

# IPMR-3004DF

**Industrial Multifunction VPN Router Managed Ethernet switch w/up to 2 LTE 4G + 2 serial ports + 4 Gigabit Ethernet (incl. 4 PoE) + 2 WAN 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)
- Built-in 4 Gigabit + 2 WAN Dual Speed SFP managed switch including 4 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\*\* support 8 mechanism
- Optional EMMC Flash storage on-board\*\*
- Support NAT and Firewall
- Support 2 RS422/485 ports with 2.5KV isolation or 2 RS232 ports
- Dual isolated input voltage 9~60VDC (24V model)
- Ignition sensing on 24V model
- Vehicle E-marking\* certificate
- 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-3004DF 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 WAN 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-3004DF can allow auto-swap, failover & fallback 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-3004DF 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-3004DF supports Load Balancing\*\* for LTE/WAN connections. There are eight schemes for Load Balancing\*\* function:

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

		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.
<b>Full Package (incl. basic package)</b>	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, 485 in which RS422/485 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-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, 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/SMS\*\* 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-3004DF will immediately send email and trap.

When the router is at remote area with limited access, Web/SMS\*\* control can help to get router status or remotely reboot by Web/SMS\*\*.

**Wide range input voltage from 9V-60VDC (24V Model); Built-in 4 port PoE at/af switch with 80W budget**

The IPMR-3004DF is able to work from 9VDC to 60VDC (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\*\* and SMS\*\* alert when abnormal.

**Ignition Sensing**

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

**Built-in Managed Switch Function**

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

**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-3004DF 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-3004DF is best for outdoor community, vehicle, process control automation etc application. For more usage flexibilities, IPMR-3004DF supports wide operating temperature from -20°C to 75°C & -40°C to 75°C (-E model)

**FEATURES & BENEFITS**

- Built-in 4 Gigabit + 2 WAN Dual Speed SFP 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

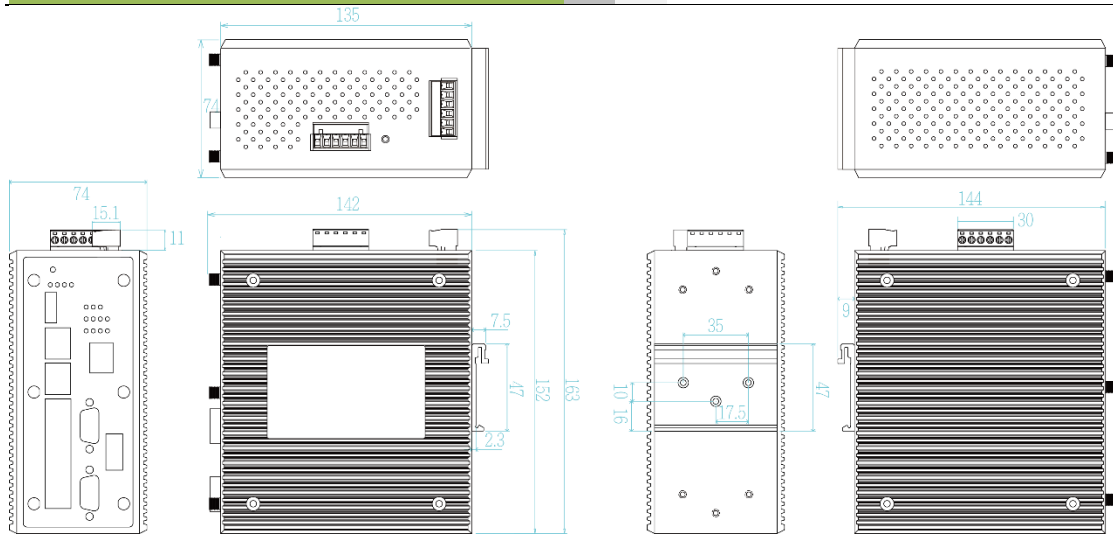
- GRE , IPGRE and NAT for secured network connection
- The built-in Layer-4 firewall includes DDoS, IP address filter / Mac address filter / TCP/UDP port number
- NAT/DMZ/Port Forwarding
- Support SNMP\*v1/v2c/v3
- Dual concurrent LTE 4G/3G design (2L model)for auto-swap/failover/failback between multiple 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

	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.

Pack	Algorithm	Description
Standard	Fixed	Manually route by traffic type through fixed WAN link.
Basic Package	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. WiFi 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

- Built-in 2 x serial ports(RS232/RS422/485)
- Serial port with 2.5KV isolation on RS422/485
- Supports 2DI / 2DO (Digital Input / Output)
- Event alerting by Syslog, SNMP Trap, Email, SMS\*\* text, Relay ; Permanent local log rotation / Maxi 1K records
- Remote Web/SMS\*\* control to get status or re-boot by Web or SMS\*\*
- 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/FTP/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
- Operation temperature -20~75°C or -40~75°C (-E model)

**DIMENSIONS (unit=mm)**



**SPECIFICATION**

Location Solutions	GPS, Glonass (EUNA/Americas) GPS, Glonass, Beidou, Galileo (APAC model only)	Load Balancing**	8 schemes for multiple WAN(client mode)		
Band Options	<b>APAC &amp; Australia (APAC model)</b> <b>LTE:</b> 2100/1800/850/2600/900/850/850/1500/700/2600/1900/2300/2500 MHz (B1/B3/B5/B7/B8/B18/B19/B21/B28/B38/B39/B40/B41)  <b>EU &amp; USA model</b> <b>LTE:</b> 2100/1800/2600/900/800 MHz (B1/B2/B3/B4/B5/B7/B12/B13/B20/B25/B26/B29/B30/B41)  <b>WorldWide (WW model)</b> <b>LTE:</b> 2100/1900/1800/1700/850/2600/900/1800/700/700/850/850/800/850/700/2300/1500/2500/3500/3700/5200/3600/1700 (B1/B2/B3/B4/B5/B7/B8/B9/B12/B13/B18/B19/B20/B26/B28/B29/B30/B32/B41/B42/B43/B46/B48/B66)	Fixed(standard)	Manually route by traffic type through fixed WAN link.		
		<b>Basic Package**</b>			
		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.		
		<b>Full Package incl. Basic package**</b>			
		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				
Data Rates – LTE	<b>APAC &amp; Australia (APAC model)</b> Downlink (Cat 6): FDD: 300 Mbps TDD: 222 Mbps Uplink (Cat 6): FDD: 50 Mbps TDD: 26 Mbps  <b>Americas &amp; EMEA (EUNA model)</b> Downlink (Cat 6): FDD: 300 Mbps TDD: 222 Mbps Uplink (Cat 6): FDD: 50 Mbps TDD: 26 Mbps  <b>WorldWide (WW model)</b> Downlink: Cat 12: 600 Mbps Cat 9: 450 Mbps Uplink: Cat 13: 150 Mbps				
<b>Software</b>					
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				

Discovery	always(RTC)	<b>LED Indicators</b>	
SNMP trap	IEEE 802.1ab Link Layer Discovery Protocol (LLDP)	Power & System indicator	Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red) , Ring Master(Green), Storage(Green), Serial1/Serial2(Green) , Ready(Green)
Remote Web/SMS** control	Device cold / warm start Port link up / link down DI/DO high / low	10/100/1000Base-T(X) port indicator	Link/Activity (Green), Speed (Yellow), PoE (Green)
Maintenance	To reboot router by WebUI or SMS**	SIM	Green for Link/Act
Configuration backup & restore	Firmware upgradeable through TFTP/FTP/HTTP	GPS	Green for Link/Act
	Supports text configuration file for system quick installation	Fault	Red: Ethernet link down or power down
	USB port to upload/download configuration by USB dongle	<b>Fault contact</b>	
<b>Physical Ports &amp; System</b>		Relay	Relay output to carry capacity of 1A at 24VDC
Connectors	10/100/1000T: 4x ports RJ 45 (incl 4 PoE ports) 2 WAN 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) SMA connector : 6 Power & P-Fail connector: 1 x 6-pole terminal block DIDO : 1 x 5-pole terminal block	<b>Power</b>	
Serial Baud Rate	1000Kbps for RS232 ; 12Mbps for RS422/485	Input power	Single DC input, 9~60VDC (24V model)
Serial Data Bits	5, 6, 7, 8	PoE Budget	80W @12V /80W @24V
Serial Parity	odd, even, none, mark, space	Power consumption (Typ.)	30.5 Watts
Serial Stop Bits	1, 1.5, 2	<b>Physical Characteristic</b>	
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND	Enclosure	IP 30 aluminum case
RS-422	Tx+,Tx-, Rx+, Rx-,GND	Dimension	74 (W) x 142 (D) x 152 (H) mm
RS-485 (2-wire)	Data+, Data-,GND	Weight	900g
Isolation protection	RS422/485 2.5KV isolation; 8KV contact & 15KV air RS232 8KV contact and 15KV air ESD DIDO 3KV isolation Input power 1.5KVA isolation	<b>Environmental</b>	
EMMC**	8G 16G 32G	Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
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	Operating Temperature	-20°C ~ 75°C (-4°F ~ 167°F) -40°C ~ 75°C (-40°F ~ 167°F) -E model
		Operating Humidity	5% to 95% Non-condensing
		<b>Regulatory approvals</b>	
		EMC	FCC* Part 15 Class A, EN55032*
		EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
		E-marking**	E13**
		MTBF	NA
		Warranty	5 years

\*Future Release  
\*\*Optional

## ORDERING INFORMATION

For -40~75C operational temperature model, the model name will add -E

- **IPMR-3004DF-2L-2S-24V-EUNA.....P/N: 8692-001**  
Industrial Dual LTE (Quad SIM) Load Balancing\*\* Multifunction Router managed Ethernet Switch w/ 2 RS232 serial ports and 4 Giga ports and 2 WAN dual speed SFP incl.4 PoE; EU and US band; dual isolated input 9~60VDC; -20~75C
- **IPMR-3004DF-2L-2S-24V-APAC.....P/N: 8692-002**  
Industrial Dual LTE (Quad SIM) Load Balancing\*\* Multifunction Router managed Ethernet Switch w/ 2 RS232 serial ports and 4 Giga ports and 2 WAN dual speed SFP incl.4 PoE; APAC band; dual isolated input 9~60VDC; -20~75C
- **IPMR-3004DF-2L-2S-24V-WW.....P/N: 8692-003**  
Industrial Dual LTE (Quad SIM) Load Balancing\*\* Multifunction Router managed Ethernet Switch w/ 2 RS232 serial ports and 4 Giga ports and 2 WAN dual speed SFP incl.4 PoE; worldwide band; dual isolated input 9~60VDC; -20~75C
- **IPMR-3004DF-2L-2SA-24V-EUNA.....P/N: 8692-004**  
Industrial Dual LTE (Quad SIM) Load Balancing\*\* Multifunction Router managed Ethernet Switch w/2 RS422/485 serial isolated ports and 4 Giga ports and 2 WAN dual speed SFP incl.4 PoE; EU and US band; dual isolated input 9~60VDC; -20~75C
- **IPMR-3004DF-2L-2SA-24V-APAC.....P/N: 8692-005**  
Industrial Dual LTE (Quad SIM) Load Balancing\*\* Multifunction Router managed Ethernet Switch w/2 RS422/485 serial isolated ports and 4 Giga ports and 2 WAN dual speed SFP incl.4 PoE; APAC band; dual isolated input 9~60VDC; -20~75C
- **IPMR-3004DF-2L-2SA-24V-WW.....P/N: 8692-006**  
Industrial Dual LTE (Quad SIM) Load Balancing\*\* Multifunction Router managed Ethernet Switch w/2 RS422/485 serial isolated ports and 4 Giga ports and 2 WAN dual speed SFP incl.4 PoE; Worldwide band; dual isolated input 9~60VDC; -20~75C
- **IPMR-3004DF-1L-2S-24V-EUNA.....P/N: 8692-007**  
Industrial One LTE (Dual SIM) Load Balancing\*\* Multifunction Router managed Ethernet Switch w/2 RS232 serial ports and 4 Giga ports and 2 WAN dual speed SFP incl.4 PoE; EU and US band; dual isolated input 9~60VDC; -20~75C
- **IPMR-3004DF-1L-2S-24V-APAC.....P/N: 8692-008**  
Industrial One LTE (Dual SIM) Load Balancing\*\* Multifunction Router managed Ethernet Switch w/2 RS232 serial ports and 4 Giga ports and 2 WAN dual speed SFP incl.4 PoE; APAC band; dual isolated input 9~60VDC; -20~75C
- **IPMR-3004DF-1L-2S-24V-WW.....P/N: 8692-009**  
Industrial One LTE (Dual SIM) Load Balancing\*\* Multifunction Router managed Ethernet Switch w/2 RS232 serial ports and 4 Giga ports and 2 WAN dual speed SFP incl.4 PoE; Worldwide band; dual isolated input 9~60VDC; -20~75C
- **IPMR-3004DF-1L-2SA-24V-EUNA.....P/N: 8692-010**

Industrial One LTE (Dual SIM) Load Balancing\*\* Multifunction Router managed Ethernet Switch w/2 RS422/485 serial isolated ports and 4 Giga ports and 2 WAN dual speed SFP incl.4 PoE; EU and US band; dual isolated input 9~60VDC; -20~75C

- **IPMR-3004DF-1L-2SA-24V-APAC.....P/N: 8692-011**

Industrial One LTE (Dual SIM) Load Balancing\*\* Multifunction Router managed Ethernet Switch w/2 RS422/485 serial isolated ports and 4 Giga ports and 2 WAN dual speed SFP incl.4 PoE; APAC band; dual isolated input 9~60VDC; -20~75C

- **IPMR-3004DF-1L-2SA-24V-WW.....P/N: 8692-012**

Industrial One LTE (Dual SIM) Load Balancing\*\* Multifunction Router managed Ethernet Switch w/2 RS422/485 serial isolated ports and 4 Giga ports and 2 WAN dual speed SFP incl.4 PoE; Worldwide band; dual isolated input 9~60VDC; -20~75C

**Software License**

- **LOAD BALANCING Basic Package.....P/N: 9000-101**
- **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)**

- |  |   |
|--|---|
| ■ <b>8330-162X</b> MINI GBIC 1000SX (LC/0.5km) Transceiver | ■ <b>8330-186</b> LTSFP-1000BX-20KM Transceiver (WDM 1310)          |
| ■ <b>8330-163X</b> MINI GBIC 1000SX2 (LC/2km) Transceiver  | ■ <b>8330-187</b> LTSFP-1000BX-20KM Transceiver (WDM 1550)          |
| ■ <b>8330-165X</b> MINI GBIC 1000LX (LC/10km) Transceiver  | ■ <b>8330-180</b> LTSFP-1000BX-40KM Transceiver (WDM 1310)          |
| ■ <b>8340-0591</b> MINI GBIC 1000LHX (LC/40km) Transceiver | ■ <b>8330-182</b> LTSFP-1000BX-40KM Transceiver (WDM 1550)          |
| ■ <b>8330-166</b> MINI GBIC 1000XD (LC/50km) Transceiver   | ■ <b>8330-181</b> LTSFP-1000BX-60KM Transceiver (WDM 1310)          |
| ■ <b>8330-169</b> MINI GBIC 1000XD (LC/60km) Transceiver   | ■ <b>8330-183</b> LTSFP-1000BX-60KM Transceiver (WDM 1550)          |
| ■ <b>8330-167</b> MINI GBIC 1000ZX (LC/80km) Transceiver   | ■ <b>8330-184</b> LTSFP-1000BX-80KM Transceiver (WDM 1490)          |
| ■ <b>8330-170</b> MINI GBIC 1000EZX (120km) Transceiver    | ■ <b>8330-185</b> LTSFP-1000BX-80KM Transceiver (WDM 1550)          |
| ■ <b>8330-168</b> MINI GBIC 1000T (100m) Transceiver       | ■ <b>8330-262</b> MINI GBIC 2.5G 850nm VCSEL (LC/0.3km) Transceiver |
| ■ <b>8330-188</b> LTSFP-1000BX-10KM Transceiver (WDM 1310) | ■ <b>8330-263</b> MINI GBIC 2.5G 1310nm FP (LC/2km) Transceiver     |
| ■ <b>8330-189</b> LTSFP-1000BX-10KM Transceiver (WDM 1550) | ■ <b>8330-265</b> MINI GBIC 2.5G 1310nm DFB (LC/15km) Transceiver   |

All SFP ended with D are with Diagnostic function

**LTE Antenna**

- **ANT11000041** 791-960/1710~2170/2500~2700MHZ, SMA plug, EUNA
- **ANT11000042** 704-960/1710~2170MHZ, SMA plug, US

**Lantech Communications Global Inc.**

www.lantechcom.tw  
info@lantechcom.tw

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