

IPWAP-3006

Industrial Multifunction VPN Router w/up to 2x WiFi 11ac + 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(2AC model)
- Built-in 6 Gigabit Ethernet managed switch including 4 PoE at/af w/budget 80W
- Managed Switch functions cover port management, QOS, VLAN, multicast, redundant ring and security function
- 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
- Support NAT and Firewall
- Optional EMMC Flash storage on-board**
- Support Modbus gateway on serial ports**
- Support 2 RS422/RS485 ports with 2.5KV isolation or 2x RS232 ports
- Dual input voltage selection 9~56VDC (24V model)
- Vehicle E-marking** certificate
- ITxPT compliant w/ ignition function**
- Environmental monitoring for router inside info with voltage, current, temperature and total PoE load; Wi-Fi 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 IPWAP-3006 series is a next generation industrial multi-function VPN router w/up to 2x 802.11ac Wi-Fi + 6x Gigabit Ethernet managed 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), and Wi-Fi roaming. The dual core CPU with 1.6GHz + 256M flash enables the router to multi-task smoothly.

IEEE 802.11ac dual band radio up to 2.6Gbps bandwidth

With IEEE 802.11ac capability, IPWAP-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 Wi-Fi 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 Wi-Fi with first priority.

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

IPWAP-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)

IPWAP-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.

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.

Optional EMMC Flash storage**

The optional EMMC flash storage on router can offer 8G/16G/32G capacity

MIMO technology with 3T3R and SMA type connectors

Lantech IPWAP-3006 series adapts MIMO technology with smart antenna transmission and reception for 3T3R. With six external detachable Omni connectors and optional antennas, IPWAP-3006 can have better Wi-Fi coverage.

Wireless WMM QoS

IPWAP-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 trends. Lantech IPWAP-3006 support up to 16 SSIDs, each SSID has its independent security and encryption.

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

IPWAP-3006 supports Load Balancing for WAN connections. There are eight schemes for Load Balancing function:

| | | |
|---|----------------------|--|
| | | occurs. Once failover will not fallback 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, 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, IPWAP-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 IPWAP-3006 will immediately send email** and trap.

| 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 |

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 (24V Model);

Built-in 6 port PoE at/af switch with 80W budget

The IPWAP-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 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**alert when abnormal.

Ignition Sensing*

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 and upgrade firmware through USB dongle for router replacement.

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

Editable login page of captive portal

The IPWAP-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 IPWAP-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 WIFI and E-marking** certificate, the IPWAP-3006 is best for outdoor community, vehicle, process control automation etc application. For more usage flexibilities, IPWAP-3006 supports wide operating temperature from -20°C to 70°C & -40°C to 70°C (-E model)

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 managed switch incl. 4 PoE at/af for PoE budget 80W
- Dual band 2.4G and 5GHz with 802.11ac/a/b/g/n
- 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
- EMMC-FLASH storage**8/16/32G
- 6 SMA type connectors for Wi-Fi
- 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 AP/Bridge/Client/MESH mode
- Support roaming with 802.11k & v
- Support 802.11s Wireless Mesh Network
- 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
- Load Balancing supports 8 mechanism between

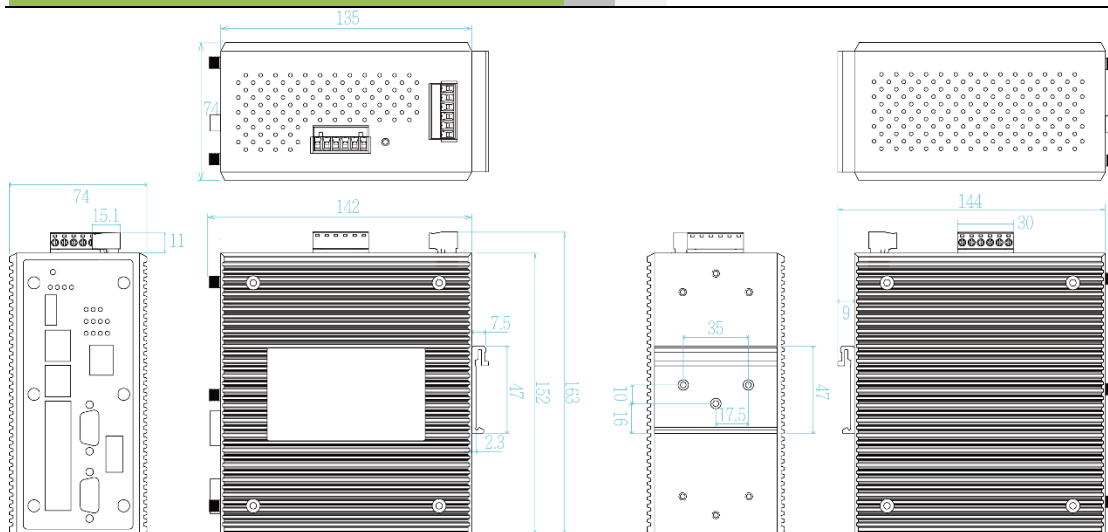
multiple WANs

| 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. 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/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**, text, Relay ; Permanent local log rotation / Maxi 1K records
- Remote Web control to get status or re-boot by Web
- Graphic 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 -20~70C or -40~70C (-E model)

DIMENSIONS (unit=mm)



SPECIFICATION

| | | | |
|----------------------------|--|---|--|
| WLAN Interface | | Fixed | Manually route by traffic type through fixed WAN link. |
| Radio Frequency Type | DSSS, OFDM | Failover | Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link failure occurs. |
| Wireless Standard | IEEE 802.11ac/n/a 5GHz IEEE 802.11b/g/n 2.4GHz | Priority | Routes connections through preferred WAN link while others stand-by. Sequentially activate other links if overflow occurs. |
| Wireless bandwidth | 5GHz: Up to 1300Mbps 2.4GHz: Up to 450Mbps | Weighted Round-Robin | Evenly distribute the traffic over all working WAN links in circular order according to the specified weights |
| Modulation | 802.11b: DSSS 802.11a/g: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11ac: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM) | Custom Route | Routing through the selected WAN for each specific traffic ex: TCP/UDP port number and IP address. |
| Operating Frequency | IEEE 802.11 a/b/g/n ISM Band, 2.412GHz-2.472GHz, 5150MHz-5850MHz | Full Package** incl. basic package | |
| Transmission Rate | IEEE802.11ac: up to 1300Mbps IEEE802.11b: 1 / 2 / 5.5 / 11 Mbps IEEE802.11a/g: 6 / 9 / 12 / 18 / 24 / 36 / 48 / 54 Mbps IEEE802.11n: up to 450Mbps | 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. |
| IEEE 802.11b/g/n(2.4Gbps) | Output Power Tx +/- 2dB(per chain) 18dBm @ 1-11Mbps 18dBm @ 6-54Mbps 20/20dBm @ MCS0-MCS7 (HT20/40) Receiver Sensitivity Rx +/- 2dB ≤ -95dBm @ 1-11Mbps ≤ -92dBm @ 6-18Mbps ≤ -88dBm @ 24Mbps ≤ -85dBm @ 36Mbps ≤ -81dBm @ 48Mbps ≤ -80dBm @ 54Mbps ≤ -94dBm @ MCS0 (HT20/40) ≤ -76dBm @ MCS7 (HT20/40) | 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 |
| IEEE 802.11a/n/ac(5Gbps) | Output Power Tx +/- 2dB(per chain) 20dBm @ 6-24Mbps 16dBm @ 36-54Mbps 19/18dBm @ MCS0 (HT20/40) 16/16dBm @ MCS7 (HT20/40) 19/18/18dBm @ MCS0 (VHT20/40/80) 13/13/13dBm @ MCS8 (VHT20/40/80) 13/13dBm @ MCS9 (VHT40/80) Receiver Sensitivity Rx +/- 2dB ≤ -92dBm @ 6-18Mbps ≤ -86dBm @ 24Mbps ≤ -84dBm @ 36Mbps ≤ -81dBm @ 48Mbps ≤ -80dBm @ 54Mbps ≤ -93dBm @ MCS0 (HT20/40) ≤ -71dBm/≤ -80dBm @ MCS7 (HT20/40) ≤ -90dBm @ MCS0 (VHT20/40/80) ≤ -69dBm @ MCS8 (VHT20/40/80) ≤ -66dBm @ MCS9 (VHT40/80) | Fastest* | Routes connections through the WAN link with lowest latency time. |
| Encryption Security | WEP : (64-bit ,128-bit key supported) WPA/WPA2:IEEE802.11i(WEP and AES encryption) WPA-PSK (256-bit key pre-shared key supported) OKC** and 802.11r** EAP-TLS,EAP-TTLS, PEAP | Security | WEP64/128bits/ WPA/ WPA-PSK (TKIP,AES)/ WPA2/ WPA2-PSK (TKIP,AES)/SSH/SSL/HTTPS |
| Wireless Security | SSID broadcast disable | Roaming | 802.11k & v |
| Software | | MESH | Support 802.11s Wireless Mesh Network |
| IPv6/4 | Present | Authentication | Radius Authentication, EAP-TLS, EAP-TTLS, PEAP; SSID broadcast disable supported |
| Operating Mode | AP/Bridge/Client/MESH modes | SSID | 16 sets |
| Air-teaming**(2AC) | <ul style="list-style-type: none"> High sustainability with fail over link Aggregated bandwidth | Login Security | Supports IEEE802.1x Authentication/RADIUS |
| WMM | WiFi multimedia and 802.11e traffic prioritization | Access Security | HTTP/HTTPS/Telnet/SSH & Administration; SNMP*v1/v2/v3 access for authentication via MD5/SHA(v3) and Encryption via DES/AES(v3) |
| VPN | Multi-site VPN, Open VPN, PPTP**, L2TP over IPSec, IPSec, L2 over GRE, IPGRE and NAT | 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* |
| Firewall | DDoS, IP address filter / Mac address filter / TCP/UDP port number | Protocol Gateway | Modbus on serial ports** |
| Load Balancing | 8 schemes for multiple WAN | Management | SNMP*v1 ,v2c, v3/ Web/Telnet/CLI |
| Basic Package | | 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 signal strength |
| | | Timer | Built-in Real Time Clock to keep track of time always(RTC) |
| | | Discovery | IEEE 802.1ab Link Layer Discovery Protocol (LLDP) |
| | | SNMP trap | Device cold / warm start Port link up / link down D/D/O 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 USB port to upload/download configuration by USB dongle |
| | | Physical Ports & System | |
| | | Connectors | 10/100/1000T: 6x ports RJ 45 (incl 4 PoE ports) USB x 1 RS-232 connector: 1 x RJ 45 Serial connector : 2 DB9 RP-SMA connector for Wi-Fi 2AC: 6 (female) RP-SMA connector for Wi-Fi 1AC: 3 (female) Power & P-Fail connector: 1 x 6-pole terminal block 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 | Environmental |
| 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 RS232 8KV contact and 15KV air ESD DIDO 3KV isolation Input power 1.5KVA isolation | Storage Temperature |
| EMMC Storage** | 8/16/32 GB | Operating Temperature |
| D/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 | Operating Humidity |
| LED Indicators | | Regulatory approvals |
| Power & System indicator | Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red) , Ring Master(Green), Storage(Green), Serial1/Serial2(Green) ,Ready(Green) | Safety |
| 10/100/1000Base-T(X) port indicator | Link/Activity (Green), Speed (1000T: Yellow; 10/100TX: off), PoE (Green) | EMC |
| Fault | Red: Ethernet link down or power down | EMS |
| Fault contact | | Radio Frequency |
| Relay | Relay output to carry capacity of 1A at 24VDC | Vehicle certificate |
| Power | | MTBF |
| Input power | Dual DC input, 9~56VDC (24V model) | Warranty |
| PoE Budget | 80W @12V /80W @24V&48V | |
| Power consumption (Typ.) | 30.5 Watts | |
| Physical Characteristic | | |
| Enclosure | IP 30 Metal case | |
| Dimension | 74 (W) x 142 (D) x 152 (H) mm | |
| Weight | 900g | |

*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 |
| 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 -40~70C operational temperature model, the model name will add -E

- **IPWAP-3006-1AC-24V.....P/N: 8625-017**
One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router and 6 Giga Port Managed Switch incl.4 PoE; dual input 9~56VDC; -20~70C
- **IPWAP-3006-1AC-2S-24V.....P/N: 8625-011**
One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/ 2 RS232 serial ports and 6 Giga Port Managed Switch incl.4 PoE; dual input 9~56VDC; -20~70C
- **IPWAP-3006-1AC-2SA-24V.....P/N:8625-012**
One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS422 serial ports and 6 Giga Port Managed Switch incl.4 PoE; dual input 9~56VDC; -20~70C
- **IPWAP-3006-1AC-2SB-24V.....P/N:8625-015**
One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS485 serial ports and 6 Giga Port Managed Switch incl.4 PoE; dual input 9~56VDC; -20~70C
- **IPWAP-3006-2AC-24V.....P/N: 8625-018**
Two WIFI 11ac/a/b/g/n Load Balancing Multifunction Router and 6 Giga Port Managed Switch incl.4 PoE; dual input 9~56VDC; -20~70C
- **IPWAP-3006-2AC-2S-24V.....P/N: 8625-013**
Two WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS232 serial ports and 6 Giga Port Managed Switch incl.4 PoE; dual input 9~56VDC; -20~70C

Industrial Multifunction Router + PoE Switch

- **IPWAP-3006-2AC-2SA-24V.....P/N:8625-014**
Two WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS422 serial ports and 6 Giga Port Managed Switch incl.4 PoE; dual input 9~56VDC; -20~70C
- **IPWAP-3006-2AC-2SB-24V.....P/N:8625-016**
Two WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS485 serial ports and 6 Giga Port Managed Switch incl.4 PoE; dual input 9~56VDC; -20~70C

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

Management System

- **InstaAir.....P/N: 9000-121**
Cloud Based Fleet Management System for Routers

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, cable length: 3M



Antenna Base

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



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