

Model 6842 FM Antenna

Elliptically polarized

Broadband

Up to 7.5 kW rating per bay

Features:

- Broadband
- Non-pressurized
- Easy to install
- Minimum maintenance
- Economical shipment by small-package carrier

Performance specifications:

Bandwidth: 87.5 - 108 MHz
 VSWR: 1.3 : 1 or better.
 93-103 MHz: 1.2 : 1 or better.
 Azimuth pattern circularity: Horizontal component on pole.
 Input connection: 1-bay: 7/8" female EIA
 2-bay: 1-5/8" female EIA
 3 - 8-bay: 3-1/8" female EIA
 Bay spacing: 98" (249 cm)



Electrical specifications:

No. of Bays	Gain		Power Rating	No. of Bays	Gain		Power Rating
	Power	dB			Power	dB	
1	0.46	-3.369	7.5	5	2.518	4.01	37.5
2	0.994	-0.027	15	6	3.024	4.806	45
3	1.512	1.797	22.5	8	4.044	6.068	60*
4	2.016	3.044	30				

* Higher-power arrays are available. Assumes 3-1/8" power divider for 2 bays and above. Contact factory for power divider requirements.

Notes:

1. Our gain figures are calculated by factoring the directivity to allow for losses in the radiating system. Due to this conservative approach, you are assured of radiating maximum ERP by using Shively's published gain figures.
 Gain is provided for one polarization and is equal in circularly polarized antennas for both horizontal and vertical components.
 Gain is computed for 98 MHz and will vary across the band.

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Size and weight:

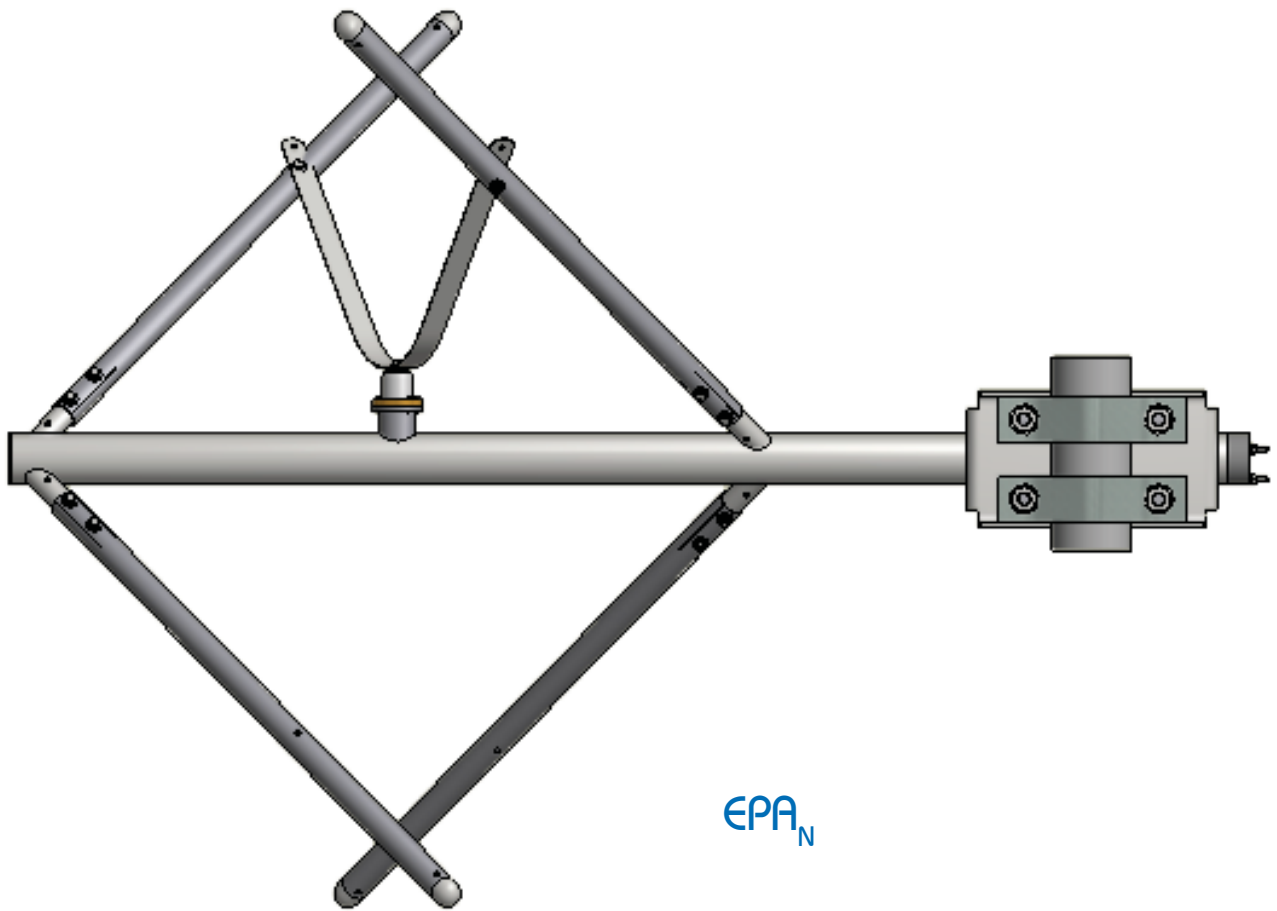
No. of Bays	Vertical Tower Space			Weight			
	Antenna Radiation Aperture	Pipe Length Required	Total Tower Space Recommended	Without ice	With 1/2" (1.2 cm) radial ice	With 1" (2.54 cm) radial ice	With 2" (5.1 cm) radial ice
	ft (m)	ft (m)	ft (m)	lb (kg)	lb (kg)	lb (kg)	lb (kg)
1	3.5 (1.07)	10.0 (3.05)	20.0 (6.10)	51 (23.2)	76 (34.5)	112 (50.9)	215 (97.7)
2	11.6 (3.53)	18.2 (5.53)	28.2 (8.60)	157 (71.4)	231 (105)	338 (154)	652 (296)
3	19.8 (6.03)	26.3 (8.0)	36.3 (11.0)	218 (99.1)	346 (157)	536 (244)	1099 (500)
4	27.4 (8.50)	34.5 (10.5)	44.5 (13.6)	274 (125)	444 (202)	695 (316)	1141 (519)
5	36.1 (11.0)	42.7 (13.0)	52.7 (16.1)	342 (155)	588 (267)	956 (435)	2059 (936)
6	44.3 (13.5)	50.8 (15.5)	60.8 (18.5)	400 (182)	694 (315)	1133 (515)	2450 (1114)
8	60.6 (18.5)	67.2 (20.5)	77.2 (23.5)	539 (245)	993 (451)	1680 (764)	3750 (1705)

Windload (TIA-222-G):

No. of Bays	Without ice		With 1/2" (1.2 cm) radial ice		With 1" (2.54 cm) radial ice		With 2" (5.1 cm) radial ice	
	EPA_N ft ² (m ²)	EPA_T ft ² (m ²)	EPA_N ft ² (m ²)	EPA_T ft ² (m ²)	EPA_N ft ² (m ²)	EPA_T ft ² (m ²)	EPA_N ft ² (m ²)	EPA_T ft ² (m ²)
1	2.8 (0.26)	1.1 (0.10)	3.6 (0.33)	1.6 (0.15)	4.4 (0.41)	2.2 (0.20)	6.2 (0.58)	3.6 (0.33)
2	8.2 (0.74)	4.8 (0.44)	11.8 (1.09)	7.8 (0.72)	15.4 (1.43)	10.9 (1.01)	21.7 (2.01)	16.5 (1.53)
3	14.4 (1.33)	9.3 (0.86)	21.7 (2.01)	15.7 (1.45)	29.0 (2.68)	22.2 (2.06)	43.9 (3.98)	35.9 (3.32)
4	19.0 (1.76)	12.3 (1.14)	28.8 (2.67)	20.8 (1.93)	38.5 (3.56)	29.5 (2.73)	58.2 (5.39)	47.6 (4.41)
5	27.6 (2.56)	19.2 (1.78)	43.2 (4.00)	33.2 (3.07)	58.7 (5.43)	47.5 (4.40)	90.3 (8.36)	77.0 (7.13)
6	32.9 (3.05)	22.9 (2.12)	51.5 (4.77)	39.5 (3.66)	70.1 (6.49)	56.6 (5.24)	108 (9.98)	91.9 (8.51)
8	51.1 (4.73)	37.8 (3.50)	82.1 (7.60)	66.2 (6.13)	113 (10.5)	95.2 (8.81)	176 (16.3)	155 (14.3)

Notes:

- Shively Labs recommends that you attach this antenna to an outriggered pole or pipe, 3" – 5-1/4" in diameter, mounted 15" from the tower face or leg. The pipe length recommended is defined in the table above.
- Antenna radiation aperture is the distance from the center of the top bay to the center of the bottom bay. Five feet (1.5 meters) of pipe is required above the top of the top bay and below the bottom of the bottom bay. Total tower space recommended allows ten ft (3 m) of clear tower space above the center line of the top bay and below the center line of the bottom bay, to protect from pattern interference by other antennas.
- Windload and weight tabulations include the bay, interbay feedline, input connection, and power dividers.
- Antenna areas and weights are calculated in accordance with TIA-222-G. See figures, next page.
- Ask for technical assistance at Shively if you are planning to mount antennas on AM towers or install them at altitudes over 3,000 ft (915 m) above mean sea level.



NOTES:

6. Orientations illustrate wind directions to calculate EPA_N & EPA_T in accordance with TIA-222-G.
7. Actual orientation of load with respect to tower will depend upon mounting configuration.

