

Subject: 6m Yagi from TV Antenna

From: G8MNY@GB7CIP.#32.GBR.EU

To : TECH@WW

Hallo All,

After I am qrv on the 6m Band since May 2000 I tried to find out an inexpensive solution to set up a short yagi for the band which was also possible to use for Scilly island expedition in August 2000.

So I asked my pit (DM2CKK) for some low expensive material. He found an old 4El Yagi for CH-E3 TV Band. The boom length an the element spacings were not modified because of the low space to put the yagi into the car for expedition use so the boom length must be below 2 meters.

With the data of the yagi I started an antenna simulation... I want to find an optimum gain with short boom with good VSWR and an moderate bandwidth to use the yagi also in critical environment (that means the data should not so strong differ from free space environment an mounting very low over the roof).

Here are the results of optimization

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ELEMENT:      LENGTH (Cm.)   SPACING FROM REF. (Cm.)   ELEMENT DIA. (Cm.)
Reflector:    290.0000                0                          1.20000
Driven Ele.:  285.0000                91.5000                   1.20000
Director #: 1 255.0000                138.0000                  1.20000
Director #: 2 240.0000                184.5000                  1.20000
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Normalized Radiation Resistance at 50.500 mHz is 43.34 Ohms

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FREQ (mHz)    GAIN (dBi)   F/B (dB)   IMPEDANCE (ohms)   VSWR
49.500        7.33         9.02       37.61-j8.39        1.32
50.000        7.36         11.79      41.51-j3.18        1.12
50.500        7.35         14.65      43.30+j1.15        1.00
51.000        7.34         17.79      43.19+j5.62        1.11
51.500        7.36         21.64      41.61+j10.78       1.26
52.000        7.41         27.52      39.00+j16.89       1.48
52.500        7.50         41.04      35.73+j24.06       1.83
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I used this antenna with good results in the expedition for tropo contacts min69uw. I got very good reports all over europe in may 2001 were I used this antenna at my home qth in jo50 and using only 10W output. I heard on also DX (CX,PY).

The driven element is the a folded dipole from the TV-Antenna with an simple 1:4 balun using aircell coaxial cable. All elements were expanded from the original size with aluminium rods and mounted with electrical contact to the 20x20mm boom.

So that's all

best greetings de dg0opk (michael)
 From: DG0OPK @ DB0PV.#BAY.DEU.EU (Michael)

Why Don't U send an interesting bul?

73 De John, G8MNY @ GB7CIP
 /EX