Sea trial: ATAIR # 188 from 15.03.2011 to 27.03.2011

D.u.T.: Selux ST Manufacturer: Consilium Selesmar

IEC 62388 Tests at Sea

Antenna height: 15 m

§ 5.2.2.2 a), b) Interference

- ☒ Interference cancellation from other Radar
- ☒ Causing significant interference to other approved Radar

§ 5.3.2.2 d) Performance Monitor Check

- ☒ Test of the Performance Monitor (PM)
- ☒ Function described in the manual
- ☒ Take screenshot of PM in function

§ 5.4.2.2 a), c) Gain Function

- ☒ Permanent indication of gain level
- ☒ Maximum gain: full noise speckle on the 24 NM range
- ☒ Minimum gain: only highest signal levels are present

§ 5.6.2 RACON, SART and RTE

- ☒ Radar Beacon (S-Band)
- ☒ Radar Beacon (X-Band)
- ☒ SART (X-Band) } Distance: 2 NM
- ☒ RTE (X-Band)
- ☒ Take screenshot of all functions

§ 5.7.3 Minimum Range

- ☒ Reference Test Target with RCS 10 m^2 (X-band) 1 m^2 (S-band), height 3,5 m, distance 40 m
  With the same adjustment of Gain and Clutter Control:
- ☒ Reference Test Target with RCS 10 m^2 (X-band) 1 m^2 (S-band), height 3,5 m, distance 1 NM

- ☒ Minimum clutter conditions
- ☒ Adjustment for visibility 8 out of 10 scans
- ☒ Range scale ≤ 1,5 NM

§ 5.8.3 Range Discrimination

- ☒ 40 m requirement
- ☒ 8 out of 10 scans
- ☒ Range scale 0,75 NM, distance to the reflectors: 0,75 NM

§ 5.8.4 Bearing Discrimination

- ☒ 2,5° requirement
- ☒ 8 out of 10 scans
- ☒ Range scale 0,75 NM, distance to the reflectors: 0,75 NM

Basic Radar Setup

§ 5.8.5 Fundamental Radar Accuracy

a) Range

Limit deviation: maximum 1 % of the used range scale or 30 m (whatever is the highest value of both).

☒ Approach to TVA Eckernförde
☒ Sail off TVA Eckernförde

b) Bearing

Deviation limit: maximum 1°

☒ Turning circle over port side
☒ Turning circle over starboard side

§ 5.9.2 Range of First Detection

☒ Minimum clutter conditions
☒ 8 out of 10 scans
☒ Gain adjustment for light even noise speckle
☒ Using the smallest antenna provided by the manufacturer
☒ No usage of correlation and /or target enhancement features
☒ Use table "First Detection"

§ 5.9.3 Target Detection with Clutter

a) Rain Clutter

☐ Rain density assessment
☐ Reduce the detection distances (§ 5.9.2) by the values of figure 1 and 2

b) Sea Clutter

☒ (X-Band) Test Targets with RCS 1 m^2, 5 m^2, 10 m^2, height 3,5 m, distance 0,7 NM.
☒ (S-Band) Test Targets with RCS 0,1 m^2, 0,5 m^2, 1 m^2, height 3,5 m, distance 0,4 NM.

Sea State	1	2	3	4	5	6
	X	X	X			

c) Rain & Sea Clutter

☐ (X-Band) Situation of opportunity
☐ (S-Band) Situation of opportunity

§ 5.11.1.1 Standby and Transmit

4 min requirement from switch-on (cold resp. disconnected from power for at least 1 hour)

☒	ok	S-band Up-Mast	3 min 10 s
☒	ok	S-band Down-Mast	3 min 10 s
☒	ok	X-band Down-Mast	3 min 13 s

5 sec. operational requirement from standby (standby for at least 2 minutes)

30° of PPI is painted.

☒	ok	S-band Up-Mast	$4^{30/100}$ s
☒	ok	S-band Down-Mast	4 s
☒	ok	X-band Down-Mast	$3^{20/100}$ s

§ 10 pp (requirement BSH, not defined by standard)

Life target acquisition and tracking in sea clutter environment.

Clutter diameter	0,75 NM
Target distance to own ship	0,5 NM
Sea state	2
Wind speed	7 m/s

☒ Successful with straight course of target	☐ Failed
☒ Successful with target changing course	☐ Failed
☐ Successful with own ship changing course or heading	☒ Failed

§ 14.2.2 Sector Blanking

☒ Test sector blanking for all transceivers
☒ Function described in manual
☒ Take screenshot of sector blanking

§ 14.3 Antenna Design

☒ Preliminary test of antenna rotation with stop-watch (normal speed ≥ 20 RPM)	22,6 RPM
☒ Preliminary test of antenna rotation with stop-watch (HSC speed ≥ 40 RPM)	42,1 RPM

§ 14.6.2 Antenna Radiation and Rotation

☒ No further radiation after rotation is stopped	☐ Failed
☒ Hardware override facility available	☐ Explained in Manual
☐ Software override facility available	☐ Explained in Manual
☐ No override facility available	☐ Measurement not possible

§ 14.6.3 Microwave Radiation Levels

Measurement of power density in front of the antenna

☒ Date 24.03.2011	Antenna surface
☒ Date 24.03.2011	Distance for 10 W/m²
☐ Date	Distance for 50 W/m²
☐ Date	Distance for 100 W/m²

50 W/m² and 100 W/m² N/A

☒ Date 01.03.2012 Check of the data published by the manufacturer

Test results and data published by supplier

Transceiver	Antenna	Surface Value	Distance 10 W/m²	Distance 50 W/m²	Distance 100 W/m²	
S-band DoM 30 kW	12'	18	0,4	N/A	N/A	meas.
S-band DoM 30 kW	12'	18	0,4	N/A	N/A	publ.

Transceiver	Antenna	Surface Value	Distance 10 W/m²	Distance 50 W/m²	Distance 100 W/m²	
S-band UpM 30 kW	12'	28	0,9	N/A	N/A	meas.
S-band UpM 30 kW	12'	28	0,9	N/A	N/A	publ.

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