

IGS-3204MGSFP

4 10/100/1000T + 2 1G/2.5G SFP L2+ Industrial Managed Switch w/ Enhanced G.8032 Ring

- *Enhanced G.8032 ring protection < 20ms for single ring. Supports auto mode**, enhanced mode, train mode**, multi-VLAN** and basic mode; Enhanced G.8032 ring covers multicast packets; MSTP 8/16**MSTI /RSTP ; support MRP ring***
- *Miss-wiring avoidance & node failure protection*
- *User friendly UI, including auto topology drawing and DDM threshold monitoring with dB values***; Complete CLI*
- *Support LACP link aggregation, IGMP v3/router port, DHCP server & DHCP Option82; Port based DHCP distribution, Mac based DHCP server, QoS by VLAN**, SSH v2/SSL, HTTPS, INGRESS ACL L2/L3, TACACS+**, QinQ**, SMS***
- *Dual 9.5V~60VDC input*
- *USB port for backup, restore the configuration file*
- *Optional Environmental monitoring function to display inside switch info incl. temperature, voltage, current, power consumption*



OVERVIEW

Lantech IGS-3204MGSFP is a high performance L2+ all Gigabit switch with 4 10/100/1000T + 2x 1G/2.5G selectable multi-Giga- rate SFP which provides L2 wire speed and advanced security function for network aggregation deployment. It delivers ITU G.8032 enhanced ring recovery less than 20ms for single ring, comprehensive QoS, VLAN, GVRP, advanced security SSH v2/SSL**, TACACS+**, INGRESS ACL L2/L3**, IGMPv1/v2/v3/router port, DHCP server/relay , jumbo frame which are important features required in mid and large network. It also supports Cisco Discovery Protocol (CDP) and LLDP for Ciscoworks to detect the switch info and to be shown on L2 map topology.

Miss-wiring avoidance, Node failure protection, Loop protection

The IGS-3204MGSFP also embedded several features for stronger and reliable network protection in an easy and intuitive way. When the pre-set ring configuration failed or looped by miss-wiring, Lantech IGS-3204MGSFP is 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

The user friendly UI, innovative auto topology drawing and topology demo makes IGS-3204MGSFP much easier to get hands-on. The complete CLI enables professional engineer to configure setting by command line.

Enhanced G.8032 ring, 8/16 MSTI MSTP; Optional MRP ring****

Lantech IGS-3204MGSFP features enhanced G.8032 ring which can be self-healed in less than 20ms for single ring topology protection covering multicast packets. It also supports various ring topologies that covers enhanced ring & basic ring by easy setup than others. It supports MSTP that allows each spanning tree for each VLAN for redundant links with 8/16** MSTI

Optional MRP (Media Redundancy Protocol) can be supported for industrial automation networks.

DHCP option 82 & Port based, Mac based DHCP, Option66, IPv6 DHCP server**

DHCP server can assign dedicated IP address by MAC or by port (Port based for single switch), it also can assign IP address by port for multiple switches with single DHCP option82 server. For the ending device which need to download file from TFTP server, DHCP Option66 server can offer IP address of TFTP server to DHCP client. Optional IPv6 address resolution for DHCP service can be supported.

QoS by VLAN for legacy device**

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.

QinQ, QoS QinQ** and GVRP supported**

It supports the QinQ**, QoS QinQ**, GVRP for large VLAN segmentation.

IGMPv3, GMRP, router port, static multicast forwarding and multicast Ring protection

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

Editable configuration text file; Factory reset button; CPU watchdog

The configuration file of Lantech IGS-3204MGSFP can be exported in text file so that it can be edited and configured back to switch with ease for mass deployment. Factory reset button can restore the setting back to factory default and built-in watchdog design can automatically reboot the switch when CPU is found dead. IGS-3204MGSFP also supports dual image firmware function.

USB port for back up, restore configuration and upgrade firmware

The built-in USB port can upload/download the firmware

through USB dongle for switch replacement.

Event log & message; 2DI / 2DO

In case of event, the IGS-3204MGSFP is able to send email & SMS** text message to pre-defined addresses as well as SNMP Traps out immediately. It provides 2DI and 2DO. When disconnection of the specific port was detected; DO will activate the signal LED to alarm. DI can integrate the sensors for events and DO will trigger the alarm while sending alert information to IP network with email and traps.

Relay alarm and email/trap/SMS alerting**

Featured with relay contact alarm function, the IGS-3204MGSFP is able to connect with alarm system in case of power failure and port disconnection. In case of such event, it will send out email, SMS**, trap alerting to predefined users.

Optional environmental monitoring for switch inside information (-M model)**

The environmental monitoring can detect switch overall temperature, voltage and current where can send the SNMP traps, email and SMS** alert when abnormal.

Dual 12V~48V input; High reliability and extended working temperature

Lantech IGS-3204MGSFP is designed with dual input power at 9.5V~60VDCinput; Lantech IGS-3204MGSFP provides $\pm 2000V$ EFT/SURGE and ± 4000 VDC (Contact) / ± 8000 VDC (Air) Ethernet ESD protection, which can reduce unstable situation caused by power line and Ethernet. It has high reliability and robustness coping with extensive EMI/RFI phenomenon, environmental vibration and shocks usually found in Automation, transportation, surveillance, Wireless backhaul, Semi-conductor factory and assembly lines.

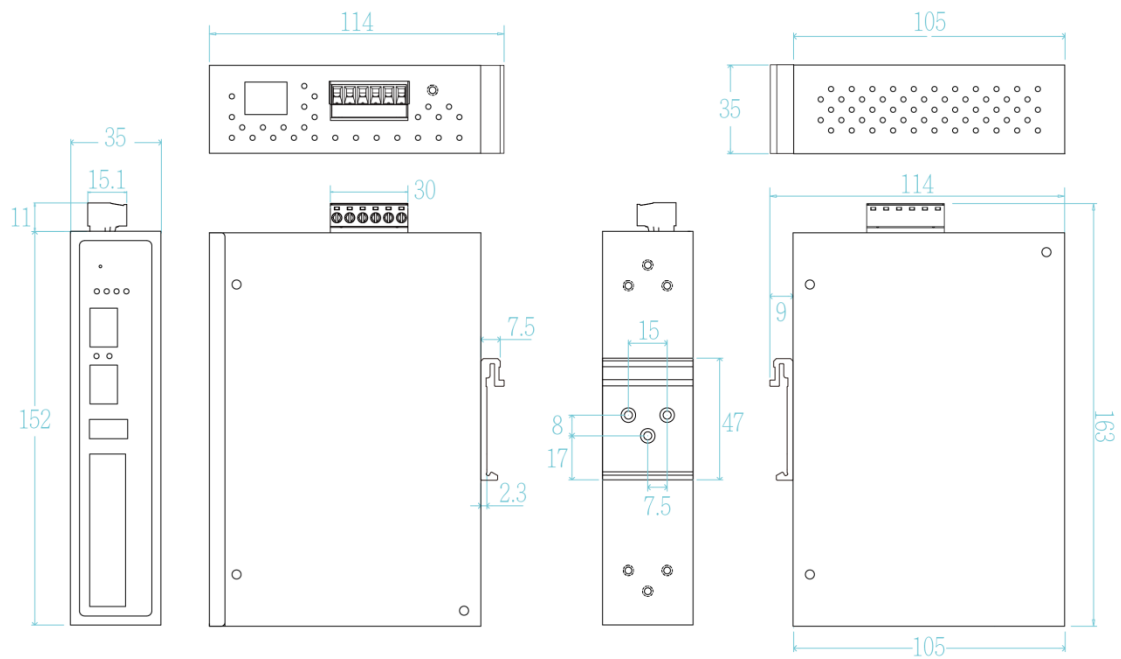
The -E model can be used in extreme environments with an operating temperature range of $-40^{\circ}C$ to $75^{\circ}C$.

FEATURES & BENEFITS

- **4 10/100/1000T + 2 1G/2.5G selectable SFP (Total 6 Ports Switch)**
- **Support 10K bytes jumbo frames**
- **Dual 9.5V~60VDC power input**
- **Back-plane (Switching Fabric): 18Gbps**
- **16K MAC address table**
- **DDM to support SFP diagnostic function*****
 - Automatically convert the raw data into dB values for TX power/RX power, making it easier to measure the fiber distance
- **10KB Jumbo frame**
- **User friendly UI, auto topology drawing, topology demo, complete CLI for professional setting**
- **Enhanced G.8032 Ring protection in 20ms for single ring**
 - Support various ring/chain topologies, including enhanced ring & basic ring
 - Enhanced G.8032 ring configuration with ease
 - Auto ring configuration(auto mode) for single ring
- **Provides EFT/SURGE protection ± 2000 VDC for power line**
- **Supports ± 4000 VDC (Contact) and ± 8000 VDC (Air) Ethernet ESD protection**
- **Supports IEEE 802.1p Class of Service, per port provides 8 priority queues Port base, Tag Base and Type of Service Priority**
- **IEEE 802.1d STP**, IEEE 802.1w RSTP, IEEE 802.1s MSTP VLAN redundancy with 8/16** MSTI,**
- **4K 802.1Q VLAN, Port based VLAN, GVRP**, QinQ**, QoS QinQ****
- **Supports IEEE 802.1ab LLDP, Cisco CDP; LLDP info can be viewed via Web/ Console**
- **DHCP server / client / DHCP Option 82 relay / DHCP Option 82 server; Port based DHCP server; DHCP Option 66; IPv6 address resolution for DHCP server**,
ring
Cover multicast and data packets protection**

- **Bandwidth Control**
 - Ingress packet filter
 - Broadcast/multicast packet filter control
- **Relay alarm output system events**
- **Miss-wiring avoidance**
 - LED indicator
- **Node failure protection**
 - Ensure the switches in a ring to survive after power breakout is back
 - The status can be shown in NMS when each switch is back
- **TFTP/SFTP**/HTTP firmware upgrade**
- **Configuration backup and restoration**
 - Supports editable configuration file for system quick installation
 - USB port for upload / download configuration by USB dongle
- **System Event Log, SMTP Email alert, SMS** mobile (text) and SNMP Trap for alarm support; 32 RMON counters**
- **Security**
 - SSL/SSH v2/INGRESS ACL L2/L3
 - Port Security: MAC address entries/Filter/static MAC-Port binding
 - Remote Admin: IP address security management to prevent unauthorized intruder.
 - TACACS+**
 - Login Security: IEEE802.1X/RADIUS
 - HTTPS for secure access to the web interface
- **Static multicast forwarding forward reversed IGMP flow with multicast packets binding with ports for IP surveillance application**
- **IGMP router port to assign query in ring for reversed multicast video flow**
- **IGMPv1,v2,v3 with Query mode for multimedia; GMRP**
- **Dual image firmware support**
- **Factory reset button to restore setting to factory default**
- **Optional environmental monitoring for system input voltage, current, ambient temperature**
- **Watchdog design to auto reboot switch CPU is found dead**
- **IP30 metal housing with DIN rail and Wall-mount** design**

DIMENSIONS (unit=mm)



SPECIFICATION

Hardware Specification		EMI & EMS	
Standards	IEEE802.3 10Base-T Ethernet IEEE802.3u 100Base-TX IEEE802.3ab 1000Base-T Ethernet IEEE802.3z Gigabit fiber 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	EMI & EMS	FCC Part 15 Class A IEC/EN61000-6-2 CE EN55032 Class A CE EN55024: CE EN61000-4-2 (ESD) Level 3 CE EN61000-4-3 (RS) Level 3 CE EN61000-4-4 (EFT) Level 3 CE EN61000-4-5 ED3 (Surge) Level 3 CE EN61000-4-6 (CS) Level 3 CE EN61000-4-8 (Magnetic field) Level 3
Switch Architecture	Back-plane (Switching Fabric): 18Gbps	Safety	EN60950 (LVD)
Transfer Rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port 1,488,000pps for Gigabit Fiber / Gigabit Ethernet port	Stability Testing	IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration)
Mac Address	16K MAC address table	MTBF	982,659 Hrs (IEC62380 standards)
Jumbo frame	10KB	Warranty	5 years
Connectors	10/100/1000T: 4 x ports RJ-45 with Auto MDI/MDI-X function SFP port: 2 x 2.5G/1G selectable cage by software with DDMI supported RS-232 connector: RJ-45 type; USB x 1 Power & Relay connector: 1 x 6-pole terminal block	CPU Clock	1.6Ghz
Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m) 100Base-TX: 2-pair UTP/STP Cat. 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m) 1000Base-TX: 2-pair UTP/STP Cat. 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m)	RAM	512MB
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)	NAND flash	512MB
LED	Per unit: Power 1 (Green), Power 2 (Green), FAULT (Red); RM(Green) Ethernet port: Link/Activity (Green), Speed (Amber); Mini-GBIC: Link/Activity (Green)	Software Specification	
Operating Humidity	5% ~ 95% (Non-condensing)	Management	SNMP v1 v2c, v3/ Web/Telnet/CLI
Operating Temperature	-20°C~60°C / -4°F~140°F (Standard model) -40°C~75°C / -40°F~167°F(-E model)	SNMP MIB	RFC 1215 Traps MIB**, RFC 1213 MIBII RFC 1158 MIBII RFC 1157 SNMP MIB, RFC 1493 Bridge MIB** RFC 1573 IF MIB RFC 2674 VLAN MIB**, Partial RFC 1757 RMON, RFC 2674 Q-Bridge MIB**, Bridge MIB, LLDP MIB RSTP MIB** Private MIB
Storage Temperature	-40°C~85°C / -40°F~185°F	Enhanced G.8032 ring	Support ITU G.8032 v2/2012 for Ring protection in less than 20ms for self-heal recovery (single ring enhanced mode) Support various ring/chain topologies Includes basic single ring & enhanced ring Enhanced G.8032 ring configuration with ease Cover multicast & data packets protection
Power Supply	9.5V~60VDC	User friendly UI	<ul style="list-style-type: none"> ■ Auto topology drawing ■ Topology demo ■ Auto configuration for G.8032 (auto mode)** for single ring ■ DDM threshold monitoring with dB values*** ■ Complete CLI for professional setting
Power Consumption	7W	Port Trunk with LACP	LACP Port Trunk: 8 Trunk groups/Maximum 10 trunk members
Case Dimension	IP-30, 35(W) x 105(D) x 152(H) mm	LLDP	Supports LLDP to allow switch to advise its identification and capability on the LAN
Weight	660 g	CDP	Cisco Discovery Protocol for topology mapping
Installation	DIN Rail and Wall Mount** Design	VLAN	Port Based VLAN IEEE 802.1Q Tag VLAN (256 entries)/ VLAN ID (Up to 4K, VLAN ID can be assigned from 1 to 4096.) GVRP, QinQ**, QoS QinQ**, Protocol based VLAN** ; IPv4/IPv6 Subnet based VLAN**
		IPv6/4	Present
		RSTP/MSTP	Supports IEEE802.1d Spanning Tree and IEEE802.1w Rapid Spanning Tree, IEEE802.1s Multiple Spanning Tree with 8/16** MSTI
		Quality of Service	The quality of service determined by port, Tag and IPv4 Type of service, IPv4 Differentiated Services Code Points - DSCP
		Class of Service	Support IEEE802.1p class of service, per port provides 8 priority queues
		Remote Admin	Supports 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder.
		Login Security	Supports IEEE802.1X Authentication/RADIUS
		Port Mirror	Support 3 mirroring types: "RX, TX and Both packet"
		Network Security	Support 10 IP addresses that have permission to

	access the switch management and to prevent unauthorized intruder. 802.1X access control for port based and MAC based authentication/static MAC-Port binding Ingress ACL L2/L3 SSL/ SSH v2 for Management HTTPS for secure access to the web interface TACACS+** for Authentication	SNMP Trap	<ul style="list-style-type: none"> Loop protection Up to 10 trap stations; trap types including: <ul style="list-style-type: none"> Device cold start Authorization failure Port link up/link down DI/DO open/close Topology change(ITU ring) Power failure Environmental abnormal
IGMP	Support IGMP snooping v1,v2,v3; Supports IGMP static route; 1024 multicast groups; IGMP router port ; IGMP query; GMRP	DHCP	Provide DHCP Client/ DHCP Server/DHCP Option 82 (Client & Server)/Port based DHCP; DHCP Option 66; IPv6 address resolution for DHCP server**
Static MAC-Port bridge	Static multicast forwarding forward reversed IGMP flow with multicast packets binding with ports for IP surveillance application	Mac based DHCP Server	Assign IP address by Mac that can include dumb switch in DHCP network
Bandwidth Control	Support ingress packet filter. Ingress filter packet type combination rules are Broadcast/Multicast/Flooded Unicast packet, Broadcast/Multicast packet, Broadcast packet only and all types of packet. The packet filter rate can be set an accurate value through the pull-down menu for the ingress packet filter.	DNS	Provide DNS Client feature and support Primary and Secondary DNS server.
Flow Control	Supports Flow Control for Full-duplex and Back Pressure for Half-duplex	SNTP	Supports SNTP to synchronize system clock in Internet
System Log	Supports System log record and remote system log server	Environmental Monitoring**	System status for input voltage, current, consumption and ambient temperature to be shown in GUI and sent alerting if any abnormal status(-M models)
SMTP/Text SMS**	Supports SMTP Server and 8 e-mail accounts for receiving event alert; can send SMS** text alert via mobile	Firmware Update	Supports TFTP/SFTP** firmware update, TFTP backup and restore; HTTP firmware upgrade
Relay Alarm	Provides one relay output for port breakdown, power fail and alarm. Alarm Relay current carry ability: 1A @ DC24V	Configuration upload and download	Supports editable configuration file for system quick installation; Support factory reset button to restore all settings back to factory default; USB port for upload/download configuration by USB dongle
Protection	<ul style="list-style-type: none"> Miss-wiring avoidance Node failure protection 	Dual Image Firmware	Support dual image firmware function

*Future Release
**Optional
***Optional DDM SFP required

ORDERING INFORMATION

- **IGS-3204MGSFP**.....P/N: **8351-007**
4 10/100/1000T + 2 1G/2.5G SFP L2+ Industrial Managed Ethernet Switch, dual 9.5V~60VDC input; -20°C to 60°C
- **IGS-3204MGSFP-E**.....P/N: **8351-008**
4 10/100/1000T + 2 1G/2.5G SFP L2+ Industrial Managed Ethernet Switch, dual 9.5V~60VDC input, -40°C to 75°C
- **IGS-3204MGSFP-M**.....P/N: **8351-0071**
4 10/100/1000T + 2 1G/2.5G SFP L2+ Industrial Managed Ethernet Switch + environmental monitoring, dual 9.5V~60VDC input; -20°C to 60°C
- **IGS-3204MGSFP-M-E**.....P/N: **8351-0081**
4 10/100/1000T + 2 1G/2.5G SFP L2+ Industrial Managed Ethernet Switch + environmental monitoring, dual 9.5V~60VDC input, -40°C to 75°C

OPTIONAL ACCESSORIES

DIN Rail Power

- **MDR-40 Series** 40W Single Output Industrial Din Rail Power; 85-264VAC / 120-370VDC Input Range; Cooling by free air convection; RoHS2 ; Operating Temp. -20°C~70°C (ambient, derating each output at 4% per degree from 60°C ~ 70°C)
- **MDR-20 Series** 20W Single Output Industrial Din Rail Power; 85-264VAC / 120-370VDC Input Range; Cooling by free air convection; RoHS2 ; Operating Temp. -20°C~70°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C)

Mini GBIC (SFP)

- | | |
|--|---|
| ■ 8330-162X MINI GBIC 1000SX (LC/0.5km) Transceiver | ■ 8330-186 LTSFP-1000BX-20KM Transceiver (WDM 1310) |
| ■ 8330-163X MINI GBIC 1000SX2 (LC/2km) Transceiver | ■ 8330-187 LTSFP-1000BX-20KM Transceiver (WDM 1550) |
| ■ 8330-165X MINI GBIC 1000LX (LC/10km) Transceiver | ■ 8330-180 LTSFP-1000BX-40KM Transceiver (WDM 1310) |
| ■ 8340-0591 MINI GBIC 1000LHX (LC/40km) Transceiver | ■ 8330-182 LTSFP-1000BX-40KM Transceiver (WDM 1550) |
| ■ 8330-166 MINI GBIC 1000XD (LC/50km) Transceiver | ■ 8330-181 LTSFP-1000BX-60KM Transceiver (WDM 1310) |
| ■ 8330-169 MINI GBIC 1000XD (LC/60km) Transceiver | ■ 8330-183 LTSFP-1000BX-60KM Transceiver (WDM 1550) |
| ■ 8330-167 MINI GBIC 1000ZX (LC/80km) Transceiver | ■ 8330-184 LTSFP-1000BX-80KM Transceiver (WDM 1490) |
| ■ 8330-170 MINI GBIC 1000EZ (120km) Transceiver | ■ 8330-185 LTSFP-1000BX-80KM Transceiver (WDM 1550) |
| ■ 8330-168 MINI GBIC 1000T (100m) Transceiver | ■ 8330-262 MINI GBIC 2.5G 850nm VCSEL (LC/0.3km) Transceiver |
| ■ 8330-188 LTSFP-1000BX-10KM Transceiver (WDM 1310) | ■ 8330-263 MINI GBIC 2.5G 1310nm FP (LC/2km) Transceiver |
| ■ 8330-189 LTSFP-1000BX-10KM Transceiver (WDM 1550) | ■ 8330-265 MINI GBIC 2.5G 1310nm DFB (LC/15km) Transceiver |

All SFP ended with D are with Diagnostic function

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