Outdoor Antenna Installation Guide

synapse

WARNING AND CAUTIONS:

• **TO AVOID FIRE, SHOCK, OR DEATH; TURN OFF POWER AT CIRCUIT BREAKER OR FUSE AND TEST THAT POWER IS OFF BEFORE WIRING!**

• To be installed and/or used in accordance with appropriate electrical codes and regulations.

• Mounting: It is critical to the performance of this device that the antenna be oriented vertically. The antenna must point straight up or down for proper operation. Straight up is preferred.

• If you are unsure about any part of these instructions, consult Synapse Customer Support. (877-982-7888)

INSTALLATION GUIDE

KIT CONTENTS
- 1 - RF Cable
- 1 - ESD Protection Module
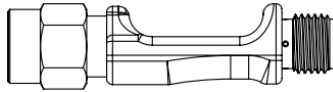- 1 - Antenna with Bracket and RP-SMA connector

Figure 2 - ESD Protection Module

Figure 3- SS450 with ESD Protection Module Installed

DESCRIPTION

The Outdoor Antenna Kit helps ensure the best RF signal on sites with physical obstructions between the SimplySnap gateway and other SNAP nodes such as lighting controllers, repeaters and IIoT SimplySnap products.

CAUTION

• The outdoor antenna must be installed in accordance with national, state, and local electrical codes and requirements

• All work must be performed by qualified personnel

• Disconnect all power before installation or service

INSTALLATION INSTRUCTIONS

Note: The RP-SMA bulkhead is permanently attached to the Type N connector and the bracket. The reason for the permanent connection is to meet FCC requirements. **Any attempt to disassemble will void the warranty and violate FCC regulations.**

1. After installing the SimplySNAP gateway, determine where the outdoor antenna will be mounted.

2. Using the built-in mounting bracket, mark the mounting holes on the antenna bracket on the mounting surface. Use proper screws and anchors to attach the bracket to the mounting surface.

Note: In order to ensure best RF transmission, please ensure that the antenna is mounted in a vertical alignment.

3. Attach the ESD Protection Module (Figure 2) to SNAP antenna bulkhead on the SS450 Gateway. Hand tighten snuggly. Be careful not to touch the pin inside the SNAP antenna bulkhead. (Figure 3)

Note: The ESD Protection Module helps discharge any built up static from the coax cable during installation. The static can damage the SNAP RF Module which will create poor RF connectivity. It is the installer's responsibility to protect the Gateway's RF module from damaging high static charges.
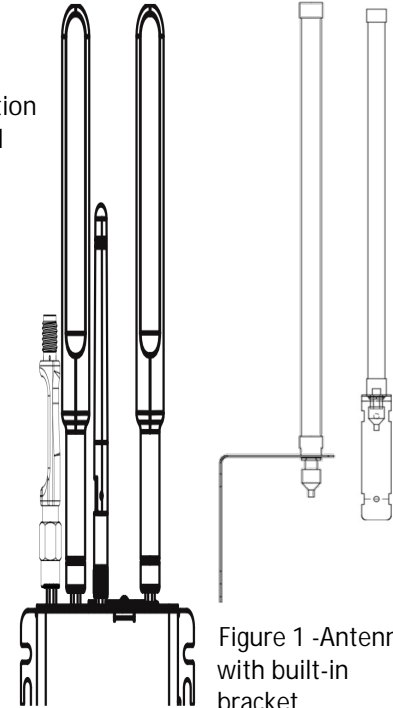
Figure 1 -Antenna with built-in bracket

4. (If installation requires passing through a wall.) Drill a hole with a 3/8" drill bit. Make sure to protect the end of the cable to thread the cable through the wall while leaving enough cable to connect to the Gateway or Repeater.

5. Attach the Cable to the ESD Protection Module on the Gateway

Connect the loose end of the cable to the ESD Protection Module. Hand tighten the cable and then use a pair of needle nose pliers to tighten the cable jack 1/4 turn. If a torque wrench is available, tighten cable to 10 inch pounds.

Note: Do not over tighten or you can damage the internal pin of the cable jack. Damage to the internal pin will cause poor RF connectivity.

Note: SimplySNAP Gateways are not rated to be mounted outdoors without being placed inside an 4X Rated NEMA Box. The Central Base Station is rated for outdoors. Use the Central Base Station for outdoor applications.

6. Attach the cable to the Antenna

Touch your hand to the mounting bracket to discharge any built-up static charge. Attach the end of the cable to the antenna. Hand tighten the cable and then use a pair of needle nose pliers to tighten the cable jack 1/4 turn. If a torque wrench is available, tighten cable to 10 inch pounds.

Notes:

- Do not over tighten or you can damage the internal pin of the cable jack. Damage to the internal pin will cause poor RF connectivity.

- Do not substitute cables. Synapse uses 50 Ohm 2.4GHz RF cables that are double-shielded, low-loss, and flexible. The double-shielding is a major factor in the higher quality of this cable, which translates into lower loss/better performance. The center frequency of the cable is 2.4GHz. Cable substitution will result in poor performance.

- When routing the RF cable do not create hard ninety degree turns. Instead use a gentle turn to prevent damage to the RF cable.

- Be sure to create a drip loop in the coax cable to prevent water ingress into the device. The drip loop needs to be lower than the connection to the device and the antenna.

7. Secure the cable and Strain Relief

It is important to avoid any sharp turns or kinks in the cable. Avoid pinching the cable or smashing the cable flat. Leave enough slack so the cable does not have tension on the connection to the ESD Protection Module or the SimplySnap Gateway's bulkhead or the connection to the antenna bulkhead. Using straps or cable ties, secure the cable to provide strain relief and keep the cable secure. It is important to keep any unnecessary pressure or strain off the cable connections.