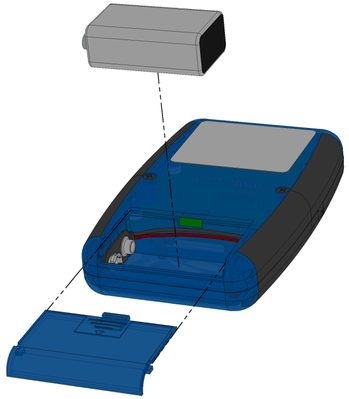
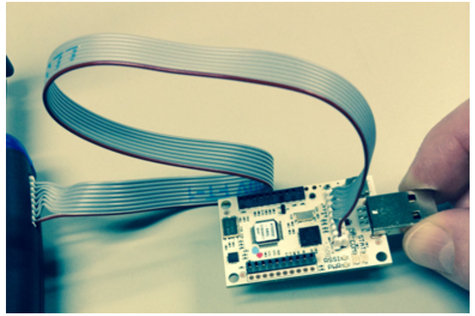
Replacing Battery

Power off the device after use. Battery life is limited.



Configuring the Device



If you want to modify the device settings or reprogram the device, you must order a **Micro Developer Kit (MDK)**, model: MTMDK-ST-MDOT (pictured above), which is sold separately. (Alternatively, a UDK2 can also work. Refer to .net link under **More Information** section.) For programming instructions, visit the mbed.org site: http://developer.mbed.org/getting-started/

Note: If you do not want to configure the device, configure your gateway to match these device default network parameters:

- **name:** MultiTech
- **phrase:** MultiTech
- **sub band:** 1 (only applies to US/915 MHz Frequency Band)

For Windows users only, you must install the device driver for the configuration port. See ARM mbed site for installation instructions and files at: https://developer.mbed.org/teams/st/wiki/ST-Link-Driver

1. As shown in the photo on the left, connect the device to the **MDK** using the flat programming or ribbon cable (with its red stripe facing you).
2. Connect the **MDK** to a **computer** (via its **USB connector**) after powering up the device.
3. Using your **computer**, connect to the new tty/COM port at 115200 bps.
4. Press **SW1** to select **Configuration** from the **Main Menu**.
5. Enter the AT command you wish to execute. To see information on the entire set of commands, enter **help** or **?**. Otherwise refer to the list of commonly-used AT commands below.

   Common AT Commands

   Change the Network Name to match your gateway

   AT+NI=1,<name>

   Change the Network Passphrase to match your gateway

   AT+NK=1,<phrase>

   Change the Frequency Sub Band to match your gateway (only applies to US/915 MHz Frequency Band)

   AT+FSB=<sub band>

   Save the configuration changes

   AT&W

   Note: The gateway can be configured to use the device default network parameters if desired:

   - **name:** MultiTech
   - **phrase:** MultiTech
   - **sub band:** 1 (only applies to US/915 MHz Frequency Band)
6. Hold **SW1** or use **AT+EXIT** to return to the **Main Menu**.

MultiConnect® mDot™ Box (MTDOT-BOX)

Document Part Number: S82000751L Rev 1.0

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MultiConnect® mDot™ Box

MTDOT-BOX Quick Start

Product Overview

The MultiConnect® mDot™ Box (MTDOT-BOX) provides a portable, handheld LoRa end-point. You can use the device for: 1) a LoRa demonstration that tests an IOT application prototype or proof-of-concept, or 2) a site survey tool. With a site survey, the device performs a link check gathering data at various power levels and data rates.

Safety and Regulatory Content

For safety and regulatory content, refer to the Developer Guide for your model.

Package Contents

Your MultiConnect® mDot™ Box (MTDOT-BOX) includes the following:

Power Supply	1 - Battery, 9V
Cables	1 - 8 Position Flat Programming Cable
Antennas	1 - Dual frequency 868-915 MHz RP-SMA, 8" antenna (external, manufacturer: Pulse Electronics, MultiTech Part Number: 45009830L)

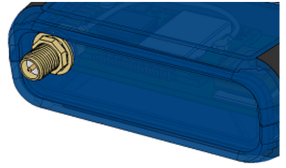
Device	1- MultiConnect® mDot™ Box (MTDOT-BOX) 4.61" x 3.11" x .94" Blue and black enclosure includes: ■ Power switch on left side of box ■ 8-pin connector on right side of box (for configuration, programming and debugging) ■ SMA connector (for external antenna) ■ LCD display ■ SW1 and SW2 buttons (to select modes of operation) ■ LS (Light sensor) ■ LED1 (red = network not joined, green= network joined) ■ LED2 (no light = no GPS, flashing blue = no GPS lock, blue = GPS lock) ■ GPS antenna (internal) ■ Internal Sensors (see **Internal Sensors** section for more details)
Customer Notices	Quick Start

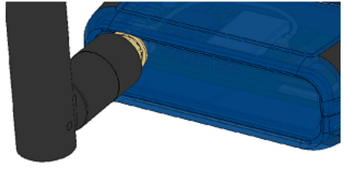
More Information

For more information, visit the device page on MultiTech's Developer site at: www.multitech.net/developer/products/multiconnect-mdot-box-and-evb/ and the mbed site at: https://developer.mbed.org/platforms/mdotevb/

Antenna Connection

Caution: To avoid damage, only finger-tighten the antenna to the connector. Do not use any tools.



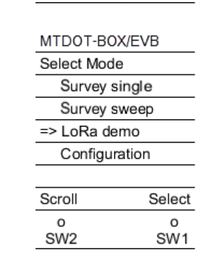


Device Startup

The device requires a gateway and must first join it to execute functions. In order to join, the gateway and the device must match configurations (network type, network name, network pass phrase, frequency band [not configurable, either 915 or 868 MHz] and frequency sub band). See **Configuring the Device** section.

To start up the device:

1. Power on the device using the switch on the left side.
   - The screen displays the MultiTech logo and product name. The **LED1** flashes green then turns red.
   - If the device has GPS, it performs GPS detect and lock (this may take a few minutes). The **LED2** continues flashing until GPS lock and then remains blue.
   - The screen displays the product name and **Select Mode** with the following menu options:



   - **Survey Single:** A single link check transaction with the gateway. The device

sends a request message to the gateway and the gateway returns a response.
   - **Survey Sweep:** A series of Survey Single operations across a range of data rate and TX power combinations.
   - **LoRa demo:** LoRa Demo Mode demonstrates typical device usage. Sensor data is gathered and updated in real time. The device sends the sensor data to the gateway periodically or on a button press, depending on the mode selected. See **Internal Sensors** section for details.
   - **Configuration:** Modify the device settings using AT commands. See **Configuring the Device** section.
2. To scroll through the menu options, push the **SW2** button (labeled **Scroll**) to move the selection arrow **=>**.
3. To select a menu option, push the **SW1** button (labeled **Select**) when the selection arrow is on your desired option.

Internal Sensors

The device contains several internal sensors whose data is sent based on user input (when using **LoRa Demo**). The screen displays data from the following:

1. **Accelerometer:** displays the x, y and z positions of the device in g-force (g).
2. **Pressure:** displays barometric pressure in kilopascals (kPa).
3. **Altimeter:** displays elevation in meters (m).
4. **Temperature:** displays temperature in degrees Celsius (C).
5. **Light:** displays illuminance in lux (lx).