IWMR-3002

Industrial Multifunction VPN Router w/up to 2x WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 2 Gigabit Ethernet (incl.1 PD) w/Load Balancing, VPN, Protocol Gateway, Storage**; 24V input

- *Up to 2 concurrent WIFI 11ac and redundancy (1L-2AC model)*
- *Up to 2 concurrent modems for 3G/4G LTE Link & GPS (2L-1AC model/4 SIMs)*
- *Support LTE Cat 6*
- *Built-in 2 Gigabit Ethernet ports (1LAN+1WAN or 2LAN) (incl. 1PD)*
- *Dual radio for 802.11ac/a/b/g/n with concurrent 5GHz & 5GHz bands up to 2.6Gbps Wi-Fi bandwidth (2AC model)*
- *MIMO technology 3T3R; SMA type up to 6 external antennas*
- *VPN router for Multi-site VPN, OpenVPN, L2TP over IPsec, IPsec, L2 over GRE, IPGRE*
- *Load Balancing built-in 5 mechanism*
- *Optional EMMC Flash storage on-board***
- *Support Client-base roaming*
- *Supports AP/Bridge/Client/MESH modes*
- *Support 802.11s Wireless Mesh Network*
- *Support NAT and Firewall*
- *Support Modbus gateway*
- *Support 2 RS422/RS485 ports or 2/4x RS232 ports (RJ45 model only)*
- *Dual input range from 9V to 56VDC (24V model) ; Dual Input 9V-36VDC (24V-IGN model)*
- *Vehicle E-marking** certificate (M12 model)*
- *Wi-Fi & LTE graphic signal strength*
- *Editable login page of captive portal for hot-spot application*
- *USB port to backup, restore the configuration file and upgrade firmware; Dual image firmware*
- *Optional eSIM chip enables router with versatile data plans***
- *ITxPT design w/ ignition function***
- *EN50155/61373/45545 verification for railway application (except 24V-IGN model)*



RJ45 model



M12 model



OVERVIEW

Lantech IWMR-3002 series is a next generation industrial multi-function VPN router w/up to 2x 802.11ac Wi-Fi + up to 2x LTE modem + 2x Gigabit Ethernet (incl.1 PD) + 2 serial ports (RJ45 model only) that supports advanced function of VPN, Load-Balancing, EMMC Flash Storage**, Protocol gateway(Modbus) , Wi-Fi roaming and LTE quad SIM fail-over for industrial applications. The dual core CPU with 1.6GHz + 256M flash enables the router to multi-task smoothly.

Dual concurrent LTE design 4G/3G for load-balancing

With dual LTE module design (2L model), 4 SIM card slots, IWMR-3002 can allow auto-swap, failover & failback between multiple service providers for real non-stop connection. With concurrent LTE modules, it can also allocate bandwidth by "Load Balancing with 8 schemes between multiple WANs.

With one mobile LTE module, 2 SIM card slots, IWMR-3002 provides redundant link between two service providers.

Both GPS and Russian GLONASS systems are supported.

Optional EMMC Flash storage*

The optional EMMC flash storage on router can offer 8G/16G/32G capacity.

Optional eSIM*

By replacing physical SIM, optional eSIM chip will allow users to purchase data plans at low prices from local carriers in the world.

IEEE 802.11ac dual band radio up to 2.6Gbps bandwidth

With IEEE 802.11ac capability, IWMR-3002 can operate either 5GHz or 2.4GHz bands, offering the maximum speed of

2.6Gbps bandwidth (1.3Gbps per 1AC). It is also compatible with 802.11g/n that can work with 2.4GHz for longer range transmission.

The Wi-Fi 11ac supports AP/Bridge/AP Client modes can be diverse for most of wireless application. Working with load-balancing “Priority” mode, the AP client can enable router to transmit on Wi-Fi with first priority.

MIMO technology with 3T3R and SMA type connectors
Lantech IWMR-3002 series adapts MIMO technology with smart antenna transmission and reception for 3T3R. With six external detachable omni connectors and optional antennas, IWMR-3002 can have better Wi-Fi coverage.

Support AP/Bridge/Client mode, Mesh roaming
IWMR-3002 supports AP/Bridge/Client mode for different applications.

It also supports client-base roaming to swap between the APs in a network.

Built-in Wireless Mesh network（WMN）
IWMR-3002 supports Mesh network composed of different nodes. The set of SSIDs allow the wireless client to roam freely without the need for complicated account management. With Mesh protocol, it can provide a reliable, scalable, stable and seamless network topology.

Wireless WMM QoS
IWMR-3002 supports 802.11e standard which defines a set of Quality of Service for wireless LAN applications as well as WMM (Wi-Fi multimedia)

Advanced security & 16 SSIDs
The security support standards including 64/128bits WEP, WPA/WPA2 PSK (TKIP, AES), 802.1x ensures the best security and active defense against security treads. Lantech IWMR-3002 support up to 16 SSIDs, each SSID has its independent security and encryption.

Load Balancing with 5 mechanisms for multi-WANs
IWMR-3002 supports Load Balancing for LTE/WAN connections. There are five schemes for Load Balancing function:

Pack	Algorithm	Description
Basic	Fixed	Manually route by traffic type through fixed WAN link.
	Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link fail occurs. Once failover will not failback until link loss.
	Priority	Routes connections through preferred WAN link as primary while others follow by. Ex. Wi-Fi client>LTE>others
	Weighted Round-Robin	Evenly distribute the traffic over all working WAN links in circular order according to the specified weights.
	Custom Route	Routing through the selected WAN for each specific traffic, ex: TCP/UDP port number and IP address.

2 port serial connection, Modbus gateway
It builds in 2 port serial connection for RS232, RS422, RS485. (RJ45 model only)

The built-in Modbus gateway can convert Modbus RTU/ASCII to Modbus TCP for device control.

VPN and firewall
Besides traditional VPN peer to peer tunneling, IWMR-3002 support latest Multi-Site VPN function that is an efficient way for Mesh tunneling. The registration is under cloud service and encrypted by SSH makes the connection easy and safe.

It supports Multi-Site VPN, OpenVPN, L2TP over IPsec, IPsec, L2 over GRE, IPGRE, and NAT for various VPN applications.

The built-in Layer-4 firewall includes DDoS, IP address filter / Mac address filter / TCP/UDP port number

Email notice; Event log; Remote Web control
In case of events, the IWMR-3002 will immediately send email and trap.

When the router is at remote area with limited access, Web control can help to get router status or remotely reboot.

24V input voltage selection: dual 9V-56VDC (24V model) or dual 9V-36VDC (24V-IGN model)
The IWMR-3002 is able to work from 9VDC to 56VDC (24V model) or dual 9V-36VDC (24V-IGN model).

Built-in 2 port Gigabit Ethernet
2 port Gigabit Ethernet can be supported as 1LAN+1WAN or 2LAN models.

Graphic Wi-Fi & LTE signal strength
The graphic Wi-Fi & LTE signal strength shows connection status at a glance.

USB port for back up, restore configuration and upgrade firmware; Dual image firmware
The built-in USB port can upload/download the configuration through USB dongle for router replacement.

It supports dual-image firmware to choose which one to start.

Ignition Sensing*
Ignition sense allows you to delay power off the router with a designated time delay.

Editable login page of captive portal
The IWMR-3002 supports editable captive portal function that allows administrator to force end-users redirect to authentication page.

Ruggedized industrial design and FCC, CE certificate
The IWMR-3002 is designed to meet with outdoor network environment with IP30 (IP43 for M12 model) housing. It passed serious tests under extensive Industrial EMI and environmental

vibration and shocks standards. With CE & FCC radio certification for Wi-Fi and LTE, the IWMR-3002 is best for outdoor community, vehicle, and process control automation applications.

For more usage flexibilities, IWMR-3002 supports wide operating temperature from -40°C to 65°C

EN50155, EN61373 verification; E-marking** certification; ITxPT** design

The IWMR-3002 series is also applicable for railway on-board/track side, vehicle and mining applications for more usage flexibilities. The series is verified with EN50155, EN61373, and EN45545 for railway applications (Except 24V-IGN model). The E-marking certificate (24V model) and ITxPT design (24V-IGN model).

FEATURES & BENEFITS

- **High Speed Air Connectivity: WLAN interface support up to 2.6Gbps link speed(2AC) or 1.3Gbps (1AC)**
- **Built-in 2 Gigabit ports and 1LAN+1WAN or 2LAN (incl.1 PD)**
- **Support AP/Bridge/Client/MESH mode**
- **Support Client-base roaming**
- **Support 802.11s Wireless Mesh Network**
- **EMMC-FLASH storage** 8/16/32G**
- **eSIM** to allow data-plan globally**
- **Dual band 2.4G and 5GHz with 802.11ac/a/b/g/n**
- **Support 2.4Ghz operating within the following frequency bands:**
  - ***2.412~2.472 GHz***
- **Support 5Ghz operating within the following frequency bands:**
  - ***5.180~5.825 GHz***
- **MIMO smart antenna technology with 3T3R with 6 SMA type connectors and optional antennas**
- **IEEE 802.11h DFS and automatic TPC**
- **Output power: <24dBM**
- **Transmit power adjustment**
- **VAP (virtual access point) support up to 16 SSIDs**
- **Operation modes: AP / Bridge / Client**
- **Traffic control for each SSID**
- **Band preference for same SSID services on dual band**
- **Highly Security Capability: WEP64/128bits/ WPA/ WPA-PSK (TKIP, AES)/ WPA2/ WPA2-PSK (TKIP, AES)**
- **HTTP/HTTPS/Telnet/SSH & Administration access**
- **Support IPv6 & IPv4 protocol**
- **Radius Authentication, EAP-TLS, EAP-TTLS, PEAP; SSID broadcast disable supported**
- **Multiple channel bandwidths of 20MHz and 40MHz for 2.4G.**
- **Multiple channel bandwidths of 20MHz, 40MHz and 80MHz for 5G only.**
- **Wi-Fi Multimedia (WMM) and 802.11e traffic prioritization**
- **Support Multi-Site VPN for Mesh tunneling as well as Open VPN, L2TP over IPsec, IPsec, L2 over GRE, IPGRE and NAT for secured network connection**
- **The built-in Layer-4 firewall includes DDoS, IP address filter / Mac address filter / TCP/UDP port number**
- **Support SNMP v1/v2c/v3**
- **NAT/DMZ/Port Forwarding**
- **Dual concurrent LTE 4G/3G design (2L model) for auto-swap/failover/failback between multiple ISPs for continuous service (four SIM card slots)**
- **One LTE 4G/3G w/ 2 SIM card design (1L model) for mobile redundancy**
- **GPS & GLONASS connection**
- **Load Balancing supports 5 mechanism between multiple WANs**

Pack	Algorithm	Description
Basic	Fixed	Manually route by traffic type through fixed WAN link.
	Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link fail occurs. Once failover will not failback until link loss.
	Priority	Routes connections through preferred WAN link as primary while others follow by. Ex. Wi-Fi client>LTE>others
	Weighted Round-Robin	Evenly distribute the traffic over all working WAN links in circular order according to the specified weights.
	Custom Route	Routing through the selected WAN for each specific traffic, ex: TCP/UDP port number and IP address.

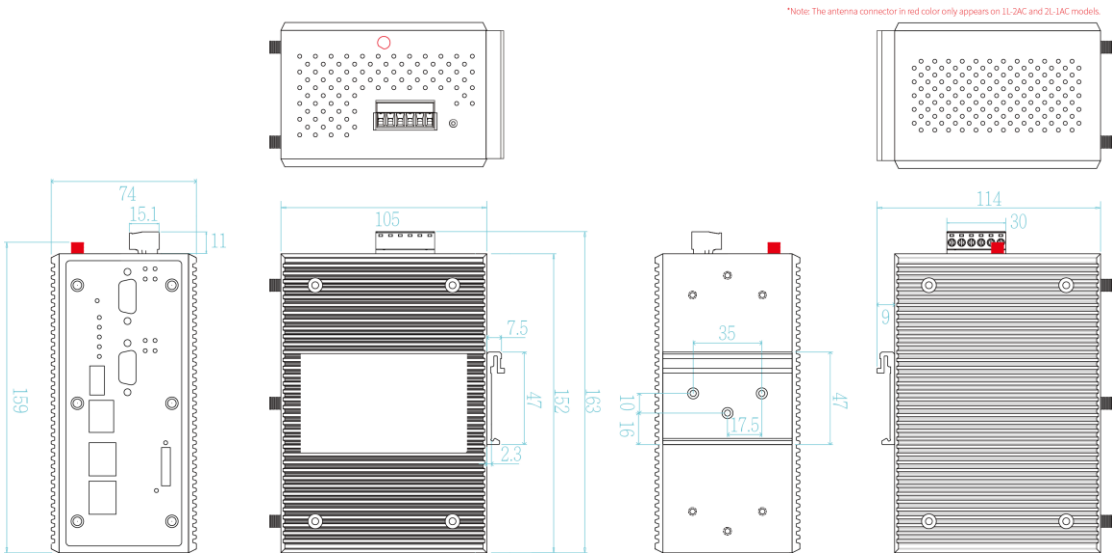
- **Built-in 2 x serial ports (RS232/RS422/RS485) (RJ45 model only)**
- **Built-in Modbus gateway converting Modbus RTU/ASCII to Modbus/TCP**
- **Event alerting by Syslog, SNMP Trap, Email, Relay; Permanent local log rotation / Maxi 1K records**
- **Remote Web control to get status or re-boot by Web**
- **Built-in RTC to keep track of time always**
- **Support SNTP to synchronize system clock**
- **Support LLDP discovery protocol**
- **Support DHCP Server and Client**
- **Reset button for factory default mode**
- **Graphic LTE & WIFI signal strength**
- **Firmware upgradeable through TFTP/HTTP**
- **Configuration backup and restoration**
  - *Supports text configuration file for system quick installation*

- *USB port to upload/download configuration by USB dongle*

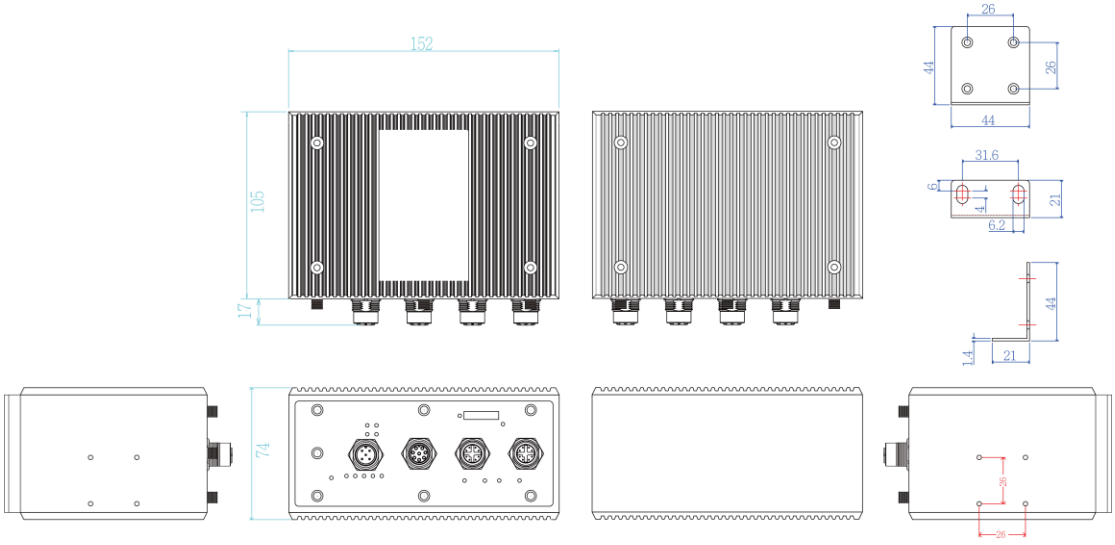
- **Support editable captive portal login page**
- **IP30 / IP43 housing for industrial environment**
- **RJ45 model: DIN-Rail and Wall-mount** installation**
- **M12 model: Wall-mount installation**
- **Operation temperature -40°C to 65°C**
- **Wide range input voltage from 9V-56V ; dual input 9V-36VDC (24V-IGN model)**
- **ITxPT design w/ ignition function****
- **EN50155 & EN61373 verification (Except 24V-IGN model)**

DIMENSIONS (unit=mm)

24V model



M12 Model



SPECIFICATION

WLAN Interface			
Radio Frequency Type	DSSS, OFDM		IEEE 802.11b/g/n 2.4GHz
Wireless Standard	IEEE 802.11ac/n/a 5GHz	Wireless bandwidth	5GHz: Up to 1300Mbps 2.4GHz: Up to 450Mbps
		Modulation	**802.11b: DSSS**

	802.11a/g: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) **802.11n:** OFDM (BPSK, QPSK, 16-QAM, 64-QAM) **802.11ac:** OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)
Operating Frequency	IEEE 802.11 a/b/g/n ISM Band, 2.412GHz~2.472GHz, 5150MHz~5850MHz
Transmission Rate	IEEE802.11ac: up to 1300Mbps IEEE802.11b: 1 / 2 / 5.5 / 11 Mbps IEEE802.11a/g: 6 / 9 / 12 / 18 / 24 / 36 / 48 / 54 Mbps IEEE802.11n: up to 450Mbps
IEEE 802.11b/g/n(2.4GHz)	**Output Power Tx +/- 2dB (per chain)** 18dBm @ 1~11Mbps 18dBm @ 6~54Mbps 20/20dBm @ MCS0~MCS7 (HT20/40) **Receiver Sensitivity Rx +/- 2dB** ≦-95dBm @ 1~11Mbps ≦-92dBm @ 6~18Mbps ≦-88dBm @ 24Mbps ≦-85dBm @ 36Mbps ≦-81dBm @ 48Mbps ≦-80dBm @ 54Mbps ≦-94dBm @ MCS0 (HT20/40) ≦-76dBm @ MCS7 (HT20/40)
IEEE 802.11a/n/ac(5GHz)	**Output Power Tx +/- 2dB (per chain)** 20dBm @ 6~24Mbps 16dBm @ 36~54Mbps 19/18dBm @ MCS0 (HT20/40) 16/16dBm @ MCS7 (HT20/40) 19/18/18dBm @ MCS0 (VHT20/40/80) 13/13/13dBm @ MCS8 (VHT20/40/80) 13/13dBm @ MCS9 (VHT40/80) **Receiver Sensitivity Rx +/- 2dB** ≦-92dBm @ 6~18Mbps ≦-86dBm @ 24Mbps ≦-84dBm @ 36Mbps ≦-81dBm @ 48Mbps ≦-80dBm @ 54Mbps ≦-93dBm @ MCS0 (HT20/40) ≦-71dBm/≦-80dBm @ MCS7 (HT20/40) ≦-90dBm @ MCS0 (VHT20/40/80) ≦-69dBm @ MCS8 (VHT20/40/80) ≦-66dBm @ MCS9 (VHT40/80)
Encryption Security	WEP: (64-bit ,128-bit key supported) WPA /WPA2: IEEE802.11i (WEP and AES encryption) WPA-PSK (256-bit key pre-shared key supported) EAP, MD5, EAP, TLS, EAP, TTLS, EAP PEAP
Wireless Security	SSID broadcast disable

Cellular Interface

Location Solutions	GPS, Glonass
Band Options	**Europe & North America (EUNA model)** **LTE** = B1, B2, B3, B4, B5, B7, B8, B12, B13, B20, B25, B26, B29, B30, B41 (TDD) **DC-HSPA+/ HSPA+/ HSPA/ UMTS** = B1, B2, B3, B4, B5, B8
Data Rates – LTE	**Europe & North America (EUNA model)** Downlink (Cat 6): FDD: 300 Mbps TDD: 222 Mbps Uplink (Cat 6): FDD: 50 Mbps TDD: 26 Mbps

Software

IPv6/4	Present
Operating Mode	AP/Bridge/Client/MESH modes
Login Security	Supports IEEE802.1x Authentication/RADIUS
Access Security	HTTP/HTTPS/Telnet/SSH & Administration; SNMP v1/v2/v3 access for authentication via MD5/SHA(v3) and Encryption via DES/AES(v3)
Protocol	PPPoE Client, DHCP server/client, Adjustable MTU, Port forwarding (NAPT), DMZ; NAT, SNTP, Firewall (Firewall (DDoS; IP address filter / Mac address filter
	/TCP/UDP port name},VRRP, DDNS
Management	SNMP v1,v2c,v3/ Web/Telnet/CLI
Load Balancing	5 schemes for multiple WAN
Basic	
Fixed	Manually route by traffic type through fixed WAN link.
Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link failure occurs.
Priority	Routes connections through preferred WAN link while others stand-by. Sequentially activate other links if overflow occurs.
Weighted Round-Robin	Evenly distribute the traffic over all working WAN links in circular order according to the specified weights
Custom Route	Routing through the selected WAN for each specific traffic ex: TCP/UDP port number and IP address.
Roaming	Client-base roaming
MESH	Support 802.11s Wireless Mesh Network
WMM	Wi-Fi multimedia and 802.11e traffic prioritization
Security	WEP64/128bits/ WPA/ WPA-PSK (TKIP, AES)/ WPA2/ WPA2-PSK (TKIP, AES)/SSH/SSL/HTTPS
Authentication	Radius Authentication, EAP-TLS, EAP-TTLS, PEAP; SSID broadcast disable supported
SSID	16 sets
Timer	Built-in Real Time Clock to keep track of time always (RTC)
Discovery	IEEE 802.1ab Link Layer Discovery Protocol (LLDP)
SNMP trap	Device cold / warm start Port link up / link down
Graphic signal display	Graphic LTE & Wi-Fi signal strength
Remote Web control	To reboot or get status of router by WebUI
Captive portal	Editable captive portal login page
Maintenance	Firmware upgradeable through TFTP/HTTP
Configuration backup & restore	Supports text configuration file for quick system installation USB port to upload/download configuration by USB dongle

Physical Ports & System

Connectors	10/100/1000T: 2x ports RJ 45 with Auto MDI/MDI-X function (2 x10/100/1000T; 8 pin X coded-M12 model) (one port PD) USB x 1 RS-232 connector: 1 x RJ 45 (RJ45 model only) Serial connector: 2 DB9 (RJ45 model only) SIM card slots: 4(2L) or 2(1L) SMA connector: 6 (Wi-Fi male, LTE female) Power & P-Fail connector: 1 x 6-pole terminal block (M12, 5-pole A-coded, Male – M12 model) Reset/Console/USB: 1 x M12 8-pole A-coded – M12 model
Serial Band Rate	1000Kbps high data rate,250kbps normal for RS232 ; 20Mbps high data rate,250kbps normal for RS422/RS485 (RJ45 model only)
Serial Data Bits	5, 6, 7, 8
Serial Parity	odd, even, none, mark, space
Serial Stop Bits	1, 1.5, 2
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+,Tx-, Rx+, Rx-,GND
RS-485 (2-wire)	Data+, Data-,GND
EMMC Storage**	8/16/32 GB
Isolation protection	Input power to I/O: 1.5KV isolation Input power to Ethernet 1.5KV isolation

LED Indicators

Power & System indicator	Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red), Storage (Green), Serial1/Serial2 (Green) (RJ45 model only), Ready (Green)
10/100/1000Base-T(X) port indicator	Link/Activity (Green), Speed (1000T: Yellow; 10/100TX: off)
SIM	Green for Link/Act
GPS	Green for Link/Act
WLAN LEDs	WLAN 1, WLAN2 Link /ACT: Green
Fault	Red: Ethernet link down or power down

Fault contact	
Relay	Relay output to carry capacity of 1A at 24VDC
Power	
Input power	Dual DC input, 9~56VDC (24V model) Dual DC input, 9~36VDC (24V-IGN model)
Power consumption (Typ.)	20 Watts
Physical Characteristic	
Enclosure	IP30 Metal case (24V models) IP43 Metal case (M12 model)
Dimension	74 (W) x 114 (D) x 152 (H) mm (24V, 1L-1AC model) 74 (W) x 114 (D) x 159 (H) mm (24V, 1L-2AC / 2L-1AC model) 74(W) x 114(D) X 152 (H)mm (M12 model)
Weight	900g
Environmental	
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Operating Temperature	-40°C ~65°C (-40°F ~ 149°F)
Operating Humidity	5% to 95% Non-condensing
Regulatory approvals	
Safety	EN 62368-1
EMC	FCC Part 15B Class A, ICES-003 ISSUE7, EN 55032: 2015, EN 55024: 2015 IEC 61000-6-2, IEC 61000-6-4 BS EN55032, BS EN55024
EMS	IEC 61000-4-2 (ESD), IEC 61000-4-3 (RS), IEC 61000-4-4 (EFT), IEC 61000-4-5 (Surge), IEC 61000-4-6 (CS), IEC 61000-4-8 (PFMF) BS EN61000-4-2, BS EN61000-4-3, BS EN61000-4-4, BS EN61000-4-5, BS EN61000-4-6, BS EN61000-4-8,
Radio Frequency	EN 301 489-1, EN 301 489-17, EN 301 489-19, EN 301 489-52, EN 302 502, EN 301 893, EN 300 328, EN 301 908-1※, EN 303 413, EN 62311
Stability Testing	IEC 60068-2-27 (Shock) IEC 60068-2-31 (Shock) IEC 60068-2-64 (Vibration) IEC 60068-2-80 (Vibration)
Vehicle Certificate (24V model)	E13 marking** (UN ECE R10)
Vehicle Compliance (24V model)	UN ECE R118, ITxPT design** (ITxPT design is IGN model only)
Railway Compliance (Except -IGN model)	EN50155 EN61373 EN45545 IEC 60571
MTBF	1,161,227Hrs (standards: IEC62380)
Warranty	5 years

*Future Release

**Optional

RF Performance Table

	Data Rate	TX Power (per chain)	TX Power (3 chains)	Tolerance	RX Specifications Sensitivity	Tolerance
2.4GHz 802.11b	1Mbps	20dBm	25dBm	±2dB	-95dBm	±2dB
	2Mbps	20dBm	25dBm	±2dB	-94dBm	±2dB
	5.5Mbps	20dBm	25dBm	±2dB	-92dBm	±2dB
	11Mbps	20dBm	25dBm	±2dB	-90dBm	±2dB
2.4GHz 802.11g	6Mbps	21dBm	26dBm	±2dB	-94dBm	±2dB
	9Mbps	21dBm	26dBm	±2dB	-93dBm	±2dB
	12Mbps	21dBm	26dBm	±2dB	-93dBm	±2dB
	18Mbps	21dBm	26dBm	±2dB	-90dBm	±2dB
	24Mbps	21dBm	26dBm	±2dB	-90dBm	±2dB
	36Mbps	20dBm	25dBm	±2dB	-85dBm	±2dB
	48Mbps	19dBm	24dBm	±2dB	-82dBm	±2dB
	54Mbps	18dBm	23dBm	±2dB	-80dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	21dBm	26dBm	±2dB	-94dBm	±2dB
	MCS 1	21dBm	26dBm	±2dB	-92dBm	±2dB
	MCS 2	21dBm	26dBm	±2dB	-89dBm	±2dB
	MCS 3	20dBm	25dBm	±2dB	-84dBm	±2dB
	MCS 4	20dBm	25dBm	±2dB	-83dBm	±2dB
	MCS 5	20dBm	25dBm	±2dB	-80dBm	±2dB
	MCS 6	18dBm	23dBm	±2dB	-79dBm	±2dB
	MCS 7	16dBm	21dBm	±2dB	-77dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	20dBm	25dBm	±2dB	-93dBm	±2dB
	MCS 1	20dBm	25dBm	±2dB	-91dBm	±2dB
	MCS 2	20dBm	25dBm	±2dB	-89dBm	±2dB
	MCS 3	19dBm	24dBm	±2dB	-84dBm	±2dB
	MCS 4	19dBm	24dBm	±2dB	-82dBm	±2dB
	MCS 5	19dBm	24dBm	±2dB	-80dBm	±2dB
	MCS 6	18dBm	23dBm	±2dB	-79dBm	±2dB
	MCS 7	16dBm	21dBm	±2dB	-75dBm	±2dB

	Data Rate	TX Power (per chain)	TX Power (3 chains)	Tolerance	RX Specifications Sensitivity	Tolerance
5GHz 802.11a	6Mbps	20dBm	25dBm	±2dB	-94dBm	±2dB
	9Mbps	20dBm	25dBm	±2dB	-94dBm	±2dB
	12Mbps	20dBm	25dBm	±2dB	-92dBm	±2dB
	18Mbps	20dBm	25dBm	±2dB	-91dBm	±2dB
	24Mbps	20dBm	25dBm	±2dB	-90dBm	±2dB
	36Mbps	18dBm	23dBm	±2dB	-86dBm	±2dB
	48Mbps	16dBm	21dBm	±2dB	-83dBm	±2dB
	54Mbps	15dBm	20dBm	±2dB	-80dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	19dBm	24dBm	±2dB	-93dBm	±2dB
	MCS 1	19dBm	24dBm	±2dB	-90dBm	±2dB
	MCS 2	19dBm	24dBm	±2dB	-87dBm	±2dB
	MCS 3	18dBm	23dBm	±2dB	-83dBm	±2dB
	MCS 4	18dBm	23dBm	±2dB	-80dBm	±2dB
	MCS 5	17dBm	22dBm	±2dB	-77dBm	±2dB
	MCS 6	16dBm	21dBm	±2dB	-74dBm	±2dB
	MCS 7	14dBm	19dBm	±2dB	-73dBm	±2dB
	MCS 8	13dBm	18dBm	±2dB	-71dBm	±2dB
5GHz 802.11n/ac VHT40	MCS 0	18dBm	23dBm	±2dB	-90dBm	±2dB
	MCS 1	18dBm	23dBm	±2dB	-88dBm	±2dB
	MCS 2	18dBm	23dBm	±2dB	-85dBm	±2dB
	MCS 3	17dBm	22dBm	±2dB	-82dBm	±2dB
	MCS 4	17dBm	22dBm	±2dB	-80dBm	±2dB
	MCS 5	16dBm	21dBm	±2dB	-75dBm	±2dB
	MCS 6	15dBm	20dBm	±2dB	-73dBm	±2dB
	MCS 7	14dBm	19dBm	±2dB	-73dBm	±2dB
	MCS 8	13dBm	18dBm	±2dB	-70dBm	±2dB
	MCS 9	13dBm	18dBm	±2dB	-68dBm	±2dB
5GHz 802.11ac VHT80	MCS 0	18dBm	23dBm	±2dB	-89dBm	±2dB
	MCS 1	18dBm	23dBm	±2dB	-87dBm	±2dB
	MCS 2	18dBm	23dBm	±2dB	-85dBm	±2dB
	MCS 3	17dBm	22dBm	±2dB	-83dBm	±2dB
	MCS 4	17dBm	22dBm	±2dB	-80dBm	±2dB
	MCS 5	16dBm	21dBm	±2dB	-78dBm	±2dB
	MCS 6	15dBm	20dBm	±2dB	-75dBm	±2dB
	MCS 7	14dBm	19dBm	±2dB	-72dBm	±2dB
	MCS 8	13dBm	18dBm	±2dB	-70dBm	±2dB
	MCS 9	13dBm	18dBm	±2dB	-68dBm	±2dB

ORDERING INFORMATION

M12 models are available with –M12 model names (-2S/-4S/-2SA/-2SB/-2S2SA/-2S2SB for RJ45 models only)
2 RS422 models are available with -2SA; 2 RS485 models are available with -2SB
2 RS232+ 2 RS422 models are available with -2S2SA; 2 RS232+ 2 RS485 models are available with -2S2SB
For 24V model are all available with –IGN model name (w/ ignition; dual 9~36VDC)

- **IWMR-3002-2L-1AC-2S-24V-EUNA……P/N: 8610-101**
  Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl. 1PD); EU and US band; dual input 9V~56VDC; -40~65C
- **IWMR-3002-2L-1AC-4S-24V-EUNA……P/N: 8610-120**
  Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl. 1PD); EU and US band; dual input 9V~56VDC; -40~65C
- **IWMR-3002-1L-1AC-2S-24V-EUNA……P/N: 8610-1073**
  Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl. 1PD); EU and US band; dual input 9V~56VDC; -40~65C
- **IWMR-3002-1L-1AC-4S-24V-EUNA……P/N: 8610-123**
  Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl. 1PD); EU and US band; dual input 9V~56VDC; -40~65C
- **IWMR-3002-1L-2AC-2S-24V-EUNA……P/N: 8610-104**

Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS232 serial ports and 2 port Gigabit Ethernet (incl. 1PD); EU and US band; dual input 9V~56VDC -40~65C

- **IWMR-3002-1L-2AC-4S-24V-EUNA……P/N: 8610-126**
  Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router w/4 RS232 serial ports and 2 port Gigabit Ethernet (incl. 1PD); EU and US band; dual input 9V~56VDC -40~65C

EMMC Flash Storage

- **8G……P/N: 8850-113**
- **16G……P/N: 8850-114**
- **32G……P/N: 8850-115**

OPTIONAL ACCESSORIES

Management System

- **InstaAir……P/N: 9000-121**
  Cloud Based Fleet Management System for Routers

GPS Antenna

- **ANT12000001** SMA GPS antenna, 28dB, 300m



Cellular Antenna

- **ANT11000041** 2G/3G/4G dipole antenna, 791-960/1710~2170/2500~2700MHz, 3dBi, SMA plug, EU



- **ANT11000042** 2G/3G/4G dipole antenna, 704-960/1710~2170MHz, 3dBi, SMA plug, US



- **ANT11000046** LTE hinge rotatable antenna, 698-960MHz, 1710-2690MHz, Diameter 10mm, Length 108mm, SMA Connector



Wi-Fi Antenna

- **ANT11000051** 2.4/5GHz SMA dipole Wi-Fi antenna, 3dBi (2.4GHz), 4dBi (5GHz)



- **ANT11000056** Wi-Fi hinge rotatable antenna, WiFi Dual Bands 2.4/5.8GHz, SMA Connector



Antenna Base

■ **ADA11000052** Magnetic antenna base for Wi-Fi, RP SMA Jack Base, Length : 1M



■ **ADA11000053** Magnetic antenna base for 3G/4G, RP SMA Jack Base, Length : 1M



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