



613 Broadband Dipole Antenna

The Model 613 is a truly broadband dipole antenna with excellent performance over short- and medium-range circuits. The height and configuration of the antenna were chosen to provide high take-off angle radiation at the low frequencies optimum for short-range communication and low take-off angle radiation at the higher frequencies necessary for longer-range communications. At the take-off angles used in short- and medium-range communications, the azimuth pattern is essentially omnidirectional. This provides great flexibility and makes the 613 applicable to most communications requirements.

Maximize coverage over short to medium ranges.

The 613 achieves broadbanding without the use of resistors or tuning units. It delivers full antenna efficiency—radiating valuable power rather than losing it in tuning devices.

The antenna's vertical towers are a very important consideration for both installation and maintenance. Towers can be safely guyed prior to curtain installation. Once erected, the curtain can be lowered at any time, independent of the tower guying. Compared with long skewed towers, short vertical towers are much quicker to install, safer to climb, and easier to maintain.

The 613 uses the same high-quality, exhaustively tested components and materials featured in all TCI antennas. All radiators, feedlines, and catenaries are Alumoweld, a wire composed of a high-strength steel core and a highly conductive, corrosion-resistant welded aluminum coating.

Fixed-station antennas traditionally have used catenary and drop rod assemblies of fiberglass for its excellent dielectric and tensile strength properties. Field experience, however, has shown that minute, difficult-to-detect flaws in the material, RF burning, and small nicks incurred during installation can result in catastrophic structural failure and deterioration when stored

for long periods at high temperature and high humidity. TCI antennas eliminate the risks stemming from the poor structural qualities of fiberglass by using Alumoweld catenaries, segmented by fail-safe insulators.

KEY FEATURES

- › Reliable, short- and medium-range communications
- › Small land area
- › 2–30 MHz – No tuner required
- › High efficiency
- › Easier and safer to install and maintain

Model 613 Specifications

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Polarization	Horizontal
Impedance	50 ohms nominal
VSWR	2.0:1 or less over most of frequency band 2.5:1 maximum
Environmental Performance	Designed in accordance with EIA Specification RS-222C for loading of 160 km/h (100 mi/h) wind. Optional: 225 km/h (140 mi/h) wind

Size

Model Number	Frequency Range	Height		Length*		Width*	
		ft.	m	ft.	m	ft.	m
613-1-N	2-30 MHz	85	25.9	249.3	76.0	150	45.7
613-2-N	2.3-30 MHz	71	21.6	216.3	65.9	125	38.1
613-3-N	3.4-30 MHz	44	13.4	146.6	44.7	88.3	26.9
613-3A-N	6-30 MHz	25	7.6	87.8	26.8	50	15.2
613-4-N	4.3-30 MHz	35	10.7	116	35.4	69.8	21.3

*Measured between extreme guy points

Power

Model Number	Average	PEP	Connector
613-N-02	Receive	Receive	Type N Female
613-N-06	1 kW	2 kW	Type N Female
613-N-28	5 kW	10 kW	7/8" EIA Female
613-N-03	10 kW	20 kW	1-5/8" EIA Female

AZIMUTH AND ELEVATION PATTERNS for 613-1 (Azimuth Patterns at elevation angle of beam maximum. Gain in dBi. Fo is lowest operating frequency.)

