



Yagi Antennas



CHARACTERISTICS

Yagi antennas typically use a dipole as the feed element. The rest of the elements are parasitic, usually one reflector and the rest are directors

A Yagi usually produces the most linear polarity gain for materials used

The practical gain range of a single Yagi is 6 to 20 dBi

The maximum typically bandwidth of a Yagi antenna is 10% ie. At a center frequency of 400 MHz, the bandwidth could be 380 to 420 MHz (40 MHz wide)

Doubling the boom length of a Yagi will increase its gain by 2.2 to 2.3 dB

Yagi designs are quite practical to about 3000 MHz. But the best frequency range for Yagis is 3 to 1500 MHz

Modern computer design programs for Yagis provide great flexibility on gain / bandwidth, Front to Back and side lobe control and VSWR bandwidth

Yagis are easily matched to 50 or 75 Ohm coaxial cable

When two Yagis are stacked, the main lobe beamwidth is cut in half in the direction of the stack. No change in beamwidth in the other plane

When two Yagis are stacked and phased together almost 3 dB gain is possible. The gain goes up by almost 3 dB each time the Array size is doubled. Arrays up to 32 Yagis are quite practical and possible

It is easy to create circular polarity with Right Hand (RHC) or Left Hand (LHC) circularity. It is also easy to use in a Polarity Diversity system

Excellent G/T is possible with Yagis and can be confirmed by computer

YAGI FREQUENCY RANGES

HF	8.0 to 8.2 MHz, 15 to 15.4 MHz, 25.5 to 26 MHz
VHF	48 to 50 MHz, 121 to 126 MHz, 135 to 140 MHz , 150 to 165 MHz
UHF	300 to 330 MHz, 400 to 430 MHz, 810 to 894 MHz
Microwave	1400 to 1500 MHz, 1.85 to 1.975 GHz, 2.4 to 2.485 GHz



Linear Yagi Antenna Listing

Linear yagis are typically designed for horizontal or vertical polarization. Our standard call out for antenna designs are as follows:

Example= **24-5** (**24**) starting or center frequency of antenna
(**-5**) number of elements

Gain = reference to a dipole (dBd) To change from (dBd) to (dBi) add 2.14 Example = 12 dBd = 14.14 dBi

Materials are standard **6061-T6** aluminum.

Available coatings are: **Alodine, Color Anodized, paints** (additional charge for coatings)

Linear Yagis 24-139 MHz

Model	Freq	Gain dBd	F/B	Length
24-5	24-25	7	21	468"
35-4	35-36	9	19	240"
36-4	36-38	7	12	144"
36-5	35-36	8	22	204"
37-4	36-38	7	19	240"
37-7	37-38	10	19	456"
39-7	39-40	10	22	432"
39-3	38-40	7	22	108"
40-5	39-41	9	22	156"
40-6	38-40	10	22	240"
40-7	38-41	10	22	372"
41-4	41-42	10	21	180"
41-7	41-42	10	29	372"
42-5	42-43	10	29	156"
43-5	43-44	9	17	240"
43-7	43-44	13	18	372"
44-3	42-44	5	22	72"
44-5	44-45	9	24	204"
44-7	44-45	11	21	360"
45-1	44-45	.10	360	120"
45-3	44-45	9	19	96"
45-5	44-45	8	25	204"
45-7	44-45	10	22	336"
46-7	45-46	10	22	396"
47-5	46-47	9	18	240"
47-7	46-47	10	16	360"
48-4	47-49	8	20	156"
49-5	49-50	9	20	276"
49-7	49-50	10	26	360"
50-7	49-50	10	23	348"
75-5	72-76	8	20	84"
89-5	89-90	12	33	144"
89-7	89-90	13	24	168"
90-3	88-92	5	25	48"
96-2	96-97	1.0	12	36"
100-5	99-100	11	13	96"
100-7	99-101	12	13	120"
107-6	106-108	10	22	144"
112-5	108-113	8	20	60"
120-6	118-122	9	13	96"
121-4	120-123	7	29	60"
122-4	116-125	9	18	60"
122-9	121-124	12	15	204"
127-3	126-128	7	23	36"
135-9	134-136	12	12	195"
138-6	137-139	10	17	100"

Linear Yagis 140-2800 MHz

Model	Freq	Gain dBd	F/B	Length
145-9	140-150	10	16	120"
143-7	141-144	11	21	117"
150-4	149-151	8	10	60"
157-7	155-159	10	27	106"
160-7	160-165	10	19	95"
162-10	160-163	13	24	213"
167-4	160-175	9	11	52"
167-11	160-175	13	21	204"
168-8	162-173	11	21	117"
173-5	171-175	9	16	60"
246-10	244-248	13	18	122"
263-7	260-266	11	21	64"
272-4	269-274	9	15	29"
278-13	268-288	12	17	128"
310-7	300-320	10	17	60"
332-7	329-335	10	21	47"
374-7	370-379	11	22	45"
403-6	395-411	9	23	44"
410-3	408-412	7	26	26"
410-10	402-418	12	22	74"
425-14	421-430	14	24	120"
435-18	410-459	12	23	133"
460-5	440-470	10	23	36"
460-4	450-470	7	16	23"
460-18	450-470	14	22	132"
473-7	450-485	10	23	37"
479-22	474-486	16	30	189"
500-14	475-580	12	20	63"
545-22	530-520	16	21	148"
580-8	550-610	10	23	30"
569-22	566-572	16	21	149"
647-26	644-650	16	19	142"
675-14	655-700	14	22	47"
698-20	692-698	16	27	130"
703-5	690-716	9	21	21"
725-14	695-750	11	17	43"
754-22	751-757	15	31	38"
840-14	800-875	11	16	42"
845-13	835-895	13	24	62"
882-17	869-905	14	30	67"
902-10	880-930	10	21	41"
902-18	890-940	14	25	64"
915-6	902-928	6	20	11"
915-10	900-930	12	22	45"
915-15	880-950	14	22	60"
975-6	950-1000	10	15	24"
1476-18	1441-1511	14	29	37"
1691-41	1675-1710	19	26	96"
2760-41	2700-2820	22	22	60"



Circular/Cross Dipole Antenna Listing

Circular / Cross Dipoles are typically designed for circular polarization or vertical and horizontal on the same boom. Our standard call out for antenna designs are as follows:

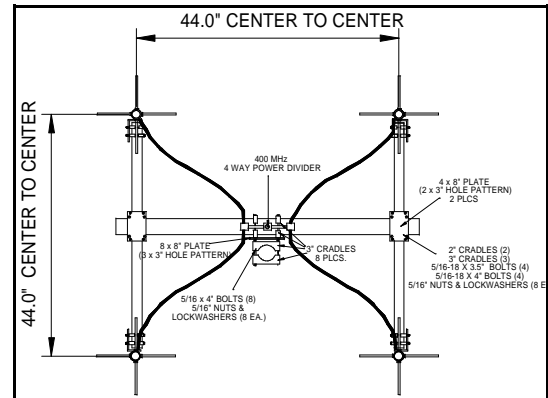
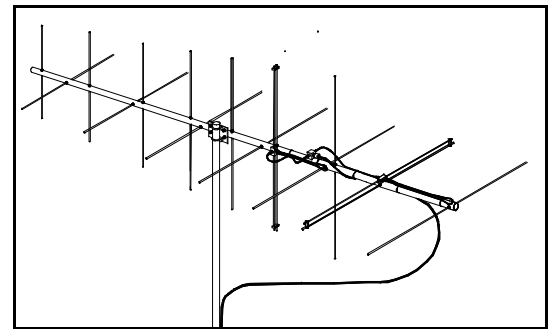
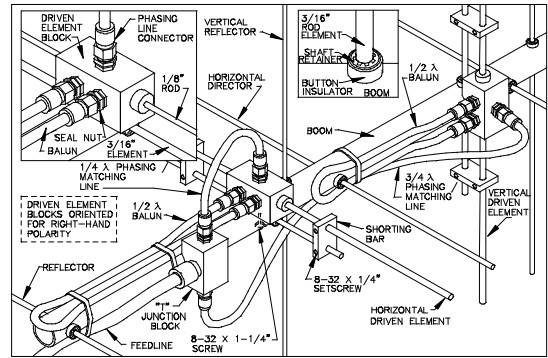
Example= **124CP18BB** = (124) starting or center frequency of antenna
 (CP) circular polarization
 (18) number of elements
 (BB) broad banded (covers large frequency range)
 (XP) cross dipole (separate vertical / horizontal elements on same boom)

Gain = reference to a dipole (dBd) To change from (dBd) to (dBi) add 2.14 Example = 12 dBd = 14.14 dBi
 Materials are standard **6061-T6** aluminum.

Available coatings are: **Alodine, Color Anodized, paints** (additional charge for coatings)

Circular / Cross Dipole - 121-460 MHz

Model	Freq	Gain dBd	F/B	Length
124CP18BB	121-130	10	22	222"
126CP16BB	121-130	11	11	199"
128CP20BB	121-136	11	10	227"
135CP14	135-136	10	20	129"
135CP18BB	134-136	12	18	241"
136CP14	134-136	10	20	128"
136CP22	135-137	12	17	237"
137CP14	137-138	11	19	141"
137CP16	136-138	11	18	167"
138XP26	137-138	13	13	399"
142CP14BB	136-149	8	14	
146XP22	144-150	10	20	216"
149CP14	149-150	10	19	117"
167CP22BB	163-175	11	19	217"
244CP22	235-257	12	22	131"
242/317XP10	240-244	8	13	48"
	315-319	8	13	
245/410-11	240-250	9	23	43"
	402-418	10	25	
248CP22	237-261	12	22	130"
249CP24	247-251	10	20	153"
250CP36	240-265	12	20	177"
258CP24	248-268	12	17	130"
260CP14	250-270	10	19	79"
280CP22	260-300	14	22	115"
260XP28	257-262	17	23	200"
295CP6	292-298	6	22	37"
295CP8	250-305	6	18	38"
295CP18	292-298	11	22	113"
303CP26	301-305	10	20	141"
310CP12BB	290-332	11	18	107"
350CP24	335-365	12	15	96"
400CP22	400-440	12	22	72"
400CP30	395-504	14	23	132"
405CP32	401-410	16	19	127"
420CP10	400-440	12	22	84"
420CP22	400-440	13	21	134"
401CP14	400-415	9	24	49"
402CP18	400-423	14	19	71"
425CP8	420-430	6	24	30"
425CP16	420-430	10	20	67"
429CP26	415-435	14	18	89"
430CP44	420-440	16	24	224"
435XP16	426-432	6	22	24"
450CP30	444-455	14	27	123"
455CP24	450-460	12	17	78"



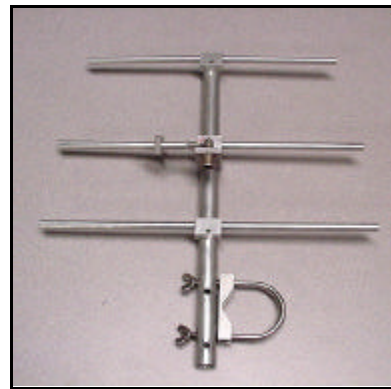
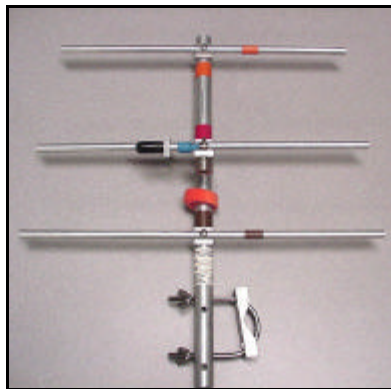


Special Quick Deploy Yagi Antenna listing

The QD1 and QD2 Series were specifically designed for Military and Covert operations. Many hours went into the engineering and design of these small but highly operationally antennas. This type of antenna style can be scaled and or utilized at many different frequencies not listed below. Multiple finishes are available such as: Olive drab paint, alodining, anodizing or powder coating.

The **QD1** Series is designed for quick deployment when communication is a must. Elements are attached to the boom with 8-32 stainless steel hardware and wing nuts for quick operation. The boom and elements are color coded for ease of assembly. The heart of the antenna is the "Gamma Match" feed, which allows for good VSWR and Gain. The special "Uni-cradle" is designed to accommodate masts sizes from 1" to 2 1/4". An attached velcro strap is included to keep all components together. Assembly time is less than 4 minutes.

The **QD2** Series is a top of the line "Bungee" Element design. Elements are released and the antenna is shaken, allowing for quicker deployment. When operation is complete, simply pull the elements outward and fold them over. The heart of the antenna is the "Gamma Match" feed, which allows for good VSWR and Gain. The special "Uni-cradle" is designed to accommodate masts sizes from 1" to 2 1/4". An attached velcro strap is included to keep all components together. Assembly time is less than 1 minute.



QD 1 SERIES - 358-930 MHZ

MODEL	FREQ	GAIN dBd	F/B	LENGTH
360-3QD1	358-362	6	24	16"
360-6QD1	359-362	10	21	38"
375-4QD1	350-400	6	15	15"
375-6QD1	350-400	8	21	24"
380-3QD1	378-382	7	21	14"
380-6QD1	377-383	10	20	38"
390-3QD1	388-392	7	20	14"
390-6QD1	380-400	8	21	39"
400-3QD1	398-402	6	21	10"
400-6QD1	397-403	10	20	41"
408-3QD1	406-410	6	27	11"
408-6QD1	403-413	10	19	35"
420-3QD1	417-422	7	21	10"
420-6QD1	417-422	10	21	41"
459-3QD1	456-461	6	21	11"
459-6QD1	456-461	10	20	34"
900-3QD1	900-928	6	22	11"
900-6QD1	900-930	12	16	23"

QD 2 SERIES - 149-930 MHZ

MODEL	FREQ	GAIN dBd	F/B	LENGTH
149-QD2	148-150	8	22	38"
360-3QD2	358-362	6	24	16"
400-3QD2	398-402	6	16	16"
408-3QD2	406-410	6	20	16"
420-3QD2	417-422	6	16	16"
425-4QD2	400-450	7	15	14"
425-6QD2	400-450	8	18	24"
459-3QD2	456-461	6	19	16"
920-3QD2	900-928	6	22	11"
920-6QD2	900-930	12	16	23"