I(P)WAP-3204DF

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

- *Up to 2 concurrent WI-FI 11ac and redundancy(2AC model)*
- *Built-in 4 Gigabit Ethernet ports + 2 Dual Speed SFP managed switch*
- *PoE model 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)*
- *MIMO technology 3T3R; SMA type up to 6 external antennas*
- *VPN router for Multi-site VPN, OpenVPN, L2TP over IPsec, IPsec, L2 over GRE , IPGRE*
- *Support Client-base roaming*
- *Supports AP/ Bridge/Client/MESH modes*
- *Support 802.11s Wireless Mesh Network*
- *Load Balancing built-in 5 mechanism*
- *Support NAT and Firewall*
- *Optional EMMC Flash storage on-board***
- *Dual input voltage 9V to 56VDC (24V model) for vehicle, station and process automation applications*
- *Vehicle E-marking** certificate*
- *Editable login page of captive portal for hot-spot application*
- *USB port to backup, restore the configuration file and upgrade firmware; Dual image firmware*
- *Environmental monitoring for router inside info with voltage, current, temperature and total PoE load; WIFI graphic signal strength*

OVERVIEW

Lantech I(P)WAP-3204DF series is a next generation industrial multi-function VPN router managed switch w/up to 2x 802.11ac Wi-Fi + 4x Gigabit Ethernet+ 2 dual speed SFP incl. 4 PoE ports (PoE model) + 2 serial ports** that supports advanced function of VPN, Load-Balancing, EMMC Flash storage**, 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, I(P)WAP-3204DF 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 the router can offer 8G/16G/32G capacity

Support AP/Bridge/Client mode, Mesh roaming

I(P)WAP-3204DF 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）

I(P)WAP-3204DF 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.

MIMO technology with 3T3R and SMA type connectors

Lantech I(P)WAP-3204DF series adapts MIMO technology with smart antenna transmission and reception for 3T3R. With six external detachable Omni connectors and optional antennas, I(P)WAP-3204DF can have better Wi-Fi coverage.

Managed switch Function

W/ port managed functions, QOS, VLAN, Multicast, Redundant protection, security

Wireless WMM QoS

I(P)WAP-3204DF 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 I(P)WAP-3204DF support up to 16 SSIDs, each SSID has its independent security and encryption.

Load Balancing with 5 mechanism for multi-WANs

I(P)WAP-3204DF supports Load Balancing for WAN (client mode) connections. There are five schemes for Load Balancing function:

Pack	Algorithm	Description
Basic	Fixed	All traffic will be distributed to a single WAN.
	Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activating another link if the preferred link fails.
	Priority	Select the active WAN according to priority.
	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

It builds in 2 port serial connection for RS232, RS422, RS485.

VPN and firewall

Besides traditional VPN peer to peer tunneling, I(P)WAP-3204DF 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, 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.

Support Routing Protocol: Static route / RIPv2 / OSPF / BGP / EIGRP

Lantech router series supports two routing methods: static routing and dynamic routing. Dynamic routing makes use of RIPv2, OSPF, EIGRP and BGP. The user can either choose one routing method to establish the routing table.

DIDO for alarm & email notice; Event log; Remote Web control

2 sets of optional 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 I(P)WAP-3204DF 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.

Wide range input voltage from 9V-56VDC (24V model) ; Built-in 4 port Gigabit Ethernet

The I(P)WAP-3204DF is able to work from 9VDC to 56VDC (24V model) that is particular good for vehicle, rail train, depot etc. application.

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.

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.

Editable login page of captive portal

The I(P)WAP-3204DF 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 I(P)WAP-3204DF is designed to meet with outdoor 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 Wi-Fi and E-marking** certificate. The I(P)WAP-3204DF is best for outdoor community, vehicle, process control automation etc application.

For more usage flexibilities, I(P)WAP-3204DF supports wide operating temperature from -20°C to 70°C or -40°C to 70°C (-E)

FEATURES & BENEFITS

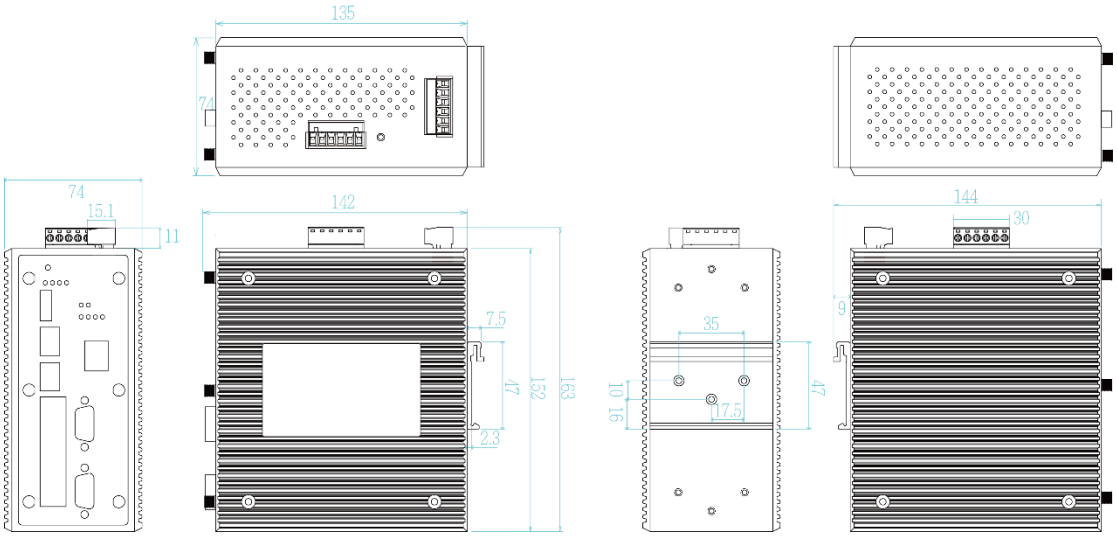
- **High Speed Air Connectivity: WLAN interface support up to 2.6Gbps link speed(2AC) or 1.3GMbps (1AC)**
- **Built-in 4 Gigabit ports + 2 Dual Speed SFP managed switch**
- **PoE model incl. 4 PoE at/af for PoE budget 80W**
- **Managed switch functions**
- **Dual band 2.4G and 5GHz with 802.11ac/a/b/g/n**
- **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**
- **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**
- **Support AP/Bridge/Client/MESH mode**
- **Support Client-base roaming**
- **Support 802.11s Wireless Mesh Network**
- **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, L2 over GRE , IPGRE and NAT for secured network connection**
- **Support Routing Protocol: Static route / RIPv2 / OSPF / BGP / EIGRP**
- **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	All traffic will be distributed to a single WAN.
	Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activating another link if the preferred link fails.
	Priority	Select the active WAN according to priority.
	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/RS485)**
- **Supports 2DI / 2DO(Digital Input / Output)**
- **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**
- **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/ 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 housing for industrial environment**
- **DIN-Rail and Wall-mount** installation**
- **Operation temperature -20~70°C or -40°C to 70°C (-E)**
- **Wide range input voltage from 9V-56V (24V model)**

DIMENSIONS (unit=mm)

2AC-2S 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(2.4Gbps)	**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)
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)
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	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
Routing	Static route / RIPv2 / OSPF / BGP / EIGRP
Management	SNMP v1,v2c,v3/ Web/Telnet/CLI
Load Balancing	5 schemes for multiple WAN
Basic	
Fixed	All traffic will be distributed to a single WAN.
Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activating another link if the preferred link fails.
Priority	Select the active WAN according to priority.
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 DI / DO high / low
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 /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 10/100/1000T: 4x ports RJ 45 + 2 Dual Speed SFP (PoE model 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 high data rate, 250kbps normal for RS232 ; 20Mbps high data rate, 250kbps normal 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	Input power to I/O: 1.5KV isolation Input power to Ethernet 1.5KV isolation Input power to PoE port 1.5KV isolation (PoE model)
EMMC Storage**	8/16/32 GB
DI/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

LED Indicators

Power & System indicator	Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red) , Ring Master(Green), Storage(Green), Serial1/Serial2/Serial3/Serial4(Green) ,Ready(Green)
10/100/1000Base-T(X) port indicator	Link/Activity (Green), Speed (1000T: Yellow; 10/100TX: off), PoE (Green, PoE model)
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 inputs, 9V~56VDC (24V model)
PoE budget (PoE model)	80W@12V /80W@24V
Power consumption (Typ.)	20 Watts

Physical Characteristic

Enclosure	IP 30 Metal case
Dimension	74 (W) x 142 (D) x 152 (H) mm
Weight	900g

Environmental

Storage Temperature	-40ºC ~ 85ºC (-40ºF ~ 185ºF)
Operating Temperature	-20ºC ~70ºC (-4ºF ~ 158ºF) -40ºC ~70ºC (-40ºF ~ 158ºF) -E model
Operating Humidity	5% to 95% Non-condensing

Regulatory approvals

Safety	EN 62368
EMC	FCC Part 15B Class A, EN 55032: 2015, EN 55024: 2010 IEC 61000-6-2, IEC 61000-6-4
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)
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
Vehicle certificate	E13**
MTBF	NA
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 -40~70C operational temperature model, the model name will add –E

- **IPWAP-3204DF-1AC-24V…..……..…….....P/N: 8687-007**
  One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet Switch and 4 port Giga ports and 2 dual speed SFP managed Switch (incl. 4 PoE) ; dual input 9V~56VDC; -20~70C
- **IPWAP-3204DF-1AC-2S-24V…..……..…….....P/N: 8687-001**
  One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet Switch w/ 2 RS232 serial ports and 4 port Giga ports and 2 dual speed SFP managed Switch (incl. 4 PoE) ; dual input 9V~56VDC; -20~70C
- **IPWAP-3204DF-1AC-2SA-24V…..……..…….....P/N: 8687-002**
  One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet switch w/ 2 RS422serial ports and 4 port Giga ports and 2 dual speed SFP managed Switch (incl. 4 PoE) ; dual input 9V~56VDC; -20~70C
- **IPWAP-3204DF-1AC-2SB-24V…..……..…….....P/N: 8687-005**
  One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet switch w/ 2 RS485 serial ports and 4 port Giga ports and 2 dual speed SFP managed Switch (incl. 4 PoE) ; dual input 9V~56VDC; -20~70C
- **IPWAP-3204DF-2AC-24V…..……..…….....P/N: 8687-008**
  Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet Switch and 4 port Giga ports and 2 dual speed SFP managed Switch (incl. 4 PoE) ; dual input 9V~56VDC -20~70C
- **IPWAP-3204DF-2AC-2S-24V…..……..…….....P/N: 8687-003**
  Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet Switch w/2 RS232 serial ports and 4 port Giga

ports and 2 dual speed SFP managed Switch (incl. 4 PoE) ; dual input 9V~56VDC -20~70C

- **IPWAP-3204DF-2AC-2SA-24V…..……..……..P/N: 8687-004**
  Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Switch w/2 RS422 serial ports and 4 port Giga ports and 2 dual speed SFP managed Switch (incl. 4 PoE) ; dual input 9V~56VDC; -20~70C
- **IPWAP-3204DF-2AC-2SB-24V…..……..……..P/N: 8687-006**
  Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Switch w/2 RS485 serial ports and 4 port Giga ports and 2 dual speed SFP managed Switch (incl. 4 PoE) ; dual input 9V~56VDC; -20~70C
- **IWAP-3204DF-1AC-24V…..……..……..P/N: 8681-013**
  One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet Switch and 4 port Giga ports and 2 dual speed SFP; dual input 9V~56VDC; -20~70C
- **IWAP-3204DF-1AC-2S-24V…..……..……..P/N: 8681-001**
  One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet Switch w/2 RS232 serial ports and 4 port Giga ports and 2 dual speed SFP; dual input 9V~56VDC; -20~70C
- **IWAP-3204DF-1AC-2SA-24V…..……..……..P/N: 8681-002**
  One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet switch w/2 RS422 serial ports and 4 port Giga ports and 2 dual speed SFP; dual input 9V~56VDC; -20~70C
- **IWAP-3204DF-1AC-2SB-24V…..……..……..P/N: 8681-009**
  One Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet switch w/2 RS485 serial ports and 4 port Giga ports and 2 dual speed SFP; dual input 9V~56VDC; -20~70C
- **IWAP-3204DF-2AC-24V…..……..……..P/N: 8681-014**
  Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet Switch and 4 port Giga ports and 2 dual speed SFP; dual input 9V~56VDC -20~70C
- **IWAP-3204DF-2AC-2S-24V…..……..……..P/N: 8681-003**
  Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet Switch w/2 RS232 serial ports and 4 port Giga ports and 2 dual speed SFP; dual input 9V~56VDC -20~70C
- **IWAP-3204DF-2AC-2SA-24V…..……..……..P/N: 8681-004**
  Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet Switch w/2 RS422 serial ports and 4 port Giga ports and 2 dual speed SFP; dual input 9V~56VDC; -20~70C
- **IWAP-3204DF-2AC-2SB-24V…..……..……..P/N: 8681-010**
  Two Wi-Fi 11ac/a/b/g/n Load Balancing Multifunction Router Managed Ethernet Switch w/2 RS485 serial ports and 4 port Giga ports and 2 dual speed SFP; 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

DIN Rail Power

NDR-480 Series	480W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2 ; Operating Temp. -20°C~70°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C)
NDR-240 Series	240W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2 ; Operating Temp. -20°C~70°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C)
NDR-120 Series	120W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2 ; Operating Temp. -20°C~70°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C; For 115VAC, please refer to derating curve on NDR-120 Series datasheet)
NDR-75 Series	75W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2 ; Operating Temp. -20°C~70°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C; For 115VAC, please refer to derating curve on NDR-120 Series datasheet)

Mini GBIC (SFP)

8330-162-V1	MINI GBIC 1000SX (LC/MM/0.5KM) Transceiver	**8330-198-V1**	1.25Gbps BiDi SFP 0.5KM Transceiver (WDM 1550)
8330-163-V1	MINI GBIC 1000SX2 (LC/MM/2KM) Transceiver	**8330-195-V1**	1.25Gbps BiDi SFP 2KM Transceiver (WDM 1310)
8330-165-V1	MINI GBIC 1000LX (LC/SM/10KM) Transceiver	**8330-196-V1**	1.25Gbps BiDi SFP 2KM Transceiver (WDM 1550)
8340-0591-V1	MINI GBIC 1000LHX (LC/SM/40KM) Transceiver	**8330-188-V1**	1.25Gbps BiDi SFP 10KM Transceiver (WDM 1310)
8330-166-V1	MINI GBIC 1000XD (LC/SM/50KM) Transceiver	**8330-189-V1**	1.25Gbps BiDi SFP 10KM Transceiver (WDM 1550)
8330-169-V1	MINI GBIC 1000XD (LC/SM/60KM) Transceiver	**8330-186-V1**	1.25Gbps BiDi SFP 20KM Transceiver (WDM 1310)
8330-167-V1	MINI GBIC 1000ZX (LC/SM/80KM) Transceiver	**8330-187-V1**	1.25Gbps BiDi SFP 20KM Transceiver (WDM 1550)
8330-170-V1	MINI GBIC 1000EZX (LC/SM/120KM) Transceiver	**8330-180-V1**	1.25Gbps BiDi SFP 40KM Transceiver (WDM 1310)
8330-168-V1	MINI GBIC 10/100/1000T (100m) Transceiver	**8330-182-V1**	1.25Gbps BiDi SFP 40KM Transceiver (WDM 1550)
8330-060-V1	MINI GBIC 100Base (LC/MM/2KM) Transceiver	**8330-181-V1**	1.25Gbps BiDi SFP 60KM Transceiver (WDM 1310)
8330-065-V1	MINI GBIC 100Base (LC/MM/5KM) Transceiver	**8330-183-V1**	1.25Gbps BiDi SFP 60KM Transceiver (WDM 1550)
8330-061-V1	MINI GBIC 100Base (LC/SM/30KM) Transceiver	**8330-184-V1**	1.25Gbps BiDi SFP 80KM Transceiver (WDM 1490)
8330-197-V1	1.25Gbps BiDi SFP 0.5KM Transceiver (WDM 1310)	**8330-185-V1**	1.25Gbps BiDi SFP 80KM Transceiver (WDM 1550)

- **8330-071-V1** 125Mbps BiDi SFP 2KM (WDM 1310) Transceiver
- **8330-072-V1** 125Mbps BiDi SFP 2KM (WDM 1550) Transceiver
- **8330-069-V1** 125Mbps BiDi SFP 20KM (WDM 1310) Transceiver
- **8330-068-V1** 125Mbps BiDi SFP 20KM (WDM 1550) Transceiver
- **8330-080-V1** 125Mbps BiDi SFP 40KM (WDM 1310) Transceiver
- **8330-082-V1** 125Mbps BiDi SFP 40KM (WDM 1550) Transceiver
- **8330-081-V1** 125Mbps BiDi SFP 60KM (WDM 1310) Transceiver
- **8330-083-V1** 125Mbps BiDi SFP 60KM (WDM 1550) Transceiver
- **8330-084-V1** 125Mbps BiDi SFP 80KM (WDM 1310) Transceiver
- **8330-085-V1** 125Mbps BiDi SFP 80KM (WDM 1550) Transceiver
- **8330-191-V1** Dual Speed SFP 100M/1000M-LX 10KM Transceiver

All SFP# ended with D are with DDM function

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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