

DERA

DEFENCE EVALUATION and RESEARCH AGENCY
FRASER
Fort Cumberland Road
Portsmouth
PO4 9LJ

Report on Frequency Stability
Testing to 47CFR of
Jotron 40S 406 MHz EPIRB

DERA/SS/PSD/TT21/00/2-1.0

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Commissioned by;

JOTRON Electronics a.s
P.O. BOX 84
N-3280 TJODALYNG
NORWAY

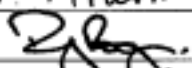

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Maritime Navigation Systems
DERA Fraser
Fort Cumberland Road
Portsmouth
England
PO4 9LJ

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Authorisation

Position Held	Name	Signature	Date
Test Engineer	W T Harmer	W.T. Harmer	13 / 10 / 00
Quality Manager	R. Rogers		16 - 10 - 00
Head of Test	R. Sharp		16 / 10 / 00

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Issue	Date	Details of Change
1.0	Oct 2000	First issue

Table of Contents

Section	Title	Page
1.	Introduction	1
2.	Equipment under Test	1
3.	Test Location	1
4.	Configuration of the sample	1
5.	Tests	1
6.	Conclusion	2
7.	Figures	3
8	List of Equipment Used	4
9.	Distribution List	5

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1 Introduction

- 1.1 The JOTRON 40S was tested for Frequency Stability with variation of temperature to the requirements of the code of Federal Regulations 47CFR. The relevant section is 2.1055.
- 1.2 The JOTRON 40S EPIRB transmits on both 121.5 MHz and 406.025 MHz. The Frequency Stability with variation of temperature was measured for both of these transmissions.

2 Equipment under Test

- 2.1 Jotron Ltd supplied the following item on 16 Dec 99 for the duration of type testing. This was the beacon used for this additional test.

ITEM	Type	Serial Number
406 MHz EPIRB	TRON 40S	9KP05404

- 2.2 A Photograph of the EPIRB can be seen in Figure 1.

3 Test Location

- 3.1 The tests were executed at DERA Fraser, Fort Cumberland Road, Portsmouth, Hants.

4 Configuration of the EPIRB sample

- 4.1 The beacon was configured to have a 50 ohm output for connecting to the test equipment.
- 4.2 The 121 MHz homer was offset to 121.65 MHz.

5 Tests

- 5.1 The measurement of the 406.025 MHz frequency stability was measured at each temperature using the LOKATA test receiver in conjunction with a frequency counter and frequency standard. The results are shown in table 1.
- 5.2 All the results are inside the COSPAS SARSAT requirement of 406.025 MHz ± 0.002 MHz.
- 5.3 The measurement of the 121.65 MHz frequency stability was measured at each temperature using the a spectrum analyser. The results are shown in table 2.
- 5.4 All the results are inside the RTCM SC110-STD Frequency Tolerance requirement of 50 parts/million. ie 121.65 MHz ± 0.006 MHz.

406 MHz Frequency Stability for Variation in Temperature	
Temperature (°C)	Frequency (MHz)
-20	406.025034
-10	406.025045
0	406.025047
+10	406.025043
+20	406.025038
+30	406.025039
+40	406.025049
+50	406.025040

Table 1

121 MHz Frequency Stability for Variation in Temperature	
Temperature (°C)	Frequency (MHz)
-20	121.64938
-10	121.64958
0	121.64972
+10	121.64976
+20	121.64974
+30	121.64970
+40	121.64970
+50	121.64982

Table 2

6 Conclusion

The Jotron 40S 406 MHz EPIRB meets the requirement for frequency stability for variation in temperature of FCC 47CFR Oct 1988.

7 Figures



Tron 40S EPIRB with test output connector.

Figure 1

8 List of Equipment Used

Description	Serial Number	Calibration Date
Advantest Spectrum Analyser R3271A	45050075	19/1/00
Lokata Receiver	1010267	2/6/00
Marconi 6960B Power Meter	1479	2/11/99
Marconi Power Probe	656	1/11/99
Counter Racal Dana 1990	19307	26/1/00
Racal Dana 9475 Frequency Standard	RIC1823	24/5/00
Astell Chamber	D4040	25/7/00

9 Distribution List

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