

# Airgain®



## AirgainConnect® AC-HPUE™ & Ethernet Injector AC-EI Troubleshooting Guide



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Version 1.0

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## Revision History

Version	Date	Comment
1.0	12/1/2020	First Version

## 1. Troubleshooting Guide Introduction

Please complete the troubleshooting steps outlined in this guide before requesting an RMA for a device.

Authorized requests for RMA Authorization should include:

- For Ethernet Injector AC-EI include the serial number.
- For AC-HPUE include the serial number and IMEI.
- A description of problem symptoms identified with this troubleshooting guide.
- Do not ship products without RMA authorization.

## 2. Ethernet Injector LED Legend

State	LED Color	Description
Power off & sleeping	<b>Off</b>	<b>The LED is off</b> when the power is off or the EI is sleeping
Booting up	<b>Blue</b>	<b>Solid blue</b> while booting up
No SIM card	<b>Red</b>	<b>Solid red</b> after bootup when there is no valid SIM card
No signal	<b>Red/Green/Blue</b>	<b>Blinking red</b> after bootup when there is no cellular coverage signal, followed by blinking green, followed by reboot solid blue
No USB connection	<b>Red</b>	<b>Blinking red</b> after bootup when there is no connection to the antenna-modem
Connecting	<b>Green blink</b>	<b>Blinking green</b> while connecting to the cellular network
Connected	<b>Green</b>	<b>Solid green</b> when connected to the cellular network

## 3. Troubleshooting the AC-HPUE Power Input When Ethernet Injector AC-EI is Installed and Connected

**User Experience: The AC-HPUE does not power on.** When power is supplied to the Ethernet Injector (EI), which provides power to the AC-HPUE, if the Ethernet Injector LED indicator does not show solid blue when power is applied, check the following:

- Verify DC power to the Ethernet Injector is 12VDC to 14VDC when the AC-HPUE is connected. If power-source voltage is correct, check the following:
  - The DC power-source is rated at least 3 amps.
  - When there is an inline fuse, check the inline fuse to ensure the fuse is not blown.
    - A 5A slow blow inline fuse is recommended for overcurrent protection.
    - A vehicle power-block, or regulated power supply may be where the inline fuse is located.
- Power-source wire is in good condition.
- Power plug is not damaged or faulty.

- ❑ Replace any suspect components such as the power-source wire or power plug.

Note: An intermittent power connection is most commonly due to a bad power cable, not a faulty EI power connector. Try the EI with a preferably new, or known good, power-source or cable.

- ❑ Verify DC power output from Ethernet Injector is nominally 12VDC, at the 2-pin Molex port.
  - Unloaded, the EI output proper range is from 11.0VDC to 12.5VDC.
  - When EI output voltage is outside that range, contact your point of sale vendor for escalation and/or to request an RMA the Ethernet Injector.

When any of the above steps resolve the problem, you will observe the Ethernet Injector LED show solid blue upon powering the EI.

When the EI LED does not illuminate, contact your point of sale vendor for escalation and/or to request an RMA.

If the EI powers on, but the EI LED does not proceed from solid blue to solid green within two minutes, proceed to *Section 2: Troubleshooting AC-HPUE Boot Up*.

## 4. Troubleshooting AC-HPUE Boot Up

**User Experience: The AC-HPUE powers up but fails to pass data LED indication not solid green.**

### ❑ Check the LED indication on the Ethernet Injector (EI) while booting

#### 1. When power is supplied:

- EI begins booting and the EI LED shows solid blue, proceed to Step-2.
- If the EI LED does not illuminate, please follow the procedures in Section 1.

#### 2. After booting up, there will be an initialization sequence.

- a. EI LED is blinking green while the modem is initializing and connecting to the network.
- b. Once the modem connects to the network, the EI LED shows solid green. The elapsed time to see a solid green LED can vary. The first connection for a new installation could take 2-5 minutes.
- c. If connection is not achieved within 5 minutes, power-cycle the EI.
- d. Power-cycle up to 3 times if needed.
- e. Subsequent boot-ups should be much faster.

#### 3. When the EI LED is solid green the AC-HPUE is operational and troubleshooting is complete.

### ❑ When EI LED is not solid green after 5 minutes, possible causes and what will be observed are:

- AC-HPUE is not correctly connected by USB cable, or the power input cable of the AC-HPUE is not properly connected.
  - After booting up, the EI LED will blink red.
- AC-HPUE SIM card not inserted. After booting up, the EI LED will be solid red.
  - Refer to the product user guide for details on how to remove and re-install a SIM card.
  - Power-cycle the EI after re-seating the SIM.
- AC-HPUE SIM card not activated. If the SIM card has never been activated, or has been deactivated by the cellular network operator:
  - EI LED will blink red, then blink green, then solid blue when it re-initializes the Modem.
  - Contact AT&T/FirstNet to verify the SIM is activated and has HPUE data-plan.

- When EI LED is solid green but the AC-HPUE fails to pass data**, check the following:
  - FirstNet SIM (ICCID) does not match with AC-HPUE IMEI. FirstNet requires SIM ICCID and IMEI of the device must match the FirstNet account ICCID and IMEI. If a SIM is moved from one device to another, the SIM may be deactivated.
  - The SIM may be deactivated in the FirstNet Subscriber account for non-payment or other reasons.
  - Contact FirstNet to verify SIM is correctly activated and has a FirstNet HPUE data-plan.

If still not working after verifying SIM card, power, USB, and cable connections please contact your point of sale vendor for escalation and/or to request an RMA.

## 5. Troubleshooting LTE Network Connections

**User Experience:** The AC-HPUE fails to connect to the cellular network in an area with good LTE coverage (the EI LED is not solid green), check the following:

- The AC-HPUE SIM card is properly installed.
- Contact AT&T/FirstNet technical support to verify that SIM data-plan is in good standing. If necessary, AT&T may initiate a DMU Key reset, AT&T/FirstNet Account reset.

## 6. Troubleshooting Interfaces

### Ethernet Port of Ethernet Injector AC-EI

**User Experience:** The EI has no connection to the ethernet host.

Check the following:

- Verify EI LED is illuminated, any color, to insure the EI is powered.
- Verify ethernet port is not physically damaged on the Ethernet Injector.
- Verify ethernet cable and connectors are in good condition and not damaged or faulty.
- Verify LEDs on the Ethernet port of the connected host are illuminated and flashing.
- Verify host WAN/Ethernet port is configured for DHCP.

### USB Port: Ethernet Injector & AC-HPUE

**User Experience:** The Ethernet Injector has no connection to the USB port of the AC-HPUE.

Check the following:

- Verify EI LED is illuminated, any color, to insure the EI is powered.

- Verify USB port is not physically damaged.
- Verify USB cable is in good condition and not damaged or faulty.
- Verify USB cable connector is fully inserted and secured in place with the screw.