1
<b>Warranty</b>	3 years

## ❏ Packing List

- **IMG-4312-MN x 1**
- **Wall-Mount Kit x 1**
- **2.4G WiFi antenna x 1**
- **CD x 1**
- **Din-Rail Kit x 1**
- **Cellular antenna x 2**
- **Quick Installation Guide x 1**

## ❏ Optional Accessories

- **DR-45 series : 45 Watts power supply**
- **DR-120 series : 120 Watts power supply**
- **DR-75 series : 75 Watts power supply**