# IPWMR-3006

## Industrial Multifunction VPN Router w/up to 2x WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 6 Gigabit Ethernet Switch (incl. 4 PoE) w/ Load Balancing, VPN, Protocol Gateway, Storage**; 24V input

- *Up to 2 concurrent WIFI 11ac and redundancy (1L-2AC model)*
- *Up to 2 concurrent mobility for 3G/4G LTE Link&GPS (2L-1AC model/4 SIMs)*
- *Support LTE Cat 6 (APAC & EUNA models) or Cat 12/9/13 (WW model)*
- *Built-in 6 Gigabit Ethernet switch including 4 PoE at/af w/budget 80W*
- *Dual radio for 802.11ac/a/b/g/n with concurrent 5GHz & 5GHz bands up to 2.6Gbps Wi-Fi bandwidth(2AC model)*
- *WIFI radio for 802.11ac/a/b/g/n with 5GHz or 2.4GHz;*
- *Support WIFI 802.11e traffic prioritization and WMM*
- *MIMO technology 3T3R up to 6 antenna(2AC); SMA type external antennas*
- *Support roaming with 802.11k & v*
- *Supports AP/ Bridge/Client/MESH modes*
- *Support 802.11s Wireless Mesh Network*
- *Air-teaming** for WIFI high-sustainability and aggregated bandwidth*
- *Advanced wireless security WEP64/128bits/ WPA/ WPA-PSK (TKIP,AES)/ WPA2/ WPA2-PSK (TKIP,AES)*
- *VPN router for Multi-site VPN, OpenVPN, L2TP over IPsec, IPsec, PPTP**, L2 over GRE , IPGRE*
- *Load Balancing built-in 5 mechanism*
- *Optional EMMC Flash storage on-board***
- *Support NAT and Firewall*
- *Support Modbus gateway on serial ports*
- *Support 2 RS422/RS485 ports with 2.5KV isolation or 2x RS232 ports*
- *ITxPT compliant w/ ignition function**
- *Input voltage selection 9~56VDC (24V model)*
- *Environmental monitoring for router inside info with voltage, current, temperature and total PoE load; WIFI & LTE graphic signal strength*
- *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 IPWMR-3006 series is a next generation industrial multi-function VPN router w/up to 2x 802.11ac WiFi + up to 2x LTE modem + + 6x Gigabit Ethernet switch incl. 4 PoE ports + 2 serial ports that supports advanced function of VPN, Load-Balancing(Basic & Full package), EMMC Flash Storage** , Protocol gateway(Modbus), Storage**, WiFi 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.

***Dual concurrent LTE design 4G/3G for load-balancing***

With dual LTE module design (2L model), 4 SIM card slots, IPWMR-3006 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, IPWMR-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.

***IEEE 802.11ac dual band radio up to 2.6Gbps bandwidth***

With IEEE 802.11ac capability, IPWMR-3006 can operate either 5GHz or 2.4GHz bands, offering the maximum speed of 2.6Gbps bandwidth (1.3Gbps per 1AC). It is also compatible with 802.11g/n that can work with 2.4GHz for longer range transmission.

The WiFi 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 WiFi with first priority.

***Air-teaming** for wireless high-sustainability and aggregated***

The innovative Air-teaming** 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 IPWMR-3006 series adapts MIMO technology with smart antenna transmission and reception for 3T3R. With six external detachable omni connectors and optional antennas, IPWMR-3006 can have better Wi-Fi & LTE/GPS coverage.

***Support AP/Bridge/Client mode, Mesh w/802.11k, v roaming***

IPWMR-3006 supports AP/Bridge/Client mode for different applications. Client mode supports PMK** Caching and pre-authentication.

It also supports 802.11k, v roaming to allow encryption keys to be stored on all of the APs in a network.

***Built-in Wireless Mesh network（WMN）***

IPWMR-3006 supports Mesh network composed of different nodes. The set of SSIDs allow the wireless client to roam freely without the need for complicated account management. With Mesh protocol, it can provide a reliable, scalable, stable and seamless network topology.

***Wireless WMM QoS***

IPWMR-3006 supports 802.11e standard which defines a set of Quality of Service for wireless LAN applications as well as WMM (WIFI 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 treads. Lantech IPWMR-3006 support up to 16 SSIDs, each SSID has its independent security and encryption.

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

IPWMR-3006 supports Load Balancing for LTE/WAN connections. There are eight schemes for Load Balancing function:

| Pack | Algorithm | Description |
|---|---|---|
| **Basic Package** | Fixed | Manually route by traffic type through fixed WAN link. |
| | 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.<br>The ratio = 1 - (traffic load / the capability of a WAN link).<br>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, RS485 in which RS422/RS485 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, IPWMR-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, OpenVPN, L2TP over IPsec, IPsec, PPTP**, 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.

***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 IPWMR-3006 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 by Web.

***Wide range input voltage from 9V-56VDC; Built-in 6 port PoE at/af switch with 80W budget***

The IPWMR-3006 is able to work from 9VDC to 56VDC for PoE at/af with PoE budget 80W@12V /80W@24V&48V that is particular good for vehicle, rail train, depot etc. application.

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

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

***Ignition Sensing****

Ignition sense allows you to delay power off your Ethernet switch with a designated time delay.

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

***Editable login page of captive portal***

The IPWMR-3006 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 IPWMR-3006 is designed to meet with industrial network environment with IP30 housing. It passed serious tests under extensive Industrial EMI and environmental vibration and shocks standards.

With CE & FCC radio certification for WIFI and LTE and E-marking certificate, the IPWMR-3006 is best for outdoor community, vehicle, process control automation etc. For more usage flexibilities, IPWMR-3006 supports wide operating temperature from -40°C to 65°C.

## FEATURES & BENEFITS

- **High Speed Air Connectivity: WLAN interface support up to 2.6Gbps link speed(2AC) or 1.3Gbps (1AC)**
- **Built-in 6 Gigabit Ethernet switch incl. 4 PoE at/af for PoE budget 80W**
- **Dual band 2.4G and 5GHz with 802.11ac/a/b/g/n**
- **EMMC-FLASH storage**8/16/32G**
- **Support 2.4Ghz operating within the following frequency bands:**
  - ***2.412~2.472 GHz***
- **Support 5Ghz operating within the following frequency bands:**
  - ***5.180GHz~5.825GHz***
- **MIMO smart antenna technology with 3T3R**
- **6 SMA type connectors for WiFi & LTE, GPS**
- **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*
- **Output power : <24dBM**
- **Transmit power adjustment**
- **VAP (virtual access point) support up to 16 SSIDs**
- **Operation modes : AP/ Bridge / Client**
- **IEEE 802.11h DFS and automatic TPC**
- **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-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**

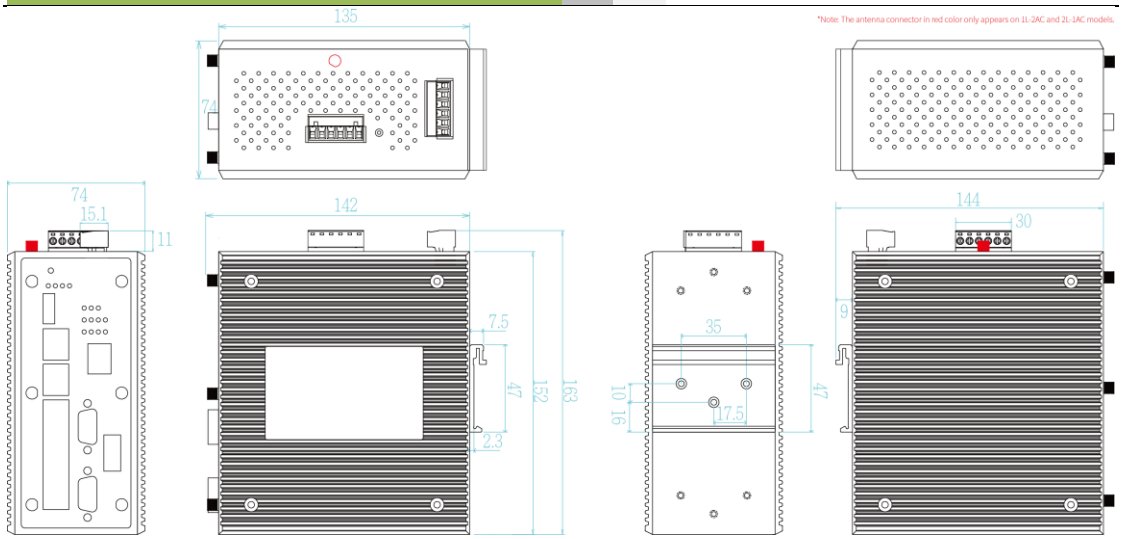
**Open VPN, L2TP over IPsec, IPsec, PPTP**, L2 over GRE , IPGRE and NAT for secured network connection**

- **The built-in Layer-4 firewall includes DDoS, IP address filter / Mac address filter / TCP/UDP port number**
- **NAT/DMZ/Port Forwarding**
- **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**
- **Support AP/Bridge/Client/MESH mode**
- **Support roaming with 802.11k & v**
- **Support 802.11s Wireless Mesh Network**
- **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. WiFi 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.<br>The ratio = 1 - (traffic load / the capability of a WAN link).<br>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/RS485)**
- **Serial port with 2.5KV isolation on RS422/RS485**
- **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 & WIFI 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/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**
- **Support editable captive portal login page**
- **IP 30 housing for industrial environment**
- **DIN-Rail and Wall-mount** installation**
- **ITxPT compliant w/ ignition function***
- **Operation temperature -40~65C**

## DIMENSIONS (unit=mm)




## SPECIFICATION

### WLAN Interface

| | |
|---|---|
| Radio Frequency Type | DSSS, OFDM |
| Wireless Standard | IEEE 802.11ac/n/a 5GHz<br>IEEE 802.11b/g/n 2.4GHz |
| Wireless bandwidth | 5GHz: Up to 1300Mbps<br>2.4GHz: Up to 450Mbps |
| Modulation | **802.11b: DSSS**<br>**802.11a/g:**<br>OFDM (BPSK, QPSK, 16-QAM, 64-QAM)<br>**802.11n:**<br>OFDM (BPSK, QPSK, 16-QAM, 64-QAM)<br>**802.11ac:**<br>OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM) |
| Operating Frequency | IEEE 802.11 a/b/g/n ISM Band,<br>2.412GHz~2.472GHz, 5150MHz~5850MHz |
| Transmission Rate | IEEE802.11ac: up to 1300Mbps<br>IEEE802.11b: 1 / 2 / 5.5 / 11 Mbps<br>IEEE802.11a/g: 6 / 9 / 12 / 18 / 24 / 36 / 48 / 54 Mbps<br>IEEE802.11n: up to 450Mbps |
| IEEE 802.11b/g/n(2.4Gbps) | **Output Power Tx +/- 2dB(per chain)**<br>18dBm @ 1~11Mbps<br>18dBm @ 6~54Mbps<br>20/20dBm @ MCS0~MCS7 (HT20/40)<br>**Receiver Sensitivity Rx +/- 2dB**<br>≦-95dBm @ 1~11Mbps<br>≦-92dBm @ 6~18Mbps<br>≦-88dBm @ 24Mbps<br>≦-85dBm @ 36Mbps<br>≦-81dBm @ 48Mbps<br>≦-80dBm @ 54Mbps<br>≦-94dBm @ MCS0 (HT20/40)<br>≦-76dBm @ MCS7 (HT20/40) |
| IEEE 802.11a/n/ac(5Gbps) | **Output Power Tx +/- 2dB(per chain)**<br>20dBm @ 6~24Mbps<br>16dBm @ 36~54Mbps<br>19/18dBm @ MCS0 (HT20/40)<br>16/16dBm @ MCS7 (HT20/40)<br>19/18/18dBm @ MCS0 (VHT20/40/80)<br>13/13/13dBm @ MCS8 (VHT20/40/80)<br>13/13dBm @ MCS9 (VHT40/80)<br>**Receiver Sensitivity Rx +/- 2dB**<br>≦-92dBm @ 6~18Mbps |
| | ≦-86dBm @ 24Mbps<br>≦-84dBm @ 36Mbps<br>≦-81dBm @ 48Mbps<br>≦-80dBm @ 54Mbps<br>≦-93dBm @ MCS0 (HT20/40)<br>≦-71dBm/≦-80dBm @ MCS7 (HT20/40)<br>≦-90dBm @ MCS0 (VHT20/40/80)<br>≦-69dBm @ MCS8 (VHT20/40/80)<br>≦-66dBm @ MCS9 (VHT40/80) |
| Encryption Security | WEP : (64-bit ,128-bit key supported)<br>WPA /WPA2 : IEEE802.11i(WEP and AES encryption)<br>WPA-PSK (256-bit key pre-shared key supported)<br>OKC** and 802.11r**<br>EAP-TLS,EAP-TTLS, and PEAP |
| Wireless Security | SSID broadcast disable |

### Cellular Interface

| | |
|---|---|
| Location Solutions | GPS, Glonass (EUNA/Americas)<br>GPS, Glonass, Beidou, Galileo (APAC model only) |
| Band Options | **Asia-Pacific (APAC model)**<br>**LTE** = B1, B3, B5, B7, B8, B18, B19, B21, B28, B38 (TDD), B39 (TDD), B40 (TDD), B41 (TDD)<br>**DC-HSPA+/ HSPA+/ HSPA/ UMTS** = B1, B5, B6, B8, B9, B19<br><br>**Europe & North America (EUNA model)**<br>**LTE** = B1, B2, B3, B4, B5, B7, B8, B12, B13, B20, B25, B26, B29, B30, B41 (TDD)<br>**DC-HSPA+/ HSPA+/ HSPA/ UMTS** = B1, B2, B3, B4, B5, B8<br><br>**World Wide (WW model)**<br>**LTE** = B1, B2, B3, B4, B5, B7, B8, B9, B12, B13, B18, B19, B20, B26, B28, B29, B30, B32, B41 (TDD), B42 (TDD), B43 (TDD), B46 (TDD), B48 (TDD), B66<br>**WCDMA** = B1, B2, B3, B4, B5, B6, B8, B9, B19 |
| Data Rates – LTE | **Asia-Pacific (APAC model)**<br>Downlink (Cat 6):<br>FDD: 300 Mbps<br>TDD: 222 Mbps<br>Uplink (Cat 6):<br>FDD: 50 Mbps<br>TDD: 26 Mbps<br><br>**Europe & North America (EUNA model)**<br>Downlink (Cat 6):<br>FDD: 300 Mbps |

| | |
|---|---|
| | TDD: 222 Mbps<br>Uplink (Cat 6):<br>FDD: 50 Mbps<br>TDD: 26 Mbps<br><br>**World Wide (WW model)**<br>Downlink:<br>Cat 12: 600 Mbps<br>Cat 9: 450 Mbps<br>Uplink:<br>Cat 13: 150 Mbps |

## Software

| | |
|---|---|
| IPv6/4 | Present |
| Operating Mode | AP/Bridge/Client/MESH modes |
| Air-teaming**(2AC) | ● High sustainability with fail over link<br>● Aggregated bandwidth |
| WMM | WIFI multimedia and 802.11e traffic prioritization |
| VPN | Multi-site VPN, Open VPN, PPTP**, L2TP over IPSec, IPSec, L2 over GRE, IPGRE and NAT |
| Firewall | DDoS, IP address filter / Mac address filter / TCP/UDP port number |
| Load Balancing | 8 schemes for multiple WAN |

### Basic Package

| | |
|---|---|
| Fixed | Manually route by traffic type through fixed WAN link. |
| 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.<br>The ratio = 1 - (traffic load / the capability of a WAN link).<br>The traffic load could be defined by downstream, upstream or total traffic |
| Fastest* | Routes connections through the WAN link with lowest latency time. |
| Security | WEP64/128bits/ WPA/ WPA-PSK (TKIP,AES)/ WPA2/ WPA2-PSK (TKIP,AES)/SSH/SSL/HTTPS |
| Roaming | 802.11k & v |
| MESH | Support 802.11s Wireless Mesh Network |
| Authentication | Radius Authentication, EAP-TLS, EAP-TTLS, PEAP; SSID broadcast disable supported |
| SSID | 16 sets |
| 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(DDoS; 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 |
| Client mode | PMK** Caching and pre-authentication. |
| 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 WIFI & 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<br>Port link up / link down<br>DI/DO high / low |
| Remote Web control | To reboot router by WebUI |
| Captive portal | Editable captive portal login page |
| Maintenance | Firmware upgradeable through TFTP/HTTP |
| Configuration backup & restore | Supports text configuration file for system quick installation<br>USB port to upload/download configuration by USB dongle |

## Physical Ports & System

| | |
|---|---|
| Connectors | 10/100/1000T: 6x ports RJ 45 (incl 4 PoE ports)<br>USB x 1<br>RS-232 connector: 1 x RJ 45<br>Serial connector : 2 DB9<br>SIM card slots : 4(2L) or 2(1L)<br>2L-1AC model<br>SMA connector for LTE: 4 (female)<br>SMA connector for GPS: 1 (female)<br>RP-SMA connector for Wi-Fi: 2 (female)<br>1L-2AC model<br>SMA connector for LTE: 2 (female)<br>SMA connector for GPS: 1 (female)<br>RP-SMA connector for Wi-Fi: 4 (female)<br>1L-1AC model<br>SMA connector for LTE: 2 (female)<br>SMA connector for GPS: 1 (female)<br>RP-SMA connector for Wi-Fi: 3 (female)<br>Power & P-Fail connector: 1 x 6-pole terminal block<br>DIDO : 1 x 5-pole terminal block |
| Serial Baud Rate | 1000Kbps for RS232 ; 12Mbps for RS422/RS485 |
| 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/RS485 2.5KV isolation; 8KV contact & 15KV air<br>RS232 8KV contact and 15KV air ESD<br>DIDO 3KV isolation<br>Input power 1.5KVA isolation |
| EMMC Storage** | 8/16/32 GB |
| DI/DO | 2 Digital Input (DI) :<br>Level 0: -30~2V / Level 1: 10~30V<br>Max. input current:8mA<br>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 (1000T: Yellow; 10/100TX: off), PoE (Green) |
| 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 input, 9~56VDC (24V model) |
| PoE Budget | 80W@12V /80W@24V&48V |
| Power consumption (Typ.) | 30.5 Watts |

## Physical Characteristic

| | |
|---|---|
| Enclosure | IP30 Metal case |
| Dimension | 74 (W) x 142 (D) x 152 (H) mm (1L-1AC model)<br>74 (W) x 142 (D) x 159 (H) mm (1L-2AC / 2L-1AC model) |
| Weight | 900g |

## Environmental

| | |
|---|---|
| Storage Temperature | -40°C ~ 85°C (-40°F ~ 185°F) |
| Operating Temperature | -40°C ~ 65°C (-40°F ~ 149°F) |
| 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 |
| Vehicle certificate | E13**<br>ITxPT compliant* |

| | |
|---|---|
| MTBF | 1,361,618hrs ( IEC-62380) |
| 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 | -93dBm | ±2dB |
| | 18Mbps | 21dBm | 26dBm | ±2dB | -90dBm | ±2dB |
| | 24Mbps | 21dBm | 26dBm | ±2dB | -90dBm | ±2dB |
| | 36Mbps | 20dBm | 25dBm | ±2dB | -85dBm | ±2dB |
| | 48Mbps | 19dBm | 24dBm | ±2dB | -82dBm | ±2dB |
| | 54Mbps | 18dBm | 23dBm | ±2dB | -80dBm | ±2dB |
| 2.4GHz 802.11n HT20 | MCS 0 | 21dBm | 26dBm | ±2dB | -94dBm | ±2dB |
| | MCS 1 | 21dBm | 26dBm | ±2dB | -92dBm | ±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 | -80dBm | ±2dB |
| | MCS 6 | 18dBm | 23dBm | ±2dB | -79dBm | ±2dB |
| | MCS 7 | 16dBm | 21dBm | ±2dB | -77dBm | ±2dB |
| 2.4GHz 802.11n HT40 | MCS 0 | 20dBm | 25dBm | ±2dB | -93dBm | ±2dB |
| | MCS 1 | 20dBm | 25dBm | ±2dB | -91dBm | ±2dB |
| | MCS 2 | 20dBm | 25dBm | ±2dB | -89dBm | ±2dB |
| | MCS 3 | 19dBm | 24dBm | ±2dB | -84dBm | ±2dB |
| | MCS 4 | 19dBm | 24dBm | ±2dB | -82dBm | ±2dB |
| | MCS 5 | 19dBm | 24dBm | ±2dB | -80dBm | ±2dB |
| | MCS 6 | 18dBm | 23dBm | ±2dB | -79dBm | ±2dB |
| | MCS 7 | 16dBm | 21dBm | ±2dB | -75dBm | ±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 | -91dBm | ±2dB |
| | 24Mbps | 20dBm | 25dBm | ±2dB | -90dBm | ±2dB |
| | 36Mbps | 18dBm | 23dBm | ±2dB | -86dBm | ±2dB |
| | 48Mbps | 16dBm | 21dBm | ±2dB | -83dBm | ±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 |
| 5GHz 802.11ac VHT80 | MCS 0 | 18dBm | 23dBm | ±2dB | -89dBm | ±2dB |
| | 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 -40~65C operational temperature model

- **IPWMR-3006-2L-1AC-2S-24V-EUNA…..……..…….....P/N: 8623-011**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/ 2 RS232 serial ports and 6 Giga Port Switch incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-2L-1AC-2S-24V-WW…..……..…….....P/N: 8623-012**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/ 2 RS232 serial ports and 6 Giga Port Switch incl.4 PoE; worldwide band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-2L-1AC-2S-24V-APAC…..…….....,....P/N: 8623-013**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/ 2 RS232 serial ports and 6 Giga Port Switch incl.4 PoE; APAC band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-2L-1AC-2SA-24V-EUNA…..……..…….....P/N: 8623-0111**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS422 serial ports and 6 Giga Port Switch incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-2L-1AC-2SA-24V-WW……..……..…….P/N: 8623-0121**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS422 serial ports and 6 Giga Port Switch incl.4 PoE; Worldwide band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-2L-1AC-2SA-24V-APAC…..……..…….....P/N: 8623-0131**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS422 serial ports and 6 Giga Port Switch incl.4 PoE; APAC band; dual input 9~56VDC; -40~65C

- **IPWMR-3006-2L-1AC-2SB-24V-EUNA…….P/N: 8623-0112**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS485 serial ports and 6 Giga Port Switch incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-2L-1AC-2SB-24V-WW…….P/N: 8623-0122**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS485 serial ports and 6 Giga Port Switch incl.4 PoE; Worldwide band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-2L-1AC-2SB-24V-APAC…….P/N: 8623-0132**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS485 serial ports and 6 Giga Port Switch incl.4 PoE; APAC band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-1L-1AC-2S-24V-EUNA…….P/N: 8623-021**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS232 serial ports and 6 Giga Port Switch incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-1L-1AC-2S-24V-APAC…….P/N: 8623-022**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS232 serial ports and 6 Giga Port Switch incl.4 PoE; APAC band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-1L-1AC-2S-24V-WW…….P/N: 8623-023**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS232 serial ports and 6 Giga Port Switch incl.4 PoE; Worldwide band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-1L-1AC-2SA-24V-EUNA…….P/N: 8623-0211**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS422 serial ports and 6 Giga Port Switch incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-1L-1AC-2SA-24V-APAC…….P/N: 8623-0221**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS422 serial ports and 6 Giga Port Switch incl.4 PoE; APAC band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-1L-1AC-2SA-24V-WW…….P/N: 8623-0231**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS422 serial ports and 6 Giga Port Switch incl.4 PoE; Worldwide band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-1L-1AC-2SB-24V-EUNA…….P/N: 8623-0212**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS485 serial ports and 6 Giga Port Switch incl.4 PoE; EU and US band; dual input 9~56VDC ; -40~65C
- **IPWMR-3006-1L-1AC-2SB-24V-APAC…….P/N: 8623-0222**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS485 serial ports and 6 Giga Port Switch incl.4 PoE; APAC band; dual input 9~56VDC ; -40~65C
- **IPWMR-3006-1L-1AC-2SB-24V-WW…….P/N: 8623-0232**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS485 serial ports and 6 Giga Port Switch incl.4 PoE; Worldwide band; dual input 9~56VDC ; -40~65C
- **IPWMR-3006-1L-2AC-2S-24V-EUNA…….P/N: 8623-031**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/ 2 RS232 serial ports and 6 Giga Port switch EU and US band; dual input 9~56VDC ; -40~65C
- **IPWMR-3006-1L-2AC-2S-24V-APAC…….P/N: 8623-032**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/ 2 RS232 serial ports and 6 Giga Port Switch incl.4 PoE; APAC band; dual input 9~56VDC ; -40~65C
- **IPWMR-3006-1L-2AC-2S-24V-WW…….P/N: 8623-033**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/ 2 RS232 serial ports and 6 Giga Port Switch incl.4 PoE; Worldwide band; dual input 9~56VDC ; -40~65C
- **IPWMR-3006-1L-2AC-2SA-24V-EUNA…….P/N: 8623-0311**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS422 serial ports and 6 Giga Port switch EU and US band; dual input 9~56VDC ; -40~65C
- **IPWMR-3006-1L-2AC-2SA-24V-APAC…….P/N: 8623-0321**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS422 serial ports and 6 Giga Port Switch incl.4 PoE; APAC band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-1L-2AC-2SA-24V-WW…….P/N: 8623-0331**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS422 serial ports and 6 Giga Port Switch incl.4 PoE; Worldwide band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-1L-2AC-2SB-24V-EUNA…….P/N: 8623-0312**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS485 serial ports and 6 Giga Port switch EU and US band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-1L-2AC-2SB-24V-APAC…….P/N: 8623-0322**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS485 serial ports and 6 Giga Port Switch incl.4 PoE; APAC band; dual input 9~56VDC; -40~65C
- **IPWMR-3006-1L-2AC-2SB-24V-WW…….P/N: 8623-0332**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing AP VPN Mobile Router w/2 RS485 serial ports and 6 Giga Port Switch incl.4 PoE; Worldwide band; dual input 9~56VDC; -40~65C

**EMMC Flash Storage**

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

- **32G……P/N: 8850-115**

**Software License**

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

## OPTIONAL ACCESSORIES

### Multifunction Antenna

- **ANT11000091** 5-in-1 omnidirectional antenna – 2G/3G/4G (698-960/1710~2170/2300~2700MHz) MIMO x2 + Wi-Fi 2.4/5GHz MIMO x2 + GPS/GLONASS/GALILEO (1575.42/1602MHz) x1, 3dBi, IP67

- **ANT11000092** 6-in-1 omnidirectional antenna – 2G/3G/4G (698-960/1710~2170/2300~2700MHz) MIMO x2 + Wi-Fi 2.4/5GHz MIMO x1 + GPS/GLONASS/GALILEO/BeiDou (1561/1575.42/1602MHz) x1 + AM/FM x1 + DSRC x1, 6dBi, IP67

### 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

- **ANT11000044** 2G/3G/4G dipole antenna, 704-960/1710~2690MHz, 1.6dBi, SMA plug, EU

- **ANT11000045** 2G/3G/4G dipole antenna, 698-960/1710~2690MHZ, 3dBi, SMA plug, US

### Wi-Fi Antenna

- **ANT11000051** 2.4/5GHz SMA dipole Wi-Fi antenna, 3dBi (2.4GHz), 4dBi (5GHz)

- **ANT11000055** 2.4/5GHz SMA dipole Wi-Fi antenna, 6dBi (2.4GHz), 4dBi (5GHz)

- **ANT11000090** 2.4/5GHz omnidirectional Wi-Fi antenna, 802.11ac 3x3 MIMO, 5dBi, IP67

## Antenna Base

- **ADA11000052** Magnetic antenna base for Wi-Fi, RP SMA Jack Base, Length : 1M

- **ADA11000053** Magnetic antenna base for 3G/4G, RP SMA Jack Base, Length : 1M

**Lantech Communications Global Inc.**

www.lantechcom.tw
info@lantechcom.tw