MOONRAKER

CBG SYSTEMS

MOONRAKER MARINE ANTENNA SYSTEMS

CBG Systems Pty Ltd designs and manufactures Moonraker Marine Antenna Systems, trusted worldwide for over 45 years. Engineered and handcrafted in Australia, Moonraker antennas deliver reliable, missioncritical communication performance for naval, commercial, offshore, and recreational vessels operating in extreme marine environments.

WHY MOONRAKER

- Over 45 years of marine RF engineering expertise
- ISO 9001 certified manufacturing and quality assurance
- Individually tuned and performance-tested antennas
- Defence-preferred supplier with NATO stock numbers (selected models)
- Full in-house RF design, prototyping, and customization capability

KEY FEATURES

- Marine-grade aluminium construction with high-durability coatings
- Survives cyclonic winds up to 240 km/h
- Operational temperature range: -30°C to +50°C
- Wide frequency coverage: LF, MF, HF, VHF, UHF, SHF (10 kHz – 1500 MHz)
- Modular, compact designs for easy transport and installation
- Compatible with automatic tuning units and lightning protection systems

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CONTACT DETAILS ▼

APPLICATIONS

- Ocean-going GMDSS vessels
- Naval and defence platforms
- Commercial shipping and offshore oil & gas
- Fishing fleets and coastal vessels
- Pleasure craft, expedition yachts, and emergency vessels

PRODUCT RANGE OVERVIEW

- **HF Marine Whip Antennas:** 12, 15, 18, 22W, 23, 29W, 80 & 100 Series
- **High-Power Naval HF Systems:** 107B, 122BBS
- **Automatic Tuning Systems:** AT230
- **VHF Marine Dipoles & Collinears:** MD, MMD, MDHB G3, MDA
- **UHF Tactical & Broadband Systems:** BCA, BDA, CL3 Series
- **Marine Cellular Systems:** CEL Series (2G/3G/4G/4GX)
- **Receiving Systems:** HF RXA, TV/FM Distribution, Broadcast Systems.

Moonraker Marine Antenna Systems by CBG Systems ensure extended range, superior signal clarity, and unmatched durability — keeping your vessel connected and operational wherever the mission takes you.

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HF ANTENNA SYSTEMS

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12SD

MARINE HF ANTENNA FOR SMALLER VESSELS PARTICULARLY OF THE TRAILED TYPE WHERE A SWINGDOWN FACILITY IS REQUIRED.

Designed to permit easy adjustment of antenna angle and to provide high efficiency communications in both transmit and receive modes where antenna obstructions (bridges, etc.) may be encountered or deck level stowage is necessary or desirable.

The 12S/D, a 3.65m (12ft) whip, is quickly assembled from two 1.85m sections which screw together on a self locking taper. The compact and sturdy stainless steel swingdown mount, which may be mounted unobtrusively on deck or cabin side, may be adjusted in 10° steps and is easily locked into position by a heavy duty ratchet and wing nut.

Construction is of lightweight marine grade tempered aluminium alloy tubing, providing a large low loss radiating surface, powder coated for maximum protection from the marine environment and ultra violet radiation. Fittings are of nylon, stainless steel and aluminium with low loss coils.

It is available unloaded or resonant at a single frequency (the highest to be used, normally 2.6, 4.6, 6.3, 8.3 or 10 MHz). For operation on frequencies lower than the resonant frequency, the difference is made up in the ATU.

SPECIFICATIONS ▼

	STANDARD	OPTIONAL
Colour	Black	White
HF Marine Band	2-30 MHz	
Length	3.65 metres (12 ft)	
Pattern	Omnidirectional	
Polarisation	Vertical	
Base Diameter	35mm	
Frequency Range	Pre-tuned to frequency, or unloaded 2-30 MHz with suitable ATU	
Wind Loading	2.54 kg at 100 km/h 4.3 kg at 130 km/h	
Power Capability	400W PEP for unloaded top sections, 250W PEP for normal loaded top sections; higher power to order	
Mountings	A nylon insulator mated to an adjustable angle, stainless steel alloy mount via a threaded 1 in 14TPI stainless steel stud (supplied) and 4 x 6.4mm countersunk head screws (not supplied). May be cabin side or deck mounted.	
Connection	Silicone insulated flexible cable tail 2m long 56/0.3 tinned copper; length should not exceed that provided for correct operation on the higher frequencies	
Packed Weight	2.5 kg with mountings	

12SD INSTALLATION INSTRUCTIONS ▼

Assembly and Mounting:

1. On permanent installations use locking compound such as Loctite on top section screw thread joint. Note that some grades of Loctite will not allow disassembly, we suggest 243 grade. Do not use silicone sealant or grease on this joint.
2. Use the mount as a template to mark the position of the mounting holes.
3. Drill 6.4 mm holes in the marked position.
4. Reinforce thin decks with metal or wooden backing plate.
5. Bolt the mount in position.

Important Factors:

1. For best results the antenna should be mounted vertically (not sloping).
2. The length of lead supplied with the antenna should not be exceeded. Longer lead may be used if necessary, but antenna efficiency may decrease and series capacitance may be required to tune the higher frequencies.
3. Keep the lead clear of ship's wiring and other metallic objects and avoid running parallel to metal decks, etc. with less than 2cm clearance.
4. Lead should be run as short and direct as possible between the antenna and equipment.
5. If using deck feed through insulator, make sure the terminals are protected from salt spray, otherwise severe loss of power may result due to leakage across the wet insulator. Moonraker feed through insulators are recommended.
6. Earth leads should be connected directly to the ATU and kept as short as possible.
7. Copper strip is recommended for earth lead between equipment and Moonraker earth plate.

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HF ANTENNA SYSTEMS

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18W

MARINE HF ANTENNA FOR VESSELS OVER 9 METRES (30 FEET)

Designed as a high efficiency compact whip, in both transmit and receive modes, for professional use in the HF Band range from 2-30 MHz.

The 18W, a 5.5m (18ft) heavy duty whip, is comprised of two sections [base: 3.65m; top: 1.85m] which slip together and fasten with 2 stainless steel self tapping screws.

It is constructed from marine grade tempered aluminium alloy which provides a large low loss radiating surface and is fully protected by a high durability epoxy based coating resistant to chemical attack, abrasion and the effects of ultra-violet radiation. Fittings are of nylon and stainless steel with low loss coils and/or traps.

It is available unloaded, resonant at a single frequency (the highest to be used, normally 2.6, 4.6, 6.3, 8.3 or 10 MHz). For operation on frequencies lower than the resonant frequency, the difference is made up in the ATU.

SPECIFICATIONS ▼

	STANDARD	OPTIONAL
Colour	Black	White
HF Marine Band	2-30 MHz	
Length	5.5 metres (18 ft)	
Pattern	Omnidirectional	
Polarisation	Vertical	
Base Diameter	23mm	
Frequency Range	Pre-tuned to frequency or frequencies required, or unloaded 2-30 MHz with suitable ATU	
Wind Loading	4.9 kg at 100 km/h 8.3 kg at 130 km/h	
Power Capability	800W PEP for unloaded top sections, 600W PEP for normal loaded top sections	
Mountings	Two 63mm nylon clamp type insulators, 35mm diameter, threaded to take 3/8 inch Whitworth bolt (not supplied). Minimum insulator spacing not less than 60cm	
Connection	Silicone insulated flexible cable tail 2m long 56/0.3 tinned copper; length should not exceed that provided for correct operation on the higher frequencies	
Packed Weight	4 kg with mountings	

18W INSTALLATION INSTRUCTIONS ▼

Assembly:

1. When fitting the side mounting insulators, slide them on the base section before assembling. Mounts may be opened by reversing the clamp screw, placing a coin or similar in the slot behind the screw and using the screw to force the slot apart.
2. For ease of maintenance lightly smear the top section slip joint with grease and push firmly together.
3. Tighten screws firmly and lightly smear joint with neutral clear silicone.
4. If the top section is removed when lowered, make sure to replace it tightly when using the antenna again.

Mounting:

1. Make sure the mounting bolts are long enough to use the full length of thread in the insulators, but not so long that they bottom in the hole.
2. Mounting insulators should be spaced not less than 60 cm apart.

Important Factors:

1. For best results the antenna should be mounted vertically (not sloping).
2. The length of lead supplied with the antenna should not be exceeded. Longer lead may be used if necessary, but antenna efficiency may decrease and series capacitance may be required to tune the higher frequencies.
3. Keep the lead clear of ship's wiring and other metallic objects and avoid running parallel to metal decks, etc., with less than 2 cm clearance.
4. Lead should be run as short and direct as possible between the antenna and equipment.
5. If using deck feed through insulator, make sure the terminals are protected from salt spray, otherwise severe loss of power may result due to leakage across the wet insulator. Moonraker feed through insulators are recommended.
6. Earth leads should be connected directly to the ATU and kept as short as possible.
7. Copper strip at least 50 mm wide is recommended for earth lead between equipment and Moonraker earth plate.
8. Sealant should be non-acid neutral cure type. Acid cure type sealant will attack copper and aluminium.

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HF ANTENNA SYSTEMS

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80B - 80B/S - 80W

MARINE HF WHIP ANTENNA FOR PROFESSIONAL AND GMDSS USE ON OCEAN GOING VESSELS.

The 80 series is a 8 metre (26.2 ft) heavy duty free standing whip antenna with a power capability of 1.0 kW PEP in the frequency range 1.6-30 MHz, designed to provide efficient and reliable communications in the professional services where a 10 metre (100 series) antenna is not suitable.

The antenna is available either side mounted (80W) or base mounted with base feed (80B) or side feed (80B/S) and is able to withstand wind speeds of 200 km/h without permanent deformation.

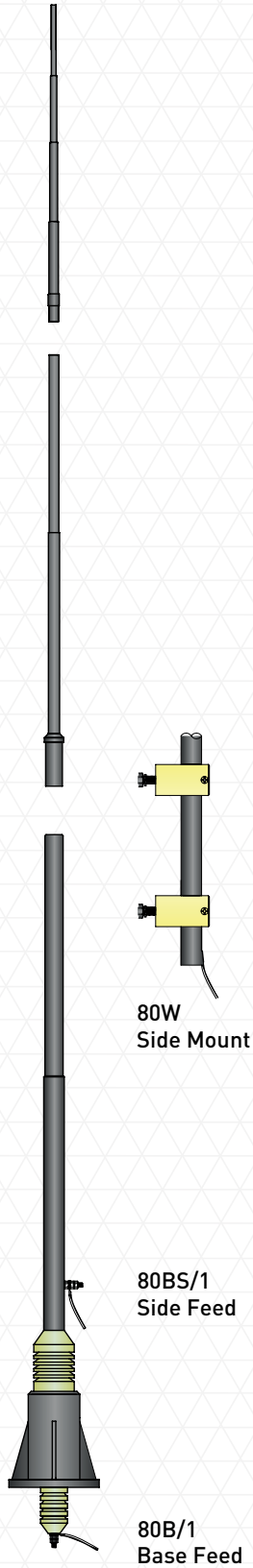
Construction is of heavy gauge marine grade aluminium alloy tubing, which provides a large low loss surface area for maximum radiating efficiency. The radiator and base flange are finished with a high durability epoxy based coating, highly resistant to chemical attack, abrasion and the effects of ozone and ultra-violet radiation.

The base mount is fabricated aluminium alloy with industry standard 165 mm O/D flange with eight mounting holes, drilled on 140 mm centres. Base insulator is ribbed high strength low loss polypropylene. Side mounting is via two ribbed low loss polypropylene insulators. Connection is via a base feedthrough insulator (B) or to a stainless steel side terminal above the base insulator (B/S) or bottom side mount (W).

For ease of transport, the antenna breaks down into three sections which slip together and fasten with stainless steel locking screws. These joints are sealed using a special jointing kit and covered with flexible boots.

SPECIFICATIONS ▼

	STANDARD	OPTIONAL
Colour	Black	Grey or White
HF Marine Band	1.6-30 MHz	
Length	8.0 metres (26.2 ft)	
Pattern	Omnidirectional	
Polarisation	Vertical	
Frequency Range	Unloaded 1.6-30 MHz with suitable ATU	
Wind Loading	66 kg at 200 km/h Antenna survival: 200 km/h, 55m/sec	
Tip Deflection	4 m at 200 km/h, 55m/sec	
Power Capability	1.0 kW PEP	
Base Mounting	Industry standard 165 mm diameter flange with 8 x 13.5 mm (½ in) holes drilled on a 140 mm diameter	
Side Mounting	Two 5/8 in Whitworth bolts into two 110 mm diameter side mounting insulators, spaced a minimum of 1 m apart.	
Connection	Side feed via 1/4 in Whitworth stainless steel stud and lock nuts, base feed below through deckmount via 3/8in Whit s/s stud and locknuts	
Packed Weight	80B: 31 kg, 80B/S: 28 kg, 80W: 19 kg	



80W
Side Mount

80BS/1
Side Feed

80B/1
Base Feed

ANTENNA JOINT SEALING KIT

The kit will consist of the following:

1 x upper joint shroud - small
1 x lower joint shroud - large
1 x container of special grease - antenna joint
Roll of special tape - antenna joint
O-ring - large

Other items required but not supplied:

1 x pair scissors
1 x Philips head screw driver
Rags - lint free
Cleaning fluid (general purpose)
Lubricant (detergent and water)

Antenna Section joining:

The object of this procedure is to exclude moisture from the joints of the antenna. **Strict adherence** to the instructions will prolong service life and ease disassembly of the antenna in years to come.

> **Note:** When handling antenna ensure that hands and tools are clean. Wipe any dirt, grease etcetera from antenna using clean rag soaked in cleaning fluid.

Ensure antenna sections are adequately supported and are not knocked or scraped against any hard surfaces. If necessary, place protective wrapping around antenna to prevent damage to surface finish. The following instructions apply to both joints, we suggest assembly of bottom joint first.

> **Note 1:** That only the bottom joint is fitted with an "O" ring seal.
>
> **Note 2:** Synthetic rubber joint shroud material has a high tear resistance but do not stretch it more than necessary or use sharp objects to manipulate it.

Joint Sealing:

1. Remove fixing screws from joint section.
2. Lightly lubricate the external surface of the joint section with detergent and water (or similar).
3. Carefully slide the joint shroud over the antenna to the upper section of the joint to a point approximately 200mm above the joint.
4. Roll larger diameter section of joint shroud back over itself until the shroud is the length of the smaller diameter section.
5. Thoroughly clean mating surfaces of the joint and remove the detergent and water using rag and cleaning fluid and allow to dry. Ensure no dust or residue is left on surfaces.
6. Install "O" ring on upper section of joint in the "O" ring groove provided. (Base to mid section only) Use normal precautions observed for "O" rings to prevent damage such as nicks and abrasions.
7. Apply the conductive grease to both surfaces of joint using special grease supplied in jointing kit. Work grease around "O" ring.
8. Carefully insert upper section into lower section, gently rotate upper section to ensure even distribution of jointing grease.
9. Align joint fixing holes, insert fixing screws with internal star washers (base to mid section only) and tighten firmly.
10. Thoroughly clean excess grease from external surfaces of antenna using rag and cleaning fluid – allow to dry.
11. Wind the special tape supplied firmly (without stretching) once around antenna immediately below fixing screws and then spirally wind tape towards antenna joint, keeping tape firm. Each winding to step up by half the tape width until a position just above the joint is reached.

    Proper adherence to this procedure will ensure that the screws and joint are properly sealed.
12. Slide down and manipulate the shroud over the upper section of the joint. Roll the larger diameter section over lower section of joint. Manipulate the shroud until it is fully home on both diameters.
13. Thoroughly clean all excess lubricant from antenna using a dry rag.

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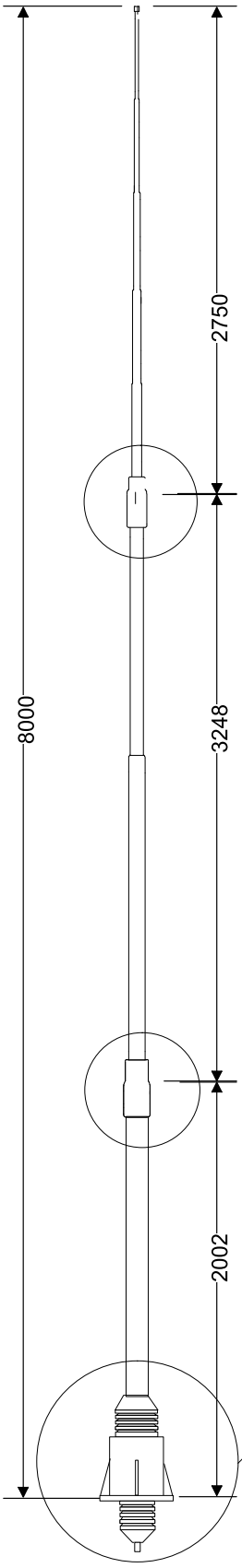
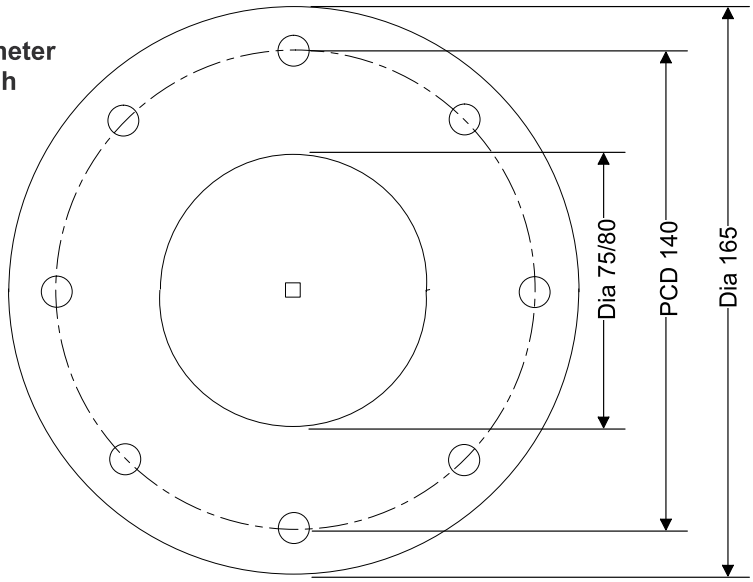
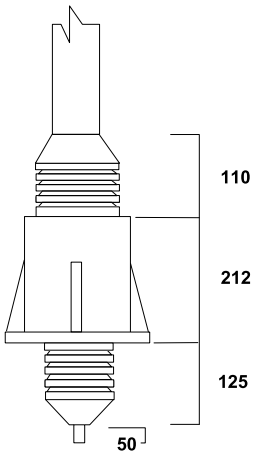


HOLES:
8 x 13.5mm diameter at 45 degrees

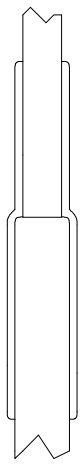
1 x 75/80mm diameter for feedthrough insulator



BASE MOUNT
Mounting Flange



DETAIL A
FEED POINT



DETAIL B
JOINT SEALING SHROUD

Tape should be wound to cover screws and joint first then place rubber shroud over the joint -

See Installation Instructions

DETAIL A

DIMENSIONS IN MILLIMETRES UNLESS SHOWN OTHERWISE

MOONRAKER AUSTRALIA PTY LTD
HOBART AUSTRALIA

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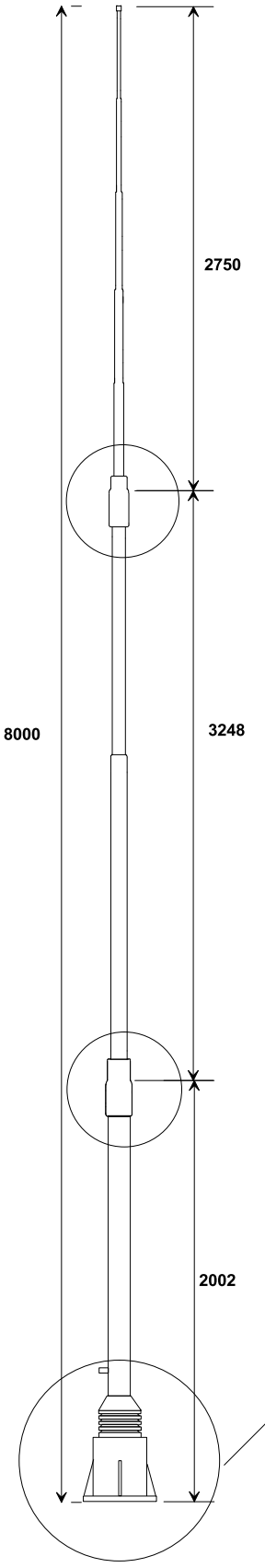
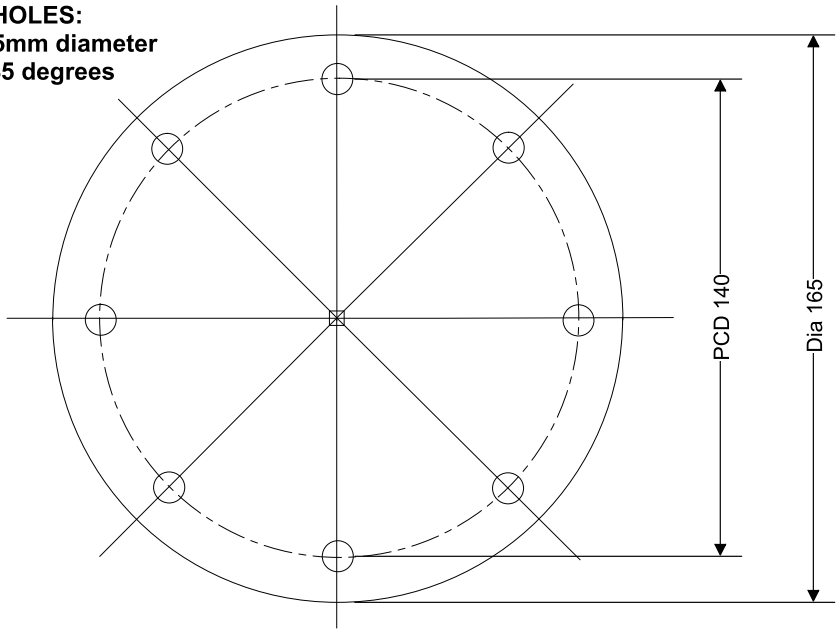
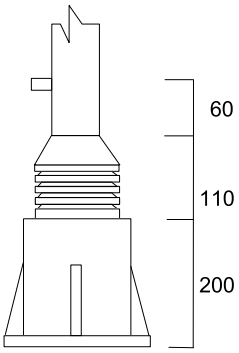
	/ /		DRAWN	GLE	DRAWING NUMBER UNCONTROLLED COPY — REV
REV BY	DATE	REVISION DESCRIPTION	APPR'D	7/00	

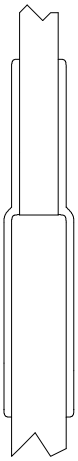




BASE MOUNT
Flange Details



DETAIL A
FEED POINT



DETAIL B
JOINT SEALING SHROUD

Tape should be wound to cover screws and joint first then place rubber shroud over the joint -

See Installation Instructions

DETAIL A

DIMENSIONS IN MILLIMETRES UNLESS SHOWN OTHERWISE

GLE	21 / 02 / 12		SCALE	NTS	MOONRAKER AUSTRALIA PTY. LTD. HOBART AUSTRALIA
	/ /		DES,ND	LWE/RK 97	TYPE 80B/S HF ANTENNA INSTALLATION DETAILS
	/ /		DRAWN	GLE	DRAWING NUMBER UNCONTROLLED COPY / REV
REV BY	DATE	REVISION DESCRIPTION	APPR'D	7/00	

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HF ANTENNA SYSTEMS

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100B - 100B/S - 100W

HIGH POWER CAPABILITY MARINE HF WHIP ANTENNA FOR PROFESSIONAL AND GMDSS USE ON OCEAN-GOING VESSELS

The type 100B - 100B/S -100W is a 10 metre (32.8 ft) heavy duty free standing whip antenna with a power capability of 1.2 kW PEP in the frequency range 1.6-30 MHz, designed to provide efficient and reliable communications in the professional services.

The antenna is available either side mounted (100W) or base mounted with base feed (100B) or side feed (100B/S) and is able to withstand wind speeds of 200 km/h without permanent deformation.

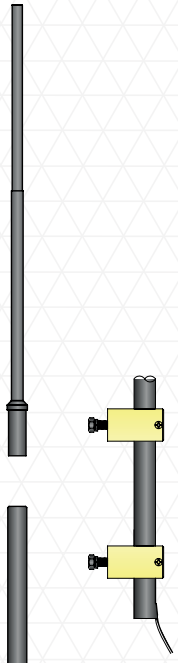
Construction is of heavy gauge marine grade aluminium alloy tubing, which provides a large low loss surface area for maximum radiating efficiency. The radiator and base flange are finished with a high durability epoxy based coating, highly resistant to chemical attack, abrasion and the effects of ozone and ultra-violet radiation.

The base mount is fabricated aluminium alloy with industry standard 165 mm O/D flange with eight mounting holes, drilled on 140 mm centres. Base insulator is ribbed high strength low loss polypropylene. Side mounting is via two ribbed low loss polypropylene insulators. Connection is via a base feedthrough insulator (B) or to a stainless steel side terminal above the base insulator (B/S) or bottom side mount (W).

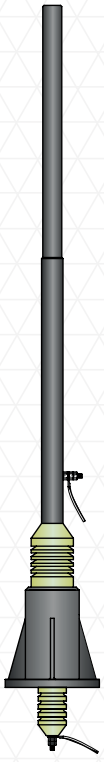
For ease of transport, the antenna breaks down into three sections which slip together and fasten with stainless steel locking screws. These joints are sealed using a special jointing kit and covered with flexible boots. A Tilting Mount which may be operated either by hand lowering or by an optional winding handle screw assisted mechanism is available permitting the antenna to be lowered and raised at will when obstructions are encountered and to facilitate maintenance. Mount construction is of hot dip galvanised coated steel with stainless and bronze fittings.

SPECIFICATIONS ▼

Colour	Black
HF Marine Band	1.6-30 MHz
Length	10.0 metres (32.8 ft)
Pattern	Omnidirectional
Polarisation	Vertical
Frequency Range	Unloaded 1.6-30 MHz with suitable ATU
Wind Loading	72 kg at 200 km/h Antenna survival: 200 km/h, 55m/sec
Power Capability	Unloaded 1.2 kW PEP
Tip Deflection	5.56 m at 200 km/h, 55m/sec
Temperature Rating	-30 to +55˚ C
Power Capability	1.0 kW PEP
Base Mounting	Industry standard 165 mm diameter flange with 8 x 13.5 mm (½ in) holes drilled on a 140 mm diameter
Side Mounting	Two 5/8 in Whitworth bolts into two 110 mm diameter side mounting insulators, spaced a minimum of 1 m apart.
Connection	Side feed via 1/4 in Whitworth s/s stud and lock nuts; base feed below through deckmount via 3/8 in Whit S/S stud and lock nuts
Packed Weight	100B - 33kg 100B/S - 30kg 100W - 21kg



100W
Side Mount



100BS/1
Side Feed

100B/1
Base Feed

ANTENNA JOINT SEALING KIT

The kit will consist of the following:

1 x upper joint shroud - small
1 x lower joint shroud - large
1 x container of special grease - antenna joint
Roll of special tape - antenna joint
O-ring - large

Other items required but not supplied:

1 x pair scissors
1 x Philips head screw driver
Rags - lint free
Cleaning fluid (general purpose)
Lubricant (detergent and water)

Antenna Section joining:

The object of this procedure is to exclude moisture from the joints of the antenna. **Strict adherence** to the instructions will prolong service life and ease disassembly of the antenna in years to come.

Note: When handling antenna ensure that hands and tools are clean. Wipe any dirt, grease etcetera from antenna using clean rag soaked in cleaning fluid.

Ensure antenna sections are adequately supported and are not knocked or scraped against any hard surfaces. If necessary, place protective wrapping around antenna to prevent damage to surface finish. The following instructions apply to both joints, we suggest assembly of bottom joint first.

Note 1: That only the bottom joint is fitted with an "O" ring seal.

Note 2: Synthetic rubber joint shroud material has a high tear resistance but do not stretch it more than necessary or use sharp objects to manipulate it.

Joint Sealing:

1. Remove fixing screws from joint section.
2. Lightly lubricate the external surface of the joint section with detergent and water (or similar).
3. Carefully slide the joint shroud over the antenna to the upper section of the joint to a point approximately 200mm above the joint.
4. Roll larger diameter section of joint shroud back over itself until the shroud is the length of the smaller diameter section.
5. Thoroughly clean mating surfaces of the joint and remove the detergent and water using rag and cleaning fluid and allow to dry. Ensure no dust or residue is left on surfaces.
6. Install "O" ring on upper section of joint in the "O" ring groove provided. (Base to mid section only) Use normal precautions observed for "O" rings to prevent damage such as nicks and abrasions.
7. Apply the conductive grease to both surfaces of joint using special grease supplied in jointing kit. Work grease around "O" ring.
8. Carefully insert upper section into lower section, gently rotate upper section to ensure even distribution of jointing grease.
9. Align joint fixing holes, insert fixing screws with internal star washers (base to mid section only) and tighten firmly.
10. Thoroughly clean excess grease from external surfaces of antenna using rag and cleaning fluid – allow to dry.
11. Wind the special tape supplied firmly (without stretching) once around antenna immediately below fixing screws and then spirally wind tape towards antenna joint, keeping tape firm. Each winding to step up by half the tape width until a position just above the joint is reached.

    Proper adherence to this procedure will ensure that the screws and joint are properly sealed.
12. Slide down and manipulate the shroud over the upper section of the joint. Roll the larger diameter section over lower section of joint. Manipulate the shroud until it is fully home on both diameters.
13. Thoroughly clean all excess lubricant from antenna using a dry rag.

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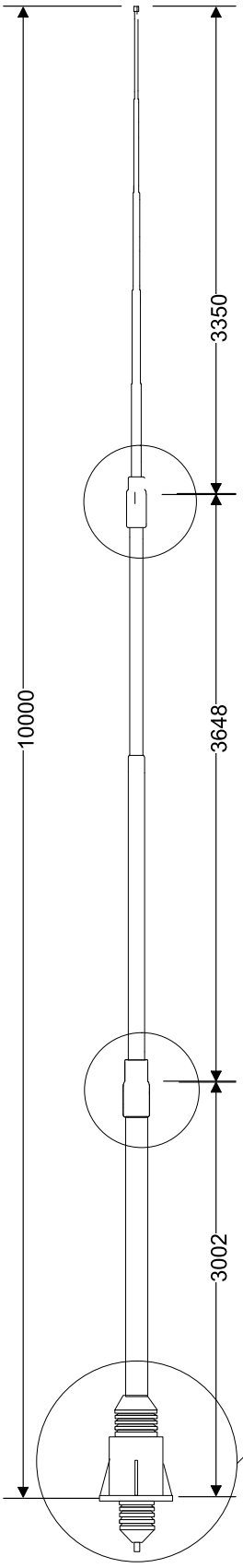
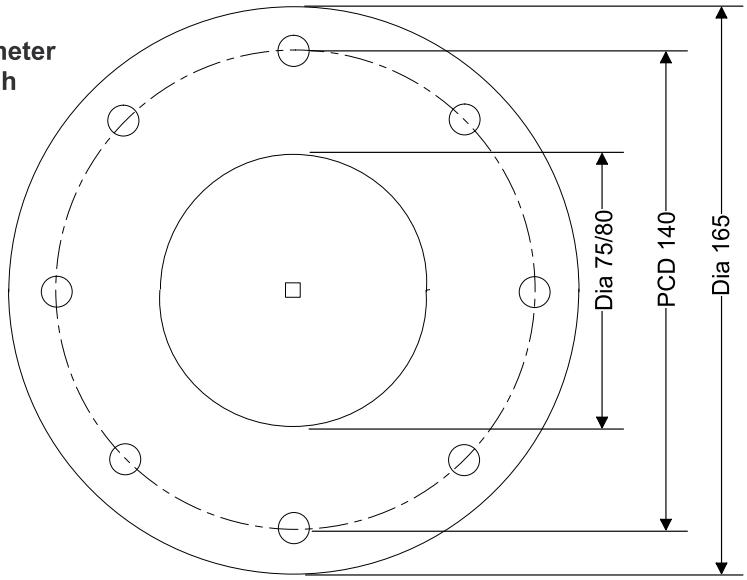
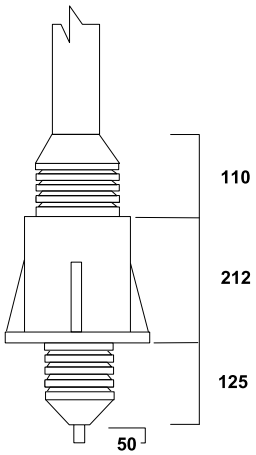


HOLES:
8 x 13.5mm diameter at 45 degrees

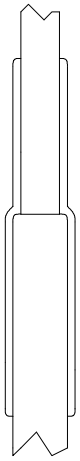
1 x 75/80mm diameter for feedthrough insulator



BASE MOUNT
Mounting Flange



DETAIL A
FEED POINT



DETAIL B
JOINT SEALING SHROUD

Tape should be wound to cover screws and joint first then place rubber shroud over the joint -

See Installation Instructions

DETAIL A

DIMENSIONS IN MILLIMETRES UNLESS SHOWN OTHERWISE

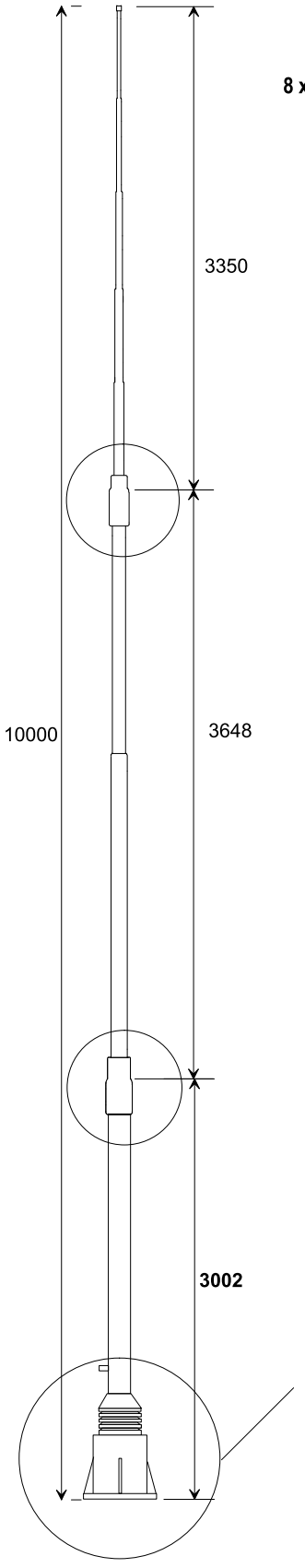
MOONRAKER AUSTRALIA PTY LTD
HOBART AUSTRALIA

TYPE 100B HF ANTENNA INSTALLATION DETAILS

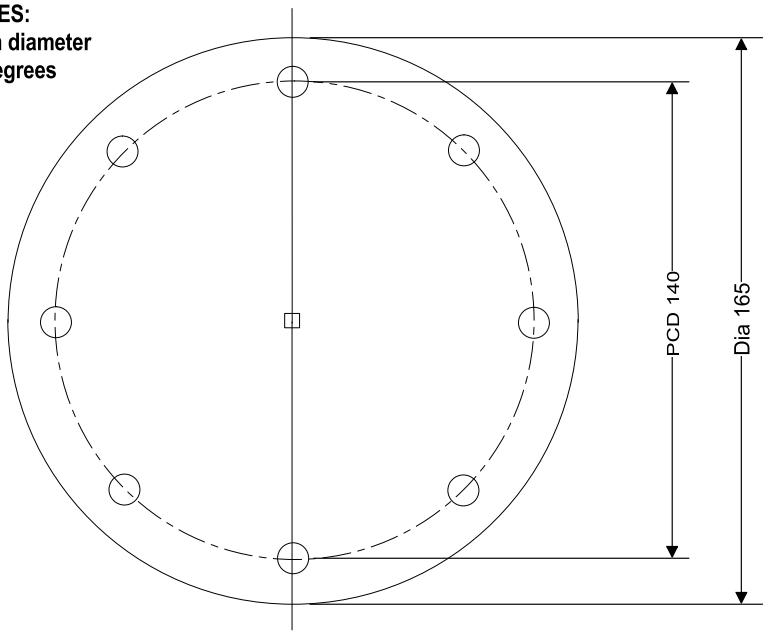
GLE	16/ 02/ 12		SCALE	NTS	
	/ /		DES,ND	LWE	10/93
	/ /		DRAWN	GLE	
REV BY	DATE	REVISION DESCRIPTION	APPR'D	7/00	

DRAWING NUMBER
UNCONTROLLED COPY

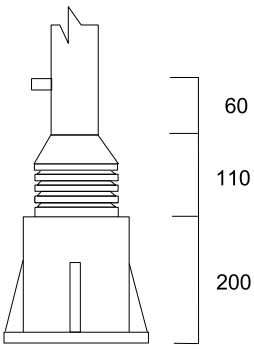
REV



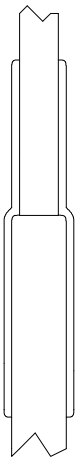
HOLES:
8 x 13.5mm diameter
at 45 degrees



BASE MOUNT
Flange Details



DETAIL A
FEED POINT



DETAIL B
JOINT SEALING SHROUD

Tape should be wound to cover screws and joint first then place rubber shroud over the joint -

See Installation Instructions

DIMENSIONS IN MILLIMETRES
UNLESS SHOWN OTHERWISE

MOONRAKER AUSTRALIA PTY. LTD.
HOBART AUSTRALIA

GLE	21 / 02 / 12		SCALE	NTS	TYPE 100B/S HF ANTENNA INSTALLATION DETAILS
	/ /		DES,ND	LWE 10/93	
	/ /		DRAWN	GLE	DRAWING NUMBER / REV
REV BY	DATE	REVISION DESCRIPTION	APPR'D	7/00	UNCONTROLLED COPY

MOONRAKER

HF ANTENNA SYSTEMS

www.cbgsystems.com

107B/1 - 107BS/1

HIGH POWER CAPABILITY BASE MOUNTED MARINE HF WHIP ANTENNA FOR VESSELS OVER 40 METRES (130 FEET) AND BASE STATIONS

The type 107B/1 is a 10.7 metre (35 ft) heavy duty free standing whip antenna with a continuous power capability of 1 kW in the frequency range 1.6 to 30 MHz, designed to provide efficient and reliable communications. NATO Stock No.s: 5985-66-137-0889 base feed, 5985-66-137-0890 side feed.

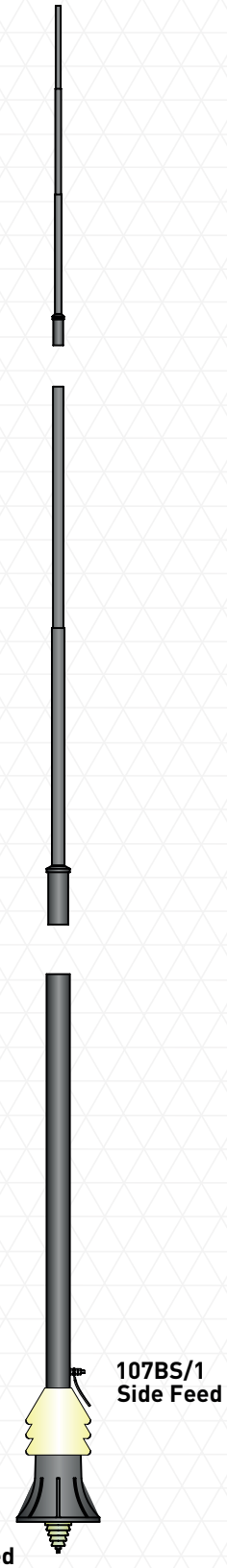
The antenna is base mounted and designed to withstand wind speeds of up to 240 km/h without permanent deformation. Construction is of heavy gauge marine grade aluminium alloy tubing, which provides a large low loss surface area for maximum radiating efficiency. The radiator and base flange are finished with a high durability epoxy based coating, highly resistant to chemical attack, abrasion and the effects of ozone and ultra-violet radiation.

A high reliability corona shield forms part of the base insulator. This reduces the effects of flashover caused by rain and saltwater spray and permits a rapid recovery from saltwater induced short circuits caused by splashing. The corona shield neither burns nor leaves tracks even when subject to severe surface arcing. It is made from a flexible modified polymer moulded over the antenna base insulator and is consequently impact resistant. The physical shape of the shield is arranged to provide a long and broken path to further assist with low leakage of RF energy.

For ease of transport, the antenna breaks down into three sections which slip together on "O" ring seals and are secured by three stainless steel locking set screws. Joint sealing kits and special grease are provided to prevent corrosion of the joint.

SPECIFICATIONS ▼

Colour	APO Grey
HF Marine Band	1.5-30 MHz
Length	10.7 metres (35 ft)
Pattern	Omnidirectional
Polarisation	Vertical
Frequency Range	Unloaded, 1.6-30 MHz with suitable ATU
Wind Loading	Antenna survival : 240 km/h, 65 m/sec
Power Capability	1 kW continuous
Construction of Radiator	Aluminium 3 sections: 3m, 3.8m and 4m approx.
Feed Connection	**107BS/1:** Upper side feed above corona shield
	107B/1: Lower feed below through deckmount
Base Mounting	Aluminium casting Ø315mm with 8 equally spaced M16 securing holes on 273mm PCD.
Packed Weight	85 kg
	Antenna and base unpacked 47 kg
Feed Connection	Upper side feed above corona shield (90B/S), or lower feed below through deckmount 90B)
Packed Weight	83 kg
	Antenna and base unpacked 45 kg



MOONRAKER

VHF ANTENNA SYSTEMS

www.cbgsystems.com

MDHB G3

HIGH GAIN BROADBAND COLLINEAR ANTENNA FOR MARINE OR LAND VHF MARINE BAND

A rugged lightweight 5/8 wave ground independent collinear to give efficient and dependable performance.

The type MD-G3 has been designed as a robust, high gain antenna system and is ideally suited for base station and marine mobile use. It is constructed of marine grade, low corrosion, tempered aluminium alloy tubing which is finished with a high durability epoxy based coating, highly resistant to chemical attack, abrasion and the effects of ozone and ultra-violet radiation. All metal parts are at DC earth potential for static discharge.

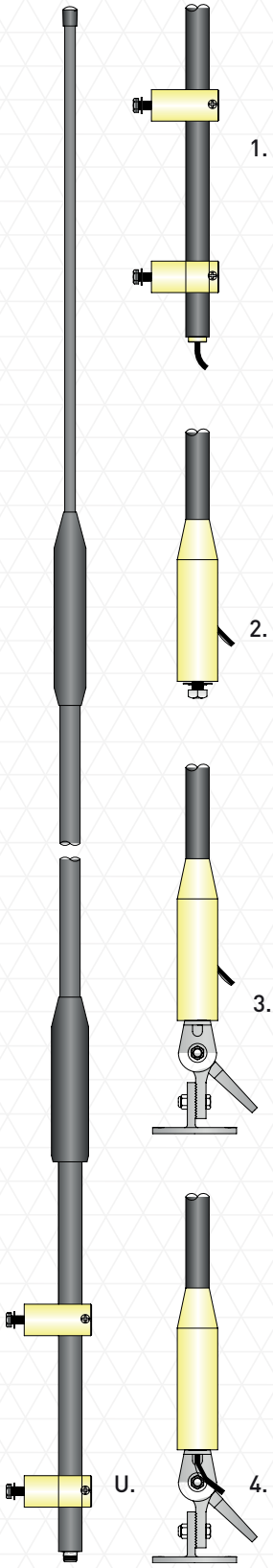
Moonraker MD G3 antennas have a proven service history in harsh marine environments from tropical waters to shipboard applications in Antarctica.

The MD G3 antenna has also found favour with both recreational and commercial offshore fisherman and marine search and rescue groups for it's excellent range and suitability for marine use.

Mounting is easily affected by way of nylon side mount insulators, (or by straps or clamps to mast or tower section), by 12mm metric base bolt or by a heavy duty stainless steel swingdown mount adjustable in two planes.

SPECIFICATIONS

	STANDARD	OPTIONAL
Colour	Black	White
Frequency Range	150-170MHz (centre frequency tuneable within this range)	
Bandwidth	7 MHz at <1.5:1 VSWR; 20 MHz at <2:1 VSWR	
Polarisation	Vertical , Omnidirectional	
Power	75 watts	
Gain	+5 dBi	
Impedance	50 ohms (nominal)	
Length	2.78m	
Section Diameter	Base: 22.3mm Top: 10mm	
Wind Loading	2.35 kg at 100 km/h (5.2 lbs at 60 mph) 3.56 kg at 120 km/h (7.8 lbs at 75 mph)	
Temperature	-50 to +55˚C 100% humidity	
Connection	5 metres RG58 coaxial cable with PL259 (UHF) connector; or female N Type connector permanently fitted in base of mounting tube (sidemount type)	
Mounting	U: Connector in base (no cable), Side mounted via insulators or clamps 1: Base fed cable with connector, Side mounted via insulators or clamps 2: Side fed cable with connector, Base mount with M12 bolt 3: Side fed cable with connector, Base mount with 1" x 14 TPI 4: Base fed cable with connector, Base mount with 1" x 14 TPI	
Packed Weight	3kg	
Warranty	12 months	



MDHB G3 INSTALLATION INSTRUCTIONS

Mounting:

SWINGDOWN MOUNT

1. Place the base plate of the mount in the desired position and use it as a template.
2. Mark the position of the mounting holes.
3. Drill 4 x 6.4mm (1/4 in) dia holes.
4. Bolt the mount/antenna in place

M12 BASE MOUNT ADAPTOR

1. Mark the mounting position on a horizontal surface or mount and drill a 12mm hole in the marked position.
2. Using a 12mm (metric thread) stainless steel or galvanised bolt, fasten antenna down firmly.

SIDE MOUNTING

1. For sidemount insulators: slide the two mounts onto the mounting tube. Mounts should be spaced not less than 25cm apart.
2. Mark the positions and drill the holes for the sidemount set bolts
3. Hose clamps or similar may be used to mount the antenna to a mounting pole, however suitable insulation should be used to prevent metal to metal contact.
4. Do not over tighten straps or clamps so as to damage the coating or crush mounting tube.
5. Keep antennas lower matching coil clear of support pole.

Important Factors:

1. The antenna cable should **not** be cut, coil and stow excess cable.
2. The mounting tube must not be drilled or damaged in any way.
3. The antenna should be mounted as high as possible and kept clear of nearby metal objects which may affect antenna tuning, and for best results, should be vertical, not sloping.
4. Note that due to the internal arrangements in this antenna it will exhibit a short circuit if tested with an Ohmmeter or DC circuit tester between inner and outer of coaxial cable.
5. Ensure coaxial connections are sealed against water ingress.
6. Do not allow the coaxial connector to take the cable strain. Secure cable with cable ties or tape.
7. When using a swingdown mount allow sufficient coaxial cable slack to permit antenna to swingdown without cable strain.

CONTACT DETAILS ▼

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Tasmania, AUSTRALIA 7009

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F +61 3 6273 1716
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www.cbgsystems.com

Moonraker products represent the pinnacle of antenna design. With over 45 years' experience supplying Defence, Commercial and Recreational industries. Moonraker antennas are individually tuned and manufactured to our stringent extreme marine quality standards that ensure maximum performance and service life.

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