

# Touchstone® TG852 Telephony Gateway User's Guide



Get ready to experience the Internet's express lane! Whether you're checking out streaming media, downloading new software, checking your email, or talking with friends on the phone, the Touchstone TG852 Telephony Gateway brings it all to you faster and more reliably. All while providing toll quality Voice over IP telephone service and both wired and wireless connectivity. It also provides a Lithium-Ion battery backup to provide continued telephone service during power outages.

The Touchstone Telephony Gateway provides four Ethernet connections for use as the hub of your home/office Local Area Network (LAN). The Touchstone Telephony Gateway also provides 802.11b/g/n wireless connectivity for enhanced mobility and versatility. In addition, the Touchstone Telephony Gateway provides for up to two separate lines of telephone service.

Installation is simple and your cable company will provide assistance to you for any special requirements. The links below provide more detailed instructions.

[Safety Requirements](#)

[Getting Started](#)

[Battery Installation and Removal](#)

[Installing and Connecting Your Telephony Gateway](#)

[Configuring Your Ethernet Connection](#)

[Using the Telephony Gateway](#)

[Troubleshooting](#)

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## **Export Regulations**

This product may not be exported outside the U.S. and Canada without U.S. Department of Commerce, Bureau of Export Administration authorization. Any export or re-export by the purchaser, directly or indirectly, in contravention of U.S. Export Administration Regulation is prohibited.

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Protected under one or more of the following U.S. patents: 7,031,435; 7,100,011. Other patents pending.

ARSVD01310

Release 8 Standard 1.1 May 2010

## Safety Requirements

ARRIS Telephony Gateways comply with the applicable requirements for performance, construction, labeling, and information when used as outlined below:



**CAUTION**  
**Risk of shock**

Mains voltages inside this unit. No user serviceable parts inside. Refer service to qualified personnel only!



**CAUTION**  
**Potential equipment damage**  
**Potential loss of service**

Connecting the Telephony Gateway to existing telephone wiring should only be performed by a professional installer. Physical connections to the previous telephone provider must be removed and the wiring must be checked; there must not be any voltages. Cancellation of telephone service is not adequate. Failure to do so may result in loss of service and/or permanent damage to the Telephony Gateway.



**CAUTION**  
**Risk of explosion**

Replacing the battery with an incorrect type, heating a battery above 75°C, or incinerating a battery, can cause product failure and a risk of fire or battery explosion. Dispose of used batteries according to the instructions.

- The Telephony Gateway is designed to be connected directly to a telephone.
- Connecting the Telephony Gateway to the home's existing telephone wiring should only be performed by a professional installer.
- Do not use product near water (i.e. wet basement, bathtub, sink or near a swimming pool, etc.), to avoid risk of electrocution.

- Do not use spray cleaners or aerosols on the Telephony Gateway.
- Avoid using and/or connecting the equipment during an electrical storm, to avoid risk of electrocution.
- Do not use the telephone to report a gas leak in the vicinity of the leak.
- Do not locate the equipment within 6 feet (1.9 m) of a flame or ignition source (i.e. heat registers, space heaters, fireplaces, etc.).
- Use only power supply and power cord included with the equipment.
- Equipment should be installed near the power outlet and should be easily accessible.
- The shield of the coaxial cable must be connected to earth (grounded) at the entrance to the building in accordance with applicable national electrical installation codes. In the U.S., this is required by NFPA 70 (National Electrical Code) Article 820. In the European Union and in certain other countries, CATV installation equipotential bonding requirements are specified in IEC 60728-11, *Cable networks for television signals, sound signals and interactive services*, Part 11: Safety. This equipment is intended to be installed in accordance with the requirements of IEC 60728-11 for safe operation.

If the equipment is to be installed in an area serviced by an IT power line network, as is found in many areas of Norway, special attention should be given that the installation is in accordance with IEC 60728-11, in particular Annex B and Figure B.4.

- In areas of high surge events or poor grounding situations and areas prone to lightning strikes, additional surge protection may be required (i.e. PF11VNT3 from American Power Conversion) on the AC, RF, Ethernet and Phone lines.
- When the Telephony Gateway is connected to a local computer through Ethernet cables, the computer must be properly grounded to the building/residence AC ground network. All plug-in cards within the computer must be properly installed and grounded to the computer frame per the manufacturer's specifications.

## FCC Part 15

This equipment has been tested and found to comply with the requirements for a Class B digital device under Part 15 of the Federal Communications Commission (FCC) rules. These requirements are intended 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.

Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## Industry Canada

The term "IC:" before the radio certification number only signifies that Industry Canada technical specifications were met.

This Class **B** digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. 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.

Cet appareillage numérique de la classe B répond à toutes les exigences de l'interférence canadienne causant des règlements d'équipement. L'opération est sujette aux deux conditions suivantes: (1) ce dispositif peut ne pas causer l'interférence nocive, et (2) ce dispositif doit accepter n'importe quelle interférence reçue, y compris l'interférence qui peut causer l'opération peu désirée.

## RF Exposure

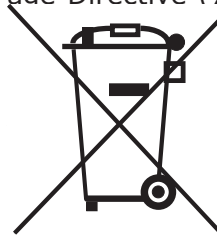
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## European Compliance

This product complies with the provisions of the Electromagnetic Compatibility (EMC) Directive (89/336/EEC), the Amending Directive (92/31/EEC), the Low Voltage Directive (73/23/EEC), and the CE Marking Directive (93/68/EEC). As such, the CE marking in accordance with the above applicable Direc-



tion of Conformity may be obtained from: ARRIS International, Inc., 10000 Lakefield Drive, Suite 300, Suwanee, GA 30024.

As indicated by this symbol, disposal of this product or battery is governed by Directive 2002/96/EC of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE). WEEE could potentially prove harmful to the environment; as such, upon disposal of the Telephony Gateway the Directive requires that this product must not be disposed as unsorted municipal waste, but rather collected separately and disposed of in accordance with local WEEE ordinances.



This product complies with directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances (RoHS) in electrical and electronic equipment.

## Getting Started

### About Your New Telephony Gateway

The Touchstone TG852 Telephony Gateway is DOCSIS compliant with the following features:

- Speed: much faster than dialup or ISDN service; up to eight times faster than DOCSIS 2.0 cable modems.
- Convenience: supports Ethernet and 802.11b/g/n wireless connections; both can be used simultaneously
- Flexibility: provides two independent lines of telephone service as well as high speed data
- Compatibility:
  - Data services: DOCSIS 3.0 compliant and backward-compatible with DOCSIS 2.0 or 1.1; supports tiered data services (if offered by your cable company)
  - Telephony services: PacketCable™ 1.5 or 1.0 compliant

The TG852 provides:

- Wireless 802.11b/g/n connectivity
- Four Ethernet ports for connections to non-wireless devices
- Up to two lines of telephone service
- DOCSIS 3.0 compliant with Li-Ion backup battery
- One USB host port (future support for external USB devices)

### What's in the Box?

Make sure you have the following items before proceeding. Call your cable company for assistance if anything is missing.

- Telephony Gateway
- Power Cord
- Battery

- Wall-Mounting Template and Instructions
  - Quick Installation Guide
  - Ethernet Cable
  - Mini CD-ROM (80mm)
- Note:** An adapter is required for slot-loading drives. Adapter is not included.
- End User License Agreement

## What's on the CD?

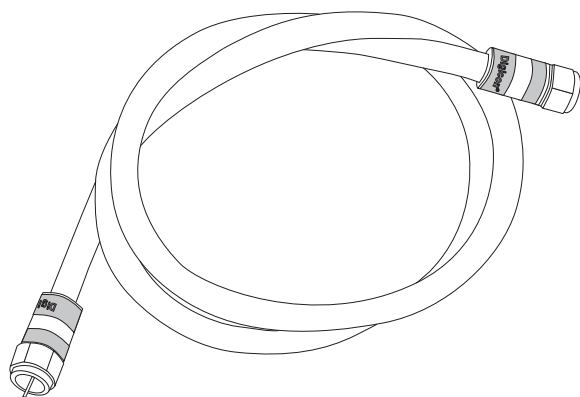
The CD provides the following items:

- Quick Install Guide
- User's Guide

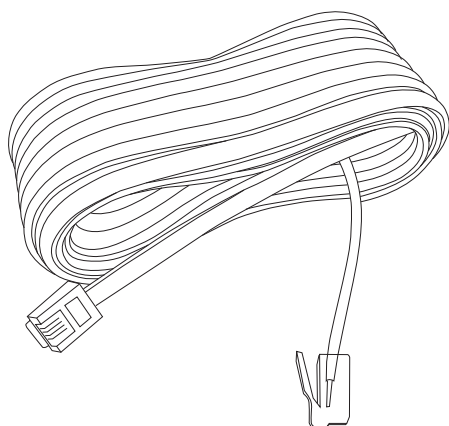
## Items You Need

If you are installing the Telephony Gateway yourself, make sure you have the following items on hand before continuing:

- **Telephony Gateway package:** see [What's in the Box?](#) for a list of items in the package.
- **Coaxial cable (coax):** as shown in the image to the left, this is a round cable with a connector on each end. It is the same kind of wire used to connect to your television for cable TV. You can buy coax from any electronics retailer and many discount stores; make sure it has connectors on both ends. There are two types of connectors, slip-on and screw-on; the screw-on connectors are best for use with your Telephony Gateway. The coax should be long enough to reach from your Telephony Gateway to the nearest cable outlet.
- **Phone Cable:** as shown in the image to the left, this is a standard phone cable with standard phone connectors (RJ11 type) on both ends. You can buy phone cables from any electronics retailer and many discount stores.
- **Splitter (optional):** provides an extra cable connection by splitting a single outlet into two. You may need a splitter if you have a TV already connected to the cable outlet that you want to use. You can buy a splitter from



**Coax Cable**



**Phone Cable**



any electronics retailer and most discount stores; you may also need a short piece of coax cable (with connectors); use it to connect the splitter to the cable outlet and then connect the Telephony Gateway and TV to the splitter.

**Note:** A splitter effectively cuts the signal in half and sends each half to its two outputs. Using several splitters in a line may deteriorate the quality of your television, telephone, and/or internet connection.

- **Wall-mount hardware (optional):** if you want to wall-mount your Telephony Gateway, you need to obtain two drywall anchors or wood screws. See the Wall-Mount Template and Instructions for more details.
- **Information packet:** your cable company should furnish you with a packet containing information about your service and how to set it up. Read this information carefully and contact your cable company if you have any questions.

## Getting Service

Before trying to use your new Telephony Gateway, contact your local cable company to establish an Internet account and telephone service. When you call, have the following information ready:

- the Telephony Gateway serial number and cable MAC addresses of the unit (printed on a sticker on the bottom of the Telephony Gateway)
- the model number of the Telephony Gateway

If the Telephony Gateway was provided by your cable company, they already have the required information.

In addition, you should ask your cable company the following questions:

- Do you have any special system requirements or files that I need to download after I am connected?
- When can I start using my Telephony Gateway?
- Do I need a user ID or password to access the Internet or my e-mail?
- Will my phone number(s) change?
- What new calling features will I have and how do I use them?

## System Requirements

The Touchstone Telephony Gateway operates with most computers. The following describes requirements for each operating system; see the documentation for your system for details on enabling and configuring networking.

To use the Telephony Gateway, you need DOCSIS high-speed Internet service from your cable company. Telephone service requires that the cable company has PacketCable support.

### Recommended Hardware

The following hardware configuration is the minimum recommended. Computers not meeting this configuration can still work with the TG852, but may not be able to make maximum use of TG852 throughput.

- CPU: P4, 3GHz or faster
- RAM: 1GB or greater
- Hard drive: 7200 RPM or faster
- Ethernet: Gig-E (1000BaseT)

### Windows

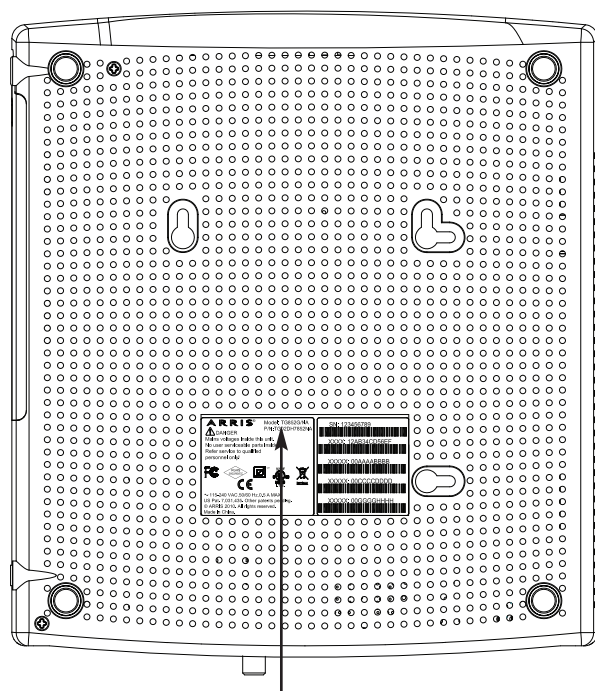
Windows 2000, Windows XP, Windows Vista, or Windows 7. A supported Ethernet or wireless LAN connection must be available.

### MacOS

System 7.5 to MacOS 9.2 (Open Transport recommended) or MacOS X. A supported Ethernet or wireless LAN connection must be available.

### Linux/other Unix

Hardware drivers, TCP/IP, and DHCP must be enabled in the kernel. A supported Ethernet or wireless LAN connection must be available.



Model Number

## About this Manual

This manual covers the Touchstone TG852 Telephony Gateway. The model number is on the label affixed to the Telephony Gateway. See the image at the left.

## What About Security?

Having a high-speed, always-on connection to the Internet requires a certain amount of responsibility to other Internet users—including the need to maintain a reasonably secure system. While no system is 100% secure, you can use the following tips to enhance your system's security:

- Keep your operating system updated with the latest security patches. Run the system update utility at least weekly.
- Keep your email program updated with the latest security patches. In addition, avoid opening email containing attachments, or opening files sent through chat rooms, whenever possible.
- Install a virus checker and keep it updated.
- Avoid providing web or file-sharing services over your Telephony Gateway. Besides certain vulnerability problems, most cable companies prohibit running servers on consumer-level accounts and may suspend your account for violating your terms of service.
- Use the cable company's mail servers for sending email.
- Avoid using [proxy](#) software unless you are certain that it is not open for abuse by other Internet users (some are shipped open by default). Criminals can take advantage of open proxies to hide their identity when breaking into other computers or sending spam. If you have an open proxy, your cable company may suspend your account to protect the rest of the network.
- If you use the wireless LAN, make sure you enable wireless security on the Telephony Gateway (for the same reasons that you should run only secured proxies). See [Configuring Your Wireless Connection](#).

## Ethernet or Wireless?

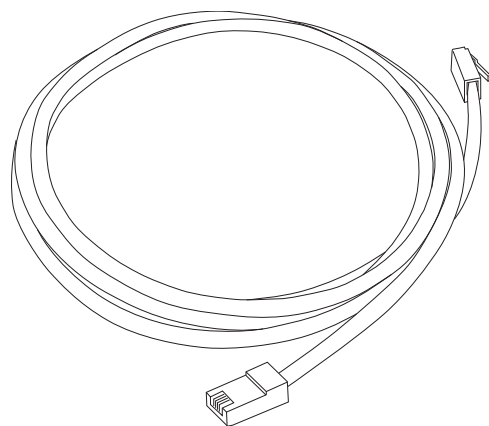
There are two ways to connect your computer (or other equipment) to the Telephony Gateway. The following will help you decide which is best for you:

### Ethernet

Ethernet is a standard method of connecting two or more computers into a Local Area Network (LAN). You can use the Ethernet connection if your computer has built-in Ethernet hardware.

**Note:** To connect more than four computers to the TG852 through the Ethernet ports, you need an Ethernet hub (available at computer retailers).

The Telephony Gateway package comes with one 6-foot (1.9m) Ethernet cable (the connectors look like wide telephone connectors); you can purchase more cables if necessary at a computer retailer. If you are connecting the Telephony Gateway directly to a computer, or to an Ethernet hub with a cross-over switch, ask for Category 5 (CAT5) straight-through cable.



**Ethernet Cable**

### Wireless

Wireless access lets you connect additional (wireless-capable) devices to Telephony Gateway. The 802.11 wireless LAN standard allows one or more computers to access the TG852 using a wireless (radio) signal. These connections are in addition to the connections supported via Ethernet.

**Note:** You can use the wireless connection if your computer has a built-in or aftermarket wireless card. To learn more about which wireless hardware works best with your computer, see your computer dealer.

### Both

If you have two or more computers, you can use Ethernet for up to four devices and wireless for the others. To connect five or more computers to the Ethernet ports, you will need an Ethernet hub (available at computer retailers.)

## Battery Installation and Removal

The TG852 Telephony Gateway supports a Lithium-Ion backup battery to provide backup in the event of a local power loss. The battery backup is not intended to take the place of AC power.

**Note:** For safety and regulatory purposes, batteries are shipped outside of the Telephony Gateway and must be installed.

The TG852 supports the following battery models:



**Basic Backup Battery (black)**



**Basic Backup Battery (grey)**



**Extended Backup Battery**

- **Basic backup battery** — provides up to 5 hours (black) or 8 hours (grey) of backup time, depending on your Telephony Gateway model and usage. It may be light grey (recommended battery) or black.

[Basic Battery Installation and Replacement](#)

- **Extended backup battery** — provides up to 12 hours of backup time, depending on model and usage. It has a strap between the battery guides.

[Extended Battery Installation and Replacement](#)

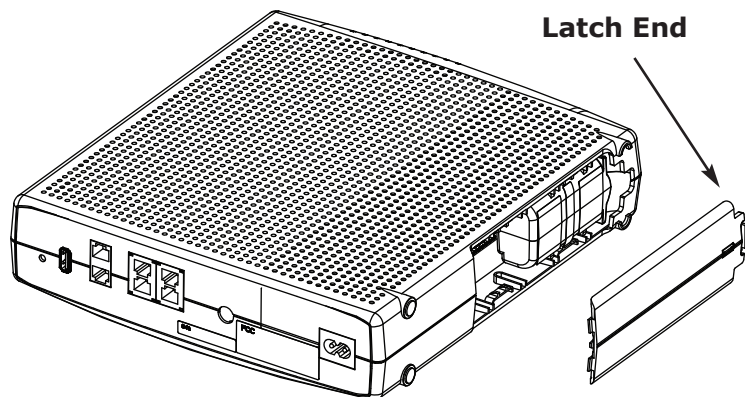
Your cable company may include a backup battery with your Telephony Gateway. You can order any of the batteries shown here at <http://yourbroadbandstore.com/>

## TG852 Basic Battery Installation and Replacement

This model of the Telephony Gateway has the ability to provide battery backup in the event of a local power loss. The battery backup is not intended to take the place of AC power.

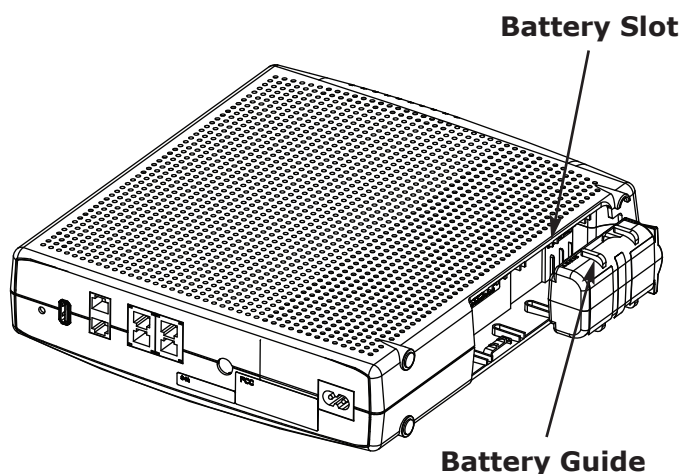
Use this procedure to install and to replace the backup battery.

- 1 Press down and pull back on the latch holding the battery door (on the bottom of the Telephony Gateway). Pull the door toward you. Set the door aside in a safe place.



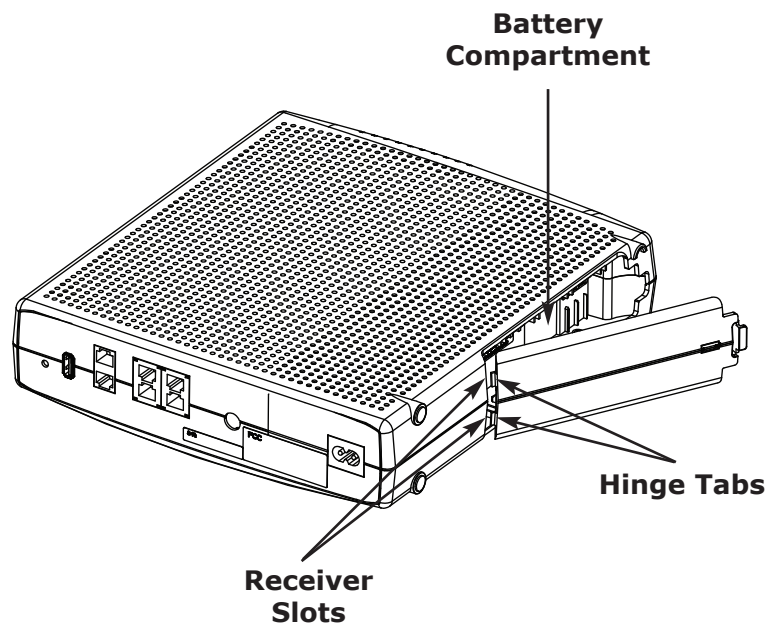
### CAUTION Risk of equipment damage

Improperly inserting the battery may damage the battery connector in the Telephony Gateway. Carefully follow the instructions in the next step to avoid damage.



- 2 Hold the battery pack so that the guides on the battery align with the slots on the Telephony Gateway and slide the battery into the bay. The diagram on the left shows the proper orientation.

**Note:** Batteries will not insert completely into the Telephony Gateway if not oriented correctly. The battery should slide into the bay without significant force. Line up the guides on the battery with the slots in the battery bay.



- 3 Push the battery pack into the bay until it seats into place. **If you are taking the battery out of the Telephony Gateway, position your finger in the battery opening area and use leverage to dislodge the battery while pulling it straight back.**

**Note:** The Telephony Gateway will not begin operating until you apply AC power.

- 4 Replace the door. To do so, place the hinge tabs of the battery door into the receiver slots inside the Telephony Gateway battery compartment on the opposite end of the battery opening. Rotate the door toward the unit until the latch snaps back into place.

**Note:** Telephony Gateways use a Lithium-Ion battery pack. Please recycle or dispose of the battery responsibly and in accordance with local ordinances.

## TG852 Extended Battery Installation and Replacement

Use this procedure to install or replace the backup battery.

- 1 Press down and pull back on the latch holding the battery door (on the bottom of the Telephony Gateway). Pull the door toward you. Set the door aside in a safe place.

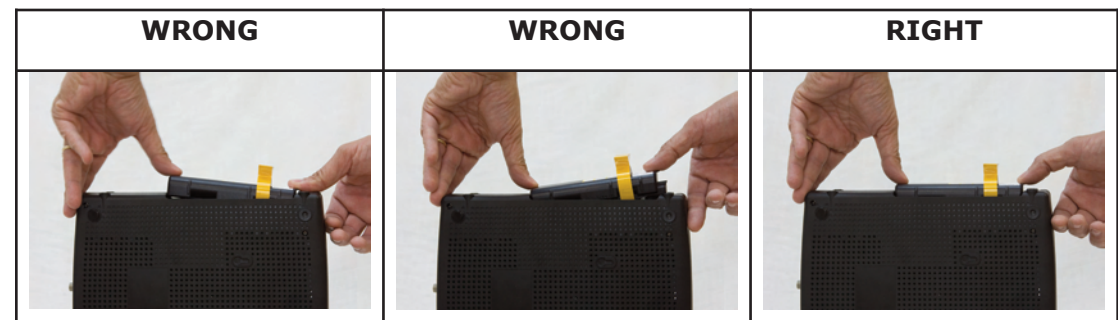


### CAUTION Risk of equipment damage

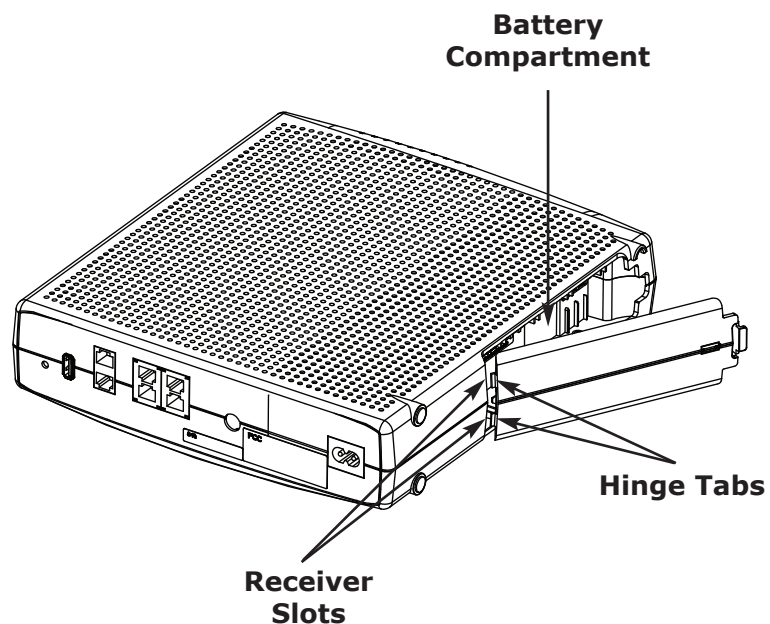
Improperly inserting the battery may damage the battery connector in the Telephony Gateway. Carefully follow the instructions in the next step to avoid damage.

- 2 Hold the battery pack so that the guides on the battery align with the slots on the Telephony Gateway and slide the battery into the bay. The diagram on the left shows the proper orientation.

**Note:** Batteries will not insert completely into the Telephony Gateway if not oriented correctly. The battery should slide into the bay without significant force. Line up the slots in the battery bay with the guides on the battery and apply even pressure on both ends of the battery.







- 3 Push the battery pack into the bay until it latches into place. **If you are taking the battery out of the Telephony Gateway, use the battery pull strap to dislodge the battery.**

**Note:** The Telephony Gateway will not begin operating until you apply AC power.

- 4 Replace the door. To do so, place the tabs of the battery door into the slot inside the Telephony Gateway battery compartment. Rotate the door toward the front of the Telephony Gateway until the latch snaps back into place.

**Note:** Telephony Gateways use a Lithium-Ion battery pack. Please recycle or dispose of the battery responsibly and in accordance with local ordinances.

## Installing and Connecting Your Telephony Gateway

Before you start, make sure that:

- You have contacted your cable company and verified that they provide data and telephone service using standard DOCSIS technology.
- You have all the [items you need](#).
- Cable, phone, and power outlets are available near the computer. If a cable outlet is not conveniently located, your cable company can install a new one.

If you have ordered service, your cable company should configure the Telephony Gateway automatically. You need only follow the instructions in this section to install and connect the Telephony Gateway.



**CAUTION**  
**Risk of equipment damage**

Only qualified installation technicians should connect the Telephony Gateway to house wiring. Incumbent telephone service must be physically disconnected at the outside interface box before making any connections.

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