UK ANTENNAS

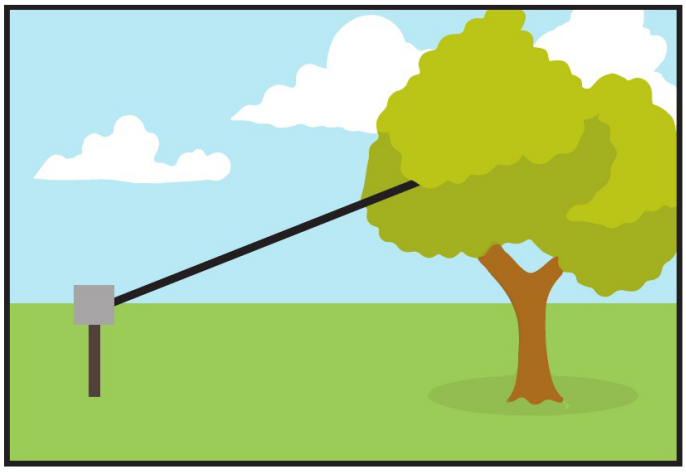
Instructions and Set Up Manual

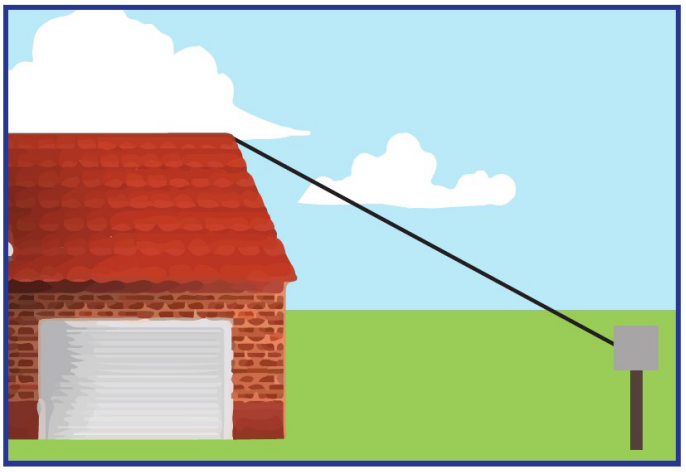
Thank you for choosing UK Antennas.

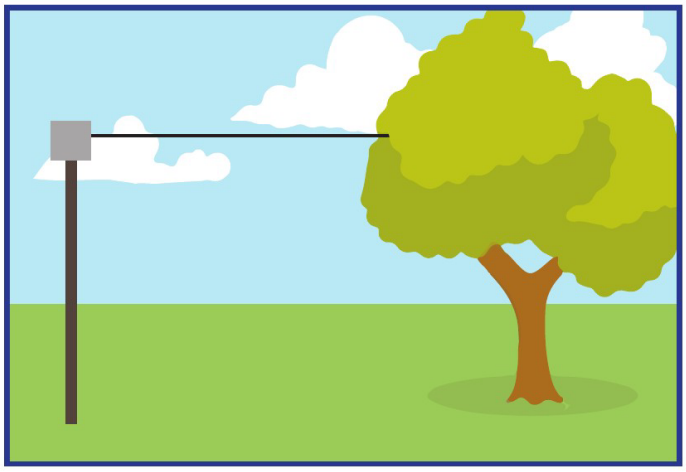
When installed correctly, there should be no need to tune the antenna although no two set-ups are the same.
Please note that the single band antenna will only cover the band stated,DO NOT USE ON ANY OTHER BAND

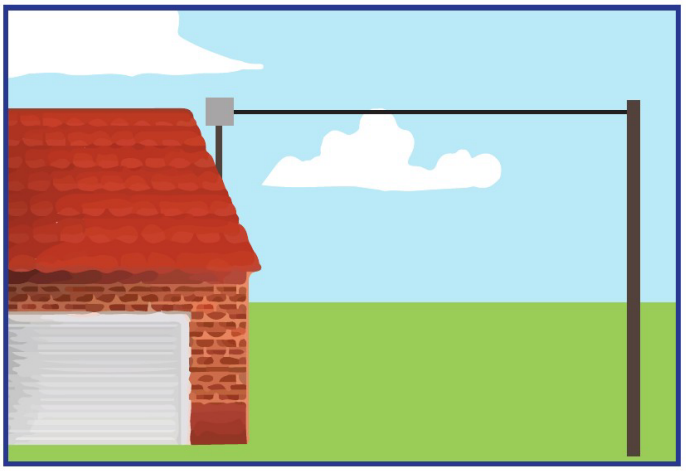
Positioning

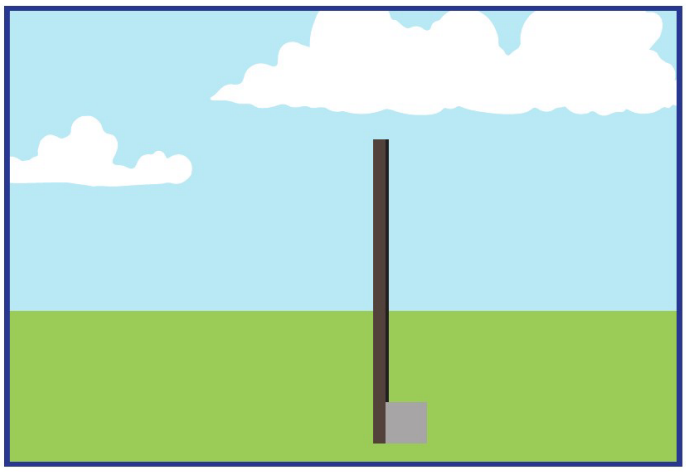
The antenna will work the best when high and in the clear, it can be used in almost any configuration: sloping, horizontal, vertical, Inverted V and inverted L, do not use angles that are less than 90 degrees. The antenna wire must always come directly away from the matching section avoiding the backing plate even if using in a vertical postion.
Use caution in windy conditons if using trees for support.











Positioning Notes:

- A non-metalic pole must be used in the vertical position.
- Keep ends away from conductive materials.
- Use non conductive rope for the end insulator.
- Ensure the antenna wire comes away from the enclosure.

WARNING: The end of the antenna and antenna terminal has a high RF voltage when transmitting.

When fed with 100W, the RF voltage will be around 500 V.

Do not touch the antenna terminal or the ends of the antenna while transmitting.

Tuning

Erect the antenna in the desired configuration.
The configuration can effect the SWR but because of the high impedance it is quite forgiving compared to other antennas.
Connect the HF transmitter to the antenna connector with a SWR meter in line, or use your radio's built in SWR meter.
Measure the SWR at your operating frequency and adjust the antenna wire until the SWR is at a minimum, don't cut the wire, just foldit back onitself, the shortened 80-10m can be tuned on 80m without effecting the other bands.
If the SWR doesn't change or gets worse then it is already at the optimum length, try moving the antenna to a new location or alter the configuration.The use of antenna analysers are not recommended as they can lead to erratic results from overload, it is better to use the radios own built in swr meter or a good quality external one next to the radio.
Never transmit with a high swr, you could damage your tranceiver and also the antenna.

Counterpoise and earthing

Very little counterpoise is needed and in most cases the mounting pole if metallic might be enough.
0.05 wavelength of the lowest band is recommended and will be required if using a choke right at the antenna.

See "Earthing your Antenna" for earthing/counterpoise points

Make sure the drain hole next to the so239 always points down (bracket version only)
The drain hole is on the lastest version 03/2023 and onwards.
Warning! we use lead solder during the manufacturing process

For more information or help.
WWW.UKANTENNAS.CO.UK, email sales@ukantennas.co.uk
Full T&C can be found here, https://www.ukantennas.co.uk/refund_returns/

Specifcation

Single band antennas

SWR <1:1.5, a tuner might be needed on some bands at band hedges.
Power 800w PEP, 200w digi modes.

Multi band antennas

SWR <1:1.5, a tuner might be needed on some bands at band hedges.
Power 400w PEP, 100w digital modes, please note that the power ratings are 50% RX/TX and not 100% full duty cycle.
Using high power levels for prolonged periods can cause the swr to rise on the multi-band antennas the antenna core can over heat, please allow to cool for the swr to return to normal.The portable version is 100w PEP, 25w digital.

Antenna length is determined by the frequency.
- Mutli band (80, 40, 20, 17, 15, 12, 10m) approx 39m
- Mutli band (80,40, 20, 15, 10m) approx 20-23m depending on the 80m tuning point.
- Mutli band (40, 20, 15, 10m) approx 20m
- Mono band 80m approx 40m
- Mono band 40m approx 20m
- Mono band 30m approx 14m
- Mono band 20m approx 10m
- Mono band 17m approx 7.8m
- Mono band 15m approx 6.7m
- Mono band 12m approx 5.7m
- Mono band 10m approx 5m

Antenna wires

If you have purchased one of the antenna wires you will need to solder the ring terminal supplied. This is only suitable for a 6mm binding post as used on our 49:1 transformers, you will need to supply your own if a different size is needed.

Before fitting the terminal to the end of the wire make sure you pull the wire through any eye supports on the matching transformer not forgetting to slide the supplied glue lined heat shrink over the wire, this will protect the wire and connection from the weather, use a heat gun were possible to shrink it in place.

The wires are pre cut to length and shouldn't require any tuning, the shortened antenna wires require tuning on the lowest band, see tuning below.

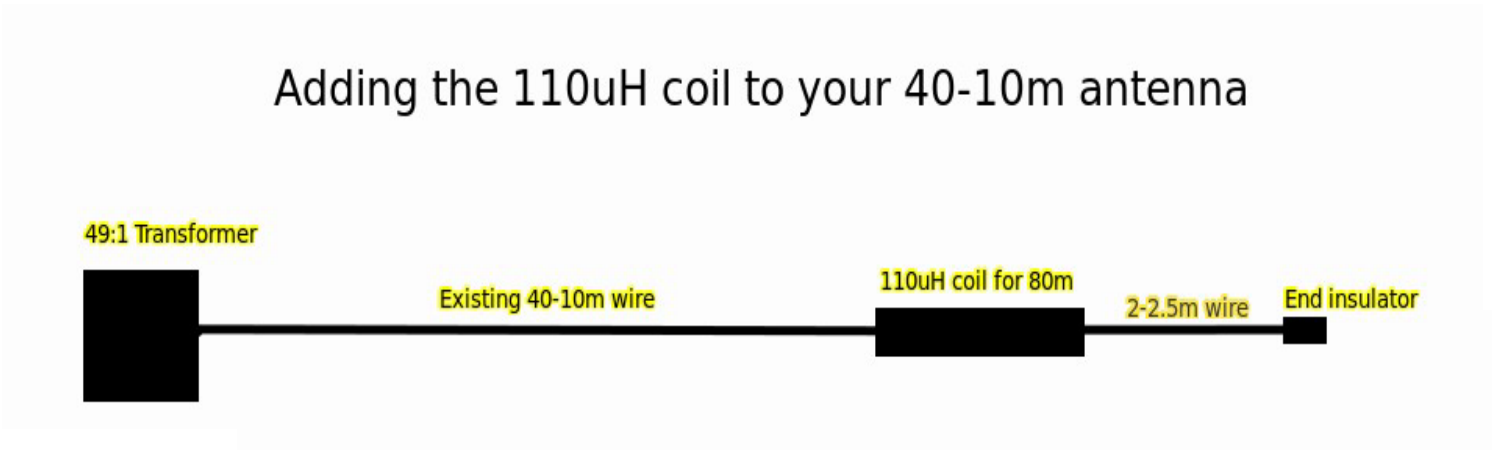
Please note the bandwidth on the shortened antenna wire will be less than a standard half-wave dipole.

Both the 80-10m and 40-10m wires have a compensation coil fitted, this will bring the higher frequencies in line with the lower ones, without it the 10m band will be at 29Mhz rather than 28Mhz which is more desirable.
The shortened version doesn't need the compensation coil fitted but will also work with it.

The 110uH coil add on for 80m, this is the same coil as used in the the shortened 80/40/20/15/10m antenna and antenna wire.

The coil is supplied with the short length of wire to tune 80m, this will be at the bottom of the band and will need adujusting to your desired frequency, you may have to cut some wire if the foldback gets too long.

If you are converting one of our 40-10m antennas don't cut the wire, remove the end insulator and solder the supplied ring terminal to the end and attach it to one end of the coil.



Shortend multi-band 80-10m end-fed tuning

The antenna will need tuning for your desired frequency on the 80m band.

The supplied wire is just over 3.3m long which should put you at the very bottom of the band at 3.5Mhz, it is recommended to cut the wire to avoid a long fold back, this can be done while tuning.

When you have the antenna in its intended location fit the short wire to the 80m coil.
Don't fit the supplied cable ties at this point use a bit of tape to stop the wire coming off the insulator instead so you can easily adjust the wire length.

Now you can now check the swr while you have the antenna wire in the clear were you intend to use it, if the desired frequency is too low you need to make the wire shorter if its too high you need to make it longer.

If you find the fold back getting too long, more than 30cm cut some wire off at 5cm intervals as you go always check the swr before you cut anything off.

Once you are happy with the tuning tightly fit the cable ties to avoid the wire slipping , its recommended to fit the glue lined heat-shrink to the end of the trimmed wire using a suitable heat source crimping the end with pliers or similar tool.

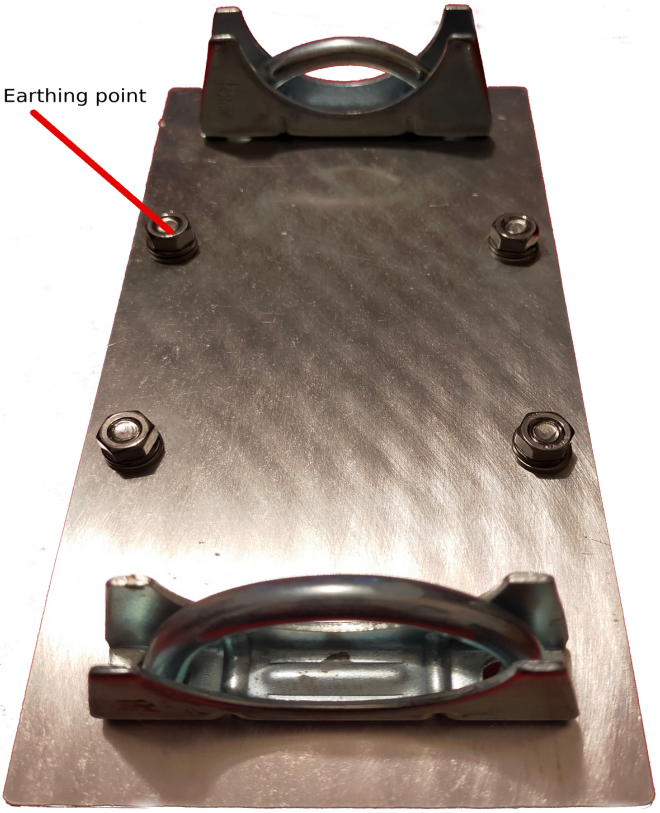
There is no tuning guide because the installation will cause the resonant frequency to shift on 80m. What will work for one person will not work for another in some cases.
40-20-15-10m require no tuning, the wire is cut to a pre cut length.

End wire with cable ties and heat shrink fitted

Earthing your antenna

Earthing can be done on any 4 of the nuts on the rear of the mounting plate, the bolts can not fall inside the box as they are fixed from the inside.
There is an earthing point next to the s0239 socket on the non bracket version.
There is no earthing ponit on the portable version.

Earthing is done at your own risk, there is a potential for ground loops by earthing and we can't offer advice regarding earthing, if in doubt consult a qualified electrician.



F.A.Q

Why is there a short on the antenna?
It is normal to have a dead short between all metal parts, including the so239 inner/outer.
This is for the multiband antennas and the 49:1 transformer.

Why is the swr higher on some bands but low on another?
If the swr is low on some of the bands but high on others there is an issue with the configuration near by objects can detune one band without effecting others.

Common Mode Choke/ Line Isolator

Fitting a choke can help with noise on your coax and eliminate RF back in your shack causing potential issues with other sensitive equipment.

The choke should be fitted close to the antenna, some experimentation may be needed for placement.
If the SWR is higher than before try moving the choke away from the antenna input, 4.5m is a good starting Point.
You can also fit 2 chokes one at the antenna and one at the radio side for ultimate results.
There is no input or output and can be fitted either way round inline with your coax.

The importance of fitting chokes, click the image below to view the video.