

CHAPTER 4

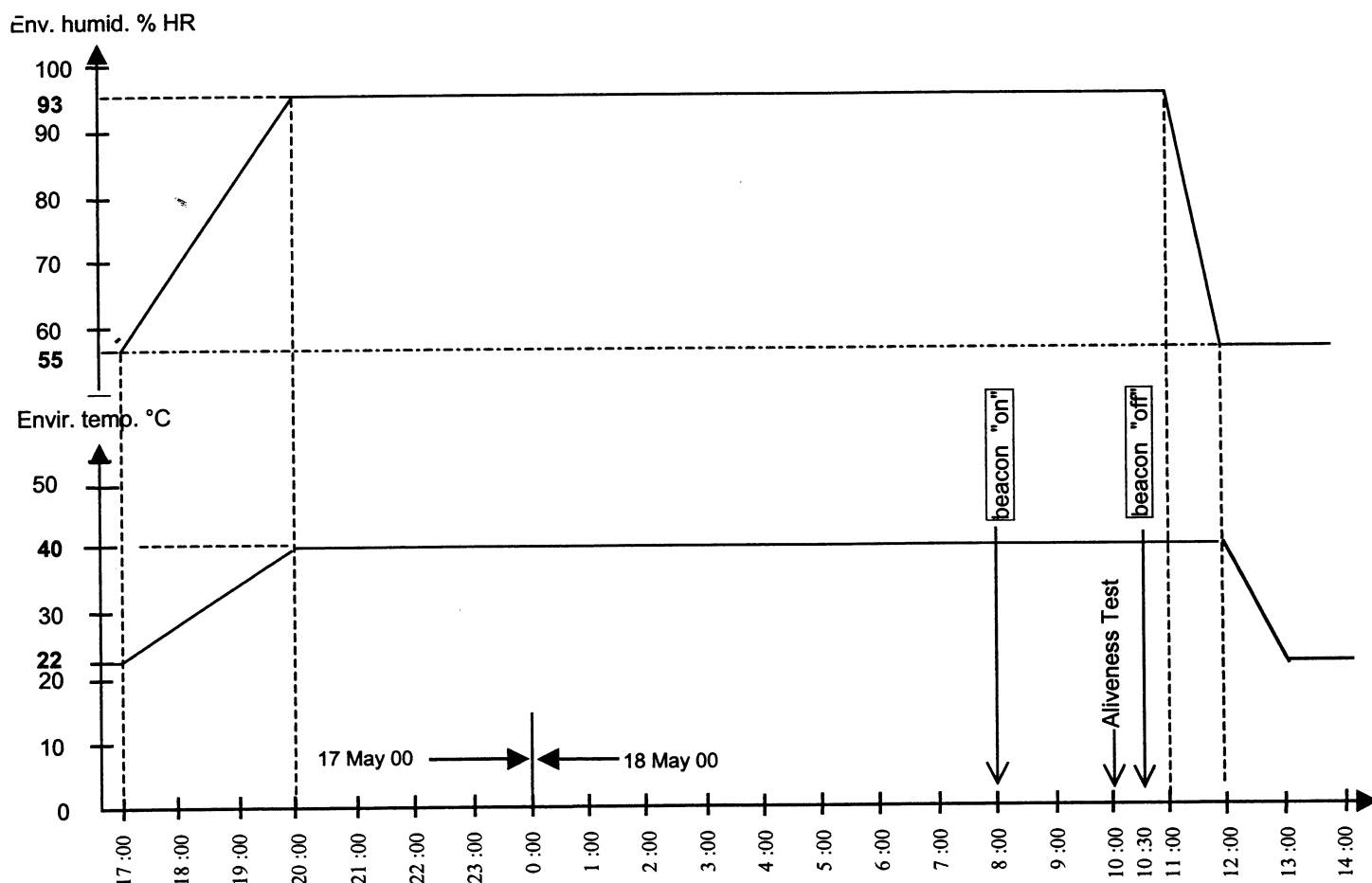
A4.0 - DAMP HEAT CYCLE TEST

4.1 PROCEDURE

The parameters defined in sections A4.0 of the RTCM document are measured using a SARSAT test bench .

We have used also Intespace Radiobeacon Test Procedure N° 554/AP/QA/f :
« Essai de Chaleur Humide »

4.2 DAMP HEAT CYCLE PROGRAMME



4.3. ALIVENESS TEST RESULTS

Data and graphs are reported next page

CERTIFICATION CENTER MEASUREMENTS

DAMP HEAT ALIVENESS TEST RESULTS

E UT : 2/2
 Name : JOTRON
 Type : TRON 40GPS
 Number : 7001
 Date : 18 May 2000

406 MHZ MEASUREMENTS

1 - Environmental Temperature (° C / HR)			$+ 40^{\circ} \text{C} \pm 1 / 93 \% \pm 2$
2 - POWER OUTPUT			
- Transmission power	dBm	37 ± 2	37.6
- Power risetime	ms	< 5	0.51 ms
- Power falltime	ms	< 5	0.24 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	$440 \pm 4.4 / 520 \pm 5.2$	522.32
- CW preamble	ms	160 ± 1.6	160.35
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	$406\,025 \pm 2$	$\rightarrow 0.08061$
- Short term stability		$< 2 \times 10^{-9} / 100 \text{ ms}$	1.54×10^{-10}

* See graphs page 4.8

** See graph page 4.5

Laboratoire de certification
Balise COSPAS/SARSAT

Constructeur	JOTRON
Modele	TRON 40GPS
Numero de serie	P1
Reference	M2393-1
Type	SARSAT

Type de certification	: Nominal
Date des mesures	: 18 May 1990 08:01:03
Temperature de palier	: 40 °C
Temperature lue	: 39.4550403 °C

Message balise

Message reçu	(1-144):	FFFE2F901E1E24007FDFFC15A17783E0F66C
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/calculé	(86-106/25-85):	105685/105685
BCH 2 lu/calculé	(133-144/107-132):	66C/66C
Pos. Data Source	(111):	Internal
121.5 MHz Homing	(112):	Yes
Position GPS de reference	:	N 43°33'34'' E 1°28'48
Position GPS	:	Yes
Position GPS par défaut	:	Yes

Controle du message

Duree de la porteuse pure	mS	158.4<	<162.6	160.35 +- .99
Duree minimale				159.72
Duree maximale				160.90
Duree de l'emission	mS	513.8<	<526.2	522.32

Frequence des bits

Frequence de modulation	Hz	395.4<	<404.6	398.86 +- .99
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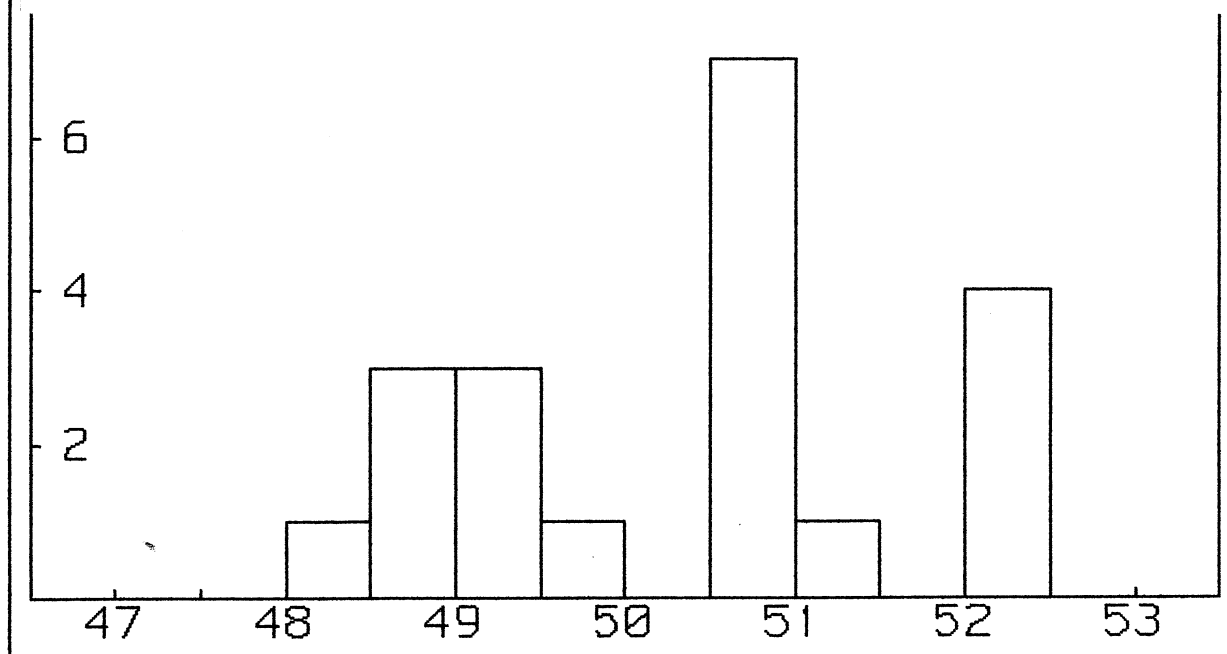
Mesures d'indice

Excursion de phase totale	rd	<= 2.48	2.29
Excursion de phase positive	rd	0.96<	<1.24 1.11
Excursion de phase negative	rd	-1.24<	<-0.96 -1.18
Symetrie de l'excursion	%	<= 5	3.23

Stabilité de fréquence

Frequence moyenne	F2	Hz	406025080.61
SIGMA2	F2-F1		4.568E-10
SIGMA3	F3-F2		1.543E-10
Slope		min. -1E-9 < <1E-9	-2.734E-11
Residual frequency variation		<= 3E-9	1.096E-10

Recurrence des emissions



Mesures de puissance

Puissance	dBm	37.63
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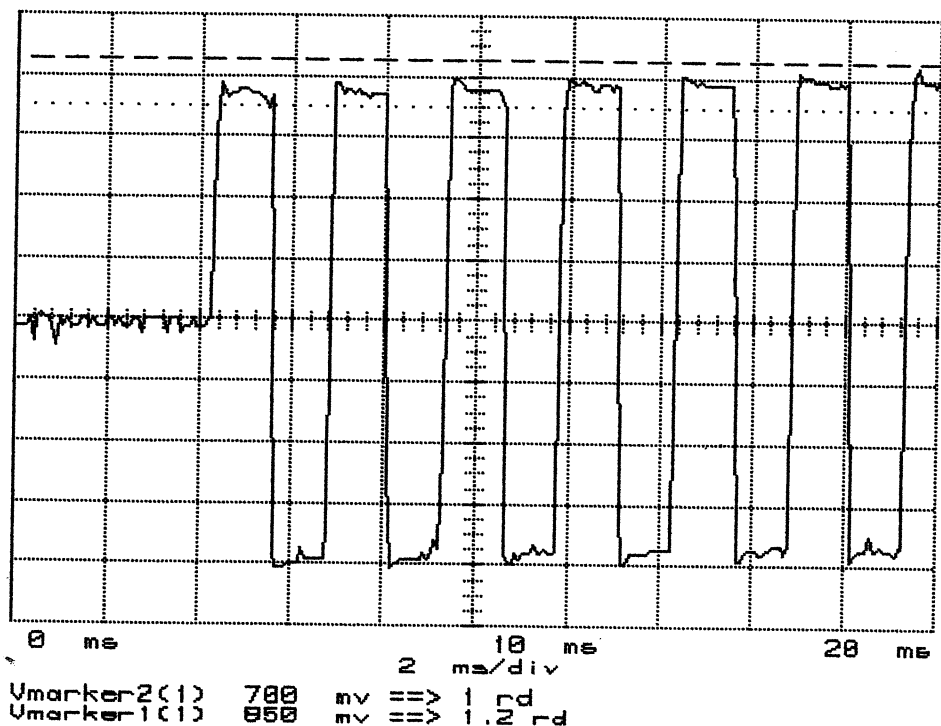
Mesures du 121.5

121500.775
121500.778
121500.775
121500.779
121500.775

Frequence moy 121.5 MHz	121500.78
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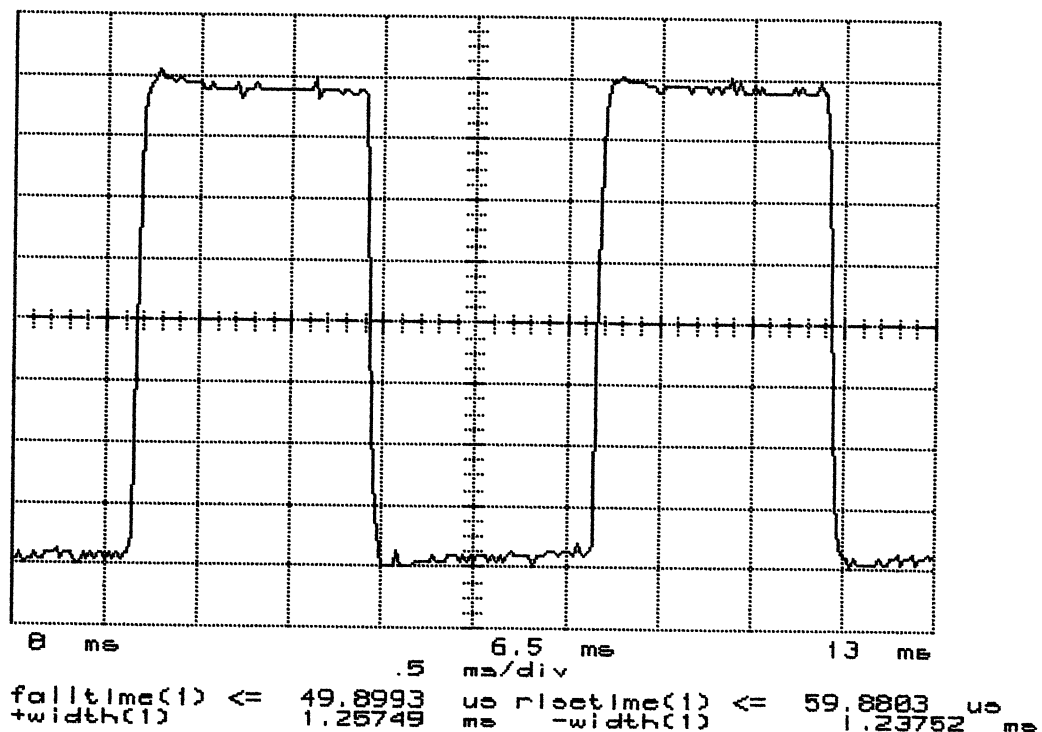
19.36
19.26
19.2
19.16
19.11

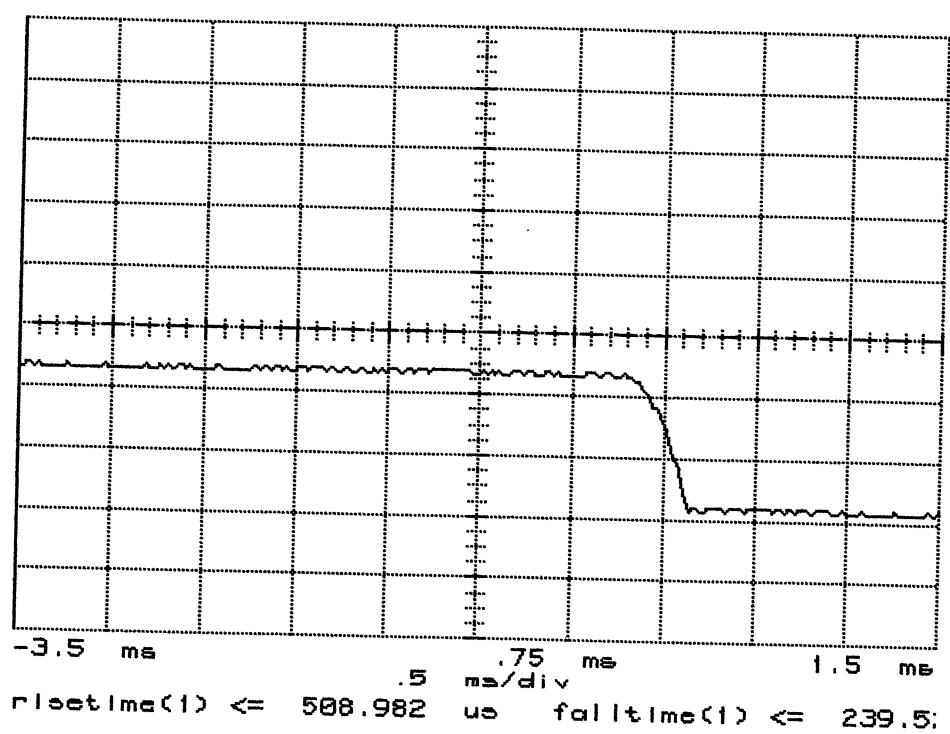
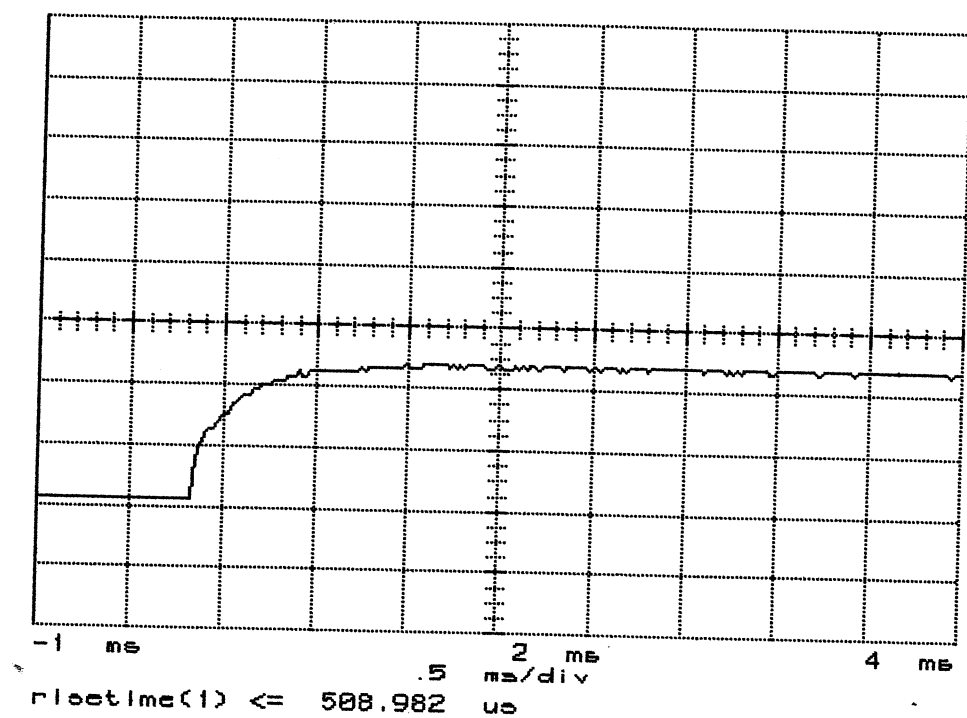
Puissance	22.9
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DUTY CYCLE : 8.0E-03

DUTY CYCLE : .00800397593597





Spurious

JOTRON
TRON 406PS
PI
10 May 1998
406 MHz
TEMP : 40°C

