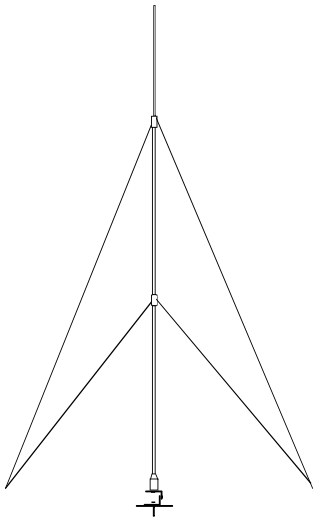
MOONRAKER

Type 32H/S

HF base station antenna system for tropical and high wind locations



Designed to meet the specifications of military, government and semi-government authorities for locations subject to tropical atmospheres and high winds up to 240 km/h (150 mph).

The 32H/S may be mounted on buildings or direct on the round and is easily assembled from two 3.6m (11.75 ft) and one 2.6m (8.5 ft) lengths. The basic mast radiator, normally in natural aluminium finish, may be finished with a high durability epoxy based coating resistant to chemical attack, abrasion and the effects of ozone and ultra-violet radiation. A horn gap overvoltage lightning protection system (type LPU) is available.

Two sets of four electrically transparent Dyneema core guys, 4mm (11/64 in) diameter, are fastened at 3.65m (12 ft) and 7.3m (24 ft) from the base of the mast and may be anchored by four 205mm (8 in) square hot dip galvanised plates with 12.5mm (1/2 in) dia x 760mm (30 in) long eyebolts, nuts and terminating thimbles (Optional). Guys in stainless steel rope with insulators are also optional.

For building mounting, a hot dip galvanised adjustable steel bracket, suitable for erection at any angle, is supplied. A ground plane kit which comprises four 12m (39.5 ft) x 7/1.04 stranded hard drawn copper wires, complete with end insulators, outer end anchor lugs and racket attachment bolt is optional. Ground mounting is by way of a hot dip galvanised square steel plate, earth spike and adjustable angle bracket incorporating connections for ground radials and lightning arrestor. Also available is an earth mat kit of four 12m (39.5.ft) long 7/1.04 hard drawn bare copper wires with 0.6m (2 ft) x 12.5mm (1/2 in) outer end spikes and inner end bolts which may be attached to the plate.

The antenna is usually supplied unloaded and self resonant at approximately 7.5 MHz but may be supplied trapped and/or loaded for high efficiency multi-frequency operation. An antenna tuning unit is normally required, and, for efficient operation, a low impedance ground plane or earth mat system is necessary.

SPECIFICATIONS

HF Band	2-30 MHz
Length	9.5m (32ft)
Pattern	Omnidirectional
Polarisation	Vertical
Guy Spread	Recommended not less than 4m (13ft) radius in high wind areas
Guy Tension	Recommended 4kg (8.8 lbs)
Frequency Range	Pretuned to frequency or frequencies required, or, unloaded 2-30 MHz. A suitable ATU is required.
Wind Loading	Total projected area: 0.29 sq m: Total wind loading 57kg at 200 km/h (125 lbs at 125 mph); Total wind loading 83kg at 240 km/h (183 lbs at 150 mph)
Power Capability	1kW PEP for normal loaded top sections; 500w PEP for trapped top sections; 1kW PEP for unloaded top sections
Mountings	On open ground: adjustable angle ground plate, 300 x 300 x 5mm (12 x 12 x 3/16 in) with spike, 300 x 16mm (12 x 5/8in); On buildings: adjustable angle bracket. Both mountings are supplied in kit form.
Connection	1m (3ft) HV silicone insulated 56/0.30 flexible tinned copper cable tail permanently fastened to base of radiator
Packed Weight	Antenna: with ground mount 13.5kg (29.8 lbs); with building mount 11.5kg (25.3 lbs). Ground Plane 4.0kg (8.8 lbs) Earth Mat 6.0kg (13.3 lbs) Anchor Kit 11.0kg (24.2 lbs) Lightning Protection Unit 1.5kg (3.3 lbs)

Specifications subject to change – Issued 01/09/13

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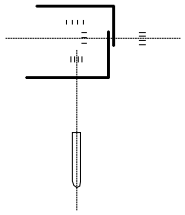
TYPE 32H/S INSTALLATION INSTRUCTIONS:

Assembly

The 32H/S radiator is supplied in three sections: base, mid and top section. The two sets of guys are stamped either 1 or 2 on the guy ring for ease of recognition. For ease of assembly, to assist conductivity and with future dismantling, smear a little of the conductive grease provided on the joints. Guy stakes or anchors are not provided.

1. **Lay out the three sections of the antenna.**
2. **Place guy ring number 1 over the section joiner on the bottom of the mid section. Apply conductive grease to the joint. Slide the bottom of the mid section into the base section and secure using three ½ in x $^{3}/_{16}$ in stainless steel metal threads provided.**
3. **Apply conductive grease to the joint. Insert the top section into the mid section. (Do not fit the securing screws at this stage.) Slide guy ring number 2 over the top section until it seats on top of the mid section. Fasten the mid and top sections using three ½ in x $^{3}/_{16}$ in stainless steel metal threads provided.**
4. **Fasten the galvanised right angle mounting brackets together. Fasten the antenna base insulator using the M10 x 25mm stainless steel bolt and washer provided to the top bracket face. (As shown in the drawing at right.)**



Mounting

Antenna

1. ***For building roof top installation:*** **fasten base (three holes) of angle bracket to building roof (fasteners not provided).**

   For ground mounting: **fasten angle bracket to base plate as shown on drawing. Stake ground plate in position on ground.**
2. **Temporarily fasten the side and back guys to their anchors. Note: minimum distance to each guy is 4 metres (13 ft).**
3. **Swing the antenna upright.**
4. **Fasten the front guy temporarily to its anchor.**
5. **Tighten all guys and mounting bolts. Do not exceed 4kg (8.8 lbs) guy tension as this will pre-stress the antenna and may lead to premature failure, i.e. just remove the slack from each guy.**

Ground Plane and Earth Mat

1. **Fasten one end of each copper wire radial to angle bracket of the antenna mount with the long bolt provided. A lug is provided for attaching the ATU earth cable.**
2. **Run the radials out from the base at 90° spacings.**
3. **For the Earth Mat: drive in the outer earth stakes and attach the radial with the bolts in the stakes provided. (It is advisable to leave bolts in the stakes while driving to prevent distortion of bolt holes.)**

   For the Ground Plane: fasten the outer end anchor lugs, lightly tension the radials and crimp the swages provided to maintain the tension.
4. **In the case of the Earth Mat, the radials should be buried if possible.**

Important Factors

1. **Recommended guy tension should not be exceeded.**
2. **Observe minimum recommended guy spread.**
3. **When handling guy wires, ensure that they do not become kinked and subsequently weakened.**