

I(P)MR-3004

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

- Up to 2 concurrent mobility for 3G/4G LTE Link & GPS(2L model/4 SIMs)
- Support LTE Cat 6
- PoE model built-in 4 Gigabit PoE at/af Switch with budget 80W@12V/24V/48V
- 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 NAT and Firewall
- Support Modbus or gateway on serial ports
- Support 2 RS422/RS485 ports or 2x RS232 ports
- Input voltage selection 9~56VDC (24V model)
- Environmental monitoring for router inside info with voltage, current temperature and total PoE load; LTE graphic signal strength
- Editable login page of captive portal for hot-spot application
- Optional eSIM chip enables router with versatile data plans**
- USB port to backup, restore the configuration file and upgrade firmware; Dual image firmware



OVERVIEW

Lantech I(P)MR-3004 series is a next generation industrial multi-function VPN router w/up to 2x LTE modem + 4x Gigabit Ethernet switch incl. 4 PoE ports (PoE model) + 2WANs + 2 serial ports that supports advanced function of VPN, Load-Balancing, EMMC Flash Storage**, Protocol gateway (Modbus), Storage**, 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, I(P)MR-3004 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 (1L model), 2 SIM card slots, I(P)MR-3004 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 the router can offer 8G/16G/32G capacity.

Load Balancing with 5 mechanisms for multi-WANs

I(P)MR-3004 supports Load Balancing for LTE/WAN connections. There are five schemes for Load Balancing function:

Pack	Algorithm	Description
Basic	Fixed	All traffic will be distributed to a single WAN.
	Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activating another link if the preferred link fails.
	Priority	Select the active WAN according to priority.
	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.

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, I(P)MR-3004 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.

Support Routing Protocol: Static route / RIPv2 / OSPF / BGP / EIGRP

Lantech router series supports two routing methods: static routing and dynamic routing. Dynamic routing makes use of RIPv2, OSPF, EIGRP and BGP. The user can either choose one routing method to establish the routing table.

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

2 sets of 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 I(P)MR-3004 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.

Wide range input voltage from 9V-56VDC; Built-in 4 port switch (PoE model including 4 PoE with 80W@12V /24V/48V)

The I(P)MR-3004 is able to work from 9VDC to 56VDC and PoE model built-in PoE at/af with PoE budget 80W@12V /24V/48V that is particular good for vehicle, rail train, depot etc. application.

Environmental monitoring for inside router info& alerting;**Graphic LTE signal strength**

The built-in environmental monitoring can detect router ambient temperature, voltage, current and total PoE load where can send the SNMP traps Syslog and email when abnormal.

The graphic LTE signal strength shows connection status at a glance

Built-in Managed Switch Function

Managed switch function is built-in and provides various L2+ functions for network aggregation deployment. It delivers ports and PoE management, VLAN, QoS, multicast, redundant ring, and security functions.

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 support dual-image firmware to choose which one to start.

Editable login page of captive portal

The I(P)MR-3004 supports editable captive portal function that allows administrator to force end-users redirect to authentication page.

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.

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

The I(P)MR-3004 is designed to meet with industrial 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 I(P)MR-3004 is best for outdoor community, vehicle, process control automation etc. For more usage flexibilities, I(P)MR-3004 supports wide operating temperature from -40°C to 65°C.

FEATURES & BENEFITS

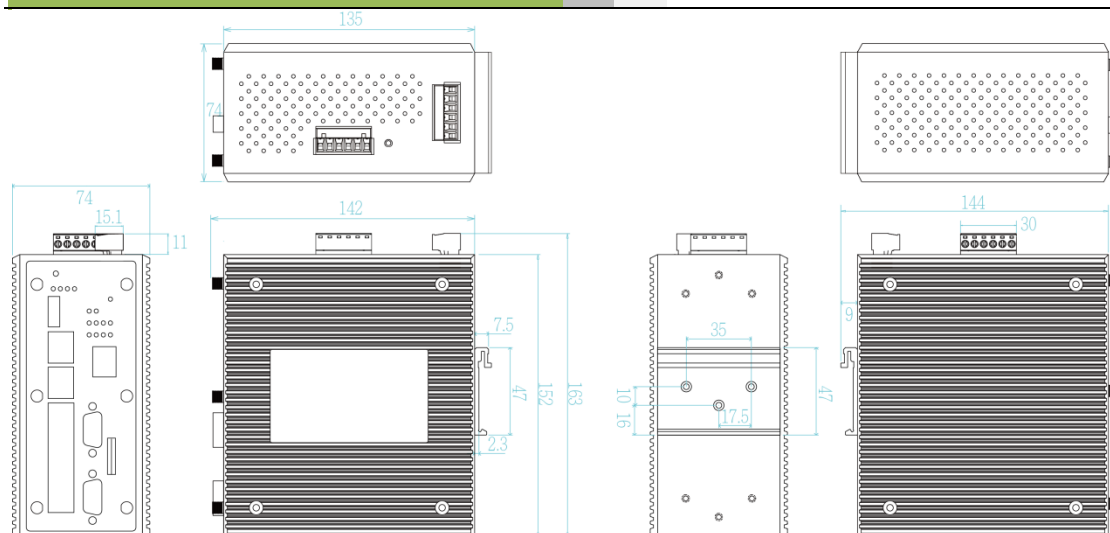
- Built-in 4 Gigabit switch + 2 WAN port
- PoE model incl. 4 PoE at/af with 80W@12V /80W@24V&48V PoE budget
- 6 SMA type connectors for LTE, GPS
- HTTP/HTTPS/Telnet/SSH & Administration access
- Radius Authentication, EAP-TLS, EAP-TTLS, PEAP
- Support IPv6 & IPv4 protocol
- Support Multi-Site VPN for mesh tunneling as well as
- Open VPN, L2TP over IPsec, IPsec, L2 over GRE , IPGRE and NAT for secured network connection
- Support Routing Protocol: Static route / RIPv2 / OSPF / BGP / EIGRP
- The built-in Layer-4 firewall includes DDoS, IP address filter / Mac address filter / TCP/UDP port number
- NAT/DMZ/Port Forwarding
- EMMC-FLASH storage**

- eSIM** to allow data-plan globally
- Support SNMP v1/v2c/v3
- 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 (support by LTE module) connection
- Load Balancing supports 5 mechanism between multiple WANs

Pack	Algorithm	Description
Basic	Fixed	All traffic will be distributed to a single WAN.
	Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activating another link if the preferred link fails.
	Priority	Select the active WAN according to priority.
	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/RS422/485)
- Supports 2DI / 2DO (Digital Input / Output)
- Built-in Modbus gateway converting Modbus RTU/ASCII to Modbus/TCP for serial ports
- 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
- Graphic LTE signal strength
- Support SNTP to synchronize system clock
- Support LLDP discovery protocol
- Support DHCP Server and Client
- Built-in environmental monitoring for system input voltage, current and ambient temperature; Able to set alert when abnormal
- Dual image firmware to choose which to start
- 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
- Reset button for factory default mode
- IP 30 housing for industrial environment
- DIN-Rail and Wall-mount** installation
- Operation temperature -40~65°C

DIMENSIONS (unit=mm)



SPECIFICATION

Location Solutions	GPS, Glonass	TDD: 26 Mbps
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	Software IPv6/4 Present VPN Multi-site VPN, Open VPN, L2TP over IPSec, IPSec, L2 over GRE, IPGRE and NAT Firewall DDoS, IP address filter / Mac address filter / TCP/UDP port number.
Data Rates – LTE	Europe & North America (EUNA model) Downlink (Cat 6): FDD: 300 Mbps TDD: 222 Mbps Uplink (Cat 6): FDD: 50 Mbps	Load Balancing 5 schemes for multiple WAN Basic Fixed All traffic will be distributed to a single WAN.

Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activating another link if the preferred link fails.	Isolation protection	Input power to I/O: 1.5KV isolation Input power to Ethernet 1.5KV isolation Input power to PoE port 1.5KV isolation (PoE model)
Priority	Select the active WAN according to priority.	EMMC Storage**	8/16/32 GB
Weighted Round-Robin	Evenly distribute the traffic over all working WAN links in circular order according to the specified weights	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
Custom Route	Routing through the selected WAN for each specific traffic ex: TCP/UDP port number and IP address.	LED Indicators	
Login Security	Supports IEEE802.1x Authentication/RADIUS	System & Power	Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red), Ring Master(Green), Storage(Green), Serial1/Serial2(Green), Ready(Green)
Access Security	HTTP/HTTPS/Telnet/SSH & Administration; SNMP v1/v2c/v3 access for authentication via MD5/SHA(v3) and Encryption via DES/AES(v3)	10/100/1000Base-T(X) port indicator	Link/Activity (Green), Speed (1000T: Yellow; 10/100TX: off), PoE (Green, PoE model)
Protocol	PPPoE Client,DHCP server/client, Adjustable MTU, Port forwarding (NAPT), DMZ; NAT, SNTP, Firewall(DDoS/ IP address filter / Mac address filter / TCP/UDP port name),VRRP, DDNS	SIM	Green for Link/Act
Routing	Static route / RIPv2 / OSPF / BGP / EIGRP	GPS	Green for Link/Act
Protocol Gateway	Modbus on serial ports	Fault	Red: Ethernet link down or power down
Management	SNMP v1,v2c,v3/ Web/Telnet/CLI	Fault contact	
Environmental Monitoring	System status for input voltage, current, ambient temperature to be shown in GUI and sent alerting if any abnormal status	Relay	Relay output to carry capacity of 1A at 24VDC
Graphic signal display	Graphic LTE signal strength	Power	
Timer	Built-in Real Time Clock to keep track of time always(RTC)	Input power	Dual DC input, 9~56VDC (24V model)
Discovery	IEEE 802.1ab Link Layer Discovery Protocol (LLDP)	PoE Budget (PoE mode;)	80W@12V/24V/48V
SNMP trap	Device cold / warm start Port link up / link down DI/DO high / low	Power consumption (Typ.)	30.5W
Remote Web control	To reboot or get status of router by Web UI	Physical Characteristic	
Maintenance	Firmware upgradeable through TFTP/FTP/HTTP	Enclosure	IP 30 Metal case
Configuration backup & restore	Supports text configuration file for system quick installation USB port to upload/download configuration by USB dongle	Dimension	74 (W) x 142 (D) x 152 (H) mm
Physical Ports & System		Weight	900g
Connectors	10/100/1000T: 6x ports RJ 45 with 2 WAN ports (PoE model incl. 4 PoE ports) USB x 1 RS-232 connector: 1 x RJ 45 Serial connector : 2 DB9 SIM card slots : 4(2L) or 2(1L) 2L model SMA connector for LTE: 4 (female) SMA connector for GPS: 2 (female) 1L model SMA connector for LTE: 2 (female) SMA connector for GPS: 1 (female) Power & P-Fail connector: 1 x 6-pole terminal block DIDO: 1 x 5-pole terminal block	Environmental	
Serial Baud Rate	1000Kbps high data rate,250kbps normal for RS232 ; 20Mbps high data rate,250kbps normal for RS422/485	Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Serial Data Bits	5, 6, 7, 8	Operating Temperature	-40°C ~ 65°C (-4°F ~ 149°F)
Serial Parity	odd, even, none, mark, space	Operating Humidity	5% to 95% Non-condensing
Serial Stop Bits	1, 1.5, 2	Regulatory approvals	
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND	Safety	EN 62368
RS-422	Tx+,Tx-, Rx+, Rx-,GND	EMC	FCC Part 15B Class A, EN 55032: 2015, EN 55024: 2010 IEC 61000-6-2, IEC 61000-6-4
RS-485 (2-wire)	Data+, Data-,GND	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)
		Radio Frequency	EN 301 489-1, EN 301 489-17, EN 301 489-19, EN 301 489-52 EN 301 908-1※, EN 303 413, EN 62311
		Vehicle certificate	E13**
		MTBF	NA
		Warranty	5 years

*Future Release

**Optional

※Standard test of the following bands are not listed in EN 301 908-1 report:
 (EUNA not listed bands) LTE = B2, B4, B5, B12, B13, B25, B26, B29, B30, B41
 WCDMA = B2, B4, B5;

ORDERING INFORMATION

- **IPMR-3004-2L-2S-24V-EUNA.....P/N: 8664-011**
Industrial Dual LTE (Quad SIM) Load Balancing VPN Mobile Router w/ 2 RS232 serial ports and 4 Giga PoE at/af Switch + 2WAN ports; EU and US band; dual 9V~56VDC input; -40~65C
- **IPMR-3004-2L-2SA-24V-EUNA.....P/N: 8664-0111**
Industrial Dual LTE (Quad SIM) Load Balancing VPN Mobile Router w/2 RS422 serial ports and Giga ports incl. 4 PoE at/af ports + 2WAN ports switch; EU and US band; dual 9V~56VDC input; -40~65C
- **IPMR-3004-2L-2SB-24V-EUNA.....P/N: 8664-0112**
Industrial Dual LTE (Quad SIM) Load Balancing VPN Mobile Router w/2 RS485 serial ports and Giga ports incl. 4 PoE at/af ports + 2WAN ports switch; EU and US band; dual 9V~56VDC input; -40~65C
- **IPMR-3004-1L-2S-24V-EUNA.....P/N: 8664-021**
Industrial One LTE (Dual SIM) Load Balancing VPN Mobile Router w/2 RS232 serial ports and 4 Giga PoE at/af Switch +

Datasheet Version 1.41

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RP-001-26 A0

- 2WAN ports; EU and US band; dual 9V~56VDC input; -40~65C
- **IPMR-3004-1L-2SA-24V-EUNA.....P/N: 8664-0211**
Industrial One LTE (Dual SIM) Load Balancing VPN Mobile Router w/2 RS422 serial ports and 4 Giga PoE at/af Switch + 2WAN ports; EU and US band; dual 9V~56VDC input; -40~65C
 - **IPMR-3004-1L-2SB-24V-EUNA.....P/N: 8664-0212**
Industrial One LTE (Dual SIM) Load Balancing VPN Mobile Router w/2 RS485 serial ports and 4 Giga PoE at/af Switch + 2WAN ports; EU and US band; dual 9V~56VDC input; -40~65C
 - **IMR-3004-2L-2S-24V-EUNA.....P/N: 8666-001**
Industrial Dual LTE (Quad SIM) Load Balancing Multifunction Router w/ 2 RS232 serial ports and 4 Giga Ethernet managed switch + 2WAN ports; EU and US band; dual input 9V~56VDC; -40~65C
 - **IMR-3004-2L-2SA-24V-EUNA.....P/N: 8666-0011**
Industrial Dual LTE(Quad SIM) Load Balancing Multifunction Router w/2 RS422 serial ports and 4 Giga Ethernet managed switch + 2WAN ports; EU and US band ; dual input 9V~56VDC; -40~65C
 - **IMR-3004-2L-2SB-24V-EUNA.....P/N: 8666-0012**
Industrial Dual LTE(Quad SIM) Load Balancing Multifunction Router w/2 RS485 serial ports and 4 Giga Ethernet managed switch + 2WAN ports; EU and US band ; dual input 9V~56VDC; -40~65C
 - **IMR-3004-1L-2S-24V-EUNA.....P/N: 8666-004**
Industrial One LTE (Dual SIM) Load Balancing Multifunction Router w/2 RS232 serial ports and 4 Giga Ethernet managed switch + 2WAN ports; EU and US band; dual input 9V~56VDC; -40~65C
 - **IMR-3004-1L-2SA-24V-EUNA.....P/N: 8666-0041**
Industrial One LTE(Dual SIM) Load Balancing Multifunction Router w/2 RS422 serial ports and 4 Giga Ethernet managed switch + 2WAN ports; EU and US band ; dual input 9V~56VDC; -40~65C
 - **IMR-3004-1L-2SB-24V-EUNA.....P/N: 8666-0042**
Industrial One LTE(Dual SIM) Load Balancing Multifunction Router w/2 RS485 serial ports and 4 Giga Ethernet managed switch + 2WAN ports; 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



Antenna Base

■ **ADA11000053**

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



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