

Quick Start

Overview



WARNING!

Read all warnings, cautions, notes and installation instructions before installing or servicing this equipment.



ATTENTION!

Lisez tous les avertissements et mises en garde avant l'installation de cet équipement ou la réalisation de toute opération de maintenance.

This document supports the following products:

Device	Part Number
854-6 Wi-Fi 6 2.5G Router	617600028F1
854-v6 Wi-Fi 6 2.5G Router with Voice	617600026F1

This quick start describes how to install ADTRAN's 854 service delivery gateways.

The 854-6 Wi-Fi 6 2.5G Router is an indoor gateway that performs as a true 2Gbps Router with Wi-Fi 6, delivering premium, multi-Gigabit services and Dual-band Wi-Fi 6. The 854-v6 Wi-Fi 6 2.5G Router offers the same features along with Voice services.

- "Installing the 854 Router" on page 2
- "Understanding the Status LEDs" on page 4

Figure 1 illustrates the front and back of the 854-v6 gateway. The 854-6 gateway does not offer voice connections (Tel1/Tel2).



Figure 1. Front and Back of the 854-v6 Gateway



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.

Features

The features of the 854 gateways include the following:

- Combo WAN Uplink (one at a time)
 - ◆ SFP cage
 - ◆ 2.5GBASE-T (IEEE 802.3bz-2016)
- Subscriber Interfaces
 - ◆ 4x Gigabit Ethernet (RJ-45) interfaces
 - ◆ 4x4 802.11ax @ 2.4GHz
 - ◆ 4x4 802.11ax @ 5GHz
 - ◆ 1x USB 3.0 Type A interface
 - ◆ 2x voice (RJ-11) interfaces (854-v6 only)

Installing the 854 Router

The following are guidelines for basic installation of the device.



NOTE

Refer to the national, state and local electrical codes for the requirements for power, grounding, wiring, and installation methods.



CAUTION!

The product is intended for indoor use only. Ethernet, POTS 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. Furthermore, all connections from outside of the building, such as old POTS wiring, must be disconnected prior to use.

Package Contents

- ADTRAN's 854-6 or 854-v6 WiFi 6 2.5G Router
- 12V DC power adapter

Prior to Installation

Before installing the equipment, inspect the gateway. If damage has occurred during shipping, file a claim with the carrier, and then contact ADTRAN Customer Support. For more information, refer to the product warranty available online at https://adtran/wp_support_warranty.

Required Tools

Standard technician tools and, if installing the gateway on a wall, a #2 Phillips-head screwdriver, are required for installing these devices.

Mounting Options

There are two options to install this device: desktop and wall mount. Be sure to route and secure the fiber and cables in a manner that will prevent damage. These options are described below.

Desktop Installation

This device can be placed on a desk or table. The following table shows the recommended minimum distance (in feet and meters) between ADTRAN equipment and household appliances to reduce interference.

Household Appliance	Recommended Minimum Distance (in feet and meters)
Microwave ovens	30 feet / 9 meters
Baby monitor – analog	20 feet / 6 meters
Baby monitor – digital	40 feet / 12 meters
Cordless phone – analog	20 feet / 6 meters

Household Appliance	Recommended Minimum Distance (in feet and meters)
Cordless phone – digital	30 feet / 9 meters
Bluetooth devices	20 feet / 6 meters
ZigBee	20 feet / 6 meters



WARNING!

Ensure that the device does not come in contact with water or other liquids.



CAUTION!

Ensure that the device is not located in direct sunlight or next to any thermal obstructions.

Wall Mount Installation

This device can be mounted on a wall. Wall Mount Kit (17600192F1) can be ordered for mounting the device. Instructions are provided in the related Quick Start Guide (617600192F1-13A).

Connecting the 854 Gateway

Figure 2 illustrates the installation (connection) options for this device.

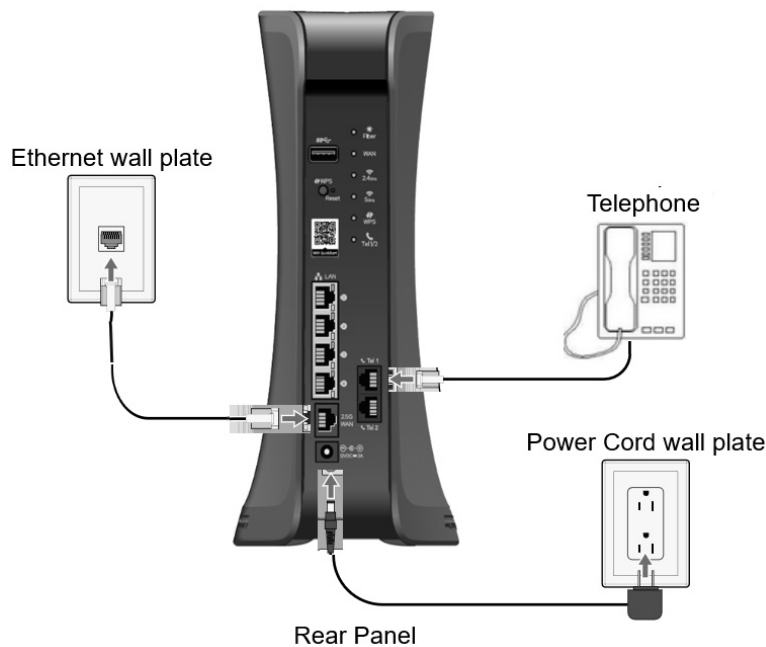


Figure 2. 854-6/v6 Gateway Installation Options (placeholder)

The following subscriber connections are available on the rear of the device:

- 4x Gigabit Ethernet (RJ-45 Connectors) – LAN 1-4 ports
- 1x USB 3.0 (Type A Connector) - port
- 2x Telephone (RJ-11 Connectors) – Tel 1 and Tel 2 ports (854-v6 only)

To connect the subscriber interfaces, refer to Figure 2 and complete the following:

1. For a WAN connection, do either of the following:
 - 2.5Gb WAN: insert a Cat 5E or better Ethernet cable into the port labeled **2.5G WAN** until there is an audible “click”.
 - SFP WAN: insert a compatible SFP module into the SFP cage at the bottom of the Router..
2. For an Ethernet LAN connection, insert a Category 5E (or better) RJ-45 cable into one of the LAN ports (labeled LAN 1-4) until there is an audible “click”.

3. For a Voice connection on the 854-v6 only, insert an RJ-11 cable into one of the telephone ports (labeled **Tel 1** or **Tel 2**) until there is an audible “click”.
4. Before connecting to the service provider interface, clean the optical Interfaces of the SC/APC connectors.
5. Insert the fiber cable into the **WAN** port on the bottom of the gateway.



CAUTION!

To prevent breaking the fiber, do not exceed the fiber bend radius of 3.5 in (8.9 cm).

Connecting the Power Supply

1. Connect the end of the power adapter to the **Power** port on the rear panel of the gateway
2. Plug other end of the power adapter into the wall outlet.
3. Confirm that the power is connected properly. The **Power** LED should be lit on the front of the gateway.



NOTE

Alternately, the device may be powered by a supported third-party UPS which may be connected via 7-pin molex connector, labeled **UPS**.

Resetting the Gateway

A reset button is available if the device needs to be rebooted. To reboot the device, press the **Reset** button on the rear panel of the gateway for **5 seconds or less**. To reset the device to custom defaults, press the **Reset** button for **5 seconds or more**.

Understanding the Status LEDs

The LEDs on the back panel of the device enable you to monitor the device status. This section describes the four types of LEDs available on the gateway. See *Figure 3* for details.



Figure 3. Status LEDs

Fiber Status LED

The **Fiber** status LED indicates the state of an inserted Fiber SFP module.

LED	Color	State	Description
Fiber	Green	On	Fiber optic connection is UP.
		Flashing	Fiber optic connection is discovering or activating the ONT on the PON.
	None	Off	Fiber optic connection is DOWN.

2.5G WAN LED

The **2.5G WAN** status LED indicates the state of the 2.5G WAN connection on the gateway.

LED	Color	State	Description	
WAN	2.5.Gbps	Green	On	WAN is UP at 2.5 Gbps speed.
		Flashing	Flashing	WAN connection is transferring data.
	1000/100 Mbps	Orange	On	WAN is UP at 1000/100 Mbps speed.
		Flashing	Flashing	WAN connection is transferring data.
		None	Off	WAN connection is DOWN.

2.4GHz / 5GHz Status LEDs

The **2.4GHz** and **5GHz** status LEDs indicate the state of the wireless connections on the gateway.

LED	Color	State	Description
2.4GHz / 5GHz	Green	On	Wi-Fi radio is UP.
		Flashing	Wi-Fi radio is transferring data.
	None	Off	Wi-Fi connection is DOWN.

WPS Status LED

The **WPS** status LED indicates the status of WPS (Wi-Fi protected setup).

LED	Color	State	Description
WPS	Green	On	Wi-Fi Protected Setup complete.
		Flashing	Wi-Fi Protected Setup pairing in progress.
	None	Off	Wi-Fi Protected Setup inactive.

Tel 1/2 Status LED (854-6 only)

The **Tel 1/2** status LED indicate the state of the phone line ports on the 854-v6 device.

LED	Color	State	Description
Tel 1/2	Green	On	Telephone is off-hook; a call is in progress.
		Flashing	Telephone is off-hook.
	None	Off	Telephone is on-hook.

Product Specifications

Electrical

Power is provided by a 12V DC power adapter that is included with the device. The power adapter operates from a power source of 100 to 240V AC, 50 - 60 Hz. The nominal output is 12V DC +\−5% with a minimum current rating of 3.0 Amps. For US and Canadian applications, a UL Listed limited power source (LPS) is required. For deployment outside of North America, an LPS specifically approved for that country, such as a CE Mark, is required.



NOTE

It is strongly suggested that the power supply (a 5-foot (1.5 m) power cord) included with the 854-v6 be connected to a surge suppressor device which can have its own extension cable. The surge protection device should provide L-N, L-G, and N-G protection. It is also recommended that the device contains a visual 'GOOD' indicator.

Environment

- Operating Temperature: 32°F to 104°F (0°C to 40°C)
- Storage Temperature: -40°F to 158°F (-40°C to 70°C)
- Relative Humidity: 10 to 95 percent, non-condensing



NOTE

Changes or modifications not expressly approved by ADTRAN will void the warranty.

Safety and Regulatory

This product meets the following safety and regulatory requirements:

- UL/cUL Safety Listed
- IEC 62368-1
- EN 62368-1, AS/NZS 60950.1
- RoHS Compliant

This equipment contains no parts that can be serviced by the user.

Refer to the Safety and Regulator Notice for this product (P/N: 617600028F1-17) for detailed safety and regulatory information.

Consultez l'avis sur la sécurité et la conformité à la réglementation pour ce produit (P/N: 617600028F1-17) 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 (P/N: 617600028F1-17) aufgeführt.

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

Go to: <https://supportcommunity.adtran.com>

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>

Access additional safety information and product documentation using the QR code or website.



<https://supportcommunity.adtran.com>

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.

Trademarks: Brand names and product names included in this document are trademarks, registered trademarks, or trade names of their respective holders.

Copyright © 2021 ADTRAN, Inc. All Rights Reserved.

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



6 1 7 6 0 0 1 2 8 F 1 - 1 3 A

Safety and Regulatory Notice

Sécurité et Avis de réglementation

Sicherheitsvorschriften und -hinweise

854-6/v6 Service Delivery Gateway

WiFi 6 2.5G Router

P/N: 17600026F1
17600028F1

This document supports the following products:

Device	Part Number
854-6 Wi-Fi 6 2.5G Router	617600028F1
854-v6 Wi-Fi 6 2.5G Router with Voice	617600026F1

WARNING!

- Read all warnings, cautions, notes, and installation instructions before installing or servicing this equipment.
- Refer to the national, state, and local electrical codes for the requirements for power, grounding, wiring, and installation methods.
- This product may be powered by multiple sources. Disconnect all sources of power prior to servicing.

AVERTISSEMENT!

- Lisez toutes les mentions de danger et de prudence et les remarques, ainsi que la notice d'installation, avant d'effectuer l'installation ou l'entretien de cet équipement.
- Consultez les Codes de l'électricité - national, régional et local - pour connaître les exigences concernant l'alimentation, la mise à terre, le câblage, et les méthodes d'installation.
- Ce produit peut être alimenté par des sources multiples. Débranchez toutes les sources d'énergie avant l'entretien.

WARNUNG!

- Lesen Sie alle Warnungen, Gefahrenhinweise, Anmerkungen und Installationsanweisungen bevor Sie dieses Gerät installieren oder warten.
- Beziehen Sie sich auf die in den nationalen, bundesstaatlichen und lokalen elektrischen Vorschriften festgelegten Anforderungen an Stromversorgung, Erdung, Verkabelung und Installationsmethoden.
- Dieses Produkt kann durch mehrere Quellen versorgt werden. Trennen Sie alle Stromquellen vor der Wartung.

CAUTION!

- Connect the DC power inputs to an approved Limited Power Source (LPS) power supply ONLY.
- This equipment contains no parts that can be serviced by the user.
- This product is intended to operate in ambient temperatures up to 40°C.
- It is recommended that an external AC Surge Protection Device be installed at the AC input connection to the local AC-Powered product. The Surge Protection device should provide L-N, L-G, and N-G protection. It is also recommended that the device contains a visual 'GOOD' indicator.
- The product is intended for indoor use only. Ethernet, Voice, 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.

NOTES

This product meets the following compliance requirements:

- This equipment contains no parts that can be serviced by the user.
- This product meets EU RoHS Directive. Refer to www.adtran.com/environmental for further information on RoHS/WEEE.
- This product is UL Listed to the applicable UL/CSA Standards.
- This product has also been evaluated to applicable international standards including CE and RCM marking.
- The AC branch circuit socket-outlet must be installed near the equipment and must be easily accessible.
- The RJ-45 jacks are not used for telephone line connection.



This radio transmitter (IC: 2250A-W649A) has been approved by Industry Canada to operate with the antenna types listed below. Antenna types not included in this list are strictly prohibited for use with this device.

- Dynamic Frequency Selection (DFS) for devices operating in the bands 5250 - 5350 MHz, 5470 - 5600 MHz and 5650 - 5725 MHz.
- The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.
- Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650- 5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.
- The maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the equivalent isotropically radiated power (EIRP) limit.
- The maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the EIRP limits specified for point-to-point and non-point-to-point operation as appropriate.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L' appareil ne doit pas produire de brouillage;
2. L' appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d' en compromettre le fonctionnement.

Regulatory Compliance Information

This section includes user requirements for operating this product in accordance with National laws for usage of radio spectrum and operation of radio devices. Failure of the end-user to comply with the applicable requirements may result in unlawful operation and adverse action against the end-user by the applicable National regulatory authority.

This product's firmware limits operation to only the channels allowed in a particular Region or Country. Therefore, all options described in this user's guide may not be available in your version of the product.

Europe – EU Declaration of Conformity

Products bearing the marking comply with the following EU directives:

- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- WEEE Directive reference: 2012/19/EU

If this product has telecommunications functionality, it also complies with the requirements of the following EU Directive:

- RED 2014/53/EU

Compliance with these directives implies conformity to harmonized European standards that are noted in the EU Declaration of Conformity.

For indoor use only. Valid in all EU member states, EFTA states, and Switzerland.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 - 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

FCC Requirements for Operation in the United States

FCC Information to User

This product does not contain any user serviceable components and is to be used with approved antennas only. Any product changes or modifications will invalidate all applicable regulatory certifications and approvals.

FCC Guidelines for Human Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 26 cm between the radiator and your body.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

FCC Declaration of Conformity

We, ADTRAN, Inc., 901 Explorer Blvd, Huntsville, AL 35806, declare under our sole responsibility that these device comply with Part 15 Subpart B of FCC CFR47 Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

FCC Radio Frequency Interference Warnings & Instructions

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:



- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAN ICES-3(B)/NMB-3(B)

Canadian Department of Communications Radio Interference Regulations

This digital apparatus (Wi-Fi 6 2.5G Router Model 854-v6) does not exceed the Class B limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Industry Canada

This device complies with RSS-247 of the Industry Canada Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE: Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 31cm between the radiator & your body.

NOTE IMPORTANTE: Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 31 cm de distance entre la source de rayonnement et votre corps.



CAUTION!

- (i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
- (ii) the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit;
- (iii) the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate; and
- (iv) the worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in Section 6.2.2(3) shall be clearly indicated.
- (v) Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.



ATTENTION!

- i) les dispositifs fonctionnant dans la bande 5150-5250MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;
- (ii) le gain maximal d'antenne permis pour les dispositifs utilisant les bandes de 5250 à 5350MHz et de 5470 à 5725MHz doit être conforme à la limite de la p.i.r.e.;
- (iii) le gain maximal d'antenne permis (pour les dispositifs utilisant la bande de 5725 à 5850MHz) doit être conforme à la limite de la p.i.r.e. spécifiée pour l'exploitation point à point et l'exploitation non point à point, selon le cas;
- (iv) les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de la p.i.r.e. applicable au masque d'élévation, et énoncée à la section 6.2.2.3), doivent être clairement indiqués.

Installation Instructions:

Refer to the Quick Start or Job Aid for this product (P/N: 617600028F1-13) for detailed installation instructions.

Notice d'installation :

Rapportez-vous au Guide de prise en main, ou à L'Aide-mémoire pour ce produit (Code article 617600028F1-13) pour des consignes d'installation détaillées.

Installationsanweisungen:

Genaue Installationsanweisungen finden Sie in der Schnellstart- oder Auftragshilfe für dieses Produkt (P/N:617600028F1-13).

