

# *Network Controller Installation Guide*

Viasat Community Internet

Revision – 2020.12.02



**Overview**

In support of Installation of a new Viasat Community Internet – WiFi Hotspot site, this section provides step-by-step instructions on how to physically mount, cable, and install the Network Controller (NC).

**This mounting process should occur AFTER modem and wi-fi device activation is complete.**

**REQUIRED MATERIALS AND TOOLS:**

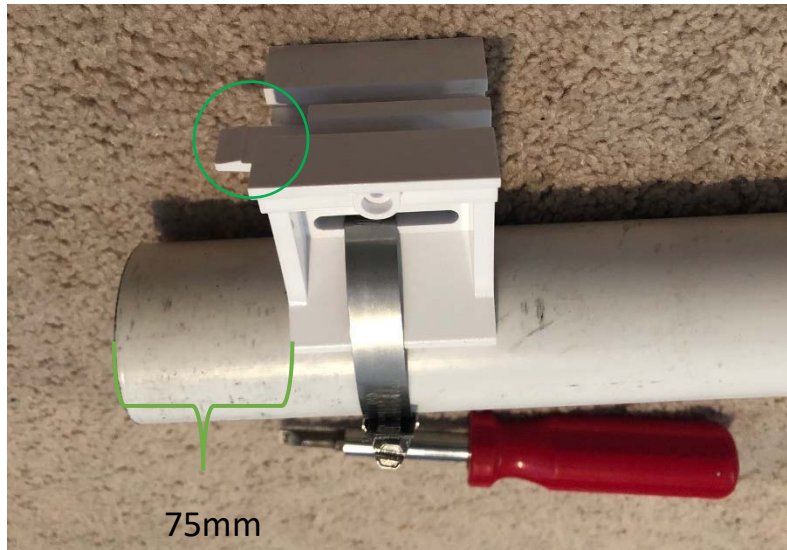
- One Mikrotik Network Controller (NC)
- NC power cord (included with the device)
- One slide-on attachment (included with the NC)
- NC PoE injector (included with the device)
- One flathead screwdriver
- One Viasat Modem
- One UPS
- UV-rated zip ties to tie down cabling
- One galvanized steel pole – threaded end recommended
- Pole mount and hardware – swivel mount preferred
- Minimum 2 meters of PVC and threaded fitting/other method for attaching to steel pole
- Ethernet cable, connectors, and shields
- Three 76mm steel clamps
- One set of needle-nose pliers
- One set of wire cutters/metal clippers
- One galvanized steel ground strap
- Grounding wire 12awg or lower
- Grounding rod (or use one installed with satellite ODU)

**NOTE:** A different model may be used for the MikroTIK items in pictures below, but the process is identical.

## **Installation Instructions:**

### **STEP 1 | Mount the NC to the PVC**

- A. Install the NC slide-on attachment approximately 75mm from the top of the PVC using a metal clamp and a flathead screwdriver. Make sure the tab of the slide-on attachment is face-up as shown below.



**NOTE:** Be careful not to break the slide-on attachment plastic by over-tightening the metal clamp.

**NOTE:** If an AP is installed on the same pole as the NC it must be installed fully beneath the NC (see the Mounting Requirements Guide for more detail).

- B. Clip any excess clamp metal with metal cutters.



- C. Slide the NC onto the slide-on attachment until it clicks (model may vary).



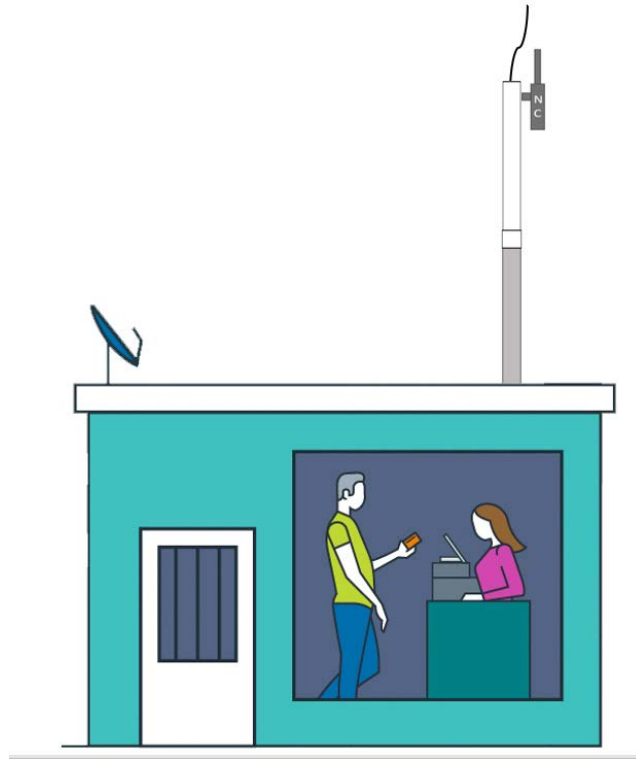
### STEP 3 | Connect the NC to the Modem

- A. Attach the PVC to the steel pole and mount per the specifications listed in the Mounting Requirements Guide. If using a steel pole with a threaded end (recommended method), tighten a PVC fitting to the steel and PVC poles as shown below.



- B. Once the pole is installed, run ethernet cable through it from the inside network equipment to the WiFi device(s). **NOTE:** If the AP is installed on the same pole as the NC then two ethernet cables must be run through the pole.

**DO NOT** allow the pole or any other object to apply pressure to the cable(s).



- C. Terminate the ends of all ethernet cable with connectors and shields by following the [CAT5e cable termination guide](#).
- D. Test the cables using a CAT5e cable tester.



- E. Open the bottom cover of the NC as shown below and use pliers to remove the plastic tabs for Port 1. **NOTE:** For some models, plastic tabs must be removed on both sides of the cover.



- F. Connect an ethernet cord to Port 1 of the NC.





- G. Hold the cable down in the opening and reattach the bottom cover. Hand-tighten the nut (if there is one).



#### STEP 4 | Powering-On the NC (Inside Network Equipment)

- A. Route the ethernet cords to the inside network equipment area.

##### CABLE ROUTING NOTES:

- For horizontal cable runs, attach the cables to the wall surface using screw clips every 18 to 24 inches.
- For vertical cable runs, attach cables to the all surface with screw clips every 30 to 36 inches.
- Keep the cable run as straight as possible but remember to use the correct bend radii of **1 inch**. Follow horizontal and vertical elements (such as the siding) at every opportunity.
- Diagonal or aerial cable runs are not allowed.
- Remember! **Never put a 90-degree bend in any cable run.**
- These cables can be routed into the building in the same way as the RG6 cabling installed for the satellite ODU.

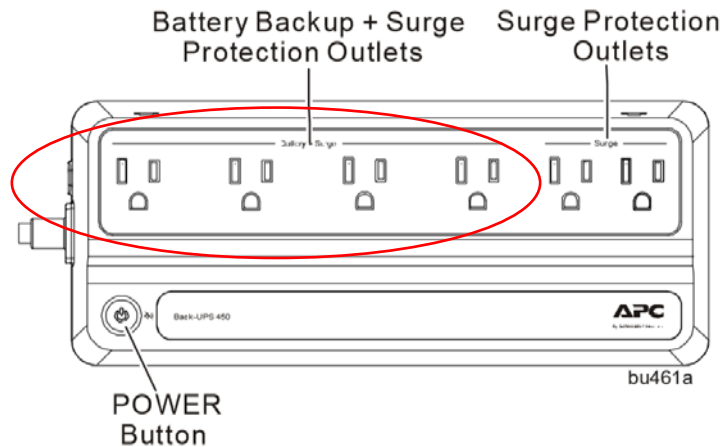
B. Connect the NC Port 1 ethernet cord to the PoE injector.



C. Connect the PoE injector to the NC power cord and the NC power cord to the UPS.



**NOTE:** The Modem, Network Controller, and AP power cords must be plugged into one of the 4 “Battery Backup + Surge Protection Outlets” on the UPS. The image below shows where these outlets are located on the device.





- D. Connect the PoE ethernet plug to Port 1 of the modem inside the building. **NOTE:** Data modem is pictured on the left, SB2+ on the right (used in Brazil).



- E. On the NC, verify green lights turn on for Power and Port 1 as shown below. These indicate successful connections.



**TROUBLESHOOTING NOTE:** *If the devices have issues powering on you may need to PowerCycle the UPS located in the inside equipment.*

*To do this, press and hold the POWER button on the UPS for at least 2 seconds. At the first beep, release the button and the UPS will turn off.*

*To turn it back on, press the POWER button (no need to hold). A light will illuminate green and a single short beep will indicate the UPS is powered back on.*

## STEP 5 | Grounding the Mounting Pole

- A. To ground the galvanized steel mounting pole, first install the UL-listed grounding strap to the bottom of the pole.



- B. Attach 12 awg (or thicker) grounding wire to the grounding strap and run grounding wire from the pole to the grounding source.

**NOTE:** A grounding bus is required if the distance from the pole to the grounding source is over 6.5 meters. If a grounding bus is used you can run an additional 6.5 meters of grounding wire 10 awg (or thicker) from the grounding bus to the grounding source.

- C. The Wi-Fi hardware install is complete! Next steps are to take photos for the Post-Install Report and verify a successful Wi-Fi connection.

**STEP 8 | Verify the Network Connections**

- A. Using your 5GHz laptop (or 5GHz smartphone if one is available – see equipment list for phone requirements) verify that the SSIDs for “Viasat WiFi” and “Viasat POS” appear for both 2.4 GHz and 5 GHz by using a WiFi analyzer such as WiFiman.

**NOTE:** If these Networks do not appear or do not load properly, but the devices and modem are powered on – try running a powercycle on the UPS by following the below steps:

**TROUBLESHOOTING NOTE:** *If the devices have issues connecting you may need to PowerCycle the UPS located in the inside equipment.*

*To do this, press and hold the POWER button on the UPS for at least 2 seconds. At the first beep, release the button and the UPS will turn off.*

*To turn it back on, press the POWER button (no need to hold). A light will illuminate green and a single short beep will indicate the UPS is powered back on.*

Contact Support if there are still issues after running a PowerCycle.  
Mounting of the NC is now complete!

