Quick Setup Guide

AMG Skywave III AMG8870F series Wireless Radios

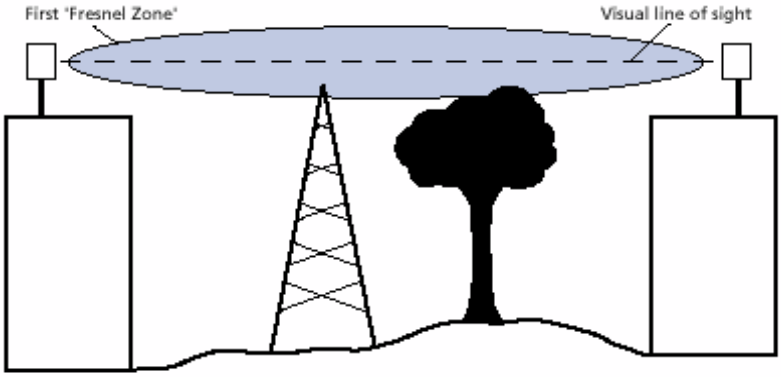
Products

The guide is applicable for the following AMG Wireless IP radios:

AMG8870F-06	6km 500Mbps (Remote End)
AMG8870F-06-2	6km 500Mbps (Pair)
AMG8870F-03-90	3km 500Mbps (Base Collector)
AMG8870F-M-E	External Antenna 500Mbps (Base Collector)

Installation Guidelines

1. Line Of Sight – **IMPORTANT: radios require clear line-of-sight.**
   If the radios do not have line-of-sight, then the signal strength will be too weak for continuous, reliable operation. Avoid obstructions along and around the line of sight, especially metal structures, with particular consideration for obstructions such as trees which could compromise the signal over time.



2. Alignment: If the radios are not aligned correctly, the signal quality and bandwidth of the radios will be reduced. Access web GUI of the radios (mainly base unit). The web GUI provide more detail about link performance.
3. Cable: External grade Shielded CAT5e Cable is highly recommended to avoid extraneous interference.

Pre-Installation Checklist

1. Do not connect the wireless radio to a live network before assigning an unique IP address, completing radio configuration and bench testing the product.
2. It is highly recommended that each link is configured and tested in a controlled environment to ensure correct configurations and operation prior to on site installation.
3. Confirm that you have two AMG8870 units and two passive PoE sources to create a point-to-point link.
4. Confirm that you have four Ethernet (Cat5 as minimum) patch cables for connecting radios to power and PC/laptop for bench configuration and testing.
5. ESD (Electrostatic discharge) can cause failure, permanent degradation, or temporary erratic behaviour or electronic devices or system due to I.E. direct lightning. Therefore, it is recommended to follow best ground practices when installing the unit in an outdoor environment I.E. to a metal pole and use the recommended cable type with ground shielding.

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Configuration and Setup

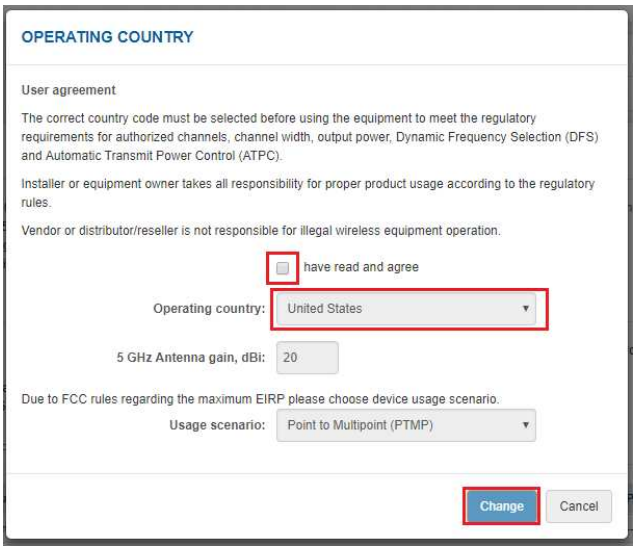
Login Prompt - The default login credentials of the AMG8870F radio are:

Username: ***admin***
Password: ***password***

You will be presented with the page below. Tick agreement, choose country, set gain and press Change.

Antenna Gain

- AMG8870F-06 20dBi
- AMG8870F-03-90 18dBi
- AMG8870F-M-E depends on external antenna



The radios with external antenna require gain setting. The gain depends on the type of the external antenna. The radios with internal antennas have got gain set up from the default and it is not possible to change it. They will use always the same antenna.

With different gain then an external antenna requires, the wireless radios could work incorrect.

The 5Ghz Antenna gain could be also changed in section ***Settings->Wireless configuration->Operating country***.

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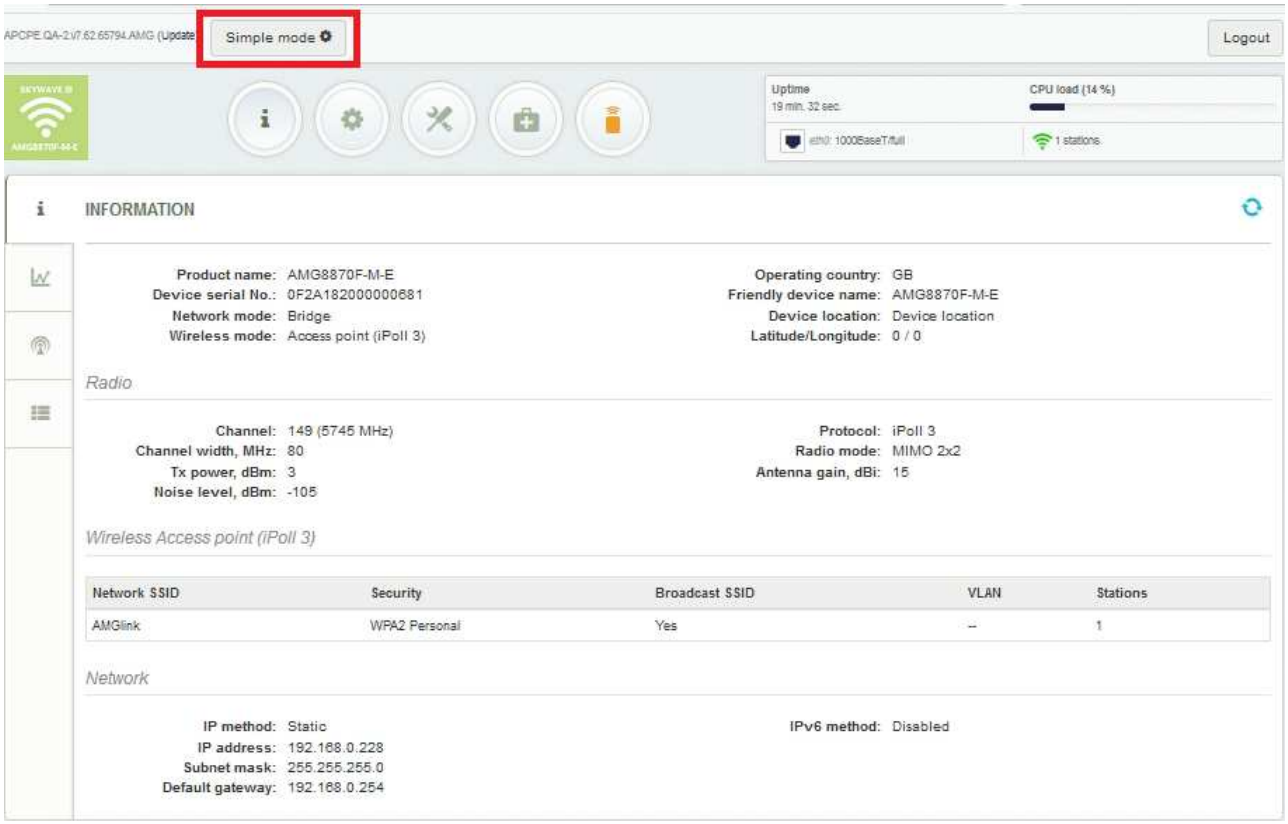
You will be presented with the Information page.



Press Simple mode

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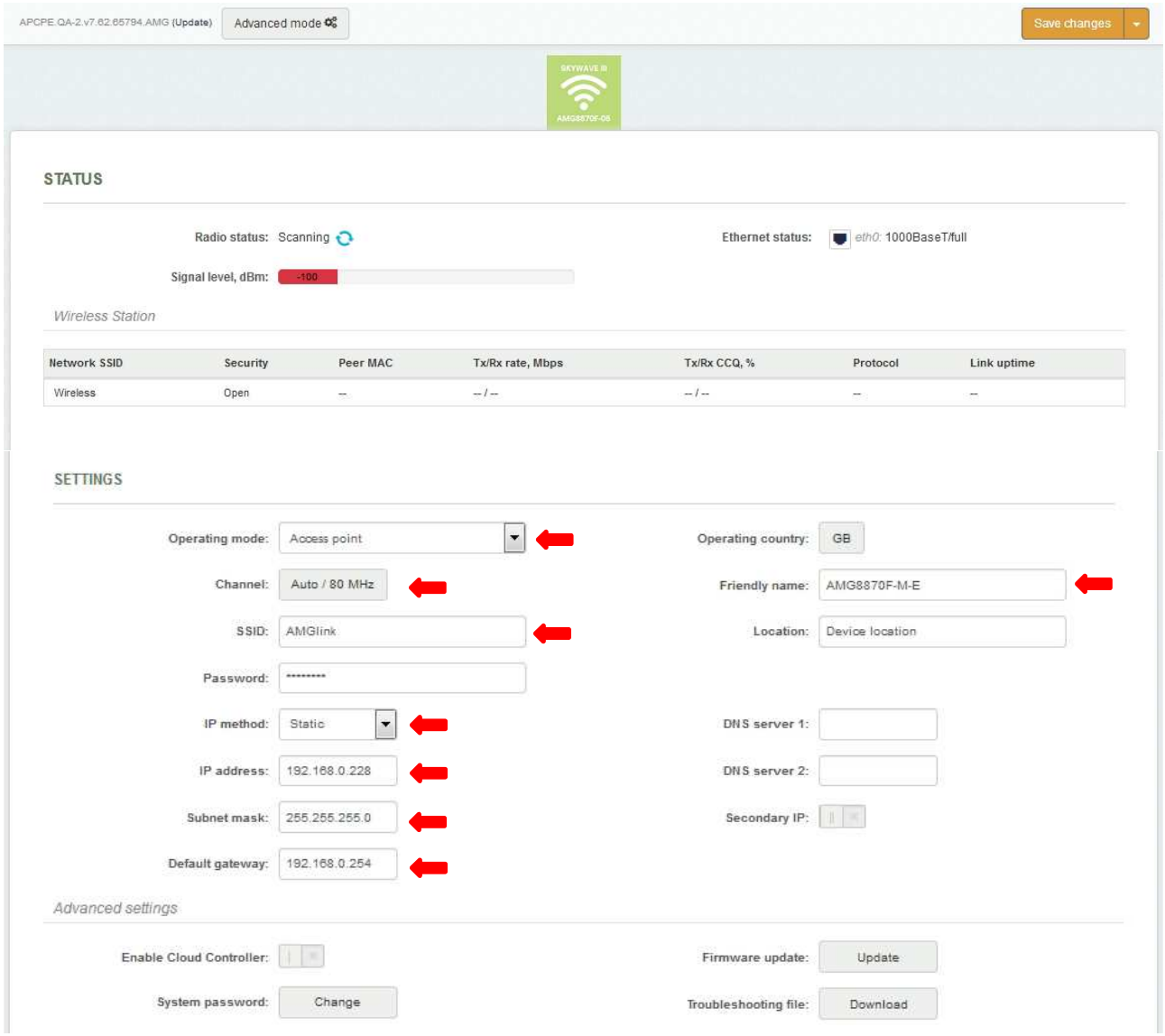
This will give you Wireless Configuration. Change setting, example below.



Example configuration:

Set Operating mode – Station. Set Channel Width – 20 (150Mbs). Set SSID – Test. Set IP method – Static. Set IP address – 192.168.10.10. Set Subnet mask – 255.255.255.0. Set Default Gateway – 192.168.10.1. Set Friendly name – Control.

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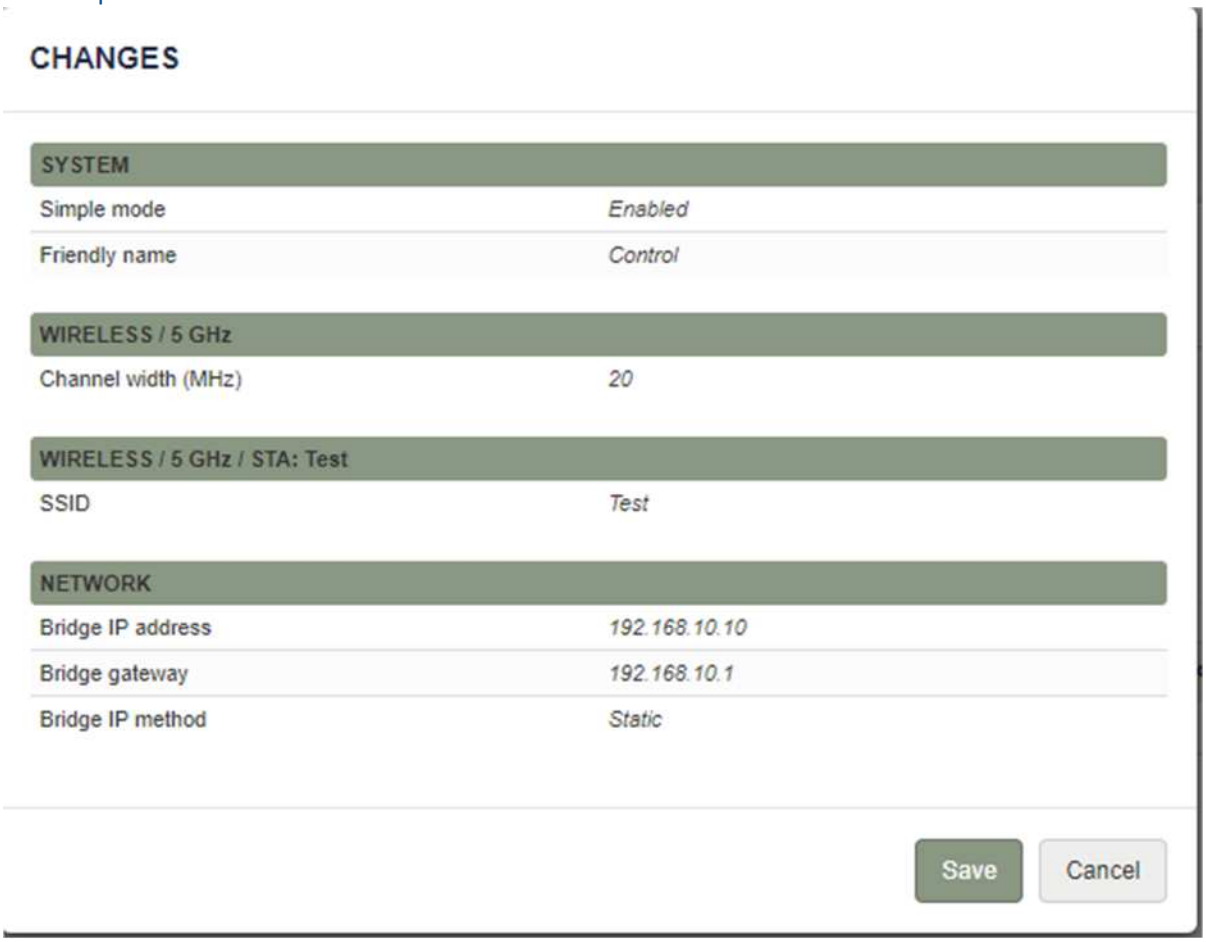
Press Save Changes

You will be presented with



Press Save

You will see.

Click on the IP address.

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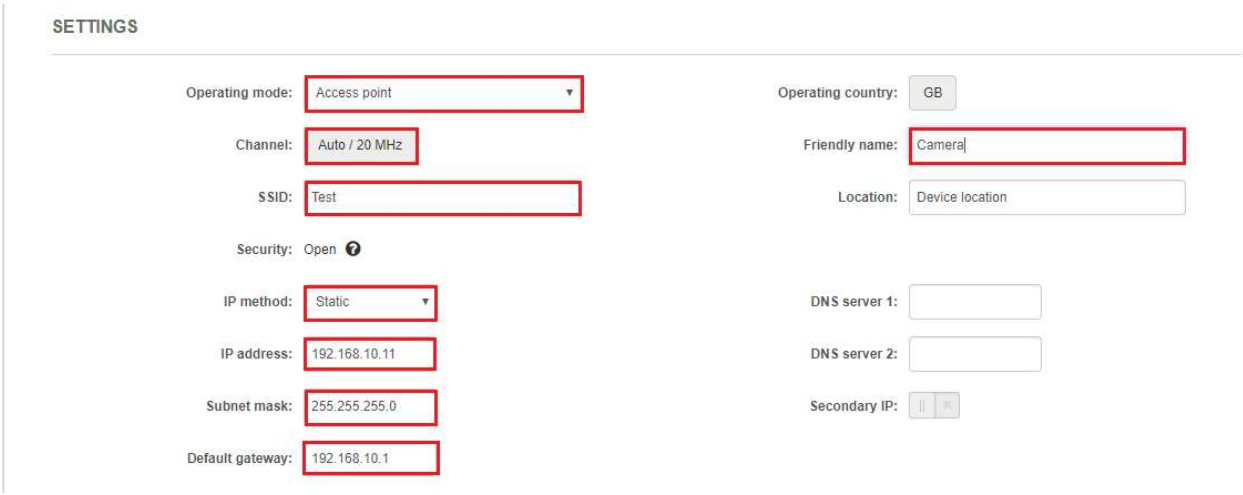
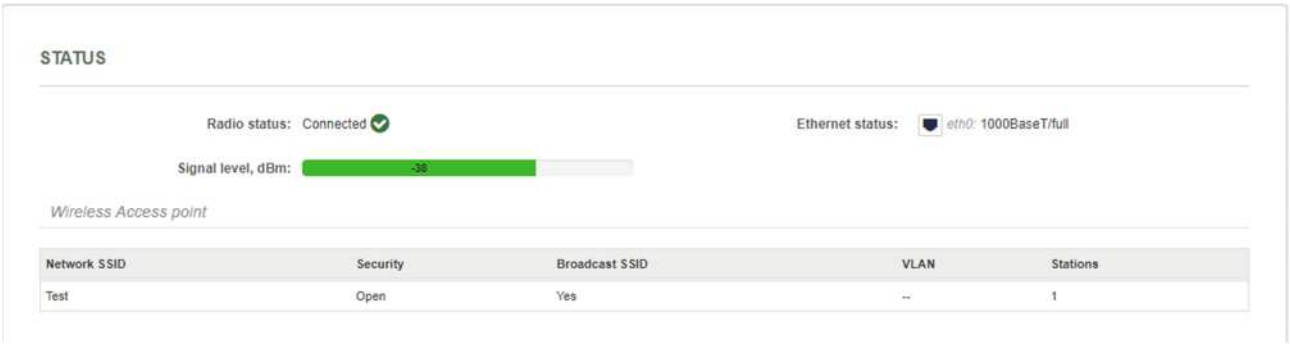
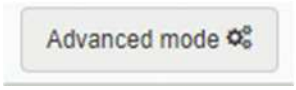
Log back in, then connect second radio and repeat with the following steps.
The second radios should have unique IP address. For example 192.168.10.11 as shown below.



When you save this and log back in, you should see.



Click Advanced Mode



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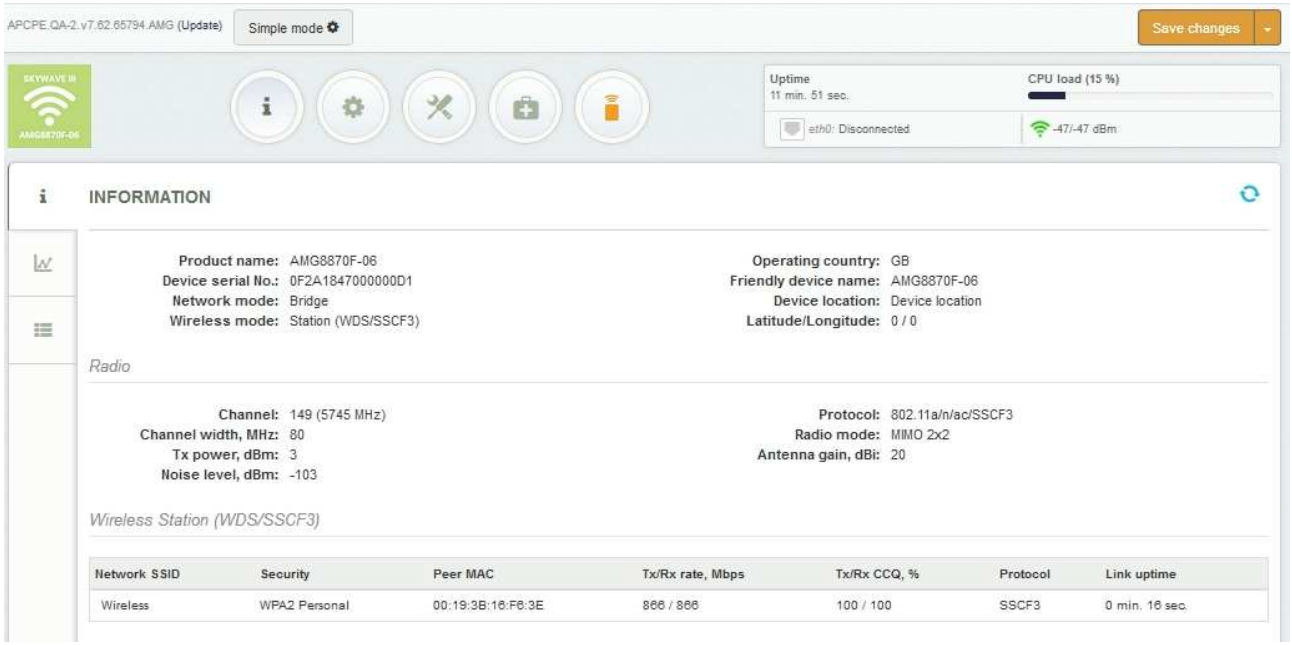
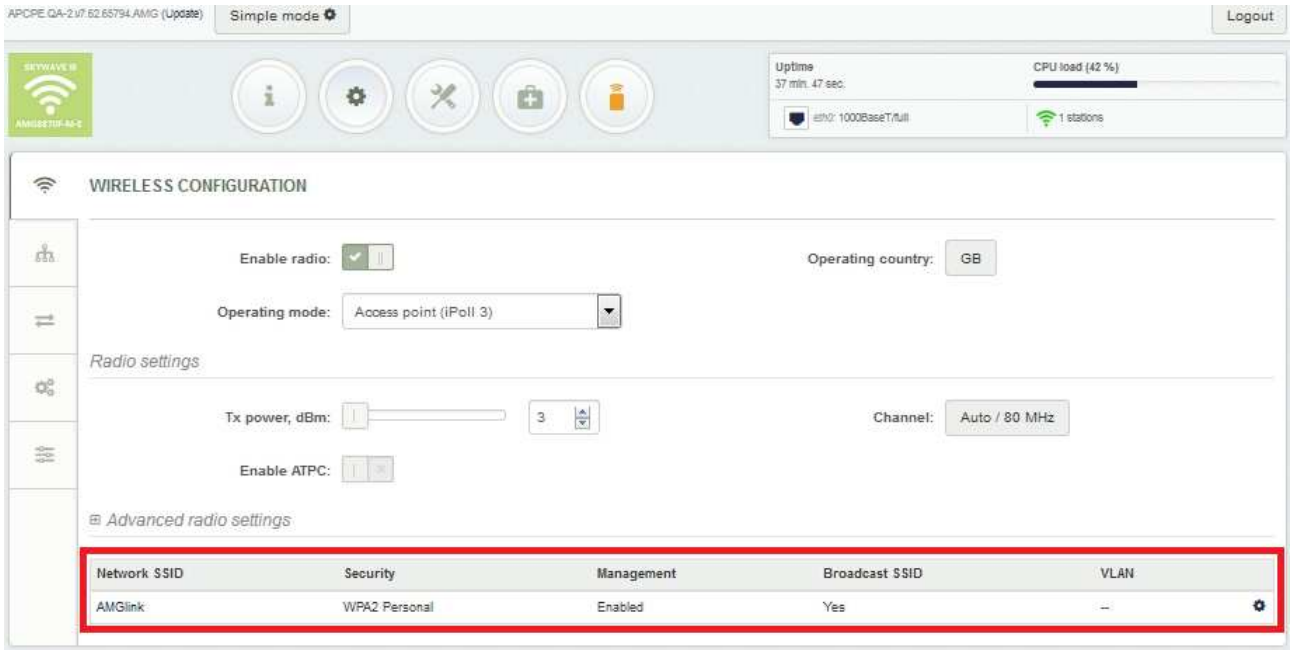
You will see.



For Encryption click on the configuration symbol 



Then click to the Network SSID AMGlink.

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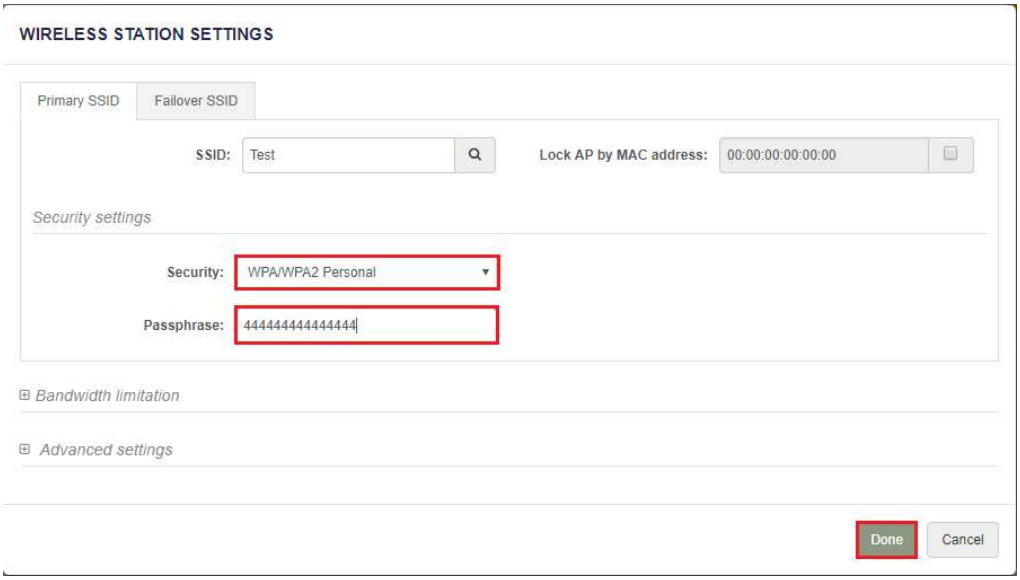
You will see.



Change Security – WPA/WPA2 Personal and type a password (minimum 8 characters). Press done and save changes.

DO THIS FOR BOTH RADIOS.

The same encryption password must be used at both ends.

Press  for Spectrum Analyser, Antenna Alignment, Link Test and Ping.

You now have an encrypted link.

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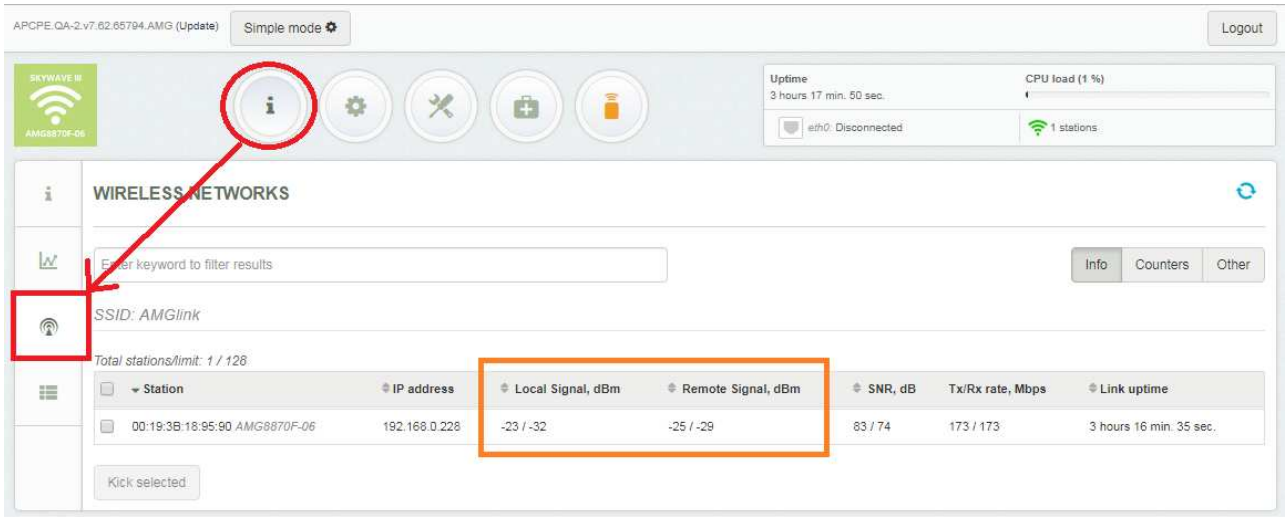
Wireless Link Performance

Base unit.

Link Performance you can find in section ***Status->Wireless network***.
You will see wireless performance for both local and remote radios.



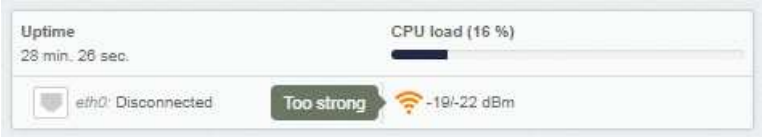
Satellite unit

Link performance of the station you can find in right top corner of the web GUI.

When you point at the field with link performance, it will show the link performance status.

See possible performances below:

- Too strong



- Excellent

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- Good

- Fair

As you can see the **Excellent RSSI is around -35/-35**.

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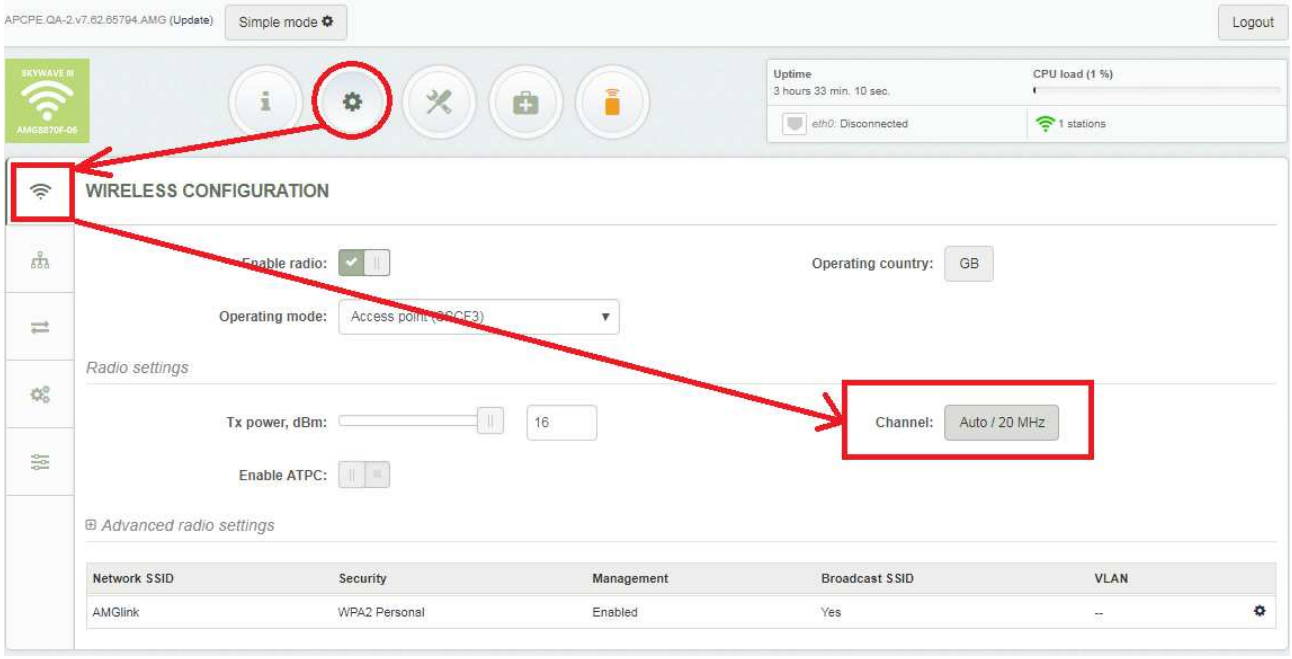
Throughput

Wireless radios AMG8870F can deliver throughput up to 500Mbps of compressed video with frequency channel width 80 MHz.

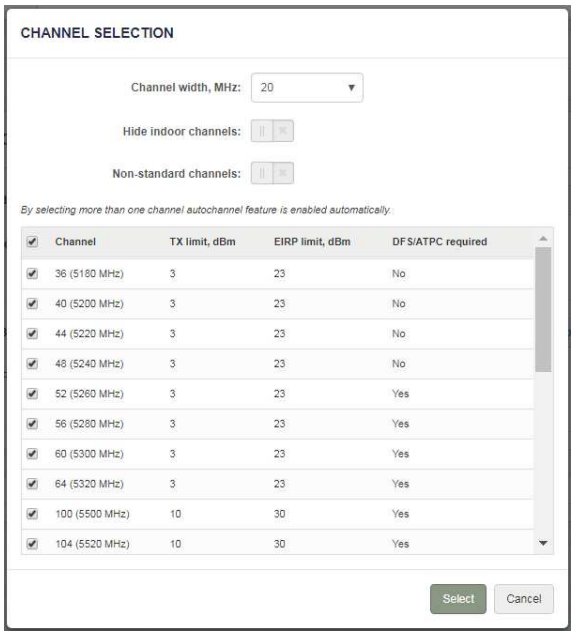
The default configuration of the channel width is 20 Mhz which provide throughput up to 90 Mbps of compressed video.

To change channel width.

Access Base unit web GUI and go to section ***Settings->Wireless configuration->Channel***.



You will see.



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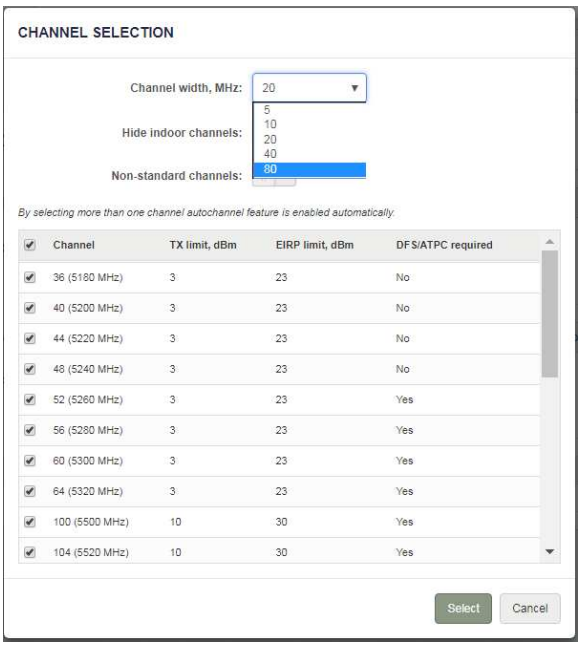
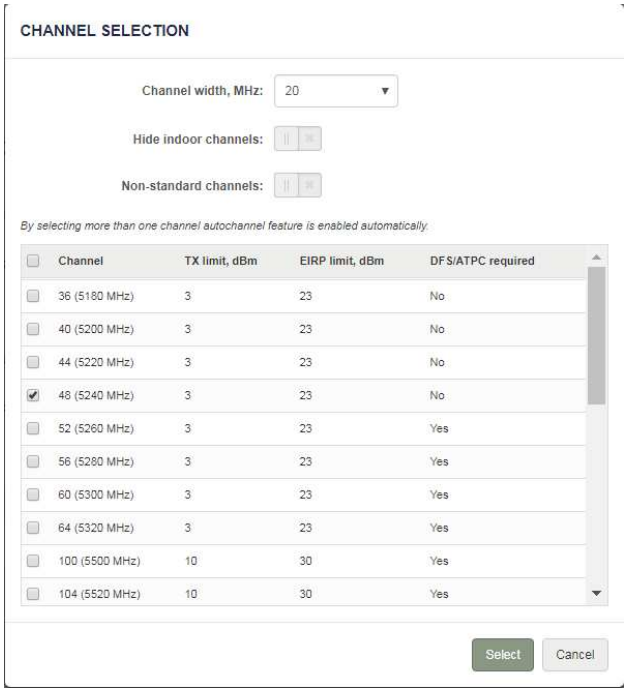
Select required channel width.



Channel selection

Auto channel selection is in the factory default. You can select specific channel in the same section as you select channel width.



The fixed channel is required when there is more wireless links on the site or if there is a local interference.

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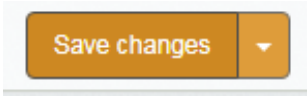
Save configuration changes

When you do any change, you have to save the configuration. The button Save changes you can find in the right top corner in the web GUI.



After factory default reboot the radios will have IP address 192.168.0.1 (mask 255.255.255).
With “admin“ as username and “password“ as password.

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Configuration summary

SSID – The SSID should be the same in all radios that directly communicate. When using multiple links, make sure that each link has its own unique SSID. This can be checked with our Network Monitoring Software – Default SSID is 'AMGlink'.

Security Key – The security key should be the same in all radios that directly communicate. If anyone tries to connect to the equipment wirelessly then they will be asked for this security key.

IP Addresses – Default IP addresses are **192.168.0.228** (Base) and **229** (Client). Change the IP address of each radio to suit the site. A factory reset will default the radios to 192.168.0.1

Login & Password – The default is set to **admin** and **password**. For security reasons, this must be changed for all radios. Following a Factory Reset this will change to **admin** and **password.**

Config files – When configured, save the config files for each radio (e.g. onto a USB drive, under a folder with the date and job number). It can be helpful to rename the saved config files to match the IP address of the radios. Saved settings can be easily uploaded to each of the radios.

Troubleshooting

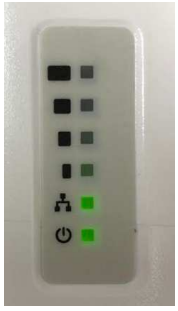
No power at the antenna – the radio links **use passive PoE** for their power.

- Test the cat5 cable and re-terminate it if required.
- Make sure the downlink cable is made as a straight through cable.
- Please also check that the PSU is plugged in, turned on and that the green LED is on.

Interference – AMG radios use auto-channel select and will avoid channels with interference. Rebooting the radios will allow a re-scan. If further problems persist with interference, then manually select channels while checking signal quality via web GUI.

LEDs – The LEDs on the radios show basic information at a glance about the status of the link:

- Power LED
    - Off – unit is not powered
    - On (green) – unit is powered by passive PoE
- Ethernet
    - Off – No Ethernet device (IP Camera, NVR, etc) connected
    - On (green) – Ethernet device connected
    - Flashing – Ethernet traffic detected on port
- Signal
    - Off – No wireless link
    - On (orange) – shows strength of the signal



For support and assistance during normal working hours, please contact AMG Systems Ltd on +44 (0)1767 600 777 or email: technical@amgsystems.com

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Configuration Record

Please keep this information about your devices in a safe place.

Site/radio link name: _____

	Factory Default	This site
Wireless SSID	AMGlink	
IP Address of radio 1 :	192.168.0.228	
IP Address of radio 2 :	192.168.0.229	
Wireless Encryption key:	wireless	
Wireless Encryption type:	AES	
Subnet Mask of Devices :	255.255.255.0	
Admin Username :	admin	
Admin Password :	password	

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