E31U2V1

DOCSIS 3.1 eMTA

Charter COMMUNICATIONS

Quick Installation Guide

Spectrum

SAFETY NOTICES

Device Grounding: Install the eMTA to include grounding the coaxial cable to the earth as close as practical to the building entrance per ANSI/NFPA 70 and the National Electrical Code (NEC, in particular, Section 820.93, Grounding of the Outer Conductive Shield of a Coaxial Cable). The device is designed for IT power systems with phase-to-phase voltage at 120V.

This unit requires a 100-240V, 50-60Hz power adapter. The power adapter must be keyed for proper polarization, and must be fully inserted to contact the back of the power connector port to ensure snug connection. Use only the supplied power adapter.

Disconnecting the Device: If the eMTA becomes damaged or encounters some other abnormality, disconnect the power adapter from the AC wall outlet immediately.

Temperature and Altitude: Install the device in a location not to exceed the maximum operating temperature of 104˚F (40˚C). Maximum operating altitude is 5000 m (16,404 ft.).

PREPARING FOR INSTALLATION

Verify package contents, RF cable connectors, and power outlet.

✓ Unpack the box and confirm the following components:

E31U2V1

1 Ethernet Cable (RJ-45)

1 Power Adapter (use only this adapter)

✓ Locate the RF (coaxial) cable connector on the wall.

✓ Verify the power outlet is working and is wired correctly. Place your eMTA within a proper distance from the outlet.

BASIC MODEM INFORMATION

Example of Cable RF MAC Address	00:71:CC:8E:54:C7
Firmware Version	14.2.xxxx
Compatibility	• DOCSIS 3.1/3.0/2.0/1.1/1.0 certified • Ethernet 10/100/1000 Mbps • PacketCable 1.5 (NCS) or 2.0 (IMS/SIP) compatible

ACCESSING THE WEB USER INTERFACE (UI)

User Interface (UI) Web pages are disabled by default. On the Charter secure management network, the UI can be accessed by enabling HTTP/HTTPs using either RIO or DRUM. Access can be enabled for the cable RF port or the LAN (Ethernet) port.

1. Generate a Password of the Day (PoTD) using the PoTD tool.
2. Enable HTTP/HTTPs using RIO or DRUM.
3. Use IPv4 or IPv6 to remotely access the UI of the E31U2V1 DOCSIS 3.1 eMTA.
   - **IPv4:** WAN side via the RF CM IPv4 address. Example: HTTP://10.11.12.13
   - **IPv6:** WAN side via the RF CM IPv6 address. Example: HTTP://[2001:b021:15:7a00:dc4d:dc7c:467c:4dfb]
4. User Interface Sign-In
   - Username: technician
   - Password <PoTD> (Password of the Day)

NOTE: From the LAN side Ethernet port, access is possible only using the IPv4 address 192.168.100.1.

UNDERSTANDING DEVICE CONNECTIONS

REAR PANEL:

Ethernet (Internet): Connect to an Ethernet-enabled device such as a wireless access point (router) using an RJ45 Ethernet cable.

Voice 1-2: Use to connect analog telephones to the device. Telephone service must be enabled by the service provider.

Cable: Use to connect to the coaxial cable from your Internet service provider.

Power: Use to connect to the power adapter. Plug the other end into the wall power outlet.

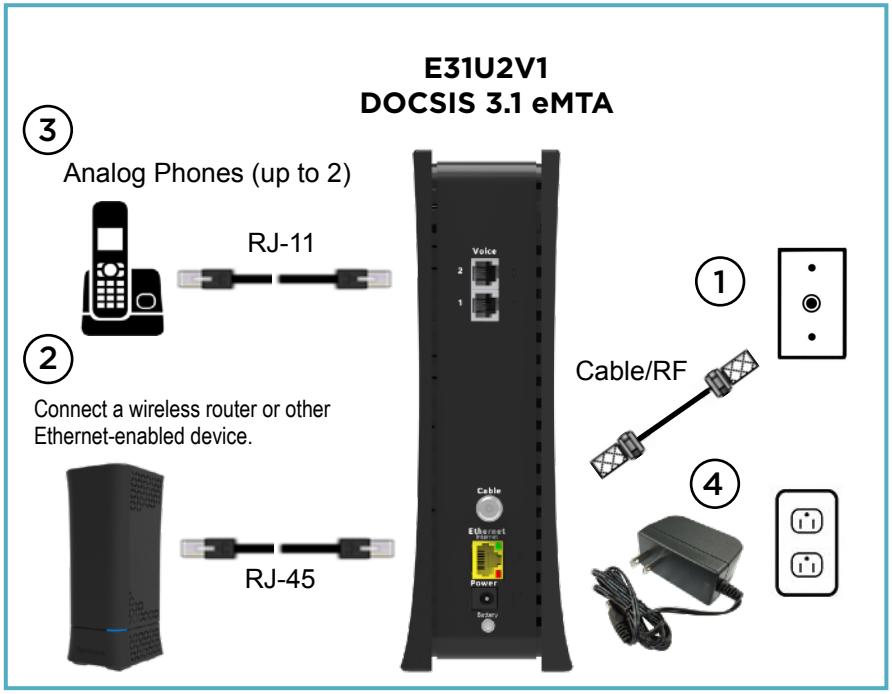
FRONT PANEL:

Reset: Use to reset the device settings. When the Reset button icon, and the surrounding ring are illuminated, press and hold the button for **4** seconds to initiate a power cycle. If the lights are not lit, the device can be factory reset. Press and hold the button for **10** seconds to reset the device to factory default settings. **Note**: When the button and ring are lit, a power cycle must be performed prior to performing a factory reset.

INSTALLING THE MODEM

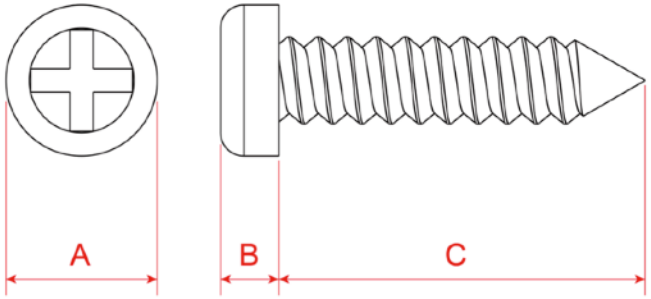
1. Connect the coaxial cable (not supplied) to the **Cable** connector on the rear panel of the eMTA and connect the other end to the cable wall outlet. Do not bend or over tighten the cables, as this may strain the connector and cause damage. To connect an eMTA and a television to the same wall outlet, you must use a cable line splitter (not included).
2. Connect the Ethernet cable (supplied) to the **Ethernet (Internet)** port on the back panel of the eMTA and connect the other end to an Ethernet port on a wireless router (or other Ethernet-enabled device).
3. Connect an RJ-11 phone cable (not supplied) to the **Voice 1 or 2** port on the modem (when provisioned for voice service as specified by the service provider), and connect the other end to the phone port of the telephone. If voice service is not provisioned through the service provider, telephone service is not available.
4. Connect the power adapter (supplied) to the **Power** port on the modem. Connect the other end to a power outlet.

INSTALLATION DIAGRAM



DEVICE WALL MOUNT INSTRUCTIONS

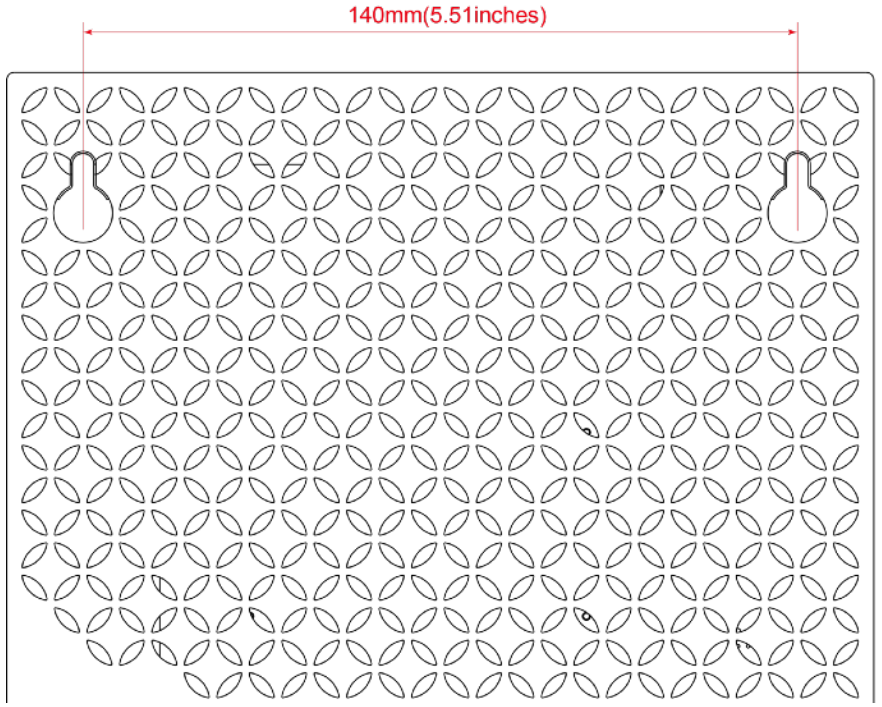
You can mount the E31U2V1 on a wall using the 2 mounting brackets on the side of the device. Two round or pan head screws are recommended. See the figure below for measurements.



Label	Size in Millimeters (mm)
A	9.5 +/- 0.2
B	3.7 +/- 0.1
C	34.5 +/- 0.2

To mount the device on a wall:

1. Install the 2 screws horizontally on the wall 140 mm (5.51 inches) apart.



Note: The screws should protrude from the wall so you can fit the device between the head of the screws and the wall. If you install the screws in drywall, use hollow wall anchors to ensure the unit does not pull away from the wall due to prolonged strain from the cable and power connectors.

2. Mount the device on the wall

NOTE to CATV SYSTEM INSTALLER:
This reminder is provided to call the CATV systems installer's attention to section 820-93 of the National Electric Code, which provides guidelines for proper grounding and in particular, specify that the Coaxial cable shield shall be connected to grounding system of the building, as close to the point of cable entry as practical.

• LED BEHAVIOR

LED		COLOR	DESCRIPTION
Power	Status Light	**BLUE**	• Powering Up: **Flashing** between **On Blue** and **Off** • Normal Operation: **On Blue** • Network Access Denied: If receiving power, **On Blue**
	Illuminated Text	**WHITE**	• Powering Up and Fully Powered: **On White**
Online	Status Light	**BLUE / WHITE**	• Determining Connection: **Pulsing** between **On Blue** and **On White** • Device has entered DOCSIS 3.0 Bonded State: **On White** • Device has entered DOCSIS 3.1 Bonded State: **On Blue** • Network Access Denied: **Pulsing** between **On Blue** and **On White**
	Illuminated Text	**WHITE**	• Determining Connection: **On White** • Connected: **On White**
Voice	Status Light	**BLUE**	• Voice Service Not Provisioned: **Off** • Voice Service Active: **On Blue** • Phone Cable Connected to Voice Port: **On Blue** • Phone Cable Not Connected to Voice Port: **On Blue** • Any Phone Off-Hook: **Pulsing** between **On Blue** and **Off** • Unable to Establish Phone Connection: **Off**
	Illuminated Text	**WHITE**	• Voice Service Active: **On White**

• LED BEHAVIOR (Cont.)

LED		COLOR	DESCRIPTION
Battery *(NOTE: Battery is optional)*	Status Light	**BLUE / RED**	• Battery at 21% (of usable charge) or Higher: **On Blue** • Battery at 20% (of usable charge) or Lower: **On Red** • Battery at 10% (of usable charge) or Lower: **Flashing** between **On Red** and **Off** • No Battery Installed: **Off** • Battery Charging: **Pulsing** between **On Blue** and **Off**
	Illuminated Text	**WHITE**	• Battery Installed: **On White**
Reset	Button Icon Light	**WHITE**	• Device is in a State that Suggests a Power Cycle: **On White** • Device is NOT in a State that Suggests a Power Cycle: **Off**
	Ring	**RED**	• Device is waiting to be Power Cycled: **Pulsing** between **On Red** and **Off** • Device is NOT in a State that Suggests a Power Cycle: **Off**
	Illuminated Text	**WHITE**	• Device is in a State that Suggests a Power Cycle, or is waiting to be Power Cycled: **On White**
	Note: When the device is in a state that suggests a power cycle (the button icon and the surrounding ring are lit), a factory reset cannot be performed. The user must power cycle the device, then perform a factory reset.		
Ethernet	Status Lights	**GREEN / ORANGE**	• An Ethernet Device is Connected at 100 Mbps Speeds: **On Green** • An Ethernet Device is Connected at 1000 Mbps Speeds (Gigabit Ethernet): **On Orange** • An Ethernet Device is Connected at 10 Mbps Speeds: **Off** • Data is Being Passed Between the E31U2V1 and the Connected Device: Flashing **Green** or **Orange**

SAFETY

WARNING: Read all safety instructions in this guide before attempting to unpack, install, operate, or connect power to this product.

- Follow basic safety precautions to reduce the risk of fire, electrical shock, and injury. To prevent fire or shock hazard, do not expose the unit to rain and moisture or install this product near water. Never spill any form of liquid on or into this product. Do not use liquid cleaners or aerosol cleaners on or close to this product. Clean with a soft dry cloth.
- Do not insert sharp objects into the product's module openings or empty slots. Doing so can accidentally damage its parts and/or cause electric shock.
- Electrostatic discharge (ESD) can permanently damage semiconductor devices. Always follow ESD-prevention guidelines for equipment handling and storage.
- Use only the power supply included with the device. Do not attach the power supply cable to building surfaces or floorings.
- Rest the power cable freely without any obstacles. Do not place heavy items on top of the power cable. Do not abuse, step, or walk on the cable.
- Do not place heavy objects on top of the device. Do not place the device on an unstable stand or table; the device can fall and become damaged.
- Do not block the slots and openings in the module housing that provide ventilation to prevent overheating the device.
- Do not expose this device to direct sunlight and do not place hot devices close to the EMTA; it may degrade it or cause damage.

FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENTS

This device complies with Part 15 of the FCC 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.

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 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.