

IMR-3002

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

- Up to 2 concurrent modem for 3G/4G LTE Link & GPS(2L model/4 SIMs)
- Built-in 2 Gigabit Ethernet ports incl. 1 PD port (1LAN+1WAN or 2LAN)
- VPN router for Multi-site VPN, OpenVPN, L2TP, IPSec, PPTP**, L2 over GRE
- Optional EMMC Flash storage on-board**
- Load Balancing** support 8 mechanism
- Support NAT and Firewall
- Support Modbus 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
- LTE graphic signal strength & TX/RX rate display
- Editable login page of captive portal for hot-spot application
- USB port to backup, restore the configuration file and upgrade firmware*; Dual image firmware*



4S model 2S model



OVERVIEW

Lantech IMR-3002 series is a next generation industrial multi-function VPN router w/ 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), EMMC Flash Storage**, Protocol gateway(Modbus), Storage** 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, IMR-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, IMR-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.

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

VPN and firewall

Besides traditional VPN peer to peer tunneling, IMR-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 L2 over GRE, NAT, 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 IMR-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. 1 PD port

FEATURES & BENEFITS

- Built-in two Gigabit ports incl. 1 PD port and 1LAN+1WAN or 2LAN
- HTTP/HTTPS/Telnet/SSH & Administration access
- Support IPv6** & IPv4 protocol
- Support Multi-Site VPN for mesh tunneling as well as Open VPN, L2TP, IPsec L2 over GRE, 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
- EMMC-FLASH storage**
- 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

The IMR-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.

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.

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

Ruggedized industrial design and FCC*, CE* & E-marking certificate**

The IMR-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 LTE and E-marking** certificate, the IMR-3002 is best for outdoor community, vehicle, process control automation etc. For more usage flexibilities, IMR-3002 supports wide operating temperature from -20°C to 75°C or -40°C to 75°C(-E)

- 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

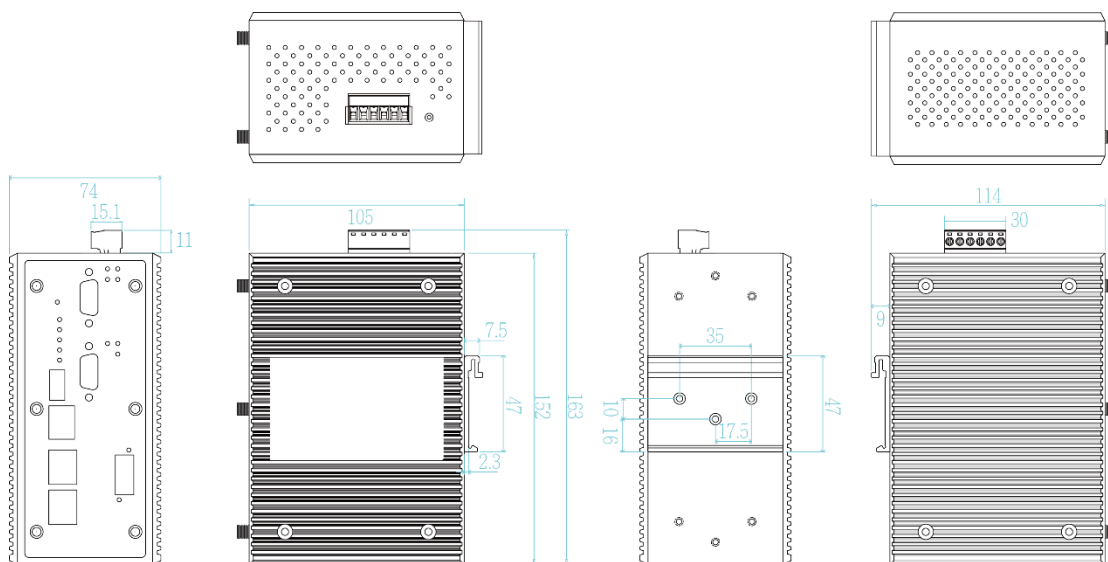
	Weighted Round-Robin	Evenly distribute the traffic over all working WAN links in circular order according to the specified weights.
	Custom Route	Routing through the selected WAN for each specific traffic, ex: TCP/UDP port number and IP address.
Full Package (incl. basic package)	Sticky Session*	Binding 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

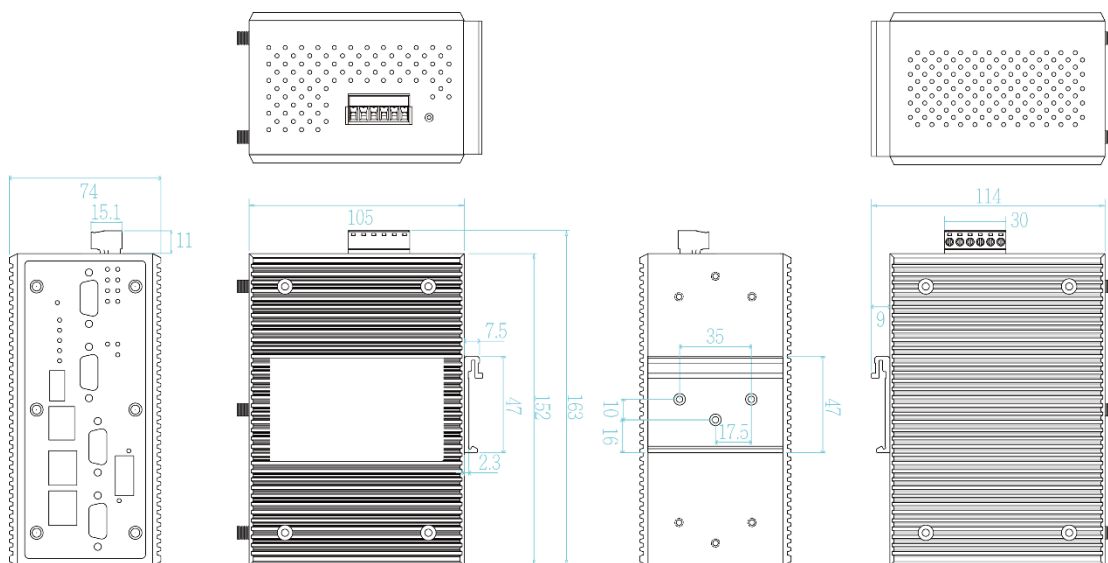
- Event alerting by Syslog, SNMP Trap, Email**, SMS** text, Relay ; Permanent local log rotation / Maxi 1K records
- Remote Web/SMS** control to get status or re-boot by Web
- Built-in RTC to keep track of time always
- Support SNTP to synchronize system clock
- Support LLDP discovery protocol
- Support DHCP Server and Client
- Reset button for factory default mode
- Graphic LTE 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 configuration by USB dongle
 - InstaView/AIR** for centralized configuration deployment, backup & upgrade
- 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 -20~70°C or -40~70°C(-E)
- Wide range input voltage from 9V-60V

DIMENSIONS (unit=mm)

2S model



4S model



SPECIFICATION

Location Solutions	GPS, Glonass (EU/Americas) GPS, Glonass, Beidou, Galileo (APAC model only)	Management	DDNS*
Band Options	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)	Load Balancing**	SNMP*v1,v2c,v3/ Web/Telnet/CLI 8 schemes for multiple WAN
	EUNA & USA model LTE: 2100/1800/2600/900/800 MHz (B1/B2/B3/B4/B5/B7/B12/B13/B20/B25/B26/B29/B30/B41)	Fixed	Manually route by traffic type through fixed WAN link.
	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)	Basic Package**	
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	Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link failure occurs.
	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)	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.
		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.
		Security	SSH/SSL/HTTPS
		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 DI / DO high / low**
		Graphic signal display	Graphic LTE signal strength & TX / RX rate display
		Remote Web/SMS** control	To reboot or get status of router by WebUI or SMS**
		Maintenance	Firmware upgradeable through TFTP/FTP/HTTP
		Configuration backup & restore	Supports text configuration file for quick system installation USB port to upload/download configuration by USB dongle**
Software			
IPv6/4	Present		
Login Security	Supports IEEE802.1x** Authentication/RADIUS		
Access Security	HTTP/HTTPS/Telnet/SSH & Administration; SNMP*v1/v2c/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(DoS**; IP address filter / Mac address filter* / TCP/UDP port name),VRRP**,		

InstaView/AIR** for mass configuration/upgrade		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
Physical Ports & System		Fault	Red: Ethernet link down or power down
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 female Power & P-Fail connector: 1 x 6-pole terminal block DIDO **: 1 x 5-pole terminal block	Fault contact	
Serial Baud Rate	1000Kbps high data rate,250kbps normal for RS232 ; 20Mbps high data rate,250kbps normal for RS422/485	Relay	Relay output to carry capacity of 1A at 24VDC
Serial Data Bits	5, 6, 7, 8	Power	
Serial Parity	odd, even, none, mark, space	Input power	Dual DC inputs, 9V~60VDC
Serial Stop Bits	1, 1.5, 2	Power consumption (Typ.)	20 Watts
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND	Physical Characteristic	
RS-422	Tx+,Tx-, Rx+, Rx-,GND	Enclosure	IP 30 aluminum case
RS-485 (2-wire)	Data+, Data-,GND	Dimension	74 (W) x 114 (D) x 152 (H) mm
Micro SD	128G or 256G(MSD model)	Weight	900g
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	Environmental	
LED Indicators		Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Power & System indicator	Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red) , Ring Master(Green), Storage(Green), Serial1/Serial2/Serial3/Serial4(Green),Ready(Green)	Operating Temperature	-20°C ~75°C (-4°F ~ 167°F) -40°C ~75°C (-40°F ~ 167°F)-E model
10/100/1000Base-T(X) port indicator	Link/Activity (Green), Speed (Yellow)	Operating Humidity	5% to 95% Non-condensing
SIM	Green for Link/Act	Regulatory approvals	
GPS	Green for Link/Act	EMC	FCC* Part 15 Class A, EN55032*
WLAN LEDs	Link /ACT : Green	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

ORDERING INFORMATION

For -40~75C operational temperature model, the model name will add -E

- **IMR-3002-2L-2S-EUNA.....P/N: 8611-101**
Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~75C
- **IMR-3002-2L-2S-WW.....P/N: 8611-102**
Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~75C
- **IMR-3002-2L-2S-APAC.....P/N: 8611-103**
Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~75C
- **IMR-3002-2L-2SA-EUNA.....P/N: 8611-104**
Industrial Dual LTE (Quad SIM) Load Balancing** 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; -20~75C
- **IMR-3002-2L-2SA-WW.....P/N: 8611-105**
Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/ 2 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~75C
- **IMR-3002-2L-2SA-APAC.....P/N: 8611-106**
Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/ 2 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~75C
- **IMR-3002-1L-2S-EUNA.....P/N: 8611-107**
Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~75C
- **IMR-3002-1L-2S-WW.....P/N: 8611-108**
Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~75C
- **IMR-3002-1L-2S-APAC.....P/N: 8611-109**
Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~75C
- **IMR-3002-1L-2SA-EUNA.....P/N: 8611-1101**
Industrial One LTE (Dual SIM) Load Balancing** 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; -20~75C
- **IMR-3002-1L-2SA-WW.....P/N: 8611-1102**
Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/ 2 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~75C
- **IMR-3002-1L-2SA-APACP/N: 8611-1103**
Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/ 2 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~75C

- Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~75C

■ **IMR-3002-2L-4S-EUNA.....P/N: 8611-114**
Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~75C
- **IMR-3002-2L-4S-WW.....P/N: 8611-115**
Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~75C
- **IMR-3002-2L-4S-APAC.....P/N: 8611-116**
Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~75C
- **IMR-3002-2L-4SA-EUNA.....P/N: 8611-117**
Industrial Dual LTE (Quad SIM) Load Balancing** 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; -20~75C
- **IMR-3002-2L-4SA-WW.....P/N: 8611-118**
Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/ 4 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~75C
- **IMR-3002-2L-4SA-APAC.....P/N: 8611-119**
Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/ 4 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~75C
- **IMR-3002-1L-4S-EUNA.....P/N: 8611-121**
Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); EU and US band; dual 9V~60VDC; -20~75C
- **IMR-3002-1L-4S-WW.....P/N: 8611-122**
Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~75C
- **IMR-3002-1L-4S-APAC.....P/N: 8611-123**
Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/ 4 RS232 serial ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~75C
- **IMR-3002-1L-4SA-EUNA.....P/N: 8611-124**
Industrial One LTE (Dual SIM) Load Balancing** 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; -20~75C
- **IMR-3002-1L-4SA-WW.....P/N: 8611-125**
Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/ 4 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); worldwide band; dual 9V~60VDC; -20~75C
- **IMR-3002-1L-4SA-APAC.....P/N: 8611-126**
Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/ 4 RS422/485 serial isolated ports and 2 port Gigabit Ethernet (incl.1 PD port); APAC band; dual 9V~60VDC; -20~75C

EMMC Flash Storage

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

Software License

- **LOAD BALANCING Basic Package.....P/N: 9000-101**
- **LOAD BALANCING Full Package.....P/N: 9000-102**

OPTIONAL ACCESSORIES

LTE Antenna

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

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