

AXIOM® SHPA Series

Master FM Antennas

ERI offers 4, 8, 12, and 16-bay versions of its AXIOM® master FM antenna. The AXIOM® is a specially designed antenna system which provides high input power handling capability and can provide service as an auxiliary master FM antenna for systems that are limited to a bandwidth requirement of up to 18 MHz of the FM Band (88 MHz to 108 MHz). The antenna can be designed with a single RF input or can be configured as separate upper and lower antennas for higher power handling capability and redundancy.

Features

- Low VSWR
- Internal feed
- Fully pressurized
- Series fed radiating elements
- Circular polarization
- Welded feed connections
- Superior VSWR band width
- High input power capacity
- Custom modifications are available
- Corrosion resistant construction
- Modular construction facilitates easy installation and repair
- Minimal weather related VSWR problems
- Beam tilt and/or null fill available
- 60" spacing between elements
- Rugged brass construction
- Stainless steel support brackets and hardware
- Radomes or deicing heaters are available (not normally required for radial ice less than 1/2-inch)
- Custom designed antenna supports; poles or Lambda® tower sections are also available from ERI



ERI antennas are unchallenged in quality and dependability. ERI is the only manufacturer to use large diameter outer conductors and a completely enclosed, pressurized, internal series feed system. The result is a simple and reliable method of coupling power to the elements. Unlike competing designs, ERI series fed antennas do not require a troublesome secondary current loop for element excitation with all the resulting disadvantages. All ERI antennas include brackets for mounting on leg, pole, or face mounting (up to 42-inch uniform cross section tower), brackets for other mounting configurations are optionally available. The ROTOTILLER® series FM antenna's unique design consists of two series fed, bent dipole elements which form a space phased, circularly polarized radiator. The antenna's configuration and the large diameter of the radiating elements contribute to the excellent bandwidth of the antenna system, and also inhibits corona discharge.

The horizontal plane azimuth pattern of the SHP series antenna is omnidirectional within ± 2 dB when the antenna is mounted on a pole or on a Lambda® optimized FM tower section atop a tower. Side mounting the antenna on a typical tower structure will affect the azimuth pattern. ERI offers a pattern measurement service to assist in determining the effect of the mounting structure on the antenna's pattern. Using ERI's pattern optimization service the pattern's circularity may be improved through the addition of parasitically excited elements.

Utilize the ERI advantage, combine an ERI antenna with an ERI Lambda® Mounting Structure, Pattern Measurement and Installation. Assure yourself of the best antenna/tower interaction. ERI's Pattern Measurement service will provide the crucial answers concerning the relationship between the antenna mounting orientation and antenna pattern. Lambda Sections are designed to achieve optimum antenna performance while reducing weight and wind loads. Only ERI can offer you an antenna/tower/installation package that will achieve your highest expectations in a demanding FM radio market.

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Electrical Specifications

Frequency Range: Specified 18 MHz of the FM Band (88 to 108 MHz)
 RF Input Power Rating: See chart below for standard configuration input power ratings
 Available with dual inputs for higher power handling capability.

VSWR: 1.25:1, maximum with field tuning
 Element Type: SHP Series ROTOTILLER®
 Azimuth Pattern Circularity: +/-2 dB, in free space
 Polarization: Circular (Clockwise)
 Axial Ratio: Less than 3 dB in free space

Model	RF Input Flange	Power Handling
SHPA-4AC	Single, 4-1/16-inch EIA, Female	64 kW
SHPA-8AC	Single, 6-1/8-inch EIA, Female	120 kW
SHPA-12AC	Single, 6-1/8-inch EIA, Female	120 kW
SHPA-16AC	Single, 6-1/8-inch EIA, Female	120 kW

Gain	4-Bay		8-Bay		12-Bay		16-Bay	
	Numeric	dB	Numeric	dB	Numeric	dB	Numeric	dB
88.1 MHz	1.179	0.715	2.247	3.516	3.318	5.209	4.390	6.425
98.1 MHz	1.308	1.166	2.522	4.017	3.736	5.724	4.951	6.947
107.9 MHz	1.394	1.443	2.703	4.318	4.012	6.034	5.322	7.261

Mechanical Specifications

Model	Antenna Length		Aperture recommended	
	Feet	Meters	Feet	Meters
SHPA-4AC	19.3	5.88	29.3	8.93
SHPA-8AC	39.3	11.98	49.3	15.03
SHPA-12AC	59.8	18.23	69.8	21.28
SHPA-16AC	79.3	24.17	89.3	27.22

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Mechanical Specifications

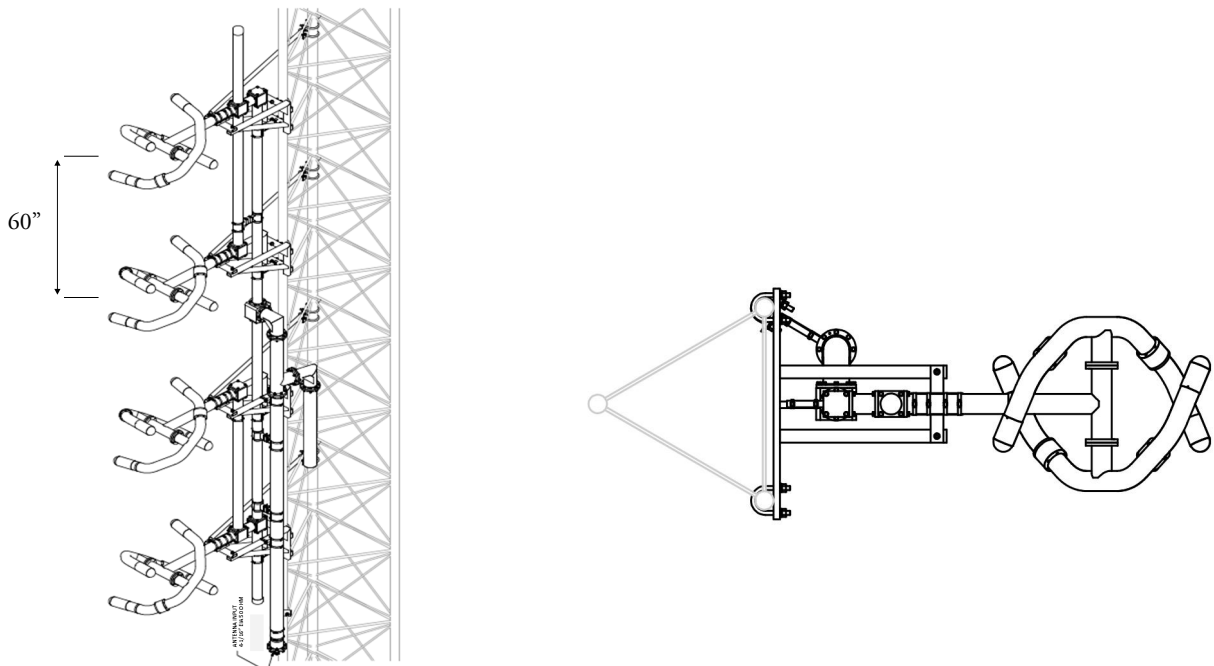
Model	Antenna Only				Antenna with Radomes			
	Weight		CaAc		Weight		CaAc	
	lbm	kg	sq ft	sq mtr	lbm	kg	sq ft	sq mtr
SHPA-4AC	699	317	25.7	2.39	899	407.7	30.2	2.81
SHPA-8AC	1214	550.5	70.4	6.55	1614	731.9	92.4	8.6
SHPA-12AC	1733	785.8	105.1	9.78	2333	1058	144.5	13.44
SHPA-16AC	2252	1021.2	139.8	13.01	3052	1384	196.5	18.28

Model	Antenna Only with 1/2-inch radial ice				Antenna with Radomes with 1/2-inch radial ice			
	Weight		CaAc		Weight		CaAc	
	lbm	kg	sq ft	sq mtr	lbm	kg	sq ft	sq mtr
SHPA-4AC	1076	488	34.6	3.21	1576	714.8	51.9	4.82
SHPA-8AC	2007	910.2	95.1	8.83	3007	1363.8	130.5	12.11
SHPA-12AC	2913	1321	142.3	13.21	4413	2001.5	195.3	18.13
SHPA-16AC	3819	1732	189.4	17.58	5819	2,639.2	260.1	24.15

Notes:

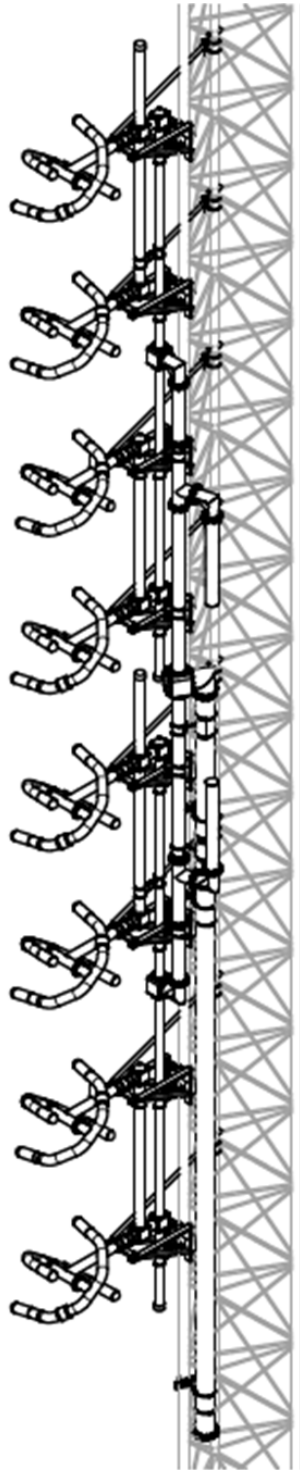
- 1) All loads calculated in accordance with the ANSI/TIA-222 standard.
- 2) Listed antenna weights and effective wind areas are based upon 'typical' configurations. Final design loads will vary for specific projects and should be verified by an ERI representative.
- 3) Loading includes antenna radiating elements, interbay feed, standard leg mounting brackets, and anti-rotation brackets. Special mounting bracket loads for face-mounted and/or pole standoff mounted systems are NOT included.
- 4) No wind shielding taken into account for supporting structure.

Model SHPA-4AC 4 Bay AXIOM Master FM Antenna

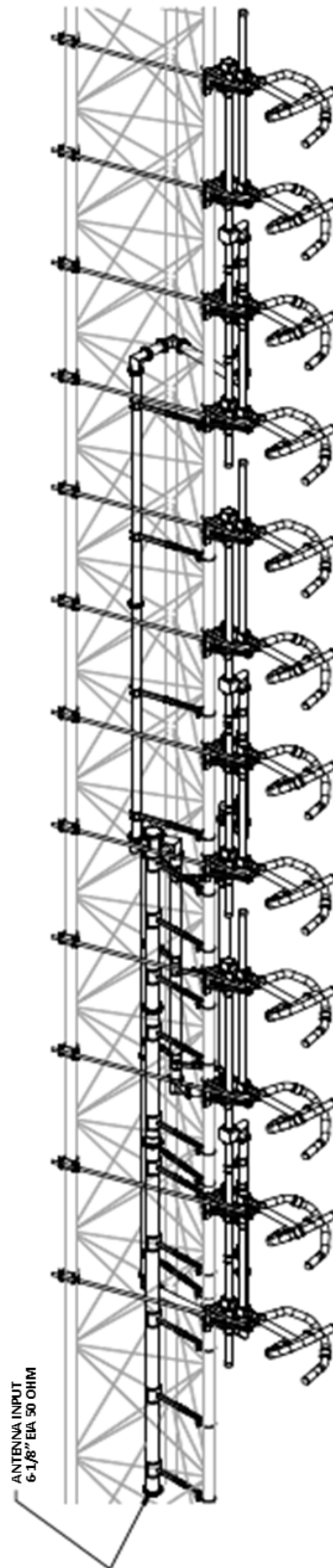


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8 Bay AXIOM®



12 Bay AXIOM®



16 Bay AXIOM®

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