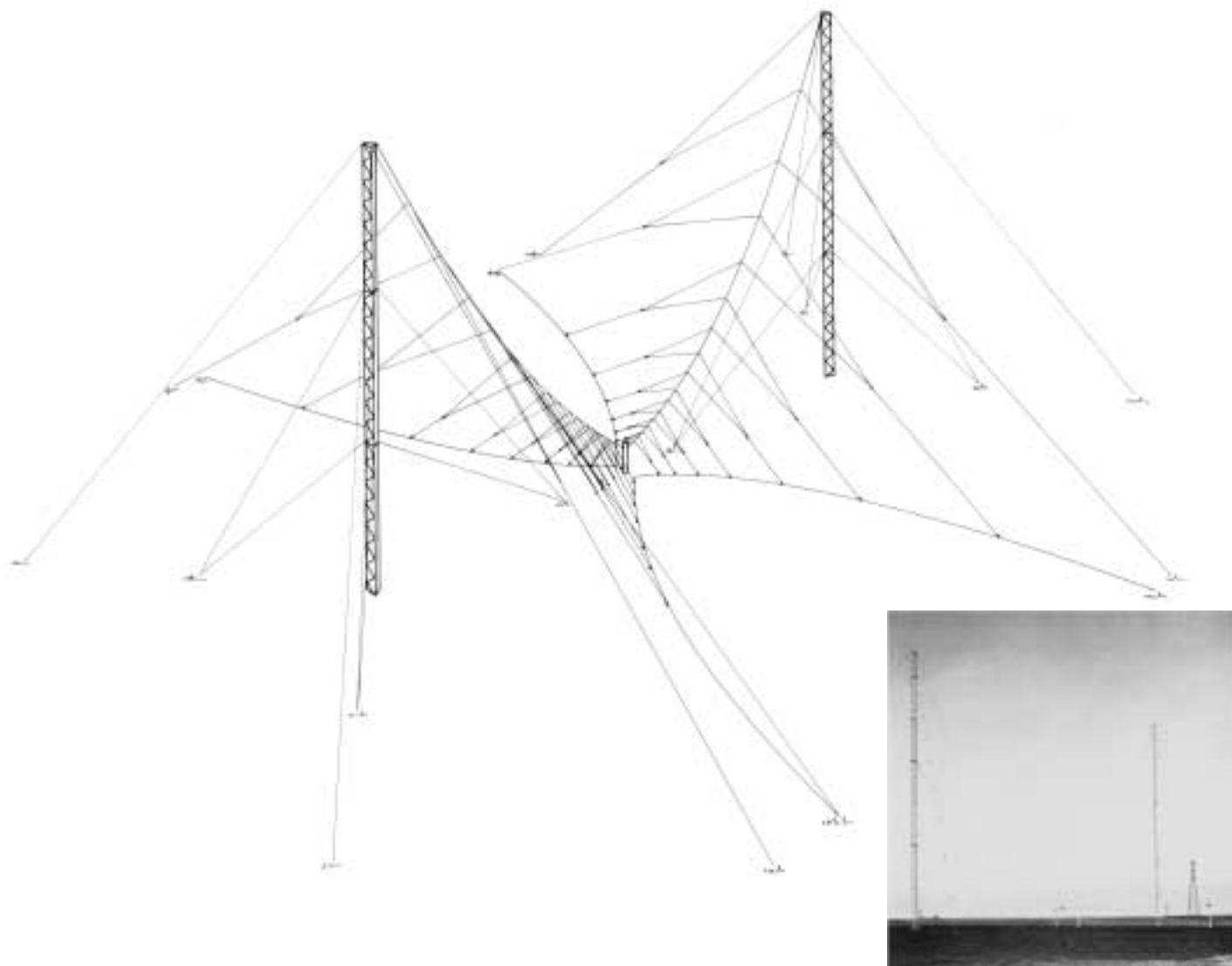


Short Range Broadcast Antenna



The quality of short range shortwave broadcasting can be greatly enhanced with a properly chosen antenna. Ideally, the antenna should handle high power to insure high signal-to-noise ratio at the receiver, have a wide frequency bandwidth for selection of the appropriate frequency, allow diplexing of two transmitters on one antenna, and produce radiation at high elevation angles.

The TCI Model 615 antenna exhibits all the features of this ideal short range broadcast antenna. Power handling capability is 100 kW AM carrier power. The frequency bandwidth is either 2.3–18 MHz or 3.2–18 MHz and the radiation pattern is essentially omnidirectional with the majority of the energy directed overhead. Broadcast coverage is in the approximate range 0 to 1500 kilometers from the transmitter station (see signal strength data).

The Model 615 is truly a wideband antenna and not merely tuned to the specific broadcast bands. It may be utilized at any frequency within its operating range with high efficiency and low VSWR.

- **Short Range—High Take Off Angle**
- **2.3–18 MHz**
- **100 kW carrier**
- **Rugged construction**
- **Factory preassembled**
- **Diplex two transmitters**

As with all TCI antennas, the 615 shares the same high quality, exhaustively tested components and material. Feedlines and catenaries are of Alumoweld, a wire composed of a high strength steel core and a highly conductive corrosion resistant welded coating of aluminum. All feedline and radiator tip insulators are made of high strength glazed alumina, a material with an extremely low loss tangent (.001) which is virtually impervious to the effects of ultraviolet radiation, dirt and salt spray.

No fiberglass material is used anywhere in the antenna. Complete fabrication and preassembly are accomplished in the factory. No measuring, cutting, swaging, welding, or other manufacture is required in the field. Installation consists of only the tower erection and hoisting the preassembled curtains. The few connections required are accomplished with nuts and bolts.

Specifications

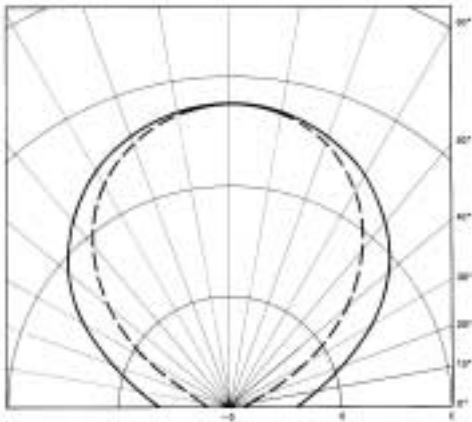
Polarization	Horizontal	
Frequency	615-1 2.3–18 MHz 615-2 3.2–18 MHz	
VSWR	2.0:1 maximum 1.8:1 or lower over most of the band	
Input Impedance	300 ohms balanced, nominal	
Power		
615-1-100 612-2-100	100 kW AM carrier (150 kW average/400 kW peak)	
615-1-50 615-2-50	50 kW AM carrier (75 kW average/200 kW peak)	
Diplexing	The 615-1-100 or 615-2-100 can be used with two 25 kW AM carrier transmitters operating at two fixed adjacent broadcast bands	
Gain	9 dBi	
Size	615-1	615-2
Height	132 ft (40.2 m)	96 ft (29.3 m)
Length	330 ft (100.6 m)	330 ft (100.6 m)
Width	318 ft (97 m)	234 ft (71.3 m)
Environ. Performance	Designed in accordance with EIA Specification RS-222C for loading of 160 km/h (100 mi/h) wind, no ice	

Signal Strength

Range (km)	50 kW Transmitter		100 kW Transmitter	
	Dec SSN 10	June SSN 110	Dec SSN 10	June SSN 110
100	66 dBu	65 dBu	69 dBu	68 dBu
500	62 dBu	61 dBu	65 dBu	64 dBu
1000	53 dBu	53 dBu	56 dBu	56 dBu
1500	48 dBu	48 dBu	51 dBu	51 dBu

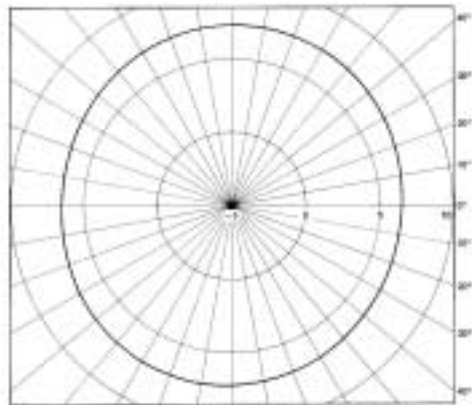
ELEVATION PATTERN

(Typical elevation patterns) gain in dBi



AZIMUTH PATTERN

(Typical azimuth patterns at 60° elevation) gain in dBi



———— E PLANE
- - - - H PLANE

Signal strength in dB above a microvolt per meter (dBu) versus range in kilometers for winter and summer months (Dec. and Jun.) and sunspot numbers (SSN) 10 and 110. Data generated using United States Institute for Telecommunications Sciences (ITS) Computer Program HFMUFES 3.