

VisionMaster Net

The Networked Bridge Solution



VisionMaster Net

The Awarded Networked Bridge Solution

Digital Technology Winner 2019
VisionMaster Net



Northrop Grumman Sperry Marine's heritage in commercial marine radar dates back to August 1949, when Decca Marine Group introduced its first product, the Type 159.

In the course of 70 years, the Sperry Marine portfolio has evolved from standalone, single function navigation and positioning products, through smart products with feature rich software, improved user interface and integrated sensor data, to smart and connected products combining remote monitoring, control and optimisation.

The latest phase of developments has seen the company move into networked bridge solution with VisionMaster Net, to simplify deployment, increase system availability and create foundation for big data on the vessel.

Simple

Easy to install: VisionMaster Net's distributed architecture makes installation easier, with fewer components to connect and less cables to pull.

Easy to integrate: It is designed as a modular network over an Ethernet ring. Any combination of VisionMaster Net and third party equipment can be easily integrated into any configuration to create a networked bridge solution for any vessel.

Solid

Increased resilience: VisionMaster Net's ring topology provides a higher level of redundant network capability than conventional point-to-point systems.

Complete support: VisionMaster Net is backed up by Sperry Marine's global service network.

Smart

Improved operational efficiency: VisionMaster Net provides the foundation for "big data" on the vessel. With SperrySphere, it enables smart maintenance of on-board systems with a focus on cyber security.

Alert management: VisionMaster Net is supported by a new central alert management human machine interface (CAM-HMI) which complies with the latest IMO standards.

Made for Mariners!

The simple integration of VisionMaster Net provides an easy interface for the crew for safety and operational efficiency, simplifying their daily work on board.



Features:

- Digital platform for all navigational applications
- User centred interface
- Scalable to all type of vessels
- Type approved according to latest IMO regulation
- Joystick and Track control

Benefits:

- Easy installation
- User friendly with an intuitive interface
- Low cost of ownership through lifetime
- Fully connected with Ethernet CAT6a cable

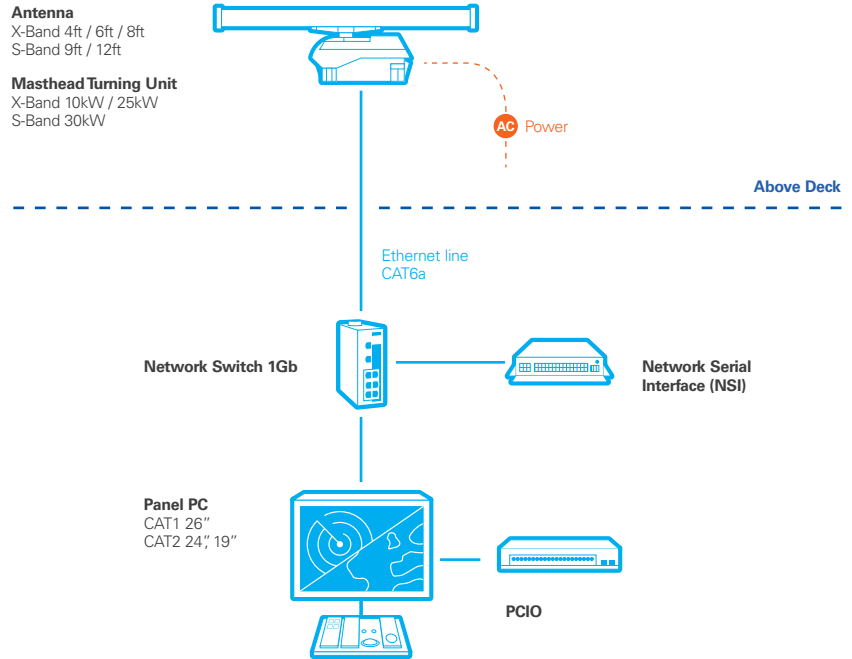
Navigation Products:

- Autopilot – NAVIPILOT and NAVIGUIDE series
- Gyrocompass – NAVIGAT series
- Speed log – NAVIKNOT series
- VDR - VoyageMaster
- GPS
- GMDSS

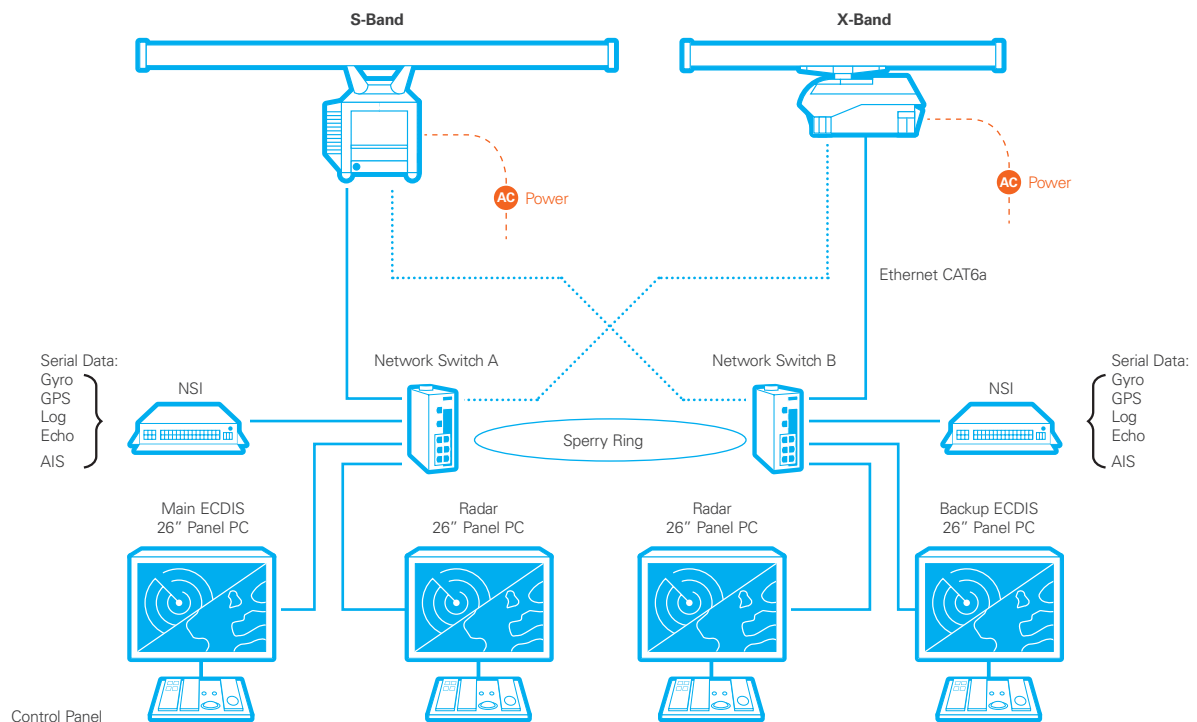
A World of Support

VisionMaster Net simplifies and reduces the installation time and cost compared to other navigation systems.

Through our Global Service Network, we support you throughout the system's lifecycle, from installation, maintenance and repair to managing obsolescence and ultimate replacement.



VisionMaster Net layout: Multinode system



A complete type approved connected bridge solution for safety at sea!

VisionMaster Net Radar / Chart Radar

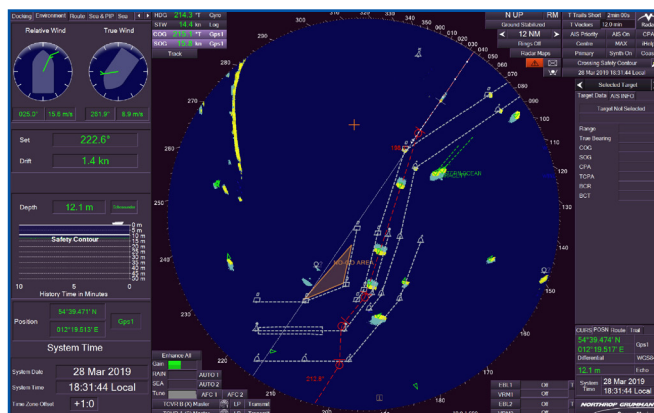
The VisionMaster ARPA Radar is Sperry Marine's state of the art radar solution, which has established an unmatched reputation in reliability and performance worldwide.

With an easy upgrade to Chart Radar, the result is the most advanced series of high-performance radars yet produced by Sperry Marine, providing the ultimate in safe navigation and situational awareness.

The VisionMaster Net Radar system is Type Approved using 19", 24" and 26" displays with X-Band and S-Band top units.

Standard features are:

- Latest panel PCs for best display resolution
- Complete ARPA functionality
- Advanced clutter suppression
- Small target detection
- VDR and AIS interfaces
- Tracks up to 100 radar and AIS targets
- CAT6a Ethernet cabling



VisionMaster Net ECDIS / ECDIS with Radar Overlay

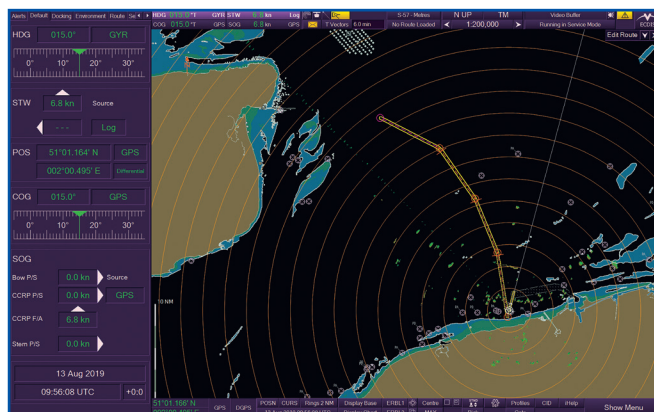
The VisionMaster Net ECDIS provides a complete IMO compliant Type Approved Electronic Chart Display and Information System for safe navigation.

Multiple voyage plans can be created quickly and edited easily at any time during the voyage without interrupting the navigation process. The ECDIS automatically correlates targets with radar and AIS to minimize mistaken identity and simplify watch standing.

VisionMaster Net ECDIS is also available with Radar Overlay, or in a TotalWatch configuration.

Standard features:

- Vector or raster chart formats (ENC S-57, S-63, ARCS), C-Map
- Radar and AIS target automatic correlation
- Configurable Conning Information Display (CID)
- Central Alert Management (CAM) information



VisionMaster Net TotalWatch

The VisionMaster Net TotalWatch multi-function workstation provides the ultimate in flexibility and redundant network for bridge configuration, manning and safety.

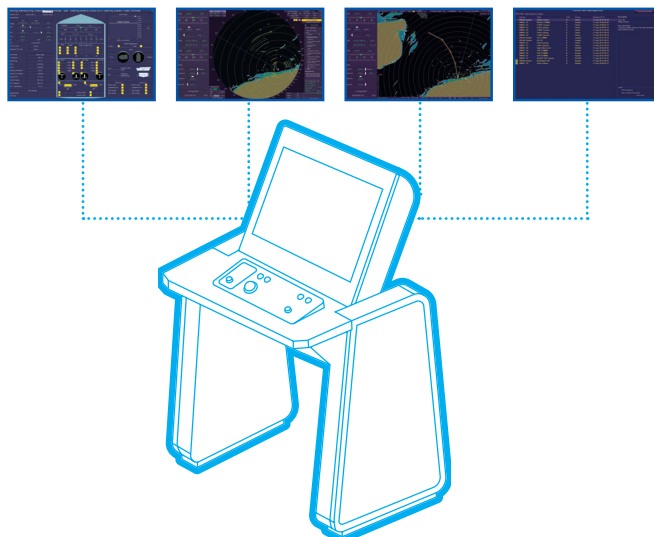
At a TotalWatch multifunction workstation, any VisionMaster Net function (chart radar, ECDIS/radar overlay, CID, CAM) can be selected by the operator as a Watch Mode at the click of a button.

With TotalWatch:

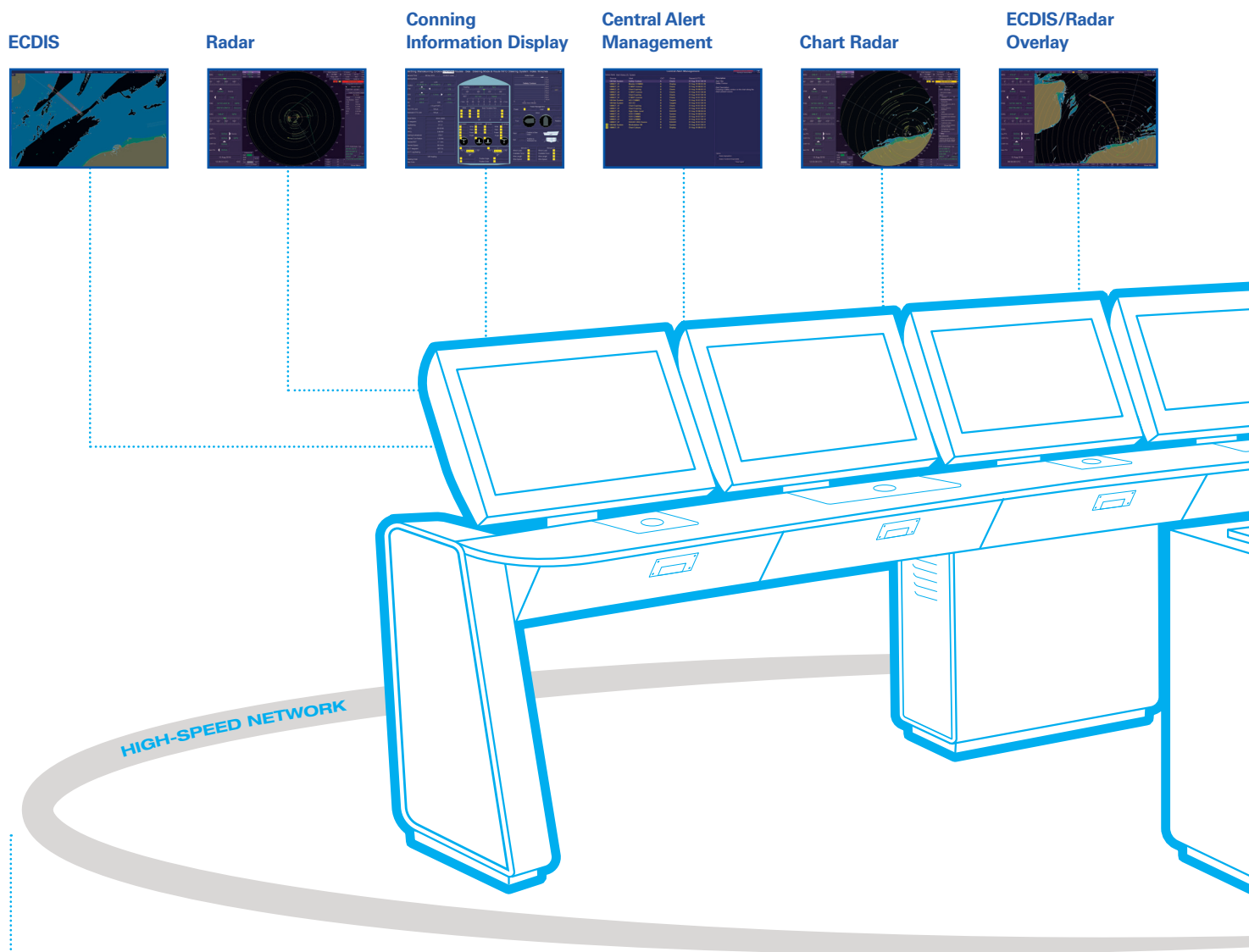
- Any combination of workstation functions and watchkeeper manning configuration can be created

- All navigation data is available to any watchstander
- Having multiple functions available at any individual workstation provides the redundant network necessary to navigation safety
- The flexibility of TotalWatch enables reduced manning and supports single-watchkeeper bridge requirements

The TotalWatch workstations can be designed to be interfaced with the SperrySphere navigation suite, which includes fuel management and chart downloads.



VisionMaster Net[®]



Navigation / Communication Suite

- Autopilot – NAVIPILOT and NAVIGUIDE Series
- Gyrocompass – NAVIGAT Series
- Speed Log – NAVIKNOT Series
- VDR - VoyageMaster Series
- GPS
- AIS
- GMDSS

VisionMaster Net the power of connectivity

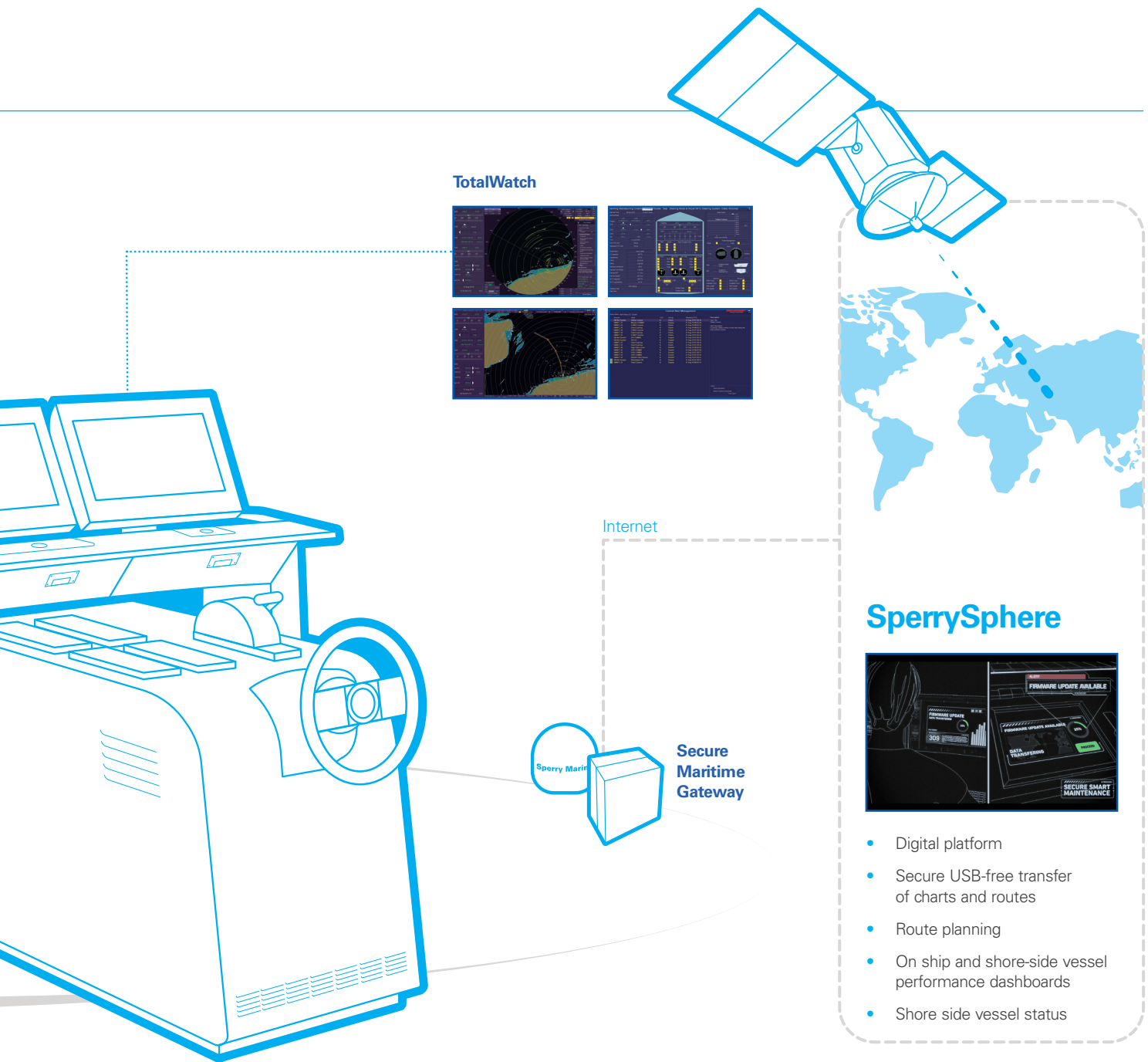
Modern navigation system technology provides more connectivity and communication capabilities for a safer and simpler journey for watch officers. The VisionMaster Net family of products includes:

ARPA / Radar:

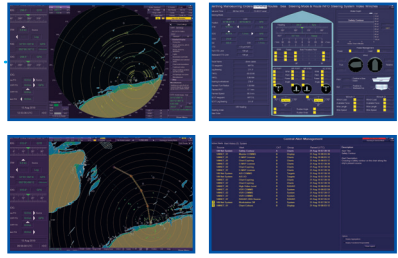
Fully CAT1 and CAT2 Type Approved Radar exceeding MED requirements for safety and peace of mind of mariners.

Chart Radar:

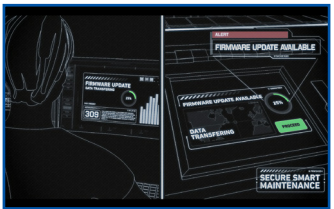
Integrates electronics chart and radar displays for improved watch keeping efficiency and safety at sea.



TotalWatch



SperrySphere



- Digital platform
- Secure USB-free transfer of charts and routes
- Route planning
- On ship and shore-side vessel performance dashboards
- Shore side vessel status

ECDIS:

The Electronic Chart Display and Information System not only meets all IMO requirements for paperless navigation, but also provides the industry's most advanced capabilities for voyage planning and chart management.

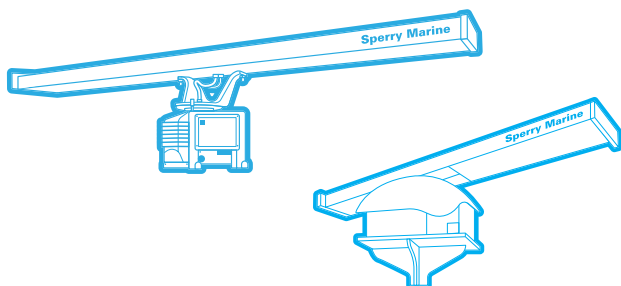
TotalWatch:

Multi-function workstations at which any VisionMaster Net function can be selected as a watch mode. In addition to the optional Playback Watch mode, having everything available at a single workstation maximizes situational awareness, increasing safety and navigation performance.

Integrated Bridge System (IBS):

For a complete certified solution, Sperry Marine VisionMaster Net new bridge design is for all type of commercial applications and is scalable for all types of vessels. Any combination of VisionMaster Net radars, chart radars, ECDIS and/or TotalWatch can be integrated with all our navigation product lines.

VisionMaster Net Antennas and Masthead units



Bespoke X-Band and S-Band antennas, provide clear and accurate radar images to VisionMaster Net.

The specific design has been especially influenced to minimize load on the motor in high wind, for thermal management and also to reduce ice accumulation.

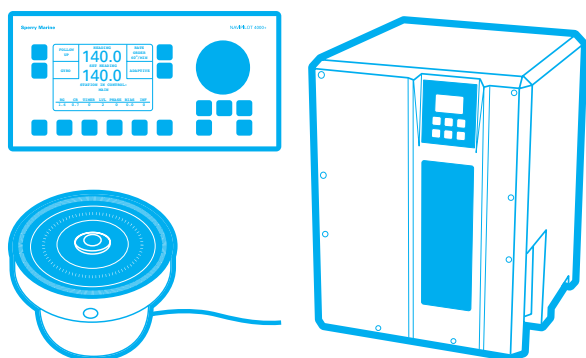
The mastheads top units including transceivers, provide highly reliable data transmission to the VisionMaster Net display through a CAT6a Ethernet cable.

Customised colours and other options available.

Navigation Products

A complete set of high reliable navigation products can be provided to interface with VisionMaster Net for a safe navigation.

- Autopilot series: NAVIPILOT 4000+ and NAVIGUIDE series
- CompassNet Gyrocompass and Fiber-Optic Gyrocompass series: NAVIGAT 100 / 200 / 2500 / 3500
- Speedlogs series: NAVIKNOT
- VDR - VoyageMaster
- GMDSS
- AIS
- NAVTEX



Specifications

Antenna Characteristics

	S-Band		X-Band		
Antenna Type	Slotted waveguide array				
Aperture Length	9ft* (2750mm)	12ft (3600mm)	4ft (1310mm)	6ft (1920mm)	8ft (2535mm)
Horizontal Beamwidth	2.8° max.	2.0° max.	2.0° max.	1.3° max.	1.0° max.
Vertical Beamwidth	30° nom.	30° nom.	24° nom.	24° nom.	24° nom.
Gain (nominal)	25dB	26dB	29dB	30dB	31dB
Polarization	Horizontal				
Nominal Rotation Rate	25rpm (50Hz) / 30rpm (60Hz)		28rpm		

*The S-Band 9ft is not Type Approved

Masthead Transceivers

	S-Band	X-Band	
Transceiver Frequency	3050MHz	9010MHz	
Transceiver Peak Power	30KW	10kW	25KW
Pulse Length/PRF	0.05µ /1800Hz Nominal 0.25µ /1800Hz Nominal 0.75µ /785Hz Nominal	0.05µ /1800Hz Nominal 0.25µ /1800Hz Nominal 0.75µ /785Hz Nominal	
Performance Monitor	Yes	Yes	
Transceiver/TU Power Supplies	Depends on S-Band selection	Nominal input 92-276V AC - 47/64Hz	

Marine Panel PC

	Description			
Product Type	CAT 1 Radar / Chart		ECAT 2 Radar / Chart	
Screen Size	26"	26" SlimLine	24"	19"
Screen Type	LCD Display			
Resolution	1920x1200		1920x1080	1280x1024
Aspect Ratio	16:10		16:9	5:4
Luminance	350 Cd/m ²		250 Cd/m ²	300 Cd/m ²
Glass	Anti-glare hardness 3H			
Processor	Intel i5-6500TE			
RAM	4GB			
Hard Drive	128GB SSD			
Power Input	90-264VAC 50/60Hz			
Dimensions (WxHxD)	632x534x86mm	621x435x100mm	593x384x79mm	429x382x93mm
Weight	14.5kg	15kg	12kg	8.8kg
Operating Temperature	-15 to 55°C			
Ingress Protection code	IP65 (front)			

Standards Applied

IMO Performance Standards and Resolutions:

MSC.191(79), MSC.232(82), MSC.302(87) and A694(17)

IEC Test Standards:

IEC 61174:2015	Electronic Chart Display and Information System
IEC 60945:2002	General Requirements for Marine Navigation Equipment
IEC 62388:2013	Shipborne Radar
IEC 62288:2014	Presentation of Navigation Related Information on Shipborne Navigation Displays
IEC 61162-1 Ed 5:2016	Digital Interfaces
IEC 61162-2 Ed 1:1998	Digital Interfaces
IEC61162-450:2011 + Amd.1	Digital Interfaces (Ethernet interconnection)



A world of support

Global Customer Support and Solutions

We provide service and support on a 24/7/365 basis at every major port worldwide, at anchor, offshore and at sea. We continually monitor our service quality to ensure our performance remains the highest in the industry.

Americas



EMEA



Asia & Oceania



sales@sperry.ngc.com

A division of the Northrop Grumman Corporation, Sperry Marine provides a range of sophisticated navigation solutions for mariners around the world: autopilot and steering control systems, compass systems, integrated navigation and bridge systems, integrated platform management systems, speedlogs, navigation radar and ECDIS. Working with mariners around the globe for over 100 years.

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Specifications and features subject to change without notice.

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