I(P)WMR-3004DF

Industrial Multifunction VPN Router Managed switch w/up to 2x WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 4 GigaT (incl. 4 PoE) + 2 WAN Dual Speed SFP 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*
- *Built-in 4 GigaT + 2 WAN Dual Speed SFP managed switch*
- *PoE model: 4 PoE at/af w/budget 80W*
- *Built-in 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 Client-base roaming*
- *Supports AP/Bridge/Client/MESH modes*
- *Support 802.11s Wireless Mesh Network*
- *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, L2 over GRE , IPGRE*
- *Load Balancing built-in 5 mechanism*
- *Support NAT and Firewall*
- *Support Modbus gateway on serial ports*
- *Optional EMMC Flash storage on-board***
- *Dual DC input, 9~56VDC (24V model)*
- *Vehicle E-marking** certificate*
- *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*
- *Optional eSIM chip enables router with versatile data plans***
- *USB port to backup, restore the configuration file and upgrade firmware; Dual image firmware*

OVERVIEW

Lantech I(P)WMR-3004DF series is a next generation industrial multi-function VPN router w/up to 2x 802.11ac WiFi + up to 2x LTE modem + 4 GigaT + 2 WAN Dual Speed SFP incl. 4 PoE ports (PoE model) + 2 serial ports that supports advanced function of VPN, Load-Balancing, EMMC Flash Storage**, Protocol gateway (Modbus), 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, I(P)WMR-3004DF 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, I(P)WMR-3004DF provides redundant link between two service providers.

Both GPS and Russian GLONASS systems are supported.

Support AP/Bridge/Client mode, Mesh roaming

I(P)WMR-3004DF 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)WMR-3004DF 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, I(P)WMR-3004DF 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.

MIMO technology with 3T3R and SMA type connectors

Lantech I(P)WMR-3004DF series adapts MIMO technology with smart antenna transmission and reception for 3T3R. With six external detachable omni connectors and optional antennas, I(P)WMR-3004DF can have better Wi-Fi & LTE/GPS coverage.

Wireless WMM QoS

I(P)WMR-3004DF 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 I(P)WMR-3004DF support up to 16 SSIDs, each SSID has its independent security and encryption.

Load Balancing with 5 mechanisms for multi-WANs

I(P)WMR-3004DF supports Load Balancing for LTE/WAN 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, Modbus gateway

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

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, I(P)WMR-3004DF 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 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)WMR-3004DF 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 (24V model); PoE model built-in 4 port PoE at/af with 80W budget

The I(P)WMR-3004DF is able to work from 9VDC to 56VDC (24V model) and PoE model built-in PoE at/af with PoE budget

80W@12V /80W@24V 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.

Built-in Managed Switch Function

Managed switch function is built-in and provides various L2+ functions for network access deployment. It delivers ports and PoE management, VLAN, QoS, multicast, redundant ring, and security functions.

USB port for back up, restore configuration and upgrade firmware; Dual image firmware

The built-in USB port can upload/download the configuration through USB dongle for router replacement

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

Optional EMMC Flash storage**

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

Optional eSIM**

By replacing physical SIM, optional eSIM chip will allow users to purchase data plans at low prices from local carriers in the world.

Editable login page of captive portal

The I(P)WMR-3004DF 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)WMR-3004DF is designed to meet with industrial network environment. 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 I(P)WMR-3004DF is best for outdoor community, vehicle, process control automation etc application. For more usage flexibilities, I(P)WMR-3004DF supports wide operating temperature from -40°C to 65°C.

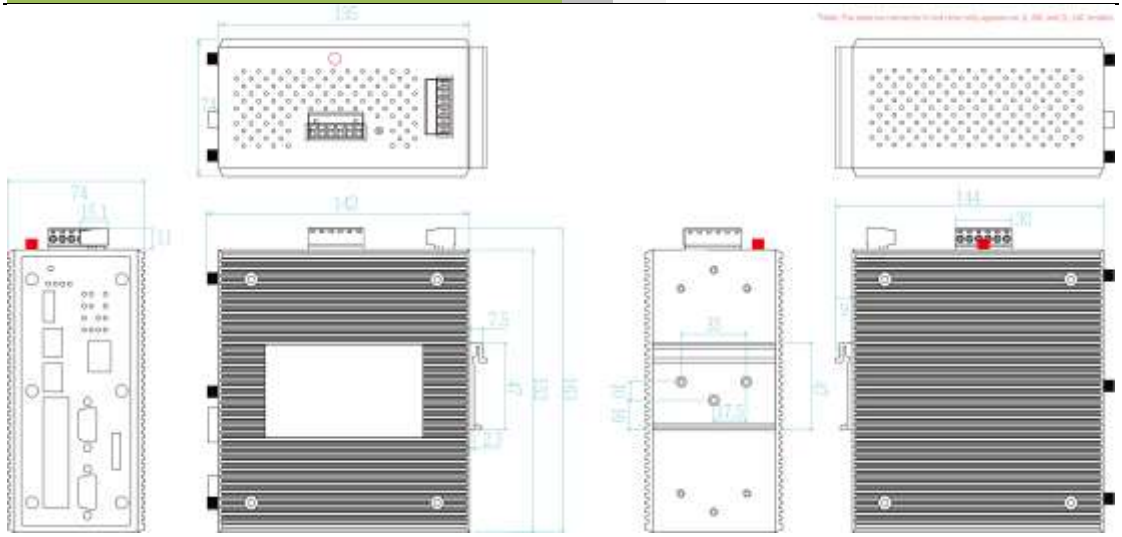
FEATURES & BENEFITS

- **High Speed Air Connectivity: WLAN interface support up to 2.6Gbps link speed (2AC) or 1.3Gbps (1AC)**
- **Built-in 4 GigaT + 2 WAN Dual Speed SFP Ethernet managed switch**
- **PoE model incl. 4 PoE at/af for PoE budget 80W**
- **EMMC-FLASH storage**8/16/32G**
- **eSIM** to allow data-plan globally**
- **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**
- **6 SMA type connectors for WiFi & LTE, GPS**
- **Output power : <24Dbm**
- **Support AP/Bridge/Client/Mesh mode**
- **Support Client-base roaming**
- **Support 802.11s Wireless Mesh Network**
- **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**
- **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**
- **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**
- **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)**
- **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**
- **DIN-Rail and Wall-mount** installation**
- **Operation temperature -40~65C**

DIMENSIONS (unit=mm)



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, and PEAP
Wireless Security	SSID broadcast disable

Cellular Interface

Location Solutions	GPS, Glonass
Band Options	**Europe & North America (EUNA model)** **LTE** = B1, B2※, B3, B4※, B5※, B7, B8, B12※, B13※, B20, B25※, B26※, B29※, B30※, B41※ (TDD) **DC-HSPA+/ HSPA+/ HSPA/ UMTS** = B1, B2※, B3, B4※, B5※, B8
Data Rates – LTE	**Europe & North America (EUNA model)** Downlink (Cat 6): FDD: 300 Mbps TDD: 222 Mbps Uplink (Cat 6): FDD: 50 Mbps TDD: 26 Mbps

Software

IPv6/4	Present
Operation Mode	AP/Bridge/Client/MESH mode
WMM	WIFI multimedia and 802.11e traffic prioritization
VPN	Multi-site VPN, Open VPN, L2TP over IPSec, IPSec, L2 over GRE, IPGRE and NAT
Firewall	DDoS, IP address filter / Mac address filter / TCP/UDP port number
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.

Security	WEP64/128bits/ WPA/ WPA-PSK (TKIP,AES)/ WPA2/ WPA2-PSK (TKIP,AES)/SSH/SSL/HTTPS
Roaming	Client-base roaming
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
Routing	Static route / RIPv2 / OSPF / BGP / EIGRP
Protocol Gateway	Modbus on serial ports
Management	SNMP v1,v2c,v3/ Web/Telnet/CLI
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
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
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: 4x ports RJ 45 + 2 WAN Dual Speed SFP (PoE model incl 4 PoE ports) USB x 1 RS-232 connector: 1 x RJ 45 Serial connector : 2 DB9 SIM card slots : 4(2L) or 2(1L) 2L-1AC model SMA connector for LTE: 4 (female) SMA connector for GPS: 1 (female) RP-SMA connector for Wi-Fi: 2 (female) 1L-2AC model SMA connector for LTE: 2 (female) SMA connector for GPS: 1 (female) RP-SMA connector for Wi-Fi: 4 (female) 1L-1AC model SMA connector for LTE: 2 (female) SMA connector for GPS: 1 (female) RP-SMA connector for Wi-Fi: 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
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(Green) ,Ready(Green)
10/100/1000Base-T(X) port indicator	Link/Activity (Green), Speed (1000T: Yellow; 10/100TX: off), PoE (Green, PoE model)
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 (PoE model)	80W@12V /80W@24V
Power consumption	30.5 Watts

(Typ.)	
Physical Characteristic	
Enclosure	IP 30 Metal case
Dimension	74 (W) x 142 (D) x 152 (H) mm (1L-1AC model) 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	
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 301 908-1※, EN 303 413, EN 62311
Vehicle certificate	E13**
MTBF	564,950hrs (IEC62380 standards)
Warranty	5 years

*Future Release

**Optional

※Standard test of the following bands are not listed in EN 301 908-1 report:

(EUNA not listed bands) LTE = B2, B4, B5, B12, B13, B25, B26, B29, B30, B41

WCDMA = B2, B4, B5;

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

- **IPWMR-3004DF-2L-1AC-2S-24V-EUNA…….P/N: 8690-001**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/ 2 RS232 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed Switch incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPWMR-3004DF-2L-1AC-2SA-24V-EUNA…….P/N: 8690-0011**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS422 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed Switch incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPWMR-3004DF-2L-1AC-2SB-24V-EUNA…….P/N: 8690-0012**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS485 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed Switch incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPWMR-3004DF-1L-1AC-2S-24V-EUNA…….P/N: 8690-004**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS232 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed Switch incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPWMR-3004DF-1L-1AC-2SA-24V-EUNA…….P/N: 8690-0041**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS422 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed Switch incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPWMR-3004DF-1L-1AC-2SB-24V-EUNA…….P/N: 8690-0042**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS485 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed Switch incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C

- **IPWMR-3004DF-1L-2AC-2S-24V-EUNA…….P/N: 8690-007**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/ 2 RS232 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed switch EU and US band; dual input 9~56VDC; -40~65C
- **IPWMR-3004DF-1L-2AC-2SA-24V-EUNA…….P/N: 8690-0071**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS422 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed switch EU and US band; dual input 9~56VDC; -40~65C
- **IPWMR-3004DF-1L-2AC-2SB-24V-EUNA…….P/N: 8690-0072**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS485 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed switch EU and US band; dual input 9~56VDC; -40~65C
- **IWMR-3004DF-2L-1AC-2S-24V-EUNA…….P/N: 8693-001**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/ 2 RS232 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed Switch; EU and US band; dual input 9V~56VDC; -40~65C
- **IWMR-3004DF-2L-1AC-2SA-24V-EUNA…….P/N: 8693-0011**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS422 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed Switch ; EU and US band; dual input 9V~56VDC; -40~65C
- **IWMR-3004DF-2L-1AC-2SB-24V-EUNA…….P/N: 8693-0012**
  Industrial Dual LTE (Quad SIM) One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS485 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed Switch ; EU and US band; dual input 9V~56VDC; -40~65C
- **IWMR-3004DF-1L-1AC-2S-24V-EUNA…….P/N: 8693-004**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS232 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed Switch; EU and US band; dual input 9V~56VDC; -40~65C
- **IWMR-3004DF-1L-1AC-2SA-24V-EUNA…….P/N: 8693-0041**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS422 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed Switch; EU and US band; dual input 9V~56VDC; -40~65C
- **IWMR-3004DF-1L-1AC-2SB-24V-EUNA…….P/N: 8693-0042**
  Industrial One LTE (Dual SIM) One WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS485 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed Switch; EU and US band; dual input 9V~56VDC; -40~65C
- **IWMR-3004DF-1L-2AC-2S-24V-EUNA…….P/N: 8693-007**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/ 2 RS232 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed switch EU and US band; dual input 9V~56VDC; -40~65C
- **IWMR-3004DF-1L-2AC-2SA-24V-EUNA…….P/N: 8693-0071**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS422/485 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed switch EU and US band; dual input 9V~56VDC; -40~65C
- **IWMR-3004DF-1L-2AC-2SB-24V-EUNA…….P/N: 8693-0072**
  Industrial One LTE (Dual SIM) Two WIFI 11ac/a/b/g/n Load Balancing Multifunction Router w/2 RS485 serial ports and 4 GigaT + 2 WAN Dual Speed SFP Managed switch EU and US band; dual input 9V~56VDC; -40~65C

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)

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

- **8330-181D-V1** 1.25Gbps BiDi SFP 60KM Transceiver (WDM 1310)
- **8330-183D-V1** 1.25Gbps BiDi SFP 60KM Transceiver (WDM 1550)
- **8330-184-VD1** 1.25Gbps BiDi SFP 80KM Transceiver (WDM 1490)
- **8330-185D-V1** 1.25Gbps BiDi SFP 80KM Transceiver (WDM 1550)
- **8330-071D-V1** 125Mbps BiDi SFP 2KM (WDM 1310) Transceiver
- **8330-072D-V1** 125Mbps BiDi SFP 2KM (WDM 1550) Transceiver
- **8330-069D-V1** 125Mbps BiDi SFP 20KM (WDM 1310) Transceiver
- **8330-068D-V1** 125Mbps BiDi SFP 20KM (WDM 1550) Transceiver
- **8330-080D-V1** 125Mbps BiDi SFP 40KM (WDM 1310) Transceiver
- **8330-082D-V1** 125Mbps BiDi SFP 40KM (WDM 1550) Transceiver
- **8330-081D-V1** 125Mbps BiDi SFP 60KM (WDM 1310) Transceiver
- **8330-083D-V1** 125Mbps BiDi SFP 60KM (WDM 1550) Transceiver
- **8330-084D-V1** 125Mbps BiDi SFP 80KM (WDM 1310) Transceiver
- **8330-085D-V1** 125Mbps BiDi SFP 80KM (WDM 1550) Transceiver
- **8330-191D-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

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

- **ANT11000046** LTE hinge rotatable antenna, 698-960MHz, 1710-2690MHz, Diameter 10mm, Length 108mm, SMA Connector

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

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

Lantech Communications Global Inc.

www.lantechcom.tw
info@lantechcom.tw