

IWMR-3002

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

- Up to 2 concurrent WIFI 11ac and redundancy(1L-2AC model)
- Up to 2 concurrent modem for 3G/4G LTE Link & GPS(2L-1AC model/4 SIMs)
- Optional TWCC**(Train Wireless Carriage Coupling) for auto wireless coupling
- Built-in 2 Gigabit Ethernet ports incl. 1 PD port (1LAN+1WAN or 2LAN)
- Dual radio for 802.11ac/a/b/g/n with concurrent 5GHz & 5GHz bands up to 2.6GMbps Wi-Fi bandwidth(2AC model)
- MIMO technology 3T3R; SMA type up to 6 external antenna
- Unlimited concurrent WIFI users
- Fast roaming<50ms**, 802.11r standard
- Supports AP/Bridge /Client modes
- Air teaming** for Wi-Fi high-sustainability and aggregated bandwidth
- VPN router for Multi-site VPN, OpenVPN, L2TP, IPSec, PPTP**
- Load Balancing** support 8 mechanism
- Support NAT and Firewall
- Support Modbus / DNP3** gateway
- Support 2/4 RS422/485 ports with 2.5KV isolation or 2/4x RS232 ports
- Wide input range from 9V to 60VDC for vehicle, station and process automation applications
- Wi-Fi & LTE graphic signal strength & TX/RX rate display
- Optional storage microSD** for storage backup or multi-media content suit with load-balancing
- Editable login page of captive portal for hot-spot application
- USB port to backup, restore the configuration file and upgrade firmware; Dual image firmware*



OVERVIEW

Lantech IWMR-3002 series is a next generation industrial multi-function VPN router w/up to 2x 802.3ac Wi-Fi + up to 2x LTE modem + 2x Gigabit Ethernet(1 PD) + 2 or 4 serial ports that supports advanced function of VPN, Load-balancing**(Basic & Full Package), TWCC**, Protocol gateway(Modbus,DNP3**), Storage**, 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.

Optional TWCC (Train Wireless Carriage Coupling) for auto coupling**

IWMR-3002 series supports optional TWCC** (Train Wireless Carriage Coupling) that enables auto wireless coupling to reconnect APs.

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 & fallback 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-3002-1L-2AC provides redundant link between two service providers.

Both GPS and Russian GLONASS systems are supported.

IEEE 802.11ac dual band radio up to 2.6GMbps bandwidth

With IEEE 802.11ac capability, IWMR-3002 can operate either 5GHz or 2.4GHz bands, offering the maximum speed of 2.6GMbps bandwidth (1.3GMbps 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.

Air teaming for wireless high-sustainability and**

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aggregated bandwidth

The innovative Air-teaming protection can combines multiple wireless links to achieve both high-sustainability and aggregated bandwidth. High sustainability can keep the network traffic alive even one link is down or severely interfered. Aggregated bandwidth can bind two link channels to provide the maximum throughput.

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. It can support unlimited concurrent WIFI users.

Optional 802.11r fast roaming < 50ms**

IWMR-3002 support fast roaming < 50ms** (optional) in coordination with Lantech Wireless Controller to allow encryption keys to be stored on all of the APs in a network. Client mode supports PMK** Caching and pre-authentication (move to roaming section).

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 trends. Lantech IWMR-3002 support up to 16 SSIDs, each SSID has its independent security and encryption.

Load Balancing with 8 mechanism for multi-WANs (premium license pack)**

IWMR-3002 supports Load Balancing** for LTE/WAN (client mode) connections. There are eight schemes for Load Balancing** function:

Pack	Algorithm	Description
Standard	Fixed	Manually route by traffic type through fixed WAN link.
Basic Package	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.
Full Package (incl. basic package)	Sticky Session*	Binding all connections in an application session to particular WAN link to ensure all connections in the session are

		routed to the same WAN link , that is suitable for security services like online payment etc.
	Smallest Load*	Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load / the capability of a WAN link). The traffic load could be defined by downstream, upstream or total traffic
	Fastest*	Routes connections through the WAN link with lowest latency time.

2 or 4 port serial connection, Modbus / DNP3 gateway**

It builds in 2 or 4 port serial connection for RS232, RS422, 485 in which RS422/485 has 2.5KV isolation protection.

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

It also can support optional DNP3** gateway over serial ports

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, Open VPN, L2TP, IPsec and PPTP** for various VPN applications.

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

DIDO for alarm & email** notice; Event log; Remote Web/SMS** control**

2 sets of optional DIDO function can support additional high/low physical contact for designate applications besides Port / Power events, for example, DIDO function can trigger alarm if the router was moved or stolen. In case of events, the IWMR-3002 will immediately send email** and trap.

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

Wide range input voltage from 9V-60VDC; Built-in 2 port Gigabit Ethernet incl. 1PD port

The IWMR-3002 is able to work from 9VDC to 60VDC that is particular good for vehicle, rail train, depot etc. application.

Two port Gigabit Ethernet including 1 PD port can be supported as 1LAN+1WAN or 2LAN models.

Graphic Wi-Fi & LTE signal strength and TX/RX rate display

The graphic Wi-Fi & LTE signal strength and TX/RX rate display 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 firmware through USB dongle for router replacement.

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

Cloud/Host based InstaView/InstaAir** software for router/fleet management and monitoring**

Lantech InstaView** can offer fixed location router central management, configuration, and monitoring via secured Cloud or Host server. InstaAir** can offer fleet router management including the GPS tracking, signal strength, remote configure/upgrade, monitoring/alerting and report function

Optional USB to microSD for storage backup or multimedia resources**

The optional internal USB to microSD** can have data backup or pre-store the multimedia resources for content application. User can designate the route via load-balancing** scheme to upload/download the data per request.

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* & E-marking certificate**

The IWMR-3002 is designed to meet with outdoor network environment with IP 30 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 and E-marking** certificate, the IWMR-3002 is best for outdoor community, vehicle, process control automation etc. For more usage flexibilities, IWMR-3002 supports wide operating temperature from -20°C to 70°C or -40°C to 70°C(-E)

FEATURES & BENEFITS

- High Speed Air Connectivity: WLAN interface support up to 2.6GMbps link speed(2AC) or 1.3GMbps (1AC)
- Built-in two Gigabit ports incl. 1 PD port and 1LAN+1WAN or 2LAN
- Optional TWCC** (Train Wireless Carriage Coupling) for auto wireless coupling
- 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
 - Optional Air-teaming protection(2AC)
 - **High-sustainability:** if one link member is down or severely interfered, the other link will keep the network traffic alive.
 - **Aggregated bandwidth :** The bandwidth of two link members can be aggregated to provide maximum throughput-
- IEEE 802.11h DFS and automatic TPC
- Unlimited concurrent WIFI users
- 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**
- Rate selection to disable low data rate access**
- 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-MD5, 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, IPsec and PPTP** fro secured network connection
- The built-in Layer-4 firewall includes DoS**, IP address filter / Mac address filter* / TCP/UDP port number
- Support SNMP*v1/v2c/v3
- NAT/DMZ
- 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 8 mechanism between multiple WANs

Pack	Algorithm	Description
Standard	Fixed	Manually route by traffic type through fixed WAN link.
Basic Package	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.

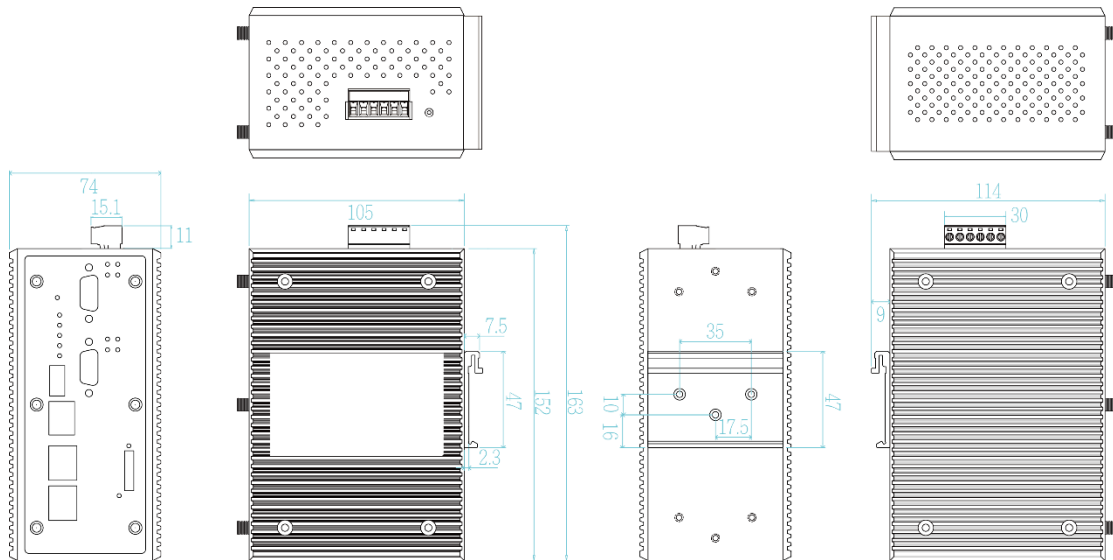
Full Package (incl. basic package)	Sticky Session*	Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.
	Smallest Load*	Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load / the capability of a WAN link). The traffic load could be defined by downstream, upstream or total traffic
	Fastest*	Routes connections through the WAN link with lowest latency time.

- Built-in 2 or 4 x serial ports(RS232/RS422/485)
- Serial port with 2.5KV isolation on RS422/485
- Supports optional 2DI / 2DO(Digital Input / Output)
- Built-in Modbus gateway converting Modbus RTU/ASCII to Modbus/TCP
- Optional DNP3 over Ethernet gateway on serial ports
- Event alerting by Syslog, SNMP Trap, Email**, SMS** text, Relay ; Permanent local log rotation / Maxi 1K records

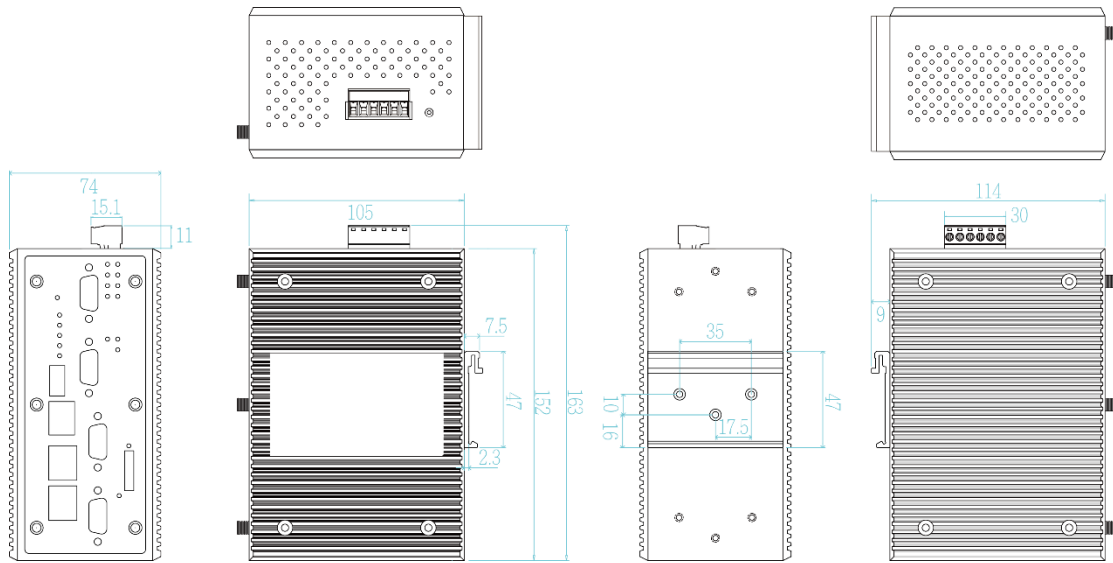
- Remote Web/SMS** control to get status or re-boot by Web
- Built-in RTC to keep track of time always
- Support SNTP to synchronize system clock
- Support LLDP discovery protocol
- Support DHCP Server and Client
- Reset button for factory default mode
- Graphic LTE & WIFI signal strength & TX/RX rate display
- Firmware upgradeable through TFTP/FTP/HTTP
- Configuration backup and restoration
 - Supports text configuration file for system quick installation
 - USB port to upload/download firmware by USB dongle
 - InstaView/AIR** for centralized configuration deployment, backup & upgrade
- Support editable captive portal login page
- Cloud/Host based InstaView/AIR** for fixed/fleet router management/configuration/monitoring
- IP 30 housing for industrial environment
- DIN-Rail and Wall-mount** installation
- Operation temperature -20~70C or -40°C to 70°C(-E)
- Wide range input voltage from 9V-60V

DIMENSIONS (unit=mm)

2S/2SA model



4S/4SA model



SPECIFICATION

WLAN Interface		Encryption Security	Wireless Security
Operating Mode	AP/BRIDGE/Client modes		
Radio Frequency Type	DSSS, OFDM	Cellular Interface	
Wireless Standard	IEEE 802.11ac/n/a 5GHz IEEE 802.11b/g/n 2.4GHz	Location Solutions	
Wireless bandwidth	5GHz: Up to 1300Mbps 2.4GHz: Up to 450Mbps	GPS, Glonass (EU/Americas) GPS, Glonass, Beidou, Galileo (APAC model only)	
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)	Band Options	
Operating Frequency	IEEE 802.11 a/b/g/n ISM Band, 2.412GHz~2.472GHz, 5150MHz~5850MHz	APAC & Australia (APAC model) LTE: 2100/1800/850/2600/900/850/850/1500/700/2600/1900/2300/2500 MHz (B1/B3/B5/B7/B8/B18/B19/B21/B28/B38/B39/B40/B41)	
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	EUNA & USA model LTE: 2100/1800/2600/900/800 MHz (B1/B2/B3/B4/B5/B7/B12/B13/B20/B25/B26/B29/B30/B41)	
IEEE 802.11b/g/n(2.4Gbps)	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)	WorldWide (WW model) LTE: 2100/1900/1800/1700/850/2600/900/1800/700/700/850/850/800/850/700/2300/1500/2500/3500/3700/5200/3600/1700 (B1/B2/B3/B4/B5/B7/B8/B9/B12/B13/B18/B19/B20/B26/B28/B29/B30/B32/B41/B42/B43/B46/B48/B66)	
IEEE 802.11a/n/ac(5Gbps)	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	Data Rates – LTE	
		APAC & Australia (APAC model) Downlink (Cat 6): FDD: 300 Mbps TDD: 222 Mbps Uplink (Cat 6): FDD: 50 Mbps TDD: 26 Mbps	
		Americas (US model) / EMEA (EU model) Downlink (Category 3):	

	100 Mbps (20 MHz bandwidth) 50 Mbps (10 MHz bandwidth) Uplink (Category 3): 50 Mbps (20 MHz bandwidth) 25 Mbps (10 MHz bandwidth)	Maintenance	Firmware upgradeable through TFTP/FTP/HTTP
		Configuration backup & restore	Supports text configuration file for quick system installation USB port to upload/download firmware by USB dongle InstaView/AIR** for mass configuration/upgrade
Software		Physical Ports & System	
IPV6/4	Present	Connectors	10/100/1000T: 2x ports RJ 45 with Auto MDI/MDI-X function USB x 1 RS-232 connector: 1 x RJ 45 Serial connector : 2 or 4 DB9 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 DIDO **: 1 x 5-pole terminal block
Login Security	Supports IEEE802.1x** Authentication/RADIUS	Serial Baud Rate	1000Kbps high data rate,250kbps normal for RS232 ; 20Mbps high data rate,250kbps normal for RS422/485
TWCC**	Optional Train Wireless Carriage Coupling for Auto wireless Coupling	Serial Data Bits	5, 6, 7, 8
Access Security	HTTP/HTTPS/Telnet/SSH & Administration; SNMP*v1/v2/v3 access for authentication via MD5/SHA(v3) and Encryption via DES/AES(v3)	Serial Parity	odd, even, none, mark, space
Protocol	PPPoE Client,DHCP server/client, Adjustable MTU, Port forwarding (NAPT), DMZ; NAT, SNTP, Firewall(Firewall(DoS**); IP address filter / Mac address filter* / TCP/UDP port name),VRRP**, DDNS*	Serial Stop Bits	1, 1.5, 2
Management	SNMP*v1,v2c,v3/ Web/Telnet/CLI	RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
Load Balancing**	8 schemes for multiple WAN	RS-422	Tx+,Tx-, Rx+, Rx-,GND
Fixed	Manually route by traffic type through fixed WAN link.	RS-485 (2-wire)	Data+, Data-,GND
Basic Package**		Micro SD	128G or 256G(MSD model)
Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link failure occurs.	Isolation protection	RS422/485 2.5KV isolation; 8KV contact & 15KV air RS232 8KV contact and 15KV air ESD DIDO** 3KV isolation Input power 1.5KVA isolation
Priority	Routes connections through preferred WAN link while others stand-by. Sequentially activate other links if overflow occurs.	LED Indicators	
Weighted Round-Robin	Evenly distribute the traffic over all working WAN links in circular order according to the specified weights	Power & System indicator	Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red) , Ring Master(Green), Storage(Green), Serial1/Serial2/Serial3/Serial4(Green)
Custom Route	Routing through the selected WAN for each specific traffic ex: TCP/UDP port number and IP address.	10/100/1000Base-T (X) port indicator	Link/Activity (Green), Speed (Yellow)
Full Package incl. basic package**		SIM	Green for Link/Act
Sticky Session*	Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.	GPS	Green for Link/Act
Smallest Load*	Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load / the capability of a WAN link). The traffic load could be defined by downstream, upstream or total traffic	WLAN LEDs	WLAN 1 , WLAN2 Link /ACT : Green
Fastest*	Routes connections through the WAN link with lowest latency time.	DI/DO**	2 Digital Input (DI) : Level 0: -30~2V / Level 1: 10~30V Max. input current:8mA 2 Digital Output(DO): Open collector to 40 VDC, 200mA
Fast Roaming<50ms**	802.11r <50ms work with Lantech controller	Fault	Red: Ethernet link down or power down
Air-teaming protection(2AC)**	<ul style="list-style-type: none"> High sustainability with fail over link Aggregated bandwidth 	Fault contact	
WMM	Wi-Fi multimedia and 802.11e traffic prioritization	Relay	Relay output to carry capacity of 1A at 24VDC
Security	WEP64/128bits/ WPA/ WPA-PSK (TKIP*,AES)/ WPA2/ WPA2-PSK (TKIP*,AES)/SSH/SSL/HTTPS	Power	
Authentication	Radius Authentication, EAP-MD5, EAP-TLS, EAP-TTLS, PEAP; SSID broadcast disable supported**	Input power	Dual DC inputs, 9V~60VDC
SSID	16 sets	Power consumption (Typ.)	20 Watts
Client mode	PMK** Caching and pre-authentication.	Physical Characteristic	
Timer	Built-in Real Time Clock to keep track of time always(RTC)	Enclosure	IP 30 aluminum case
Discovery	IEEE 802.1ab Link Layer Discovery Protocol (LLDP)	Dimension	74 (W) x 114 (D) x 152 (H) mm
SNMP trap	Device cold / warm start Port link up / link down DI / DO high / low**	Weight	900g
Graphic signal display	Graphic LTE & Wi-Fi signal strength & TX / RX rate display	Environmental	
Remote Web/SMS** control	To reboot or get status of router by WebUI or SMS**	Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Captive portal	Editable captive portal login page	Operating Temperature	-20°C ~70°C (-4°F ~ 158°F) -40°C ~70°C (-40°F ~ 158°F)-E model
		Operating Humidity	5% to 95% Non-condensing
		Regulatory approvals	
		EMC	FCC* Part 15 Class A, EN55032*
		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
		E-marking**	E13**
		MTBF	NA
		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	-92dBm	±2dB
	18Mbps	21dBm	26dBm	±2dB	-90dBm	±2dB
	24Mbps	21dBm	26dBm	±2dB	-88dBm	±2dB
	36Mbps	20dBm	25dBm	±2dB	-85dBm	±2dB
	48Mbps	19dBm	24dBm	±2dB	-81dBm	±2dB
	54Mbps	18dBm	23dBm	±2dB	-80dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	21dBm	26dBm	±2dB	-94dBm	±2dB
	MCS 1	21dBm	26dBm	±2dB	-91dBm	±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	-78dBm	±2dB
	MCS 6	18dBm	23dBm	±2dB	-78dBm	±2dB
	MCS 7	16dBm	21dBm	±2dB	-76dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	20dBm	25dBm	±2dB	-92dBm	±2dB
	MCS 1	20dBm	25dBm	±2dB	-89dBm	±2dB
	MCS 2	20dBm	25dBm	±2dB	-87dBm	±2dB
	MCS 3	19dBm	24dBm	±2dB	-82dBm	±2dB
	MCS 4	19dBm	24dBm	±2dB	-80dBm	±2dB
	MCS 5	19dBm	24dBm	±2dB	-78dBm	±2dB
	MCS 6	18dBm	23dBm	±2dB	-77dBm	±2dB
	MCS 7	16dBm	21dBm	±2dB	-73dBm	±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	-90dBm	±2dB
	24Mbps	20dBm	25dBm	±2dB	-86dBm	±2dB
	36Mbps	18dBm	23dBm	±2dB	-84dBm	±2dB
	48Mbps	16dBm	21dBm	±2dB	-81dBm	±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
	MCS 0	18dBm	23dBm	±2dB	-89dBm	±2dB
5GHz 802.11ac VHT80	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

For -40~70C operational temperature model, the model name will add -E

- **IWMR-3002-2L-1AC-2S-EUNA.....P/N: 8610-101**
Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~70C
- **IWMR-3002-2L-1AC-2S-WW.....P/N: 8610-102**
Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~70C
- **IWMR-3002-2L-1AC-2S-APAC.....P/N: 8610-103**
Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~70C
- **IWMR-3002-2L-1AC-2SA-EUNA.....P/N: 8610-104**
Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 2 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~70C
- **IWMR-3002-2L-1AC-2SA-WW.....P/N: 8610-105**
Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 2 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~70C
- **IWMR-3002-2L-1AC-2SA-APAC.....P/N: 8610-106**
Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 2 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-1AC-2S-EUNA.....P/N: 8610-107**
Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-1AC-2S-WW.....P/N: 8610-108**
Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-1AC-2S-APAC.....P/N: 8610-109**
Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-1AC-2SA-EUNA.....P/N: 8610-1101**
Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 2 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-1AC-2SA-WW.....P/N: 8610-1102**
Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 2 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-1AC-2SA-APAC.....P/N: 8610-1103**
Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 2 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-2AC-2S-EUNA.....P/N: 8610-1104**
Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC -20~70C
- **IWMR-3002-1L-2AC-2S- WW.....P/N: 8610-1105**
Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-2AC-2S-APAC.....P/N: 8610-1106**
Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-2AC-2SA-EUNA.....P/N:8610-111**
Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/2 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~70C

- **IWMR-3002-1L-2AC-2SA-WW.....P/N:8610-112**
Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/2 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-2AC-2SA-APAC.....P/N:8610-113**
Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/2 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~70C
- **IWMR-3002-2L-1AC-4S-EUNA.....P/N: 8610-114**
Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~70C
- **IWMR-3002-2L-1AC-4S-WW.....P/N: 8610-115**
Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~70C
- **IWMR-3002-2L-1AC-4S-APAC.....P/N: 8610-116**
Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~70C
- **IWMR-3002-2L-1AC-4SA-EUNA.....P/N: 8610-117**
Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 4 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~70C
- **IWMR-3002-2L-1AC-4SA-WW.....P/N: 8610-118**
Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 4 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~70C
- **IWMR-3002-2L-1AC-4SA-APAC.....P/N: 8610-119**
Industrial Dual LTE (Quad SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 4 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-1AC-4S-EUNA.....P/N: 8610-121**
Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-1AC-4S-WW.....P/N: 8610-122**
Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-1AC-4S-APAC.....P/N: 8610-123**
Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-1AC-4SA-EUNA.....P/N: 8610-124**
Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 4 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-1AC-4SA-WW.....P/N: 8610-125**
Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 4 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-1AC-4SA-APAC.....P/N: 8610-126**
Industrial One LTE (Dual SIM) One Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/ 4 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-2AC-4S-EUNA.....P/N: 8610-127**
Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-2AC-4S-WW.....P/N: 8610-128**
Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-2AC-4S-APAC.....P/N: 8610-129**
Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-2AC-4SA-EUNA.....P/N: 8610-131**
Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/4 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-2AC-4SA-WW.....P/N: 8610-132**
Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/4 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~70C
- **IWMR-3002-1L-2AC-4SA-APAC.....P/N: 8610-133**
Industrial One LTE (Dual SIM) Two Wi-Fi 11ac/a/b/g/n Load Balancing** AP VPN Mobile Router w/4 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~70C

Built-in MSD for Router 3000 Series

- **Built-in USB to MicroSD 128GB Module.....P/N:8850-210**
- **Built-in USB to MicroSD 256GB Module.....P/N:8850-213**

Software License

- LOAD BALANCING Basic Package.....P/N: 9000-101
- LOAD BALANCING Full Package.....P/N: 9000-102
- TWCC.....P/N: 9000-103
- DNP3 GATEWAY.....P/N: 9000-106
- WIRELESS ROAMING.....P/N: 9000-107

OPTIONAL ACCESSORIES

LTE Antenna

- ANT11000041 791-960/1710~2170/2500~2700MHZ, SMA plug, EU
- ANT11000042 704-960/1710~2170MHZ, SMA plug, US

Wireless Connector Adapter

- ADA11000052 RP SMA Jack Base, Length : 1M

Wireless Antenna

- ANT11000050 2.4G&5.8GHz SMA Omni-directional / dipole antenna, 2dBi or 5.8GHz 3dBi
- ANT11000051 2.4G&5.8GHz SMA Omni-directional / dipole antenna, 5dBi

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