

# Lantech™

## 2016

### PRODUCT GUIDE



## Industrial Wireless

## Industrial EN50155

## Industrial Layer 3

## Industrial IEC 61850-3

## Industrial PoE

**Pioneering Industrial and IP Networks**



# 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 feature rich, high-quality networking solutions with outstanding service and support to our world-wide partners. Lantech’s core competency is centered on our network software and hardware, which allows for the seamless delivery of a variety of applications and services in diverse network environments.

Lantech offers a complete family 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 products are distributed worldwide. We provide high quality products with customer-centered services from our sales offices located in Taiwan, Germany, and Korea. By combining our outstanding products and services with knowledgeable and respected channel partners, Lantech is able to provide a significant price-performance value to any industrial IP network.

Lantech products are successfully transporting Ethernet services around the globe, including expressway lane control system of Korea, bus system in Spain, tram system in Finland, Japan’s highway system, outdoor wireless surveillance system in Malaysia, military truck system in Vietnam, and city surveillance system in Romania, etc.

### 2016 Key Exhibitions:

Jan	Intersec (Dubai, UAE)
Apr	Intertraffic (Amsterdam, Netherlands)
	ISC West (Las Vegas, USA)
May	Railtex (Birmingham, UK)
Jun	IFSEC (London, UK)
Sep	InnoTrains (Berlin, Germany)
Nov	SPS IPC Drives (Nuremberg, Germany)



\*Industrial-grade products

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# Rail Transportation Network

## Rugged yet fast solution for high-speed transportation

As one of the most important infrastructure, railway transportation always comes with flows of people, merchandise, and money. Modern railway system intelligently integrates devices with an IP-based Ethernet network, which means a reliable and fast network is absolutely necessary. Lantech delivers a complete product line with rugged network capability to handle massive traffic information timely and accurately without interruptions.

### Gigabit Speed for Huge-bandwidth Requirement

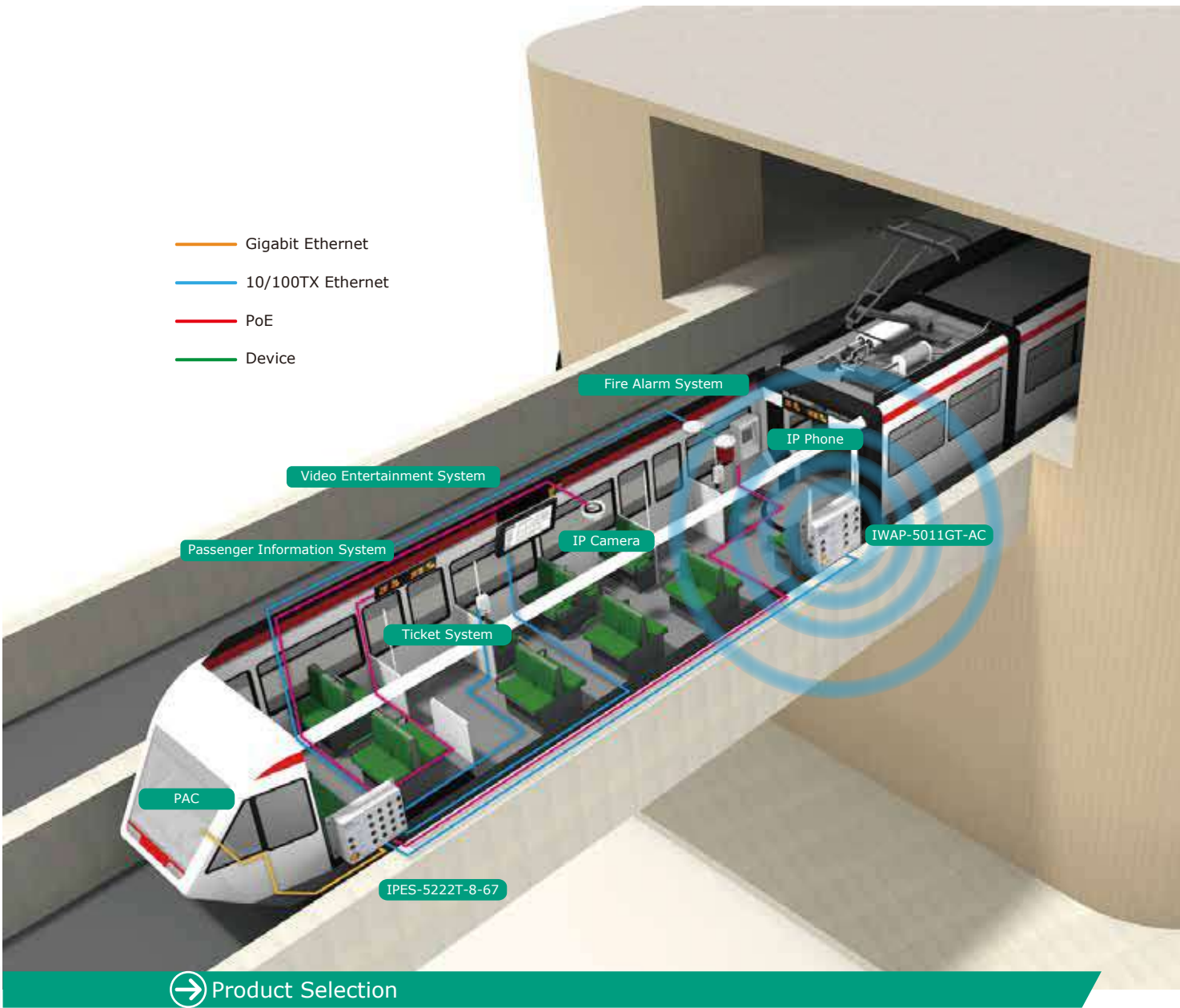
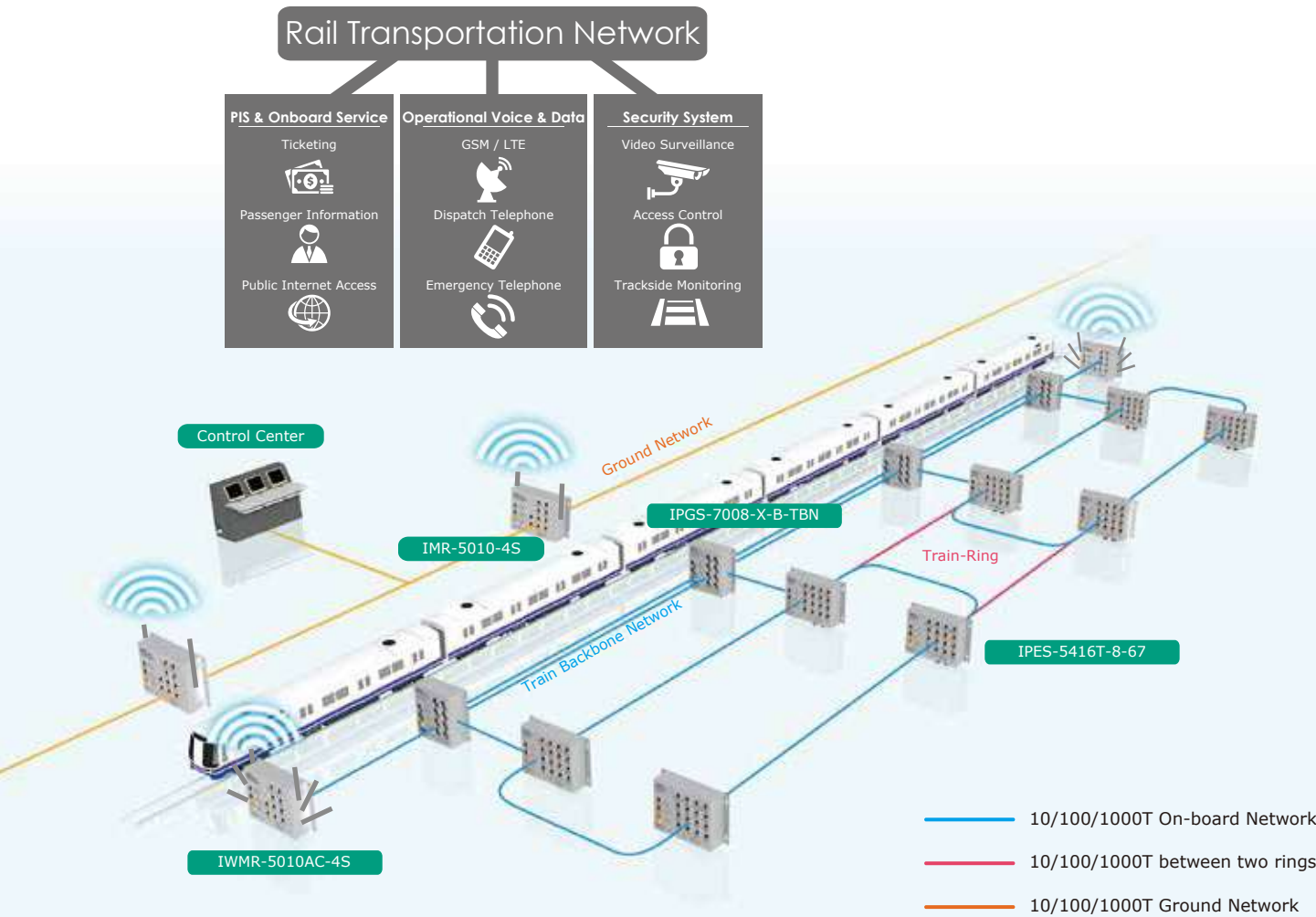
The Gigabit-speed Ethernet network is able to satisfy the increasing bandwidth requirement for now and future. What's more, enough bandwidth means lag-free transmission for real-time communication. The latest 802.11ac Wi-Fi delivers Giga speed wireless speed, which is 3X faster than current 802.11n standard.

### Rugged Design for Harsh Onboard Environment

Shock and vibration caused by high-speed moving are commonly seen in onboard train environments, and may lead to network interruption for critical railway applications. Lantech designs the most rugged products that are fully compliant with EN50155 standards with up to IP67 rated protection for sustaining in such harsh environments.

### Enhanced G.8032 & Train Ring

The IP-based alarm/surveillance system helps to detect and inform the happening of disasters. The fastest we can react, the less lost we will face. Lantech rail train solution features enhanced ITU G.8032 ring which can be self-healed in less than 20ms with up to 256 switches. Lantech also provides a new solution called "Train Ring", which can switch multiple cars without reconfigure the settings!



#### IPGS-7008-X-B-TBN

8 10/100/1000T PoE at/af L3  
Industrial Train Backbone Network  
Switch

- Full Gigabit
- OSPF, RIP v1/v2, Static & Dynamic Routing
- L3 VRRP Redundancy Less Than 500ms
- 802.3at/af PoE
- EN50155 / E-mark\* certified
- IP67 rated aluminum housing

#### IPES-5408T-67

8 10/100TX + 4 1000T L2\* 8 PoE  
at/af Industrial Managed Switch

- IEEE802.3 at/af up to 30W PoE output
- ITU G.8032 ring/MSTP/RSTP/STP redundancy
- EN50155 / E-mark\* certified
- IP67 rated aluminum housing
- Built-in environmental monitoring
- IEEE1588 PTP V2 for precise time synchronization

#### IWMR-5010AC-4S-67

Industrial Dual LTE (4SIMs) Wireless  
Mobile VPN Load Balance Router  
w/8-port Gigabit + 4 Serial Ports

- 802.11a/b/g/n/ac dual radio Wi-Fi
- Dual Concurrent LTE Design
- Load Balance with 8 Mechanisms for Dual LTE
- 802.11r Fast Roaming < 50ms
- EN50155 / E-mark\* certified
- IP67 rated aluminum housing

#### IPES-5222T-8-67

22 10/100TX + 2 1000T L2\* w/8  
PoE at/af Industrial Managed Switch

- IEEE802.3 at/af up to 30W PoE output
- ITU G.8032 ring/MSTP/RSTP/STP redundancy
- EN50155 / E-mark\* certified
- IP67 rated aluminum housing
- Built-in environmental monitoring
- IEEE1588 PTP V2 for precise time synchronization

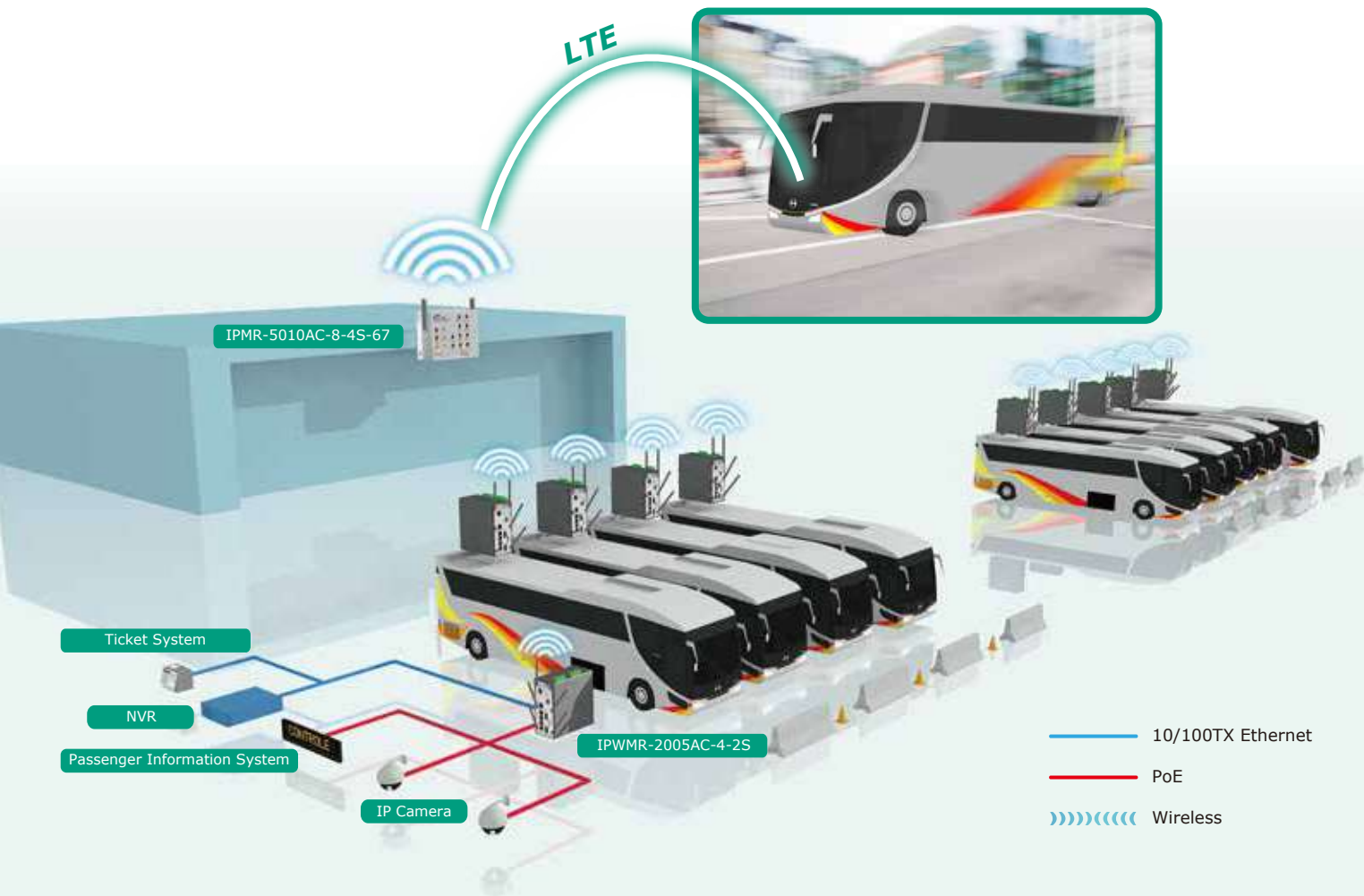


# Bus Network

Boost up from low vottage and feed up to 30W to PDs.

Lantech industrial switches are able to run with voltage as low as 9VDC and offers the series of PoE switch accepting 12VDC and boost to 48VDC for feeding power to devices of moving vehicles. The 12/24/48VDC Lantech PoE switch series are able to work in harsh environment and provide up to 30W/port to PDs. They are the best choice to construct a surveillance system for moving vehicles such as bus. Lantech industrial wireless products deliver the latest 802.11ac Wi-Fi, which is 3X faster than current 802.11n standard.

- ✓ 12VDC PoE 30W Booster
- ✓ Latest 802.11ac Wi-Fi + 802.11a/b/g/n Support
- ✓ Robust Design for Moving Vehicles



## Product Selection

**IPES-0008A-12V**  
8 10/100TX Industrial PoE at/af Switch, 12/24/48VDC Power Input



**IPWMR-2005AC-4-2S**  
Industrial 802.11ac Dual Radio Wireless Mobile Router w/4 Port Gigabit PoE at/af + 2 Serial Ports



**IPGS-0204DSFP**  
4 10/100/1000TX + 2 100/1000M SFP Industrial Switch w/ 4 PoE at/af Injectors



**IPMR-5010AC-8-4S-67**  
Industrial Dual LTE (4SIMs) Mobile VPN Load Balance Router w/8 Port Gigabit PoE at/af + 1 GigaT + 1 WAN + 4 Serial Ports

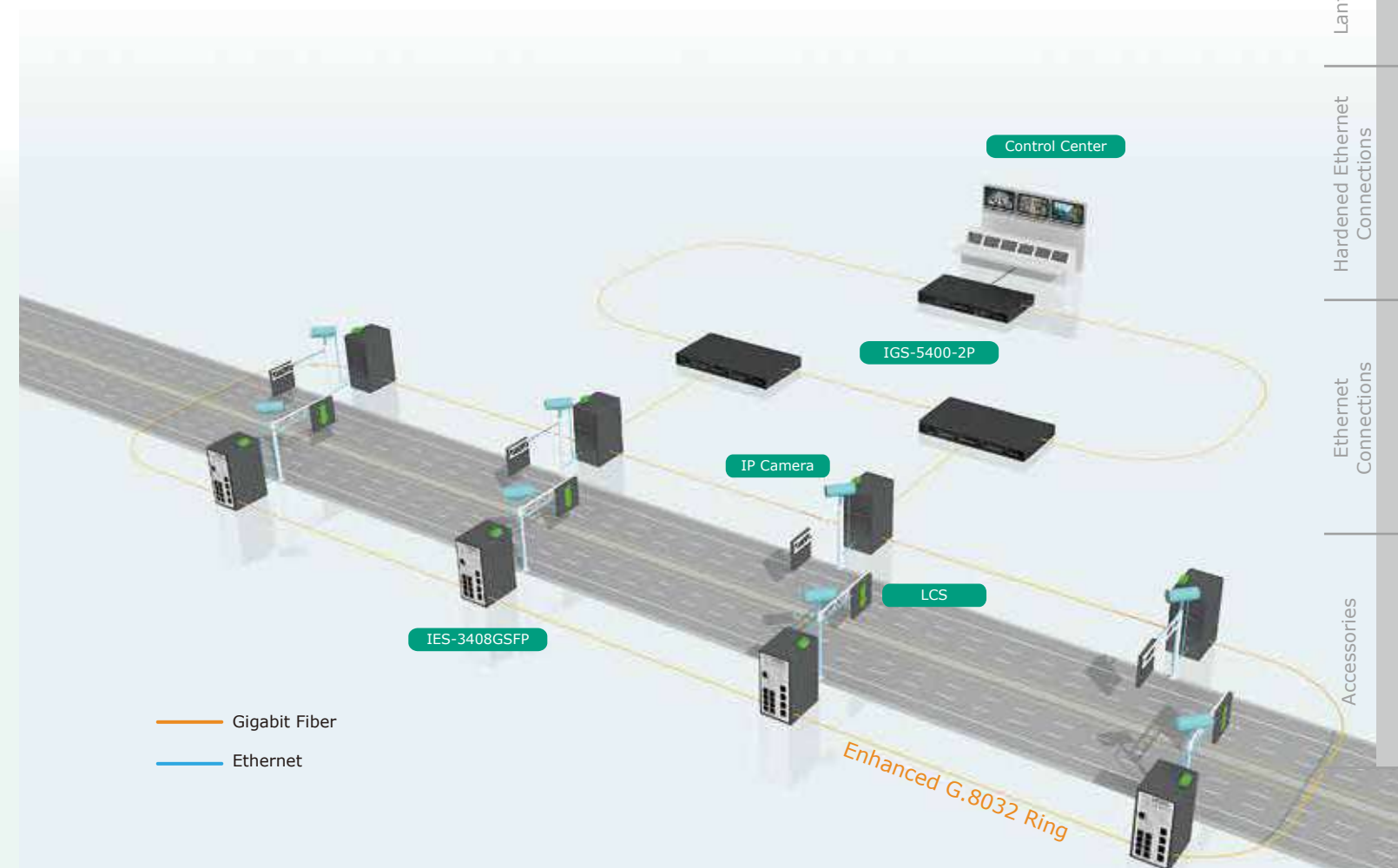


# Intelligent Transportation System

Utilize and optimize traffic system, with Lantech switches

As one of the most important infrastructure of our daily life, to utilize and optimize traffic system is always the top priority to every government. Fortunately, the safer, more efficient and green transportation is able to achieve via intelligent transportation systems (ITS). It is able to transmit real-time road condition and react to any unexpected incident immediately. Lantech delivers best industrial switches for ITS solution, from rugged hardware to powerful yet intuitive software function.

- ✓ Giga Speed Real-time Connection
- ✓ Enhanced ITU G.8032 Ring Protection
- ✓ Robust Design for Severe Environment



## Product Selection

**IES-3408GSFP**  
8 10/100TX + 4 1000M SFP L2+ Industrial Managed Switch



**IES-5408DFT**  
8 10/100TX + 2 100/1000M SFP + 2 10/100/1000T L2+ Industrial Managed Switch



**IGS-3408GSFP**  
8 10/100TX + 4 1000M SFP L2+ Industrial Managed Switch



**IGS-5424**  
24 10/100/1000T + 4 100/1000M SFP L2+ Industrial Managed Switch

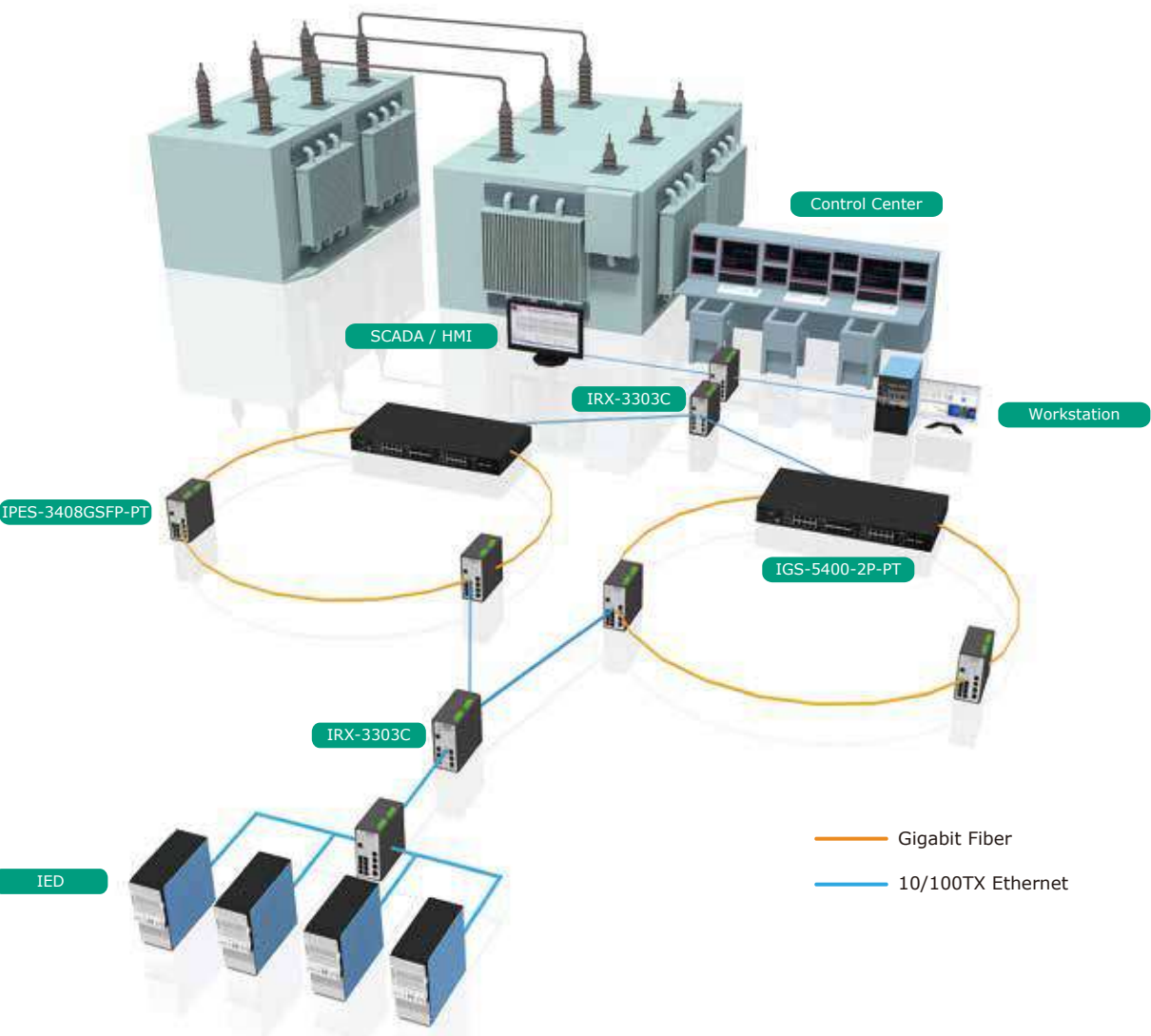




# Power Substation

Precisely transmit critical package with zero package loss.

The harsh environment of power substation demands specially hardened reliable network infrastructure to support the IED's. Lantech provides managed switches that comply with the latest IEC 61850-3 & IEEE 1613 standards which define specifications for operation in the substation environment covering EMI/RFI. Generic Object Oriented Substation Events (GOOSE), defined by IEC 61850-3, ensures the ability to transfer events immediately with security and dependability. Defined by the standard, the GOOSE messages transfer data with a maximum delay of 4ms in a network environment.



## Product Selection

**IES-3408GSFPM-PT**  
8 10/100TX + 4 1000M SFP L2+  
IEC 61850-3 Industrial Managed Switch



**IPES-3408GSFPM-PT**  
8 10/100TX + 4 1000M SFP L2+  
IEC 61850-3 Industrial Managed Switch w/ 8 PoE at/af Injectors



**IRX-3303C**  
3 10/100/1000T + 3 Dual Speed  
SFP Combo IEC 62439-3 Zero  
Recovery Time Managed PRP/HSR  
Redundancy Box



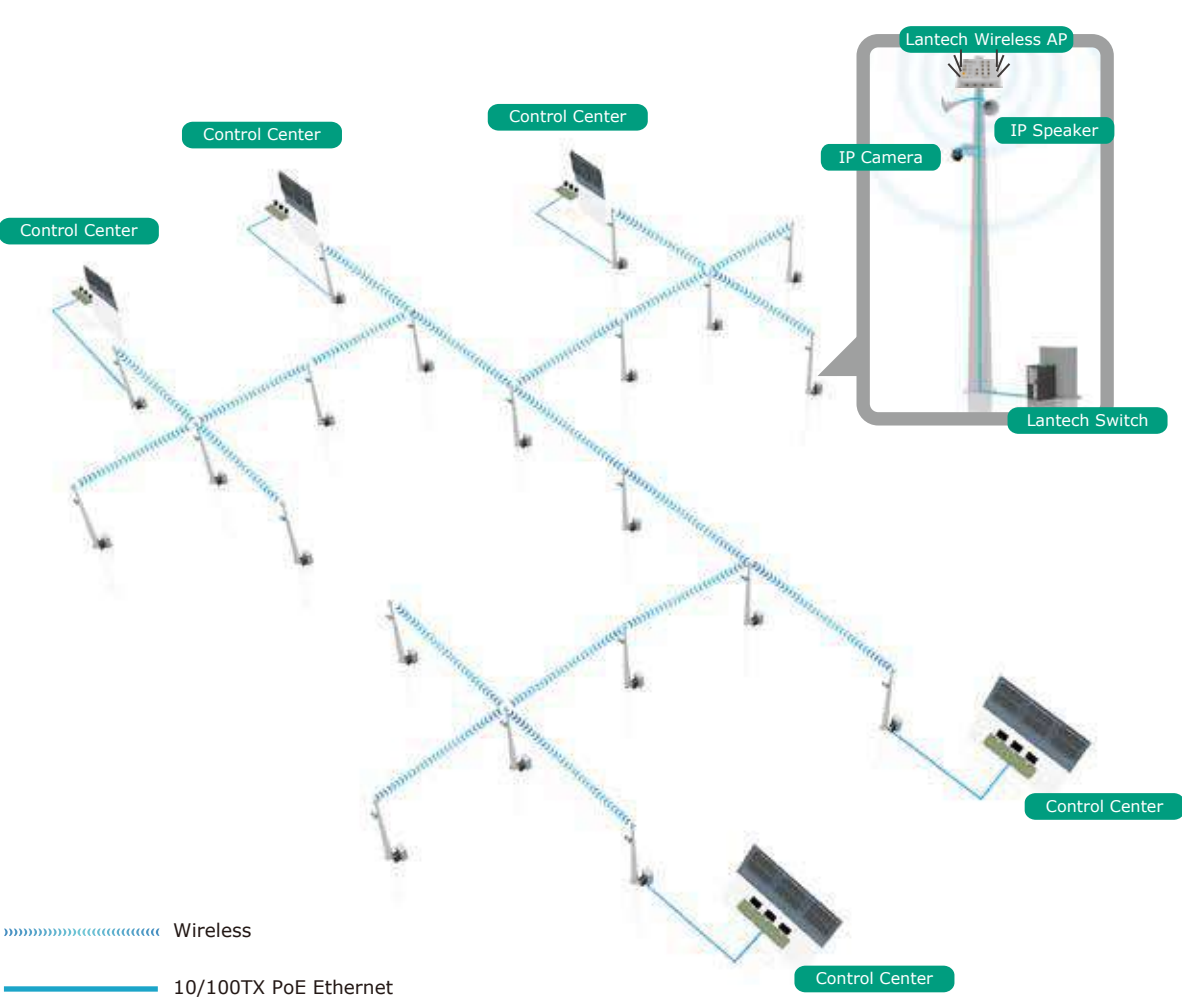
**I(P)GS-5400-2P-PT**  
4 Modular Slots Industrial L2+  
Managed (PoE at/af) Switch w/ IEEE  
1588 PTP v2



# Surveillance System

Huge bandwidth, high-power PoE, and IGMP support.

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



## Product Selection

**IPES-0008A-12V**  
8 10/100TX Industrial Switch w/ 8  
PoE at/af Injectors; 12/24/48VDC



**IPES-3408GSFP**  
8 10/100TX + 4 1000M SFP L2+  
Industrial Managed Switch w/ 8  
PoE at/af Injectors



**IPWAP-5010AC-8-67**  
Industrial 802.11ac Dual Radio  
Wireless Load Balance Access  
Point w/8-port POE at/af + 1  
GigaT + 1 WAN



**IPGS-5424**  
24 10/100/1000T + 4 Dual Speed  
SFP Industrial L2+ Switch w/ 24  
PoE at/af Injectors & IEEE 1588  
PTP v2





# Lantech™ InstaView

## Powerful and intuitive graphic monitoring / analysing tool

Lantech InstaView is a powerful and intuitive NMS (Network Management Software). Design with graphical concept, InstaView logic structure and all the key metrics are like SCADA can be graphically visualized. It provides the real time image of whole network. Users can easily monitor network health and quickly allocate problems by playing-back the topology.

### Intuitive & realistic network map edit

InstaView can freely zoom-in or zoom-out the device icon in which corresponds to the real device panel. Importing the application drawing or google map as background, InstaView can edit the network topology directly to match the real network installation.

### Vivid link / flow monitoring

Link information like link capacity, utilization, amount of traffic, blocked/broken/linked are vividly represented along the line. Users can easily understand how traffic is flowing through the networks.

### Real-time event notification

The event is triggered by link down, power down, SNMP failure, bandwidth utilization and packet error rate. A warning can be set with traffic threshold such as multicast, broadcast, or specific VLAN. InstaView pulls the devices status periodically and detects the problems by SNMP inform or trap real time. If there is an abnormal device or links, InstaView will highlight it at different color. The event notification can be sent remotely by SMS or email. Also, it will trigger the audio alarm locally, if any.

### Distinct real-time network category analysis

The unique function-group analysis makes InstaView outstands other NMS in the markets. InstaView can analyze groups of redundant ring, VLAN, multicast/IGMP as well as trunk group with graphical visualization. It also views the whole network with different color coded showing the live network status.

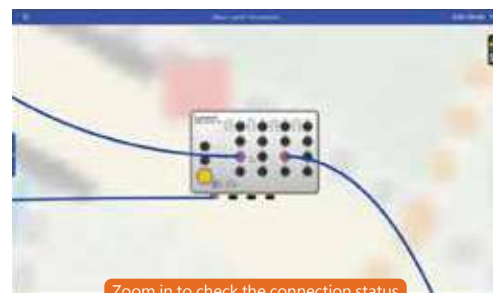
### Traffic report and play back trouble shooting

The traffic reports and event logs can be stored and backup to remote server on regular basis. The playback of event can help to record network events and replay the past network incident for trouble shooting.

### Centralized configuration and firmware management\*

The InstaView can link to device web page to change configuration as well as mass devices configuration. It can set scheduling configuration back up as well as the history of configuration change.

\*Future Release



Zoom in to check the connection status



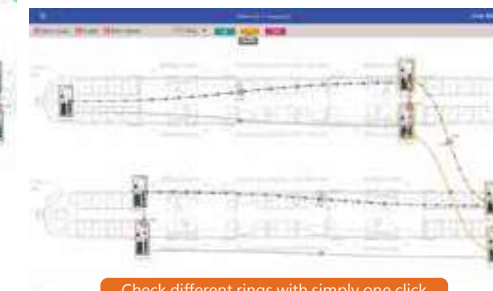
Background image and linked devices



Zoom out to see the full picture of topology



Real-time link status / notifications



Check different rings with simply one click



Different VLAN groups are shown in different colors

# Lantech™ InstaConfig

## Smart and graphical configuration tool



### Automatic Discover All Devices in the Network

Lantech InstaConfig can scan all compliant devices in LAN automatically or manually assigned by IP or MAC address. The ability to analyze topology not only display current topology in both text and graphical view, but also can suggest the best device in network to begin the setup.



### Mass Configuration within One Click

Lantech InstaConfig allows users do the common used configuration on multiple devices at the same time via Web UI, reducing the effort of large installation and deployment.



### Grouping Import / Export Configuration

To backup and deployment easily, the configuration is able to import and export to save the time and efforts. Also, firmware upgrade is can be done via Lantech InstaConfig.



### Lantech™ InstaView / InstaConfig Operating System

Apple OS X Lion 10.7 or later  
Microsoft Windows XP or later  
Linux Ubuntu 12.04 or later



# Enhanced ITU G.8032 Ring

Innovative and Intuitive redundancy for next generation IP networks

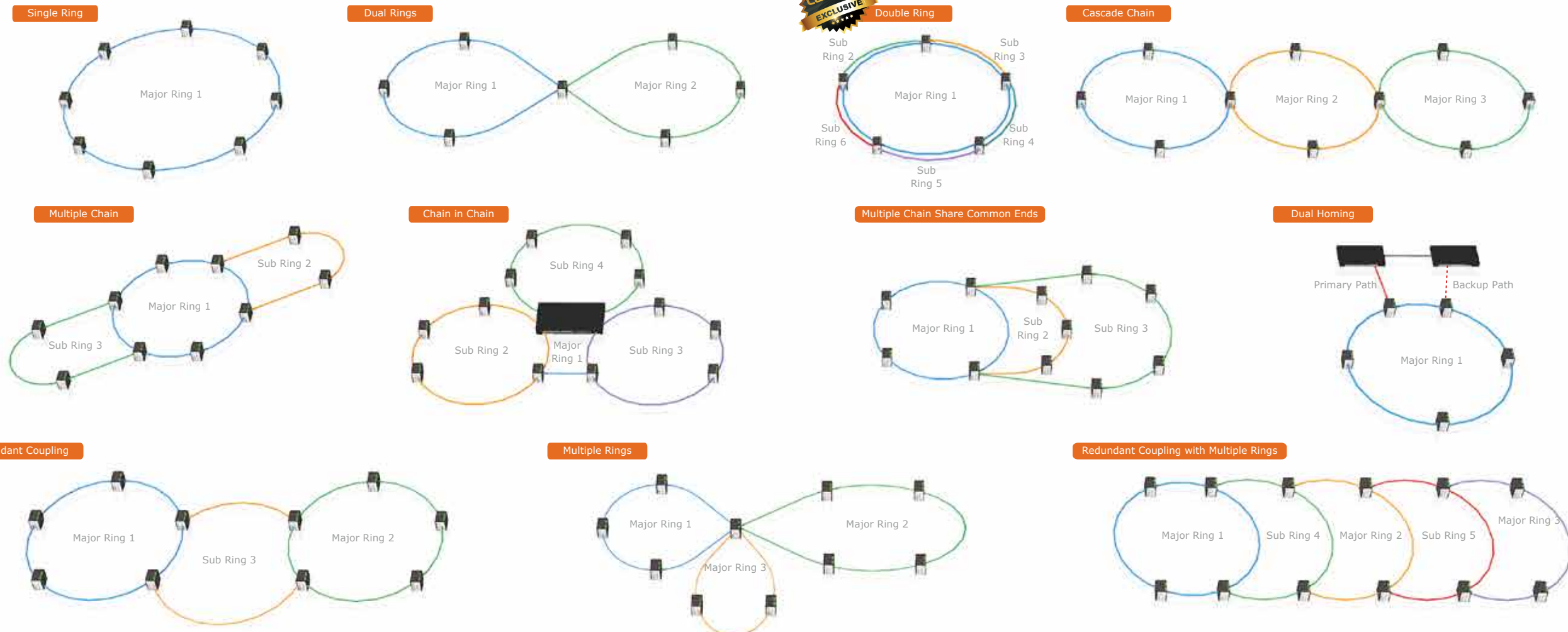
Established by ITU (International Telecommunication Unit), the G.8032 protocol is compatible with Ethernet standard and has been supported by many major Ethernet system providers. With our long background in IP Ethernet industry, Lantech is proud to present our enhanced ITU G.8032 ring which is still powerful and flexible, but more intuitive.

✓ **Exclusive "Double Ring" topology**

✓ **Multicast integration**

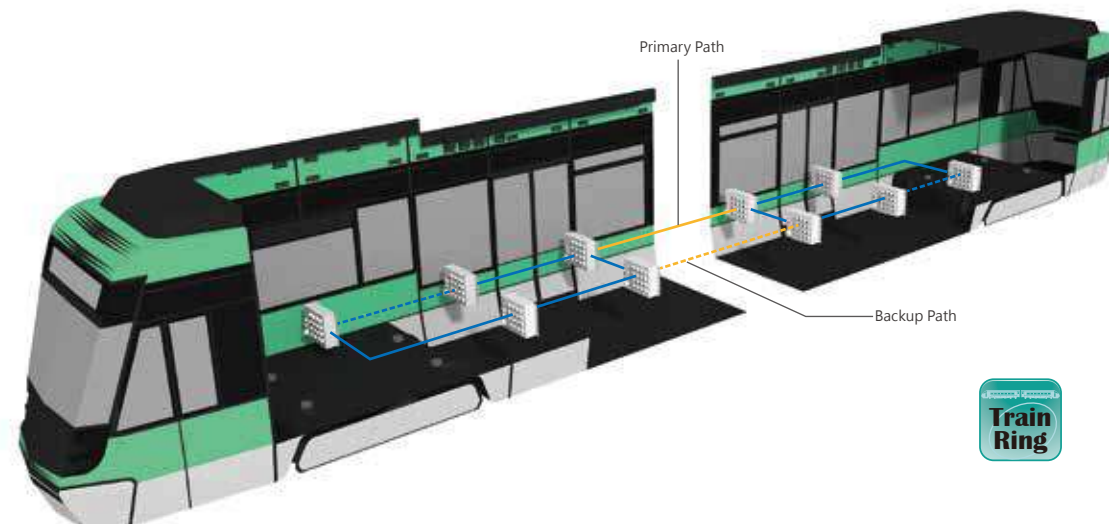
✓ **Guaranteed recovery time of less than 20ms**

✓ **Auto configuration with graphical web UI**



## Multiple Train-Ring

Switch cars, no reconfiguration needed.



### "Dynamic ring coupling"

During current train operation, train cars might need to be separated and reoriented due to more flexible operating requirement. When train cars are switched, re-configure network settings is normally required. Thus, railway operators need to have enough knowledge of Ethernet. This not only increases the cost of labor but also result in additional time. Lantech provides a new solution called "Train Ring", which can automatically recover the network within 50ms without reconfigure the settings!

Lantech Train Ring is evolved from traditional Coupling Ring. It eliminates the setting process, and will automatically identify the primary and backup path dynamically, without any configuration required. Lantech Train Ring allows train operators to rapidly change composition of trains with high efficiency and flexibility. Since all settings are done automatically, configuration errors and cost can be minimized.



# DLR = Device Level Ring

Link and protect connections between switches and PLCs

Lantech has been dedicated to developing fast and reliable industrial networking solution for a long period. Not only finding the new possibilities to our hardware products, but also the software features. Lantech's 2 series models come with Pro-Ring2se self-recovery scheme for simple industrial network. Now, we are proud to announce that Lantech 2 series models are ready to support the Device Level Ring (DLR).



## Modbus TCP

The most widely used network communication protocol for automation

Modbus is a communication protocol developed by MODICON Inc. in 1979. It's a standard, truly open and the most widely used network communication protocol in industrial automation field. SCADA and HMI utility can easily integrate control equipment together via Modbus protocol. Modbus/TCP protocol is the extension design of Modbus protocol. It was developed in 1999 to allow SCADA and HMI to access the control equipment via Ethernet network.

Supported models:



## EtherNet/IP

Link and protect connections between switches and PLCs

EtherNet/IP is an industrial Ethernet network that combines standard Ethernet technologies with the media-independent Common Industrial Protocol or "CIP." The EtherNet/IP and CIP technologies are managed by ODVA organization. EtherNet/IP uses both of the most widely deployed collections of Ethernet standards –the Internet Protocol suite and IEEE 802 project, so it was easy to implement under standard TCP/IP environment.

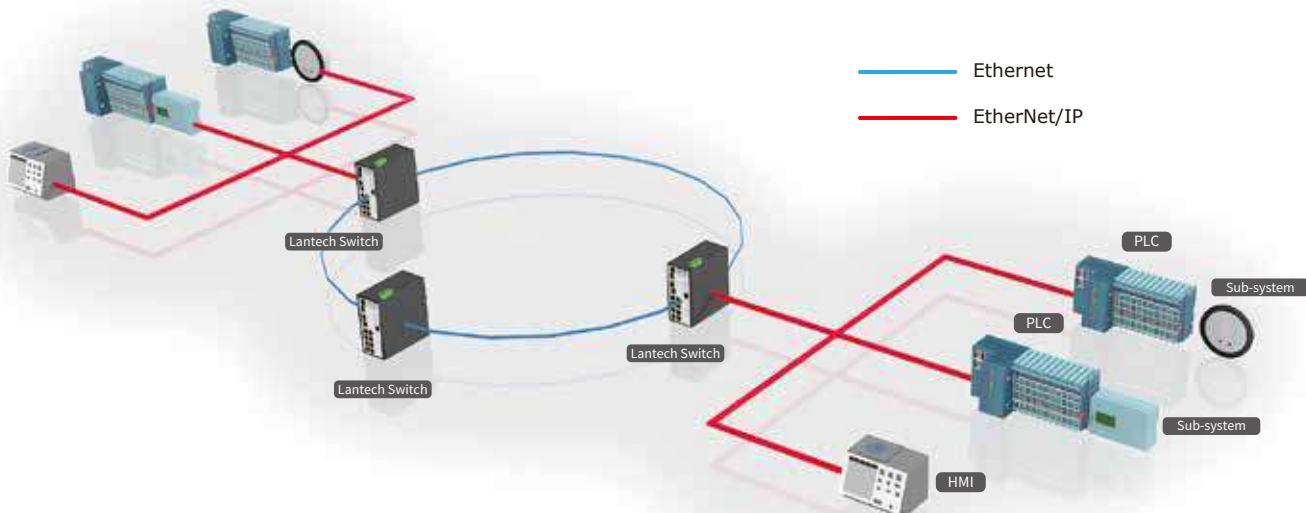
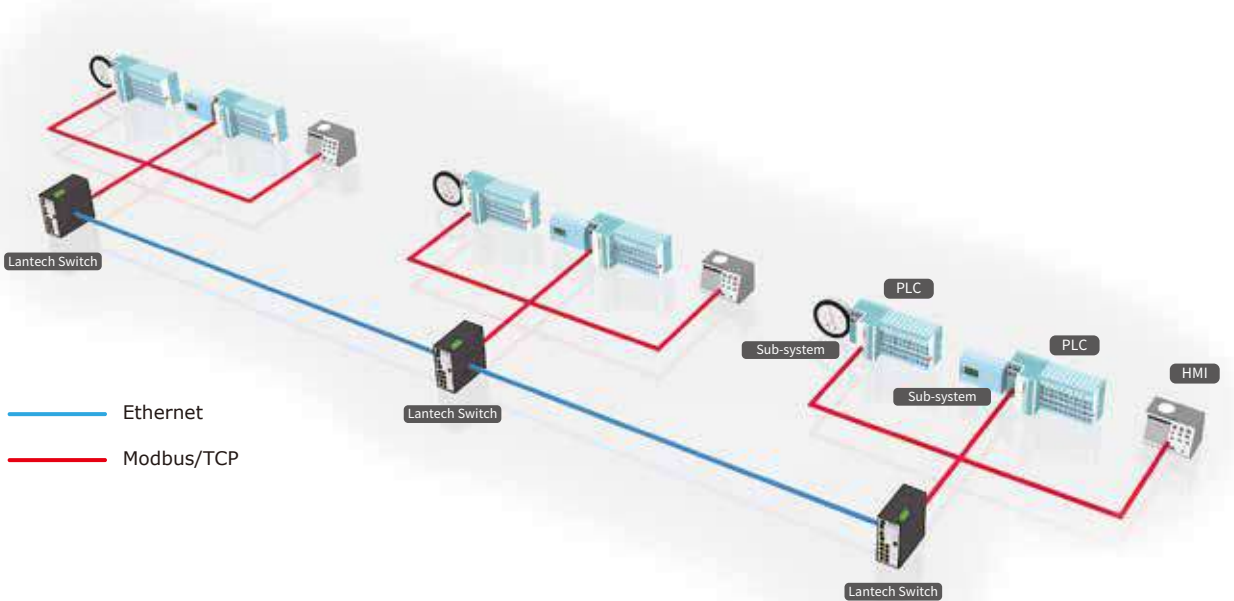
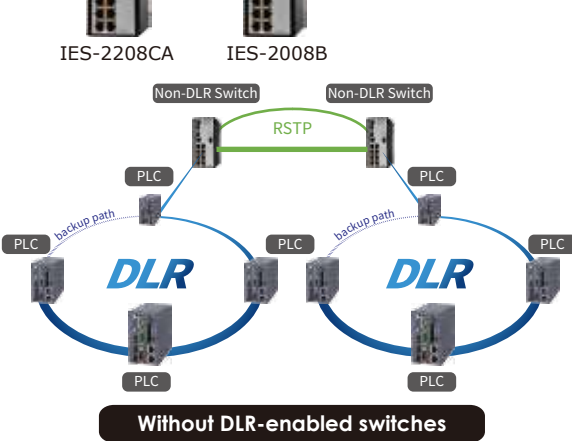
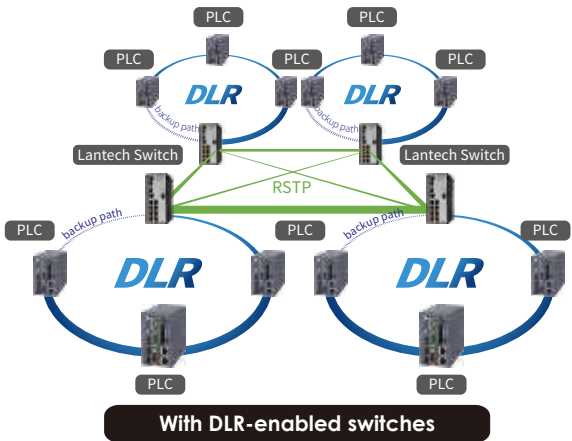
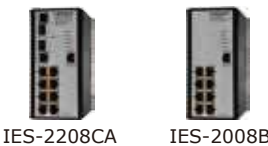
Supported models:



Required PLCs:

- Support DLR protocol under ODVA
- Have two or more Ethernet ports

Supported models:





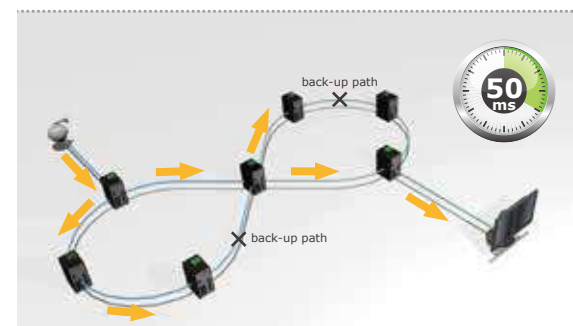
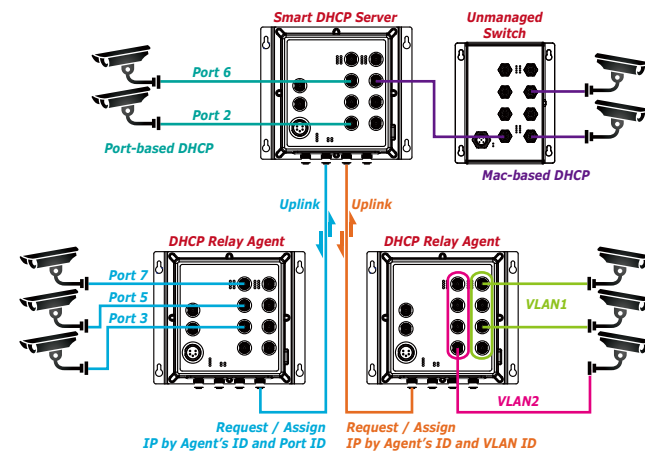
# 3000~7000 Series Feature Highlights

The most powerful and intuitive features.

Based on our long background in industrial IP network industry, Lantech developed our 3000~7000 series with several new features, making installation, maintenance, and monitoring much easier than other industrial switches on the market. We do care what our customers care, and dedicate to bring the best product to you.

## Smart DHCP & Mac-based DHCP

Lantech switch is able to support port-based DHCP and DHCP option 82 at the same time. It's also powerful enough as a DHCP option 82 server. By supporting DHCP option 82 and port-based DHCP server simultaneously, not only the clients can get the fixed IP address assigned by the port number or VLAN ID where the client is connected, but the relay agents get the fixed IP address according to the port number it attached. The support of Mac-based DHCP also raises the flexibility for different requirements.



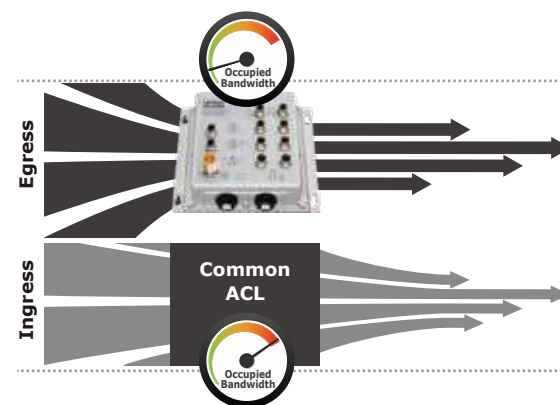
## Exclusive IGMP 50ms Recovery

Lantech switch is able to transmit video packets with dual-channel in which leads the short cut to query. When the interruption occurs, the IGMP network can be recovered within 50ms.



## Advanced QoS by VLAN

With advanced QoS, Lantech switch can tag QoS by VLAN then send QoS packets at set priority even when your devices do not support QoS.



## Enhanced ACL Control

Most ACL only filter packets at ingress. Since the packets will pass through the switch thus increases the loading of switch. With enhanced ACL, Lantech switch can filter packets at egress, which means the multicast packets are controlled more efficiently with less bandwidth occupied.

## CDP and LLDP

Lantech 3000~7000 series support Cisco Discovery Protocol (CDP) that can be recognized by CiscoWorks NMS and also acknowledge Cisco switch on Web UI. The LLDP can discover Lantech switches and display them on the topology view at a glimpse.



## Environmental Monitoring\*\*

The optional environmental monitoring function(-M model) can view the switch system's ambient temperature, input voltage, input current along with CPU and memory buffer utilization status in real time. User can also set an alerting message if the status is over the limit by email, traps and SMS text.



## Built-in RTC and User Friendly Event-Action Setup

Lantech 3000~7000 series build in RTC real time clock so that user can synchronize the time with PC first time and the switch will keep track of time itself as to record the current time whenever the event is happening. The intuitive setting for event and action has never been easier.

## DDM Threshold Monitoring with dB Values\*\*\*

The 3000~7000 series supports DMI interface that can correspond with DDM SFPs (Digital diagnostic monitor) to display the five parameters including optical output power, input power, temperature, laser bias current and transceiver supply voltage. Lantech converts TX power/RX power raw data to dB values for installer to easily calculate the fiber distance.



## Miss-wiring Avoidance

On the installation site, the miss-wiring event could cause the pre-set ring configuration failed or looped, Lantech 3000~7000 series switches help installer and IT engineer to be aware of it by lit the fault LED and sending the alerting messages by email, traps or SMS text.



## Loop Protection

In a closed loop connection, it could accidentally generate broadcast storm if a dumb switch is inserted, Lantech 3000~7000 series is able to disconnect the port automatically when switch is detecting abnormal enormous packets flooding in the network.



## Advanced Security Management

Lantech 3000~7000 series offer advanced security function including SSH/SSL, ACL, TACAS+\*, 802.1X, IP security, Access priority to have the thorough protection of network.



## Repowered Auto Ring Restore (Node Failure Protection)

When power breakout, the ring protection will naturally be broken, but we all want the minimum damage when power is back. In such scenario, Lantech 3000~7000 series are able to bring the ring back without any re-configuration also the returned live information to be shown on NMS one by one.

\*Future release \*\*Optional \*\*\*Optional DDM SFP required



# Management Levels : Switches

Satisfy all your needs with complete product lines.

Lantech industrial managed switches provides different management levels to satisfy all needs, from basic L2 management, to the most powerful L3 management models. You can select the most suitable series according to applications.



7000 series

L3 Management

6000 series

L2+ Management

5000 series

3000 series

2000 series

- ITU G.8032 Multiple Ring protection
- PTP IEEE 1588 V2 hardware base
- IGMP V3, Auto querier assigning
- Static Multicast forwarding
- Topology View
- Environmental Monitoring (3000 series is optional function)
- Smart Event log Trigger
- CDP, IPV6 ready
- Access Control List, SSH, SSL
- PoE model supports af/at up to 30W/Port
- Train ring for dynamic coupling ring
- Aggregation ring for ring redundancy and bandwidth combination (Future release)
- Mac based DHCP server - Mac based DHCP server function assigns an IP address according to its MAC address to include dumb switches in DHCP network.
- DHCP server & DHCP Option82 for Port & VLAN based DHCP distribution
- QoS by VLAN - QoS by VLAN can allow switch to tag QoS by VLAN regardless the devices acknowledge QoS or not in which greatly enhance the bandwidth management in a network.
- Modbus TCP/Ethernet IP protocol (Future release)

L2 Management

- IGMP V1, 2
- Static Multicast forwarding
- Pro-Ring II se < 20ms
- MSTP
- DLR Ring (IES-2008B, IES-2208CA)
- PoE model supports af/at up to 30W/Port
- Mod Bus TCP/ Ethernet IP protocol (Specific models)

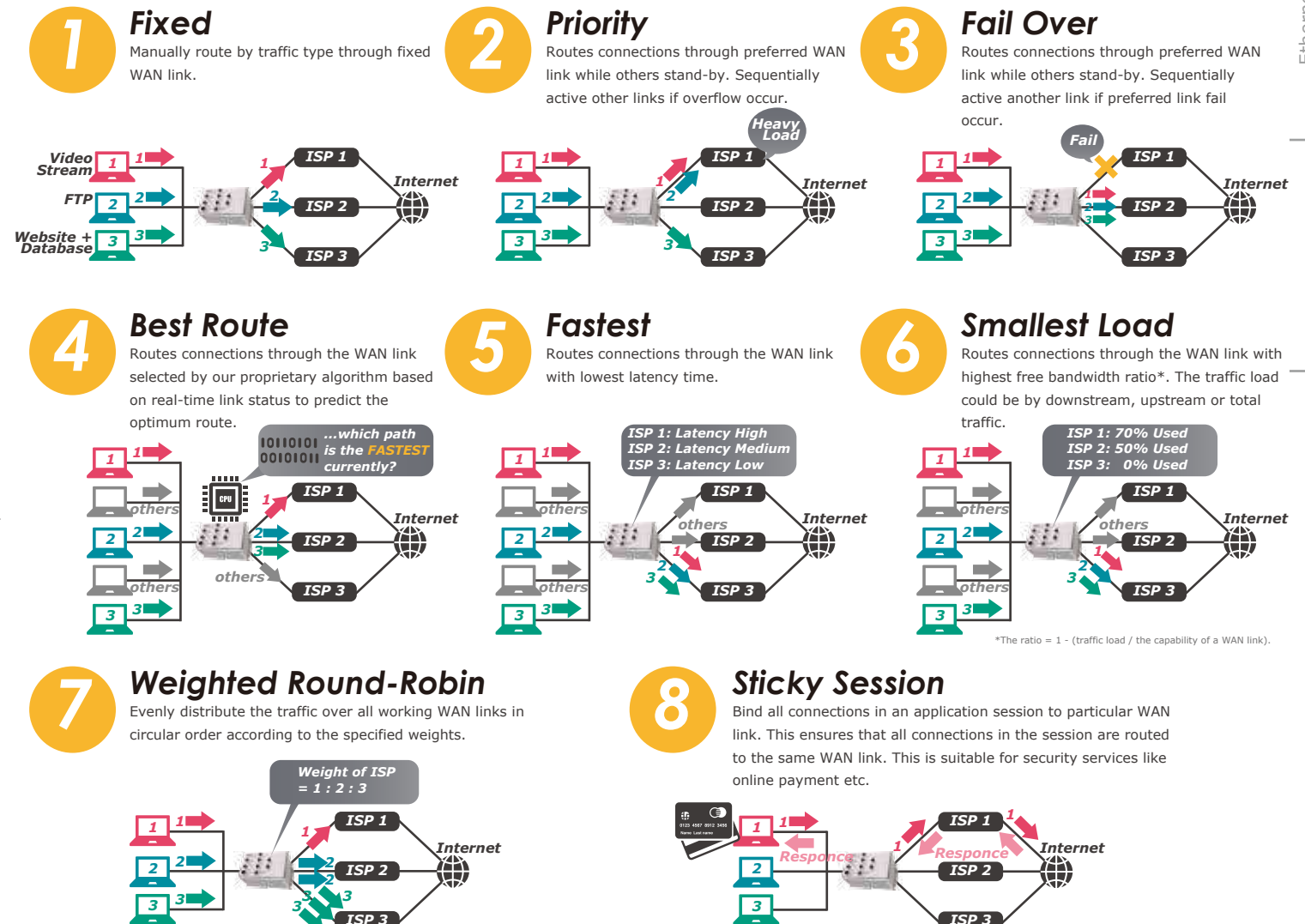
# Industrial Wireless Product Portfolio

Complete line-up for communications.

	Industrial WiFi Mobile Routers			Industrial Mobile Routers			Industrial WiFi Access Points		
	5000 Series	3000 Series	2000 Series	5000 Series	3000 Series	2000 Series	5000 Series	3000 Series	2000 Series
IP67 rated	●	-	-	●	-	-	●	-	-
IP65 rated	●	-	-	●	-	-	●	-	-
IP54 rated	●	-	-	●	-	-	●	-	-
IP30 rated	-	●	●	-	●	●	-	●	●
Aluminum case	●	-	-	●	-	-	●	-	-
Serial ports	4 (IP67) 2 (IP65/54)	4 or 2	2	4 (IP67) 2 (IP65/54)	4 or 2	2	-	-	-
SIM slots	Up to 4	Up to 4	1	Up to 4	Up to 4	1	-	-	-
M12 connectors	●	-	-	●	-	-	●	-	-
N-type antennas	6 (IP67)	-	-	2 (IP67)	-	-	6 (IP67)	-	-
SMA antennas	6 (IP65/54)	6	6	4 (IP65/54)	2	2	6 (IP65/54)	6	6
802.11a/b/g/n/ac WiFi	●	●	●	●	●	●	●	●	●
Power inputs	16.8~137.5VDC	9.5~60VDC	19V~60VDC	16.8~137.5VDC	9.5~60VDC	19V~60VDC	16.8~137.5VDC	9.5~60VDC	19V~60VDC
Galvanic isolation 1.5KV	●	●	●	●	●	●	●	●	●
LTE/WiFi redundancy	●	●	-	●	●	-	●	●	-
Modbus gateway	●	●	-	●	●	-	●	●	-
WiFi WMM	●	●	-	●	●	-	●	●	-
Load balance	●	●	-	●	●	-	●	●	-
L2TP3	●	●	-	●	●	-	●	●	-
N-Key or USB backup	●	●	-	●	●	-	●	●	-
DHCP server and client	●	●	-	●	●	-	●	●	-
Rate limiting	●	●	-	●	●	-	●	●	-
InstaView / InstaConfig	●	●	-	●	●	-	●	●	-

# Load Balance with 8 Mechanisms

Optimize traffic distribution for all of your special requirements.





# Industrial Wireless Mobile Routers

Load Balance, Dual Concurrent LTE, and 802.11ac WiFi.

Lantech wireless products aim to provide no-boundary network access, with the most rugged design, full Giga ports and the latest 802.11ac Wi-Fi transmission. Integrated with Lantech switches, we are able to deliver a total networking solution for industrial applications.



## Dual Concurrent LTE Design 4G/3G\*\* for Resilience & GPS\*\*

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



## Load Balance with 8 Mechanisms for Dual LTE

It supports load balance for dual LTE connections. There are eight schemes for load balance function: Fixed, Priority, Fail over, Best route, Fastest, Smallest load, Weight round-robin, and Sticky session.



## 2/4-port Serial Connection, DIDO for Alarm & E-mail Notice

It builds in 2-port or 4-port serial connection for RS232, RS422, 485 in which RS422/485 has 2.5KV isolation protection. 2 sets of DIDO function can support additional high/low physical contact for designate applications besides Port / Power events. In case of events, the mobile router will immediately send email and trap.



## VPN and Stateful Firewall

The VPN function allows remote users to access private network under high encryption without much influence. It supports IPSec and firewall SPI that can highly secure the network while remotely accessed.



## IEEE 802.11ac Dual Band Operation

With IEEE 802.11ac capability, the series can operate simultaneously over both the 5GHz and 2.4GHz bands, offering the maximum speed of 1750Mbps bandwidth for concurrent multiple tasks. With less interference 5GHz frequency, the backhaul streaming can be transmitted smoothly while 2.4GHz can handle internet browsing and email requirement where has the best Wi-Fi performance ever. It can offer at least minimum 20Mbps throughput between APs at 60km/ph speed.



## 802.11r Fast Roaming < 50ms\*

Lantech WiFi mobile routers support 802.11r standard (Fast Basic Service Set Transition) to allow encryption keys to be stored on all of the APs in a network. With this standard the fast roaming time between Lantech APs can reach less than 50ms.



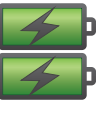
## MIMO Technology with 3T3R

Lantech WiFi mobile router series adapts MIMO technology with smart antenna transmission and reception for 3T3R. With optional six external detachable omni antennas, it can have better Wi-Fi coverage that eliminate poor Wi-Fi signal. The device can support up to 200 concurrent users that offer 100users per radio.



## Advanced Security, up to 16 SSIDs

The security support standards including 64/128bits WEP, WPA/ WPA2, WPA/WPA2 PSK (TKIP, AES), 802.1x ensures the best security and active defense against security treads. It also supports IPv6 pass through and SSH configuration. Lantech WiFi mobile routers support up to 16 SSIDs, each SSID has its independent security and encryption.



## IEEE802.3at PoE, 2X Output Power

All PoE models supports IEEE802.3at standard and is able to feed up to 30W at each PoE port, which is twice as previous 802.3af standard.



## Galvanic Isolation, WV Input

It provides galvanic isolation for WV model with dual wide range input (24~110V). With the isolated input 1.5KVA design, the mobile router can prevent surge, EFT, spike from damaging the main components.



## Optional N-Key Auto Backup, Exported Text File

The configuration file of Lantech mobile router can be exported in text file so that it can be edited and configured back to router with ease for mass deployment. The optional N-key RJ45 configurator offers firmware upgrade, auto backup/ editable configuration restore without computer by adjusting the DIP switch.



	I(P)WMR-5010AC-4S	I(P)WMR-5006AC-2S	IWMR-5002AC-2S	IWMR-3002AC-4S/2S	I(P)WMR-2005AC-2S
HARDWARE FEATURES					
Interface	10/100/1000T WAN	1	1	1	1
	10/100/1000T (X-coded M12)	9	5	1	-
	10/100/1000T (RJ45)	-	-	-	1 (PoE PD)
	802.3at/af PoE Injector	8 (PoE model)	4 (PoE model)	-	-
	DI/DO	2/2	2/2	2/2	2/2
Console	M12	M12	M12	RJ45	RJ45
Standard / Protocol	Cellular Standards				
	LTE/HSDPA/HSUPA/HSPA+/GSM/GPRS/EGPRS/EDGE				
	IEEE 802.11ac/n/a 5GHz, Up to 1300Mbps IEEE 802.11b/g/n 2.4GHz, Up to 450Mbps				
	802.11a/g: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11ac: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)				
	SSID: 16 sets				
Protocol	PPPoE Client,DHCP server/client, DNZ proxy, Adjustable MTU, Port forwarding (NAPT) : virtual server, Port triggering, DMZ; NAT, SNTP, Firewall(DoS/SPI firewall; IP address filter/Mac address filter/Domain filter; IP Mac address binding, RIPv1/v2, DDNS				PPPoE Client,DHCP server/client, DNZ proxy, RIP v1/v2,, DDNS,, Adjustable MTU, Port forwarding (NAPT) :DMZ; NAT, SNTP, Firewall(DoS/SPI firewall; IP address filter/Mac address filter/Domain filter; IP Mac address binding
Advanced Protocol	DHCP relay, Static routing, Multicast routing, Traffic shaping (ingress/Egress), OSPF, VRRP, Modbus				OSPF*, VRRP*, DHCP relay, Static routing, Multicast routing*, Traffic shaping (ingress/Egress), Modbus
Hardware Spec.	Power Supply			Wide Voltage (WV): 9.5~137.5VDC	Isolated 9.5V~60V dual input
	Galvanic Isolation	1.5KV	1.5KV	1.5KV	1.5KV
	RS232/422/485	4 (DB-9)	2 (M12, X-coded)	2 (M12, X-coded)	4 or 2 (DB-9)
	Serial Port & DIDO Isolation	RS422/485 2.5KV isolation; 8KV contact & 15KV air RS232 8KV contact and 15KV air ESD DIDO 3KV isolation			
	Serial Baud Rate	1000kps for RS232 ; 12Mbps for RS422/485			
LTE & SIM no	2 LTE/4 SIM	2 LTE/4 SIM	2 LTE/4 SIM	2L: 2 LTE / 4 SIM 1L: 1 LTE / 2 SIM	1 LTE/1 SIM
Antenna	6 x N-type	6 x SMA	6 x SMA	6 x SMA	6 x SMA
Mechanism	Standard Operating Temperature -20°C~60°C / -4°F~140°F		●	●	●
	Wide Operating Temperature -40°C~75°C / -40°F~167°F		●	●	●
	Case Protection	IP67 / IP65 / IP54	IP65 / IP54		IP30
	Case Dimension W x D x H (unit=mm)	285 x 201.4 x 77.6 (IP67) 250 x 165 x 62 (IP65/IP54)	178 x 99 x 97.5		74 x 105 x 152
	DIN Rail Installation	Optional	Optional	Optional	●
Wall Mount Installation	●	●	●	Optional	Optional

\*Future release \*\*Optional



# Industrial Mobile Routers

## Dual Concurrent LTE + Load Balance.

Lantech delivers the next generation VPN router that supports dual LTE mobility + up to 4 serial ports (RS232,RS422,RS485) as well as up to 10 Giga ports. Harnessed with up to 1.6Ghz processor, 256Mbyte flash and 1Gbyte memory RAM, the series can boost your network performance and handle complicate applications.



### Dual Concurrent LTE Design 4G/3G\*\* for Resilience & GPS\*\*

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



### Load Balance with 8 Mechanisms for Dual LTE

It supports load balance for dual LTE connections. There are eight schemes for load balance function: Fixed, Priority, Fail over, Best route, Fastest, Smallest load, Weight round-robin, and Sticky session.



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It builds in 2-port or 4-port serial connection for RS232, RS422, 485 in which RS422/485 has 2.5KV isolation protection. 2 sets of DIDO function can support additional high/low physical contact for designate applications besides Port / Power events. In case of events, the mobile router will immediately send email and trap.



### IEEE802.3at PoE, 2X Output Power

All PoE models supports IEEE802.3at standard and is able to feed up to 30W at each PoE port, which is twice as previous 802.3af standard.



### Galvanic Isolation, WV Input

It provides galvanic isolation for WV model with dual wide range input (24~110V). With the isolated input 1.5KVA design, the mobile router can prevent surge , EFT, spike from damaging the main components.



### Optional N-Key Auto Backup, Exported Text File

The configuration file of Lantech mobile router can be exported in text file so that it can be edited and configured back to router with ease for mass deployment. The optional N-key RJ45 configurator offers firmware upgrade, auto backup/ editable configuration restore without computer by adjusting the DIP switch.



	I(P)MMR-5010-4S	I(P)MR-5010-4S	I(P)MR-5006-2S	IMR-5002-2S	IMR-3002-4S	I(P)MR-2005-2S
<b>HARDWARE FEATURES</b>						
Interface	10/100/1000T WAN	-	-	-	-	-
	10/100/1000T (X-coded M12)	10	10	6	2	-
	10/100/1000T (RJ45)	-	-	-	-	2 (1 PoE PD)
	802.3at/af PoE Injector	8 (PoE model)	8 (PoE model)	4 (PoE model)	-	4 (PoE model)
	DI/DO	2/2	2/2	2/2	2/2	2/2
Standard / Protocol	Console	M12	M12	M12	RJ45	RJ45
	Cellular Standards	LTE/HSDPA/HSUPA/HSPA+/GSM/GPRS/EGPRS/EDGE				
	Protocol	PPPoE Client,DHCP server/client, DNZ proxy, Adjustable MTU, Port forwarding (NAPT) : virtual server, Port triggering, DMZ; NAT, SNTP, Firewall(DoS/SPI firewall); IP address filter/Mac address filter/Domain filter; IP Mac address binding, RIPv1/v2, DDNS				PPPoE Client,DHCP server/client, DNZ proxy, RIP v1/v2,, DDNS, Adjustable MTU, Port forwarding (NAPT) :DMZ; NAT, SNTP, Firewall(DoS/SPI firewall); IP address filter/Mac address filter/Domain filter; IP Mac address binding
Hardware Spec.	Advanced Protocol	DHCP relay, Static routing, Multicast routing, Traffic shaping (ingress/Egress), OSPF, VRRP, Modbus				OSPF*, VRRP*, DHCP relay, Static routing, Multicast routing*, Traffic shaping (ingress/Egress), Modbus
	Power Supply	Wide Voltage (WV): 9.5~137.5VDC			Isolated 9.5V~60V dual input	Isolated 19V~60V dual input
	Galvanic Isolation	1.5KV	1.5KV	1.5KV	1.5KV	1.5KV
	RS232/422/485	4 (DB-9)	4 (DB-9)	2 (M12, X-coded)	2 (M12, X-coded)	4 or 2 (DB-9)
	Serial Port & DIDO Isolation	RS422/485 2.5KV isolation; 8KV contact & 15KV air RS232 8KV contact and 15KV air ESD DIDO 3KV isolation				
Mechanism	Serial Baud Rate	1000kps for RS232 ; 12Mbps for RS422/485				
	LTE & SIM no	2 LTE/4 SIM	2 LTE/4 SIM	2 LTE/4 SIM	2LTE/ 2 / 4 SIM 1L: 1 LTE / 2 SIM	1 LTE/1 SIM
	3/4G Antenna	2 x N-type	2 x N-type	4 x SMA	4 x SMA	2 x SMA
	Standard Operating Temperature -20°C~60°C / -4°F~140°F	●	●	●	●	●
	Wide Operating Temperature -40°C~75°C / -40°F~167°F	●	●	●	●	●
Accessories	Case Protection	IP67 / IP65 / IP54		IP65 / IP54		IP30
	Case Dimension W x D x H (unit=mm)	285 x 201.4 x 77.6 (IP67) 250 x 165 x 62 (IP65/IP54)		178 x 99 x 97.5		74 x 105 x 152
	DIN Rail Installation	Optional	Optional	Optional	Optional	●
	Wall Mount Installation	●	●	●	●	Optional

\*Future release \*\*Optional



# Industrial Wireless Access Points

High performance with "Load Balance" & Wireless Redundancy

Lantech industrial wireless AP series is for next generation hardened wireless solution, confirming to 802.11ac/a/b/g/n with up to 10-port Giga switch. The support of AP/WDS/AP client modes can be diverse for most of wireless application. Client mode supports PMK Caching and pre-authentication.



IEEE 802.11ac Dual Band Operation  
+ Wireless Redundancy



2/4-port Serial Connection, DIDO  
for Alarm & E-mail Notice



Load Balance with 8 Mechanisms



IEEE802.3at PoE, 2X Output Power



MIMO Technology with 3T3R



Advanced Security, up to 16 SSIDs



802.11r Fast Roaming< 50ms\*



Galvanic Isolation, WV Input




	I(P)WAP-5010AC	I(P)WAP-5006AC	IWAP-5002AC	IWAP-3002AC	I(P)WAP-2005AC
HARDWARE FEATURES					
Interface	10/100/1000T WAN	1	1	1	1
	10/100/1000T (X-coded M12)	9	5	1	-
	10/100/1000T (RJ45)	-	-	1 (PoE PD)	4
	802.3at/af PoE Injector	8 (PoE model)	4 (PoE model)	-	4 (PoE model)
	DI/DO	2/2	2/2	2/2	2/2
Wireless / Operation Modes	Console	M12	M12	RJ45	RJ45
	IEEE 802.11ac/n/a 5GHz, Up to 1300Mbps IEEE 802.11b/g/n 2.4GHz, Up to 450Mbps				
	802.11a/g: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11ac: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)				
	SSID: 16 sets				
	AP mode	●	●	●	●
Hardware Spec.	WDS mode	●	●	●	●
	AP client mode	●	●	●	●
	Power Supply	Wide Voltage (WV): 9.5~137.5VDC		Isolated 9.5V~60V dual input	Isolated 19V~60V dual input
	Galvanic Isolation	1.5KV	1.5KV	1.5KV	1.5KV
	DIDO Isolation	3KV Isolation			
Mechanism	Antenna	6 x N-type	6 x SMA	6 x SMA	6 x SMA
	Standard Operating Temperature	●	●	●	●
	Wide Operating Temperature	●	●	●	●
	Case Protection	IP67 / IP65 / IP54		IP30	
	Case Dimension W x D x H (unit=mm)	285 x 201.4 x 77.6 (IP67) 250 x 165 x 62 (IP65/IP54)	178 x 99 x 97.5		74 x 105 x 152
	DIN Rail Installation	Optional	Optional	●	●
	Wall Mount Installation	●	●	Optional	Optional


# Industrial Wireless Controller

Compact, powerful, and rugged.


Lantech industrial wireless controller is a next generation hardened wireless controller that can manage 802.11ac/a/b/g/n APs with GigaLAN switch. The device offers advanced features like centralized user & AP management, authentication server, DHCP server, roaming management, redundancy and load balance with easy configuration as well as captive web portal for security authentication.




Centralized AP Management  
up to 1500 APs




Controller and AP Redundancy  
& Load Balancing




Authentication Server  
& DHCP Server




Captive Web Portal  
to Upload Page



Roaming Management for  
L2 / L3 and L2 / L3\* Tunneling



Built-in Two Gigabit Ports  
for LAN Connection



IP65/IP54 Case  
for Outdoor Installation



	I(P)WC-5006
HARDWARE FEATURES	
Interface	10/100/1000T WAN
	10/100/1000T (X-coded M12)
	10/100/1000T (RJ45)
	802.3at/af PoE Injector
	DI/DO
Hardware Spec.	Console
	Power Supply
	Galvanic Isolation
	DIDO Isolation
	Standard Operating Temperature
Mechanism	Wide Operating Temperature
	Case Protection
	Case Dimension W x D x H (unit=mm)
	DIN Rail Installation
	Wall Mount Installation



\*Future release \*\*Optional



# Industrial Layer 3 Switches

Higher capacity. Better performance.

Lantech optimized the hardware of Layer 3 switches, making the data transmission speed as fast as our L2+ switches, but Layer 3 switches are able to make switching decisions like routers. Compared to software-based routers, Lantech Layer 3 switches are faster and cost effective because the switching hardware is built-in.

## OSPF, RIP v1/v2, Static & Dynamic Routing

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

## ITU G.8032 Ring

The series supports G.8032 Ethernet Ring Protection Switching, with the ability for the network to detect and recover from incidents without impacting users, meeting the most demanding quality and availability requirements. Rapid recovery time when problems do occur is as low as 50 msec. It also supports RSTP/STP and MSTP over VLAN providing L2 load sharing on redundant links for up to 32 instances.

## Comprehensive QoS

The series offers advanced QoS for marking, classification, and scheduling to deliver best-in-class performance for data, voice, and video traffic at wire speed.

- Priority Queues: 8 hardware queues per port
- Traffic classification
- IEEE 802.1p CoS
  - DSCP
- Traffic Scheduling
- Strict Priority
  - Weighted Round Robin
  - Strict + WRR traffic scheduling
- Port-based default priority
- Diffserv

## L3 VRRP Redundancy Less Than 500ms

The series supports VRRP(Virtual Router Redundancy Protocol), where use a virtual IP address to support a primary router and multiple backup router. The primary goal of VRRP is to allow a host device which has been configured with a fixed gateway to maintain network connectivity in case the primary gateway goes down.

## Enhanced Security

- Port security
- IEEE 802.1X port-based and MAC-based authentication
  - IEEE 802.1X EAPOL frames pass-through
  - IEEE 802.1X supplicant support
  - Dynamic VLAN assignment
  - Dynamic QoS assignment
  - MAC authentication, Web authentication
  - Access Control List
    - L2/L3/L4
      - L2 ACL filter SA/DA/VLAN
      - L3 IP SA/DA, subnet based
      - L4 TCP/UDP port
      - IPv6
    - Time-based (time range)
- DHCP Snooping
- DHCP Snooping Option 82
  - IP Source Guard
  - Dynamic ARP Inspection
  - Instruction lock (link detection)
  - PPPoE Intermediate Agent
  - RADIUS authentication and accounting
  - TACACS + authentication, authorization, and accounting
  - Management Security
    - HTTPS and SSL (secured Web)
    - Denial of Service (DoS) protection
    - SSH 1.5/V2.0 (secured telnet session)
    - Management interface access filtering (SNMP, Web, Telnet)

### IP67/IP54 rated



### IP30 rated



	I(P)GS-7016-X-B-TBN	I(P)GS-7012-X-B-TBN	I(P)GS-7008-X-B-TBN	I(P)ES-7416-X-B-TBN	I(P)ES-7216DF-X-B-TBN	I(P)ES-7408-X-B-TBN	I(P)ES-7208DF-X-B-TBN	I(P)ES-7408S-X-B-TBN	I(P)GS-7300-2P	I(P)GS-7424	I(P)GS-7416DSFP	I(P)ES-7416DSFP
HARDWARE FEATURES												
Interface	10/100TX (M12)	-	-	16	16	8	8	8	-	-	-	16 (RJ45)
	10/100/1000T (M12)	16 (X-coded)	12 (X-coded)	4 (X-coded)	-	4 (X-coded)	-	4 (X-coded)	Max 24 (RJ45)	24 (RJ45)	16 (RJ45)	-
	100M Fiber	-	-	-	-	-	-	-	Max 18	-	-	-
	100/1000 Dual Speed Fiber	-	-	-	-	LC x2 / QODC x2	-	LC x2 / QODC x2	Max 24 (SFP)	4 (SFP)	4 (SFP)	4 (SFP)
	802.3at/af PoE Injector	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	Max 24 (PoE model)	24 (PoE model)	8 (PoE model)	8 (PoE model)
	Console	M12	M12	M12	M12	M12	M12	M12	Female DB-9	Female DB-9	RJ45	RJ45
Power Input	DI/DO	4/3	4/3	2/2	2/2	2/2	2/2	2/2	2/2	2/2	1/1	1/1
	Relay Contact	●	●	●	●	●	●	●	●	●	●	●
	Bypass	2-pair/1-pair	2-pair/1-pair	2-pair/1-pair	2-pair/1-pair	1-pair	2-pair/1-pair	1-pair	2-pair/1-pair	-	-	-
	Power Supply - M23	IPGS-7016-X-B-TBN	IPGS-7012-X-B-TBN	IPGS-7008-X-B-TBN	IPES-7416-X-B-TBN	IPES-7216DF-X-B-TBN	IPES-7408-X-B-TBN	IPES-7208DF-X-B-TBN	-	-	-	-
	Power Supply - M12	IGS-7016-X-B-TBN	IGS-7012-X-B-TBN	IGS-7008-X-B-TBN	IES-7416-X-B-TBN	IES-7216DF-X-B-TBN	IES-7408-X-B-TBN	IES-7208DF-X-B-TBN	●	-	-	-
	12V/24V (9.5~60VDC)	●	●	●	●	●	●	●	●	●	●	●
Mechanism	48V (45~56VDC)	-	-	-	-	-	-	-	● (PoE model)	● (PoE model)	● (PoE model)	● (PoE model)
	WV (9.5~137.5VDC)	●	●	●	●	●	●	●	-	-	-	-
	HV (85~265VAC/100~300VDC)	-	-	-	-	-	-	-	●	-	-	-
	AC (85~265VAC IEC320)	-	-	-	-	-	-	-	●	-	-	-
	LDC (36~75VDC)	-	-	-	-	-	-	-	●	-	-	-
	Standard Operating Temperature -20°C~60°C / -4°F~140°F	●	●	●	●	●	●	●	●	●	●	●
Certification	Wide Operating Temperature -40°C~75°C / -40°F~167°F	●	●	●	●	●	●	●	-	-	●	●
	Case Protection	IP67/IP54	IP67/IP54	IP67/IP54	IP67/IP54	IP67/IP54	IP67/IP54	IP65/IP54	IP30	IP30	IP30	IP30
	Case Dimension W x H x D (unit=mm)	IP67 285 x 186 x 77.6 IP54 250 x 165 x 62	285 x 186 x 77.6 250 x 165 x 62	215 x 186 x 77.6 180 x 165 x 62	285 x 201.4 x 77.6 250 x 180 x 62	285 x 200 x 77.6 250 x 178 x 62	215 x 201.4 x 77.6 180 x 179.5 x 82	215 x 200 x 77.6 180 x 178 x 82	178 x 99 x 97.5	440 x 248 x 44	440 x 248 x 44	96 x 134 x 152 96 x 105 x 152
	DIN Rail Installation	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	19-inch Rack Mount	19-inch Rack Mount	● Optional
	Wall Mount Installation	●	●	●	●	●	●	●	●	●	●	●
	CE/FCC/RoHS/WEEE	●	●	●	●	●	●	●	●	●	●	●
SOFTWARE FEATURES	EN50155 & EN61373	●	●	●	●	●	●	●	●	●	●	●
	E-Mark (E4)	●	●	●	●	●	●	●	●	●	●	●
	EN45545-2 Fire & Smoke	●	●	●	●	●	●	●	●	●	●	●
Management Level												
		L3	L3	L3	L3	L3	L3	L3	L3	L3	L3	L3



# Industrial EN50155 Switches

Best for rolling stock applications. Reliable yet powerful.

Designed for railway and other rugged applications, Lantech EN50155 certified series provides rugged protection with up to IP67-rated housing with M12/M23 connection. Lantech delivers the most complete product line to satisfy all your needs – 5 to 24 ports, PoE/non-PoE, fiber/Giga T, and 12V/24V/72V/110V/WV power inputs.



### IP67-rated Rugged Aluminum Housing

To against dust and water in harsh environment, Lantech designed the series with up to IP67-rated housing with aluminum. Aluminum is high thermal conductivity, non-magnetic, light weight, and oxidation resistance that ensure our products deliver high performance with the best stability.



### Gigabit Uplink & Dual Speed Fiber

Lantech EN50155 switches provide Giga speed connectivity, including 10/100/1000T and dual speed fiber. No matter 100M or 1000M fiber is inserted, the dual speed fiber port is able to function well.



### EN50155 / E-mark / EN45545-2 Certified

These standards are defined to ensure the operation safety and environmental friendly for rolling stock applications.



### Dynamic Train Ring, G.8032 & Smart DHCP

It delivers ITU G.8032 enhanced ring recovery less than 20ms including train coupling ring, enhanced mode for easy configuration and aggregation ring\*\*, comprehensive QoS, QoS by VLAN, advanced security including ACL L2/L3, SSH/SSL, Mac based DHCP server, DHCP Option 82, DHCP server, IGMPv1/v2/v3/router port, QinQ\*\* (double tag VLAN) which are important features required in train and large network.



### Hardware One-step PTP < 1us

Full-Giga models feature hardware-based one step PTP IEEE1588 v2 function which can allow all Gigabit ports to synchronize the network with precise accuracy (under 1μs).



### Galvanic Isolation/ WV Input/ High PoE Budget

Full-Giga models provide galvanic isolation between DC input and case for WV (Wide Voltage) model. The WV model is designed with dual power input at 16.8-137.5VDC input with max. PoE budget 80W budget.

#### Full Giga Management



#### Fast Ethernet Management



		I(P)GS-5214DF-X	I(P)GS-5016T-X	I(P)GS-5210DF-X	I(P)GS-5012T-X	I(P)GS-5206DF-X	I(P)GS-5008T-X	I(P)ES-5222T	I(P)ES-5416DFT	I(P)ES-5416DF	I(P)ES-5416T-X	I(P)ES-5416T	I(P)ES-5216DF	I(P)ES-5408DFT-X
HARDWARE FEATURES														
Interface	10/100TX (M12)	-	-	-	-	-	-	22	16	16	16	16	16	8
	10/100/1000T (M12)	14 (X-coded)	16 (X-coded)	10 (X-coded)	12 (X-coded)	6 (X-coded)	8 (X-coded)	2	2	-	4 (X-coded)	4	-	2 (X-coded)
	100/1000 Dual Speed Fiber	LC x2 / QODC x2	-	LC x2 / QODC x2	-	LC x2 / QODC x2	-	-	LC x2	LC x4	-	-	LC x2	QODC x2
	802.3at/af PoE Injector	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 or 16 (PoE model)	8 (PoE model)	8 (PoE model)
	Console	M12	M12	M12	M12	M12	M12	M12	M12	M12	M12	M12	M12	M12
	DI/DO	4/3	4/3	4/3	4/3	4/3	4/3	1/1	1/1	1/1	1/1	1/1	1/1	1/1
	Relay Contact	●	●	●	●	●	●	●	●	●	●	●	●	●
Power Input	Bypass	2-pair/1-pair	2-pair/1-pair	2-pair/1-pair	2-pair/1-pair	2-pair/1-pair	2-pair/1-pair	1-pair	1-pair	2-pair/1-pair	2-pair/1-pair	2-pair/1-pair	1-pair	2-pair/1-pair
	Power Supply - M23	IPGS-5214DF-X	IPGS-5016T-X	IPGS-5210DF-X	IPGS-5012T-X	IPGS-5206DF-X	IPGS-5008T-X	IPES-5222T-8	IPES-5416DFT-8	IPES-5416DF-8	IPES-5416T-X-8	IPES-5416T	IPES-5216DF-8	IPES-5408DFT-X
	Power Supply - M12	IGS-5214DF-X	IGS-5016T-X	IGS-5210DF-X	IGS-5012T-X	IGS-5206DF-X	IGS-5008T-X	IES-5222T	IES-5416DFT	IES-5416DF	IES-5416T-X	IES-5416T	IES-5216DF	IES-5408DFT-X
	12V/24V (9.5~60VDC)	●	●	●	●	●	●	●	●	●	●	●	●	●
	48V (45~56VDC)	-	-	-	-	-	-	IPES-5222T-8	IPES-5416DFT-8	IPES-5416DF-8	IPES-5416T-X	IPES-5416T	IPES-5216DF-8	IPES-5408DFT-X
Mechanism	72V (50.4~90VDC)	-	-	-	-	-	-	●	●	●	●	●	●	●
	110V (77~137.5VDC)	-	-	-	-	-	-	●	●	●	●	●	●	●
	WV (9.5~137.5VDC)	●	●	●	●	●	●	-	-	-	-	-	-	-
	Wide Operating Temperature -40°C~75°C / -40°F~167°F	●	●	●	●	●	●	●	●	●	●	●	●	●
	Case Protection	IP67/IP54	IP67/IP54	IP67/IP54	IP67/IP54	IP67/IP54	IP67/IP54	IP67/IP54	IP67/IP54	IP67/IP54	IP67/IP54	IP67/IP54	IP67/IP54	IP67/IP54
Certification	Case Dimension W x H x D (unit=mm)	IP67 285 x 200 x 77.6 IP54 250 x 178 x 62	285 x 186 x 77.6 250 x 165 x 62	285 x 200 x 77.6 250 x 178 x 62	285 x 186 x 77.6 250 x 165 x 62	215 x 200 x 77.6 180 x 178 x 62	215 x 186 x 77.6 180 x 165 x 62	285 x 201.4 x 77.6 250 x 180 x 62	285 x 201.4 x 77.6 250 x 180 x 62	285 x 200 x 77.6 250 x 178 x 62	285 x 201.4 x 77.6 250 x 180 x 62	285 x 201.4 x 77.6 250 x 180 x 62	285 x 200 x 77.6 250 x 178 x 62	215 x 201.4 x 77.6 250 x 180 x 62
	DIN Rail Installation (Optional)	●	●	●	●	●	●	●	●	●	●	●	●	●
	Wall Mount Installation	●	●	●	●	●	●	●	●	●	●	●	●	●
	CE/FCC/RoHS/WEEE	●	●	●	●	●	●	●	●	●	●	●	●	●
SOFTWARE FEATURES	EN50155 & EN61373	●	●	●	●	●	●	●	●	●	●	●	●	●
	E-Mark (E4)	●	●	●	●	●	●	●	●	●	●	●	●	●
	EN45545-2 Fire & Smoke	●	●	●	●	●	●	●	●	●	●	●	●	●
Management Level														
		L2+	L2+	L2+	L2+	L2+	L2+	L2+	L2+	L2+	L2+	L2+	L2+	L2+

\*Operating temperature for 72V / 110V model: -40°C~60°C / -40°F~140°F



# Industrial EN50155 Switches



## IEEE802.3at PoE, 2X Output Power

All Lantech EN50155 PoE models supports IEEE802.3at standard and is able to feed up to 30W at each PoE port, which is twice as previous 802.3af standard.



## 4ms Bypass Protection

The bypass relay is set to bypass the switch to the next one in 4ms when power is off in order to protect the network from crashing at daisy chain topology. Lantech bypass caters to remain in bypass mode until the switch is completely booting up when power is back to avoid another network crash while booting up. The bypass is activated when CPU watchdog is ON to rescue the network from crash.



## Built-in Environmental Monitoring

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



## Complete Power Input Range

The series provides the most complete power input range in the market. Except the normal input spec, the 12V, 72V, 110V, and WV (=Wide Voltage) are also available to satisfy any industrial environment.



## Compact in Size

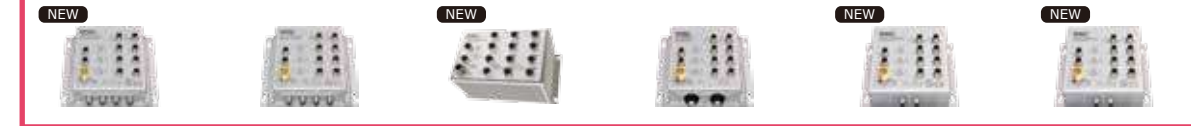
The new I(P)ES-0008B and I(P)ES-0005B are designed with compact housing which is best for limited space such as bus or other vehicles.

## Various M12 / M23 Cable Design

Moving vehicles may face vibration continuously that causes the disconnection of network cables. Lantech provides 90 and 180 degree M12 / M23 connectors that ensure cable installation with the highest flexibility.



## Fast Ethernet Management



## Fast Ethernet Unmanagement



	I(P)ES-5408T-X	I(P)ES-5408T	I(P)ES-5408S-X	I(P)ES-5208DF	I(P)ES-5208T-X	I(P)ES-5208T	I(P)ES-0208T	I(P)ES-0208GF	I(P)ES-0208F	IPES-0008A-12V	IES-0008A	I(P)ES-0008B	IPES-0005A-12V	I(P)ES-0005B
HARDWARE FEATURES														
Interface	10/100TX (M12)	8	8	8	8	8	8	8	8	8	8	8	5	5
	10/100/1000T (M12)	4 (X-coded)	4	4 (X-coded)	-	2 (X-coded)	2	-	-	-	-	-	-	-
	1000M Fiber (LC)	-	-	-	-	-	-	2	-	-	-	-	-	-
	100M Fiber (LC)	-	-	-	-	-	-	-	2	-	-	-	-	-
	100/1000 Dual Speed Fiber (LC)	-	-	-	2	-	-	-	-	-	-	-	-	-
	802.3at/af PoE Injector	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8 (PoE model)	8	-	8 (PoE model)	5	5 (PoE model)
	Console	M12	M12	M12	M12	M12	M12	M12	M12	M12	M12	-	M12	-
Relay Contact	DI/DO	1/1	1/1	2/2	1/1	1/1	-	-	-	-	-	-	-	-
	Relay Contact	●	●	●	●	●	●	●	●	●	●	●	●	●
	Bypass	2-pair/1-pair	2-pair/1-pair	2-pair/1-pair	1-pair	1-pair	-	-	-	-	-	-	-	-
	Power Supply - M23	IPES-5408T-X	IPES-5408T	-	IPES-5208DF	IPES-5208T-X	IPES-5208T	IPES-0208T	IPES-0208GF	IPES-0208F	●	-	-	●
	Power Supply - M12	IES-5408T-X	IES-5408T	●	IES-5208DF	IES-5208T-X	IES-5208T	IES-0208T	IES-0208GF	IES-0208F	-	●	●	●
Power Input	12V/24V (9.5~60VDC)	●	●	●	●	●	●	●	●	●	●	●	●	●
	48V (45~56VDC)	IPES-5408T-X	IPES-5408T	24V model: (9.5~60VDC)	IPES-5208DF	IPES-5208T-X	IPES-5208T	-	-	-	-	IPES-0008B	-	IPES-0005B
	72V (50.4~90VDC)	●	●	●	●	●	●	●	●	●	●	●	●	●
	110V (77~137.5VDC)	●	●	●	●	●	●	●	●	●	●	●	●	●
	WV (9.5~137.5VDC)	-	-	WV model: (9.5~137.5VDC)	-	-	-	-	-	-	-	-	-	-
Mechanism	Wide Operating Temperature -40°C~75°C / -40°F~167°F	●	●	●	●	●	●	●	●	●	●	●	●	●
	Case Protection	IP67/IP54	IP67/IP54	IP65/IP54	IP67/IP54	IP67/IP54	IP67/IP54	IP54/IP43	IP54/IP43	IP54/IP43	IP54/IP43	IP54/IP41	IP54/IP43	IP54/IP41
	Case Dimension W x H x D (unit=mm)	IP67 215 x 201.4 x 77.6 IP54 180 x 179.5 x 82 IP43 - IP41 -	215 x 201.4 x 77.6 180 x 179.5 x 82 - -	178 x 99 x 97.5	215 x 200 x 77.6 180 x 178 x 82 -	215 x 201.4 x 77.6 180 x 179.5 x 82 -	215 x 201.4 x 77.6 180 x 179.5 x 82 -	180 x 179.5 x 82 203 x 188.4 x 77.6 -	180 x 178 x 82 203 x 187 x 77.6 -	180 x 178 x 82 203 x 187 x 77.6 -	180 x 165 x 82 203 x 173 x 77.6 -	180 x 165 x 82 203 x 173 x 77.6 135 x 165 x 62	180 x 165 x 82 203 x 173 x 77.6 -	135 x 165 x 62
	DIN Rail Installation (Optional)	●	●	●	●	●	●	●	●	●	●	●	●	●
	Wall Mount Installation	●	●	●	●	●	●	●	●	●	●	●	●	●
Certification	CE/FCC/RoHS/WEEE	●	●	●	●	●	●	●	●	●	●	●	●	●
	EN50155 & EN61373	●	●	●	●	●	●	●	●	●	●	●	●	●
	E-Mark (E4)	●	●	●	●	●	●	●	●	●	●	●	●	●
	EN45545-2 Fire & Smoke	●	●	●	●	●	●	●	●	●	●	●	●	●
SOFTWARE FEATURES														
Management Level	L2+	L2+	L2+	L2+	L2+	L2+	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged

\*Operating temperature for 72V / 110V model: -40°C~60°C / -40°F~140°F



# Industrial IEC 61850-3 Switches

Made for power substation with highest protection level.

Lantech IEC 61850-3 series features high reliability and robustness for power substation automation applications that operate in extremely harsh environments. The series is built for real-time transmission of important packets and against severe electrical interference in power substations.



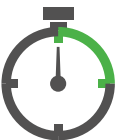
## IEC 61850-3 / IEEE 1613 Certified

The series complies with the strict substation-rated standard of IEC 61850-3 and IEEE 1613. It is able to 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 support standardized GOOSE message that ensures the most critical packets are transmitted. Manager is able to receive and react for unexpected accidents in real time without any packet loss.



## GOOSE Packet Counter

The exclusive GOOSE monitoring function (IEC packet) can display the counter of GOOSE message transmitted and received by port.



## RedBox: HSR and PRP Support

Followed IEC 62439-3 standard, High-availability Seamless Redundancy (HSR) and the Parallel Redundancy Protocol (PRP) provides the ultimate in network reliability for electric utility applications that demand high availability and very short switch over time. HSR provides zero recovery time in case of failure of one component, while PRP allows systems to overcome any single network failure without affecting the data transmission.



	I(P)GS-5400-2P-PT	I(P)GS-5424-PT	I(P)ES-3424DSFP-PT	IGS-5408GSFPM-PT	IES-5408DFTM-PT	IES-5408DSFPM-PT	IES-5408FM-PT	IPES-3408GSFPM-PT	IES-3408GSFPM-PT
HARDWARE FEATURES									
Interface	10/100TX (RJ45)	-	-	24	-	8	8	8	8
	10/100/1000T (RJ45)	Max 24	24	-	8	2	-	-	-
	100M Fiber	Max 18 (SC)	-	-	-	-	4	-	-
	1000M SFP	4	-	-	4	-	-	4	4
	100M/1000M Dual Speed SFP	Max 28	4	4	-	2	4	-	-
	802.3at/af PoE Injector	Max 24 (PoE model)	24 (PoE model)	24 (PoE model)	-	-	8	-	-
	Console	Female DB-9	Female DB-9	Female DB-9	RJ45	RJ45	RJ45	RJ45	RJ45
	USB for Automatic Backup and Configuration	●	●	●	●	-	-	-	-
	DI/DO	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
	Relay Contact	●	●	●	●	●	●	●	●
Power Input	48VDC	● (PoE model)	● (PoE model)	● (PoE model)	-	-	-	●	-
	18~56VDC	-	-	-	●	●	●	-	●
	9.5~60VDC	-	●	●	-	-	-	-	-
	12~56VDC	●	-	-	-	-	-	-	-
	HV: 85~265VAC/100V~370VDC	●	IGS-5424-PT	IES-3424DSFP-PT	●	●	●	-	●
Mechanism	LV: 36~75VDC	●	-	-	-	-	-	-	-
	Standard Operating Temperature	●	●	●	●	●	●	●	●
	-20°C~60°C / -4°F~140°F	-	-	●	●	●	●	●	●
	Wide Operating Temperature	-	-	●	●	●	●	●	●
	-40°C~75°C / -40°F~167°F	-	-	●	●	●	●	●	●
	Case Protection	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30
	Case Dimension	Standard Temp. Model Wide Temp. Model	440 x 280 x 44	440 x 280 x 44	440 x 280 x 44	74 x 105 x 152	74 x 105 x 152	74 x 105 x 152	74 x 105 x 152
	W x D x H (unit=mm)								
	DIN Rail Installation	-	-	-	●	●	●	●	●
	Wall Mount Installation	-	-	-	●	●	●	●	●
Certification	19-inch Rack Mount	●	●	●	●	●	●	●	●
	CE/FCC	●	●	●	●	●	●	●	●
	RoHS/WEEE	●	●	●	●	●	●	●	●
	IEC 62439-3 HSR/PRP	●	●	●	●	●	●	●	●
	IEC 61850-3/IEEE1613	●	●	Pending	Pending	●	●	●	●
SOFTWARE FEATURES									
Management Level									
L2+									

REDBOX SERIES		IRX-3303C
HARDWARE FEATURES		
Interface	10/100/1000T (RJ45)	-
	10/100TX (RJ45)	-
	1000M SFP	-
	100M/1000M Dual Speed SFP	-
	10/100/1000T/Dual Speed SFP Combo	3
Power Input	100M SC Fiber	-
	802.3at/af PoE Injector	-
	Console	RJ45
	DI/DO	2/2
	Relay Contact	●
Mechanism	48VDC	-
	18~56VDC	-
	12~56VDC	●
	HV: 85~265VAC/100V~370VDC	●
	LV: 36~75VDC	-
Certification	Standard Operating Temperature	●
	-20°C~60°C / -4°F~140°F	-
	Wide Operating Temperature	●
	-40°C~75°C / -40°F~167°F	-
	Case Protection	IP30
Management	Case Dimension	74 x 105 x 152
	W x D x H (unit=mm)	-
	DIN Rail Installation	●
	Wall Mount Installation	●
	19-inch Rack Mount	●
Software Features	CE/FCC/RoHS/WEEE	●
	IEC 62439-3 Clause 5 "High-availability Seamless Redundancy (HSR)"	●
	IEC 62439-3 Clause 4 "Parallel Redundancy Protocol (PRP)"	●
	IEC 61850-3/IEEE1613	●
	HTTP graphical web-based	●
Management	Telnet, VT100	●
	Command Line Interface (CLI)	●
	SSH/SFTP	●
	SNMP v1, v2c, v3	●
	TACACS+	●
Accessories	RADIUS client	●



# Industrial Center Switches

Hardened, powerful solution with sufficient ports.

Lantech industrial center managed switches provide fully management functions with 19-inch rack mount installation, and also ensure the highest network redundancy. The modular high density design allows flexible configuration with Gigabit speed aggregation points.



## 10G High Speed + Full Gigabit + 802.3at PoE

Lantech center switches are designed with huge bandwidth capacity that is able to transmit multiple HD videos at the same time. Compared to current Gigabit port, the 10G port delivers 10X bandwidth for increasing data throughput requirement. IEEE802.3at PoE models are also available, which can feed up to 30W at each port.



## Flexible Modularity

Lantech provides highly customized modular models to satisfy all kinds of needs, from 100TX to dual speed SFP. All modules built in hardware PTP V2 for precise time synchronization.



## IEEE1588 PTP V2 (2-step)

The hardware-based IEEE1588 PTP V2 function allows each port to synchronize the network with precise accuracy (End to End 2-step and Peer to Peer 2-step modes in Transparent Clock). It's one of the most critical requirements for power substation applications. Our 2016 new models support "One-step PTP".



## USB Port for Automatic 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.



	I(P)GS-6300-2P	I(P)GS-5424	I(P)GS-5400-2P	IGS-5816-2P	I(P)ES-3424DSFP
HARDWARE FEATURES					
Interface	10/100/1000T (RJ45)	Max 24	24	Max 24	8
	10/100TX (RJ45)	-	-	-	24
	100M SC Fiber	Max 18	-	Max 18	-
	1000M SFP	-	-	-	-
	1000M/10G Dual Speed SFP	4	-	-	-
	100M/1000M Dual Speed SFP	Max 28	4	Max 28	16
	802.3at/af PoE Injector	Max 24 (PoE model)	24 (PoE model)	Max 24 (PoE model)	-
	Console	Female DB-9	Female DB-9	Female DB-9	Female DB-9
	USB for Automatic Backup and Configuration	●	●	●	●
	DI/DO	2/2	2/2	2/2	2/2
Power Input	Relay Contact	●	●	●	●
	48VDC	● (PoE model)	● (PoE model)	● (PoE model)	● (PoE model)
	12~56VDC	●	-	●	-
	9.5~60VDC	-	●	-	●
	HV: 85~265VAC/100V~370VDC	●	-	●	-
Mechanism	AC: 85~265VAC IEC320	●	-	●	-
	LDC: 36~75VDC	●	-	●	-
	Standard Operating Temperature	●	●	●	●
	-20°C~60°C / -4°F~140°F	-	-	-	-
	Wide Operating Temperature	-	-	-	-
Certification	-40°C~85°C / -40°F~185°F	-	-	-	-
	Case Protection	IP30	IP30	IP30	IP30
	Case Dimension W x D x H (unit=mm)	440 x 280 x 44	440 x 280 x 44	440 x 280 x 44	440 x 280 x 44
	19-inch Rack Mount	●	●	●	●
SOFTWARE FEATURES	CE	●	●	●	●
	FCC	●	●	●	●
	ROHS/WEEE	●	●	●	●
	IEC 61850-3/IEEE1613	-	-	● (-PT model)	● (-PT model)

# Industrial Managed Switches

Fast, powerful, and flexible networking solution.

Lantech SNMP managed switches offer advanced functions to cover most of the network requirements, including IPv6, DDM, SSH/SSL, TACAS+, ACL, IGMP v3, DHCP, etc. Each model also supports advanced ITU G.8032 or Pro-Ring system for redundancy. All the models are strictly tested with shock, vibration, EMC with IP30-rated protection for various industrial applications.



## IEEE1588 PTP V2 (2-step)

The hardware-based IEEE1588 PTP V2 function allows each port to synchronize the network with precise accuracy (End to End 2-step and Peer to Peer 2-step modes in Transparent Clock). It's one of the most critical requirements for power substation applications. Our 2016 new models support "One-step PTP".



## USB Port for Automatic 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.



## Full Gigabit Models for Fastest Transmission

Besides 1000T and 1000M SFP, Lantech designed full gigabit models to satisfy the requirement toward fast networking speed. IEEE802.3at PoE models are also available on next page.



	IGS-5408DSFP	IGS-5408DFT	IGS-5408GSFP	IGS-3408DSFP	IGS-3408GSFP	IGS-3208GSFP
HARDWARE FEATURES						
Interface	10/100/1000T (RJ45)	8	10	8	8	8
	10/100TX (RJ45)	-	-	-	-	-
	100M Fiber	-	-	-	-	-
	1000M SFP	-	-	4	-	2
	100M/1000M Dual Speed SFP	4	2	-	4	-
	10/100/1000T/Dual Speed SFP Combo	-	-	-	-	-
	Console	RJ45	RJ45	RJ45	RJ45	RJ45
	USB for Automatic Backup and Configuration	●	●	●	●	●
	DI/DO	2/2	2/2	2/2	2/2	2/2
	Relay Contact	●	●	●	●	●
Power Input	Power Input: 24/48VDC	●	●	●	●	●
	Standard Operating Temperature	●	●	●	●	●
	-20°C~60°C / -4°F~140°F	-	-	-	-	-
	Wide Operating Temperature	●	●	●	●	●
	-40°C~75°C / -40°F~167°F	-	-	-	-	-
Mechanism	Case Protection	IP30	IP30	IP30	IP30	IP30
	Case Dimension W x D x H (unit=mm)	96 x 105 x 152	96 x 105 x 152	74 x 105 x 152	96 x 105 x 152	74 x 105 x 152
	DIN Rail Installation	●	●	●	●	●
	Wall Mount Installation	●	●	●	●	●
Certification	CE/FCC	●	●	●	●	●
	RoHS/WEEE	●	●	●	●	●
	UL Class I Division II	-	-	-	-	-
	ATEX	-	-	-	-	-
SOFTWARE FEATURES						
Management Level	L2+	L2+	L2+	L2+	L2+	L2+



# Industrial Managed Switches

Fast, powerful, and flexible networking solution.



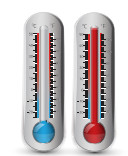
### Dual Speed SFP Combo Ports

The combo port design provides high flexibility of connections which allows user to choose from 100/1000T or 100/1000M dual speed SFP. It helps to decrease the cost of upgrade or topology-changing in the future.



### Digital Input / Digital Output

The DI/DO function can support additional open/close physical contact for designate applications besides port / power events. For example, when the switch was moved or stolen, DI/DO will send an email to pre-defined addresses as well as SNMP traps out immediately.



### Tested for Extreme Temperature

To ensure the switches will not be damaged or malfunctions under the influence of extreme weather, the industrial managed series is designed with wider temperature tolerance up to -40°C~75°C.



### Link and protect connections between switches and PLCs

Published in EtherNet/IP specification, the DLR is a Layer 2 protocol that allows multi-port EtherNet/IP devices to operate in ring topologies. With DLR protocol, the connection between Lantech switches and PLCs can be protected.

\*Available on -DLR models



### UL Class I Division II / ATEX Certified

Some models of the series provide optional hazardous models that certified by Underwriters Laboratories (UL) and European Union (EU). "UL Class I Division II" is one of the most widely used safety certifications while ATEX Directive 94/9/EC is a directive adopted by the 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.

NEW



	IGS-3008	IGS-2204DSFP	IES-5408DFT	IES-5408DSFP	IES-5408F	IES-3416DSFP	IES-3408GSFP	IES-3307C	IES-2208CA	IES-2204F	IES-2008B
HARDWARE FEATURES											
Interface	10/100/1000T (RJ45)	8	4	2	-	-	-	-	-	-	-
	10/100TX (RJ45)	-	-	8	8	16	8	7	8	4	8
	100M Fiber/SFP	-	-	-	4 Fiber	-	-	-	-	2 SFP	-
	1000M SFP	-	-	-	-	4	4	-	-	-	-
	100M/1000M Dual Speed SFP	-	2	2	4	-	-	-	-	-	-
	10/100/1000T/Dual Speed SFP Combo	-	-	-	-	-	-	3 (1 is 10/100TX combo)	2	-	-
	Console	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45
Power Input: 9.5~56VDC	USB for Automatic Backup and Configuration	-	-	-	-	-	-	●	-	-	-
	DI/DO	-	-	2/2	2/2	2/2	2/2	2/2	-	-	-
	Relay Contact	●	●	●	●	●	●	●	●	●	●
	Standard Operating Temperature	●	●	●	●	●	●	●	●	●	●
	Wide Operating Temperature	●	●	●	●	●	●	●	●	●	●
Mechanism	Case Protection	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30
	Case Dimension W x D x H (unit=mm)	34 x 105 x 152	34 x 105 x 152	74 x 105 x 152	74 x 105 x 152	74 x 105 x 152	74 x 140 x 152	74 x 105 x 152	74 x 105 x 152	34 x 105 x 152	74 x 105 x 152
	DIN Rail Installation	●	●	●	●	●	●	●	●	●	●
	Wall Mount Installation	●	●	●	●	●	●	●	●	●	●
Certification	CE/FCC	●	●	●	●	●	●	●	●	●	●
	RoHS/WEEE	●	●	●	●	●	●	●	●	●	●
	UL Class I Division II	-	-	-	-	-	-	-	● (-ATEX model)	-	● (-ATEX model)
	ATEX	-	-	-	-	-	-	-	● (-ATEX model)	-	● (-ATEX model)
SOFTWARE FEATURES											
Management Level	L2+	L2	L2+	L2+	L2+	L2+	L2+	L2+	L2	L2	L2



# Industrial PoE Switches

Durable, reliable, and complete PoE solution.

Fully compliant with IEEE802.3at/af PoE standard, Lantech industrial PoE series provides comprehensive PoE solution with durability and reliability. All kinds of needs can be satisfied with our complete lineup, including unmanaged, managed, fiber uplink, SFP, combo, modular model, PoE mode A and PoE mode B.



### Feed 2X Power – 802.3at

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



### Built-in Power Booster

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



### Prioritize Your PDs

Priority of PDs can be defined. When the total power consumption of all PoE ports was over the value of maximum power available, the switch will fulfill the power consumption of the high priority PDs to make sure these critical devices keep working.



### Configurable Power Budget

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



### PoE Management

The pre-set power feeding schedule is allowed via PoE scheduling function. Turns on/off a PD according to the user-defined routine time table is that easy. It's saving both time and energy.

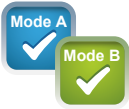


	IPGS-5424	IPGS-5400-2P	IPES-3424DSFP	IPGS-5408GSFP	IPGS-3416DSFPM	IPGS-3408GSFP	IPGS-3208GSFP	IPGS-3008	IPGS-2204DSFP	IPES-3416DSFP	IPES-3408GSFP	IPES-3208C(B)	IPES-2208CB
HARDWARE FEATURES													
Interface	10/100/1000T (RJ45)	24	Max 24	-	8	16	8	8	4	-	-	-	-
	10/100TX (RJ45)	-	-	24	-	-	-	-	-	16	8	8	8
	100M Fiber	-	Max 18 (SC)	-	-	-	-	-	-	-	-	-	-
	1000M SFP	-	4	-	4	4	2	-	-	-	4	-	-
	100M/1000M Dual Speed SFP	4	Max 28	4	-	4	-	-	2	4	-	-	-
	10/100/1000T/Dual Speed SFP Combo	-	-	-	-	-	-	-	-	-	-	2	2
	802.3at/af PoE Injector	24	Max 24	24	8	16	8	8	4	16	8	8 (Mode B available)	8
	802.3af PoE Injector	-	-	-	-	-	-	-	-	-	-	-	-
	Console	Female DB-9	Female DB-9	Female DB-9	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45
	USB for Automatic Backup and Configuration	●	●	●	●	-	-	-	-	-	-	●	-
Power Input	DI/DO	2/2	2/2	2/2	2/2	2/2	2/2	-	-	2/2	2/2	2/2	-
	Relay Contact	●	●	●	●	●	●	●	●	●	●	●	●
	48VDC	●	●	●	●	●	●	●	●	●	●	●	-
	12/24/48VDC	System	System	System	-	-	-	●	●	-	-	-	●
	HV: 85~265VAC/100~370VDC	-	System	-	-	-	-	-	-	-	-	-	-
Mechanism	AC: 85~265VAC IEC320	-	System	-	-	-	-	-	-	-	-	-	-
	LDC: 36~75VDC	-	System	-	-	-	-	-	-	-	-	-	-
	Standard Operating Temperature	●	●	●	●	●	●	●	●	●	●	●	●
	-20°C~60°C / -4°F~140°F	-	●	●	●	●	●	●	●	●	●	●	●
	Wide Operating Temperature	-	●	●	●	●	●	●	●	●	●	●	●
	-40°C~75°C / -40°F~167°F	-	●	●	●	●	●	●	●	●	●	●	●
	Case Protection	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30
Certification	Case Dimension	Standard Temp. Model	440 x 280 x 44	440 x 280 x 44	440 x 280 x 44	74 x 105 x 152	74 x 134 x 152	74 x 105 x 152	74 x 105 x 152	12V: 43 x 105 x 142	12V: 43 x 105 x 142	74 x 105 x 152	74 x 105 x 152
	W x D x H (unit=mm)	Wide Temp. Model	440 x 280 x 44	440 x 280 x 44	440 x 280 x 44	96 x 105 x 152	96 x 134 x 152	96 x 105 x 152	96 x 105 x 152	48V: 34 x 105 x 152	48V: 34 x 105 x 152	74 x 105 x 152	74 x 105 x 152
	DIN Rail Installation	-	-	-	-	●	●	●	●	●	●	●	●
	Wall Mount Installation	19-inch Rack Mount	19-inch Rack Mount	19-inch Rack Mount	●	●	●	●	●	●	●	●	●
Software Features	CE	●	●	●	●	●	●	●	●	●	●	●	●
	FCC	●	●	●	●	●	●	●	●	●	●	●	●
	ROHS/WEEE	●	●	●	●	●	●	●	●	●	●	●	●
	IEC 61850-3/IEEE1613	-	● (-PT model)	● (-PT model)	-	-	-	-	-	-	● (-PT model)	-	-
SOFTWARE FEATURES													
Management Level	L2+	L2+	L2+	L2+	L2+	L2+	L2+	L2+	L2	L2+	L2+	L2+	L2



# Industrial PoE Switches

Durable, reliable, and complete PoE solution.



## PoE Mode B Support

Besides PoE mode A, special-designed mode B models are available to feed power passively for specific PDs that are not standard-designed.



## PD Detection

Lantech PoE switches keep checking if PD is alive or not. Once PD hangs up, the switch will restart the PD automatically.



## Dual Power Supply

Designed with dual power supply, Lantech PoE switches seamlessly transfer to backup power when the main one fails, without causing any interruption.



## Pro-Ring2se Redundant Ring

The Pro-Ring2se self-recovery scheme can recover Ring network in less than 20ms with single ring up to 50 switches with one step setup.

\*Available on selected models
















## Dual Speed SFP Combo Ports

The combo port design provides high flexibility of connections which allows user to choose from 100/1000T or 100/1000M dual speed SFP. It helps to decrease the cost of upgrade or topology-changing in the future.



## Tested for Extreme Temperature

To ensure the switches will not be damaged or malfunctions under the influence of extreme weather, the industrial managed series is designed with wider temperature tolerance up to -40°C~75°C.

															
		IPES-2204F	IPGS-0204DSFP	IPGS-0105DSFP-4	IPGS-0008B	IPGS-0008B-4	IPGS-0005-4	IPES-0208CA	IPES-0008A	IPES-0204DFT-4	IPES-0104DSFP	IPES-0104GT-4	IPES-0104FT	IPEC-0101FT	
Hardware Features															
Interface	10/100/1000T (RJ45)	-	4	5	8	8	5	-	-	-	-	1	-	-	
	10/100TX (RJ45)	4	-	-	-	-	-	8	8	4	4	4	4	1	
	100M Fiber	-	-	-	-	-	-	-	-	-	-	-	1 (SC)	1 (SC)	
	100M SFP	2	-	-	-	-	-	-	-	-	-	-	-	-	
	100M/1000M Dual Speed SFP	-	2	1	-	-	-	-	-	2	1	-	-	-	
	10/100/1000T/Dual Speed SFP Combo	-	-	-	-	-	-	2	-	-	-	-	-	-	
	802.3at/af PoE Injector	4	4	4	8	4	4	8	8	4	4	4	-	-	
	802.3af PoE Injector	-	-	-	-	-	-	-	-	-	-	-	-	-	
Power Input	Console	RJ45	-	-	-	-	-	-	-	-	-	-	4	1	
	Relay Contact	●	●	●	●	●	●	●	●	●	●	●	●	●	
	48VDC	●	●	●	●	●	●	●	●	●	●	●	●	●	
	12/24/48VDC	●	●	●	●	●	●	●	●	●	●	●	-	-	
Mechanism	24/48VDC	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Standard Operating Temperature -20°C~60°C / -4°F~140°F		-	-	-	-	-	●	●	-	-	-	●	●	
	Wide Operating Temperature -40°C~75°C / -40°F~167°F		●	●	●	●	●	●	●	●	●	●	●	●	
	Case Protection		IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP30	
	Case Dimension	12V Model	43 x 105 x 142	43 x 105 x 142	43 x 105 x 142	43 x 105 x 142	43 x 105 x 142	43 x 105 x 142	74 x 105 x 152	74 x 105 x 152	43 x 105 x 142	43 x 105 x 142	43 x 105 x 142	30 x 95 x 140	30 x 95 x 140
		48V Model	34 x 105 x 142	34 x 105 x 142	34 x 105 x 142	34 x 105 x 142	34 x 105 x 142	34 x 105 x 142			34 x 105 x 142	34 x 105 x 142	34 x 105 x 142		
	DIN Rail Installation		●	●	●	●	●	●	●	●	●	●	●	●	●
	Wall Mount Installation		●	●	●	●	●	●	●	●	●	●	●	●	●
Certification	CE	●	●	●	●	●	●	●	●	●	●	●	●	●	
	FCC	●	●	●	●	●	●	●	●	●	●	●	●	●	
	RoHS	●	●	●	●	●	●	●	●	●	●	●	●	●	
	WEEE	●	●	●	●	●	●	●	●	●	●	●	●	●	
Software Features															
Management Level		L2	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	



# Industrial DNV Type Switches

Strictly tested for maritime applications.

Meet with the maritime test criteria in DNV type test, the series ensure the switches sustaining the harsh on-board environments often founded in ships, crafts, and offshore platforms. The wide product line provides the complete solution for maritime applications.



### 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.



### Prevent Compass Interference

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



### 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.



### 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 environment.



	LGS-2624C-DNV	IES-2008B-DNV	IES-1204FT-DNV	IES-0204FT-DNV	IES-0104FT-DNV	IEC-0101FT-DNV	IES-0008T-DNV	IES-0005T-DNV
HARDWARE FEATURES								
Interface	10/100TX (RJ45)	-	8	4	4	4	1	8
	10/100/1000T (RJ45)	20	-	-	-	-	-	-
	100M Fiber	-	-	-	2 (SC)	1 (SC)	1 (SC/ST)	-
	100M SFP	-	-	2	-	-	-	-
	Dual Speed SFP	2	-	-	-	-	-	-
	10/100/1000T/Dual Speed SFP Combo	4	-	-	-	-	-	-
	Console	RJ45	RJ45	-	-	-	-	-
Power Input	Relay Contact	●	●	●	●	●	●	●
	12~36VAC	-	-	-	●	●	●	●
	12~48VDC	-	●	●	●	●	●	●
	100~240VAC	●	-	-	-	-	-	-
Mechanism	Standard Operating Temperature -20°C~60°C / -4°F~140°F	●	●	●	●	●	●	●
	Wide Operating Temperature -40°C~75°C / -40°F~167°F	●	●	●	●	●	●	●
	Case Protection	IP30	IP30	IP30	IP30	IP30	IP30	IP30
	Case Dimension W x D x H (unit=mm)	442 x 170 x 44	74 x 105 x 152	26 x 95 x 144.3	30 x 95 x 140	30 x 95 x 140	30 x 95 x 140	30 x 95 x 140
	DIN Rail Installation	-	●	●	●	●	●	●
	Wall Mount Installation	-	●	●	●	●	●	●
Certification	19-inch Rack Mount	●	-	-	-	-	-	-
	CE/FCC	●	●	●	●	●	●	●
	RoHS/WEEE	●	●	●	●	●	●	●
	DNV	●	●	●	●	●	●	●
SOFTWARE FEATURES	UL Class I Division II	-	-	●	●	●	●	●
	Management Level	L2+	L2+	Web Smart	Unmanaged	Unmanaged	Unmanaged	Unmanaged

# Industrial Hazardous Switches

Guarantee safety in hazardous environments.

Gas, oil, and mine related environments are full with flammable gases, vapors, liquids and combustible dusts. We classified these areas as hazardous environments because disasters may be caused with only one small spark. To guarantee the safety of property and people, Lantech release a series of switches to fulfill this kind of applications. The series can be deployed in hazardous or explosive condition without increasing the risk of explosion or accelerating the damage if an accident occurs.



### 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 of the 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 design our hazardous series with apparatus that has no normally arcing parts or thermal effects capable of ignition. Also, the components are hermetically sealed.



### Non-incendive Design

Lantech hazardous series is incapable of igniting the 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.



	IES-2208CA(-ATEX)	IES-2008B(-ATEX)	IGC-0101GB	IEC-0101FT	IES-0008T	IES-0005T
HARDWARE FEATURES						
Interface	10/100TX (RJ45)	8	8	-	1	8
	10/100/1000T (RJ45)	-	-	1	-	-
	100M Fiber	-	-	-	1 (SC/ST)	-
	100M SFP	-	-	1	-	-
	10/100/1000T/Dual Speed SFP Combo	2	-	-	-	-
	Console	RJ45	RJ45	-	-	-
	DI/DO	-	-	-	-	-
Power Input	Relay Contact	●	●	●	●	●
	12~36VAC	-	-	●	●	●
	12~48VDC	●	●	●	●	●
	100~240VAC	●	●	●	●	●
Mechanism	Standard Operating Temperature -20°C~60°C / -4°F~140°F	●	●	●	●	●
	Wide Operating Temperature -40°C~75°C / -40°F~167°F	●	●	●	●	●
	Case Protection	IP30	IP30	IP30	IP30	IP30
	Case Dimension W x D x H (unit=mm)	74 x 105 x 152	74 x 105 x 152	30 x 95 x 140	30 x 95 x 140	30 x 95 x 140
	DIN Rail Installation	●	●	●	●	●
	Wall Mount Installation	●	●	●	●	●
Certification	CE/FCC	●	●	●	●	●
	RoHS/WEEE	●	●	●	●	●
	UL Class I Division II	●	●	●	●	●
	ATEX	● (-ATEX model)	● (-ATEX model)	-	-	-
SOFTWARE FEATURES						
Management Level	L2	L2	Unmanaged	Unmanaged	Unmanaged	Unmanaged



# Industrial Entry Switches

Strictly tested for basic industrial networking requirements.

Lantech industrial entry switches are unmanaged models which are designed to meet the demands of industrial network for plug-and-play usage. Each model is in a robust IP30 housing and has been tested extensively to meet with industrial EMI/EMC standards.



	NEW	NEW	NEW	NEW		NEW
	IGS-0204DSFP	IGS-0105DSFP	IGS-0008B	IGS-0005	IES-0208CA	IES-0204DFT
HARDWARE FEATURES						
Interface	10/100/1000T (RJ45)	4	5	8	5	-
	10/100TX (RJ45)	-	-	-	-	8
	100M Fiber	-	-	-	-	-
	Dual Speed SFP	2	1	-	-	-
	10/100/1000T/Dual Speed SFP Combo	-	-	-	2	-
	Relay Contact	●	●	●	●	●
Power Input	12~36VAC	-	-	-	-	-
	12~48VDC	●	●	●	●	●
Mechanism	Standard Operating Temperature -20°C~60°C / -4°F~140°F	-	●	-	-	-
	Wide Operating Temperature -40°C~75°C / -40°F~167°F	●	●	●	●	●
	Case Protection	IP30	IP30	IP30	IP30	IP30
	Case Dimension W x D x H (unit=mm)	34 x 105 x 142	34 x 105 x 142	34 x 105 x 142	34 x 102 x 142	74 x 114 x 152
	DIN Rail Installation	●	●	●	●	●
	Wall Mount Installation	●	●	●	●	●
Certification	CE/FCC	●	●	●	●	●
	RoHS/WEEE	●	●	●	●	●
	DNV	-	-	-	-	-
	UL Class I Division II	-	-	-	-	-
SOFTWARE FEATURES						
Management Level	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged
	NEW	NEW				
	IES-0204FT	IES-0104DSFP	IES-0104GT	IES-0104FT	IES-0008T	IES-0005T
HARDWARE FEATURES						
Interface	10/100/1000T (RJ45)	-	-	1	-	-
	10/100TX (RJ45)	4	4	4	8	5
	100M Fiber	2 (SC)	-	-	1 (SC)	-
	Dual Speed SFP	-	1	-	-	-
	10/100/1000T/Dual Speed SFP Combo	-	-	-	-	-
	Relay Contact	●	●	●	●	●
Power Input	12~36VAC	●	-	-	●	●
	12~48VDC	●	●	●	●	●
Mechanism	Standard Operating Temperature -20°C~60°C / -4°F~140°F	●	-	-	●	●
	Wide Operating Temperature -40°C~75°C / -40°F~167°F	●	●	●	●	●
	Case Protection	IP30	IP30	IP30	IP30	IP30
	Case Dimension W x D x H (unit=mm)	30 x 95 x 140	34 x 102 x 142	34 x 102 x 142	30 x 95 x 140	30 x 95 x 140
	DIN Rail Installation	●	●	●	●	●
	Wall Mount Installation	●	●	●	●	●
Certification	CE/FCC	●	●	●	●	●
	RoHS/WEEE	●	●	●	●	●
	DNV	●	-	-	●	●
	UL Class I Division II	●	-	-	●	●
SOFTWARE FEATURES						
Management Level	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged

# Industrial Converter Series

Convert connections with the most robust design.

Featured with the unique DIP switch for LLF and duplex mode, Lantech industrial converters provide the most convenient choice with reliability. To meet the demands of harsh industrial environments, each model is designed with robust IP30 housing with industrial grade components and has also been tested extensively to meet with EMI/EMC standards.



## Link Loss Forwarding (LLF) Support

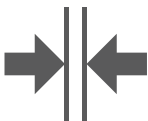
When one side of the link fails, the other side still continues to transmit packets, and waits for a response that will never arrive. With the Link Loss Forwarding activated, any detected broken link on the RJ-45 Ethernet port will force the fiber port to cut down, and the fiber uplink port will stop transmitting then cut off as soon as the remote link is down.



## Link Fault Pass (LFP) Support

With the Link Fault Pass technology, the following actions will implement automatically:

1. When the broken link on the RJ-45 Ethernet port occurs, all fiber and UTP connections will stop transmitting.
2. When the broken link on a fiber port occurs, the other fiber port will be forced to stop transmitting and cut down all UTP connection as well.



## Slim Design

Lantech entry switches are compact in size and easy to be installed with DIN rail and wall mount kits.

	IEC-0101FT-SC	IEC-0101FT-ST	IGC-0101GB	IPEC-0101FT	IPGC-0101GB
HARDWARE FEATURES					
Interface	10/100/1000T (RJ45)	-	-	-	1
	10/100TX (RJ45)	1	1	-	-
	100M Fiber	1 (SC)	1 (ST)	-	-
	1000M SFP	-	-	1	-
	802.3at/af PoE Injector	-	-	-	●
	802.3af PoE Injector	-	-	●	-
Power Input	Relay Contact	●	●	●	●
	12~36VAC	●	●	●	-
Mechanism	12~48VDC	●	●	●	-
	48VDC	-	-	-	●
	Standard Operating Temperature -20°C~60°C / -4°F~140°F	●	●	●	●
	Wide Operating Temperature -40°C~75°C / -40°F~167°F	●	●	●	●
	Case Protection	IP30	IP30	IP30	IP30
	Case Dimension W x D x H (unit=mm)	30 x 95 x 140	30 x 95 x 140	30 x 95 x 140	30 x 95 x 105
Certification	DIN Rail Installation	●	●	●	●
	Wall Mount Installation	●	●	●	●
	CE/FCC	●	●	●	●
	RoHS/WEEE	●	●	●	●
Certification	UL Class I Division II	●	●	●	-
	DNV	●	●	-	-
SOFTWARE FEATURES					
Management Level	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged



Industrial / Serial Devices

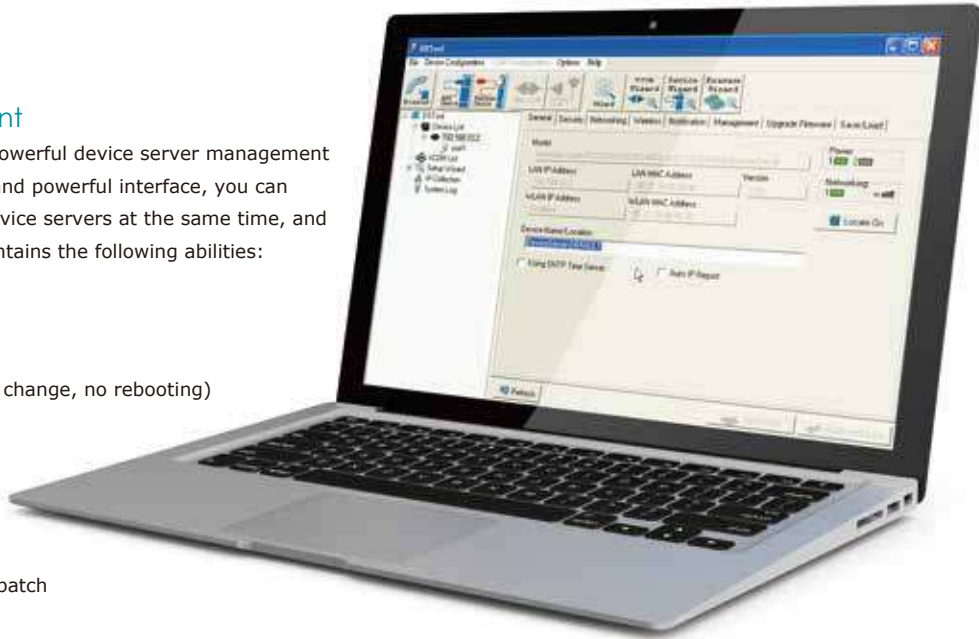
Reliably connect your serial devices with IP-based network.

The Lantech serial device, which is able to convert at least one serial port (RS232/422/485) to Ethernet or USB connection, enables user to remotely manage and configure device servers via internet.

DS-Tool Management

DS-Tool is Windows-base powerful device server management software. With its friendly and powerful interface, you can easily configure multiple device servers at the same time, and monitor status. DS-Tool contains the following abilities:

- 1. Device discovery
- 2. Auto IP report
- 3. Device setting (run-time change, no rebooting)
- 4. Access control list
- 5. Group setting
- 6. Device monitoring
- 7. Serial port monitoring
- 8. Log info
- 9. Group Firmware update batch



	IDS-2101F	IDS-2102	IDS-2204	LSC-0101U	LSC-1102A
HARDWARE FEATURES					
Interface	LAN	1 (100FX)	2 (10/100TX)	2 (10/100TX)	1 (10/100TX)
	Serial Ports	1 (RS-232/422/485)	1 (RS-232/422/485)	4 (RS-232/422/485)	1 (RS-232) 1 (RS-232/422/485)
	USB	-	-	-	1
	DIP Switch	●	●	-	9/ 125μm
Power Input	Beeper	●	●	●	-
	12/24/48VDC	●	●	●	-
	12/24VDC, 500mA	-	-	-	●
	USB Bus Power (5V)	-	-	-	●
Mechanism	Operating Temperature -20°C~60°C / -4°F~140°F	●	●	●	-
	Operating Temperature -10°C~70°C / 14°F~158°F	-	-	-	●
	Operating Temperature 0°C~60°C / 32°F~140°F	-	-	●	-
	Case Protection	IP30	IP30	IP30	-
Certification	Case Dimension W x D x H (unit=mm)	72 x 29.4 x 123.4	72 x 29.4 x 123.4	52 x 106.1 x 144.3	55 x 40 x 29
	DIN Rail Installation	●	●	●	-
	Wall Mount Installation	●	●	●	●
	CE	●	●	●	●
SOFTWARE FEATURES	FCC	●	●	●	●
	RoHS	●	●	●	●
	WEEE	●	●	●	●
	SNMP	●	●	●	-
Protocols	Web	●	●	●	●
	DS-Tool	●	●	●	-
	Telnet	●	●	●	●
	ICMP, IP, TCP, UDP, DHCP, BootP, ARP/RARP, Telnet, RTelet, DNS, SNMP, MIB II, HTTP, SMTP, SNTP	ICMP, IP, TCP, UDP, DHCP, BootP, ARP/RARP, Telnet, RTelet, DNS, SNMP, MIB II, HTTP, SMTP, SNTP	ICMP, IP, TCP, UDP, DHCP, BootP, ARP/RARP, Telnet, DNS, SNMP, MIB II, SMTP, SNTP	-	ARP, IP, ICMP, UDP, TCP, HTTP, DHCP, Telnet
Security	HTTPS, SSH v2, SSL v3 (data encryption)*	HTTPS, SSH v2, SSL v3 (data encryption)*	HTTPS, SSH, SSL (data encryption)	-	Login Password
	Email notification	●	●	●	-
	SNMP Trap	●	●	●	-
	Serial API Function	Port Control Input/output Data Port Status Inquiry	Port Control Input/output Data Port Status Inquiry	-	-

\*Optional

Central Managed Switches

Powerful solution with large numbers of ports.

Lantech central managed switches provide fully management functions with large numbers of ports. With advanced SNMP and security function, Lantech central management switches are the best aggregation switches to connect with IP camera, setup box, VoIP phone / router, wireless equipments for MTU, transportation or surveillance applications.



	LGS-2624C	LTS-3448	LPES-3424DSFP
HARDWARE FEATURES			
Interface	10/100/1000T (RJ45)	20	48
	10/100TX (RJ45)	-	-
	10G SFP/1000M Dual Speed SFP	-	24
	100M/1000M Dual Speed SFP	4	-
Power Input	100M/1000T/Dual Speed SFP Combo	2	4
	802.3 at/af PoE Injector	4	-
	Console	-	24
	RJ45	●	Female DB-9
Mechanism	100~240VAC, 50/60Hz	●	●
	Redundant 12~48VDC Power	-	-
	Operating Temperature 0°C~45°C / 32°F~113°F	-	●
	Operating Temperature 0°C~50°C / 32°F~122°F	●	-
Certification	Operating Temperature -20°C~60°C / -4°F~140°F	-	-
	Case Dimension W x D x H (unit=mm)	442 x 170 x 44	442 x 300 x 44
	19-inch Rack Mount	●	●
	CE	●	●
SOFTWARE FEATURES	FCC	●	●
	RoHS	●	●
	WEEE	●	●
	SNMP v1 v2c v3	●	●
Management	Web browser	●	●
	Telnet	●	●
	Console	●	●
	SNTP	●	●
Redundancy	SMTP	●	●
	System Log	-	●
	SNMP Trap	●	●
	STP	●	●
Security	RSTP	●	●
	MSTP	●	●
	LLDP	●	●
	Port Security	●	●
Applications	IP Security	●	●
	Login Security (RADIUS)	●	●
	VLAN	●	●
	IGMP snooping v1 v2 / IGMP query	●	●
Others	IGMP snooping v3	●	●
	Port Trunk with LACP	●	●
	Quality of Service	●	●
	Class of Service	●	●
	Bandwidth Control (Rate Limiting)	●	●
	DHCP	●	●
	DNS Client	-	●
	TFTP Firmware Upgrade / Backup / Restore	●	●
	Configuration Upload and Download	●	●



PoE Series

Complete product line for non-industrial PoE applications.

Lantech PoE series includes fully-managed switches, splitters and injectors, providing a total PoE solution for our customers. Fully complies with IEEE 802.3at/af PoE standard, Lantech PoE series is equipped with IGMP query and snooping function for IGMP applications where can release the video network burden immediately.



	LPES-3424DSFP	LPES-2208CA	POA-1000A	POA-100B	POS-100A
HARDWARE FEATURES					
Interface	10/100/1000T (RJ45)	-	1	-	-
	10/100TX (RJ45)	24	-	1	1
	100M/1000M Dual Speed SFP	4	-	-	-
	10/100/1000T/Dual Speed SFP Combo	-	2	-	-
	802.3at/af PoE Injector	24	1	1	-
	802.3af PoE Injector	-	-	-	-
Power Input	Console	Female DB-9	Female DB-9	-	-
	100~240VAC, 50/60Hz	200W/370W	90W	●	●
	48VDC	-	●	-	●
Mechanism	Operating Temperature 0°C~45°C / 32°F~113°F	●	●	-	-
	Operating Temperature -10°C~45°C / 14°F~113°F	-	●	●	●
	Case Dimension W x D x H (unit=mm)	440 x 280 x 44	217 x 140 x 43	145 x 60 x 40	145 x 60 x 40
	Wall Mount Installation	-	●	-	-
	10-inch Rack Mount	-	●	-	-
Certification	19-inch Rack Mount	●	-	-	-
	CE	●	●	●	●
	FCC	●	●	●	●
	ROHS	●	●	●	●
	WEEE	●	●	●	●
SOFTWARE FEATURES					
Management	SNMP v1 v2c v3	●	●	-	-
	Web browser	●	●	-	-
	Telnet	●	●	-	-
	Console	●	●	-	-
	SNTP	●	●	-	-
	SMTP	●	●	-	-
Redundancy	System Log	●	●	-	-
	SNMP Trap	●	●	-	-
	Pro-Ring I System	-	●	-	-
	STP/RSTP	●	●	-	-
Security	MSTP	●	-	-	-
	LLDP	●	●	-	-
	Port Security	●	●	-	-
Applications	IP Security	●	●	-	-
	Login Security (RADIUS)	●	●	-	-
	VLAN	●	●	-	-
	IGMP snooping v1 v2 / IGMP query	●	●	-	-
	IGMP snooping v3	●	-	-	-
Others	Port Trunk with LACP	●	●	-	-
	Quality of Service	●	●	-	-
	Class of Service	●	●	-	-
	Bandwidth Control (Rate Limiting)	●	●	-	-
	DHCP	●	●	-	-
	DNS Client	●	●	-	-
	TFTP Firmware Upgrade / Backup / Restore	●	●	-	-
	Configuration Upload and Download	●	●	-	-

Fiber Converters

Easy DIP-switch setting. Flexible chassis installation.

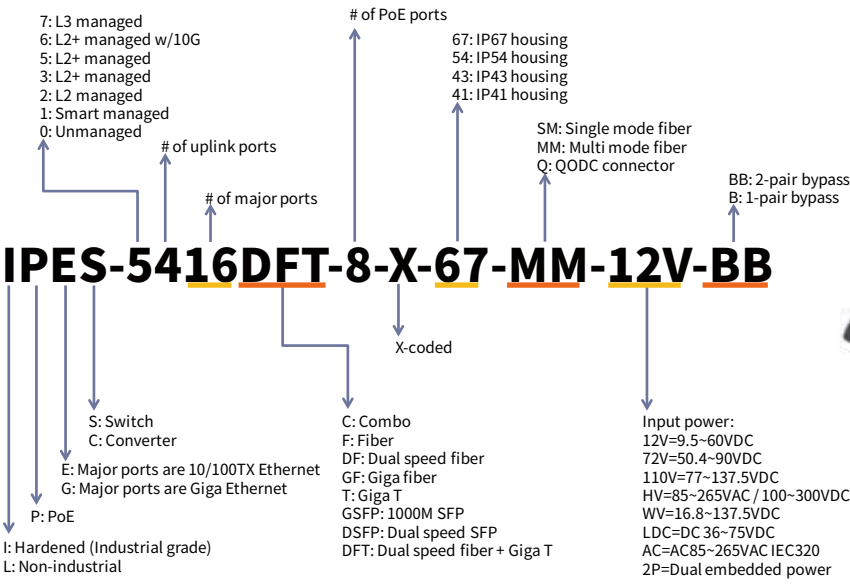
Lantech converter series provides the flexibility for the users to convert network connection between fiber port and RJ45 port. The universal media converter chassis for 16 converters is also available, which provides plug-and-play and hot-swappable features.



	CM-121	CM-022A	CM-011A	MC-116-RPS
HARDWARE FEATURES				
Interface	10/100/1000T (RJ45)	1	-	Chassis with 16 slots for media converter
	10/100TX (RJ45)	-	-	
	100M Fiber	-	1	
	1000M SFP	1	2	
Power Input	DC 5V, 1.6A	●	●	-
	DC 5V, 2.0A	-	●	-
	48VDC	-	-	●
	90~240VAC	-	-	●
Mechanism	100~240VAC	●	●	-
	Operating Temperature 0°C~50°C / 32°F~122°F	●	●	●
	Case Dimension W x D x H (unit=mm)	71 x 94 x 26	71 x 94 x 26	71 x 94 x 26
	19-inch Rack Mount	● with Chassis	● with Chassis	● with Chassis
Certification	CE	●	●	●
	FCC	●	●	●
	RoHS	●	●	●
	WEEE	●	●	●
SOFTWARE FEATURES				
Management Level	-	-	-	-

Product Naming Rule

\*Applies to most of the Lantech products





Accessories

High quality, reliable, and durable.

Find the best accessories for your Lantech switches! You can get the specifically designed SFP for the high performance integrated data link, with rugged industrial DIN rail power supply here. Various brackets give you the high flexibility of installation.



SFP (Mini-GBIC)

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

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

Power Supply



Model	O/P voltage Adjustment	Loading (A)			Ripple Noise	Line Reg.	Load Reg.	Efficiency	Overvoltage Protection
		Min.	Rated	Max.					
AD1024-24F	+24VDC±10%	0A	1A	1A	150mVp-p	±1%	±1%	83%	40VDC Max
AD1024-24F-E	+24VDC±10%	0A	1A	1A	150mVp-p	±1%	±1%	83%	40VDC Max
AD1048-24F	+24VDC±10%	0A	2A	2A	150mVp-p	±1%	±1%	83%	27~30VDC Max
AD1048-24F-E	+24VDC±10%	0A	2A	2A	150mVp-p	±1%	±1%	83%	27~30VDC Max
AD1048-24FS	+24VDC±10%	0A	2A	2A	150mVp-p	±1%	±1%	83%	40VDC Max
AD1048-24FS-E	+24VDC±10%	0A	2A	2A	150mVp-p	±1%	±1%	83%	40VDC Max
AD1048-48F	+48VDC±10%	0A	1A	1A	250mVp-p	±1%	±1%	83%	52~57VDC Max
AD1048-48FS	+48VDC±10%	0A	1A	1A	250mVp-p	±1%	±1%	83%	60VDC Max
AD1072-24F	+24VDC±10%	0A	3A	3A	150mVp-p	±1%	±1%	81%	27~30VDC Max
AD1072-48F	+48VDC±10%	0A	1.5A	1.5A	250mVp-p	±1%	±1%	82%	52~56VDC Max
AD1120-24F	+24VDC±10%	0A	5A	5A	150mVp-p	±1%	±1%	81%	27~30VDC Max
AD1120-48F	+48VDC±10%	0A	2.5A	2.5A	550mVp-p	±1%	±1%	83%	52~56VDC Max
AD1240-24S	+24VDC±10%	0A	10A	10A	150mVp-p	±1%	±1%	83%	27~30VDC Max
AD1240-48S	+48VDC±10%	0A	5A	5A	250mVp-p	±1%	±1%	84%	52~56VDC Max
AD1240-48S-5	+55VDC±10%	0A	4.3A	4.3A	250mVp-p	±1%	±1%	84%	60~65VDC Max
AD1360-24S	+24VDC±10%	0A	15A	15A	150mVp-p	±1%	±2%	82%	40VDC Max
AD1360-48S	+48VDC±10%	0A	7.5A	7.5A	250mVp-p	±1%	±2%	83%	52~56VDC Max
AD1360-48S-5	+55VDC±10%	0A	6.5A	6.5A	250mVp-p	±1%	±2%	83%	60~65VDC Max
AD1500-24S	+24VDC±10%	0A	21A	21A	150mVp-p	±1%	±2%	84%	27~30VDC Max
AD1500-48S	+48VDC±10%	0A	10.5A	10.5A	250mVp-p	±1%	±2%	85%	52~56VDC Max
AD1500-48S-5	+55VDC±10%	0A	9A	9A	250mVp-p	±1%	±2%	85%	60~65VDC Max

- Note:
- Each output can supply up to maximum current, but total loading cannot exceed rated output wattage.
  - Line regulation is measured from low line to high line at rated load.
  - Load regulation is measured from 20% to 100% of rated load at 110VAC input.
  - 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.
  - Efficiency is measured at rated load and 110VAC input.
  - Standard Operating Temperature: -20°C ~ 50°C / ambient, derating each output at 2.5% per degree from 50°C ~ 70°C
  - 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

N-Key

The configuration file of Lantech industrial managed switches can be exported in text file so that it can be edited and configured back to router with ease for mass deployment. The optional N-key RJ45 configurator offers firmware upgrade, auto backup/ editable configuration restore without computer by adjusting the DIP switch.



Cable / Connector / Bracket

M23/M12 Accessories



Part Number	Type	Pin Number	Plug/IP-rated	Gender
ECON120005PF	Power Connector	5	M12	Female
ECONM12-08M-CAT5E3	GigaT RJ45 Cable (3M)	8	M12	Female
ECAB124030MJ	10/100TX RJ45 Cable (3M)	4	M12	Male
ECAB124030MJS	10/100TX RJ45 STP Cable (3M)	4	M12	Male
ECONM12-05M2-02-CONSOLE	Console Cable (3M)	5	M12	Male
ECONM12-5P(F)70CM CABLE	90° Power Cable (70cm)	5	M12	Female
ECONM23-5P(F)70CM CABLE	90° Power Cable (70cm)	5	M23	Female
ECONM23-5P(F)6M CABLE	90° Power Cable (6m)	5	M23	Female
ECONM23-5P(F)8.5M CABLE	90° Power Cable (8.5m)	5	M23	Female

Wall-mount Bracket



19 inch Bracket



L Bracket



Part Number	Description
MBEAR001	Wall-mount bracket for 74(W) x 105 (D) x 152 (H) mm Industrial switches
MTAK19001	19" Rack Mounting Kit for 72x105x152mm Industrial Switch
MTAK19002	L-Bracket that can change 90 degree of DIN rail mounting



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