IPMR-3204DF

Industrial Multifunction VPN Router Managed Ethernet switch w/up to 2 LTE 4G + 2 serial ports + 4 Gigabit Ethernet (incl. 4 PoE) + 2 dual speed SFP w/ Load Balancing, VPN, Storage**; 24V input

- *Up to 2 concurrent mobility for 3G/4G LTE Link&GPS (2L model/4 SIMs)*
- *Support LTE Cat 6 (APAC & EUNA models) or Cat 12/9/13 (WW model)*
- *Built-in 4 Gigabit Ethernet managed switch including4 PoE at/af w/budget 80W*
- *Federal Information Processing Standards (FIPS)-compliance***
- *Managed Switch functions cover port management, QOS, VLAN, multicast, redundant ring and security function*
- *VPN router for Multi-site VPN, OpenVPN, L2TP over IPsec, IPsec, PPTP**, L2 over GRE , IPGRE*
- *Load Balancing built-in 5 mechanism*
- *Optional EMMC Flash storage on-board***
- *Support NAT and Firewall*
- *Support 2 RS422/RS485 ports with 2.5KV isolation or 2 RS232 ports*
- *Dual input voltage 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; LTE graphic signal strength*
- *Editable login page of captive portal for hot-spot application*
- *Dual image firmware**

OVERVIEW

Lantech IPMR-3204DF series is a next generation industrial multi-function VPN router w/up to 2x LTE modem + 4x Gigabit Ethernet ports incl. 4 PoE ports + 2 dual speed SFP+ 2 serial ports that supports advanced function of VPN, Load-Balancing(Basic & Full Package**), EMMC Flash Storage**, Protocol gateway(Modbus), 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, IPMR-3204DF 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, IPMR-3204DF provides redundant link between two service providers.

Both GPS and Russian GLONASS systems are supported.

Optional EMMC Flash storage**

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

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

IPMR-3204DF supports Load Balancing for LTE/WAN connections. There are eight schemes for Load Balancing function:

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

	Priority	Routes connections through preferred WAN link as primary while others follow by. Ex. Wi-Fi client>LTE>others
	Weighted Round-Robin	Evenly distribute the traffic over all working WAN links in circular order according to the specified weights.
	Custom Route	Routing through the selected WAN for each specific traffic, ex: TCP/UDP port number and IP address.
Full Package (incl. basic package)**	Sticky Session*	Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.
	Smallest Load*	Routes connections through the WAN link with highest free bandwidth ratio. 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

It builds in 2 port serial connection for RS232, RS422, RS485 in which RS422/RS485 has 2.5KV isolation protection.

Managed switch Function

With port managed functions, QOS, VLAN, Multicast, Redundant protection, security

VPN and firewall

Besides traditional VPN peer to peer tunneling, IPMR-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, 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 IPMR-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 by Web.

Wide range input voltage from 9V-56VDC (24V Model); Built-in 4 port PoE at/af switch with 80W budget

The IPMR-3204DF is able to work from 9VDC to 56VDC (24V Model) for 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 LTE signal strength

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

Dual image firmware*

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

Ruggedized industrial design and FCC, CE & E-marking** certificate

The IPMR-3204DF 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 LTE and E-marking** certificate, the IPMR-3204DF is best for outdoor community, vehicle, process control automation etc application. For more usage flexibilities, IPMR-3204DF supports wide operating temperature from -40°C to 65°C.

FEATURES & BENEFITS

- **Built-in 4 Gigabit Ethernet managed switch incl. 4 PoE at/af for PoE budget 80W**
- **Managed Ethernet switch Functions**
- **6 SMA type connectors for LTE & GPS**
- **HTTP/HTTPS/Telnet/SSH & Administration access**
- **Support IPv6 & IPv4 protocol**
- **EMMC-FLASH storage**8/16/32G**
- **Radius Authentication, EAP-TLS, EAP-TTLS, PEAP**

- **Support Multi-Site VPN for mesh tunneling as well as Open VPN, L2TP over IPsec, IPsec, PPTP**, L2 over GRE , IPGRE and NAT for secured network connection**
- **The built-in Layer-4 firewall includes DDoS, IP address filter / Mac address filter / TCP/UDP port number**
- **NAT/DMZ/Port Forwarding**
- **Support SNMP*v1/v2c/v3**
- **Dual concurrent LTE 4G/3G design (2L model)for auto-swap/failover/failback between multiple ISPs for continuous service (four SIM card slots)**
- **One LTE 4G/3G w/ 2 SIM card design(1L model) for mobile redundancy**
- **GPS/ GLONASS (support by LTE module) connection**
- **Fast roaming** (Optional) between APs by Wireless Controller**
- **Load Balancing supports 8 mechanism between multiple WANs**

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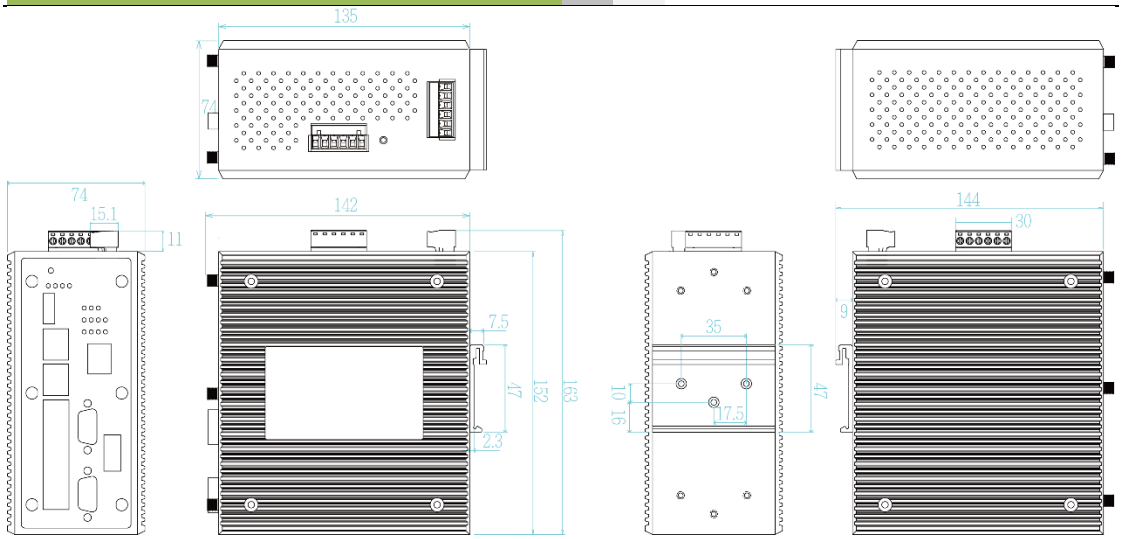
Basic Package	Fixed	Manually route by traffic type through fixed WAN link.
	Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link fail occurs. Once failover will not failback until link loss.
	Priority	Routes connections through 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)**
- **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 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**
- **IP 30 housing for industrial environment**
- **DIN-Rail and Wall-mount** installation**
- **ITxPT compliant w/ ignition function****
- **Operation temperature -40~65°C**

DIMENSIONS (unit=mm)



SPECIFICATION

Location Solutions	GPS, Glonass (EUNA/Americas) GPS, Glonass, Beidou, Galileo (APAC model only)
Band Options	**Asia-Pacific (APAC model)** **LTE** = B1, B3, B5※, B7, B8, B18※, B19※, B21※, B28, B38 (TDD), B39※ (TDD), B40 (TDD), B41※ (TDD) **DC-HSPA+/ HSPA+/ HSPA/ UMTS** = B1, B5※, B6※, B8, B9※, B19※ **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 **World Wide (WW model)** **LTE** = B1, B2※, B3, B4※, B5※, B7, B8, B9※, B12※, B13※, B18※, B19※, B20, B26※, B28, B29※, B30※, B32※, B41※ (TDD), B42※ (TDD), B43※ (TDD), B46※ (TDD), B48※ (TDD), B66※ **WCDMA** = B1, B2※, B3※, B4※, B5※, B6※, B8, B9※, B19※
Data Rates – LTE	**Asia-Pacific (APAC model)** Downlink (Cat 6): FDD: 300 Mbps TDD: 222 Mbps Uplink (Cat 6): FDD: 50 Mbps TDD: 26 Mbps **Europe & North America (EUNA model)** Downlink (Cat 6): FDD: 300 Mbps TDD: 222 Mbps Uplink (Cat 6): FDD: 50 Mbps TDD: 26 Mbps **World Wide (WW model)** Downlink: Cat 12: 600 Mbps Cat 9: 450 Mbps Uplink: Cat 13: 150 Mbps

Software

IPv6/4	Present
VPN	Multi-site VPN, Open VPN, PPTP**, L2TP over IPSec, IPSec, L2 over GRE, IPGRE and NAT
Firewall	DDoS, IP address filter / Mac address filter / TCP/UDP port number
Load Balancing	8 schemes for multiple WAN(client mode)
Basic Package	
Fixed	Manually route by traffic type through fixed WAN link.
Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link failure occurs.
Priority	Routes connections through preferred WAN link while others stand-by. Sequentially activate other links if overflow occurs.
Weighted Round-Robin	Evenly distribute the traffic over all working WAN links in circular order according to the specified weights
Custom Route	Routing through the selected WAN for each specific traffic ex: TCP/UDP port number and IP address.
Full Package incl. Basic package**	
Sticky Session*	Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.
Smallest load*	Routes connections through the WAN link with highest free bandwidth ratio. 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.
Security	SSH/SSL/HTTPS
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*
Management	SNMP*v1,v2c,v3/ Web/Telnet/CLI
Managed function	QOS, VLAN, Multicast, Redundant protection, security
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 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
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 (incl 4 PoE ports) Dual Speed SFP port x 2ports USB x 1 RS-232 connector: 1 x RJ 45 Serial connector : 2 DB9 SIM card slots : 4(2L) or 2(1L) 2L model SMA connector for LTE: 4 (female) SMA connector for GPS: 2 (female) 1L model SMA connector for LTE: 2 (female) SMA connector for GPS: 1 (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	RS422/RS485 2.5KV isolation; 8KV contact & 15KV air RS232 8KV contact and 15KV air ESD DIDO 3KV isolation Input power 1.5KVA isolation
EMMC**	8G 16G 32G
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)
SIM	Green for Link/Act
GPS	Green for Link/Act
Fault	Red: Ethernet link down or power down

Fault contact

Relay	Relay output to carry capacity of 1A at 24VDC

Power

Input power	Dual DC input, 9~56VDC (24V model)
PoE Budget	80W@12V /80W@24V
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

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 301 908-1※, EN 303 413, EN 62311
Vehicle certificate	E13** ITxPT compliant**
MTBF	NA
Warranty	5 years

*Future Release

**Optional

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

(APAC not listed bands) LTE = B5, B18, B19, B21, B39, B41
WCDMA = B5, B6, B9, B19;

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

(WW not listed bands) LTE = B2, B4, B5, B9, B12, B13, B18, B19, B26, B29, B30, B32, B41, B42, B43, B46, B48, B66
WCDMA = B2, B3, B4, B5, B6, B9, B19

ORDERING INFORMATION

- **IPMR-3204DF-2L-2S-24V-EUNA…..……..……..P/N: 8682-001**
  Industrial Dual LTE (Quad SIM) Load Balancing Multifunction Router managed Ethernet Switch w/ 2 RS232 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-2L-2S-24V-APAC…..……..P/N: 8682-002**
  Industrial Dual LTE (Quad SIM) Load Balancing Multifunction Router managed Ethernet Switch w/ 2 RS232 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; APAC band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-2L-2S-24V-WW…..……..……..P/N: 8682-003**
  Industrial Dual LTE (Quad SIM) Load Balancing Multifunction Router managed Ethernet Switch w/ 2 RS232 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; worldwide band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-2L-2SA-24V-EUNA…..……..……..P/N: 8682-0011**
  Industrial Dual LTE (Quad SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS422 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-2L-2SA-24V-APAC…..……..……..P/N: 8682-0021**
  Industrial Dual LTE (Quad SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS422 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; APAC band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-2L-2SA-24V-WW…..……..……..P/N: 8682-0031**
  Industrial Dual LTE (Quad SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS422 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; Worldwide band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-2L-2SB-24V-EUNA…..……..……..P/N: 8682-0012**
  Industrial Dual LTE (Quad SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS485 serial ports and 4

Giga ports and 2 dual speed SFP incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C

- **IPMR-3204DF-2L-2SB-24V-APAC…..……...…….....P/N: 8682-0022**
  Industrial Dual LTE (Quad SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS485 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; APAC band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-2L-2SB-24V-WW……..……...……...P/N: 8682-0032**
  Industrial Dual LTE (Quad SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS485 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; Worldwide band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-1L-2S-24V-EUNA…..……...…….....P/N: 8682-004**
  Industrial One LTE (Dual SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS232 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-1L-2S-24V-APAC…..……..…….....P/N: 8682-005**
  Industrial One LTE (Dual SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS232 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; APAC band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-1L-2S-24V-WW…….……..…….....P/N: 8682-006**
  Industrial One LTE (Dual SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS232 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; Worldwide band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-1L-2SA-24V-EUNA…..……..…….....P/N: 8682-0041**
  Industrial One LTE (Dual SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS422 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-1L-2SA-24V-APAC…..……..…….....P/N: 8682-0051**
  Industrial One LTE (Dual SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS422 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; APAC band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-1L-2SA-24V-WW……..……..…….....P/N: 8682-012**
  Industrial One LTE (Dual SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS422 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; Worldwide band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-1L-2SB-24V-EUNA…..……..…….....P/N: 8682-0042**
  Industrial One LTE (Dual SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS485 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; EU and US band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-1L-2SB-24V-APAC…..……..…….....P/N: 8682-0052**
  Industrial One LTE (Dual SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS485 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; APAC band; dual input 9~56VDC; -40~65C
- **IPMR-3204DF-1L-2SB-24V-WW……..……..…….....P/N: 8682-0121**
  Industrial One LTE (Dual SIM) Load Balancing Multifunction Router managed Ethernet Switch w/2 RS485 serial ports and 4 Giga ports and 2 dual speed SFP incl.4 PoE; Worldwide band; dual input 9~56VDC; -40~65C

Software License

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

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)

8330-162X	MINI GBIC 1000SX (LC/0.5km) Transceiver	**8330-188**	LTSFP-1000BX-10KM Transceiver (WDM 1310)
8330-163X	MINI GBIC 1000SX2 (LC/2km) Transceiver	**8330-189**	LTSFP-1000BX-10KM Transceiver (WDM 1550)
8330-165X	MINI GBIC 1000LX (LC/10km) Transceiver	**8330-186**	LTSFP-1000BX-20KM Transceiver (WDM 1310)
8340-0591	MINI GBIC 1000LHX (LC/40km) Transceiver	**8330-187**	LTSFP-1000BX-20KM Transceiver (WDM 1550)
8330-166	MINI GBIC 1000XD (LC/50km) Transceiver	**8330-180**	LTSFP-1000BX-40KM Transceiver (WDM 1310)
8330-169	MINI GBIC 1000XD (LC/60km) Transceiver	**8330-182**	LTSFP-1000BX-40KM Transceiver (WDM 1550)
8330-167	MINI GBIC 1000ZX (LC/80km) Transceiver	**8330-181**	LTSFP-1000BX-60KM Transceiver (WDM 1310)
8330-170	MINI GBIC 1000EZX (120km) Transceiver	**8330-183**	LTSFP-1000BX-60KM Transceiver (WDM 1550)
8330-168	MINI GBIC 1000T (100m) Transceiver	**8330-184**	LTSFP-1000BX-80KM Transceiver (WDM 1490)

- **8330-185** LTSFP-1000BX-80KM Transceiver (WDM 1550)
- **8330-262** MINI GBIC 2.5G 850nm VCSEL (LC/0.3km) Transceiver
- **8330-263** MINI GBIC 2.5G 1310nm FP (LC/2km) Transceiver
- **8330-265** MINI GBIC 2.5G 1310nm DFB (LC/15km) Transceiver

All SFP ended with D are with Diagnostic function

Management System

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

Multifunction Antenna

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

- **ANT11000092** 6-in-1 omnidirectional antenna – 2G/3G/4G (698-960/1710~2170/2300~2700MHz) MIMO x2 + Wi-Fi 2.4/5GHz MIMO x1 + GPS/GLONASS/GALILEO/BeiDou (1561/1575.42/1602MHz) x1 + AM/FM x1 + DSRC x1, 6dBi, IP67, cable length: 30cm

GPS Antenna

- **ANT12000001** SMA GPS antenna, 28dB, 300m

Cellular Antenna

- **ANT11000041** 2G/3G/4G dipole antenna, 791-960/1710~2170/2500~2700MHz, 3dBi, SMA plug, EU

- **ANT11000042** 2G/3G/4G dipole antenna, 704-960/1710~2170MHz, 3dBi, SMA plug, US

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

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

Antenna Base

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

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