PART 80 COMPLIANCE REPORT

REVISIONS			
Revision Level	Approval	Date	Description
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ACR South Africa
TELLUSART MKII
FCC Part 80.1101
Compliance Report

A	18560	Sheet 1
SIZE	CODE IDENT NO	Of 4

Compliance Report | **A**

Attached Test Reports:

1.) **TEST REPORT 1.pdf** Number 800011, IEC-1097-1, compliance testing, from Assessment Services. November 1995. Supplemental data, Part 1. Manufacturers Supplied Information.
Part 2. CIVIL MARINE GROUP, SART Range tests report, from the Defense Research Agency.

2.) **TEST REPORT 2.pdf,** 102208B, IEC-1097-1, compliance testing, from Assessment Services. July 1993

3.) **DERA.pdf** - Electro-Magnetic compatibility testing. 96/98 Directive 1999

4.) **Compliance Matrix to IMO A.697(17).**

5.) Schematic Diagram 1.pdf, Bias PCB *Schematics in Adobe .pdf format.*

6.) Schematic Diagram 2.pdf, Logic 2 *Schematics in Adobe .pdf format*.

7.) Schematic Diagram 3.pdf, Logic 1 *Schematics in Adobe .pdf format.*

8.) Schematic Diagram 4.pdf, Microwave module. *Schematics in Adobe .pdf format*.

9.) Assembly drawing 1

10.) Assembly drawing 2

11.) Assembly drawing 3

12.) Acceptance Test Spec for the SART Electronic assembly. Doc# PH0200-064

13.) Environmental Test procedure for the Tellusart SART. DOC # PH0200-010-1

14.) SART Instruction manual

Application for type acceptance requirements, Part 2.983

a.)	Name of applicant,	ACR South Africa, Manufacturer
b.)	Identification of equipment,	TELLUSART MKII
c.)	Production is planned starting	Q3 of 2000.
d.)	Technical Description	
	Search and rescue 9 GHz radar transponder	
	1.) Emission	300MXON
	2.) Frequency range	9200-9500 MHz
	3.) Operating power	. 400 Watts min
	4.) Max operating power	≤ 4dB variation
	5.) DC Voltage	min 11.0 Vdc
	6.) Semiconductor description	See Figure 6
	7.) Circuit Diagrams	See page 4
	8.) Instruction Manual	See attached Doc 10
	9.) Tune up procedure	See attached Doc 8-9
	10.) Freq. stab. Des	See page 6
	11.) Sup. Spur Rad Des.	See page 6
	12.) No Digital Mod. Ckts	NA, FM analog mod. 300MXON
e.)	RF power measurements.	See attached Doc 1-2, 4
f.)	Photographs of all labels.	See attached Doc 4

g.)	8* 10 photographs	See attached Doc 4
h.)	No Encoders	Not applicable.
i.)	No external power amplifiers.	Not applicable.
j.)	No AM Broadcast equipment.	Not applicable.

Test Report for compliance to FCC part 80.1101.

Performance standard recommendations from FCC Rules part 80.1101

Section 6, 9 GHz radar transponders (SART).
1.) IMO resolution A.604 (15) recommended.
2.) CCIR 628-1 recommended

IMO A.697 (17) revokes A.604 (15).
ITU-R M.628-3 replaces CCIR 628-1.

IEC 1097-1 Global Maritime distress and safety systems part 1: Radar transponder-Marine search and rescue (SART), operational and performance requirements, methods of testing and required test results.

Standards Note: The Technical characteristics of ITU-R M.628-3 ANNEX 1 form the technical requirements of IEC 1097-1.

IEC 1097-1 states the method of measurement and required test results for compliance, hence the inclusion of passing type approval report 800011 and 102208B showing compliance to IEC 1097-1.

ITU-R M.628-3 makes no recommendations on the measurement standards used for measuring the performance of a SART device.

COMPLIANCE/APPROVAL STATEMENT:
In combination with the attached passing type approval reports from Assessment services showing compliance to IEC 1097-1 and the attached test Compliance Matrix showing compliance to IMO A.697 (17). The radar transponder meets the requirement under PART 80.1101 of the FCC rules and is hereby submitted for type approval as such.

BIAS PCB, Schematic description

3 stage log amp
BC848
Compareter
MAX903

IC 1 Transmit / receive module.
Microwave module

LOGIC 1 Schematic, semiconductor description

Ramp Generator
LM555CM
BC848
LM6361

Counter
HEF4538BT
HEF4520BT
LM555CM
BC85B
BC84B
LM4011
UP0610T
BAV99

Battery Checker
LP311M

LOGIC 2 Schematic, semiconductor description

Voltage Regulators
LP2951
LM317T

Enable Circuitry
MMBT 2222
MMBT2907
BC858
Si9942DY
VP0610T
2N7002
CD4538B

IC 1, Microwave module, semiconductor description
Marconi P35-4800 MMIC for SART applications, this MMIC device contains an integral T/R switch, high output power amplifier and a high linearity VCO designed specifically for the GMDSS application.
Typical output power 27 dBm
Limiter diode
Receiver
3 stage receiver with 50db gain
Video detector
Harmonic filtering

Frequency stabilizing description
The SARTs frequency stabilizing circuitry was verified by an outside lab (Assessment Services) and was found to be in compliance. The data from the testing is included in Test report 1.pdf. The frequency control circuitry consist of a Ramp generator and counter that controls the frequency response of ASIC device IC1.

The VCO is calibrated for linearity, and frequency limits within the specification range of 9200-9500 MHz, as per the ITU-R M.628-3.

The calibration consists of adjusting R17 and R18 for maximum and minimum temperature compensation of the frequency limits.

Every unit in production is measured for frequency limit to verify the acceptable bandwidth and frequency limits.

Spurious Radiation suppression description

Spurious radiation was measured by outside laboratory (DERA) and Assessment Services and was typed approved and found to be in compliance to EC 96/98 directive.
Spurious radiation is limited internally by the ASIC device IC1 through stripline filtering and the metal shielding over the electronics assembly. This was tested and verified to prevent any leakage out of the unit.