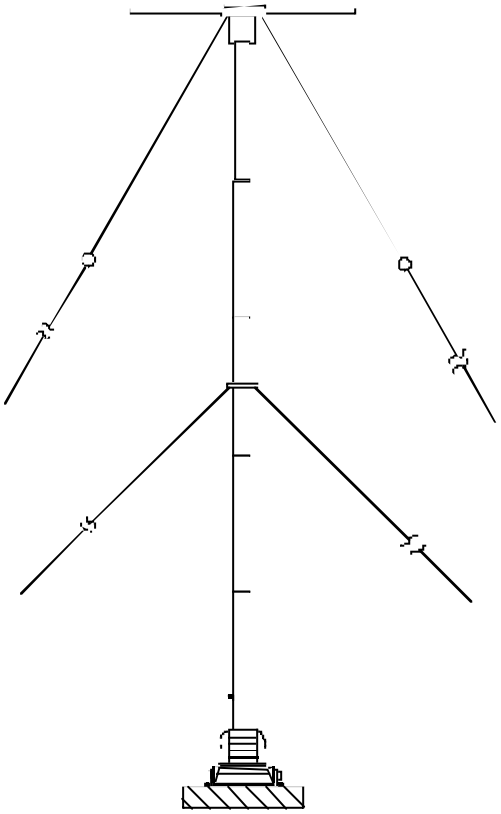
M O O N R A K E R

Type 150MF

Professional high quality MF guyed antenna system

Designed for temporary or permanent land use as non directional beacons, differential GPS base stations and low power AM broadcast stations operating in the 250-3000 KHz band to provide an economical solution where space or cost precludes the use of tower supported wire antennas.



The 15 metre (50ft) whip is base mounted and guyed to withstand winds of 216 km/h (134 mph). Construction is of heavy gauge high temper marine grade aluminium alloy to give a large low loss surface area for maximum radiating efficiency. High durability epoxy based coating provides protection from chemical attack, abrasion and the effects of ozone and ultra-violet radiation. The base insulator is ribbed high strength low loss polypropylene shrouded with a dished corona shield. RF connection is via a stainless steel terminal above the corona shield.

The antenna breaks down into five transportable sections which slip together and fasten with stainless steel locking screws. The top radials are similarly assembled into their mounting boss. Joints are "O" ring sealed to prevent water ingress. The top loading coil is easily replaced should this be necessary. A hinged base mount is available as an option to assist further with erection and maintenance.

150MF systems are tailored to suit individual frequency and ground conditions and can be used with commonly available couplers. Earth system design is critical as actual overall performance depends mainly upon the antenna coupling unit Q and earth losses relating to soil type, soil conductivity and earth system).

The performance specifications given below are based on perfect earth, an earth system resistance of 1Ω and an ATU (coupler) working Q of 250. The expected feed point impedance is 3.71-J1660Ω .

Specifications

Frequency Range	250-3000 kHz (with suitable ATU)
Overall Length	15m (50ft)
Top Loading	1 x 2m (6.5ft) radials, 4 x 6m (20ft) guy radials and loading coil, overall diameter 4m (13.1ft)
Radiator Diameter	80mm (3.1 in)
Pattern	Omnidirectional
Polarisation	Vertical
Power Capability	Below 500 KHz: 100w CW plus 100% amplitude modulation; 500-3000 KHz: 600w PEP/400w CW; higher power to order
Wind Survival	Antenna survival : 216 km/h (134 mph/60 m/s)

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Mounting	Base mounting plate with integral insulator and connections for earth mat; hinged base plate optional
Footings	Concrete footings are required: Mast 500 x 500 x 600 mm deep (19.7 x 19.7 x 23.6 in), Guys (4) 600 x 600 x 600 mm (23.6 x 23.6 x 23.6 in)
Guy Radius	9m (29.5ft) minimum
Earth Mat	Systems available to suit site conditions
Erection	Easily erected by two men with a small winch and a gin pole
Operating Frequency	300 kHz
System Efficiencies	Antenna and Earth only 3.8%; system (incl. coupler) 1.46%
System Bandwidth	1.72 kHz at -3 dB
Effective Base Capacitance	327 pf

Coupler Coil	**Q**	**Inductance**	**Reactance**	**Resistance**
	200.00	860µHy	1623Ω	**8.1**Ω

Earth Resistance	1.0Ω
Calculated Power for 100w input	Losses: coupler coil 61.5w, top coil 25.7w, earth 7.6w, mast 3.8w; Radiated Power: 1.46

Unattenuated Field Intensity perfect ground, 100w input	**1km**	**1 N/Mile**	**50 N/Miles**
	13.1 mv/M	7.1 mv/M	142.3 µv/M

Weight	Unpacked: 74kg (162.8 lbs); packed 179 kg (393.8 lbs), excluding optional hinged base

Specifications subject to change 03/10