TGAR-1062-3G-M12 series

Industrial EN50155 IEEE 802.11 a/b/g/n 3G Cellular Router With 2x10/100/1000Base-T(X), M12 connector

Features

- Leading EN50155-compliant wireless access point for rolling stock application
- High Speed Air Connectivity: WLAN interface support up to 300Mbps link speed
- Highly Security Capability: WEP/WPA/WPA-PSK(TKIP,AES)/ WPA2/WPA2-PSK(TKIP,AES)/802.1X Authentication supported
- Secured Management by HTTPs
- Various kind of WAN Connection Type supported: Dynamic/Static IP, PPPoE, Modem Dial Up
- IP table configurable to prevent access from unauthorized IP address
- Support VPN for secured network connection (Open VPN , PPTP VPN)
- Support NAT Setting (Virtual Server , Port Trigger , DMZ , UPnP)
- Support DHCP forwarding through PPTP function
- 3.5G HSDPA Modem dial up included
- Dual redundant Ethernet ports support Ethernet redundant mode (Recovery time < 10ms) and switch mode in M12 connector (A-coding)
- GPS support for GPS model
- 1KV isolation for PoE P.D. port for PoE model.
- Event Warning by Syslog, Email, SNMP Trap and Relay output
- Ultra rugged enclosure for toughest industrial usages
- Wall mounting enabled

Introduction

ORing's Transporter™ series cellular router is designed for industrial and rolling stock wireless applications, such as vehicle, and railway applications. TGAR-1062-3G-M12 is reliable IEEE802.11 a/b/g/n router with 2 ports LAN which is fully compliant with EN50155 certification. It could 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. TGAR-1062-3G-M12 EN50155 cellular VPN router use M-series connectors to ensure tight, robust connections, and guarantee reliable operation against environmental disturbances, such as vibration and shock. In addition, TGAR-1062+-3G-M12 also provides P.D. feature on ETH2 which is fully compliant with IEEE802.3af PoE P.D. specification and TGAR-1062+-3GS-M12 supports GPS function. Therefore, TGAR-1062-3G-M12 is one of the most reliable choices for rolling stock applications on the wireless network.

Application

In TGAR-1062-3G-M12 , there are 3 modes of routing functions supported: Dynamic/Static IP route, PPPoE dial up, and Modem dial up. TGAR-1062-3G-M12 also support NAT, VPN and Back up functions. You can build up the wireless network and connect to the Internet easily.

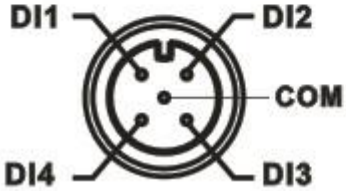
Pin Definition

Relay Output

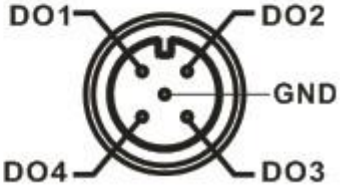
Console

RS-232, 115200bps, 8, N, 1

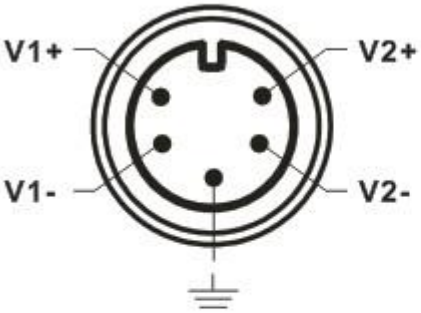
DI



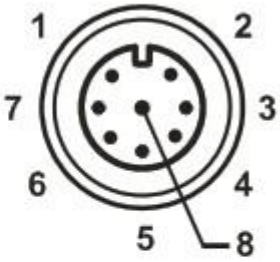
DO



Power

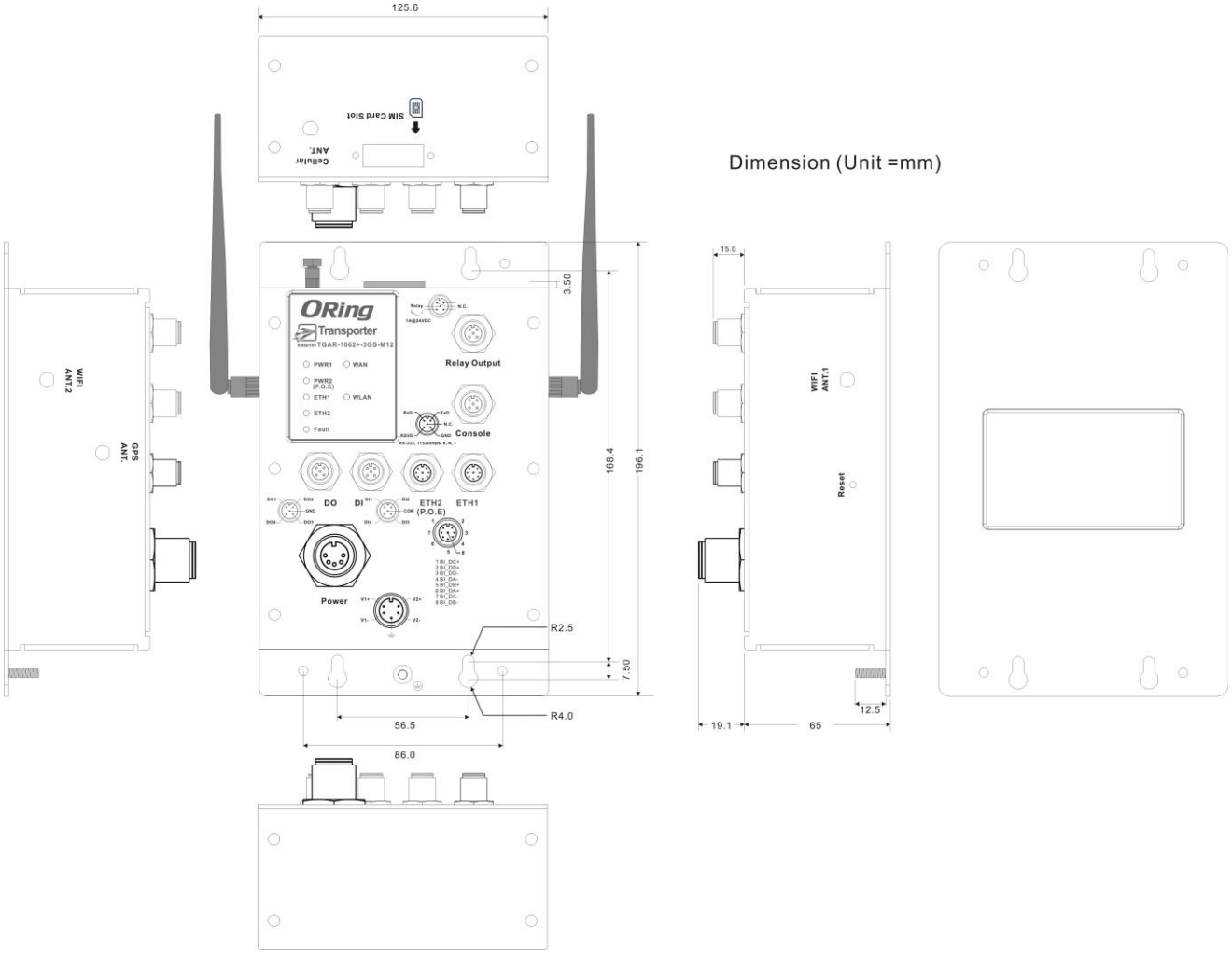


Ethernet



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

Dimension


Dimension (Unit =mm)
125.6
SIM Card Slot
Cellular ANT.
ORing
Transporter
TGAR-1062+-3GS-M12
PWR1
PWR2 (P.O.E)
ETH1
ETH2
Fault
WAN
WLAN
Relay Output
Console
DO
DI
ETH2 (P.O.E)
ETH1
Power
WIFI ANT.2
GPS ANT.
WIFI ANT.1
Reset
3.50
168.4
196.1
7.50
R2.5
R4.0
56.5
86.0
15.0
19.1
65
12.5

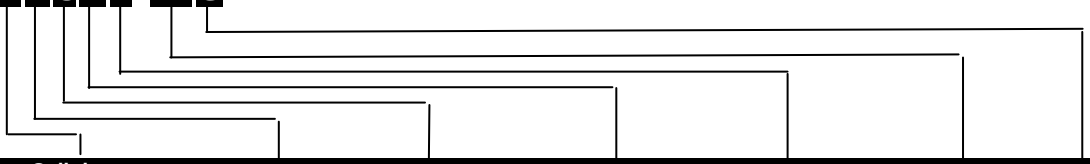
Specifications

ORing EN50155 WLAN Access Point Router Model	TGAR-1062-3G-M12	TGAR-1062+-3G-M12	TGAR-1062+-3GS-M12
Physical Ports			
10/100/1000Base-T(X) Ports in M12 Auto MDI/MDIX (8-pin A-coding)	**2**	**2(**Present at ETH2 Fully compliant with IEEE 802.3af PoE P.D)	
DIDO port in M12 (5-pin A-coding)	**2(DI x 4** and **DO x 4) :** Dry Contact: On: short to GND, Off: open Wet Contact (DI to COM/GND): On: 0 to 3VDC, Off: 10 to 30VDC		
RS-232 Console port in M12 (5-pin A-coding)	**115200, 8 ,N ,1**		
Relay port in M12 (5-pin A-coding)	**1A@24VDC**		
SIM Card Slot	**1**		
GPS (-3GS model only)			
Antenna Connector	1 x External reverse SMA antenna connector		
Frequency	1575.42MHz		
WLAN Interface			
Antenna Connector	2 x External reverse SMA-type antenna connector		
Radio Frequency Type	DSSS, OFDM		
Modulation	IEEE802.11a : OFDM with BPSK, QPSK, QAM, 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 IEEE801.11n: up to 300Mbps		
Transmit Power	802.11a: 12dBm ± 1.5dBm@54Mbps 802.11b: 17dBm ± 1.5dBm@11Mbps 802.11g: 16dBm ± 1.5dBm@54Mbps 802.11gn HT20: 15dBm ± 1.5dBm @MCS7 802.11gn HT40: 14dBm ± 1.5dBm @MCS7 802.11an HT20: 12dBm ± 1.5dBm @MCS7 802.11an HT40: 11dBm ± 1.5dBm @MCS7		
Receiver Sensitivity	802.11a : -76dBm ± 2dBm@54Mbps 802.11b : -85dBm ± 2dBm@11Mbps 802.11g : -76dBm ± 2dBm@54Mbps 802.11gn HT20:-75dBm ± 2dBm@MCS7 802.11gn HT40:-72dBm ± 2dBm@MCS7 802.11an HT20:-74dBm ± 2dBm@MCS7 802.11an HT40:-71dBm ± 2dBm@MCS7		
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		
Cellular Interface			
Cellular Standard	GSM / GPRS/ EGPRS/ EDGE / WCDMA / HSDPA / HSUPA		
Band Option	Dual-band : HSUPA 1900/2100 MHz Quad-band : GSM/GPRS/EDGE 850/900/1800/1900 MHz WCDMA/HSDPA 850/900/1900/2100 MHz		
Protocol Support			

Protocol	ARP,BOOTP, DHCP, DNS, HTTP, IP, ICMP, SNTP, TCP, UDP, RADIUS, SNMP, PPPoE		
LED Indicators			
Power Indicator	2 x LEDs, PW1:Green for DC Power on PW2:Green for DC Power on or power by PoE		
10/100/1000Base-T(X) Indicator	2 x LEDs, Green for port Link/Act		
WLAN LED	1 x LED, Green for WLAN Link/Act		
WAN LED	1 x LED, Green for Cellular modem Link/ Act		
Fault Indicator	1 x LED, Red for Ethernet link down or power down indicator		
Fault Contact			
Relay	Relay output to carry capacity of 3A at 24VDC		
Power			
Redundant Input Power	Relay output to carry capacity of 1A at 24VDC(5-pin M12 A-coding)		
Power Consumption (Typ.)	9 Watts	10 Watts	10.2 Watts
Overload Current Protection	Present		
Reverse Polarity Protection	Present		
Physical Characteristic			
Enclosure	IP-40		
Dimension (W x D x H)	125.6(W) x 65(D) x 196.1(H) mm (4.94 x 2.55 x 7.72 inch.)		
Weight (g)	985g	990g	990g
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)		
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	IEC60068-2-31		
Vibration	IEC60068-2-6, EN61373		
Rail Traffic	EN50155		
Cooling	EN60068-2-1		
Dry Heat	EN60068-2-2		
Safety	EN60950-1		
Warranty	5 years		

Ordering Information

TGAR-ABCDE-FFG-M12



Code Definition	Cellular Module Number	2nd Wireless Mode	1st Wireless Mode	Giga Ethernet Port Number	PoE Identification	Cellular Generation	GPS Function
Option	**1:** One SIM **2:** Dual SIM	**1:** 802.11 b/g **2:** 802.11 a **3:** 802.11 a/b/g **4:** 802.11 b/g/n **5:** 802.11 a/n **6:** 802.11 a/b/g/n	**1:** 802.11 b/g **2:** 802.11 a **3:** 802.11 a/b/g **4:** 802.11 b/g/n **5:** 802.11 a/n **6:** 802.11 a/b/g/n	**2:** 2 ports	**-"+":** PoE P.D. present at ETH2	**3G :**UMTS	**S:GPS**

	Model Name	Description
Available Model	**TGAR-1062-3G-M12_US**	Industrial EN50155 IEEE 802.11 a/b/g/n 3G cellular router with 2x10/100/1000Base-T(X), M12 connector, US band
	TGAR-1062+-3G-M12_US	Industrial EN50155 IEEE 802.11 a/b/g/n 3G cellular router with 2x10/100/1000Base-T(X), M12 connector, 1-port PoE P.D,US band
	TGAR-1062+-3GS-M12_US	Industrial EN50155 IEEE 802.11 a/b/g/n 3G cellular GPS router with 2x10/100/1000Base-T(X), M12 connector, 1-port PoE P.D,US band
	TGAR-1062-3G-M12_EU	Industrial EN50155 IEEE 802.11 a/b/g/n 3G cellular router with 2x10/100/1000Base-T(X), M12 connector, EU band
	TGAR-1062+-3G-M12_EU	Industrial EN50155 IEEE 802.11 a/b/g/n 3G cellular router with 2x10/100/1000Base-T(X), M12 connector, 1-port PoE P.D,EU band
	TGAR-1062+-3GS-M12_EU	Industrial EN50155 IEEE 802.11 a/b/g/n 3G cellular GPS router with 2x10/100/1000Base-T(X), M12 connector, 1-port PoE P.D,EU band

Packing List

- **TGAR-1062(+)-3G(S)-M12 x 1**
- **CD x 1**
- **Quick Installation Guide x 1**
- **2.4GHz/5GHz Antenna x 2**
- **3G Antenna x 1**

Optional Accessories

- **DR-45 series : 45 Watts power supply**
- **DR-75 series : 75 Watts power supply**
- **DR-120 series : 120 Watts power supply**
- **WLAN RF Antenna series**
- **RF Antenna Base series**
- **RF Cable series**