IWAP-3002

Industrial Multifunction VPN Router w/up to 2x WiFi 11ac + 2 serial ports** + 2 Gigabit Ethernet (incl.1 PD**) w/Load Balancing, VPN, Protocol Gateway, Storage**; 24V input

- *Up to 2 concurrent WI-FI 11ac and redundancy(2AC model)*
- *Built-in 2 Gigabit Ethernet ports (1LAN+1WAN or 2LAN) (incl. 1PD**)*
- *Dual radio for 802.11ac/a/b/g/n with concurrent 5GHz & 5GHz bands up to 2.6Gbps Wi-Fi bandwidth (2AC model)*
- *MIMO technology 3T3R; SMA type up to 6 external antenna*
- *VPN router for Multi-site VPN, OpenVPN, L2TP over IPsec, IPsec, PPTP, L2 over GRE , IPGRE*
- *Load Balancing support 8 mechanism*
- *Support NAT and Firewall*
- *Optional EMMC Flash storage on-board***
- *Support Modbus gateway*
- *Support Client-base roaming*
- *Supports AP/ Bridge/Client/MESH modes*
- *Support 802.11s Wireless Mesh Network*
- *Support 2 RS422/485 ports or 2x RS232 ports*
- *Dual input range from 9V to 56VDC (24V model) ; Dual Input 9V-36VDC (24V-IGN model)*
- *Ignition sensing on 24V model*
- *Vehicle E-marking* certificate*
- *Wi-Fi graphic signal strength*
- *ITxPT design w/ ignition function**
- *Editable login page of captive portal for hot-spot application*
- *USB port to backup, restore the configuration file and upgrade firmware; Dual image firmware*
- *EN50155/61373/45545 verification for railway application (except 24V-IGN model)*



RJ45 model



M12 model



OVERVIEW

Lantech IWAP-3002 series is a next generation industrial multi-function VPN router w/up to 2x 802.11ac Wi-Fi + 2x Gigabit Ethernet (incl.1 PD** + 2 serial ports** that supports advanced function of VPN, Load-Balancing, 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.

Support AP/Bridge/Client mode, Mesh roaming

IWAP-3002 supports AP/Bridge/Client mode for different applications.

It also supports client-base roaming to swap between the APs in a network.

Built-in Wireless Mesh network（WMN）

IWAP-3002 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.

IEEE 802.11ac dual band radio up to 2.6Gbps bandwidth

With IEEE 802.11ac capability, IWAP-3002 can operate either 5GHz or 2.4GHz bands, offering the maximum speed of 2.6Gbps bandwidth 1.3GMbps per 802.11ac module). It is also compatible with 802.11b/g/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.

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 IWAP-3002 series adapts MIMO technology with smart antenna transmission and reception for 3T3R. With six external detachable Omni connectors and optional antennas, IWAP-3002 can have better Wi-Fi coverage.

Wireless WMM QoS

IWAP-3002 supports 802.11e standard which defines a set of Quality of Service for wireless LAN applications as well as WMM (Wi-Fi 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 IWAP-3002 support up to 16 SSIDs, each SSID has its independent security and encryption.

Load Balancing with 5 mechanism for multi-WANs

IWAP-3002 supports Load Balancing for WAN (client mode) connections. There are five schemes for Load Balancing function:

Pack	Algorithm	Description
Basic	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.

2 port serial connection, Modbus gateway

It builds in 2 port serial connection for RS232, RS422, 485. (RJ45 model only)

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, IWAP-3002 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.

Email notice; Event log; Remote Web control

In case of events, the IWAP-3002 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.

24V input voltage selection: dual 9V-56VDC (24V model) or dual 9V-36VDC (24V-IGN model)

The IWAP-3002 is able to work from 9VDC to 56VDC (24V model) or dual 9V-36VDC (24V-IGN model).

Built-in 2 port Gigabit Ethernet

Two port Gigabit Ethernet can be supported as 1LAN+1WAN or 2LAN models.

Graphic Wi-Fi signal strength

The graphic Wi-Fi signal strength shows connection status at a glance

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.

Ignition Sensing

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

Editable login page of captive portal

The IWAP-3002 supports editable captive portal function that allows administrator to force end-users redirect to authentication page.

Ruggedized industrial design and FCC, CE certificate

The IWAP-3002 is designed to meet with outdoor network environment with IP30 (IP43 for M12 model) housing. It passed serious tests under extensive Industrial EMI and environmental vibration and shocks standards. With CE & FCC radio certification for Wi-Fi, the IWAP-3002 is best for outdoor community, vehicle, and process control automation applications.

For more usage flexibilities, IWAP-3002 supports wide operating temperature from -20°C to 70°C or -40°C to 70°C (-E)

EN50155, EN61373 verification; E-marking** certification; ITxPT** design

The IWAP-3002 series is also applicable for railway on-board/track side, vehicle and mining applications for more usage flexibilities. The series is verified with EN50155, EN61373, and EN45545 for railway applications (Except 24V-IGN model). The E-marking certificate (24V model) and ITxPT design (24V-IGN model).

FEATURES & BENEFITS

- **High Speed Air Connectivity: WLAN interface support up to 2.6Gbps link speed(2AC) or 1.3GMbps (1AC)**
- **Built-in two Gigabit ports and 1LAN+1WAN or 2LAN**
- **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:**
- **5.180~5.825 GHz**
- **MIMO smart antenna technology with 3T3R with 6 SMA type connectors and optional antennas**
- **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.**
- **IEEE 802.11h DFS and automatic TPC**
- **Output power : <24dBM**
- **EMMC-FLASH storage**8/16/32G**
- **Transmit power adjustment**
- **VAP (virtual access point) support up to 16 SSIDs**
- **Operation modes : AP / Bridge / Client**
- **Traffic control for each SSID**
- **Band preference for same SSID services on dual band**
- **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 Client-base roaming**
- **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 5 mechanism between multiple WANs**

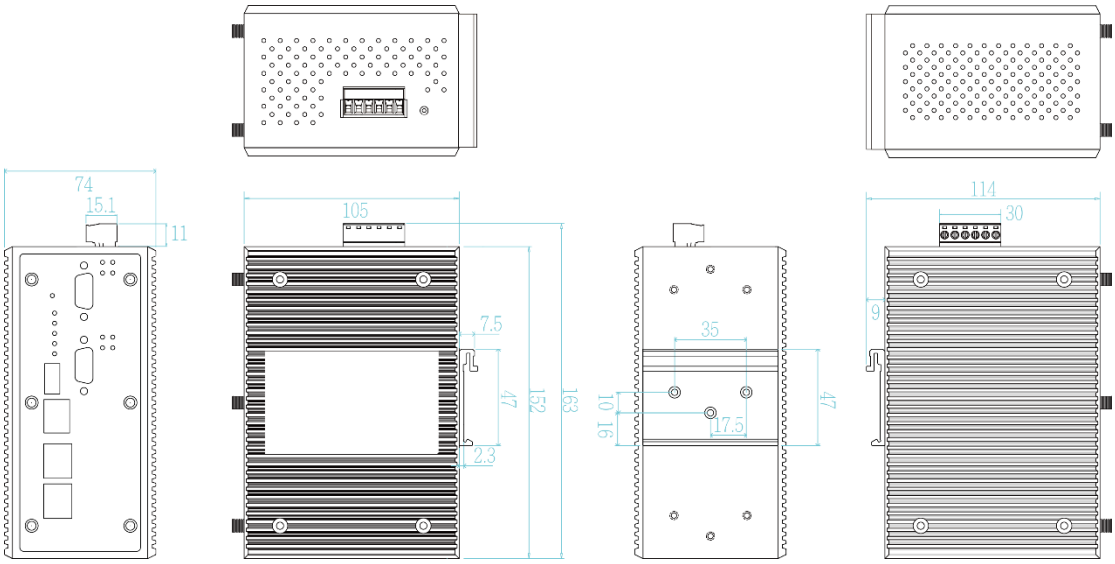
Pack	Algorithm	Description
Basic	Fixed	Manually route by traffic type through fixed WAN link.
	Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link fail occurs. Once failover will not failback until link loss.
	Priority	Routes 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.

- **Built-in 2 x serial ports**(RS232/RS422/485, RJ45 model only)**
- **Built-in Modbus gateway converting Modbus RTU/ASCII to Modbus/TCP**
- **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**
- **Built-in RTC to keep track of time always**
- **Support SNTP to synchronize system clock**
- **Support LLDP discovery protocol**
- **Support DHCP Server and Client**
- **Reset button for factory default mode**
- **Graphic WI-FI signal strength**
- **Firmware upgradeable through TFTP/FTP/HTTP**
- **Configuration backup and restoration**
  - *Supports text configuration file for system quick installation*
  - *USB port to upload/download firmware by USB dongle*
- **Support editable captive portal login page**
- **IP30 /IP43(M12 model) housing for industrial environment**
- **RJ45 model: DIN-Rail and Wall-mount** installation**
- **M12 model: Wall-mount installation**
- **Operation temperature -20~70C or -40°C to 70°C (-E)**

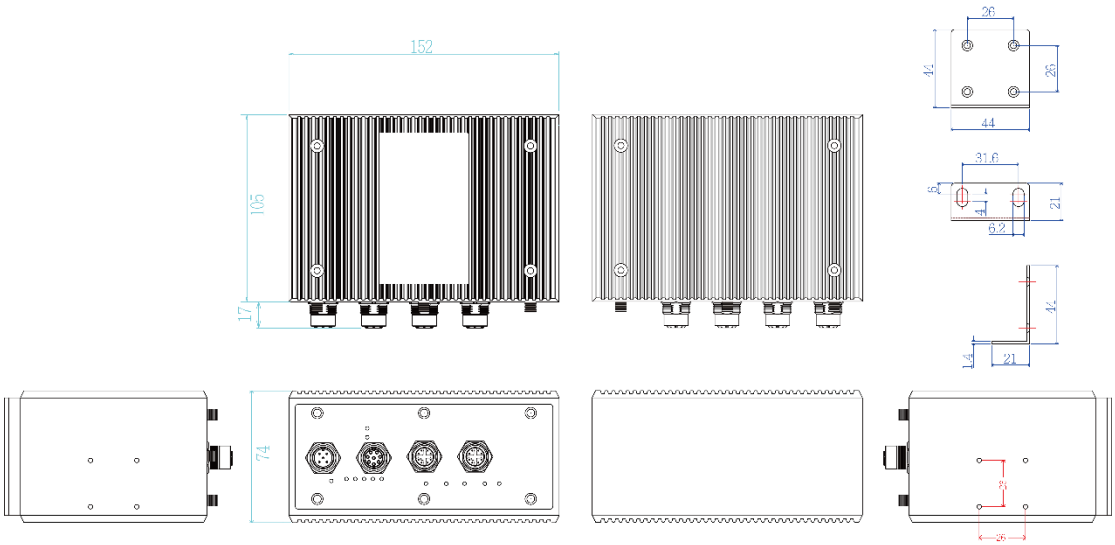
- ITxPT design w/ ignition function*
- EN50155 & EN61373 verification (Except 24V-IGN model)
- Wide range input voltage from 9V-56V ; dual input 9V-36VDC (24V-IGN model)

DIMENSIONS (unit=mm)

24V model



M12 model



SPECIFICATION

WLAN Interface

Radio Frequency Type	DSSS, OFDM
Wireless Standard	IEEE 802.11ac/n/a 5GHz IEEE 802.11b/g/n 2.4GHz
Wireless bandwidth	5GHz: Up to 1300Mbps 2.4GHz: Up to 450Mbps
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)
Operating Frequency	IEEE 802.11 a/b/g/n ISM Band, 2.412GHz~2.472GHz, 5150MHz~5850MHz
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
IEEE 802.11b/g/n(2.4GHz)	**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)
IEEE 802.11a/n/ac(5GHz)	**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)
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) EAP-TLS,EAP-TTLS, PEAP
Wireless Security	SSID broadcast disable

Software

IPv6/4	Present
Operation Mode	AP/Bridge/Client/MESH mode
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	PoE 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
Management	SNMP v1,v2c,v3/ Web/Telnet/CLI
Load Balancing	5 schemes for multiple WAN

Basic

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.
Roaming	Client-base roaming
MESH	Support 802.11s Wireless Mesh Network
WMM	Wi-Fi multimedia and 802.11e traffic prioritization
Security	WEP64/128bits/ WPA/ WPA-PSK (TKIP,AES)/ WPA2/ WPA2-PSK (TKIP,AES)/SSH/SSL/HTTPS
Authentication	Radius Authentication, EAP-TLS, EAP-TTLS, PEAP; SSID broadcast disable supported
SSID	16 sets
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
Graphic signal display	Graphic Wi-Fi signal strength
Remote Web control	To reboot or get status of router by WebUI
Captive portal	Editable captive portal login page
Maintenance	Firmware upgradeable through TFTP/FTP/HTTP
Configuration backup & restore	Supports text configuration file for quick system installation USB port to upload/download firmware by USB dongle

Physical Ports & System

Connectors	10/100/1000T: 2x ports RJ 45 with Auto MDI/MDI-X function (2 x10/100/1000T; 8 pin X coded-M12 model) USB x 1 RS-232 connector: 1 x RJ 45 Serial connector : 2 DB9 SMA connector : 6 male Power & P-Fail connector: 1 x 6-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	Input power to I/O: 1.5KV isolation Input power to Ethernet 1.5KV isolation
EMMC Storage**	8/16/32 GB

LED Indicators

Power & System indicator	Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red) , Storage(Green), Serial1/Serial2(Green) ,Ready(Green)
10/100/1000Base-T(X) port indicator	Link/Activity (Green), Speed (1000T: Yellow; 10/100TX: off)
WLAN LEDs	WLAN 1 , WLAN2 Link /ACT : Green
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) Dual DC input, 9~36VDC (24V-IGN model)
Power consumption (Typ.)	20 Watts

Physical Characteristic

Enclosure	IP 30 Metal case / IP43 (M12 model) Metal case
Dimension	74 (W) x 114 (D) x 152 (H) mm (24V model)

	74(W) x 114(D) X 152 (H)mm (M12 model)
Weight	900g
Environmental	
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Operating Temperature	-20°C ~70°C (-4°F ~ 158°F) -40°C ~70°C (-40°F ~ 158°F) -E model
Operating Humidity	5% to 95% Non-condensing
Regulatory approvals	
Safety	EN 62368-1
EMC	FCC Part 15B Class A, ICES-003 ISSUE7, EN 55032: 2015, EN 55024: 2015 IEC 61000-6-2, IEC 61000-6-4 BS EN55032, BS EN55024
EMS	IEC 61000-4-2 (ESD), IEC 61000-4-3 (RS), IEC 61000-4-4 (EFT), IEC 61000-4-5 (Surge), IEC 61000-4-6 (CS), IEC 61000-4-8 (PFMF) BS EN61000-4-2, BS EN61000-4-3, BS EN61000-4-4,
	BS EN61000-4-5, BS EN61000-4-6, BS EN61000-4-8,
Radio Frequency	EN 301 489-1, EN 301 489-17, EN 301 489-19, EN 301 489-52, EN 302 502, EN 301 893, EN 300 328, EN 62311
Stability Testing	IEC 60068-2-27 (Shock) IEC 60068-2-31 (Shock) IEC 60068-2-64 (Vibration) IEC 60068-2-80 (Vibration)
Vehicle Certificate (24V model)	E13 marking** (UN ECE R10)
Vehicle Compliance (24V model)	UN ECE R118, ITxPT design** (ITxPT design is IGN model only)
Railway Compliance (Except -IGN model)	EN50155 EN61373 EN45545 IEC 60571
MTBF	NA

*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 -40~70C operational temperature model, the model name will add –E
M12 model are all available with –M12 model name (-2S / -2SA is RJ45 model only)
For 24V model are all available with –IGN model name (w/ ignition; dual 9~36VDC)
2 Gigabit ports without PD function as default, add to the last digit of P/N (ex. 8612-1131) for models w/o 1 PD

- **IWAP-3002-1AC-24V…….P/N: 8612-113**
  One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router and 2 port Gigabit Ethernet (incl. 1PD); dual input 9V~56VDC; -20~70C
- **IWAP-3002-1AC-2S-24V…….P/N: 8612-101**
  One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router w/ 2 RS232 serial ports and 2 port Gigabit Ethernet (incl. 1PD); dual input 9V~56VDC; -20~70C
- **IWAP-3002-1AC-2SA-24V…….P/N: 8612-102**
  One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router w/ 2 RS422 serial ports and 2 port Gigabit Ethernet (incl. 1PD); dual input 9V~56VDC; -20~70C
- **IWAP-3002-1AC-2SB-24V…….P/N: 8612-110**
  One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router w/ 2 RS485 serial ports and 2 port Gigabit Ethernet (incl. 1PD); dual input 9V~56VDC; -20~70C
- **IWAP-3002-2AC-24V…….P/N: 8612-114**
  Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router and 2 port Gigabit Ethernet (incl. 1PD); dual input 9V~56VDC; -20~70C
- **IWAP-3002-2AC-2S-24V…….P/N: 8612-103**
  Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS232 serial ports and 2 port Gigabit Ethernet (incl. 1PD); dual input 9V~56VDC; -20~70C
- **IWAP-3002-2AC-2SA-24V…….P/N:8612-104**
  Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS422 serial ports and 2 port Gigabit Ethernet (incl. 1PD); dual input 9V~56VDC; -20~70C
- **IWAP-3002-2AC-2SB-24V…….P/N:8612-111**
  Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS485 serial ports and 2 port Gigabit Ethernet (incl. 1PD); dual input 9V~56VDC; -20~70C

EMMC Flash Storage

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

OPTIONAL ACCESSORIES

Management System

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

Wi-Fi Antenna

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



- **ANT11000056** Wi-Fi hinge rotatable antenna, WiFi Dual Bands 2.4/5.8GHz, SMA Connector



Antenna Base

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



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