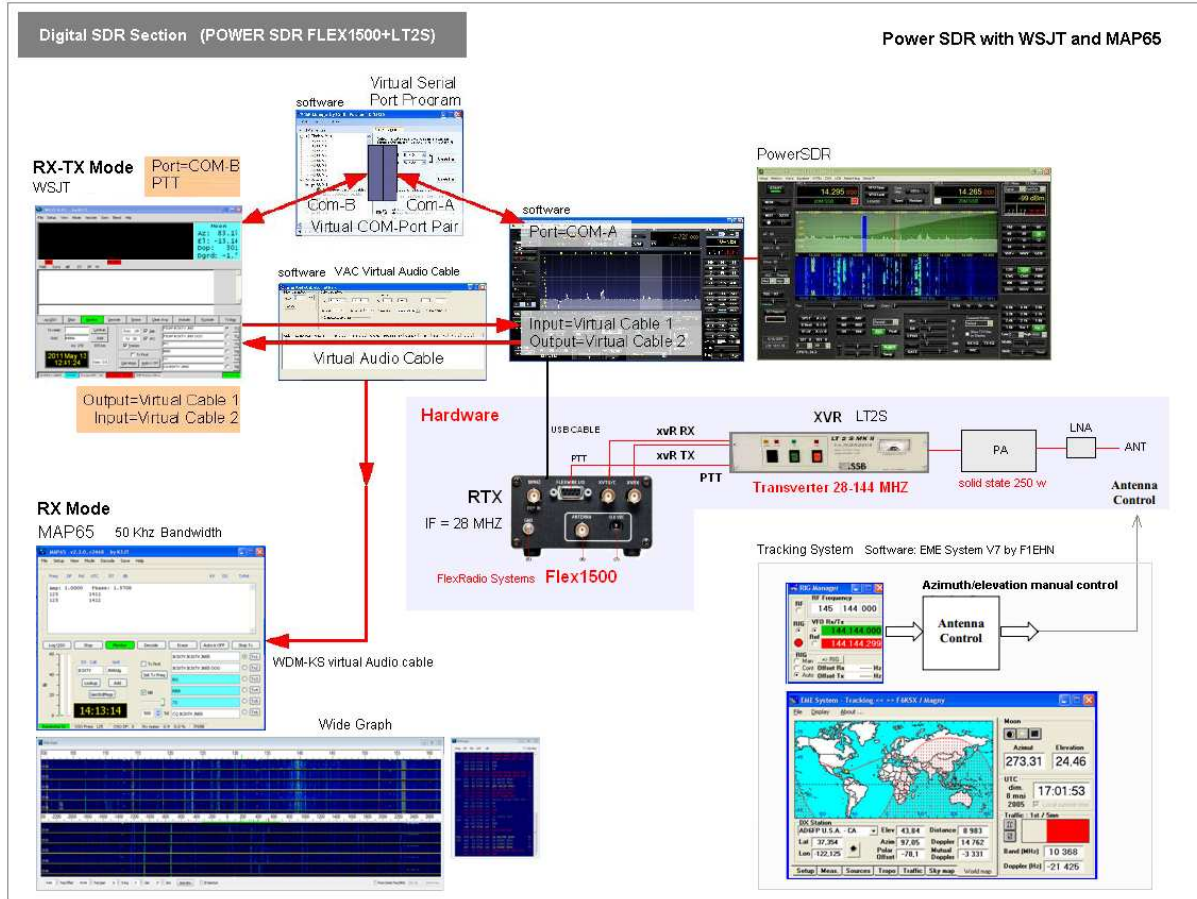


Frequency: 144 mhz
Antenna: 2X8 elements (H polarization) 8jxx2
Rtx: SDR Flex Radio 1500+Transverter LT2S SSB Electronic
LNA: Gasfet 22 dB gain – 0,7 dB NF
PA: solid state 250watts

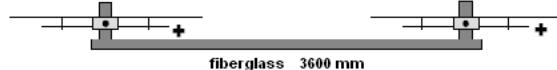
Last update: June 2012

SDR Flex Radio 1500+Transverter LT2S SSB Electronic



Antenna System

Yagi Array	Number of Yagis	E	22,8 °	Array Gain	10JXX 144 9JXX2
Single Yagi Gain in dBi	2	H	22,8 °	15,01 dBd	17,16 dBi
14,31 dBi					



single antenna

Gain	12.19 dBd/14.23 dBi
Angle -3dB E/H	34.54° - 37.74°
Spacing E/H	3.5 - 3.21 m
SWR	1:1.2
Boom length	4.25 m - 2.04 λ
Boom diameter	25 - 30 - 25
Element diameter	5 mm
Dipole	T-match
Connector	N precision
Power max	1500 W
Balun 1:4	R.G142/U
Pole diameter	75 mm Ø MAX
Weight	3.2 kg
Wind area	0.15 m²

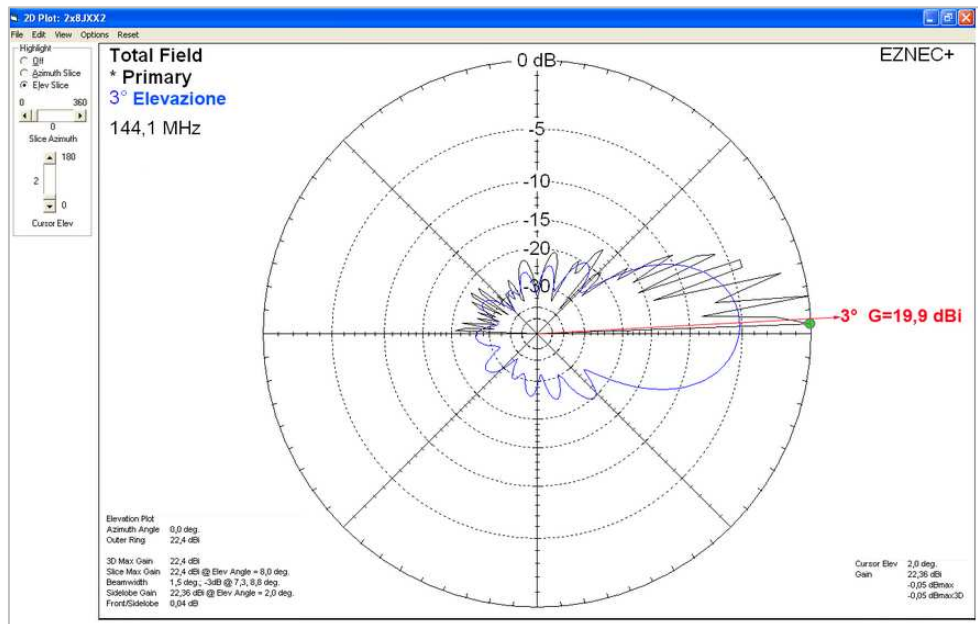
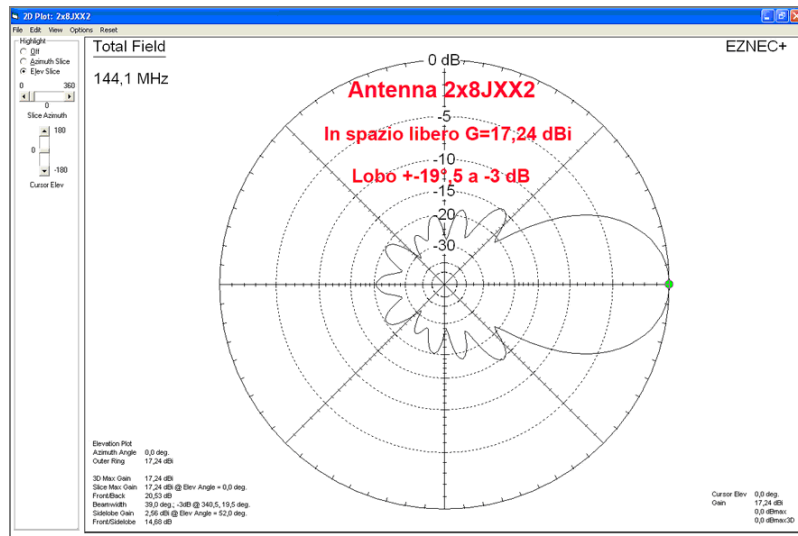
stacking distance

$$d = \frac{\lambda}{2 \cdot \sin(\Phi / 2)}$$

Plane E = 34.54 ° where $d = \frac{2079}{2 \cdot \sin(34.54 / 2)} = \frac{2079}{0.5937} \approx 3550 \text{ mm}$

I use Fiberglass for the cross boom. Fiberglass is perfect for cross boom use. By using Fiberglass, you will be guaranteed of almost zero interaction between the antennas and the stacking boom.

EZNEC simulation 2D Plot Antenna 2x8JXX2



Receiver performance VK3UM eme calc software

Receiver Performance

Antenna Temperature

- 250 *K Sky Noise
- 200 *K Spill over - dish
- 80 *K Side lobes - yagi
- 530 *K Feed thru - dish
- Antennae Temp Rear lobe - yagi

Transmission Line Reflection Loss

YSWR: 1,24 Return Loss: 19,5 dB
Transmission Loss: 0,05 dB

Antenna Relay Insertion Loss: 0,10 dB

Coaxial Cable Type and Loss

Type: Cable 1
RG-214, 15,0 m, 0,34 dB

Cable 2
2,30 dB/100 m, 0,0 m, 0,00 dB

Total Connector Loss: Type N, 2, 0,02 dB

Operating Frequency

50 MHz 900 MHz 5760 MHz
 144 MHz 11296 MHz 10.368 GHz
 220 MHz 2304 MHz 24.028 GHz
 432 MHz 3456 MHz 47.088 GHz

System Parameters:

- Rx Noise Temp *K: 61,0 *K
- Rx Noise Figure: 0,83 dB
- Reference: H E I P
- System Sensitivity: -150,09 dBm
- dBuV: 0,0070 uV
- Sum of all * Cable 2: 0,12 dB
- Sum of all * Cable 1: 0,34 dB
- Total LNA Input Loss: Loss between LNA and Receiver or 2nd LNA
- LNA Noise Figure: 0,70 dB 50,7 *K
- Receiver Noise Figure: 1,00 dB 75,1 *K
- LNA Gain: 22,0 dB
- Receiver Band Width: 120 Hz