

CHAPTER 19

A19.0 - ORIENTATION TEST

19.1. TEST SPECIFICATIONS AND SEQUENCE

Following Section A19.0 of RTCM Recommended Standards for 406 MHz Satellite EPIRBs (Version 2.0 Feb 5,1997) :

- At the ambient temperature :

- In vertically position active the EUT and after 15 minutes perform an alivness test .
- Subsequently place the eut in horizontal position, upside down, and return upright position and perform the alivness test 2 minutes after each position .

19.2. EQUIPMENT UNDER TEST

Beacon Unit : 2/2
Name : JOTRON
Type : TRON 40GPS
Number : 7001

19.3 TEST SITE

Toulouse Space Center (CST) - INTESPACE Metrology.

19.4. TEST EQUIPMENT

- Climatic chamber : CLIMATS F.C.H. – Type: Austral 137H60/1,5E - S/N: S4880.
- Argos - Cospas/Sarsat Test Bench

19.5. RESULTS

The orientation test is performed during the COSPAS-SARSAT certification test at ambient temperature .

See next page the results .

9.5.1 ALIVENESS TEST RESULTS BEACON IN VERTICAL POSITION

EUT : 2/2
 Name : JOTRON
 Type : TRON 40GPS
 Number : 7001
 Date : 18 may 2000 17:30

406 MHZ MEASUREMENTS

1 - Environmental Temperature (° C)			+ 20.8 ° C
2 - POWER OUTPUT			
- Transmission power	dBm	37 ± 2	37.7
- Power risetime	ms	< 5	0.50 ms
- Power falltime	ms	< 5	0.39 ms
3 - SPURIOUS OUTPUT			
- In band	*		OK
- Carrier harmonics			
4 - DIGITAL MESSAGE GENERATOR			
- Repetition rate			OK
- Bit rate	bits/S	400 ± 4	398.86
- Transmission time	ms	440 ± 4.4 / 520 ± 5.2	521.99
- CW preamble	ms	160 ± 1.6	160.39
5 - DIGITAL MESSAGE			
- Bit and frame sync	bits	1-24	FFFE2F
- Format flag	bit	25	1
- Protocol flag	bit	26	0
- Country code	bits	27-36	0257
- Protocol	bits	37-40	1110
- Encoded Position Data Source	bits	111	1
- Homing	bits	112	1
- BCH 1 code read / calculated	bits	86-106 / 25-85	1D3226 / 1D3226
- BCH 2 code read / calculated	bits	133-144 / 107-132	9E3 / 9E3
6 - FREQUENCY			
- Nominal value	KHz	406025 ± 2	± 0.10545
- Short term stability		< 2x10 ⁻⁹ /100 ms	1.4 x 10 ⁻¹⁰

* See Chapter 12 : C/S T.A. Test Report (page 17 to 30)

9.5.2 ALIVENESS TEST RESULTS BEACON AFTER HORIZONTAL POSITION

EUT : 2/2
 Name : JOTRON
 Type : TRON 40GPS
 Number : 7001
 Date : 24 may 2000 9:30

406 MHZ MEASUREMENTS

1 - Environmental Temperature (° C)			- 19.5 ° C
2 - POWER OUTPUT			
- Transmission power	dBm	37 ± 2	35.6
- Power risetime	ms	< 5	0.44 ms
- Power falltime	ms	< 5	0.33 ms
3 - SPURIOUS OUTPUT			
- In band	*		OK
- Carrier harmonics			
4 -DIGITAL MESSAGE GENERATOR			
- Repetition rate			OK
- Bit rate	bits/S	400 ± 4	398.86
- Transmission time	ms	440 ± 4.4 / 520 ± 5.2	521.87
- CW preamble	ms	160 ± 1.6	160.20
5 - DIGITAL MESSAGE			
- Bit and frame sync	bits	1-24	FFFE2F
- Format flag	bit	25	1
- Protocol flag	bit	26	0
- Country code	bits	27-36	0257
- Protocol	bits	37-40	1110
- Encoded Position Data Source	bits	111	1
- Homing	bits	112	1
- BCH 1 code read / calculated	bits	86-106 / 25-85	105685 / 105685
- BCH 2 code read / calculated	bits	133-144 / 107-132	66C / 66C
6 - FREQUENCY			
- Nominal value	KHz	406025 ± 2	↓ 0.13396
- Short term stability	< 2x10 ⁻⁹ /100 ms		2.0 x 10 ⁻¹⁰

* See Chapter 12 : C/S T.A. Test Report (page 17 to 30)

9.5.3 ALIVENESS TEST RESULTS BEACON AFTER UPSIDE DOWN POSITION

EUT : 2/2
 Name : JOTRON
 Type : TRON 40GPS
 Number : 7001
 Date : 12 may 2000 13:00

406 MHZ MEASUREMENTS

1 - Environmental Temperature (° C)			+ 56.2 ° C
2 - POWER OUTPUT			
- Transmission power	dBm	37 ± 2	37.4
- Power risetime	ms	< 5	0.50 ms
- Power falltime	ms	< 5	0.46 ms
3 - SPURIOUS OUTPUT			
- In band	*		OK
- Carrier harmonics			
4 - DIGITAL MESSAGE GENERATOR			
- Repetition rate			OK
- Bit rate	bits/S	400 ± 4	398.64
- Transmission time	ms	440 ± 4.4 / 520 ± 5.2	521.94
- CW preamble	ms	160 ± 1.6	160.27
5 - DIGITAL MESSAGE			
- Bit and frame sync	bits	1-24	FFFE2F
- Format flag	bit	25	1
- Protocol flag	bit	26	0
- Country code	bits	27-36	0257
- Protocol	bits	37-40	1110
- Encoded Position Data Source	bits	111	1
- Homing	bits	112	1
- BCH 1 code read / calculated	bits	86-106 / 25-85	105685 / 105685
- BCH 2 code read / calculated	bits	133-144 / 107-132	66C / 66C
6 - FREQUENCY			
- Nominal value	KHz	406025 ± 2	+ 0.06107
- Short term stability		< 2x10 ⁻⁹ /100 ms	1.7 x 10 ⁻¹⁰

* See Chapter 12 : C/S T.A. Test Report (page 17 to 30)