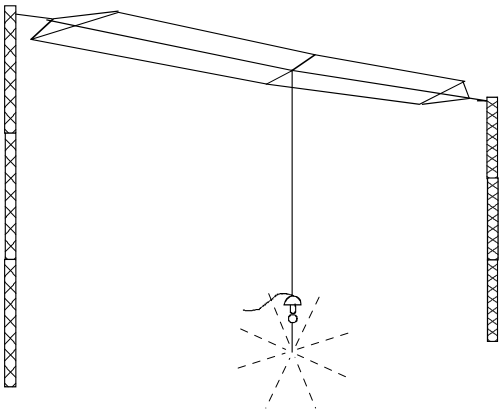
MOONRAKER

Type T Top

Professional tower supported wire MF NDB antenna system



Designed as a higher efficiency alternative to vertical radiators, the T Top is a wire capacitive top antenna system for NDB and Differential GPS transmissions in the MF Band.

The antenna system requires support at either end from two towers or masts free standing or guyed (option). The radiating section is the centre wire vertical base fed via high voltage insulators and corona shield. Standard power rating is 1 kW CW with 100% modulation. Higher power is available to order. Halyards and winching equipment are available for antenna erection as an option.

As antenna height is directly related to efficiency, the antenna supporting tower should be as high as possible. Apart from the antenna itself, system efficiency is greatly dependent upon earth conditions and the installed earth system. The Moonraker supplied earth system is based on 60 radials spaced at 6°, length of radials to be determined, based on site conditions, with earth stakes at each end. The radials are normally bare copper buried approximately 150mm (5.9 in) terminated on copper earth stakes.

T Top systems are available to suit varying conditions and support structures and are designed for use with commonly available couplers. Actual overall performance depends mainly upon the antenna coupling unit Q and earth losses. The performance specifications given below are typical of a 70m long (230ft) three wire top sections supported by 27m (88.6ft) towers. A mid span sag of 5.5m (18ft) is allowed for giving a vertical radiating length of 21.5m (70.5ft).

Specifications

Frequency Range	250-600 KHz (with suitable ATU)
Support Structure	Overall Height: 27m (88.6 ft); Distance Apart 80m (260 ft)
Effective Antenna Height	21.5 metres (70.5 ft)
Pattern	Omnidirectional
Polarisation	Vertical
Wind Survival	Antenna survival : 240 km/h (150 mph), no ice
Earth Mat Radials	60 radials – length to be determined by site conditions
Operating Frequency	320 KHz
Effective Base Capacitance	1390.00 pf
System Efficiencies	Antenna only 30.0%; system (incl. coupler) 13.0%
Coupler Coil	**Q** 200.00 **Inductance** 173μHy **Reactance** 352Ω **Resistance** 1.76Ω
Earth Resistance	1.0Ω
System Bandwidth	4.5 KHz at -3 dB
Power Capability	1kW CW plus 100% amplitude modulation
Calculated Power for 1kW input	Losses: coupler coil 360w, earth 204w, antenna wire 307w; Radiated Power: 129w
Unattenuated Field Intensity perfect ground, 1kW input	**1km** 107.2 mv/M **1 N/Mile** 58.3 mv/M **50 N/Miles** 1.166 mv/M +61.3 dB ref 1μv
Packed Weight (Antenna/Earth System)	Approx 700kg, depending on earth system specifications

Specifications subject to change: 01/04/2014

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