**5el 4.1mtr 50Mhz Quad**

**DETAILS**

 Created: 22 February 2009

**G0KSC SC0605Q 5el 50Mhz OWA Quad Antenna with a 4.08 Metre Length Boom**

*Do you want over 11dB gain from an antenna with a 4 metre boom? This is the one to do it!*

Some have said there are no benefits to be seen from Quads over Yagi's with more than 3 elements. This model is set to prove this statement wrong. Over 11dBi has been achieved with respectable front to back ratio on a boom length of a little over 4 metres. This is around one to two metre less than would be required to see similar gain from a Yagi. In addition, I have been able to model the antenna without the narrow bandwidth characteristics normally associated with an antenna of this kind.

If Quads are your type of antenna, this one maybe for you.

As with all my antennas, this is a **non-critical design** and therefore, any small errors in you calculations when building the antenna WILL NOT have a great impact on the antennas final performance.



**The G0KSC 3el 50MHz Quad at CT1QP**

**Dimensions in Metres**

Element spacing:

* Ref =      0
* Driven =  .946
* D1 =       1.705
* D2 =       2.853
* D3 =       4.08

Elements lengths - full quad length:

* Ref =       6.36
* Driven =   6.152
* D1 =        6.016
* D2 =        6.064
* D3 =        5.816

Performance figures **@ 50.250Mhz**:

* Froward Gain: **11.12dBi free space**
* Front to Back: **21.13dB**
* Radiation angle at 10 Metres above ground: **10 degrees**

Element diameter:

This antenna has been models with **12# copper wire**. You will need to mail me if you wish to use a different gauge as the model will change. Isolated spacers will be needed. fiberglass would be a good option.

**NOTE:**

Build orientation is as per the layout image below with the feed point on the bottom section of the quad indicated by a red circle.

**Feeding the Antenna**

Whilst OWA is not normally a term used in quad antennas, I felt it appropriate due to the low SWR and wide bandwidth of this antenna. Like all of my antennas, this has a **50 Ohm impedance** so can be fed directly with 50Ohm coax, no matching is required. However, a balun or RF chokes should be used in the coax as close to the feedpoint as possible.