

T(P)GS-H7624XT

**24 GE + 6 10GE Copper M12 Push-Pull X-coded (PoE) EN50155
Managed Ethernet Switch w/optional L3 & Cybersecurity, WVI
input**



OVERVIEW

Lantech T(P)GS-H7624XT is a high-performance OS5 Ethernet switch with 24 10/100/1000T + 6 100M/1G/2.5G/5G/10G Copper PoE switch (total 30 ports) w/ M12 X-coded Push-Pull lock connectors (IEC 61076-2-010). The OS5 platform supports L3/L2, IPv6/v4, NAT**, standardized ITU G.803 ring, IEC62443-4-2 certified cybersecurity, Macsec**, PTP v2 as well as ETBN TTDP**, TRDP* protocol suitable for the future-proof modern network.

Lantech OS5 platform is equipped with complete L2 management and optional L3 communication protocols incl. dynamic routing, multicast routing, hardware NAT and ETBN TTDP, TRDP*, optional PTP, MacSec to be upgradable

The switch runs on the Lantech OS5 platform which is powerful with complete Layer 2 management features and major L3 protocols inclusive of RIP, OSPF, PIM, DVMRP, IEC61375-2-5 (ETBN), TRDP* and hardware-based NAT. It also supports optional Macsec for authentication and encryption between two Macsec devices. The optional PTP V2 and gPTP support transparent clock, boundary clock and ordinary clocks with 2-step processing that synchronizes network time accuracy to sub-microseconds. To learn more about the Lantech OS5 Platform, please refer to **Lantech OS5 Software Datasheet** (<https://www.lantech.com.tw/global/eng/download/datasheet/D-OS5.pdf>)

Certified cybersecurity development process with IEC 62443-4-1, and IEC 62443-4-2** certificate with physical tamper resistance and detection for integrity and authenticity of the boot process

Lantech OS5 platform is designed with a high standard of cybersecurity to prevent threats from network attacks. To ensure the safety and reliability of communication networks, Lantech software development is certified with IEC 62443-4-1 security process standards and the switch is also certified with IEC 62443-4-2**. The switch uses roots of trust to verify the integrity and authenticity of the firmware, software, and configuration data needed for the switch's boot process.

To learn more about Lantech cybersecurity software solutions, please refer to **Lantech OS5 Software Datasheet**

(<https://www.lantechcom.tw/global/eng/download/datasheet/D-OS5.pdf>)

Support Restful API for better switch performance; Auto-provisioning for firmware/configuration update

The switch supports Restful API that uses JSON format to access and use data for GET, PUT, POST and DELETE types to avoid traditional SNMP management occupying CPU utilization. The OPEN API document format for Restful API can greatly improve central management efficiency for various applications including fleet management and AIOT.

It also supports auto-provisioning for switch to auto-check the latest software image and configuration through TFTP server.

Optional IEC 61375-2-5/3-4 ETBN/ECN TTDP protocol, RNAT and proprietary DHCP and VLAN over TTDP

Lantech optional L3L/L3 license includes IEC 61375-2-5 and 3-4 ETBN standardized TTDP protocol that automatically assigns the switch IP address reflecting its location to adapt with various train-car arrangements of the operator's plan. With RNAT (railway NAT), each car device's IP address can be routed to the specific server and proprietary DHCP and VLAN over TTDP to help manage fixed IP address per device as well as the segmentation of VLAN in ECN.

Redundant dual WVI power input w/ power transient, inrush current, polarity reverse

The T(P)GS-H7624XT WVI model accepts 16.8~137.5VDC dual inputs with galvanic isolation to PoE and all Ethernet ports. The switch incorporates a power protection circuit to safeguard against potential adverse effects and hazards from power transients (surges, spikes, power fluctuations). It is also designed to clamp inrush current and protect from polarity reversal damage.

Up to 24 PoE at/af and 22 PoE include 20 IEEE 802.3at/af and 2 T4 PoE bt/at/af ports w/advanced PoE management and PoE galvanic isolation with max PoE budget, support Perpetual/Fast PoE

Compliant with 802.3 bt/at/af standard, the PoE model is able to feed 24 or 20 PoE ports up to 30 Watt@ for various PD devices and 2 T4 PoE IEEE 802.3bt to feed PoE up to 90 Watt@. The switch supports 120W PoE budget with an optional external PoE supply, it can provide up to a total 450W PoE output power. (-PEXT model)

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 a pre-set power feeding schedule upon a routine timetable. Each PoE port can be Enabled/disabled, get the voltage, current, Watt, and temperature info displayed on WebUI.

Perpetual and Fast PoE provides immediate and continuous power to devices during PSE switch reboots.

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%.

Support RTC (Real Time Clock) with longevity golden capacitor

Our switch supports RTC which is powered by a golden capacitor, ensuring accurate real-time event logs for all times. Unlike traditional batteries, golden capacitors offer superior reliability, and longevity, without a need to change battery.

Auto feed configuration for swapped new switches for Seamless Network Maintenance

The T(P)GS-H7624XT supports auto-feed configuration features that revolutionize network switch setup and management. It ensures that new and replacement switches automatically receive the correct configuration without manual intervention.

User-friendly GUI, Auto topology drawing, Enhanced Environmental Monitoring

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

Out-Of-Band management

OoB management allows a separate and secure method to access and manage the switch even when the primary network is inaccessible. (-OOB model)

Editable configuration file; USB port for import/export configuration

The configuration file of the switch can be imported and edited with a word processor for the following switches to configure with ease. The USB data port can import/export the configuration from/to the USB dongle and also to upgrade firmware. It supports USB console port that allows CLI access. It supports USB type-C console port that allows CLI access without an external RS232 adapter is required.

Event log & message; 2DI + 2DO; Factory default pin

The switch provides 2DI and 2DO. When disconnection of the specific port is detected; DO will activate the signal LED to alarm. DI can integrate the sensors for events and DO will trigger the outside alarm and the switch will send alert information to IP network with traps. The factory reset pin can restore the setting to factory default.

Optional smart bypass protection on dual/quad 10G copper ports

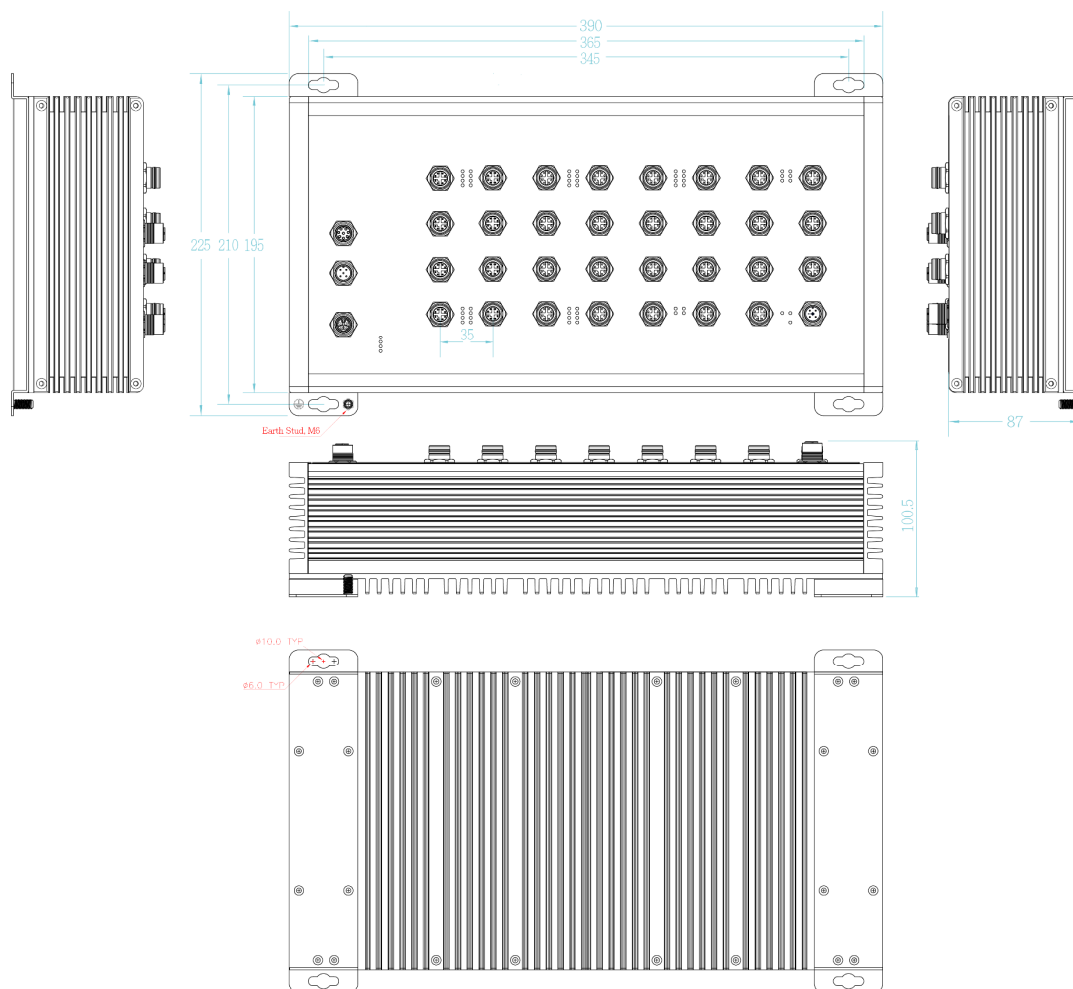
The bypass relay is set to bypass the switch to the next one when power is off to prevent network disruption. Lantech bypass caters to remain in bypass mode until the switch is completely booting up when power is back to avoid another network loss. Optional smart bypass (Up to two pairs) can be activated when switch encounters power failure or CPU hang. (-BT/-BBT model)

EN50155, EN45545-2; EN61373 compliance

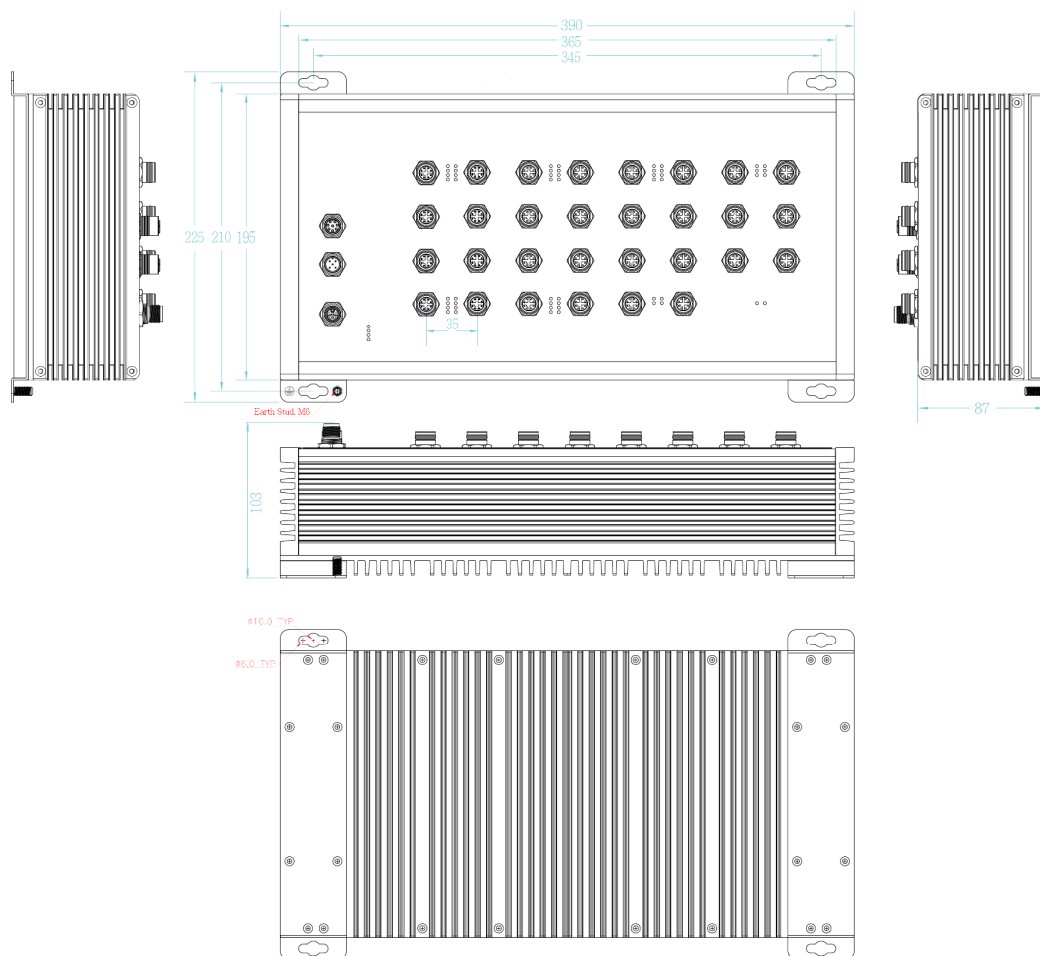
The IP54 aluminum alloy enclosure meets with EN60529 with M12 connectors for waterproofing. With EN50155 verification along with EN45545-2 Fire & Smoke compliance, this switch is ideally suited for railway on-board/trackside, vehicle, and other rugged applications. The switch operates under wide-ranging temperatures from -40°C to 70°C (-40°F to 158°F) (EN50155 T4).

DIMENSIONS (unit=mm)

-OOB-PEXT model



w/o -OOB-PEXT model



SPECIFICATIONS

Hardware Specification

Standards	IEEE802.3 10Base-T Ethernet	Network Cable	Out-Of-Band connector: M12 8-pole X-coded with Push-Pull connectors (-OOB model)
	IEEE802.3u 100Base-TX		1000Base-T: 4-pair STP Cat5E/6 cable;
	IEEE802.3ab 1000Base-T		10G Copper: 4-pair STP Cat6a/7 cable
	IEEE802.3an 10Gbase-T		
Switch Architecture	IEEE802.3x Flow Control and Back Pressure	LED	Per unit: Power 1 (Green), Power 2 (Green), FAULT (Red)
	IEEE802.3ad Port trunk with LACP		100/1000T Ethernet port: Link/Activity (Green), Speed (Green);
	IEEE802.1d Spanning Tree		R.M. indicator (Green)
	IEEE802.1w Rapid Spanning Tree		Uplink 100M/1G/2.5G/5G/10G Copper ports: Speed (100M/1G: Green; 2.5G/5G/10G: Orange)
Mac Address	IEEE802.1s Multiple Spanning Tree	DI/DO	PoE: Link/Act (Green)
	IEEE802.3ad Link Aggregation Control Protocol (LACP)		2 Digital Input (DI):
	IEEE802.1AB Link Layer Discovery Protocol (LLDP)		Level 0: -30~2V / Level 1: 10~30V
	IEEE802.1X User Authentication (Radius)		Max. input current: 8mA
Jumbo frame	IEEE802.1p Class of Service	Operating Humidity	2 Digital Output (DO): Open collector to 80 VDC, 50mA
	IEEE802.1Q VLAN Tag		5% ~ 95% (Non-condensing)
	IEEE802.3at/af Power over Ethernet		Operating Temperature
	Type 3 IEEE802.3bt Power over Ethernet		-40C~70C / -40F~158F (85°C operation for 10min.)
Connectors	Type 4 IEEE802.3bt Power over Ethernet	Storage Temperature	-40°C~85°C / -40°F~185°F
	Back-plane (Switching Fabric): 168Gbps		
	10/100/1000T: 24 x M12 8-pole X-coded with Push-Pull connectors	Power Supply	Dual DC input
	Auto MDI/MDI-X function		WVI (16.8~137.5VDC)
Connectors	100M/1G/2.5G/5G/10G Copper: 6x M12 8-pole X-coded port		T-code PoE power input:
	25-30 with Push-Pull connectors		54VDC (for PoE at/bt)
	Power Input connector: 1 x M12 5-pole Male K-coded	Inrush Current	6A
	Reset/USB console/USB data: 1 x M12 8-pole A-coded		
Connectors	DIDO: 1 x M12 5-pole A-coded 10/100/1000T:	PoE Budget (PoE model)	Internal 120W
	PoE Power Input Connector: 1 x M12 4-pole Male T-coded (-PEXT model)		450W with external PoE power supply (-PEXT model)

PoE pin assignment (PoE model)	-24 model: M12 port #1~#24 (AT 30W) -22 model: M12 port #1~#20 (AT 30W) M12 port #29~#30 (BT 90W) support IEEE 802.3bt/at/af End-point, Alternative A mode	Verifications	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 EN50155/EN50121-3-2/EN50121-4; EN 45545-1, EN 45545-2 Fire & Smoke verification
Power Consumption	Max. 65W excludes PoE load	Stability Testing	EN61373 (Shock and Vibration)
Dimensions	IP54 Aluminum alloy case (wall mount): 390mm(W)x103mm(H)x225mm(D)	MTBF	114,831 hrs. (standards: IEC 62380)
Weight	4.9kgs	Warranty	5 years
Installation	Wall Mount Design	Bypass**	Up to two pairs Bypass modules on 10GT ports to pass to next switch in case of power failure and CPU fail
EMI & EMS	FCC Part 15 Class A EN61000-6-2 EN61000-6-4 CE EN55032 Class A CE EN55024 CE EN61000-4-2 (ESD) Level 3 CE EN61000-4-3 (RS) Level 3	Software Specification Lantech OS5 Platform Download Software Datasheet https://www.lantechcom.tw/global/eng/download/datasheet/D-OS5.pdf	

*Future release

**Optional

ORDERING INFORMATION

All model packages include M12 caps. For conformal coating add -C to Model Name. For optional bypass add -BT (one pair); -BBT (two pairs). For optional PTP add -PTP; For optional MacSec add -MacSec; For optional Out-Of-Band add -OOB; for optional PoE power extension add -PEXT

- **TPGS-H7624XT-24-54-WVI.....P/N: 8361-0291**
24 100/1000T w/PoE at/af + 6 100M/1G/2.5G/5G/10G M12 X-coded EN50155 OS5 Managed Ethernet Switch; 16.8V~137.5V dual input; IP54 housing; -40°C to 70°C; w/PoE & ethernet galvanic isolation
- **TPGS-H7624XT-22-54-WVI.....P/N: 8361-0292**
24 100/1000T w/20 PoE at/af + 6 100M/1G/2.5G/5G/10G M12 X-coded w/2 T4 PoE bt EN50155 OS5 Managed Ethernet Switch; 16.8V~137.5V dual input; IP54 housing; -40°C to 70°C; w/PoE & ethernet galvanic isolation
- **TGS-H7624XT-54-WVI.....P/N: 8361-029**
24 10/100/1000T + 6 100M/1G/2.5G/5G/10G Copper M12 X-coded EN50155 OS5 Managed Ethernet Switch; 16.8V~137.5VDC dual input; -40°C to 70°C; IP54 housing w/ethernet galvanic isolation
- **TPGS-H7624XT-22-54-WVI-PEXT-BBT-C.....P/N: 8361-0293-C**
24 100/1000T w/20 PoE at/af + 6 100M/1G/2.5G/5G/10G M12 X-coded w/2 T4 PoE bt EN50155 OS5 Managed Ethernet Switch; 16.8V~137.5V dual input; IP54 housing; -40°C to 70°C; w/PoE & ethernet galvanic isolation; w/PoE power extension; w/two-pairs bypass; w/conformal coated

OPTIONAL ACCESSORIES

Software package

Please refer to the software datasheet (<https://www.lantechcom.tw/global/eng/download/datasheet/D-OS5.pdf>)

M12 Connector & Cable

Connector

- **ECONM12-08A(M)-180** 8 pin M12 (Male) A-coded 180 degrees crimp type connector for reset/console/USB
- **ECONM12-05A(M)-S-180** 5 pin M12 (Male) A-coded 180 degrees crimp type connector for DI/DO
- **ECONM12-08X(M)-SPEEDCON** 8 pin M12 (Male) X-coded 180 degrees crimp type connector for data, Ethernet CAT6A (10G), shielded, SPEEDCON
- **4106-00000097-001** 5 pin M12 (Female) K-coded 180 degrees screw type connector for power supply
- **ECONM12-05K(F)-S-180**

Cable

- **ECABM12X83MSTP** 8 pin M12 (Male) X-coded 180 degrees RJ45 STP cable for data, shielded, 300cm
- **4106-00000096-001** 5 pin M12 (Female) K-coded 90 degrees 1.5M cable for power supply
- **ECABM12-05K(F)-90-1.5M**

Others

- **4106-00000100-001** 8 pin M12 (Male) A-coded 180 degrees to USB Female/male plug, 150cm

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