Quick Start

SDX

632v XGS-PON ONT

10 GE/2.5 GE/Voice SFU

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61287943F1-13C

P/N: 1287943F1

Description

The SDX 632v XGS-PON ONT is an indoor, single-family, XGS-PON Optical Network Terminal (ONT) featuring a 2.5 GE and 10 GE interface that delivers high-bandwidth, 10 Gbps symmetric services. It also includes one Voice port that supports carrier-grade VoIP.

This document supports the following versions of the 632v ONT.

Description	Part Number
SDX 632v XGS-PON ONT with NA power adapter (included)	1287943F1
SDX 632v XGS-PON ONT with UK power adapter (included)	1287943F2
SDX 632v XGS-PON ONT with EU power adapter (included)	1287943F3
SDX 632v XGS-PON ONT with AU power adapter (included)	1287943F4
SDX 632v XGS-PON ONT with NZ power adapter (included)	1287943F5

Features

The basic features of the 632v ONT include the following:

- 10 Gbps XGS-PON SC/APC connector (WAN)
- 2.5 Gbps Ethernet (RJ-45) Customer Interface
- 10 Gbps Ethernet (RJ-45) Customer Interface
- Remote activation and deactivation
- Remote firmware upgrades and downgrades
- Remote OMCI management as per ITU-T G.988
- Voice (RJ-11) interface

Refer to the following table for a description of each feature in Figure 1.

Callout	Description
1	LEDs
2	Power Button
3	Power
4	UPS
5	Reset
6	2.5 Gbps Ethernet Interface (2.5 GE)
7	10 Gbps Ethernet Interface (10 GE)
8	Voice
9	Optical

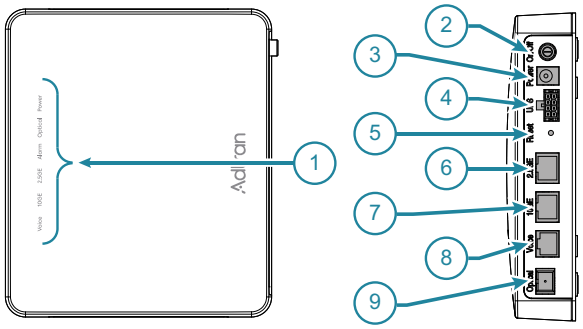

Figure 1. ONT Interfaces

WARNING!
WARNING indicates a hazard which, if not avoided, could result in death, injury or serious property damage.

CAUTION!
CAUTION indicates a hazard which, if not avoided, could result in service interruption, damage to the equipment, or minor property damage.

NOTE
NOTES inform the user of additional, but important, information or features.

Adtran

Installation

After unpacking the unit, inspect it for damage. If damage is noted, file a claim with the carrier and then contact Adtran Product Support. For more information, refer to the warranty.

Installation Guidelines

The following are guidelines for basic installation of the 632v ONT.

WARNING!

- Read all warnings, cautions, notes, and installation instructions before installing or servicing the 632v ONT.
- Ensure that the 632v ONT does not come in contact with water or other liquids.

CAUTION!

The product is intended for indoor use only. Ethernet cables, and attached equipment are intended for use within the same building with equipotential bonding, and not intended to be placed in separate buildings or structures. Failure to deploy as described could result in permanent damage from lightning or other electrical events and voids the warranty.

NOTE

- For additional installation considerations, including wall-mounted fiber trays and other installation housings, please consult with your Adtran representative for the best solution to meet your needs.
- Included with the 632v ONT is a 5-foot (1.5 m) power cord. All installation locations should be within 5 feet (1.5 m) of a wall outlet.
- The equipment has been tested and approved according to applicable product safety standards that allow mounting heights up to 6.6 ft (2 m).
- Supplied hardware is intended for drywall mounting only. For mounting on surfaces other than drywall, obtain the appropriate mounting hardware and follow the provided instructions.

Required Tools

Standard technician tools and those listed below are required for installing the 632v ONT.

- Optical power meter with wavelength filtering
- Fiberscope or videoscope
- #2 Phillips-head screw driver
- Drill
- 3/16-inch drill bit
- Hammer
- ODC fiber cleaning tool

Installation Overview

To install the 632v ONT, you will need to complete the following steps:

- “Step 1: Install the 632v ONT”
- “Step 2: Connect Ethernet”
- “Step 3: Connect Voice”
- “Step 4: Connect Fiber”
- “Step 5: Connect Power”
- “Step 6: Registration ID Activation”

Step 1: Install the 632v ONT

There are two options for installing the 632v ONT.

- “Desktop Installation”
- “Wall-Mount Installation”

Desktop Installation

The 632v ONT can be located on a desktop. Ensure the desktop location meets the requirements listed in the installation guidelines.

Wall-Mount Installation

Complete the following steps to wall mount the 632v ONT. Refer to Figure 2.

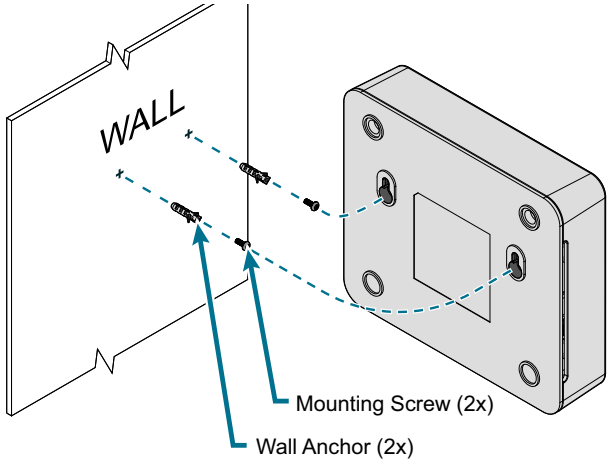

Figure 2. Wall-Mount Installation

1. Decide on a location for the 632v ONT. Mount below eye-level so the LEDs are visible.
2. Use the included drill template to drill holes in the wall using a 3/16 inch drill bit.
3. Use a hammer to lightly tap the included wall anchors into the drilled holes until anchors are flush with the wall.
4. Install the included screws into the anchor heads. Leave approximately 1/4 inch (6 mm) protruding from the mounting surface. Wall anchors are not needed if mounting directly to wall studs.
5. Slide the 632v ONT over the screws and exert a small amount of downward pressure to ensure that the top of the slots are resting on the shafts of the screws.

Step 2: Connect Ethernet

Insert a Category 6 ether cable into the port labeled 2.5GE or 10GE until there is an audible click.

NOTE

A Category 5e ethernet cable can be used but data rates will be limited to 1 GE.

Step 3: Connect Voice

NOTE

The SDX 632v XGS-PON ONT Voice port supports two-wire operation only, and can support a maximum of 3 telephony devices in parallel.

Insert an RJ-11 cable into the port labeled **Voice** until there is an audible “click”. Refer to Figure 1.

Step 4: Connect Fiber

CAUTION!

- Be sure to route and secure the fiber and cables in a manner that will prevent damage.To prevent breaking the fiber, do not exceed the fiber bend radius of 3.5 in (8.9 cm).
- Ensure that the 632v ONT is not located in direct sunlight or next to any thermal obstructions.

CAUTION!

- LASER RADIATION - 1260 nm to 1580 nm
- Do not view directly with optical instruments
- Use of controls, adjustments, or procedures other than those specified herein may result in hazardous radiation exposure

The fiber cable is installed into the SC/APC connector (**Optical**) located on the rear of the 632v ONT (see Figure 1). Complete the following steps to install the fiber:

1. Remove the dust cover from the SC/APC Connector and dispose of the dust cover as it could become a choking hazard for small children.
2. Clean the end of the incoming fiber connector and the ONT optical port using an appropriate fiber cleaning tool.
3. Before installing the fiber, use an optical power meter to measure the optical power in dBm power. The level should not exceed –9 dBm or it will cause damage to the unit power levels. Use an appropriate bi-directional optical attenuator if the power levels are at or above –9 dBm. A level between –12 and –27 dBm is acceptable.
4. Connect the incoming fiber connector.

Step 5: Connect Power

To connect power to the 632v ONT, complete the following steps:

1. Plug the supplied 12 VAC/DC power adapter into the **Power** connection on the rear of the 632v ONT.

CAUTION!

ADTRAN recommends only using the DC power adapter that is provided with the unit. If a different power supply is utilized in United States and Canadian applications, the DC Power Adapter must be an NRTL Listed LPS power supply. For deployments outside the US and Canada, the DC Power Adapter must be an LPS power supply specifically approved for that country.

2. Connect the power adapter to a standard 100 - 240 VAC outlet.
3. Power on the 632v ONT by pressing the **Power** button.
4. Verify power is on by checking the **Power** LED on the 632v ONT. The LED should be green, indicating local power is on.

Step 6: Registration ID Activation

Registration ID activation offers a secure way to add ONTs to a PON. An installer can program a Registration ID during installation instead of having to install an ONT with a specific serial number where that serial number is associated with the services for a specific customer.

A Registration ID value is programmed into the ONT. The OLT is configured for an activation mode using Registration ID, as well as configured with the matching Registration ID programmed into the ONT. When the ONT is initially discovered by the OLT, it will be activated using the Registration ID without regard to the serial number value programmed into the ONT by the factory.

The Registration ID can be set through the following methods.

- Set Registration ID using the ONT GUI
- Set Registration ID using Lineman’s Handset

Set Registration ID using the ONT GUI

To configure the Registration ID for a 632v ONT, complete the following steps:

1. Disconnect the PON fiber from the ONT.
2. Reboot the ONT.
3. Connect a computer’s Ethernet port to a LAN port and configure the computer's Ethernet port with an IP address of 192.168.0.2 and a subnet mask of 255.255.255.0.
4. When the ONT has fully booted up, open a web browser and go to http://192.168.0.1.

5. At the Log in screen, enter the following credentials.
   - **Username**: `admin` (lower case)
   - **Password**: `<serial number>` (This is the serial number written on the label on the side of the ONT. Use ALL CAPS.)
6. Click **Sign in**.
7. When the **SLID Configuration** page is displayed (see Figure 3), enter the new Registration ID in the **Input New SLID/REGID** field. This value may be up to 36 alphanumeric ASCII characters long (no “special” characters are allowed).

SLID Configuration

Current SLID	6210013050
Input New SLID/REGID	

Figure 3. 632v ONT SLID Configuration Screen

8. Click **Submit**. If the Registration ID is valid, the ONT will automatically reboot.
9. Exit the GUI.
10. Reconnect the PON cable.
11. Refer to the LED Table to ensure the ONT is functioning correctly.

NOTE
The web GUI will become inaccessible after the PON fiber is connected and the 632v ONT becomes activated on the PON. To access the web GUI after the ONT has activated, the PON fiber must be disconnected and the 632v ONT rebooted. The web GUI will become accessible again once the ONT has booted up.

The 632v ONT is now programmed with the new Registration ID and may be activated by the OLT using its Registration ID.

Set Registration ID using Lineman’s Handset

NOTE
The ONT must not be connected to the OLT during the Registration ID process.

To set the Registration ID using a DTMF Keypad on a standard lineman’s handset, complete the following steps.

1. Perform an initial power-up on a new 632v ONT.

NOTE
At the start-up of the 632v ONT, a 10-second Registration ID configuration window is provided.

2. Wait for the indication that Registration ID configuration is available. The **OPTICAL** LED will be flashing red and green on a 200 millisecond interval when Registration ID configuration is available.
3. Go off-hook and observe that dial tone is heard.
   - Once a dial tone is heard by going off-hook during the Registration ID process, there is a 10-second window to enter the initial digits *00. Once *00 is entered, there is a 300-second window to complete the Registration ID process.
   - The Registration ID MUST be 10 digits.
4. After a dial tone is heard, enter *001234*XXXXXXXXXX*XXXXXXXXXX*, where XXXXXXXXXX is the Registration ID for this site. The Registration ID needs to be entered twice.
5. If entered correctly, a confirmation tone is played and the number is displayed on the phone’s caller-id display with the string “ACCEPTED”.
6. If programming is successful, the 632v ONT plays a stutter dial tone and flashes the Voice LED green for approximately 10 seconds with a cadence of 300 milliseconds on/off before it continues its startup/ranging process.
   - If a failure occurs, the 632v ONT plays reorder tone and displays **Invalid** on the caller-id display. If the pattern is entered incorrectly, the caller-id displays **Re-enter* if the first ID does not match the second.
   - Entering an invalid Registration ID results in a reorder tone. There is another 10-second window to restart from step 3 to re-enter codes that were entered incorrectly.
7. Refer to the LED Table on the following page to ensure the 632v ONT is functioning correctly.

LEDs

The LEDs are located beneath the plastic housing and are only visible after power has been applied. When the 632v ONT first powers up, it performs self-tests. Once the power up self-tests are complete, the status LEDs will reflect the state of the hardware. The table below details the status indicated by the LEDs.

LED	Status		Indication
Voice	○	Off	No active voice service; phone on hook.
	●	Green	Line in ringing state.
	✷	Green Flashing	Off hook condition (line in use).
10GE	○	Off	No Ethernet connectivity.
	●	Green	Ethernet connectivity present, no activity.
	✷	Green Flashing	Ethernet connectivity present, activity detected. Interface operation state is up and packets Tx/Rx detected on the interface.
2.5GE	○	Off	No Ethernet connectivity.
	●	Green	Ethernet connectivity present, no activity.
	✷	Green Flashing	Ethernet connectivity present, activity detected. Interface operation state is up and packets Tx/Rx detected on the interface.
Alarm	○	Off	No alarm detected.
	●	Green	ONU software download complete and software upgrade in progress. LED will turn off once upgrade is successful.
	✷	Green Flashing	ONU software download in progress.
	●	Red	ONU is powered up, PON operational state is up, and ONU software upgrade failed. OR ONU software is not operational due to one of the following reasons. ■ Software image download failed. ■ Software image flash write failed. ■ Software image activation failed. ■ Software image commit failed.
Optical	○	Green	ONU ranged, authenticated, and configured with services.
	✷	Green Flashing (Fast)	ONU is ranging and synchronization process is in progress.
	✷	Green Flashing (Slow)	ONU ranged and authenticated but is not configured with any services.
	●	Red	PON is down due to LOF/LOS.
Power	○	Off	Power is unavailable.
	●	Green	Power is on, self-test passed, and normal operation.
	✷	Green Flashing	Unit is powering up.

Reset Button

WARNING!

All settings will return to factory defaults and registration provisioning will be lost.

A reset button is available if the ONT needs to be rebooted. To reset the ONT, press the Reset button for five seconds or longer.

Specifications

Specifications for the 632v ONT are as follows:

- Electrical
  - Input: 12VDC, 1.5A
  - Maximum Power Consumption: 13 W
  - Typical Power Consumption: 11 W
  - Power Supply Adapter: 12 VDC Power Adapter (LPS)
    - Input Voltage Rating: 100 - 240 VAC
    - Output Voltage Rating: 12 VDC
    - Output Current Rating: 1.5 A (minimum)
- Optical
  - TX Power: +4.0 dBm to +9.0 dBm
  - RSSI max sensitivity: –28.0 dBm
  - RX overload: –9.0 dBm
  - TX wavelength: 1270 nm typical
  - RX wavelength: 1577 nm typical
  - Reach: 20 km (12.4 mi)
- Physical
  - Height: 5.295 in (13.45 cm)
  - Width: 6.125 in (15.56 cm)
  - Depth: 1.40 in (3.55 cm)
  - Weight: 0.75 lb (340.19 g)
- Environmental
  - Operational Temperature Range: 0°C to +40°C
  - Storage Temperature Range: –40°C to +70°C
  - Relative Humidity: up to 95%, noncondensing

Maintenance

The 632v ONT does not require routine hardware maintenance for normal operation. Adtran does not recommend that repairs be attempted in the field. Repair services may be obtained by returning the defective unit to Adtran. Refer to the warranty for further information. Field support for software is provided through upgrade facilities.

Adtran

SAFETY AND REGULATORY

Refer to the Safety and Regulatory Notice for this product (P/N: 61287943F1-17) for detailed safety and regulatory information.

Consultez l'avis sur la sécurité et la conformité à la réglementation pour ce produit (61287943F1-17) pour obtenir des renseignements détaillés sur la sécurité et la réglementation.

Ausführliche Sicherheits- und regulatorische Informationen sind in der Konformitätserklärung zur Sicherheit und Einhaltung von Normen zu diesem Produkt (61287943F1-17) aufgeführt.

Documentation for Adtran Network Solutions products is available for viewing and download directly from the Adtran Support Community website.

Go to: https://supportforums.Adtran.com/welcome

Registration is required.

Adtran offers training courses on our products, including customized training and courses taught at our facilities or at customer sites.

For inquiries, go to: https://www.Adtran.com/index.php/training

Warranty: Adtran will replace or repair this product within the warranty period if it does not meet its published specifications or fails while in service. Warranty information can be found online at www.Adtran.com/warranty.

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CAUTION!

SUBJECT TO ELECTROSTATIC DAMAGE OR DECREASE IN RELIABILITY

HANDLING PRECAUTIONS REQUIRED

ADTRAN CUSTOMER CARE:

From within the U.S. 1.888.423.8726

From outside the U.S. +1 256.963.8716

PRICING AND AVAILABILITY 1.800.827.0807

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