

VisionMaster Radar

Industry-leading target detection and tracking in all conditions that's reliable, simple and accurate



Reduce collision risk and simplify watch standing

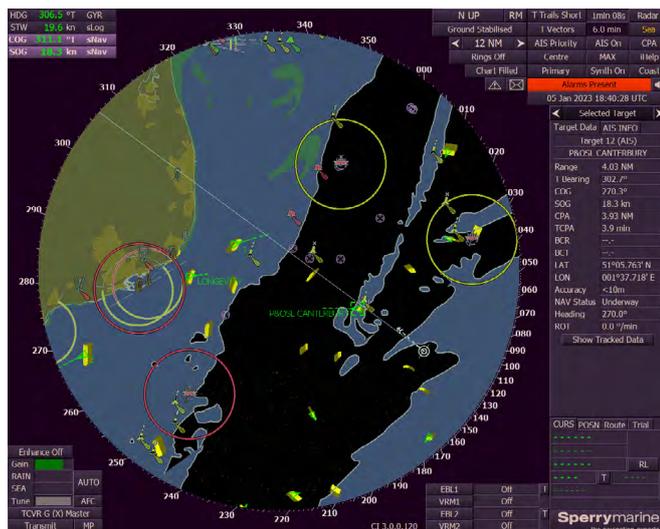
Collision avoidance is critical to safe navigation for any vessel. But demands on mariners are increasing, with reduced bridge crew handling more tasks and more systems. Work overload leads to stress, fatigue and ultimately, more accidents. Mariners need a clear display of radar images in all maritime conditions, delivered by a dependable system that keeps vessels sailing.

Industry-leading target detection and tracking

VisionMaster Radar provides industry-leading target detection and tracking in all sea states that's reliable, simple and accurate. It delivers precise radar images through a clear, intuitive interface that reduces collision risk and simplifies watch standing. Our advanced automatic clutter suppression makes it simpler to distinguish small targets in sea or rain clutter without manual adjustment. The radar system is designed to be always available with the ability to switch between multiple transceivers for extra resilience. And built-in performance monitors ensure optimal functioning.

It's simple to install and use on any vessel, whether a new build or retrofit. VisionMaster Radar is fully compliant and offers enhanced functionality that exceeds IMO and IEC standards. And as requirements evolve, it can be easily upgraded to add the chart radar option or to become a TotalWatch multifunction workstation.

Increase situational awareness



- Advanced automatic clutter suppression for easier identification of small targets in sea or rain clutter without manual adjustment
- Small target enhancement for assured visibility, particularly at higher range scaling
- Real-time distribution of precise radar images from transceiver to workstation, which maintains integrity from source to display
- Automatic interference suppression for clear radar images
- Selection of three trail lengths (true or relative) to visualize course and speed of targets
- Operational Mode feature that provides the ability to apply a range of settings for a better management of alerts on the bridge for the current task
- High performance tracking suitable for use on standard and high-speed craft
- Automatically associates radar and AIS targets to minimise mistaken identity and simplify watch keeping

- System-wide target management on vessels with more than one radar for consistent target identification
- Dual Radar option overlays target data from two independent transceivers for a seamless 360 view on one screen with no blind spots
- Chart radar option providing overlay of official ENCs
- Predicted Vector/Predicted Ship feature graphically projects vessel's path over the ground to support safe manoeuvring and docking
- Conning Information Display alongside radar image for efficient monitoring of all key vessel systems

Increase reliability

- Interswitch capability allows up to six radar transceivers to be connected with up to six workstations for enhanced resilience
- Global 24/365 service and support at every major seaport, at anchor, offshore and even in passage to always keep your vessel sailing

Increase ease of use

- Intuitive interface for fast, accurate target detection

Specifications

VisionMaster Radar offers mariners enhanced functionality above IMO and IEC standards for more advanced target detection and tracking.

Radar features

Clutter suppression	<ul style="list-style-type: none"> • Advanced automatic clutter suppression • Manual Rain and Sea clutter controls • Independently adjustable on each workstation
Interference rejection	<ul style="list-style-type: none"> • Effective suppression of interference from other marine radars
Target enhancement	<ul style="list-style-type: none"> • Small target enhancement at higher range scales
Trail lengths	<ul style="list-style-type: none"> • Selection of three trail lengths (true or relative) to visualize course and speed of targets
Interswitching	<ul style="list-style-type: none"> • Supports up to six radar transceivers • Supports up to six radar/ECDIS workstations
Chart Radar overlay	<ul style="list-style-type: none"> • Optional overlay of selected parts of chart • Supports IHO S-57 / S-63, C-MAP CAES and Professional+, VPF and SevenCs DirectENC formats • Display of Clearing Lines and Clearing Bearings

AIS and tracked targets

Target tracking	<ul style="list-style-type: none"> • Manual target acquisition and tracking at relative speeds up to 150 knots • ARPA ability to track up to 100 targets • Automatic target acquisition with annular and polygonal zones
Target identification	<ul style="list-style-type: none"> • Numerical and alphanumeric • Automatic association of radar and AIS targets • System-wide target identification on vessels with more than one workstation
AIS target	<ul style="list-style-type: none"> • AIS target capacity up to 650 AIS targets • Class A, Class B • AIS transmissions from AtoNs, Base Stations, SAR aircraft, SARTS, MOB devices and EPIRBs
Own Ship AIS	<ul style="list-style-type: none"> • Integrated readout of key AIS parameters for own ship • Optional MKD ("Minimum Keyboard and Display") capability to update AIS parameters directly from the ECDIS
AIS messages	<ul style="list-style-type: none"> • Supports safety-related messages to/from other vessels • Addressed or broadcast messaging

Navigation tools

Electronic Bearing Line & Variable Range Marker	<ul style="list-style-type: none"> • Two true or relative bearing lines which can be offset from own ship • Two Variable Range Markers which can be offset from own ship • Combined Electronic Range and Bearing Lines
Range Rings	<ul style="list-style-type: none"> • Measures distances from the consistent common reference point for own ship
Parallel Index Lines	<ul style="list-style-type: none"> • Can be defined ready for use during critical phases of pilotage. Multiple sets can be created in advance. Each set can contain up to 15 lines
Parallel Cursor	<ul style="list-style-type: none"> • Graphical tool for quickly measuring distances from own ship
Distance Line	<ul style="list-style-type: none"> • Determines the Rhumb Line and Great Circle distance between two points
Predicated Vector/ Predicated Ship	<ul style="list-style-type: none"> • Provides a graphical predication of the vessel's future path over the ground. Select between a simple vector or full representation of the ship's outline.
Trial Manoeuvre	<ul style="list-style-type: none"> • Collision avoidance tool for planning and performing manoeuvres

continued over

Navigation tools

Operational Mode	<ul style="list-style-type: none"> Allows the Mariner to quickly and easily adjust settings according to the navigational task. There are four modes to select from: <ol style="list-style-type: none"> Open Sea Confined Waters Berthed Offline
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Display

Brightness modes	<ul style="list-style-type: none"> Day Bright, Day Black, Dusk, Night
Radar Display modes	<ul style="list-style-type: none"> Motion modes: True and relative Presentation modes: Head Up, North Up and Course Up Effective stabilisation: ground and water stabilisation from a range of speed sensors
Conning Information Display	<ul style="list-style-type: none"> Customisable to present navigation information specific to vessel and classification society requirements Mariner can select Conning information for display according to current navigational task Head-Up Displays can show specific sensor information, such as rudder, thruster and anemometer data
User profiles	<ul style="list-style-type: none"> Individual's display settings can be saved and reused, and carried from vessel to vessel

Positioning and manoeuvring

Position fixing	<ul style="list-style-type: none"> Own ship's position can be derived from a wide range of GNSS systems. For additional PNT resilience, Line of Position fixes can be entered using either bearing or range Optional Optical Bearing Device interface available to further streamline the taking of fixes
Own Ship's history	<ul style="list-style-type: none"> Automated recording of own ship's position with selected display of recent track and ability to record navigationally-significant events. Historical track can be displayed for review of previous passages
Precision Anchoring	<ul style="list-style-type: none"> To plan an anchorage, perform an anchoring manoeuvre and then monitor for anchor drag during anchor watch. Chain length and anchorage depth can be entered and swing radius is automatically calculated, with an alert raised if anchor drag is detected
Man Overboard	<ul style="list-style-type: none"> Graphically presents position of overboard event and updates it using the estimated set and drift
Alternate Bow	<ul style="list-style-type: none"> Specialised support for double-ended vessels to reduce port turnaround time

Additional capabilities

Dual Radar	<ul style="list-style-type: none"> Seamless 360° view on a single screen with no blind spots: any combination of X- or S-band supported
Static site	<ul style="list-style-type: none"> Suitable for coastal surveillance, oil rigs and vessel traffic services

VisionMaster Radar user interface

The screenshot displays the VisionMaster Radar user interface. It features a central radar display showing a 360-degree view of the sea with various targets and overlays. The interface is annotated with several key areas:

- Permanent display of primary navigation information:** Located at the top left, showing parameters like HDG, STW, COG, and SOG.
- Quick access to radar controls:** Located at the bottom left, showing controls for Gain, WAIN, SEA, Tune, and TCRV.
- Radar presentation controls and targets:** Located at the top right, showing controls for N UP, RM, T Trails Short, T Vectors, AIS Priority, AIS On, and CPA.
- Alarms and indications:** Located on the right side, showing a list of alarms and indications.
- Menu:** Located on the right side, showing a menu for Target Data, AIS Info, and Target 12 (AIS).
- User selected readout area:** Located at the bottom right, showing a readout area for CURS POSN, Route, and Trial.
- Quick access to VRM and EBL tools:** Located at the bottom center, showing controls for EBL1, VRM1, EBL2, and VRM2.

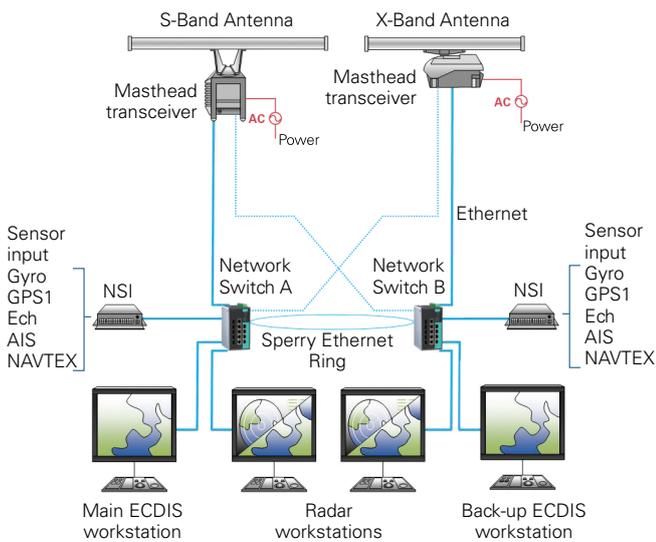
Comprehensive range of radar sensors

Sperry Marine radar sensors are the ideal solution for all your maritime applications. Based on well-proven magnetron technology, they deliver precise, highly reliable performance. A wide range of configurations are available to suit different vessels – from merchant ships, cruise liners and super yachts to working boats and naval ships – as well as static installations.

Sperry Marine offers a choice of two network platforms for vessels:

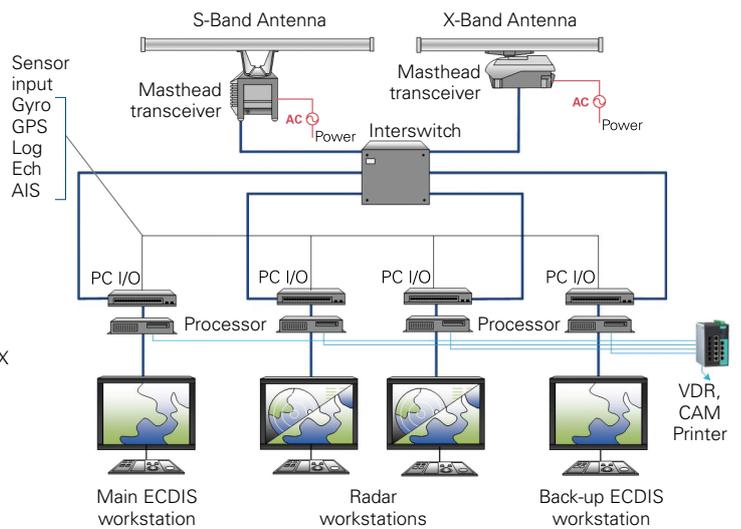
VisionMaster Net

Fully networked platform using standard 1GB Ethernet cable to support digitalisation of operations.



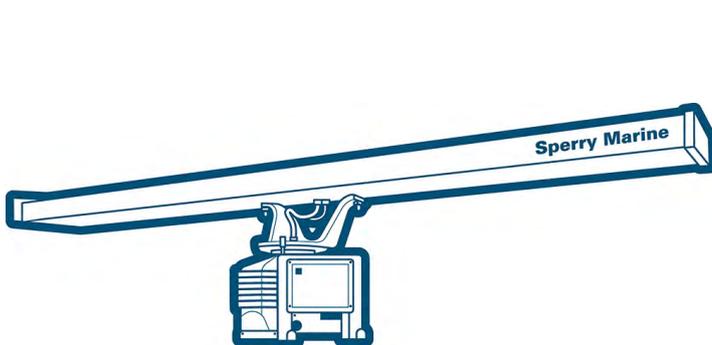
VisionMaster FT

Established platform with point-to-point analogue connection between system components using coax.

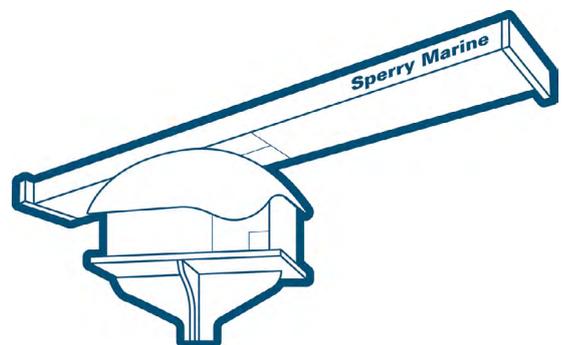


Antennas and Turning units

The sensor is available with type-approved X-band antennas at 4ft, 6ft and 8ft, which deliver a sharper radar image for short-range detection; and a type-approved S-band antenna at 12ft for long-range detection and clearer images in rain and fog. A 9ft S-band antenna is also available for applications where type approval is not required.



S-band antenna with masthead transceiver



X-band antenna with masthead transceiver

Turning Units and transceiver location

Technical data	S-Band*		X-Band*		
	Turning unit with 30kW masthead transceiver	Turning unit with 30kW bulkhead transceiver	Turning unit with 10kW masthead transceiver	Turning unit with 25kW masthead transceiver	Turning unit with 10/25kW bulkhead transceiver
Description	Turning unit with 30kW masthead transceiver	Turning unit with 30kW bulkhead transceiver	Turning unit with 10kW masthead transceiver	Turning unit with 25kW masthead transceiver	Turning unit with 10/25kW bulkhead transceiver
Transceiver frequency	3050MHz	3050MHz	9410MHz	9410MHz	9410MHz
Transceiver peak power	30kW	30kW	10kW	25kW	10k/25W
Turning Unit weight	141kg	84kg	37kg	40kg	12.5kg
Performance monitor	Yes		Yes		
Turning Unit power supply nominal input	1 Phase, 110-220V, 50/60Hz 1 Phase, 220-240V, 50/60Hz 3 Phase, 110-220V, 50/60Hz 3 Phase, 220-240V, 50/60Hz		1 Phase, 110-240V, 50/60Hz		
Environmental specifications	Meets the requirements of IEC 60945. Minimum operating temperature -40°C.				

* Additional export-controlled features for naval vessels available on request

Flexible range of workstations



Deckstand

Free-standing console with an integrated display, control panel and processor.

Simplify new or retrofit installations with an all-in-one workstation.



Desktop

Top part of a Deckstand with integrated display and control panel.

Designed for easy installation on a pre-installed Deckstand base with processor on an existing bridge.



Kit Version

Standalone display, control panel and processor.

Flexibly install navigation equipment in a new-build console. Save transportation costs by sourcing consoles near shipyard.



TT250

Plug & Play TableTop solution with integrated standard monitor and processor.

Unique small footprint with 19" monitor allows easy installation on a small bridge with space constraints (VisionMaster FT only).

Display options

All formats (except the Tabletop) can incorporate either a panel PC or standard monitor, which are based on standard hardware for easy integration and can be flexibly configured as an ECDIS or multifunction display. Designed for optimal visibility, these high-resolution, widescreen displays are ECDIS calibrated for consistent, faithful colour rendering and easier data interpretation.

Panel PCs

Flat screen marine PC with integrated processor

- Saves space and simplifies installation
- Available in 19, 24 and 26-inch sizes, with a bracket available for flexible mounting
- Robust, IP65-rated fanless design with latest solid state drive
- High performance with lower power consumption

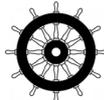
Standard Monitor

Traditional marine PC with separate processor

- Enables flexible replacement of monitor or processor separately
- Available in 19, 23, 24 and 26-inch sizes
- Robust, IP65-rated design for the harsh marine environment

Standards compliance

Standard number	Description
IMO MSC. 192(79)	• IMO performance standard for radar equipment
IMO MSC. 191(79)	• IMO performance standard for the presentation of navigation related information on shipborne navigation displays
IMO MSC. 302(87)	• IMO performance standard for bridge alert management
IMO A.694(17)	• General requirements for shipborne radio equipment and electronic navigational aids
IEC 62388	• IEC test standard for shipborne radar. VisionMaster Radar is certified as compliant with the following categories of radar: CAT 1, 1C, 1H, 1HC and CAT 2, 2C, 2H, 2HC
IEC 60945	• IEC test standard – general requirements
IEC 62288	• IEC test standard for the presentation of navigation related information on shipborne navigation displays
IEC 61162-1	• IEC test standard – digital interfaces – part 1: single talker and multiple listeners
IEC 61162-2	• IEC test standard – digital interfaces – part 2: single talker and multiple listeners, high-speed transmission
IEC 61162-450	• IEC test standard – digital interfaces – part 450: multiple talkers and multiple listeners – Ethernet interconnection
IEC 62923-1	• IEC test standard for Bridge Alert Management – part 1
IEC 62923-2	• IEC test standard for Bridge Alert Management – part 2: alert and cluster identifiers
UKCA	• UK Conformity Assessed



You may also be interested in:



VisionMaster ECDIS

Enhance situational awareness by adding an Electronic Chart Display and Information System with integrated Conning Information Display.



VisionMaster TotalWatch

Upgrade to a multifunction workstation that combines VisionMaster Chart Radar, ECDIS, Conning Information Display and Central Alert Management HMI.



VisionMaster TT 250

Integrated Tabletop Radar, Chart Radar, ECDIS.



NAVIPILOT 4500N

Keeping your vessel more efficiently on course, reducing fuel consumption, emissions and workload on the bridge.

Global Service and Support

Sperry Marine provides service and support on a 24/365 basis at every major port worldwide, at anchor, offshore and at sea. All Marine Service Engineers are all certified to ensure they install, maintain and repair our products to the industry's highest standards on a consistent global basis. Please see www.sperrymarine.com/services for full details of all our service locations.

Find out more

Please visit www.sperrymarine.com/visionmaster-ft-ecdis for more information on Sperry Marine's complete range of radar solutions. If you would like a quotation, please email sales@sperrymarine.com.

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