The Simrad brand is a leader in electronics technology for commercial vessels. Our products are designed to withstand the most rugged environments, to give you the confidence you demand at sea. Known for ease of use, simple installation and state of the art, precision technology, Simrad products won’t let you down.

Over the past sixty years, we have developed systems for the benefit of commercial vessels. Today we offer a range of sophisticated auto steering, navigation and safety products for vessels of all sizes, from small vessels on inland waterways to larger coastal commercial and passenger craft.

For a product that works as hard as you do, look no further than the Professional Series. Whether you are servicing rigs in the Gulf of Mexico, or are responsible for maritime missions involving homeland security, maritime law enforcement or search and rescue, you need our expertise on board.

Demand high performance from your crew.

Demand perfection from your electronics.
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Smart Solutions for Work Boats

The product range spans ECDIS, radar, sounders, heading sensors, gyros and VHF, with easy networking options including autopilots, instruments and SART/EPIRB safety devices.

Discover dependable, adaptable and smart solutions designed specifically for the Work Boat market.

LOW MAINTENANCE GYROCOMPASSES

- Simrad Gyrocompasses are the most reliable on the market, thanks to the fact that there is no need to change fluids on a yearly basis. Simrad Gyrocompasses are virtually maintenance free!
- A wide range of control units provide complete flexibility of system configuration for new installation and easy retrofit into existing repeater systems.

ARGUS RADAR

MAKE YOUR VESSEL MULTI-PURPOSE

- With the optional Advanced OSID Software module installed, the Simrad ARGUS radar system provides the navigator with both the unique Oil Spill Detection software and the special Ice Navigator features.

CUSTOMISE YOUR SYSTEM

- The standard configuration always includes 100 target ARPA, 300 target AIS and an electronic built-in interswitch for dual radar installations. But customisation is easy, for example adding a heading input from an autopilot system or dedicated sensor will allow the radar image to be overlaid on the chart.

TROUBLE FREE INSTALLATION/SERVICE

- The interface with the radar console is through a single connector, and it is not necessary to open the antenna casing during installation. Every analogue adjustment is made remotely from the ARGUS console.
- Easy installation and service. The radar cable snaps on from the outside ensuring quick, easy and trouble free installation.

PILOTS THAT WORK AS HARD AS YOU DO

- The Simrad AP70 and AP80 feature a unique WORK Mode.
- Customise the parameters to suit individual vessel needs, such as fully laden load, vessel-towing mode, light ship configuration etc.

AP70/80 - MODULAR AND FLEXIBLE AUTO STEERING SOLUTIONS

- 2 basic systems using the same modules: design and build a system to your unique requirements. Configure a system to meet the requirements for a Type Approved autopilot.
- Designed for professionals - CAN-bus networking, triple support of independent rudders and multiple thrusters, and simple networking via the Micro-C protocol. Data sharing and system control is much easier and flexible.
The MX Series offers a full range of Type Approved GPS navigation products including D/GPS display units, antennas, AIS and GPS heading sensors. With over twenty years of development behind them, these products are made with the needs of today’s professional mariners in mind.

**IMO GPS**

- **We are one of the few ECDIS suppliers that offers an approved system that runs on 24 V DC.** This makes CS68 ideally suited for smaller vessels under 10,000 tons. Quick access to the most important functions makes CS68 the easiest ECDIS to operate on the market.
- **Combines both monitoring and planning modes – all safety functions are continuously monitored even when route planning.**
- **Includes a unique voice alarm system which makes it possible to separate ECDIS alarms from other bridge alarms.**
- **An anti-grounding feature, detecting obstacles on the chart, may be set to meet user requirements.**
- **Fully integrated design comprises of the processor, networking and power supply in a single, compact package for minimal helm space usage.**
- **Includes TrackSteer – the ability to steer a vessel based on steering commands from the ECDIS, enabling the navigator to program a route and vessel deviation limits into the Simrad CS68 so the autopilot will auto-steer based on turning parameters of the vessel.**
- **Web based, type specific training provided by Simrad and Safebridge with online certification, means navigators can get up to speed in no time.**
Professional navigation and communication equipment is vital for the safety and efficiency of crews accountable for the defence and security of maritime waterways. The latest generation of Simrad navigation products provide tried and trusted solutions for a wide variety of patrol boat applications.

**SIMRAD MULTIFUNCTION DISPLAYS**

**CRITICAL DECISIONS REQUIRE DIRECT ACTION**
- With Simrad NSE, Primary functions are always only one key press away with our direct access keys. Your crew can focus on the task at hand.
- Simrad NSS evo2 provides all the benefits of touchscreen, with the added bonus of a rotary control button for rough sea states.

**COMPLETE FLEXIBILITY – WITH MASTERLESS NETWORKING**
- Share Charting, Echosounder and Radar information across multiple units.
- Masterless system - any networked unit can operate independently. Network switch may be required.
- Plug and play data networking for Micro-C compatible sensors and instrumentation.
- Video input and output for display of video or navigation data where you want it.

**POWER CONTROL FOR FAST START UP**
- Speed and efficiency are critical components for a successful mission. Our MFD displays and radars can be configured so that the whole system is fully operational 43 seconds after the main battery switch is thrown.
- Incorporate digital switching for complete power control and instant mode selection to switch from night running mode to stealth mode.
- The system can be programmed to power down to sleep mode, where it is instantly operational at the push of a button.

**BRUTALLY STRONG SIMRAD CONSTRUCTION**
- Modern Simrad styling with flush mount option compliments any helm design.

**HIGH PERFORMANCE MULTIFUNCTION DISPLAYS**
- Experience zero chart lag time and seamless zooming and panning with the Simrad NSS evo2 and NSE systems.
- Achieve 10Hz GPS accuracy with the Simrad High Performance GS25 GPS Antenna.
- Integrate everything from thermal imaging to engine data.
- Get consistency across the fleet. Save all settings and transfer via the USB interface.
- Also available in a black box version (NSO evo2) for system flexibility.
FLIR CAMERA INTEGRATION

- Integrate a FLIR night vision camera to assist with search and rescue missions.

STRUCTURES\(\text{\textasciitilde}\)SCAN™ – SIDE AND DOWN IMAGING

- Integrate StructureScan™ to achieve high detail, picture perfect bottom viewing to reveal underwater structure including wreckage, nets, rocks and even divers or bodies.
- Search a 200x200m area in the water in less than an hour before you put divers in the water.
- Record sonar logs and upload them to the online Biobase service to create your own up-to-date and detailed bathymetric maps for coastal, port and harbour areas.

BROADBAND 4G™ RADAR FOR ULTIMATE SURFACE DETECTION

Our fourth generation Broadband Radar offers features that no other compact system can offer.

BEAM SHARPENING TECHNOLOGY

- The only dome radar in the world to employ beam sharpening. This unique function allows you to control the level of target separation, so you can see the sharpest images possible when you need them most. Perfect for Search and Rescue operations.

RANGE PERFORMANCE

- Noise rejection control increases range performance and increases target detection sensitivity.
- Up to 48rpm rotation for tracking high speed targets.
- Outperforms competitors’ compact magnetron based domes.

RADAR FOR COVERT OPERATIONS

- Low Probability of Intercept (LPI) is inherent to the Broadband Radar. FMCW technology operates at extremely low transmitter power making interception by ESM equipment virtually impossible.
IMO Work Boats

SENSORS
- 25 kW Argus Radar (9 Feet)
- HS80A GPS Compass
- GC60 Gyrocompass
- MX612 DGPS Antenna
- WS80 Wind Sensor

BRIDGE
- CS68 ECDIS (24” display)
- ARGUS Radar (26” display)
- IS80 Rudder Angle Indicator
- IS80 Speed Instrument
- HR80 Heading Repeater
- WI80 Wind Indicator
- Panorama 545 Rudder Angle Indicator
- AP80 Autopilot
- FU80 Autopilot Remote Control
- MX612 Navigation System
- EG70 GPS EPIRB
- SA70 AIS-SART

WORK STATION
- Argus OSID (23” display)
- CS68 ECDIS (24” display)
- HR80 Heading Repeater
- WI80 Wind Indicator
- MX612 Navigation System

BRIDGE
- CS68 ECDIS
- Argus Radar
- IS 80 Rudder Angle Indicator
- IS80 Speed Instrument
- HR80 Heading Repeater
- WI80 Wind Indicator
- AP80 Autopilot
- FU80 Autopilot Remote Control
- MX612 Navigation System
- Safety Products

SENSORS
- 25kW Radar
- HS80A GPS Compass
- GC60 Gyrocompass
- MX612 DGPS Antenna
- WS80 Wind Sensor

WORK STATION
- Argus OSID
- CS68 ECDIS
- HR80 Heading Repeater
- WI80 Wind Indicator
- MX612 Navigation System
# Patrol Boats

## Multi Station (integrate up to 6 stations)

<table>
<thead>
<tr>
<th>STATION 1</th>
<th>SENSORS</th>
</tr>
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<tbody>
<tr>
<td>NSO (M019) Multifunction Display</td>
<td>SIMRAD 10kW Radar</td>
</tr>
<tr>
<td>OP40 Controller</td>
<td>Broadband 4G Radar</td>
</tr>
<tr>
<td>IS70 Rate of Turn Instrument</td>
<td>GS25 GPS Antenna</td>
</tr>
<tr>
<td>IS70 RPM Instrument</td>
<td>MX575 DGPS Compass</td>
</tr>
<tr>
<td>RS35 VHF Radio</td>
<td>Camera</td>
</tr>
<tr>
<td>AP70 Autopilot</td>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th>STATION 2</th>
<th>BELOW DECK</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSO (M019) Multifunction Display</td>
<td>SIMRAD BSM-3 Broadband Sounder Module</td>
</tr>
<tr>
<td>OP40 Controller</td>
<td>SonarHub Sounder Module</td>
</tr>
<tr>
<td>IS70 Rate of Turn Instrument</td>
<td>NAI5-400 AIS Transponder</td>
</tr>
<tr>
<td>IS70 RPM Instrument</td>
<td></td>
</tr>
<tr>
<td>RS35 VHF Radio</td>
<td></td>
</tr>
<tr>
<td>AP70 Autopilot</td>
<td></td>
</tr>
</tbody>
</table>

| STATION 3 | |
|-----------| |
| NSE Multifunction Display | |
| IS70 Rate of Turn Instrument | |
| IS70 RPM Instrument | |
| RS35 VHF Radio | |

## STATIONS 1-3

| NSO Multifunction Display | p.28 |
| IS70 Rate of Turn Instrument | p.36 |
| IS70 RPM Instrument | p.36 |
| RS35 VHF Radio | p.38 |
| AP70 Autopilot | p.16 |
| NSE Multifunction Display | p.29 |

## SENSORS

- 10kW Radar ........................................ p.24
- Broadband 4G Radar ................................. p.25
- GS25 GPS Antenna .................................. p.32
- MX575 DGPS Compass .............................. p.35

## BELOW DECK

- BSM-3 Broadband Sounder Module ............ p.26
- SonarHub Sounder Module ........................ p.26
- NAI5-400 AIS ........................................ p.30
HSC / Passenger Vessels

**SENSORS**

- 12kW Argus Radar (6 Feet) .......................... p.24
- Broadband 4G™ Radar ................................ p.25
- GC80/GC85 Gyro Compass ......................... p.34
- MX521B DGPS Antenna .............................. p.32
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- HS80 Compass ........................................ p.35
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- WS80 Wind Sensor .................................. p.37

**BRIDGE**

- CS68 ECDIS ............................................. p.29
- ARGUS Radar (27" Display) .......................... p.24
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- IS80 Rate of Turn Instrument ....................... p.36
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Simrad Professional In Action

**ARGUS RADAR**

- Argus S-Band - standard PPI screen showing dual range
- Argus X-Band – oil spill screen showing oil spill area and recovery booms
- Argus X-Band – ice detection mode showing an open water crack in the ice

**BROADBAND & HD DIGITAL RADAR**

- 4G dual range display with different gain settings
- StructureScan and 4G for above and below water surveillance
- 4G targets at 24nm

**DATA/VESSEL INTEGRATION**

- AIS vessel data
- FLIR camera integration
- CZone integration – battery and tank monitoring
**AUTOPILOTS**

- Customisable WORK profiles
- Versatile setup with intuitive steering system selection
- Detailed thruster interface with visual reference of thruster activity

**ECHOSOUNDER MODULES**

- **StructureScan** - Truck located on the sea bed using StructureScan
- **StructureScan** - Minato Maru shipwreck. Downscan™, SideScan and Sonar
- BSM-3 - Bottom structure at 10,000 ft – ultra-deep water penetration

**CUSTOMISED CARTOGRAPHY - CREATE DETAILED BATHYMETRIC MAPS USING YOUR STRUCTURESCAN SONAR LOGS.**

- **Data Capture** - Survey area whilst recording sonar logs
- Upload survey logs to the online Biobase system at cibiobase.com

Biobase will create bathymetric maps using your sonar data, this can then be downloaded and used with your Simrad Multifunction Display. Biobase maps can show vegetation levels, heat maps and provide spatial analysis information at a glance.
Integrate Everything

Innovative and industry unique, plug & play performance modules.

**ECHOSOUNDER MODULES**

Revolutionise the way you find fish with our award-winning echosounder technology. For deep water choose the outstanding BSM-3 and for shallow water look no further than the life-like imagery of SonarHub or StructureScan® HD.

**HIGH SPEED GPS**

The impressive 32-channel NMEA 2000 GPS antenna with an integrated eCompass/Gyro. In addition to accurate and reliable location, benefit from stable and smooth chartplotting, accurate COG at any speed, and the ability to precisely overlay radar on charts.*

Additionally the antenna provides superior sensitivity for signal acquisition, with incredible position accuracy. Compatible with both NSO and NSE.

*Please note this product is not suitable for use with MARPA or autopilot systems, this requires a rate compass such as the RC42.

**ENGINE MANAGEMENT**

Integrate real time gasoline or diesel fuel flow monitoring together with fuel tank information, for extended mission range and eco friendlier operations. A wide range of sensors available.

**GOFREE WIFI-1**

The WIFI-1 is a marine grade wireless gateway which allows owners of compatible Simrad Multifunction Display units to view data when utilised in conjunction with a wireless device. View key navigation data on devices such as an iPad from anywhere on the vessel.

**CAMERA INPUTS**

Video input for night vision and multi purpose cameras. Connect up to two cameras per Simrad NSE, or connect up to two cameras to the NSO evo2 MPU, and two on the MO16, MO19 and MO24 Monitors.

**ECHOSOUNDER MODULES**

Revolutionise the way you find fish with our award-winning echosounder technology. For deep water choose the outstanding BSM-3 and for shallow water look no further than the life-like imagery of SonarHub or StructureScan® HD.
DIGITAL SWITCHING

Breaking 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 the vessel. The Simrad MFD’s can operate as a CZone controller. Control lights, turn on bilge pumps, monitor tank levels – all from the NSO or NSE navigation system. Simrad and CZone – a partnership in Innovation.

Find out more: www.bepmarine.com

AUTOPilot

The world’s best performing autopilot systems offer complete flexibility to integrate with a wide variety of steering types - including CAN-bus using the SG05 PRO.

AIS

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

HD DIGITAL RADAR

Simrad offers a range of radome and open array digital signal processing radar systems, working with power levels from 4 kW to 25 kW via high capacity Ethernet. These radars ensure exceptional detection of small or distant targets, virtually eliminating screen clutter allowing a clear and accurate image.

BROADBAND RADAR

A revolution in radar unlike anything else on the marine market, the Broadband Radar utilises solid-state technology and provides superior target detection and separation at closer ranges, ease of operation and a new level of navigational performance.
Autopilot

Autopilot Control Units

AP80
The AP80 is one of the smartest type approved autopilot solutions available on the market today. It will adapt to your individual load characteristics, and wind and wave conditions, to help lower operating costs and reduce risk. The USB port in the front makes loading and storing these settings so simple.

Like the AP70, the slightly larger AP80 is totally modular in nature, so installation and operation are effortless. Both the AP70 and AP80 control units share common autopilot computers and accessories making them the most flexible autopilot systems available.

With 6 individual scenario profiles, networking with NMEA2000 cabling, a special work mode, and triple support of independent rudders and multiple thrusters, the Simrad AP80 is a one stop shop for vessels from 20 feet to super tankers.

AP70
The AP70 is a type approved autopilot system providing complete heading and course control for a wide range of vessels. It can be used as a standalone autopilot control unit, or is perfect as a second station in an AP80 system.

With its unique colour user interface and intuitive graphics, ability to store up to 6 individual scenario profiles, and self-learning software, this modular system makes installation and operation so easy. You won’t find another pilot on the market that boasts the same performance, durability and versatility without the high cost.

KEY FEATURES
- 5 inch colour bonded display
- Adaptive, self-learning software
- Total of 6 user modes available
- Unique WORK mode: customize the parameters to suit individual vessel needs
- Supports up to 6 independent drives (rudders + thrusters)
- Includes USB port for saving or resorting master or fleet settings

KEY FEATURES
- As per AP80 plus:
- Includes TrackSteer – the ability to steer a vessel based on steering commands from the ECDIS
- Quick Command and Quick Dodge enhanced manual steering
- Pendulum ferry function; a XTD (Cross Track Distance) offset feature to run a vessel parallel to a track line without changing modes or disengaging navigation
- Toe-Angle Support for manual entry of rudder toe-angles to improve slow speed performance
- International Maritime Organization (IMO) approved autopilots for Volvo EVC and IPS drive
AP60

The AP60 is a feature packed entry level autopilot system for the professional mariner who is looking for the perfect balance between performance and price and does not require IMO certification.

Based on the proven user interface of the AP70/80 and offering thruster integration, the AP60 is incredibly easy to set up and use. The intuitive menu system and large, high contrast mono screen with clear digits make reading the display effortless. The heading control includes a rotary course control wheel, as well as dedicated WORK, AUTO and STANDBY buttons, enabling simple performance selection depending on your task at sea.

The AP60 includes 2 user configurable WORK modes – these allow the operator to have pre-set modes of operation for the vessel. An operator could have light ship, partially loaded, fully loaded, underway, trawling or manoeuvring options pre-loaded. The AP60 also includes turn patterns such as U-Turns, C-Turns, Dodging and NoDrift steering – features you wouldn’t expect to find in an entry level pilot.

**KEY FEATURES**

- Cost effective advanced autopilot system with thruster integration
- Compatible with an extensive range of existing Simrad autopilot controllers and accessories
- 2 user configurable WORK profiles, customise parameters to suit individual vessel needs
- Designed by the world leaders in autopilot technology – we steer any boat!
- Backed by the Simrad Advantage Service program which includes 7 years of worldwide product support

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Dimensions (LxWxH)</th>
<th>AP80</th>
<th>AP70</th>
<th>AP60</th>
</tr>
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<tbody>
<tr>
<td>252x32x144 mm (9.9x1.2x5.7 in)</td>
<td>230x32x144 mm (9x1.2x5.7 in)</td>
<td>172x48x114 mm (6.7x1.9x4.5 in)</td>
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<tr>
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<td>HSC, MED, CCS, USCG</td>
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<tr>
<td>Screen</td>
<td>5” 16-bit colour bonded TFT</td>
<td>5” 16-bit colour bonded TFT</td>
<td>4.4” Greyscale TFT Matrix LCD</td>
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<td>Yes</td>
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</tr>
<tr>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Thruster Control</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Full Track Steering</td>
<td>Yes</td>
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<tr>
<td>USB Port</td>
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<tr>
<td>Adaptive</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Pendulum Ferry Function</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Course Change Rotary Knob</td>
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<td>Power Consumption</td>
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<td>0.7/0.4 A at 12 V DC (backlight full)</td>
<td>1.2 W max. typical</td>
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<td></td>
<td>0.4/0.3 A at 24 V DC (backlight off)</td>
<td>0.4/0.3 A at 24 V DC (backlight off)</td>
<td></td>
</tr>
<tr>
<td>Power Supply (Supply Voltage)</td>
<td>12/24 V DC +30 – 10%</td>
<td>12/24 V DC +30 – 10%</td>
<td>8-16 V DC (CAN network powered)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-30 to +55°C (-22 to 131°F)</td>
<td>-30 to +55°C (-22 to 131°F)</td>
<td>-15 to +55°C (5 to 131°F)</td>
</tr>
</tbody>
</table>
Autopilot

Autopilot Computers

A comprehensive range of computers and interface units are offered with the Simrad AP60, AP70 and AP80 autopilots providing a complete solution for every steering system. The autopilot computer is the heart of the system, processing navigation data from the compass, GPS and instrument system to an output of smooth control of the rudder. We have a system to steer any vessel! Our Autopilot Computers interface with steering systems.

AC70

Drive computer for rudder using reversible motor or non-isolated solenoids and frequency rudder angle feedback. Connection for NFU remote control and one channel IEC 61162-1 (NMEA 0183) RX/TX or IEC 61162-1,2 and 3 compatible.

AC80A

Drive computer for analogue or proportional control of rudder or thruster using analogue voltage or low level current with possibility for frequency, voltage or current angle feedback, digital drive handshake and external mode input. Built in CAN-bus supply and 4 channel IEC 61162-1 (NMEA 0183) RX/TX.

SG05

SG05 is the Simrad Autopilot Computer for CAN-bus steering systems. The SG05 Pro version provides autopilot control from AP70 and AP80 control heads to CAN-bus steering systems and can be used as part of an IMO approved autopilot system.

AC80S

Drive computer for on/off or proportional control of rudder or thruster using galvanic isolated solenoids or high level current with possibility for frequency, voltage or current angle feedback, digital drive handshake and external mode input. Built in CAN-bus supply and 4 channel IEC 61162-1 (NMEA 0183) RX/TX.

AC85

Customizable computer that can be configured with up to four PCBs depending on the installation requirements. Drive computer cabinet with CAN-bus supply and 4 channel IEC 61162-1 (NMEA 0183) RX/TX (not mounted). Prepared for additional mounting of up to three drive boards with same functionality as SD80, AD80 or AC70.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th></th>
<th>AC70</th>
<th>AC80A</th>
<th>AC80S</th>
<th>AC85</th>
<th>SG05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (LxWxH)</td>
<td>211x180x60 mm (8.3x7x2.3 in)</td>
<td>340x256x100 mm (13.4x10x3.9 in)</td>
<td>340x256x100 mm (13.4x10x3.9 in)</td>
<td>410x440x105 mm (16.1x17.3x4.1 in)</td>
<td>94.5x26x26 mm (3.7x1x1 in)</td>
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<td>1.0 kg (2.2 lb)</td>
<td>4.1 kg (9.0 lb)</td>
<td>4.1 kg (9.0 lb)</td>
<td>4.1 kg basic (9.0 lb)</td>
<td>0.1 kg (0.2 lb)</td>
</tr>
<tr>
<td>Power Supply</td>
<td>12/24VDC + 15V CAN</td>
<td>12/24VDC</td>
<td>12/24VDC</td>
<td>12/24VDC</td>
<td>12V via SimNet</td>
</tr>
<tr>
<td>Output for CAN-bus Supply</td>
<td>-</td>
<td>15VDC/4A</td>
<td>15VDC/4A</td>
<td>15VDC/4A</td>
<td>-</td>
</tr>
<tr>
<td>N2K Load (LEN)</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>Config dependant Max 10</td>
<td>1</td>
</tr>
<tr>
<td>Operation Temperature</td>
<td>-15C to +55C (5F to 131F)</td>
<td>-15C to +55C (5F to 131F)</td>
<td>-15C to +55C (5F to 131F)</td>
<td>-15C to +55C (5F to 131F)</td>
<td>0C to +55C (32F to 131F)</td>
</tr>
<tr>
<td>Protection</td>
<td>IPX2</td>
<td>IPX4</td>
<td>IPX4</td>
<td>IPX4</td>
<td>IPX4</td>
</tr>
<tr>
<td>Mounting</td>
<td>Bulkhead</td>
<td>Bulkhead</td>
<td>Bulkhead</td>
<td>Bulkhead</td>
<td>Bulkhead</td>
</tr>
<tr>
<td>Material</td>
<td>Plastic + Anodized Aluminium</td>
<td>Epoxy Coated Aluminium</td>
<td>Epoxy Coated aluminium</td>
<td>Epoxy Coated aluminium</td>
<td>Polyamide</td>
</tr>
</tbody>
</table>
Autopilot

Interface Units

Autopilot Interface Units connect with thrusters and positioning systems.

AD80
Drive interface for analogue or proportional control of rudder or thruster using analog voltage or low level current with possibility for frequency, voltage or current angle feedback, digital drive handshake and external mode input.

SD80
Drive interface for on/off or proportional control of rudder or thruster using galvanic isolated solenoids or high level current with possibility for frequency, voltage or current angle feedback, digital drive handshake and external mode input.

SI80
The SI80 is a 24V/12V signal interface module that provides up to four IEC 61162-1 (NMEA 0183) input and output channels and Micro-C power supply.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>AD80</th>
<th>SD80</th>
<th>SI80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (LxWxH)</td>
<td>211x168x60 mm (8.3x6.6x2.3 in)</td>
<td>211x168x60 mm (8.3x6.6x2.3 in)</td>
<td>211x180x60 mm (8.3x6.6x2.3 in)</td>
</tr>
<tr>
<td>Weight</td>
<td>0.5 kg (1.1 lb)</td>
<td>0.5 kg (1.1 lb)</td>
<td>0.9 kg (2.0 lb)</td>
</tr>
<tr>
<td>Power Supply</td>
<td>15V CAN</td>
<td>15V CAN</td>
<td>12/24VDC</td>
</tr>
<tr>
<td>Output for CAN-bus Supply</td>
<td>-</td>
<td>-</td>
<td>15VDC/4A</td>
</tr>
<tr>
<td>N2K Load (LEN)</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Operation Temperature</td>
<td>-15C to +55C (5F to 131F)</td>
<td>-15C to +55C (5F to 131F)</td>
<td>-15C to +55C (5F to 131F)</td>
</tr>
<tr>
<td>Protection</td>
<td>IPX2</td>
<td>IPX2</td>
<td>IPX2</td>
</tr>
<tr>
<td>Mounting</td>
<td>Bulkhead</td>
<td>Bulkhead</td>
<td>Bulkhead</td>
</tr>
<tr>
<td>Material</td>
<td>Plastic</td>
<td>Plastic</td>
<td>Plastic + Anodized Aluminium</td>
</tr>
</tbody>
</table>
Intelligent Remote Controls

You can power steer the vessel and change course in Auto mode from various locations with our range of remote controls.

**FU80**

The FU80 (a manoeuvre controller) is a Follow Up remote which means that the rudder, when hand steering, moves to the commanded angle set by turning the knob to port or starboard. It can also be used for course change when autosteering.

**NF80**

The NF80 (a drive controller) is a Non Follow Up remote which means that the rudder, when hand steering, moves as long as the steering lever is kept at maximum port/starboard position. It can also be used for course change when autosteering. The lever has spring return to mid-position.

**QS80**

The QS80 (Quick Stick™ controller) operates the same way as NF80 when the joystick is kept to port or starboard. When the joystick is moved forward and released, the autopilot goes into automatic mode. When the joystick is moved backwards when automatic steering is active, the autopilot goes to standby. If the joystick is moved backwards when standby, the rudder moves to mid-position. It can also be used for course change when autosteering. The joystick has spring return to centre position.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>FU80</th>
<th>NF80</th>
<th>QS80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (LxWxH)</td>
<td>144x80x40 mm</td>
<td>144x80x40 mm</td>
<td>144x80x40 mm</td>
</tr>
<tr>
<td></td>
<td>(5.5x3.1x1.6 in)</td>
<td>(5.5x3.1x1.6 in)</td>
<td>(5.5x3.1x1.6 in)</td>
</tr>
<tr>
<td>Weight</td>
<td>0.5 kg (1.1 lb)</td>
<td>0.5 kg (1.1 lb)</td>
<td>0.4 kg (0.8 lb)</td>
</tr>
<tr>
<td>Course Steering (No Drift)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Waypoint-Waypoint Steering</td>
<td>-</td>
<td>-</td>
<td>Yes</td>
</tr>
<tr>
<td>Non Follow Up Steering</td>
<td>-</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Follow Up Steering</td>
<td>Yes</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Direct Command Transfer (open/unlocked system)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Thruster On/Off with direct button</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Built in audible alarm</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Course Change in Autosteering</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Remote Controls

**JS10**
The Simrad JS10 Joystick is a Non Follow-up steering lever designed for indoor and outdoor console mount. It has a spring-loaded return-to-mid-position and is equipped with 10 m (33') of cable and installation hardware. The rudder will move for as long as the lever is held in left (Port) or right (Starboard) position.

**R3000X**
The R3000X is small handheld remote control with two push buttons for power steering or course selection (port and starboard), and one push button with built-in lighted indicator for mode selection. Also features NFU steering in STBY and Dodge modes plus course changing in auto mode.

**S35**
Simrad S35 is designed for indoor and outdoor bulkhead mount and is made of shock resistant polyxymethylene. The lever has spring loaded return to midposition. A push button with light indicator is used for mode selection when connected to a Simrad J3XX junction unit.

**S9**
The Simrad S9 is a heavy duty NFU steering lever. Depending on how it is connected, the S9 will disengage the autopilot and operate the solenoids by direct override. When the S9 handle is pushed in, the autopilot will resume in AUTO mode on the present heading.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>JS10</th>
<th>R3000X</th>
<th>S35</th>
<th>S9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td>55x55x70(+41) mm</td>
<td>122x50x18 mm</td>
<td>192x120x93 mm</td>
<td>144x144x78(+53) mm</td>
</tr>
<tr>
<td></td>
<td>(2.1x2.1x2.7(+1.6) in)</td>
<td>(4.8x2.0x0.7 in)</td>
<td>(7.5x4.7x3.6 in)</td>
<td>(5.6x5.6x3.0(+2.0) in)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>0.5kg (1.1 lb)</td>
<td>0.4kg (0.9 lb)</td>
<td>1.4kg (3.0 lb)</td>
<td>2.8kg (6.2 lb)</td>
</tr>
<tr>
<td><strong>Material</strong></td>
<td>Plastic / Rubber / Epoxy Coated Aluminium</td>
<td>Epoxy Coated Aluminium</td>
<td>Polyacetal (POM)</td>
<td>Epoxy Coated Aluminium</td>
</tr>
<tr>
<td><strong>Protection</strong></td>
<td>Joystick: IP66</td>
<td>IP56</td>
<td>IP56</td>
<td>IP56</td>
</tr>
<tr>
<td></td>
<td>Terminals: IP22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mounting</strong></td>
<td>Panel (desk)</td>
<td>In bracket (included)</td>
<td>Panel (desk) or Bulkhead</td>
<td>Panel (desk) or Bulkhead</td>
</tr>
<tr>
<td><strong>Operation temperature</strong></td>
<td>-25C to +55C (-13F to +130F)</td>
<td>-25C to +55C (-13F to +130F)</td>
<td>-10C to +55C (14F to 130F)</td>
<td>-25C to +55C (-13F to +130F)</td>
</tr>
<tr>
<td><strong>Max. inductive load</strong></td>
<td>24VDC: 10A</td>
<td>-</td>
<td>24VDC: 4A</td>
<td>24VDC: 4A</td>
</tr>
<tr>
<td><strong>Cable length</strong></td>
<td>10m (33 ft)</td>
<td>7m (23 ft)</td>
<td>10m (33 ft)</td>
<td>No Cable Supplied</td>
</tr>
<tr>
<td><strong>Safe distance to compass</strong></td>
<td>0.15m (0.5 ft)</td>
<td>0.15m (0.5 ft)</td>
<td>0.5m (1.6 ft)</td>
<td>0.5m (1.6 ft)</td>
</tr>
</tbody>
</table>
Autopilot

Rudder Feedback Units

Simrad rudder feedback units contribute to our reputation for controlled and accurate steering.

The RFU transmits a signal proportional to the rudder angle. It is mounted close to the rudder stock and is mechanically connected to the rudder by a transmission link in a 1:1 ratio.

**RF14XU**

The RF14XU is a heavy duty long life feedback unit with transmission linkage. It has a separate output for rudder angle indicators and a double set of limit switches. It requires 24 V DC supply voltage. Not designed for use with the AC70.

**RF45X**

The RF45X is a medium duty rudder feedback unit and it is a repairable rather than a potted throw away item. The RF45X can also operate on 24V DC—a useful feature when connected in a standalone rudder angle indicator system. The unit is mounted close to the rudder stock and is mechanically connected to the rudder by the RF45 transmission link.

**RF70N**

RF70N rudder feedback unit with NMEA 2000 connection.

**RF300**

RF300 rudder feedback unit connects directly to the Autopilot Computer using 2 wire frequency interface.

**RF25N**

RF25 rudder feedback unit with NMEA 2000 connection.

---

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th></th>
<th>RF14XU</th>
<th>RF45X</th>
<th>RF70N</th>
<th>RF300</th>
<th>RF25N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (LxWxH)</td>
<td>150x240x120 mm (5.9x9.5x4.8 in)</td>
<td>100(dia)x129 mm (3.9 in (dia) x 5.1 in)</td>
<td>100(dia)x129 mm (3.9 in (dia) x 5.1 in)</td>
<td>195x99x65 mm (7.6x3.9x2.5 in)</td>
<td>195x99x65 mm (7.6x3.9x2.5 in)</td>
</tr>
<tr>
<td>Weight</td>
<td>1.0 kg (2.2 lb)</td>
<td>1.0 kg (2.2 lb)</td>
<td>0.5kg (1.1 lb)</td>
<td>0.5kg (1.1 lb)</td>
<td></td>
</tr>
<tr>
<td>Supply Voltage</td>
<td>24 V DC – 10%/20% Frequency section 12-40 V DC</td>
<td>12-24 V DC – 10%/+30%, system supplied</td>
<td>12V (CAN supply)</td>
<td>12V (from Computer)</td>
<td>12V (CAN supply)</td>
</tr>
<tr>
<td>Output RAI</td>
<td>Midship reference 0.5 x supply voltage Full deflection +/-9 V</td>
<td>0.1-1.1mA NMEA2000</td>
<td>NMEA2000</td>
<td>NMEA2000</td>
<td></td>
</tr>
<tr>
<td>Output Autopilot</td>
<td>3400 Hz +/-20Hz/degree</td>
<td>3400Hz +/-20Hz/degree</td>
<td>3400Hz +/-20Hz/degree</td>
<td>NMEA2000</td>
<td></td>
</tr>
<tr>
<td>No. of indicators</td>
<td>5 in parallel</td>
<td>5 in series</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rudder Angle</td>
<td>+/-45° (changeable to 60, 70 or 90°)</td>
<td>+/-45°</td>
<td>+/-45°</td>
<td>+/-45°</td>
<td>+/-45°</td>
</tr>
</tbody>
</table>
Autopilot

Drive Units
The drive unit is the device that actually moves the rudder. We have a range of models to fit different vessel types, sizes and steering systems.

RPU80
Reversible pump for cylinder displacement of 80-250 cm³, 12 V DC.
US = 4.9-15.2 cu in.

RPU160
Reversible pump for cylinder displacement of 160-550 cm³, 12 V DC.
US = 9.8-33.5 cu in.

RPU300-12 V
Reversible pump for cylinder displacement of 290-960 cm³, 12 V DC.
US = 17.7-58.5 cu in.

RPU300-24 V
Reversible pump for cylinder displacement of 290-960 cm³, 24 V DC.
US = 17.7-58.5 cu in.

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
<th>RPU80</th>
<th>RPU160</th>
<th>RPU300-12 V</th>
<th>RPU300-24 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Volts*</td>
<td>12 V</td>
<td>12 V</td>
<td>12 V</td>
<td>24 V</td>
</tr>
<tr>
<td>Junction Unit/Autopilot Computer**</td>
<td>AC12/AC70</td>
<td>AC42/AC70</td>
<td>AC42/AC70</td>
<td>AC42/AC70</td>
</tr>
<tr>
<td>Ram Capacity Min cm³ (cu. in.)</td>
<td>80 cm³ (4.9 cu. in)</td>
<td>160 cm³ (9.8 cu. in)</td>
<td>290 cm³ (17.7 cu. in)</td>
<td>290 cm³ (17.7 cu. in)</td>
</tr>
<tr>
<td>Ram Capacity Max cm³ (cu. In.)</td>
<td>250 cm³ (15.2 cu. in)</td>
<td>550 cm³ (33.5 cu. in)</td>
<td>960 cm³ (58.5 cu. in)</td>
<td>960 cm³ (58.5 cu. in)</td>
</tr>
<tr>
<td>Flow Rate at 10 bar cm³/min (cu.in/min)</td>
<td>800 cm³ (49 cu. in)</td>
<td>1600 cm³ (98 cu. in)</td>
<td>3000 cm³ (183 cu. in)</td>
<td>3000 cm³ (183 cu. in)</td>
</tr>
<tr>
<td>Max Pressure Bar</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Power Consumption***</td>
<td>2.4-6 A</td>
<td>3-10 A</td>
<td>5-18 A</td>
<td>3.5-10 A</td>
</tr>
</tbody>
</table>

* The motor voltage is transformed by the junction unit/autopilot computer when operating from 24V or 32V mains.
** The specified junction unit/autopilot computer is necessary to achieve max. drive unit capacity.
*** Typical average 40% of max. value.
ARGUS X-BAND
State of the art professional X-band radar including 6 or 9 foot antenna options and up-mast transceiver in both 12kW and 25 kW. The Simrad ARGUS radars fully comply with and exceed IMO regulations. Thanks to the modular design, they can be either assembled to form a stand-alone display cabinet or be flush mounted into a mechanical bridge console. The standard configuration always includes full ARPA, AIS and an electronic built-in interswitch for dual radar installations.

Adding a heading input from an autopilot system or dedicated sensor will allow the radar image to be overlaid on the chart. Targets can be interpreted instantly with respect to chart information such as navigation aids and coastlines.

KEY FEATURES
- Separate processor, monitor and operation panel
- 100 target ARPA and 300 AIS target tracking feature as standard
- Wide screen colour monitor option
- Superior signal processing
- Significantly larger target presentation area
- Seamless use of up to four antennas
- Optional Advanced Oil Spill and Ice Detection (OSID) Software

ARGUS S-BAND
The Simrad Argus family has been expanded with the addition of the lightest S-Band radar available in the market today. The S-Band radar has a slim profile antenna to reduce disturbances caused by sea waves and wind resistance.

It utilises the same proven technology and electronic components as the Argus X-Band thus reducing the required on-board spare parts and assuring their availability via our world-wide Advantage Service program.

KEY FEATURES
- Separate processor, monitor and operation panel
- Up to 100 target tracking (ARPA) and 300 AIS targets
- Controllable antenna rotation speed 20 or 40 rpm (*HSC model)
- Combined Video of two radar transceivers onto one PPI or two independent PPI on a widescreen monitor
- Flexible network configurations to include additional workstations, remote and additional X/S-band radar
- Includes a masthead transceiver with performance monitor, antenna and core unit with interswitch capabilities
- Ability to accommodate up to four S-Band or X-Band transceivers

*Pending approval

6KW, 10KW AND 25KW HIGH DEFINITION RADARS
Our HD open array digital radars provide professional mariners with exceptional detection of small or distant targets using our advanced Digital Signal Processing technology. Screen clutter in any weather is virtually eliminated, allowing a clear, accurate and easy to interpret image.

KEY FEATURES
- The most advanced Digital Signal Processing (DSP) technology
- Extremely robust, high performance scanners
- Easy to read colour radar with chart overlays
- Automatic Tune, Gain and Sea Clutter Adjustments
- Dynamic colour ranging for better target and weather definition
**BROADBAND 4G™ RADAR**

Utilising broadband Frequency Modulated Continuous Wave (FMCW), this breakthrough technology provides superior target detection and separation, ease of operation and a new level of navigational safety. Broadband Radar near-range performance and usability is optimised with the addition of High-Speed Antenna Rotation (48 rpm).

This FMCW radar has all of the benefits of our revolutionary Broadband 4G Radar but with more advanced features, including beam sharpening for target separation control, Dual Range radar and increased target detection capabilities. The Broadband 4G Radar also includes a new 36nm working range, and 18 range scales to accommodate the increased performance.

**KEY FEATURES**
- Beam sharpening with target separation control
- Dual range anywhere from 200’ to 36nm
- Up to 48rpm at less than 1nm
- Directional clutter rejection and Sidelobe suppression
- FMCW technology with inherent LPI
- Extremely low emissions
- InstantOn™

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**SPECIFICATIONS**

<table>
<thead>
<tr>
<th></th>
<th>Argus X-Band</th>
<th>Argus S-Band</th>
<th>HD Open Scanners</th>
<th>Broadband 4G Radar</th>
</tr>
</thead>
</table>
| Dimensions (LxWxH)     | 6 kW: 1285x344x432 mm  
(50.6x13.5x17 in)  
10 kW: 1869x437x449 mm  
(73.6x17.2x1.9 in)  
25 kW: 2235x462x534 mm  
(88x18x21 in) | 489 mm (19.3 in) diameter  
280 mm (11 in) height |
| Weight (upmast)        | 6 ft: 40 kg (88 lb)  
9 ft: 44 kg (97 lb)  
125 kg (275 lb) | 6 kW: 29 kg (63.9 lb)  
10 kW: 35 kg (77.2 lb)  
25 kW: 54 kg (119 lb) | 74 kg (16 lb) |
| Approvals              | MED, USCG, CCS, RS, FCC,  
Shipping Register of Ukraine, ISO 9001  
IMO MSC192(79) and relevant IEC 62388 ed.1 | - | - |
| Power Consumption       | 500 W max | 6 kW: 120 W  
10 kW: 250 W  
25 kW: 180 W | 20W (Typ.) @ 13.8Vdc (21W in dual range mode)  
Standby:2.9W |
| Antenna Horizontal Beam Width (deg) | 6 ft: 1.3°  
9 ft: 0.9°  
1.9° (-3 dB width) | 6 kW: 1.8° + 10% (-3 dB width)  
10 kW: 1.2° + 10% (-3 dB width)  
25 kW: 1° + 10% (-3 dB width) | 5.2°+/-10% (-3dB width) * |
| Antenna Vertical Beam Width (deg) | 22°  
24° (-3 dB width) | 6 kW: 20° + 20% (-3 dB width)  
10 kW: 20° + 20% (-3 dB width)  
25 kW: 20° + 20% (-3 dB width) | 25°+/-20% (-3dB width) * |
| Antenna Rotation Speed  | 20 or 40 rpm  
> 20 (> 40 HSC) | 27 rpm | 48 rpm |
| Antenna Type           | 6 ft: 12 kW  
9 ft: 25 kW  
30 kW | 6 kW | Dome |
| Safe Distance to Standard Magnetic Compass | 1.35 m (4.3 ft)  
4.2 m (13 ft) | 6 kW: 2.3 m (7.5 ft)  
10 kW: 2.4 m (7.9 ft)  
25 kW: 2.4 m (7.9 ft) | - |
| Safe Distance to Steering magnetic Compass | 0.85 m (2.8 ft)  
2.75 m (9 ft) | 6 kW: 1.75 m (5.7 ft)  
10 kW: 1.8 m (6 ft)  
25 kW: 1.8 m (6 ft) | - |
| Swing Circle           | 6 ft: 183 cm (6 ft)  
9 ft: 274 cm (8.9 ft)  
362 cm (11.8 ft) | 6 kW: 132 cm (4.3 ft)  
18 kW: 191 cm (6.25 ft)  
25 kW: 227 cm (7.45 ft) | - |
| Required Power – Bar standard configuration | 115-220 V / 50-60 Hz  
6 kW: 108.8 V – 42 V  
10 kW: 216.6 V – 41.6 V  
25 kW: 216.6 V – 31.2 V | 12 V / 20 W |
SONARHUB

SonarHub is Simrad’s new all-in-one sounder solution combining StructureScan® HD and CHIRP sonar. It is ideal for marking fish and tracking lure action, and can provide easy-to-understand, picture-like views of structure and bottom detail.

Offering a powerful performance advantage in any situation, the new module’s Frequency Sweeping Pulse Compression technology – known as CHIRP sonar — provides high-definition detail to depths of 3,500 feet; while its StructureScan HD functionality gives boaters picture-like displays for more productive fishing, diving, and search and recovery operations.

KEY FEATURES

- Capable of showing 2 important views:
  1. CHIRP
  2. StructureScan HD (Side and DownScan) plus Single Frequency Sonar (50kHz, 83kHz, 200kHz)
- Identical performance as current StructureScan HD
- Utilise CHIRP with the Airmar™ 150 transducer for optimal sonar performance
- Broadband dual frequency:
  - Single frequency sonar (83, 50, 200kHz) and DownScan Imaging also works with HDI Transducers
  - Use any of the existing 50/200kHz and 83/200kHz Simrad/Airmar 7 pin blue transducers for excellent single frequency performance

BSM-3

The ultimate fishfinder echosounder module for professional users and CHIRP deepwater anglers, the BSM-3 uses the latest technology to deliver unprecedented depth penetration, resolution and clarity.

KEY FEATURES

- Dual independent transceivers with dual transducer ports
- Compression Modulation (CHIRP) for improved performance over all depth ranges
- Penetrates up to 3000 m (10,000 ft)*
- 5x resolution of BSM-2
- Networked over high speed Ethernet
- Any frequency you need: 25-45, 40-60, 38, 28, 200 kHz

*Transducer dependent

See page 13 for BSM-3 proof of performance
## StructureScan® HD

StructureScan HD provides best-in-class range and resolution so you can see in picture-perfect detail what’s beneath your boat for the ultimate fishfinding/navigational experience. StructureScan® HD enables boaters to see exactly what’s below their boat with crisp, clear imagery to the left, right and directly beneath, at depths of up to 100m.

### Key Features
- Highly detailed structure and fishfinding clarity
- Vastly improved range and resolution compared with the original StructureScan®
- Panoramic underwater imaging with SideScan and exclusive DownScan
- Picture-perfect detail
- Left, right and straight down coverage

### Specifications

<table>
<thead>
<tr>
<th>BSM-3</th>
<th>SonarHub</th>
<th>StructureScan HD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System Description</strong></td>
<td>Ultra Performance, Broadband CHIRP Echosounder with 5x better resolution than BSM-2</td>
<td>High performance sonar module including both StructureScan HD + CHIRP sonar</td>
</tr>
<tr>
<td><strong>Dimensions (LxWxH)</strong></td>
<td>340x100x288 mm (13.4x3.9x11.3 in)</td>
<td>204x180x57 mm (8x7.1x2.2 in)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>0.9 kg (2 lb)</td>
<td>0.9 kg (2 lb)</td>
</tr>
<tr>
<td><strong>Output Power</strong></td>
<td>250 Watts RMS; 2,000 Watts (peak-to-peak) kW</td>
<td>• StructureScan: 500 W RMS • CHIRP: 250 W RMS</td>
</tr>
<tr>
<td><strong>Power Supply (supply voltage)</strong></td>
<td>12 or 24 V DC (max range 9 V to 32 V DC)</td>
<td>12 or 24 V DC (max range 9 V to 32 V DC)</td>
</tr>
<tr>
<td><strong>Maximum Depth</strong>&lt;br&gt;(<em>tdx dependent</em>)</td>
<td>3000 m / 10,000 ft*</td>
<td>• StructureScan: -Max side range: 300 ft each side -Max down range: 300 ft • CHIRP: 3500 ft (tdx dependent)</td>
</tr>
<tr>
<td><strong>Echosounder transducers</strong></td>
<td>Standard Narrowband AND High Performance Broadband</td>
<td>Recommended with Airmar single channel CHIRP tdx’s and StructureScan tdx’s</td>
</tr>
<tr>
<td><strong>Echosounder Frequencies</strong></td>
<td>Broadband 1: 130/210kHz, 40/60kHz Broadband 2: 40/60kHz, 25/45kHz Narrowband 1: 50/200kHz Narrowband 2: 50/38/28kHz</td>
<td>• StructureScan: 455 &amp; 800 kHz • CHIRP: 40-60 kHz, 85-145 kHz, 130-210 kHz • Narrow Band: 50 kHz/ 83 kHz/ 200 kHz</td>
</tr>
<tr>
<td><strong>Operating temperature</strong></td>
<td>-15°C to +55°C (5°F to 131°F)</td>
<td>-28°C to 75°C (-20°F to 167°F)</td>
</tr>
</tbody>
</table>
**Charting**

**CS68 ECDIS**

The Simrad CS60 Series ECDIS systems have the unique capability of combining both a monitoring and a planning mode. All safety functions are continuously monitored even when route planning. Operational modes include monitor mode (showing COG, SOG and actual track), ARPA radar interface (showing other vessels in real time), and planning mode (plan a route and define waypoints).

CS68 is available in 2 screen sizes - 19” 5:4 aspect ratio for easy swap-out of existing 19” ECDIS systems, and 24” 16:9 widescreen for larger viewable chart area.

**KEY FEATURES:**
- ENC / S57, S63 and C-MAP SENC CM93/3 Chart support.
- Tracksteer software features for integration with AP80 Autopilot System.
- Radar Overlay using external Radar interface module.
- Fully integrated ECDIS system with processor, NMEA0183 IO and display all in a single package for easy install and service replacement.
- Multi-voltage input 24V DC and 110-240V AC, with uninterrupted changeover in the event of a source failure.
- Dual-station PLECDIS (Paperless ECDIS) available.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th></th>
<th>CS68-19</th>
<th>CS68-24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display Size</td>
<td>19” (Aspect Ratio 5:4)</td>
<td>24” (Widescreen, Aspect Ratio 16:9)</td>
</tr>
<tr>
<td>Dimensions (LxWxH)</td>
<td>420x80.9x382 mm (16.89x3.19x15.04 in)</td>
<td>593x76.4x384 mm (23.35x3.01x15.12 in)</td>
</tr>
<tr>
<td>Weight</td>
<td>8.6 kg (18.9 lb)</td>
<td>11.2 kg (24.6 lb)</td>
</tr>
<tr>
<td>Mounting</td>
<td>4 x M6 VESA mounting 280x150mm, Max 12mm deep</td>
<td>4 x M6 VESA mounting 280x150mm, Max 12mm deep</td>
</tr>
<tr>
<td>Power Supply</td>
<td>110-240V AC / 24V DC</td>
<td>110-240V AC / 24V DC</td>
</tr>
</tbody>
</table>

**NSO evo2**

The NSO evo2 navigation system is Simrad’s flagship modular navigation system that is fully configurable to meet any captain’s requirements. Designed as a single processor black box, you can build a system to meet the specific needs of your vessel. Start with the MPU, add TouchSensible™ widescreen monitors, and then combine any number of award winning plug-and-play Simrad performance modules to build the ultimate customised solution.

**NSO evo2 System Components**

1. **The MPU (Marine Processor Unit)**

Simrad engineers have leveraged years of experience building integrated computer systems for boats to deliver the intelligently engineered brains and brawn of this flagship system. Dual quad-core processors drive the independent video output and also maintain the lightning-fast chart redraw Simrad is known for. We’ve included a full-size SD Card slot for cartography or critical navigation data backup, and standard Ethernet and USB Ports eliminate cable complexity. This fully networked, modular glass-bridge navigation system can be integrated with any of the wide range of Simrad Performance Modules.

2. **Widescreen Monitors**

The NSO evo2 is optimised for use with Simrad MO Series multi-touch, widescreen marine monitors. Available in three screen sizes, 16-inch, 19-inch, and 24-inch, the Simrad MO-T Series features sleek, glass-bridge styling, front-mounting for ease of installation, and a familiar “Home” key that eliminates guesswork when operating the system. Whether you view the NSO evo2 on Simrad Monitors, on your tablet, or on compatible third party monitors, you’ll be amazed at what this system will do.

**KEY FEATURES:**
- Dual independent video output
- Widescreen video support
- Multi-touch, pinch-to-zoom
- Performance module integration
- Widest choice of cartography options
- Multiple video inputs
NSS EVO2

Next generation of navigation, engineered for performance, easy use, functionality and flexible control. Multi-touch interaction and a keypad with rotary push-to-enter dial for rolling seas. CHIRP enabled Broadband Sounder and powerful expansion capabilities ensure you can go with confidence in any sea state.

NSE

Simrad NSE multifunction displays are the most capable out-of-the-box navigation system you’ll find. NSE offers professional performance with powerful networking capabilities providing comfort and control at sea. Plug-and-play expansion and networking options ensure best-in-class charting, radar and echosounding.

The NSE is a Masterless system where any networked unit can operate independently (a network switch may be required). NSE also offers Micro-C plug and play data networking for NMEA2000 sensors & instrumentation, and video input and output for display of video or navigation data where you want it.

The NSE is ideal for patrol vessels, smaller workboats and inshore fishing vessels, and is available in both 8 and 12 inch multifunction displays.

KEY FEATURES:
- Heavy duty aluminium case for professional use
- Brilliant LED display technology
- Complete flexibility - networks with other NS Series MFDs
- Embedded Navionics coastal cartography in Europe, Asia Pacific, and Insight HD for US models
- Integrate everything: compatible with all Simrad Performance Modules.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>NSO evo2</th>
<th>NSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display Size</td>
<td>16&quot;, 19&quot;, 24&quot;</td>
</tr>
<tr>
<td>Networking Capability</td>
<td>6 units</td>
</tr>
<tr>
<td>Video Integration</td>
<td>4x input, 2x output</td>
</tr>
<tr>
<td>Radar Options</td>
<td>HD Digital and Broadband</td>
</tr>
<tr>
<td>Echosounder Options</td>
<td>SonarHub, BSM-2, StructureScan, BSM-1</td>
</tr>
<tr>
<td>CZone Smart Boat Integration</td>
<td>Yes</td>
</tr>
<tr>
<td>Touchscreen options</td>
<td>Yes</td>
</tr>
<tr>
<td>FLIR camera Integration</td>
<td>Yes</td>
</tr>
<tr>
<td>OP40 Controller Option</td>
<td>Yes</td>
</tr>
<tr>
<td>Direct Access Keys</td>
<td>No</td>
</tr>
<tr>
<td>USB Ports</td>
<td>2</td>
</tr>
<tr>
<td>Cartography options</td>
<td>Insight, Biobase, Navionics, C-Map MAX-N, NV-Digital on SD</td>
</tr>
</tbody>
</table>
NAIS-400 CLASS B-AIS TRANSPONDER

A fully integrated black-box Class-B AIS solution. Compact in size, lightweight, fully waterproof, with low power draw and featuring multiple connections, the NAIS-400 is ideal for networking with any NSE or NSO chartplotter / multifunction display and Simrad RS VHF system.

KEY FEATURES
- Class-B Approved
- Send & receive
- Integrated solution
- Multiple networking connections (USB, Micro-C)
- Waterproof
- Lightweight
- Low power consumption

SPECIFICATIONS (TRANSPONDER UNIT)  NAIS-400

| Dimensions (LxWxH)       | 140x100x42 mm  
|                          | (5.5x3.9x1.65 in) |
| Weight                   | 0.25 kg (0.55 lb) |
| Type Approval            | N/A             |
| Power Supply Voltage     | 9.6-31.2 V DC   |
| Power Consumption        | 170mA at 12 V DC|
| GPS Receiver Channels    | 50              |
GPS Displays

**GN70 GLOBAL NAVIGATION SYSTEM**

An IMO compliant, cost effective navigation system with an NMEA 2000 Interface. The GN70 has a colour display and is designed to work together with a range of existing IMO type-approved GPS smart antennas and GPS compasses.

**KEY FEATURES**

- Convenient data interface using NMEA 2000 Network including simple plug-and-play connectivity to other Micro-C enabled systems
- Dedicated hot keys for position, navigation, heading, AIS and MOB for easy access
- LAN can be used to output NMEA 0183/IP messages
- GN70 can be used with an HS80A GPS compass, which has dual IMO compliance certification for use as a primary position AND heading device
- External RTCM correction for DGPS mode with optional MX610A/B junction box.

**MX610 AND MX612 GLOBAL NAVIGATION SYSTEMS**

The MX610 and MX612 are IMO type-approved navigation systems designed for the professional mariner. Offering convenient data interface using NMEA 2000, set up and connection to other devices couldn’t be simpler. Utilising the trusted MX521B GPS/DGPS smart antenna and MX61x junction box, this is a complete professional navigation system for any professional vessel requiring IMO type-approved electronics.

**KEY FEATURES**

- Convenient data interface using the NMEA 2000 Network including simple plug-and-play connectivity to other NMEA 2000 enabled systems
- Buy in a conveniently packaged ready-to-use system, or choose to integrate with the Simrad HS80A GPS compass or GS70 GPS antenna
- MX610/MX612 can be used with MX575D DGPS compass, which has dual IMO compliance certification as a navigation AND a heading device
- Dedicated hot keys for position, navigation, heading and AIS for quick and easy access
- LAN can be used to output NMEA 0183/IP messages

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
<th>GN70</th>
<th>MX610</th>
<th>MX612</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (LxWxH)</td>
<td>54x230x144 mm</td>
<td>54x252x144 mm</td>
<td>54x252x144 mm</td>
</tr>
<tr>
<td>(1.61x9.06x5.5 in)</td>
<td>(2.1x9.9x5.6 in)</td>
<td>(2.1x9.9x5.6 in)</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>1.2 kg (2.7 lb)</td>
<td>1.4 kg (3.0 lb)</td>
<td>1.4 kg (3.0 lb)</td>
</tr>
<tr>
<td>Type Approval</td>
<td>Wheelmark IMO</td>
<td>Wheelmark IMO</td>
<td>Wheelmark IMO</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>0.7A at 12 V DC</td>
<td>0.7/0.4 A at 12 V DC</td>
<td>0.7/0.4 A at 12 V DC</td>
</tr>
<tr>
<td></td>
<td>with backlight on, 0.4A with backlight off</td>
<td>0.4/0.3 A at 24 V DC</td>
<td>0.4/0.3 A at 24 V DC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>backlight full/off</td>
<td>backlight full/off</td>
</tr>
<tr>
<td>USB Port</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Controllable NMEA 0183 Ports</td>
<td>-</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>(via MX61x Junction Box)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
GPS Antennas

MX521B D/GPS ANTENNA

The MX521B is an IMO approved precision D/GPS positioning solution in a smart antenna. It delivers position accuracy better than 1 meter in DGPS mode, and better than 5 meter accuracy in standard GPS mode.

- Better than 1m (RMS) DGPS position accuracy and better than 5m (RMS) GPS accuracy
- NMEA 0183 version 3.0 interface
- IMO type approved (as part of an MX display system) including RAIM (receiver autonomous integrity monitoring)
- Design for easy upgrade of existing MX420 installations to latest IMO standards
- GLONASS compatible.

GS25 GPS ANTENNA

Simrad’s GS25 GPS antenna is the ideal GPS for any navigator that requires extremely accurate and rapid vessel position and speed updates. The GS25 easily connects to an Simrad NS Series multifunction display or any NMEA 2000 Network.

- High speed position update - 10 times per second
- Rapid signal acquisition
- Consistent position accuracy
- Integrated magnetic heading with an integrated eCompass/Gyro
- GPS, WAAS, EGNOS and more
- Compact design - ideal for flush-mounting or pole mounting
GS70 SMART ANTENNA

AN IMO compliant NMEA 2000 Smart Antenna that integrates with the GN70. It can receive DGPS corrections from SBAS satellites such as WAAS.

KEY FEATURES
- Easy to install with standard NMEA 2000 interface
- GS70 smart antenna can receive DGPS corrections from SBAS satellites such as “WAAS” and “GLONASS”
- This smart antenna has 32 channels and can output position at 1, 5, or 10 Hz
- Antenna has GPS accuracy (2DRMS) of 5m and DGPS accuracy (SBAS) of 2m
- Cold startup time 50 sec and warm startup time 3 sec

MXB5 D/GPS ANTENNA

Simrad MXB5 D/GPS Antenna is a precision D/GPS positioning solution and forms an IMO approved DGPS solution when matched with the MX525A DGPS sensor and an MX510 or MX512 display unit.

KEY FEATURES
- IMO Compliant DGPS antenna which can be used with IMO compliant DGPS receivers
- Replacement antenna for MGL3 and MGL4 DGPS antenna
- Can be used with L1 GPS receivers
- Can be used with Beacon Receivers

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
<th>MX521B</th>
<th>MXB5</th>
<th>GS25</th>
<th>GS70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (diameter)</td>
<td>182 mm (7.2 in)</td>
<td>140 mm (5.5 in)</td>
<td>90 mm (3.5 in)</td>
<td>90 mm (3.5 in)</td>
</tr>
<tr>
<td>Dimensions (height)</td>
<td>102 mm (4 in)</td>
<td>101 mm (3.9 in)</td>
<td>38 mm (1.5 in)</td>
<td>38 mm (1.5 in)</td>
</tr>
<tr>
<td>Weight</td>
<td>0.5 kg (1.1 lb)</td>
<td>0.52 kg (1.15 lb)</td>
<td>0.13 kg (0.28 lb)</td>
<td>0.13 kg (0.28 lb)</td>
</tr>
<tr>
<td>Type Approval</td>
<td>BSH and Wheelmark IMO approval (MX CDU required), CE and FCC compliant, CCS</td>
<td>IMO (with MX525A and MX CDU), IEC</td>
<td>-</td>
<td>IMO compliant with GN70, MX610 and MX612 CDU</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>&lt;3 W</td>
<td>50 mA</td>
<td>&lt;2 W</td>
<td>&lt;2 W</td>
</tr>
<tr>
<td>Power Supply</td>
<td>10.5 to 32 VDC</td>
<td>4 to 18 VDC</td>
<td>9 to 18 VDC</td>
<td>9 to 18 VDC</td>
</tr>
<tr>
<td>Serial Ports</td>
<td>2 duplex NMEA 0183 Ports</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>283.5 to 325 kHz</td>
<td>283.5 to 325 kHz</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>GPS Receiver Channels</td>
<td>12</td>
<td>32</td>
<td>32</td>
<td>-</td>
</tr>
<tr>
<td>Horizontal Accuracy</td>
<td>&lt;2 m=“2D-RMS=“&gt;</td>
<td>5 m</td>
<td>5 m</td>
<td>-</td>
</tr>
<tr>
<td>NMEA 2000 Interface</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Compasses

**GC80 AND GC85 GYRO COMPASS**
IMO approved for both standard vessels and high speed craft, the simple and quick installation and set-up, and the fact that there is no annual servicing required, makes Simrad gyro systems the best solution for any 24/7 operator.

**KEY FEATURES**
- Sophisticated and fully sealed sensitive elements that require no annual servicing, and these are swappable for on board service
- Very low RPM reduces wear and increases lifetime
- No annual oil change required – virtually maintenance free
- High follow-up rate
- Wide range of control unit options provide complete flexibility of system configuration for new installations and easy retrofit into existing repeater systems
- IMO approved for standard (GC80) and High Speed Craft (GC85)

**RGC50 COMPACT GYRO COMPASS**
The small and compact “all in one” RGC50 gyro compass is designed for smaller vessels and non-IMO applications. A gyro compass eliminates the inconvenience and limitations of magnetic compasses, and provides a variety of outputs to supply accurate and consistent heading information to other navigation equipment.

**KEY FEATURES**
- Compact unit design for smaller vessels
- Supplies consistent and accurate heading information to a variety of navigation equipment
- Not IMO approved

**RC42N RATE COMPASS**
The RC42N is an intelligent rate compass which significantly improves the dynamic performance of autopilots and stabilised radar displays. Featuring an integrated turn sensor, the RC42N enhances all auto-steering experiences.

**KEY FEATURES**
- Magnetic fluxgate sensor
- Solid state rate sensor
- Fully waterproof
- NMEA2000® connectivity

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th></th>
<th>RGC50</th>
<th>GC80</th>
<th>GC85</th>
<th>RC42N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (LxWxH)</td>
<td>340x340x438 mm (13.4x13.4x17.2 in)</td>
<td>340x340x438 mm (13.4x13.4x17.2 in)</td>
<td>106x72x102 mm (4.2x2.8x4 in)</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>15.5 kg (34.2 lb)</td>
<td>23 kg (50.7 lb)</td>
<td>23 kg (50.7 lb)</td>
<td>0.9 kg (2 lb)</td>
</tr>
<tr>
<td>Setting Time</td>
<td>&lt;4h</td>
<td>&lt;3h</td>
<td>&lt;3h</td>
<td>-</td>
</tr>
<tr>
<td>Pitch/Roll Angle</td>
<td>+/- 45 deg</td>
<td>+/- 45 deg</td>
<td>+/- 45 deg</td>
<td>+/- 45 deg</td>
</tr>
<tr>
<td>Follow-Up rate</td>
<td>&gt;36 deg/sec</td>
<td>&gt;75 deg/sec</td>
<td>&gt;75 deg/sec</td>
<td>-</td>
</tr>
</tbody>
</table>
**HS70 GPS COMPASS**

The HS70 GPS compass is a smart antenna that provides mariners with highly accurate heading and positioning data. As an alternative to a traditional separate compass and GPS antenna, this combined sensor is maintenance free and incorporates many additional features.

**KEY FEATURES**
- Provides heading, positioning, heave, rate of turn, roll and pitch
- NMEA2000 or NMEA0183 communication
- 0.75 degree heading accuracy in amazingly small form factor
- Differential positioning accuracy of 1.0 m, 95% of the time
- SBAS compatible (WAAS, EGNOS, MSAS, GLONASS etc.)
- COAST™ technology (with integrated gyro and tilt sensors) maintains differentially-corrected positioning for 40 minutes after loss of differential signal.

**HS80A GPS AND MX575D DGPS COMPASS SOLUTIONS**

Simrad’s D/GPS compass solutions are designed to provide reliable heading, Rate of Turn, and position information to Simrad Autopilots and the MX Series of navigation and AIS transponder systems. Both are IMO certified as a heading AND navigation device, and also meet RAIM (Receiver Autonomous Integrity Monitoring) regulations.

**KEY FEATURES**
- Type-Approved as a primary positioning AND heading device, “GLONASS” compatible
- Compatible with MX420 and MX5XX family of CDU’s
- Stand-alone automatic operation (no black box required)
- Pitch, roll and heave as standard output
- Heading accuracy <0.5° rms with gps, and heading updates 1-20 Hz
- Differential positioning accuracy of <1.0 m, 95% of the time
- MX575D receives DGPS corrections from land based Beacons

---

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th></th>
<th>MX575D</th>
<th>HS80A</th>
<th>HS70</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Description</td>
<td>IMO Compliant DGPS Compass</td>
<td>IMO Compliant GPS Compass</td>
<td>Combined heading and positioning smart antenna</td>
</tr>
<tr>
<td>Dimensions (LxWxH)</td>
<td>669x209x122 mm (26.3x 8.2x4.8 in)</td>
<td>669x209x122 mm (26.3 x 8.2 x 4.8 in)</td>
<td>417x158x69 mm (16.4x6.2x2.7 in)</td>
</tr>
<tr>
<td>Weight</td>
<td>2.44 kg (5.38 lb)</td>
<td>2.1 kg (4.7 lb)</td>
<td>1.5 kg (3.3 lb)</td>
</tr>
<tr>
<td>DGPS Corrections from Beacon Stations</td>
<td>Yes (default setting)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>SBAS DGPS corrections</td>
<td>Yes (can be set from MX display)</td>
<td>Yes (default)</td>
<td>Yes</td>
</tr>
<tr>
<td>IMO Certification as Navigation Device*</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>IMO certification as Heading Device</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>NMEA 2000 Interface</td>
<td>Optional adaptor is needed</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>NMEA 0183 Interface</td>
<td>Yes</td>
<td>Optional (Power/Data cable is needed)</td>
<td>Yes</td>
</tr>
<tr>
<td>USCG Certification as Navigation Device</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1 PPS Output</td>
<td>Standard with power/data cable</td>
<td>Optional with power/data cable</td>
<td>No</td>
</tr>
</tbody>
</table>

*IMO compliant display required
The IS40, IS70 and IS80 range of Simrad instruments are built tough, and are designed to supply critical information to professional users in clear, easy-to-read formats. These instruments are used by professional and coastal commercial mariners around the world and give consistent performance day after day.

**IS40 SYSTEM**
Digital marine instrument system showing Rudder Angle and networked system information.

**KEY FEATURES**
- System includes RF70N Rudder Sensor.
- 170 degree viewing angle, zero condensation.
- Micro-C network compatible.
- Default pages include Rudder Angle, speed and night mode for easy operation.

**IS70 AND IS80 SPEED**
Large format analogue marine instruments showing vessel speed.

**KEY FEATURES**
- Available in 25 or 50 kt scale options
- Tough, shock proof 4.5” or 6.8” display options
- Multiple lighting levels with zone lighting
- Micro-C network compatible

**IS70 AND IS80 RATE OF TURN (ROT)**
Analogue marine instruments showing rate of turn to either port or starboard in degrees per minute.

**KEY FEATURES**
- Rate of Turn indicators 30, 120 or 300 deg/min scale options
- Tough, shock proof 4.5” or 6.8” display options
- Multiple lighting levels with zone lighting
- Analogue (V) interface and Micro-C compatible

**IS70 AND IS80 Rudder Angle**
Showing the angle of the rudder relative to the centre line in degrees both to port and starboard.

**KEY FEATURES**
- Available in 3000 or 6000 RPM scale options
- Tough, shock proof 4.5” or 6.8” display options
- Multiple lighting levels with zone lighting
- Micro-C compatible

- 45 or 90 degree scale options available
- Tough, shock proof 4.5” or 6.8” display options
- Multiple lighting levels with zone lighting
- Analogue (V) interface and Micro-C compatible
**RI35 MK2 RUDDER ANGLE INDICATOR**

The RI35 Mk2 Rudder Angle Indicator gives a continuous reading of the rudder position up to 45 degrees on either side of the amidships position.

**KEY FEATURES**
- Actual versus commanded heading function
- Choice of true or magnetic heading
- LED bar graph turn-rate indicator
- Operates from frequency or current signal generated from a Simrad Autopilot feedback unit
- Also accepts NMEA 0183 rudder angle (RSA) signal

**HR80 HEADING REPEATER**

Large format analogue marine instruments showing the vessel’s heading in both analogue and digital formats for maximum clarity.

**KEY FEATURES**
- Actual versus commanded heading function
- Choice of true or magnetic heading
- LED bar graph turn-rate indicator
- NMEA0183/NMEA2000 compatible
- Large format 6.8” display

**WS80 ULTRASONIC WIND SYSTEM**

The highly innovative ultrasonic measuring principle with no moving parts gives accurate and reliable performance without any wear-out problems and without requiring regular service. The WS80 has four built-in heating elements to prevent snow and ice from building up, and is well-suited for all types of vessels.

**KEY FEATURES**
- Accurate measures of wind speed and direction
- Intelligent heating prevents icing up
- Working temperature down to -52 degrees Celsius
- Extensive field tests in rough weather in the North Atlantic

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**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>IS40 Range</th>
<th>IS70 Range</th>
<th>IS80 Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>115x118 mm (4.5x4.6 in)</td>
<td>114x114 mm (4.5x4.5 in)</td>
</tr>
<tr>
<td>Weight</td>
<td>0.28 kg (0.62 lb)</td>
<td>0.55 kg (1.21 lb)</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>&lt;2W</td>
<td>&lt;5W</td>
</tr>
<tr>
<td>Power Supply</td>
<td>12 V DC</td>
<td>12-24 V DC</td>
</tr>
<tr>
<td>Mounting Options</td>
<td>Dash mount</td>
<td>Dash mount</td>
</tr>
<tr>
<td>Environmental</td>
<td>IPx7</td>
<td>IP66</td>
</tr>
<tr>
<td>Data Connections</td>
<td>NMEA2000</td>
<td>NMEA2000</td>
</tr>
<tr>
<td>Safe Distance to Compass</td>
<td>0.4 m (1.32 ft) to steering compass 0.2 m (0.66 ft) to stand-by/emergency compass</td>
<td>0.4 m (1.32 ft) to steering compass 0.2 m (0.66 ft) to stand-by/emergency compass</td>
</tr>
</tbody>
</table>
### HH36 HANDHELD VHF RADIO
A feature-packed handheld, Class D DSC marine VHF radio loaded with integrated GPS, loud and clear audio, and navigational features that leave other handheld VHF radios in the shade. Great for use on any sized vessel.

**KEY FEATURES**
- Extra-large display – the largest currently available on any handheld VHF
- Floats if accidentally dropped overboard
- Integrated GPS for instant positioning and planning
- Transmit your position with the ‘Get Buddy’ feature
- Class D DSC – increases safety by enabling DSC calling with your boat’s MMSI in an emergency
- Long battery life – up to 11 hours

### RS35 VHF/AIS RADIO
Class D DSC compliant for global use, the RS35 VHF radio offers inbuilt dual channel AIS receiver functionality, which allows AIS reception and VHF use via just one antenna. In areas such as busy shipping lanes, the RS35 offers the ability to see, hear and be heard for increased safety.

**KEY FEATURES**
- Class D DSC approved
- Loud and clear audio including 30 Watt Hailer with listenback, including automated fog signals
- Advanced radio features including AIS plot, waypoints, navigation and MOB features
- Dual Channel AIS Receiver – does not require a separate antenna
- Wireless handset option – incorporate up to 2 HH35 handsets to make and receive radio calls from anywhere on your vessel. Includes an intercom feature to call between handsets.
- NMEA 0183® and NMEA 2000 Compatible

### RS12 VHF RADIO
Communicate clearly with this dependable and versatile Class D DSC Approved marine VHF Radio. Fully loaded with features and ideal for a variety of boats from small RIBs to larger cruisers.

**KEY FEATURES**
- Highly visible backlit LCD display – can be easily read in all lighting conditions
- Class D DSC
- ATIS function
- Dual and tri watch functions – keep an eye on up to three channels at the same time
- 20 user programmable names with MMSI to automatically call vessels or ports of your choice

### RS90 VHF/AIS RADIO
More than just a radio it’s got an AIS receiver, hailer, foghorn, intercom and NMEA connectivity, all standard. Not sure who’s calling you; a thirty second record and replay means you never miss anything vital and with support for up to 6 handsets, you need never be out of reach.

**KEY FEATURES**
- Class D DSC approved
- PA/Hailer Horn output with Record and Playback feature
- Up to 6 Stations: 4 Wired handsets and 2 Wireless handsets
- Works with HH35 Wireless Handset
### HS35 WIRELESS HANDSET

Use your Simrad RS35 VHF/AIS Radio wherever you are on your boat, with the HS35 wireless handset. Easy to use and with full VHF functionality, this innovative handset gives you total freedom of movement on board your boat.

### KEY FEATURES
- Wireless control for RS35
- Simple charging through the inductive plate on the back of the handset for 8 hours of battery life.
- Keypad lock to avoid unintentional operation
- Intercom feature allows you to communicate with the base station and other remote stations to relay vital information to crew members.
- Up to 100m range – covers even the largest of vessels.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>HH36</th>
<th>RS12</th>
<th>RS35</th>
<th>HS35</th>
<th>RS90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>80x58x140 mm (3.1x2.3x5.5 in)</td>
<td>161x147x75 mm (6.3x5.8x2.9 in)</td>
<td>180.5x171x96.3 mm (7x6.7x3.8 in)</td>
<td>69x38x192 mm (2.7x7.5x1.5 in) without cradle</td>
<td>211x195x96.3 mm (8.3x7.7x3.8 in)</td>
</tr>
<tr>
<td>Display</td>
<td>40x25 mm (1.6x0.9 in) 128x128 pixels</td>
<td>46x26 mm (1.8x1 in) 128x256 pixels</td>
<td>33x66 mm (1.3x2.6 in) 128x256 pixels</td>
<td>180x128 pixels</td>
<td>180x128 pixels</td>
</tr>
<tr>
<td>Weight</td>
<td>0.3 kg (0.7 lb)</td>
<td>1.29 kg (2.8 lb) without mic.</td>
<td>1.63 kg (3.9 lb)</td>
<td>1.63 kg (3.9 lb)</td>
<td>1.63 kg (3.9 lb)</td>
</tr>
<tr>
<td>Power Requirements</td>
<td>12 V DC charging</td>
<td>Transmit 5 A at 25 W Tx / 1.5 A at 1 W Tx (12 VDC)</td>
<td>Transmit 5 A at 25 W Tx / 1.5 A at 1 W Tx (12 VDC)</td>
<td>12 V DC charging</td>
<td>Transmit High &lt;6 W Low &lt;2 W</td>
</tr>
<tr>
<td></td>
<td>Cradle current drain: 0.5 A</td>
<td>Receive: Less than 250 mA in standby</td>
<td>Receive: Less than 250 mA in standby</td>
<td>Cradle current drain: &lt;0.5 A</td>
<td>Battery life: 8 hours @ 90/5/5 Duty Cycle</td>
</tr>
<tr>
<td></td>
<td>Battery life: 7 hours @ 90/5/5 Duty Cycle with GPS On</td>
<td>Battery life: 11 hours @ 90/5/5 Duty Cycle with GPS Off</td>
<td>Battery life: 11 hours @ 90/5/5 Duty Cycle with GPS Off</td>
<td>Battery life: 8 hours @ 90/5/5 Duty Cycle</td>
<td>Battery life: 8 hours @ 90/5/5 Duty Cycle</td>
</tr>
<tr>
<td>Mounting Options</td>
<td>Charger cradle included Dash mount or bracket mount hardware included</td>
<td>Charger cradle included Dash mount or bracket mount hardware included</td>
<td>Charger cradle included Dash mount or bracket mount hardware included</td>
<td>Charger cradle included Dash mounted speaker and cradle</td>
<td>Charger cradle included Dash mounted speaker and cradle</td>
</tr>
<tr>
<td>Environment</td>
<td>JIS-7</td>
<td>JIS-7</td>
<td>JIS-7</td>
<td>JIS-7</td>
<td>JIS-7</td>
</tr>
<tr>
<td>Data Connections</td>
<td>NMEA0183 Output (when in cradle)</td>
<td>NMEA2000/NMEA0183 In and Out</td>
<td>NMEA2000/NMEA0183 In and Out (38400 for AIS)</td>
<td>NMEA2000</td>
<td>NMEA2000</td>
</tr>
<tr>
<td>DSC Mode</td>
<td>Class D DSC</td>
<td>Class D DSC</td>
<td>Class D DSC</td>
<td>Class D DSC</td>
<td>Class D DSC</td>
</tr>
<tr>
<td>Channels</td>
<td>International, USA, Canadian, Weather (country specific), ATIS Facility</td>
<td>International, USA, Canadian, Weather (country specific), ATIS Facility</td>
<td>International, USA, Canadian, Weather (country specific), ATIS Facility</td>
<td>International, USA, Canadian, Weather (country specific), ATIS Facility</td>
<td>International, USA, Canadian, Weather (country specific), ATIS Facility</td>
</tr>
<tr>
<td>Other</td>
<td>AIS receiver functionality</td>
<td>Wireless handset for RS35</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
SA70 SART & SA70 AIS-SART

Designed for use in search and rescue operations, Simrad’s SA70 and SA70 AIS-SART will pinpoint the location of a vessel in distress and give the exact location to nearby ships, SAR vessels and aircrafts.

The SA70 AIS-SART gives the exact location of the distress with GPS precision –searching ships or helicopters receive the position data in an AIS message.

The SA70 SART gives the location of the distress on an X-Band radar display. When the SART is interrogated (hit) by a radar signal, it will immediately start transmitting and will be detected on radar screens on nearby vessels.

KEY FEATURES
- Easy mounting options: bulkhead bracket onboard vessel, pole or bracket mount in a lifeboat or life raft, providing flexible installation options
- Equipped with LED and a built in buzzer to indicate operation for peace of mind
- Non-hazardous battery which can be replaced onboard –no transport restrictions
- Light weight and compact design –one of the smallest on the market
- IMO/SOLAS/GMDSS compliant and IMO/MED/FCC approved

EG70 EPIRB & EP70 EPIRB

The Simrad EG70 and EP70 range of EPIRBs are designed to be used as a primary alarm for vessels in distress, and when activated transmit the ID of the ship in distress.

Available in GPS (EG70) and non-GPS (EP70) variants –the EG70 features a 22 channel GPS receiver to provide fast and accurate position data. Once activated, the distress signal is picked up almost instantly by satellites.

KEY FEATURES
- Available with both float-free (includes a hydrostatic mechanism) and manual release options
- High-intensity LED light to enhance your chances of survival
- Compact design –takes up less space in the cockpit/your cabin/bridge
- Non-dangerous goods batteries –no transport restrictions
- 48 hour operating life at -20°C once activated

SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>SA70 SART</th>
<th>SA70 AIS-SART</th>
<th>EG70/EP70 EPIRBs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td>251 mm (9.8 in) height</td>
<td>251 mm (9.8 in) height</td>
<td>340 mm (13.4 in) height</td>
</tr>
<tr>
<td></td>
<td>89 mm (3.5 in) diameter</td>
<td>89 mm (3.5 in) diameter</td>
<td>128 mm (5 in) diameter</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>482g (1.062 lb)</td>
<td>450g (0.99 lb)</td>
<td>680g (1.5 lb)</td>
</tr>
<tr>
<td><strong>Operating Life</strong></td>
<td>96 hours standby + 8 hours continuous operation when activated by radar with 1 kHz prf at -20°C</td>
<td>Minimum 96 hours</td>
<td>Minimum 48 hours at -20°C</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td>X-band (3cm) (9.2-9.5 GHz)</td>
<td>161.975 and 162.025 (AIS 1 and 2)</td>
<td>406.037</td>
</tr>
<tr>
<td><strong>Radiated power</strong></td>
<td>&gt; 400 mW e.i.r.p (+26 dBm)</td>
<td>Minimum 1E ERP (+30dBm)</td>
<td>5 W</td>
</tr>
<tr>
<td><strong>Operating Temperature Range</strong></td>
<td>-20 to +55°C (-4 to 131°F)</td>
<td>-20 to +55°C (-4 to 131°F)</td>
<td>-20 to +55°C (-4 to 131°F)</td>
</tr>
</tbody>
</table>
CERTIFIED DEALER ADVANTAGE

A network of qualified Master Distributors and Certified Dealers in more than 50 countries, ready to provide spare parts and onboard support to ensure prompt and efficient service. Supported by fifteen regional Navico hubs, co-ordinating seamless support and communication across the globe. Designated as a marine electronics authority, Certified Dealer accreditation inspires customer confidence, trust, loyalty and referrals. Along with in-store signage, Certified Dealers receive worldwide recognition with preferential website listings on the Simrad Professional Series website. Certified Dealers also gain exclusive access to the B2B Advantage and Vessel Portal Advantage tools, enabling rapid response to any service requirement.

ONBOARD ADVANTAGE

The OnBoard Advantage Program provides customers with the option to receive warranty service by a Certified Dealer onboard their vessel for the first 2 years. Systems under warranty with a value of over $2,500 USD qualify when they have been installed or certified by a Certified Dealer, or installed by a Navico-authorized ship builder. Select limits apply to labor and travel related costs as detailed by the program guidelines and OnBoard coverage can be extended by adding Extended Warranty Advantage.

7-YEAR ADVANTAGE

The 7-Year Advantage offers comprehensive support for 7 years, including upgrade options to current technology products, an online spare parts locator and price list.

In the unlikely event of failure within the first seven years since purchasing a new product, the program guarantees that customers will have the option to upgrade to the latest model technology at a discount price. In addition, a web-based portal allows Dealers to easily locate part numbers and pricing for spare parts, service units, extended warranties and upgrade options.

FASTFIX ADVANTAGE

FastFix Advantage ensures that if a qualifying product is identified as defective, customers will be shipped a replacement product or spare part within 1 business day.

Our global service and support network will ship products and spare parts from any of the five Navico logistics centres to any Dealer or customer, anywhere in the world, within 1 business day.
Extended Warranty Advantage offers flexible extended warranty options for Simrad Professional Series systems. Choose to extend the Product Warranty, OnBoard Support period or Service period. Mix and match coverage to customize a warranty package for any requirement.

The System Builder Advantage offers Simrad Professional Series Dealers an Apple iPad tool that combines a current price book with a product information guide and more in an easy-to-use shopping cart-style purchase format. The system allows dealers to provide instant quotes as well as Ethernet, SimNet and NMEA 2000 schematics to help consumers choose the ideal system, it also ensures all necessary components are included. Allowing for local currencies, freight and duty, the System Builder provides detailed installation quotes. Standard packages and boat builder packs can be pre-loaded and configured during the quotation process. Estimates and drawings can be shared with customers and multiple recipients for seamless supply chain operation.

Support for Simrad Professional Series customers 24 hours a day, 7 days a week. The 24/7 Advantage Program gives customers access to dial into qualified, personal phone support solutions to ensure they get the right support, round the clock.

Customer Portal Advantage offers Certified Dealers access to online tools and technical information via a new B2B portal. Including information such as technical bulletins, product briefs, manuals, FAQs and troubleshooting documents, videos and calendars, Customer Portal Advantage ensures Certified Dealers have access to the technical information they need 24/7.

Vessel Portal Advantage offers Certified Dealers access to extensive detail for Certified Vessels via an online portal. Including information such as installed components, warranty dates, installation notes, system diagrams and a complete service history, Vessel Portal Advantage ensures Certified Dealers have access to the vessel information they need to optimize onboard service, 24/7.

Training Advantage supports Dealers with technical training courses for sales staff, engineers and technicians. Comprehensive and up to date knowledge of the complete product range enables Dealers to provide world-class service. Hands-on courses are available at Navico locations around the globe. Seminars and technical training are held in strategic locations worldwide every year. In addition, our online training tool allows dealers access to training material 24/7.

PRO.SIMRAD-YACHTING.COM
OUR HERITAGE: ESTABLISHED IN 1947.

With more than 60 years of maritime expertise invested in delivering solutions to the professional market, we have unique knowledge to support professional customers with cost effective navigation solutions.

Contact us:

<table>
<thead>
<tr>
<th>Region</th>
<th>Tel</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navico Americas</td>
<td>+1 832 377 9578</td>
<td><a href="mailto:sales.americas@navico.com">sales.americas@navico.com</a></td>
</tr>
<tr>
<td>Navico Asia Pacific</td>
<td>+64 9 925 4500</td>
<td><a href="mailto:sales.apacnz@navico.com">sales.apacnz@navico.com</a></td>
</tr>
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<td>Navico EMEA</td>
<td>+44 1794 510010</td>
<td><a href="mailto:sales.emea@navico.com">sales.emea@navico.com</a></td>
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</tbody>
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