# ORing

# *IMG-4312-3G series*

## *Industrial IEEE 802.11 b/g/n 3G Cellular Router with 2x10/100Base-T(X) 1x RS-232/422/485 Gateway*

### Features

- ➢ Provide 2x10/100Base-T(x) port and single SIM card slot
- ➢ High Speed Air Connectivity: WLAN interface support up to 150Mbps link speed
- ➢ 3.5G HSDPA Modem dial up included
- ➢ Support Open VPN, PPTP VPN
- ➢ Support DHCP forwarding through PPTP function
- ➢ Update DNS Hostname: DDNS
- ➢ Versatile modes & event alarm by e-mail.
- ➢ Event warning by Syslog, Email, SNMP Trap
- ➢ Support DNP 3
- ➢ 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+-3G)
- ➢ Rigid IP-30 housing design
- ➢ Din-Rail and panel mounting enabled.
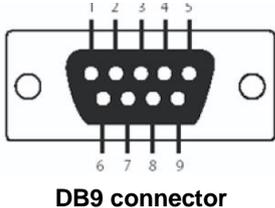- ➢ Support OpenWRT SDK for project

### Introduction

   IMG-4312-3G is an innovative 1 port RS-232/422/485 and 3G cellular Gateway with 2 port 10/100Base-T(X) port. IMG-4312-3G also provide IEEE802.11 b/g/n wifi interface which have 150Mbps link speed. It could be configured to connect to the internet by dialing up 2G/3G cellular modem to fulfill demands of various applications rapidly a. In addition, IMG-4312-3G can also transfer data into 5 host PCs simultaneously for backup purposes. In addition, IMG-4312+-3G also provides P.D. feature on ETH1 port which is fully compliant with IEEE802.3af PoE P.D. specification  Therefore, IMG-4312-3G is one of the best solutions for applications of wireless and serial communication.

### Application

   IMG-4312-3G support 2G/3G Modem dial up. The utility- M2M-Tool which is used to manage and monitor all of the serial ports on IMG-4312-3G.
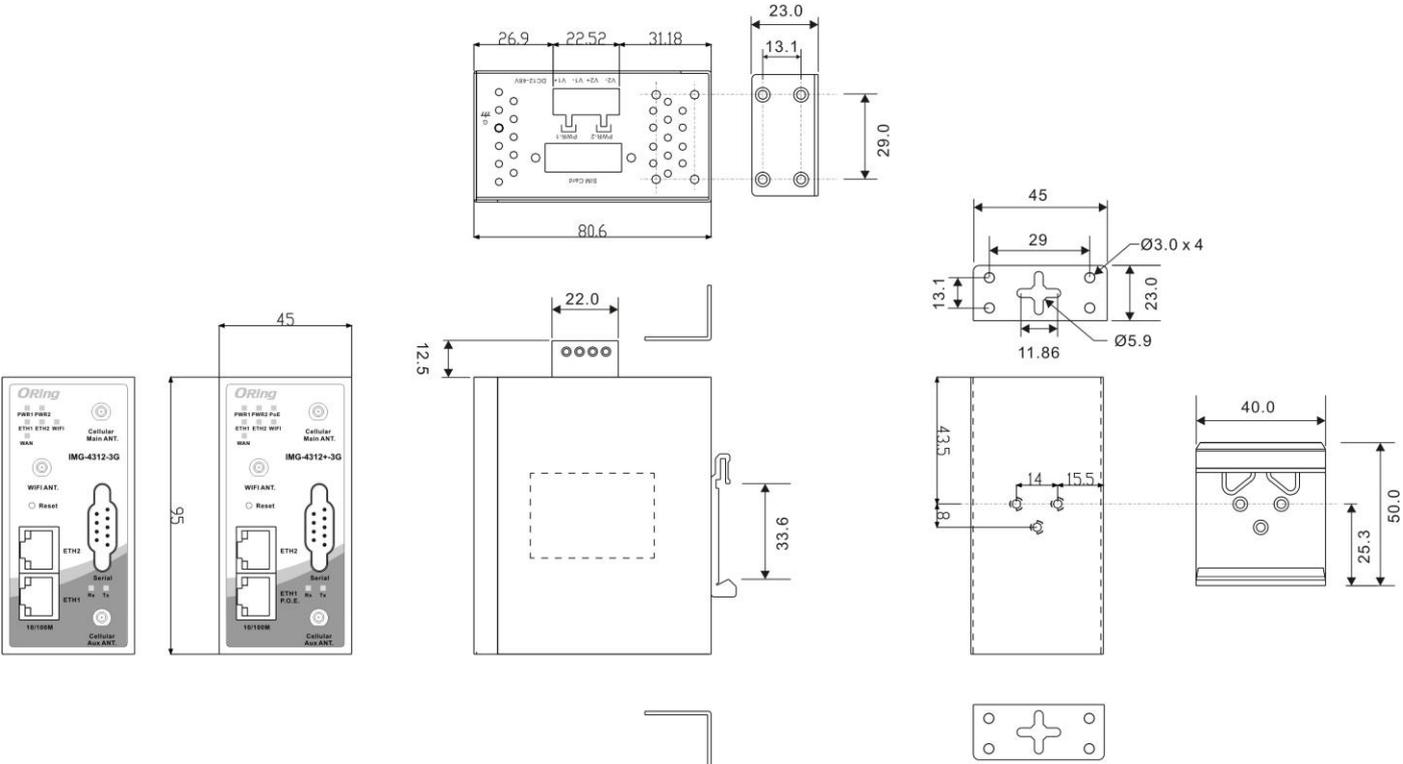
*M2M Gateway Connection*

## 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-4312-3G | IMG-4312+-3G |
|---|---|---|
| **Physical Ports** | | |
| 10/100 Base-T(X) Ports in RJ45 Auto MDI/MDIX | 2 | |
| PoE P.D Port | | P.O.E.Present at ETH1<br>Power Device (IEEE 802.3af):<br>  IEEE 802.3af compliant input interface<br>  Over load & short circuit protection<br>  Isolation Voltage: 1000 VDC min.<br>  Isolation Resistance : $10^8$ ohms min |
| Sim card slot | 1 | |
| **Cellular Interface** | | |
| Antenna Connector | 2 x RP-SMA Female | |
| Cellular Standard | GSM / GPRS/ EGPRS/ EDGE / WCDMA / HSDPA / HSUPA | |
| Band Option | Dual-band : HSUPA 1900/2100 MHz<br>Quad-band : GSM/GPRS/EDGE 850/900/1800/1900 MHz<br>WCDMA/HSDPA 850/900/1900/2100 MHz | |
| **Wifi Interface** | | |
| Antenna Connector | 1 x RP-SMA Female | |
| Modulation | IEEE802.11b: CCK/DQPSK/DBPSK<br>IEEE802.11g: OFDM<br>IEEE802.11n: BPSK, QPSK, 16-QAM, 64-QAM | |
| Frequency Band | America / FCC:<br>2.412~2.462 GHz (11 channels )<br>Europe CE / ETSI:<br>2.412~2.472 GHz ( 13 channels ) | |
| Transmission Rate | 802.11b: 1/2/5.5/11 Mbps<br>802.11g: 6/9/12/18/24/36/48/54 Mbps<br>802.11n(40MHz): UP to 150 Mbps | |
| Transmit Power | 802.11b: 19dBm ±1.5dBm<br>802.11g: 17dBm ±1.5dBm<br>802.11n(2.4G@20MHz): 16dBm ±1.5dBm<br>802.11n(2.4G@40MHz): 14dBm ±1.5dBm | |
| Receiver Sensitivity | 802.11b: -90dBm ±2dBm@1Mbps<br>802.11g: -72dBm ±2dBm@54Mbps<br>802.11n(2.4G@40MHz,MCS7): -68dBm ±2dBm | |
| Encryption Security | WEP: (64-bit ,128-bit key supported)<br>WPA/WPA2 :802.11i(WEP and AES encryption)<br>WPA-PSK (256-bit key pre-shared key supported)<br>802.1X Authentication supported<br>TKIP encryption | |
| **Serial Ports** | | |
| 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 | |
| **Network Protocol** | | |
| Protocol | ICMP, IP, TCP, UDP, DHCP, BOOTP, SSH, DNS, SNMP V1/V2c, HTTPS, SMTP, DDNS, PPPoE | |
| **LED indicators** | | |

| | | |
|---|---|---|
| Power indicator | 3 x LEDs, PWR 1(2)(PoE) / Ready:<br>    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<br>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 | |
| **Power** | | |
| Redundant Input power | Dual DC inputs. 12-48VDC on 6-pin terminal block | |
| Power consumption (Typ.) | 4.8W | 5.3W |
| Overload current protection | Present | |
| Reverse polarity protection | Present on terminal block | |
| **Physical Characteristic** | | |
| Enclosure | IP-30 | |
| Dimension (W x D x H) | 45(W)x80.6(D)x95(H) mm | |
| Weight (g) | 368 | 372 |
| **Environmental** | | |
| 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 | |
| **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 | |

## Packing List

- **IMG-4312-3G x 1**
- **Wall-Mount Kit x 1**
- **2.4G wifi antenna x 1**
- **CD x 1**
- **Din-Rail Kit x 1**
- **3G 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**