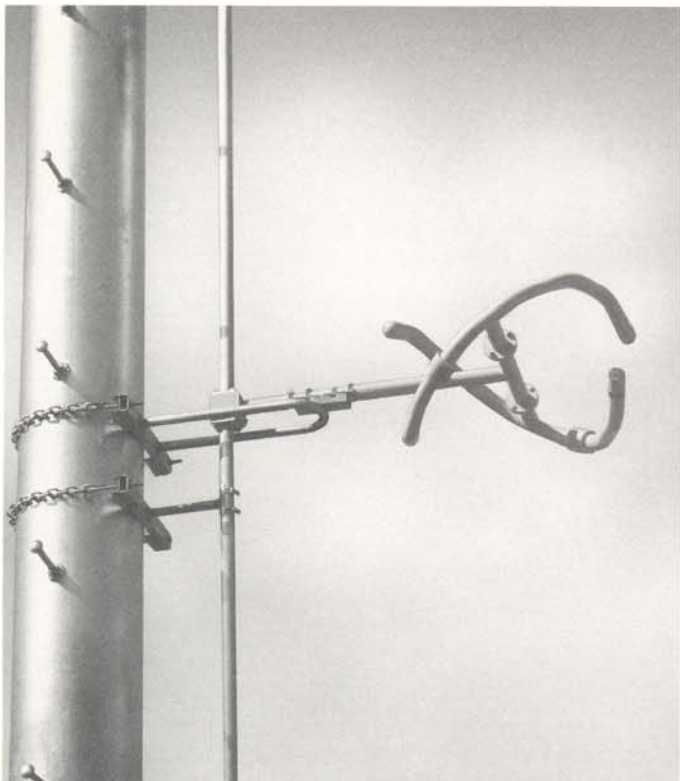


HARRIS FMXL LOW POWER CIRCULARLY POLARIZED FM ANTENNA



The FMXL antenna features rugged construction necessary to withstand the most severe weather.

The heavy gauge tubular brass radiating element has an outside diameter of 1 $\frac{3}{4}$ ". The silver soldered feed point is completely internal with a pressurized environment up to and including the feed point. This feature minimizes weather-related problems.

End-fed FMXL models have a power input capability of 9 kW, limited by the average tower capability of the 1 $\frac{5}{8}$ -inch rigid coaxial line which has been conservatively derated from 15 kW to 9 kW. Center-fed models have a power input capability of 12 kW with a 1 $\frac{5}{8}$ -inch input feed.

Lightning protection is provided with a D.C. short circuit to the inner feed system. This Harris feature minimizes risk of lightning damage to the antenna, transmission line and transmitter hardware.

As a result of design excellence in the Harris FMXL antenna, deicers and radomes typically are not required where radial ice does not exceed $\frac{1}{2}$ -inch. Under icing conditions of up to $\frac{1}{2}$ -inch, typical VSWR is 1.7:1 or less, assuming the antenna exhibits normal VSWR of 1.1:1 or less. Harris recommends optional FMXL radomes or electrical element deicers for antennas in environments subject to heavier icing.

The FMXL antenna typically exhibits a low standing wave ratio of 1.07:1 or less, ± 200 kHz per given channel with field trimming. VSWR at antenna input without field trimming is 1.3:1 for pole mounting atop a tower, and 1.5:1 or less when side mounted on a tower without field trimming.

Radiation Pattern: Harris offers complete antenna patterning facilities for measuring the antenna radiation patterns. An electrically equivalent full size tower section approximately 20-feet long is set up on the antenna range. The exact size and location of the ladder, coaxial transmission lines, conduits and cables are duplicated on this tower section, and an identical antenna element is mounted on the tower for such measurements.

Pattern optimization for the vertical polarization component or both the vertical and horizontal polarization components is available to improve the pattern circularity.

Corrosion-resistant stainless steel mounting brackets and hardware are supplied for tower face mounts up to 48-inches or for steel poles. Optional brackets for mounting on tapered towers also are available.

FMXL options available to meet your special requirements include:

- FMXL radomes
- FMXL electrical deicers (less control sensor)
- Mounting brackets for special tower configurations
- Custom pattern measurement and optimization

Features and Benefits:

- Typical horizontal circularity of ± 2 dB when pole mounted or face mounted on a 24-inch tower
- Excellent bandwidth to minimize degradation to stereo and SCA channels
- DC short to inner feed system for lightning protection
- Rugged brass element construction with stainless steel support brackets to impede corrosion and ensure long, trouble-free life
- Custom pattern optimization available to meet special requirements

Harris' FMXL Low Power Circularly Polarized FM Antenna will give you excellent circularity and rugged construction for years of superb signal coverage.

The FMXL antenna exhibits horizontal polarized circularity of ± 2 dB when mounted on a 14-inch O.D. steel pole or face mounted on a 24-inch tower.



HARRIS FMXL SPECIFICATIONS

Harris Part No.	Model Configuration	Power Gain	DB Gain	Type Feed	50 OHM Input	Input Rating	Lbs. Weight	Lbs. Wind Load	Calculated Weight with Radome and Brackets	Calculated Wind Load with Radome and Brackets
710-0513-000	FMXL-1E	0.4611	-3.3632	END	1 ⁵ / ₈ "	9 kW	57	102	88	228
710-0514-000	FMXL-2E	0.9971	-0.0128	END	1 ⁵ / ₈ "	9 kW	114	212	171	461
710-0515-000	FMXL-3E	1.5588	1.9278	END	1 ⁵ / ₈ "	9 kW	170	323	253	693
710-0516-000	FMXL-4E	2.1332	3.2903	END	1 ⁵ / ₈ "	9 kW	227	433	336	926
710-0517-000	FMXL-5E	2.7154	4.3384	END	1 ⁵ / ₈ "	9 kW	283	543	418	1,158
710-0518-000	FMXL-6E	3.3028	5.1888	END	1 ⁵ / ₈ "	9 kW	340	654	501	1,391
CENTER FED										
710-0519-000	FMXL-2C	0.9971	-0.0128	CENTER	3 ¹ / ₈ "	12 kW	152	302	204	538
710-0520-000	FMXL-3C	1.9278	1.5588	OFF CENTER	3 ¹ / ₈ "	12 kW	207	412	287	770
710-0521-000	FMXL-4C	2.1332	3.2903	CENTER	3 ¹ / ₈ "	12 kW	260	509	371	1,002
710-0522-000	FMXL-5C	2.7154	4.3384	OFF CENTER	3 ¹ / ₈ "	12 kW	317	620	452	1,235
710-0523-000	FMXL-6C	3.3028	5.1888	CENTER	3 ¹ / ₈ "	12 kW	373	730	534	1,467
710-0524-000	FMXL-7C	3.8935	5.9034	OFF CENTER	3 ¹ / ₈ "	12 kW	430	840	617	1,700
710-0525-000	FMXL-8C	4.4872	6.5197	CENTER	3 ¹ / ₈ "	12 kW	486	950	699	1,932
710-0526-000	FMXL-9C	5.0826	7.0608	OFF CENTER	3 ¹ / ₈ "	12 kW	543	1,060	782	2,164
710-0527-000	FMXL-10C	5.6800	7.5435	CENTER	3 ¹ / ₈ "	12 kW	599	1,171	864	2,397
710-0528-000	FMXL-11C	6.2783	7.9785	OFF CENTER	3 ¹ / ₈ "	12 kW	656	1,281	947	2,630
710-0529-000	FMXL-12C	6.8781	8.3847	CENTER	3 ¹ / ₈ "	12 kW	713	1,391	1,029	2,862

NOTES: 1. Horizontal and vertical power gain and dB gain are the same. 2. Power input capability up to 2,000 ft. above mean sea level. Derating required above 2,000 ft. 3. Wind load based on 112 mph wind velocity (50/33 psf) and the wind blowing normal to the side of the antenna. Weight and wind load calculations include brackets, interbay line and the transformer section. Calculations based on the frequency of 95 MHz. 4. Heaters add 4 lbs. to each half loop for a single bay. Heater box, hardware, interbay connecting A.C. cable, and copper conduit add a total of 7 lbs. to each bay. The total effect of adding heaters is 15 lbs. per bay level.

HARRIS MAINTAINS A CONTINUOUS PROGRAM OF PRODUCT IMPROVEMENT, AND THEREFORE RESERVES THE RIGHT TO CHANGE SPECIFICATIONS WITHOUT NOTICE.