

**S-BAND**

- 20" or 23" LCD flat panel super TFT - exceeding 340 mm PPI equivalent;
- Very versatile solution allowing maximum configurability according to customer requirements;
- Proven state of the art technology in a new engineering suite;
- **VIDEO INTENSIFIER** An improved Scan-to-Scan technique for a superior very small target detection in heavy sea clutter conditions;
- Full IMO compliant ARPA version allowing automatic tracking up to 120 targets;
- AIS up to 2000 targets (200 activated + 1800 sleeping );
- 2 VRM, 2 EBL;
- Designed to allow very easy installation and inspection for maintenance purposes;
- Easy operation in combination with all devices available (joystick, trackball, keyboard);
- Performance monitor included (for type approved version).

**LEONARDO**

**LD 2030 RK-S / LD 2330 RK-S**

GEM elettronica is introducing a new radar S-Band kit based on Leonardo proven technology with the aim to ensure maximum flexibility in bridge design and in general for customer requirements best satisfaction.

AU20-12S



SU76-01S



MLD-23xx



RBX-700



TST-851

Ideal for:

Cargo


Tanker

Merchant Ships

Supply Vessel

Cruise Boats



ANTENNAS AND ROTATING UNIT	
	S-Band 10 cm. 
Length	12 feet
Type	Slotted waveguide, horizontally polarized
Horizontal beamwidth	1.9°
Vertical beamwidth	~ 25°
Rotation speed	22 rpm
Tolerable relative wind speed	100 knots

TRANSMITTERS	
	S-Band, l=10 cm.
Magnetron peak power (nominal)	30 kW
Location of transceiver	Upmast
Frequency	3050 MHz ± 10 MHz
Duplexer	Ferrite circulator, solid state limiter diode
Dynamic Range	>=100 dB
Minimum Range	Better than 15 mt on 10 sq.m. target with short pulse
Discrimination	Better than 25 mt on 10 sq.m. target with short pulse

Range Scale in Nautical Miles 30 kW S-Band

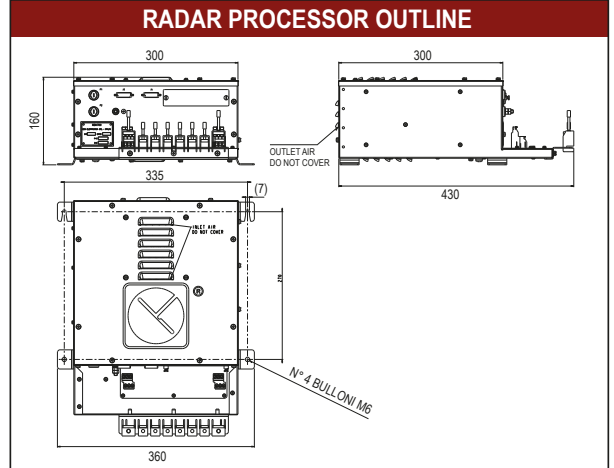
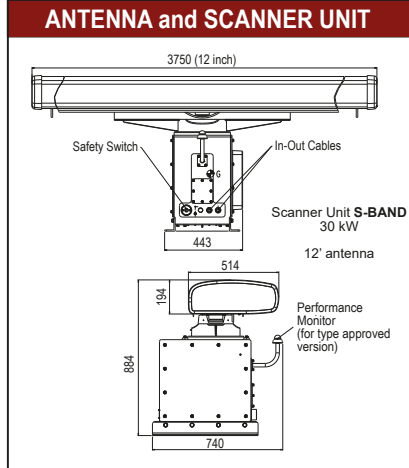
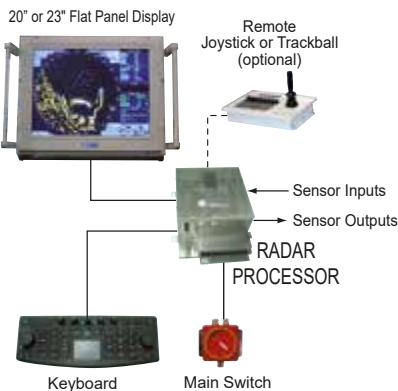
Pulse width ↓	0.0625	0.125	0.25	0.5	0.75	1.5	3	6	12	24	48	64	72	96	P.R.F. (Hz)
80 ns	Short	Short	Short	Short	Short	Short									2000
300 ns					Medium	Medium	Medium	Medium							1000
600 ns							Long	Long	Long	Long	Long				750
1200 ns									Extra long	Extra long	Extra long	Extra long	Extra long	Extra long	500

RECEIVER	
Type	Solid-state logarithmic
Front-end module	Microwave integrated circuit
Intermediate Frequency (IF)	60 MHz
IF Bandwidth	20 MHz on short and medium pulses 4 MHz on long and extra long pulses
Noise Figure	< 6 dB

POWER REQUIREMENTS	
Input Voltage	115/220 Vac - 50/60 Hz
Power absorption	< 800 W

ENVIRONMENT			
Temperature	Display unit	-15°C+55°C	Waterproofing
	Processor unit	-15°C+55°C	
	Antenna unit	-25°C+55°C	
	Display unit	IPXO	
	Processor unit	IPXO	
	Antenna unit	IPX6	

BLOCK DIAGRAM



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., without notice.



DISPLAY UNIT

Type	LCD, Super TFT Technology, high resolution, color.												
Display size (diagonal)	20" with resolution up to 1280 x 1024 pixels 23" with resolution up to 1600 x 1200 pixels												
Range scale (n. miles)	0.065	0.125	0.25	0.5	0.75	1.5	3	6	12	24	48	72	96
Ring spacing (n. miles)	0.031	0.0625	0.125	0.25	0.125	0.25	0.5	1	2	4	8	12	16
Range discrimination	Better than ± 25 meters, $\sigma = 10$ m2, short pulse												
Range accuracy	± 6 meters or less than 0.8% of the scale in use, whichever is greater												
Plot intervals	15 sec. • 30 sec. • 1 min. • 3 min. • 6 min.												
Azimuth discrimination	0.1°												
Bearing accuracy	± 0.5°												
Keyboard	embedded keyboard												
ARPA	capacity of manual/automatic acquisition and automatic tracking of 120 targets												
AIS	up to 2000 targets (sleeping + activated) 200 activated												

INTERFACES

**Gyrocompass:** Standard NMEA 0183 with sentence type HDT,XXX.,T  
**Radionavigation System:** Standard NMEA 0183 with sentence type RMC, GLL.  
**AIS:** Standard NMEA 0183 with sentence type VDM  
**Ship Alarm System:** n. 5 contact closure outputs, n. 2 open collector inputs  
**Log:** Standard NMEA 0183 with sentence type VHW  
 Contact closure with 100/200/400 pulses/n.m.  
**Video:** 1 VGA + 1DVI output standard, SVGA and SXVGA  
**ECDIS (Output):** Standard NMEA 0183 with sentence type TTM  
**Input/Output signals (optional)**  
 • 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)  
**Chart Overlay (optional)**  
**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

EQUIPMENT

Standard	Upmast scanner, 30 meters interconnecting cable, operation and installation manual, mounting hardware, consumable spares
Optional	- Display indicator - 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