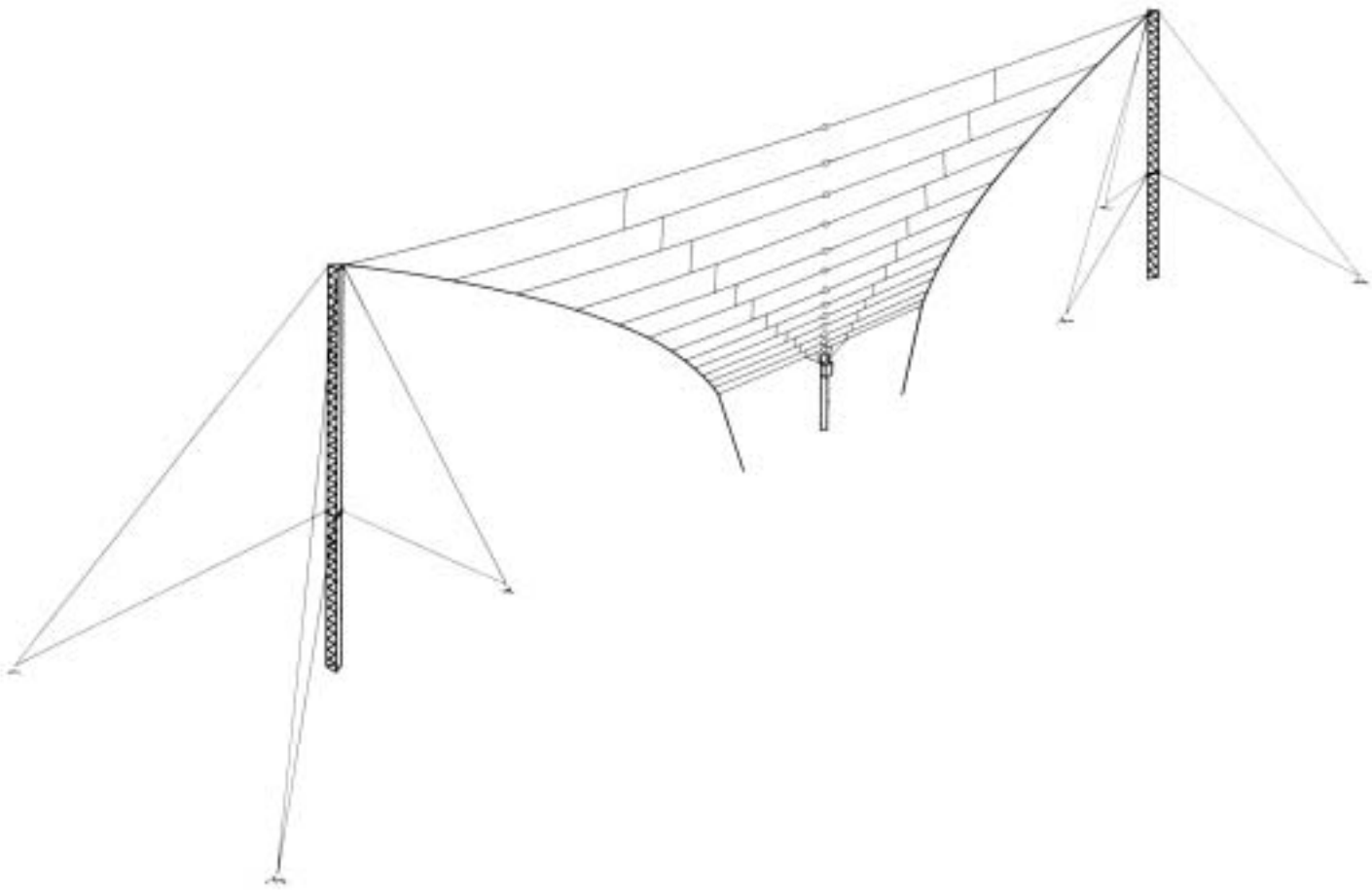
TCI
A Dielectric Company

MODEL

518

Clamped-Mode Short Range Log-Periodic Antenna

U.S. Patent No. 3,257,661



The Model 518 employs the patented TCI Clamped-Mode Concept, which provides an active aperture a full wavelength in width, as opposed to the half-wavelength-wide aperture of conventional log-periodic antennas. A detailed explanation of the Clamped-Mode Principle is available from TCI.

The Model 518 is a bidirectional, horizontally polarized Clamped-Mode log-periodic antenna with all elements and the support structure in a common vertical plane. The additional E-plane directivity of the Clamped-Mode structure provides approximately 2 dB gain over that of a conventional dipole log-periodic antenna of similar configuration. The array is so designed to emphasize very high take-off angles at the lower frequencies, and lower take-off angles at the higher frequencies, thus tending to optimize communications reliability for area coverage applications.

The Model 518 is entirely pre-manufactured from extremely rugged aluminum TCI fittings, aluminum or galvanized steel towers, high purity alumina insulators, and is fed from extremely rugged TCI balun transformers.

- **Compact, highly directive, short-range antenna**
- **Approximately 2 dB more gain than conventional dipole log-periodic antennas**
- **Quickly erected**

Specifications

Polarization ..... Horizontal

Pattern ..... Bidirectional

Azimuthal Beamwidth ..... 53° nominal

Take-off Angle ..... 90° at f_o
40° at 15 MHz
26° at 25 MHz

Gain ..... 9 dBi at 4 MHz
9 dBi at 15 MHz
9.5 dBi at 25 MHz

VSWR ..... 2.51 maximum

Environmental Performance ..... Designed in accordance with EIA Specification RS-222C for loading of 225 km/h (140 mi/h) wind, no ice, 145 km/h (90 mi/h) wind, 12 mm (1/2") radial ice

NOTE: Front support poles, normally class 2, 3, or 4 Douglas Fir, are required but not supplied by TCI. Check with TCI for specific requirements.

Size and Frequency Coverage

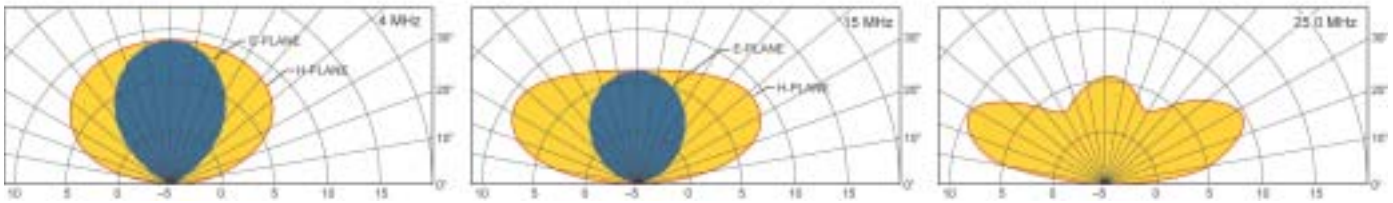
Model Number	Frequency Range	Height ft.	Height mtr.	Length* ft.	Length* mtr.	Width* ft.	Width* mtr.
518-1-N	2.75–30 MHz	91	28	368	112	139	42
518-5-N	3.3–30 MHz	74	23	312	95	125	39
518-2-N	4–30 MHz	65	20	260	80	104	32

* Measured from extreme guy points.

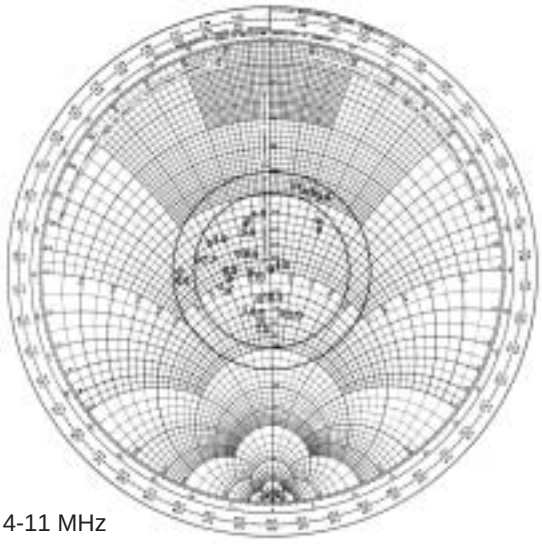
Power & Impedance Data

Model Number	Input Impedance	Power Handling Handling	Connector
518-N-02	50 Ω coaxial	Receiving	Type N Female
518-N-03	50 Ω coaxial	10 kW Avg. 10 kW PEP	1-5/8" EIA Female

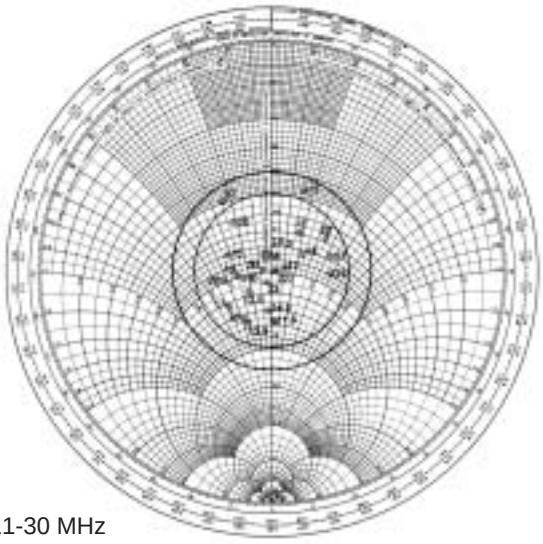
Model 518 Patterns gain in dBi



Model 518 Impedance Data



4-11 MHz



11-30 MHz

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