# T(P)GS-H7624XT

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



## OVERVIEW

Lantech T(P)GS-H7624XT is a high-performance OS5 Ethernet security 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, SNMPv3, 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**

***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**

### *SNMP v3 Security Models*

SNMPv3 enhances security with three key models. The User-based Security Model (USM) provides authentication and encryption, verifying the sender's identity and protecting data. The View-based Access Control Model (VACM) manages user access to specific objects based on their security level. The Transport Security Model (TSM) uses secure protocols like TLS or DTLS for communication encryption. Together, these models make SNMPv3 implementations highly secure, meeting modern cybersecurity standards for large-scale and high-security projects.

### *Comprehensive Network Protection Against DDoS and Layer 2 Threats*

Lantech OS5 generation integrates advanced security mechanisms to safeguard both switches and networks. Key features include DDoS attack mitigation, 802.1X port-based authentication, Dynamic ARP Inspection (DAI), IP Source Guard, and Port Security, providing multi-layer protection against spoofing, unauthorized access, and traffic floods. These security capabilities ensure stable, resilient network operation.

### *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*

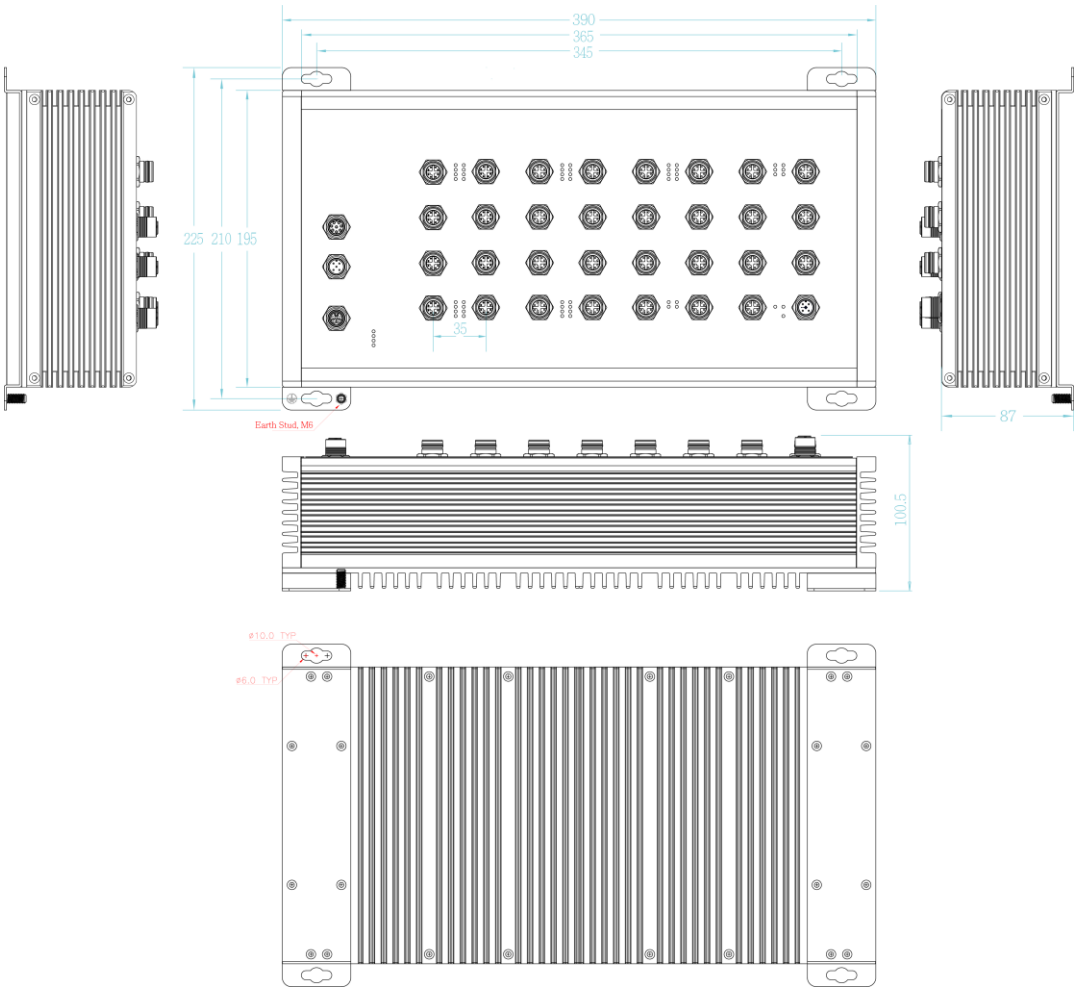
The IP54 aluminum alloy enclosure meets with EN60529 with M12 connectors for waterproofing. With EN50155 verification along with EN45545-2 Fire & Smoke compliance, this switch is ideally suited for railway on-board/trackside, vehicle, and other rugged applications. The switch operates under wide-ranging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

### *OS5 vs. OS5 - SEC models comparison*

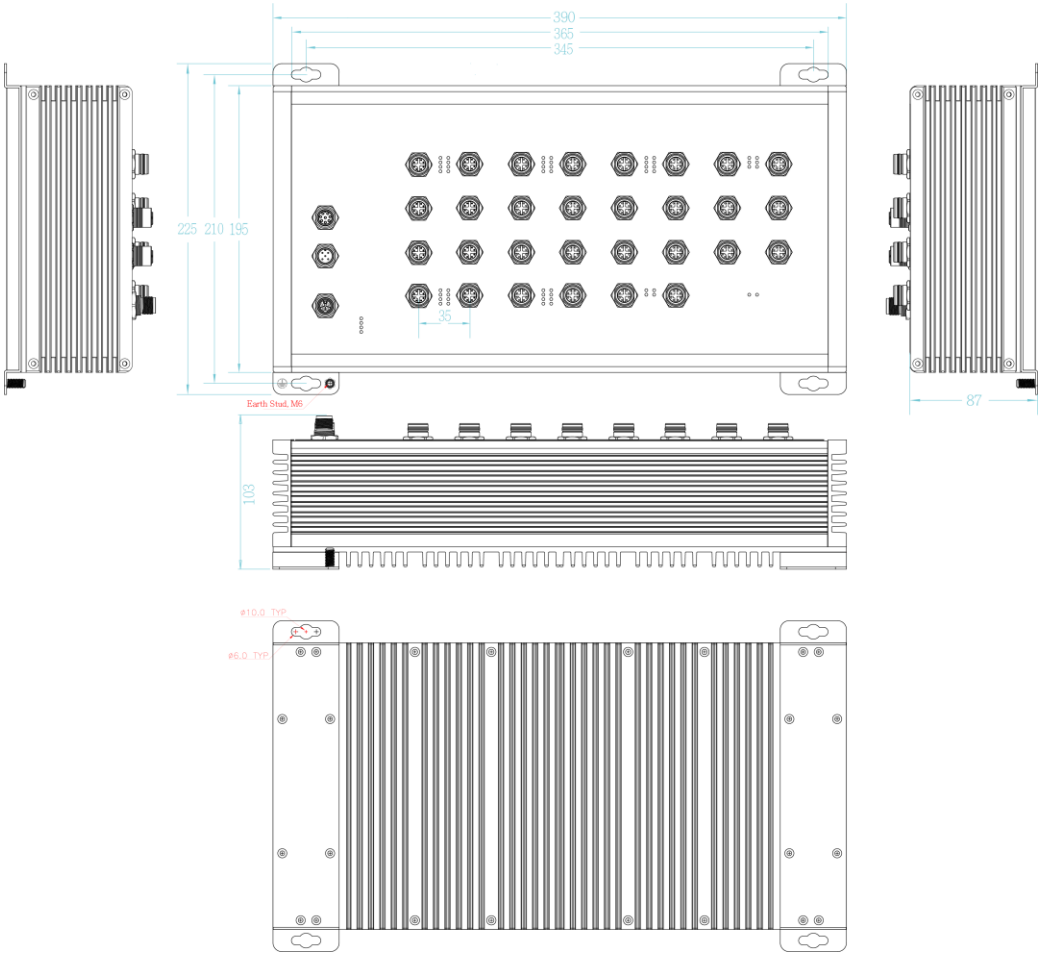
| | OS5 | OS5 - SEC |
|---|---|---|
| **IEC 62443-4-2 Cyber Security** | NA | Y, need optional license |
| **Boot up time** | Around 100 sec. | Around 135 sec. |

## DIMENSIONS (unit=mm)

-OOB-PEXT model




w/o -OOB-PEXT model




# SPECIFICATIONS

## Hardware Specification

| | |
|---|---|
| Standards | IEEE802.3 10Base-T Ethernet<br>IEEE802.3u 100Base-TX<br>IEEE802.3ab 1000Base-T<br>IEEE802.3an 10Gbase-T<br>IEEE802.3x Flow Control and Back Pressure<br>IEEE802.3ad Port trunk with LACP<br>IEEE802.1d Spanning Tree<br>IEEE802.1w Rapid Spanning Tree<br>IEEE802.1s Multiple Spanning Tree<br>IEEE802.3ad Link Aggregation Control Protocol (LACP)<br>IEEE802.1AB Link Layer Discovery Protocol (LLDP)<br>IEEE802.1X User Authentication (Radius)<br>IEEE802.1p Class of Service<br>IEEE802.1Q VLAN Tag<br>IEEE802.3at/af Power over Ethernet<br>Type 3 IEEE802.3bt Power over Ethernet<br>Type 4 IEEE802.3bt Power over Ethernet |
| Switch Architecture | Back-plane (Switching Fabric): 168Gbps |
| Mac Address | 16K MAC address table |
| Jumbo frame | 10KB |
| Connectors | 10/100/1000T: 24 x M12 8-pole X-coded with Push-Pull connectors<br>Auto MDI/MDI-X function<br>100M/1G/2.5G/5G/10G Copper: 6x M12 8-pole X-coded port 25-30 with Push-Pull connectors<br>Power Input connector: 1 x M12 5-pole Male K-coded<br>Reset/USB console/USB data: 1 x M12 8-pole A-coded<br>DIDO: 1 x M12 5-pole A-coded 10/100/1000T: |
| | PoE Power Input Connector: 1 x M12 4-pole Male T-coded<br>Out-Of-Band connector: M12 8-pole X-coded with Push-Pull connectors |
| Network Cable | 1000Base-T: 4-pair STP Cat5E/6 cable;<br>10G Copper: 4-pair STP Cat6a/7 cable |
| LED | Per unit: Power 1 (Green), Power 2 (Green), FAULT (Red)<br>100/1000T Ethernet port: Link/Activity (Green), Speed (Green);<br>R.M. indicator (Green)<br>Uplink 100M/1G/2.5G/5G/10G Copper ports: Speed (100M/1G: Green; 2.5G/5G/10G: Orange)<br>PoE: Link/Act (Green) |
| DI/DO | 2 Digital Input (DI):<br>Level 0: -30~2V / Level 1: 10~30V<br>Max. input current:8mA<br>2 Digital Output(DO): Open collector to 80 VDC, 50mA |
| Operating Humidity | 5% ~ 95% (Non-condensing) |
| Operating Temperature | -40C~70C / -40F~158F (85°C operation for 10min.) |
| Storage Temperature | -40°C~85°C / -40°F~185°F |
| Power Supply | Dual DC input<br>WVI (16.8~137.5VDC)<br>T-code PoE power input:<br>54VDC (for PoE at/bt) |
| Inrush Current | 6A |
| PoE Budget (PoE model) | Internal 120W |

| | |
|---|---|
| | 450W with external PoE power supply (-PEXT model); with PoE galvanic isolation |
| PoE pin assignment (PoE model) | -24 model:<br>M12 port #1~#24 (AT 30W)<br>-22 model:<br>M12 port #1~#20 (AT 30W)<br>M12 port #29~#30 (BT 90W)<br>support IEEE 802.3bt/at/af End-point, Alternative A mode |
| Power Consumption | Max. 38W excludes PoE load |
| Dimensions | IP54 Aluminum alloy case (wall mount): 390mm(W)x103mm(H)x225mm(D) |
| Weight | 4.9kgs |
| Installation | Wall Mount Design |
| EMI & EMS | FCC Part 15 Class A<br>EN61000-6-2<br>EN61000-6-4<br>CE EN55032 Class A<br>CE EN55024 |
| | CE EN61000-4-2 (ESD) Level 3<br>CE EN61000-4-3 (RS) Level 3<br>CE EN61000-4-4 (EFT) Level 3<br>CE EN61000-4-5 ED3 (Surge) Level 3<br>CE EN61000-4-6 (CS) Level 3<br>CE EN61000-4-8 (Magnetic field) Level 3 |
| Verifications | EN50155/EN50121-3-2/EN50121-4;<br>EN 45545-1, EN 45545-2 Fire & Smoke verification |
| Stability Testing | EN61373 (Shock and Vibration) |
| MTBF | 114,831 hrs. (standards: IEC 62380) |
| Bypass** | Up to two pairs Bypass modules on 10GT ports to pass to next switch in case of power failure and CPU fail |

## Software Specification

| | |
|---|---|
| Lantech OS5 Platform | Download Software Datasheet |

*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 PoE power extension add -PEXT；For Out-Of-Band model add -OOB

- **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 90W 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 90W 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

### 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**<br>**ECONM12-05K(F)-S-180** | 5 pin M12 (Female) K-coded 180 degrees screw type connector for power supply |

**Cable**

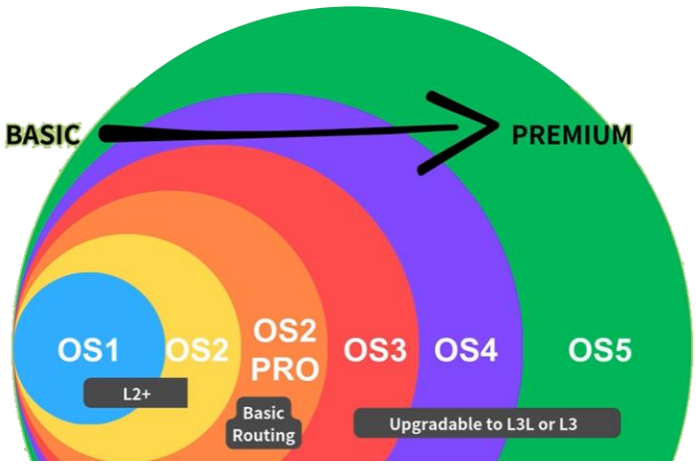
| | |
|---|---|
| **ECABM12X83MSTP** | 8 pin M12 (Male) X-coded 180 degrees RJ45 STP cable for data, shielded, 300cm |
| **4106-00000096-001**<br>**ECABM12-05K(F)-90-1.5M** | 5 pin M12 (Female) K-coded 90 degrees 1.5M cable for power supply |

**Others**

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

## Managed Switch OS Generations

We offer a comprehensive range of managed switches, from OS1 and OS2 with rich L2+ management features, to OS2 PRO with basic routing functionality, and OS3, OS4, and OS5, which can be upgraded with optional Layer 3 Lite or Layer 3 capabilities to meet diverse customer needs. Note: Model differences include both software features and hardware specifications.




**[LEARN MORE]**

→ **OS2PRO Generation**

→ **OS3/OS4 Generation**

→ **OS5 Generation**

**[CHECK THE DIFFERENCES]**

→ **Generation Comparison Table**

**Lantech Communications Global Inc.**
www.lantechcom.tw
info@lantechcom.tw
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