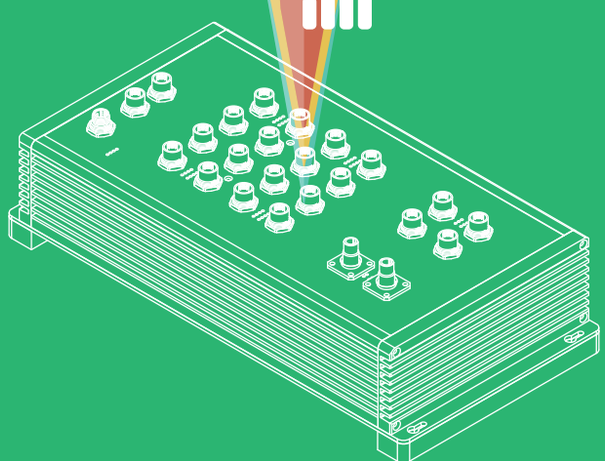
Pioneering Industrial and IP Networks



Lantech™

2019

PRODUCT GUIDE

An IRIS™ Certification-certified company

About Lantech

With a long background in IP Ethernet products, Lantech brings the best network solutions for industrial and IP networks to the marketplace. The Lantech group is devoted to providing end user benefits & feature rich innovative high-quality networking solutions. We provide outstanding service and support to our world-wide partners & distribution network. Our core values are based on our development of class leading software and hardware products, which allow for the seamless delivery of a variety of applications and services in diverse network environments.

Lantech offers a complete range of hardened and non-hardened networking products in support of the global transition to all Ethernet services. Lantech products and solutions provide for the delivery of universal Ethernet services across various markets and applications.

Lantech provides high quality products with customer-focused services from our sales offices located in Taiwan, Germany, UK and Korea. Our products are available worldwide through a network of respected channel partners, these partners have been selected by meeting strict standards of technical knowledge & customer services. Lantech is able to provide cost effective high-performance solutions to any industrial IP network with ongoing support for our legacy products.

Lantech products are successfully deployed around the world and used in all types of applications, including expressway lane control system of Korea, bus system in Spain, tram system in Finland, train in France, Japan's highway system, outdoor wireless surveillance system in Malaysia, military truck system in Vietnam, traffic networks in the UK and city surveillance system in Romania, etc.

As an IRIS-certified company, Lantech ensures that the quality of our products and services meets the high standards required by our customers worldwide and are suitable for use in the rail industry.

Quality Policy

Technical Innovation
Sustainable Improvements
Customer Satisfaction
Grow Responsibly with Suppliers

Safety Policy

Create Safety Awareness
Implement Safety Training
Guarantee Safe Operations
Provide Safe Products

afaq ISO 9001 Quality AFNOR CERTIFICATION

IRIS Certification

TAIWAN QUALITY 5 YEAR WARRANTY

*Industrial-grade products

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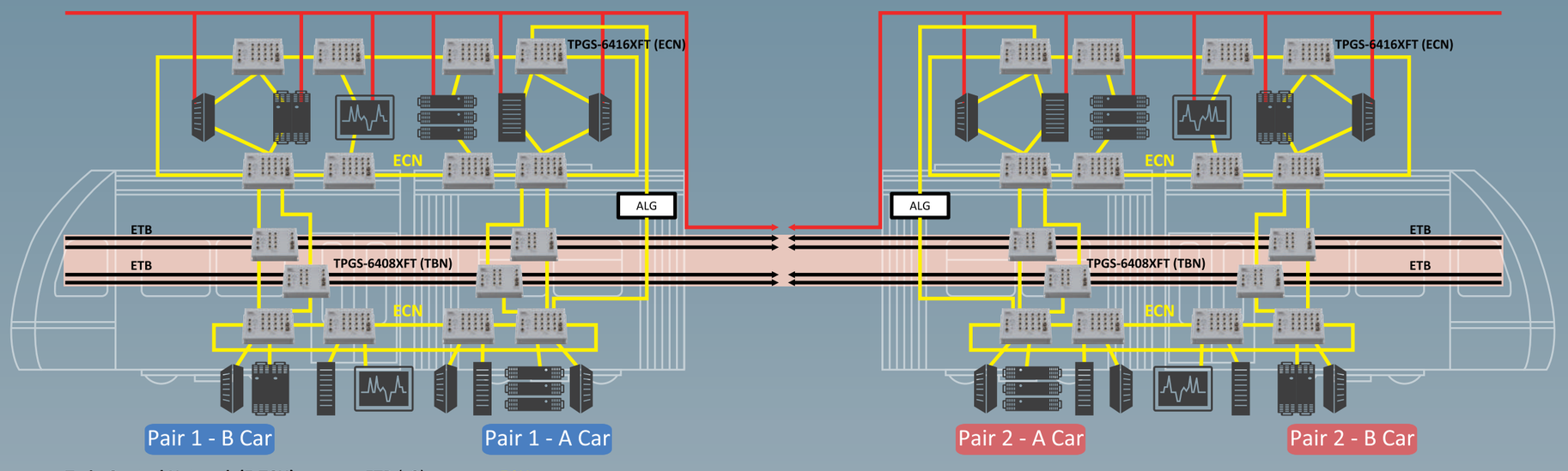
On-board Networking **Switches** for Rail-train, Metro and Tram

Delivering substantial operational and passenger communication data in a rolling stock application; is crucial yet making it flexible for easy maintenance is the biggest challenge for on-board network solutions.



Features at a glance

Lantech **New Generation** EN50155 Ethernet Switches

L3 Lite

IEC 61375 2-5/3-4

10G Fiber or Copper

- √ Layer 3 Lite (L3L/TBN model)
- √ 10G Fiber or Copper Uplinks
- √ Inrush Current Limit
- √ EN 50155:2017, EN 55032, EN 50124, EN 12663, EN45545-2, IEC 60571 Certified
- √ Up to 80W PoE w/PoE & System Isolation
- √ IEC 61375-3-4 & IEC 61375-2-5 (TBN model)
- √ Wide Voltage Input 16.8~137.5VDC

TPGS-R6616XFT

16 10/100/1000T PoE at + 4 10G copper + 2 10G Q-ODC fiber OS4 EN50155 Managed Switch w/R-NAT

Optional √R-NAT √L3 √TBN √L3L √ECN

IPGS-5008T

8 10/100/1000T PoE at + L2+ EN50155 Managed Switch

Optional ☐R-NAT ☐L3 ☐TBN ☐L3L √ECN

TPES-L6424XFT

24 10/100TX (PoE at) + 2 10G copper + 2 10G Q-ODC fiber OS3 EN50155 Managed Switch

Optional ☐R-NAT √L3 √TBN √L3L √ECN

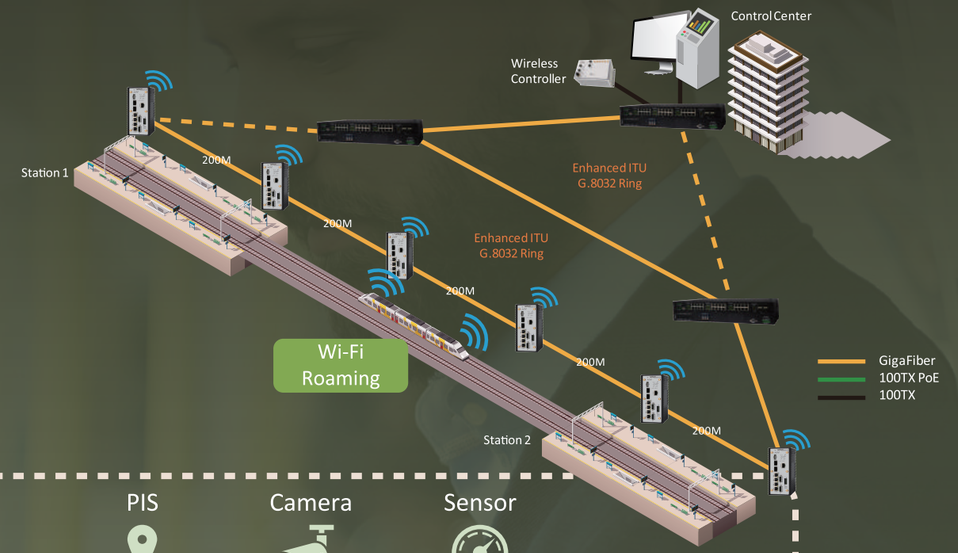
IPES-5408S

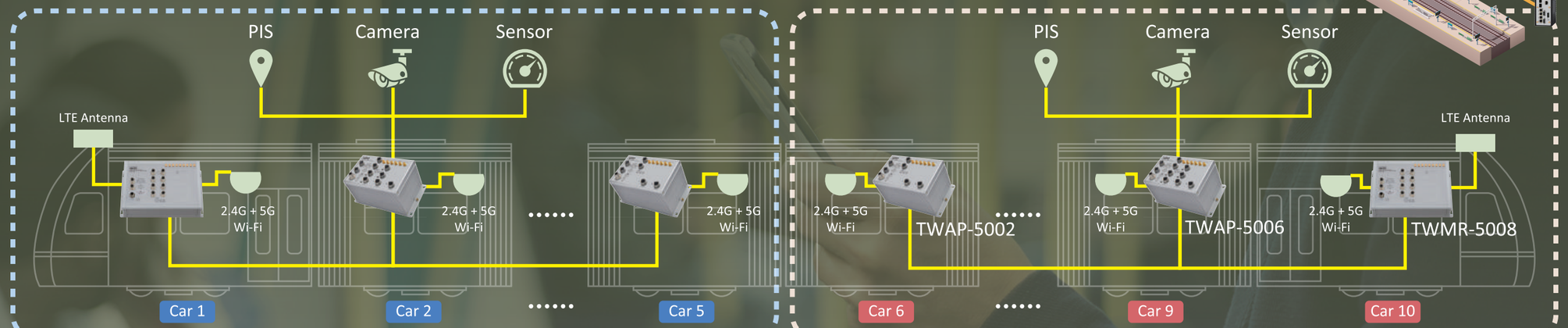
8 10/100TX PoE at + 4 10/100/1000T L2+ EN50155 Managed Switch

Optional ☐R-NAT ☐L3 ☐TBN ☐L3L √ECN

On-board / Trackside Networking **Routers**

Lantech multifunction routers are suitable for on-board or trackside applications with a variety of connectivity combinations and powerful features. Designed with IP30 to IP67-rated housing, you can easily find the right model to fit a restricted cabinet space.





Features at a glance Lantech Multi-function Routers

- √ Two LTE WAN Load Balancing
- √ Two WAN Aggregation**
- √ Quad SIM Design
- √ TWCC (Train Wireless Carriage Coupling)
- √ LTE & Wi-Fi Redundancy
- √ Concurrent Dual Band 2.4G+5G Wi-Fi
- √ EMMC Flash Storage**
- √ Up to 80W PoE Budget
- √ eSIM Chip Built-in
- √ Built-in L2+ Managed Switch Function**
- √ VPN router for Multi-site VPN, OpenVPN, L2TP, IPSec, L2 over GRE

**Optional

TWMR-5208MGF-2WAN-2S

EN50155 8 x 10/100/1000 X coded+ Multifunction VPN Router w/up to 2 LTE 4G + 1 WIF 11AC + 2x2.5G/1G Fiber Uplink

TWMR-5008T

EN50155 8 x 10/100/1000 X coded+ Multifunction's load balancing VPN Router w/up to 2x LTE 4G +1x WIF 11AC

TWAP-5006

EN50155 Multifunction Access point w/up to 2 x WiFi 11ac + 6 Gigabit Ethernet Switch

TWMR-5006

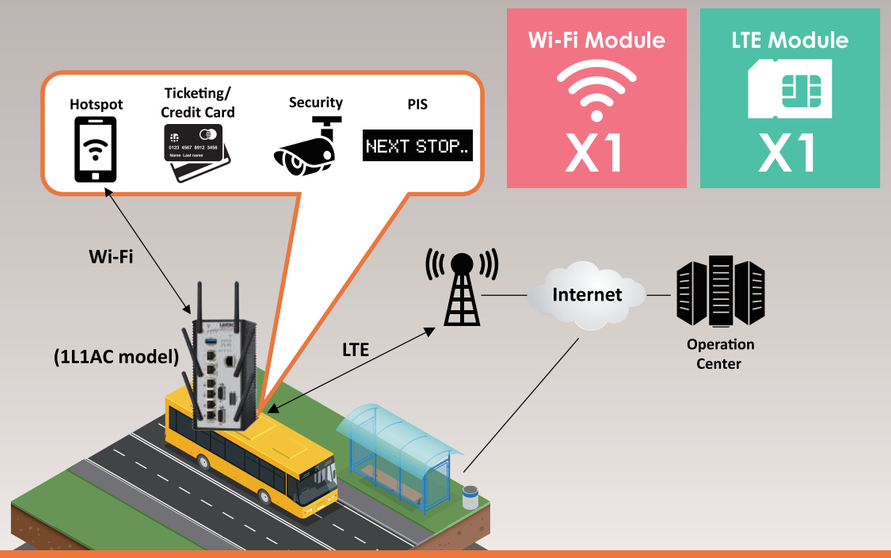
EN50155 Multifunction VPN Router w/1x WiFi 11ac + 1 LTE 4G + 2 serial ports + 6 Gigabit X-coded Ethernet Switch

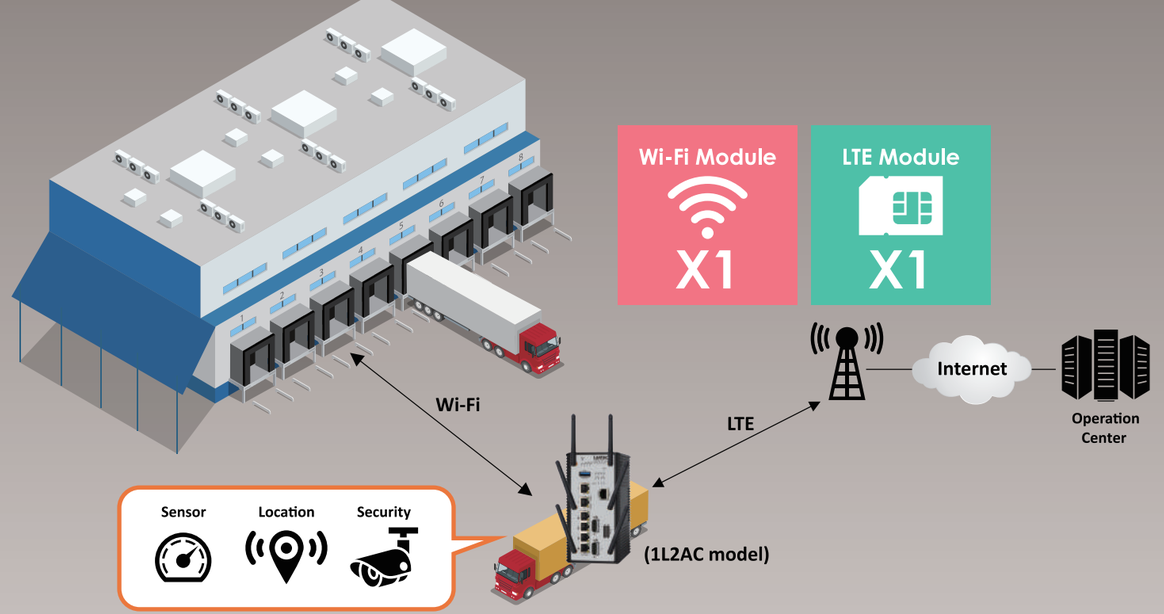
IWMR-3204DF

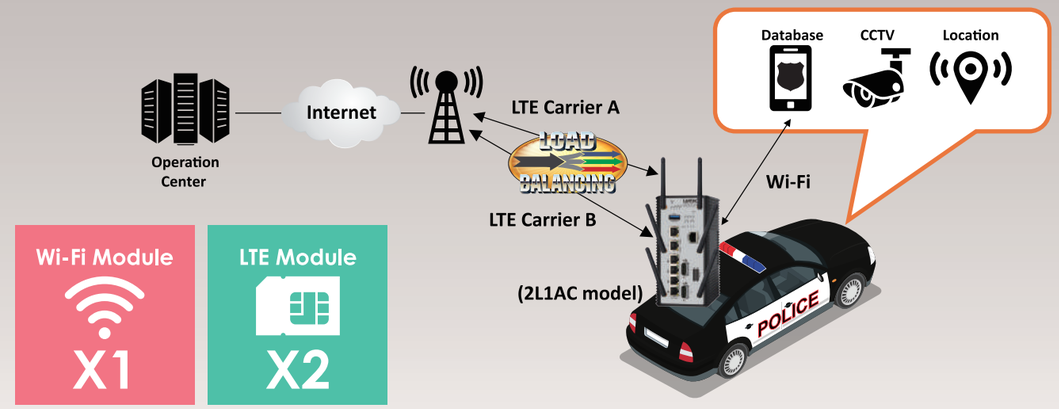
Industrial Multifunction VPN Router w/up to 2x WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 4 Gigabit Ethernet + 2 Dual Speed SFP Switch

Vehicle Communication Solution

Lantech designs Ethernet switches and multifunction routers as the communication hub of the vehicle's IP network. Lantech products provide communication links to passenger counters, CCTV Camera, and drivers panel via Wi-Fi or Ethernet cables while LTE connectivity helps to connect with the control center or the Internet.







Features at a glance Lantech Multi-function Routers

- √ Two LTE WAN Load Balancing
- √ Quad SIM Design
- √ LTE & Wi-Fi Redundancy
- √ Ignition Sensing Design
- √ EMMC Flash Storage**
- √ eSIM Chip Built-in
- √ Two WAN Aggregation**
- √ 2 RS422/485 w/isolation or 2 RS232 ports
- √ Up to 3 Modules (Wi-Fi / LTE module)
- √ Up to 80W PoE Budget
- √ Supports AP/Bridge /Client modes
- √ L2+ Managed Switch Function
- √ VPN router for Multi-site VPN, OpenVPN, L2TP, IPSec, L2 over GRE

**Optional

IPWMR-3006
Industrial Multifunction VPN Router w/up to 2x WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 6 Gigabit Ethernet Switch(incl. 4 PoE)

IWMR-3204DF
Industrial Multifunction VPN Router w/up to 2x WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 4 Gigabit Ethernet + 2 Dual Speed SFP Switch

Features at a glance Lantech Ethernet Switches

- √ Ignition Sensing Design
- √ 12/24VDC PoE Booster
- √ ITxPT Compliant
- √ E-Marking Certified for Vehicle
- √ 802.3at Standard, Up To 30W/port
- √ ISO 7637 Certified for Vehicle

TPES-0008C
8 10/100TX M12 PoE at/af Industrial Unmanaged Switch

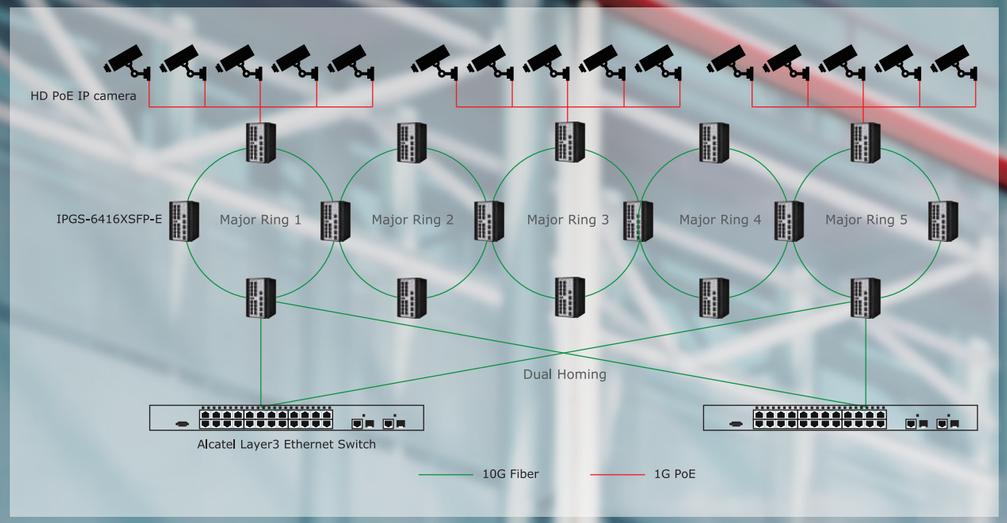
IPES-0008B
8 10/100TX M12 PoE at/af EN50155 Unmanaged Switch

IPES-0008C
8 10/100TX PoE at/af Industrial Unmanaged Switch

I(P)ES-0008B
8 10/100TX (PoE at/af) Industrial Ethernet Unmanaged Switch

Surveillance System

Accompanied with rapid economic global growth, the demand for surveillance is increasing. One of the key factors to construct a reliable surveillance system is hardened industrial switches. Lantech provides the best industrial networking solutions with high power PoE, and gigabit bandwidth with power booster that is suitable for different environments even for vehicles that only provide 12VDC power supply. Also, the support of IGMP v1/v2/v3 eliminates network jam even with hundreds of IP cams and huge video flow by handling multicast packets effectively.



Features at a glance Lantech Ethernet Switches

- √ 10G SFP+/Copper Uplinks
- √ 802.3at Standard, Up To 30W/port
- √ IGMP v1/v2/v3
- √ Complete PoE Managed/Unmanaged Models

IPGS-6416XSFP

16 10/100/1000T PoE at/af + 4 1G/2.5G /10G SFP+ L2+ Industrial Managed Ethernet Switch

IPES-3416DSFP

16 10/100TX + 4 Dual Speed SFP L2+ PoE at/af Industrial Managed Ethernet Switch

IPGS-6300-2P

4- Modular-Slots w/4/2 x1G/2.5G/10G SFP+ + 2 10GT uplink L2+ Industrial Managed Ethernet Switch

IPES-0008B

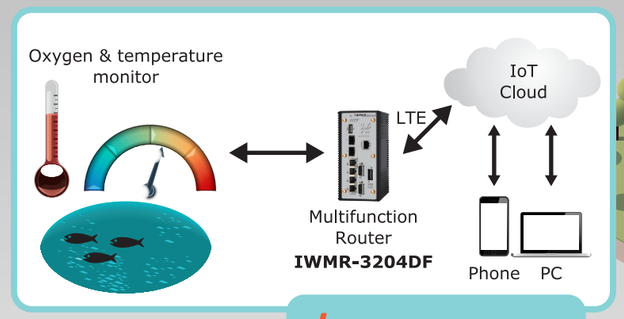
8 10/100TX PoE at/af Industrial Ethernet Unmanaged Switch

Solutions of IoT

The Internet of Things (IoT) is often associated with devices that communicate with each other and with people through a network. All these devices need a router to pass raw data through a network to reach a central server for further processing. Lantech multifunction router is the best choice for IoT applications.

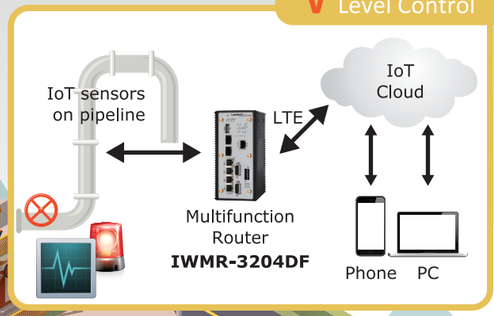
IWMR-3204DF

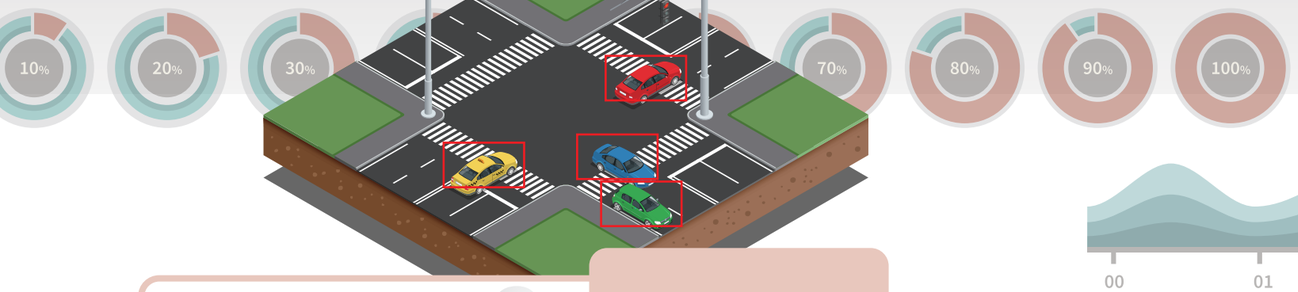
Industrial Multifunction VPN Router w/up to 2x WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 4 Gigabit Ethernet + 2 Dual Speed SFP Switch

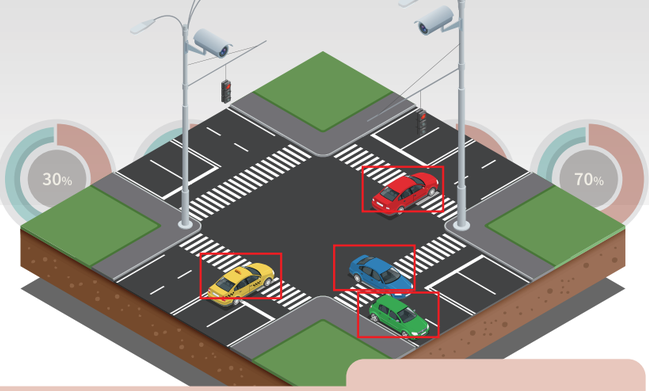


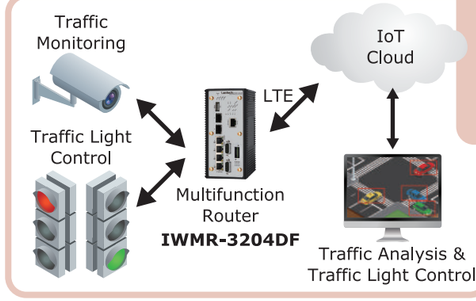
- √ Temperature Control
- √ Oxygen Monitoring
- √ Water Quality Control

- √ Device Control
- √ Pipeline Monitoring
- √ Leakage Detection
- √ Level Control

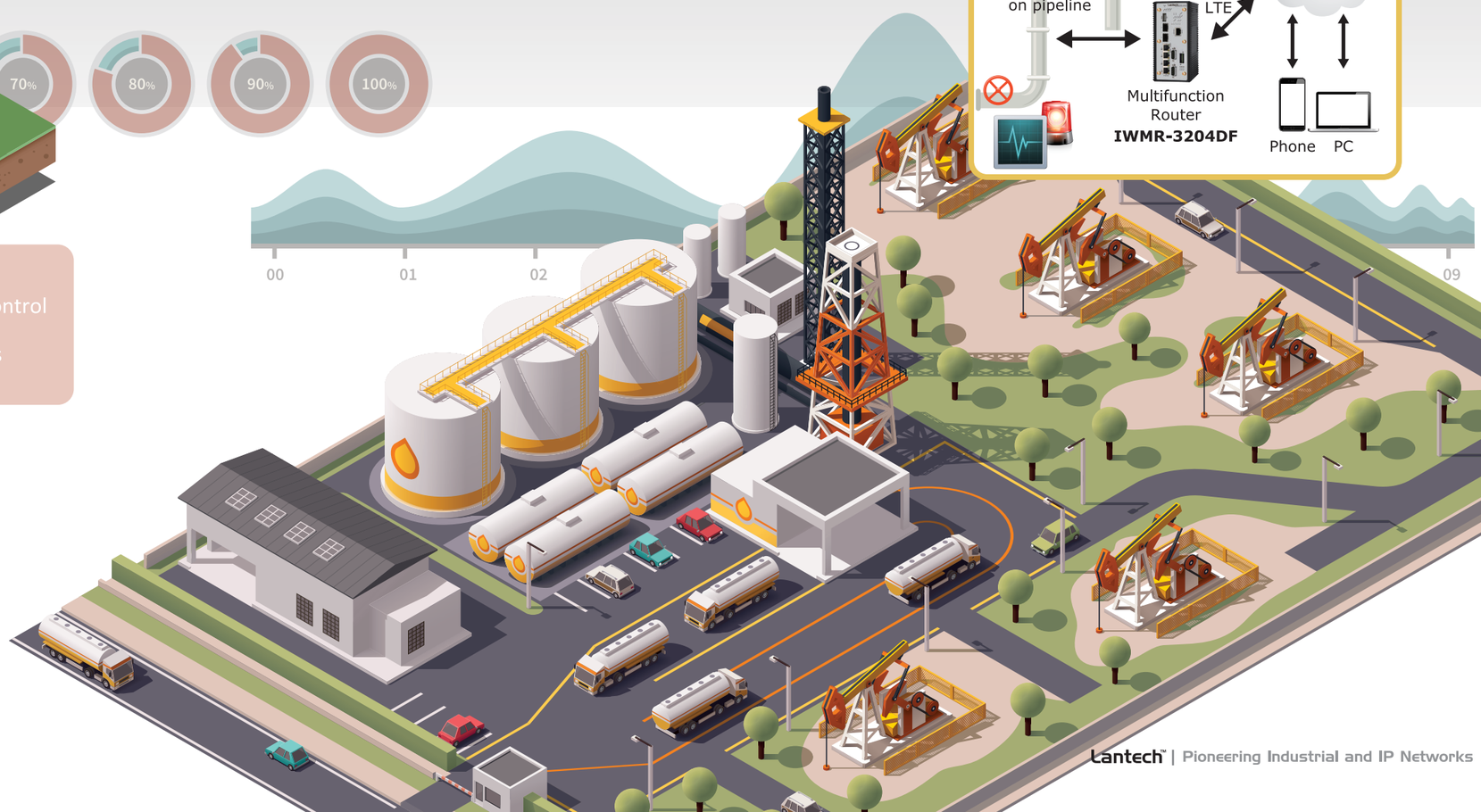








- √ Traffic Light Control
- √ Traffic Analysis



Multifunction Routers Portfolio

	Multifunction Wi-Fi + LTE Routers		Multifunction LTE Mobile Routers		Multifunction Wi-Fi Routers	
	5000 Series	3000 Series	5000 Series	3000 Series	5000 Series	3000 Series
IP67 rated	●	-	●	-	●	-
IP65 rated	●	-	●	-	●	-
IP54 rated	●	-	●	-	●	-
IP30 rated	-	●	-	●	-	●
Aluminum case	●	-	●	-	●	-
Serial ports	Up to 2	Up to 2	Up to 2	Up to 2	Up to 2	Up to 2
SIM slots	Up to 4	Up to 4	Up to 4	Up to 4	-	-
M12 connectors	●	-	●	-	●	-
SMA antenna connectors	Up to 6	Up to 7	Up to 6	Up to 7	Up to 6	Up to 7
802.11a/g/n/ac WiFi	●	●	-	-	●	●
Power inputs	16.8~137.5VDC (WV model)	9.5~60VDC (24V model)	16.8~137.5VDC (WV model)	9.5~60VDC (24V model)	16.8~137.5VDC (WV model)	9.5~60VDC (24V model)
Galvanic isolation 1.5KV	●	●	●	●	●	●
LTE/WiFi redundancy	●	●	●	●	●	●
USB port for configuration	●	●	●	●	●	●
EMMC external storage**	●	●	●	●	●	●
Modbus gateway	●	●	●	●	●	●
WiFi WMM	●	●	-	-	●	●
Load balancing	●	●	●	●	●	●
Rate limiting	●	●	●	●	●	●
Ignition sensing	-	●	-	●	-	●
Managed Switch	●	●	●	●	●	●
InstaView	●	●	●	●	●	●
InstaView Cloud	●	●	●	●	●	●
WAN/Routing Features:						
Multisite VPN, OpenVPN, PPTP**	●	●	●	●	●	●
RIPv1 and RIPv2	●	●	●	●	●	●
GRE	L2 over GRE	L2 over GRE	L2 over GRE	L2 over GRE	L2 over GRE	L2 over GRE
NAT	●	●	●	●	●	●
L2TP	●	●	●	●	●	●
DHCP server, relay and client	partial	partial	partial	partial	partial	partial
Suporte de DNS, DNS proxy e spoofing	partial	partial	partial	partial	partial	partial
filtragem por MAC	●	●	●	●	●	●
VRRP	●	●	●	●	●	●
Routing protocols OSPFv2, OSPFv3, BGP	partial	partial	partial	partial	partial	partial
802.1X	●	●	●	●	●	●
Security Features:						
SSL VPN	●	●	●	●	●	●
Hardware acceleration for DES, 3DES, AES 128, AES 192, e AES 256	●	●	●	●	●	●
VPN IPSec site-to-site	●	●	●	●	●	●
Management capabilities:						
Telnet	●	●	●	●	●	●
SSH	●	●	●	●	●	●
SNMPv3	●	●	●	●	●	●
CLI interface	●	●	●	●	●	●
HTTP management	●	●	●	●	●	●
RADIUS	●	●	●	●	●	●

**Optional

Multifunction Wi-Fi + LTE Routers

Load Balancing** with 8 Mechanisms

It supports load balancing for multiple WAN connections. There are eight schemes for load balancing function: Fixed, Failover, Priority, Weight round-robin, Sticky session, Smallest load, Fastest, ,and Custom route. See next page for detail

Dual Concurrent LTE Design 4G/3G**

With dual LTE design and up to 4 SIM card slots, it can allow auto-swap, failover & failback from one service provider to another for non-stop connection. GPS supports both US and Russian GLONASS systems.

Galvanic Isolation, Wide Input Voltage

The 5000 series provides galvanic isolation for the WV model with dual wide range input (16.8~137.5V) while the 3000 series has a 24V (9.5~56V) input range. With an isolated input 1.5KVA design, the mobile router can prevent surge , EFT, and spike from damaging the main components.

Advanced security & 16 SSIDs

The security support standards including 64/128bits WEP, WPA/WPA2 PSK (TKIP, AES), and 802.1x ensure the best security and active defense against security threats. Lantech multifunction routers support up to 16 SSIDs, each SSID has independent security and encryption.

Multisite VPN, OpenVPN and Firewall

The VPN function allows remote users to access private networks under high encryption without much influence. It supports IPSec, multisite VPN, open VPN, L2TP, PPTP**, L2 over GRE, NAT, and firewall SPI which can highly secure the network while remotely accessed. The built-in Layer-4 firewall includes DoS*, SPI Firewall, IP address filter / Mac address filter* / TCP/UDP port number as well as IP and Mac address binding*

IEEE 802.11ac Dual Band Operation

With IEEE 802.11ac capability, the series can operate either 5GHz or 2.4GHz bands, offering maximum speed of 1.3GMbps bandwidth. 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 which can be diverse for most wireless applications.

USB Port for Configuration

The configuration file of Lantech mobile routers can be exported in text file so it can be edited and configured back to the router with ease for mass deployment.

802.11r Fast Roaming**

Lantech WiFi mobile routers support 802.11r standard (Fast Basic Service Set Transition) to allow encryption keys to be stored in all of the APs in a network.

**Optional

Standard / Basic / Full Package for Load balancing**

With 8 different schemes for load balancing, Lantech routers can prioritize different data requirements with different paths for maximum performance of the bandwidth available.

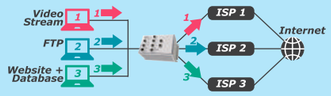
FULL PACKAGE

BASIC PACKAGE

STANDARD

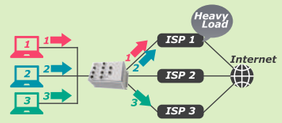
Fixed

Manually route by traffic type through fixed WAN link.



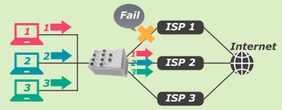
Priority

Routes connections through preferred WAN link while others stand-by. Sequentially activating other links if overflow occurs.



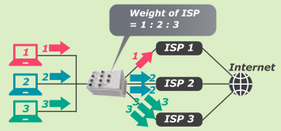
Fail Over

Routes connections through preferred WAN link while others stand-by. Sequentially activating another link if preferred link fails.



Weighted Round-Robin

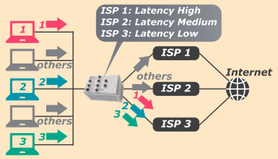
Even distribution of the traffic over all working WAN links in circular order according to the specified weights.



Single WAN output

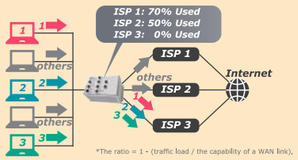
Fastest

Routes connections through the WAN link with lowest latency time.



Smallest Load

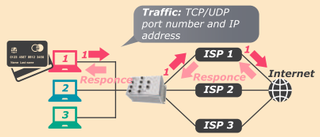
Routes connections through the WAN link with highest free bandwidth ratio*. The traffic load could be by downstream, upstream or total traffic.



*The ratio = 1 - (traffic load / the capability of a WAN link).

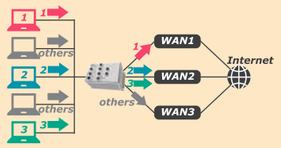
Custom Route

Routing through the selected WAN links for each specific traffic, ex: TCP/UDP port number and IP address.



Sticky Session

Bind all connections in an application session to particular WAN link. This ensures that all connections in the session are routed to the same WAN link. This is suitable for security services like online payment etc.



Concurrent multi-WAN output

Optional EMMC Flash Storage**

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

eSIM Chip Built-in

By replacing physical SIM, optional eSIM chip will allow users to purchase data plans at low prices from local carriers around world. *Available in models: 5208, 5008 series

Ignition Sensing

Ignition sense allows you to delay power off your Ethernet switch with a designated time delay. *Available in models: 3204, 3006, 3004, 3002 series

Serial Ports: Modbus Gateway

The series builds in up to 2 port serial connections for RS232; RS422/ RS485 in which RS422/RS485 has 2.5KV isolation protection. The built-in Modbus gateway can convert Modbus RTU/ASCII to Modbus TCP for device control.

Built-in Managed Switch Function

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

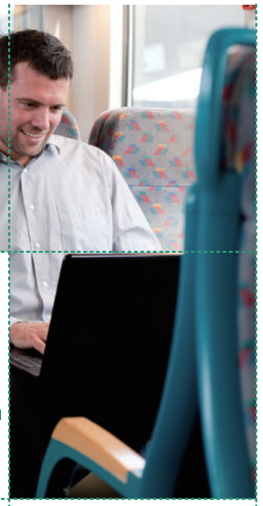
Up to 3 Internal Module Slots

Up to 3 internal modules which consist of 2 LTE + 1 Wi-Fi, or 1 LTE + 2 Wi-Fi provide higher bandwidth and better redundancy utilizing load balancing scheme.

Product Line-ups

T(P)WMR-5208MGF
EN50155 Multifunction VPN Router w/1 WiFi 11ac + 1 LTE 4G + 2 serial ports + 8 GigaT + 2 1G/2.5G Fiber
8 GT | 2 Q-ODC | 8 PoE | USB | 2 Serial | 2 WAN

T(P)WMR-5008
EN50155 Multifunction VPN Router w/1 WiFi 11ac + 1 LTE 4G + 8 GigaT Ethernet
8 GT | 8 PoE | USB



T(P)WMR-5006
EN50155 Multifunction VPN Router w/1 WiFi 11ac + 1 LTE 4G + 2 serial ports + 6 GigaT
6 GT | 4 PoE | USB | 2 Serial

T(P)WMR-5004
EN50155 Multifunction VPN Router w/1 WiFi 11ac + 1 LTE 4G + 2 serial ports + 4 GigaT + 2WAN/2LAN
4 GT | 4 PoE | USB | 2 Serial | 2 WAN

TWMR-5002
EN50155 Multifunction VPN Router w/1 WiFi 11ac + 1 LTE 4G + 2 serial ports + 2 GigaT (incl.1 PD)
2 GT | 1 PD | 2 Serial | USB

I(P)WMR-3204DF
Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 4 GigaT + 2 Dual Speed SFP
4 GT | 2 SFP | 4 PoE | USB | 2 Serial

I(P)WMR-3006
Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 6 GigaT
6 GT | 4 PoE | USB | 2 Serial

I(P)WMR-3004
Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 4 GigaT + 2WAN/2LAN
4 GT | 4 PoE | USB | 2 Serial | 2 WAN

IWMR-3002
Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2/4 serial ports + 2 GigaT (incl.1 PD)
2 GT | 1 PD | 4 Serial | USB

Model name (P) = PoE model

**Optional

Multifunction LTE Mobile Routers

T(P)MR-5208MGF
EN50155 Multifunction VPN Router
w/2 LTE 4G + 2 serial
ports + 8 GigaT + 2 1G/2.5G Fiber

8 GT | 2 Q-ODC | 8 PoE | USB | 2 Serial | 2 WAN

T(P)MR-5008
EN50155 Multifunction VPN Router
w/2 LTE 4G + 8 GigaT

8 GT | 8 PoE | USB

Lantech delivers the next generation VPN routers that supports dual LTE mobility + up to 2 serial ports (RS232,RS422,RS485) as well as up to 6 Giga ports. Harnessed with up to 1.6Ghz processor, 256Mbyte flash and 1Gbyte memory RAM, the series can boost your network performance and handle complicated applications.

T(P)MR-5006
EN50155 Multifunction VPN Router
w/2 LTE 4G + 2 serial
ports + 6 GigaT

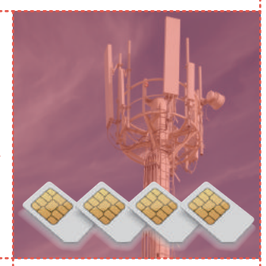
6 GT | 4 PoE | USB | 2 Serial

T(P)MR-5004
EN50155 Multifunction VPN Router
w/2 LTE 4G + 2 serial
ports + 4 GigaT + 2WAN/2LAN

4 GT | 4 PoE | USB | 2 Serial | 2 WAN

TMR-5002
EN50155 Multifunction VPN Router
w/2 LTE 4G + 2 serial
ports + 2 GigaT (incl.1 PD)

2 GT | 1 PD | 2 Serial | USB



I(P)MR-3204DF
Industrial Multifunction VPN Router
w/2 LTE 4G + 2 serial ports +
4 GigaT + 2 Dual Speed SFP

4 GT | 2 SFP | 4 PoE | USB | 2 Serial

I(P)MR-3006
Industrial Multifunction VPN Router
w/2 LTE 4G + 2 serial
ports + 6 GigaT

6 GT | 4 PoE | USB | 2 Serial

I(P)MR-3004
Industrial Multifunction VPN Router
w/2 LTE 4G + 2 serial
ports + 4 GigaT + 2WAN/2LAN

4 GT | 4 PoE | USB | 2 Serial | 2 WAN

IMR-3002
Industrial Multifunction VPN Router
w/2 LTE 4G + 2/4 serial
ports + 2 GigaT (incl.1 PD)

2 GT | 1 PD | 4 Serial | USB

Model name (P) = PoE model

Learn more about Lantech multifunction routers

https://www.lantechcom.tw/global/eng/industrial-multifunction-4G+wifi-routers.html

Multifunction Wi-Fi Routers

T(P)WAP-5208MGF
EN50155 Multifunction VPN Router
w/2 WiFi 11ac + 2 serial
ports + 8 GigaT + 2 1G/2.5G Fiber

8 GT | 2 Q-ODC | 8 PoE | USB | 2 Serial | 2 WAN

T(P)WAP-5008
EN50155 Multifunction VPN Router
w/2 WiFi 11ac +
8 GigaT Ethernet

8 GT | 8 PoE | USB

Lantech multifunction Wi-Fi router series is the next generation hardened wireless solution, conforming to 802.11ac/a/g/n with up to 6-port Giga switch. The support of AP/Bridge/AP client modes can be diverse for most wireless applications. Client mode supports PMK** Caching and pre-authentication.

T(P)WAP-5006
EN50155 Multifunction VPN Router
w/2 WiFi 11ac +
2 serial ports + 6 GigaT

6 GT | 4 PoE | USB | 2 Serial

T(P)WAP-5004
EN50155 Multifunction VPN Router
w/2 WiFi 11ac + 2 serial
ports + 4 GigaT + 2WAN/2LAN

4 GT | 4 PoE | USB | 2 Serial | 2 WAN

TWAP-5002
EN50155 Multifunction VPN Router
w/2 WiFi 11ac + 2 serial
ports + 2 GigaT (incl.1 PD)

2 GT | 1 PD | 2 Serial | USB

I(P)WAP-3204DF
Industrial Multifunction VPN Router
w/2 WiFi 11ac + 2 serial ports +
4 GigaT + 2 Dual Speed SFP

4 GT | 2 SFP | 4 PoE | USB | 2 Serial

I(P)WAP-3006
Industrial Multifunction VPN Router
w/2 WiFi 11ac + 2 serial
ports + 6 GigaT

6 GT | 4 PoE | USB | 2 Serial

I(P)WAP-3004
Industrial Multifunction VPN Router
w/2 WiFi 11ac + 2 serial ports
+ 4 GigaT + 2WAN/2LAN

4 GT | 4 PoE | USB | 2 Serial | 2 WAN

IWAP-3002
Industrial Multifunction VPN Router
w/2 WiFi 11ac + 2/4 serial
ports + 2 GigaT (incl.1 PD)

2 GT | 1 PD | 4 Serial | USB

Model name (P) = PoE model

EN50155 NAT Routers

Lantech EN50155 NAT routers support two Gigabit WAN ports for NAT (Network Address Translation) function for Internet access. It supports VRRP (Virtual Router Redundancy Protocol) function that helps build WAN redundancy. The built-in Layer-4 firewall includes DoS*, SPI Firewall, IP address filter / Mac address filter* / TCP/UDP port number as well as IP and Mac address binding*.

T(P)GR-5010TA-2WAN
10 10/100/1000T + 2 Giga WAN
EN50155 L2+ Managed
Ethernet Router

10 GT | 8 PoE | USB | 2 WAN

T(P)ER-5208TA-2WAN
8 10/100TX + 2 Giga WAN
EN50155 L2+ Managed
Ethernet Router

2 GT | 8 TX | USB | 2 WAN

*Future release
**Optional

L2+ Functions Comparison

		2000 series	OS1	NEW! OS2	NEW! OS3	NEW! OS4
Management	SNMP v1 v2c v3	●	●	●	●	●
	Web browser	●	●	●	●	●
	Telnet	●	●	●	●	●
	SSH		●	●	●	●
	SNTP	●	●	●	●	●
	LLDP	●	●	●	●	●
	CDP		●	●	●	●
	Topology View		●	●	●	●
	Environment Monitoring		●	●	●	●
Redundancy	STP	●	●	●	●	●
	RSTP	●	●	●	●	●
	MSTP		●	●	●	●
	Loop Protection		●	●	●	●
	Proprietary redundant protocol	ProRing2se	ITU-Ring Enhance mode	ITU-Ring Enhance mode	ITU-Ring Enhance mode	ITU-Ring Enhance mode
	MRP				●	●
	Dual Homing		●	●	●	●
	G.8032 standard		●			
Security	MAC filter	●	●	●	●	●
	IP Security(What IP can access switch)	●	●	●	●	●
	Login Security (RADIUS)		●	●	●	●
	SSL		●	●	●	●
	Login Security (TACACS+)		●	●	●	●
	ACL	●	●	Ingress Only	●	●
	IEEE 802.1X	●	●	●	●	●
	IP Source Guard		●		●	●
	ARP inspection		●		●	●
	BPDU Guard		●		●	●
	Remote admin (limitation of accessing way)		●	●	●	●
VLAN	Port Based VALN	●	●	●	●	●
	Tagged VLAN	●	●	●	●	●
	GVRP		●	●	●	●
	QinQ		●		●	●
	Protocol Based				●	●
	Subnet Based				●	●
Multicast	IGMP Snooping	●	●	●	●	●
	MLD Snooping				●	●
	IGMP router port		●	●	●	●
	Static Multicast forwarding	●	●	●	●	●
	GMRP		●	●	●	●
Traffic control	Rate Limiting	●	●	●	●	●
	Link aggregation	●	●	●	●	●
	Port based QoS	●	●	●	●	●
	VLAN based QoS		●	●	●	●
	CoS/DSCP	●	●	●	●	●
	Small-frame arrival rate				●	●
	Protocol storm protection				●	●
	Port Monitoring				●	●
DHCP	IP v6 version				●	●
	IP v4 version	●	●	●	●	●
	Port Based DHCP	●	●	●	●	●
	MAC based DHCP		●	●	●	●
	Option82 DHCP Relay		●	●	●	●
	Option 12/42/66		option 66 only	option 66 only	●	●
	DHCP Snooping		●	●	●	●
	PXE application				●	●
PoE	Alive Detecting	●	●	●	●	●
	PoE Scheduling	●	●	●	●	●
Event&Log	SysLog client&server	●	●	●	●	●
	Email	●	●	●	●	●
	SNMP Trap	V1/V2c	●	●	●	●
	Relay	●	●	●	●	●
	Digital Input/Output		●	●	●	●
	Triggered by event of environment		●	●	●	●
	Triggered by event of SFP DDM		●	●	●	●
Diagnostic	Ping		●	●	●	●
	ARP		●	●	●	●
	DDM information	●	●	●	●	●
Maintainance	Firmware upgrading	WEB/TFTP	WEB/TFTP/FTP	WEB/TFTP/FTP	WEB/TFTP/FTP	WEB/TFTP/FTP
	Configuration file import/export	WEB/TFTP	WEB/TFTP/FTP	WEB/TFTP/FTP	WEB/TFTP/FTP	WEB/TFTP/FTP
	Auto Provision		●			
	Dual Image			●	●	●

NEW OS3 Platform
OS4 Platform

Optional Layer3/L3L/NAT Ethernet Switches

IEC-61375 for Train Applications **optional

IEC-61375 is a standardized communication protocol for train-consist network applications, that stipulates three elements, TTDP, R-NAT and VRRP. Train Backbone Node (TBN) device is used when many trains must be connected together. TBN has been specially designed to meet the requirements specified by IEC standards.

Since each train car is seen as an independent domain in IEC 61375-2-5 standard, the communication between two cars needs to be processed via routing function. The IEC 61375-2-5 standard requests that the networking devices in ECN need to transmit data through TBN by R-NAT from one car to another car.

OS4 Platform Exclusive

Railway Network Address Table (R-NAT) **optional

R-NAT is an IEC 61375 algorithm for network address translation between Ethernet Train Backbones (ETB) and Ethernet Consist Networks (ECN). This algorithm uses the rules for train and Consist network addresses, which simplify the management of address translation.

OSPF, RIP v1/v2, Static&Dynamic Routing, VRRP **optional

The series supports hardware-based IPv4 routing for maximum performance. Routing protocols, such as OSPF, RIP v1/v2, VRRP, static routes including VLAN routing and multicast routing are supported.

Layer 3 Lite (L3L) **optional

Lantech L3L platform supports static routing, VRRP (Virtual Router Redundancy Protocol), DHCP relay (Layer3), and VLAN routing. A DHCP relay agent is any host that forwards DHCP packets between clients and servers. Relay agents are used to forward requests and replies between clients and servers when they are not in the same physical subnet. Relay agent forwarding is distinct from the normal forwarding of an IP router, where IP datagrams are switched between networks somewhat transparently. By contrast, relay agents receive DHCP messages and then generate a new DHCP message to send on another interface.

Inrush Current Limit

The series is able to prevent damage caused by inrush current, which is the maximum instantaneous input current drawn by an electrical device when first turned on.

Power isolation design (WVI model)

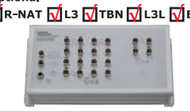
Power isolation design for power input and Ethernet switch system power circuit. The isolation provides a barrier across which dangerous voltages cannot pass in the event of a fault or component failure. At the same time, the WVI model provides power input range from 16.8~137.5 VDC.

Product Line-ups OS4 Platform

Optional ☑R-NAT ☑L3 ☑TBN ☑L3L ☑ECN

T(P)GS-R6616XFT
16 10/100/1000T (PoE at) +
4 10G copper + 2 10G Q-ODC fiber
L3L EN50155 Managed Switch
6 10G | 16 GT | 16 PoE | USB

T(P)GS-R6616XT
16 10/100/1000T (PoE at)
+ 6 10G copper
L3L EN50155 Managed Switch
6 10G | 16 GT | 16 PoE | USB



T(P)GS-R6416XT
16 10/100/1000T (PoE at)
+ 4 10G copper
L3L EN50155 Managed Switch
4 10G | 16 GT | 16 PoE | USB

T(P)GS-R6608XFT
8 10/100/1000T (PoE at) +
4 10G copper + 2 10G Q-ODC fiber
L3L EN50155 Managed Switch
6 10G | 8 GT | 8 PoE | USB

T(P)GS-R6608XT
8 10/100/1000T (PoE at)
+ 6 10G copper
L3L EN50155 Managed Switch
6 10G | 8 GT | 8 PoE | USB

T(P)GS-R6408XT
8 10/100/1000T (PoE at)
+ 4 10G copper
L3L EN50155 Managed Switch
4 10G | 8 GT | 8 PoE | USB

T(P)ES-R6616XFT
16 10/100TX (PoE at) +
4 10G copper + 2 10G Q-ODC fiber
L3L EN50155 Managed Switch
6 10G | 16 TX | 16 PoE | USB

T(P)ES-R6616XT
16 10/100/1000T (PoE at)
+ 6 10G copper
L3L EN50155 Managed Switch
6 10G | 16 TX | 16 PoE | USB

T(P)GS-R5616MGFT
16 10/100/1000T (PoE at) + 4
10/100/1000T + 2 1G/2.5G Q-ODC
fiber L3L EN50155 Managed Switch
2 Q-ODC | 20 GT | 16 PoE | USB

T(P)GS-R5616T
16 10/100/1000T (PoE at)
+ 6 10/100/1000T
L3L EN50155 Managed Switch
22 GT | 16 PoE | USB

T(P)GS-R5416T
16 10/100/1000T (PoE at)
+ 4 10/100/1000T
L3L EN50155 Managed Switch
20 GT | 16 PoE | USB

T(P)GS-R5608MGFT
8 10/100/1000T (PoE at) + 4
10/100/1000T + 2 1G/2.5G Q-ODC
fiber L3L EN50155 Managed Switch
2 Q-ODC | 12 GT | 8 PoE | USB

T(P)GS-R5608T
8 10/100/1000T (PoE at)
+ 6 10/100/1000T
L3L EN50155 Managed Switch
14 GT | 8 PoE | USB

T(P)GS-R5408T
8 10/100/1000T (PoE at)
+ 4 10/100/1000T
L3L EN50155 Managed Switch
12 GT | 8 PoE | USB

T(P)ES-R5616MGFT
16 10/100TX (PoE at) + 4
10/100/1000T + 2 1G/2.5G Q-ODC
fiber L3L EN50155 Managed Switch
4 GT | 2 Q-ODC | 16 TX | 16 PoE | USB

T(P)ES-R5616T
16 10/100/1000T (PoE at)
+ 6 10/100/1000T
L3L EN50155 Managed Switch
6 GT | 16 TX | 16 PoE | USB

Learn more

https://www.lantechcom.tw/global/eng/en50155-OS4.html

Do you know?
Benefits of 10G copper connectors

- Compatible with existing Ethernet cables
- Rugged and robust connector
- Cat 5e for inter-car gaps while Cat 7 for fixed, intra-car connection
- EMC immunity testing

Do you know?
Benefits of Q-ODC fiber connectors

- Installation friendly - push-pull locking mechanism
- Interference free
- Compliant with EN 45545-2 fire safety standard
- Vibration & shock resistant – EN 61373:2010 Category 2
- Rapid change of temperature – EN 60512-11-4
- Damp heat – EN 60512-11-3

Model name (P) = PoE model

EN50155 Standard L2+ Ethernet Switches

IP67/65/54/41-rated Aluminum Housing

To protect against dust and water in harsh environments, Lantech designed the series with up to IP67-rated aluminum housing. Aluminum has high thermal conductivity, is non-magnetic, light weight, and oxidation resistant which ensures our products deliver high performance with the best stability.

Smart Bypass Protection

The bypass relay is set to bypass one switch to the next one when the power is off in order to protect the network from crashing at daisy-chain topology. Lantech new Smart bypass caters to remain in bypass mode until the switch boots up completely, also it will activate when it detects CPU hang.

ECN models: IEC 61375-3-4 (optional)

IEC 61375-3-4 defines networking data that is transmitted in ECN into five types: Process data, Message data, Stream data, Best effort data, and Supervisory data. Any Ethernet switch installed in ECN must be able to forward these five types of data packages and provide redundant protection.

EN 50155: 2017 / EN 45545-2 Certified

The series is EN 50155: 2017, EN 55032, EN 50124, EN 12663, EN 45545-2 and IEC 60571 certified. These standards are defined to ensure the operational safety and environmental friendliness for rolling stock applications.

Wide Voltage Input w/ Isolation

WV model w/system isolation accepts 16.8~147.5VDC dual input and can feed a 54V output with max 120W PoE budget. WVI w/PoE isolation and can feed max 80W PoE budget.

Built-in Environmental Monitoring

All Lantech EN50155 L2+ managed switches have built-in environmental monitoring. Users can view the switch's ambient temperature, real input voltage, and input current along with CPU and memory buffer in real time.

EN50155 10G Uplinks Managed Ethernet Switches OS3 Platform

Optional √L3 √TBN √L3L √ECN

T(P)GS-L6416XFT
16 10/100/1000T (PoE at)+
2 10G Copper + 2 10G Q-ODC fiber
L2+ EN50155 Managed Switch
4 10G | 16 GT | 16 PoE | USB

T(P)GS-L6408XFT
8 10/100/1000T (PoE at) +
2 10G Copper + 2 10G Q-ODC fiber
L2+ EN50155 Managed Switch
4 10G | 8 GT | 8 PoE | USB

T(P)GS-L6216XT
16 10/100/1000T (PoE at)
+ 2 10G Copper
L2+ EN50155 Managed Switch
2 10G | 16 GT | 16 PoE | USB

T(P)GS-L6216XF
16 10/100/1000T (PoE at)
+ 2 10G Q-ODC fiber
L2+ EN50155 Managed Switch
2 10G | 16 GT | 16 PoE | USB

T(P)GS-L6208XT
8 10/100/1000T (PoE at)
+ 2 10G Copper
L2+ EN50155 Managed Switch
2 10G | 8 GT | 8 PoE | USB

T(P)GS-L6208XF
8 10/100/1000T (PoE at)
+ 2 10G Q-ODC fiber
L2+ EN50155 Managed Switch
2 10G | 8 GT | 8 PoE | USB

T(P)ES-L6424XFT
24 10/100TX (PoE at) +
2 10G copper + 2 10G Q-ODC fiber
L2+ EN50155 Managed Switch
4 10G | 24 TX | 24 PoE | USB

T(P)ES-L6424XT
24 10/100TX (PoE at)
+ 4 10G copper
L2+ EN50155 Managed Switch
4 10G | 24 TX | 24 PoE | USB

T(P)ES-L6416XFT
16 10/100/1000T (PoE at)+
2 10G Copper + 2 10G Q-ODC fiber
L2+ EN50155 Managed Switch
4 10G | 16 TX | 16 PoE | USB

T(P)ES-L6416XT
16 10/100TX (PoE at)
+ 4 10G Copper
L2+ EN50155 Managed Switch
4 10G | 16 TX | 16 PoE | USB

T(P)ES-L6408XFT
8 10/100TX (PoE at) +
2 10G Copper + 2 10G Q-ODC fiber
L2+ EN50155 Managed Switch
4 10G | 8 TX | 8 PoE | USB

T(P)ES-L6408XT
8 10/100TX (PoE at)
+ 4 10G Copper
L2+ EN50155 Managed Switch
4 10G | 8 TX | 8 PoE | USB

T(P)ES-L6216XT
16 10/100TX (PoE at)
+ 2 10G copper
L2+ EN50155 Managed Switch
2 10G | 16 TX | 16 PoE | USB

T(P)ES-L6216XF
16 10/100TX (PoE at)
+ 2 10G Q-ODC fiber
L2+ EN50155 Managed Switch
2 10G | 16 TX | 16 PoE | USB

T(P)ES-L6208XT
8 10/100TX (PoE at)
+ 2 10G copper
L2+ EN50155 Managed Switch
2 10G | 8 TX | 8 PoE | USB

T(P)ES-L6208XF
8 10/100TX (PoE at)
+ 2 10G Q-ODC fiber
L2+ EN50155 Managed Switch
2 10G | 8 TX | 8 PoE | USB

Model name (P) = PoE model

EN50155 Giga Uplinks Managed Ethernet Switches OS3 Platform

Optional √L3 √TBN √L3L √ECN

T(P)GS-L5416MGFT
16 10/100/1000T (PoE at)+ 2
10/100/1000T + 2 1G/2.5G Q-ODC
fiber L2+ EN50155 Managed Switch
2 Q-ODC | 18 GT | 16 PoE | USB

T(P)GS-L5408MGFT
8 10/100/1000T (PoE at) + 2
10/100/1000T + 2 1G/2.5G Q-ODC
fiber L2+ EN50155 Managed Switch
2 Q-ODC | 10 GT | 8 PoE | USB

T(P)GS-L5216MGF
16 10/100/1000T (PoE at)
+ 2 1G/2.5G Q-ODC fiber
L2+ EN50155 Managed Switch
2 Q-ODC | 16 GT | 16 PoE | USB

T(P)GS-L5216T
16 10/100/1000T (PoE at)
+ 2 10/100/1000T
L2+ EN50155 Managed Switch
18 GT | 16 PoE | USB

T(P)GS-L5208T
8 10/100/1000T (PoE at)
+ 2 10/100/1000T
L2+ EN50155 Managed Switch
10 GT | 8 PoE | USB

T(P)GS-L5208MGF
8 10/100/1000T (PoE at)
+ 2 1G/2.5G Q-ODC fiber
L2+ EN50155 Managed Switch
2 Q-ODC | 8 GT | 8 PoE | USB

T(P)ES-L5424MGFT
24 10/100TX (PoE at) + 2
10/100/1000T + 2 1G/2.5G Q-ODC
fiber L2+ EN50155 Managed Switch
2 GT | 2 Q-ODC | 24 TX | 24 PoE | USB

T(P)ES-L5424T
24 10/100TX (PoE at)
+ 4 10/100/1000T
L2+ EN50155 Managed Switch
4 GT | 24 TX | 24 PoE | USB

T(P)ES-L5416MGFT
16 10/100/1000T (PoE at) + 2
10/100/1000T + 2 1G/2.5G Q-ODC
fiber L2+ EN50155 Managed Switch
2 GT | 2 Q-ODC | 16 TX | 16 PoE | USB

T(P)ES-L5416T
16 10/100TX (PoE at)
+ 4 10/100/1000T
L2+ EN50155 Managed Switch
4 GT | 16 TX | 16 PoE | USB

T(P)ES-L5408MGFT
8 10/100TX (PoE at) + 2
2 10/100/1000T + 2 1G/2.5G Q-ODC
fiber L2+ EN50155 Managed Switch
2 GT | 2 Q-ODC | 8 TX | 8 PoE | USB

T(P)ES-L5408T
8 10/100TX (PoE at)
+ 4 10/100/1000T
L2+ EN50155 Managed Switch
4 GT | 8 TX | 8 PoE | USB

T(P)ES-L5216MGF
16 10/100TX (PoE at)
+ 2 1G/2.5G Q-ODC fiber
L2+ EN50155 Managed Switch
2 Q-ODC | 16 TX | 16 PoE | USB

T(P)ES-L5216T
16 10/100TX (PoE at)
+ 2 10/100/1000T
L2+ EN50155 Managed Switch
2 GT | 16 TX | 16 PoE | USB

T(P)ES-L5208T
8 10/100TX (PoE at)
+ 2 10/100/1000T
L2+ EN50155 Managed Switch
2 GT | 8 TX | 8 PoE | USB

T(P)ES-L5208MGF
8 10/100TX (PoE at)
+ 2 1G/2.5G Q-ODC fiber
L2+ EN50155 Managed Switch
2 Q-ODC | 8 TX | 8 PoE | USB

Model name (P) = PoE model

EN50155 Giga Uplinks Managed Ethernet Switches OS2 Platform

Optional □L3 □TBN □L3L √ECN

T(P)GS-5010TA
10 10/100/1000T (8 PoE at)
L2+ EN50155 Managed Switch
10 GT | 8 PoE | USB

T(P)ES-5208TA
8 10/100TX (PoE at)
+ 2 10/100/1000T
L2+ EN50155 Managed Switch
2 GT | 8 TX | 8 PoE | USB

Model name (P) = PoE model

Learn more qbout OS3 & OS2 Platform products

https://www.lantechcom.tw/global/eng/en50155-OS3.html

EN50155 Giga Uplinks Managed Switches OS1 Platform

Optional ☐ L3 ☐ TBN ☐ L3L ☑ ECN

I(P)GS-5208GF
8 10/100/1000T (PoE at)
+ 2 1000FX
L2+ EN50155 Managed Switch
2 Q-ODC · 8 GT · 8 PoE

Optional ☐ L3 ☐ TBN ☐ L3L ☑ ECN

I(P)GS-5008T
8 10/100/1000T (PoE at)
L2+ EN50155 Managed Switch
8 GT · 8 PoE

Optional ☐ L3 ☐ TBN ☐ L3L ☑ ECN

T(P)ES-5424DFT
24 10/100TX (PoE at) +
2 10/100/1000T + 2 100/1000FX
L2+ EN50155 Managed Switch
2 GT · 2 Q-ODC · 24 TX · 24 PoE

Optional ☐ L3 ☐ TBN ☐ L3L ☑ ECN

T(P)ES-5424T
24 10/100TX (PoE at)
+ 4 10/100/1000T
L2+ EN50155 Managed Switch
4 GT · 24 TX · 24 PoE

Optional ☐ L3 ☐ TBN ☐ L3L ☑ ECN

I(P)ES-5416DFT
16 10/100TX (PoE at) +
2 10/100/1000T + 2 100/1000FX
L2+ EN50155 Managed Switch
2 GT · 2 FX · 16 TX · 16 PoE

Optional ☐ L3 ☐ TBN ☐ L3L ☑ ECN

I(P)ES-5416T
16 10/100TX (PoE at)
+ 4 10/100/1000T
L2+ EN50155 Managed Switch
4 GT · 16 TX · 16 PoE

Optional ☐ L3 ☐ TBN ☐ L3L ☑ ECN

I(P)ES-5416DF
16 10/100TX (PoE at)
+ 4 100/1000FX
L2+ EN50155 Managed Switch
4 FX · 16 TX · 16 PoE

Optional ☐ L3 ☐ TBN ☐ L3L ☑ ECN

I(P)ES-5408DFT
8 10/100TX (PoE at) + 2
10/100/1000T + 2 100/1000FX
L2+ EN50155 Managed Switch
2 GT · 2 Q-ODC · 8 TX · 8 PoE

Optional ☐ L3 ☐ TBN ☐ L3L ☑ ECN

I(P)ES-5408T
8 10/100TX (PoE at)
+ 4 10/100/1000T
L2+ EN50155 Managed Switch
4 GT · 8 TX · 8 PoE

Optional ☐ L3 ☐ TBN ☐ L3L ☑ ECN

I(P)ES-5408S
8 10/100TX (PoE at)
+ 4 10/100/1000T
L2+ EN50155 Managed Switch
4 GT · 8 TX · 8 PoE

Optional ☐ L3 ☐ TBN ☐ L3L ☑ ECN

I(P)ES-5216DF
16 10/100TX (PoE at)
+ 2 100/1000FX
L2+ EN50155 Managed Switch
2 FX · 16 TX · 16 PoE

Optional ☐ L3 ☐ TBN ☐ L3L ☑ ECN

I(P)ES-5208T
8 10/100TX (PoE at)
+ 2 10/100/1000T
L2+ EN50155 Managed Switch
2 GT · 8 TX · 8 PoE

Optional ☐ L3 ☐ TBN ☐ L3L ☑ ECN

I(P)ES-5208DF
8 10/100TX (PoE at)
+ 2 100/1000FX
L2+ EN50155 Managed Switch
2 FX · 8 TX · 8 PoE

Learn more

https://www.lantechcom.tw/global/eng/industrial-en50155.html

Model name (P) = PoE model

EN50155 Unmanaged Ethernet Switches

802.3bt PoE++

The new IEEE 802.3bt standard increases the maximum PoE power available by utilizing all four pairs of the structured wiring. IEEE 802.3bt provides up to 60W per port, while also being backward compatible to older PoE standards. *Available in models: TPGS-0010T, TPGS-0208GF, TPGS-0008T series

Ignition Sensing

Ignition sense allows you to delay power off your Ethernet switch with a designated time delay. *Available in models: 0008C series

ITxPT Compliant

ITxPT is a Belgium-based association that supports the deployment of standards for onboard plug-and-play IT-systems applied to public transport. ITxPT compliant devices are tested in real operational conditions. This supports the adoption of plug-and-play systems by limiting the risks associated with the integration stage. *Available models: 0008C series

Product Line-ups

T(P)GS-0010T
10 10/100/1000T (8 PoE at)
EN50155 Unmanaged Switch
10 GT · 8 PoE

T(P)GS-0208GF
8 10/100/1000T (PoE at)
+ 2 1000FX
EN50155 Unmanaged Switch
2 Q-ODC · 8 GT · 8 PoE

T(P)GS-0008T
8 10/100/1000T (PoE at)
EN50155 Unmanaged Switch
8 GT · 8 PoE

T(P)ES-0008C
8 10/100TX (PoE at)
EN50155 Unmanaged Switch
8 TX · 8 PoE

I(P)ES-0208GF
8 10/100TX (PoE at)
+ 2 1000FX
EN50155 Unmanaged Switch
2 FX · 8 TX · 8 PoE

I(P)ES-0208T
8 10/100TX (PoE at)
+ 2 10/100/1000T
EN50155 Unmanaged Switch
2 GT · 8 TX · 8 PoE

I(P)ES-0008A
8 10/100TX (PoE at)
EN50155 Unmanaged Switch
8 TX · 8 PoE

I(P)ES-0008B
8 10/100TX (PoE at)
EN50155 Unmanaged Switch
8 TX · 8 PoE

I(P)ES-0005B
5 10/100TX (PoE at)
EN50155 Unmanaged Switch
5 TX · 5 PoE

IPES-0101T
1 10/100TX (PoE at)
+ 1 10/100TX
EN50155 Unmanaged Switch
2 TX · 1 PoE

Do you know?
IEEE 802.3bt standard is also known as **PoE++**, providing up to 60W/port.

Learn more

https://www.lantechcom.tw/global/eng/en50155-entry.html

Model name (P) = PoE model

Industrial IEC 61850-3 Ethernet Switches

IEC 61850-3 / IEEE 1613 Certified

The series complies with the strict substation-rated standard of IEC 61850-3 and IEEE 1613. It is able to help against electrical interference and meets communication requirements for network equipment used in power substations. For example, the switch was tested with high ESD of up to 8K (contact) and 15K (air).

Zero GOOSE Message Packet Loss

The series supports standardized GOOSE messages that ensure the most critical packets are transmitted. The manager is able to receive and react in unexpected accidents in real time without any packet loss.

IEC61850-90-4 switch data modeling

Lantech IEC 61850-3 model embeds a MMS server based on IEC61850-90-4 switch data modeling for power SCADA that allow power SCADA to control and monitor the switch without additional NMS.

OS1 Product Line-ups

I(P)GS-5400-2P-PT
4 Modular Slots Industrial L2+ IEC 61850-3 Managed (PoE) Switch
Max 24GT · Max 18FX · Max 32SFP · Max 24PoE · USB

I(P)GS-5424-2P-PT
24 10/100/1000T (PoE) + 4 DualSpeed SFP IEC 61850-3 Managed Ethernet Switch
24 GT · 4 SFP · 24 PoE · USB

I(P)ES-3424DSFP-2P-PT
24 10/100TX (PoE) + 4 DualSpeed SFP IEC 61850-3 Managed Ethernet Switch
4 SFP · 24 TX · 24 PoE · USB

IPGS-5408DFT-PT
2 10/100/1000T + 2 100/1000 SFP + 8 10/100/1000T PoE IEC 61850-3 Industrial Managed Ethernet Switch
10 GT · 2 SFP · 8 PoE · USB

IGS-5408DFT-PT
2 10/100/1000T + 2 100/1000 SFP + 8 10/100/1000T IEC 61850-3 Industrial Managed Ethernet Switch
10 GT · 2 SFP · USB

IES-5408DFT-PT
8 10/100TX + 2 10/100/1000T + 2 Dual Speed SFP L2+ Industrial Managed Ethernet Switch
2 GT · 4 SFP · 8 TX

Do you know?

The series built-in MMS:

- IP address information
- Environmental Monitoring
- PoE status
- Port status
- Packet statistics

Model name (P) = PoE model

Industrial L3/10G (PoE) Ethernet Switches

10G Uplink & L3 Capacity

Lantech OS3 IP30 switch series have 10G uplinks and upgradable L3 capacity that is able to boost the outdoor network to higher bandwidth across different subnets.

Feed 30W Power – 802.3at (PoE model)

IEEE802.3at standard is able to feed up to 30W at each PoE port, which is twice as the previous 802.3af standard. It's ideal for big power consumption devices such as PTZ IP cameras, High power wireless AP, etc.

Flexible Modularity & L3 Upgradable**

Lantech provides highly customized modular models to satisfy all kinds of needs, from 100TX to dual speed SFP. All 6000 series models are able to upgrade to Layer 3 (**optional).

Built-in Power Converter

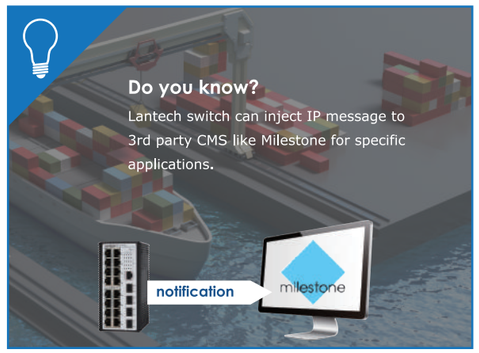
Normally in vehicle environments, 48V power supply is not available. The built-in power converter is able to boost up from 12V (car), 24V (bus), and step down 110V, making the devices function well.

USB Port for Backup and Configuration

With the special-designed USB port, backup / restore configuration is easier than ever! Simply plug in the USB thumb drive and the system will automatically detect and decide the action. No laptop or console needed.

Configurable Power Budget (PoE model)

To prevent over consumption that causes the system to become unstable, Lantech PoE switches are able to control the power budget by limiting the total power consumption for all connected PDs. Each port's power limit can be defined as well.



OS3 Product Line-ups

I(P)GS-6300-2P
4 Modular-Slots w/4/2 x1G/2.5G/10G SFP+ + 2 10GT uplink Industrial Managed Ethernet Switch
4 10G · Max 24GT · Max 28SFP · Max 24PoE · USB

I(P)GS-6416XSFP
16 10/100/1000T (PoE at/af) + 4 1G/2.5G/10G SFP+ Industrial Managed Ethernet Switch
4 10G · 16 GT · 16 PoE · USB

I(P)GS-6488XSFP
8 10/100/1000T (PoE) + 8 100M/1G SFP + 4 1G/2.5G/10G SFP+ Industrial Managed Ethernet Switch
4 10G · 8 GT · 8 SFP · 8 PoE · USB

OS3

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Do you know?

"P" in model name means PoE capacity.

Do you know?

OS3 series is able to upgrade to Layer 3 or L3L. (optional)

Model name (P) = PoE model

Industrial Managed (PoE) Ethernet Switches

Product Line-ups

I(P)GS-5400-2P
4 Modular-Slots
L2+ Industrial Managed
Ethernet Switch
Max 24GT | Max 18FX | Max 32SFP | Max 24PoE | USB

I(P)GS-5424
24 10/100/1000T (PoE at/af)
+ 4 Dual Speed SFP L2+
Industrial Managed Ethernet Switch
24 GT | 4 SFP | 24 PoE | USB

I(P)ES-3424DSFP-2P
24 10/100TX (PoE at/af)
+ 4 Dual Speed SFP L2+
Industrial Managed Ethernet Switch
4 SFP | 24 TX | 24 PoE | USB

I(P)GS-5416MGSFP
16 10/100/1000T (PoE at/af)
+ 4 1G/2.5G SFP L2+
Industrial Managed Ethernet Switch
4 SFP | 16 GT | 16 PoE | USB

I(P)GS-5488MGSFP
8 10/100/1000T (PoE) + 8 100M/1G
SFP + 4 1G/2.5G SFP L2+
Industrial Managed Ethernet Switch
12 SFP | 8 GT | 8 PoE | USB

I(P)GS-5408DFT
8 10/100/1000T (PoE) + 2 Dual
Speed SFP + 2 10/100/1000T L2+
Industrial Managed Ethernet Switch
2 SFP | 10 GT | 8 PoE | USB

I(P)GS-5408GSFP
8 10/100/1000T (PoE)
+ 4 1000M SFP L2+
Industrial Managed Ethernet Switch
4 SFP | 8 GT | 8 PoE | USB

I(P)GS-3408GSFP
8 10/100/1000T (PoE)
+ 4 1000M SFP L2+
Industrial Managed Ethernet Switch
4 SFP | 8 GT | 8 PoE

I(P)GS-3208GSFP
8 10/100/1000T (PoE)
+ 2 1000M SFP L2+
Industrial Managed Ethernet Switch
2 SFP | 8 GT | 8 PoE | USB

I(P)GS-3208C
8 10/100/1000T (PoE)
+ 2 10/100/1000T/Dual Speed SFP
Combo L2+ Industrial
Managed Ethernet Switch
2 Combo | 8 GT | 8 PoE | USB

I(P)GS-3204MGSFP
4 10/100/1000T (PoE)
+ 2 1G/2.5G SFP L2+
Industrial Managed Ethernet Switch
2 SFP | 4 GT | 4 PoE | USB

I(P)GS-3008
8 10/100/1000T (PoE)
L2+ Industrial
Managed Ethernet Switch
8 GT | 8 PoE

I(P)ES-3416DSFP
16 10/100TX (PoE)
+ 4 Dual Speed SFP L2+
Industrial Managed Ethernet Switch
4 SFP | 16 TX | 16 PoE

I(P)ES-5408DFT
8 10/100TX (PoE)
+ 2 10/100/1000T + 2 Dual Speed
SFP L2+ Industrial
Managed Ethernet Switch
2 SFP | 2 GT | 8 TX | 8 PoE

I(P)ES-3408GSFP
8 10/100TX (PoE)
+ 4 1000M SFP L2+
Industrial Managed Ethernet Switch
4 SFP | 8 TX | 8 PoE

I(P)ES-3208CA
8 10/100TX (PoE)
+ 2 10/100/1000T/Dual Speed
SFP Combo L2+ Industrial
Managed Ethernet Switch
2 Combo | 8 TX | 8 PoE | USB

I(P)ES-2208CB
8 10/100TX (PoE)
+ 4 10/100/1000T/Dual Speed
SFP Combo L2+ Industrial
Managed Ethernet Switch
2 Combo | 8 TX | 8 PoE

I(P)ES-2204F
4 10/100TX (PoE)
+ 2 100M SFP L2+
Industrial Managed Ethernet Switch
2 SFP | 4 TX | 4 PoE

PoE Detection and Scheduling (PoE model)

PoE detection can detect if the connected PD hangs and then restart the PD; PoE scheduling allows pre-set power feeding schedule upon a routine time table. Each PoE port can be enabled/disabled, get the voltage, current, Watt, and temperature info displayed on WebUI. It saves both time and energy. Built-in power converter is able to boost up from 12V/24V, and step down from 110V (vary on models).

Model name (P) = PoE model

Industrial Unmanaged (PoE) Ethernet

Built-in Power Converter

Normally in rolling stock and vehicle environments, 48V power supply is not available. The built-in power converter is able to boost up from 12V (car), 24V (bus), and step down 110V (train), making the devices function well.

Feed 30W Power – 802.3at (PoE model)

IEEE802.3at standard is able to feed up to 30W to each PoE port, which is twice as the previous 802.3af standard. It's ideal for big power consumption devices such as PTZ IP cameras, High power wireless AP, etc.

E-Marking Certified

The E-marking certificate makes it the most suitable PoE switch for bus, carriage, other vehicles application as well as for industrial areas where the power source is limited with 12V but has demand of IP surveillance or VoIP applications. (12V model)

Product Line-ups

I(P)GS-0208GSFP
8 10/100/1000T (PoE at/af)
+ 2 1000M SFP
Industrial Ethernet Switch
2 SFP | 8 GT | 8 PoE

I(P)GS-0208C
8 10/100/1000T (PoE at/af) +
2 10/100/1000T/Dual Speed SFP
Combo Industrial Ethernet Switch
2 Combo | 8 GT | 8 PoE

I(P)GS-0008B
8 10/100/1000T (PoE at/af)
Industrial Ethernet Switch
8 GT | 8 PoE

I(P)GS-0204DSFP
4 10/100/1000T (PoE)
+ 2 Dual Speed SFP
Industrial Ethernet Switch
2 SFP | 4 GT | 4 PoE

IPGS-0005T-4
5 10/100/1000T
w/ 4 PoE at/af
Industrial Ethernet Switch
5 GT | 4 PoE

IPGS-0101T
Industrial Gigabit Switch
with PoE 802.3at/af
2 GT | 1 PoE

I(P)ES-0208CA
8 10/100TX (PoE at/af) +
2 10/100/1000T/Dual Speed SFP
Combo Industrial Ethernet Switch
2 Combo | 8 TX | 8 PoE

IPES-0104GT-4
4 10/100TX PoE at/af +
1 10/100/1000T
Industrial Ethernet Switch
1 GT | 4 TX | 4 PoE

I(P)ES-0204DFT-4
4 10/100TX (PoE at/af) +
1 10/100/1000T + 1 Dual Speed SFP
Industrial Ethernet Switch
2 SFP | 4 TX | 4 PoE

I(P)ES-0008B
8 10/100TX (PoE)
Industrial Ethernet Switch
8 TX | 8 PoE

I(P)GC-0101DSFP
10/100/1000T
to 100/1000M SFP 802.3at
Industrial PoE Switch Converter
1 SFP | 1 GT | 1 PoE

I(P)ES-0008C
8 10/100TX (PoE)
Industrial Ethernet Switch
8 TX | 8 PoE

Model name (P) = PoE model

Industrial DNV Type Ethernet Switches

DNV Certified

DNV (Det Norske Veritas) is a certification that verifies maritime facilities comply for satisfactory operation in typical on-board environments. All the certified switches are designed to create a reliable solution for marine applications.

Strict EMC Tests

To meet the robustness that maritime applications required, Lantech DNV-certified switches passed several immunity tests, including conducted low frequency test, electrical transient/burst test, conducted radio frequency test, etc.

Prevent Compass Interference

In order to not interfere with a standard or with the steering magnetic compass installed for maritime applications, Lantech DNV-certified switches are tested for compass safe distance in accordance with IEC 60945.

Anti-Vibration

Three perpendicular plans (different frequency/ amplitude) are adopted to ensure the switches are able to function normally during and after intensive vibration in maritime environments.

Product Line-ups

LGS-2624C-DNV
20 10/100/1000T + 4 1000T/ 100/1000M SFP Combo + 2 100/ 1000M SFP L2+ Managed Switch
4 Combo | 20 GT | 2 SFP

IES-2208CA-DNV
8 10/100TX + 2 10/100/1000T/ Dual Speed SFP Combo Industrial Managed Ethernet Switch
2 Combo | 8 TX

IES-2008B-DNV
8 10/100TX Industrial Managed Ethernet Switch
8 TX

Do you know?
DNV GL is a globally leading quality assurance and risk management company founded in 1864 in Oslo, Norway.

IES-0204FT-DNV
4 10/100TX + 2 100FX Industrial Unmanaged Switch
2 FX | 4 TX

IES-0104FT-DNV
4 10/100TX + 1 100FX Industrial Unmanaged Switch
1 FX | 4 TX

IES-0008T-DNV
8 10/100TX Industrial Unmanaged Switch
8 TX

IES-0005T-DNV
5 10/100TX Industrial Unmanaged Switch
5 TX

Industrial Hazardous Ethernet Switches

UL Class 1 Division 2 Certified

Established by well-known Underwriters Laboratories (UL), "UL Class I Division II" is one of the most widely used safety certifications. All models are strictly tested by UL Class I Division II standard for group A, B, C, D, which covers most hazardous atmospheres.

ATEX Certified

The ATEX Directive 94/9/EC is a directive adopted by the European Union (EU) to facilitate free trade in the EU by aligning the technical and legal requirements in the Member States for products intended for use in potentially explosive atmospheres.

Non-sparking Components

To meet the standard of UL Class I Division II and ATEX, Lantech designs our hazardous series with an apparatus that normally has no arcing parts or thermal effects capable of ignition. Also, the components are hermetically sealed.

Non- incendive Design

Lantech hazardous series is incapable of igniting specified flammable gas–air or vapor–air mixture. The housing of a non-incendive component is not intended to exclude the flammable atmosphere or contain an explosion.

Product Line-ups

IES-2208CA (-ATEX)
8 10/100TX + 2 10/100/1000T/ Dual Speed SFP Combo Industrial Managed Switch
2 Combo | 8 TX

IES-2008B (-ATEX)
8 10/100TX Industrial Managed Ethernet Switch
8 TX

IES-0008T
8 10/100TX Industrial Unmanaged Switch
8 TX

IES-0005T
5 10/100TX Industrial Unmanaged Switch
5 TX

Industrial Entry Ethernet Switches

IGS-0208GSFP
8 10/100/1000T + 2 1000M SFP
Industrial Unmanaged Switch

2 SFP | 8 GT

IGS-0204DSFP
4 10/100/1000T + 2 Dual Speed SFP
Industrial Unmanaged Switch

2 SFP | 4 GT

IGS-0008B
8 10/100/1000T
Industrial Unmanaged Switch

8 GT

Do you know?

DIP switch on IGS-0204DSFP is for adjusting SFP 100M or 1000M speed.

IES-0208CA
8 10/100TX + 2 10/100/1000T/ Dual Speed SFP Combo
Industrial Unmanaged Switch

2 Combo | 8 TX

IES-0204DFT
4 10/100TX + 1 10/100/1000T + 1 Dual Speed SFP
Industrial Unmanaged Switch

1 SFP | 1 GT | 4 TX

IES-0204FT
4 10/100TX + 2 100FX
Industrial Unmanaged Switch

2 FX | 4 TX

IES-0104FT
4 10/100TX + 1 100FX
Industrial Unmanaged Switch

1 FX | 4 TX

IES-0008B
8 10/100TX
Industrial Unmanaged Switch

8 TX

IES-0008T
8 10/100TX
Industrial Unmanaged Switch

8 TX

IES-0005T
5 10/100TX
Industrial Unmanaged Switch

5 TX

Industrial Converter Series

IPGC-0101DSFP
10/100/1000T to 100/1000M SFP 802.3at Industrial PoE Switch Converter

1 SFP | 1 GT | 1 PoE

IGC-0101DSFP
10/100/1000T to 100/1000M SFP Industrial Switch Converter

1 SFP | 1 GT

Industrial / Serial Devices

IDS-2102A
1 RS-232/422/485 port to 2 10/100TX Ethernet Device Server

2 Serial | 8 TX

LSC-1102B
Ethernet to RS-232/ 422/ 485 Serial Device

1 Serial | 8 TX

LSC-0101U
USB to RS-422/485 Serial Device

1 Serial | USB

Central Managed Ethernet Switches

LPGS-2424C-240W
24 10/100/1000T + 4 1000T/ 100/1000M SFP Combo L2 PoE af/at Gigabit Managed Ethernet Switch

4 Combo | 24 GT | 24 PoE

LGS-2624C
20 10/100/1000T + 4 1000T/100/ 1000M SFP Combo + 2 100/1000M SFP L2+ Managed Switch

4 Combo | 20 GT | 2 SFP

LPES-3424DSFP
24 10/100TX + 4 Dual Speed SFP Managed Switch w/ 24 PoE Injectors

4 SFP | 24 TX | 24 PoE | USB

PoE Series

POA-1000A
Single Port PoE Power Source Injector IEEE802.3at/af PoE, 10/100/1000Mbps LAN

POA-100B
Single Port PoE Power Source Injector IEEE802.3at/af PoE, 10/100Mbps LAN

POS-100A
Adjustable Output Power Over Ethernet Splitter

Fiber Converters

CM-121
10/100/1000BaseT to 1000M SFP
Web Smart Fiber Media Converter

1 GT | 1 SFP

CM-022A
100/1000Base SFP to
100/1000Base SFP Media Converter

1 SFP | 1 SFP

CM-021DSFP
Gigabit Ethernet 10/100/1000Base-T
to 100/1000Base-X Media Converter

1 GT | 1 SFP

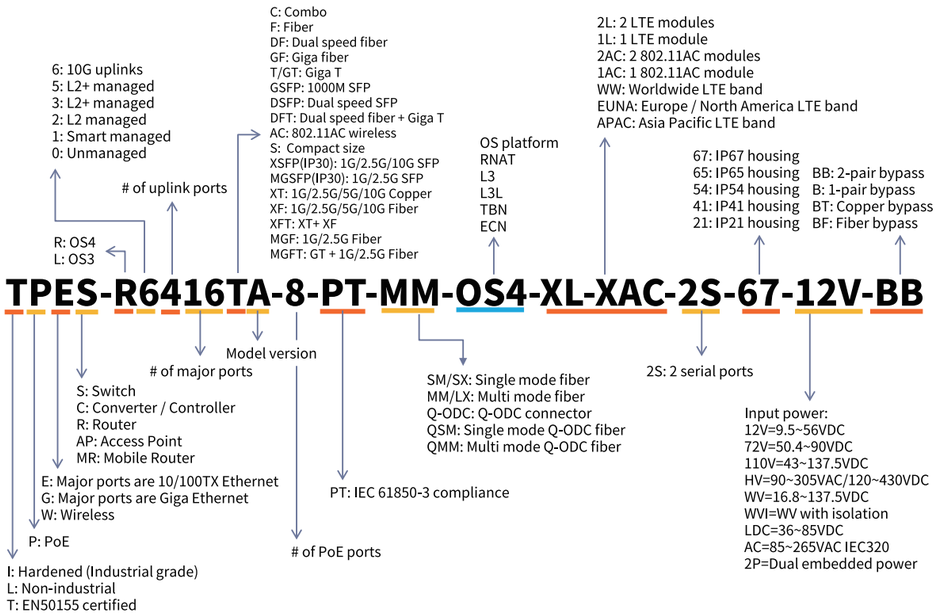
CM-011A
10/100TX to 100FX
Media Converter

1 TX | 1 SFP

MC-116-RPS
16 slots
Universal Media Converter Chassis

Supported Models: CM-121 | CM-022A | CM-011A

Products Naming Rule



Accessories

Wireless Antennas

ANT11000090

ANT11000091

ANT11000092

ANT11000041

ANT11000042

ANT11000051

Part Number	Antenna Type	Band	Casing	Dimension	Operating Temp.
ANT11000090	802.11ac 3x3 MIMO	2.4/5 GHz	IP67, Screw Mount	Height 65.35mm x Diameter 147.5mm	30°C~85°C
ANT11000091	Cellular (x2) GPS/Glonass (x1) MIMO Dualband 802.11ac (x2)	Cellular: 2G/3G/4G GPS/Glonass: 1575.42/1602MHz 2.4GHz / 5GHz (MIMO) x2	IP67, Screw Mount	Height 85.7mm x Diameter 145.6mm	40°C~85°C
ANT11000092	2G/3G/4G MIMO (x2) GPS/Glonass/Beidou (x1) WiFi 2.4G/5GHz (x1) AM/FM (x1) DSRC 5.9GHz (x1)	2G/3G/4G MIMO: 698~960MHz, 1710~2170MHz, 2300~2700 MHz GPS/Glonass/Beidou: 1561/1575.42/1602MHz	IP67, Screw Mount	176.2 x 84.5 x 70.8mm (LxWxH)	40°C~85°C
ANT11000041	LTE EU type Antenna	791~960/1710~2170/2500~2700MHz	Plastic	162.23 x 19.57 x 13.5mm (LxWxH)	10°C~55°C
ANT11000042	LTE US type Antenna	704~960/1710~2170MHz	Plastic	162.23 x 19.57 x 13.5mm (LxWxH)	10°C~55°C
ANT11000051	Dipo Antenna	2.4/5 GHz	Plastic	162.23 x 19.57 x 13.5mm (LxWxH)	10°C~55°C

Wireless Accessories

Part Number	Description
ADA11000052	Magnetic Antenna Base (WiFi), RP SMA Jack, Black
ADA11000053	Magnetic Antenna Base (LTE), RP SMA Jack, Black
ADA11000080	N Plug to RP SMA Plug
ADA11000081	N Plug to SMA Plug

ADA11000052 / AD11000053

SFP (Mini-GBIC)

DDM SFP All SPF part no. with D have Diagnostic function

SFP 10Gbps

Part Number	Wavelength	LD	IO	LOS	Mode	Link	Temp.
8330-193D	850nm	VCSEL	AC/AC	TTL	Multi-mode	300m	-10~70°C
8330-194D	1310nm	DFB	AC/AC	TTL	Single-mode	10km	-10~70°C
8330-200D	1270nm	DFB	AC/AC	TTL	Single-mode	20km	-10~70°C
8330-201D	1330nm	DFB	AC/AC	TTL	Single-mode	20km	-10~70°C
8330-202D	1270nm	DFB	AC/AC	TTL	Single-mode	40km	-10~70°C
8330-203D	1330nm	DFB	AC/AC	TTL	Single-mode	40km	-10~70°C
8330-193D-E	850nm	VCSEL	AC/AC	TTL	Multi-mode	300m	-40~85°C
8330-194D-E	1310nm	DFB	AC/AC	TTL	Single-mode	10km	-40~85°C
8330-200D-E	1270nm	DFB	AC/AC	TTL	Single-mode	20km	-40~85°C
8330-201D-E	1330nm	DFB	AC/AC	TTL	Single-mode	20km	-40~85°C
8330-202D-E	1270nm	DFB	AC/AC	TTL	Single-mode	40km	-40~85°C
8330-203D-E	1330nm	DFB	AC/AC	TTL	Single-mode	40km	-40~85°C

SFP 2.5Gbps

Part Number	Wavelength	LD	IO	LOS	Mode	Link	Temp.
8330-262D	850 nm	VCSEL	AC/AC	TTL	Multi-mode	300m	-10~70°C
8330-263D	1310 nm	FP	AC/AC	TTL	Single-mode	2km	-10~70°C
8330-265D	1310 nm	DFB	AC/AC	TTL	Single-mode	15km	-10~70°C
8330-262D-E	850 nm	VCSEL	AC/AC	TTL	Multi-mode	300m	-40~85°C
8330-263D-E	1310 nm	FP	AC/AC	TTL	Single-mode	2km	-40~85°C
8330-265D-E	1310 nm	DFB	AC/AC	TTL	Single-mode	15km	-40~85°C

SFP 1.25Gbps

Part Number	Wavelength	LD	IO	LOS	Mode	Link	Temp.
8330-162	850 nm	VCSEL	AC/AC	TTL	Multi-mode	550m	-10~70°C
8330-163	1310 nm	FP	AC/AC	TTL	Multi-mode	2km	-10~70°C
8330-165	1310 nm	FP	AC/AC	TTL	Single-mode	10km	-10~70°C
8340-0591	1310 nm	DFB	AC/AC	TTL	Single-mode	40km	-10~70°C
8330-166	1550 nm	DFB	AC/AC	TTL	Single-mode	50km	-10~70°C
8330-169	1550 nm	DFB	AC/AC	TTL	Single-mode	60km	-10~70°C
8330-167	1550 nm	DFB	AC/AC	TTL	Single-mode	80km	-10~70°C
8330-170	1550 nm	DFB	AC/AC	TTL	Single-mode	120km	-10~70°C
8330-162-E	850 nm	VCSEL	AC/AC	TTL	Multi-mode	550m	-40~85°C
8330-163-E	1310 nm	FP	AC/AC	TTL	Multi-mode	2km	-40~85°C
8330-165-E	1310 nm	FP	AC/AC	TTL	Single-mode	10km	-40~85°C
8340-0591-E	1310 nm	DFB	AC/AC	TTL	Single-mode	40km	-40~85°C
8330-166-E	1550 nm	DFB	AC/AC	TTL	Single-mode	50km	-40~85°C
8330-169-E	1550 nm	DFB	AC/AC	TTL	Single-mode	60km	-40~85°C
8330-167-E	1550 nm	DFB	AC/AC	TTL	Single-mode	80km	-40~85°C
8330-170-E	1550 nm	DFB	AC/AC	TTL	Single-mode	120km	-40~85°C

SFP 125Mbps

Part Number	Wavelength	LD	IO	LOS	Mode	Link	Temp.
8330-060	1310nm	FP	AC/AC	TTL	Multi-mode	2km	-10~70°C
8330-065	1310nm	FP	AC/AC	TTL	Multi-mode	5km	-10~70°C
8330-061	1310nm	FP	AC/AC	TTL	Single-mode	30km	-10~70°C
8330-060-E	1310nm	FP	AC/AC	TTL	Multi-mode	2km	-40~85°C
8330-065-E	1310nm	FP	AC/AC	TTL	Multi-mode	5km	-40~85°C
8330-061-E	1310nm	FP	AC/AC	TTL	Single-mode	30km	-40~85°C

SFP 1000T

Part Number	Description
8330-168	10/100/1000Base-T, SFP, 100m, 3.3V, -10~70°C
8330-168-E	10/100/1000Base-T, SFP, 100m, 3.3V, -40~85°C

125Mbps/1.25Gbps Dual-rate

Part Number	Wavelength	LD	IO	LOS	Mode	Link	Temp.
8330-191	1310nm	FP	AC/AC	TTL	Single-mode	10km	-10~70°C
8330-191-E	1310nm	FP	AC/AC	TTL	Single-mode	10km	-40~85°C

BiDi SFP 1.25Gbps

Part Number	TX	LD	RX	IO	LOS	Link	Temp.
8330-197	1310nm	FP	1550nm	AC/AC	TTL	0.5km	-10~70°C
8330-195	1310nm	FP	1550nm	AC/AC	TTL	2km	-10~70°C
8330-188	1310nm	FP	1550nm	AC/AC	TTL	10km	-10~70°C
8330-186	1310nm	FP	1550nm	AC/AC	TTL	20km	-10~70°C
8330-180	1310nm	DFB	1550nm	AC/AC	TTL	40km	-10~70°C
8330-181	1310nm	DFB	1550nm	AC/AC	TTL	60km	-10~70°C
8330-184	1490nm	DFB	1550nm	AC/AC	TTL	80km	-10~70°C
8330-197-E	1310nm	FP	1550nm	AC/AC	TTL	0.5km	-40~85°C
8330-195-E	1310nm	FP	1550nm	AC/AC	TTL	2km	-40~85°C
8330-188-E	1310nm	FP	1550nm	AC/AC	TTL	10km	-40~85°C
8330-186-E	1310nm	FP	1550nm	AC/AC	TTL	20km	-40~85°C
8330-180-E	1310nm	DFB	1550nm	AC/AC	TTL	40km	-40~85°C
8330-181-E	1310nm	DFB	1550nm	AC/AC	TTL	60km	-40~85°C
8330-184-E	1490nm	DFB	1550nm	AC/AC	TTL	80km	-40~85°C
8330-198	1550nm	FP	1310nm	AC/AC	TTL	0.5km	-10~70°C
8330-196	1550nm	FP	1310nm	AC/AC	TTL	2km	-10~70°C
8330-189	1550nm	DFB	1310nm	AC/AC	TTL	10km	-10~70°C
8330-187	1550nm	DFB	1310nm	AC/AC	TTL	20km	-10~70°C
8330-182	1550nm	DFB	1310nm	AC/AC	TTL	40km	-10~70°C
8330-183	1550nm	DFB	1310nm	AC/AC	TTL	60km	-10~70°C
8330-185	1550nm	DFB	1490nm	AC/AC	TTL	80km	-10~70°C
8330-198-E	1550nm	FP	1310nm	AC/AC	TTL	0.5km	-40~85°C
8330-196-E	1550nm	FP	1310nm	AC/AC	TTL	2km	-40~85°C
8330-189-E	1550nm	DFB	1310nm	AC/AC	TTL	10km	-40~85°C
8330-187-E	1550nm	DFB	1310nm	AC/AC	TTL	20km	-40~85°C
8330-182-E	1550nm	DFB	1310nm	AC/AC	TTL	40km	-40~85°C
8330-183-E	1550nm	DFB	1310nm	AC/AC	TTL	60km	-40~85°C
8330-185-E	1550nm	DFB	1490nm	AC/AC	TTL	80km	-40~85°C

BiDi SFP 125Mbps

Part Number	TX	LD	RX	IO	LOS	Link	Temp.
8330-071	1310nm	FP	1550nm	AC/AC	TTL	2km	-10~70°C
8330-069	1310nm	FP	1550nm	AC/AC	TTL	20km	-10~70°C
8330-080	1310nm	FP	1550nm	AC/AC	TTL	40km	-10~70°C
8330-081	1310nm	FP	1550nm	AC/AC	TTL	60km	-10~70°C
8330-084	1310nm	FP	1550nm	AC/AC	TTL	80km	-10~70°C
8330-071-E	1310nm	FP	1550nm	AC/AC	TTL	2km	-40~85°C
8330-069-E	1310nm	FP	1550nm	AC/AC	TTL	20km	-40~85°C
8330-080-E	1310nm	FP	1550nm	AC/AC	TTL	40km	-40~85°C
8330-081-E	1310nm	FP	1550nm	AC/AC	TTL	60km	-40~85°C
8330-084-E	1310nm	FP	1550nm	AC/AC	TTL	80km	-40~85°C
8330-072	1550nm	FP	1310nm	AC/AC	TTL	2km	-10~70°C
8330-068	1550nm	FP	1310nm	AC/AC	TTL	20km	-10~70°C
8330-082	1550nm	DFB	1310nm	AC/AC	TTL	40km	-10~70°C
8330-083	1550nm	DFB	1310nm	AC/AC	TTL	60km	-10~70°C
8330-085	1550nm	DFB	1310nm	AC/AC	TTL	80km	-10~70°C
8330-072-E	1550nm	FP	1310nm	AC/AC	TTL	2km	-40~85°C
8330-068-E	1550nm	FP	1310nm	AC/AC	TTL	20km	-40~85°C
8330-082-E	1550nm	DFB	1310nm	AC/AC	TTL	40km	-40~85°C
8330-083-E	1550nm	DFB	1310nm	AC/AC	TTL	60km	-40~85°C
8330-085-E	1550nm	DFB	1310nm	AC/AC	TTL	80km	-40~85°C

Bracket

Part Number	Description
MBAK19002	L-Bracket that can change 90 degree of DIN rail mounting
MBAK19003	Wall mount bracket for 74 (W) x 105 (D) x 152 (H) mm / 74 (W) x 135 (D) x 152 (H) / 96 (W) x 105 (D) x 152 (H) mm Industrial Switches
MBAK19008	Wall mount bracket for 35 (W) x 105 (D) x 152 (H) mm / 43 (W) x 105 (D) x 152 (H) mm Industrial Switches
MBAK19004	19" Rack Mounting Kit for 74 (W) x 105 (D) x 152 (H) mm / 74 (W) x 135 (D) x 152 (H) mm Industrial Switches
MBAK19005	19" Rack Mounting Kit for 35 (W) x 105 (D) x 152 (H) mm Industrial Switches
MBAK19009	19" Rack Mounting Kit for 43 (W) x 105 (D) x 152 (H) mm Industrial Switches
MBAK19006	Side DIN Rail mounted fin for 74 (W) x 105 (D) x 152 (H) mm Industrial Switches
MBAK19007	Side DIN Rail mounted fin for 74 (W) x 135 (D) x 152 (H) mm Industrial Switches

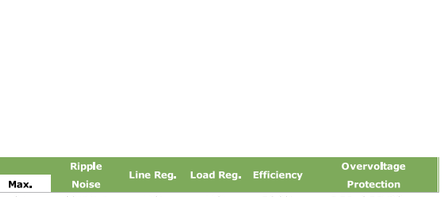
Power Supply

Model	O/P voltage Adjustment	Loading (A)			Ripple Noise	Line Reg.	Load Reg.	Efficiency	Overvoltage Protection
		Min.	Rated	Max.					
MDR-20-5	4.75~5.5VDC	0A	3A	3A	80mVp-p	±1%	±1%	76.0%	5.75~6.75VDC
MDR-20-12	10.8~13.2VDC	0A	1.67A	1.67A	120mVp-p	±1%	±1%	80.0%	13.8~16.2VDC
MDR-20-24	13.5~16.5VDC	0A	1.34A	1.34A	120mVp-p	±1%	±1%	81.0%	17.25~20.25VDC
MDR-20-48	21.6~26.4VDC	0A	1A	1A	150mVp-p	±1%	±1%	84.0%	27.6~32.4VDC
MDR-40-5	5~6VDC	0A	6A	6A	80mVp-p	±1%	±1%	78.0%	6.25~7.25VDC
MDR-40-12	12~15VDC	0A	3.33A	3.33A	120mVp-p	±1%	±1%	86.0%	15.6~18VDC
MDR-40-24	24~30VDC	0A	1.7A	1.7A	150mVp-p	±1%	±1%	88.0%	31.2~36VDC
MDR-40-48	48~56VDC	0A	0.83A	0.83A	200mVp-p	±1%	±1%	88.0%	57.6~64.8VDC
NDR-75-12	12~14VDC	0A	6.3A	6.3A	80mVp-p	±0.5%	±1%	85.5%	14~17VDC
NDR-75-24	24~28VDC	0A	3.2A	3.2A	120mVp-p	±0.5%	±1%	88.0%	29~33VDC
NDR-75-48	48~55VDC	0A	1.6A	1.6A	150mVp-p	±0.5%	±1%	89.0%	56~65VDC
NDR-120-12	12~14VDC	0A	10A	10A	100mVp-p	±0.5%	±1%	85.5%	14~17VDC
NDR-120-24	24~28VDC	0A	5A	5A	120mVp-p	±0.5%	±1%	88.0%	29~33VDC
NDR-120-48	48~55VDC	0A	2.5A	2.5A	150mVp-p	±0.5%	±1%	89.0%	56~65VDC
NDR-240-24	24~28VDC	0A	10A	10A	150mVp-p	±0.5%	±1%	88.5%	29~33VDC
NDR-240-48	48~55VDC	0A	5A	5A	150mVp-p	±0.5%	±1%	90.0%	56~65VDC
NDR-480-24	24~28VDC	0A	20A	20A	150mVp-p	±0.5%	±1%	92.5%	29~33VDC
NDR-480-48	48~55VDC	0A	10A	10A	150mVp-p	±0.5%	±1%	92.5%	56~65VDC
AD1024-24F	+24VDC±10%	0A	1A	1A	150mVp-p	±1%	±1%	83.0%	40VDC Max
AD1024-24F-E	+24VDC±10%	0A	1A	1A	150mVp-p	±1%	±1%	83.0%	40VDC Max
AD1048-24F	+24VDC±10%	0A	2A	2A	150mVp-p	±1%	±1%	83.0%	27~30VDC
AD1048-24F-E	+24VDC±10%	0A	2A	2A	150mVp-p	±1%	±1%	83.0%	27~30VDC
AD1048-24FS	+24VDC±10%	0A	2A	2A	150mVp-p	±1%	±1%	83.0%	40VDC Max
AD1048-24FS-E	+24VDC±10%	0A	2A	2A	150mVp-p	±1%	±1%	83.0%	40VDC Max
AD1048-48F	+48VDC±10%	0A	1A	1A	250mVp-p	±1%	±1%	83.0%	52~57VDC
AD1048-48FS	+48VDC±10%	0A	1A	1A	250mVp-p	±1%	±1%	83.0%	60VDC Max
AD1072-24F	+24VDC±10%	0A	3A	3A	150mVp-p	±1%	±1%	81.0%	27~30VDC
AD1072-48F	+48VDC±10%	0A	1.5A	1.5A	250mVp-p	±1%	±1%	82.0%	52~56VDC
AD1120-24F	+24VDC±10%	0A	5A	5A	150mVp-p	±1%	±1%	81.0%	27~30VDC
AD1120-48F	+48VDC±10%	0A	2.5A	2.5A	550mVp-p	±1%	±1%	83.0%	52~56VDC
AD1240-24S	+24VDC±10%	0A	10A	10A	150mVp-p	±1%	±1%	83.0%	27~30VDC
AD1240-48S	+48VDC±10%	0A	5A	5A	250mVp-p	±1%	±1%	84.0%	52~56VDC
AD1360-24S	+24VDC±10%	0A	15A	15A	150mVp-p	±1%	±2%	82.0%	40VDC Max
AD1360-48S	+48VDC±10%	0A	7.5A	7.5A	250mVp-p	±1%	±2%	83.0%	52~56VDC
AD1500-24S	+24VDC±10%	0A	21A	21A	150mVp-p	±1%	±2%	84.0%	27~30VDC
AD1500-48S	+48VDC±10%	0A	10.5A	10.5A	250mVp-p	±1%	±2%	85.0%	52~56VDC

Note: 1. Each output can supply up to maximum current, but total loading cannot exceed rated output wattage.
2. Line regulation is measured from low line to high line at rated load.
3. Load regulation is measured from 20% to 100% of rated load at 110VAC input.
4. Ripple & Noise is measured by using a 0.1uF/630V metalized capacitor & a 47uF electrolytic capacitor parallel on the test point, at rated load and 110VAC input.
5. Efficiency is measured at rated load and 110VAC input.
6. Standard Operating Temperature: -20°C ~ 50°C / ambient, derating each output at 2.5% per degree from 50°C ~ 70°C
6. Wide Operating Temperature (-E model): -40°C* ~ 75°C / ambient, derating each output at 2.5% per degree from 50°C ~ 75°C, which means the output is 18 Watts at 75°C

*Note: Starting time of -E model is 1.5 to 2 seconds at -40°C

Cable



Part Number	Description	Pin Number	Type	Length	Gender
ECABM12X83MSTP	X-coded Shielded Twisted Pair (STP) Cable	8	M12	3M	Male
ECAB124030MJS	D-coded Shielded Twisted Pair (STP) Cable	4	M12	3M	Male
ECONM12-4P(F)1.5M CABLE	A-coded 90° Power Cable	4	M12	1.5M	Female
ECONM12-5P(F)1.5M CABLE	A-coded 90° Power Cable	5	M12	1.5M	Female
ECONM23-5P(F)1.5M CABLE	A-coded 90° Power Cable	5	M23	1.5M	Female

Connector

ECONM23-5P(F)-S-180 **ECONM23-5P(F)-S-90** **ECONM12-04T(F)-3PECON** **ECONM12-04A(F)-C-180** **ECONM12-05A(F)-C-180**

Part Number	Description	Pin Number	Type	Gender
ECONM23-5P(F)-S-180	A-coded 180° Screw Type Connector	5	M23	Female
ECONM23-5P(F)-S-90	A-coded 90° Screw Type Connector	5	M23	Female
ECONM12-04T(F)-3PECON	T-coded 180° Screw Type Connector	4	M12	Female
ECONM12-04D(M)-C-180	D-coded 180° Crimp Type Connector	4	M12	Male
ECONM12-04A(F)-C-180	A-coded 180° Crimp Type Connector	4	M12	Female
ECONM12-05A(F)-C-180	A-coded 180° Crimp Type Connector	5	M12	Female

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