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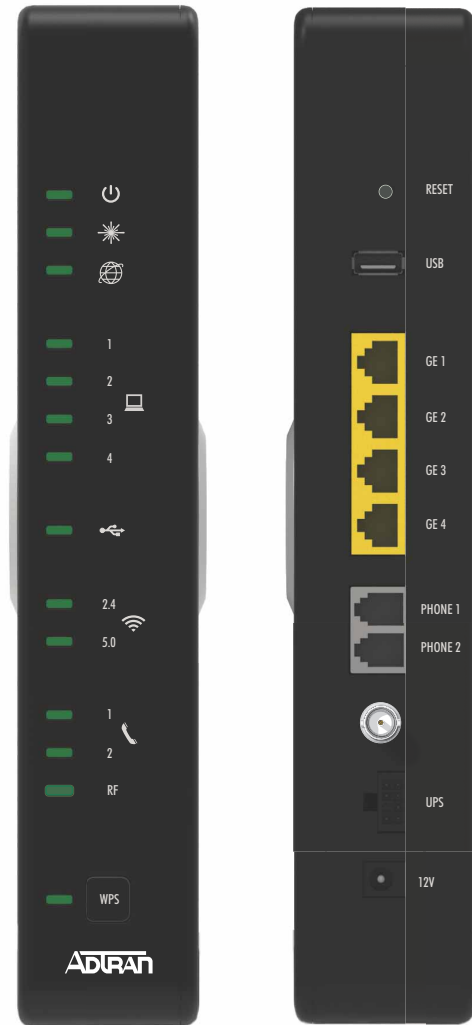
Total Access 5000 GPON OLT User Interface Guide

Total Access 5000 Series CLI Dictionary

Total Access 5000/5006 Engineering Guide

Total Access 5000 Series Fiber to the Premises Deployment Guide

ADTRAN 434RG ONT 2 POTS/4 GigE/RF/MoCA with Dual Band WiFi User Interface Guide



DESCRIPTION

The ADTRAN 434RG 2POTS/4GigE Indoor ONT with RF (434RG ONT, P/N 1287782F1) provides Triple Play and WiFi services to a customer premises. The 434RG ONT also supports RF and Multimedia over Coax Alliance (MoCA 2) with backward compatibility to 1.1. The illustration at the left displays the front and rear of the 434RG ONT.

FEATURES

The 434RG ONT supports the following features:

- Two POTS (PHONE) Ports
- Four Ethernet Ports
- 2.4 GHz and 5 GHz WiFi
- CATV (with Coaxial Connection)
- MoCA 2.0 (backward compatible with 1.1)
- USB 2.0 Port
- 12 VDC Power Adapter
- UPS Connector
- Reset Button

Resetting the ONT

A reset button is available if the 434RG ONT needs to be rebooted. The Reset button is located just above the **USB** port on the rear of the 434RG ONT. To reset the 434RG ONT, press the RESET button for 5 seconds or longer.

⚠ WARNING

All settings will return to Factory Defaults; registration provisioning will be lost.

Voice Processing

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).

Ethernet Interface

The 434RG ONT supports data service through four 10/100/1000Base-T Ethernet interfaces via RJ-45-style connectors.

Power

Power is provided by a 12 VDC Power Adapter that is included with the 434RG ONT. The Power Adapter operates from a main power source input of 100 to 240 VAC, 50/60 Hz, with a nominal output of 12 VDC. The total power consumption with WiFi enabled, 4 Ethernet Ports running and both POTS lines off-hook is approximately 15.0 Watts. A connection for an optional un-interruptible power supply (UPS) is also provided.

UPS

The 434RG ONT provides an optional connection for an 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 434RG ONT by a local power source with battery backup that utilizes the AC power at the customer premises and keeps the battery charged.

WiFi

The 434RG ONT provides 802.11 a/b/g/n/ac compliant WiFi that support both 2.4 GHz and 5.0 GHz.

CATV

Cable Television (CATV) is television service that provides cable Internet service with television to customers over the same links - normally coaxial cable. CATV operates at a frequency of 54-870 MHz.

MoCA 2.0

Multimedia over Coax Alliance (MoCA) is an industry standard technology for connecting the home to a service provider. MoCA technology uses existing coaxial cabling for distributing high definition video with multi-room applications such as DVRs.

The 434RG ONT supports MoCA Version 2.0 and is backward compatible to MoCA Version 1.1. MoCA 2.0 operates in C4 and D bands with a frequency range from 1125 to 1500 MHz. Channel bandwidth throughput increased from > 140 Mb/s (MoCA 1.1) to 400 Mb/s. MoCA 2.0.

INSTALLATION

After unpacking the 434RG ONT, inspect it for damage. If damage is noted, file a claim with the carrier and then contact ADTRAN. For more information, refer to the warranty.

Installation consists of positioning the 434RG ONT on a desktop and connecting POTS (PHONE), Ethernet, Fiber, and Power.

Installation Guidelines

The following are guidelines for this installation.

- Read all warnings and cautions before installing or servicing the 434RG ONT.
- Do not locate the 434RG ONT in direct sunlight or next to any thermal devices.

Installation Overview

To install the 434RG ONT, you will need to complete the following steps:

- "Step 1: Attach the 434RG ONT to the Base and connect Fiber"
- "Step 2: Connect POTS (PHONE)"
- "Step 3: Connect Ethernet"
- "Step 4: Connect Power"
- "Step 5: Connect USB"
- "Step 6: Connect Coaxial Cable"
- "Step 7: Connect UPS (optional)"

Required tools

Standard technician tools and those listed below are required for installing the 434RG ONT.

- PON power meter with wavelength filtering
- Fiberscope or videoscope

For fiber optic connections, the following is required:

- ODC Fiber cleaning tool

Installation Steps

NOTICE

The 434RG ONT must sit upright using the stand provided. DO NOT lay the ONT flat as it may overheat.

Step 1: Attach the 434RG ONT to the Base and connect Fiber

Ensure the 434RG ONT is not located in direct sunlight and is not located next to any thermal obstructions. To attach the 434RG ONT to the base, refer to [Figure 1](#) and complete the following steps:

1. Position the 434RG ONT on the base.
2. Using the screw provided, secure the base to the 434RG ONT.

3. Thread the fiber cable through the opening in the base. If there is excess fiber, carefully wrap it around the Fiber Tray.
4. Remove the dust cover plug from the SC/APC Connector and insert the fiber cable. Retain the dust cover and insert it in the fiber connection when the fiber cable is not connected. This will protect the optical portion of the connection.
5. [Figure 2](#) illustrates the 434RG ONT after the base has been attached.

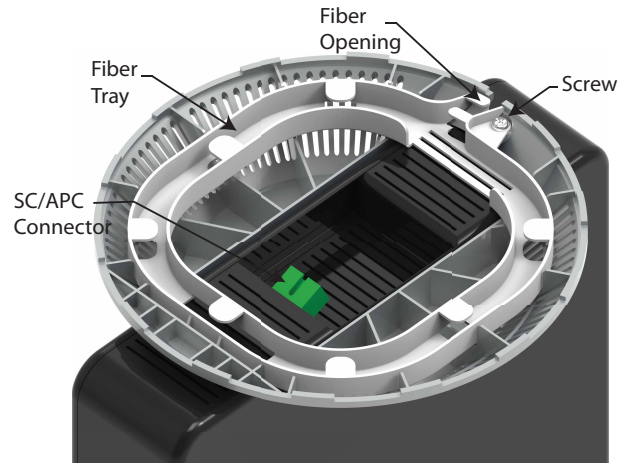


Figure 1. Attach 434RG ONT to Base and Connect Fiber



Figure 2. 434RG ONT with Base Attached

Step 2: Connect POTS (PHONE)

If POTS cables are not available, use [Figure 3](#) and the following procedure to create the POTS cables:

1. Trim the insulation for the subscriber POTS cables.
2. Refer to [Figure 3](#) and connect the twisted-pair Tip (green) and Ring (Red) to the RJ-11 connector using an RJ-11 crimper.
3. Insert the RJ-11 connector in the appropriate PHONE 1 or PHONE 2 jack.

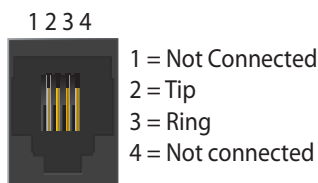


Figure 3. POTS (PHONE) Connection

Step 3: Connect Ethernet

The 434RG ONT supports four, CAT 6, 1 Gigabit (10/100/1000Base-T) connections (GE 1 to GE 4).

If Ethernet cables are not available, use the following procedure and table to create the Ethernet cables:

1. Trim the insulation for the subscriber Ethernet cable.
2. Connect the wires per the following table using an RJ-45 Crimper.

Ethernet RJ-45 Pin-out			
Pin	Name	Description	Color Code
1	TRD0+	Transmit/Receive Positive	White/Orange
2	TRD0-	Transmit/Receive Negative	Orange
3	TRD1+	Transmit/Receive Positive	White/Green
4	TRD2+	Transmit/Receive Positive	Blue
5	TRD2-	Transmit/Receive Negative	White/Blue
6	TRD1-	Transmit/Receive Negative	Green
7	TRD3+	Transmit/Receive Positive	White/Brown
8	TRD3-	Transmit/Receive Negative	Brown

3. Insert the CAT 6 rated cable in the appropriate GE 1 through GE 4 ports on the rear of the 434RG ONT.

Step 4: Connect Power

Plug the supplied 12 VDC Power Adapter into the **12V** connection on the rear of the chassis. Connect the AC plug to a standard 120 VAC outlet.

Step 5: Connect USB

There is a USB data connection on the rear of the 434RG ONT that can be used for connection and communications with other computers and electronic devices.

Step 6: Connect Coaxial Cable

The coaxial connection is located on the rear of the 434RG ONT. Connect a standard coaxial cable from this connection to the coaxial connection on the television where you want Internet capability.

Step 7: Connect UPS (optional)

CAUTION

DO NOT connect the Power Adapter and an UPS at the same time as this will cause damage to the 434RG ONT. The ONT can be powered by either power source, but not both simultaneously.

The 434RG ONT can typically use an un-interruptible power supply (UPS) if desired. Power is supplied to the 434RG ONT by a local power source with battery backup that utilizes the AC power at the customer premises. The UPS powers the 434RG ONT and functions as a battery backup unit (BBU) supplying continuous 12 VDC. Refer to the installation material that is provided with the UPS when installing the BBU.

UPS Connector

Connect the UPS to the 8-pin MOLEX connector labeled “UPS” located on the rear of the SFU ONT chassis. Figure 4 illustrates the MOLEX connector on the rear of the ONT.

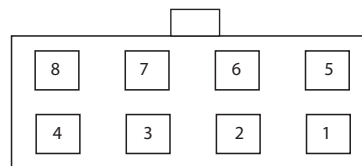


Figure 4. 8-Pin Molex Connector

The UPS Power/Alarm Connections Table below defines each pin on the connector.

NOTE

ADTRAN offers a UPS Cable assembly (P/N 1287402G1) for this connector.

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	-

NOTE

If an UPS is being used and is disconnected, the 434RG ONT will not function and is not protected from power outages. In addition, a “Battery Missing” alarm will be sent to the OLT.

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	AC or battery off
	● Green	No Failure
FIBER 	○ Off	No connection to the OLT, open fiber, failure at the ONT, or power is Off
	● Green	DS signal present and is within operating range
	* Green Flashing Fast	Ranging in Progress or AOE Auto-upgrade in progress

Label	Status	Indication
INTERNET 	○ Off	No IP address configured on WAN Interface, or Power is Off
	● Green	WAN Interface is configured with IP address
GE 1-4 	○ Off	Link is down or not connected
	● Green	Link is up
	* Green Flashing Fast	Data is being sent or received
USB 	○ Off	Power Off or no device connected
	● Green	Device connected
	* Green Flashing Fast	Data is being sent or received
2.4GHZ 	○ Off	Power is Off, or Wireless 2.4GHz is Disabled
	● Green	Wireless 2.4GHz is Enabled
	* Green Flashing Fast	Data is being sent or received on 2.4GHz
5GHZ 	○ Off	Power is Off, or Wireless 5GHz is Disabled
	● Green	Wireless 5GHz is Enabled
	* Green Flashing Fast	Data is being sent or received on 5GHz
PHONE 1-2 	○ Off	Unequipped or on-hook and not ringing
	● Green	Line is off-hook
	* Green Flashing Slow	Line in ringing state
WPS	○ Off	Power Off or WPS is Disabled
	● Green	WPS is Enabled
	* Green Flashing Fast	WPS push button pressed and device is ready to accept connection
RF	○ Off	No Video connection
	● Green	Video is streaming
	* Green Flashing	TBD

REGISTRATION ID

Registration ID is performed by Serial Number Activation. This occurs when the 434RG ONT is "Discovered" by the OLT.

NOTE

If AOE Auto Upgrade is active, a new 434RG ONT installation will be detected and a fast blinking **FIBER** LED will indicate a new software download has commenced. This may take 5 - 10 minutes to complete.

PROVISIONING

When provisioning the 434RG ONT, refer to the *ADTRAN 434RG ONT 2 POTS/4 GigE/RF/MoCA with Dual Band WiFi/MoCA2 User Interface Guide*. This guide provides basic information for getting the Internet, video and data up and running using a web interface.

For complete provisioning information, refer to the *Total Access 5000 GPON OLT User Interface Guide*. This guide provides all the information necessary to provision the PON to which the 434RG ONT is connected.

SPECIFICATIONS

Refer to the following for a list of all specifications for the 434RG ONT.

- Electrical
 - ◆ Voltage: 12 Volts typical
 - ◆ Minimum Voltage: 10 Volts
 - ◆ Maximum Voltage: 13.9 Volts
 - ◆ Power Consumption: Typical 17.0 watts
- Physical
 - ◆ 10.8 inches high (27.5 centimeters)
 - ◆ 7.4 inches deep (18.8 centimeters)
 - ◆ 3.2 inches wide (8.1 centimeters)
 - ◆ Weight: 1 pounds (0.45 kilograms)
- Environmental
 - ◆ Operational Temperature: 23°F to +113°F (0°C to +45°C)
 - ◆ Storage Temperature: -40°F to 185°F (-40°C to +85°C)
 - ◆ Relative Humidity: 90%, noncondensing
- Optical
 - ◆ TX min power: +0.5 dBm
 - ◆ TX max power: +5.0 dBm
 - ◆ RSSI max sensitivity: -27.0 dBm
 - ◆ R.OX overload: -8.0 dBm
 - ◆ TX wavelength: 1310 nm typical
 - ◆ RX wavelength: 1490 nm typical
 - ◆ RF 1550 nm, and no RF return

MAINTENANCE

The 434RG 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.

SAFETY AND REGULATORY COMPLIANCE

Refer to the Safety and Regulatory Compliance Notice for this product (P/N 61287782F1-17) for detailed safety and regulatory information. Consultez l'avis sur la sécurité et la conformité à la réglementation pour ce produit (61287782F1-17) pour obtenir des renseignements détaillés sur la sécurité et la réglementation.

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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