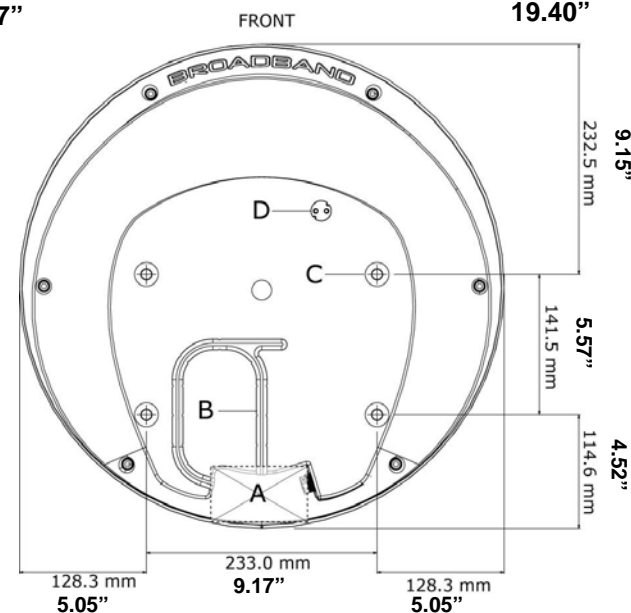
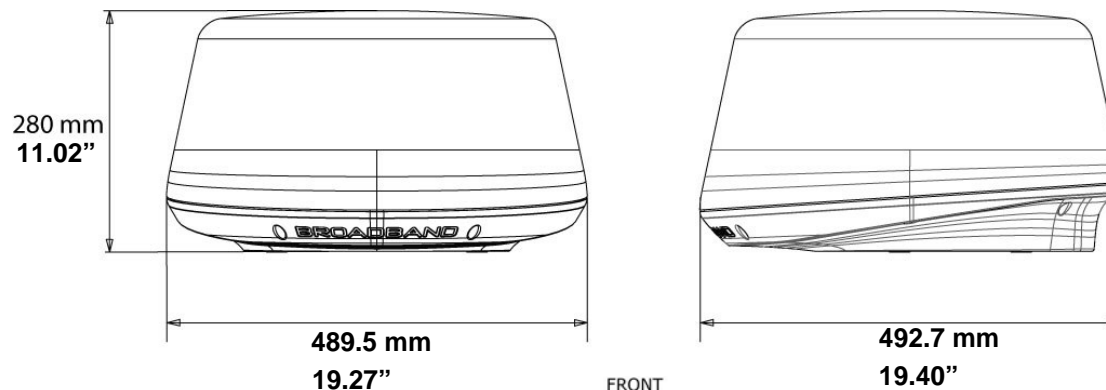
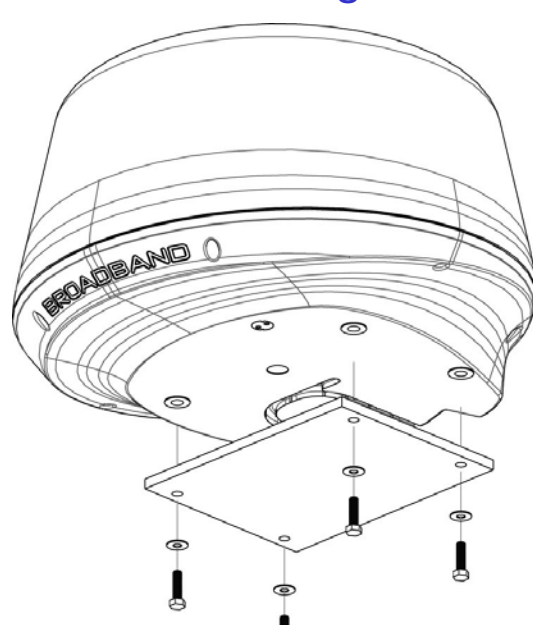


# Broadband Radar System Installation

## Radome mounting and dimensions



### Mounting the scanner

- Use the supplied mounting template and tape it securely to the chosen location site.
- Before drilling, check that:
  - you have oriented the mounting template correctly so that the front of the scanner unit will face the front of the vessel
  - the location site is not more than 15 mm (0.6") thick. If the location site is thicker use longer bolts

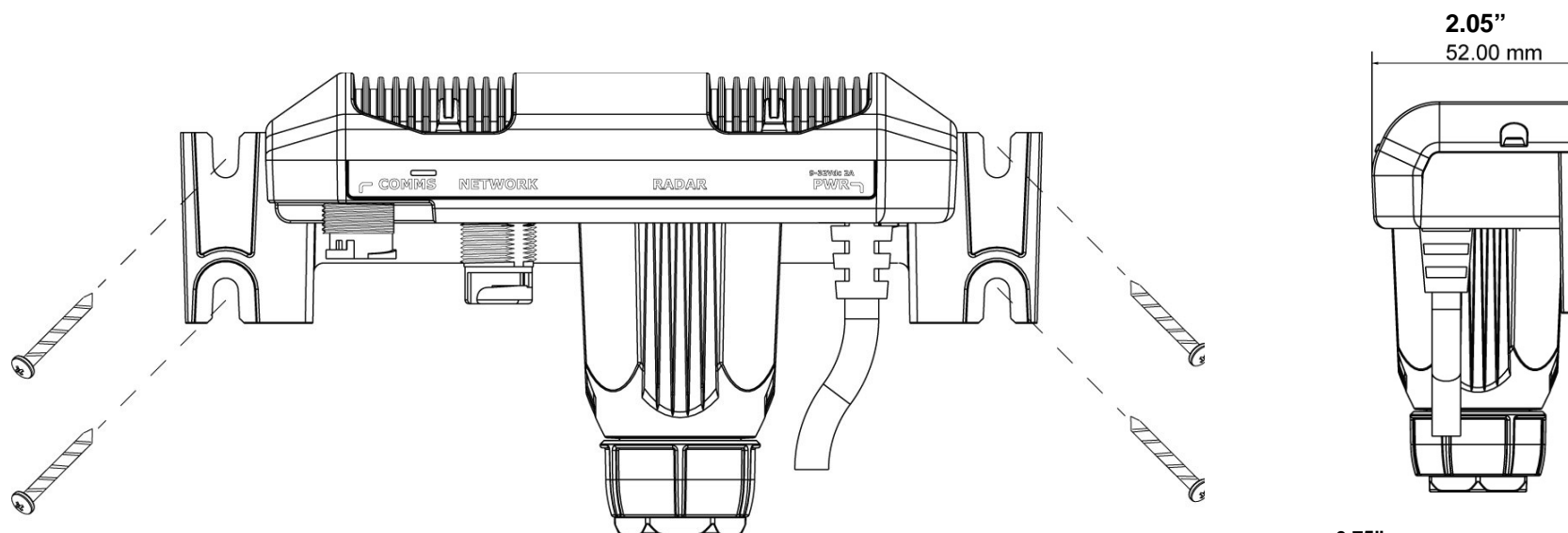
*Note: The bolts supplied are M8 x 30 mm x 4. If you need to use longer bolts make sure they are 304 stainless steel and allow for 15 mm (0.6") of thread contact.*

- The location site allows the drain hole to empty.
- Drill the four holes where shown.
- Remove the mounting template.
- Connect the scanner interconnection cable (see "Connect the Broadband radar to your display" page 16)
- Position the scanner carefully over the bolt holes so that they are aligned.
- Place a spring washer then a plain washer onto each bolt, as shown.
- Screw each bolt into each drill hole from the under side of the location site, and tighten securely.

Key	Description
A	Cable entry area
B	Cable retention channel
C	Bolt holes x 4 M8 x 30 mm
D	Breather

# Broadband Radar System Installation

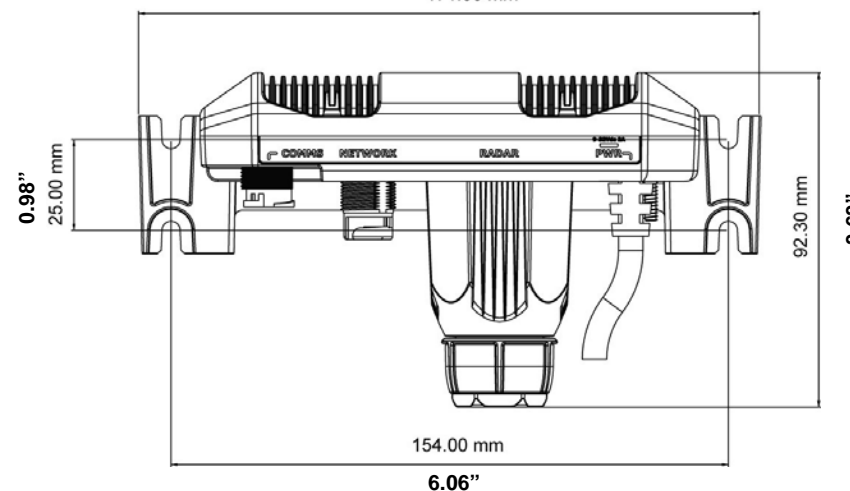
## Interface junction mounting and dimensions



6.75"  
171.50 mm

### Mounting the radar interface box

- Install the radar interface box in a dry location away from spray, rain, drips and condensation.
- The radar processor must be located where it can be easily connected to the ship's ground, the scanner interconnection cable, a power source and the display or display network.
- Allow enough room for cables to form a drip loop.
- Preferably mount the radar interface box on a vertical surface with cables exiting downwards.
- Secure to the surface using the four mounting points



# Broadband Radar System Installation

## Interface junction wiring

### Connect interconnection cable to the scanner

The scanner interconnection cable connects the scanner to the RI-10 or RI-11 interface box (or Lowrance HDS U.S only). The cable connects to the scanner using a 14 pin connector.

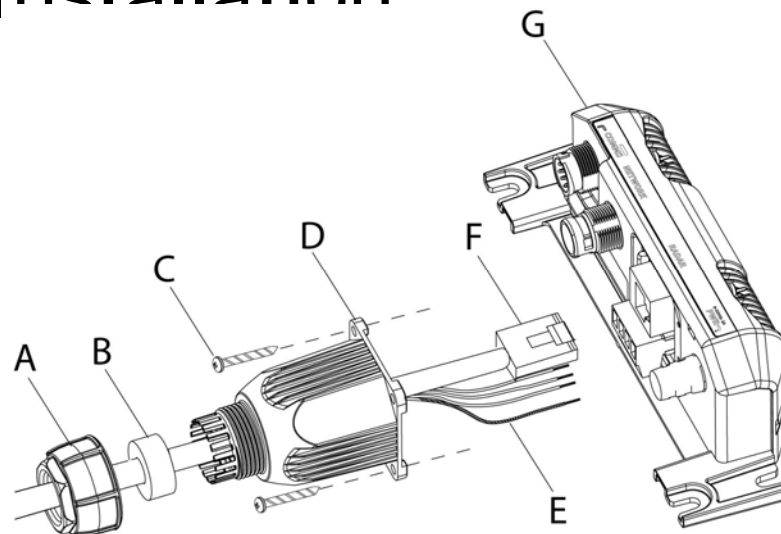
- Insert cable connector on to the male 14 pin plug on the scanner.
- Take care to align the connector correctly to avoid bending the pins. Secure the locking collar by rotating clockwise.
- Feed and secure the cable into the cable retention channel.

Interconnection cable pin out

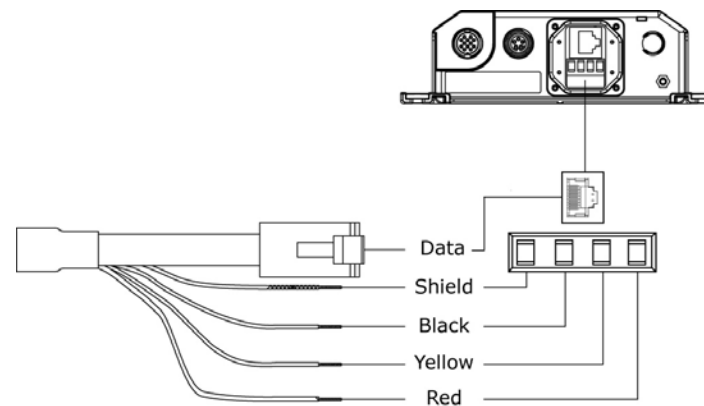
		Pinout		
Conn	Wire color	RJ45		
1	Black	Tinned wire		
2	Red	Tinned wire		
3	Yellow	Tinned wire		
4	Drain	Tinned wire		
5	N/A	N/A		
6	Blue	RJ45 Pin 4		
7	White / Blue	RJ45 Pin 5		
8	white / Brown	RJ45 Pin 7		
9	Brown	RJ45 Pin 8		
10	White / Green	RJ45 Pin 3		
11	N/A	N/A		
12	White / Orange	RJ45 Pin 1		
13	Green	RJ45 Pin 6		
14	Orange	RJ45 Pin 2		

### Connect the interconnection cable to radar interface box

- Remove the 4 phillips screws that secure the cable gland housing and disassemble.
- Slide the lock nut, gland washer, and gland housing on to the scanner cable
- Connect power wires to the terminal strip.
- Connect the RJ45 data connector.
- Secure the gland housing to the interface box using the 4 screws.
- Insert the gland washer into the gland housing.
- Screw the lock nut on to the gland housing.



Key	Description	Part Number
A	Lock nut	
B	Gland washer	
C	Screws x 4 M3x12mm phillips pan head	SR000041-G
D	Cable gland housing	
E	Power wires (see "Connect power" page 14)	
F	Radar data connector RJ45	
G	Radar interface box	AA010204 (Serial) AA010189 (Network)

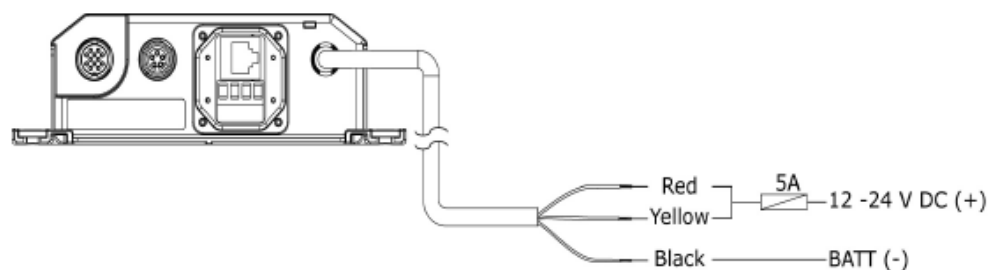


# Broadband Radar System Installation

## Interface Box wiring

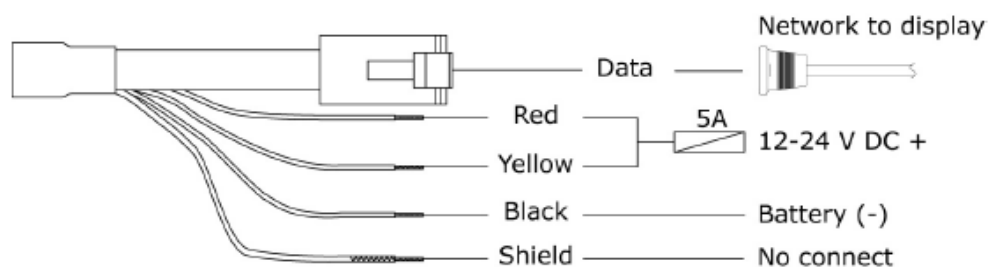
For systems using a radar interface box

- Connect the red wire to power positive 12 or 24 V DC. Use a 5 amp fuse or breaker.
- Connect the yellow wire to power source that will turn on the system (see above).
- Connect black to power negative.



For systems not using radar interface box (Lowrance HDS USA only)

- Connect the red wire to power positive 12 or 24 V DC. Use a 5 Amp fuse
- Connect the yellow wire to power source that will turn on the system (see above)
- Connect black to power negative.



# Technical Specs

Characteristic	Technical Data
<b>General</b>	
Compliance	°FCC/IC/R&TTE/AUS Type Certification complete °FCC ID: RAYBR24 °IC ID: 4697A-BR24 °Human Exposure General Public Safety Limit – touch dome anywhere.
Environmental	°IEC60945 4 <sup>th</sup> edition 2002-2008 °Operating Temperature: -25° to +55°C °Relative humidity: +35C, 95% RH ° <b>Waterproof: IPx6</b>
Relative wind velocity	51 m/sec ( <b>Max:100 Knots</b> )
Power consumption	Operating: 17W (Typ.) @ 13.8V <sub>DC</sub> Standby: 1.6W (Typ.) @ 13.8V <sub>DC</sub> ~ 110mA
DC input (at end of radar cable)	<b>9V to 32VV<sub>DC</sub> (12/24 Volt systems).</b> <b>Reverse polarity protection</b>
Transmitter Source (pre-heating time )	No magnetron – Instant On™
Outside dimensions	Height 280mm (11.02”) x Diameter 489.5mm (19.27”)
Scanner Weight (no cable)	<b>7.4 kg (16.3 lbs.)</b>

# Technical Specs continued

Characteristic	Technical Data
<b><i>Radar and Antenna Parameters</i></b>	
Radar Ranges	200' to 24NM with 17 range settings (nm/sm/km)
Rotation	24rpm +/- 10%
Transmitter frequency	X-band - 9.3 to 9.4GHz
Transmitter source (warm-up time)	No Magnetron – all solid state. Instant On™ (excluding CPU boot time of ~16 seconds)
Plane of polarization	Horizontal Polarization
Transmitter peak power output	100mW nominal
Main Bang Dead Zone & Tuning	None – not a pulse radar
Sea and Rain Clutter	3-5X less than a pulse radar
Sweep Repetition Frequency	200Hz
Sweep Time	1ms
Sweep Bandwidth	65MHz max
Horizontal Beam width (Tx and Rx antenna)	<b>5.2° +/- 10% (-3dB width)</b>
Vertical Beam width (Tx and Rx antenna)	<b>30° +/- 20% (-3dB width)</b>
Side lobe level (Tx and Rx antenna)	Below -18dB (within ±10°); Below -24dB (outside ±10°)
Noise figure	Less than 6dB

# Technical Specs continued

Characteristic	Technical Data
<b><i>Coms/Cabling/Mounting</i></b>	
Com Protocol	10/100Base-T Ethernet and Serial
Heading	NMEA2000/Simnet (with RI-10 interface box)
Inter Connecting cable length	<b>10m (32.8')</b> standard with <b>RJ45 thin custom connector – Display model dependent</b>
Maximum Inter Connecting cable length	<b>30m (98.4')</b>
Bolts (4)	M8x30 - 304 stainless steel
Footprint	Port to Starboard W233.0mm (9.17") x Bow to Stern L141.5mm (5.57") <b>(matches Garmin GMR18HD/Raymarine RD218 footprint)</b>
<b><i>Compatible Displays</i></b>	
Lowrance:	Lowrance HDS – 5", 7", 8", 10"
Simrad:	Simrad GB40 – 10", 12", 15"
	Simrad NX40/45 – 8", 12"
Northstar:	Northstar 8000i – 12", 15"
	Northstar M84/M121 – 8", 12"

**\*\* Note: Specifications subject to change without notice. \*\***

# What's in the Box?

AA010215 Lowrance, BR24 Radar Bundle, HDS -		RRP ex VAT £1,699.00
AA010186	BR24 radar dome (branded Lowrance)	1
AA010204	Navico Interface Box RI11	1
MN000760B-G	Installation manual	1
LA000667A-G	Mounting leaflet	1
AA010211	External radar cable, 10m	1
000-0127-28	Navico Ethernet cable (connects IF box to display)	1

# What's in the Box?

<b>AA010216 Northstar, BR24 Radar Bundle, M-Series</b>		<b>RRP ex VAT £1,799.00</b>
AA010186	BR24 radar dome (branded Northstar)	1
AA010204	Navico Interface Box RI11	1
MN000760B-G	Installation manual	1
LA000667A-G	Mounting leaflet	1
AA010212	External radar cable, 20m	1
AA010114	Serial Data Cable – 3mtr (connects IF box to display)	1

<b>AA010217 Simrad, BR24 Radar Bundle, NX4x</b>		<b>RRP ex VAT £1,799.00</b>
AA010186	BR24 radar dome (branded Simrad)	1
AA010204	Navico Interface Box RI11	1
MN000760B-G	Installation manual	1
LA000667A-G	Mounting leaflet	1
AA010212	External radar cable, 20m	1
AA010114	Serial Data Cable – 3mtr (connects IF box to display)	1

# What's in the Box?

<b>AA010218 Northstar, BR24 Radar Bundle, 8000i</b>		<b>RRP ex VAT £1,799.00</b>
AA010186	BR24 radar dome (branded Northstar)	1
AA010204	Navico Interface Box RI11	1
MN000760B-G	Installation manual	1
LA000667A-G	Mounting leaflet	1
AA010212	External radar cable, 20m	1
AA010079	Ethernet Cable (RJ45) – 0.5mtr (connects IF box to display)	1
000-0127-56	Ethernet adapter Cable (Navico-RJ45) – 2mtr (connects radar cable to display)	1

<b>AA010219 Simrad, BR24 Radar Bundle, GB40</b>		<b>RRP ex VAT £1,799.00</b>
AA010186	BR24 radar dome (branded Simrad)	1
AA010189	Navico Interface Box RI10	1
MN000760B-G	Installation manual	1
LA000667A-G	Mounting leaflet	1
AA010212	External radar cable, 20m	1
AA010079	Ethernet Cable (RJ45) – 0.5mtr (connects IF box to display)	1
000-0127-56	Ethernet adapter Cable (Navico-RJ45) – 2mtr (connects radar cable to display)	1