I(P)GS-L6416XSFPR-2DCI

16 GE + 4 10G SFP (w/16 PoE af/at) Industrial Managed Ethernet Rackmount Switch; Dual DCI power inputs

OVERVIEW

Lantech I(P)GS-L6416XSFPR-2DCI is a high performance OS3 Industrial Ethernet switch with 16 10/100/1000T + 4 1G/2.5G/5G/10G SFP which provides advanced security function for network aggregation deployment. PoE model has 16 PoE 802.3af/at ports.

Up to 16 PoE at/af ports w/advanced PoE management; Ethernet power input galvanic isolation

Compliant with 802.3af/at standard, the PoE model is able to feed each PoE port up to 30 Watt at each PoE port for various IP PD devices. It supports advanced PoE management including PoE detection and scheduling. PoE detection can detect if the connected PD hangs then restart the PD; PoE scheduling is to allow pre-set power feeding schedule upon routine timetable. Each PoE ports can be Enabled/disabled, get the voltage, current, Watt, and temperature info displayed on WebUI.

Galvanic isolation between power input and Ethernet power system, also the PoE galvanic isolation provides insulation between the power input to PoE Ethernet ports, preventing cabling and grounding incidents from damaging the Ethernet switch. The efficiency of the galvanically decoupled voltage converters can reach above 90%. (DCI model)

Lantech OS3 Platform with complete L2 management and upgradable optional L3 & communication protocols

The switch runs Lantech OS3 platform which is powerful with complete Layer 2 management features and optional upgradable for future expansion, such as Layer 3 Lite, Layer 3, etc. To learn more about the Lantech OS3 Platform, please refer to **Lantech OS3/OS4 Software Datasheet**

Enhanced cybersecurity features with IEC 62443-4-1 certification

Lantech OS3 platform is designed with high standard of cybersecurity to prevent the threats from network attack such as DDoS attacks. To ensure the safety and reliability of communication networks, Lantech develops our products under strict international security standard and is certified with IEC 62443-4-1 network security standard. To learn more about Lantech cybersecurity software solution, please refer to **Lantech OS3/OS4 Software Datasheet**

Miss-wiring avoidance, node failure protection, Loop protection

The switch also embedded several features for strong and reliable network protection in an easy and intuitive way. When the pre-set ring configuration failed or looped by miss-wiring, the switch being able to alert with the LED indicator and disable ring automatically. Node failure protection ensures the switches in a ring to survive after power breakout is back. The status can be shown in NMS when each switch is back. Loop protection is also available to prevent the generation of broadcast storm when a dumb switch is inserted in a closed loop connection.

User friendly GUI, Auto topology drawing, Enhanced Environmental Monitoring

The user-friendly UI, innovative auto topology drawing and topology demo makes the switch much easier to get hands-on. The complete CLI enables professional engineer to configure setting by command line. It supports enhanced environmental monitoring for actual input voltage, current, ambient temperature and total power load.

Editable configuration file; USB port for import/export configuration; optional out-of-band management via 1000T Ethernet port

The configuration file of the switch can be imported and edited with word processor for the following switches to configure with ease. The USB port can import/export the configuration from/to USB dongle and also to upgrade firmware from USB dongle. TFTP/HTTP firmware upgrade is supported.

The console port can act as OOB** management for remote service and management.

Dual DCI power supplies

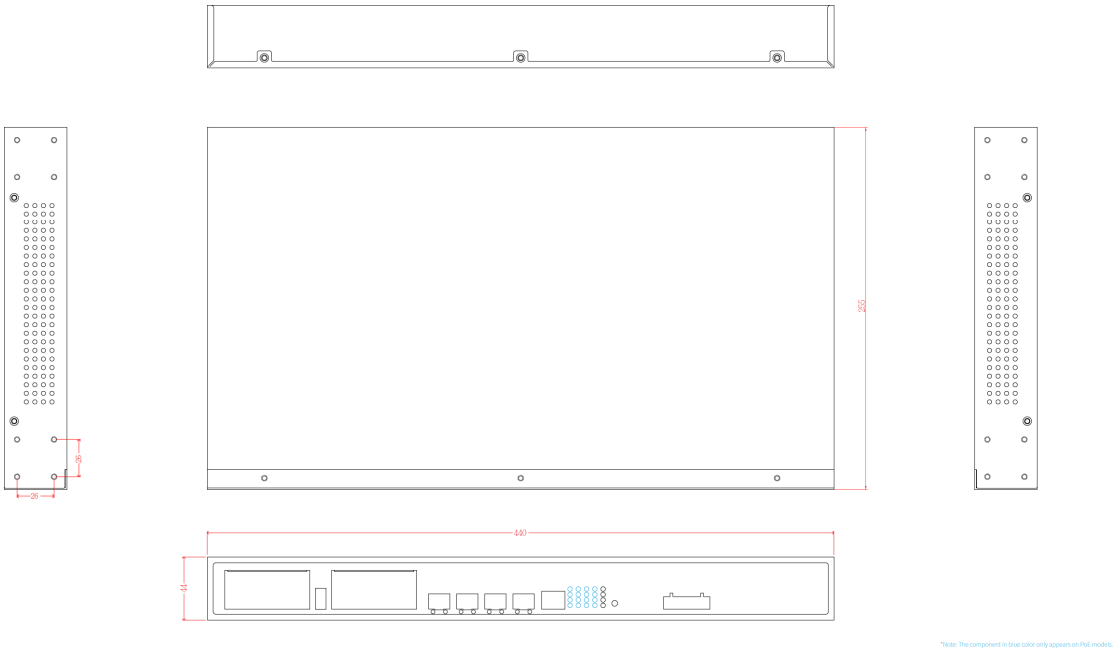
The switch is designed with dual galvanic isolated power supplies at 16.8~137.5VDC with terminal block.

Industrial hardened design with high EFT and ESD protection

The switch features high reliability and robustness coping with extensive EMI/RFI phenomenon, environmental vibration and shocks usually found in factory, substation, steel automation, aviation, mining and process control.

It is the best solution for Automation, transportation, surveillance, Wireless backhaul, Semi-conductor factory applications. The switch can be used in extreme environments with an operating temperature range of -40°C to 70°C.

DIMENSIONS (unit=mm)



*Note: The component in blue color only appears on PoE models.

SPECIFICATIONS

Hardware Specification

Standards	IEEE802.3 10Base-T Ethernet IEEE802.3u 100Base-TX IEEE802.3ab 1000Base-T IEEE802.3x Flow Control and Back Pressure IEEE802.3ad Port trunk with LACP IEEE802.1d Spanning Tree IEEE802.1w Rapid Spanning Tree IEEE802.1s Multiple Spanning Tree IEEE802.3ad Link Aggregation Control Protocol (LACP) IEEE802.1AB Link Layer Discovery Protocol (LLDP) IEEE802.1X User Authentication (Radius) IEEE802.1p Class of Service IEEE802.1Q VLAN Tag IEEE802.3at/af Power over Ethernet (PoE model)
Switch Architecture	Back-plane (Switching Fabric): 112Gbps
Mac Address	16K MAC address table
Jumbo frame	10KB
Connectors	10/100/1000T: 16 x ports RJ-45 with Auto MDI/MDI-X function Mini-GBIC: 4 x 1G/2.5G/5G/10G SFP socket with DDMI RS-232 connector: RJ-45 type for CLI; optional 100Mbps Ethernet for management out-of-band feature USB x 1 Power connector: 6-pin terminal block
Network Cable	100Base-TX: 2-pair STP Cat. 5/ 5E/ 6 cable; EIA/TIA-568 100-ohm (100m) 1000Base-T: 4-pair STP Cat5E/6 cable 10G Copper: 4-pair STP Cat6a/7 cable
Optical Cable	**1Gbps:** Multi-mode: 0 to 550 m, 850 nm (50/125 µm); 0 to 2 km, 1310 nm (50/125 µm) Single mode: 0 to 10 km/ 30 km/ 40 km, 1310 nm (9/125 µm); 0 to 50 km/ 60 km/ 80km/ 120 km, 1550 nm (9/125 µm) **2.5Gbps** Multi-mode: 0 to 300 m, 850 nm (50/125 µm); Single mode: 0 to 2 km/ 15 km/ 40 km, 1310 nm (9/125 µm); 0 to 40 km/ 80 km/ 100km, 1550 nm (9/125 µm) **WDM 1Gbps:** Single-mode: 0 to 10 km/ 20 km/ 40 km/ 60 km, 1310 nm (9/125 µm); 0 to 80 km, 1490 nm (9/125 µm); 0 to 10 km/ 20 km/ 40 km/ 60 km/ 80 km, 1550 nm (9/125 µm) **WDM 2.5Gbps** Single-mode: 0 to 5 km/ 20 km/ 40 km/ 60 km, 1310 /1550nm (9/125 µm); 0 to 80 km, 1490/1550 nm (9/125 µm) **10Gbps** Multi-mode: 0 to 300 m, 850 nm (OM3 50/125µm); Single mode: 0 to 10 km/ 20 km, 1310 nm (9/125 µm); 0 to 40 km/ 80km/ 100 km, 1550 nm (9/125 µm) **WDM 10Gbps** Single-mode: 0 to 10 km/ 20 km/ 40 km/ 60 km, 1270/1330 nm (9/125 µm); 0 to 80km, 1490/1550 nm (9/125 µm)
LED	Per unit: Power 1 (Green), Power 2 (Green), FAULT (Red); RM(Green) 10/100/1000T Ethernet port: Link/Activity (Green) 1G/10G fiber: Link/Act (Orange) PoE : Link/Act (Green) (PoE model)
Operating Humidity	5% ~ 95% (non-condensing)
Operating Temperature	-40°C~70°C / -40°F~167°F
Storage Temperature	-40°C~85°C / -40°F~185°F
Power Supply	Built-in x2 galvanic isolated DC 16.8~137.5VDC power supply
PoE Budget (PoE model)	120W@54V (50-56VDC input is recommended for 802.3at 30W applications) Higher PoE budget can be applied upon request.

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PoE pin assignment (PoE model)	M12 port #1~#16; support IEEE 802.3at/af End-point, Alternative A mode
Power Consumption	Max. 33.5W (For PoE model) 30.5W (For Non PoE Model)
Case Dimension	Metal case. IP-30, 440mm(W)x255mm(D)x44mm(H)
Weight	3.2kg
Installation	Rack Mount Design
EMI & EMS	EN 50121-4:2016/A1:2019 EN 50121-5:2017/A1:2019 EN 55035:2017/A11:2020 EN 55032:2015/A11:2020 FCC Part 15, Subpart B ICES-003 Issue 7-2020 IEC 61000-4-9:2016
	IEC 61000-4-10:2016 IEC 61000-6-5:2015 IEC 61000-6-2:2016 IEC 61000-6-4:2018 EN IEC 61000-6-2:2019 EN 61000-6-4:2019 BS EN 55035:2017+A11:2020 BS EN 55032:2015+A1:2020
Verifications	IEC 61850-3:2013 IEEE 1613:2009 EN 50155:2021
MTBF	645,121 hrs (standards: IEC 62380)

Software Specification

Lantech OS3 Platform	Download Software Datasheet

*Future release
**Optional

ORDERING INFORMATION

- **IPGS-L6416XSFPR-2DCI .....P/N: 8350-85965**
  16 10/100/1000T + 4 1G/2.5G/5G/10G SFP OS3 w/16 PoE Managed Ethernet Switch; Built-in x2 galvanic isolated DC 16.8~137.5VDC power supply with PoE galvanic isolation; -40°C to 70°C; IP30 Rackmount design
- **IGS-L6416XSFPR-2DCI .....P/N: 8350-85966**
  16 10/100/1000T + 4 1G/2.5G/5G/10G SFP OS3 Managed Ethernet Switch; Built-in x2 galvanic isolated DC 16.8~137.5VDC power supply with galvanic isolation, -40°C to 70°C; IP30 Rackmount design
- **IPGS-L6416XSFPR-2DCI-OOB ..... P/N: 8350-85967**
  16 10/100/1000T + 4 1G/2.5G/5G/10G SFP OS3 w/16 PoE Managed Ethernet Switch; Built-in x2 galvanic isolated DC 16.8~137.5VDC power supply with PoE galvanic isolation; -40°C to 70°C; IP30 Rackmount design, w/Out-of-band management feature
- **IGS-L6416XSFPR-2DCI-OOB ..... P/N: 8350-85968**
  16 10/100/1000T + 4 1G/2.5G/5G/10G SFP OS3 Managed Ethernet Switch; Built-in x2 galvanic isolated DC 16.8~137.5VDC power supply with galvanic isolation, -40°C to 70°C; IP30 Rackmount design, w/Out-of-band management feature

OPTIONAL ACCESSORIES

Software package

Please refer to the software datasheet

Mini GBIC (SFP)

- **8330-162-V1** MINI GBIC 1000SX (LC/0.5km) Transceiver
- **8330-163-V1** MINI GBIC 1000SX2 (LC/2km) Transceiver
- **8330-165-V1** MINI GBIC 1000LX (LC/10km) Transceiver
- **8340-0591-V1** MINI GBIC 1000LHX (LC/40km) Transceiver
- **8330-166-V1** MINI GBIC 1000XD (LC/50km) Transceiver
- **8330-169-V1** MINI GBIC 1000XD (LC/60km) Transceiver
- **8330-167-V1** MINI GBIC 1000ZX (LC/80km) Transceiver
- **8330-170-V1** MINI GBIC 1000EZX (120km) Transceiver
- **8330-168-V1** MINI GBIC 1000T (100m) Transceiver
- **8330-188-V1** LTSFP-1000BX-10KM Transceiver (WDM 1310)
- **8330-189-V1** LTSFP-1000BX-10KM Transceiver (WDM 1550)
- **8330-186-V1** LTSFP-1000BX-20KM Transceiver (WDM 1310)
- **8330-187-V1** LTSFP-1000BX-20KM Transceiver (WDM 1550)
- **8330-180-V1** LTSFP-1000BX-40KM Transceiver (WDM 1310)
- **8330-182-V1** LTSFP-1000BX-40KM Transceiver (WDM 1550)
- **8330-181-V1** LTSFP-1000BX-60KM Transceiver (WDM 1310)
- **8330-183-V1** LTSFP-1000BX-60KM Transceiver (WDM 1550)
- **8330-184-V1** LTSFP-1000BX-80KM Transceiver (WDM 1490)
- **8330-185-V1** LTSFP-1000BX-80KM Transceiver (WDM 1550)
- **8330-262D-V1** MINI GBIC 2.5G 850nm VCSEL (LC/0.3km) Transceiver
- **8330-263D-V1** MINI GBIC 2.5G 1310nm FP (LC/2km) Transceiver
- **8330-265D-V1** MINI GBIC 2.5G 1310nm DFB (LC/15km) Transceiver
- **8330-193D-V1** 10G Base SFP+ SR, Multi-mode (LC/300m) Transceiver
- **8330-194D-V1** 10G Base SFP+ LR, Single-mode (LC/10km) Transceiver
- **8330-209D-V1** 10G Base SFP+ , Single-mode(10km) Transceiver (WDM 1270)
- **8330-210D-V1** 10G Base SFP+ , Single-mode(10km) Transceiver (WDM 1330)
- **8330-200D-V1** 10G Base SFP+ , Single-mode(20km) Transceiver (WDM 1270)
- **8330-201D-V1** 10G Base SFP+ , Single-mode(20km) Transceiver (WDM 1330)
- **8330-202D-V1** 10G Base SFP+ , Single-mode(40km) Transceiver (WDM 1270)
- **8330-203D-V1** 10G Base SFP+ , Single-mode(40km) Transceiver (WDM 1330)
- **8330-206-V1** 10G/5G/2.5G/1000Base-T SFP, 3.3V,30m (10G) 50m (2.5G/5G) 100m (1G); -10~70°C

All SFPs ended with D are with Diagnostic function

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