

# MOONRAKER AUSTRALIA

A good antenna radiates maximum available transceiver power and can withstand extreme weather conditions - this is when you will really need to rely on it!

A Moonraker antenna system is designed and manufactured to give you the very best and keep on doing so, year after year after year...



Aurora Australis, P & O Polar, getting ready to leave for Antarctica

**Marine Antenna Systems**  
high performance solutions for demanding environments

# Moonraker At Sea

**Moonraker marine antenna systems** are available through the communications bands from MF and HF through to VHF and UHF to suit all sizes of ships down to trailed craft.

Systems are designed as high efficiency compact units to meet the demands of the professional user while at the same time being eminently suitable for the pleasure craft owner.

Great attention is given to choice of materials that will endure and survive extremes of weather conditions. Special models have been developed to withstand cyclonic winds to 200km/h (125 mph) without permanent deformation and for high power (1.2kW) operation in high seas.

Construction is of heavy gauge marine grade aluminium tubing, protected from the marine environment and UV radiation by high durability coatings. This provides a large, low loss radiating surface to ensure that maximum signal is transmitted.

Mounting options are versatile from side and swingdown mounting to base mounting with side or underdeck base feed.

To ensure complete system efficiency Moonraker provides a complete range of accessories, including earth plates, lightning protection, receive matching transformers, insulators, cables, copper earth strap...

HF Marine Antenna Guide

Vessel Type	Vessel Length	Antenna Type
Ocean Going GMDSS	over 50m/170ft	100 Series
	over 18m/60ft	80/23 Series
General coastal/fishing vessels	over 18m/60ft	29W/23 Series
Medium/larger work boats/fishing vessels	over 12m/40ft	FB330 (broadband)
Flybridge cruisers, high speed planing hulls	over 10.5m/34.5ft	22W/23 Series
General & small fishing/inshore & pleasure craft	over 9m/30ft	18 Series
Small pleasure/work boats, smaller high speed planing hulls, yacht emergency	over 5.5m/18ft vessels with wire to mast systems	15 Series 15S/R
General & small vessels	under 7m/23ft	12 Series
Removable antenna for trailed craft and emergency antenna	under 7m/23ft & vessels with wire to mast systems	12S/R

## High endurance systems are available for

### LF/MF

- . LF/MF self supporting system for helideck perimeters on off-shore oil and gas platforms using 200-500 kHz aircraft band beacons - type HD MF
- . Compact 10m (32.8ft) MF 300-2000 kHz high wind area NDB whip for offshore platforms - type 100MF

### HF

- . HF whip 2-30 MHz antennas for all size vessels, including trailed craft and inflatables, available in lengths from 3.65m (12ft) to 10.7m (35ft)
- . High endurance 10m (32.8ft) and 8m (26.2ft) systems for GMDSS fit on ocean going ships
- . 20m (65.6ft) broadband wire shipboard system for short/medium range communications - type FB330
- . 5.5m (15ft) and 3.65m (12ft) 2-30 MHz demountable whips for emergency and other purposes - types 15S/R and 12S/R

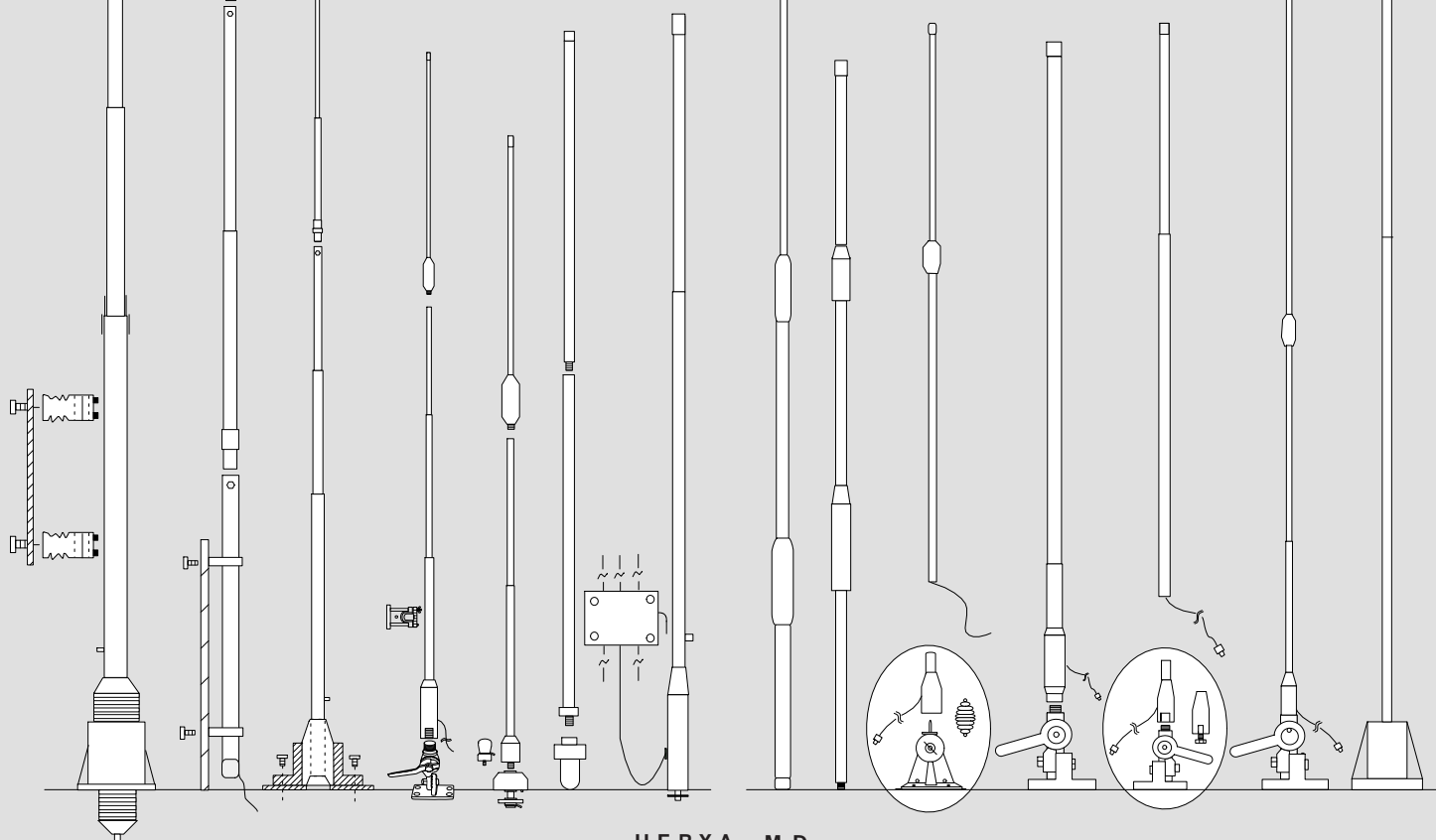
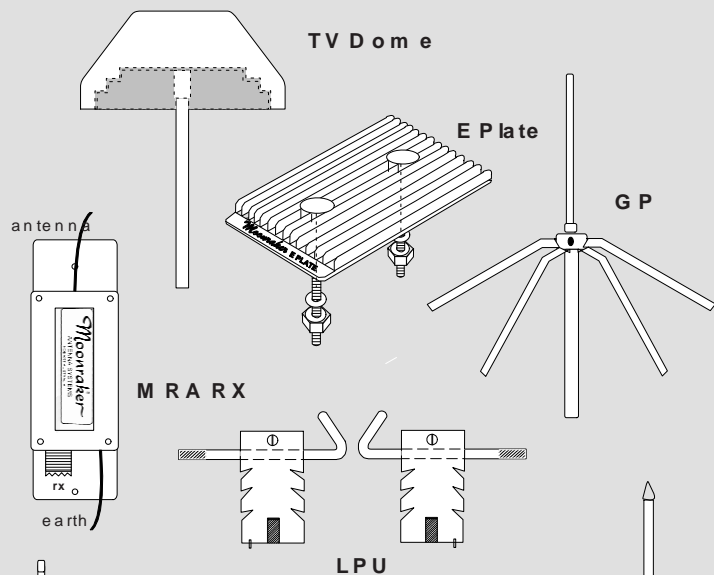
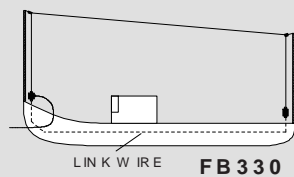
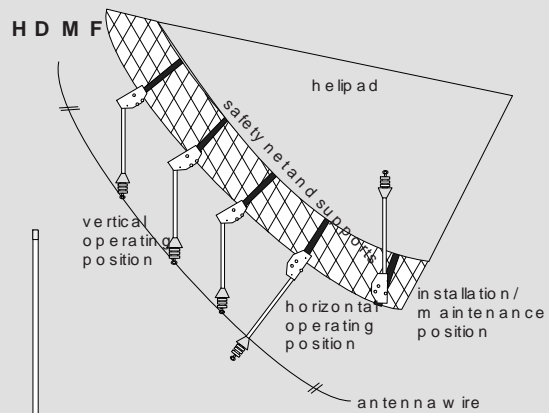
### 27 MHz, VHF, UHF

- . Heavy duty 27 MHz 1/2 wave whip - type 27S/D
- . VHF marine 1/2 wave dipole, 40-180 MHz, and "twins" to match HF whip antennas - type MD
- . VHF marine 5/8 wave collinear, 118-170 MHz (for extended range) - type MD HB G3
- . Cellular mobile telephone collinears for analogue AMPS and digital GSM and CDMA systems - types CEL800 and CEL900
- . High endurance surface to air VHF air band broadband ground plane and dipole systems - types GP and MDA
- . High strength UHF ground independent high gain collinear 390-520 MHz - type CL3
- . Extreme rugged helical antennas for hand held portable : 27 MHz, VHF 50-180 MHz, UHF 400-500 MHz - type P/Hel

### Receiving

- . Omnidirectional VHF/UHF TV/FM shipboard receiving systems 40-850 MHz - type TV Dome
- . Fully versatile custom tailored marine multi-media distribution system - TV/FM Distribution System
- . MF/HF active broadband receive system for single outlets or multiple distribution, 70 kHz to 30 MHz - type HF RXA
- . Transformer for matching whip/long wire antenna to coaxial cable and receiver 0.28-30 MHz - type MRA RX
- . High efficiency AM broadcast receiving system with matching transformer - type 15BC

for all vessels of all sizes



100/80 Serie 29W

23B/3

18S/D

15S/R  
12S/R

HFRXA  
15BC & M multi-coupler

MD  
HBMDA  
G3

MD

CL3

CEL800/900 7S/D

LPS

# Moonraker Australia Marine Systems

**Moonraker Australia** is a specialist antenna company with a long history of working with the professional marine industry to design systems that will stand time in the most challenging of environments from the tropics to polar regions.

The finished product is hardy, cosmetically non-obtrusive and light enough to be sent by airfreight to all parts of the globe. Large antennas are easily assembled on site from smaller sections, which are easier to transport.

Emphasis is on providing the very best solutions to match individual needs, with technical assistance, product customisation and market-led design. Quality Assurance is to ISO9001. Moonraker is a defence preferred supplier and many products have been allocated Nato stock numbers.

The commitment to excellence has resulted in products that can survive hurricanes and cyclonic winds of 200-240 km/h (125-150mph) in temperatures as low as minus 30°C (-22°F) and as high as 50° C (122°F) with humidity. High power antennas for 100% operation in saturated salt laden atmospheres have been developed to meet the exacting standards of the Royal Australian Navy.

Moonraker Australia maintains an ongoing program of research and development and can readily design new systems to customer requirements and adapt existing designs to specialised usage. If you have a special requirement, please contact us.

For a more in-depth view of our product range, please visit our website at:

<http://www.moonraker.com.au>.



Top: container vessel with GMDSS fit

Bottom: police patrol boat 'George R. Young' with suite of Moonraker antennas, built by Norman R. Wright & Sons, Australia

**Distributed by:**

**Moonraker Australia Pty. Limited,**

Tasmania Technopark, Dowsing Point, Tasmania 7010 Australia

tel: 61 3 6273 1533 fax: 61 3 6273 1749

email: [radiocom@moonraker.com.au](mailto:radiocom@moonraker.com.au) website: [www.moonraker.com.au](http://www.moonraker.com.au)





# Quality Marine Performance

for all users



MF - HF

## GMDSS - the enduring

Moonraker offers two main solutions for GMDSS transmit and receive/watchkeeping MF/HF antennas, both approved by the Australian Maritime Safety Authority: the 10m (32.8ft) **100 Series** and the 8m (26ft) **80 Series**. Both offer high strength, reliability and endurance for mid ocean vessels, being designed with 200 km/h (125 mph) wind survival. For smaller vessels the 7m (23ft) **23 Series** can also be considered.

Construction is of epoxy coated heavy gauge marine grade aluminium alloy tubing with ribbed high strength low loss polypropylene insulation. Joints are sealed using a special sealing kit and covered with flexible boots.

Full mounting options are available: side, base with base feed or base with side feed. A tilting mechanism is also available to assist with raising/lowering and maintenance.

## Receiving you loud & clear

As signal to noise ratio is all important for MF/HF reception, difficulty can be experienced due to interference from ship's wiring and electronic equipment.

This can be overcome by using our **MRA RX** Transformer, which can be located up to 70m from the receiver and can be used with either whips or long wire antennas. A gas discharge device is provided for lightning over voltage protection.

The active **HF RXA** system with single outlet or multiple distribution provides excellent broadband reception from 70 kHz to 30 MHz for NAVTEX/AM/SSB, etc. A low noise integral broadband amplifier, totally enclosed in the base, maximises communications across the frequency range.



**Moonraker MF/HF Whip Antennas** are constructed from high quality marine grade aluminium, which provides a large low loss surface area for maximum radiating efficiency. Finished surfaces are fully marinised and not prone to the cracking and powdering that can result in corrosion, water and salt absorption .....antenna failure.

## Smaller Vessels , Trailed Craft and Back Stays

Having a vessel under 7m (23ft) and having to fit a shorter antenna doesn't mean that you can't get quality performance. Moonraker **12 Series** antennas can be loaded to look much longer electrically, so you get good performance at the lower end of the band too, including the emergency frequency.

## Professional and Leisure Coastal Craft

The heavy duty side mounting 8.8m (29ft) type **29W** provides a high performance solution for all types of larger coastal vessels over 18m (60ft). Smaller vessels over 10.5m (34.5ft) , especially flybridge cruisers and high speed planing hull vessels, the 6.7m (22ft) type **22W** is ideal.

Both antennas are designed for endurance with wind survival to 130 km/h (80 mph) and have a high durability epoxy based coating for maximum protection from the marine

For those that prefer matching HF and VHF antennas, matching twins are available as either 6.7m side mounting Deep Sea Twins or 5.5m (18ft) Bluewater Twins with

swingdown mounting to facilitate passing under bridges, etc.

For vessels over 12m (40ft) requiring only short to medium range communications from 3 to 30 MHz, the **FB3-30** wire antenna provides effective broadband performance without the need for an antenna tuner (ATU).

It can be erected horizontally using bow and stern supports or in inverted V configuration using the mast as a central support.

## Inshore Vessels and Pleasure Craft

Moonraker 5.5m (18ft) **18 Series** and 4.6m (15ft) **15 Series** whips provide high efficiency communications for smaller commercial vessels and larger

pleasure cruisers and yachts over 9m (30ft) . The 15 Series is especially suited to smaller high speed planing hull and multi hull vessels.

A range of mounting options is available.

12 Series antennas are available with full mounting options, including the demountable type **12S/R** and, for larger yachts type **15S/R**, both of which have optional back stay kits to feed a wire back stay antenna, especially useful for emergency purposes on racing yachts.

## Moonraker Australia Pty. Ltd.

Tasmania Technopark, Dowsing Point, 7010, Tasmania, Australia  
Website: [www.moonraker.com.au](http://www.moonraker.com.au) Telephone: 61 (03) 6273 1533 □  
Fax: 61 (03) 6273 1749 Email: [radiocom@moonraker.com.au](mailto:radiocom@moonraker.com.au)

**Distributed By:**

# Quality Marine Performance

for all users



## All-round VHF Performance

The classic type MD 1/2 wave dipole, supplied to virtually every ship in the royal Australian Navy. It is designed for durability and is fully marinised, being available for the VHF bands from 40-145 MHz and 146-180 MHz..

Radiation characteristics are omnidirectional with good all round coverage. The antenna features 2.2 dBi gain performance and a 7 MHz bandwidth with better than 1.2:1 VSWR at centre frequency. It is supplied with connector and 5m coaxial cable, with all mounting options available. The special type MD HB/U with a connector in the base is suitable for mast or rail mounting.

MD antennas are also available as lookalikes to match HF whips. (Bluewater and Deep Sea Twins)

## High Performance UHF Collinear

The Moonraker high strength collinear type **CL3** is ground independent and offers 5 dBi gain extended range performance for marine mobiles and land base stations.

Available in the 390-520 MHz frequency range, the antenna is factory tuned to specified centre frequency, providing a bandwidth of 10 MHz at <1.5:1 or 20 MHz at 2:1 VSWR. The series fed array of 1/2 wave stripline stacked dipoles is optimised for high gain low angle omnidirectional radiation throughout the bandwidth.

The antenna is extremely rugged being designed for long life in the marine environment. It features a stainless steel mounting pole with elements capsulated within a heavy duty coated fibreglass radome and DC grounding.

**Moonraker VHF/UHF Marine Antennas** are designed to exacting specifications to give excellent performance and last in the marine environment - year after year after year. Antennas are finished with either a high durability epoxy based coating or with high marine quality PVC. All fittings are of material selected to minimise the risks of electrolysis.

## 5 Antennas in One for High Performance TV and FM

The Moonraker Mark II active omnidirectional **TV Dome** offers improved performance for land mobile and shipboard TV/FM reception from 40-814 MHz. The system features a separate VHF and multiple UHF arrays, permitting reception of both vertically and horizontally polarised signals to minimise

## Longer Range VHF

If you are operating at maximum range from your VHF base station, the **MD G3** 5/8 wave collinear gives 5 dBi gain performance to ensure you stay in range.

With its added range, this 2.78m antenna is ideally suited to base stations, VHF seaphone and marine vessels operating over extended distances. Frequency range is for the entire Marine Band 156-162 MHz. VSWR is <1.5:1 for the full band.

Antenna design is rugged, featuring a high quality marine grade aluminium radiator with PVC coating. All metal parts are at DC earth potential for static discharge. All mounting options are offered.

## Maximising Cellular □ Range for Mobiles

The best way to improve the performance of your cellular phone in coastal waters, AMPS, CDMA or GSM, is to fit a full size antenna. □ This will enable you to operate successfully at greater range throughout the mobile network, especially in fringe areas and inshore waters, and with less transmit power required, the drain on the mobile battery is reduced.

Moonraker CEL800 CDMA/AMPS (820-890 MHz) and CEL900 GSM (890-960 MHz) antennas for marine mobile and base station applications exhibit 5 dBi gain across the entire band with a VSWR better than 1.7:1.

The antenna features a stainless steel mounting pole and full mounting options are available. A FME female crimp connector is supplied with other connectors to order, and 5m of RG58 extra low loss cable.



types MD, MD G3, CEL800/900, TV Dome, S/S Mount

**Moonraker Australia Pty. Ltd.**  
Tasmania Technopark, Dowsing Point, 7010, Tasmania, Australia  
Website: [www.moonraker.com.au](http://www.moonraker.com.au) Telephone: 61 (03) 6273 1533 □  
Fax: 61 (03) 6273 1749 Email: [radiocom@moonraker.com.au](mailto:radiocom@moonraker.com.au)

**Distributed By:**