



Simrad R5000

IMO/Solas Type Approved Radar Systems



▲ NEW R5000



R5000 Radar Systems

SIMRAD R5000 Radar Systems feature a modular plug & play design making it easy to create a cost effective and scalable state-of-the-art system, with an intuitive interface designed for ease of use. Providing you a more powerful way to navigate safely in severe weather while protecting your vessel and the environment.



SRT LAN X-Band

Type-Approved X-Band Radar Solutions

X-Band radar delivers high-resolution coverage with optimal target separation. We offer type-approved X-Band radar solutions for use aboard CAT 1 and CAT 2 SOLAS vessels, including high speed craft (HSC). Choose from a 12 or 25 kilowatt up-mast transceiver for simple and cost-effective installation, or a 25-kilowatt down-mast transceiver for enhanced serviceability and resistance to harsh environmental conditions. Open array antennas are available in 6, 9, and 12-foot diameters to suit a variety of operational requirements and vessel sizes.

SRT LAN S-Band

Type-Approved S-Band Radar Solutions

S-Band radar serves as a secondary system aboard SOLAS vessels of 3,000 GT and above, and offers superior target detection to X-Band radar in poor weather conditions such as rain or fog. We offer IMO type-approved S-Band radar solutions for use aboard CAT 1 and CAT 2 vessels, including high speed craft (HSC). A lightweight 12-foot open array antenna is paired with a 30-kilowatt S-Band transceiver; the transceiver is available in an up-mast configuration for simple and cost-effective installation, or down-mast configuration for enhanced serviceability and resistance to harsh environmental conditions.

FEATURES

- Solutions available to suit CAT 1 (H) and CAT 2 (H) SOLAS vessels
- Modern user interface with intuitive keypad and trackball controls
- 24 and 27-inch widescreen display options (category dependent)
- Modular system for ease of installation
- Create multi-radar and multi-station systems
- Fast commissioning by advanced automatic sharing data function
- Instantaneous tracking data display of up to 100 radar targets and 300 AIS targets

X-Band

- X-Band radar offers high resolution and optimal target separation
- 6, 9, and 12-foot open array antennas are available to suit a range of vessels
- Choose from a 12 or 25 kW up-mast transceiver, or 25 kW down-mast option

S-Band

- S-Band radar offers superior target detection to X-Band in harsh weather conditions
- Lightweight 12-foot open array antenna
- 30 kW up-mast or down-mast transceiver

R5000 Radar Approvals

Size of ship/craft	Under 500 gt	500 gt to 10000 gt and HSC<10000 gt	All ships/craft ≥10000 gt	Simrad R5000
CATEGORIES OF SHIPS	CAT 3	CAT 2 CAT 2H	CAT 1 CAT 1H	CAT 1 CAT 1H CAT 2 CAT 2H
Auto-acquisition of targets	NO	NO	YES	YES
Minimum acquired radar target capacity	20	30	40	100
Minimum activated AIS targets	20	30	40	300
Minimum sleeping AIS target capacity	100	150	200	300

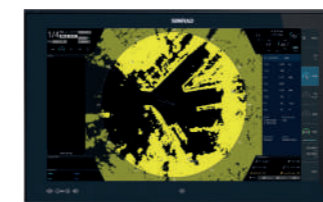
OTHER RADAR APPROVALS

- EC Marine Equipment Directive (MED)
- United States Coast Guard (USGC)
- China Classification Society (CCS) (approval pending)
- Russian Maritime Register of Shipping (RS) (approval pending)
- FCC / IC (approval pending)
- ISO 9001

Easy to use R5000 Control Station



► **M5027 CAT 1**
Part no. 000-12726-001



► **M5024 CAT 2**
Part no. 000-11781-001



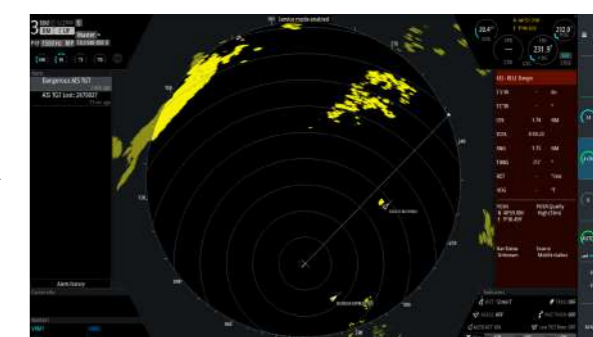
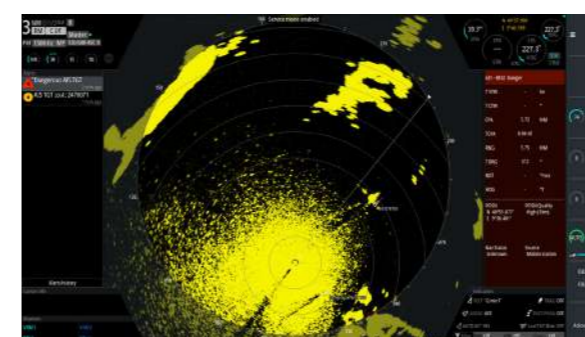
► **R5000 radar Processor**
Part no. 000-13216-001



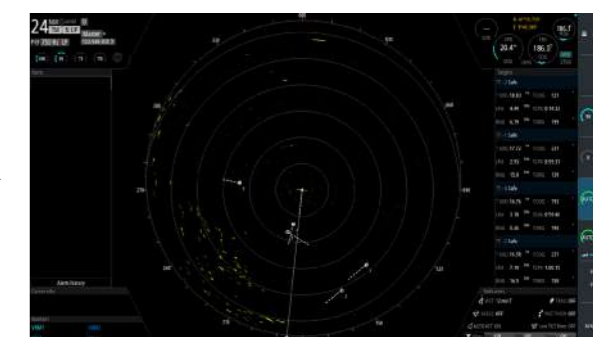
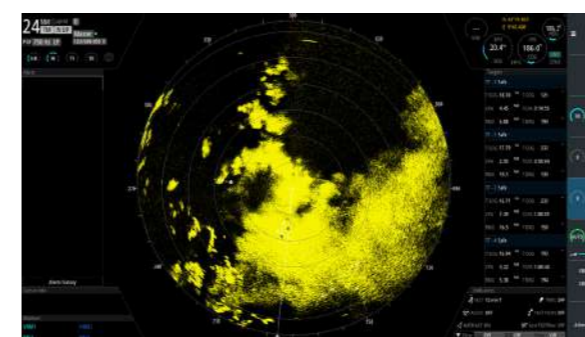
► **O2000+O5000 Trackball**
Part no. 000-13958-001
Part no. 000-14278-001

Simrad R5000 systems feature a modern interface with intuitive keypad and trackball controls for unparalleled ease of use. When paired with a 24- or 27-inch widescreen display, the advanced series gives operators constant access to key information, alerts, and settings without distracting from the central PPI. This same interface is used across the complete series of Simrad X-Band and S-Band solutions, offering a consistent experience for operators of multi-radar systems.

Advanced Digital Signal Processing



Adjust the radar image with a simple double-click. Sea and Rain anti-clutter controls has manual and an innovative automatic mode, the manual Sea anti-clutter system includes predefined reduction filters for Calm, Moderate and Rough sea state conditions, the auto rain anti-clutter includes an autodaptive algorithm filter to the current weather condition.



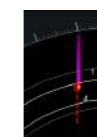
The quality of the target tracking is immune to radar user settings. Boasting instantaneous tracking-data display of up to 100 radar targets, and a background target-tracking capacity of 2,500 in all kinds of weather and sea conditions.

Easy to use Navigation Tools



AIS Targets

The system can display up to 300 AIS targets, of which 100 can be activated to provide additional information.



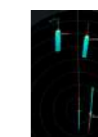
Tracking Zones

Allows for automatic acquisition of radar and AIS targets when they enter in a user defined zone.



Trial Manoeuvre

Dynamically shows final target positions at the end of adjusted own-ship Heading, Speed and ROT settings.



Target Trails

Indicates the target movement by leaving an afterglow, the length represents the time it takes for the trails to fade out.



Past Positions

Indicates the Past Positions of each AIS and tracking targets. The dots behind the target represent its position in the multiple of a time selected by the user.

Easy to Install



The cutting-edge R5000 series is designed for plug & play, pre-wired installation without comprising system architecture, flexibility and product durability. Each Radar processor is connected to the radar transceiver via a pre-wired, thin and easy to route Ethernet cable.



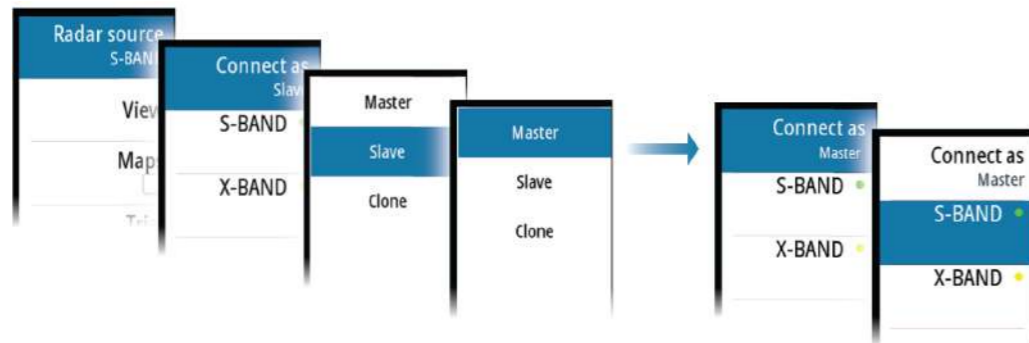
System Configuration

The new R5000 will be available in six different packaged systems for CAT 1 and CAT 2 requirements. Alternatively, R5000 series offers the possibility to pair the M5024 or M5027 Control Station with all kind of up-mast or down-mast radar sensors.

Part Number	Description
000-14618-001	R5024 12U/6X CAT 2 Radar System
000-14619-001	R5024 25U/6X CAT 2 Radar System
000-14620-001	R5027 25U/6X CAT 1 Radar System
000-14621-001	R5027 25U/9X CAT 1 Radar System
000-14622-001	R5024 30U/12S CAT 2 Radar System
000-14623-001	R5027 30U/12S CAT 1 Radar System

Advanced Interswitch Capability

Multiple R5000 processors can be networked together to create multi-radar systems, and to provide access to radar from multiple stations. Any networked station can control any connected radar system, offering both flexibility and redundancy.



MASTER

A master control station has full control of a radar sensor. There can be only one master for each sensor at a given time. A control station has to release its master status before another control station can be set to master mode.

SLAVE

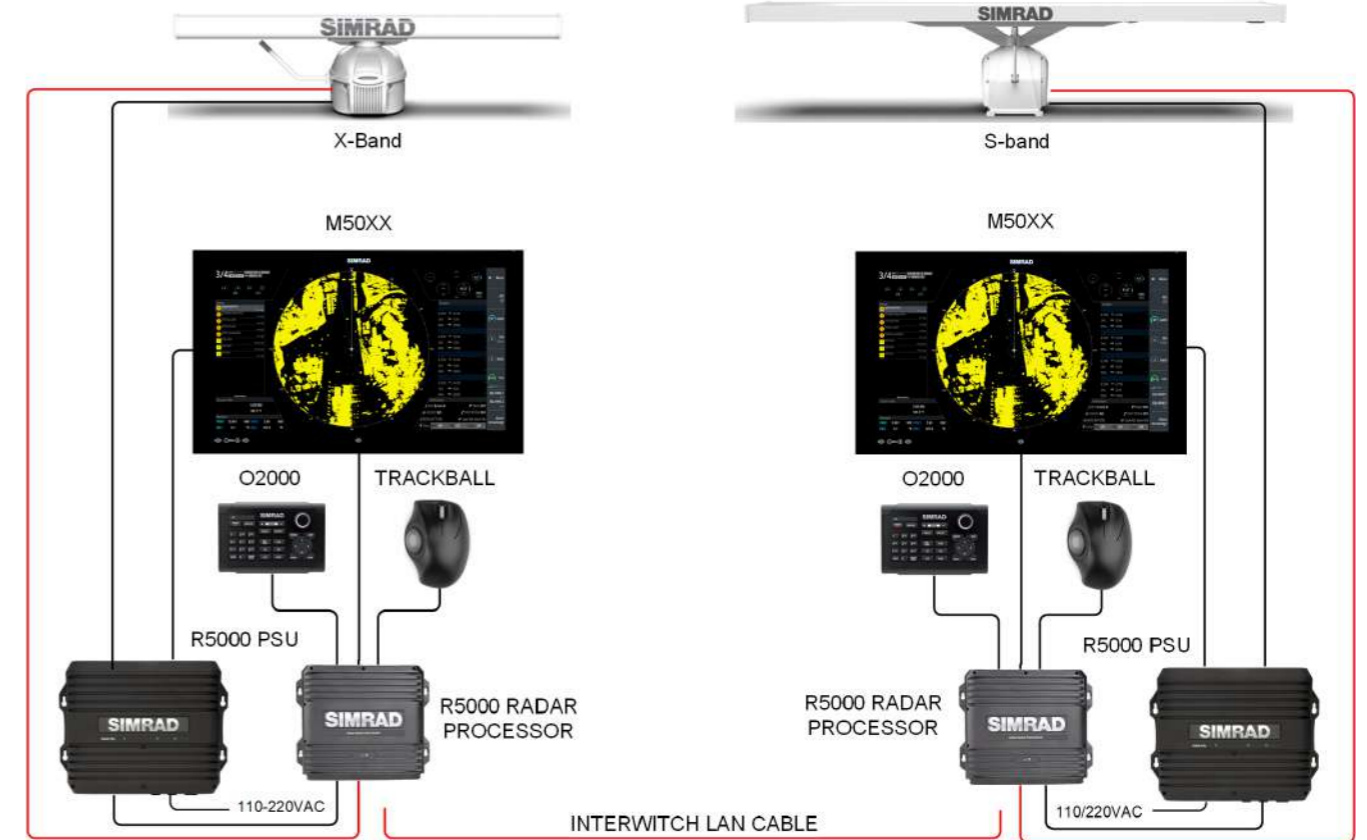
A slave control station has restricted control of the radar sensor. There can be max 3 slaves for each radar sensor simultaneously.

CLONE

A clone control station mirrors a selected control station's display. A clone cannot control a radar sensor.

System Diagrams

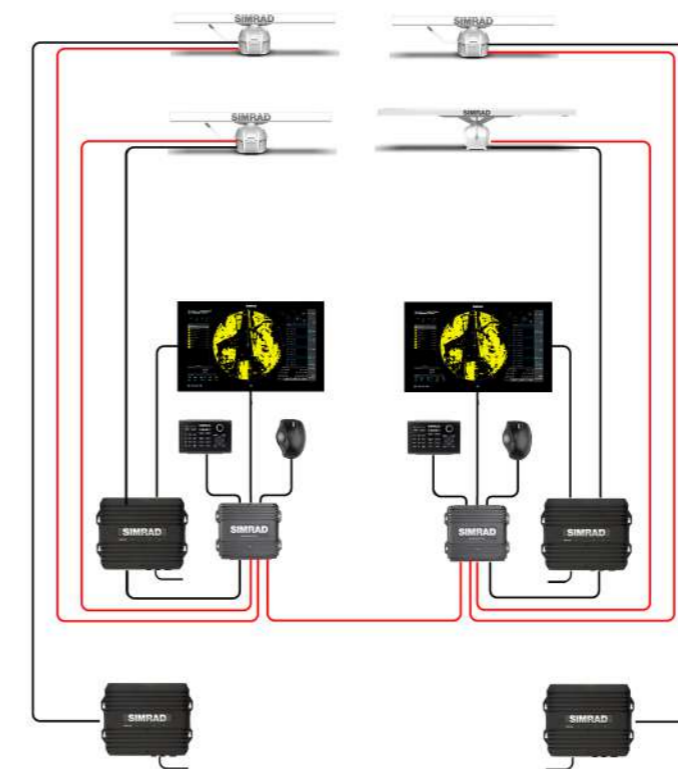
Single Radar Systems



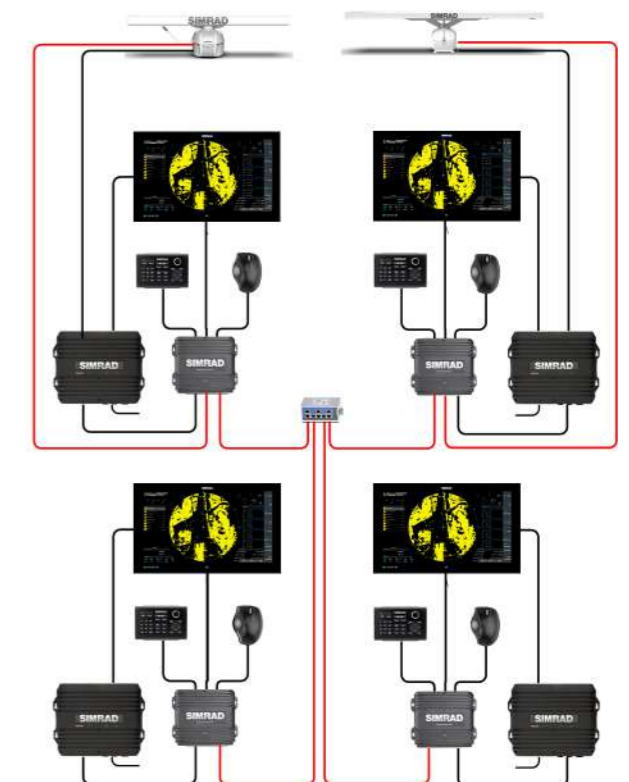
X-Band up-mast system

S-Band up-mast system

Multiple Radar Sensors

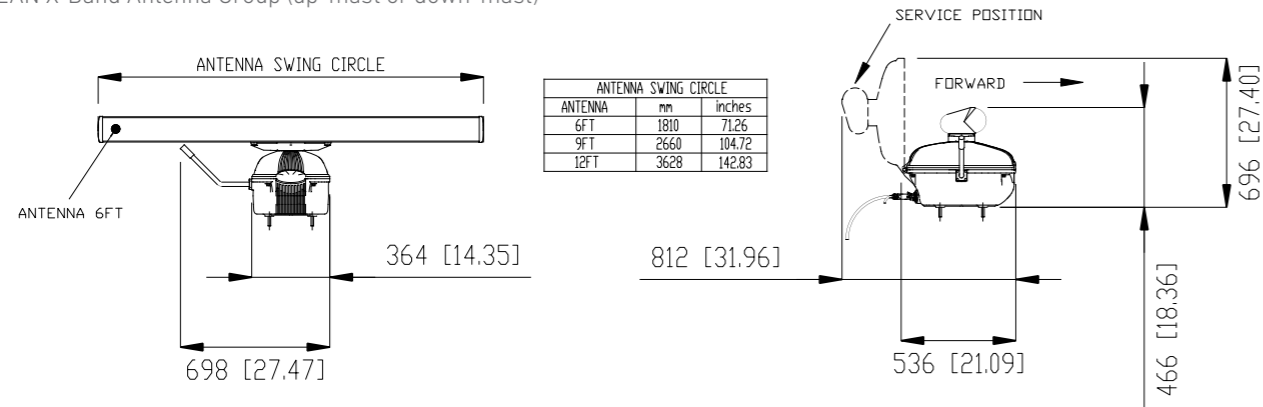


Multiple Radar Control Stations

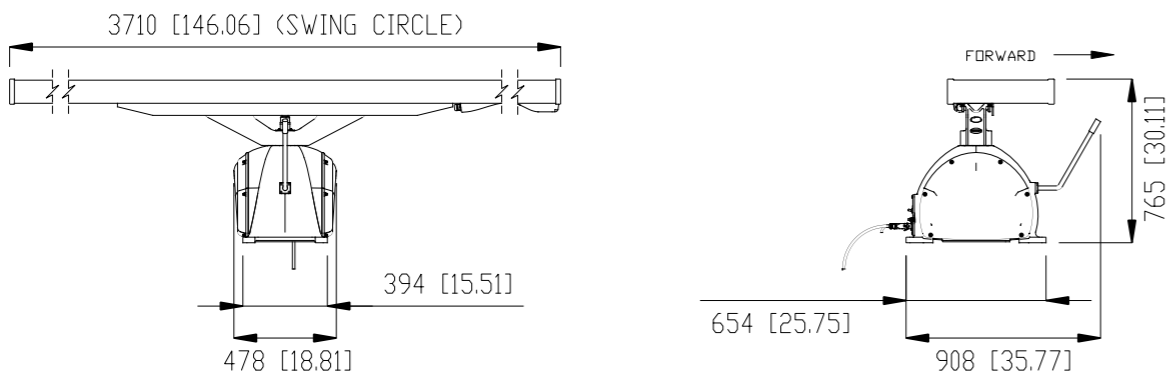


Dimensions

SRT LAN X-Band Antenna Group (up-mast or down-mast)



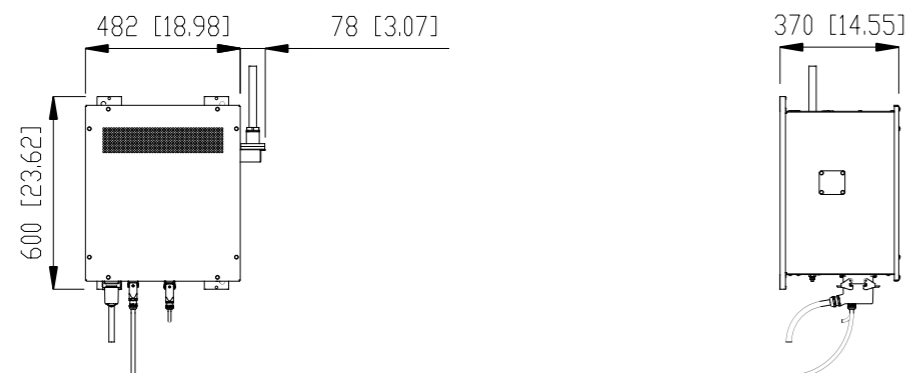
SRT LAN S-Band Antenna Group (up-mast or down-mast)



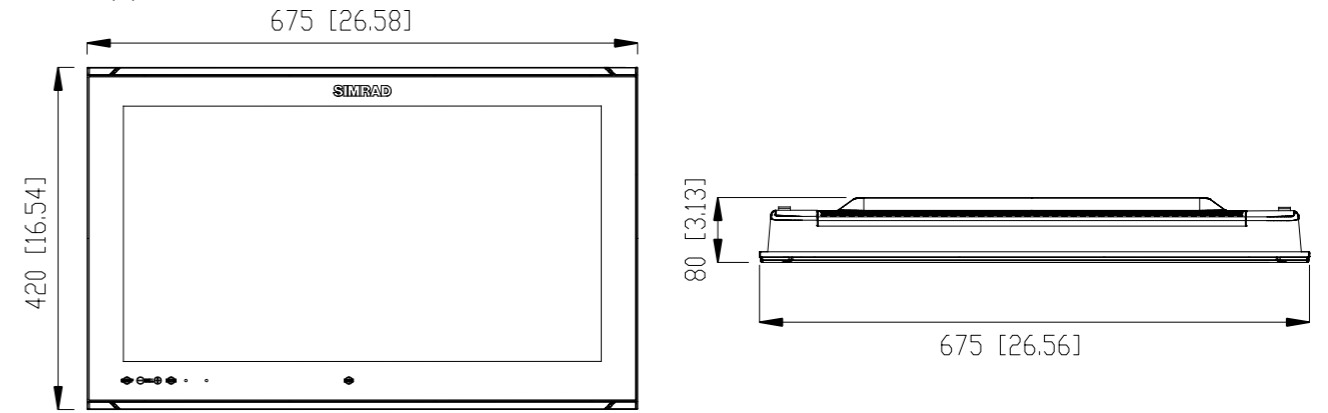
SRT LAN X-Band down-mast Transceiver



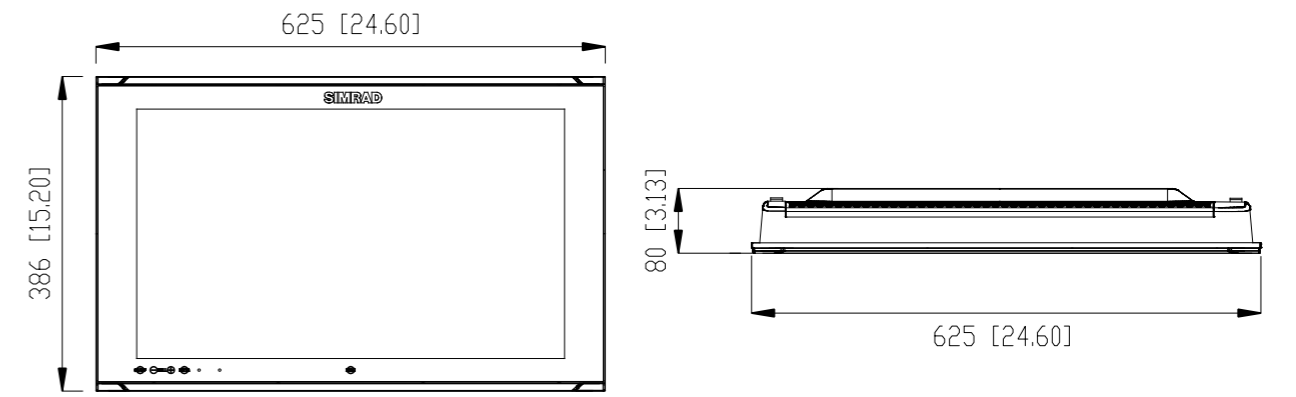
SRT LAN S-Band down-mast Transceiver



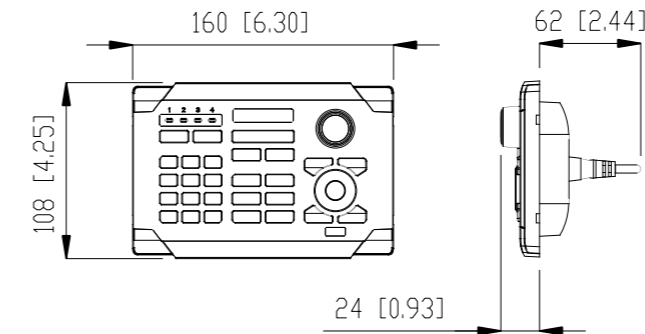
M5027 CAT 1 (H) Monitor



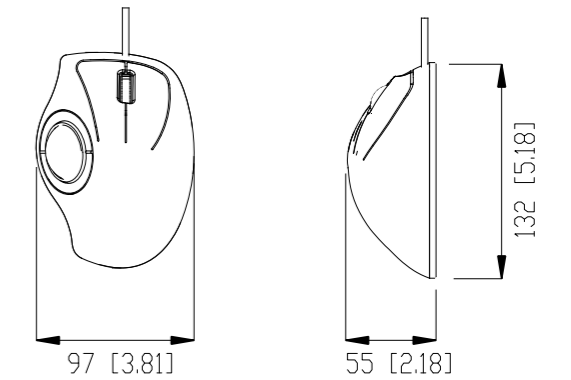
M5024 CAT 2 (H) Monitor



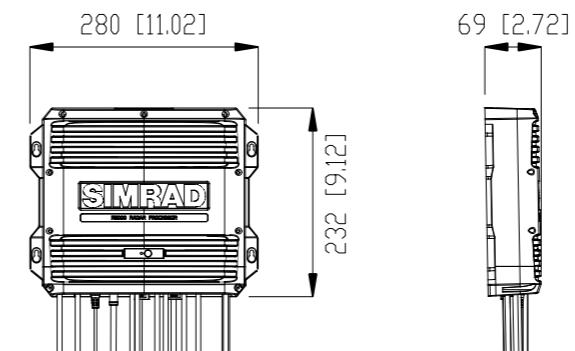
O2000 Remote Control



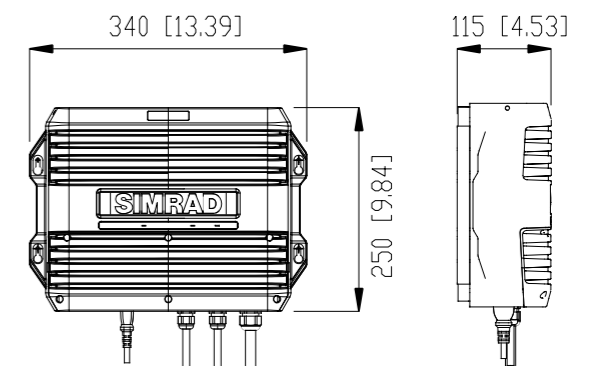
O5000 Trackball



R5000 Radar Processor



R5000 Power Supply Unit



SPECIFICATIONS

	M5024	M5027
IMO Display category	CAT 2(H)	CAT 1(H)
TFT Active Matrix Panel diagonal (inch)	24	27
Native resolution (pixels)	1920 x 1080	
Screen glass	Anti-reflective and anti-fingerprint coating, optically bonded	

RADAR DISPLAY FEATURES

Minimum Range (m)	< 40
Range discrimination (m)	< 40
Range Accuracy (m)	1% of the maximum range of the scale in use or 30m, which is the greater
Bearing Discrimination (Deg)	2,3 (6X), 1,5 (9X), 1,2 (12X), 2,3 (12S)
Bearing Accuracy (Deg)	< 1
Azimuth on-screen resolution (Deg)	0,1

RADAR PRESENTATION

Relative Motion (RM)	Head Up, Course Up and North Up
True Motion (TM)	Course Up and North Up
Off-centering	Up to 75% of range scale in use
Cursor	Polar and Geographical coordinates, continuously displayed when cursor is activated

TARGET TRACKING (TT)

Tracking acquisition in background	Automatic, up to 2500 targets within 24NM
Presentation	Manual/Automatic, up to 100 targets

TARGET AIS

AIS Capacity	Up to 6000 receivable target messages
Display Capacity	Totally 300 target capacity, of which all of 300 can be activated. AIS overflow mechanism of priority

I/O INTERFACES

VDR	DVI-D output to VDR. (Same resolution as Monitor output)
Serial Ports	2 x IEC 61162-2 (AIS, GYRO) 4 x IEC 61162-1 (BAM input, GNSS, LOG)
Ethernets	3 x RJ45 Ports at 100Mbps
USB	2 x USB 2.0

	X-BAND	S-BAND
Nominal peak power (kW):	12 or 25 up-mast, 25 down-mast	30 up-mast and down-mast
Operating frequency (MHz):	9410 ± 30	3050 ± 30
Pulse length (ns):	60 (25kW, 30kW) 80 (12kW) – 250 – 800	
PRF (with 3 alternative PRF sets) (Hz)	3000 (3040, 2900, 3100) – 1500 (1520, 1450, 1550) – 750 (760, 725, 775)	
Modulator:	MOSFET technology	
IF amplifier:	Logarithmic	
IF bandwidth (MHz):		
- short pulse:	24	
- medium pulse:	5	
- long pulse:	2	
Overall noise figure (nominal dB):	< 5 dB nominal	
Sector blanking:	Four different sectors to be set at time of installation	

ENVIRONMENTAL

Relative wind velocity	100 knots (According to IEC 62388)			
	6 ft X-Band	9 ft X-Band	12 ft X-Band	12 ft S-Band
Antenna type	End-fed-slotted wave guide			
Polarization	Horizontal			
Antenna length/swing circle (ft/mm)	6 / 1800	9 / 2650	12 / 3618	12 / 3695
Gain (dB)	≥ 29	≥ 31	≥ 32.5	≥ 27
Horizontal beam width at -3 dB	1.3°	0.9°	0.7°	1,9
Vertical beam width at -3 dB	22°	22°	22°	24
Horizontal side lobes (dB):				
- within 10°	- 27	- 27	- 27	- 23
- outside 10°	- 30	- 30	- 30	- 30
VSWR	Lower than 1.20			
Rotation speed (RPM):				
- Standard	> 20 and > 40		> 20	> 20
- HSC	> 40		N/A	> 40
Maximum Wind resistance (knots)	100			
De-Icer	Optionally available as unit upgrade heater kit			

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*Applies to certified vessels only

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