

CHAPTER 5

SALT FOG TEST

5.1. TEST SPECIFICATIONS AND SEQUENCE

Following section A5.0 of RTCM Recommended Standards for 406 MHz Satellite PLBs (Version 1.1 Feb 4, 2003)

5.2. EQUIPMENT UNDER TEST

Beacon Unit : 1/3
Name : ACR / TeraFixTM 406GPS I/O PLB
Type : PLB200
Number : 07

5.3. TEST SITE

Toulouse Space Center (C.S.T.) - INTESPACE Laboratory.

5.4. TEST EQUIPMENT

- Salt fog chamber SAPRATIN S /N : 229 (see photo next page),
- Salt solution : Mil-Std-810 D (July 19th, 1983), method 509.2,
- METLER TOLEDO Phmeter , Type : check mate 90 S/N : ITS 01 – Validity : October 2004,
- VAISALA thermo-hygrometer, Type : HM131 S/N : 133535 – Validity : Feb. 2005,
- KEITHLEY thermometer/multimeter ,Type : 2000, S/N 0678112 with CU-CT thermocoupler - Validity : June 2004,
- Argos - Cospas/Sarsat Test Bench.

SALT FOG TEST



5.5. TEST RESULTS

5.5.1 Test implementation

Place : INTESPACE Laboratory

Date	Hour	Events - Observations
June 29 th , 2001	14h	Salt bath preparation ; Beacon intallation;
	15h	Warning up of the chamber to 35 °C
	18h	Salt fog injection (5% of NaCl) at 35 °C ± 2 °C for 48 h
July 1 st , 2004	19h	Salt fog injection stopped. Beacon dried during 24 h at 22 °C ± 2 °C
July 2 nd , 2004	19h	Salt fog injection at 35 °C ± 2 °C ≥ 12 h
July 3 th , 2004	8h	Salt fog injection stopped.
	11h30	Visual inspection at ≈ 22 °C: OK . Nothing abnormal to note .
	14h	Electrical checks : See results of aliveness after salt fog test next page § 5.5.2

5.5.2 ALIVENESS TEST RESULTS AFTER RTCM SALT FOG TEST

Beacon Unit : 1/3
 Name : ACR / TeraFixTM 406GPS I/O PLB
 Type : PLB200
 Number : 07

406 MHZ MEASUREMENTS

July 6th, 2004

1 - Environmental Temperature (° C)			+ 22° C
2 - POWER OUTPUT			
- Transmission power	dBm	37 ± 2	37.6
- Power risetime	ms	< 5	0.90 ms
- Power falltime	ms	< 5	-
3 - SPURIOUS OUTPUT			
- In band			OK
- Carrier harmonics			
4 - DIGITAL MESSAGE GENERATOR			
- Repetition rate			OK
- Bit rate	bits/S	400 ± 4	398.25
- Transmission time	ms	440 ± 4.4 / 520 ± 5.2	522.40
- CW preamble	ms	160 ± 1.6	160.70
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	0366
- 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	00B717 / 00B717
- BCH 2 code read / calculated	bits	133-144 / 107-132	1F0 / 1F0
6 - FREQUENCY			
- Nominal value	KHz	406 025 ± 2 or 406 028 ± 1	406027.75
- Short term stability		< 2x10 ⁻⁹ /100 ms	2.3 x 10 ⁻¹⁰