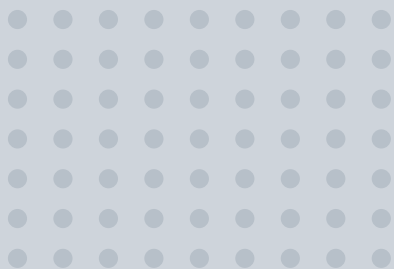


VEHICLE COMMUNICATION NETWORK SOLUTIONS



MEMBER OF
IT X PT

Designed for Smart Vehicle Applications

Lantech Vehicle Switches and Routers

The smart vehicle communication network helps improve transportation efficiency, service productivity, safety and customer satisfaction. These are a core competency of enterprises in the future.

There are many IP systems on board modern vehicles as part of the on board communications for example IP cameras (Security Systems), PIS (Passenger Information Systems), PA / Intercom, automatic passenger counting systems, passenger WI-FI, passenger infotainment, real time video streaming & operational support systems such as vehicle tracking and ticketing systems.

Lantech Communications has developed a series of Ethernet switches & multi-functional routers to meet the current E-marking / ITxPT standard for onboard vehicle applications. Lantech Communications is able to provide a complete solution to maximize your fleet efficiency and performance.

**ITxPT,
E-Mark &
ISO 7637-5****

Lantech networking devices meet these international standards for better safety in a vehicle environment.

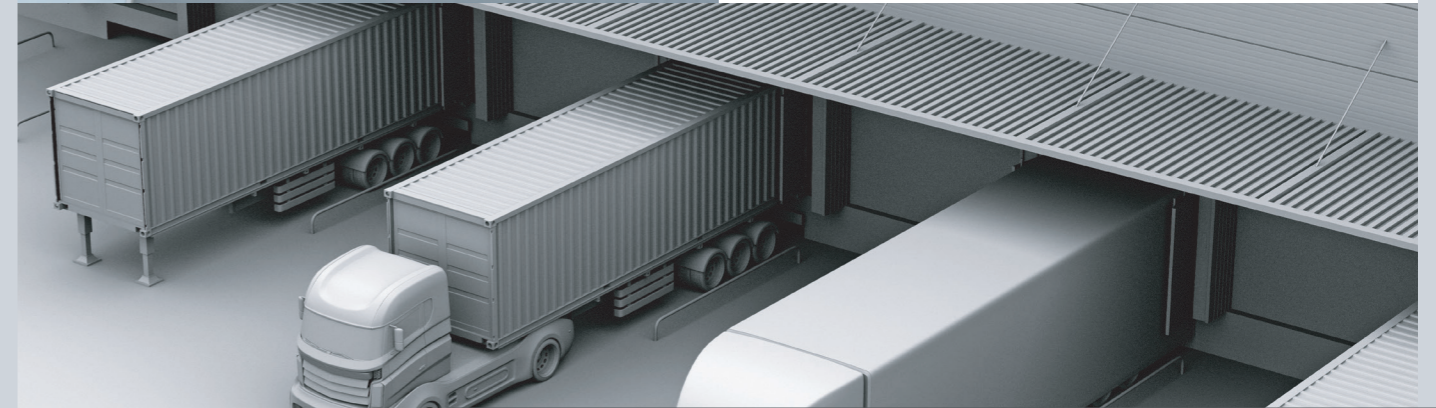
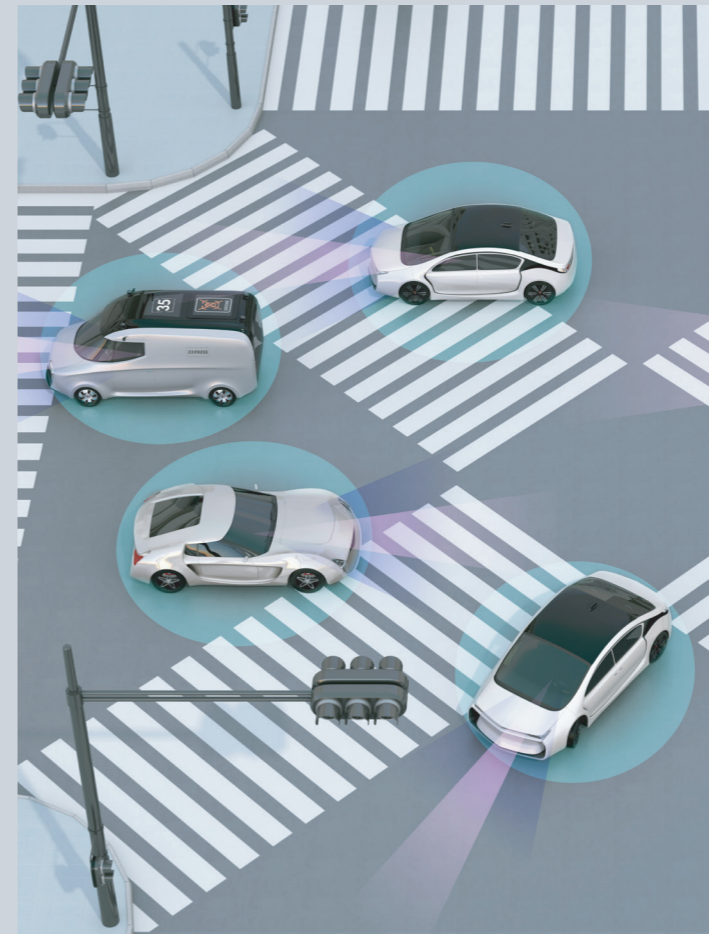
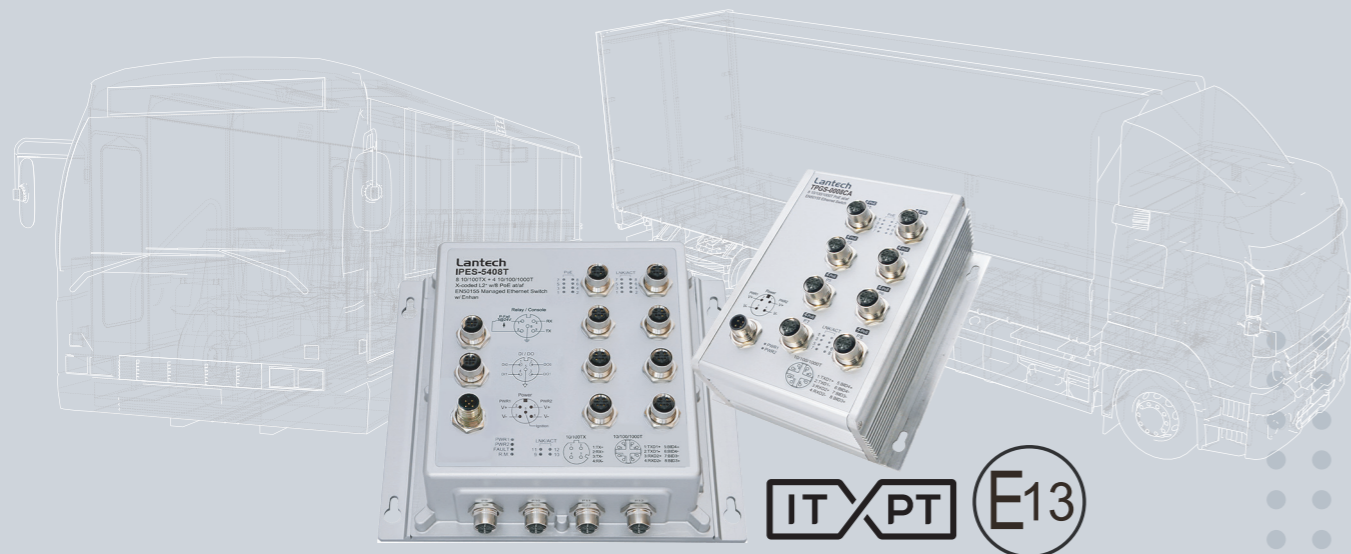
**Optional

**24VDC
Booster**

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

**PoE
at/af**

Lantech PoE Ethernet switches are compliant to IEEE802.3at/af PoE standard. They are able to feed each PoE port up to 30 Watt per port for various IP PD devices.



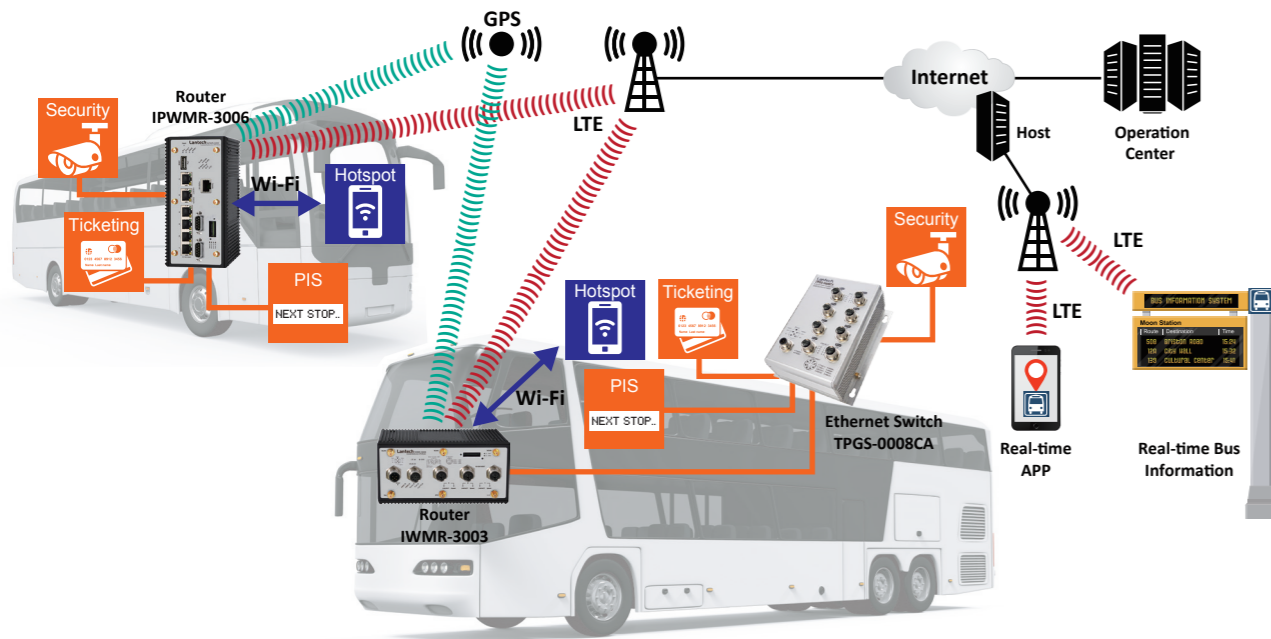
About Lantech

Lantech is an IRIS and ITxPT certified company focused on on-board EN50155 and E-Marking Ethernet switches and Wireless /LTE Routers development. Lantech is dedicated to transportation verticals where it covers onboard train/bus, stations, trackside, ITS and smart city. Lantech has been working together with key customers in effort to create up-to-date on-board passenger information, video security, track side data communications by providing rugged 10GbE, PoE Managed switches, LTE/ Wi-Fi Routers, ITxPT and E-mark certified solutions to fulfil various and critical requirements.

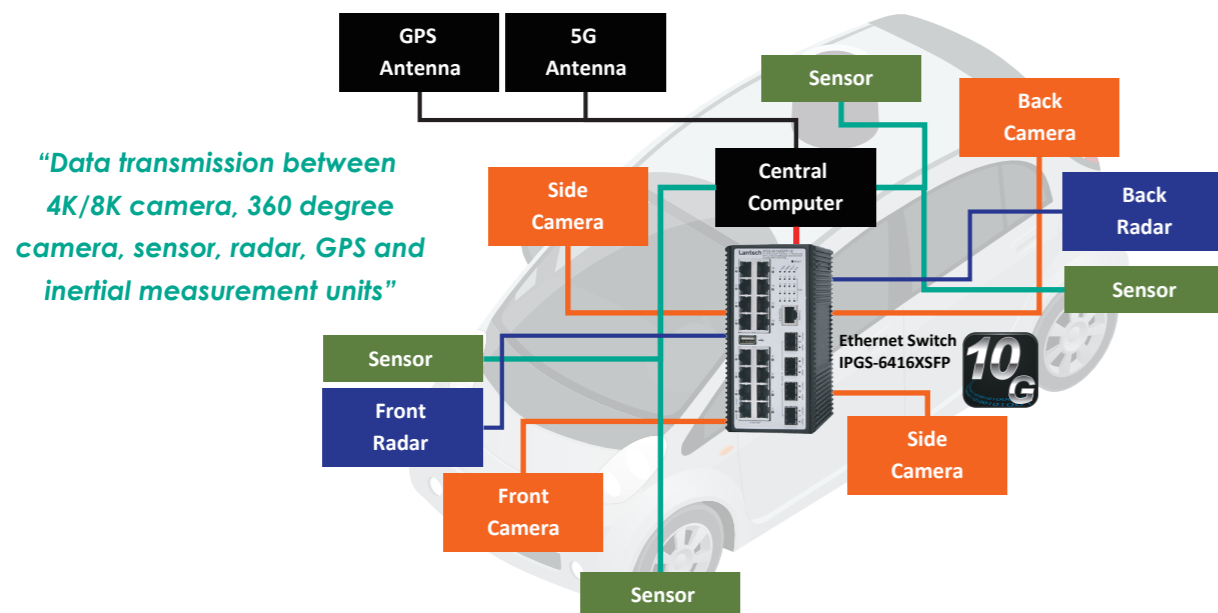


*Industrial-grade products

Applications Bus Communication



Applications Autonomous Car



Ethernet Switches FEATURE HIGHLIGHTS

E13

E-marking Certified

The E-mark is an EU certification for approved vehicles and vehicle components sold into the EU. The certified devices meet the basic requirements of safety and environmental protection.

ITxPT

ITxPT Ready

As an ITxPT member and a key supplier to the mass/public transportation industry, Lantech has access to the ITxPT platform for testing our wide range devices in real world operational conditions.

ISO 7637-5 Tested**

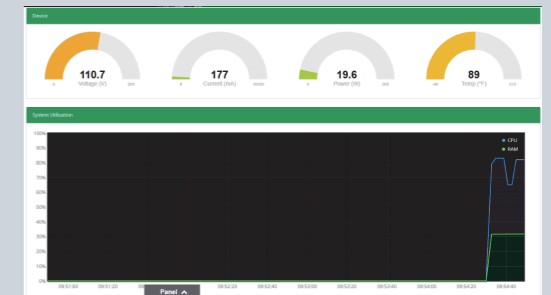
It's the enhanced definitions and verification methods for harmonization of pulse generators according to ISO 7637 that ensure the compatibility of conducted electrical transient of equipment installed on passenger cars and commercial vehicles.

**Optional

Real-time Environmental Monitoring

The enhanced environmental monitoring can detect when the switch's overall temperature, total PoE load, voltage or current are abnormal and it can send syslog or e-mail as a notification.

OS3 Platform



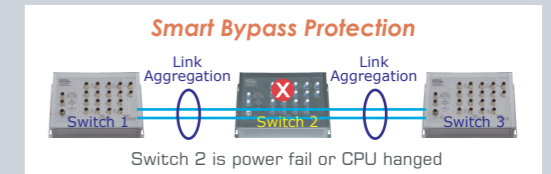
Firmware System Protection

The 4 mechanisms are designed to provide a more reliable firmware system: Boot Loader Protection, Dual Image, Rescue Mode, and NAND Flash Protection.

OS3 Platform

Smart Bypass Protection (Optional)

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



802.3at/af PoE up to 30W per port

Inrush current protection

Built-in power converter 12/24VDC boost up to 48VDC

Fan-less design

10G 10GbE connectivity to fulfill huge bandwidth requirement

USB port to upload & download the configuration file



Ignition Design

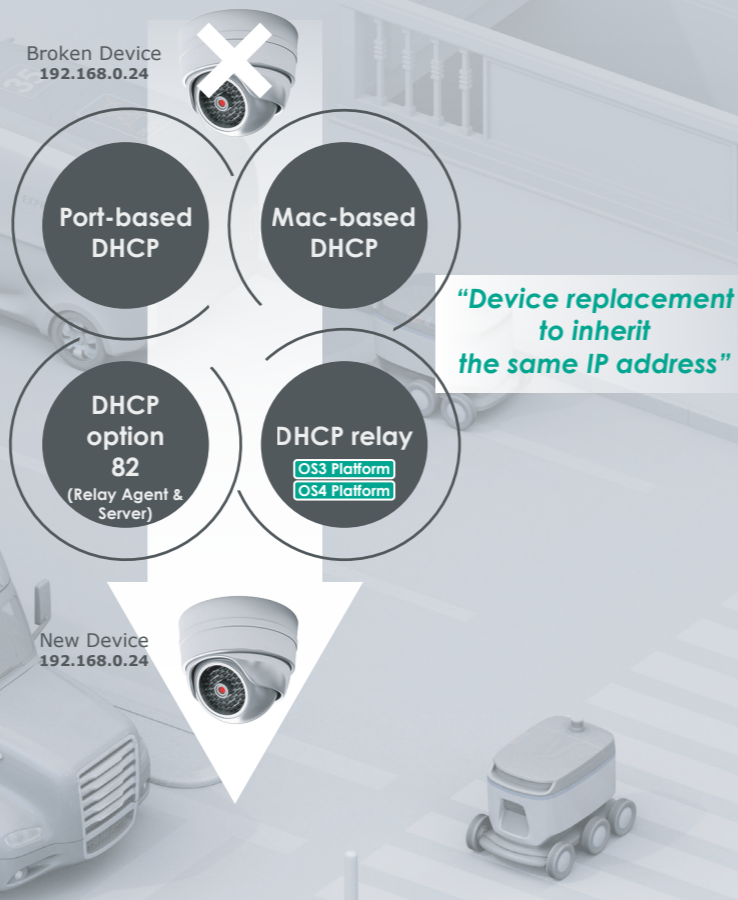
(IGN model)

When the vehicle has been stalled by the driver, some equipment in the car may still need to run for a while. With Lantech ignition switch, even if the engine on the vehicle has been turned off by the driver, the switch can still offer power to the equipment via PoE connection to the battery.



1. Engine is off
2. Extended operation time
3. Ethernet switch shut down

DHCP for Easy Device Replacement



Complete IGMP

The unique multicast protection under the enhanced G.8032 ring, can offer immediate self-recovery instead of waiting for the IGMP table timeout. Lantech Ethernet switches also support IGMPv3, GMRP, router port, MLD Snooping and static multicast forwarding binding by ports for video surveillance application.



M12 10G Uplinks Managed Ethernet Switches

OS3 Platform

<p>T(P)ES-L6416XFT 16 10/100TX (PoE at)+ 2 10G Copper + 2 10G Q-ODC fiber M12 OS3 Managed Switch</p> <p>4 10G, 16 TX, 16 PoE, USB</p>	<p>T(P)ES-L6416XT 16 10/100TX (PoE at) + 4 10G Copper M12 OS3 Managed Switch</p> <p>4 10G, 16 TX, 16 PoE, USB</p>	<p>T(P)ES-L6408XFT 8 10/100TX (PoE at) + 2 10G Copper + 2 10G Q-ODC fiber M12 OS3 Managed Switch</p> <p>4 10G, 8 TX, 8 PoE, USB</p>	<p>T(P)ES-L6408XT 8 10/100TX (PoE at) + 4 10G Copper M12 OS3 Managed Switch</p> <p>4 10G, 8 TX, 8 PoE, USB</p>
<p>T(P)ES-L6216XT 16 10/100TX (PoE at) + 2 10G copper M12 OS3 Managed Switch</p> <p>2 10G, 16 TX, 16 PoE, USB</p>	<p>T(P)ES-L6216XF 16 10/100TX (PoE at) + 2 10G Q-ODC fiber M12 OS3 Managed Switch</p> <p>2 10G, 16 TX, 16 PoE, USB</p>	<p>T(P)ES-L6208XT 8 10/100TX (PoE at) + 2 10G copper M12 OS3 Managed Switch</p> <p>2 10G, 8 TX, 8 PoE, USB</p>	<p>T(P)ES-L6208XF 8 10/100TX (PoE at) + 2 10G Q-ODC fiber M12 OS3 Managed Switch</p> <p>2 10G, 8 TX, 8 PoE, USB</p>

M12 2.5G Uplinks Managed Ethernet Switches

OS3 Platform

<p>T(P)ES-L5416MGFT 16 10/100TX (PoE at)+ 2 1G/ 2.5G Copper + 2 1G/2.5G Q-ODC fiber M12 OS3 Managed Switch</p> <p>4 2.5G, 16 TX, 16 PoE, USB</p>	<p>T(P)ES-L5416MGT 16 10/100TX (PoE at) + 4 1G/2.5G Copper M12 OS3 Managed Switch</p> <p>4 2.5G, 16 TX, 16 PoE, USB</p>	<p>T(P)ES-L5216MGT 16 10/100TX (PoE at) + 2 1G/2.5G copper M12 OS3 Managed Switch</p> <p>4 2.5G, 16 TX, 16 PoE, USB</p>	<p>T(P)ES-L5216MGF 16 10/100TX (PoE at) + 2 1G/2.5G Q-ODC fiber M12 OS3 Managed Switch</p> <p>4 2.5G, 16 TX, 16 PoE, USB</p>
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M12 Giga Uplinks Managed Ethernet Switches

OS1 Platform

<p>I(P)ES-5408T-X-IGN 8 10/100TX (PoE at) + 4 10/100/1000T L2+ M12 Managed Switch</p> <p>4 GT, 8 TX, 8 PoE</p>	<p>I(P)ES-5408T-D-IGN 12 10/100TX (PoE at) L2+ M12 Managed Switch</p> <p>12 TX, 8 PoE</p>
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Model name (P) = PoE model



M12 Unmanaged Ethernet Switches

Product Line-ups

<p>T(P)ES-0216T 16 10/100TX (PoE at) + 2 10/100/1000T M12 Unmanaged Switch</p> <p>2 GT, 16 TX, 16 PoE</p>	<p>T(P)ES-0212T 12 10/100TX (PoE at) + 2 10/100/1000T M12 Unmanaged Switch</p> <p>2 GT, 12 TX, 12 PoE</p>	<p>T(P)ES-0210T 10 10/100TX (PoE at) + 2 10/100/1000T M12 Unmanaged Switch</p> <p>2 GT, 10 TX, 10 PoE</p>	<p>T(P)ES-0016T 16 10/100/1000T (PoE at) M12 Unmanaged Switch</p> <p>16 TX, 16 PoE</p>
<p>T(P)GS-0008CA 8 10/100/1000T (PoE at) M12 Unmanaged Switch</p> <p>8 GT, 8 PoE</p>	<p>T(P)GS-0006CA 6 10/100/1000T (PoE at) M12 Unmanaged Switch</p> <p>6 GT, 6 PoE</p>	<p>T(P)ES-0008CA 8 10/100TX (PoE at) M12 Unmanaged Switch</p> <p>8 TX, 8 PoE</p>	<p>T(P)ES-0006CA 6 10/100TX (PoE at) M12 Unmanaged Switch</p> <p>6 TX, 6 PoE</p>
<p>I(P)ES-0208GF 8 10/100TX (PoE at) + 2 1000FX M12 Unmanaged Switch</p> <p>2 FX, 8 TX, 8 PoE</p>	<p>I(P)ES-0208T 8 10/100TX (PoE at) + 2 10/100/1000T M12 Unmanaged Switch</p> <p>2 GT, 8 TX, 8 PoE</p>	<p>I(P)ES-0008A 8 10/100TX (PoE at) M12 Unmanaged Switch</p> <p>8 TX, 8 PoE</p>	
<p>I(P)ES-0008B 8 10/100TX (PoE at) M12 Unmanaged Switch</p> <p>8 TX, 8 PoE</p>	<p>I(P)ES-0005B 5 10/100TX (PoE at) M12 Unmanaged Switch</p> <p>5 TX, 5 PoE</p>		

RJ45 Managed Ethernet Switches

OS3 Platform		
<p>I(P)GS-6416XSFP 16 10/100/1000T (PoE at/af) + 4 1G/2.5G/10G SFP+ Industrial Managed Ethernet Switch</p> <p>4 10G, 16 GT, 16 PoE, USB</p>	<p>I(P)GS-5416MGSFP 16 10/100/1000T (PoE at/af) + 4 1G/2.5G SFP L2+ Industrial Managed Ethernet Switch</p> <p>4 2.5G, 16 GT, 16 PoE, USB</p>	<p>I(P)GS-5016 16 10/100/1000T (PoE at/af) L2+ Industrial Managed Ethernet Switch</p> <p>16 GT, 16 PoE, USB</p>
OS2 Platform	OS1 Platform	
<p>I(P)GS-3008 8 10/100/1000T (PoE at/af) L2+ Industrial Managed Ethernet Switch</p> <p>8 GT, 8 PoE</p>	<p>I(P)ES-3416DSFP 16 10/100TX (PoE at/af) + 4 Dual Speed SFP L2+ Managed Ethernet Switch</p> <p>4 SFP, 16 TX, 16 PoE</p>	<p>I(P)ES-3016 16 10/100TX (PoE at/af) L2+ Industrial Managed Ethernet Switch</p> <p>16 TX, 16 PoE</p>

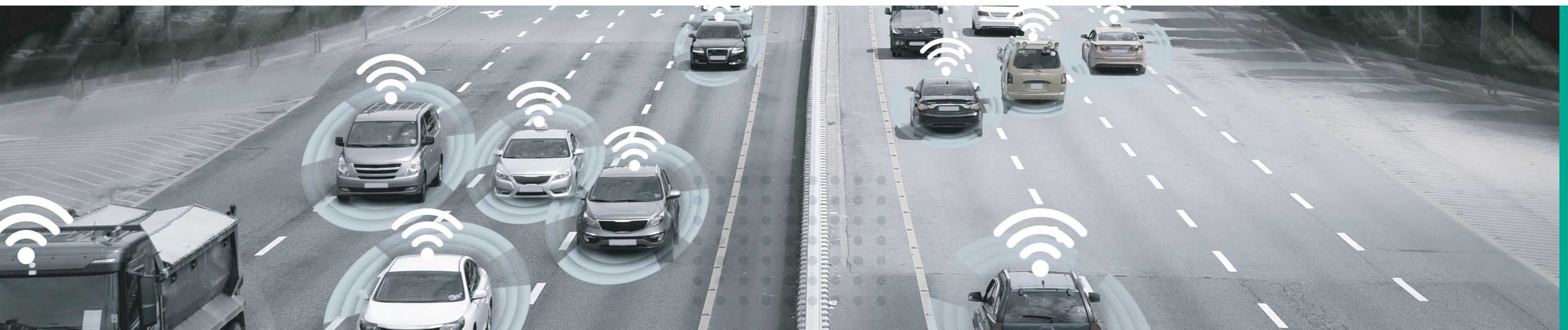


RJ45 Unmanaged Ethernet Switches

Product Line-ups

<p>I(P)GS-0016 16 10/100/1000T (PoE at/af) Industrial Ethernet Switch</p> <p>16 GT, 16 PoE</p>	<p>I(P)ES-0016 16 10/100TX (PoE at/af) Industrial Ethernet Switch</p> <p>16 TX, 16 PoE</p>	<p>I(P)GS-0008B 8 10/100/1000T (PoE at/af) Industrial Ethernet Switch</p> <p>8 GT, 8 PoE</p>	<p>I(P)ES-0008B 8 10/100TX (PoE) Industrial Ethernet Switch</p> <p>8 TX, 8 PoE</p>
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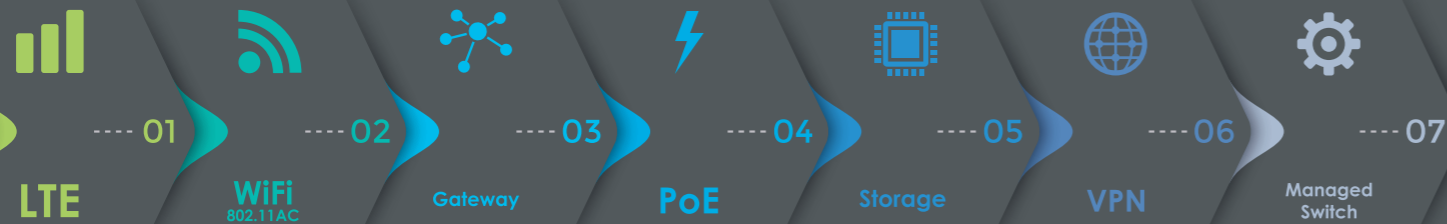
Model name (P) = PoE model



Multi-function Routers FEATURE HIGHLIGHTS

7in1 7-in-1 Multifunction

Lantech 7-in-1 multi-function VPN routers provide advanced features and powerful performance for future vehicle applications.



Built-in L2+ Managed Switch Function

EMMC Flash storage (Optional)

Graphical Wi-Fi & LTE signal strength

Ignition Sensing with ITxPT design

5-in-1 Wireless Modes: AP Client/ Client/ Bridge/ Client Roaming/ MESH

Load Balancing with 5 Mechanisms

Serial Ports: Modbus Gateway

Multisite VPN, OpenVPN and Firewall

Dual Concurrent LTE Design 4G/3G w/ SIM Redundancy

Optional eSIM chip enables router with versatile data plans

IEEE 802.311ac Dual Band Operation

Support Routing Protocol: Static route / RIPv2 / OSPF / BGP / EIGRP

Environmental monitoring for inside router info& alerting

802.3at/af PoE up to 30W per port

Built-in power converter 12/24VDC boost up to 48VDC (12V/24V models)

Isolation protection: Power input, serial and DI/DO

Support MQTT (Message Queuing Telemetry Transport) as a MQTT publisher

USB port to backup, restore the configuration file and upgrade firmware

InstaAir Cloud Based Fleet Management System for Routers

InstaAir is the leading-edge, end-to-end cloud-based fleet management system for routers. This highly advanced system supports over-the-air device monitoring, configuration, and software upgrades anytime, anywhere. The powerful features provide current views of the entire device, and custom reports can be set up to monitor critical events and prevent device downtime.

FEATURES

- Real-time Monitoring
- User Authentication
- Group Organization*
- Zero-Touch Configuration
- GPS Fleet Management
- Remote actions
- Network Troubleshooting*
- Notification*
- Responsive Web

*Future release

4G LTE + Wi-Fi Multifunction Routers

<p>I(P)WMR-3204DF Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 4 GigaT + 2 Dual Speed SFP</p> <p>4 GT, 2 SFP, 4 PoE, 4 USB, 2 Serial</p>	<p>I(P)WMR-3004DF Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 4 GigaT + 2 Dual Speed SFP WAN</p> <p>4 GT, 4 PoE, 4 USB, 2 Serial, 2 WAN</p>	<p>I(P)WMR-3006 Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 6 GigaT</p> <p>6 GT, 4 PoE, 4 USB, 2 Serial</p>	<p>I(P)WMR-3004 Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2 serial ports + 4 GigaT + 2WAN</p> <p>4 GT, 4 PoE, 4 USB, 2 Serial, 2 WAN</p>	<p>IWMR-3003(-M12) Industrial Multifunction VPN Router w/up to 2 WiFi 11ac + up to 2 LTE 4G + 2/4 serial ports + 3 GigaT</p> <p>3 GT, 1 PD, 4 Serial, 4 USB</p>
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4G LTE Multifunction Routers

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

<p>I(P)WAP-3204DF Industrial Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 4 GigaT + 2 Dual Speed SFP</p> <p>4 GT, 2 SFP, 4 PoE, 4 USB, 2 Serial</p>	<p>I(P)WAP-3004DF Industrial Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 4 GigaT + 2 Dual Speed SFP WAN</p> <p>4 GT, 4 PoE, 4 USB, 2 Serial, 2 WAN</p>	<p>I(P)WAP-3006 Industrial Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 6 GigaT</p> <p>6 GT, 4 PoE, 4 USB, 2 Serial</p>	<p>I(P)WAP-3004 Industrial Multifunction VPN Router w/2 WiFi 11ac + 2 serial ports + 4 GigaT + 2WAN</p> <p>4 GT, 4 PoE, 4 USB, 2 Serial, 2 WAN</p>	<p>IWAP-3003(-M12) Industrial Multifunction VPN Router w/2 WiFi 11ac + 2/4 serial ports + 3 GigaT</p> <p>3 GT, 1 PD, 4 Serial, 4 USB</p>
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1) M12 model does not support serial ports.
2) Model name (P) = PoE model
3) In a continuing effort to improve and advance technology, product specifications are subject to change without notice.

Learn more



Lantech Worldwide Offices



Taiwan

Lantech Communications Global, Inc.

7F, No.33, Sec.1, Tiding Blvd.,
Neihu District, Taipei, Taiwan, 114066 (or 11494)
Tel: +886-2-2790-2589
Fax: +886-2-2790-2516
info@lantechcom.tw
www.lantechcom.tw

United Kingdom

Lantech UK & Ireland Sales

The Barracks Business Centre
Wakefield Road Pontefract
West Yorkshire WF8 4HH
Mobile: +44 (0) 7746 256770
Office: +44 (0) 1977 877477
ken.woolley@lantechcom.tw

Europe

Lantech Communications Europe GmbH

Philipp-Kachel-Str. 42a
63911 Klingenberg / Germany
Tel: +49-9372-50959-97
Fax: +49-9372-50959-99
sales@lantechcom.eu
www.lantechcom.eu

Australia

Lantech Communications Australia Pty Ltd.

Victoria Headquarter
Suite #11, 1044A Dandenong Road,
Carnegie, VIC 3163
Tel : +61 3 7036 0400
Perth Office
15 McCabe Street,
North Fremantle, WA 6159
Tel : +61 8 6558 0818
Email: sales@lantechcom.com.au
www.lantechcom.com.au

Singapore

Lantech Singapore

25 Bukit Batok Crescent
#10-07 THE ELITIST
Singapore 658066
Tel: +65-8822-5589
lim@lantechcom.tw



www.lantechcom.tw



info@lantechcom.tw

