Tenda

Quick Installation Guide

TES70 Series GPON OLT

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Disclaimer

Preface

Thank you for choosing Tenda! Please read this guide if you want to know the device appearance, hard installation and OLT default configuration.

Application model

This guide applies to Tenda GPON OLT. The "OLT" and "device" mentioned in this guide refer to GPON OLT.

Audience

This guide is intended for internal staff, FTTX O&M (operation and maintenance) engineer and Customer technical engineer.

Conventions

This guide is for reference only and does not imply that the product supports all functions in the guide. The functions may differ with product models. The actual product prevails.

The product figures and screenshots in this guide are for examples only. They may be different from the actual products you purchased, but do not affect the normal use.

If the function or parameter is displayed in gray on the product web UI, the product model is not supported or cannot be modified.

The typographical elements that may be found in this document are defined as follows.

Item	Presentation	Example
Cascading menus	>	Internet Settings > LAN Setup
Parameter and value	Bold	Set **SSID** to **Tom**.
Variable	Italic	Format: *XX:XX:XX:XX:XX:XX*
UI control	Bold	On the **Quick Setup** page, click the **Save** button.

The symbol that may be found in this document is defined as follows.

Symbol	Meaning
NOTE	This format is used to highlight information of importance or special interest. Ignoring this type of note may result in ineffective configurations, loss of data or damage to device.
TIP	This format is used to supplement or explain the description of relevant operations.

For more documents

If you want to get more documents about the device, visit www.tendacn.com and search for the

corresponding product model.

Technical support

Contact us if you need more help. We will be glad to assist you as soon as possible.

Email address: support@tenda.cn

Website: www.tendacn.com

Revision history

Tenda is constantly searching for ways to improve its products and documentation. The following table indicates any changes that might have been made since the guide was released.

Version	Date	Description
V1.2	2024-06-20	- Added the description about TES7001&TES7002. - Optimized sentence expression.
V1.1	2023-06-01	- Updated introduction to the related documents. - Updated the operating environment temperature in Installation site requirements.
V1.0	2022-12-02	Original publication.

Contents

1 Device appearance

TES7008 is 1U standard Pizza-Box devices and can be mounted into a standard 19-inch rack. The length, width, height of the device is: 440 mm * 240 mm * 44 mm.

TES7001 and TES7002 are 1U Pizza-Box devices and can be mounted into a standard 19-inch rack. The length, width, height of the device is: 294 mm * 178 mm * 44 mm.

1.1 Front panel

TES7008

TES7001

TES7002

OLT front panel ports description

Port Type \ Device Model	TES7008	TES7001	TES7002
Uplink SFP Port	2 * 10-gigabit ports Only PCBA: 2 * 10-gigabit ports + 2 * gigabit ports	1 * 10-gigabit port	
Uplink RJ45 Ethernet Port	2 * gigabit ports Only PCBA: 4 * gigabit ports	4 * gigabit ports	
GPON port	8	1	2
Console port	1 port that meets RS232 technical specifications		
Type-C port	1 port that meets USB Type-C/RS232 technical specifications	Only PCBA	
Outband management port	1 port that meets 10/100/1000 Base-TX technical specifications	/	

OLT front panel button description

Port Type \ Device Model	TES7008	TES7001	TES7002
RST	Hold down the button with a needle-like object for about 2 seconds, and then release it, the OLT will automatically reboot.	– Hold down the button with a needle-like object for about 5 - 30 seconds, and the OLT will automatically reboot. – Hold down the button with a needle-like object for more than 30 seconds, and the OLT will restore the factory settings and automatically reboot.	

Indicator status description

Device Model Port Type	TES7008	TES7001	TES7002
PWR1 - PWR2	**Power indicator** – Solid green: Normal power input/output – Off: No power supply or abnormal power input/output		
ACT	**System status indicator** – Solid green: System is working properly – Slowly blinking green: System is initializing, or software is starting but master-slave communication state is not established – Fast blinking green: System is receiving configuration commands, or is establishing master-slave communication state – Off: System is powered off or software is not started		
ALM	**Alarm indicator** – Solid red: System alarms occurred – Off: No system alarms	/	
PON	**PON port indicator** – Solid on: ONT is connected to the PON port – Off: ONT is not connected to the PON port or connected improperly		
XGE	**Uplink port indicator** – Solid on: Port is connected properly – Blinking: Port is transmitting data – Off: Port is disconnected or connected improperly	**Uplink port indicator** – Solid on: Port is connected properly – Off: Port is disconnected or connected improperly	
GE	**Ethernet port indicator** – Yellow: Port rate is 100 Mbps. Blinking indicates that port is transmitting data. – Green: Port rate is 1000 Mbps. Blinking indicates that port is transmitting data. – Off: Port is disconnected or connected improperly		

Device Model / Port Type	TES7008	TES7001	TES7002
NMS	**Management port indicator** – Yellow: Port rate is 100 Mbps. Blinking indicates that port is transmitting data. – Green: Port rate is 1000 Mbps. Blinking indicates that port is transmitting data. – Off: Port is disconnected or connected improperly	/	

1.2 Back panel

TES7008

TES7001&TES7002

OLT back panel description

Type	Description
GND	1 grounding terminal on the left side of the rear panel for the grounding of the device.
Power	Power port of the device. You can use a single power port or both ports for power supply as required. ⊕TIP When both ports are used for power supply, it is recommended to connect the two power supplies to different power lines.

2 Hardware installation

2.1 Open box and checkout

Check the products referring to the package contents or contract. If any item is missing, or damaged, keep the original package and contact the local reseller or distributor immediately.

The package contents include the following items:

- OLT * 1
- AC power cord * 1 or 2 (The quantity is based on the power supply specifications you choose.)
- DC power plug * 1 (According to the power supply type you choose, only some models available.)
- L-shaped bracket * 2
- Screw * 8
- Rubber feet pad * 4

2.2 Installation requirements

2.2.1 Power requirements

The input voltage must be stable with neither EMI noise nor distortion.

> ✎NOTE
>
> All safety requirements and rules about electricity of the locality or the building must be followed. All power supply must be legal.

■ **Use DC power supply**

  – TES7001&TES7002: 12V DC power supply can be used. The voltage range is 11V DC to 13.2V DC, and the power cannot less than 18W.

  – TES7008: 48V DC power supply can be used. The input voltage is - 48V DC and the voltage range is - 40V DC to - 72V DC.

■ **Use AC power supply**

The input voltage is 110/220V AC and the voltage range is 100V DC to 240V AC.

2.2.2 Device grounding requirements

A good grounding system is the basis for the stable and reliable operation of the OLT, and an important guarantee for lightning, anti-interference and anti-static protection of the OLT. Users must provide a good grounding system for the OLT.

2.2.3 Installation site requirements

To ensure the stable operation of the OLT in the long run, the installation site must meet the following requirements.

■ **TES7008**

  – The working environment temperature of the OLT should be controlled at - 5°C - 45°C (23℉ - 113℉). Place the OLT away from the main heat source (such as power supply). If the environment temperature is higher than 45 °C, improve the ventilation of the room, such as installing fans or air conditioners.

  – The humidity of the installation site should range from 10% to 90%, non-condensing and frost-free.

- **TES7001&TES7002**

  - The working environment temperature of the OLT should be controlled at - 20°C - 55°C (- 4℉ - 131℉). Place the OLT away from the main heat source (such as power supply).
  - The humidity of the installation site should range from 10% to 93%, non-condensing and frost-free.

2.3 Installations preparations

2.3.1 Safety precautions

- The device is for indoor usage only.
- During installation, wear ESD wrist straps or gloves. And the OLT should be powered off.
- During installation, do not wear conductive items (such as a watch, or hand chain).
- Please use the included power adapter/power cord.
- Ensure that the input voltage is within the input range indicated on the OLT.
- The device should be installed in a dry, cool place and at least have a 10 cm space away from its surroundings at both sides for ventilation.
- The device should be located far away from the heat source or other sources of strong electromagnetic interference (such as power lines, lights, power grid).
- Keep the air in the operating environment clean. Remove dust of the OLT regularly.
- Disconnect the power supply before cleaning the OLT. Do not clean the OLT with any liquid.
- Do not open the chassis of the OLT.
- Do not place heavy objects on the OLT.
- Do not use the power adapter or power cord if its plug or cord is damaged.
- Keep the device away from water, fire, high electric field, high magnetic field, and inflammable and explosive items.
- Disassembling or modifying the device or its accessories without authorization voids the warranty, and might cause safety hazards.
- If such phenomena as smoke, abnormal sound or smell appear when you use the device, immediately stop using it and disconnect its power supply, unplug all connected cables, and contact the after-sales service personnel.
- Refer all servicing to qualified service personnel.
- Disconnect the power source during servicing.
- This device should be installed by trained and qualified personnel in compliance with local and national electrical regulations.
- The device's marking information can be found on its surface.

For the latest safety precautions, see **Safety and Regulatory Information** on **www.tendacn.com**.

2.3.2 Preparations before installations

- Ensure that the related cables (such as optical fibers, Ethernet cables, grounding cables) are properly routed.
- Ensure that the cable and connectors used for installation are normal.
- If the rack mounting is used for OLT, ensure that you have prepared the necessary mounting screws, nuts and tools (such as ladders, screwdrivers).
- If the DC power supply mode is used for TES7008, prepare cables for connecting the -48V DC power supply to the - 48 V DC power input port of the OLT (two cables for connecting the positive and negative clients of the power supply respectively).
- Prepare the following items to connect to the OLT for network connectivity and network management checks:

    - A management platform, such as a computer

    - RJ45/DB9 RS232 Console cable

   - Universal USB Type-C cable (for Console management)

2.4 OLT installation

2.4.1 Rack mounting to a standard 19-inch rack

Step 1 Ensure that the rack is stable, level and properly grounded.

Step 2 Fix the L-shaped brackets to both sides of the OLT with the included screws.

Step 3 Place the OLT in an appropriate position in the rack. Fix the L-shaped brackets to the rack with screws (self-prepared). Ensure that the OLT is stable on the rack.

----End
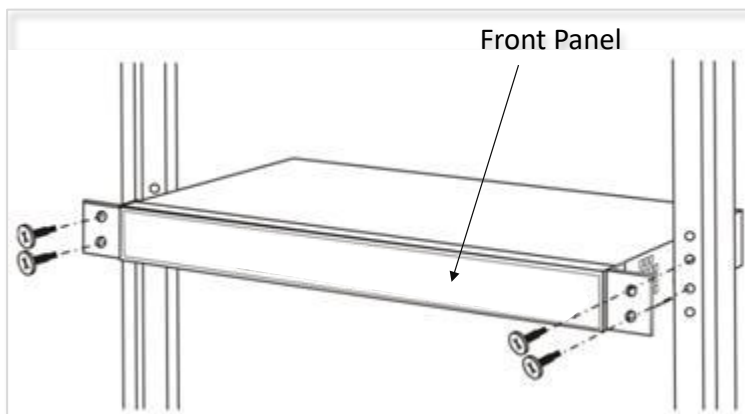
Rack mounting diagram

2.4.2 Cables connecting

This part describes the port, power supply and grounding connection of OLT. Read the instructions carefully before connecting the OLT.

Uplink port connecting

OLT provides uplink RJ45 Ethernet ports and uplink SFP ports. For the specific port quantities and specifications of each model of OLT, refer to Device appearance.

- **If RJ45 Ethernet ports of the OLT is used to connect uplink devices, the requirements are as follows:**

    - Connection cable: Category 5 (CAT5) or above Ethernet cable (crossover or straight-through cable)
    - Cable connector: RJ45 connector

- **If SFP ports of the OLT is used to connect uplink devices, the requirements are as follows:**
    - Connection cable: Optical fiber (single-mode or multi-mode)
    - Cable connector: LC connector
    - Optical module: SFP optical module, SFP+ optical module

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💡TIP

- The optical module is not provided with the OLT. Prepare the SFP and SFP+ optical modules by yourself.
- The standards of SFP optical modules complied with: 1000 Base-LX, 1000 Base-SX.
- The standards of SFP+ optical modules complied with: 10G Base-LR/LW, 10G Base-ER/EW, 10G Base-SR.

When the single mode optical fiber is used, the maximum transmission distance can be up to 10 to 80 km. When the multimode fiber is used, the maximum transmission distance is less than 500m.

PON port connecting

OLT supports GPON SFP slots. Each SFP GPON slot can be mounted with a GPON SFP module and provide one PON port.

The GPON SFP slot supports the following optical module standards:

- ITU-T G.984.2 Class B+
- ITU-T G.984.2 Class C+
- ITU-T G.984.2 Class C++

The OLT SFP port is SC/PC. Use the patch cord with SC/PC connector to connect the OLT to the ODN.

Grounding cable connecting

To ensure the safety and reliable working of OLT, proper ground connection should be performed for OLT. For detailed grounding methods, refer to the **Lightning Protection Guide** at the official website for instructions.

Power supply connecting

Connect the power supply of the OLT based on your power supply selection and the corresponding power supply connection instructions.

Using AC power supply

You can select a dual AC version OLT. The dual AC version OLT supports dual power supply 1 + 1 redundancy. If one power supply unit fails, the system will continue operation using the other

power supply unit. To ensure true AC line input redundancy for the OLT, connect each AC power cable to a different AC power source.

The procedure for connecting the AC power supply is as follows:

Step 1   Get the included AC power cords from the OLT's package contents.

Step 2   Connect one end of each AC power cord into the AC power inlet connectors located at the rear of the OLT.

Step 3   Connect the other ends of the power cords into AC wall outlets.

 ----End

Using 48V DC power supply (TES7008)

**Step 1**   Prepare two cables for connecting the - 48V DC power supply to the - 48V DC power input port on the OLT by yourself (for connecting the positive and negative clients of the power supply respectively).

Step 2   Turn off the - 48V DC power supply.

Step 3   Get the included DC input plug from the OLT's package contents.

Step 4   Use the two cables prepared in **Step 1** to connect the DC input plug of the OLT.
   – "-" indicates that 48V negative
   – "+" indicates that 48V positive

 The detailed procedures are as follows:

1.   Strip 8 mm (5/16 inches) of insulation from each cable.
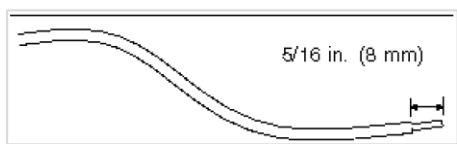
2.   Fit the exposed section of the copper wire into the rectangular plug hole in the DC input plug, and tighten the screw to fix the copper wire.
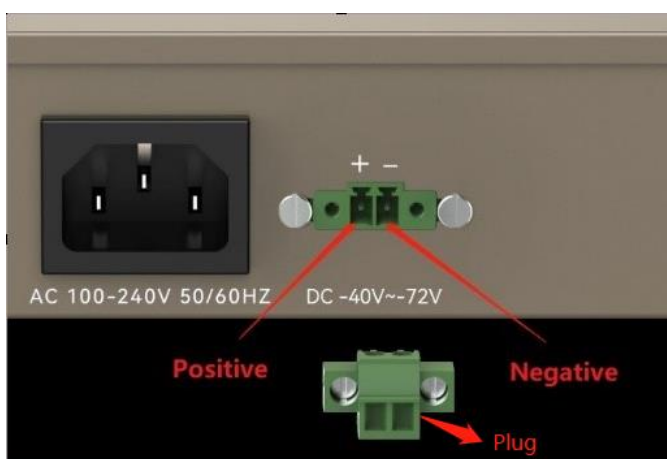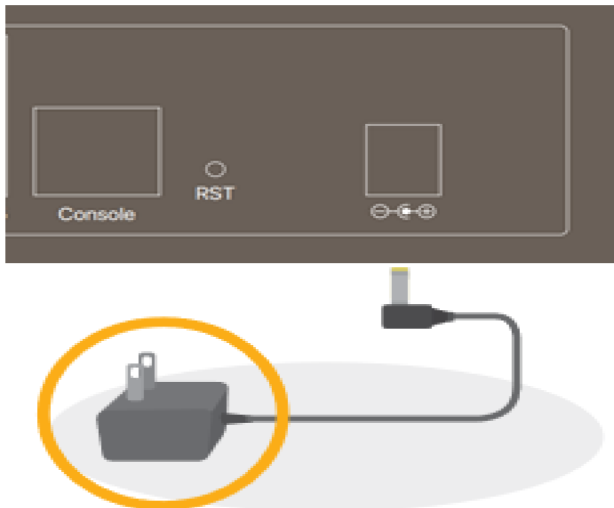
3. Insert the DC input plug of the connected cable into the DC connection socket of the OLT.

    ----End

Using 12V DC power supply (TES7001&TES7002)

Use a power adapter (output ≥ 12V/2A, self-prepared) to connect the DC jack of the OLT to the power source.

2.5 OLT working status checkout

2.5.1 Power supply checkout

Before you connect the power supply, carefully check the power supply to see whether it is in line with the power supply requirements, and whether the OLT is in reliable grounding. After verification, you can turn on the power supply sources.

2.5.2 OLT working status checkout

Check the OLT's working status from the following aspects:

- Check the PWR (power indicator). The indicator should be solid green.
- Check the ACT (system status indicator). The indicator should be solid green.
- If the uplink device is connected to the uplink port, the target connection indictor is on.

2.5.3 ONT registration status checkout

By default, after the ONT device is started, it will be registered on the OLT without any configuration.

You can prepare an ONT for registration checkout.

Before connecting the OLT, it is recommended to use an optical power meter to test whether the optical function is within the working range (-8 to -28 dBm) required by the OLT.

Then, connect the ONT to the PON port of the OLT. The corresponding PON port indicator should be on, and the ONT is registered successfully.

2.5.4 Network connection checkout

By default, after the ONT is normally registered on the OLT, the network between the ONT user and the device connected to the OLT should be connected.

The checkout procedures are as follows:

Step 1   Connect a computer to the LAN port of the ONT.

Step 2   Use the Ping package tool on the computer to ping the IP address of the OLT uplink devices in the same LAN (same IP address segment).

----End

Checkout result: The IP address of the OLT uplink devices can be pinged successfully on the computer.

2.5.5 Network management checkout

The management computer can manage the device in the following two ways.

- **Local command line interface management**

Use a DB9 or Type-C serial cable to connect the management computer to the Console management port of the OLT, and then access the command line management interface of the OLT through the serial port. For related parameters, refer to OLT default configuration.

- **Web management**

Use an Ethernet cable to connect the management computer to the NMS outband management port (TES7008) or uplink port (TES7001&TES7002) of the OLT, and then log in to the web UI of the OLT on a browser. For related parameters, refer to OLT default configuration.

3 OLT default configuration

3.1 Network parameter configuration

Default IP address of OLT management port:

- IP Address: 192.168.0.254

- Subnet Mask: 255.255.255.0

The default username and password of web management:

- Username: admin

- Password: admin

3.2 OLT console parameter configuration

- Baud Rate: 115200

- Data Bit: 8

- Parity Check: NO

- Stop Bit: 1

- Flow Control: NO

3.3 Username and password of CLI

Default login username and password of CLI:

- Username: admin
- Password: admin