

VK5DJ's YAGI CALCULATOR

Yagi design frequency =1240,00 MHz

Wavelength =242 mm

Parasitic elements fastened to a non-metallic or separated from boom

Folded dipole mounted same as directors and reflector

Director/reflector diam =4 mm

Radiator diam =4 mm

REFLECTOR

117 mm long at boom position = 30 mm (IT = 51,0 mm)

RADIATOR

Single dipole 111 mm tip to tip, spaced 48 mm from reflector at boom posn 78 mm (IT = 48,0 mm)

Folded dipole 114 mm tip to tip, spaced 48 mm from reflector at boom posn 78 mm (IT = 49,5 mm)

DIRECTORS

Dir (no.)	Length (mm)	Spaced (mm)	Boom position (mm)	IT (mm)	Gain (dBd)	Gain (dBi)
1	100	18	96	42,5	2,7	4,9
2	99	44	140	42,0	5,4	7,6
3	97	52	192	41,0	7,1	9,2
4	96	60	252	40,5	8,4	10,5
5	95	68	320	40,0	9,4	11,5
6	94	73	393	39,5	10,2	12,4

COMMENTS

The abbreviation "IT" means "Insert To", it is the construction distance from the element tip to the edge of the boom for through boom mounting

Spacings measured centre to centre from previous element

Tolerance for element lengths is +/- 1 mm

Boom position is the mounting point for each element as measured from the rear of the boom and includes the 30 mm overhang. The total boom length is 423 mm including two overhangs of 30 mm

The beam's estimated 3dB beamwidth is 49 deg

FOLDED DIPOLE CONSTRUCTION

Measurements are taken from the inside of bends

Folded dipole length measured tip to tip = 114mm

Total rod length =251mm

Centre of rod=125mm

Distance BC=CD=44mm

Distance HI=GF=42mm

Distance HA=GE=61mm

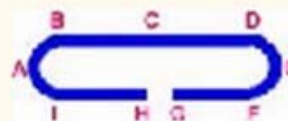
Distance HB=GD=81mm

Distance HC=GC=125mm

Gap at HG=5mm

Bend diameter BI=DF=25mm

Folded dipole measuring points



If the folded dipole is considered as a flat plane (see ARRL Antenna Handbook) then its resonant frequency is less than the flat plane algorithm's range of 10:1