



# Helium Starter Kit - Ethernet

Choose your hardware adapter (Arduino/mbed, Raspberry Pi, USB) to get started.

## Product Details

Helium Starter Kits include everything you need to easily give your embedded devices secure, long-range connectivity.

Included Hardware:

1 x Helium Element Access Point with Ethernet Connectivity

1 x Helium Atom Prototyping Module (US Model)

1 x Hardware Adapter (Arduino/mbed, Raspberry Pi, or USB)

Note about US Model Hardware: Helium ships our prototyping kits worldwide, however radio bands may not work in all countries.

# About the Helium Atom Prototyping Module

The Helium Atom Prototyping Module is the prototyping version of our secure, low-power, dual-band wireless module. The pin layout is compatible with many existing embedded devices, including Raspberry Pi, Arduino, and mbed.

Atom devices connect to the nearest Element out of the box using Helium's wireless technology that allows devices to communicate long distances with little interference and requiring no device-level configuration. Each element can support multiple atoms. Some embedded devices some may require an additional adapter, contact us at [human@helium.com](mailto:human@helium.com) if you have any questions before purchasing.

## Technical Specifications

<b>Networking Standards</b>	IEEE 802.15.4
<b>Wireless Connectivity</b>	802.15.4 IEEE Standard on dual-band radios  915 MHz & 2.4 GHz (US) 868 MHz & 2.4GHz (EU)
<b>Security</b>	Hardware-based encryption, authentication, and authorization
<b>Environmental Range</b>	Operating Temperature -40° to 185°F (-40° to 85°C)
<b>Product Dimensions</b>	Atom:  Length: 1.06" (27mm) Width: 1.1" (28mm)
<b>Certifications</b>	FCC ID: 2ADMK-1 IC ID: 12590A-1
<b>Voltage Range</b>	2.0 to 3.6V (3.3V typical; 2.4V recommended minimum for full TX power at 915MHz)

# About the Helium Element Access Point

Atom devices connect out of the box to the nearest Element. Helium's wireless technology allows devices to communicate long distances with little interference, requires no device-level configuration, and each Element can support thousands of Atom devices. This means you may only need one Element to cover an entire office building, two for a manufacturing facility, or three for a multi-acre farm.

The Element connects to the Helium Routing Infrastructure, allowing for zero-configuration deployment for various applications and data is securely routed to any cloud platform of your choice. Helium Element with Ethernet is able to power itself over Ethernet connectivity, removing the need for an additional power source.

## Technical Specifications

<b>Networking Standards</b>	IEEE 802.15.4
<b>Typical operating range</b>	4500 sq ft or several miles within line-of-sight
<b>Wireless Connectivity</b>	802.15.4 IEEE Standard on dual-band radios  915MHz & 2.4GHz (US) 868MHz & 2.4GHz (EU)
<b>Security</b>	Hardware-based encryption, authentication, and authorization
<b>Power Options</b>	Line powered with included AC adapter or power over ethernet
<b>Environmental Range</b>	Operating Temperature -40° to 185°F (-40° to 85°C)
<b>Product Dimensions</b>	Width: 4.7" (119.4mm) Depth: 3.5" (88.9mm) Height: 1.1" (27.9mm)