E510 Access Point Quick Setup Guide

> **NOTE:** The minimum software revision for the E510 is ZoneDirector (ZD) 10.1 or later, or SmartZone (SZ) 3.6 or later, or standalone AP firmware 108.0 or later.

This Quick Setup Guide provides step-by-step instructions on how to field-install the Ruckus Wireless E510 access point (AP). For detailed information on planning the installation, performing a site survey, and operating the E510, refer to the *Ruckus Wireless Outdoor Access Point User Guide*, available at https://support.ruckuswireless.com.

> **WARNING!** Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

> **WARNING!** Installation of this equipment must comply with local and national electrical codes.

> **CAUTION!** Make sure that you form a 80mm - 130mm (3"-5") drip loop in any cable that is attached to the AP or the building. This will prevent water from running along the cable and entering the AP or the building where the cable terminates.

> **CAUTION!** Be sure that grounding is available and that it meets local and national electrical codes. For additional lightning protection, use lightning rods and lightning arrestors.

> **CAUTION!** Make sure that proper lightning surge protection precautions are taken according to local electrical code.

> **WARNING!** Ruckus Wireless strongly recommends that you wear eye protection before mounting the AP.

This Guide in Other Languages

- 从以下网站 得 指南的 体中文版 https://support.ruckuswireless.com.
- Vous trouverez la version française de ce guide à l'adresse suivante https://support.ruckuswireless.com.
- このガイドの日本語版は https://support.ruckuswireless.com でご覧ください。
- 이 가이드의 한국어 버전은 웹 사이트 (https://support.ruckuswireless.com) 에서 확인하시기 바랍니다.
- Veja a versão em português (Brasil) deste guia em https://support.ruckuswireless.com.
- Puede ver la versión en español (América Latina) de esta guía en https://support.ruckuswireless.com.

Before You Begin

Before deploying Ruckus Wireless products, please check for the latest software and the release documentation.

- Release Notes and other user documentation are available at http://support.ruckuswireless.com/documents.
- Software upgrades are available at http://support.ruckuswireless.com/software.
- Open source information is available at http://opensource.ruckuswireless.com.
- Software license and limited warranty information are available at http://support.ruckuswireless.com/warranty.

  Before deploying your Ruckus Wireless Access Point, verify that all items listed in *Package Contents* are included in the package. If any item is damaged or missing, notify your authorized Ruckus Wireless sales representative. Also, make sure that you have the required hardware and tools.

Required Hardware and Tools

- No. 2 Phillips screwdriver
- Small flat-blade screwdriver
- Torque wrench or torque screwdriver with sockets
- Long-nose pliers
- Electrical wire stripping and terminal crimping pliers
- Electric drill with drill bits and customer-supplied wall anchors, flat washers, and hex nuts for flat-surface mount

Package Contents

The E510 is a modular outdoor Access Point designed for deployment scenarios where the antenna structure and onboard AP intelligence must be physically separated, for customers that have specific form factor needs such as: outdoor lighting, railway, street furniture, sports and entertainment venues, etc.

The E510 AP consists of three main modules:

- Embedded Access Point Module: Consists of the main AP motherboard with the RF modules and circuitry.
- External Antenna Control Interface and RF cables: Connect to an external Antenna Module with two RP-SMA connectors (each dual-band/single chain).
- External Antenna Module: Consists of one vertically polarized and one horizontally polarized antenna per band.

A complete E510 field installation package includes all of the following:

- E510 Embedded Access Point Module (A)
- External Antenna Module (B)
- M12 Connector (X-coded, 8 Position, Shielded, Field Installable)
- M8 Connector (A-coded, 3 Position, Field Installable)
- Service Level Agreement/Limited Warranty Statement
- Declaration of Conformity
- Regulatory Statement
- Ruckus Wireless AP Getting Started Guide
- This Quick Setup Guide

FIGURE 1 E510 Package Contents

A   B
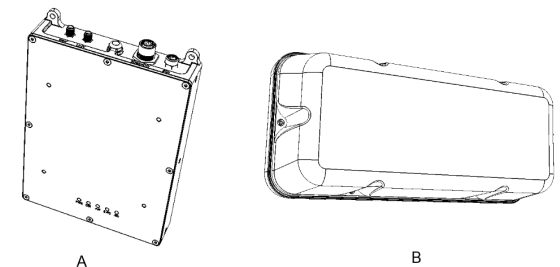
Mounting Instructions

Mounting Scenarios

The E510 is designed for embedded mounting into third-party structures such as light poles, light fixtures, street furniture, railway carriages and track side installations.

Surface Mounting

The AP Module supports mounting on a flat surface in which holes can be drilled, for example, with flanges.

The Antenna Module supports mounting on a flat surface in which holes can be drilled, for example, with flanges or curved surfaces, with, for example, loops for screw mounting.
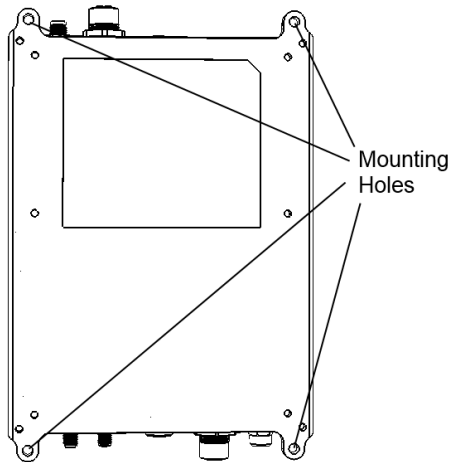
Pole Mounting

Both modules support mounting on a poles with a bracket.

DIN Rail Mounting

The AP supports mounting onto DIN Rail brackets.

FIGURE 2 E510 Mounting holes

Mounting Holes

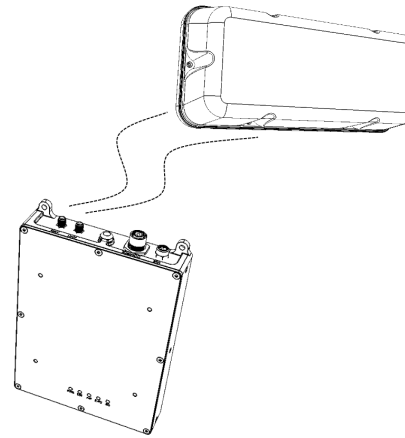## Connecting the AP Module to the Antenna Module

The E510 has two RP-SMA connectors (Female) on the rear panel for antenna RF cables to connect with the external antenna module.

The 2.4 GHz and 5 GHz WLAN RF signals are carried between the AP module and Antenna module using two SMA cables. The length of these cables can be up to 3 meters, which will lead to a loss of about 3dB in the 5GHz band and 2dB in the 2.4GHz band.

The length of cable depends on the needs of the installation, and cables are therefore purchased separately to suit the particular deployment.

1. Connect the antenna cables the **ANT1** and **ANT2** connectors on the AP Module and the Antenna Module respectively.

FIGURE 3 Connect the AP Module to the Antenna Module

2. Finger tighten the antenna cable connectors.
3. Connect the M12 antenna control cable to the M12 connector (female) on the rear of the AP module.
4. Connect the other end of the M12 antenna control cable to the M12 connector (male) on the rear of the Antenna module.

**FIGURE 4** E510 Antenna Module - rear panel connectors
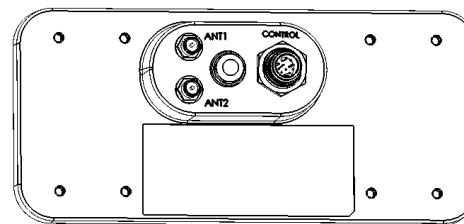
Power Input

The E510 can accommodate two sources of power, 802.3af PoE power or 12V-48V DC.

The E510 can be powered by 802.3af PoE switch or Ruckus-supplied PoE injector. Its power draw is within the 802.3af budget when not supporting a USB dongle.

Alternately, power can be supplied from a DC power source using the M8 connector on the rear of the product.

When both power sources exist, 12-48V DC takes priority over PoE Power.

FIGURE 5 E510 DC power and PoE In ports
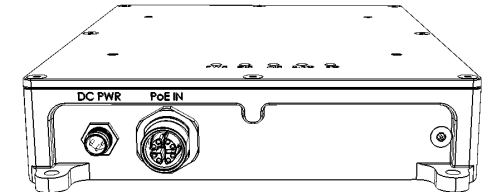
Connecting the Ethernet Cable

The E510 has one 10/100/1000 PoE Ethernet port with M12 weatherproof connector.

Connect the Ethernet cable to a 802.3af-compliant PoE switch or injector to provide both power and network connectivity.

If PoE power is not used (DC power is used), the AP can supply power to a USB dongle with a 3W power budget. If a USB dongle is used, the power budget may exceed the power draw limits of 802.3af. Thereafter, the AP's ability to support a USB dongle will be "best effort" if powered by an 802.3af PoE injector or switch.

Factory Reset Button

A waterproof push button on the rear panel performs a soft reset or, if held in more than five seconds, reset to factory defaults.

USB Port

E510 has one USB 2.0 port as an M8 IP67 connector (Female) on the rear of the unit. This port provides both data connection and a 3W power output for an IoT device such as a BLE Smart Beacon or Zigbee dongle.

A USB cable with an M8 connector at one end and a USB 2.0 Type-A connector at the other end can be attached to the female M8 connector on the E510 AP module. The USB cable length is expected to be approximately 1m (minimum) to 3m (target). The USB dongle should be field installable and (the cap/cover) secured via torx or similar screws.

Maximum output power of the USB port is 3W when the AP is powered via DC power supply, and 0.5W under PoE power.

For More Information

For information on how to configure and manage the AP, refer to the *Ruckus Wireless Outdoor Access Point User Guide*, available from https://support.ruckuswireless.com.