

IMR-3004

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

- Up to 2 concurrent mobility for 3G/4G LTE Link & GPS(2L model/4 SIMs)
- Built-in 4 Gigabit Ethernet managed switch + 2WAN ports
 Managed Switch functions cover port management, QOS, VLAN,
- multicast, redundant ring and security function
 VPN router for Multi-site VPN, OpenVPN, L2TP, IPSec, L2 over GRE and PPTP**
- Optional EMMC Flash storage on-board**
- Load Balancing** support 8 mechanism
- Support NAT and Firewall
- Support Modbus gateway on serial ports
- Support 2 RS422/485 ports with 2.5KV isolation or 2x RS232 ports
- Dual isolated Input voltage 9~60VDC (24V model); Single isolated input power 90~305VAC/120~430VDC (HV model)
- Ignition sensing on 24V model
- Vehicle E-marking* certificate
- Environmental monitoring for router inside info with voltage, current, temperature; 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*



OVERVIEW

Lantech IMR-3004 series is a next generation industrial multifunction VPN router w/up to 2x LTE modem + 4x Gigabit Ethernet managed switch + 2WAN + 2 serial ports that supports advanced function of VPN, Load-balancing**(Basic & Full package), EMMC Flash Storage**, Protocol gateway(Modbus), 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-3004 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 (1L model), 2 SIM card slots, IMR-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 router can offer 8G/16G/32G capacity.

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

IMR-3004 supports Load Balancing** for LTE/WAN 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-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, 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.

DIDO for alarm & e-mail 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-3004 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.

FEATURES & BENEFITS

- Built-in 4 Gigabit Ethernet managed switch + 2WAN ports
- Dual DC isolated input from 9V~60VDC for 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, IP sec 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**8/16/32G

24V/HV isolated input voltage selection: dual 9V-60VDC (24V model) or single 90~305VAC/120~430VDC (HV model) The IMR-3004 is able to work from 9VDC to 60VDC (24V model). Or with single high power supply at 90~305VAC / 120~430VDC (HV model).

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

Ignition Sensing

connection status at a glance

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

Built-in Managed Switch Function

Managed switch function is built-in and provides various L2+ functions for network access 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.

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

The IMR-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 IMR-3004 is best for outdoor community, vehicle, process control automation etc. For more usage flexibilities, IMR-3004 supports wide operating temperature from -20°C to 75°C or -40°C to 75°C(-E)

- Dual concurrent LTE 4G/3G design (2L model)for autoswap/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 |

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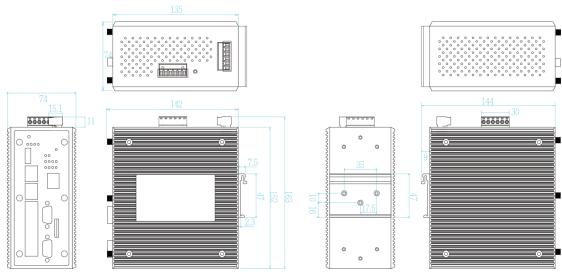


| | | stand-by. Sequentially activate another link if preferred link fail occurs. Once failover will not failback until link loss. |
|---|-----------------------------|---|
| | Priority | Routes connections through preferred WAN link as primary while others follow by. Ex. Wi-Fi client>LTE>others |
| | 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, 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*
- Reset button for factory default mode
- IP 30 housing for industrial environment
- DIN-Rail and Wall-mount** installation
- Operation temperature -20~75°C or -40~75°C(-E)

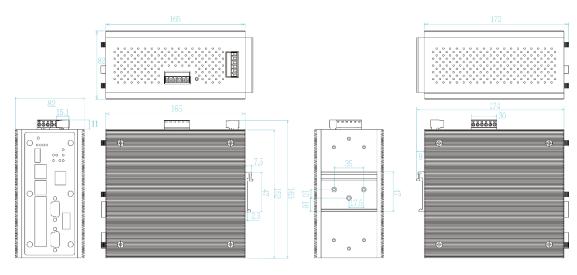
DIMENSIONS (unit=mm)

24V model





HV model



SPECIFICATION

| Location Solutions | GPS, Glonass (EU/Americas) | | Bala 16 and the second |
|---|---|----------------------|---|
| | GPS, Glonass, Beidou, Galileo (APAC model only) | | links if overflow occurs |
| Band Options | APAC & Australia (APAC model) | Weighted Round- | Evenly distribute the traffic over all working WAN |
| | LTE: | Robin | links in circular order according to the specified |
| | 2100/1800/850/2600/900/850/850/1500/700/2600/19 | | weights |
| | 00/2300/2500 MHz (B1/B3/B5/B7/B8/B18/B19/B21/B28/B38/B39/B40/B4 | Custom Route | Routing through the selected WAN for each specific traffic ex: TCP/UDP port number and IP address |
| | 1) | Full Package incl. B | asic package** |
| | EU & USA model | Sticky Session* | Binding all connections in an application session to |
| | LTE: | | particular WAN link to ensure all connections in the |
| | 2100/1800/2600/900/800 MHz | | session are routed to the same WAN link, that is |
| | (B1/B2/B3/B4/B5/B7/B12/B13/B20/B25/B26/B29/B30 | | suitable for security services like online payment etc. |
| | /B41) | Smallest load* | Routes connections through the WAN link with |
| | | Smallestillau | highest free bandwidth ratio. |
| | WorldWide (WW model) | | The ratio = 1 - (traffic load / the capability of a WAN |
| | | | link). |
| | 2100/1900/1800/1700/850/2600/900/1800/700/700/8/ 50/850/800/850/700/2300/1500/2500/3500/3700/520 | | The traffic load could be defined by downstream, |
| | 0/3600/1700 | | upstream or total traffic |
| | (B1/B2/B3/B4/B5/B7/B8/B9/B12/B13/B18/B19/B20/B | Fastest* | Routes connections through the WAN link with lowes |
| | 26/B28/B29/B30/B32/B41/B42/B43/B46/B48/B66) | | latency time. |
| | | Security | SSH/SSL/HTTPS |
| Data Rates – LTE | APAC & Australia (APAC model) | Login Security | Supports IEEE802.1x** Authentication/RADIUS |
| | Downlink (Cat 6): | Access Security | HTTP/HTTPS/Telnet/SSH & Administration; |
| | FDD: 300 Mbps | | SNMP*v1/v2/v3 access for authentication via |
| | TDD: 222 Mbps Uplink (Cat 6): | Protocol | MD5/SHA(v3) and Encryption via DES/AES(v3) PPPoE Client,DHCP server/client, Adjustable MTU, |
| | FDD: 50 Mbps | FICIOLOI | Port forwarding (NAPT), DMZ; NAT, SNTP, |
| | TDD: 26 Mbps | | Firewall(Firewall(DoS**; IP address filter / Mac |
| | Americas (US model) / EMEA (EU model) | | address filter* / TCP/UDP port name), VRRP**, |
| | Downlink (Category 3): | | DDNS* |
| | 100 Mbps (20 MHz bandwidth) | Protocol Gateway | Modbus on serial ports |
| | 50 Mbps (10 MHz bandwidth) | Management | SNMP*v1,v2c,v3/ Web/Telnet/CLI |
| | Uplink (Category 3): | Environmental | System status for input voltage, current, ambient |
| | 50 Mbps (20 MHz bandwidth) 25 Mbps (10 MHz bandwidth) | Monitoring | temperature to be shown in GUI and sent alerting if |
| Software | | | any abnormal status |
| | Descent | Graphic signal | Graphic LTE signal strength & TX/RX rate display |
| IPv6/4 VPN | Present | display | |
| Firewall | Multi-site VPN, Open VPN, PPTP**, L2TP, IPsec DoS**, IP address filter / Mac address filter* / | Timer | Built-in Real Time Clock to keep track of time |
| | TCP/UDP port number. | Discovery | always(RTC) IEEE 802.1ab Link Layer Discovery Protocol (LLDP) |
| Load Balancing** | 8 schemes for multiple WAN(client mode) | SNMP trap | Device cold / warm start |
| Fixed(standard) | Manually route by traffic type through fixed WAN link. | | Port link up / link down |
| Basic Package** | | | DI/DO high / low |
| , in the second s | Poutos connections through preferred WAN liet | Remote | To reboot or get status of router by Web UI or SMS** |
| Failover | Routes connections through preferred WAN link | Web/SMS** control | |
| | while others stand-by. Sequentially activate another | Captive portal | Editable captive portal login page |
| | link if preferred link failure occurs | Maintenance | Firmware upgradeable through TFTP/FTP/HTTP |
| Priority | Routes connections through preferred WAN link | Configuration | Supports text configuration file for system quick |
| | | backup & restore | installation |

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| | USB port to upload/download configuration by USB | SIM | Green for Link/Act |
|---|---|-----------------------------------|--|
| | dongle | GPS | Green for Link/Act |
| Physical Po | rts & System | Fault | Red: Ethernet link down or power down |
| Connectors | 10/100/1000T: 6x ports RJ 45(4 Giga + 2WAN ports) | Fault contact | |
| | USB x 1 | Relay | Relay output to carry capacity of 1A at 24VDC |
| | RS-232 connector: 1 x RJ 45 | Power | |
| | Serial connector : 2 DB9 SIM card slots : 4(2L) or 2(1L) SMA connector : 6 | Input power | Dual DC isolated inputs, 9–60VDC (24V model) Single HV isolated input, 90–305VAC/120–430VDC (HV model) |
| | Power & P-Fail connector: 1 x 6-pole terminal block DIDO : 1 x 5-pole terminal block | Power consumption (Typ.) | 30.5W |
| Serial Baud Rate | 1000Kbps high data rate, 250kbps normal for | Physical Ch | aracteristic |
| | RS232 ; 20Mbps high data rate, 250kbps normal for | Enclosure | IP 30 aluminum case |
| | RS422/485 | Dimension | 74 (W) x 142 (D) x 152 (H) mm(24V model) |
| Serial Data Bits | 5, 6, 7, 8 | Dimension | 82 (W) x 172 (D) x 152 (H) mm (HV model) |
| Serial Parity | odd, even, none, mark, space | Weight | 1000g |
| Serial Stop Bits RS-232 | 1, 1.5, 2 TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND | Environmen | tal |
| RS-232 RS-422 | TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND Tx+,Tx-, Rx+, Rx-,GND | Storage | -40°C ~ 85°C (-40°F ~ 185°F) |
| RS-485 (2-wire) | Data+, Data-, GND | Temperature | |
| Isolation protection | RS422/485 2.5KV isolation; 8KV contact & 15KV air | Operating | -20°C ~ 75°C (-40°F ~ 167°F) |
| 1301ation protection | RS232 8KV contact and 15KV air ESD | Temperature Operating Humidity | -40°C ~ 75°C (-40°F ~ 167°F) -E model 5% to 95% Non-condensing |
| | DIDO 3KV isolation | | |
| | Input power 1.5KVA isolation | Regulatory a | |
| EMMC Storage** | 8/16/32 GB | EMC | FCC* Part 15 Class A, EN55032* |
| DI/DO | 2 Digital Input (DI) : | EMS | EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000- |
| | Level 0: -30~2V / Level 1: 10~30V | | 4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), |
| | Max. input current:8mA | E an eal de att | EN61000-4-8, EN61000-4-11 |
| | 2 Digital Output(DO): Open collector to 40 VDC, | E-marking** MTBF | E13 NA |
| | 200mA | - | |
| LED Indicate | ors | Warranty | 5 years |
| Power & System | Per unit: Power 1 (Green), Power 2 (Green), P-Fail | | *Future Release |
| indicator | (Red), Ring Master(Green) Storage(Green), Serial1/Serial2(Green), Ready(Green) | | **Optional |
| 10/100/1000Base- T(X) port indicator | Link/Activity (Green), Speed (Yellow) | | |

ORDERING INFORMATION

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

- IMR-3004-2L-2S-24V-WW.......P/N: 8666-012 Industrial Dual LTE (Quad SIM) Load Balancing** Multifunction Router w/ 2 RS232 serial ports and 4 Giga Ethernet managed switch + 2WAN ports; Worldwide band; dual isolated input 9V~60VDC; -20~75C
- IMR-3004-2L-2S-24V-APAC......P/N: 8666-013 Industrial Dual LTE (Quad SIM) Load Balancing** Multifunction Router w/ 2 RS232 serial ports and 4 Giga Ethernet managed switch + 2WAN ports; APAC band; dual isolated input 9V~60VDC; -20~75C
- IMR-3004-2L-2SA-24V-WW......P/N: 8666-0121 Industrial Dual LTE (Quad SIM) Load Balancing** Multifunction Router w/2 RS422/485 serial isolated ports and 4 Giga Ethernet managed switch + 2WAN ports; Worldwide band; dual isolated input 9V~60VDC; -20~75C
- IMR-3004-2L-2SA-24V-APAC......P/N: 8666-0131 Industrial Dual LTE (Quad SIM) Load Balancing** Multifunction Router w/2 RS422/485 serial isolated ports and 4 Giga Ethernet managed switch + 2WAN ports; APAC band; dual isolated input 9V~60VDC; -20~75C
- IMR-3004-1L-2S-24V-EUNA.......P/N: 8666-021 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 isolated input 9V~60VDC; -20~75C
- IMR-3004-1L-2S-24V-WW......P/N: 8666-022 Industrial One LTE (Dual SIM) Load Balancing** Multifunction Router w/2 RS232 serial ports and 4 Giga Ethernet managed switch + 2WAN ports; Worldwide band; dual isolated input 9V~60VDC; -20~75C
- IMR-3004-1L-2S-24V-APAC......P/N: 8666-023 Industrial One LTE (Dual SIM) Load Balancing** Multifunction Router w/2 RS232 serial ports and 4 Giga Ethernet managed switch + 2WAN ports; APAC band; dual isolated input 9V~60VDC; -20~75C
- IMR-3004-1L-2SA-24V-EUNA.......P/N: 8666-0211 Industrial One LTE(Dual SIM) Load Balancing** Multifunction Router w/2 RS422/485 serial isolated ports and 4 Giga Ethernet managed switch + 2WAN ports; EU and US band ; dual isolated input 9V~60VDC; -20~75C

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Industrial Multifunction Router + Managed Switch



| OAD BAI | ANCING Basic Package | P/N: 9000-101 |
|--------------|--|--|
| Software | | |
| | | |
| | | |
| | | P/N: 8850-113 |
| 0 | witch + 2WAN ports; APAC band; single r ash Storage | IIGH DOWEL 30~303 VAC / 120~430 VDC; -20~73C |
| | | tifunction Router w/2 RS422/485 serial isolated ports and 4 Giga E high power 90~305VAC / 120~430VDC; -20~75C |
| | | |
| 0 | witch + 200AN ports; Worldwide band; sin | gle high power 90~305VAC / 120~430VDC; -20~75C P/N- 8666-0301 |
| | | tifunction Router w/2 RS422/485 serial isolated ports and 4 Giga E |
| | -1L-2SA-HV-WW | |
| 0 | | ngle high power 90~305VAC / 120~430VDC; -20~75C |
| | | ifunction Router w/2 RS422/485 serial isolated ports and 4 Giga Et |
| | -1L-2SA-HV-EUNA | |
| | VAN ports; APAC band; single high powe | |
| | | tifunction Router w/2 RS232 serial ports and 4 Giga Ethernet mana |
| | -1L-2S-HV-APAC | |
| | | ower 90~305VAC / 120~430VDC; -20~75C |
| | | tifunction Router w/2 RS232 serial ports and 4 Giga Ethernet mana |
| | -1L-2S-HV-WW | |
| | | bower 90~305VAC / 120~430VDC; -20~75C |
| | | tifunction Router w/2 RS232 serial ports and 4 Giga Ethernet mana |
| | -1L-2S-HV-EUNA | |
| | 0 | d; single high power 90~305VAC / 120~430VDC; -20~75C |
| | | ultifunction Router w/2 RS422/485 serial isolated ports and 4 Giga |
| | -2L-2SA-HV-APAC | |
| | | band; single high power 90~305VAC / 120~430VDC; -20~75C |
| | | ultifunction Router w/2 RS422/485 serial isolated ports and 4 Giga |
| | -2L-2SA-HV-WW | |
| | | band ; single high power 90~305VAC / 120~430VDC; -20~75C |
| | | Itifunction Router w/2 RS422/485 serial isolated ports and 4 Giga |
| | -2L-2SA-HV-EUNA | |
| switch + 2 | VAN ports; APAC band; single high powe | 90~305VAC / 120~430VDC; -20~75C |
| Industrial I | ual LTE (Quad SIM) Load Balancing** M | Itifunction Router w/ 2 RS232 serial ports and 4 Giga Ethernet mar |
| IMR-300 | -2L-2S-HV-APAC | P/N: 8666-026 |
| switch + 2 | VAN ports; Worldwide band; single high p | ower 90~305VAC / 120~430VDC; -20~75C |
| Industrial I | ual LTE (Quad SIM) Load Balancing** Mu | Itifunction Router w/ 2 RS232 serial ports and 4 Giga Ethernet ma |
| IMR-300 | -2L-2S-HV-WW | P/N: 8666-025 |
| switch + 2 | VAN ports; EU and US band; single high p | oower 90~305VAC / 120~430VDC; -20~75C |
| Industrial I | ual LTE (Quad SIM) Load Balancing** Mu | ultifunction Router w/ 2 RS232 serial ports and 4 Giga Ethernet mai |
| IMR-300 | -2L-2S-HV-EUNA | P/N: 8666-024 |
| managed | witch + 2WAN ports; APAC band; dual iso | plated input 9V~60VDC; -20~75C |
| | ne LTE (Dual SIM) Load Balancing** Mu | |

OPTIONAL ACCESSORIES

LTE Antenna

ANT11000041

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

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