



Model

HM300

3-piece marine deck mount

vertical radiator for large

vessels, 10 metre

ASSEMBLY REQUIRED

HF Radio 2 – 30 MHz

requires Antenna Tuning Unit (ATU)

2.1 dBi Gain

- Three-piece white fibreglass radome, stainless steel joining ferrules and stainless steel deck mount plate.
- Mounts to the deck of a large vessel using 4 stainless steel bolts, washers and nuts.
- 6 metres of 20 kv single core cable fitted with a terminating lug for antenna deck mount base plate.
- Corona ball to prevent high voltage discharge into the atmosphere.
- 2,000 watts PEP maximum input power.

INSTALLATION

GUIDE

www.zcg.com.au

ANTENNA DESCRIPTION

HM300 is a 10 metre tall free standing marine HF radio deck mount vertical radiator specifically designed for larger vessels.

This model delivers outstanding performance, is very durable and accepts high input power up to 2,000 Watts P.E.P.

The sturdy fibreglass radome is a three piece construction with each section joined with machined stainless steel joining ferrules. Each radome is fully sealed and packed tight with closed cell foam to protect the internal copper radiators, prevent rattles and maximise service life in harsh marine conditions

The radome tip has a corona ball to prevent high voltage discharge into the atmosphere.

The antenna butt is bonded to a stainless steel mount or securing tube. This is designed for mounting into a purposely design stainless steel deck mount plate measuring 300mm round and 12 mm thick. The vertical outer mount tube is welded to the steel plate with reinforcing gussets. Suitable for large vessel mounting.

A detailed specification sheet is available to download from www.zcg.com.au

ANTENNA TUNING UNIT (A.T.U.)

The antenna is designed to couple with your marine HF radio transmitter via an Antenna Tuning Unit. (A.T.U.)

The A.T.U. will match the impedance of your HF radio to the antenna and feeder cable, in this case 50 ohms.

Since tuning limits are determined by the A.T.U., It is wise to verify in advance the ability of your particular A.T.U. to match shorter radiators at the lowest frequency.

The vessel's earthing system may also affect the A.T.U. tune range.

SELECTING THE MOUNTING POSITION

The stainless steel deck mount base plate measures 300mm in diameter and is 12mm thick.

There are 4 holes in the plate for securing the base to the deck using stainless steel bolts, washers and nuts. Ensure your mounting surface is structurally adequate for mounting prior to installation.

To achieve best performance, the antenna should be mounted as far away from other antennas and metallic objects as possible to avoid interference and distortion of the radiation pattern.

The separation distance recommended is at least 1 metre, but preferably more.

INSTALLATION GUIDE

A good earth system is the essential key to achieving the optimum transmit and receive performance.

The HF antenna must be isolated from the vessel's earth system. The antenna feeder cable attaches to your A.T.U., and it is the Antenna Tuning Unit which must be connected to the vessel's earth system. Refer to the installation instructions which came with your A.T.U.

The vertical radiation pattern for this HF radio antenna is largely influenced by the size, shape and nature of the ground plane under the antenna. Symmetrical, balanced, as well as low resistance earthing is needed for a good omnidirectional radiation pattern. The length and placement of the feedline also has a large effect on pattern formation, with modelling indicating a long feedline at right angles to the antenna causes the pattern to vary greatly from omnidirectional.

Keep all leads as short as possible and joints in the earth system fully soldered. Earthing system problems may also cause the DC feed wiring to become an active radiator.

ROUTING THE CABLE

The antenna is supplied with 6 metres of 20 kv single core cable fitted with a lug for connecting to the antenna terminal bolt on the deck mount base plate.

Route the cable carefully to your HF radio. Ensure that the cable is not stretched excessively and there are no sharp kinks.

If using cable ties, then we highly recommend the 316 stainless steel type 8117 series for the harsh marine environment. They will require a cable tie tensioner tool P/N 8125 for correct tension mounting.

Do not pull the cable ties so tight as to crush the cable. A damaged feeder cable is a cause of high VSWR and reduced performance.

SEALING CONNECTIONS

For the marine environment, it is vital that all connections be well sealed with at least two layers of self-amalgamating tape, or Mastic Tape with a top layer of PVC electrical tape for UV protection. All installation accessories are available separately.

PVC or electrical tape will not be adequate.

MAINTENANCE

This antenna has been designed for high reliability and low maintenance. We recommend that you conduct a routine annual mechanical inspection of the antenna, feeder cable and connections.