

# Multiband Dipole with Ugly Choke Balun

by G4APL

## Background

This project commenced after Paul G4APL read Peter Dodd's G3LDO Multiband Dipole published in the March 2011 Page 31 Radio Society of Great Britain (RSGB) monthly magazine Radio Communication (RadCom).

As there was a requirement for a Multi-band aerial to be used on his GB7CIP HF Pactor links to be configured to cover the 7, 14, 18, 21, 28MHz Amateur Radio Frequency bands, a separate 3.5MHz dipole was already in use and would not be a requirement for the multiband dipole.

He has made multiband dipoles many decades ago for portable use, based on articles in the RSGB Radio Communication Handbooks.

Don, N4UJW, has brought together some excellent examples on how to construct and build a Choke Balun.

A further check on the Hamuniverse.com site in March 2011 illustrated other additional Ugly Choke Balun's and mounting construction. One of the mounting ideas will be incorporated in this current project.

## The search for materials

Paul checked in the shed and found that he had most of the require materials, other than the 4 inch pipe cap. Which he purchased from the local builder merchants.

A short length of 4inch drain pipe left over from the previous G4APL Ugly Choke Balun project in 2007. The article can be found at

URL [http://www.theskywaves.net/techart/G4APL\\_Another\\_Ugly\\_Choke\\_Balun.pdf](http://www.theskywaves.net/techart/G4APL_Another_Ugly_Choke_Balun.pdf)

## Materials List

Cable Ties

Co-Ax cable - used UR43 this time. 18 feet

Aerial Wire - Still had long lengths of Telecommunications wire that Paul uses for all his wire aerals.

Hardware fittings - Choc Block, Eye Bolts, Nuts, Bolts, Washers, U-bolt

22mm heavy duty pvc water pipe - Recovered from the home made garden clothes to be used as spacing insulator.

Spacing between the elements are 40mm

4 inch pvc drain pipe off cut for the balun

4 inch pvc pipe cap.

Two egg insulators

Araldite glue - to secure nuts to pvc 4 inch drain pipe

## Antenna Construction

Element lengths - two required for each half of the dipole – details extracted from G3LDO's article.

Band | Frequency | Length

80m 3.7MHz 18.44m - Not required could be added later as holes drilled in insulators.

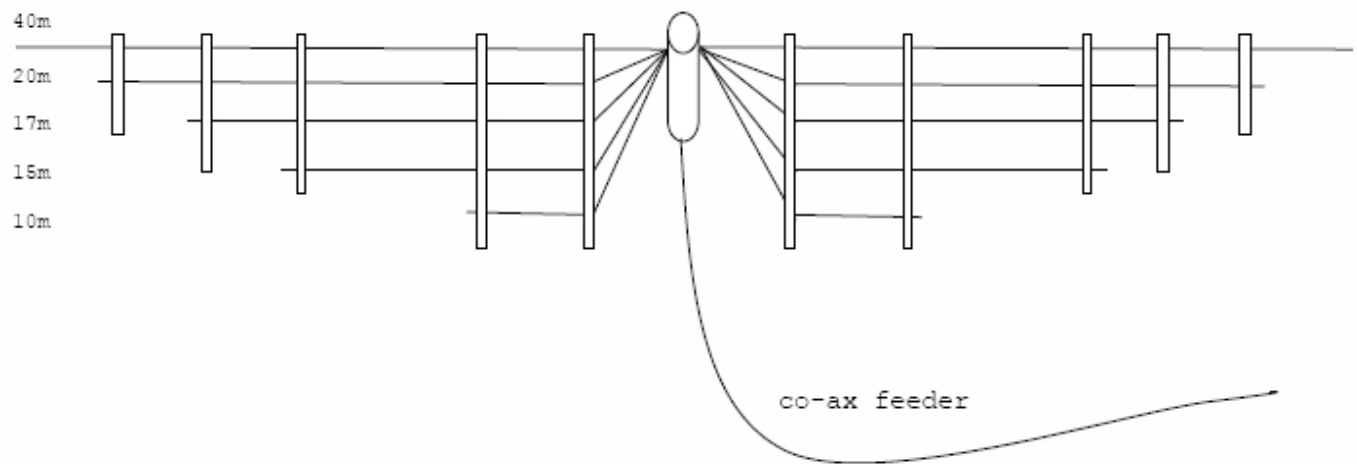
40m 7.05MHz 10.06m

20m 14.2MHz 5.03m

17m 18.1MHz 3.89m

15m 21.2MHz 2.84m

10m 28.5MHz 2.464m



**Editor note: Many times the 40 meter section can also be used on 15 meters as well...check swr first, or just trim individual antenna sections for lowest swr if you use all of them as in the drawing.**

**Change your lengths for each side to fit your frequency requirements.**

The following photographs show the basic steps in the construction of the multiband dipole.

The [Ugly Balun constructions](#) are detailed in the web site URL referenced in this article.



**Materials 4inch tube, choc blocks, cable ties, hardware**



**Materials Aerial Wire, 22mm tubing**



**Materials Aerial Wire, 22mm tubing**



**22mm 'PVC' tube drilled M5 holes 40mm apart**



**22mm PVC tube cat to size for both elements**



**22mm PVC tube cat to size for both elements**





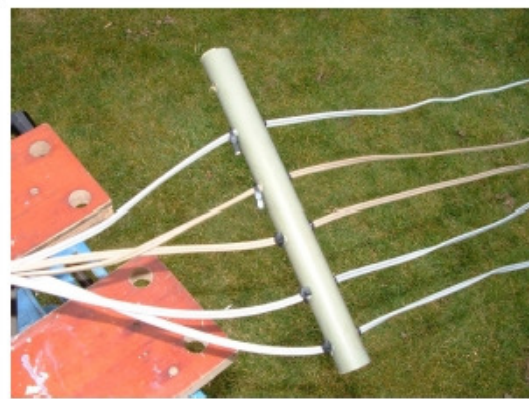
**Ugly Balun showing aerial element connections**



**4 inch pipe cap with fixing**



**4 inch pipe cap with fixing nut glued in place with araldite.**



**Aerial Elements spaced 40mm apart**



**Completed Ugly Balun with connected dipoles**



**Completed Ugly Balun with connected dipoles  
Each element is cable tied to spacing insulator**



## **Multiband Dipoles attached to tower halyard**

Many thanks to G4APL for sharing this with us!

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