

Dual polarized log periodic antenna

Mechanical Specifications:

Boom:	25mm square tube
Boom length:	4.3 metres
Number of booms:	4
Material(Boom and Elements):	Aluminium
Elements:	12mm diameter tube
Number of elements:	44

Dimensions of elements 1 to 22 fixed on boom 1 are given below:

1	1.53 m
2	1.361 m
3	1.212 m
4	1.078 m
5	0.96 m
6	0.854 m
7	0.76 m
8	0.677 m
9	0.602 m
10	0.536 m
11	0.477 m
12	0.424 m
13	0.378 m
14	0.336 m

15	0.299 m
16	0.266 m
17	0.237 m
18	0.211 m
19	0.188 m
20	0.167 m
21	0.149 m
22	0.132 m

The dimension of the corresponding elements fixed on boom 2 , 3 and 4 are the same as above. Note that the orientation of boom 3 and 4 will be different than boom 1 and 2. That is boom 3 and 4 shall be found at 90 degrees to boom 1 and 2 i.e in the H polarisation.

Spacing of the elements are give below:

Bottom of the boom to the 1 st element	Is yet to be specified(will depend on field conditions)
1 st element to 2 nd element	0.52 m
2 nd element to 3 rd element	0.463 m
3 rd element to 4 th element	0.412 m
4 th element to 5 th element	0.367 m
5 th element to 6 th element	0.326 m
6 th element to 7 th element	0.29 m
7 th element to 8 th element	0.258 m
8 th element to 9 th element	0.23 m
9 th element to 10 th element	0.205 m

10 th element to 11 th element	0.182 m
11 th element to 12 th element	0.162 m
12 th element to 13 th element	0.144 m
13 th element to 14 th element	0.128 m
14 th element to 15 th element	0.114 m
15 th element to 16 th element	0.102 m
16 th element to 17 th element	0.091 m
17 th element to 18 th element	0.081 m
18 th element to 19 th element	0.072 m
19 th element to 20 th element	0.064 m
20 th element to 21 st element	0.057 m
21 st element to 22 nd element	0.051 m

Dimensions of the spacing of the other booms is the same as above.

Boom to boom spacing at the bottom is approximately 4.5 cms and at the top shall be approximately 0.35cms.

Electrical Characteristics:

Frequency	100MHz to 900MHz
Gain	8dBi (5.85 dBd)
Front to back ratio	13 to 19 dB
Polarization	Dual polarised

Materials required

6 aluminium square tube (6.25 cm²)

24 aluminium round tube 12mm diameter