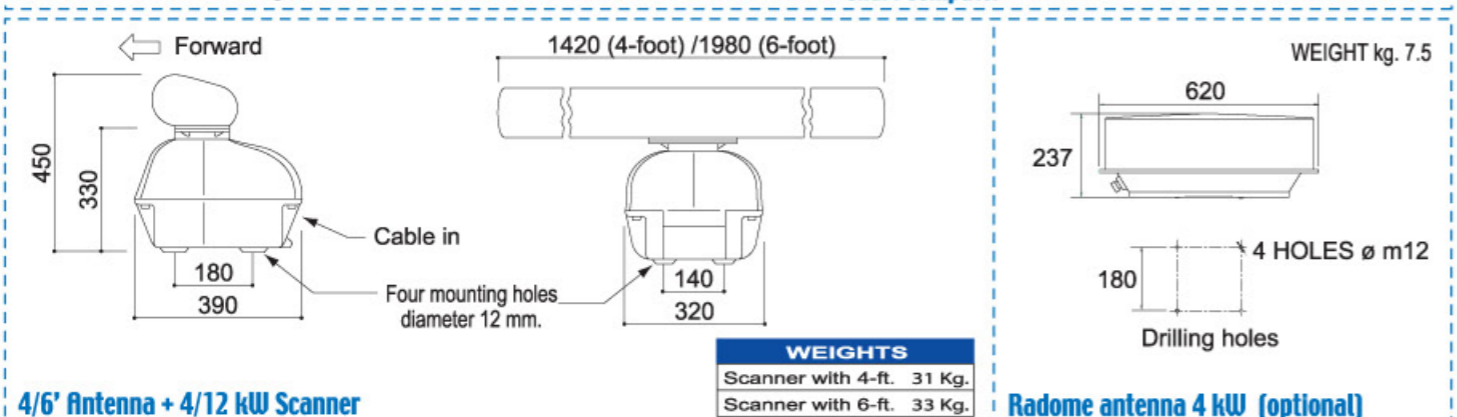
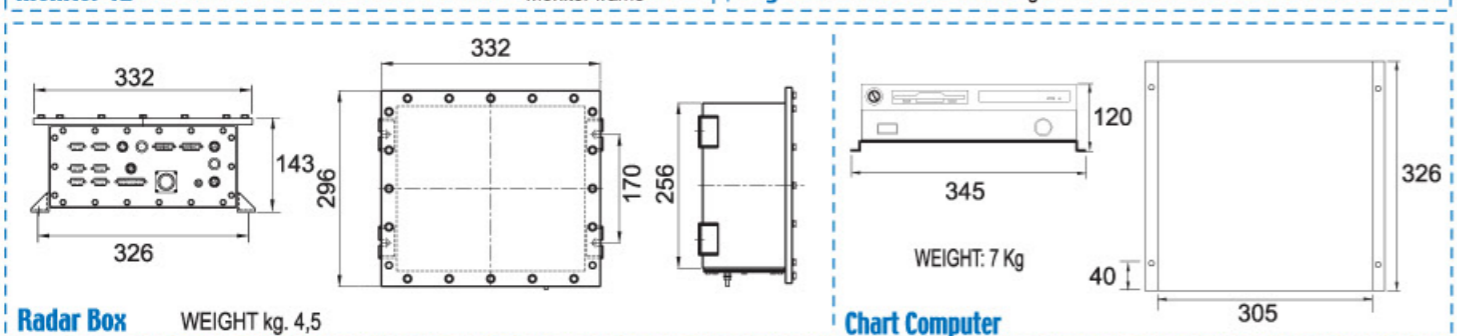
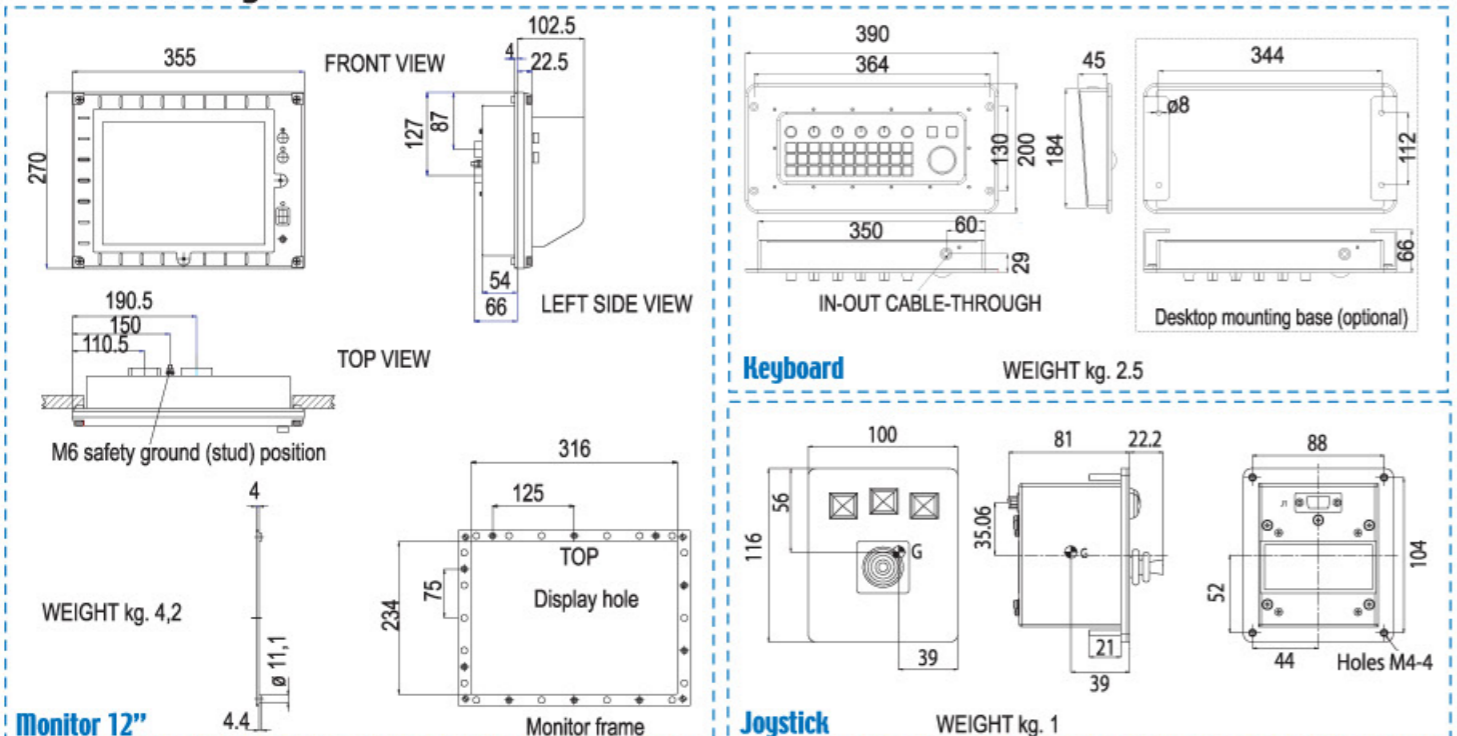


## Outline drawings



### STANDARD SUPPLY COMPOSITION

- 4' antenna
- 4 kW scanner
- Radar Box
- Chart Computer
- 12" LCD colour monitor
- Keyboard with trackball
- CB20 special cable, 15 m.
- Use and installation manual
- Installation Kit with consumable spare parts

### OPTIONS

- 15" LCD colour monitor
- Touchscreen monitor
- Joystick panel
- 6' open or 4' Radome antenna
- 12 kW Scanner
- ARPA IMO
- Sunlight, water-proof monitor for flying bridge
- GB 20-10 Gyro interface unit
- RU 40-24 Rectifier unit
- RUGB 70-24 Gyro interface unit
- NMEA Cable
- PM 30-01 Performance monitor
- External audio alarm



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Tel. +39 0735 - 59051 - Telefax +39 0735 - 590540 marketing@gemrad.com; www.gemrad.com

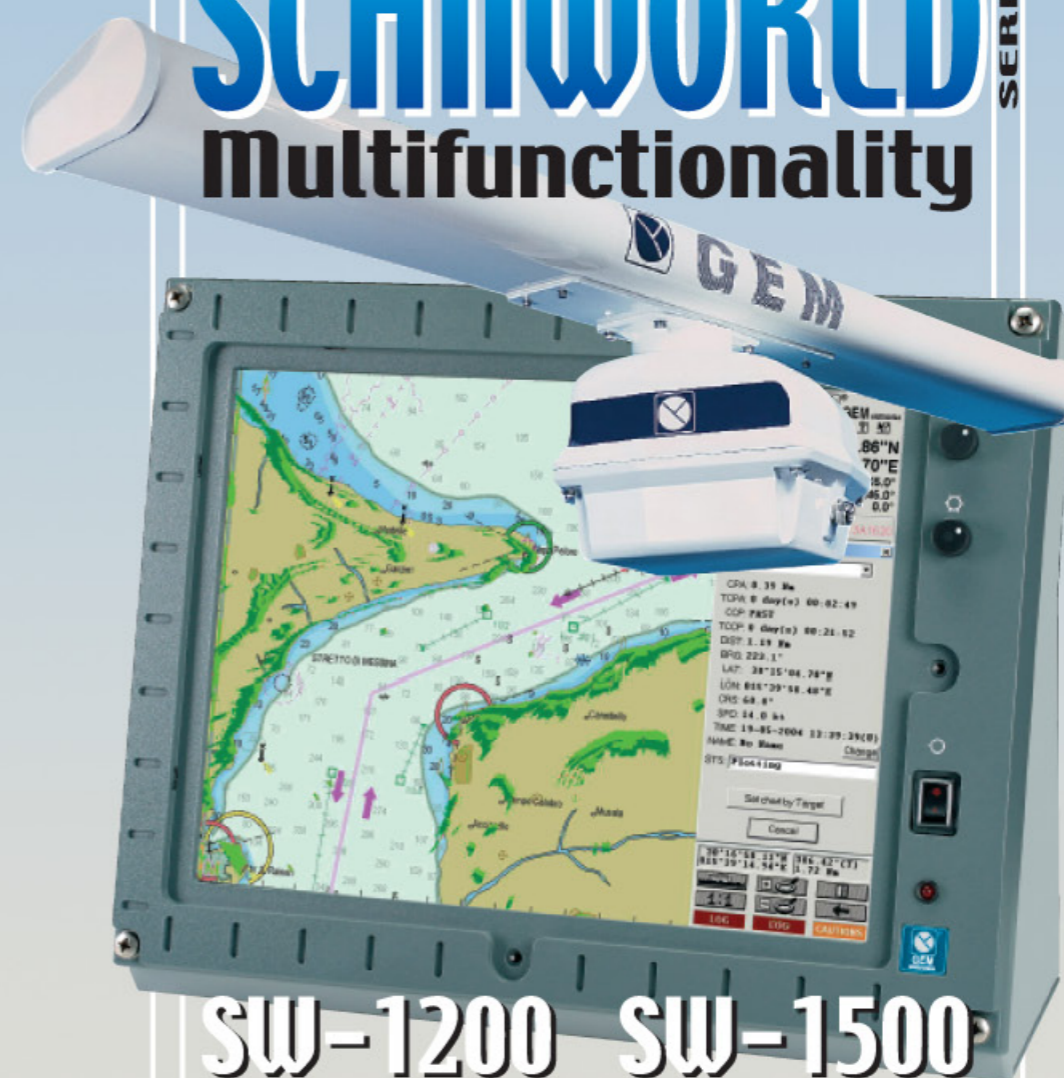
This brochure should not be considered a contractual offer to sell. The specifications given herein may be changed by the manufacturer, GEM Elettronica S.r.l., at any time without notice.

ISO 9001 Certification Number 120



# SCANWORLD SERIES

## Multifunctionality

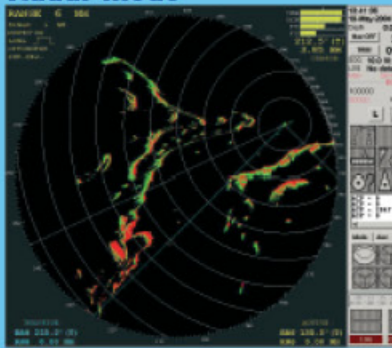


## SW-1200 SW-1500

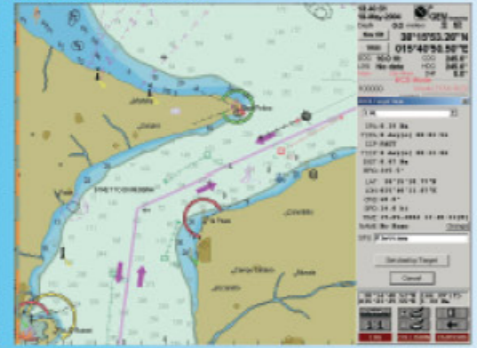
### Radar + Electronics Charts

Compact & lightweight  
Last generation day/night LCD monitors  
High performance radar  
Powerful radar processing  
Target overlay on ECS maps  
Flexible configuration  
Wide availability of interfaces

## Radar mode



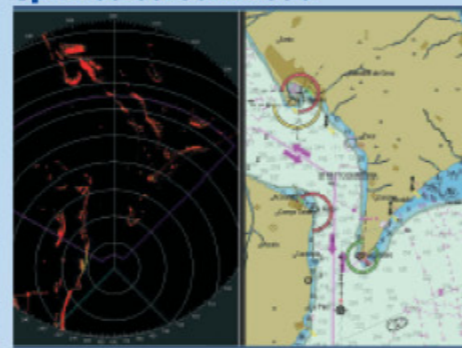
## Plotter mode



## Overlay mode



## Split screen mode



## ECS features



### Main Features:

- › Route planning;
- › Route monitoring;
- › Logbook with playback facility;
- › Easy update of charts;
- › ARPA and AIS target display and information;
- › North up, Head up and Course up modes;
- › Relative and True motion display;
- › Automatic CPA/TCPA calculation for each tracked target;
- › Mini ARPA function up to 12 targets.

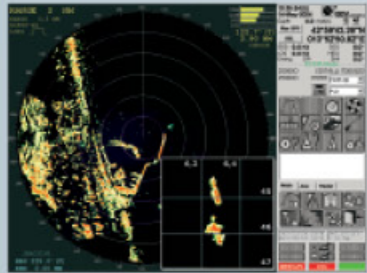
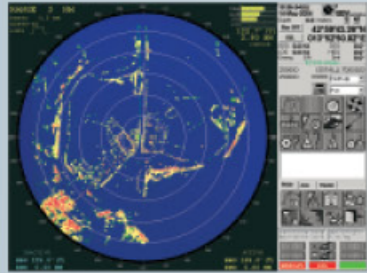
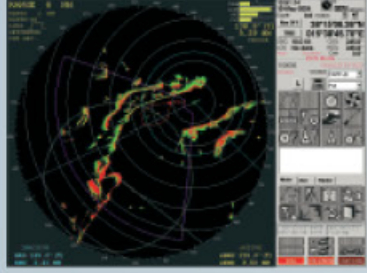
### Navigation Aids and Safety:

- › Interface with autopilot system;
- › Man Overboard;
- › Dead reckoning;
- › Multiple position sources.
- › Antigrinding control;
- › Depth check with safety contour;
- › Acoustic and blinking alarms;
- › Collision avoidance with ARPA and AIS target detection.

### Additional functionalities:

- › Five colour palettes are provided to satisfy every bridge lighting condition;
- › Information on demand about targets, chart objects, mariner's objects, etc...;
- › Mariner's objects insertion and definition;
- › Echosounder information;
- › Tides information;
- › Estimated position by triangulation with two or more points;
- › Prediction of future ownship position;
- › Estimated time to reach a waypoint;
- › Distance abeam;
- › Polygonal and sector danger zones.

## Radar features



### Radar Features:

- › Manual detection, acquisition and automatic tracking of up to 12 targets;
- › Automatic tune;
- › Two VRM;
- › Two EBL;
- › Range scale variable from 0,125 to 96 n.m.;
- › True/relative motion;
- › PPI, VRM and EBL off center;
- › Acquisition zone, guard zone, barriers;
- › Target trail.

### Advanced proprietary radar video processing:

- › Embedded signal processing algorithms increase target detectability;
- › Clutter (sea, rain and land) is suppressed automatically;
- › Manual STC, FTC and gain controls available;
- › Two levels of echo stretch;
- › Interference suppression at any scale;

### Zoom view:

- › a superimposed window with a selected area enlarged to better discriminate targets.



ANTENNA			
Type	Slotted waveguide array		
Polarization	Horizontal		
Beamwidth (at - 3 db)	1.8-foot Radome	4-foot Open	6-foot Open
	HORIZONTAL VERTICAL	4° 24°	≤ 1.9° 25°
Sidelobes	1.8-foot Radome	4-foot Open	6-foot Open
	WITHIN 10 OUTSIDE 10	-18 dB -20 dB	-26 dB -30 dB
Gain	≥ 23 dBi	≥ 27 dBi	≥ 29 dBi
Rotation speed	22 rpm 2 rpm (opt. 16, 22, 40 rpm)		
Wind load	100 knots relative		

RF TRANSCIVER												
Peak power	4 or 12 kW (nominal)											
Frequency	9410 MHz (nominal)											
Pulse width	Range Scale in Nautical Miles											
	0.065	0.125	0.25	0.5	0.75	1.5	3	6	12	24	48	72
	80 ns	Short	Short	Short	Short	Short						
	300 ns					Medium	Medium	Medium	Medium	Medium		
	600 ns							Long	Long	Long	Long	
1200 ns										Very long	Very long	Very long
P.R.F.	3200 Hz			1600 Hz			800 Hz			500 Hz		
Receiver type	Solid state logarithmic											
Front-end module	Microwave integrated circuit											
Intermediate Frequency (I.F.)	60 MHz											
I.F. bandwidth	20 MHz with short and medium pulses 4 MHz with long and extralong pulses											
Duplexer	Ferrite circulator with solid state limiter diode											
Overall Noise Figure	4.0 dB, 3.5 dB											

ENVIRONMENTAL PERFORMANCE		
	INDOOR UNITS	OUTDOOR UNITS
High temperature	+55 C	+70 C
Low temperature	-15 C	-25 C
Humidity	Up to 95% at +35 C	

DISPLAY UNIT	
Type	High resolution, color LCD, Super TFT Technology.
Display size (diagonal)	12" or 15"
Video resolution	800 x 600 pixels (12"), 1024 x 768 pixels (15")
Range scale (n. miles)	0.065 0.125 0.25 0.5 0.75 1.5 3 6 12 24 48 72*
Ring spacing (n. miles)	0.031 0.0625 0.125 0.25 0.125 0.25 0.5 1 2 4 8 12*
* 10 kW only	
Range discrimination	25 meters, radar cross section = 10 m², short pulse
Range accuracy	6 meters or less than 0.8% of the scale in use, whichever is greater
Mini ARPA	Manual or automatic acquisition and automatic tracking of up to 12 targets, with automatic CPA and TCPA calculation for each tracked target
Azimuth discrimination	0.1°
Bearing accuracy	0.5°

INTERFACES	
<b>Input signals</b>	
Gyrocompass: Standard NMEA 0183 with sentence type HDT,XXX.,T	
Radionavigation System: Serial RS232 or, on request, RS422 from 300 to 9600 baud for radionavigation and satellite systems (GPS / NAVSTAR / OMEGA TRANSIT / LORAN C etc.).	
Log: Contact closure with 100/200/400 pulses/n.m..	
Gyrocompass (optional): • Synchro threewire 90V, format 1X and 36X with reference 115 Vac 60 Hz and/or 400 Hz (same input); absorption as S/D module • 12 bit positive TTL logic, binary code, LSB=0.0879, valid data line, TTL logic, positive polarity • Stepper	
Log (optional): Synchro threewire 90V, with 30/40/72/96 knots/rev., with internal hardware selection and reference 115V, 60Hz and 400Hz	
<b>Input/Output signals (optional)</b>	
• RGB signal RS-343 for high resolution auxiliary monitor (CRT, LCD, etc.) for radar video presentation (output)	
• 4 digital outputs, open collector for general purpose device control (output); (e.g. to designate an external FCS)	
• Bidirectional RS422 serial lines (one of which RS232 configurable) to output target data	
• Serial NMEA for direction finder (input)	

POWER REQUIREMENTS		
	Open Scanner 4 kW	Open Scanner 12 kW
Required supply	From 10,4 to 40 Vdc	From 10,4 to 40 Vdc, otherwise 115-220 Vac with additional equipment (RU40-24 RUGB70-24)
Maximum absorption	120 Watts	150 Watts