

ADTRAN 411 Micro ONT

1 POTS + 1 GigE

August 2020
61287787F1-13A

Quick Start

DESCRIPTION

This document supports the following ONTs:

Part Number	Description
1287787F1	ADTRAN 411 Micro ONT (NA)
1287787F4	ADTRAN 411 Micro ONT (AUS)

The ADTRAN 411 1 Pots + 1GigE (Micro ONT) is an Optical Network Terminal (ONT). [Figure 1](#) illustrates the key features on the Micro ONT.

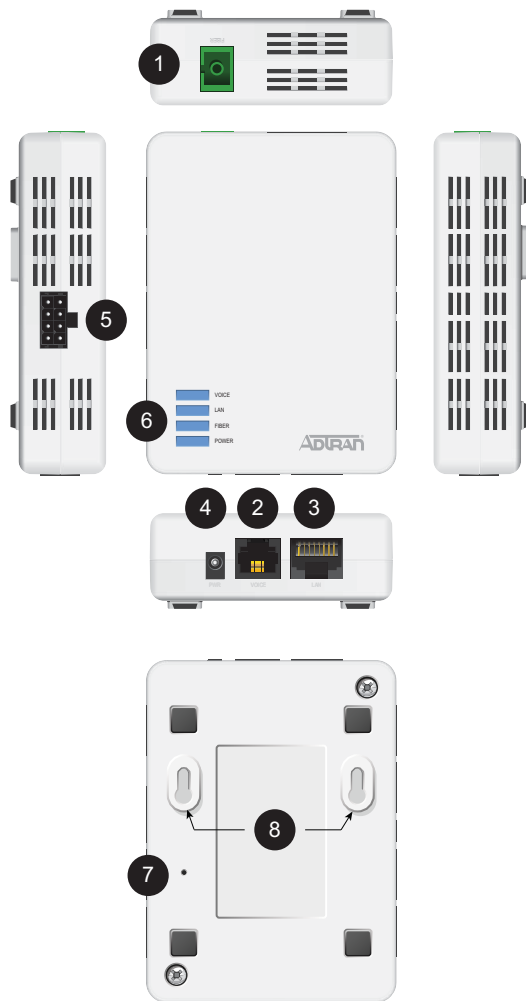


Figure 1. Micro ONT Key Features

The table opposite provides descriptions for each feature number above.

Number	Feature
1	Single GPON fiber interface with 1.244 Gbps upstream and 2.488 Gbps downstream
2	POTS (Voice) Interface
3	10/100/1000-BaseT Ethernet Interface (LAN)
4	AC Power Adapter
5	UPS Power/Alarm connector
6	Status LEDs
7	Reset Button
8	Keyholes

Fiber (FIBER)

Fiber is supplied to the Micro ONT using an SC/APC Fiber connection located on the rear of the unit.

Ethernet Interface (LAN)

The Micro ONT supports data service through one 10/100/1000BASE-T Ethernet interface via an RJ-45-style connector.

POTS (VOICE)

Plain Old Telephone Service (POTS) uses in-band signaling tones and currents to determine call status (for example, call request). Because POTS allows for the transfer of audio signals below 3.3 kHz, POTS systems are also used for modems that allow data transmission (referred to as dial up connections).

AC Power

The power feed is +12 VDC from the included AC to DC Adapter. The adapter plugs into the PWR connector.

UPS

The Micro ONT provides an optional connection for an uninterpretable power source (UPS). An UPS is a battery backup system designed to continue providing power when the primary power source is lost. Power is supplied to the Micro ONT by a local power source with battery backup that utilizes the AC power at the customer premises to charge the battery.

ONT Reset (RESET)

Refer to [Figure 1](#) for the location of the Reset button.

Reset the Micro ONT if you need to reboot the unit. The RESET button is accessed through an opening on the bottom of the unit. To reset the Micro ONT, insert a small pin (paper clip) into the RESET opening and hold the button down for 10 seconds.

The Micro ONT will automatically download the latest provisioning after the reset process has completed.

INSTALLATION

Before installing the Micro ONT, inspect it for damage. If damage has occurred during shipping, file a claim with the carrier and then contact ADTRAN. For more information, refer to the warranty.

Installation Guidelines

The following are guidelines for this installation.

- Read all warnings and cautions before installing or servicing the Micro ONT.
- Do not locate the Micro ONT in direct sunlight or next to any thermal obstructions.
- When the SC/APC fiber connection is not in use, replacing the Protective Cover will help keep the optical connection clean.
- This product should not come in contact with water or other liquids.

Installation Overview

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

- Step 1: Position the Micro ONT
- Step 2: Connect Ethernet
- Step 3: Connect POTS
- Step 4: Connect Fiber
- Step 5: Connect 12 VDC Power or UPS Power

Required Tools

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

- PON power meter with wavelength filtering
- Fiberscope or videoscope

For fiber optic connections, the following are required:

- ODC Fiber cleaning tool

Installation Steps

To install the Micro ONT, complete the following steps.

Step 1: Position the Micro ONT

The Micro ONT can be mounted on a wall, or on a desktop.

Wall Mount Installation

To wall mount the Micro ONT complete the following steps:



NOTE

Refer to [Figure 1](#) when installing the Micro ONT on a wall.

1. Determine a location for the Micro ONT
2. Use the key holes (2 inches apart) on the back of the Micro ONT as a template and install two #6 drywall anchors.
3. Install two #6 Pan Head screws. Leave approximately 1/4 inch protruding from the mounting surface.

4. Slide the Micro ONT over the Pan Head screws and exert a small amount of downward pressure to ensure that the top of the slots are resting on the shafts of the Pan Head screws.

Desktop Installation

The Micro ONT can be located on a desktop. Ensure the Micro ONT is not located in direct sunlight, next to any thermal obstructions, or sources of moisture., water or other liquids.

Step 2: Connect Ethernet

The Micro ONT supports a Gbps (10/100/1000BASE-T) connection to an RJ-45-type connector (**LAN**).

Refer to [Figure 1](#) and Insert the CAT 6 rated cable in the RJ-45 **LAN** Port.

Step 3: Connect POTS

Insert the RJ-11 connector in the RJ-11 jack labeled **VOICE**.

Step 4: Connect Fiber



WARNING!

CLASS 1 LASER PRODUCT
LASER RADIATION

CLASS 1 LASER
PRODUCT

1310 nm

Do not view directly with optical instruments.

This product contains a Class 1 Laser module that complies with 21 CFR 1040.10 and 1040.11 and IEC 60825-1.

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



Figure 2. GPON Connection

Fiber is installed in an SC/APC connector (FIBER) located on the rear of the Micro ONT (see [Figure 2](#)).

Complete the following steps to install fiber.

1. Refer to [Figure 3](#) and pull the Protective Cover from the SC/APC Connector.

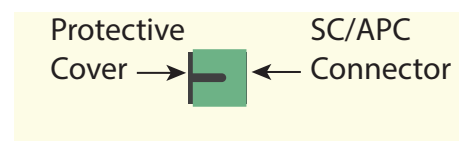


Figure 3. SC/APC Protective Cover

2. Clean the ends of the Incoming Fiber Connector.

- Before installing the fiber, use an optical power meter to measure the power level. The power level should not exceed -8.0 dBm. Use an appropriate bi-directional optical attenuator if the power levels are at or above -8.0 dBm. A level between -8.0 dBm and -28.0 dBm is acceptable, but levels between -12.0 dBm and -18.0 dBm are optimal.
- Refer to the and connect the Incoming Fiber Connector.

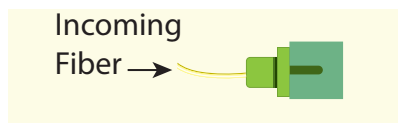


Figure 4. Fiber Installed

NOTE

When the SC/APC fiber connection is not in use, replace the Protective Cover. This will help keep the optical connection clean.

Step 5: Connect 12 VDC Power or UPS Power

Refer to [Figure 1](#) and the following steps when connecting power. The Micro ONT can be powered by either the 12 VDC connection, or by using the UPS connection.

NOTICE

DO NOT connect both power sources as, this will damage the Micro ONT.

12 VDC Connection

To power the Micro ONT using the 12 VDC connection, complete the following steps:

- Plug the supplied 12 V AC/DC Power Converter into the **PWR** connection.
- Connect the power plug to a standard AC outlet. This immediately turns the unit ON.

UPS Connection

To power the Micro ONT using an UPS, refer to [Figure 5](#) and complete the following steps:

- If using the ADTRAN Cable Assembly (see Note below), connect one end to the Molex Connector and the other to the UPS. This immediately turns the unit ON.

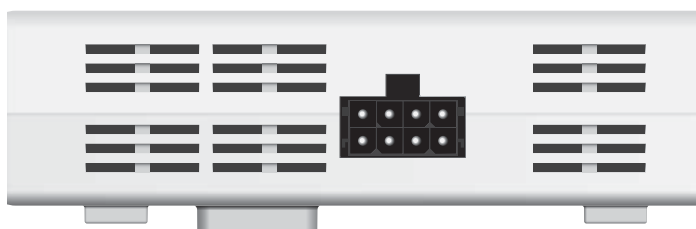


Figure 5. Molex Connector

NOTE

ADTRAN offers a 24W UPS (P/N 1187731G3) and GPON Indoor UPS Power Cable (P/N 1287402G1) for providing an UPS power source.

UPS Power/Alarm Table

The following table indicates which pin is associated with each alarm provided through a UPS connection.

Pin-Out	Description	Alarm
1	Power Input (+12 VDC)	-
2	UPS Status - On Battery	1
3	UPS Status - Battery Missing	2
4	Signal Return	-
5	Power 12 V Return	-
6	UPS Status - Replace Battery	3
7	UPS Status - Low Battery	4
8	No Connection	-

LED STATUS

The LEDs are located beneath the plastic housing and are only visible after power has been applied. The following table provides the LED status during normal operations.

Label	Status	Indication
POWER	○ Off	ONT power is Off
	● Green	ONT power On
FIBER	○ Off	ONT is not active (not Ranged)
	● Green	ONT is active (Ranged)
	* Green Flashing Fast	ONT is activating (Ranging in progress)
LAN	○ Off	LAN Port is not connected
	● Green	LAN Port is connected, but data is not being transmitted
	* Green Flashing Fast	LAN Port is connected, and data is being transmitted
VOICE	○ Off	Unequipped or on-hook and not ringing
	● Green	Off-hook
	* Green Flashing Slow	On-hook with line in ringing state

TROUBLESHOOTING

The following table provides troubleshooting tips.

Problem	Possible Solution
The LAN LED is flashing red	<ul style="list-style-type: none"> Use an optical power meter to check the receiving power to see if it between -28 dbm and -8 dbm. Reset the ONT using the Reset button. If the ONT fails again, replace the ONT with another unit.
The FIBER LED is off when the Ethernet cable is connected	Check the FIBER connection, or check to see if the Ethernet service is disabled. Contact the Central Office for verification.

Problem	Possible Solution
The Power LED is Off	<ul style="list-style-type: none"> ■ Make sure the power cable connector is properly seated in the ONT power input. ■ Verify that the power adapter is plugged into a live AC outlet. ■ Check the power cable for shorts or breaks. ■ Disconnect the power input connector at the ONT; use a voltmeter to verify that the proper voltage level is present on the 12 V pin (power and power return) from the power adapter. ■ Check the UPS cable and ensure it is properly seated in the UPS port. ■ Disconnect the UPS cable and use a voltmeter to check for 12 VDC between pins 1 and 5. ■ Check the UPS cable for shorts or opens.
The LAN LED is green	<ul style="list-style-type: none"> ■ During boot-up, the LED will flash green. This is normal. Once boot-up is complete, the LED will become solid green. When data is transmitted, the LED will flash green. If the LED remains solid green, contact the Central Office to verify that the ONT serial number, password, and vendor ID match those provisioned in the database. ■ If provisioning is correct, have the Central Office determine if there are alarms on the PON feeding the ONT. If no alarms exist, use an optical power meter to troubleshoot the fiber network.

SPECIFICATIONS

Specifications for the Micro ONT are as follows:

- Electrical
 - ◆ Voltage: 12.0 V typical
 - ◆ Minimum Voltage: 10.0 V
 - ◆ Maximum Voltage: 13.9 V
 - ◆ Maximum Power Consumption: 10 W

- Physical
 - ◆ Width: 2.8 in (7.1 cm)
 - ◆ Depth: 4.0 in (10.2 cm)
 - ◆ Height: 1.2 in (3.0 cm)
 - ◆ Weight: 1 lbs (0.45 kg)
- Environmental
 - ◆ Operational Temperature: 32°F to +104°F (0°C to +40°C)
 - ◆ Storage Temperature: -4°F to 122°F (-20°C to +50°C)
 - ◆ Relative Humidity: 90%, noncondensing
- Optical
 - ◆ TX min power: +0.5 dBm
 - ◆ TX max power: +5.0 dBm
 - ◆ RSSI max sensitivity: -27 dBm
 - ◆ RX overload: -8 dBm
 - ◆ TX wavelength: 1310 nm typical
 - ◆ RX wavelength: 1490 nm typical

MAINTENANCE

The Micro ONT does not require routine hardware maintenance for normal operation. We do not recommend that you attempt repairs in the field. Obtain repair services by returning the defective unit to ADTRAN. Refer to the warranty for further information. Field support for software is provided through upgrade facilities.

SAFETY AND REGULATORY

Refer to the Safety and Regulatory Notice for this product (P/N 61287787F1-17) for detailed safety and regulatory information.

Consultez l'avis sur la sécurité et la conformité à la réglementation pour ce produit (P/N 61287787F1-17) 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 (61287787F1-17) 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: <http://adtran.com/training>

The following online documents and resources provide additional information for this product:

[Total Access 5000 GPON OLT User Interface Guide](#)

[Total Access 5000 Series Fiber to the Premises Deployment Guide](#)

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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