

LOWRANCE®

**NEW
FOR 2011**

Broadband 3G™ Radar

The evolution of the radar revolution.



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The evolution of the radar revolution.



Broadband Radar™ a.k.a. frequency modulated continuous wave (FMCW) radar is nothing new... but, it was when we first launched the technology in 2009! Understanding the shift in radar requirements, we developed one with superior short-

range target detection and unrivalled target separation. Armed with this new technology boaters received a previously unseen level of situational awareness to improve safe navigation in any state of visibility. However, despite conventional pulse radar being no match for Broadband Radar™ in its short-range capacity, it still offered more range... until now that is! Broadband 3G™

Radar will undoubtedly mark the beginning of the end of conventional pulse radar on recreational

craft as the newest 3G boasts a massive 30% increase in range over the original BR24 whilst retaining its impressive short-range credentials.

... a massive 30% increase in range over the original BR24 whilst retaining its impressive short-range credentials.



◀ Every marker and channel easily seen with Broadband 3G™ Radar

LOWRANCE®

Broadband **3G**[™] Radar Faster, better, longer...

NEW More Range. Same outstanding target detection and discrimination, but now with a huge 30% increase in range.

» InstantOn[™]

Solid-state technology produces an immediate, accurate on-screen image unlike normal warm-up times associated with magnetron pulse radars.

» Low Power Consumption

Ideal for boats of any size, sail, cruise or fish.

» Automatic Clarity

Proven auto harbour and offshore modes.

» MARPA Target Tracking

Track up to 10 targets. Requires a heading sensor.

» Crystal Clear Image

Fantastic for tight manoeuvres in marinas or in conditions of limited visibility.

» Quick Installation

No reason to open the dome, no tune or zero mile adjustment, and no radar-licensed technician required.

» Extremely Low Emissions

Safer than any other radar currently on the market and emitting less radiation than a mobile phone allowing it to be mounted anywhere.

» High Speed Mode

Select 36 RPM for almost instant updating at less than 2nm.

» Dual Guard Zones

Protect yourself from more angles.

Truly Different Technology.

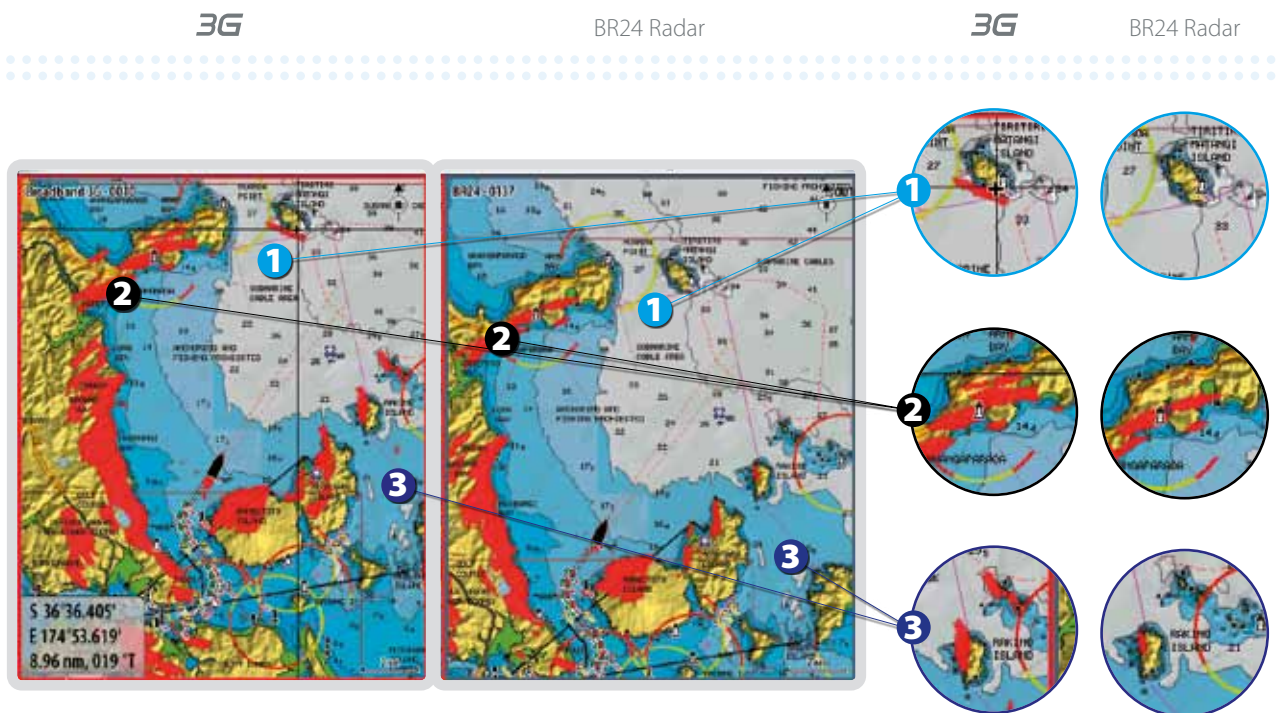
Traditional "pulse" radars use high-powered magnetrons to generate microwave signals with very short pulses of applied voltage. Simrad has developed the first solid-state X-band radar technology, which utilizes FMCW techniques. Simrad Broadband Radar sends a continuous transmission wave with linear increasing frequency (hence the term Broadband). The wave retains its frequency as it travels out and reflects back from any objects. Meanwhile, the transmitter continues to

output an increasing frequency. The difference between the currently transmitted and received frequencies, coupled with the known rate of frequency increase, is the basis for precisely calculating a "time of flight" and target distance. Since FMCW constantly builds up radar return energy (vs. a single pulse), this system provides target detection superior to pulse radars while transmitting at far lower energy levels.





» How far? Broadband 3G™ Radar



- Broadband 3G™ Radar exposes hard targets previously unseen by BR24 Radar

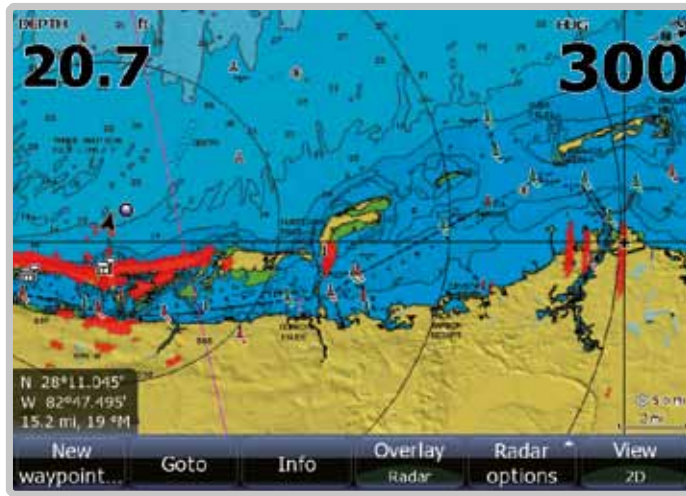
Target	BR24 Radar	Broadband 3G™ Radar
Large power station / wind farm	15-25nm	18-25nm+
Long coastline with 100m high cliffs	10-20nm	13-25nm+
High density urban coastline	6-12nm	8-15nm
Forest covered coastline gently sloping to 250m	4-8nm	5-10nm
Low lying suburban coastline	4-8nm	5-10nm
Large container ship (ship dependent)	7-14nm	10-17nm+
Low lying coastline < 50m, dense vegetation	3-6nm	4-8nm
Small low lying island	2-4nm	2.5-5nm
Medium size power boat	1-2nm	1.3-2.6nm
Channel markers with radar reflectors	1-2nm	1.3-2.6nm
Small power or sail boat	0.5 to 1.5nm	0.7-2nm
Small marker buoy with no reflector.	0.25-0.5nm	0.25-0.7nm
Kayak 300-800ft	300-800ft	300-800ft
Birds 160-500ft	160-500ft	160-500ft
Wide weather front with heavy rain.	6-12nm	8-15nm
Dense rain cell 100mm/hr	5-10nm	7-13nm
Heavy shower 25mm/hr	2-4nm	2.5-5.5nm
Light rain	1-2nm	1.3-2.6nm

Antenna Height = 13 ft

» Proven performance: Broadband 3G™ Radar

3G

» Long Range



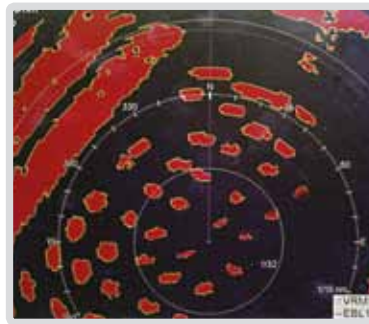
A medium sized power station is easily seen at 15nm

3G

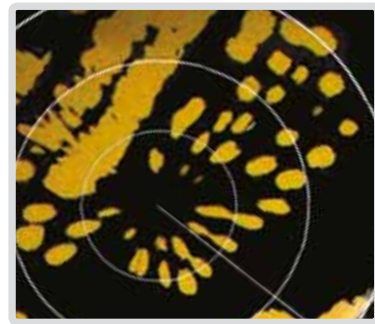
4kW Pulse Radar

» Harbour / Marina

- Boats and docks separated due to superior target definition



Superior short-range target discrimination clearly shows docks, boats and moored vessels.

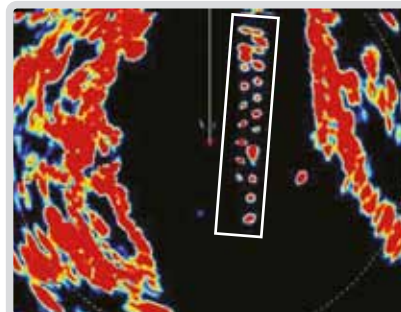


Inferior separation of boats, docks and other features, further obscured by "main bang" (where it matters most) closest to the vessel.

3G

4kW Pulse Radar

» Pile Moorings



Broadband Radar clearly shows staggered mooring poles, differentiating moored vessel.



Poles and vessel are less defined on pulse radar display.





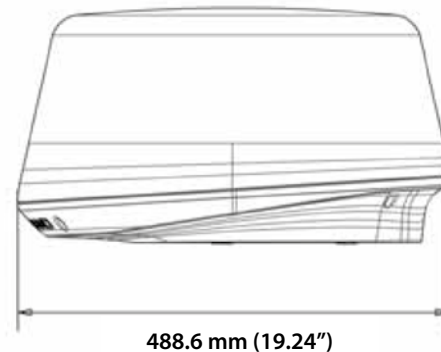
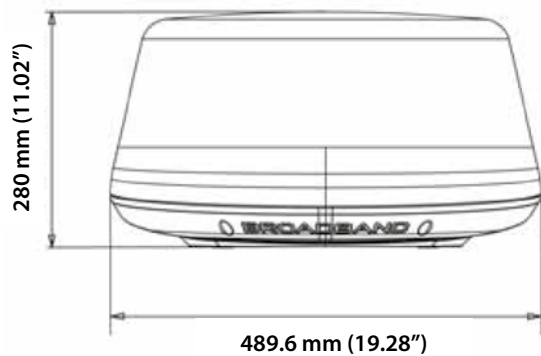
» HDS display



» Plug-in to HDS Multifunction Displays

- Broadband 3G™ Radar Ready
- Built-in BROADBAND SOUNDER™
- Internal GPS Antenna
- Lowrance StructureScan™ Sonar Imaging ready
- Ethernet networks and NMEA 2000® Performance Networking Options

» Technical Specifications: Broadband 3G™ Radar



Broadband 3G™ Radar Specifications

General	
Compliance	FCC/IC/R&TTE FCC ID: RAY3G4G IC ID: 4697A-3G4G Human Exposure General Public Safety Limit - touch dome anywhere
Environmental	IEC60945 4th edition 2002-2008 Operating Temperature: -25° to +55°C Relative humidity: +35°C, 95% RH Waterproof: IPX6
Relative wind velocity	51 m/sec (Max:100 Knots)
Power consumption	Operating: 18W (Typ.) @ 13.8VDC Standby: 2W (Typ.) @ 13.8VDC ~ 150ma
DC input (at end of radar cable)	9V to 31.2Vdc (12/24 Volt systems). Reverse polarity protection
Transmitter Source (pre-heating time)	No magnetron - Instant On™
Outside dimensions	Height 280mm (11.02") x Diameter 488mm (19.27 lbs.)
Weight (no cable)	7.4 kg (16.3 lbs.)
Radar and Antenna Parameters	
Radar Ranges	200' to 24nm with 17 range settings (nm/sm/km)
Rotation	24/36rpm +/- 10%; Mode Dependent
Transmitter frequency	X-band - 9.3 to 9.4Ghz
Transmitter source (warm-up time)	No Magnetron - all solid state. Instant On™

Radar and Antenna Parameters contd.	
Plane of polarization	Horizontal Polarization
Transmitter peak power output (at antenna port)	165mW (nominal)
Main Bang Dead Zone & Tuning	None - not a pulse radar
Sea and Rain Clutter	3-5 times less than a pulse radar
Sweep Repetition Frequency	200Hz
Sweep Time	1ms
Sweep Bandwidth	75MHz max
Horizontal Beam width (Tx and Rx antenna)	5.2° +/- 10% (-3dB width)
Vertical Beam width (Tx and Rx antenna)	25° +/- 20% (-3dB width)
Side lobe level (Tx and Rx antenna)	Below -18dB (within ±10°); Below -24dB (outside ±10°)
Noise figure	Less than 6dB
Coms/Cabling/Mounting	
Com Protocol	Ethernet 100 Base-T and Serial
Heading	NMEA2000/Simnet (with RI-10 interface box)
Inter Connecting cable length	10m (32.8') standard with RJ45 thin custom connector - Display model dependant
Maximum Inter Connecting cable length	30m (98.4')
Bolts (4)	4x30xM8 - 304 stainless steel
Footprint	W233.0mm (9.17") (port to starboard) x L141.5mm (5.57") (matches Garmin GMR18HD/Raymarine RD218 footprint)





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