



FM Broadcast Antenna System Power Analysis

KPBG

90.9 MHz Channel 215

Oroville, WA

2 State	SHY Antenna	kW Power	# Bays	Connect
AK	6020-1	5	1	1-5/8 in
AL	6020-2	10	2	1-5/8 in
AR	6020-3	14	3	1-5/8 in
AZ	6020-4	14	4	1-5/8 in
CA	6020-6	14	6	1-5/8 in
For E12) CO	6025-1	5	1	7/8 in.
2 CT	6025-1-Slant	5	1	7/8 in.
2 DC	6510-1	10	1	3-1/8 in
NaN DE	6510-10	40	10	3-1/8 in
NaN FL	6510-10-.5λ	40	10	3-1/8 in
NaN GA	6510-12	40	12	3-1/8 in
NaN HI	6510-12-.5λ	40	12	3-1/8 in
9 IA	6510-14	40	14	3-1/8 in
ID	6510-14.5λ	40	14	3-1/8 in
For E16) IL	6510-14.5λ	40	16	3-1/8 in
N IN	6510-16	40	16	3-1/8 in
N KA	6510-2	20	2	3-1/8 in
NaN KY	6510-2-.5λ	20	2	3-1/8 in
NaN LA	6510-3	30	3	3-1/8 in
NaN MA	6510-3-.5λ	30	3	3-1/8 in
NaN MD	6510-4	40	4	3-1/8 in
6-1/8 n. ME	6510-4-.5λ	40	4	3-1/8 in
MI	6510-5	40	5	3-1/8 in
For G11) MN	6510-5-.5λ	40	5	3-1/8 in
0.7 MO	6510-6	40	6	3-1/8 in
0.7 MS	6510-6-.5λ	40	6	3-1/8 in
NaN MT	6510-7	40	7	3-1/8 in
NaN NC	6510-8	40	8	3-1/8 in
NaN ND	6510-8-.5λ	40	8	3-1/8 in
NaN NE	6513-1	3.	1	1-5/8 in
9.76 NH	6513-2	6.	2	1-5/8 in
NJ	6513-2-.5λ	6.	2	1-5/8 in
NM	6513-3	9.	3	1-5/8 in
NV	6513-3-.5λ	9.	3	1-5/8 in
NY	6513-4	10.	4	1-5/8 in
OH	6513-4-.5λ	10.	4	1-5/8 in
OK	6513-5	12.	5	1-5/8 in
OR	6513-5-.5λ	12.	5	1-5/8 in
PA	6513-6	12.	6	1-5/8 in
RI	6513-6-.5λ	12.	6	1-5/8 in
SC	6513-7	12.	7	1-5/8 in
SD	6513-8	12.	8	1-5/8 in
TN	6513-8-.5λ	12.	8	1-5/8 in
TX	6602-1	1	1	N
UT	6602-2	1.5	2	N
VA	6602-3	1.5	3	N
VT	6602-4	1.5	4	N
WA	6602-5	1.5	5	N
WI	6602-6	1.5	6	N
WV	6602-7	1.5	7	N
WY	6602-8	1.5	8	N
	6771-1	8	1	7/8 in.
	6771-2	16	2	7/8 in.
	6771-4	32	4	7/8 in.
	6771-6	48	6	7/8 in.
	6810-1	20	1	3-1/8 in
	6810-10	40	10	3-1/8 in
	6810-10-.5λ	40	10	3-1/8 in
	6810-12	40	12	3-1/8 in
	6810-12-.5λ	40	12	3-1/8 in
	6810-14	40	14	3-1/8 in
	6810-14-.5λ	40	14	3-1/8 in
	6810-16	40	16	3-1/8 in
	6810-16-.5λ	40	16	3-1/8 in
	6810-2	20	2	3-1/8 in
	6810-2-.5λ	20	2	3-1/8 in
	6810-3	30	3	3-1/8 in

Antenna System

Antenna Type	Shively	6812-2-.5λ
ERP		-11.37 dBk 0.07 kW
Gain		-1.549 dBd 0.700 x
1.5 Bays		2
1.76 Bay Spacing		1.0
Antenna Input Power		-9.818 dBk 0.104 kW
Safety factor		NaN dBk -1.396 kW
13.274 Antenna Input Size		N Female
Transmission Line Losses		
Coax adaptor may be needed		
HAMSL for coax de-rating:		2,200 Ft.
For ambient temperature:	68 Degrees	Solar: 185.6 W/M^2
Vertical Coax Run		
Type:	Andrew LDF-4-50 1/2: Foam	
6-1/8 n. Length:		26.00 Ft.
Attenuation:		0.056 dB/100ft.
Total Tower Run Loss:		0.015 dB
		:Ak131)
Horizontal Coax Run		
Type:	Andrew LDF-4-50 1/2: Foam	
Length:		32.00 Ft.
Attenuation:		0.056 dB/100ft.
Total Ground Run Loss:		0.018 dB
Coax Power Capability:	181.888 kW	22.60 dBk
Coax Power Safety Factor	181.783 dBk	22.596 dBk
Total Coax Length:		58.00 Ft.
Connector losses:		0.010 dB
Coax System Efficiency:		99.03% %
Total Line Loss		0.043 dBk
Other Losses		
Circulator Loss		0.000 dB
Filter Loss		0.000 dB
Isocoupler		0.000 dB
Ant. In kW / Efficiency	0.105 kW	-9.775241: dB
Total Other:		0.010 dBk

TPO	
0.106 kW	-9.765 dBk

Created: 2-Oct-17

Coax VSWR de-rating: -7.51 kW 189.40 kW safety margin

RF Specialties nor the author accept responsibility for errors of any kind.

* De-rated coax for ambient temp, altitude AMSL & Max solar (W/M^2) for listed state