CHAPTER 2

A2.0 – INITIAL ALIVENESS TEST

2.1 PROCEDURE

The parameters defined in sections A 1.0 of the RTCM document are to be measured using a COSPAS/SARSAT test bench .

2.2. PROGRAMME

Measurements at ambient temperature :

- Output Power
- Data Message
- Carrier Frequency.

2.3. RESULTS

Data and graphs are reported next page

CERTIFICATION CENTER MEASUREMENTS

INITIAL ALIVENESS TEST RESULTS

E UT : 2/2
Name : JOTRON
Type : TRON 40GPS
Number : 7001
Date : 11 May 2000

406 MHz MEASUREMENTS

1 – Environmental Temperature (° C)			22.9 ° C
2 – POWER OUTPUT			
- Transmission power	dBm	37 ± 2	37.63
- 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	520.53
- CW preamble	ms	160 ± 1,6	159.85
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	6A8 / 6A8
6 – FREQUENCY			
- Nominal value	KHz	406 025 ± 2	+ 0.10132
- Short term stability		< 2×10^{-9}/100 ms	1.4×10^{-10}

* See graphs page 2.7

** See graph page 2.5

Laboratoire de certification
Controle balise ARGOS/SARSAT

Constructeur	JOTRON
Modele	TRON 40GPS
Numero de serie	0CA07001
Reference	M2393
Type	SARSAT
Date de l'essai	11 May 2000 15:58:26

Message balise

Message recu	(1-144):	FFFE2F901E1E24002B80374C89B78E0166A8
Format flag	(25):	1
Protocole flag	(26):	0
Code pays	(27-36):	0257
Pays	:	NORWAY
Code protocole	(37-40):	1110
Protocole utilise	:	Standard - Test
Identification	:	
Numero	:	
BCH 1 lu/calcule	(86-106/25-85):	1D3226/1D3226
BCH 2 lu/calcule	(133-144/107-132):	6A8/6A8
Pos. Data Source	(λλλ):	Internal
121.5 MHz Homing	(λλ2):	YES
Position GPS de reference	:	N 43°33'34'' E 1°28'48
Position GPS	:	Yes
Position GPS par defaut	:	No
Latitude position	:	43.5°3'32'' Nord
Longitude position	:	.5°58'36'' Est
Delta position	:	.376175261138 km

Controle message

Duree de la porteuse pure	159.85ms +- 0.0(
Duree de l'emission	520.53 ms
Frequence de modulation	398.86Hz +- 0.0(

Stabilite de frequence

Frequence moyenne	F2	406025101.32 Hz
SIGMA2	F2-F1	7.105E-10
SIGMA3	F3-F2	1.393E-10

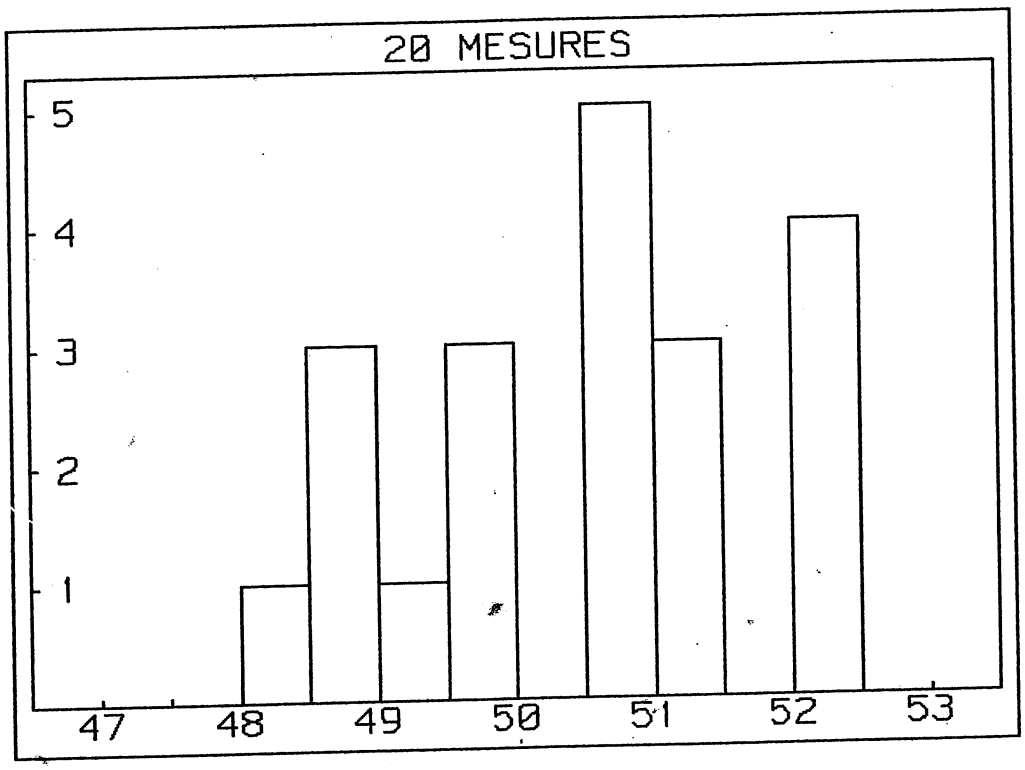
Mesures d'indice

F	F1	G1
50101.3	236	63
50100.38	216	63

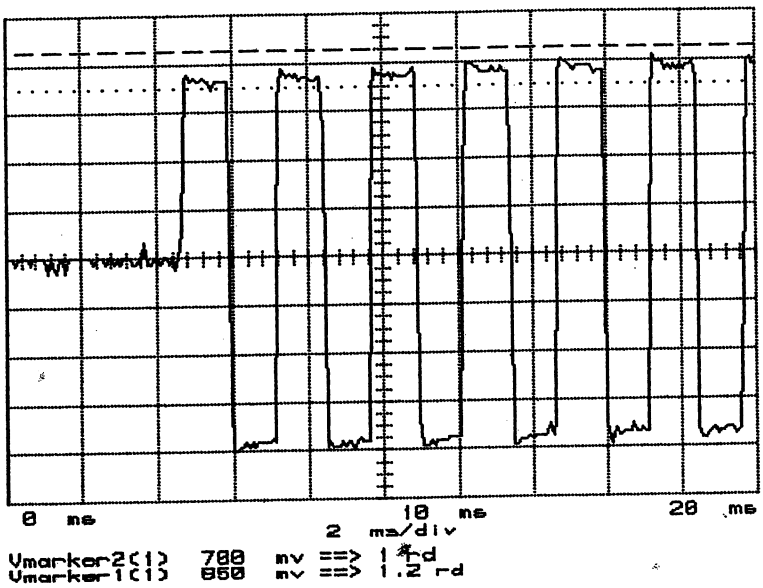
Excursion de phase totale	rd	<= 2.48	2.25
Excursion de phase positive	rd	0.96< <1.24	1.10
Excursion de phase negative	rd	-1.24< <-0.96	-1.14
Symetrie de l'excursion	%	<= 5	1.78

Mesures de puissance

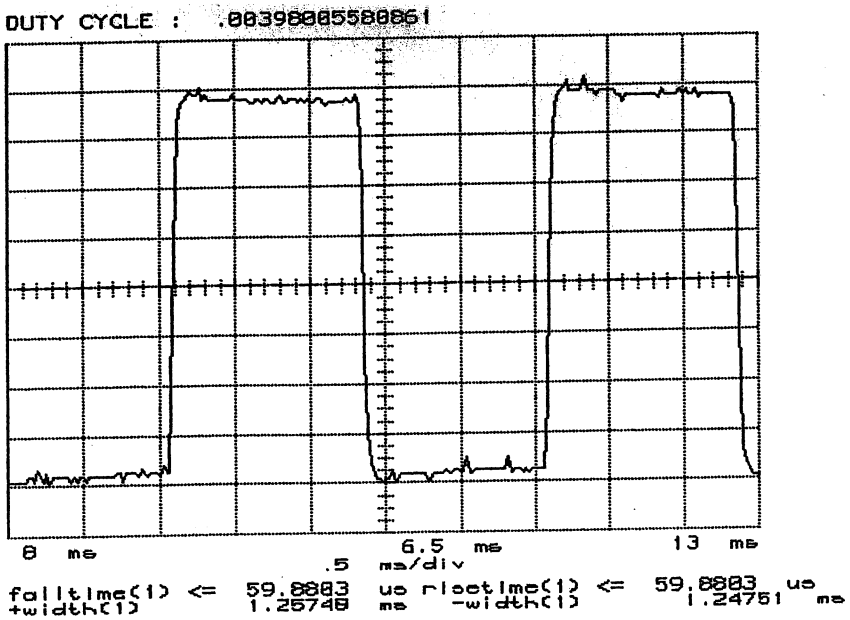
Puissance	dBm	37.63
Frequence moy 121.5 MHz		121500.75
Puissance		23.6

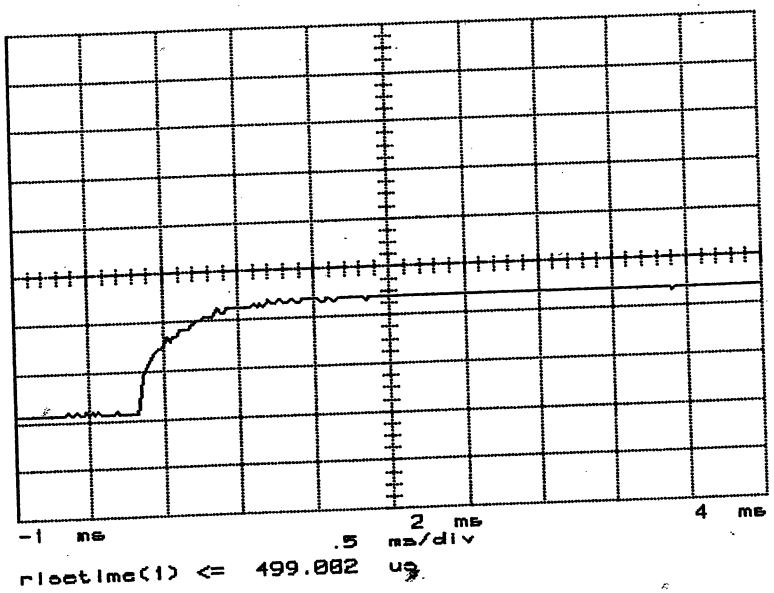


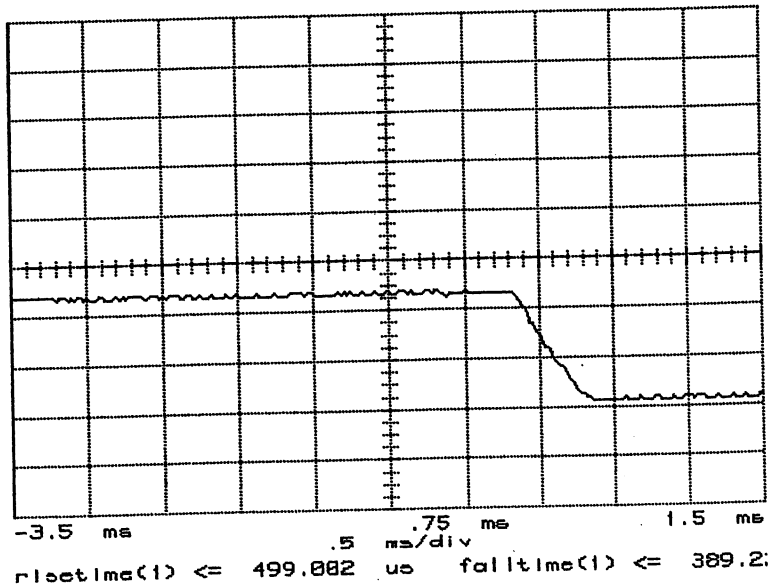
Oscilloscopes



DUTY CYCLE : 4.0E-03


DUTY CYCLE : .00398005580861
8 ms
6.5 ms
13 ms
.5 ms/div
falltime(1) <= 59.8803 us risetime(1) <= 59.8803 us
+width(1) 1.25748 ms -width(1) 1.24761 ms


-1 ms
2 ms
4 ms
.5 ms/div
risetime(1) <= 499.002 us


-3.5 ms
.75 ms
1.5 ms
.5 ms/div
risetime(1) <= 499.002 us falltime(1) <= 389.2

Spurious

JOTRON
TRON 40GPS
0CA87001
11 May 2000
406 MHz
TEMP : 21°C