

Quick Installation Guide

TGAR-W1061+ Series






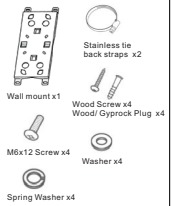
EN50155 Industrial IP-67 PoE
Outdoor Cellular Router

Introduction

The **TGAR-W1601+ series** are reliable outdoor routers with 802.11 a/b/g/n wireless support and a Gigabit LAN port with PoE P.D. in M12 connector. With EN50155 compliance and M12 connector to ensure tight and robust connections, the device guarantees reliable operation against environmental disturbances, such as vibration and shock, and are ideal for rolling stock applications. The router comes with an IP-67 waterproof housing to protect it from damage in harsh weather when installed outdoors. Featuring two N-Type connectors for wireless connection, the device is ideal for the toughest industrial environments. In addition, the LAN port of the devices is PoE-enabled, allowing the device to be powered over the existing network cable. Consisting of 3G and 4G models, the series of devices can be configured to operate in 3 modes of routing function: dynamic/static IP route, PPPoE authentication, and cellular modem dial up. Users can set up WLAN environment to fulfill demands of various applications rapidly by dialing up cellular modem.

Package Contents





The **TGAR-W1061+ Series** are 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
TGAR-W1601+-3G/4G-M12		1
CD		1
2.4GHz/5GHz Antenna		2
Cellular Antenna		1
QIG		1
Mounting Installation Package	 <ul style="list-style-type: none"> Wall mount x1 Wood Screw x4 M6x12 Screw x4 Spring Washer x4 Stainless tie back straps x2 Wood/ Gyprock Plug x4 Washer x4 	1

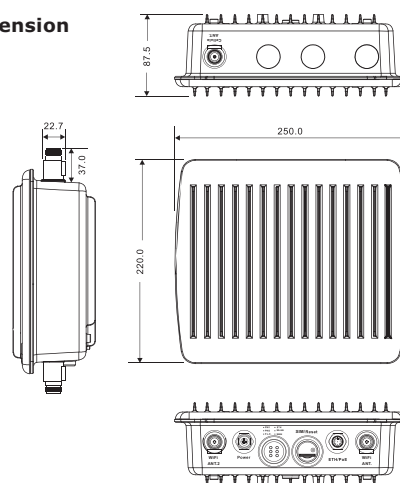
Preparation

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.

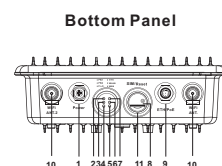
Safety & Warnings

-  When installed outdoors, make sure the connectors on the panel are facing down to prevent water intrusion.
-  Do not remove the water-proof casing, and do not touch or move the device when the antennas are transmitting or receiving signals.
-  When installing the device, make sure to keep the radiating at a minimum distance of 20 cm (7.9 inches) from all persons to minimize the potential for human contact during normal operation.
-  Do not operate the device near unshielded blasting caps or in an otherwise explosive environment unless the device has been modified for such use by qualified personnel.

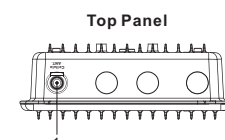
Dimension



Panel Layouts



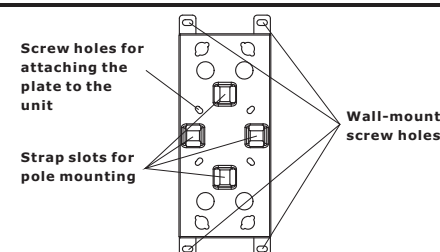
1. Power connector
2. LED for PWR1 status
3. LED for PWR2 status
4. LED for PoE status
5. LED for WAN connection
6. LED for WLAN connection
7. LED for LAN port connection
8. Reset button
9. LAN port
10. Connector for WiFi antenna
11. SIM card slot



1. Cellular antenna connector

Installation

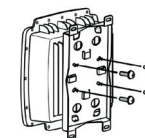
The device can be fixed to a pole or the wall using the supplied mounting plate. Make sure the connectors on the bottom panel are facing down when installing to prevent water intrusion.



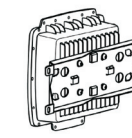
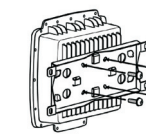
Wall-mount

Follow the steps below to install the device to the wall.
Step 1: Attach the mounting plate to the back of the device using four screws. The plate can be attached vertically or horizontally to the device depending on the space available.

Vertical

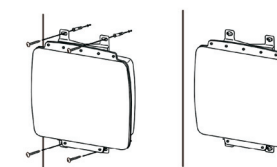


Horizontal



Step 2: Hold the device upright against the wall.

Step 3: Insert four screws through the holes at the top and bottom of the plate and fasten the screws to the wall.

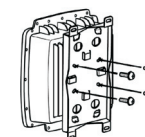


Pole-mount

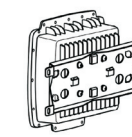
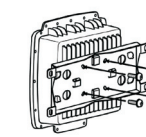
You can mount the device to a pole using the adjustable steel band straps included in the kit. Follow the steps below:

Step 1: Attach the mounting plate to the back of the device using four screws. The plate can be attached vertically or horizontally to the device based on the space available.

Vertical

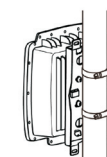


Horizontal

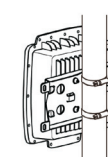


Step 2: Thread the two supplied metal mounting straps through the large slots on the mounting plate and then put the straps around the pole.

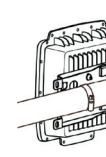
Type 1



Type 2



Type 3



Wiring

For pin assignments of power, console and relay output ports, please refer to the following tables.

Grounding

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

POWER PORT PINOUTS

The device supports two sets of power supplies and uses the M12 5-pin female connector on the front panel for the dual power inputs.

Step 1: Insert a power cable to the power connector on the device.
Step 2: Rotate the outer ring of the cable connector until a snug fit is achieved. Make sure the connection is tight.

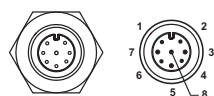


Network Connection

The AP has one 10/100/1000 Base-T(X) Ethernet ports. According to the link type, the AP uses CAT 3, 4, 5, 5e, UTP cables to connect to any other network device (PCs, servers, devices, routers, or hubs). Please refer to the following table for cable specifications.

Cable	Type	Max. Length	Connector
10Base-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	M12
100Base-TX	Cat. 5 100-ohm UTP	UTP 100 m (328 ft)	M12
1000Base-T	Cat. 5/Cat. 5e 100-ohm UTP	UTP 100 m (328 ft)	M12

M12/8P Pin Definition



PIN	Definition
1	BI_DC+
2	BI_DD+
3	BI_DD-
4	BI_DA-
5	BI_DB+
6	BI_DA+
7	BI_DC-
8	BI_DB-

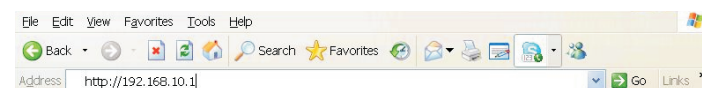
Configurations

After installing the router and connecting cables, start the device by turning on power. The green power LED should turn on. Please refer to the following table for LED indication.

LED	Color	Status	Description
PWR1	Green	On	DC power 1 activated
PWR2	Green	On	DC power 2 activated
PoE	Green	On	Power supplied over Ethernet cable
ETH	Green	On	Port is linked
		Blinking	Transmitting data
WLAN	Green	On	WLAN activated
		Blinking	Transmitting data via WLAN
WAN	Green	On	WAN activated

Follow the steps below to log in and access the system:

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

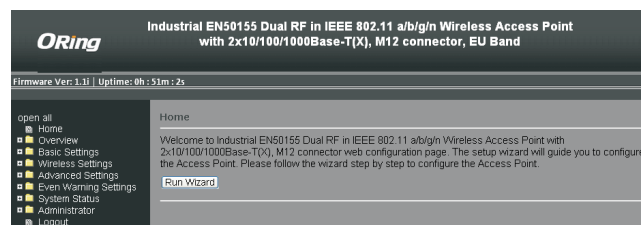


2. Log in with default user name and password (both are **admin**).

Please enter your user ID and password

ID	
Password	

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 device configurations back to the factory defaults, press the **Reset** button for a few seconds. Once the power indicator starts to flash, release the button. The device will then reboot and return to factory defaults.

Specifications

ORing WLAN Access Point Model	TGAR-W1061+3G-M12	TGAR-W1061+4G-M12
Physical Ports		
10/100/1000Base-T(X) Ports in M12 Auto MDI/MDIX (8-pin A-coding)	1	
PoE P.D. port	Fully compliant with IEEE 802.3af Power Device specification Over load & short circuit protection Isolation Voltage: 1000 VDC min. Isolation Resistance : 10 ⁹ ohms min	
SIM Card Slot	1	
WLAN Interface		
Antenna and Connector	2 x External N type antenna connector	
Modulation	IEEE802.11b: CCK, DQPSK, DBPSK IEEE802.11a/g: OFDM IEEE802.11n: OFDM with BPSK, QPSK, 16QAM, 64QAM	
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	IEEE801.11b: 1/ 2/ 5.5/ 11 Mbps IEEE801.11a/g: 6/ 9/ 12/ 18/ 24/ 36/ 48/ 54 Mbps IEEE802.11n: up to 300Mbps	
Transmit Power	802.11a: 12dBm ±1.5 dBm 802.11b: 18dBm ±1.5 dBm 802.11g: 15dBm ±1.5 dBm 802.11gn HT20: 13dBm ±1.5 dBm@150Mbps 802.11gn HT40: 12dBm ±1.5 dBm@300Mbps 802.11an HT20: 12dBm ±1.5 dBm@150Mbps 802.11an HT40: 12dBm ±1.5 dBm@300Mbps	
Receiver Sensitivity	802.11a: -68dBm±2.0dB @ 54 Mbps 802.11b: -82dBm±2.0dB @ 11Mbps 802.11g: -68dBm±2.0dB @ 54Mbps 802.11gn HT20: -64dBm±2.0dB @ 150Mbps 802.11gn HT40: -60dBm±2.0dB @ 300Mbps 802.11an HT20: -64dBm±2.0dB @ 150Mbps 802.11an HT40: -60dBm±2.0dB @ 300Mbps	
Encryption Security	WEP: (64-bit, 128-bit key supported) WPA/WPA2: (WEP and AES encryption) 802.11i WPA-PSK (256-bit key pre-shared key supported) 802.1X Authentication supported TKIP encryption	
Wireless Security	SSID broadcast disable	
Cellular Interface		

Cellular Standard	GSM / GPRS/ EGPRS/ EDGE / WCDMA / HSDPA / HSUPA	GSM / GPRS/ EGPRS/ EDGE / WCDMA / HSDPA / HSUPA / HSPA+ / LTE
Antenna and Connector	1 x External N type antenna connector	
Band Option	Dual-band : HSUPA 1900/2100 MHZ Quad-band : GSM/GPRS/EDGE 850/900/1800/1900MHZ WCDMA/HSDPA 850/900/1900/2100 MHZ	America(US) LTE: 700/1700/2100 MHZ UMTS/HSDPA/HSUPA/HSPA+/DC-HSPA+ : 800/850/1900/2100 MHZ GSM/GPRS/EDGE: 850/900/1800/1900 MHZ Europe(EU) LTE: 800/900/1800/2100/2600 MHZ UMTS/HSDPA/HSUPA/HSPA+/DC-HSPA+ : 900/2100 MHZ GSM/GPRS/EDGE: 900/1800/1900 MHZ
Power		
Redundant Input power	Dual DC inputs. 12-48VDC on M12 connector	
Power Consumption(Typ.)	9 Watts	9.5 Watts
Overload current protection	Present	
Reverse polarity protection	Present	
Physical Characteristic		
Enclosure	IP-67	
Dimension (W x D x H)	310(W) x 310(D) x 87(H) mm (12.2 x 12.2 x 3.4 inch.)	
Weight (g)	3990 g	
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, EN50155 (EN50121-3-2, EN55011, EN50121-4)	
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, EN61373	
Free Fall	IEC60068-2-32	
Vibration	IEC60068-2-6, EN61373	
Rail Traffic	EN50155	
Cooling	EN60068-2-1	
Dry Heat	EN60068-2-2	
Safety	EN60950-1	
Warranty	5 years	

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