

Using Ethernet with LoRa Packet Forwarder

If you are planning to use Ethernet with the LoRa Packet Forwarder, then make the following configuration change before configuring and running packet forwarder.

If you are using a cellular connection with LoRa, you can skip to *Configuring the Conduit AP as a LoRa Packet Forwarder*

1. Go to **Network Interfaces**. Click the pencil for the **eth0** interface.
2. Under **Network Interface ETH0**, change **Direction** to **WAN**.
3. Under **Mode**, select **DHCP Client**.
4. Click **Submit**.
5. Go to **Administration > Access Configuration > HTTPS**. Enable **HTTPS via WAN**.
6. Click **Submit**.
7. Click **Save and Apply**

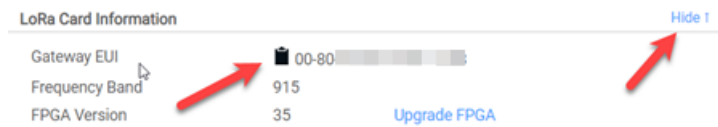
Configuring the Conduit AP as a LoRa Packet Forwarder

To use the device as a packet forwarder, use these steps to configure LoRa packet forwarding:

1. Go to **LoRaWAN > Network Settings**. Under **LoRa Mode** and set **Mode** to **PACKET FORWARDER**. If **Manual Configuration** is showing, click **Normal Configuration** to switch.
2. Under **LoRaWAN Packet Forwarder Configuration > Network Settings** select a **Network** from the drop-down list.
3. Select the LoRa **Channel Plan** for your country or region (such as EU868 for Europe). Choose from the drop-down menu:
 - IN865
 - EU868
 - US915
 - AU915
 - AS923-1

- AS923-2
- AS923-3
- AS923-4
- KR920
- RU864

4. Click **Submit**. Then, click **Save and Apply**. Confirm that the Packet Forwarder is now running under **Status**.
5. Make sure to properly add the device and any LoRaWAN end devices to the network you selected based on their specific system and instructions. You will need the Gateway EUI to do this. Show the LoRa Card Information and copy the Gateway EUI.



Next Steps

After configuring the device as a packet forwarder:

1. Configure the network you selected in the previous procedure.
2. Configure and connect LoRaWAN end devices.

Application Notes include steps for connecting mDots, xDots, and sensors to the device. They are available under Application Notes at <https://www.multitech.com/resources/training>.

Related Documentation

For the following related documents go to <https://www.multitech.com/brands/multiconnect-conduit-ap> and scroll down to find your model. On your model's page, click **Manuals**.

- **Conduit AP Hardware Guide** - Hardware, regulatory, and getting started information.
- **Conduit mPower Software Guide** - Instructions on configuring the device.
- **AT Command Reference Guide** - For cellular models, lists AT Commands used to communicate with the device.
- **Quick Start** - If this document has been updated, the new version will be available on the product page.

Safety and Regulatory Content

For US models:

47 CFR Part 15 Regulation Class B Devices: 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. Refer to the Activation, Support, and Regulatory Information insert for specific FCC compliance language.

For European models:

MultiTech declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. The declaration of conformity may be downloaded at <https://www.multitech.com/red>

For additional safety and regulatory content, refer to your model's *Conduit AP Hardware Guide*. Refer to Related Documentation for information on the hardware guide.

Conduit® AP Quick Start

Document Number: 82104753L

Copyright and Trademark

This publication may not be reproduced, in whole or in part, without the specific and express prior written permission signed by an executive officer of Multi-Tech Systems, Inc. All rights reserved. Copyright © 2023 by Multi-Tech Systems, Inc.

Multi-Tech Systems, Inc. makes no representations or warranties, whether express, implied or by estoppels, with respect to the content, information, material and recommendations herein and specifically disclaims any implied warranties of merchantability, fitness for any particular purpose and non-infringement. Multi-Tech Systems, Inc. reserves the right to revise this publication without obligation to notify any person or organization of such revisions or changes.

MultiTech, Conduit, and the MultiTech logo are registered trademarks of Multi-Tech Systems, Inc. All other brand and product names are trademarks or registered trademarks of their respective companies.

Multi-Tech Systems, Inc.

2205 Woodale Drive,
Mounds View, MN 55112 U.S.A.

Website

www.multitech.com

Support Portal

support.multitech.com

Knowledge Base

www.multitech.com/kb.go

Sales: sales@multitech.com

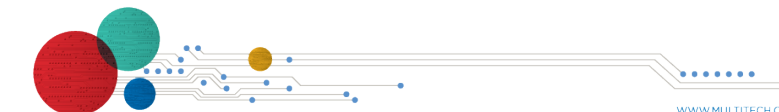
(763) 785-3500

Support: support@multitech.com

(763) 717-5863



Conduit® AP Quick Start

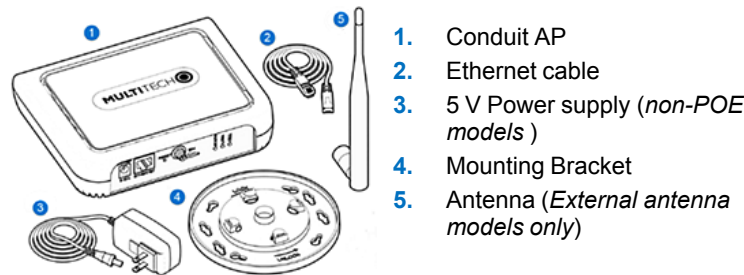


Welcome

Conduit AP (MTCAP, MTCAP2, and MTCAP3) connects thousands of IoT assets to the cloud using the LoRaWAN® protocol. It expands LoRa network coverage to difficult to reach areas and is capable of packet forwarding user data between LoRa end devices and a centrally located network server on the cloud, in a data center, or a public network.

Package Contents

The Conduit AP ships with the following:



- Not pictured: Set of 4 Mounting Feet, Quick Start, Warranty Information

Important: Contact MultiTech Systems if a replacement 5 V power supply is needed. Using a different power supply may damage the device and voids the warranty.

Note: For PoE models, you can power the device with an optional power supply or PoE. Refer to the *Power over Ethernet* topic for additional information.

Power over Ethernet (PoE) Models

For PoE models, information on using and troubleshooting PoE is included in the PoE Application Note at <https://www.multitech.com/documents/publications/application-notes/S000678.pdf>

Battery Backup Models

For models with battery backup:

- The rechargeable lithium battery pack located within the product provides backup power for up to four hours. The battery pack has an estimated life expectancy of five years.
- The battery is not user replaceable. If it fails, contact MultiTech Technical Support.
- Consult your model's hardware guide for additional battery safety information.

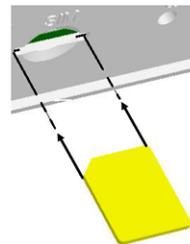
Installing a SIM Card

Models with cellular capability have a micro SIM slot, you'll need a micro (3FF) SIM card from your network provider.

Note: -LNA3 and -LNA7 models work on both Verizon and AT&T networks. The device detects the network based on the SIM card.

To install the SIM card:

- With the contact side facing down, align the notched edge as shown and slide the SIM card completely into the SIM holder.



Attaching the Antenna (External Antenna Models)

- Finger-tighten the antenna to the SMA antenna connector on the device.



Cabling the Device

Note: If using PoE to power the device, refer to the *Power over Ethernet* section for additional information and skip Step 2 below.

To cable the device:

1. If using Ethernet, connect the Ethernet cable to the Ethernet port on the device and to a PC.
2. Connect the power supply to the power jack. When the status LED blinks, the device has powered up.

Setting Up Your Credentials (Commissioning)

The first time the device powers up, it goes into commissioning mode. The system requires you to set up an administrative user. To do this:

Note: MultiTech recommends using Firefox.

1. Open a browser on your computer and enter the default IP address in the URL field, **192.168.2.1**. Most browsers display a warning about HTTP addresses being unsafe because of a self-signed certificate.
 - For Edge, click **Advanced** and then click Continue to **192.168.2.1**.
 - For Firefox, click **Advanced** and then click **Accept the Risk and Continue**.
 - **Note:** At the time of publication, the current version of Chrome was not supported.

2. Enter a username for the administrative user. Click **OK**. Follow on screen instructions for usernames.
3. Enter a password and click **OK**. Follow on screen instructions for a secure password.
4. Enter the password again to confirm. Click **OK**.
5. Log into the device using the new username and password.

The First-Time Setup Wizard appears.

First Time Setup

The setup wizard helps you configure the main features of the device for initial setup. In most cases, you can accept the provided defaults. For details, refer to **First Time Setup** in the *mPower™ Conduit Software Guide*. (Refer to Related Documentation.)

Note: This configuration works with the LoRa packet forwarder. You may use Ethernet or cellular with LoRa (if your model has a cellular radio).

1. Configure **Call Home**
 - a. Accept all defaults (disabled).
 - b. Click **Next**.
2. Set the date, time, and time zone.
 - a. If the information is correct, accept the default values. Otherwise, update **Date**, **Time**, and/or **Time Zone**.
 - b. Click **Next**.
3. Configure LAN network interfaces Eth0 and Br0. only.
 - a. Accept all default settings, **eth0** assigned to the bridge **br0** (with DHCP set automatically). **NOTE:** You will need to make additional configuration changes for Ethernet under Network Interfaces after **First-Time Setup**. Refer to **Using Ethernet with LoRa Packet Forwarder**.
 - b. Click **Next**.

4. Configure the device's **Cellular** connection.
 - a. If the device is Ethernet only (no cellular radio) or you plan to use Ethernet with the LoRa packet forwarder, accept all defaults of **Enabled** unchecked (Cellular is disabled) and leave APN blank.
 - b. If you have a cellular radio model and plan to use **Cellular** with the LoRa packet forwarder, check **Enabled**. When enabled, the device functions as a router.
 - c. If required by your network carrier, enter your **APN**. Some carrier networks automatically set APN via OTA registration. In that case, leave it blank.
 - d. Click **Next**.

5. For **Cellular Authentication**:
 - a. Accept all defaults (disabled).
 - b. Click **Next**.

6. Set up **Remote Management**.
 - a. Accept all defaults (disabled).
 - b. Click **Next**.

7. Configure **HTTP/HTTPS Access**
 - a. Accept all defaults (enable HTTP to HTTPS via LAN).
 - b. Click **Next**.

8. Set up **Bootloader Protection** by setting a u-boot password.
 - a. Disable Bootloader Protection (defaults vary with firmware version).
 - b. Click **Finish**.

9. To save your changes, click **Save and Apply**.