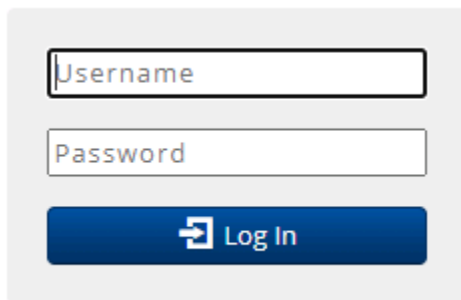


**EPMP**  
**300,200,190,180**

**- Updating Firmware Prior to install**

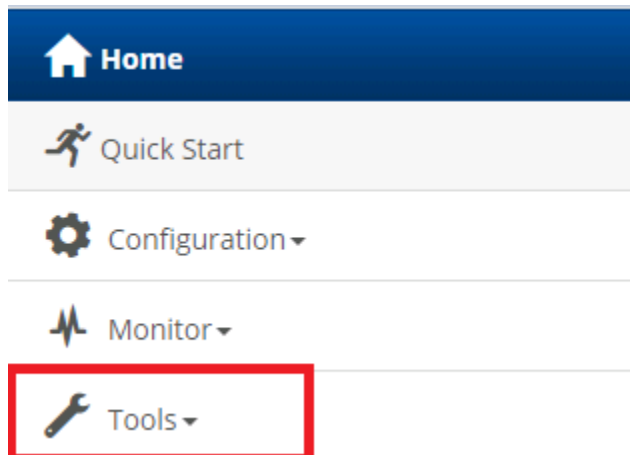
*Current Firmware is 4.6.2*

--We will want to first power on the device with the correct POE and plug a laptop in  
-open a web browser and enter the default IP `https://169.254.1.1:9443` and it will take you to the login screen. login with the following info **Username: admin Password: E1xRM9IXG2okqL**



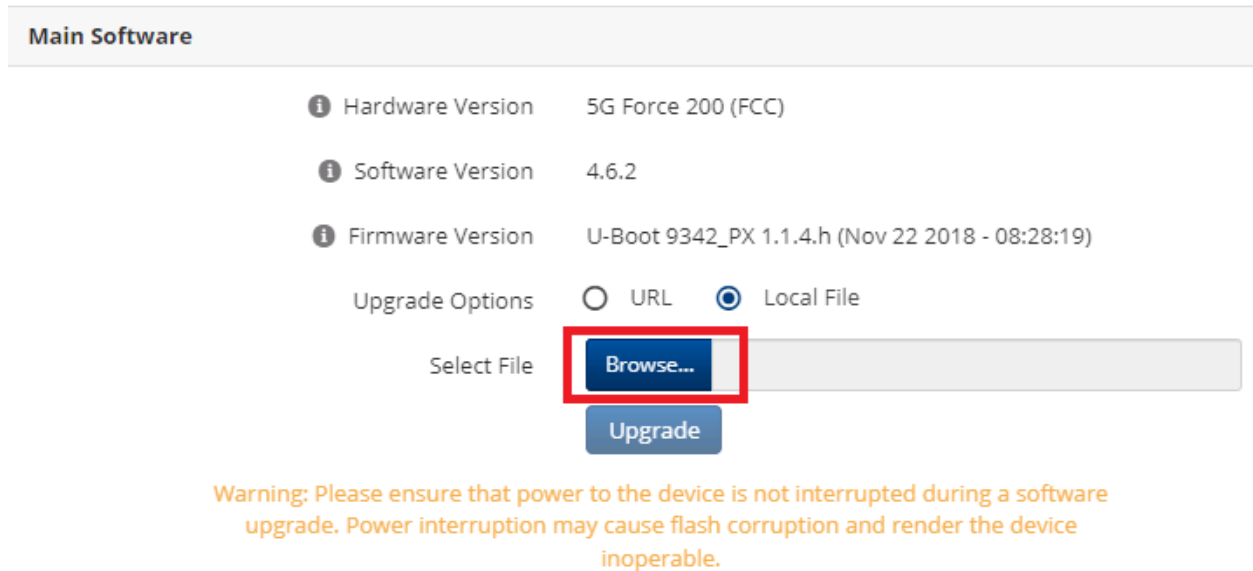
A login form with two input fields: "Username" and "Password". Below the fields is a blue button with a white arrow icon and the text "Log In".

-You will now be on the homepage, click the button on the left of the screen labeled "Tools"

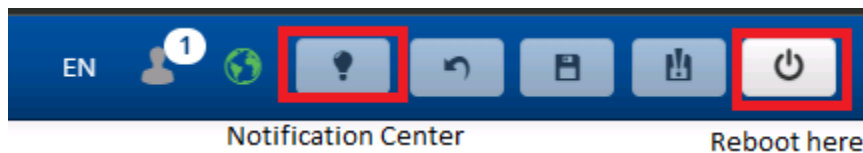


-When you click "Tools" you will now be on the Software Upgrade page, you will click on the "Browse" button in the Main Software box.

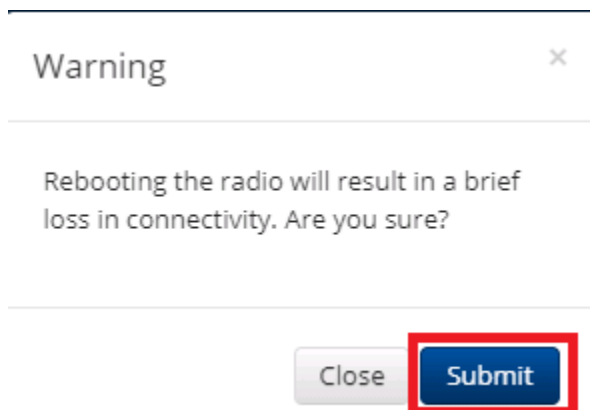
-After clicking "Browse" a file browser window will pop up, select the file you want to upload and hit upgrade.



-After hitting "Upgrade" the device will start the update, after a couple of minutes the device will pop up a notification in the upper right hand corner of the screen on the light bulb icon. Click the lightbulb icon and it should update and require Reboot.



-to reboot the radio hit the power button up in the top right, a box will pop up wanting you to confirm the reboot, hit the "Submit" button and start a ping using the command prompt to 169.254.1.1

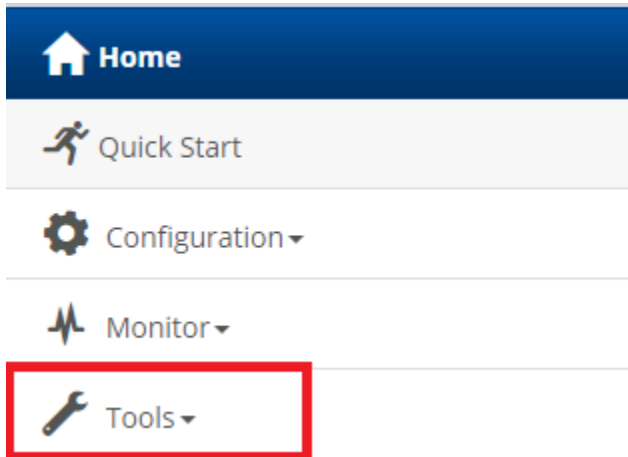


-After the radio comes back up, login and repeat the above process, you will need to upload the software 2 times. After doing this 2 times you will now have the correct software, next we will need to apply the correct configuration.

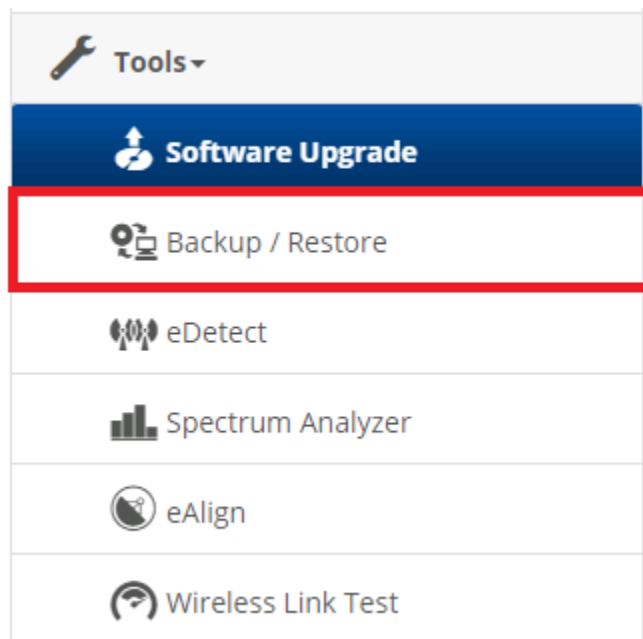
**-Applying the configuration**

-You will want to make sure the radio has the correct config, different areas will run different configs, most common ones you will see will be: *Rocky Ridge*, *Summit Ridge HH*, and *Bridge*. These are all applied in the same way.

-You will login to the radio as shown above and will click on “Tools on the left side of the screen.

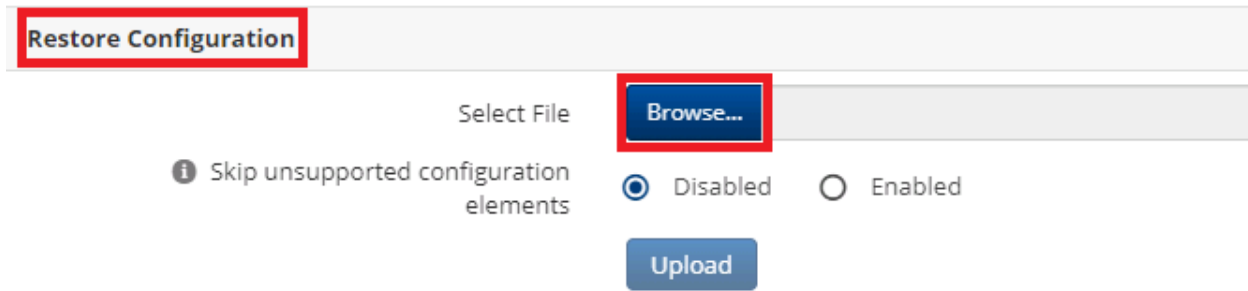


-After clicking “Tools” a few options will pop up below that you will want to click on the one labeled “Backup/Restore”.

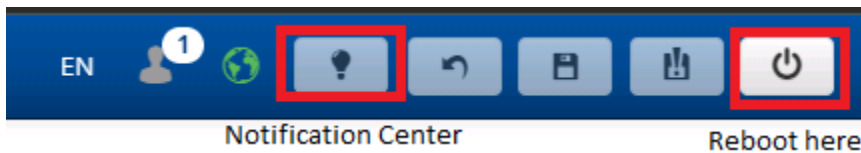


-You are now on the page you will use to apply the config. You will want to find the box on the right side of the screen titled Restore Configuration, and you will want to click “Browse”

-After clicking browse a file explorer window will pop up, find the config you want to apply and hit "Upload"



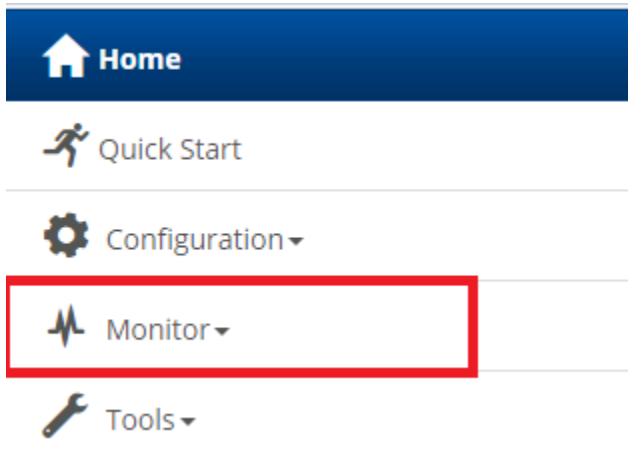
-After you hit "Upload" it will take a couple minutes for it to fully apply and you will see the notification pop up on the lightbulb in the top right of the screen. Check the notification and if it was applied correctly it will tell you to reboot the radio. Reboot the radio and wait for it to come back up.



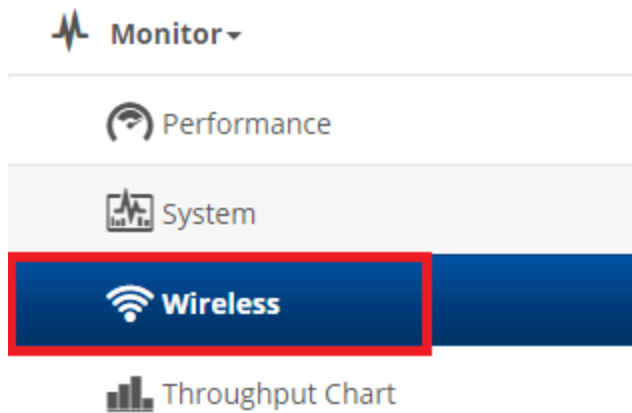
-After the radio comes back up you should now be running the correct config. If you are installing a HH in summit ridge you will want to make sure the preferred AP is set for the HH you will be connecting to.

### -Setting a preferred AP/checking available APs

-You will need to align the dish by eye sight first once you have the dish roughly pointed in you will login to the radio as shown at the top of this document. Click on the "Monitor" button on the left of the screen



-After clicking "Monitor" you will see some other options pop up, you will want to click on the button labeled "wireless"



-When you navigate to this page it should populate a table with the APs that the radio can see. If no table is displayed it may still be scanning, give it a couple minutes. If nothing pops up after a couple minutes check your rough alignment.

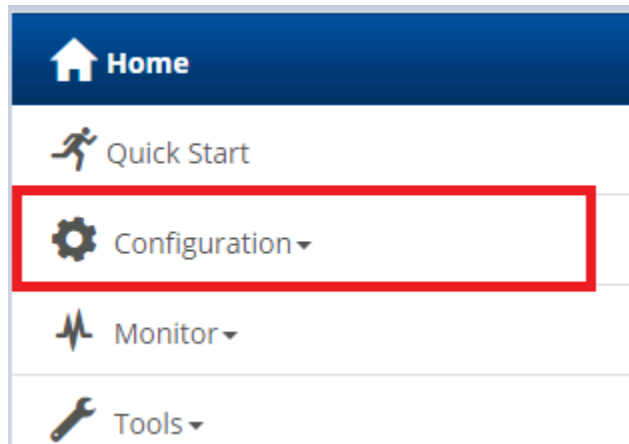
-You will want to look at this chart and pick the AP with the best RSSI and SNR

-The left side you will see the column labeled SSID, take note of the SSID you want to connect to, make sure you have it notated exactly how it appears in this list, I usually copy and paste it.

-for this example we are using SQA-009

As Preferred	SSID	MAC Address	Frequency Carrier (MHz)	Channel Bandwidth	RSSI (dBm)	SNR (dB)	Registration State	Session Time (hh:mm:ss)	Wireless Security	Driver Mode	Meets Reg Cr
Delete	SQA-009	00:04:56:D2:8D:...	5705	20	-66	31	Success	4 days 02:03:58	WPA2	TDD	✓
Add	SQA-007	00:04:56:CE:26:56	5210	20	-60	35	Unknown		WPA2	TDD	No (Not prefer
Add	SQA-005	00:04:56:C1:54:DE	5235	20	-65	30	Unknown		WPA2	TDD	No (Not prefer
Add	SQA-002	00:04:56:D8:73:2B	5545	20	-66	31	Unknown		WPA2	TDD	No (Not prefer
Add	SQA-006	00:04:56:CE:26:4C	5595	20	-79	19	Unknown		WPA2	TDD	No (Not prefer
Add	SQA-014	00:04:56:D8:72:63	5620	20	-64	33	Unknown		WPA2	TDD	No (Not prefer
Add	SQA-015	00:04:56:D7:0E:2C	5645	20	-68	29	Unknown		WPA2	TDD	No (Not prefer
Add	SQA-004	00:04:56:C2:C9:8C	5810	20	-84	14	Unknown		WPA2	TDD	No (Not prefer
Add	SQA-003	00:04:56:D3:74:FC	5835	20	-83	15	Unknown		WPA2	TDD	No (Not prefer

-After you find the AP you want to use you will need to set it as the preferred AP, you will need to click on the “Configuration” button on the left side of the screen



-After you click “Configuration” it will put you on the radio page, which is where you will set the preferred AP.

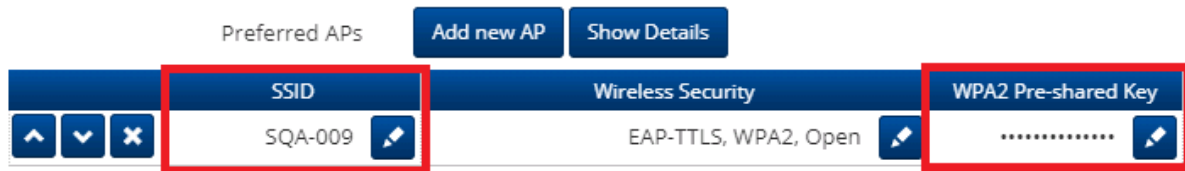
-Locate the second box down titled Preferred Aps

-You will enter the SSID for the AP as it appeared on the table earlier(in this case SQA-009)

-You also need to enter the password into the box for the WPA2 Pre-Shared Key

-password you will use pTKHA59FiokQ9k

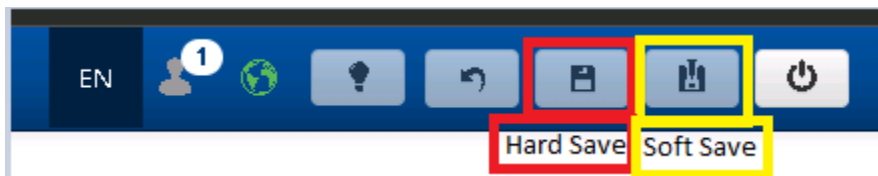
-click the pencil in the bottom corner of the box to edit this info



-After you enter this information you will need to save it to the radio using the save button up in the top right.

-red box is hard save, if you save it incorrectly and are remote you will lose connection

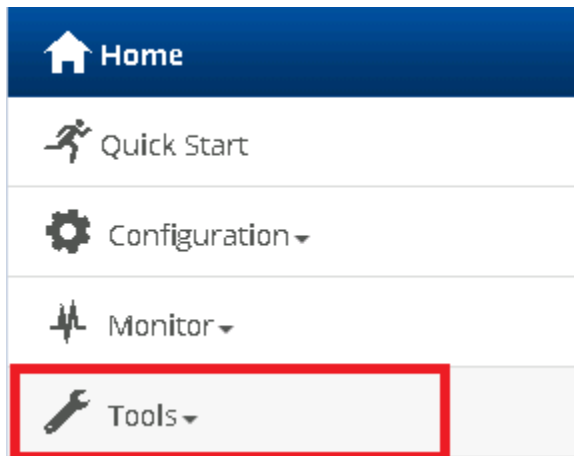
-yellow box is a soft save, will save for 5 minutes and revert back if you do not hard save the changes



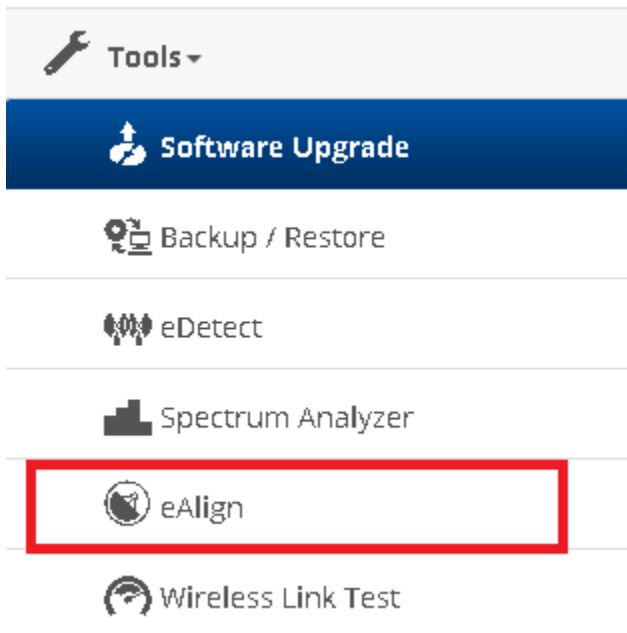
-After you save this you will not need to fully align the radio using the alignment tool that is built into the radio.

## -Aligning the radio

-To align the radio or check the alignment after install you will need to login and click on the “Tools” button on the left side of the screen.



-After clicking “Tools” you will see a handful of other options pop up below it, you will click on the button labeled “eAlign”



-You will now see a bar pop up that has the RSSI on it. This number will change as you move the dish.. You will want to move the dish left to right until you see the best signal, and then up and down until you find the best signal possible. Lock the bracket down once you have found the best signal.

-the red box shows the current RSSI. The current RSSI will also appear above the bar as you align the radio.

-The RSSI needs to be -65 or better to have a good link

Operating Frequency	5 705 MHz
Registered AP SSID	SQA-009
Current RSSI	-64 dBm (Ch0: -69 dBm, Ch1: -66 dBm)
Peak RSSI	-63 dBm
Reset Measurements	<input type="button" value="Reset"/>

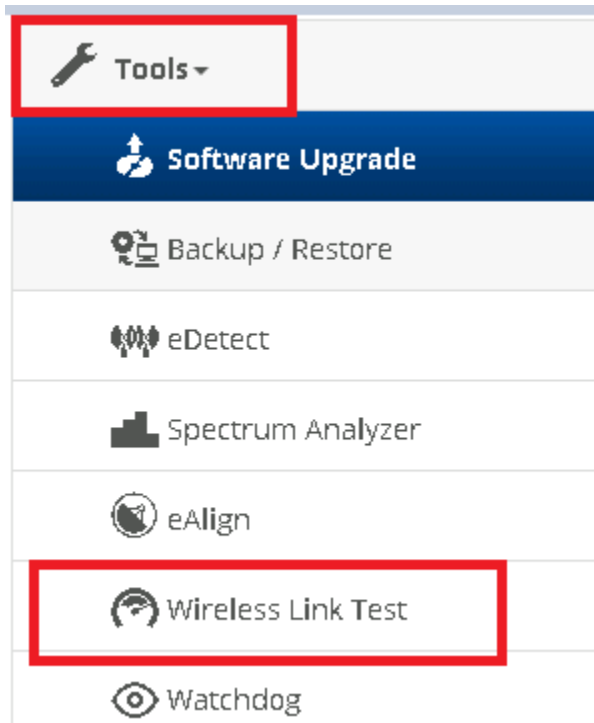


-After you have fully aligned the radio you will want to run a link test to make sure they can get the package speeds they want. You may need to change the AP to get the package speeds they want. Next you will see how to run a link test.



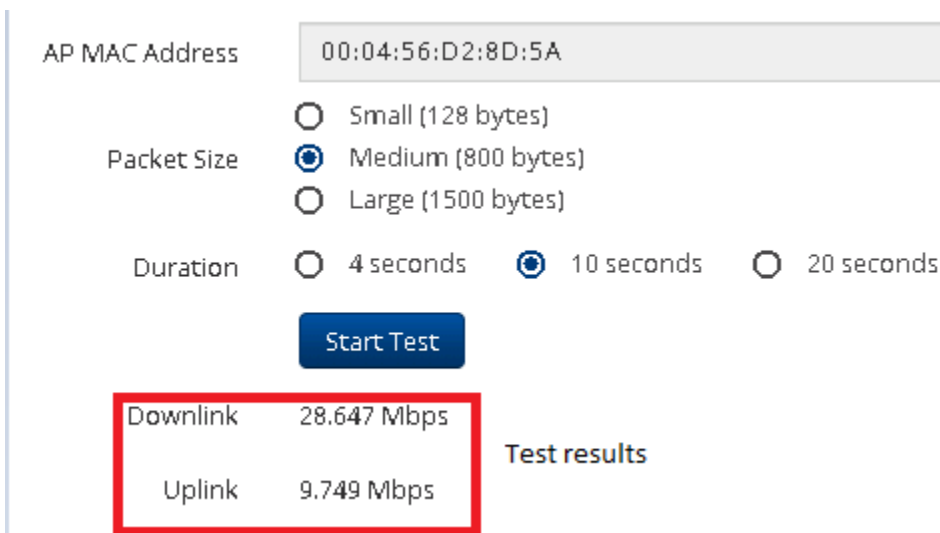
## -Running a link test

-You will need to login and click on the “Tools” button on the left side of the screen, after the options pop up below “Tools” you will need to click the button labeled “Wireless Link Test”



-You will now be on the page to run a link test, you will need to set the *packet size*, and the *duration*. After you set the two options hit the “Start Test” button. And wait for it to run. After it runs the results will be displayed below the button

- Below will be an image of a good test to run.



A screenshot of the link test configuration and results page. The configuration section includes:

- AP MAC Address: 00:04:56:D2:8D:5A
- Packet Size:  Medium (800 bytes)
- Duration:  10 seconds

A blue "Start Test" button is located below the configuration options. Below the button, the test results are displayed:

Test results	
Downlink	28.647 Mbps
Uplink	9.749 Mbps

The results table is highlighted with a red box.

-Make sure the test results are above the package they are getting.

## -Finding the radio mac on the home page

-Login to the radio and look on the right side of the screen, the wireless mac is the mac address you will be adding to powercode. Copy this code and add it to a notepad for later when you add it powercode.

Wireless MAC Address	00:04:56:FA:8E:75
Ethernet MAC Address	00:04:56:FA:8E:74
IP Address	10.9.1.30
Date and Time	25 Feb 2022, 21:28:12 GMT
System Uptime	4 days, 9 hours, 52 minutes, 14 seconds
System Description	Force 200 SM
Registered AP SSID	SQA-009

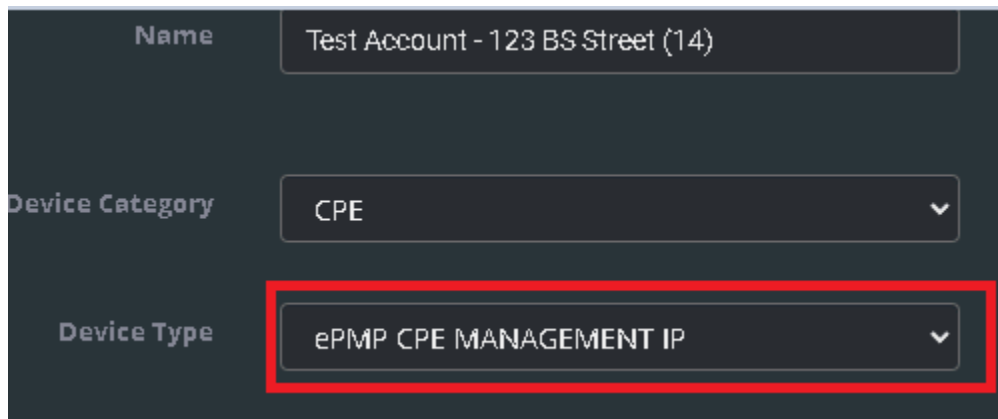
## -Adding device to powercode on PC

We are using PSA as an example here

- Open the customer Overview page and click the green button labeled "Add" in the equipment section.

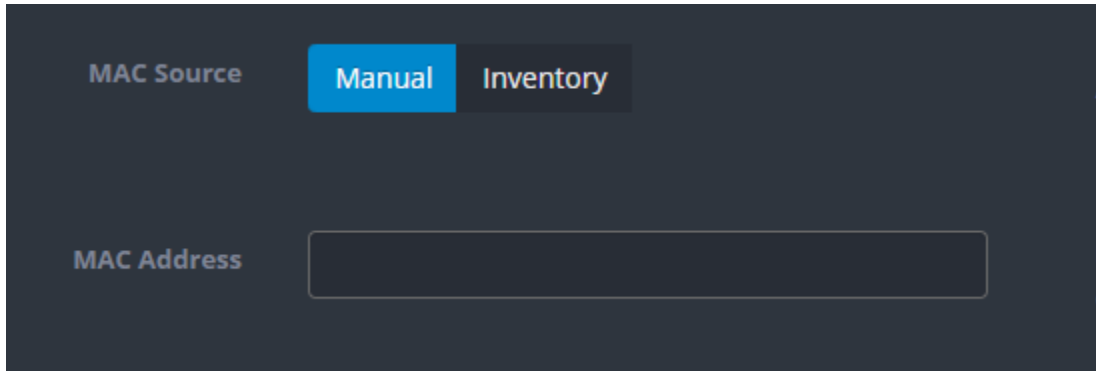


-set the device type as "ePMP CPE MANAGEMENT IP"

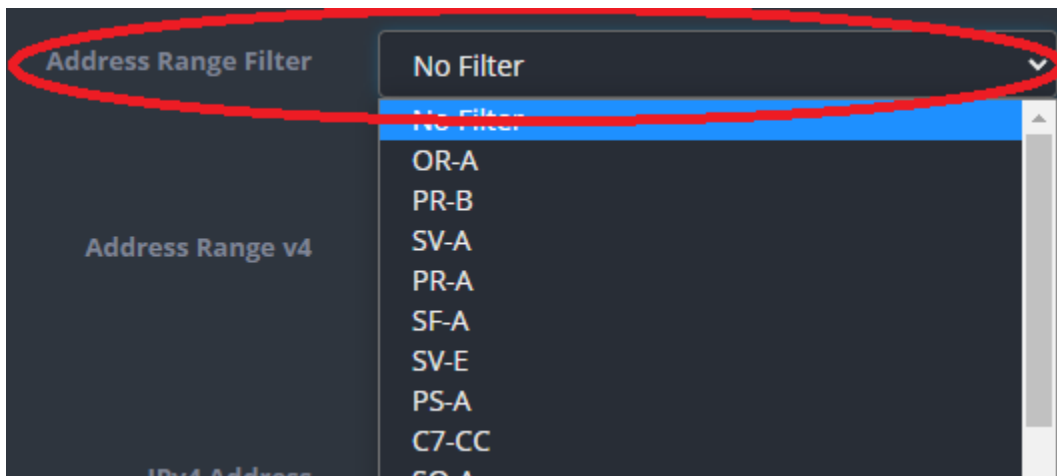
A screenshot of a device configuration form. The 'Name' field contains 'Test Account - 123 BS Street (14)'. The 'Device Category' dropdown is set to 'CPE'. The 'Device Type' dropdown is set to 'ePMP CPE MANAGEMENT IP', which is highlighted with a red box.

- Enter the mac address for the radio you will be using into the box labeled MAC address

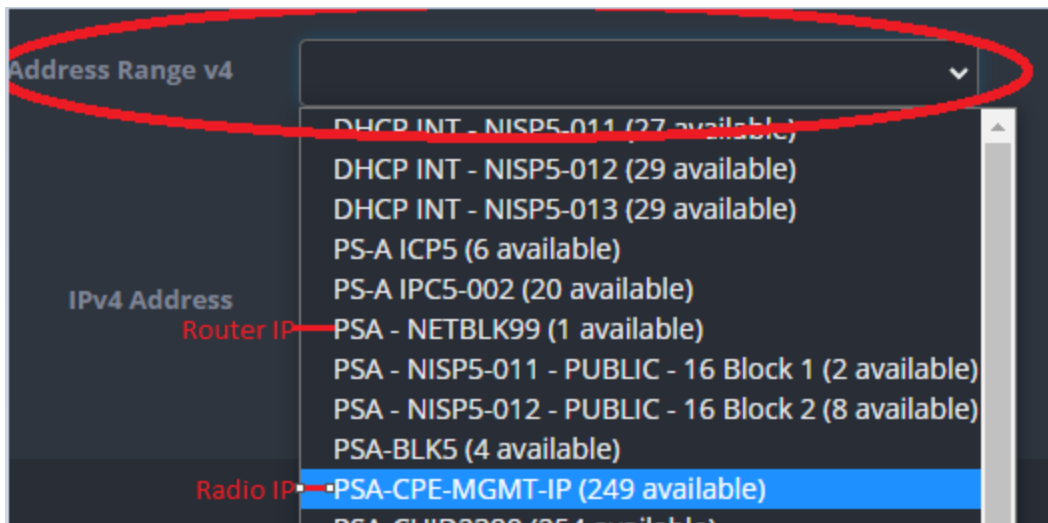
(the mac can be found on the radio on the side on the main page of the radio when you login under the wireless mac)



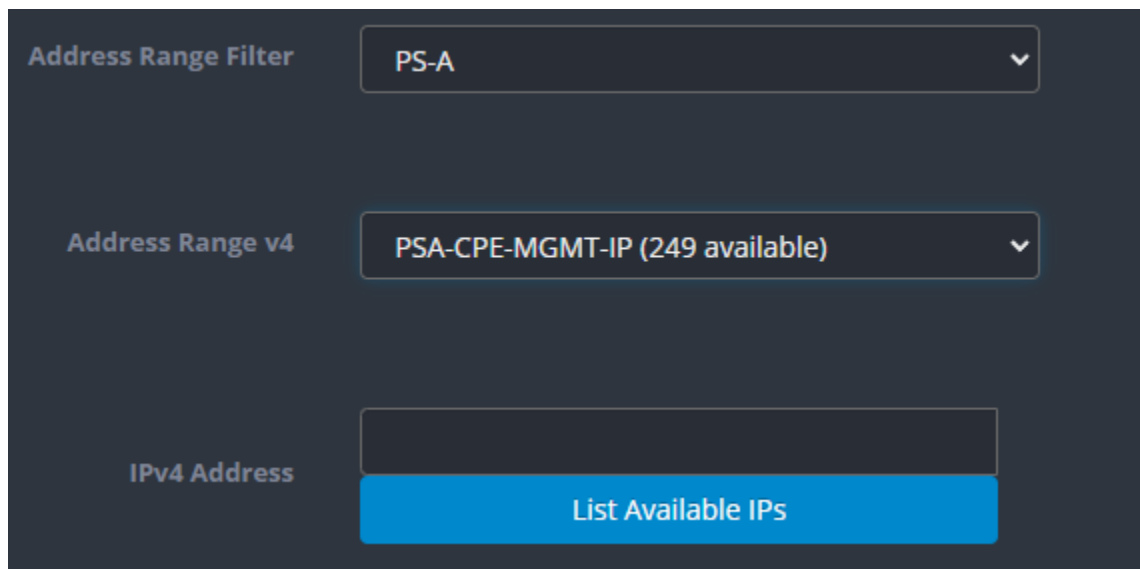
-Next we need to set the tower we are connecting to by clicking the dropdown arrow in the box labeled "Address Range Filter"  
(set this as the tower you will be connecting to.)



-we will set the IP Address Range by using the dropdown arrow in the box "Address Range v4"  
Select the IP for the appropriate tower and IP type  
(Netblock= Public IP for the router, CPE-MGMT-IP= Private IP for the radio)



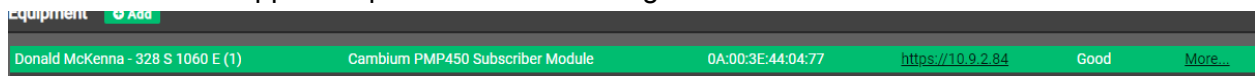
Below is a picture of what it will look like after the above information is entered to add a Radio to powercode



-After all the above has been done scroll to the bottom and hit the green save button and this piece of equipment will be added to powercode for installation

***(Be sure you are not using a MAC or IP that is on another piece of equipment, this will cause a lot of issues quickly.)***

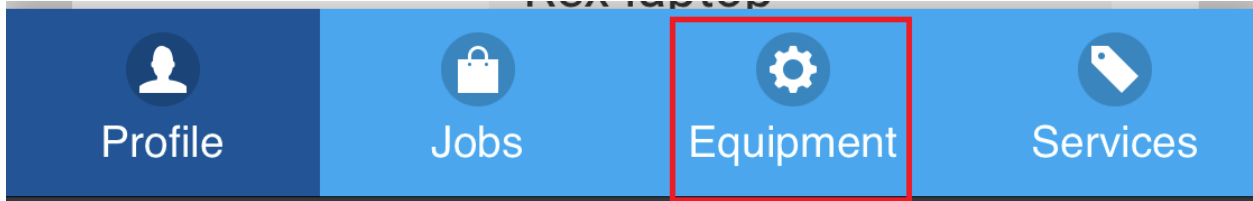
This is how it will appear in powercode after being added if the radio is online



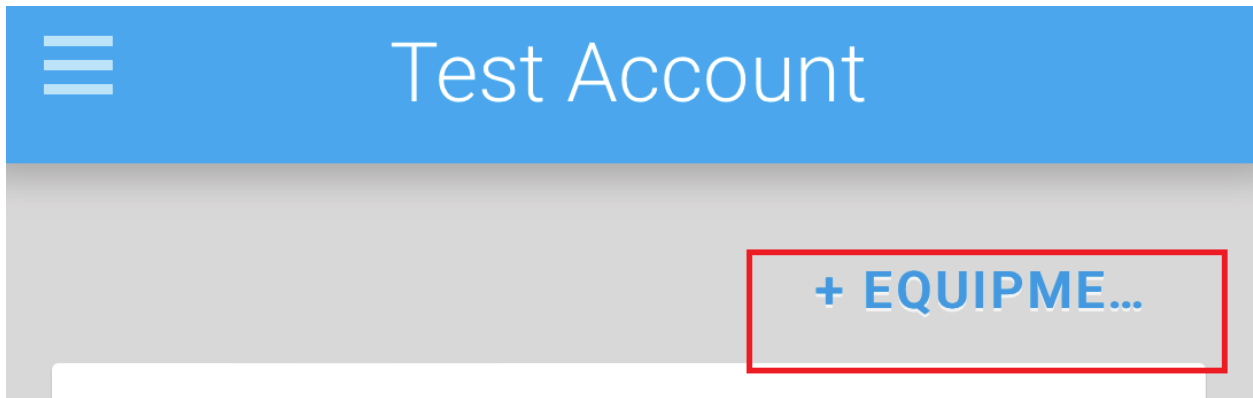
**-Adding device to powercode on mobile**

Psa is being used as the example below

-You will need to open up the job and find the blue bar at the bottom of the screen shown below, you will want to select the button labeled "Equipment"



-You will now be on the Equipment page, you will want to push the button at the top of the screen labeled "+EQUIPMENT"



-You will want to find the option labeled Device Category. "CPE" should be the selected option.

-You will be changing the Device Type to the appropriate piece of equipment, in this case that would be "ePMP CPE MANAGEMENT IP" Use the drop down arrow highlighted below to change

Equipment Details

Name

Test Account - 123 BS Street (13)

Device Category

CPE

Device Type

ePMP CPE MANAGEMENT IP

Technical Information

-Next we will need to add the mac for the radio to powercode, scroll down until you find the mac address section shown below

-add the mac manually into the box that is highlighted below *Mac can be found on the side of the radio or on the main login page of the radio under the wireless mac. It might be in the job notes*

MAC Address

MAC Address

02:84:01:10:33:92

Configuration Template

-Next we will set the Address Range and Address Range Filter

-Scroll down to the boxes labeled "Address Range Filter and Address Range" the Address Range Filter box will be selected as the tower site we are connecting to. (Ie. PSA)

-Use the drop down arrow highlighted below to get more options.

## Address Range Filter

**PS-A**



-After you set the Address Range Filter (Tower) we will need to assign this device an IP using the box labeled "Address Range". Use the drop down arrow to get more options

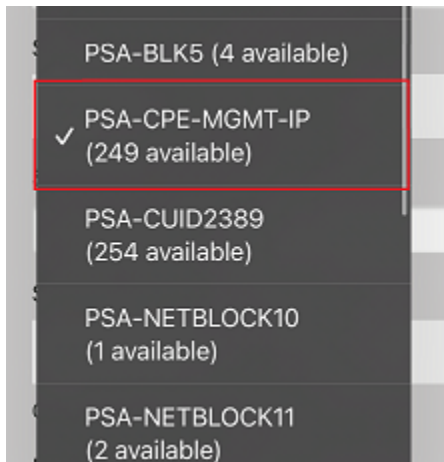
-We will want to assign the Radio a "CPE-MGMT-IP" for the appropriate tower as shown below

## Address Range

**PSA-CPE-MGMT-IP (249 available)**



The below picture shows how it will appear in your list if you select the drop down arrow.



-After the above steps you will scroll down skipping other options and hit save, this device is now in powercode and should pull an IP .

## -Important stats to check

-You will need to take note of the RSSI and the SNR to notate at the end of the install. You can find these on the main homepage when you login to the radio.

-These stats will be in the box on the left towards the bottom

<b>i</b> Subscriber Module Priority	Normal
<b>i</b> Network Mode	Bridge
<b>i</b> Downlink RSSI	-66 dBm
<b>i</b> Downlink SNR	32 dB
<b>i</b> Uplink MCS	MCS 13 - 64-QAM 2/3
<b>i</b> Downlink MCS	MCS 15 - 64-QAM 5/6
<b>i</b> cnMaestro Remote Management	Enabled- The Registered AP Is Onboarded
<b>i</b> cnMaestro Connection Status	Connected to 10.4.0.233
<b>i</b> cnMaestro Account ID	cnmaestro_on_premises

-You will also want to make note of the AP you are connected to which can be found on the main page when you login. You can also check what the radio is associating at on this page

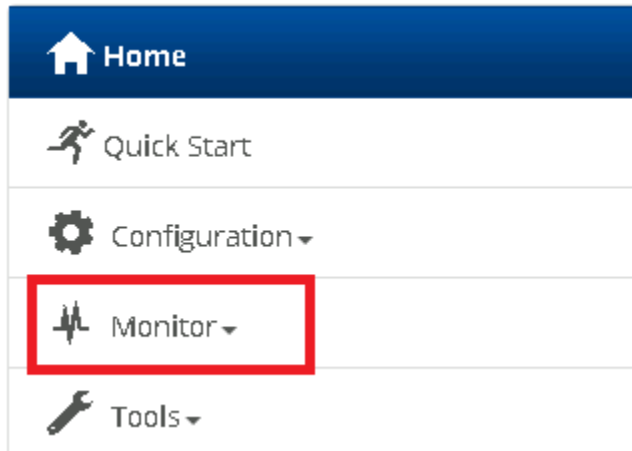
-These stats will be in the box on the right towards the bottom.

<b>i</b> Registered AP SSID	SQA-009
<b>i</b> Registered AP MAC Address	00:04:56:D2:8D:5A
<b>i</b> Device Coordinates	--
<b>i</b> DFS Status	Not Available
<b>i</b> Link Quality (Uplink)	89 %
<b>i</b> Link Capacity (Uplink)	80 %
<b>i</b> Ethernet Status	1 000 Mbps / Full
<b>i</b> Wireless Status	Up

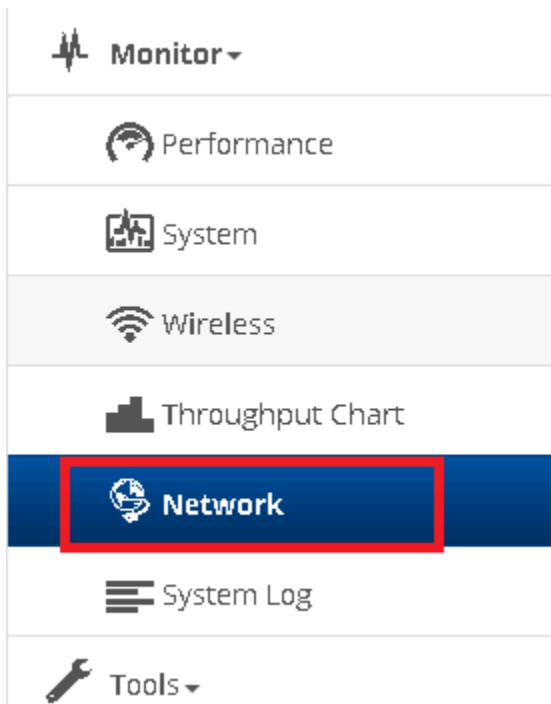


## -Pulling the router mac

-You will want to login to the radio, and click on the button labeled “**Monitor**”



-You will then want to click on the button labeled “**Network**” to get to the bridge table.



-You will want to find the box on the left side of the screen labeled **Bridge Table**. The mac will pop up in that box, with the port being LAN. You can copy that mac and use a mac lookup tool to verify you have the mac for the router.

