



I/O Modules Overview (TPS TXE Devices)

Use these instructions to set up the I/O modules supported in your Trend Micro™ TippingPoint™ TPS TXE security devices.

Before You Begin

- Review the release notes for your product for any late-breaking changes to the installation instructions.
- Read and follow all safety information listed in documentation that shipped with your product.
- Complete the installation of your TippingPoint security device.

ESD Requirements

Damage from Electromagnetic Static Discharge (ESD) can occur when electronic components are improperly handled. Improper handling can result in complete or intermittent system failures. Proper ESD protection is required whenever you handle equipment. The following general grounding guidelines apply:

- Always use an ESD wrist strap when adding or removing components from the chassis.
- Avoid touching the circuit boards or connectors on all cards and modules.
- Avoid contact between the printed circuit boards and clothing. The wrist strap only protects components from ESD voltages on the body. ESD voltages on clothing can still cause damage.

Place a removed component board-side-up on an antistatic surface or in a static-shielding container that is also grounded to the same point as the device. If you plan to return the component to the factory, immediately place it in a static-shielding container.

I/O Module Options

TPS TXE devices support both standard I/O modules and bypass I/O modules (refer to the following table) for fiber and copper components.

Important: Only optical transceiver modules (including SFP28 and QSFP28) available from Trend have been validated to achieve optimal performance with TippingPoint products. Other vendor devices are not supported and could be detrimental to proper operation of the TippingPoint system.

Bypass I/O modules are zero-power high-availability (ZPHA) modules that permit network traffic and services while bypassing the device entirely when the device loses power.

Note: Fiber modules do not support auto-negotiation.

All standard I/O modules and all bypass I/O modules are hot-swappable.

Table 1: Standard I/O Modules

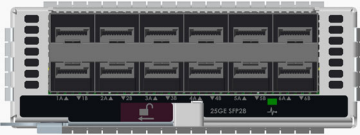

| Module Part Number | Module Description | Transceiver Part Number | Transceiver Description |
|---|-----------------------------|-------------------------|---|
|  | 6-Segment 25/10/1 GbE SFP28 | TPNN0384 | TippingPoint 25 GbE SFP28 SR Transceiver |
| | | TPNN0385 | TippingPoint 25 GbE SFP28 LR Transceiver |
| | | TPNN0057 | TippingPoint 10 GbE SFP+ SR Transceiver |
| | | TPNN0058 | TippingPoint 10 GbE SFP+ LR Transceiver |
| | | TPNN0054 | TippingPoint 1 GbE SFP RJ45 Transceiver (Copper) |
| | | TPNN0055 | TippingPoint 1 GbE SFP SX Transceiver |
| | | TPNN0056 | TippingPoint 1 GbE SFP LX Transceiver |
|  | 4-Segment 100/40 GbE QSFP28 | TPNN0382 | TippingPoint 100 GbE QSFP28 SR4 Transceiver (MPO) |
| | | TPNN0383 | TippingPoint 100 GbE QSFP28 LR4 Transceiver |
| | | TPNN0067 | TippingPoint 40 GbE QSFP+ SR4 Transceiver (MPO) |
| | | TPNN0327 | TippingPoint 40 GbE QSFP+ LR4 Transceiver |

Table 2: Bypass I/O Modules

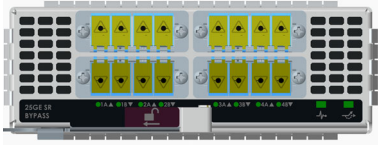
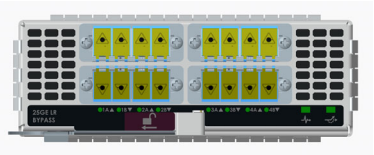
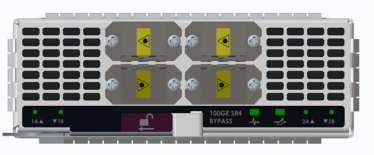
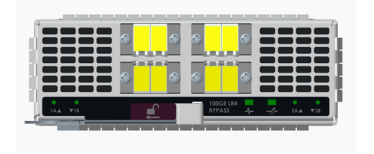
| Module Part Number | Module Description |
|---|----------------------------|
|  | 4-Segment 25 GbE SR Bypass |

Table 2: Bypass I/O Modules (continued)

| Module Part Number | Module Description |
|---|---|
| <p>TPNN0375</p>  | <p>4-Segment 25 GbE LR Bypass</p> |
| <p>TPNN0372</p>  | <p>2-Segment 100 GbE SR4 Bypass (MPO)</p> |
| <p>TPNN0373</p>  | <p>2-Segment 100 GbE LR4 Bypass</p> |

Important: Handle all I/O modules with care. The bypass modules contain mechanical switches that are very delicate and can cause network disruption if handled improperly.

Add I/O Modules

TippingPoint devices come with blank modules inserted into module slots.



Figure 1. Blank Module

Warning: Do not leave slots empty for an extended period of time. Insertion of a blank module or I/O module ensures that the device is correctly cooled.

To remove the blank module, use your thumb and finger in each pocket to pinch the release mechanism, and gently pull the module out of its chamber.

To insert an I/O module:



1. Unlock the locking lever that is attached to the faceplate at the bottom of the I/O module by pulling it open from the lever's right side.

CAUTION: The locking lever must be fully opened before inserting a module. Inserting a module without opening the locking lever can cause the module to become stuck in the slot and prevent its removal.

2. To insert the I/O module, slide the module into the empty module slot. When the module is in the correct position, manually close the locking lever to complete the insertion and lock the module in its slot.

Module LEDs

The following table describes the module LEDs.

| Feature | LED | Color | Description |
|--|----------|----------------|---|
| Optical transceiver port | Link | Green | Link is active. |
| | Activity | Blinking green | Data traffic passing. |
| Module Health  | Status | Green | The module is configured, in service, and in good health. |
| | | Blinking amber | The module has been inserted and powered up, but is not yet recognized by the software. |
| | | Solid amber | The module is experiencing a fault. |
| Bypass  | Status | Off | Module in bypass. |
| | | Green | Module in normal mode (not in bypass). |

Hot-Swapping I/O Modules

I/O modules can be installed or removed while the device is in the normal operating state. *Hot-swapping I/O modules during system initialization is not supported.*

When you insert a bypass I/O module, the bypass I/O module always starts up in bypass mode. A bypass I/O module remains in bypass mode until you remove it from bypass mode through the CLI or SMS. Rebooting the device does not change the bypass mode of the bypass I/O module. For information about how to use normal mode instead of bypass mode, refer to the SMS or CLI documentation.

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<https://success.trendmicro.com/data-collection-disclosure>

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