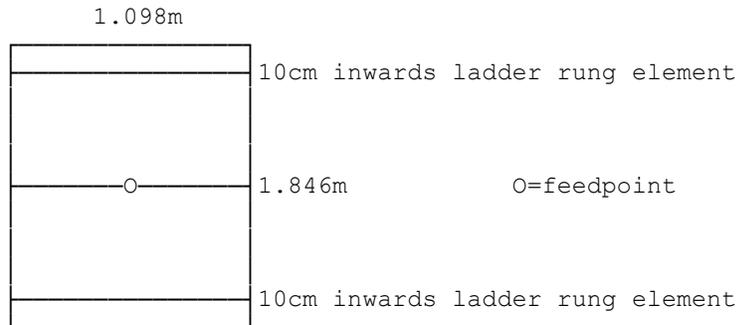


3 band VHF indoor aerial

From: G8MNY@GB7CIP.#32.GBR.EU
 To : TECH@WW

GOFTD's experimental INDiX antenna (c) (corrected May 06)
 (8 Bit ASCII Graphic use code page 437 or 850)
 Indoor DX antenna. Meant to be hung indoors within a window frame for those of you who can't get an outdoor antenna or operating from a hotel, bed & breakfast or hung from a tree! The antenna is really a bi-square modified with 2 "rungs" & lengths modelled using NEC software for optimum all round performance. You have to make up a matching network for it which is easy enough. The antenna can be made of wire with dowel rods to support the horizontal sections.



Gain:	Impedance:	Polarisation:
50 MHz = 2.35 dbd	18-j870	Horizontal
70 MHz = 1.14 dbd	30-j633	Horizontal
145 MHz = 4.36 dbd	185+j102	Horizontal

Radiation pattern is just like a half wave dipole figure of eight pattern but with slight gain. There is very little high angle radiation.

The antenna is a loop 1.846 x 1.098 metres with 2 "rungs" connected 10cm inwards which improves the gain on 145MHz by approx 1 dB. An L-Match is inserted at the feedpoint 'O'. At 50/70MHz a step down l-match is used and at 145MHz a step up. All matching networks are placed AT the feedpoint, they are *never* placed at the rig end.

50/70 MHz matching network
 ----/\ /\ /\ /\ ---->To feedpoint O
 |
 --- L=3uH tapped for 50/70Mhz
 --- C=20pF to 150pF approx variable
 |
 ----->To feedpoint O

144 MHz matching network
 ----\ /\ /\ /\ ---->To feedpoint O
 |
 --- L=0.107uH approx
 --- C=11.4pF approx made variable
 |
 ----->To feedpoint O

Alternative Matching networks using only inductors.

Replace C with 0.118uH inductance, Replace L with a 2.667uH inductance

70MHz

Replace C with 0.137uH inductance, Replace L with 1.386uH inductance

144MHz

Not possible using inductors but a coaxial matching stub may be used. Simply take a 13cm length of RG58 coax and attach to the feedpoint but leaving the far end open. Trim the length which should be around 11.5cm long but may vary slightly. The coax can be coiled up to fit it in a box.

All matching networks can be made in a compact box at the feedpoint & switch in line for each band.

Note: You must adjust the matching networks in situ and the impedance of the antenna will vary slightly with proximity to nearby objects.

Bandwidth.

You should get about 200kHz on 50/70 MHz before the SWR reaches 2.1 but on 144MHz the entire band should easily be covered.

On 50MHz/70MHz this bandwidth is quite adequate for working the DX ends of the band.

Note:

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- Andy - G0FTD@GB7SXE.#38.GBR.EU

Why Don't U send an interesting bul?

73 De John, G8MNY @ GB7CIP