

An **IRIS**[™] Certification -certified company

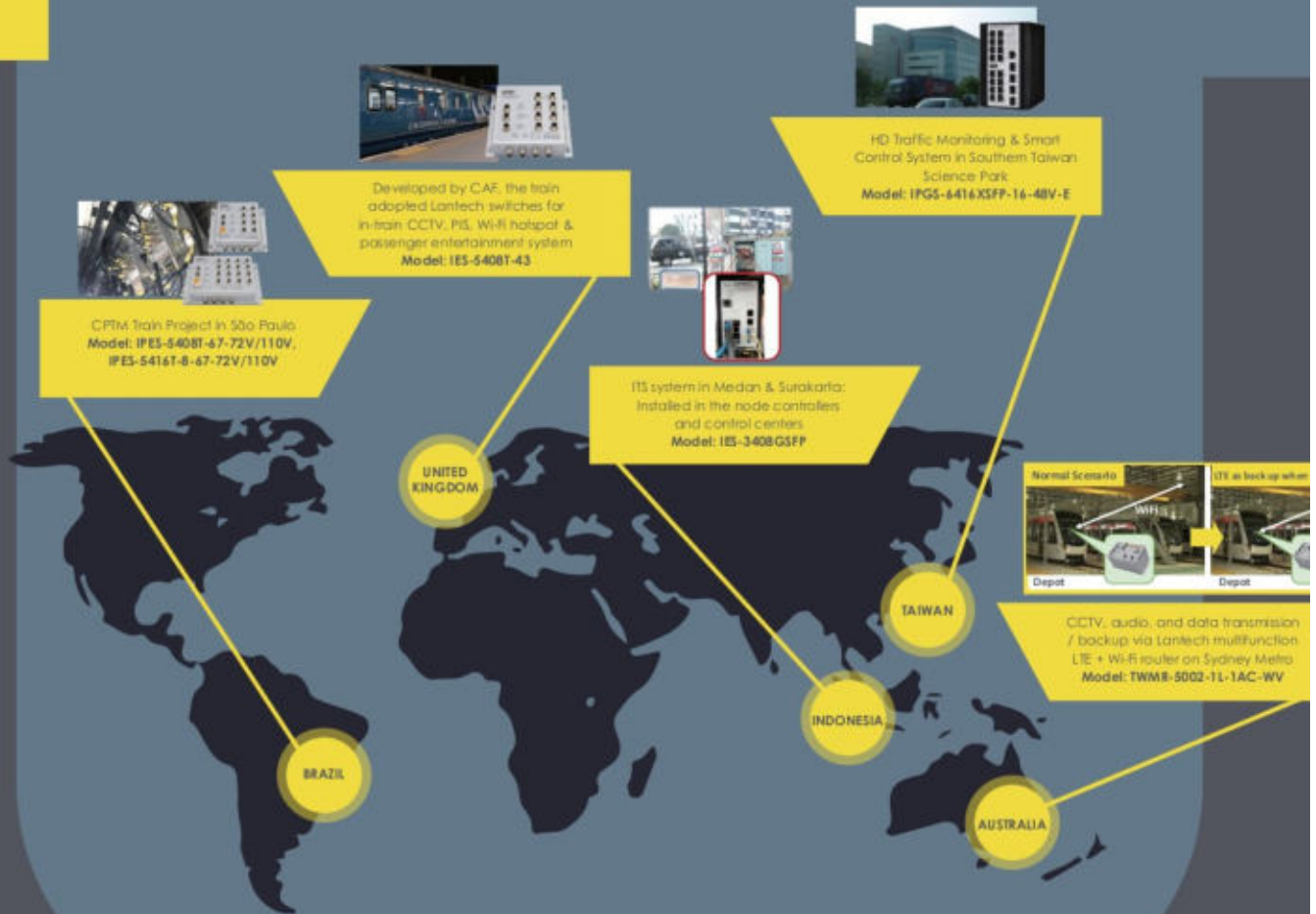
www.lantech.com.tw

Lantech[™]

2020/2021 PRODUCT GUIDE



CASE REFERENCES



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Hardened Ethernet Connections

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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. Lantech provides high quality products with customer-focused services from our sales offices located in Taiwan, Australia, Germany, UK and Singapore.

Our core values are based on our firmware modularity development to meet with special requirement of projects as well as the continuous improvement of hardware to cope with different levels of certificate and criteria for various harden applications including rollingstock railway, trackside, vehicle, transportation, maritime, offshore, power substation, industrial surveillance. PoE (power over Ethernet) is one of key advantage solution which Lantech is good at DC-DC conversion built-in the switch and router that could have greater PoE budget and wider input voltage range.

Lantech products are successfully deployed around the world and used in all types of applications, including bus system in Spain, tram system in Finland, train in France and Germany, 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



*Industrial-grade products

Ethernet Connections

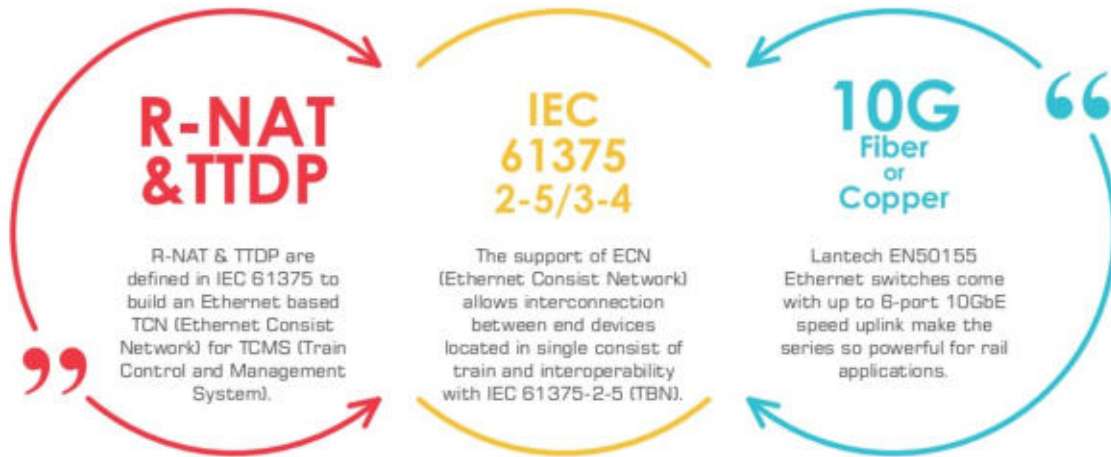
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On-board Networking Switches for TCMS Communications



Optional Railway Network Address Table (R-NAT) for OS4 models

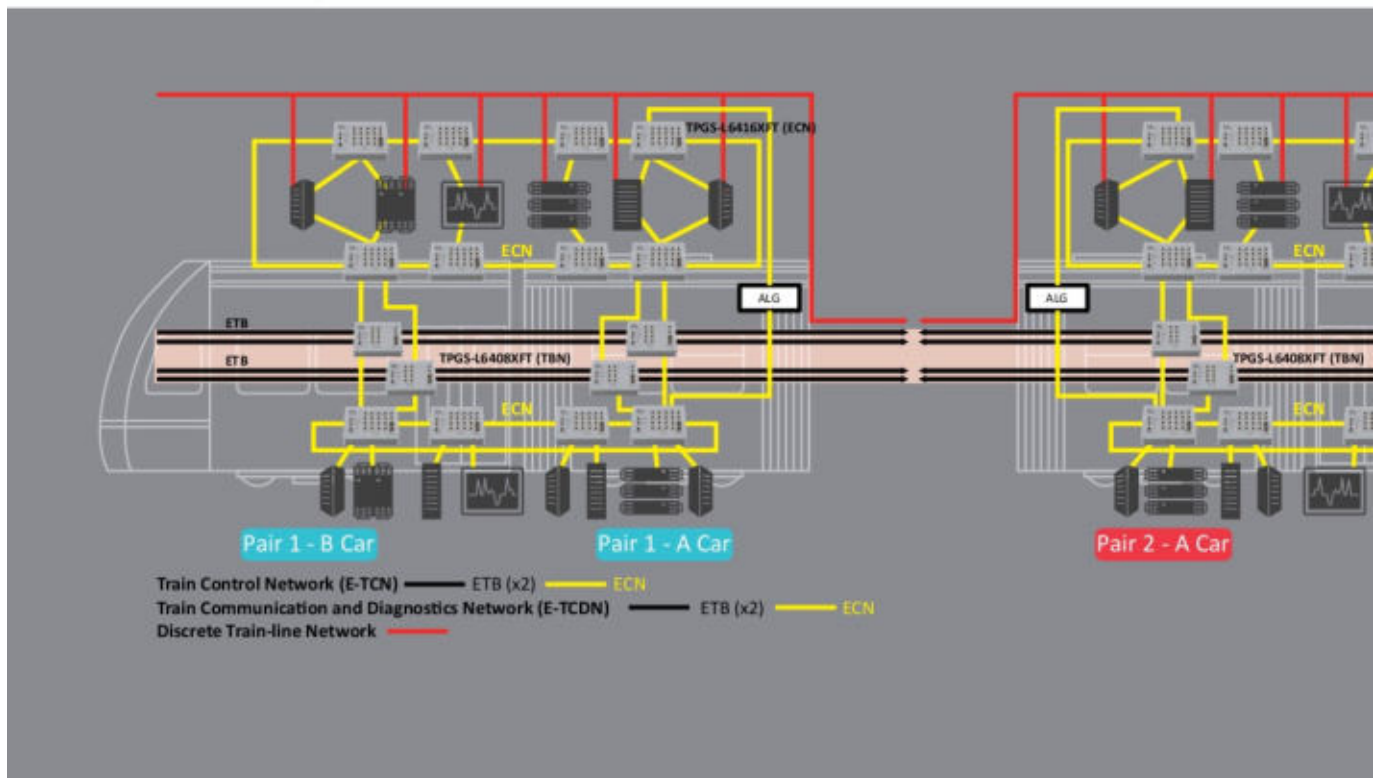
Smart Bypass Protection

EN 50155:2017, EN 50121-4, EN 55032 and EN45545-2

Wide Voltage Input: 16.8–137.5VDC w/ Isolation

Inrush Current Limit

Up to 80W PoE w/PoE & System Isolation



Product Selection



TPGS-R6616XFT

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



TPES-L6424XFT

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



TPGS-L6416XFT

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



TPGS-L6408XFT

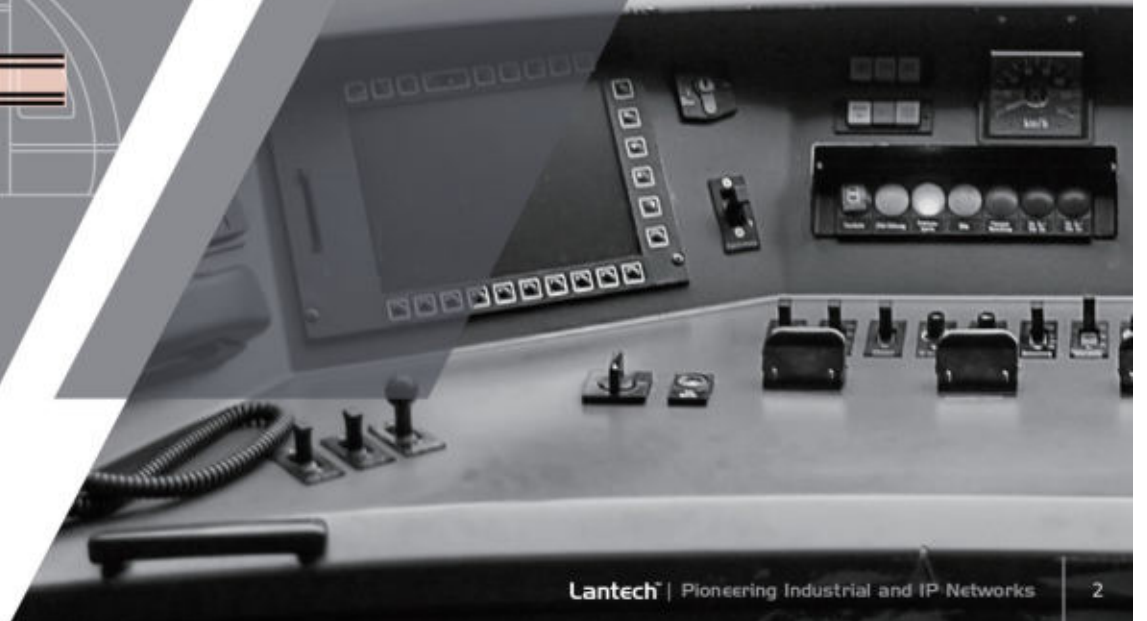
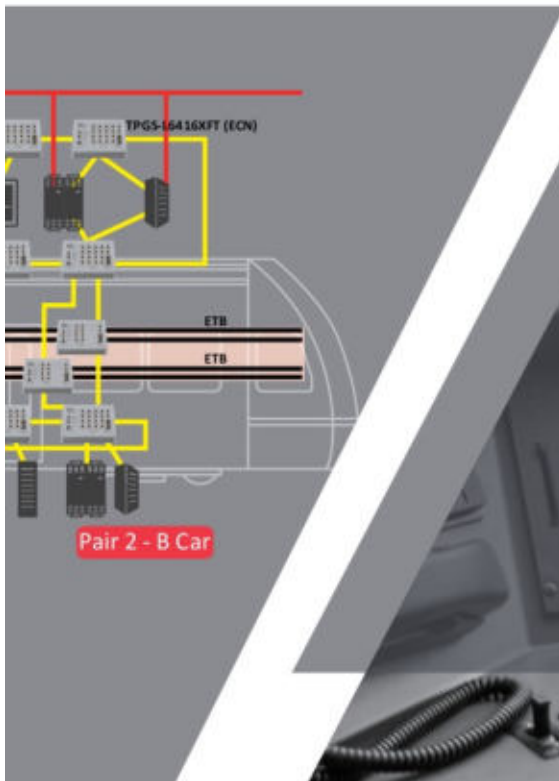
8 10/100TX PoE at + 4 10/100/1000T
L2+ EN50155 Managed Switch

Industrial Solutions

Hardened Ethernet
Connections

Ethernet
Connections

Accessories



On-board / Trackside Networking Multi-function Routers



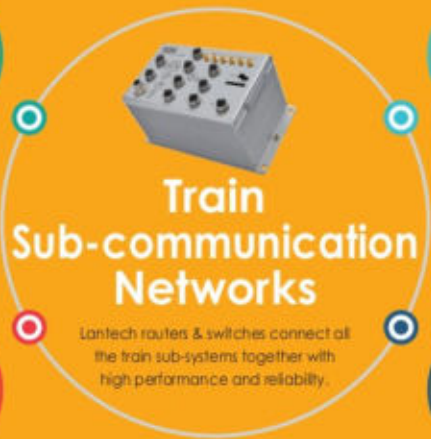
IP Phone



CCTV



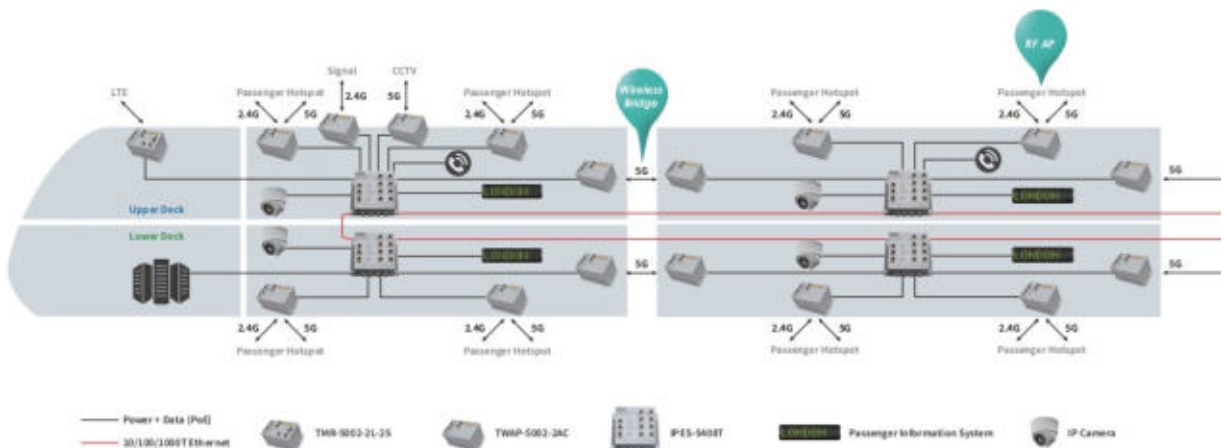
Wi-Fi Hotspot

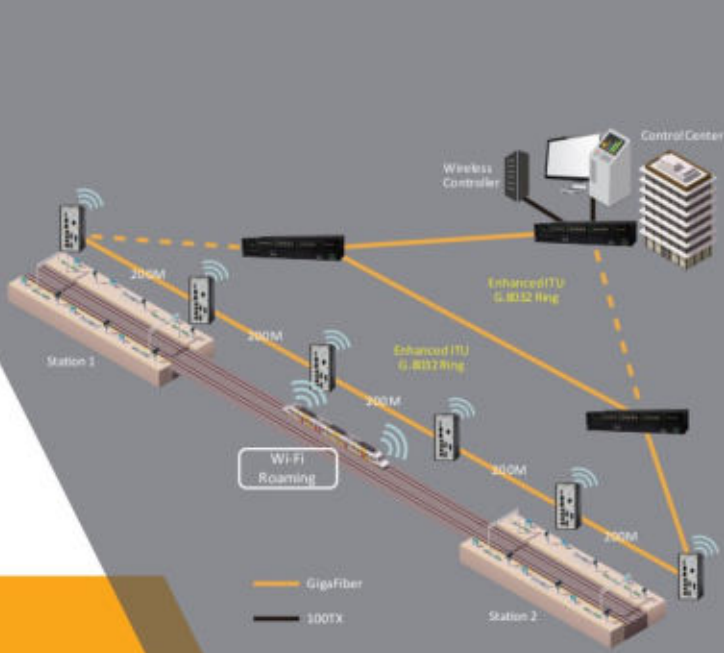


PIS

Features at a glance Lantech Multi-function Routers

- Wi-Fi**
 - Wireless Client-base Roaming
 - Advanced security & 16 SSIDs
 - IEEE 802.11ac Dual Band Operation
 - 802.11s Wireless Mesh Network
- Software**
 - Multisite VPN, OpenVPN and Firewall
 - Managed Switch Built-in
 - Load Balancing





BEST FOR TRACKSIDE

802.11s
Wireless Mesh Network

MESH
&
Fiber Connection

Product Selection



TWMR-5208MGF
EN50155 Multifunction VPN Router w/up to 2x WiFi 11ac
+ up to 2x LTE 4G + 8 GigaT + 2 1G/2.5G Fiber + 2 copper WAN



TWMR-5006
EN50155 Multifunction VPN Router
w/1x WiFi 11ac + 1x LTE 4G + 2 serial ports
+ 6 Gigabit X-coded Ethernet Switch

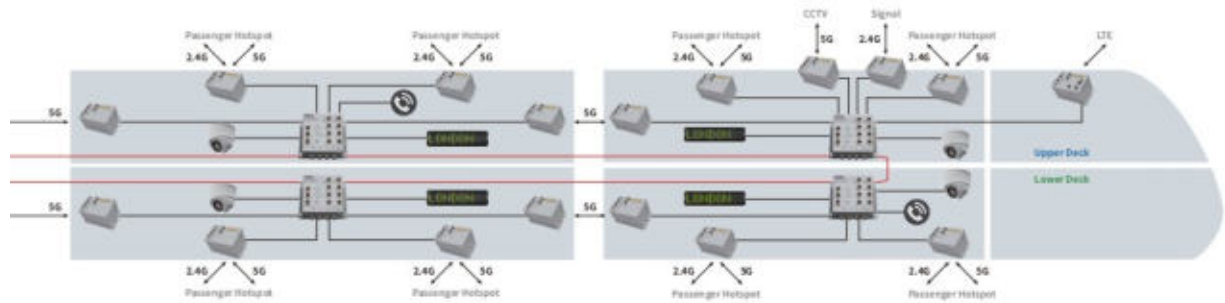


IWMR-3204DF
Industrial Multifunction VPN Router w/up to
2x WiFi 11ac + up to 2x LTE 4G + 2 serial ports
+ 4 Gigabit Ethernet + 2 Dual Speed SFP Switch

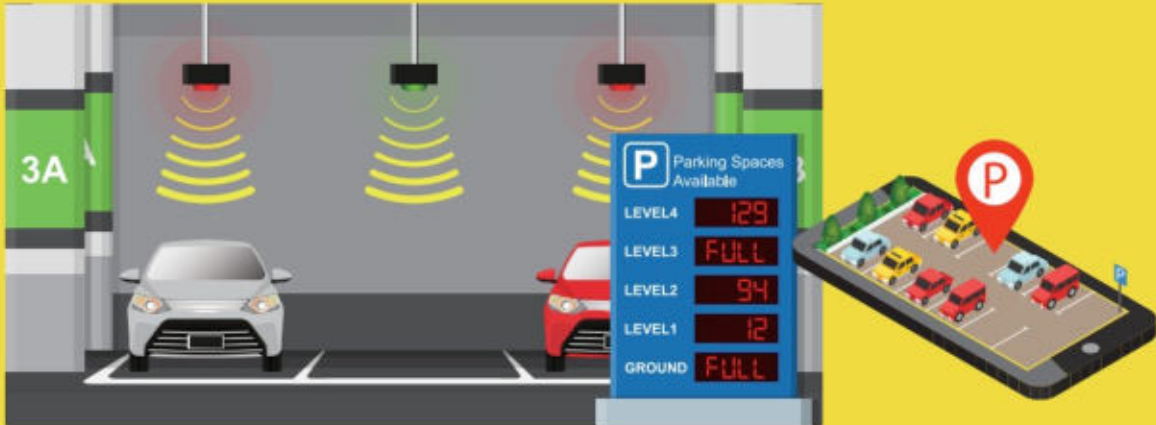
LTE Dual Concurrent LTE Design 4G/3G
Optional eSIM Chip**

Hardware Galvanic Isolation, Wide Input Voltage
USB Port for Configuration
Optional EMMC Flash Storage**
Ignition Sensing
Serial Ports: Modbus Gateway

**Optional



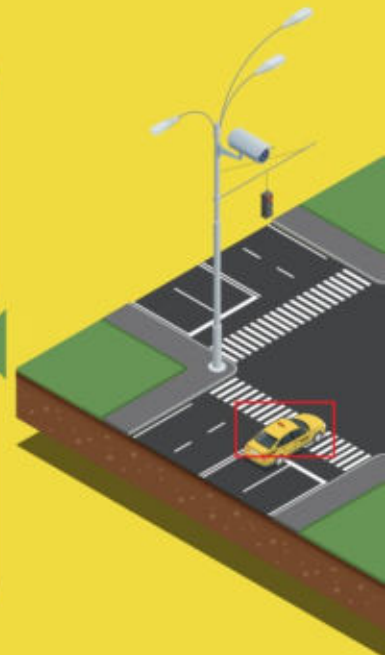
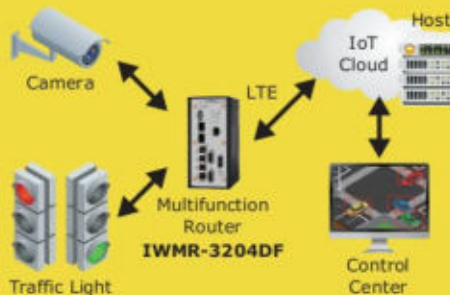
Intelligent Transportation System



- ✓ Parking Guidance Info
- ✓ Real-time Parking App
- ✓ Surveillance



- ✓ Traffic Light Control System
- ✓ Traffic Analysis
- ✓ Traffic Monitoring



Product Selection



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



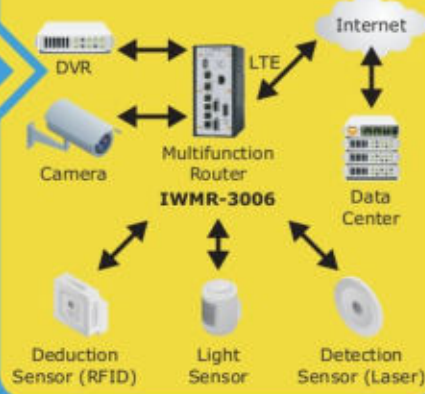
IPGS-3408GSFP

8 10/100/1000T PoE at
+ 4 1000M SFP L2+
Industrial Managed
Ethernet Switch

✓ RFID Tolling System

✓ Traffic Analysis

✓ Traffic Monitoring

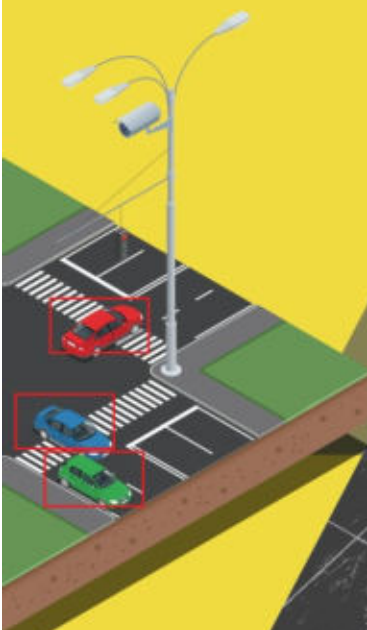


Industrial Solutions

Hardened Ethernet Connections

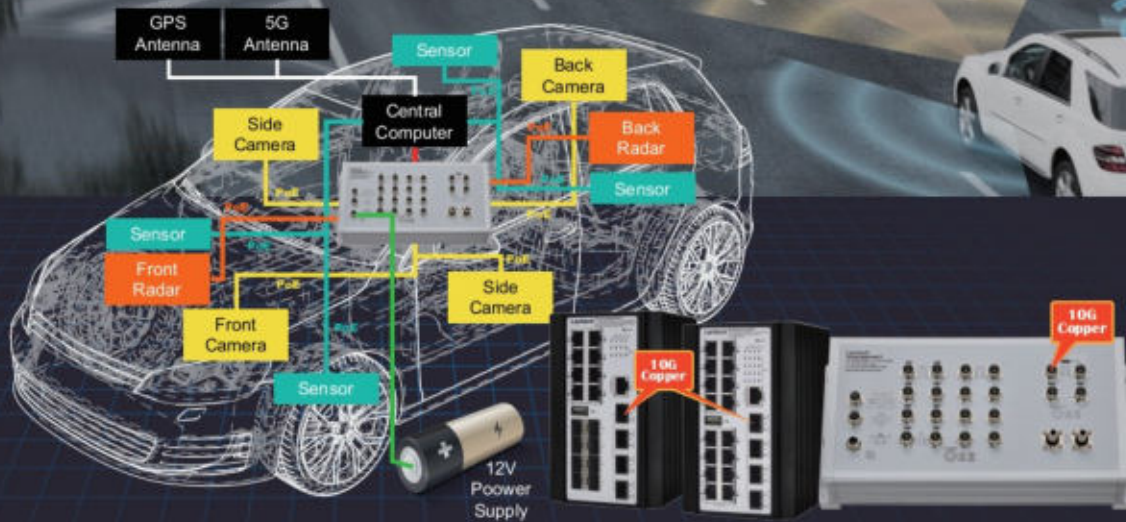
Ethernet Connections

Accessories



Autonomous Car

"Data transmission between 4K/8K camera, 360 degree camera, sensor, radar, GPS and inertial measurement units"



Lantech DIN-Rail 10G Uplinks Managed Ethernet Switches

- 4 x 10G Uplinks Fiber or Copper*
- Optional L3/L3 Lite Capacity
- USB Port for Backup and Configuration
- Built-in Power Converter (12VDC input / 24VDC input)
- Feed 30W Power - 802.3at Standard (PoE models)
- Configurable Power Budget (240W@48V; 120W@24V; 80W@12V)
- PoE Detection and Scheduling
- Built-in Environmental Monitoring
- Wide range operation temperature: -40~75°C/-40~167°F
- Fan-less design

*10G copper SFP, only used from 18V~57VDC power input, maximum two ports

Lantech EN50155 10G Uplinks Managed Ethernet Switches

- IP54/21-rated Aluminum Housing
- Inrush Current Limit
- L2+ or L3 Lite Management
- EN 50155 / EN 45545-2 Certified
- Wide Voltage 16.8~137.5VDC Isolated Input w/ PoE 80W Budget
- PoE Detection and Scheduling
- Built-in Environmental Monitoring
- Wide range operation temperature: -40~75°C/-40~167°F
- Fan-less design

Bus Communications System

Industrial Solutions

Hardened Ethernet Connections

Ethernet Connections

Accessories

Lantech Industrial 7-in-1 Multi-function Routers

- Wi-Fi 802.11ac
- Storage
- Gateway
- Managed Switch
- LTE
- PoE
- VPN



Lantech E-Marking Certified Ethernet Switches

E4



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

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

E13



IES-0016
16 10/100TX
Industrial
Unmanaged
Switch

I(P)GS-0008B
8 10/100/1000T
(PoE) Industrial
Unmanaged
Ethernet Switch

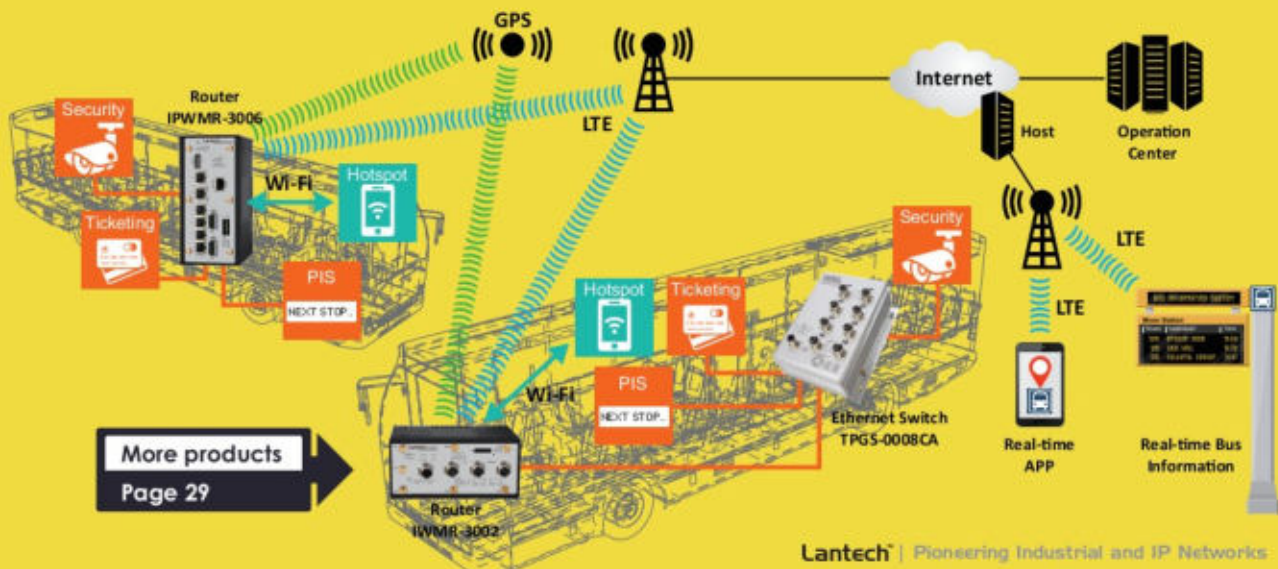
I(P)ES-0008B
8 10/100TX
(PoE) Industrial
Unmanaged
Ethernet Switch

Lantech ITxPT Compliant Ethernet Switches



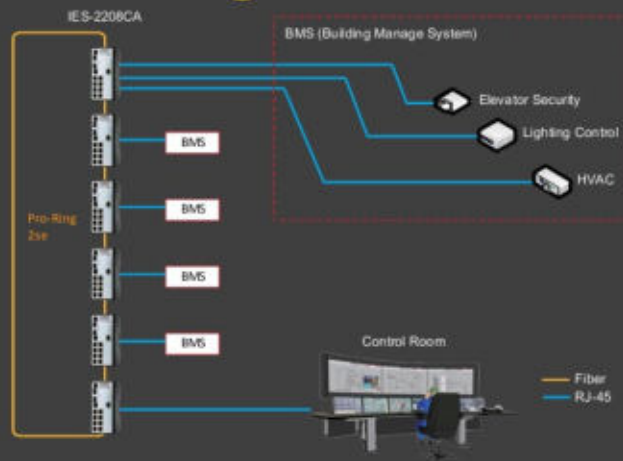
T(P)GS-0008CA
8 10/100/1000T
(PoE at) EN50155
Unmanaged Switch

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

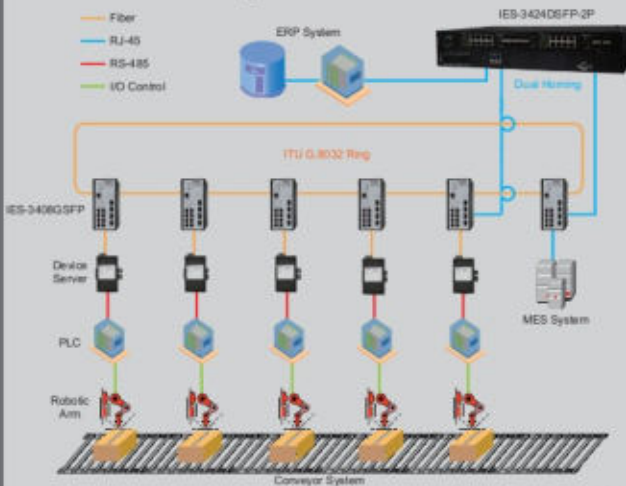


More products
Page 29

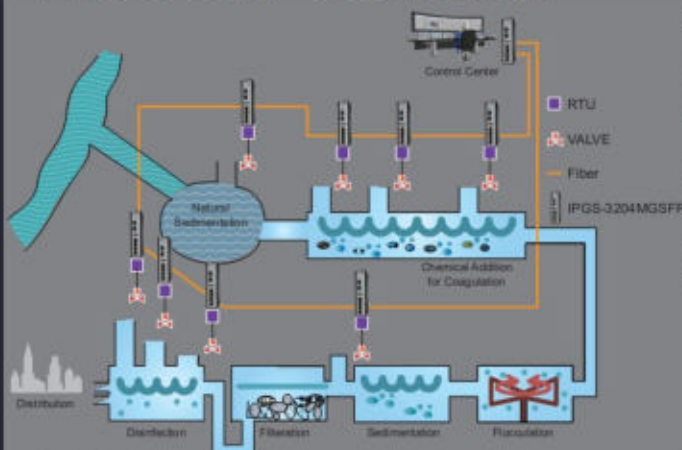
Building Automation



Factory Automation



Process Control



Challenges

Historically, building owners in the market for a new Building Management Systems (BMS) have been forced to choose between one of several proprietary equipment manufacturers. Normally BMS equipment is fitted in compact wall mounted control cabinets that are distributed around the building, with most devices being DIN Rail mounted.

Our Solutions

The use of TCP/IP for BMS system communications has brought about increased choice in selecting products from different vendors in the same BMS system and reducing the associated cabling and network hardware costs. For cable runs which exceed the 100 meter limitation of Cat5e or for links between different buildings, a fiber optic link is the ideal solution.

IES-2208CA

8 10/100TX + 2 10/100/1000T/
Dual Speed SFP Combo
Industrial Managed Switch



- 100M/1000M Dual Speed SFP Fiber
- Pro-Ring 2se covers Single-Ring Topology
 - Wide operating temperature range from -40°C to 75°C

Challenges

The most dynamic and challenging part for factory automation floor network is redundancy and real-time. Factory automation needs to be absolutely accurate because any interruption or delay could result in huge amount of lost, especially when the operation is non-stop, 7/24/365. On the other hand, to satisfy the rapid changing industry environment, manufacturing process must have high flexibility than before.

Our Solutions

Based on IP protocol, managers are able to control equipments and transmit data to SCADA, where connects with database and then generate statistic data for monitoring the operating status. As the equipments are all utilizing IP protocol and connect to the Ethernet, it's easier to integrate and change configuration through Internet. By collocating with Ethernet switches, managers are able to monitor the status, detect the failure, and solve the problem immediately.

IES-3408GSFP

4 1000FX + 8 10/100TX
L2+ Managed Ethernet Switch



- Wide range dual DC powered input with galvanic isolation
- Enhanced G.8032 ring protection
- Wide operating temperature range from -40°C to 70°C

Challenges

Water treatment process is essential for modern life to make water more acceptable and eliminating bad residues existing in many public sanitation systems then to return water back into natural environment without ecological impacts for the use of drinking water, industrial process, medical, hotel process and others.

Our Solutions

Using the industrial Ethernet network is the most convenient and reliable solution for water treatment system to connect with SCADA, PLC, water sensors, water bumps etc. Since the water treatment plant might cover huge floor space, the long transmission distance becomes one of the major considerations.

IGS-3204MGSFP

2 1G/2.5GSFP + 4 10/100TX
L2+ Managed Ethernet Switch



- Slim design
- Up to 2.5G Speed SFP Fiber
- Enhanced ITU G.8032 Ring
- USB port for backup & restore
- Wide operating temperature range from -40°C to 70°C

Why Choose Lantech?

FEATURE HIGHLIGHTS OF MUL

01

7-in-1 Multifunction



03

Highly Redundancy

LTE & WiFi client redundancy



Wi-Fi client & Wi-R client redundancy



LTE & LTE redundancy



LTE & WAN port redundancy



5-in-1 Wireless Modes



02

Up to 2 WAN + 4 LAN Ports



04

SIM Redundancy

2 SIM cards failover per LTE module



40 seconds

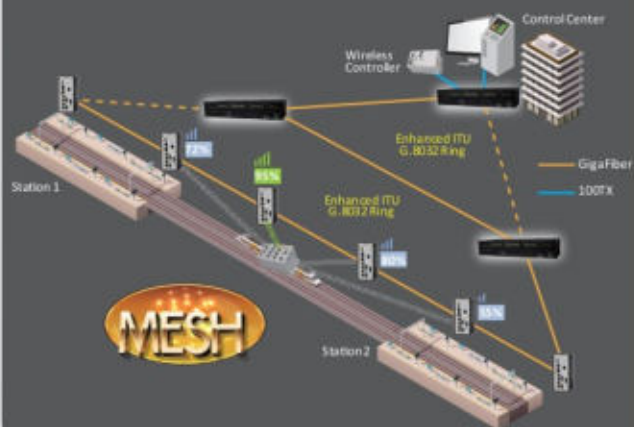
2 active LTE modules failover (with 2 SIMs redundancy in each module)



5 seconds

05

802.11s Wireless Mesh Network



06

LAN Ethernet Ring Redundancy

on fiber



or on copper

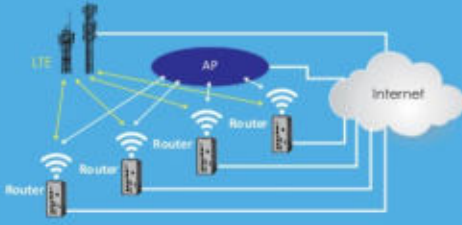


07

TI-FUNCTION ROUTERS

08

WAN-WAN Redundancy



DDoS & Firewall

09

Lantech's DDoS protection can effectively block all kinds of DDoS attacks

- ✓ UDP Flood
- ✓ TCP SYN Flood
- ✓ ICMP Flood
- ✓ Ping of death
- ✓ Distributed HTTP Flood



10

Load balancing on WAN ports

Fixed

Manually route by traffic type through fixed WAN links.



Priority

Router connects 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.

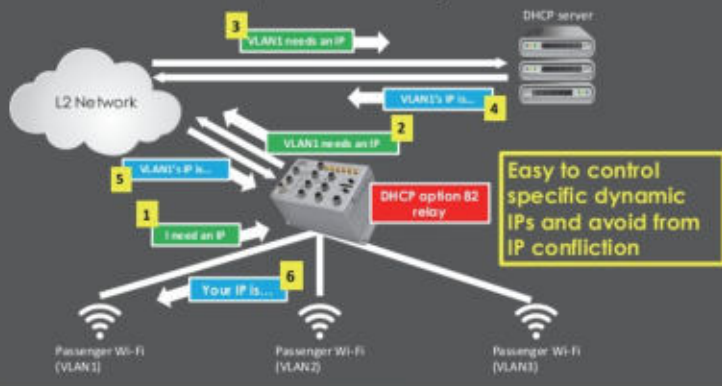


Custom Route

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



Work as DHCP option 82 relay



Easy to control specific dynamic IPs and avoid from IP confliction

11

GoS on WAN

By port: Filter by applications
By protocol: Filter by protocol



12

Full VPN support

- OpenVPN
- IPSec
- Multi-site VPN
- L2TP over IPSec
- L2 over GRE
- IPGRE MOVPN

13

Customized controller software integrated with router



14

15 Built-in Managed Switch Function



- ✓ Port Management
- ✓ CoS
- ✓ VLAN
- ✓ Multicast
- ✓ Redundant Protection
- ✓ Security

No need to purchase extra switches for a small network

Support Dynamic Route



Most competitors only support RIP

16 Supports IPv6



- ✓ Resolve IP Address space exhaustion
- ✓ Elimination of NAT
- ✓ Makes routing more efficient.
- ✓ Simplified Network Configuration and easier to management

Integrated PoE Functions



PoE Detection Monitoring power consumption, voltage, current and temperature in real time

PoE Schedule Customize the schedule to ON/OFF PoE

Power Budget Management

Ignition sensing on 3000 series to extend the operation time when engine is off



Engine is off



Extended operation time



Router shut down

Optional eSIM



Double isolation design to minimize the risk of surge, EFT at input, PoE and serial ports



802.11AC 3Tx3R Wi-Fi

Multi-channel 3Tx3R Wi-Fi 11ac for maximum communication bandwidth



433Mbps x3 = 1.3Gbps

Optional EMMC storage inside router

Optional EMMC storage inside router



8GB 16GB 32GB

LTE Status Timeline

To check the LTE status at a glance



Superior LTE Performance

Reliable brand

LTE module is powered by



High compatibility

- APAC model for Asia & Oceania
- EUNA model for Europe & North America
- WW model for worldwide

Fast speed

- Downlink (Cat 6):
FDD: 300 Mbps TDD: 222 Mbps
- Uplink (Cat 4):
FDD: 50 Mbps TDD: 26 Mbps

WW model

- Downlink (Cat 12):
600 Mbps
- Uplink (Cat 13):
150 Mbps

How To Find A Right Model? WIFI, MOBILE, OR BOTH?

Industrial Solutions
Hardened Ethernet Connections
Ethernet Connections
Accessories

Wi-Fi + LTE

LTE Only

Wi-Fi Only

Model Name
IPW**M**R-3XXX
IW**M**R-3XXX
TPW**M**R-5XXX
TW**M**R-5XXX

Model Name
IP**M**R-3XXX
I**M**R-3XXX
TP**M**R-5XXX
T**M**R-5XXX

Model Name
IPWAP-3XXX
IWAP-3XXX
TPWAP-5XXX
TWAP-5XXX

Multifunction Wi-Fi + LTE Routers

Multifunction LTE Mobile Routers

Multifunction Wi-Fi Routers

	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
Aluminum case	●	-	●	-	●	-
SIM slots	Up to 4	Up to 4	Up to 6	Up to 6	-	-
SMA antenna connectors	Up to 9	Up to 7	Up to 9	Up to 7	Up to 9	Up to 7
802.11ac/a/b/g/n WiFi	●	●	-	-	●	●
Power inputs	16.8~137.5VDC (WV model)	9~60VDC (24V model)	16.8~137.5VDC (WV model)	9~60VDC (24V model)	16.8~137.5VDC (WV model)	9~60VDC (24V model)
WiFi WMM	●	●	-	-	●	●
Ignition sensing	-	●	-	●	-	●

Product Line-ups

4G LTE + Wi-Fi Multifunction Routers

Embedded Module Slots X3			Embedded Module Slots X2		
NEW T(P)WMR-5208MGF EN50155 Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 8 GigaT + 2 1G/2.5G Fiber	NEW T(P)WMR-5208MGT EN50155 Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 8 GigaT + 2 1G/2.5G Copper	NEW T(P)WMR-5008 EN50155 Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 8 GigaT Ethernet + 4 serial ports	T(P)WMR-5006 EN50155 Multifunction VPN Router w/1 WiFi 11ac + 1 LTE 4G + 2 serial ports + 6 GigaT	T(P)WMR-5004 EN50155 Multifunction VPN Router w/1 WiFi 11ac + 1 LTE 4G + 2 serial ports + 4 GigaT + 2WAN	TWMR-5002 EN50155 Multifunction VPN Router w/1 WiFi 11ac + 1 LTE 4G + 2 serial ports + 2 GigaT (incl.1 PD)
8 GT, 2 Q-ODC, 4 PoE, USB, 2 WAN	8 GT, 2 E30T, 4 PoE, USB, 2 WAN	8 GT, 4 PoE, USB, 4 Serial	8 GT, 4 PoE, USB, 2 Serial	8 GT, 4 PoE, USB, 2 Serial, 2 WAN	2 GT, 2 PoE, 2 Serial, USB

4G LTE Multifunction Routers

Embedded Module Slots X3			Embedded Module Slots X2		
NEW T(P)MR-5208MGF EN50155 Multifunction VPN Router w/up to 3 LTE 4G + 8 GigaT + 2 1G/2.5G Fiber	NEW T(P)MR-5208MGT EN50155 Multifunction VPN Router w/up to 3 LTE 4G + 8 GigaT + 2 1G/2.5G Copper	NEW T(P)MR-5008 EN50155 Multifunction VPN Router w/up to 3 LTE 4G + 8 GigaT Ethernet + 4 serial ports	T(P)MR-5006 EN50155 Multifunction VPN Router w/2 LTE 4G + 2 serial ports + 6 GigaT	T(P)MR-5004 EN50155 Multifunction VPN Router w/2 LTE 4G + 2 serial ports + 4 GigaT + 2WAN	TMR-5002 EN50155 Multifunction VPN Router w/2 LTE 4G + 2 serial ports + 2 GigaT (incl.1 PD)
8 GT, 2 Q-ODC, 4 PoE, USB, 2 WAN	8 GT, 2 E30T, 4 PoE, USB, 2 WAN	8 GT, 4 PoE, USB, 4 Serial	8 GT, 4 PoE, USB, 2 Serial	8 GT, 4 PoE, USB, 2 Serial, 2 WAN	2 GT, 2 PoE, 2 Serial, USB

Wi-Fi Multifunction Routers

Embedded Module Slots X3			Embedded Module Slots X2		
NEW T(P)WAP-5208MGF EN50155 Multifunction VPN Router w/up to 3 WiFi 11ac + 8 GigaT + 2 1G/2.5G Fiber	NEW T(P)WAP-5208MGT EN50155 Multifunction VPN Router w/up to 3 WiFi 11ac + 8 GigaT + 2 1G/2.5G Copper	NEW T(P)WAP-5008 EN50155 Multifunction VPN Router w/up to 3 WiFi 11ac + 8 GigaT Ethernet + 4 serial ports	T(P)WAP-5006 EN50155 Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 6 GigaT	T(P)WAP-5004 EN50155 Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 4 GigaT + 2WAN	TWAP-5002 EN50155 Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 2 GigaT (incl.1 PD)
8 GT, 2 Q-ODC, 4 PoE, USB, 2 WAN	8 GT, 2 E30T, 4 PoE, USB, 2 WAN	8 GT, 4 PoE, USB, 4 Serial	8 GT, 4 PoE, USB, 2 Serial	8 GT, 4 PoE, USB, 2 Serial, 2 WAN	2 GT, 2 PoE, 2 Serial, USB

EN50155 NAT Routers

T(P)GR-5208MGF-2WAN 8 1G/10G/1000T + 2 1G/2.5G Q-ODC Fiber + 2 1G/2.5G WAN EN50155 L2+ Managed Ethernet Router	T(P)GR-5208MGT-2WAN 8 1G/10G/1000T + 2 1G/2.5G Copper + 2 1G/2.5G WAN EN50155 L2+ Managed Ethernet Router
8 GT, 2 Q-ODC, 4 PoE, USB, 2 WAN	8 GT, 2 E30T, 4 PoE, USB, 2 WAN



Model name (P) = PoE model



Embedded Module Slots X3

 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	 I(P)WMR-3004DF Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 4 GigaT + 2 Dual Speed SFP WAN	 I(P)WMR-3006 Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 6 GigaT	 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	 IWMR-3003(-M12) Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2/4 serial ports + 3 GigaT	 IWMR-3002(-M12) Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2/4 serial ports + 2 GigaT
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Embedded Module Slots X3

 I(P)MR-3204DF Industrial Multifunction VPN Router w/2 LTE 4G + 2 serial ports + 4 GigaT + 2 Dual Speed SFP	 I(P)MR-3004DF Industrial Multifunction VPN Router w/2 LTE 4G + 2 serial ports + 4 GigaT + 2 Dual Speed SFP WAN	 I(P)MR-3006 Industrial Multifunction VPN Router w/2 LTE 4G + 2 serial ports + 6 GigaT	 I(P)MR-3004 Industrial Multifunction VPN Router w/2 LTE 4G + 2 serial ports + 4 GigaT + 2WAN	 IMR-3003(-M12) Industrial Multifunction VPN Router w/2 LTE 4G + 2/4 serial ports + 3 GigaT	 IMR-3002(-M12) Industrial Multifunction VPN Router w/2 LTE 4G + 2/4 serial ports + 2 GigaT
---	---	--	---	---	---

Embedded Module Slots X3

 I(P)WAP-3204DF Industrial Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 4 GigaT + 2 Dual Speed SFP	 I(P)WAP-3004DF Industrial Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 4 GigaT + 2 Dual Speed SFP WAN	 I(P)WAP-3006 Industrial Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 6 GigaT	 I(P)WAP-3004 Industrial Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 4 GigaT + 2WAN	 IWAP-3003(-M12) Industrial Multifunction VPN Router w/2 WiFi 11ac + 2/4 serial ports + 3 GigaT	 IWAP-3002(-M12) Industrial Multifunction VPN Router w/2 WiFi 11ac + 2/4 serial ports + 2 GigaT
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*M12 model does not support serial ports.

Learn more about Lantech multifunction routers



5000 Series Routers



3000 Series Routers

Why Choose Lantech?

FEATURE HIGHLIGHTS OF HARDENED &

01 Optional Layer 3 Lite (L3L)



OS4 Platform

OS3 Platform

1. Inter-VLAN Routing

Route traffic between different VLAN by implementing a switch with routing function in the network.

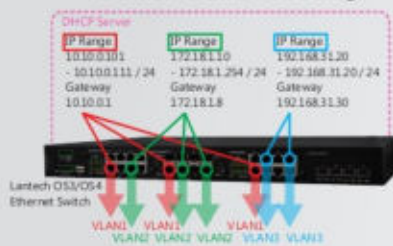
2. Router-on-a-stick

A type of routing configuration in which a single physical interface set as VLAN trunk port manages traffic between multiple VLANs from edge site.

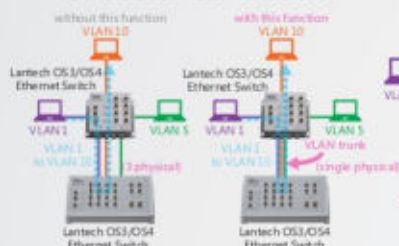
3. VRRP

Provides automatic assignment of available VLAN gateways to participating hosts and increases the availability and reliability of VLAN routing paths via automatic default gateway selections on different VLAN groups.

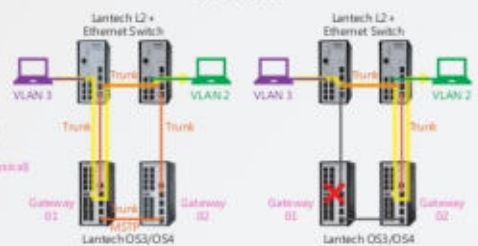
1. Inter-VLAN Routing



2. Router-on-a-stick



3. VRRP



Optional Layer 3



1. OSPF

Open Shortest Path First (OSPF) protocol is an Interior Gateway Protocol used to distribute routing information within a single Autonomous System.

2. RIP

Routing Information Protocol (RIP) is a dynamic routing protocol which uses hop count as a routing metric to find the best path between the source and the destination network.

3. PIM

Protocol-Independent Multicast (PIM) is a family of multicast routing protocols for Internet Protocol (IP) networks that provide one-to-many and many-to-many distribution of data over a LAN, WAN or Internet.

4. DVMRP

Distance Vector Multicast Routing Protocol (DVMRP) is a routing protocol used to share information between routers to facilitate the transportation of IP multicast packets among networks.

OS4 Platform
OS3 Platform

02

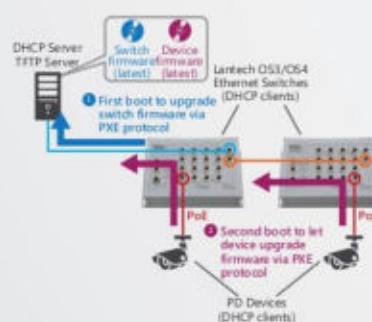
Software Advantage – Layer 2+

OS4 Platform
OS3 Platform

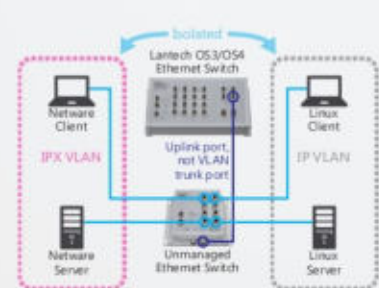
1. PXE
2. Protocol based VLAN
3. IPv6 Multicast
4. Subnet based VLAN

03

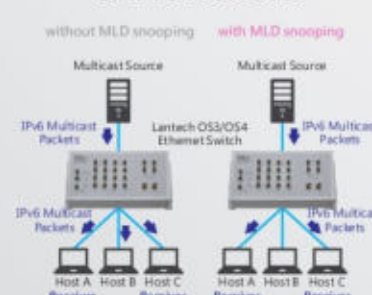
1. PXE



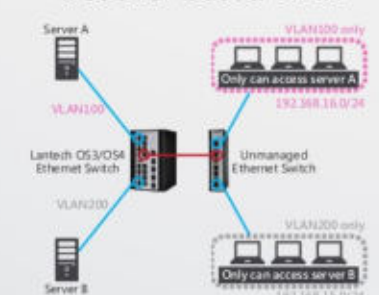
2. Protocol-based VLAN



3. IPv6 Multicast



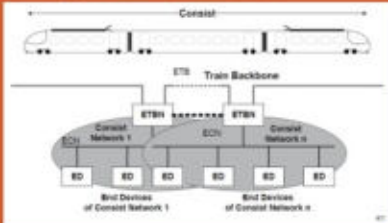
4. Subnet-based VLAN



ROLLING STOCK ETHERNET SWITCHES

Optional TBN (IEC 61375-2-5) & built-in ECN (IEC 61375-3-4)

Backbone of train network which is responsible to exchange the data from each consist

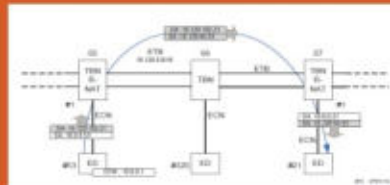


OS4 Platform
OS3 Platform

04

Optional R-NAT (IEC 61375-2-5)

If ED#53 will communicate with ED#21, it doesn't need to know the IP address of ED#21, but just need to know the IP address of TBN which is responsible to build physical connection with ED#21.



OS4 Platform

05

Real-time Environmental Monitoring



Real input voltage in routers & OS3/OS4 Ethernet switches



OS4 Platform
OS3 Platform

06

Wide Voltage (Isolated)
16.8~137.5VDC Power Input
(EN50155 Series)

Built-in Power Converter
12/24VDC boost up to 48VDC
(Industrial Series)

WIDE
Voltage
+Isolation

12V
booster
48V

07

Compliance to Various Standards for Different Applications



Rolling Stocks

- EN 50155:2017
- EN 50121-4
- EN 55032
- EN 45545-2

Vehicles

- E-Marking
- ITxPT

Power Substations

- IEC 61850-3
- IEEE 1613

Maritime

- DNV

Industrial & Outdoor

- IP30 rated to IP67 rated

08

Integrated PoE Functions



PoE Detection

Monitoring power consumption, voltage, current and temperature in real time

PoE Schedule

Customize the schedule to ON/OFF PoE

PoE Budget Management

09

Smart Bypass Protection (Optional)

The bypass relay is set to bypass the switch to the next one when power is off or CPU hanged to prevent network disruption.



10

10GbE Connectivity - To Fulfill Huge Bandwidth Requirement



11

Inrush Current Protection



The inrush current on initial power up can be limited lower than 10 x nominal current and for less than 1ms.

12

USB port to upload & download the configuration file

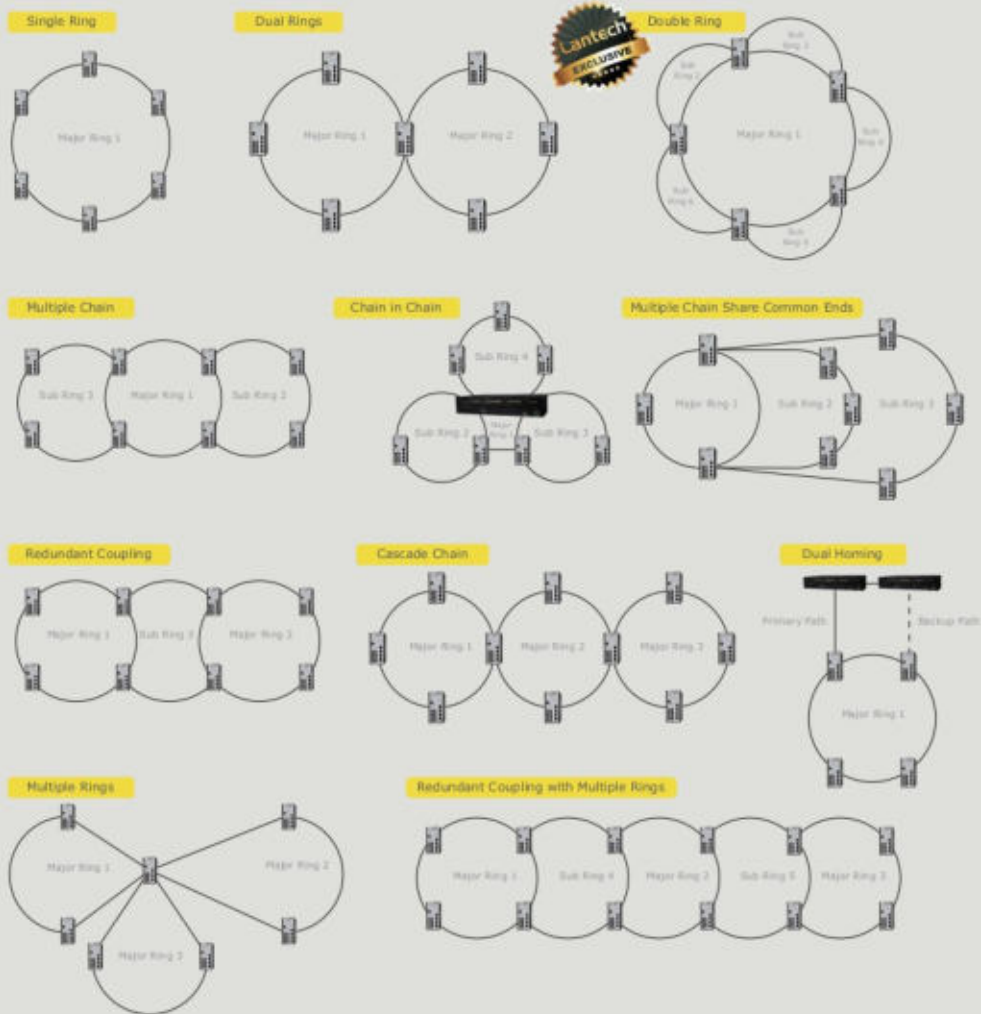


13

Enhanced ITU G.8032 Ring

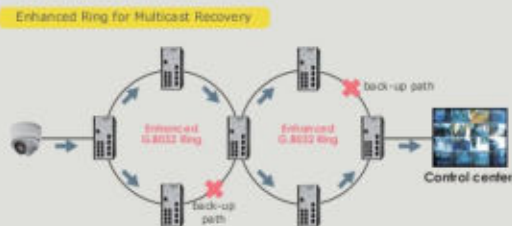
OS4 Platform
OS3 Platform
OS2 Platform
OS1 Platform

Established by ITU (International Telecommunication Unit), the G.8032 protocol is compatible with Ethernet standard and has been supported by many major Ethernet system providers. With our long background in IP Ethernet industry, Lantech is proud to present our enhanced ITU G.8032 ring which covers multicast & data recovery.



Lantech G.8032 ring has basic, auto, enhanced, multi-train mode.

Basic	Compliant with 3rd party ERPS switch, recovery time <100ms
Auto	Single ring auto-select each role
Enhanced	Support data/ multicast recovery <20ms in single ring
Multi-Train	Support auto dynamic coupling



What's the difference?

OS PLATFORM'S COMPARISON

Complete management levels, L2+, L3 Lite**, L3**

OS4 Platform	OS3 Platform	OS2 Platform	OS1 Platform
L2+ Dual Image L3L** L3** TBN** ECN Hardware-NAT**	L2+ Dual Image L3L** L3** TBN** ECN	L2+ Dual Image	L2+

	Layer 3 Lite (L3L)	Layer 2 +			Layer 2
		OS4/OS3	OS2	OS1	2000 series
TTDP (IEC 61375)	•				
R-NAT**	•				
IP based port	•				
VLAN routing	•				
VRRP	•				
Static Unicast Routing	•				
DHCP pool with per VLAN	•				
MRP	•	•			
Protocol Based	•	•			
Subnet Based	•	•			
MLD Snooping	•	•			
Port Monitoring	•	•			
PXE application	•	•			
IP v6 DHCP Server (Basic)	•	•			
Dual Image	•	•			
ARP inspection	•	•		•	
BPDU Guard	•	•		•	
QinQ	•	•		•	
Remote admin (limitation of accessing way)	•	•	•	•	
GVRP	•	•	•	•	
SSL	•	•	•	•	
Login Security (TACACS+)	•	•	•	•	
Login Security (RADIUS)	•	•	•	•	
Dual Homing	•	•	•	•	
SSH	•	•	•	•	
CDP	•	•	•	•	
Topology View	•	•	•	•	
Environment Monitoring	•	•	**	**	
MSTP	•	•	•	•	
Loop Protection	•	•	•	•	
IGMP router port	•	•	•	•	
GMRP	•	•	•	•	
VLAN based QoS	•	•	•	•	
MAC based DHCP	•	•	•	•	
Option82 DHCP Relay	•	•	•	•	
Option 124/2/66	•	•	option 66 only	option 66 only	
DHCP Snooping	•	•	•	•	
Digital Input/Output	•	•	•	•	
Triggered by event of environment	•	•	**	**	
Triggered by event of SFP DDM	•	•	•	•	
Ping	•	•	•	•	
ARP	•	•	•	•	
QoS under 61375-3-4	•	•	•	•	
Proprietary redundant protocol	ITU-Ring Enhance mode	ITU-Ring Enhance mode	ITU-Ring Enhance mode	ITU-Ring Enhance mode	ProRing2se
ACL	Ingress only	Ingress only	Ingress Only	•	•
SNMP Trap	•	•	•	•	V1/V2c
Firmware upgrading	WEB/TFTP/FTP	WEB/TFTP/FTP	WEB/TFTP/FTP	WEB/TFTP/FTP	WEB/TFTP
Configuration file import/export	WEB/TFTP/FTP	WEB/TFTP/FTP	WEB/TFTP/FTP	WEB/TFTP/FTP	WEB/TFTP
G.8032 standard				•	
Auto Provision				•	

** Optional
*** spec may vary by model

Industrial Solutions

Hardened Ethernet Connections

Ethernet Connections

Accessories

EN50155 10G Uplinks Managed Ethernet Switches

OS4 Platform			
<p>T(P)GS-R6804XFT 4 1G/2.5G + 6 10G copper + 2 10G Q-ODC Fiber w/8 PoE EN50155 OS4 Managed Switch</p>	<p>T(P)GS-R6804XT 4 1G/2.5G + 8 10G copper w/8 PoE EN50155 OS4 Managed Switch</p>	<p>T(P)ES-R6804XFT 4 10/100TX + 6 10G copper + 2 10G Q-ODC Fiber w/8 PoE EN50155 OS4 Managed Switch</p>	<p>T(P)GS-R6804XT 4 10/100TX + 8 10G copper w/8 PoE EN50155 OS4 Managed Switch</p>
<p>T(P)GS-R6616XFT 16 10/100/1000T (PoE at) + 4 10G copper + 2 10G Q-ODC fiber EN50155 OS4 Managed Switch</p>	<p>T(P)GS-R6616XT 16 10/100/1000T (PoE at) + 6 10G copper EN50155 OS4 Managed Switch</p>	<p>T(P)GS-R6416XFT 16 10/100/1000T (PoE at) + 2 10G copper + 2 10G Q-ODC Fiber EN50155 OS4 Managed Switch</p>	<p>T(P)GS-R6416XT 16 10/100/1000T (PoE at) + 4 10G copper EN50155 OS4 Managed Switch</p>
<p>T(P)GS-R6608XFT 8 10/100/1000T (PoE at) + 4 10G copper + 2 10G Q-ODC fiber EN50155 OS4 Managed Switch</p>	<p>T(P)GS-R6608XT 8 10/100/1000T (PoE at) + 6 10G copper EN50155 OS4 Managed Switch</p>	<p>T(P)GS-R6408XFT 8 10/100/1000T (PoE at) + 2 10G copper + 2 10G Q-ODC Fiber EN50155 OS4 Managed Switch</p>	<p>T(P)GS-R6408XT 8 10/100/1000T (PoE at) + 4 10G copper EN50155 OS4 Managed Switch</p>
<p>T(P)ES-R6616XFT 16 10/100TX (PoE at) + 4 10G copper + 2 10G Q-ODC fiber EN50155 OS4 Managed Switch</p>	<p>T(P)ES-R6616XT 16 10/100/1000T (PoE at) + 6 10G copper EN50155 OS4 Managed Switch</p>	OS3 Platform	
<p>T(P)GS-L6408XFT 8 10/100/1000T (PoE at) + 2 10G Copper + 2 10G Q-ODC fiber EN50155 OS3 Managed Switch</p>	<p>T(P)GS-L6408XT 8 10/100/1000T (PoE at) + 4 10G Copper EN50155 OS3 Managed Switch</p>	<p>T(P)GS-L6216XT 16 10/100/1000T (PoE at) + 2 10G Copper EN50155 OS3 Managed Switch</p>	<p>T(P)GS-L6216XF 16 10/100/1000T (PoE at) + 2 10G Q-ODC fiber EN50155 OS3 Managed Switch</p>
<p>T(P)GS-L6208XT 8 10/100/1000T (PoE at) + 2 10G Copper EN50155 OS3 Managed Switch</p>	<p>T(P)GS-L6208XF 8 10/100/1000T (PoE at) + 2 10G Q-ODC Fiber EN50155 OS3 Managed Switch</p>	<p>T(P)ES-L6424XFT 24 10/100TX (PoE at) + 2 10G copper + 2 10G Q-ODC fiber EN50155 OS3 Managed Switch</p>	<p>T(P)ES-L6424XT 24 10/100TX (PoE at) + 4 10G copper EN50155 OS3 Managed Switch</p>
<p>T(P)ES-L6416XFT 16 10/100TX (PoE at) + 2 10G Copper + 2 10G Q-ODC fiber EN50155 OS3 Managed Switch</p>	<p>T(P)ES-L6416XT 16 10/100TX (PoE at) + 4 10G Copper EN50155 OS3 Managed Switch</p>	<p>T(P)ES-L6408XFT 8 10/100TX (PoE at) + 2 10G Copper + 2 10G Q-ODC fiber EN50155 OS3 Managed Switch</p>	<p>T(P)ES-L6408XT 8 10/100TX (PoE at) + 4 10G Copper EN50155 OS3 Managed Switch</p>
<p>T(P)ES-L6216XT 16 10/100TX (PoE at) + 2 10G copper EN50155 OS3 Managed Switch</p>	<p>T(P)ES-L6216XF 16 10/100TX (PoE at) + 2 10G Q-ODC Fiber EN50155 OS3 Managed Switch</p>	<p>T(P)ES-L6208XT 8 10/100TX (PoE at) + 2 10G copper EN50155 OS3 Managed Switch</p>	<p>T(P)ES-L6208XF 8 10/100TX (PoE at) + 2 10G Q-ODC fiber EN50155 OS3 Managed Switch</p>

Model name (P) = PoE model



EN50155 2.5G Uplinks Managed Ethernet Switches

OS4 Platform			
<p>T(P)GS-R5804MGFT 4 10/100/1000T + 6 1G/2.5G copper + 2 1G/2.5G Q-ODC fiber w/8 PoE EN50155 OS4 Managed Switch</p> <p>2.5G 10 PoE USB</p>	<p>T(P)GS-R5804MGT 4 10/100/1000T + 8 1G/2.5G copper w/8 PoE EN50155 OS4 Managed Switch</p> <p>2.5G 10 PoE USB</p>	<p>T(P)ES-R5804MGFT 4 10/100TX + 6 1G/2.5G copper + 2 1G/2.5G Q-ODC fiber w/8 PoE EN50155 OS4 Managed Switch</p> <p>2.5G 10 PoE USB</p>	<p>T(P)GS-R5804MGT 4 10/100TX + 8 1G/2.5G copper w/8 PoE EN50155 OS4 Managed Switch</p> <p>2.5G 10 PoE USB</p>
<p>T(P)GS-R5616MGFT 16 10/100/1000T (PoE at) + 4 1G/2.5G copper + 2 1G/2.5G Q-ODC fiber EN50155 OS4 Managed Switch</p> <p>2.5G 16 PoE USB</p>	<p>T(P)GS-R5616MGT 16 10/100/1000T (PoE at) + 6 1G/2.5G copper EN50155 OS4 Managed Switch</p> <p>2.5G 16 PoE USB</p>	<p>T(P)GS-R5416MGFT 16 10/100/1000T (PoE at) + 2 1G/2.5G copper + 2 1G/2.5G Q-ODC fiber EN50155 OS4 Managed Switch</p> <p>2.5G 16 PoE USB</p>	<p>T(P)GS-R5416MGT 16 10/100/1000T (PoE at) + 4 1G/2.5G copper EN50155 OS4 Managed Switch</p> <p>2.5G 16 PoE USB</p>
<p>T(P)GS-R5608MGFT 8 10/100/1000T (PoE at) + 4 1G/2.5G copper + 2 1G/2.5G Q-ODC fiber EN50155 OS4 Managed Switch</p> <p>2.5G 8 PoE USB</p>	<p>T(P)GS-R5608MGT 8 10/100/1000T (PoE at) + 6 1G/2.5G copper EN50155 OS4 Managed Switch</p> <p>2.5G 8 PoE USB</p>	<p>T(P)GS-R5408MGFT 8 10/100/1000T (PoE at) + 2 1G/2.5G copper + 2 1G/2.5G Q-ODC fiber EN50155 OS4 Managed Switch</p> <p>2.5G 8 PoE USB</p>	<p>T(P)GS-R5408MGT 8 10/100/1000T (PoE at) + 4 1G/2.5G copper EN50155 OS4 Managed Switch</p> <p>2.5G 8 PoE USB</p>
<p>T(P)ES-R5616MGFT 16 10/100TX (PoE at) + 4 1G/2.5G copper + 2 1G/2.5G Q-ODC fiber EN50155 OS4 Managed Switch</p> <p>2.5G 16 PoE USB</p>	<p>T(P)ES-R5616MGT 16 10/100/1000T (PoE at) + 6 1G/2.5G copper EN50155 OS4 Managed Switch</p> <p>2.5G 16 PoE USB</p>	OS3 Platform	
		<p>T(P)GS-L5416MGFT 16 10/100/1000T (PoE at) + 2 1G/2.5G Copper + 2 1G/2.5G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>2.5G 16 PoE USB</p>	<p>T(P)GS-L5416MGT 16 10/100/1000T (PoE at) + 4 1G/2.5G Copper EN50155 OS3 Managed Switch</p> <p>2.5G 16 PoE USB</p>
<p>T(P)GS-L5408MGFTA 8 10/100/1000T (PoE at) + 2 1G/2.5G Copper + 2 1G/2.5G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>2.5G 8 PoE USB</p>	<p>T(P)GS-L5408MGTA 8 10/100/1000T (PoE at) + 4 1G/2.5G Copper EN50155 OS3 Managed Switch</p> <p>2.5G 8 PoE USB</p>	<p>T(P)GS-L5216MGFT 16 10/100/1000T (PoE at) + 2 1G/2.5G Copper EN50155 OS3 Managed Switch</p> <p>2.5G 16 PoE USB</p>	<p>T(P)GS-L5216MGF 16 10/100/1000T (PoE at) + 2 1G/2.5G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>2.5G 16 PoE USB</p>
<p>T(P)GS-L5208MGTA 8 10/100/1000T (PoE at) + 2 1G/2.5G Copper EN50155 OS3 Managed Switch</p> <p>2.5G 8 PoE USB</p>	<p>T(P)GS-L5208MGFA 8 10/100/1000T (PoE at) + 2 1G/2.5G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>2.5G 8 PoE USB</p>	<p>T(P)ES-L5424MGFT 24 10/100TX (PoE at) + 2 1G/2.5G copper + 2 1G/2.5G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>2.5G 24 PoE USB</p>	<p>T(P)ES-L5424MGT 24 10/100TX (PoE at) + 4 1G/2.5G copper EN50155 OS3 Managed Switch</p> <p>2.5G 24 PoE USB</p>
<p>T(P)ES-L5416MGFT 16 10/100TX (PoE at) + 2 1G/2.5G Copper + 2 1G/2.5G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>2.5G 16 PoE USB</p>	<p>T(P)ES-L5416MGT 16 10/100TX (PoE at) + 4 1G/2.5G Copper EN50155 OS3 Managed Switch</p> <p>2.5G 16 PoE USB</p>	<p>T(P)ES-L5408MGFTA 8 10/100TX (PoE at) + 2 1G/2.5G Copper + 2 1G/2.5G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>2.5G 8 PoE USB</p>	<p>T(P)ES-L5408MGTA 8 10/100TX (PoE at) + 2 1G/2.5G Copper + 2 1G/2.5G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>2.5G 8 PoE USB</p>
<p>T(P)ES-L5216MGT 16 10/100TX (PoE at) + 2 1G/2.5G copper EN50155 OS3 Managed Switch</p> <p>2.5G 16 PoE USB</p>	<p>T(P)ES-L5216MGF 16 10/100TX (PoE at) + 2 1G/2.5G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>2.5G 16 PoE USB</p>	<p>T(P)ES-L5208MGTA 8 10/100TX (PoE at) + 2 1G/2.5G copper EN50155 OS3 Managed Switch</p> <p>2.5G 8 PoE USB</p>	<p>T(P)ES-L5208MGFA 8 10/100TX (PoE at) + 2 1G/2.5G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>2.5G 8 PoE USB</p>

Industrial Solutions
Hardened Ethernet Connections
Ethernet Connections
Accessories

Learn more

Model name (P) = PoE model

EN50155 Rackmount Ethernet Switches

OS3 Platform

<p>T(P)GS-L6424XFTR 24 10/100/1000T (PoE at) + 2 10G Copper + 2 10G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>4 10G 24 10G PoE USB</p>	<p>T(P)GS-L6424XTR 24 10/100/1000T (PoE at) + 4 10G Copper EN50155 OS3 Managed Switch</p> <p>4 10G 24 10G PoE USB</p>	<p>T(P)GS-L6416XFTR 16 10/100/1000T (PoE at) + 2 10G Copper + 2 10G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>4 10G 16 10G PoE USB</p>	<p>T(P)GS-L6416XTR 16 10/100/1000T (PoE at) + 4 10G Copper EN50155 OS3 Managed Switch</p> <p>4 10G 16 10G PoE USB</p>
<p>T(P)GS-L6408XFTR 8 10/100/1000T (PoE at) + 2 10G Copper + 2 10G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>4 10G 8 10G PoE USB</p>	<p>T(P)GS-L6408XTR 8 10/100/1000T (PoE at) + 4 10G Copper EN50155 OS3 Managed Switch</p> <p>4 10G 8 10G PoE USB</p>	<p>T(P)GS-L5408MGFTR 8 10/100/1000T (PoE at) + 2 1G/ 2.5G Copper + 2 1G/2.5G Q-ODC fiber EN50155 OS3 Managed Switch</p> <p>4 10G 2.5G 8 10G PoE USB</p>	<p>T(P)GS-L5408MGTR 8 10/100/1000T (PoE at) + 2 1G/2.5G Copper EN50155 OS3 Managed Switch</p> <p>4 10G 2.5G 8 10G PoE USB</p>

EN50155 Giga Uplinks Managed Ethernet Switches

OS3 Platform

<p>T(P)GS-L5016T 16 10/100/1000T (PoE at) EN50155 OS3 Managed Switch</p> <p>16 10G 16 PoE USB</p>	<p>T(P)ES-L5408T 8 10/100TX (PoE at) + 4 Giga Copper Uplinks EN50155 OS3 Managed Switch</p> <p>8 10G 8 PoE USB</p>		
OS1 Platform			
<p>T(P)GS-5208GF 8 10/100/1000T (PoE at) + 2 100DFX L2+ EN50155 Managed Switch</p> <p>2 10G 8 10G PoE</p>	<p>T(P)GS-5010T 10 10/100/1000T (w/ 8 PoE at) L2+ EN50155 Managed Switch</p> <p>10 10G 8 PoE</p>	<p>T(P)GS-5008T 8 10/100/1000T (PoE at) L2+ EN50155 Managed Switch</p> <p>8 10G 8 PoE</p>	<p>T(P)ES-5416T 16 10/100TX (PoE at) + 4 10/100/1000T L2+ EN50155 Managed Switch</p> <p>4 10G 16 10G PoE</p>
<p>T(P)ES-5408T 8 10/100TX (PoE at) + 4 10/100/1000T L2+ EN50155 Managed Switch</p> <p>4 10G 8 10G PoE</p>	<p>I(P)GS-5008T 8 10/100/1000T (PoE at) L2+ EN50155 Managed Switch</p> <p>8 10G 8 PoE</p>	<p>I(P)ES-5416T 16 10/100TX (PoE at) + 4 10/100/1000T L2+ EN50155 Managed Switch</p> <p>4 10G 16 10G PoE</p>	<p>I(P)ES-5408T 8 10/100TX (PoE at) + 4 10/100/1000T L2+ EN50155 Managed Switch</p> <p>4 10G 8 10G PoE</p>
<p>I(P)ES-5408S 8 10/100TX (PoE at) + 4 10/100/1000T L2+ EN50155 Managed Switch</p> <p>4 10G 8 10G PoE</p>	<p>I(P)ES-5208DF 8 10/100TX (PoE at) + 2 100/100DFX L2+ EN50155 Managed Switch</p> <p>2 10G 8 10G PoE</p>	<p style="text-align: center;">Learn more</p> 	

Model name (P) = PoE model

EN50155 Unmanaged Ethernet Switches

Product Line-ups

<p>NEW</p>  <p>T(P)ES-0216T 16 10/100TX (PoE at) + 2 10/100/1000T EN50155 Unmanaged Switch</p> <p>2 GbE 16 PoE</p>	<p>NEW</p>  <p>T(P)ES-0212T 12 10/100TX (PoE at) + 2 10/100/1000T EN50155 Unmanaged Switch</p> <p>2 GbE 12 PoE</p>	<p>NEW</p>  <p>T(P)ES-0016T 16 10/100/1000T (PoE at) EN50155 Unmanaged Switch</p> <p>16 PoE</p>	<p>Learn more</p> 
 <p>T(P)GS-0010T 10 10/100/1000T (8 PoE at) EN50155 Unmanaged Switch</p> <p>10 PoE</p>	 <p>T(P)GS-0208GF 8 10/100/1000T (PoE at) + 2 1000FX EN50155 Unmanaged Switch</p> <p>8 PoE 2 1000FX</p>	 <p>T(P)GS-0008CA 8 10/100/1000T (PoE at) EN50155 Unmanaged Switch</p> <p>8 PoE</p>	 <p>T(P)ES-0008CA 8 10/100TX (PoE at) EN50155 Unmanaged Switch</p> <p>8 PoE</p>
 <p>I(P)ES-0208GF 8 10/100TX (PoE at) + 2 1000FX EN50155 Unmanaged Switch</p> <p>2 PoE 2 1000FX</p>	 <p>I(P)ES-0208T 8 10/100TX (PoE at) + 2 10/100/1000T EN50155 Unmanaged Switch</p> <p>2 GbE 8 PoE</p>	 <p>I(P)ES-0008A 8 10/100TX (PoE at) EN50155 Unmanaged Switch</p> <p>8 PoE</p>	 <p>I(P)ES-0008B 8 10/100TX (PoE at) EN50155 Unmanaged Switch</p> <p>8 PoE</p>
 <p>I(P)ES-0005B 5 10/100TX (PoE at) EN50155 Unmanaged Switch</p> <p>5 PoE</p>	 <p>IPES-0101T 1 10/100TX (PoE at) + 1 10/100TX EN50155 Unmanaged Switch</p> <p>1 PoE 1 10/100TX</p>		

Model name (P) = PoE model

EN50155 Power Protector

Product Line-ups

<p>NEW</p>  <p>Power Protector</p> <ul style="list-style-type: none"> ● Power input voltage protection ● Power input polarity protection ● Inrush current protection ● Enhance Surge protection ● Enhance EFT protection 	<p>Learn more</p>  <p>(Coming Soon)</p>
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Industrial L3/10G (PoE) Ethernet Switches

High Performance 10G Ethernet Capacity

To fulfill huge bandwidth requirement, Lantech OS4/OS3 IP30 switch series provides up to 4-port 10G Copper or Fiber uplinks.

Flexible Modularity & L3 Upgradable**

Lantech provides highly customized modular models to satisfy all kinds of needs, from 100TX to dual speed SFP. All OS3 series models are able to upgrade to Layer 3.

Feed up to 60W Power – PoE (PoE model)

The PoE models support IEEE802.3at standard which is able to feed up to 30W at each PoE port, while PoE -PBT models support IEEE802.3bt standard that delivers 60W per port.

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).

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.

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.

Complete Protection for Stable Operation

Not only designed with inrush current protection, the over voltage protection also ensures the switch to sustain instantaneous high voltage of up to 160VDC.

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.












Product Line-ups

<p>OS4 Platform</p>  <p>I(P)GS-R6424XSFP-2P 24 10/100/1000T (PoE at/af) + 4 1G/2.5G/10G SFP Industrial Managed Ethernet Switch</p> <p>4 10G 24 PoE 24 PoE USB</p>	<p>OS4 Platform</p>  <p>I(P)GS-R6424XFT-2P 24 10/100/1000T (PoE at/af) + 2 1G/2.5G/10G SFP + 2 10GT uplink Industrial Managed Ethernet Switch</p> <p>4 10G 24 PoE 24 PoE USB</p>	<p>OS3 Platform</p>  <p>I(P)GS-6300-2P 4 Modular-Slots w/4/2 x1G/2.5G/10G SFP+ + 2 10GT uplink Industrial Managed Ethernet Switch</p> <p>4 10G Max 240W Max 2800W Max 34Pwr USB</p>	<p>OS3 Platform</p>  <p>I(P)GS-L6424M-2P 24 10/100/1000T (PoE at/af) w/4/2 x1G/2.5G/10G SFP+ + 2 10GT uplink Industrial Managed Ethernet Switch</p> <p>4 10G 24 PoE 24 PoE USB</p>
<p>OS3 Platform</p>  <p>I(P)GS-6416XSFP 16 10/100/1000T (PoE at/af) + 4 1G/2.5G/10G SFP+ Industrial Managed Ethernet Switch</p> <p>4 16 16 PoE 16 PoE USB</p>	<p>OS3 Platform</p>  <p>I(P)GS-6488XSFP 8 10/100/1000T (PoE) + 8 100M/1G SFP + 4 1G/2.5G/10G SFP+ Industrial Managed Ethernet Switch</p> <p>4 10G 8 PoE 8 SFP 8 PoE USB</p>	<p>OS3 Platform</p>  <p>I(P)GS-L6408XSFP 8 10/100/1000T (PoE) + 4 1G/2.5G/10G SFP+ Industrial Managed Ethernet Switch</p> <p>4 10G 8 PoE 8 PoE USB</p>	<p>NEW</p>

**optional
Model name (P) = PoE model

Industrial Managed (PoE) Ethernet Switches

Product Line-ups

<p>OS3 Platform</p>  <p>I(P)GS-L5424MGSFP-2P 24 10/100/1000T (PoE at/af) + 4 1G/2.5G SFP Industrial Managed Ethernet Switch</p> <p>Max 24GT, Max 18P, Max 12SFP, Max 4PoE, USB</p>	<p>OS1 Platform</p>  <p>I(P)GS-5400-2P 4 Modular-Slots L2+ Industrial Managed Ethernet Switch</p> <p>Max 24GT, Max 18P, Max 12SFP, Max 4PoE, USB</p>	<p>OS1 Platform</p>  <p>I(P)GS-5424 24 10/100/1000T (PoE at/af) + 4 Dual Speed SFP L2+ Industrial Managed Ethernet Switch</p> <p>24 GT, 8 SFP, 24 PoE, USB</p>	<p>OS1 Platform</p>  <p>IGS-5816-2P 8 10/100/1000T + 16 Dual Speed SFP L2+ Industrial Managed Ethernet Switch</p> <p>8 GT, 16 SFP, USB</p>
<p>OS1 Platform</p>  <p>I(P)ES-3424DSFP-2P 24 10/100TX (PoE at/af) + 4 Dual Speed SFP L2+ Industrial Managed Ethernet Switch</p> <p>4 SFP, 24 TX, 24 PoE, USB</p>	<p>OS3 Platform</p>  <p>I(P)GS-5416MGSFP 16 10/100/1000T (PoE at/af) + 4 1G/2.5G SFP L2+ Industrial Managed Ethernet Switch</p> <p>4 SFP, 16 GT, 16 PoE, USB</p>	<p>OS3 Platform</p>  <p>I(P)GS-5488MGSFP 8 10/100/1000T (PoE) + 8 100M/1G SFP + 4 1G/2.5G SFP L2+ Industrial Managed Ethernet Switch</p> <p>12 SFP, 8 GT, 8 PoE, USB</p>	<p>OS3 Platform</p>  <p>I(P)GS-L5408MGSFP 8 10/100/1000T (PoE) + 4 1G/2.5G SFP L2+ Industrial Managed Ethernet Switch</p> <p>4 SFP, 8 GT, 8 PoE, USB</p> <p>NEW PoE bit model Full of model</p>
<p>OS1 Platform</p>  <p>I(P)GS-5408DFT 8 10/100/1000T (PoE) + 2 Dual Speed SFP + 2 10/100/1000T L2+ Industrial Managed Ethernet Switch</p> <p>2 SFP, 8 GT, 8 PoE, USB</p>	<p>OS1 Platform</p>  <p>I(P)GS-5408GSFP 8 10/100/1000T (PoE) + 4 1000M SFP L2+ Industrial Managed Ethernet Switch</p> <p>4 SFP, 8 GT, 8 PoE, USB</p>	<p>OS1 Platform</p>  <p>I(P)GS-3408GSFP 8 10/100/1000T (PoE) + 4 1000M SFP L2+ Industrial Managed Ethernet Switch</p> <p>4 SFP, 8 GT, 8 PoE</p>	<p>OS1 Platform</p>  <p>I(P)GS-3208GSFP 8 10/100/1000T (PoE) + 2 1000M SFP L2+ Industrial Managed Ethernet Switch</p> <p>2 SFP, 8 GT, 8 PoE, USB</p>
<p>OS3 Platform</p>  <p>I(P)GS-3208C 8 10/100/1000T (PoE) + 2 10/100/1000T/Dual Speed SFP Combo L2+ Industrial Managed Ethernet Switch</p> <p>2 SFP, 8 GT, 8 PoE, USB</p>	<p>OS3 Platform</p>  <p>I(P)GS-3204MGSFP 4 10/100/1000T (PoE) + 2 1G/2.5G SFP L2+ Industrial Managed Ethernet Switch</p> <p>2 SFP, 4 GT, 4 PoE, USB</p>	<p>OS3 Platform</p>  <p>I(P)GS-3008 8 10/100/1000T (PoE) L2+ Industrial Managed Ethernet Switch</p> <p>8 GT, 8 PoE</p>	<p>OS1 Platform</p>  <p>I(P)ES-5408DFT 8 10/100TX (PoE) + 2 10/100/1000T + 2 Dual Speed SFP L2+ Industrial Managed Ethernet Switch</p> <p>2 SFP, 8 GT, 8 TX, 8 PoE</p>
<p>OS1 Platform</p>  <p>I(P)ES-3416DSFP 16 10/100TX (PoE) + 4 Dual Speed SFP L2+ Industrial Managed Ethernet Switch</p> <p>4 SFP, 16 TX, 16 PoE</p>	<p>OS1 Platform</p>  <p>I(P)ES-3016 16 10/100TX (PoE) L2+ Industrial Managed Ethernet Switch</p> <p>16 TX, 16 PoE</p> <p>NEW</p>	<p>OS1 Platform</p>  <p>I(P)ES-3408GSFP 8 10/100TX (PoE) + 4 1000M SFP L2+ Industrial Managed Ethernet Switch</p> <p>4 SFP, 8 TX, 8 PoE</p>	<p>2000 Series</p>  <p>I(P)ES-2208CB 8 10/100TX (PoE) + 4 10/100/1000T/Dual Speed SFP Combo L2+ Industrial Managed Ethernet Switch</p> <p>2 SFP, 8 TX, 8 PoE</p>

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 24V but has demand of IP surveillance or VoIP applications. (24V model)



Product Line-ups

 <p>I(P)GS-0208C 8 10/100/1000T (PoE at/af) + 2 10/100/1000T/Dual Speed SFP Combo Industrial Ethernet Switch</p> <p>2 SFP 8 PoE</p>	 <p>I(P)GS-0008B 8 10/100/1000T (PoE at/af) Industrial Ethernet Switch</p> <p>8 PoE</p>	 <p>I(P)GS-0204DSFP 4 10/100/1000T (PoE) + 2 Dual Speed SFP Industrial Ethernet Switch</p> <p>2 SFP 4 PoE</p>	 <p>IPGS-0005T-4 5 10/100/1000T w/ 4 PoE at/af Industrial Ethernet Switch</p> <p>5 PoE</p>
 <p>IPGS-0101T Industrial Gigabit Switch with PoE 802.3at/af</p> <p>2 PoE</p>	 <p>I(P)ES-0016 16 10/100TX (PoE at/af) Industrial Ethernet Switch</p> <p>16 PoE</p>	 <p>I(P)ES-0208CA 8 10/100TX (PoE at/af) + 2 10/100/1000T/Dual Speed SFP Combo Industrial Ethernet Switch</p> <p>2 SFP 8 PoE</p>	 <p>IPES-0104GT-4 4 10/100TX PoE at/af + 1 10/100/1000T Industrial Ethernet Switch</p> <p>1 SFP 4 PoE</p>
 <p>I(P)ES-0204DFT-4 4 10/100TX (PoE at/af) + 1 10/100/1000T + 1 Dual Speed SFP Industrial Ethernet Switch</p> <p>1 SFP 4 PoE</p>	 <p>I(P)ES-0008B 8 10/100TX (PoE) Industrial Ethernet Switch</p> <p>8 PoE</p>	 <p>I(P)GC-0101DSFP 10/100/1000T to 100/1000M SFP 802.3at Industrial PoE Switch Converter</p> <p>1 SFP 1 PoE</p>	 <p>IPES-0101T 1 10/100TX (PoE at) + 1 10/100TX EN50155 Unmanaged Switch</p> <p>1 PoE</p>

Model name (P) = PoE model
*E-Marking is future release

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.

Product Line-ups OS1 Platform



I(P)GS-5400-2P-PT

4 Modular Slots Industrial L2+ IEC 61850-3 Managed (PoE) Switch

Max 24GT Max 120Tx Max 120SFP Max 24PoE USB



I(P)GS-5424-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 PoE USB



I(P)GS-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



I(P)ES-5408DFT-PT

8 10/100TX (PoE) + 2 10/100/1000T + 2 Dual Speed SFP L2+ Industrial Managed Ethernet Switch

8 GT 2 SFP 8 PoE USB



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 E-marking / ITxPT Transportation Routers & Switches

E4 E13

What is E-marking?

The e-mark is an EU mark for approved vehicles and vehicle components sold into the EU.

ITxPT

What is ITxPT?

ITxPT defines the physical interfaces between on-board systems, including general architecture, generic mechanisms with the communication protocols.

4G LTE + Wi-Fi Multifunction Routers

<p>ITxPT (Pending)</p>  <p>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</p> <p>4 GigaT, 2 SFP, 4 PoE, USB, 2 Serial</p>	<p>ITxPT (Pending)</p>  <p>I(P)WMR-3004DF Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 4 GigaT + 2 Dual Speed SFP WAN</p> <p>4 GigaT, 4 PoE, USB, 2 Serial, 2 WAN</p>	<p>ITxPT (Pending)</p>  <p>I(P)WMR-3006 Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 6 GigaT</p> <p>4 GigaT, 4 PoE, USB, 2 Serial</p>	<p>ITxPT (Pending)</p>  <p>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</p> <p>4 GigaT, 4 PoE, USB, 2 Serial, 2 WAN</p>	<p>ITxPT (Pending) E13</p>  <p>IWMR-3003(-M12) Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2/4 serial ports + 3 GigaT</p> <p>2 GigaT, 1 PoE, 4 Serial, USB</p>	<p>ITxPT (Pending) E13</p>  <p>IWMR-3002(-M12) Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2/4 serial ports + 2 GigaT</p> <p>2 GigaT, 1 PoE, 4 Serial, USB</p>
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4G LTE Multifunction Routers

<p>ITxPT (Pending)</p>  <p>I(P)MR-3204DF Industrial Multifunction VPN Router w/2 LTE 4G + 2 serial ports + 4 GigaT + 2 Dual Speed SFP</p> <p>4 GigaT, 2 SFP, 4 PoE, USB, 2 Serial</p>	<p>ITxPT (Pending)</p>  <p>I(P)MR-3004DF Industrial Multifunction VPN Router w/2 LTE 4G + 2 serial ports + 4 GigaT + 2 Dual Speed SFP WAN</p> <p>4 GigaT, 4 PoE, USB, 2 Serial, 2 WAN</p>	<p>ITxPT (Pending)</p>  <p>I(P)MR-3006 Industrial Multifunction VPN Router w/2 LTE 4G + 2 serial ports + 6 GigaT</p> <p>4 GigaT, 4 PoE, USB, 2 Serial</p>	<p>ITxPT (Pending)</p>  <p>I(P)MR-3004 Industrial Multifunction VPN Router w/2 LTE 4G + 2 serial ports + 4 GigaT + 2WAN</p> <p>4 GigaT, 4 PoE, USB, 2 Serial, 2 WAN</p>	<p>ITxPT (Pending) E13</p>  <p>IMR-3003(-M12) Industrial Multifunction VPN Router w/2 LTE 4G + 2/4 serial ports + 3 GigaT</p> <p>2 GigaT, 1 PoE, 4 Serial, USB</p>	<p>ITxPT (Pending) E13</p>  <p>IMR-3002(-M12) Industrial Multifunction VPN Router w/2 LTE 4G + 2/4 serial ports + 2 GigaT</p> <p>2 GigaT, 1 PoE, 4 Serial, USB</p>
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Wi-Fi Multifunction Routers

<p>ITxPT (Pending)</p>  <p>I(P)WAP-3204DF Industrial Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 4 GigaT + 2 Dual Speed SFP</p> <p>4 GigaT, 2 SFP, 4 PoE, USB, 2 Serial</p>	<p>ITxPT (Pending)</p>  <p>I(P)WAP-3004DF Industrial Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 4 GigaT + 2 Dual Speed SFP WAN</p> <p>4 GigaT, 4 PoE, USB, 2 Serial, 2 WAN</p>	<p>ITxPT (Pending)</p>  <p>I(P)WAP-3006 Industrial Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 6 GigaT</p> <p>4 GigaT, 4 PoE, USB, 2 Serial</p>	<p>ITxPT (Pending)</p>  <p>I(P)WAP-3004 Industrial Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 4 GigaT + 2WAN</p> <p>4 GigaT, 4 PoE, USB, 2 Serial, 2 WAN</p>	<p>ITxPT (Pending) E13</p>  <p>IWAP-3003(-M12) Industrial Multifunction VPN Router w/2 WiFi 11ac + 2/4 serial ports + 3 GigaT</p> <p>2 GigaT, 1 PoE, 4 Serial, USB</p>	<p>ITxPT (Pending) E13</p>  <p>IWAP-3002(-M12) Industrial Multifunction VPN Router w/2 WiFi 11ac + 2/4 serial ports + 2 GigaT</p> <p>2 GigaT, 1 PoE, 4 Serial, USB</p>
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*M12 model does not support serial ports.

Ethernet Switches

<p>ITxPT (Pending) NEW</p>  <p>T(P)ES-0216T 16 10/100TX (PoE at) + 2 10/100/1000T EN50155 Unmanaged Switch</p> <p>2 GigaT, 16 PoE, 2 Serial</p>	<p>ITxPT (Pending) NEW</p>  <p>T(P)ES-0212T 12 10/100TX (PoE at) + 2 10/100/1000T EN50155 Unmanaged Switch</p> <p>2 GigaT, 12 PoE, 2 Serial</p>	<p>ITxPT (Pending) NEW</p>  <p>T(P)ES-0016T 16 10/100TX (PoE at) EN50155 Unmanaged Switch</p> <p>16 PoE</p>	<p>ITxPT (Pending) E13</p>  <p>T(P)GS-0008CA 8 10/100/1000T (PoE at) EN50155 Unmanaged Switch</p> <p>8 GigaT, 8 PoE</p>	<p>ITxPT (Pending) E13</p>  <p>T(P)ES-0008CA 8 10/100TX (PoE at) EN50155 Unmanaged Switch</p> <p>8 GigaT, 8 PoE</p>	<p>ITxPT (Pending) NEW</p>  <p>I(P)ES-5408T-X-IGN 8 10/100TX (PoE at) + 4 10/100/1000T L2+ Managed Switch</p> <p>4 GigaT, 8 PoE, 4 Serial</p>
<p>ITxPT (Pending) NEW</p>  <p>I(P)ES-5408T-D-IGN 12 10/100TX (w/B PoE at) L2+ Managed Switch</p> <p>12 GigaT, 8 PoE</p>	<p>E4</p>  <p>I(P)ES-0208GF 8 10/100TX (PoE at/af) + 2 1000FX EN50155 Unmanaged Switch</p> <p>2 GigaT, 8 PoE, 2 Serial</p>	<p>E4</p>  <p>I(P)ES-0208T 8 10/100TX (PoE at/af) + 2 10/100/1000T EN50155 Unmanaged Switch</p> <p>2 GigaT, 8 PoE, 2 Serial</p>	<p>E4</p>  <p>I(P)ES-0008A 8 10/100TX (PoE at/af) EN50155 Unmanaged Switch</p> <p>8 GigaT, 8 PoE</p>	<p>E4</p>  <p>I(P)ES-0008B 8 10/100TX (PoE at) EN50155 Unmanaged Switch</p> <p>8 GigaT, 8 PoE</p>	<p>E4</p>  <p>I(P)ES-0005B 5 10/100TX (PoE at/af) EN50155 Unmanaged Switch</p> <p>8 GigaT, 8 PoE</p>
<p>E13</p>  <p>I(P)ES-3416DSFP 16 10/100TX (PoE at/af) + 4 Dual Speed SFP L2+ Managed Ethernet Switch</p> <p>8 SFP, 16 PoE, 2 Serial</p>	<p>ITxPT (Pending) NEW</p>  <p>I(P)ES-3016 16 10/100TX (PoE at/af) L2+ Industrial Managed Ethernet Switch</p> <p>16 PoE, 16 PoE</p>	<p>ITxPT (Pending) NEW</p>  <p>I(P)GS-0016 16 10/100/1000T (PoE at/af) Industrial Ethernet Switch</p> <p>16 GigaT, 16 PoE</p>	<p>ITxPT (Pending) NEW</p>  <p>I(P)ES-0016 16 10/100TX (PoE at/af) Industrial Ethernet Switch</p> <p>16 GigaT, 16 PoE</p>	<p>E13</p>  <p>I(P)GS-0008B 8 10/100/1000T (PoE at/af) Industrial Ethernet Switch</p> <p>8 GigaT, 8 PoE</p>	<p>E13</p>  <p>I(P)ES-0008B 8 10/100TX (PoE) Industrial Ethernet Switch</p> <p>8 GigaT, 8 PoE</p>

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
- ✓ Anti-Vibration
- ✓ Prevent Compass Interference

Product Line-ups

<p>OS4 Platform NEW</p>  <p>I(P)GS-R6424XSFP-2P-DNV* 24 10/100/1000T (PoE at/af) + 4 1G/2.5G/10G SFP Industrial Managed Ethernet Switch</p> <p>4 10G 24 GT 24 PoE USB</p>	<p>OS4 Platform NEW</p>  <p>I(P)GS-R6424XFT-2P-DNV* 24 10/100/1000T (PoE at/af) + 2 1G/2.5G/10G SFP + 2 10GT uplink Industrial Managed Ethernet Switch</p> <p>4 10G 24 GT 24 PoE USB</p>	 	
<p>OS3 Platform NEW</p>  <p>I(P)GS-L6424M-2P-DNV* 24 10/100/1000T (PoE at/af) w/4/2 x1G/2.5G/10G SFP+ + 2 10GT uplink Industrial Managed Ethernet Switch</p> <p>4 10G 24 GT 24 PoE USB</p>	<p>LGS-2624C-DNV 20 10/100/1000T + 4 1000T/ 100/1000M SFP Combo + 2 100/ 1000M SFP L2+ Managed Switch</p> <p>4 Combo 20 GT 2 SFP</p>		

*DNV is future release

Industrial Hazardous Ethernet Switches

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.



Product Line-ups

<p>IES-2208CA-ATEX 8 10/100TX + 2 10/100/1000T/ Dual Speed SFP Combo Industrial Managed Switch</p> <p>2 Combo 8 TX</p>	<p>IES-2008B-ATEX 8 10/100TX Industrial Managed Ethernet Switch</p> <p>8 TX</p>
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Industrial Entry Ethernet Switches

 <p>IGS-0016 16 10/100/1000T Industrial Unmanaged Switch</p> <p>16 DT</p>	 <p>IGS-0208GSFP 8 10/100/1000T + 2 1000M SFP Industrial Unmanaged Switch</p> <p>2 SFP 8 DT</p>	 <p>IGS-0204DSFP 4 10/100/1000T + 2 Dual Speed SFP Industrial Unmanaged Switch</p> <p>2 SFP 4 DT</p>	 <p>IGS-0008B 8 10/100/1000T Industrial Unmanaged Switch</p> <p>8 DT</p>
 <p>IES-0208CA 8 10/100TX + 2 10/100/1000T/ Dual Speed SFP Combo Industrial Unmanaged Switch</p> <p>2 Combo 8 TX</p>	 <p>IES-0204DFT 4 10/100TX + 1 10/100/1000T + 1 Dual Speed SFP Industrial Unmanaged Switch</p> <p>1 SFP 1 DT 4 TX</p>	 <p>IES-0204FT 4 10/100TX + 2 100FX Industrial Unmanaged Switch</p> <p>2 FX 4 TX</p>	 <p>IES-0104FT 4 10/100TX + 1 100FX Industrial Unmanaged Switch</p> <p>1 FX 4 TX</p>
 <p>IES-00016 16 10/100TX Industrial Unmanaged Switch</p> <p>16 TX</p>	 <p>IES-0008B 8 10/100TX Industrial Unmanaged Switch</p> <p>8 TX</p>	 <p>IES-0008T 8 10/100TX Industrial Unmanaged Switch</p> <p>8 TX</p>	 <p>IES-0005T 5 10/100TX Industrial Unmanaged Switch</p> <p>5 TX</p>

Industrial Converter Series

 <p>IPGC-0101DSFP 10/100/1000T to 100/1000M SFP 802.3at Industrial PoE Switch Converter</p> <p>1 SFP 1 DT 1 PoE</p>	 <p>IGC-0101DSFP 10/100/1000T to 100/1000M SFP Industrial Switch Converter</p> <p>1 SFP 1 DT</p>	 <p>IGS-022DSFP 1 100M/1000M SFP + 1 1000M SFP Industrial Ethernet Switch Converter</p> <p>2 SFP</p>	 <p>MBAK19010 MBAK19011 19" Rack Mounting Kit for 35 (W) x 105 (D) x 152 (H) mm Industrial Converters</p>
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Serial Devices

NEW



IDS-2204A-M12
4 M12 RS-232/422/485 port
to 2 M12 10/100TX Ethernet
Industrial Device Server



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



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



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



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



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



Accessories



ANT11000041
ANT11000042
ANT11000051



ANT11000044
ANT11000045
ANT11000055



ANT12000001



ADA11000052 / AD11000053

Cellular Antenna

Part Number	Antenna Type	Frequency	Casing	Dimension	Gain
ANT11000041	2G/3G/4G dipole antenna EU type	791~960/ 1710~2170/ 2500~2700MHz	Plastic SMA plug	162.2 x 19.6 x 13.5mm (LxWxH)	3dBi
ANT11000042	2G/3G/4G dipole antenna US type	704~960/1710~2170MHz	Plastic SMA plug	162.2 x 19.6 x 13.5mm (LxWxH)	3dBi
ANT11000044	2G/3G/4G dipole antenna EU type	704~960/1710~2690MHz	Plastic SMA plug	105 x 27 x 9.4mm (LxWxH)	1.6dBi
ANT11000045	2G/3G/4G dipole antenna US type	704~960/1710~2170MHz	Plastic SMA plug	105 x 27 x 9.4mm (LxWxH)	3dBi

GPS Antenna

Part Number	Antenna Type	Frequency	Casing	Dimension	Gain
ANT12000001	GPS antenna	1575.42 ± 1.023MHz	Deep into water 50cm (30mins), Magnet mount, SMA plug	40.5 x 38.0 x 12.3mm (LxWxH) cable length: 3M	28dBi

Wi-Fi Antenna

Part Number	Antenna Type	Frequency	Casing	Dimension	Gain
ANT11000051	dipo Wi-Fi antenna	2.4/5 GHz	Plastic SMA plug	162.2 x 19.6 x 13.5mm (LxWxH)	3dBi (2.4GHz) 4dBi (5GHz)
ANT11000051	dipo Wi-Fi antenna	2.4/5 GHz	Plastic SMA plug	105 x 27 x 9.4mm (LxWxH)	6dBi (2.4GHz) 4dBi (5GHz)
ANT11000090	omnidirectional 3x3 MIMO Wi-Fi antenna	2.4/5 GHz	IP67, Screw Mount	Height 65.35 x Diameter 147.5mm cable length: 3M	5dBi

Antenna Base

Part Number	Description
ADA11000052	Magnetic antenna base for Wi-Fi, RP SMA Jack Base, Length : 1M
ADA11000053	Magnetic antenna base for 3G/4G, RP SMA Jack Base, Length : 1M

SFP (Mini-GBIC)

-40~85°C For wide range operation temperature, add -E to part number.

DDM SFP All SFP part number with D have Diagnostic function.

SFP 10Gbps

Part Number	Wavelength	LD	DD	LOS	Mode	Link	Temp.
8330-1930	850nm	VCSEL	AC/AC	TTL	Multi-mode	300m	-10~70°C
8330-1940	1310nm	DFB	AC/AC	TTL	Single-mode	10km	-10~70°C

SFP 2.5Gbps

Part Number	Wavelength	LD	DD	LOS	Mode	Link	Temp.
8330-2620	850 nm	VCSEL	AC/AC	TTL	Multi-mode	300m	-10~70°C
8330-2630	1310 nm	FP	AC/AC	TTL	Single-mode	2km	-10~70°C
8330-2650	1310 nm	DFB	AC/AC	TTL	Single-mode	15km	-10~70°C

SFP 1.25Gbps

Part Number	Wavelength	LD	DD	LOS	Mode	Link	Temp.
8330-162	850 nm	VCSEL	AC/AC	TTL	Multi-mode	500m	-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

SFP 125Mbps

Part Number	Wavelength	LD	DD	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

Copper SFP

Part Number	Description
8330-206	10G/5G/2.5G/1000Base-T SFP 3.3V, 30m (10G)/ 50m (2.5G/5G)/ 100m (1G), -10~70°C
8330-168	10/100/1000Base-T, SFP, 100m, 3.3V, -10~70°C

125Mbps/1.25Gbps Dual-rate

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

BDI SFP 10Gbps

Part Number	Tx	LD	Rx	DD	LOS	Link	Temp.
8330-2090	1270nm	DFB	1330nm	AC/AC	TTL	10km	-10~70°C
8330-2100	1330nm	DFB	1270nm	AC/AC	TTL	10km	-10~70°C
8330-2000	1270nm	DFB	1330nm	AC/AC	TTL	20km	-10~70°C
8330-2020	1330nm	DFB	1270nm	AC/AC	TTL	20km	-10~70°C
8330-2020D	1270nm	DFB	1330nm	AC/AC	TTL	40km	-10~70°C
8330-2030	1330nm	DFB	1270nm	AC/AC	TTL	40km	-10~70°C

BDI SFP 1.25Gbps

Part Number	Tx	LD	Rx	DD	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
8330-198	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

BDI SFP 125Mbps

Part Number	Tx	LD	Rx	DD	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
8330-072	1550nm	FP	1310nm	AC/AC	TTL	2km	-10~70°C
8330-068	1550nm	FP	1310nm	AC/AC	TTL	20km	-10~70°C
8330-062	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

Adapter Cable

8850-102 (USB Adapter)



8850-103 (USB Adapter Set)



Part Number	Description
USB adapter (8850-102)	8 pin M12 (Male) A-coded 180 degree M12 to USB 2.0 interface adapter, 8cm
USB adapter set (8850-103)	8 pin M12 (Male) A-coded 180 degree M12 to USB 2.0 to DB9 (Female) Cable, 150cm + USB NIC

Bracket



MBAK19002



MBAK19003



MBAK19008



MBAK19004

MBAK19005



MBAK19006/MBAK19007

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) / 74 (W) x 135 (D) x 152 (H) / 96 (W) x 105 (D) x 152 (H) mm industrial switch
MBAK19004	19" Rack Mounting Kit for 74 (W) x 105 (D) x 152 (H) / 74 (W) x 135 (D) x 152 (H) mm industrial switch
MBAK19005	19" Rack Mounting Kit for 35 (W) x 105 (D) x 152 (H) / 43 (W) x 105 (D) x 152 (H) mm industrial switch
MBAK19006	Side DIN Rail mounted fin for 74 (W) x 105 (D) x 152 (H) mm industrial switch
MBAK19007	Side DIN Rail mounted fin for 74 (W) x 135 (D) x 152 (H) mm industrial switch
MBAK19008	Wall mount bracket for for 35 (W) x 105 (D) x 152 (H) / 43 (W) x 105 (D) x 152 (H) mm industrial switch
MBAK19009	Side DIN Rail mounted fin for 74 (W) x 135 (D) x 152 (H) mm industrial switch
MBAK19010	19" Rack Mounting Kit for 35 (W) x 105 (D) x 152 (H) mm industrial converter Page 31
MBAK19011	L-Bracket for Mounting MBAK19010 with the industrial converter Page 31

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%	86.0%	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 make up to maximum output, but total load by several output cannot exceed output voltage.
 2. Line regulation is measured from 30% to 100% of rated load at 100°C input.
 3. Load regulation is measured at rated load and 100°C input.
 4. Ripple & Noise is measured by using a 0.1µF/0.01µF electrolytic capacitor in a 1µF electrolytic capacitor parallel at the test point, at rated load and 100°C input.
 5. Efficiency is measured at rated load and 100°C input.
 6. Standard Operating Temperature: -40°C ~ 85°C / ambient, testing each output at 2.5% per degree from 50°C ~ 10°C.
 7. Wide Operating Temperature: 0 model: -40°C ~ 70°C / ambient, testing each output at 2.5% per degree from 50°C ~ 10°C, which means the output is 0.8 Watts at 70°C.
 Note: Starting time of IP model is 1.5 to 2 seconds @ -40°C.

Cable



Part Number	Description	Pin Number	Type	Length	Gender
ECONM12-5P(F)70CM CABLE	A-coded 90° Power Cable	5	M12	0.7M	Female
ECONM12-5P(F)1.5M CABLE	A-coded 90° Power Cable	5	M12	1.5M	Female
ECONM23-5P(F)70CM CABLE	A-coded 90° Power Cable, Made in Taiwan	5	M23	0.7M	Female
ECONM23-5P(F)70CM CABLE-C	A-coded 90° Power Cable, Made in China	5	M23	0.7M	Female
ECONM23-5P(F)1.5M CABLE	A-coded 90° Power Cable, Made in Taiwan	5	M23	1.5M	Female
ECONM12-4P(F)1.5M CABLE	A-coded 90° Power Cable	4	M12	1.5M	Female
ECONM12-08M2-CONSOLE	A-coded 180° to RS232 cable for console	8	M12	1.5M	Male
ECABM12X83MSTP	X-coded Shielded Twisted Pair (STP) Cable	8	M12	3M	Male
ECAB124030MJS	D-coded Shielded Twisted Pair (STP) Cable	4	M12	3M	Male
ECABM002-QOP2-3.0-MM-OM3	Q-ODC 2 plug/LC multimode fiber, MM-OM3	-	Q-ODC	3M	-

Connector



ECONM23-5P(F)-S-180



ECONM23-5P(F)-S-90



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
ECONM12-05A(F)-C-180	A-coded 180° Crimp Type Connector	5	M12	Female
ECONM12-04A(F)-C-180	A-coded 180° Crimp Type Connector	4	M12	Female
ECONM12-08A(M)-180	A-coded 180° Crimp Type Connector	8	M12	Male
ECONM12-05A(M)-C-180	A-coded 180° Crimp Type Connector	5	M12	Male
ECONM12-08X(M)-SPEEDCON	X-coded 180° Crimp Type Connector (shielded, SPEEDCON)	8	M12	Male
ECONM12-04D(M)-C-180	D-coded 180° Crimp Type Connector	4	M12	Male

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