

Expert Technology

▶ **Simrad NSE** 8- and 12-inch multifunctional displays provide professional-level performance with sophisticated charting, radar and echosounder technology. With powerful networking and vessel integration capabilities, NSE provides comfort and control at sea.



NSE12



▶ **Rotary controller:**
Perfectly intuitive for fine or course control of gain, zoom and menu with push to enter functionality



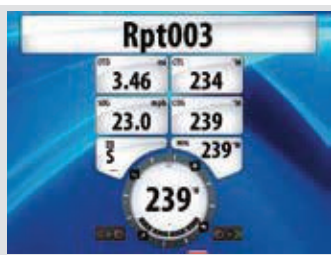
▶ **Alphanumeric keypad**
Quickly enter waypoint, route and track information with precision



▶ **QuickTouch keys**
Touch a button and make things happen

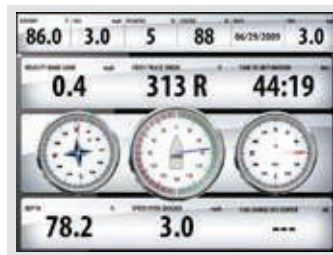


Simrad NSE and NSO systems: Pushing all the right buttons.



NAV

Emphasis is on “clear and easy to read.” The position and steer screen offer concise information displayed in large fonts and simple graphics.



INFO

Pre-configured gauge displays show vessel, environmental and navigation information in digital, analog or bar format. Optional video inputs complete your NSE system.



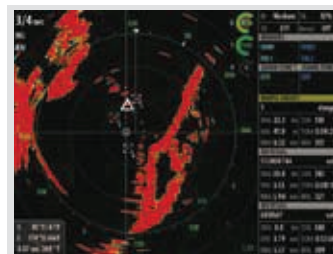
PAGES

The Pages utility is Command Central for frequently used options and tools. Display and edit waypoints, routes and tracks as well as saved log files. AIS, Alarms and GPS status pages are easily accessed.



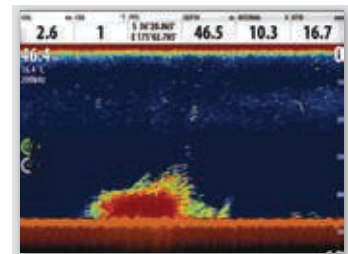
CHART

Instantly orient yourself to your surroundings. Simrad NSE and NSO come with embedded coastal charts that provide out-of-the-box navigation for both novice and experienced mariners.



RADAR

Radar improves a mariner’s situational awareness. Easy to operate Radar function allows for Navigation, Target Tracking and collision avoidance. Display both MARPA and AIS targets for the complete picture.



ECHO

NSE and NSO utilize high-performance Broadband Sounder™ technology to penetrate deepwater, clearly define underwater structure and “whisper” into the water to find more fish.

Integrate everything

Innovative high-performance, plug-and-play modules make Simrad Yachting Navigation Systems best in class, in every class.



StructureScan™ Sonar Imaging

Revolutionary StructureScan™ Sonar Imaging creates the ultimate in reality EchoSounding. StructureScan provides wide coverage in high detail with SideScan while the exclusive DownScan Imaging™ provides picture-perfect images of structure and fish directly below your boat for a true 180° view.

StructureScan high-speed ethernet networking allows units to share one StructureScan transducer that can be viewed ... on all NSO and NSE units; plug-and-play ethernet allows for quick and clean installs.



High Speed GPS

The impressive 16-channel NMEA 2000® GPS antenna provides superior sensitivity for signal acquisition, with incredible position accuracy, in a compact size that is easily flush mounted. This advanced positioning antenna is compatible with both NSO and NSE systems.



SonicHub™

SonicHub™ integrates flawlessly with award winning Simrad NSO and NSE displays to make your music more accessible when on the water, with a direct link to your entire music collection on your iPhone®, iPod®, iPod® touch and MP3s on a USB device, without the need for a stereo head - Selecting and playing music couldn't be simpler.



Broadband Sounder™ Modules

Raising the bar in fishfinding technology, the Broadband Sounder™ modules (BSM) deliver incredible echo clarity and the highest underwater definition ever achieved. Choose either BSM-1 or BSM-2, depending on your needs, for best-in-class performance.



Digital Switching

Simrad Yachting breaks new ground with support for CZone™ digital switching from BEP Marine. CZone™ digital switching offers a new paradigm for cost effective, control and monitoring of nearly any system on your boat. The Simrad NSE or NSO can operate as a CZone™ controller. Control your lights, turn on your bilge pump, monitor tank levels ... all from your NSE navigation system. NSE and CZone™ – a partnership in Innovation.

Find out more from www.bepmarine.com



Autopilot

The world's best-performing autopilot system now integrates with Offshore NSO and Expert NSE displays. Engineered to benefit both "space-challenged" dash layouts and multi-station expanded systems like flybridge boats, NSO and NSE autopilot integration offers tremendous flexibility. Control your autopilot like never before from your large, brilliant primary display.

More information on autopilots can be found on page 36



AIS

Integrate an NSO or NSE system with Simrad AI50 or NAIS-300 Class B AIS Systems to see and be seen. Overlay AIS-equipped vessel information on chart and radar displays for exceptional situational awareness.



Autopilot

AIS

HD Digital Radar

Broadband Radar™



Broadband Radar™

A revolution in radar unlike anything else on the recreational boating market, the Broadband Radar™ utilizes solid-state technology and provides superior target detection and separation at closer ranges, ease of operation and a new level of navigational safety.



HD Digital Radar

Simrad offers a range of radome and open array digital signal processing radar systems, working with power levels from 2 kW to 25 kW via high-capacity ethernet networking. These radars ensure exceptional detection of small or distant targets, virtually eliminating screen clutter allowing a clear and accurate image.

//// SIMRAD YACHTING NETWORKED NAVIGATION SYSTEMS ////





▶ **Autopilot Integration** Simrad Yachting, the world's most-awarded autopilot manufacturer, was the first to integrate autopilot control from a multifunction display.



▲ Combine charting, autopilot and vessel pages for unprecedented vessel control

▶ **A perfectly intuitive way to control the worlds best autopilots**

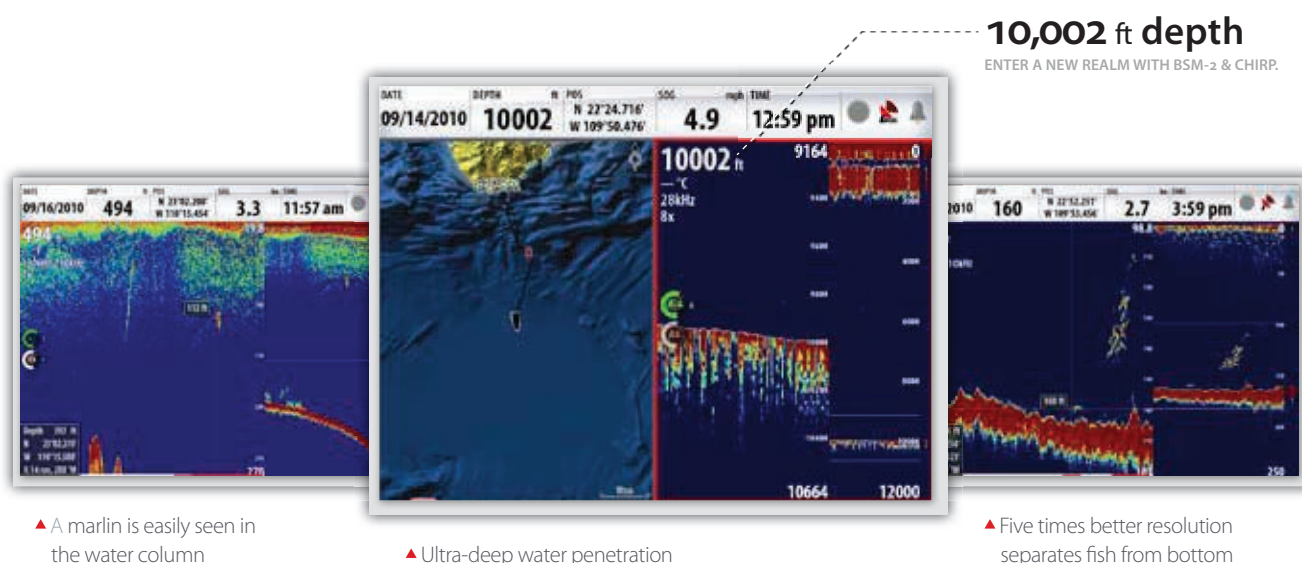
- Fully control your Simrad autopilot from an NSE or NSO Network Navigation System
- Alter course with the Rotary Controller or Cursor Pad
- Dedicated Standby / Auto key and Pilot Status indicators allow safe, easy pilot operation
- Performs all the functions of an AP24 or AP28
- NSE or NSO can replace or work together with an AP24 or AP28 controller
- Fully configure the autopilot from your NSE or NSO display
- See page 36 for more information on autopilots





► BSM-2 Broadband Sounder™ Module

The BSM-2 is the newest advance in Simrad Broadband Sounder™ technology with depth-defying digital echosounder performance that leaves 3 kW sounders in the shallows. Featuring crisper, cleaner detail of fish and bottom, the new BSM-2 penetrates to 10,000 ft./ 3,000 m – even at speed. For commercial and serious sport-fishing users, BSM-2 is the new higher standard in echosounder performance.



► More advanced technology

Along with enhanced Digital Signal Processing (DSP), BSM-2 Broadband Sounder is the first with Frequency Sweeping Pulse Compression technology – also known as CHIRP. Together, they produce higher target resolution and greater sounding depths.

► Penetrate the deepest waters on the planet

With imaging capability to the bottom at 10,000 ft./3,000 m – and deeper – BSM-2 paints the deepest drop-offs and canyon bottoms, while maintaining bottom lock, even at speed. Just think what you can see at 3,000 to 4,000 ft. (900 to 1200 m) with this performance level.

► Unprecedented resolution

BSM-2 technology delivers five times better midwater resolution. Target, identify and separate fish with incredible definition.

► ‘Whisper’ into the water to find more fish

BSM-2 outperforms traditional 3 kW systems on all counts – with lower transmit power and much less noise.

► Powerful performance transducer options

With dual sonar transceivers, dual temperature, and speed sensor ports housed in a rugged iPX6 die-cast aluminium casing, the BSM-2 module is professionally wired through glands and terminal blocks to virtually any Airmar® high-performance Broadband or traditional transducer. The BSM-2 dual transceivers operate in 25-45 kHz, 40-60 kHz, and 130-210 kHz range options. Narrowband transducers in the 28/38/50/200 kHz range are also compatible.

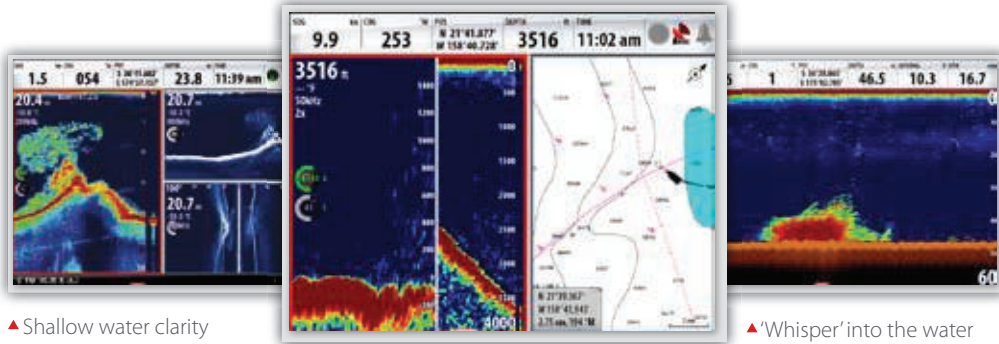
For more detailed information on Simrad echosounder technology, visit www.simrad-yachting.com.





▶ **The Simrad BSM-1** combines a clean, low-power signal, an adaptable long pulse and an extremely sensitive linear receiver.

The resulting high-quality signal and the best digital signal processing allow the BSM-1 to provide superior clarity and fantastic echosounder images. No longer is power the measure of echosounder performance.



▲ Shallow water clarity

▲ Deep water penetration

▲ 'Whisper' into the water

▶ **Penetrate deep waters**

Capability to track bottom and see structure in deep offshore terrain and canyons over 3,000 feet.

▶ **Clearly define underwater structure**

High-resolution linear receiver provides superior clarity in shallow- and mid-water levels.

▶ **'Whisper' into the water**

Exceptionally low power with efficient long pulses make the perfect 'low-noise' sonar.

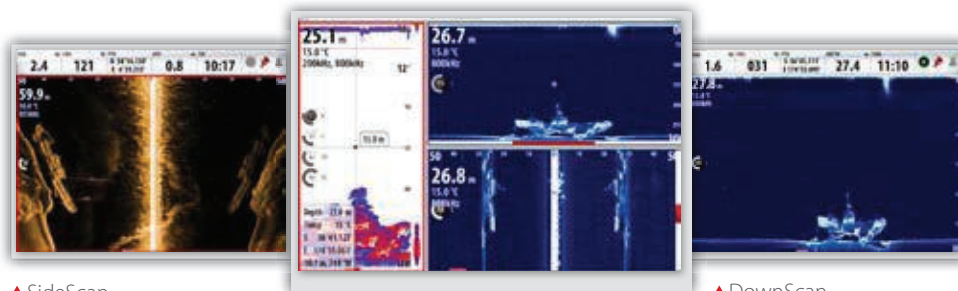
▶ **Tri-frequency capability**

Better match the frequency with your fishing location: 200kHz for shallow inshore, 50 kHz for deep offshore and 83 kHz for a desirable blend of both



▶ **StructureScan™ Sonar Imaging**

Revolutionary StructureScan™ Sonar Imaging creates the ultimate in reality echosounding. StructureScan™ provides wide coverage in high detail with SideScan while the exclusive DownScan Imaging™ provides picture perfect images of structure and fish directly below your boat for a true 180° view.



▲ SideScan

▲ DownScan Imaging™, SideScan and Broadband Sounder™

▲ DownScan

▶ **SideScan**

Full-screen, top-down panoramic view of highly detailed bottom imaging on either side of the boat.

▶ **DownScan Imaging™**

Adds a new dimension to echosounding. High-frequency imaging gives life-like representation of water structure.

▶ **TrackBack™**

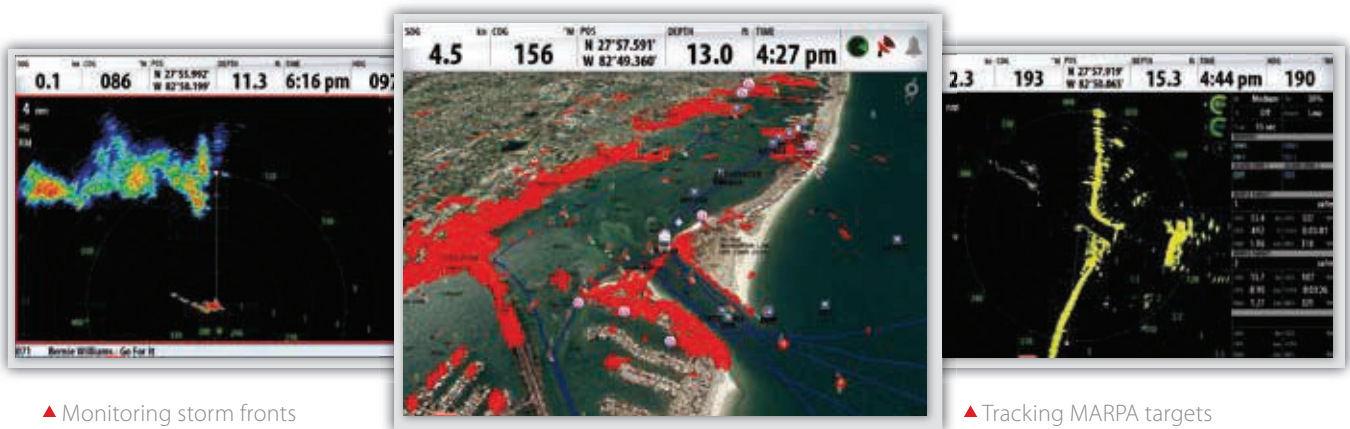
Scroll back simultaneously through sonar history and chart-plotter trail to easily mark waypoints.

▶ **DownScan Overlay™**

Exclusive new technology overlays DownScan Imaging™ onto Broadband Sounder™ on one display to clearly separate fish targets from surrounding structure.



▶ **HD Digital Radar** systems combine high-performance scanners and microwave technology with the latest in digital radar processing. Exceptional detection of small or distant targets with virtually no screen-clutter displays the full picture of your surroundings.



▲ Monitoring storm fronts

▲ Radar overlay

▲ Tracking MARPA targets

Interpret targets instantly through chart information – such as navigation aids and coastlines. Heading allows Mini-ARPA operation on the NSO & NSE with tracking capacity up to 10 different user-defined targets.

Different color palettes are provided to suit the user's taste as well as to improve viewing in different lighting conditions.

▶ Ranging from 2 kW domes to 25 kW arrays, Simrad Yachting provides radar solutions for all boaters' needs

2 kW Dome



4 kW Dome



6 kW Array



10 kW Array



25 kW Array



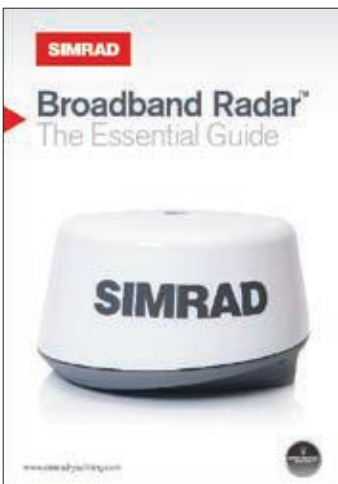


► **Advanced radar that is easy to use**

- Simrad HD Digital Radars automatically adjust color gradients on longer ranges for better interpretation when looking for storm areas and weather fronts
- The integration of a high-speed heading sensor allows up to 10 different MARPA targets to be displayed on screen
- The radar provides bearing and distance, speed and course, closest point of approach and time on selected targets. Easy to use Guard Zone areas can be shaped and defined by the user, to maintain a radar watch in specific zones. Qualified radar targets that enter the active zone will trigger an alert on the radar system.
- Simrad HD Radars now support True Motion Radar Display. Moving vessels are instantly distinguished from fixed objects and land masses, eliminating guesswork in PPI interpretation
- Simrad HD Radars ensure exceptional detection of small or distant targets using advanced Digital Signal Processing
- Automatic Harbor and Offshore modes provide optimized radar imaging for hands-off operation.



▶ **Simrad BR24 Broadband Radar™** – a revolutionary radar system unlike anything else on the recreational boating market. Utilizing Frequency Modulated Continuous Wave (FMCW), this breakthrough technology provides superior target detection and separation, ease of operation and a new level of navigational safety to a wide range of boats.



- ▶ **Crystal clear image**
Miss none of your immediate surroundings. Fantastic for tight maneuvers in marinas or in conditions of limited visibility.
- ▶ **InstantOn™**
Solid-state technology produces an immediate, accurate on-screen image.
- ▶ **Low power consumption**
Broadband Radar™ requires very little power: ideal for all types and sizes of boat.
- ▶ **Extremely low emissions**
This safest of radars means it can be mounted anywhere. Broadband Radar™ has fewer emissions than a mobile phone.
- ▶ **Quick installation**
No reason to open the dome, no tune or zero mile adjustment, and best of all – no radar-licensed technician required.
- ▶ **Automatic clarity**
Proven Auto Harbor and Offshore modes completely optimize the radar image – Just steer.

www.simrad-yachting.com

online resources

- The Essential Guide to Broadband Radar™
- See Broadband Radar™ in action
- Find an Authorized Broadband Radar™ dealer

Award winning technology



Winner
▶ NMEA
Technology
Award



Winner
▶ EDN
Innovation
Award



Winner
▶ Pittman
Innovation
Award



Winner
▶ NMMA
Innovation
Awards



Superb definition

Only possible at this range as Broadband Radar™ has no main pulse suppression that a conventional radar suffers from. Possible to see targets close together and yet they are clearly shown as separate targets.

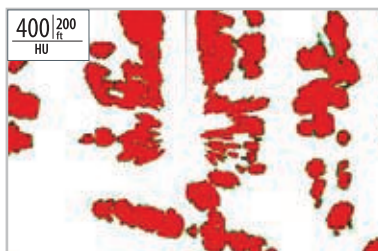
Four posts to starboard with two yachts clearly visible behind ▼



James Turner photo

Vacant moorings in a marina are easily identified ▼

At short ranges the Broadband Radar™ is showing the individual boats in their moorings, ideal at night when visibility may be compromised. In this type of situation conventional radar would only show a merged target possibly obscured by the main pulse.



James Turner photo

Range discrimination performance

Range discrimination is a measure of the radar's ability to distinguish closely spaced targets on the sample bearing. FMCW technology provides unsurpassed performance for your maximum safety and precise navigation. At 16nm and less the BR24 has from 1X to 5X more the range discrimination ability to see those smaller targets than conventional 2 kW pulse radars. This greatly improves your situational awareness.

Superior to 2 kW Radar

▼ At 16 nm and less the BR24 has from 1X to 5X more the range discrimination ability to see those smaller targets than conventional 2 kW pulse radars.

