IMR-3006

Industrial Multifunction VPN Router wup to 2 LTE 4G + 2 serial ports + 6 Gigabit Ethernet Switch w/ Load Balancing**, VPN, Protocol Gateway, Storage**; 24V input

- *Up to 2 concurrent mobility for 3G/4G LTE Link & GPS (2L model/4 SIMs)*
- *Built-in 6 Gigabit Ethernet switch*
- *VPN router for Multi-site VPN, OpenVPN, L2TP, IPSec*, L2 over GRE ,and PPTP***
- *Load Balancing** support 8 mechanism*
- *Optional EMMC Flash storage on-board***
- *Support NAT and Firewall*
- *Support Modbus gateway on serial ports*
- *Support 2 RS422/485 ports with 2.5KV isolation or 2x RS232 ports*
- *Input voltage for 24V model*
- *Environmental monitoring for router inside info with voltage, current, temperature; LTE graphic signal strength & TX/RX rate display*
- *USB port to backup, restore the configuration file and upgrade firmware*; Dual image firmware**

OVERVIEW

Lantech IMR-3006 series is a next generation industrial multi-function VPN router w/up to 2x LTE modem + 6x Gigabit Ethernet switch + 2 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 resilience and aggregation

With dual LTE module design (2L model), 4 SIM card slots, IMR-3006 can allow auto-swap, failover & failback between multiple service providers for real non-stop connection. With concurrent LTE modules, it can also build aggregated bandwidth as well as have Load Balancing** with 8 schemes between multiple WANs.

With one mobile LTE module (1L model), 2 SIM card slots, IMR-3006 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 mechanisms for multi-WANs (premium license)

IMR-3006 supports Load Balancing** for LTE 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 port serial connection, Modbus gateway
It builds in 2 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-3006 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 DIDO functions 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-3006 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.

24V Input voltage range: 9V-60VDC
The IMR-3006 is able to work from 9VDC to 60VDC dual input range with power isolation.

Environmental monitoring for inside router info& alerting; Graphic LTE signal strength and TX/RX rate display
The built-in environmental monitoring can detect router ambient temperature, voltage, current where can send the syslog, email** and SMS** alert when abnormal.

The graphic LTE signal strength and TX/RX rate display shows connection status at a glance

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

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.

Ruggedized industrial design and FCC*, CE*& E-marking** certificate
The IMR-3006 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 IMR-3006 is best for outdoor community, vehicle, process control automation etc. For more usage flexibilities, IMR-3006 supports wide operating temperature from -20°C to 75°C or -40°C to 75°C(-E).

FEATURES & BENEFITS

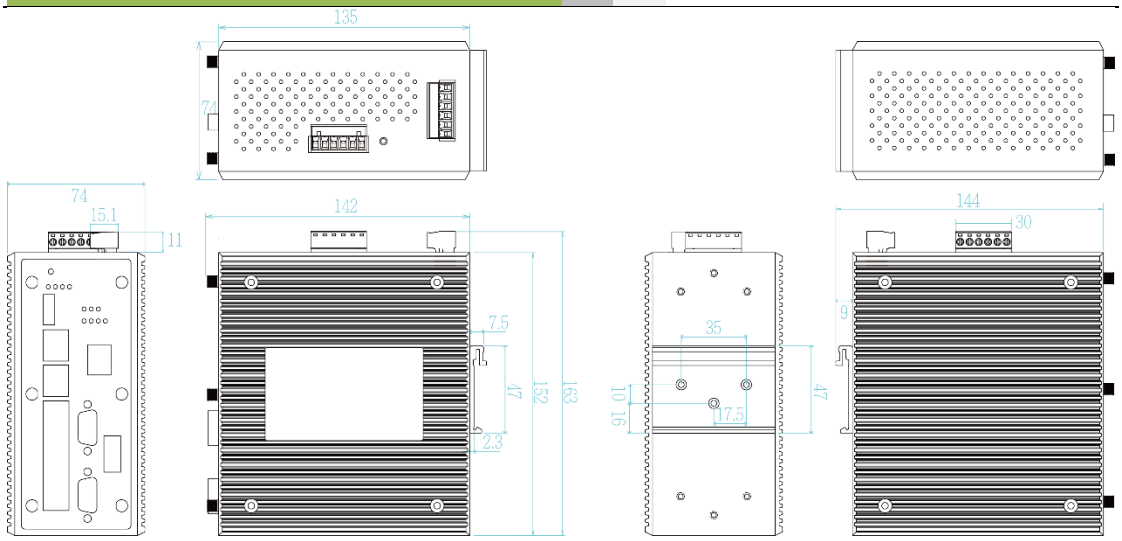
- **Built-in 6 Gigabit Ethernet switch**
- **Dual DC isolated input from 9V~60VDC (24V model)**
- **6 SMA type connectors for LTE, GPS**
- **HTTP/HTTPS/Telnet/SSH & Administration access**
- **Support IPv6** & IPv4 protocol**
- **Support Multi-Site VPN for mesh tunneling as well as Open VPN, L2TP, IPsec L2 over GRE and PPTP** fro secured network connection**
- **EMMC-FLASH storage****
- **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 aggregation bandwidth/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 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 x serial ports(RS232/RS422/485)**
- **Serial port with 2.5KV isolation on 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**, SMS** text, Relay ; Permanent local log rotation / Maxi 1K records**
- **Remote Web/SMS** control to get status or re-boot by Web or SMS****
- **Graphic LTE signal strength & TX/RX rate display**
- **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*
  - *InstaView/AIR** for centralized configuration deployment, backup & upgrade*
- **Reset button for factory default mode**
- **IP 30 housing for industrial environment**
- **Cloud/Host based InstaAIR** for router management/configuration/monitoring**
- **DIN-Rail and Wall-mount** installation**
- **Operation temperature -20~75°C or -40~75°C(-E)**

DIMENSIONS (unit=mm)



SPECIFICATION

Location Solutions	GPS, Glonass (EU/Americas) GPS, Glonass, Beidou, Galileo (APAC model only)		**LTE:** 2100/1800/850/2600/900/850/850/1500/700/2600/1900/2300/2500 MHz
Band Options	**APAC & Australia (APAC model)**		

	(B1/B3/B5/B7/B8/B18/B19/B21/B28/B38/B39/B40/B41) **EU & USA model** **LTE:** 2100/1800/2600/900/800 MHz (B1/B2/B3/B4/B5/B7/B12/B13/B20/B25/B26/B29/B30/B41) **WorldWide (WW model)** **LTE:** 2100/1900/1800/1700/850/2600/900/1800/700/700/850/800/850/700/2300/1500/2500/3500/3700/5200/3600/1700 (B1/B2/B3/B4/B5/B7/B8/B9/B12/B13/B18/B19/B20/B26/B28/B29/B30/B32/B41/B42/B43/B46/B48/B66)
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

Software

IPv6/4	Present
VPN	Multi-site VPN, Open VPN, PPTP**, L2TP, IPSec L2 over GRE
Firewall	DoS**, IP address filter / Mac address filter* / TCP/UDP port number.
Load Balancing**	8 schemes for multiple WAN(client mode)
Fixed(standard)	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 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.
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
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(DoS**; IP address filter / Mac address filter* / TCP/UDP port name),VRRP**, DDNS*
Protocol Gateway	Modbus on serial ports
Management	SNMP v1,v2c,v3/ Web/Telnet/CLI
Environmental Monitoring	System status for input voltage, current , ambient temperature to be shown in GUI and sent alerting if any abnormal status
Graphic signal display	Graphic LTE signal strength & TX/RX rate display
Timer	Built-in Real Time Clock to keep track of time
	always(RTC)
Discovery	IEEE 802.1ab Link Layer Discovery Protocal (LLDP)
SNMP trap	Device cold / warm start Port link up / link down DI**/DO** high / low
Remote Web/SMS** control	To reboot or get status of router by Web UI or SMS**
Serial long distance	Software adjustable RS422/485distance
Maintenance	Firmware upgradeable through TFTP/FTP/HTTP
Configuration backup & restore	Supports text configuration file for system quick installation USB port to upload/download configuration by USB dongle* InstaView/AIR** for mass configuration/upgrade

Physical Ports & System

Connectors	10/100/1000T: 6x ports RJ 45 USB x 1 RS-232 connector: 1 x RJ 45 Serial connector : 2 DB9 SIM card slots : 4(2L) or 2(1L) SMA connector : 6 Power & P-Fail connector: 1 x 6-pole terminal block DIDO : 1 x 5-pole terminal block
Serial Baud Rate	1000Kbps high data rate,250kbps normal for RS232 ; 20Mbps high data rate,250kbps normal for RS422/485
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
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
Micro SD	128G or 256G(MSD model)
Protocol	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

LED Indicators

Power & System indicator	Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red) , Ring Master(Green), Storage(Green), Serial1/Serial2(Green) ,Ready(Green)
10/100/1000Base-T (X) port indicator	Link/Activity (Green), Speed (Yellow)
SIM	Green for Link/Act
GPS	Green for Link/Act
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 isolated inputs, 9~60VDC
Power consumption (Typ.)	30.5W

Physical Characteristic

Enclosure	IP 30 aluminum case
Dimension	74 (W) x 142 (D) x 152 (H) mm
Weight	1000g

Environmental

Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Operating Temperature	-20°C ~ 75°C (-40°F ~ 167°F) -40°C ~ 75°C (-40°F ~ 167°F)(-E)
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

ORDERING INFOMATION

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

- **IMR-3006-2L-2S-EUNA…….....P/N: 8621-011**
  Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/ 2 RS232 serial ports and 6 Giga Port switch; EU and US band; dual isolated 9V~60VDC; -20~75C
- **IMR-3006-2L-2S-APAC…….....P/N: 8621-012**
  Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/ 2 RS232 serial ports and 6 Giga Port switch; APAC band; dual isolated 9V~60VDC; -20~75C
- **IMR-3006-2L-2S-WW…….....P/N: 8621-013**
  Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/ 2 RS232 serial ports and 6 Giga Port switch; Worldwide band; dual isolated 9V~60VDC; -20~75C
- **IMR-3006-2L-2SA-EUNA…….....P/N:8621-0111**
  Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/2 RS422/485 serial isolated ports and 6 Giga Port switch; EU and US band; dual isolated 9V~60VDC; -20~75C
- **IMR-3006-2L-2SA-APAC…….....P/N:8621-0121**
  Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/2 RS422/485 serial isolated ports and 6 Giga Port switch; APAC band; dual isolated 9V~60VDC; -20~75C
- **IMR-3006-2L-2SA-WW…….....P/N:8621-0131**
  Industrial Dual LTE (Quad SIM) Load Balancing** VPN Mobile Router w/2 RS422/485 serial isolated ports and 6 Giga Port switch; Worldwide band; dual isolated 9V~60VDC; -20~75C
- **IMR-3006-1L-2S-EUNA…….....P/N: 8621-021**
  Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/2 RS232 serial ports and 6 Giga Port switch; EU and US band; dual isolated 9V~60VDC; -20~75C
- **IMR-3006-1L-2S-APAC…….....P/N: 8621-022**
  Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/2 RS232 serial ports and 6 Giga Port switch; APAC band; dual isolated 9V~60VDC; -20~75C
- **IMR-3006-1L-2S-WW…….....P/N: 8621-023**
  Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/2 RS232 serial ports and 6 Giga Port switch; Worldwide band; dual isolated 9V~60VDC; -20~75C
- **IMR-3006-1L-2SA-EUNA…….....P/N:8621-0211**
  Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/2 RS422/485 serial isolated ports and 6 Giga Port switch; EU and US band ; dual isolated 9V~60VDC; -20~75C
- **IMR-3006-1L-2SA-APAC…….....P/N:8621-0221**
  Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/2 RS422/485 serial isolated ports and 6 Giga Port switch; APAC band; dual isolated 9V~60VDC; -20~75C
- **IMR-3006-1L-2SA-WW…….....P/N:8621-0231**
  Industrial One LTE (Dual SIM) Load Balancing** VPN Mobile Router w/2 RS422/485 serial isolated ports and 6 Giga Port switch; Worldwide band; dual isolated 9V~60VDC; -20~75C

EMMC Flash Storage

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