

Chapter 9

COSPAS-SARSAT TYPE APPROVAL TESTS REPORT (Ref : E5503-ACR)

Toulouse, 8 September 2004

INTESPACE reference : E5503-ACR

TEST REPORT OF 406 MHz DISTRESS BEACON

MANUFACTURER : ACR Electronics, Inc

BEACON MODEL : PLB200 & PLB201

Written : 8/09/2004

By : G. PEYROU

Visa :

Approved : 9/09/2004

By : Ph. COSIO

Visa : P.C.

Quality Control : 9/09/2004

By : A. LOUIT

Visa :

Distribution :

- Mr	Cal HAVENS	ACR Electronics, Inc	(1 copy)
- Mr	W. CARNAY	COSPAS/SARSAT Sec	(1 copy)
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1 - ADMINISTRATION

1.1. WORK ORDER

Manufacturer : ACR Electronics, Inc
Address : 5757 Ravenswood Road - Fort Lauderdale, Fl 33312 USA

Represented by : Mr Cal HAVENS

1.2. INTESPACE TEST CENTER

The test operations have been conducted by : Mr G. PEYROU

1.3. SCHEDULE

Start of test: 10 juin 2004
End of test : 27 juillet 2004

1.4. WORK REFERENCE : E5503

1.5. EQUIPMENT UNDER TEST

The results from this test report concern only the equipment
here after referenced :

UUT	Model	S/N		Test	Commercial designation
1	PLB200	7	Int&Ext GPS	Full C/S	TeraFixTM 406 GPS I/O PLB
2	PLB201	12	Int GPS	Full C/S	TeraFixTM 406 GPS I PLB
3	PLB200	11	Int&Ext GPS	Sat & Ant	TeraFixTM 406 GPS I/O PLB

2 - TEST FACILITIES

- ARGOS - COSPAS/SARSAT Certification Test Bench.
- Anechoic chamber for antenna test .
- Toulouse CNES MCC .

3 - STANDARDS AND TEST PROCEDURES APPLICABLE

COSPAS-SARSAT standards :

- "C/S T. 001- Issue 3 - Revision 5 - October 2003 "
- "C/S T. 007- Issue 3 - Revision 10 - October 2003"

INTESPACE Radio Beacon Test Procedures :

- | | |
|---|------------------------|
| - " COSPAS-SARSAT Certification Test" | Réf. ITS : 572 AP/QA |
| - " 406 MHz Characteristic Antenna Test " | Réf. ITS : 566 AP/QA |
| - " Radio Beacon Test Report " | Réf. ITS : 579 AP/QA-f |

4 - RESULTS

See following pages :

- application forms for COSPAS-SARSAT 406 MHz beacon Type Approval Certificate for each model of PLB
- summaries of 406 MHz beacon test results for each PLB models
- two parts of data and graphs test results :
 - * Part 'PLB200' : test results of PLB 200 model S/N 07 & 11
 - * Part 'PLB201' : test results of PLB 201 model S/N 12
- and Annex A : Manufacturer technical data

APPLICATION FOR A COSPAS - SARSAT 406 MHz BEACON TYPE APPROVAL CERTIFICATE

Beacon Manufacturer : ACR Electronics, Inc

Beacon model : PLB 200

Name and Location of Beacon Test Facility : INTESPACE Toulouse France

Beacon Type : Aviation : ☒ Land : ☒ Maritime : ☒ **PLB**
Specified Operating Temperature Range -20 °C to 55 °C

Specified Operating Lifetime : 24 hr ☒ 48 hr ☐ Other ☐ Specify :

Beacon Battery Type(s)

Chemistry	: LiMO2
Manufacturer & model n°	: SANYO - CR123A
Size & number of cells	: 2 X 4 cells , 2/3 A size

Beacon Oscillator :

Type (OCXO, MCXO, TCXO,)	: OCXO
Model, Manufacturer	: OCXO-50, ACR

Extra Features in Beacon	No	Yes	Details
a) Auxiliary Radio-Locating Device :	☐	☒	Frequency : 121.5 MHz Power : 17 dBm Tx. Duty Cycle : Continuous
b) Transmits Encoded Position Data	☐	☒	Nav. Device : Internal or external Type : GPS (Int) Manufacturer : Furuno Model : GH-80D
c) Transmits Long Message (144 bits)	☐	☒	
c) Automatic Activation :	☒	☐	
d) Built-in Strobe light :	☒	☐	Intensity : Flash rate :
e) Self-test mode	☐	☒	
f) Other	☒	☐	Specify :

I hereby confirm that the 406 MHz beacon described above has been successfully tested in accordance with the COSPAS-SARSAT Type Approval Standard (C/S T.007) and complies with the COSPAS-SARSAT Specification (C/ST T.001) as demonstrated in the attached report.

Dated : 9/9/2004

Signed :

(for test facility)

**APPLICATION FOR A COSPAS - SARSAT 406 MHz
BEACON TYPE APPROVAL CERTIFICATE**

Beacon Manufacturer : ACR Electronics, Inc

Beacon model : PLB 201

Beacon Number : 12

Name and Location of Beacon Test Facility INTESPACE Toulouse France

Beacon Type : Aviation : ☒ Land : ☒ Maritime : ☒ **PLB**

Antenna Model : ACR A3-06-2328

Specified Operating Temperature Range -20 °C to 55 °C

Specified Operating Lifetime : 24 hr ☒ 48 hr ☐ Other ☐ Specify :

Beacon Battery Type(s)

Chemistry : LiMO2
Manufacturer & model n° : SANYO - CR123A
Size & number of cells : 2 X 4 cells , 2/3 A size

Beacon Oscillator :

Type (OCXO, MCXO, TCXO,) : OCXO
Model, Manufacturer : OCXO-50, ACR

Extra Features in Beacon	No	Yes	Details
a) Auxiliary Radio-Locating Device :	☐	☒	Frequency : 121.5 MHz Power : 17 dBm Tx. Duty Cycle : Continuous
b) Transmits Encoded Position Data	☐	☒	Nav. Device : external Type : GPS Manufacturer : Any Model : NMEA 0183
c) Transmits Long Message (144 bits)	☐	☒	
c) Automatic Activation :	☒	☐	
d) Built-in Strobe light :	☒	☐	Intensity : Flash rate :
e) Self-test mode	☐	☒	
f) Other	☒	☐	Specify :

I hereby confirm that the 406 MHz beacon described above has been successfully tested in accordance with the COSPAS-SARSAT Type Approval Standard (C/S T.007) and complies with the COSPAS-SARSAT Specification (C/ST T.001) as demonstrated in the attached report.

Dated : 9/9/2004

Signed :


(for test facility)

Table C2-2 : SUMMARY OF 406 MHz BEACON TEST RESULTS
MANUFACTURER : ACR ELECTRONICS INC
MODEL : PLB200
S/N : 07 & 11

Table C2: SUMMARY OF 406 MHz BEACON TEST RESULTS
 Manufacturer: ACR Electronics Inc Model: PLB200



PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min} -20°C (±3)	T _{nom} 22°C (±3)	T _{max} 55°C (±3)	
1 - POWER OUTPUT						
o transmitter power output	35 - 39	dBm	37,9	31,7	37,4	Graphs p PLB-8, 11 and 14 Graphs pages PLB200-2 to PLB200-4
o Power output rise time	< 5	ms	0,93	0,63	0,96	
o power output 1 ms before burst	must be < -10 dBm	√ *	√	√	√	
2 - DIGITAL MESSAGE						Data and graphs pages PLB200-5 to -14
o bit sync	15 bits "1"	√	√	√	√	
o frame sync	9 bits (000101111)	√	√	√	√	
o format flag	1 bit	√	1	1	1	
o protocol flag	1 bit	√	0	0	0	
o identification/position code	59 bits	√	√	√	√	
o BCH code	21 bits	√	√	√	√	
o emerg. code/nat. use/supplem. data	6 bits	data bits	110111	110111	110111	
o additional data/BCH (if applicable)	32 bits	√	√	√	√	
o position error (if applicable)	< 5	km	0,255 km	0,309 km	0,255 km	

Table C 2.4: SUMMARY OF 406 MHz BEACON TEST RESULTS

Manufacturer : ACR Electronics Inc Model : PLB200

Ref : E5503 C-S



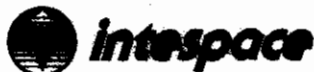
PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min.} -20°C (±3)	T _{max.} 22°C (±3)	T _{max.} 55°C (±3)	
3 - DIGITAL MESSAGE GENERATOR						
o repetition rate :	48,5 - 51,5	seconds	50,5	50,5	50,5	Data and graphs pages PLB200-5 to -14
average T _R =						
minimum T _R =	47,5	seconds	49,0	49,0	49,0	
maximum T _R =	52,5	seconds	52,5	52,5	52,0	
standard deviation =	0,5 - 2,0		1,0	1,0	0,8	
o unique TR sequence :	< 0,001	√	√	√	√	See manufacturer explanations in annex A
probability of 2 beacons with identical patterns (analysis to be provided)						
o bit rate	396	bits/sec.	398,32	398,32	398,33	
minimum f _b =	404	bits/sec.	398,35	398,35	398,35	
o total transmission time :	435,6 - 444,4	ms				
short message =						
long message (optional) =	514,8 - 525,2	ms	522,42	521,03	522,45	
o unmodulated carrier	158,4	ms	160,70	159,35	160,71	
minimum T _I =	161,6	ms	160,71	159,39	160,71	
maximum T _I =	> 47,5	seconds	≈ 100	≈ 100	≈ 100	2 repetitions rate
o first burst delay						

Table C2 : SUMMARY OF 406 MHz BEACON TEST RESULTS

Manufacturer : ACR Electronics Inc

Model : PLB200

Ref: E5-303 C-S



PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min.} -20°C (±3)	T _{max.} 22°C (±3)	T _{max.} 55°C (±3)	
4 - MODULATION o biphasic-L o rise time o fall time o phase deviation : positive o phase deviation : negative o symmetry measurement	√		√	√	√	Data and graphs pages PLB200-5 to -14
	50 - 250	microsec.	70	80	80	
	50 - 250	microsec.	70	90	80	
	+ (1.0 to 1.2)	radians	+ 1,11	+ 1,10	+ 1,11	
	- (1.0 to 1.2)	radians	- 1,08	- 1,10	- 1,12	
	≤ 0.05		+ 0,0240	+ 0,0238	+ 0,0159	
5 - 406 MHz TRANSMITTED FREQUENCY o nominal value o short term stability o medium term stability o slope o residual frequency variation	as specified in C/S T.001 and C/S T.012	MHz	406,0278882	406,0278894	406,0279025	Data pages PLB-6, PLB-9 and PLB -11
	≤ 2 x 10 ⁻⁹	/100 ms	2,94E-10	3,32E-10	4,17E-10	
	(-1 to +1) x 10 ⁻⁹	/minute	1,22E-10	1,70E-10	-6,24E-11	
	≤ 3 x 10 ⁻⁹		5,39E-10	5,70E-10	4,92E-10	
6 - SPURIOUS EMISSION ** (into 50 ohms) o in-band (406.0 - 406.1 MHz)	see spurious emission mask in C/S T.001	√	√	√	√	See graphs pages PLB200-16 to -18

Table C2 : SUMMARY OF 406 MHz BEACON TEST RESULTS

Manufacturer : ACR Electronics Inc Model : PLB200

Ref : ES-003 CS



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PARAMETRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min} -20°C (±3)	T _{max} 22°C (±3)	T _{max} 55°C (±3)	
7 - 406 MHz VSWR CHECK after open circuit, short circuit, then while VSWR is 3:1, measure : o nominal transmitted frequency Modulation : o rise time o fall time o phase deviation : positive o phase deviation : negative o symmetry measurement o digital message	as specified in C/S T.001 and C/S T.012	MHz	406,0278680	406,0278657	406,0278726	See data and graphs pages PLB200-19 to-25
	50 - 250	microsec.	79,8	79,8	69,9	
	50 - 250	microsec.	79,8	79,8	79,8	
	+ (1.0 to 1.2)	radians	1,11	1,10	1,11	
	- (1.0 to 1.2)	radians	-1,09	-1,10	-1,12	
	≤ 0.05	✓	+ 0,0199	+ 0,0159	+ 0,0240	
	must be correct	✓	✓	✓	✓	
8 - SELF-TEST MODE o frame sync o format flag o single radiated burst o default position data (if applicable) o description provided o design data provided on protection against repetitive self-test mode transmissions o single burst verification o provides for beacon 15 Hex ID	9 bits (011010000)	✓	✓	✓	✓	Data pages PLB200-26 to PLB200-28 Manufacturer doc. Annex A Data page PLB200-27
	1/0	bit		1		
	≤ 440 / 520 (+1%)	ms		442,21		
	must be correct	✓	✓	✓	✓	
	protection provided	✓	✓	✓	✓	
	one burst	✓	✓	✓	✓	
	must be correct	✓	✓	✓	✓	

Table C.2. SUMMARY OF 406 MHz BEACON TEST RESULTS
Manufacturer: ACR Electronics Inc Model: PLB200

PARAMETRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS	COMMENTS
9 - THERMAL SHOCK** (30° C change)				
o Soak temperature:		°C	Tsoak = 22	Data and graphs pages PLB200-30 to -36
o Measurement temperature:		°C	TMeas = -10	
the following parameters are to be met within 15 minutes of beacon and maintained for 2 hours				
o Transmitted frequency:				
- nominal value	as specified in C/S T.001 and C/S T.012	MHz	406,027887 / 406,027901	
- short term stability	$\leq 2 \times 10^{-9}$	/100 ms	2,5E-10	
- medium term stability:	$(-1 \text{ to } +1) \times 10^{-9}$ $\leq 3 \times 10^{-9}$	/minute	-1,0E-10	
- slope			1,10E-09	
- residual frequency variation				
o Transmitted power output	35 - 39	dBm	37,8 / 38,0	
o Digital message	must be correct	✓	✓	

Table C.2. SUMMARY OF 406 MHz BEACON TEST RESULTS
Manufacturer: ACR Electronics Inc Model: PLB200

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS	COMMENTS
10 - OPERATING LIFETIME AT MINIMUM TEMPERATURE **				
o Duration	> 24	hours	34 hours at T _{min} = -20 °C	Data and graphs pages PLB200-37 to -46
o Transmitted frequency :	as specified in C/S T.001 and C/S T.012	MHz	406,027856 / 406,027879	
- nominal value		/100 ms	< 4,0E-10	
- short term stability		/minute	-3,0E-10 / 3,0E-10 < 1,0E-9	
- medium term stability				
- slope	(-1 to +1) x 10 ⁻⁹ ≤ 3 x 10 ⁻⁹			
- residual frequency variation				
o Transmitted power output	35 - 39	dBm	35,9 / 38,0	
o Digital message	must be correct	✓	✓	
11 - TEMPERATURE GRADIENT ** (5° C/hr)				
o Transmitted frequency :	as specified in C/S T.001 and C/S T.012	MHz	406,027853 / 406,027876	Data and graphs pages PLB200-47 to -56
- nominal value	≤ 2 x 10 ⁻⁹	/100 ms	< 4,0E-10	
- short term stability		/minute	-3,0E-10 / 3,0E-10 < 1,0E-9	
- medium term stability				
- slope	(-1 to +1) x 10 ⁻⁹ ≤ 3 x 10 ⁻⁹			
- residual frequency variation				
o Transmitted power output	35 - 39	dBm	37,4 / 38	
o Digital message	must be correct	✓	✓	
12 - LONG TERM FREQUENCY STABILITY	as specified in C/S T.001 and C/S T.012	MHz		Manufacturer explanations in Annex A
o Data provided		✓	✓	

Table C2-1 : SUMMARY OF 406 MHz BEACON TEST RESULTS
 Manufacturer : ACR Electronics Inc Model : PLB200

Ref: E5503 C-S

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS	COMMENTS
13 - PROTECTION AGAINST CONTINUOUS TRANSMISSION o Description provided	≤ 45	seconds √	√	Manufacturer explanations in Annex A
14 - SATELLITE QUALITATIVE TESTS ** o Results provided	successfully located by satellites / LUT and position within 5 km	√	√	Data and graphs pages PLB200-57 to -79
15 - ANTENNA CHARACTERISTICS o Polarization o VSWR o ERP _{max} BOL o ERP _{min} BOL o azimuth gain variation at 40° elevation angle	linear or RHCP ≤ 1.5 ≤ 20 ≥ 1.6 ≤ 3	√ √ - Watts Watts dB	√ N/A 17,9 1,4 1,7	Antenna test report page PLB200-80 Inclined linear BUT antenna Little low but in 90% of ERP specifications
16 - BEACON CODING SOFTWARE o sample message provided for each coding option of the applicable coding protocol types o sample self-test message provided for each coding option of the applicable coding protocol types	must be correct (attach to report) must be correct (attach to report)	√ √	√ √	See manufacturer doc. Annex A

Table C2-1 : SUMMARY OF 406 MHz BEACON TEST RESULTS
Manufacturer : ACR Electronics Inc Model : PLB200

PARAMETERS TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS	COMMENTS
17 - NAVIGATION SYSTEM** (as applicable)				See data pages PLB200-91 to PLB200-106
o position data default values	must be correct	✓	✓	
o position acquisition time	< 30	minutes	At the first burst	
o encoded position data update interval	> 20	minutes	22:00	
o position data input update interval (as applicable)	20 / 1	minutes	N/A	
o coarse position close to actual position	must be correct	✓	✓	Manufacturer doc in Annex A
o delta offset :				
- positive direction	must be correct	✓	✓	
- negative direction	must be correct	✓	✓	
- overrange to 2 times coarse res.	must be correct	✓	✓	
o last valid position :				
- retained after nav signal lost	240 (± 5)	min	239,85	
- cleared when beacon reacquired	must be correct	✓	✓	
o design data provided on protection against beacon degradation due to navigation device, interface or signal failure or malfunction	no degradation	✓	✓	Manufacturer doc in Annex A

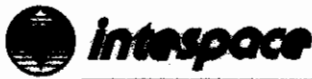
* the ticks mark ✓ can be used where indicated to record that the requirement is met (no value needs to be shown).

** attach graphs of test results for test number 6, 9, 10 and 11 and a summary table of results for test number 14, and, if applicable, test number 17.

Table C2-2 : SUMMARY OF 406 MHz BEACON TEST RESULTS
MANUFACTURER : ACR ELECTRONICS INC
MODEL : PLB201
S/N : 12

Table C2 : SUMMARY OF 406 MHz BEACON TEST RESULTS
Manufacturer : ACR Electronics Inc Model : PLB201

Ref : E5503 C-S



PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{amb} -20°C (±3)	T _{amb} 22°C (±3)	T _{max} 55°C (±3)	
1 - POWER OUTPUT						
o transmitter power output	35 - 39	dBm	37,4	36,8	37,0	Graphs p, PLB201-8,
o Power output rise time	< 5	ms	0,74	0,87	0,78	PLB201-11 and PLB201-146
o power output 1 ms before burst	must be < -10 dBm	√ *	√	√	√	Graphs pages PLB201-2 to PLB201-4
2 - DIGITAL MESSAGE						Data and graphs pages PLB201-5 to -14
o bit sync	15 bits "1"	√	√	√	√	
o frame sync	9 bits (000101111)	√	√	√	√	
o format flag	1 bit	√	1	1	1	
o protocol flag	1 bit	√	0	0	0	
o identification/position code	59 bits	√	√	√	√	
o BCH code	21 bits	√	√	√	√	
o emerg. code/nat. use/supplem. data	6 bits	data bits	110101	110101	110101	
o additional data/BCH (if applicable)	32 bits	√	√	√	√	
o position error (if applicable)	< 5	km	Default pos.	0,138 km	Default pos.	

PARAMETRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{amb} -20°C (±3)	T _{amb} 22°C (±3)	T _{amb} 55°C (±3)	
3 - DIGITAL MESSAGE GENERATOR						Data and graphs pages PLB201-5 to -14
o repetition rate :						
average T _R =	48,5 - 51,5	seconds	50,6	50,5	50,7	
minimum T _R =	47,5	seconds	49,0	49,0	49,0	
maximum T _R =	52,5	seconds	52,5	52,0	52,5	
standard deviation =	0,5 - 2,0		1,0	1,0	1,0	
o unique TR sequence :						
probability of 2 beacons with identical patterns (analysis to be provided)	< 0,001	√		√		
o bit rate						
minimum f _b =	396	bits/sec.	398,33	398,32	398,32	
maximum f _b =	404	bits/sec.	398,35	398,34	398,34	
o total transmission time :						
short message =	435,6 - 444,4	ms				
long message (optional) =	514,8 - 525,2	ms	522,47	522,48	522,49	
o CW preamble						
minimum T _I =	158,4	ms	160,76	160,76	160,74	
maximum T _I =	161,6	ms	160,76	160,76	160,76	
o first burst delay	> 47,5	seconds	≈ 100	≈ 100	≈ 100	2 repetitions rate

Table C2: SUMMARY OF 406 MHz BEACON TEST RESULTS

Manufacturer : ACR Electronics Inc Model : PLB201

Ref: E5303 C-S



PARAMETRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min} -20°C (±3)	T _{max} 22°C (±3)	T _{max} 55°C (±3)	
4 - MODULATION						
o biphasc-L		✓	✓	✓	✓	Data and graphs pages PLB201-5 to -14
o rise time	50 - 250	microsec.	80	80	80	
o fall time	50 - 250	microsec.	90	80	80	
o phase deviation : positive	+ (1.0 to 1.2)	radians	+ 1,14	+ 1,11	+ 1,12	
o phase deviation : negative	- (1.0 to 1.2)	radians	- 1,10	- 1,10	- 1,10	
o symmetry measurement	≤ 0.05		+ 0,0238	+ 0,0199	+ 0,0119	
5 - 406 MHz TRANSMITTED FREQUENCY						
o nominal value	as specified in C/S T.001 and C/S T.012	MHz	406,0279342	406,0279211	406,0279309	Data pages PLB201-6, PLB201-9 & PLB201-11
o short term stability	≤ 2 x 10 ⁻⁹	/100 ms	3,12E-10	3,17E-10	4,71E-10	
o medium term stability slope	(-1 to +1) x 10 ⁻⁹	/minute	1,65E-10	3,81E-11	-3,27E-11	
o residual frequency variation	≤ 3 x 10 ⁻⁹		6,07E-10	5,37E-10	6,16E-10	
6 - SPURIOUS EMISSION ** (into 50 ohms)	see spurious emission mask in C/S T.001	✓	✓	✓	✓	See graphs pages PLB201-16 to -18
o in-band (406.0 - 406.1 MHz)						

Table C2 : SUMMARY OF 406 MHz BEACON TEST RESULTS

Manufacturer : ACR Electronics Inc Model : PLB201

Ref : ES003 C-S



PARAMETERS TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min} -20°C (±3)	T _{max} 22°C (±3)	T _{nom} 55°C (±3)	
7 - 406 MHz VSWR CHECK after open circuit, short circuit, then while VSWR is 3:1, measure : o nominal transmitted frequency Modulation : o rise time o fall time o phase deviation : positive o phase deviation : negative o asymmetry measurement o digital message	as specified in C/S T.001 and C/S T.012	MHz	406,0279339	406,0279282	406,0279272	See data and graphs pages PLB201-19 to 25
	50 - 250	microsec.	79,8	79,8	79,8	
	50 - 250	microsec.	79,8	89,8	79,8	
	+ (1.0 to 1.2)	radians	1,14	1,13	1,11	
	- (1.0 to 1.2)	radians	-1,09	-1,12	-1,11	
	≤ 0.05	✓	+ 0,0199	+ 0,0160	+ 0,0159	
	must be correct	✓	✓	✓	✓	
8 - SELF-TEST MODE o frame sync o format flag o single radiated burst o default position data (if applicable) o description provided o design data provided on protection against repetitive self-test mode transmissions o single burst verification o provides for beacon 15 Hex ID	9 bits (011010000)	✓	✓ 442,26 ✓ ✓ ✓ ✓ ✓	✓ 442,26 ✓ ✓ ✓ ✓ ✓	✓ 442,26 ✓ ✓ ✓ ✓ ✓	Data pages PLB201-26 to PLB201-28 Manufacturer doc. Annex A Data page PLB201-27
	1/0	bit				
	≤ 440 / 520 (+1%)	ms				
	must be correct	✓				
	protection provided	✓				
	one burst	✓				
	must be correct	✓				

Table C-2: SUMMARY OF 406 MHz BEACON TEST RESULTS
Manufacturer: ACR Electronics Inc Model: PLB201

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS	COMMENTS
9 - THERMAL SHOCK** (30° C change) - Soak temperature : - Measurement temperature : the following parameters are to be met within 15 minutes of beacon and maintained for 2 hours		°C	Tsoak = -10	Data and graphs pages PLB201-30 to -36
		°C	TMeas = 22	
- Transmitted frequency : - nominal value - short term stability - medium term stability : - slope - residual frequency variation - Transmitted power output - Digital message	- as specified in C/S T.001 and C/S T.012 $\leq 2 \times 10^{-9}$ $(-1 \text{ to } +1) \times 10^{-9}$ $\leq 3 \times 10^{-9}$ 35 - 39 - must be correct	- MHz /100 ms /minute - dBm ✓	406,027925 / 406,027943 2,6E-10 3,5E-10 1,57E-09 37,3 / 37,5 ✓	

Table C2 : SUMMARY OF 406 MHz BEACON TEST RESULTS
 Manufacturer : ACR Electronics Inc Model : PLB201

PARAMETRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS	COMMENTS
10 - OPERATING LIFETIME AT MINIMUM TEMPERATURE **				
o Duration	> 24	hours	35 hours at T _{min} = -20 °C	Data and graphs pages PLB201-37 to -46
o Transmitted frequency :	as specified in C/S T.001 and C/S T.012	MHz	406,027867 / 406,027915	
- nominal value	$\leq 2 \times 10^{-9}$	/100 ms	< 5E-10	
- short term stability	(-1 to +1) $\times 10^{-9}$	/minute	-3E-10 / 1E-09	
- medium term stability	$\leq 3 \times 10^{-9}$		< 3E-9	
- slope	35 - 39	dBm	37,3 / 37,4	
- residual frequency variation	must be correct	✓	✓	
o Transmitted power output				
o Digital message				
11 - TEMPERATURE GRADIENT ** (5° C/hr)				
o Transmitted frequency :	as specified in C/S T.001 and C/S T.012	MHz	406,027903 / 406,027931	Data and graphs pages PLB201-47 to -56
- nominal value	$\leq 2 \times 10^{-9}$	/100 ms	< 6,0E-10	
- short term stability	(-1 to +1) $\times 10^{-9}$	/minute	-2,5E-10 / 2,5E-10	
- medium term stability	$\leq 3 \times 10^{-9}$		< 9,5E-10	
- slope	35 - 39	dBm	35,3 / 38,1	
- residual frequency variation	must be correct	✓	✓	
o Transmitted power output				
o Digital message				
12 - LONG TERM FREQUENCY STABILITY	as specified in C/S T.001 and C/S T.012	MHz	✓	Manufacturer explanations in Annex A
o Data provided		✓		

Table C-2: SUMMARY OF 406 MHz BEACON TEST RESULTS
Manufacturer: ACR Electronics Inc Model: PLB201

PARAMETERS TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS	COMMENTS
13 - PROTECTION AGAINST CONTINUOUS TRANSMISSION o Description provided	≤ 45	seconds ✓	✓	See manufacturer explanations in Annex A
14 - SATELLITE QUALITATIVE TESTS ** o Results provided	successfully located by satellites / LUT	✓	Checked with PLB 200 S/N 11 ✓	Data and graphs in PLB200 part
15 - ANTENNA CHARACTERISTICS o Polarization	linear or RHCP	✓		Antenna test report pages 60
o VSWR	≤ 1.5			
o ERP max BOL	≤ 20	Watts	0,0	
o ERP min BOL	≥ 1.6	Watts	0,0	
o azimuth gain variation at 40° elevation angle	≤ 3	dB	0	
16 - BEACON CODING SOFTWARE o sample message provided for each coding option of the applicable coding protocol types	must be correct (attach to report)	✓	✓	See manufacturer doc. Annex A
o sample self-test message provided for each coding option of the applicable coding protocol types	must be correct (attach to report)	✓	✓	

Table C2-2 : SUMMARY OF 406 MHz BEACON TEST RESULTS
 Manufacturer : ACR Electronics Inc Model : PLB201

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS	COMMENTS
17 - NAVIGATION SYSTEM** (as applicable)				See data page PLB201-57
o position data default values	must be correct	✓	✓	
o position acquisition time	< 30	minutes		At the first burst when the preloaded GPS data is successful in the PLB
o encoded position data update interval	> 20	minutes	N/A	
o position data input update interval (as applicable)	20 / 1	minutes	N/A	
o course position close to actual position	must be correct	✓	✓	Manufacturer doc in Annex A
o delta offset :				
- positive direction	must be correct	✓	✓	
- negative direction	must be correct	✓	✓	
- overrange to 2 times course res.	must be correct	✓	✓	
o last valid position :				
- retained after nav signal lost	240 (± 5)	min	238,9	
- cleared when beacon reactivated	must be correct	✓	✓	
o design data provided on protection against beacon degradation due to navigation device, interface or signal failure or malfunction	no degradation	✓	✓	Manufacturer explanations in Annex A

* the ticks mark ✓ can be used where indicated to record that the requirement is met (no value needs to be shown).

** attach graphs of test results for test number 6, 9, 10 and 11 and a summary table of results for test number 14, and, if applicable, test number 17.

TRANSMITTER OUTPUT POWER RISE TIME TEST RESULT ON

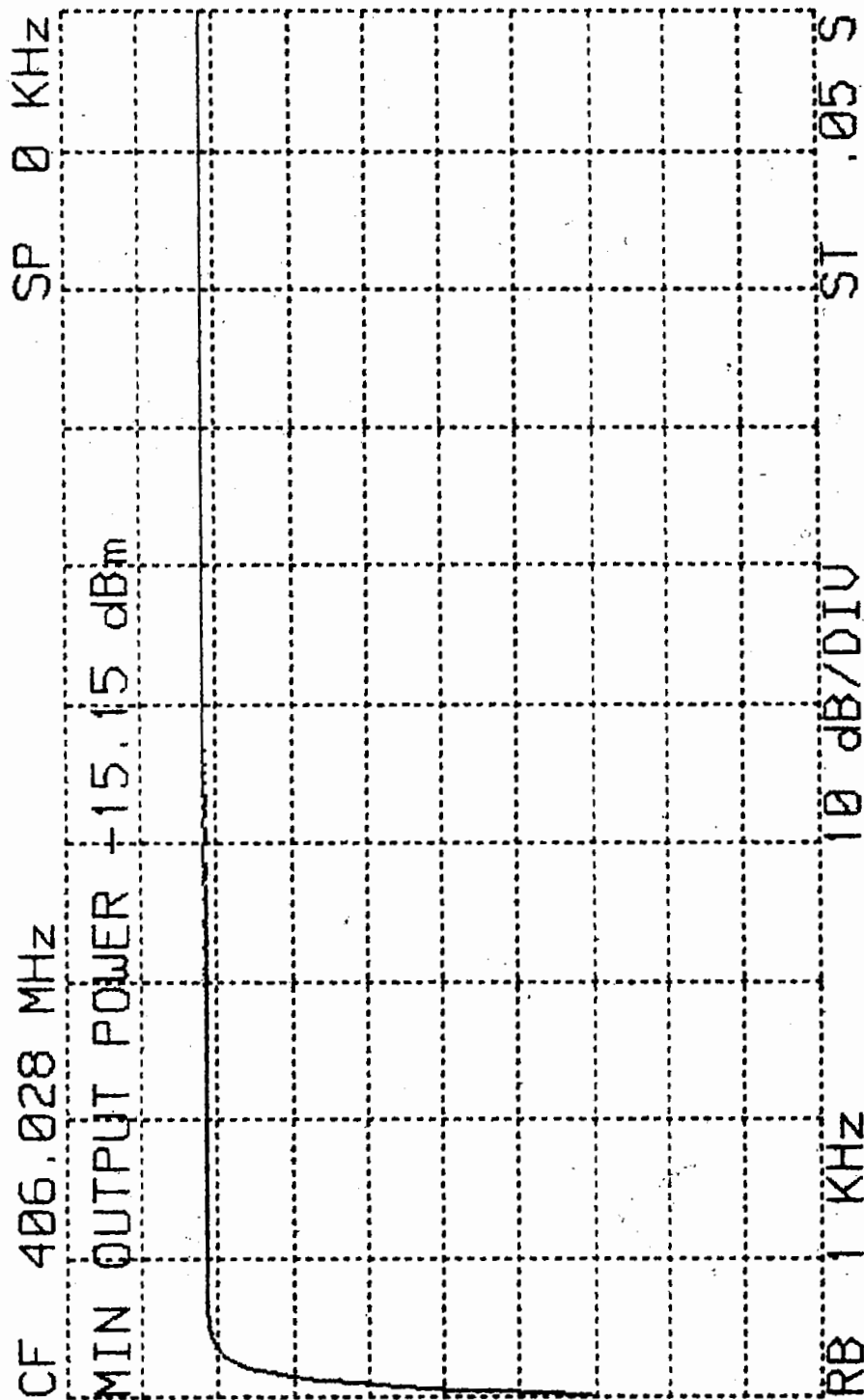
PLB 200 ACR Electronics, Inc Beacon

N° 7

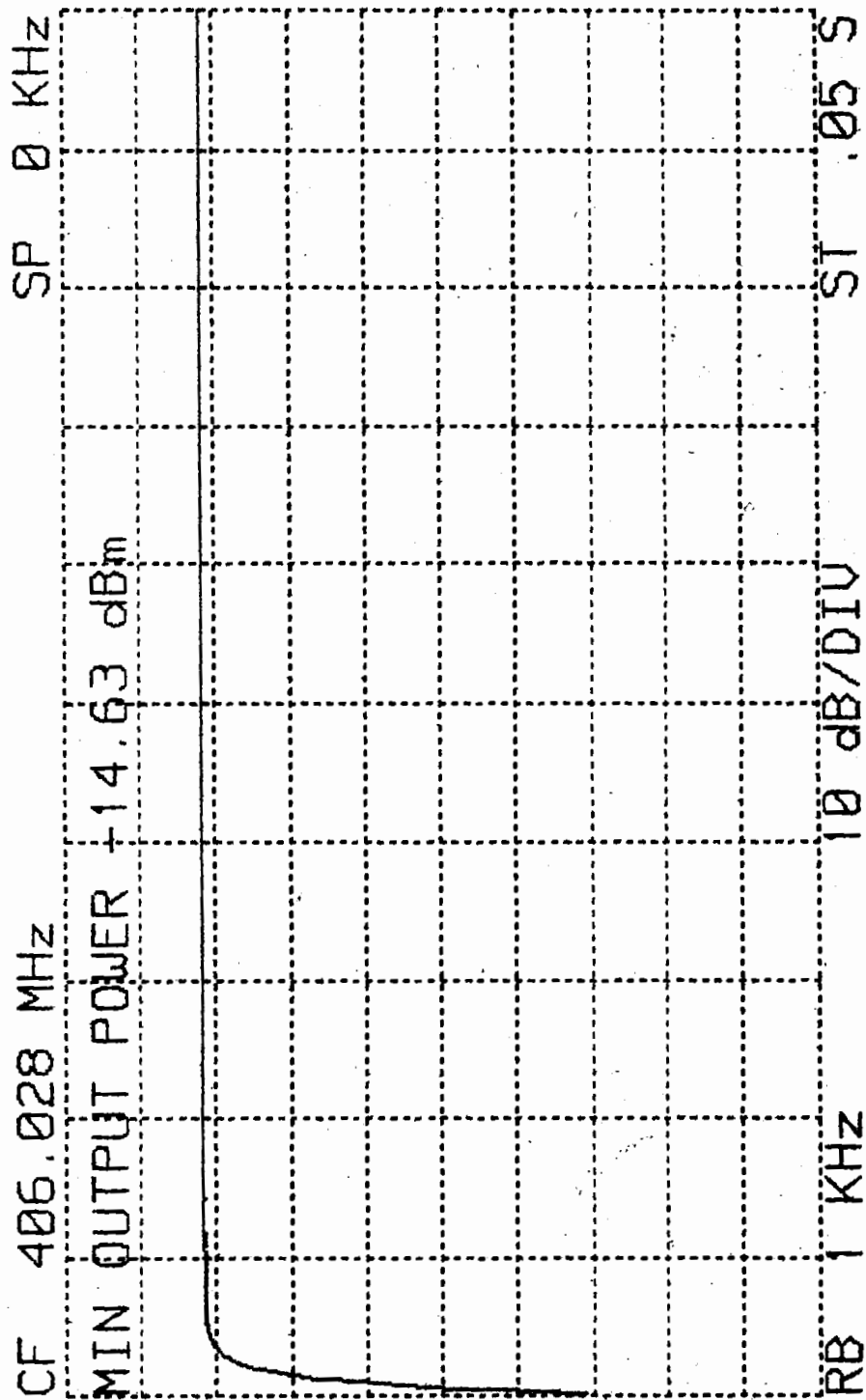
(1 ms before 10 % of the burst)

at -20° C, 22° C and 55° C

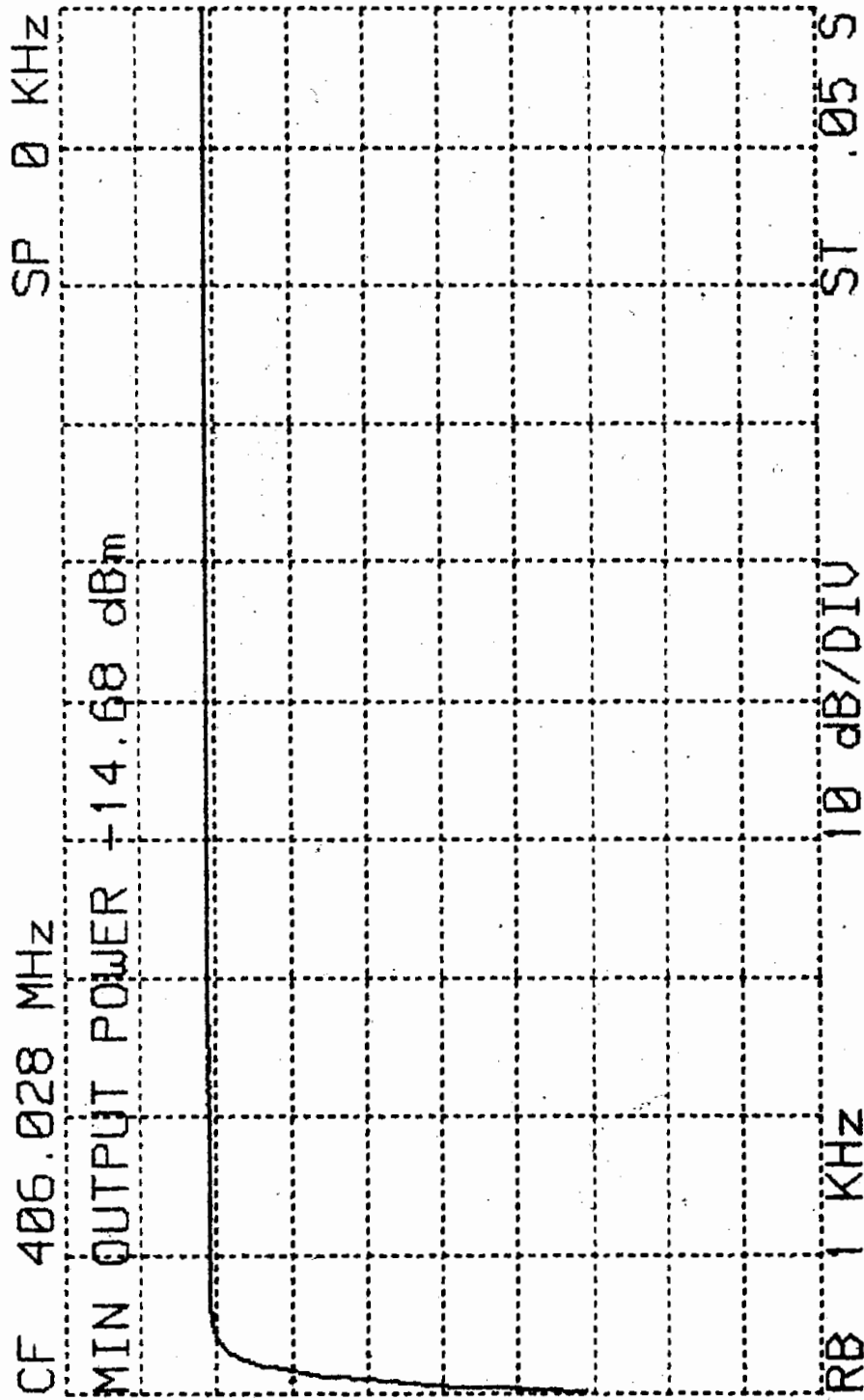
Output Power Risettime at -20°C



Output Power Rise-time at 22°C



Output Power Rise-time at 55°C



**CERTIFICATION TEST RESULTS OF
PLB 200 ACR Electronics, Inc Beacon
N° 7**

at -20° C, 22° C and 55° C

Certification Test at -20°C

Date of test : 11-juin-04

Manufacturer : ACR

Beacon Type : PLB 200-201

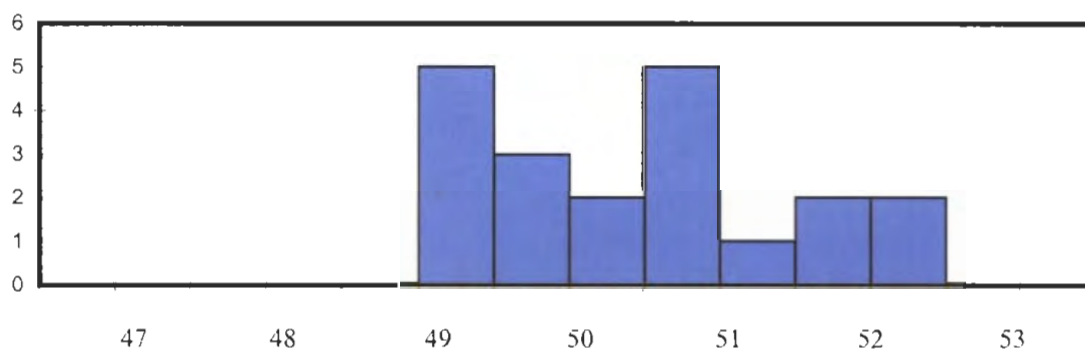
Number : 7

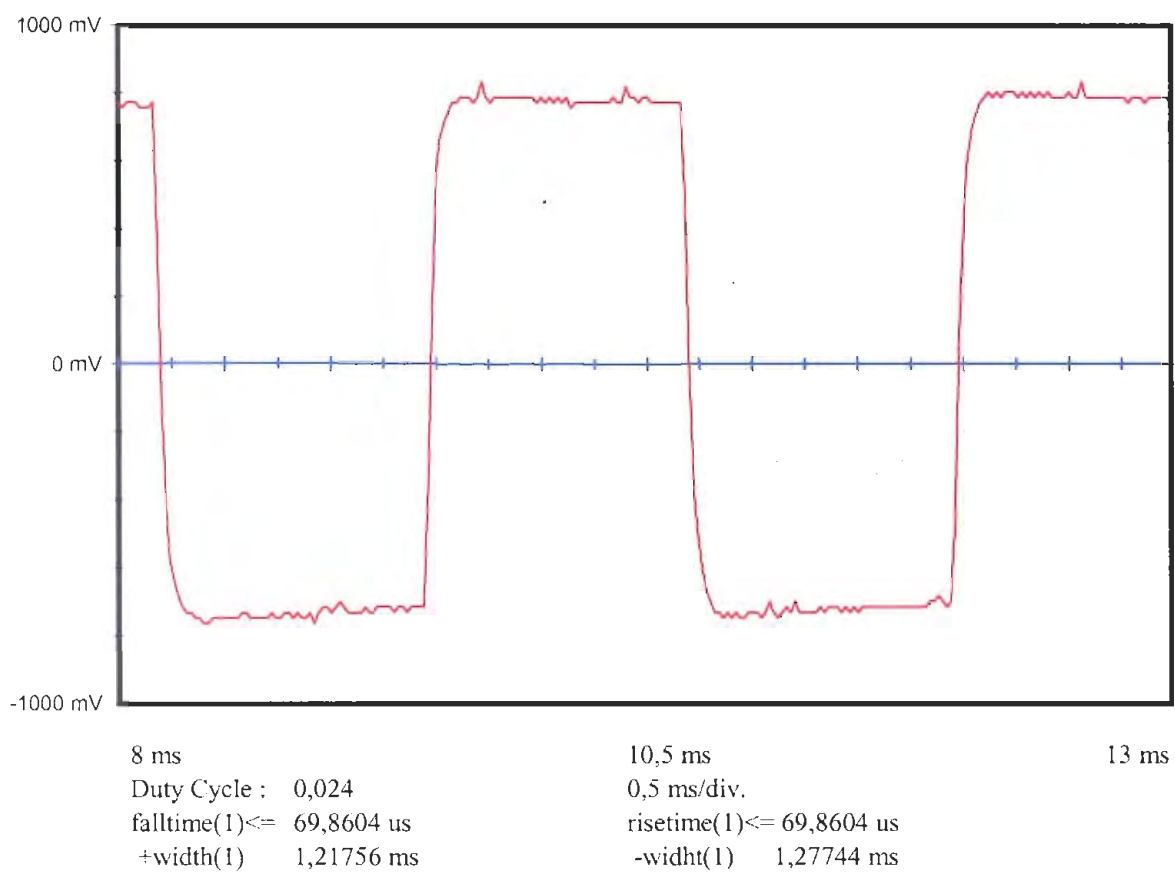
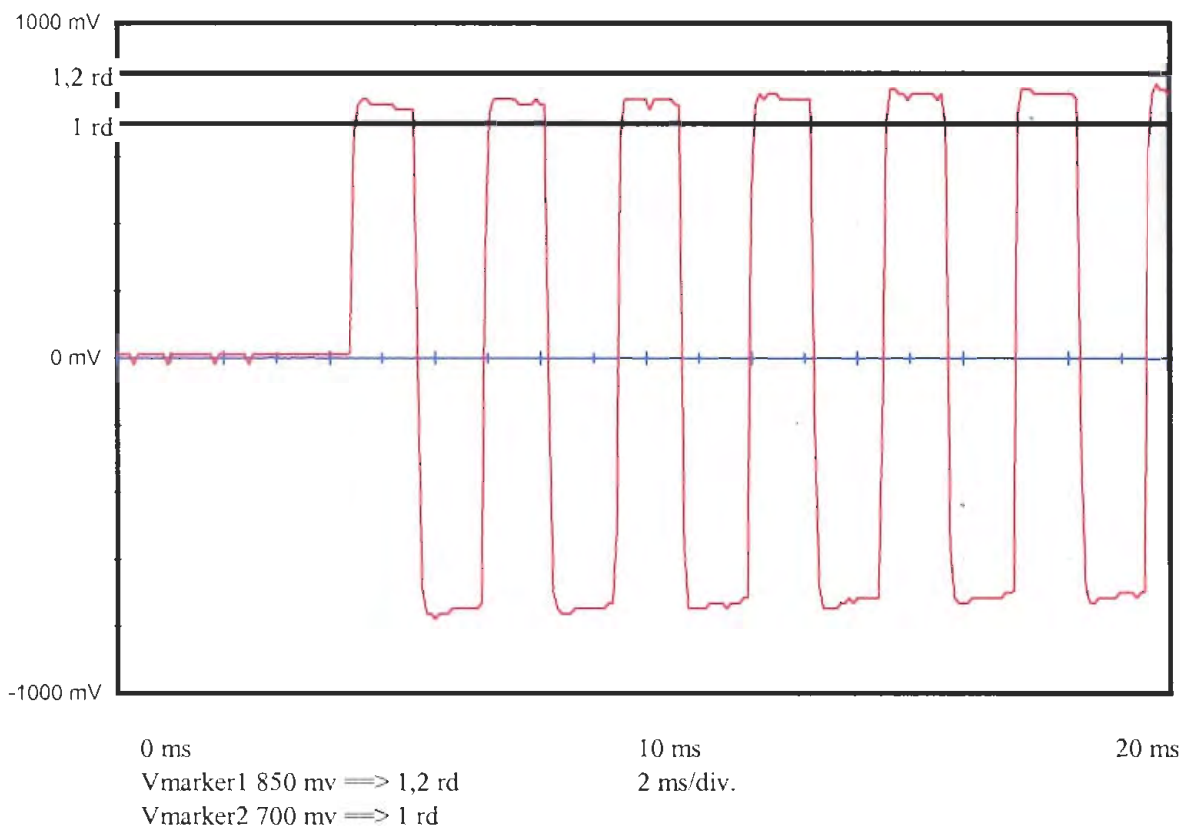
Message

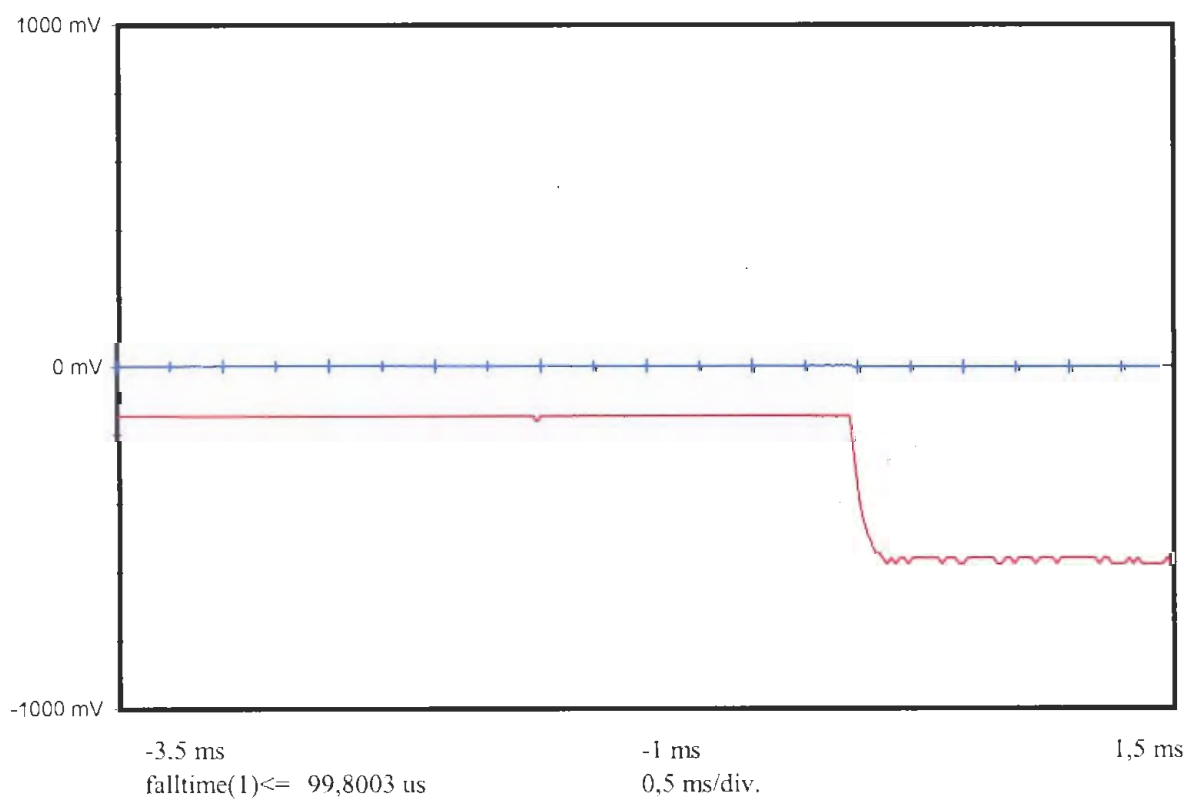
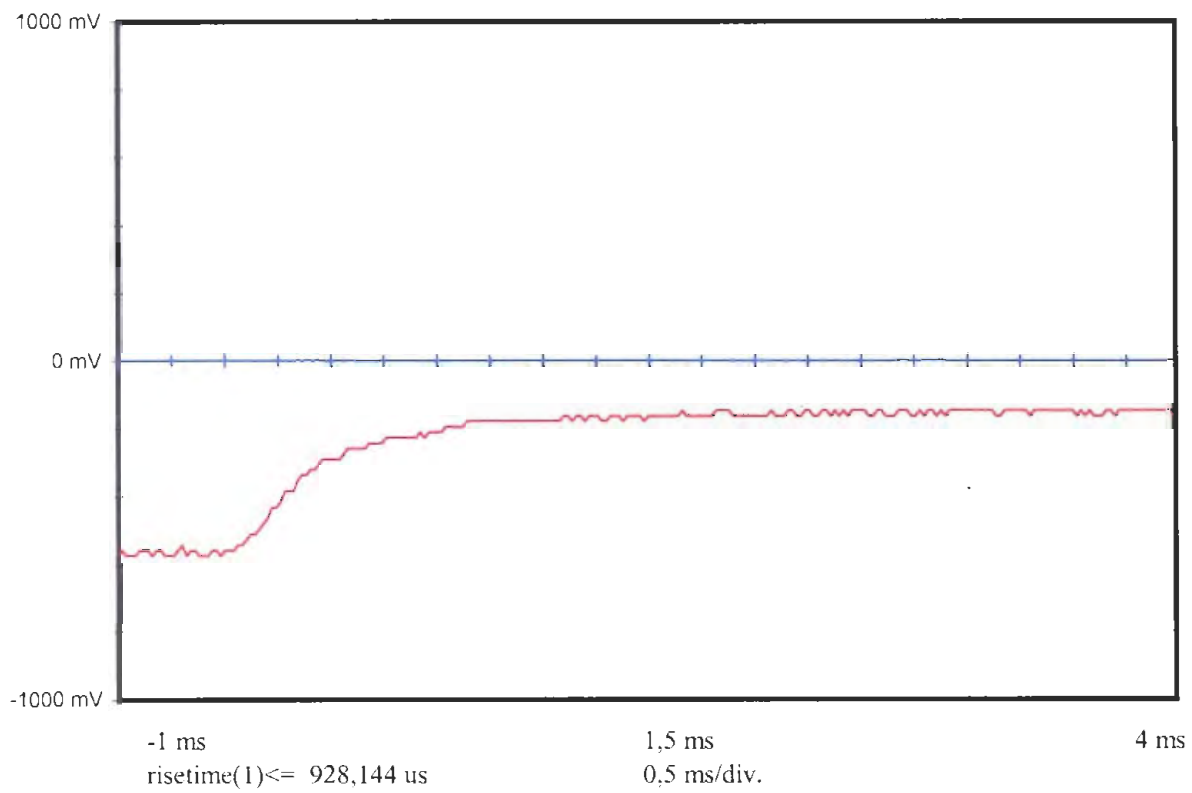
Message received		FFFE2F96EE3240072B80302DC5F78E4154C9
Format Flag	25	1
Protocol flag	26	0
Ident./Position code	27-85	0
Country Code/Country	27-36	366 / USA
Protocol Code : U/Std-Nat	37-39/37-40	1110
Protocol Code Used	37-39/37-40	Test-Standard Location
Identification Data	40-85/41-64/41-58	
Identification Used		0
Calculated BCH1	25-85	00B717
Readed BCH1	86-106	00B717
Homing	112	1
Em.cod/nat.use/supp.data	107-112	110111
Encod pos data	111	1
Fixed Data "I"	108	1 OK
Calculated BCH2	107-132	4C9
Readed BCH2	133-144	4C9
Latitude position		Nord 43° 33' 36"
Longitude position		Est 1° 28' 40"
Delta position		0,255 km

Electrical and other parameters

CW preamble	ms	158,4 <	< 162,6	160,70
Total transmission time	ms	513,8 <	< 526,2	522,42
Modulation frequency	Hz	395,4 <	< 404,6	398,34
Phase deviation : total	rd		<= 2,40	2,19
Phase deviation : positive	rd	1,00 <	< 1,20	1,11
Phase deviation : negative	rd	-1,20 <	< -1,00	-1,08
Symmetry measurement	%		<= 5 %	2,40
Nominal frequency : F2	Hz			406027888,16
Short term2				3,03E-10
Short term3				2,94E-10
Slope				1,22E-10
Residual				5,39E-10
406 MHz power output	dBm			37,9
Homing frequency	MHz			121,50
121,5 MHz power output	dBm			19,3
Soak temperature	°C			-21,4
Extra feature				No







Certification Test at 22°C

Date of test : 10-juin-2004

Manufacturer : ACR

Beacon Type : PLB 200-201

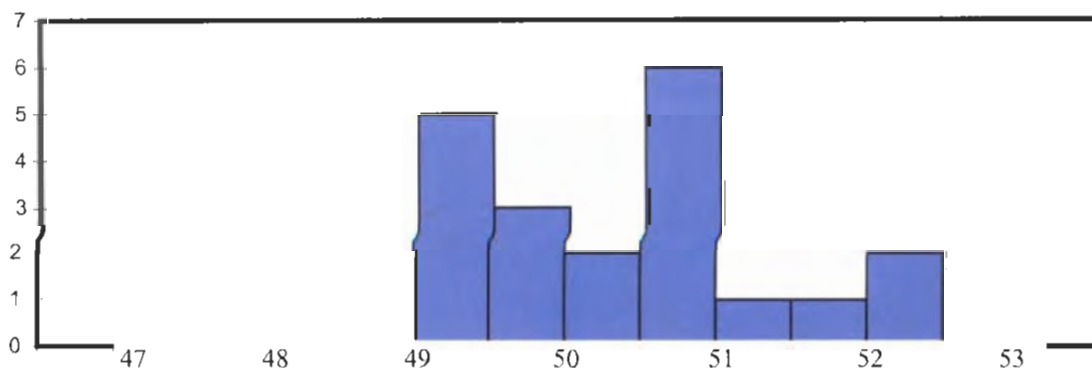
Number : 7

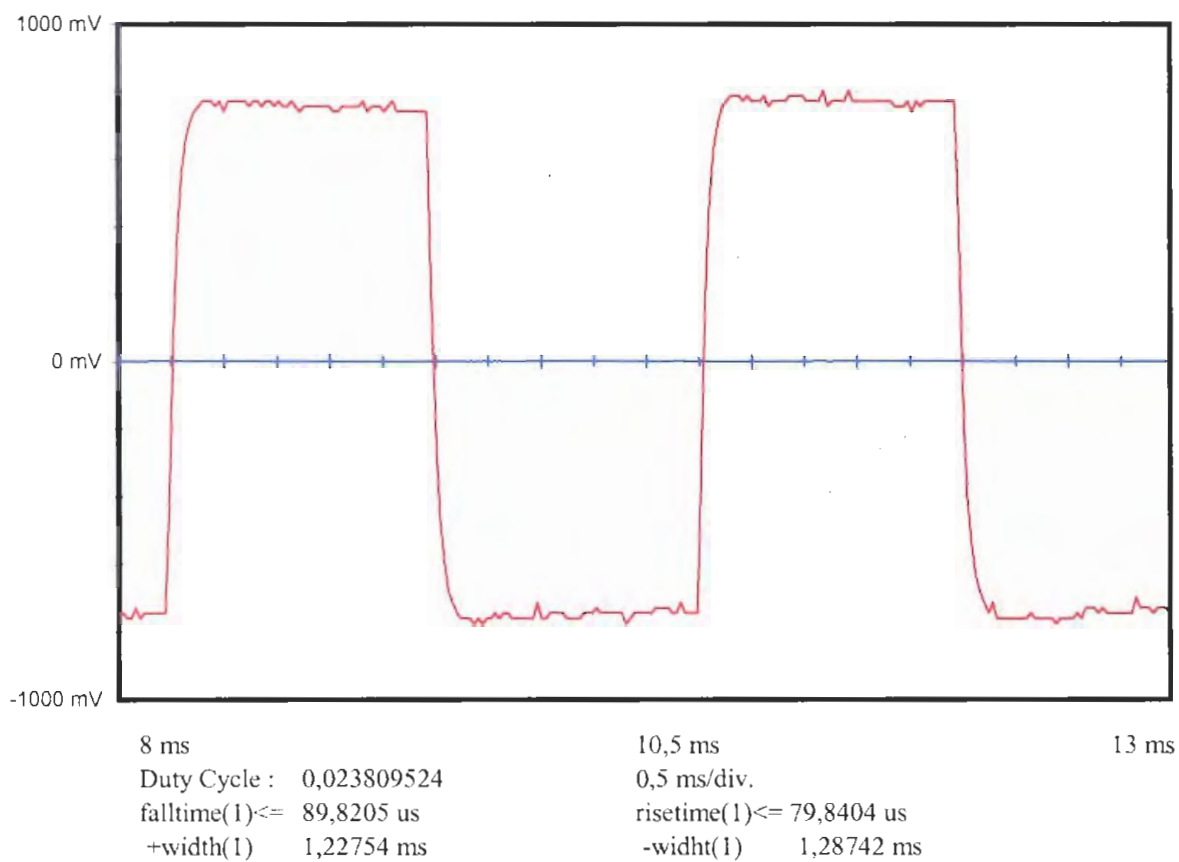
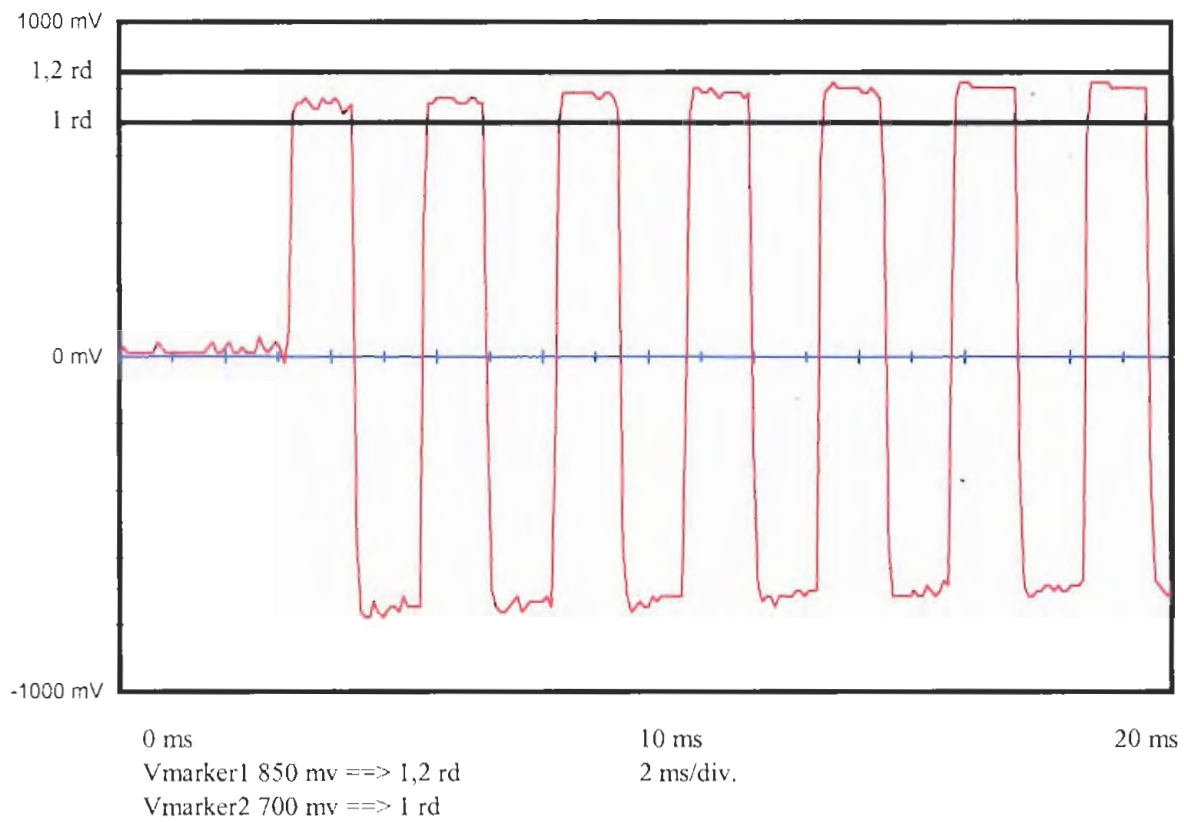
Message

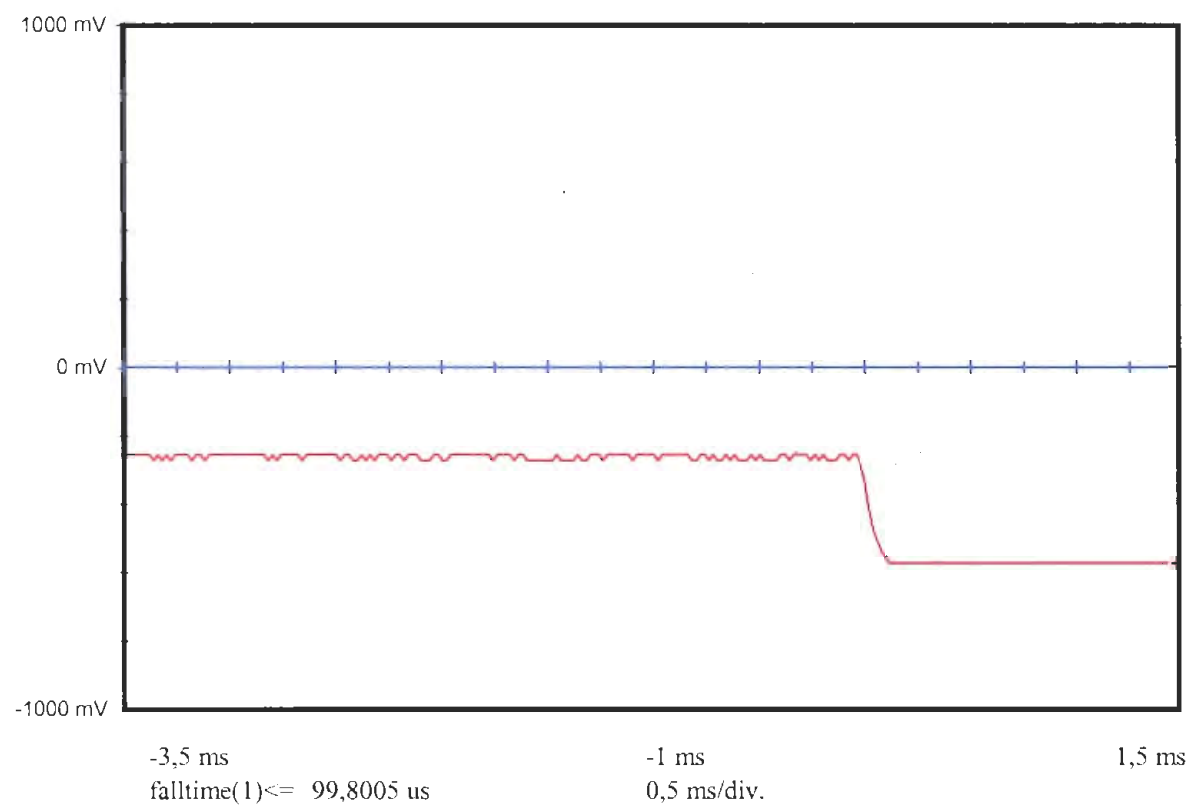
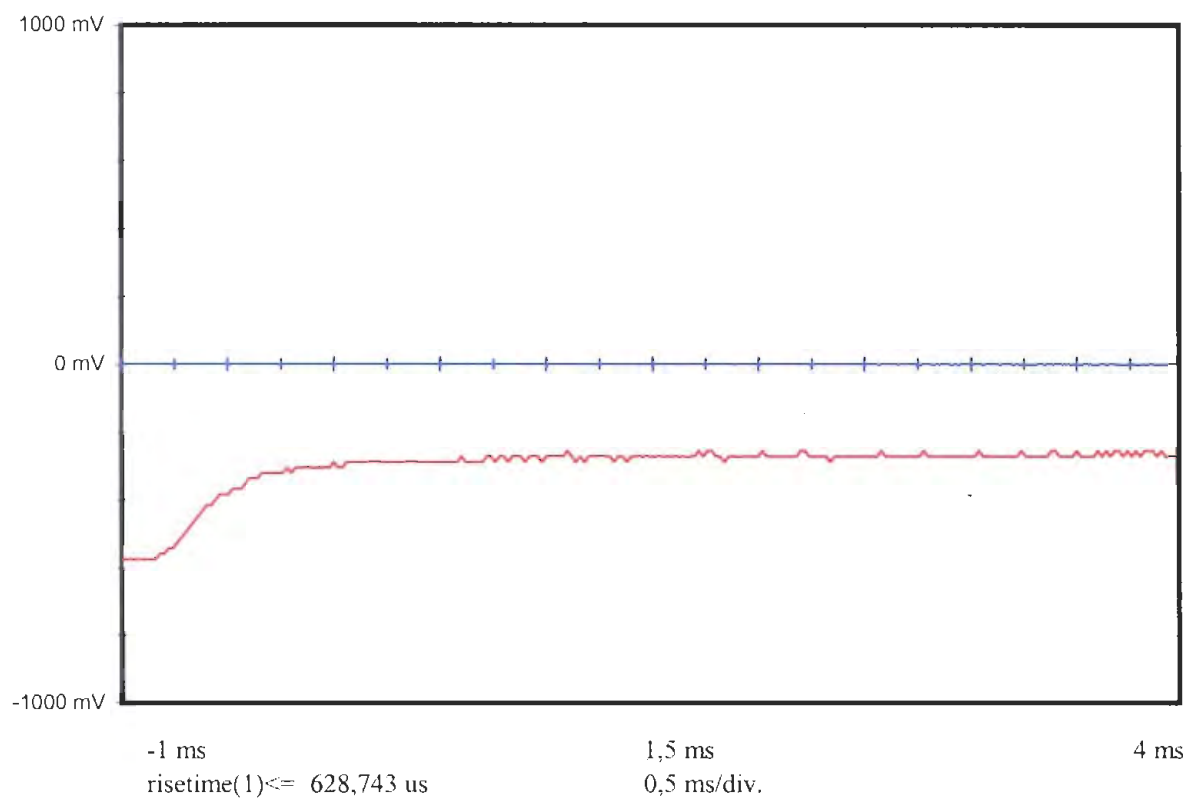
Message received		FFFE2F96EE3240072B80302DC5F78DC152B8
Format Flag	25	1
Protocol flag	26	0
Ident./Position code	27-85	0
Country Code/Country	27-36	366 / USA
Protocol Code : U/Std-Nat	37-39/37-40	1110
Protocol Code Used	37-39/37-40	Test-Standard Location
Identification Data	40-85/41-64/41-58	
Identification Used		0
Calculated BCH1	25-85	00B717
Readed BCH1	86-106	00B717
Homing	112	1
Em.cod/nat.use/supp.data	107-112	110111
Encod pos data	111	1
Fixed Data "1"	108	1
Calculated BCH2	107-132	2B8
Readed BCH2	133-144	2B8
Latitude position		Nord 43° 33' 28"
Longitude position		Est 1° 28' 40"
Delta position		0,309 km

Electrical and other parameters

CW preamble	ms	158,4 <	< 162,6	159,37
Total transmission time	ms	513,8 <	< 526,2	521,03
Modulation frequency	Hz	395,4 <	< 404,6	398,34
Phase deviation : total	rd		<= 2,40	2,20
Phase deviation : positive	rd	1,00 <	< 1,20	1,10
Phase deviation : negative	rd	-1,20 <	< -1,00	-1,10
Symmetry measurement	%		<= 5 %	2,38
Nominal frequency : F2	Hz			406027889,41
Short term2				2,26E-10
Short term3				3,32E-10
Slope				1,70E-10
Residual				5,70E-10
406 MHz power output	dBm			31,7
Homing frequency	MHz			121,50
121,5 MHz power output	dBm			-1,6
Soak temperature	°C			21,4
Extra feature				No







Certification Test at 55°C

Date of test : 11-juin-2004

Manufacturer : ACR

Beacon Type : PLB 200-201

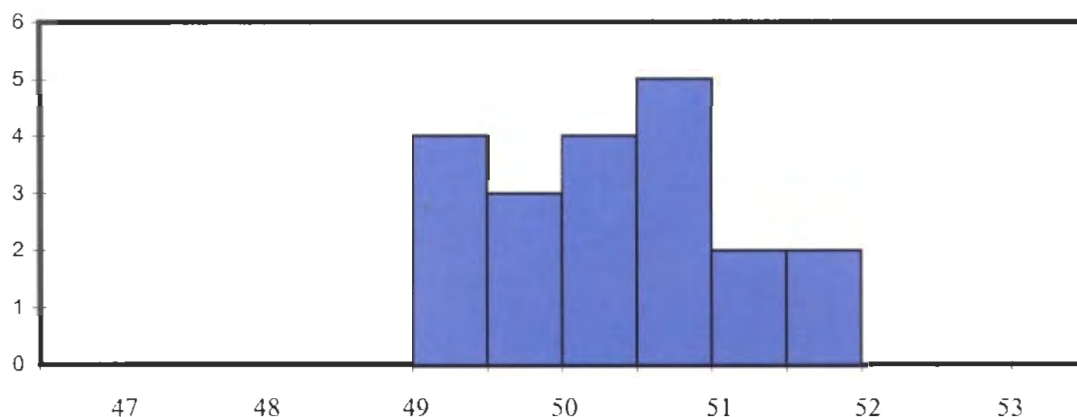
Number : 7

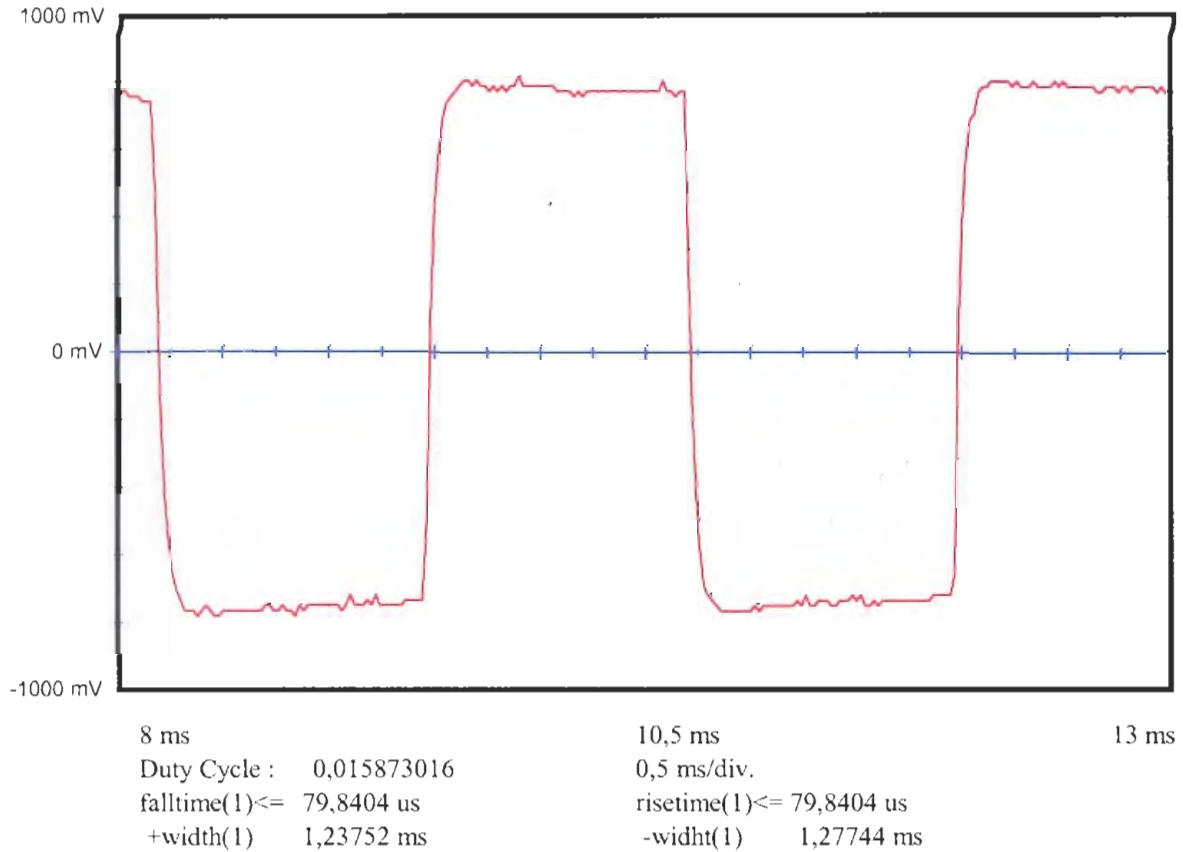
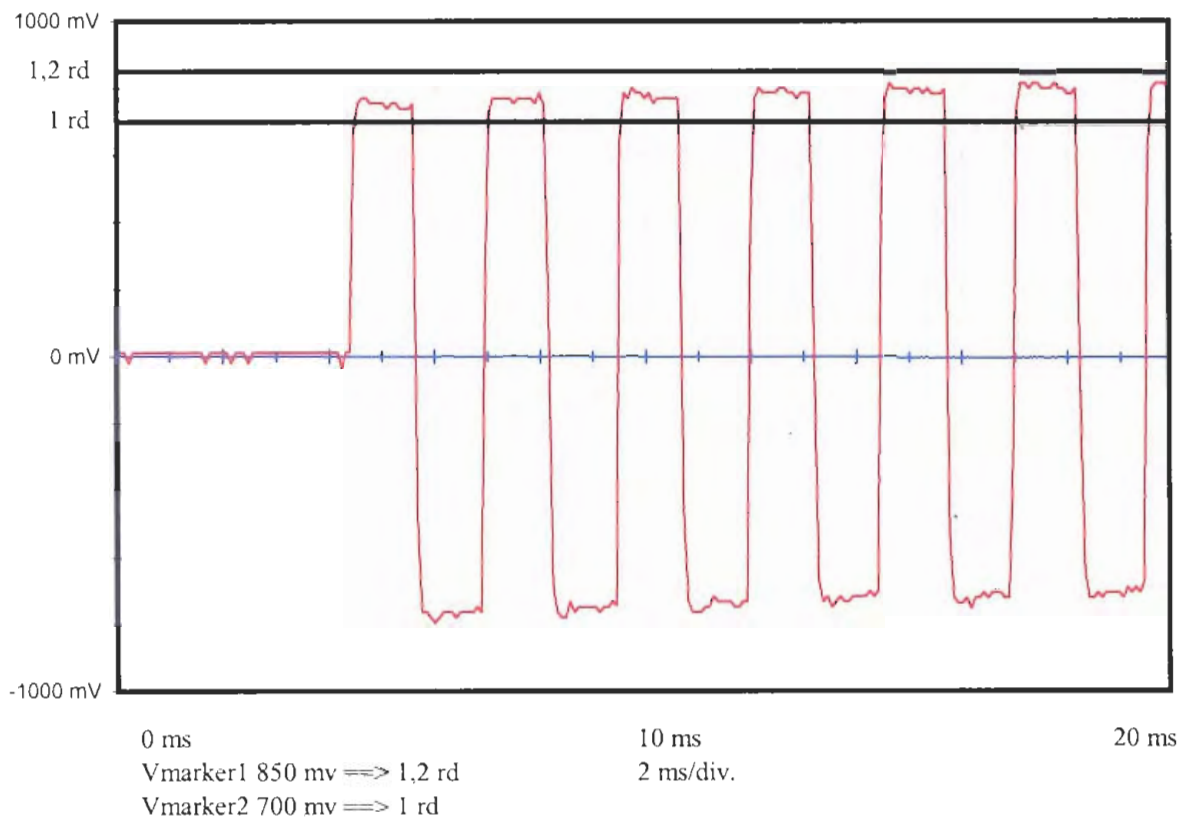
Message

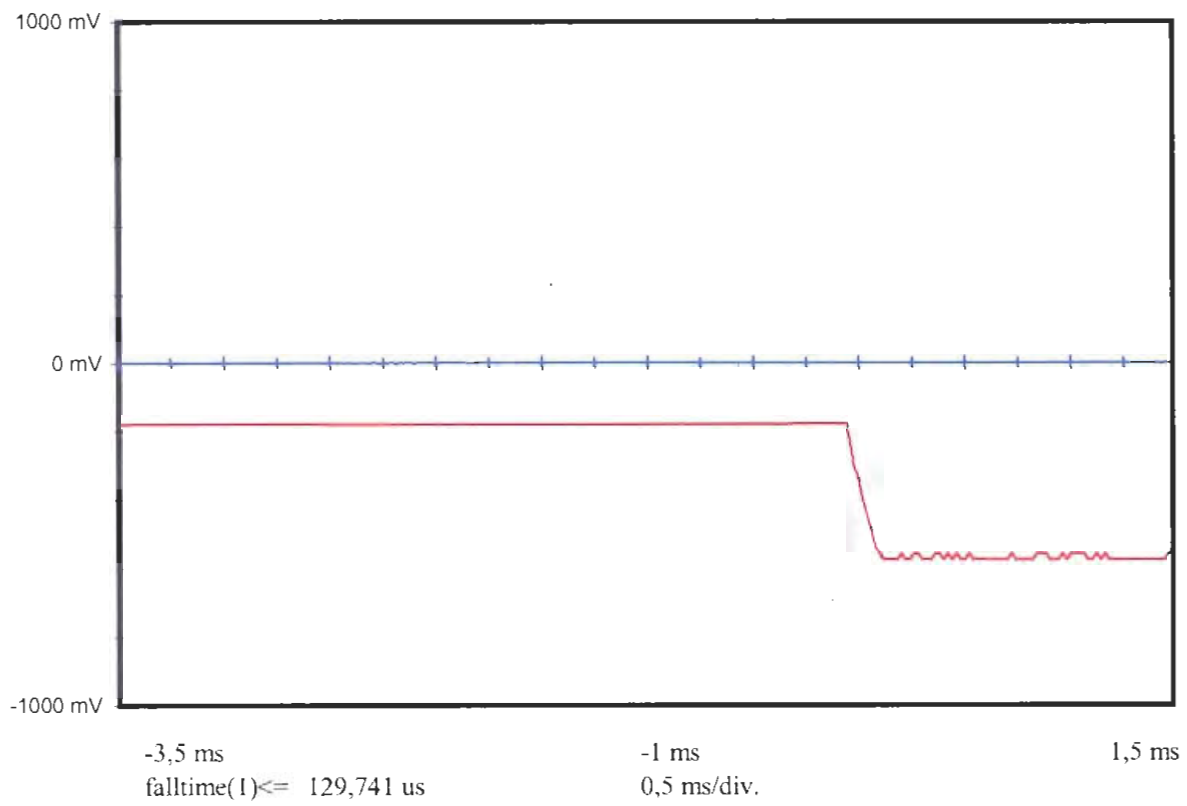
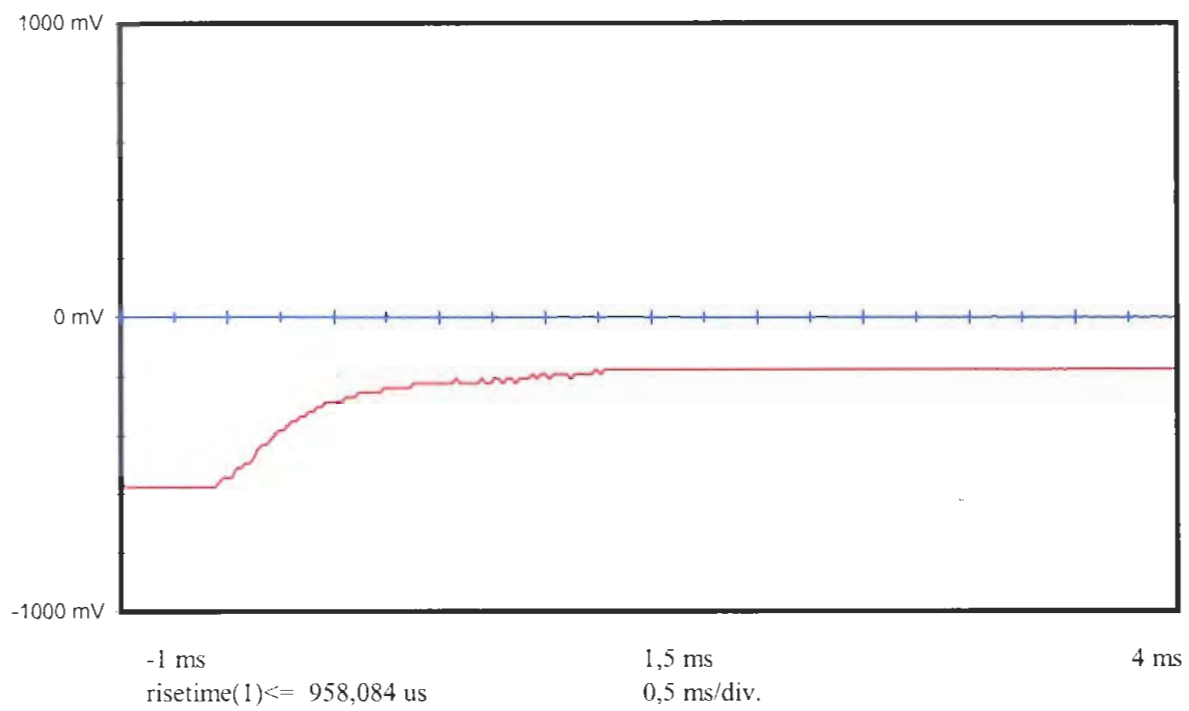
Message received		FFFE2F96EE3240072B80302DC5F78E0159E3
Format Flag	25	1
Protocol flag	26	0
Ident./Position code	27-85	0
Country Code/Country	27-36	366 / USA
Protocol Code : U/Std-Nat	37-39/37-40	1110
Protocol Code Used	37-39/37-40	Test-Standard Location
Identification Data	40-85/41-64/41-58	
Identification Used		0
Calculated BCH1	25-85	00B717
Readed BCH1	86-106	00B717
Homing	112	1
Em.cod/nat.use/supp.data	107-112	110111
Encod pos data	111	1
Fixed Data "I"	108	1
Calculated BCH2	107-132	9E3
Readed BCH2	133-144	9E3
Latitude position		Nord 43° 33' 32"
Longitude position		Est 1° 28' 40"
Delta position		0,255 km

Electrical and other parameters

CW preamble	ms	158,4 <	< 162,6	160,71
Total transmission time	ms	513,8 <	< 526,2	522,45
Modulation frequency	Hz	395,4 <	< 404,6	398,34
Phase deviation : total	rd		<= 2,40	2,23
Phase deviation : positive	rd	1,00 <	< 1,20	1,11
Phase deviation : negative	rd	-1,20 <	< -1,00	-1,12
Symmetry measurement	%		<= 5 %	1,59
Nominal frequency : F2	Hz			406027902,46
Short term2				1,80E-10
Short term3				4,17E-10
Slope				-6,24E-11
Residual				4,92E-10
406 MHz power output	dBm			37,4
Homing frequency	MHz			121,50
121,5 MHz power output	dBm			19,7
Soak temperature	°C			53,4
Extra feature				No

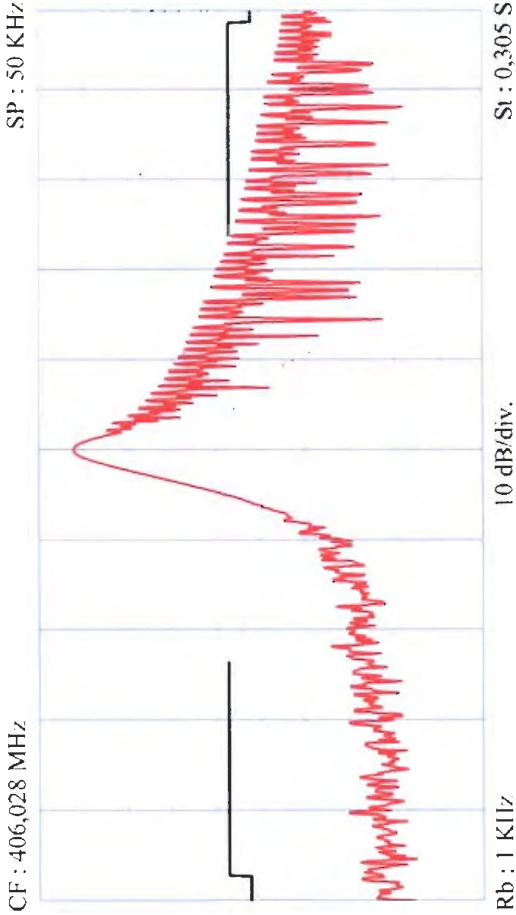
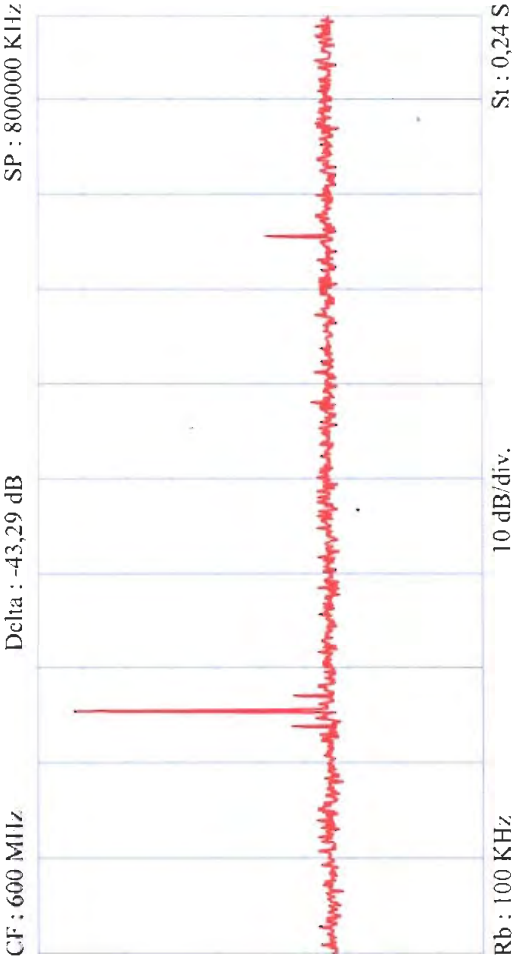
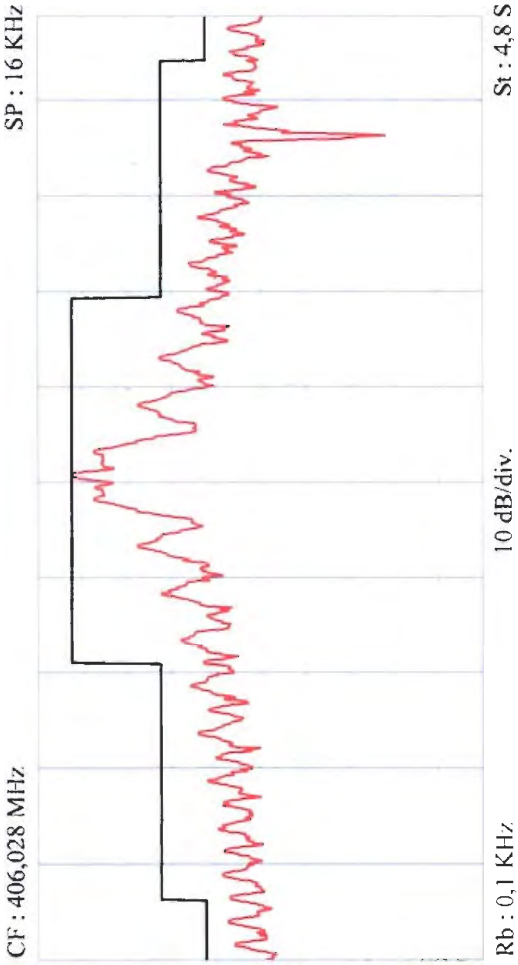




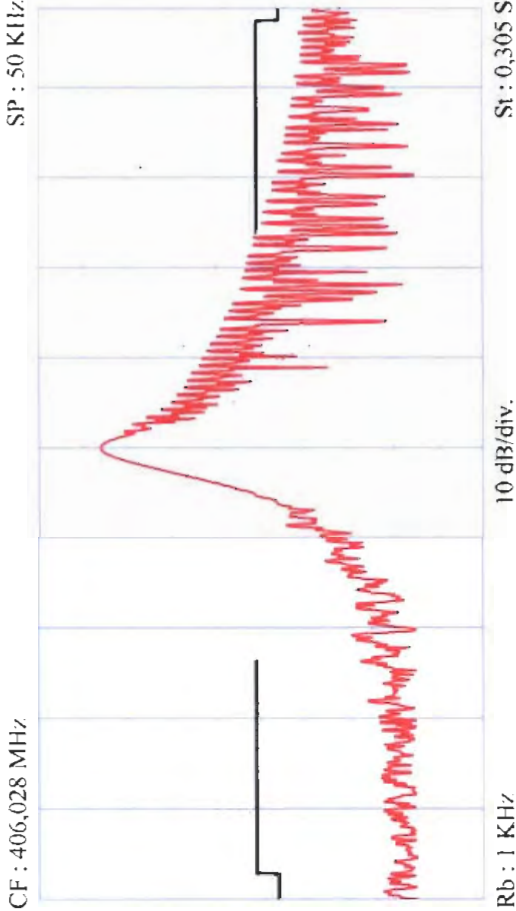
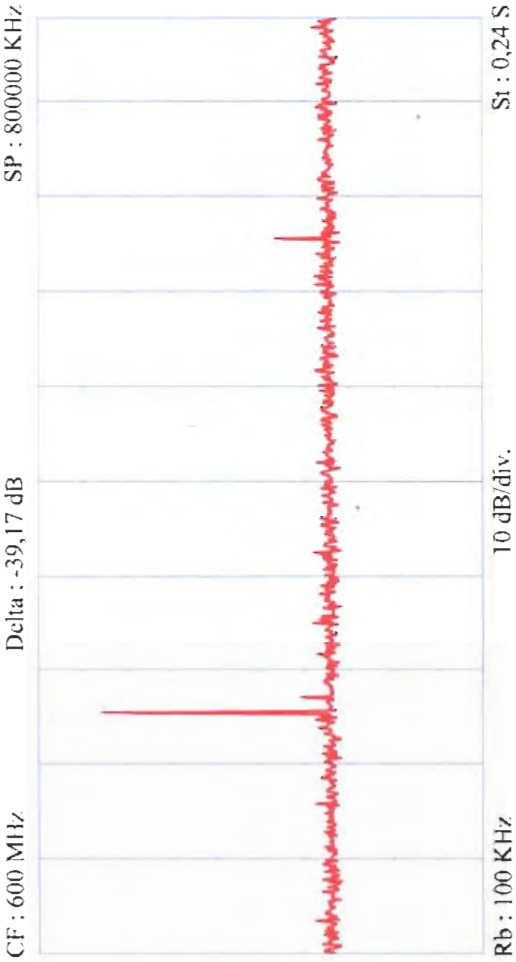
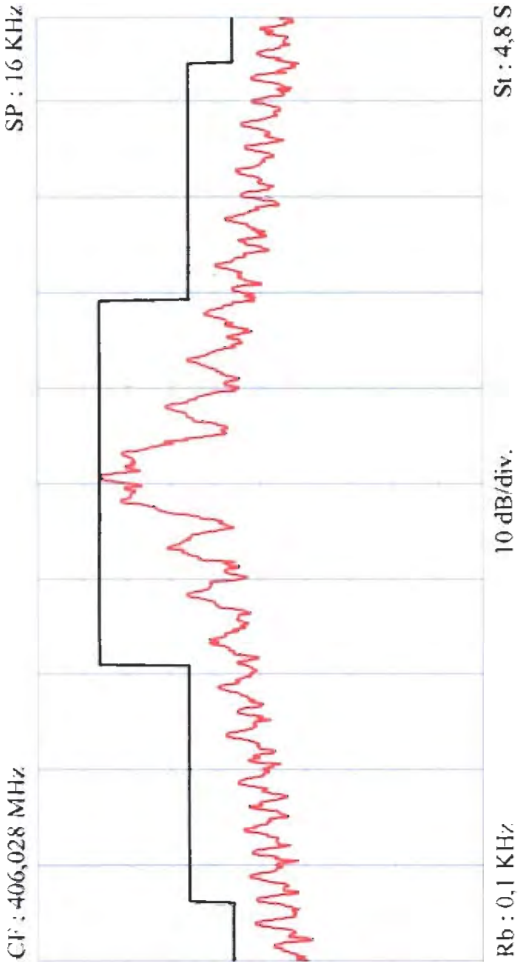


**SPURIOUS EMISSIONS RESULTS OF
PLB 200 ACR Electronics, Inc Beacon
N° 7
at -20° C, 22° C and 55° C**

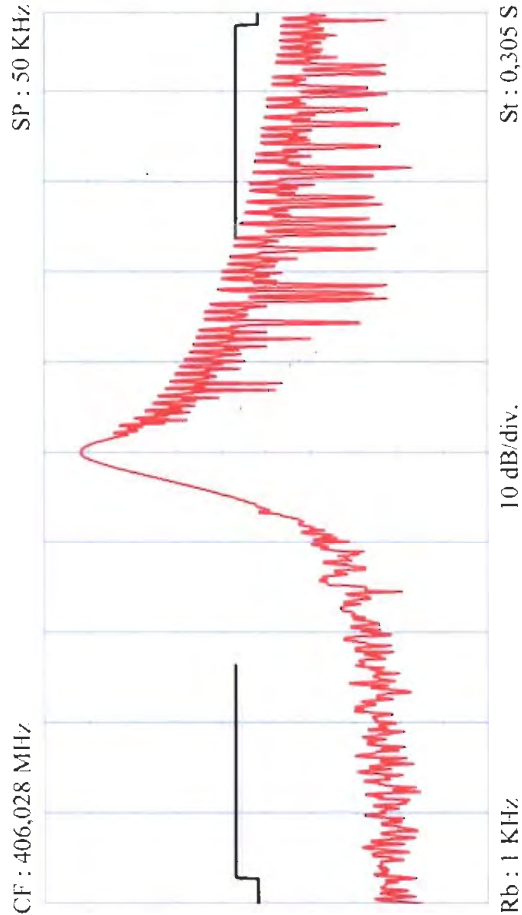
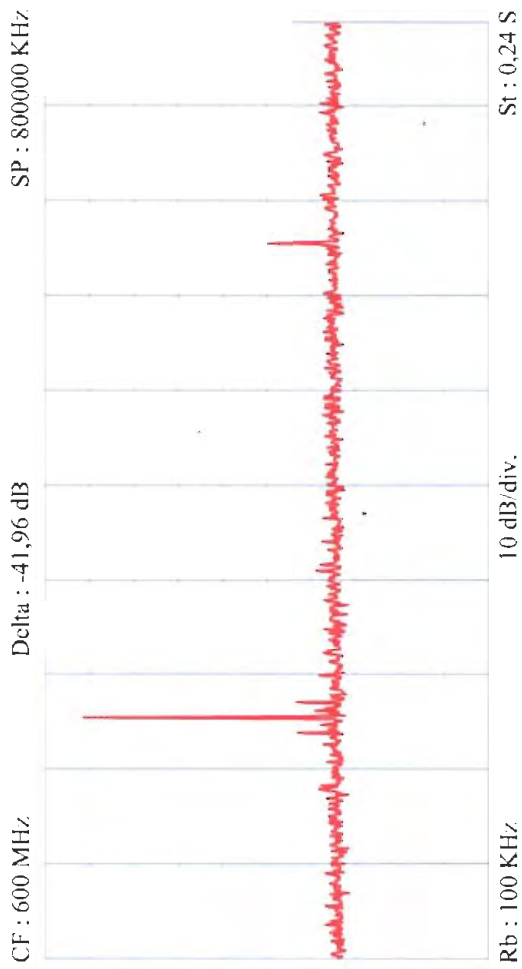
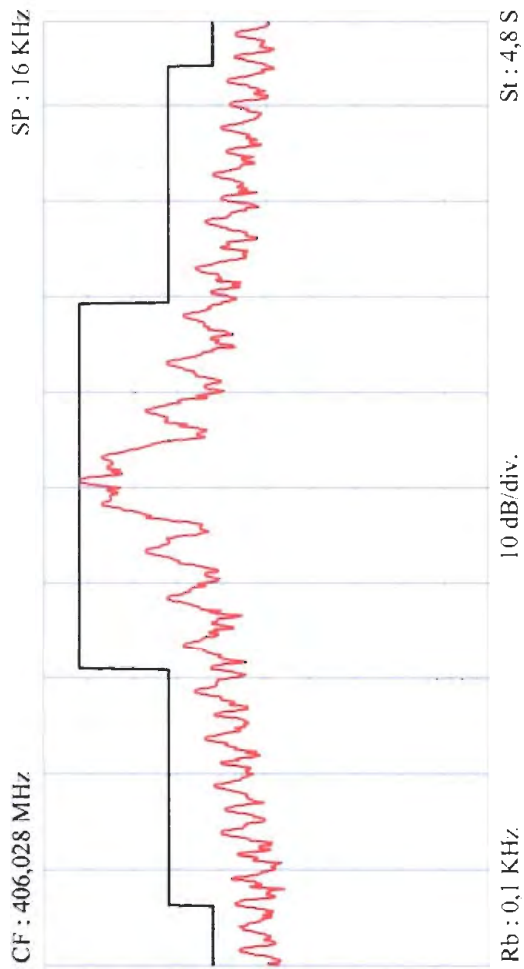
ACR Electronics, Inc
PLB 200
7
Certification nominale
406 MHz
-20 °C



ACR Electronics, Inc
PLB 200
7
Certification nominale
406 MHz
22 °C



ACR Electronics, Inc
PLB 200
7
Certification nominale
406 MHz
55 °C



**406 MHz VSWR 3:1 TEST RESULTS ON
PLB 200 ACR Electronics, Inc Beacon
N° 7**

at -20° C, 22° C and 55° C

Certification Test VSWR at -20°C

Date of test : 15-juil-04

Manufacturer : ACR

Beacon Type : PLB 200

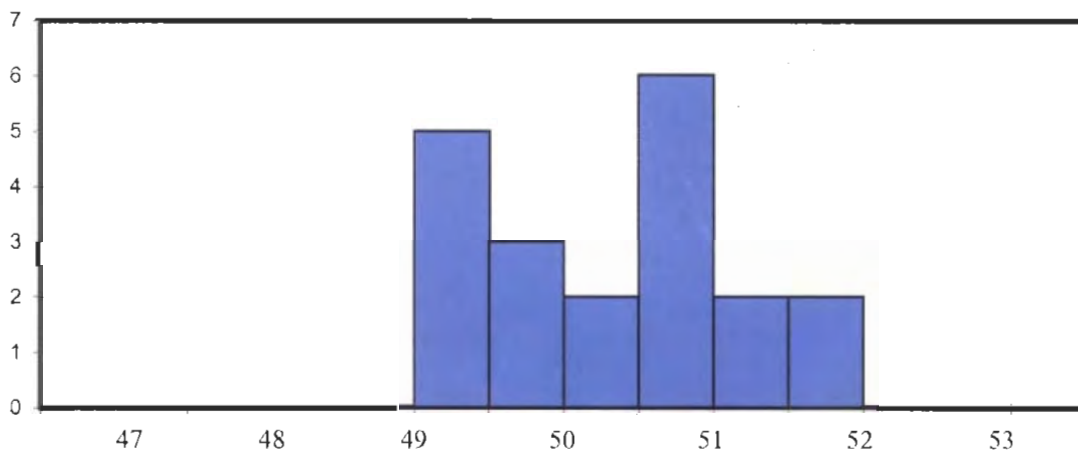
Number : 7

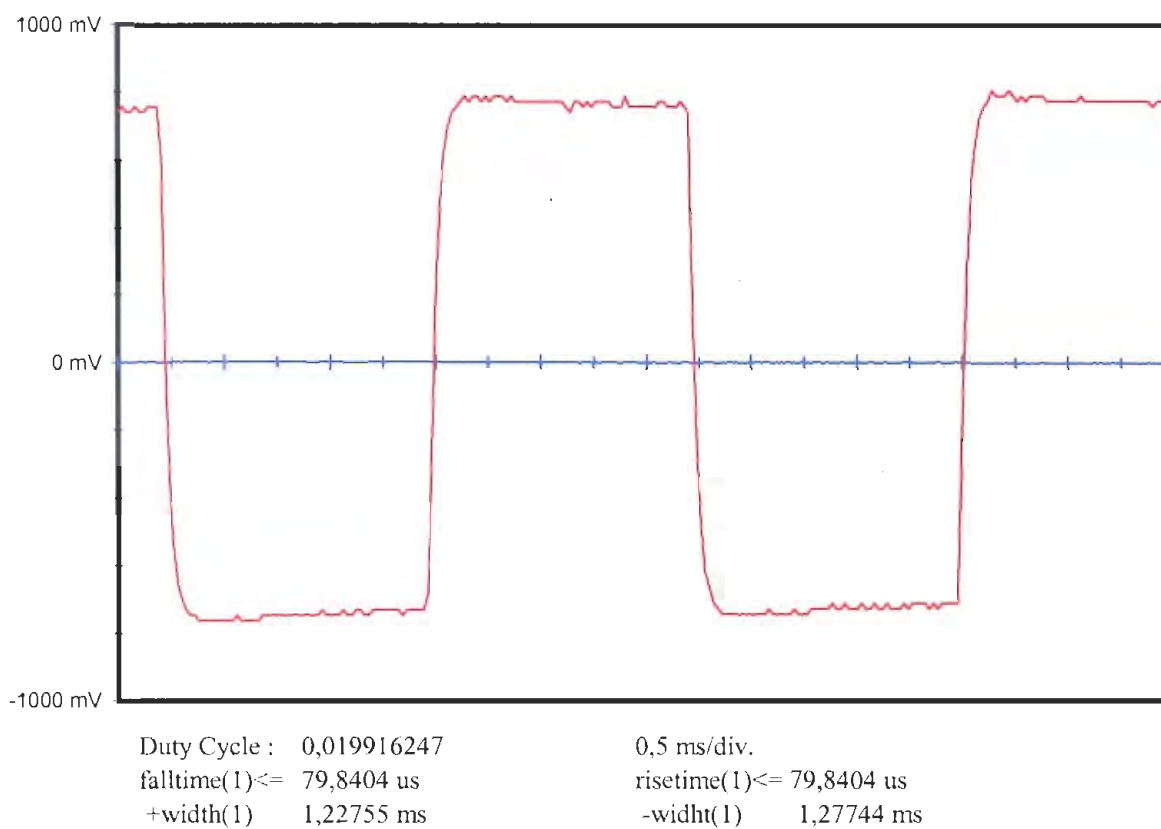
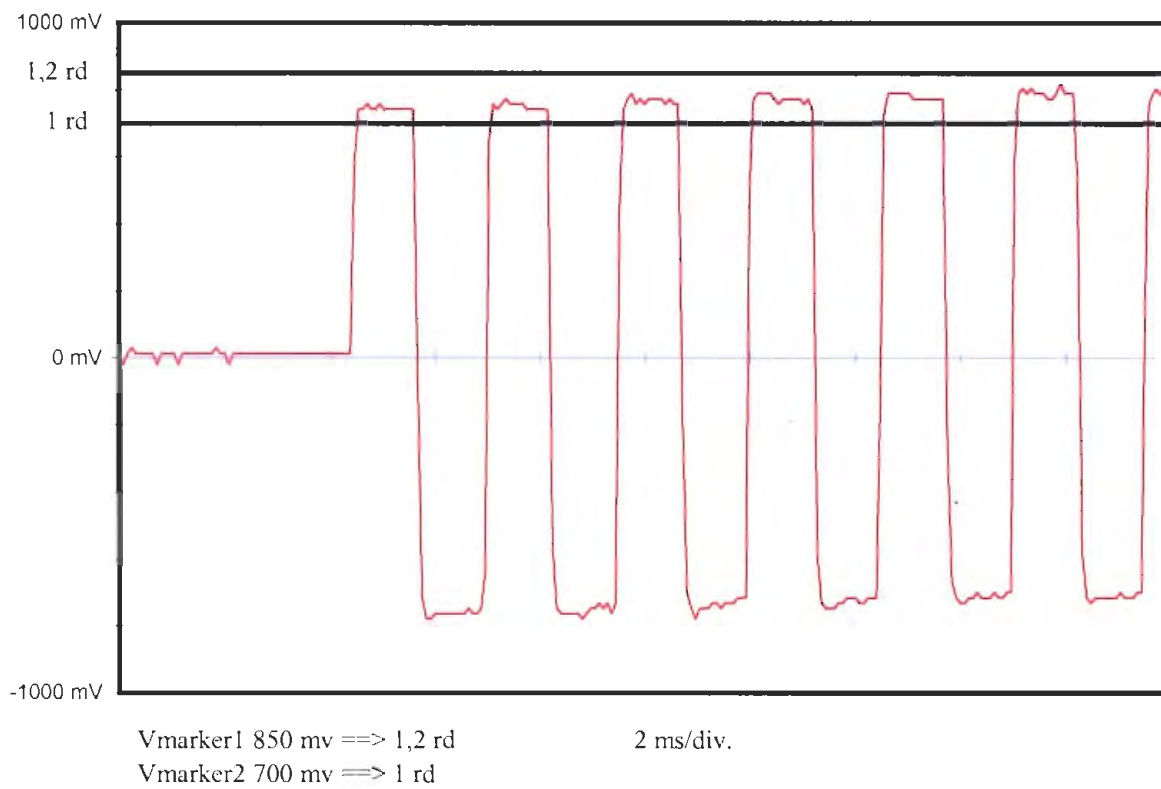
Message

Message received		FFFE2F96EE3240072B80302DC5F78E01324C
Format Flag	25	1
Protocol flag	26	0
Ident./Position code	27-85	0
Country Code/Country	27-36	366 / USA
Protocol Code : U/Std-Nat	37-39/37-40	1110
Protocol Code Used	37-39/37-40	Test-Standard Location
Identification Data	40-85/41-64/41-58	
Identification Used		0
Calculated BCH1	25-85	00B717
Readed BCH1	86-106	00B717
Homing	112	1
Em.cod/nat.use/supp.data	107-112	110111
Encod pos data	111	1
Fixed Data "I"	108	1
Calculated BCH2	107-132	24C
Readed BCH2	147-144	24C
Latitude position		Nord 43° 33' 32"
Longitude position		Est 1° 28' 48"
Delta position		0,062 km

Electrical and other parameters

Rise time Modulation	ms	0,0798
Fall time Modulation	ms	0,0798
Phase deviation : positive	rd 1,00 < < 1,20	1,11
Phase deviation : negative	rd -1,20 < < -1,00	-1,09
Symmetry measurement	% <=5 %	1,99
Nominal frequency : F2	Hz	406027867,97





Certification Test VSWR at 22°C

Date of test : 15 juil 2004

Manufacturer : ACR

Beacon Type : PLB 200

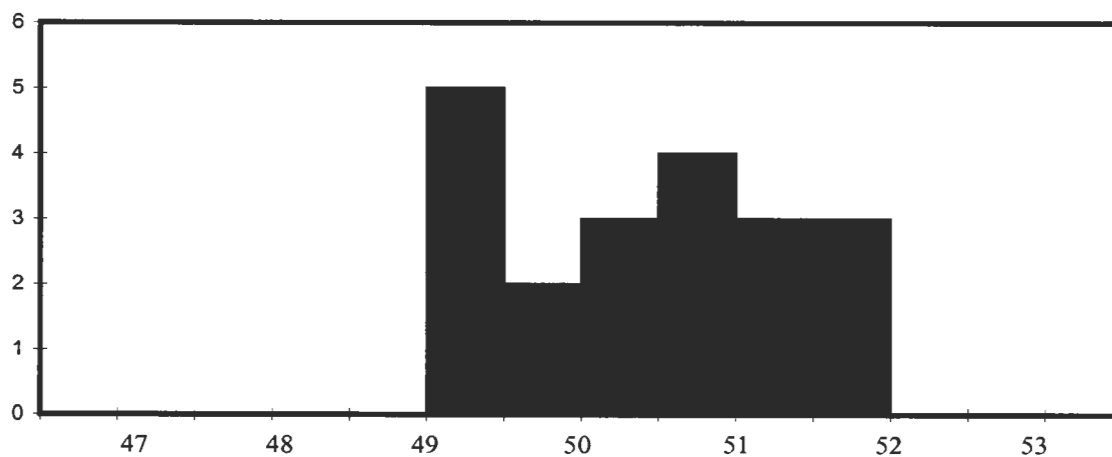
Number : 7

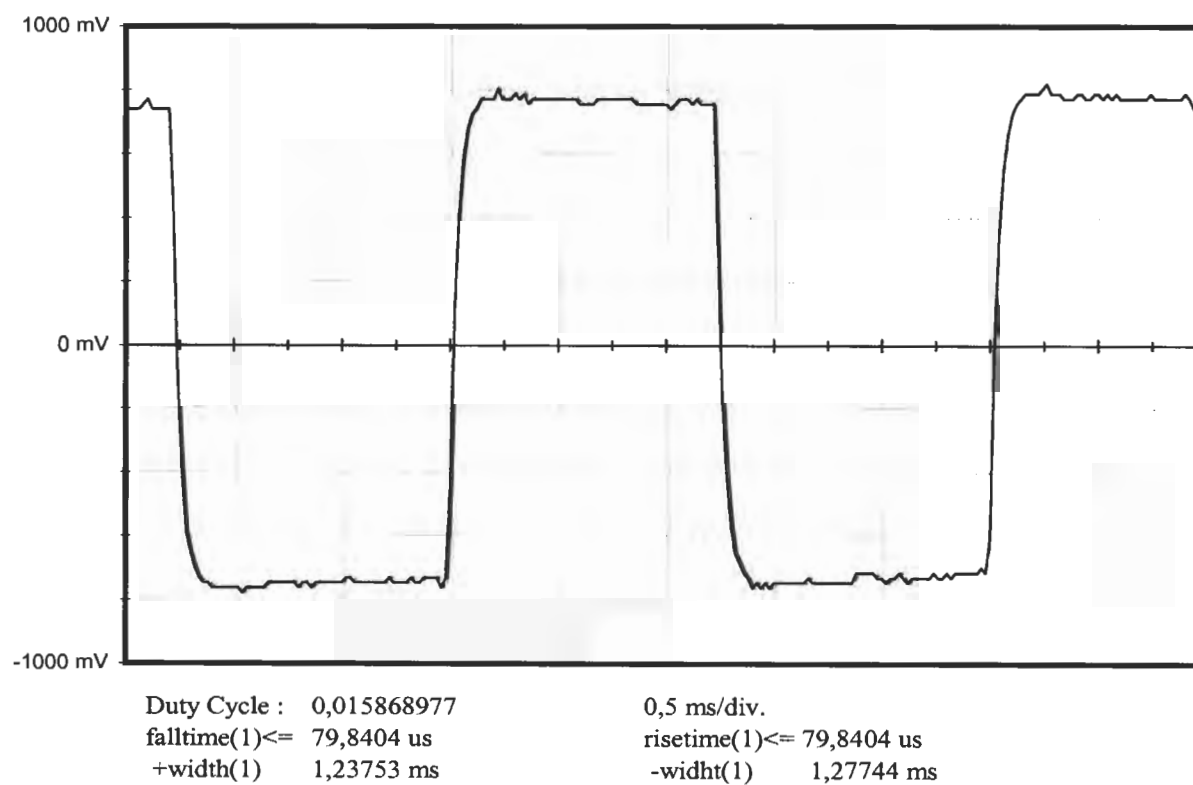
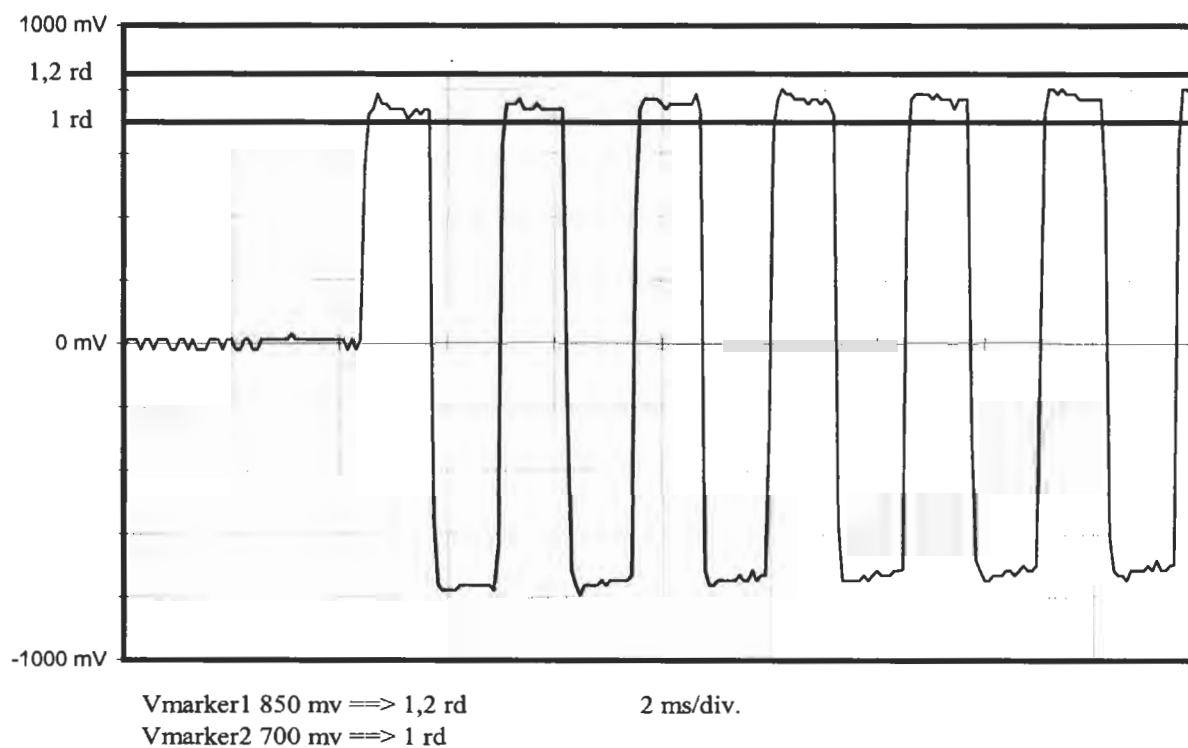
Message

Message received		FFFE2F96EE3240072B80302DC5F78DC152B8
Format Flag	25	1
Protocol flag	26	0
Ident./Position code	27-85	0
Country Code/Country	27-36	366 / USA
Protocol Code : U/Std-Nat	37-39/37-40	1110
Protocol Code Used	37-39/37-40	Test-Standard Location
Identification Data	40-85/41-64/41-51	
Identification Used		0
Calculated BCH1	25-85	00B717
Readed BCH1	86-106	00B717
Homing	112	1
Em.cod/nat.use/supp.data	107-112	110111
Encod pos data	111	1
Fixed Data "1"	108	1
Calculated BCH2	107-132	2B8
Readed BCH2	147-144	2B8
Latitude position		Nord 43° 33' 28"
Longitude position		Est 1° 28' 40"
Delta position		0,309 km

Electrical and other parameters

Rise time Modulation	ms	0,0798
Fall time Modulation	ms	0,0798
Phase deviation : positive	rd 1,00 < < 1,20	1,10
Phase deviation : negative	rd -1,20 < < -1,00	-1,10
Symmetry measurement	% <=5 %	1,59
Nominal frequency : F2	Hz	406027865,69





Certification Test VSWR at 55°C

Date of test : 16 juil 2004

Manufacturer : ACR

Beacon Type : PLB 200

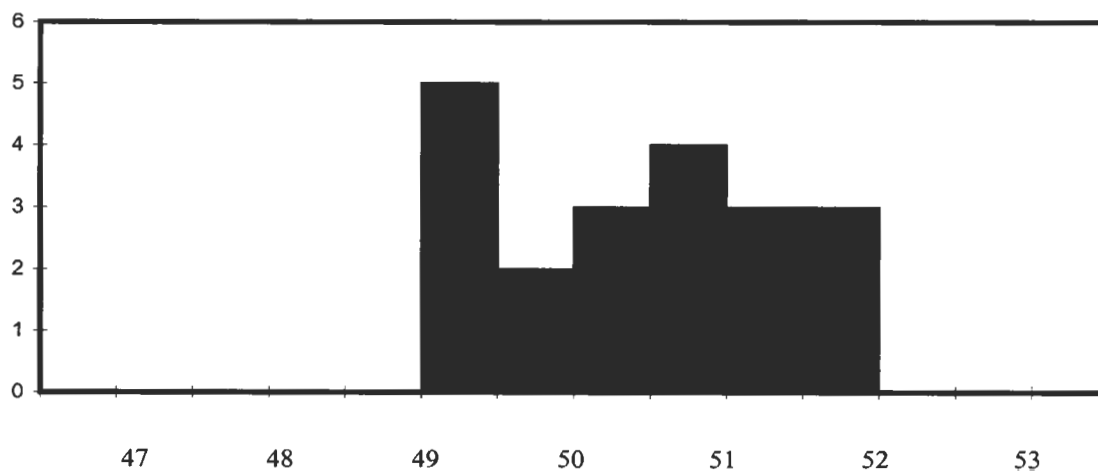
Number : 7

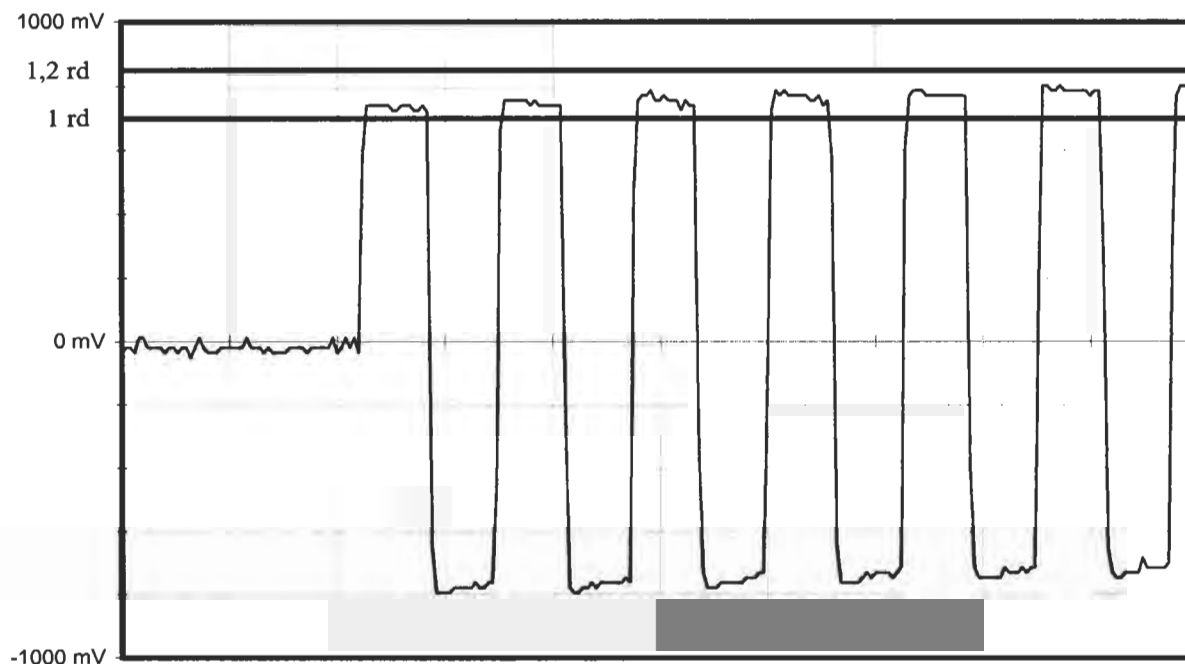
Message

Message received		FFFE2F96EE3240072B80302DC5F78E4141F0
Format Flag	25	1
Protocol flag	26	0
Ident./Position code	27-85	0
Country Code/Country	27-36	366 / USA
Protocol Code : U/Std-Nat	37-39/37-40	1110
Protocol Code Used	37-39/37-40	Test-Standard Location
Identification Data	40-85/41-64/41-58	
Identification Used		0
Calculated BCH1	25-85	00B717
Readed BCH1	86-106	00B717
Homing	112	1
Em.cod/nat.use/supp.data	107-112	110111
Encod pos data	111	1
Fixed Data "1"	108	1
Calculated BCH2	107-132	1F0
Readed BCH2	147-144	1F0
Latitude position		Nord 43° 33' 36"
Longitude position		Est 1° 28' 44"
Delta position		0,138 km

Electrical and other parameters

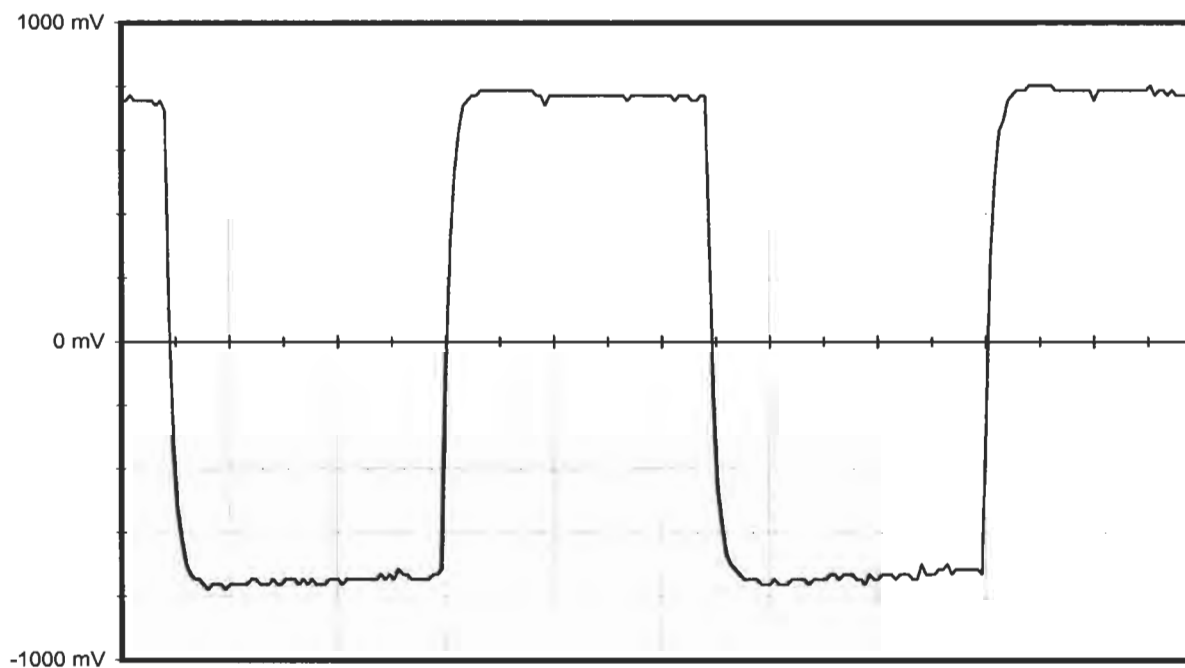
Rise time Modulation	ms	0,0798
Fall time Modulation	ms	0,0699
Phase deviation : positive	rd 1,00 < < 1,20	1,11
Phase deviation : negative	rd -1,20 < < -1,00	-1,12
Symmetry measurement	% <=5 %	2,40
Nominal frequency : F2	Hz	406027872,63





Vmarker1 850 mv ==> 1,2 rd
Vmarker2 700 mv ==> 1 rd

2 ms/div.



Duty Cycle : 0,023995896
falltime(1) <= 79,8404 us
+width(1) 1,21757 ms

0,5 ms/div.
risetime(1) <= 69,8604 us
-width(1) 1,27744 ms

SELF-TEST MODE CONTROL ON
PLB 200 ACR Electronics, Inc Beacon
N° 7
at 22° C

Message at -20°C

Manufacturer	ACR
Beacon model	PLB 200
Serial number	7
Date of test	21-juin-04
Temperature	-20,5
Message received	FFFED096EE3240077FDFFB74ED37
Default Position if appli.	OK
Frame synchro. pattern	011010000

Total transmission time	ms 513.8<	ms 526.2<	442,16
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Message at 22°C

Manufacturer	ACR
Beacon model	PLB 200-201
Serial number	7
Date of test	10-juin-04
Temperature	21,7
Message received	FFFED096EE3240077FDFFB74ED37
Default Position if appli.	OK
Frame synchro. pattern	011010000

Total transmission time	ms 513.8<	ms 526.2<	442,21
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Message at 55 °C

Manufacturer	ACR
Beacon model	PLB 200-201
Serial number	7
Date of test	11-juin-04
Temperature	50,1
Message received	FFFED096EE3240077FDFFB74ED37
Default Position if appli.	OK
Frame synchro. pattern	011010000

Total transmission time	ms 513.8<	ms 526.2<	442,21
-------------------------	-----------	-----------	--------

406 MHz BEACON SELF-TEST CHARACTERISTICS

406 MHz beacon Model(s) : PLB 200 and PLB201

Answer (X)

1. Does beacon have a self-test mode ?

Yes No
☒ | ☐

If yes :

- ♦ does self-test have a separate switch position ? ☒ | ☐
- ♦ does self-test switch automatically return to normal position when released ? ☒ | ☐
- ♦ does self-test transmit a 406 MHz signal ? ☒ | ☐
- if yes :
 - unmodulated signal only ☐ | ☒
 - normal data, but with inverted frame synchronization pattern ☒ | ☐
 - 1 burst only ☒ | ☐

- ♦ can beacon be configured in self-test to transmit position data ☐ | ☒

- ♦ does self-test transmit a 121.5 MHz signal ? ☐ | ☒

if yes :

- for less than 1 second ☐ | ☐
- continually while self-test switch is actived ☐ | ☐
- other (please specify) : ☐ | ☐
- ♦ does self-test transmit any other frequency (e.g. 243 MHz) ? ☐ | ☒

2. Result of self-test is indicated by :

- ♦ pass/fail display indicator light ☒ | ☐
- ♦ strobe light flash ☐ | ☒
- ♦ other (please specify) : ☐ | ☒

3. Can the self-test be performed without removing the beacon from its mounting bracket ?

☒ | ☐

4. What parameters are internally tested by the self-test ?

- ♦ battery voltage ☒ | ☐
- ♦ RF power ☒ | ☐
- ♦ approximate RF frequency ☒ | ☐
- ♦ phase locked loop ☒ | ☐
- ♦ other (please specify) : EEPROM, GPS ☒ | ☐

5. Do the above characteristics apply to this beacon model :

- ♦ for all countries where beacon is sold , ☒ | ☐
- if no, please specify :
- ♦ for all production serial numbers ? ☒ | ☐
- if no, specify :

6. Comments

**THERMAL SHOCK TEST RESULT ON
PLB 200 ACR Electronics, Inc Beacon
N° 7**

22°C to -10°C

Temperature Soak : 22°C
 Temperature Measure : -10°C

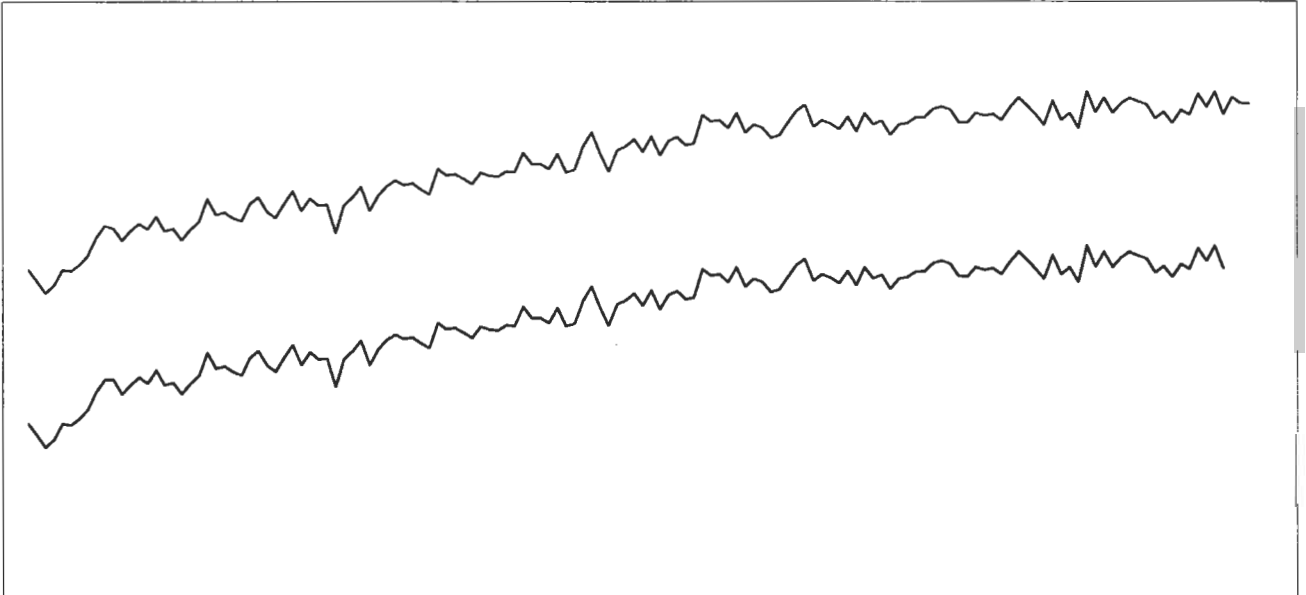
No	Δ Frequency (Hz)	Temp. (°C)	P406 (dBm)	P121.5 (dBm)
1	49888,62	-9,5	37,7	39,8
2	49889,60	-9,6	37,7	39,8
3	49889,69	-9,9	37,7	39,8
4	49889,95	-9,8	37,8	39,8
5	49890,07	-10,1	37,8	39,8
6	49889,63	-10,2	37,8	39,8
7	49889,25	-10,2	37,8	39,8
8	49889,76	-10,1	37,8	39,8
9	49889,00	-10,2	37,8	39,8
10	49889,27	-10,2	37,8	39,8
11	49889,28	-10,3	37,9	39,8
12	49888,13	-10,4	37,9	39,8
13	49888,91	-10,5	37,9	39,7
14	49888,82	-10,4	37,9	39,7
15	49889,01	-10,4	37,9	39,7
16	49889,39	-10,5	37,9	39,7
17	49888,76	-10,5	37,9	39,7
18	49889,79	-10,5	37,9	39,7

Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
1	-10,5	-1,0E-10	1,1E-9	37,8	2,5E-10	39,7
18	-10,7	3,2E-10	7,0E-10	37,9	2,1E-10	39,6
31	-10,6	1,1E-10	5,7E-10	38,0	1,9E-10	39,6
61	-10,7	1,0E-10	4,1E-10	38,0	1,8E-10	39,6
91	-10,8	9,5E-11	6,3E-10	38,0	3,0E-10	39,6
121	-10,8	3,7E-11	4,6E-10	38,0	1,8E-10	39,6

Beacon message at the end of Thermal Shock Test :
FFFE2F96EE3240072B80302DC5F78E4141F0

Frequency variation

406024901



406024887

— Initial tracing — Smoothed tracing

THERMAL SHOCK TEST / 30 °C change (22 °C to -10 °C)

Manufacturer : ACR Electronics, Inc

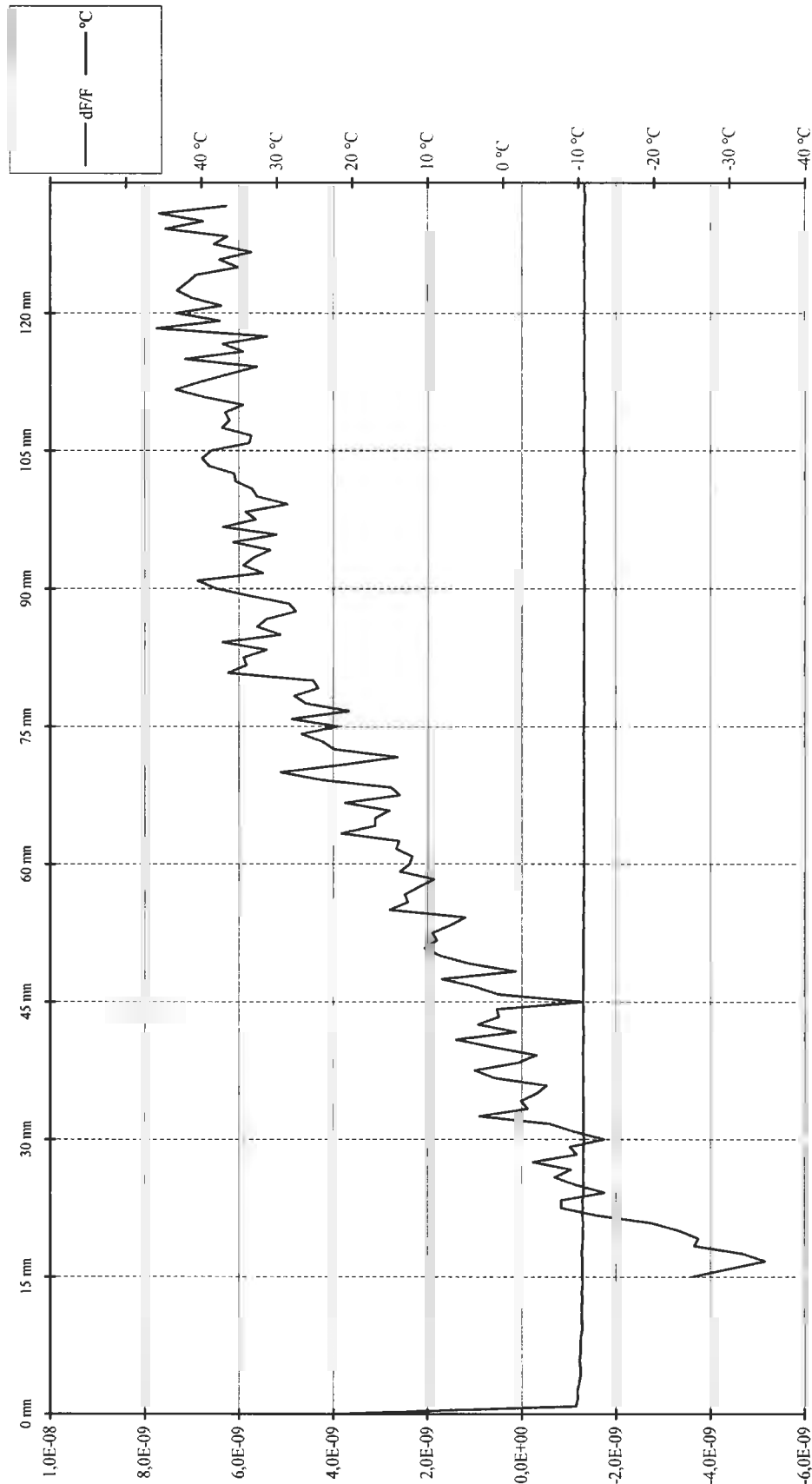
Model : PLB 200

Number : 7

Date : 10/06/2004

Time : 15:59:40

FREQUENCY VARIATION



THERMAL SHOCK TEST / 30 °C change (22 °C to -10 °C)

Manufacturer : ACR Electronics, Inc

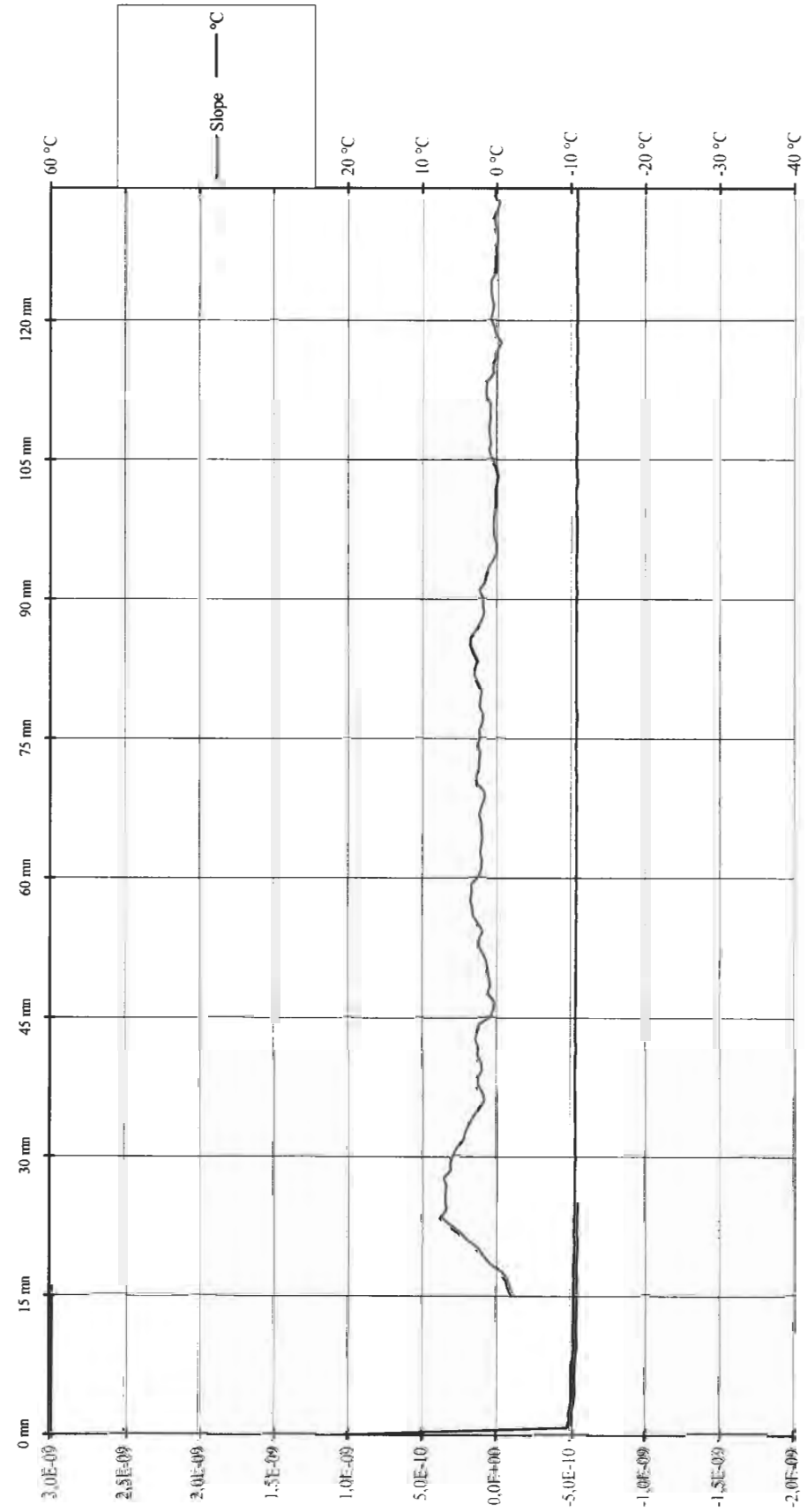
Model : PLB 200

Number : 7

Date : 10/06/2004

Time : 15:59:40

MEDIUM TERM STABILITY : MEAN SLOPE /mn (-1,0E-9 to 1,0E-9)



THERMAL SHOCK TEST / 30 °C change (22 °C to -10 °C)

Manufacturer : ACR Electronics, Inc

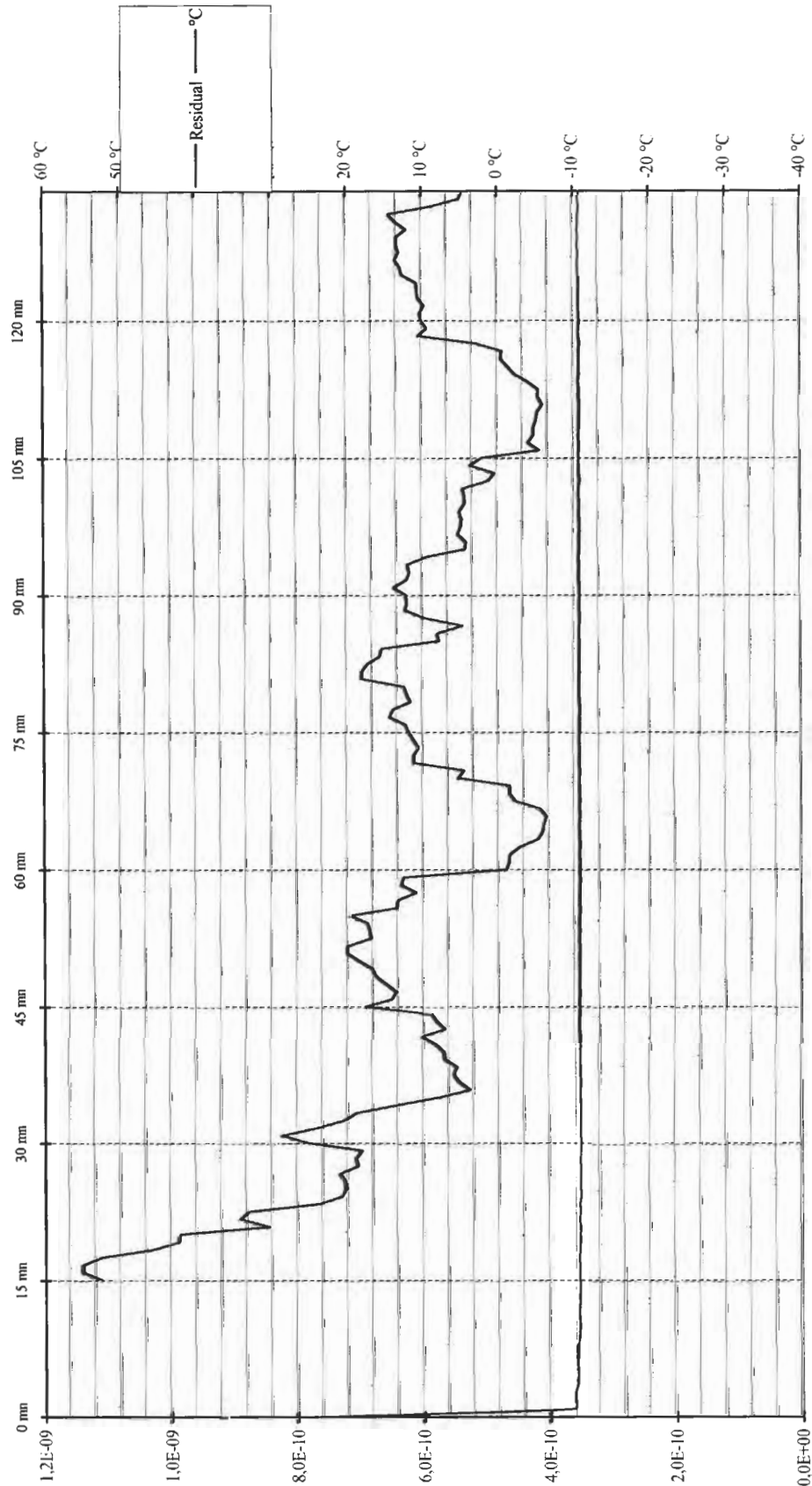
Model : PLB 200

Number : 7

Date : 10/06/2004

Time : 15:59:40

MEDIUM TERM STABILITY : RESIDUAL (≤ 3,0E-9)



THERMAL SHOCK TEST / 30 °C change (22 °C to -10 °C)

Manufacturer : ACR Electronics, Inc

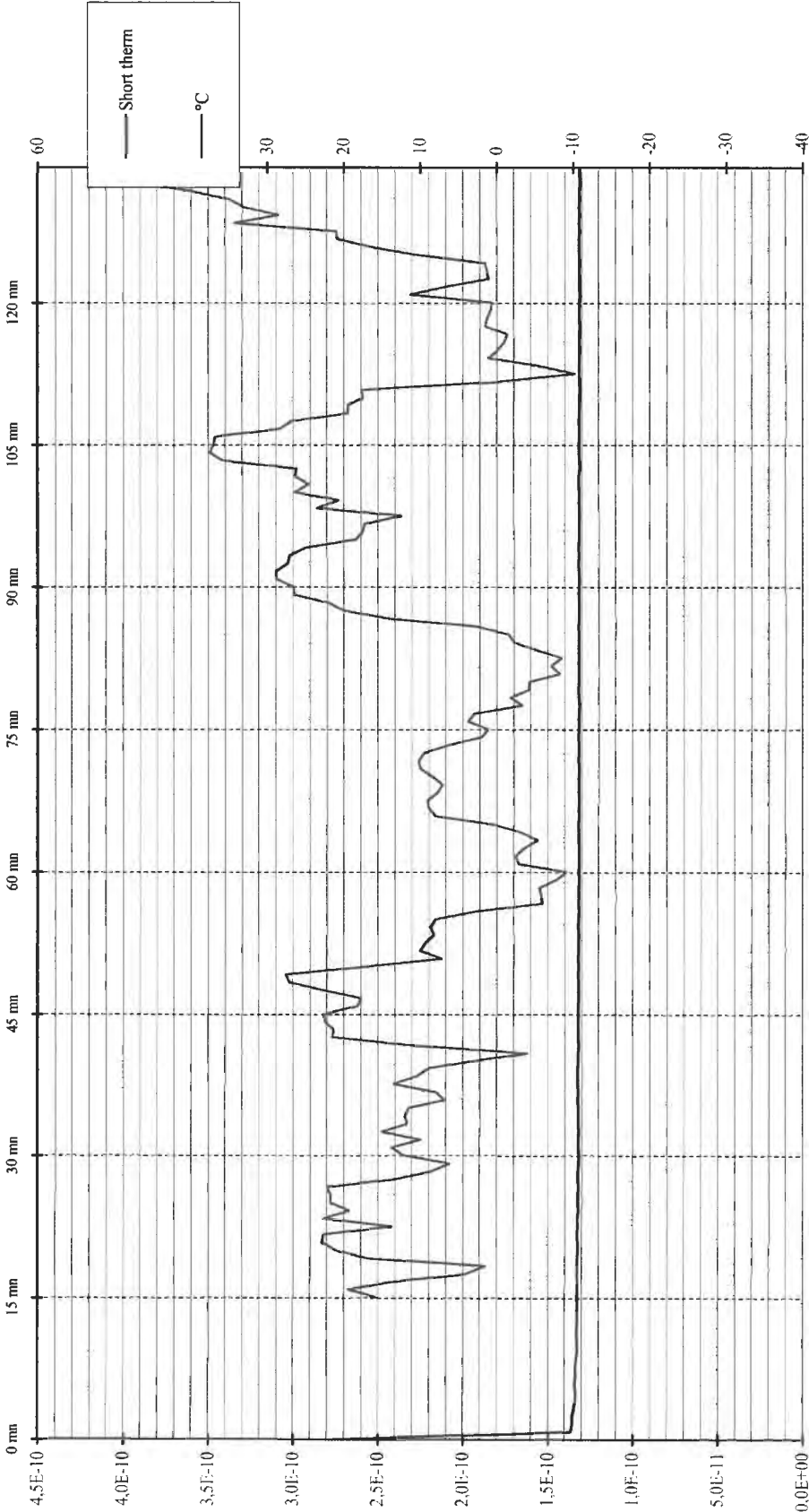
Model : PLB 200

Number : 7

Date : 10/06/2004

Time : 15:59:40

SHORT TERM STABILITY /100 mS ($\leq 2,0E-9$)



THERMAL SHOCK TEST / 30 °C change (22 °C to -10 °C)

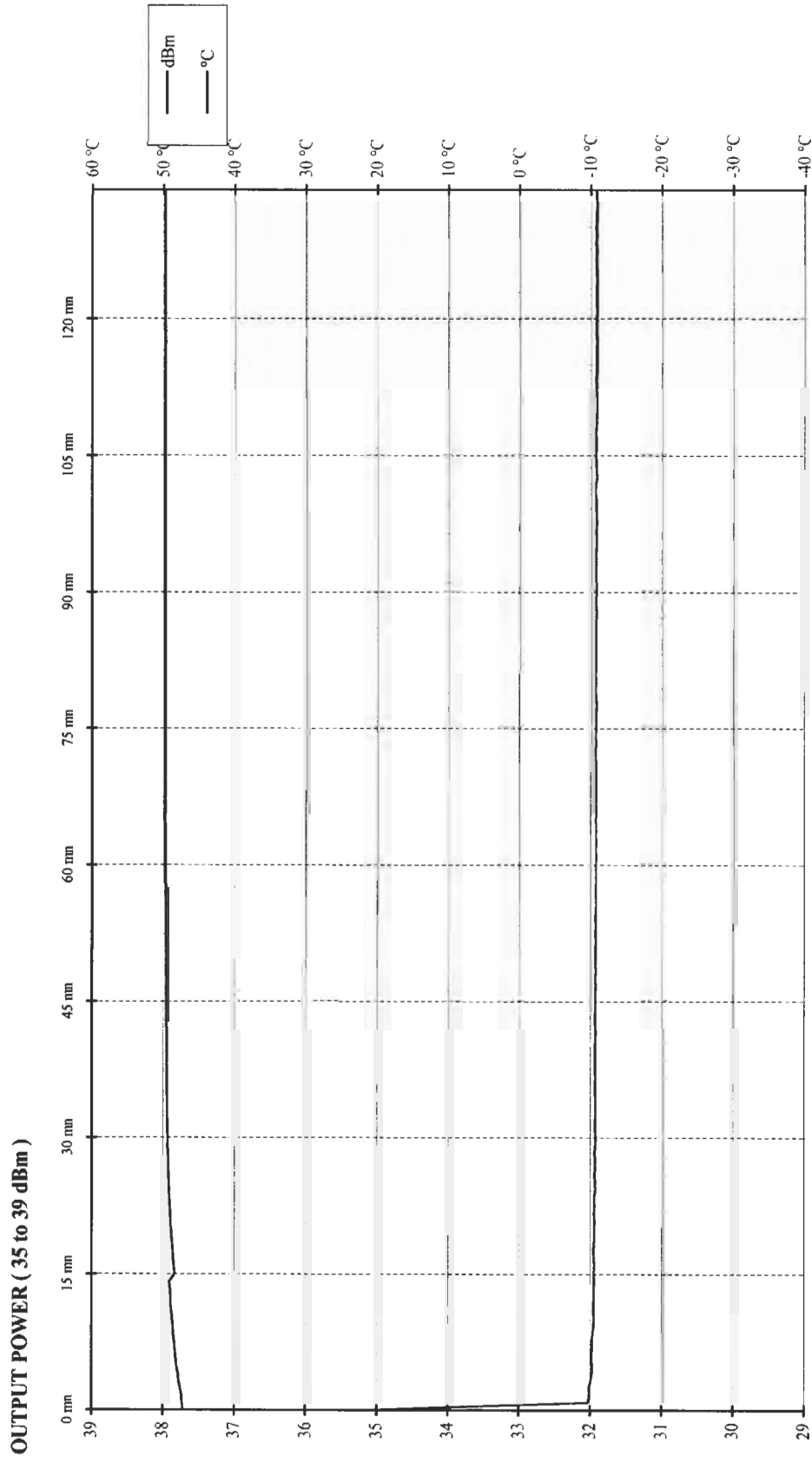
Manufacturer : ACR Electronics, Inc

Model : PLB 200

Number : 7

Date : 10/06/2004

Time : 15:59:40



OPERATING LIFE TEST RESULTS ON
PLB 200 ACR Electronics, Inc Beacon
N° 7
-20 °C

Note : Following the "PLB-200 estimate calculations for battery drain prior to Cospas/Sarsat Life Test" manufacturer note joint in annex the batteries packs capacity has been reduced by the Test Laboratory during 24 hours (2x12 hours) into 681 ohms load .

No	Δ Frequency (Hz)	Temp. (°C)	P406 (dBm)	P121.5 (dBm)
1	49859,81	-19,6	38,0	19,1
2	49862,41	-19,9	38,0	19,2
3	49864,16	-20,0	38,0	19,2
4	49865,86	-20,1	38,0	19,2
5	49866,98	-20,1	38,0	19,2
6	49867,40	-20,1	38,0	19,2
7	49868,28	-20,1	38,0	19,2
8	49868,75	-20,1	38,0	19,2
9	49869,37	-20,1	38,0	19,2
10	49869,50	-20,1	38,0	19,2
11	49869,95	-20,2	38,0	19,2
12	49870,21	-20,1	38,0	19,2
13	49870,37	-20,1	38,0	19,2
14	49870,95	-20,1	38,0	19,2
15	49870,88	-20,1	38,0	19,2
16	49871,13	-20,1	38,0	19,2
17	49870,52	-20,1	38,0	19,2
18	49870,59	-20,1	38,0	19,2

Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
1	-20,1	1,2E-9	2,7E-09	38,0	2,2E-10	19,2
18	-20,0	1,4E-10	7,1E-10	38,0	2,4E-10	19,2
31	-20,0	1,7E-11	6,6E-10	38,0	1,8E-10	19,2
61	-20,0	-1,7E-11	6,4E-10	38,0	3,0E-10	19,2
91	-20,0	9,6E-11	4,9E-10	38,0	1,3E-10	19,2
121	-20,1	-3,0E-11	7,1E-10	38,0	2,9E-10	19,2
151	-20,1	-1,1E-11	6,0E-10	38,0	2,3E-10	19,2
181	-20,0	5,4E-11	7,0E-10	38,0	2,5E-10	19,2
211	-20,1	-3,7E-11	4,3E-10	38,0	2,6E-10	19,2
241	-20,1	-3,5E-11	6,3E-10	38,0	3,0E-10	19,2
271	-20,1	7,0E-11	5,0E-10	38,0	1,8E-10	19,2
301	-20,1	4,7E-11	5,5E-10	38,0	1,9E-10	19,2
331	-20,1	-2,6E-12	6,6E-10	38,0	2,3E-10	19,2
361	-20,1	4,4E-11	7,4E-10	38,0	2,5E-10	19,2
391	-20,1	2,8E-11	4,4E-10	38,0	2,2E-10	19,2
421	-20,1	2,3E-11	6,9E-10	38,0	1,8E-10	19,2
451	-20,1	-3,6E-11	8,7E-10	38,0	2,2E-10	19,2
481	-20,1	-3,5E-11	6,3E-10	38,0	2,1E-10	19,2
511	-20,1	6,2E-11	7,9E-10	38,0	2,6E-10	19,2
541	-20,1	-4,1E-11	4,5E-10	38,0	2,6E-10	19,2
571	-20,1	1,4E-11	5,7E-10	38,0	2,4E-10	19,2
601	-20,1	-3,6E-11	5,1E-10	38,0	2,5E-10	19,2
631	-20,1	1,5E-10	4,7E-10	38,0	2,7E-10	19,2
661	-20,1	3,3E-12	5,4E-10	38,0	2,8E-10	19,2
691	-20,1	-2,4E-11	7,5E-10	38,0	1,6E-10	19,2
721	-20,1	6,5E-11	7,1E-10	38,0	2,0E-10	19,2
751	-20,1	-1,5E-11	5,3E-10	38,0	2,3E-10	19,2
781	-20,1	2,7E-12	6,4E-10	38,0	3,2E-10	19,2
811	-20,1	-2,7E-11	5,1E-10	38,0	3,3E-10	19,2
841	-20,1	2,4E-11	6,4E-10	38,0	2,1E-10	19,2

Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
871	-20,1	-4,1E-11	4,5E-10	38,0	2,2E-10	19,2
901	-20,1	6,3E-11	5,7E-10	38,0	2,5E-10	19,2
931	-20,1	5,5E-11	6,4E-10	38,0	2,5E-10	19,2
961	-20,1	1,9E-11	5,9E-10	38,0	2,7E-10	19,2
991	-20,1	-2,6E-11	6,9E-10	38,0	2,9E-10	19,2
1021	-20,1	-2,2E-11	4,9E-10	38,0	2,2E-10	19,2
1051	-20,1	1,1E-10	3,6E-10	38,0	1,2E-10	19,2
1081	-20,2	2,4E-11	8,1E-10	38,0	2,1E-10	19,2
1111	-20,1	-1,8E-11	6,3E-10	38,0	2,5E-10	19,2
1141	-20,1	3,8E-11	6,4E-10	38,0	2,8E-10	19,2
1171	-20,1	8,1E-11	5,0E-10	35,9	3,0E-10	19,2
1201	-20,2	5,8E-12	7,0E-10	38,0	1,8E-10	19,2
1231	-20,1	-1,3E-11	5,4E-10	38,0	2,4E-10	19,2
1261	-20,1	-9,8E-11	6,4E-10	38,0	3,3E-10	19,2
1291	-20,1	4,5E-11	7,0E-10	38,0	3,0E-10	19,2
1321	-20,1	-5,2E-11	5,6E-10	38,0	2,2E-10	19,2
1351	-20,1	-1,2E-10	6,5E-10	38,0	2,1E-10	19,2
1381	-20,1	-3,0E-12	5,2E-10	38,0	1,9E-10	19,2
1411	-20,2	5,8E-11	4,8E-10	38,0	1,5E-10	19,2
1441	-20,1	4,7E-12	6,4E-10	38,0	2,0E-10	19,2
1471	-20,1	-3,2E-11	5,5E-10	38,0	2,3E-10	19,2
1501	-20,2	-4,0E-11	5,0E-10	38,0	3,2E-10	19,2
1531	-20,2	8,1E-11	5,3E-10	38,0	2,5E-10	19,2
1561	-20,1	3,0E-11	5,3E-10	38,0	1,5E-10	19,2
1591	-20,2	-9,7E-11	3,6E-10	38,0	2,6E-10	19,2
1621	-20,2	6,2E-11	6,4E-10	38,0	2,1E-10	19,2
1651	-20,2	2,0E-11	6,1E-10	36,3	1,6E-10	19,2
1681	-20,2	1,0E-11	4,2E-10	38,0	2,0E-10	19,2
1711	-20,2	3,3E-11	7,1E-10	38,0	2,9E-10	19,2
1741	-20,2	1,5E-12	5,5E-10	38,0	2,3E-10	19,2
1771	-20,2	5,6E-12	6,1E-10	38,0	1,9E-10	19,2
1801	-20,2	2,3E-11	5,0E-10	38,0	2,7E-10	19,2
1831	-20,2	5,5E-11	5,7E-10	38,0	2,9E-10	19,2
1861	-20,2	3,4E-11	6,2E-10	38,0	2,0E-10	19,2
1891	-20,2	-1,2E-11	7,3E-10	38,0	2,7E-10	19,2
1921	-20,2	1,2E-12	4,3E-10	38,0	2,3E-10	19,2
1951	-20,2	-3,0E-11	6,6E-10	38,0	2,0E-10	19,2
1981	-20,2	-3,6E-11	4,0E-10	38,0	2,1E-10	19,2
2011	-20,2	1,7E-11	5,7E-10	38,0	2,6E-10	19,2
2041	-20,2	-1,3E-11	5,8E-10	38,0	1,8E-10	19,2
2071	-20,2	-1,2E-11	5,2E-10	38,0	1,7E-10	19,2
2101	-20,2	8,6E-11	5,3E-10	38,0	2,1E-10	19,2
2131	-20,2	-9,1E-11	5,1E-10	38,0	2,6E-10	19,2
2161	-20,2	3,4E-11	4,9E-10	38,0	1,2E-10	19,2
2191	-20,2	4,0E-12	6,5E-10	38,0	2,8E-10	19,2
2221	-20,2	-3,0E-11	4,4E-10	38,0	2,6E-10	19,2
2251	-20,3	2,7E-12	6,5E-10	37,9	3,0E-10	19,2
2281	-20,2	-5,6E-11	4,9E-10	37,8	3,0E-10	19,2
2311	-20,2	1,6E-11	4,4E-10	37,6	3,4E-10	19,2
2341	-20,2	-4,5E-11	5,6E-10	37,3	4,9E-10	19,2
2371	-20,3	-1,2E-11	6,0E-10	37,1	2,3E-10	19,2

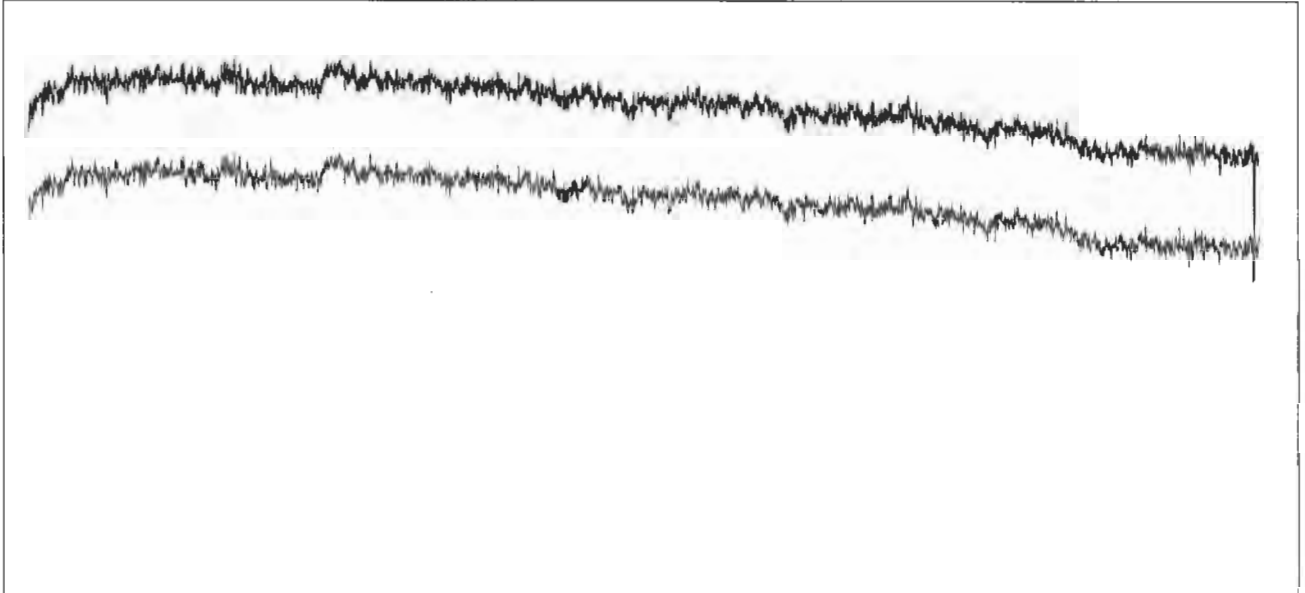
24h

Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
2401	-20,3	-1,8E-11	6,1E-10	36,7	2,9E-10	19,2
2431	-20,3	-6,2E-11	5,2E-10	36,3	1,7E-10	19,2
2461	-20,3	1,3E-11	5,7E-10	35,8	2,4E-10	19,2
2491	-20,3	-4,9E-11	7,1E-10	35,2	2,3E-10	19,1 34,5 h
2521	-20,3	-2,4E-11	3,6E-10	34,3	2,2E-10	19,0
2551	-20,3	-6,7E-11	5,9E-10	33,4	3,0E-10	18,9
2581	-20,3	-2,8E-11	6,4E-10	32,1	2,3E-10	18,8
2611						
2641						
2671						
2701						
2731						
2761						
2791						
2821						
2851						
2881						
2911						
2941						
2971						
3001						
3031						
3061						
3091						
3121						
3151						
3181						
3211						
3241						
3271						
3301						
3331						
3361						
3391						
3421						
3451						
3481						
3511						
3541						
3571						
3601						
3631						
3661						
3691						
3721						
3751						
3781						
3811						
3841						
3871						
3901						

Beacon message after 24 or 48 hours of Operating Lifetime Test :
FFFE2F96EE3240072B80302DC5F78E0159E3

Frequency variation

406024,879 kHz



406024,856 kHz

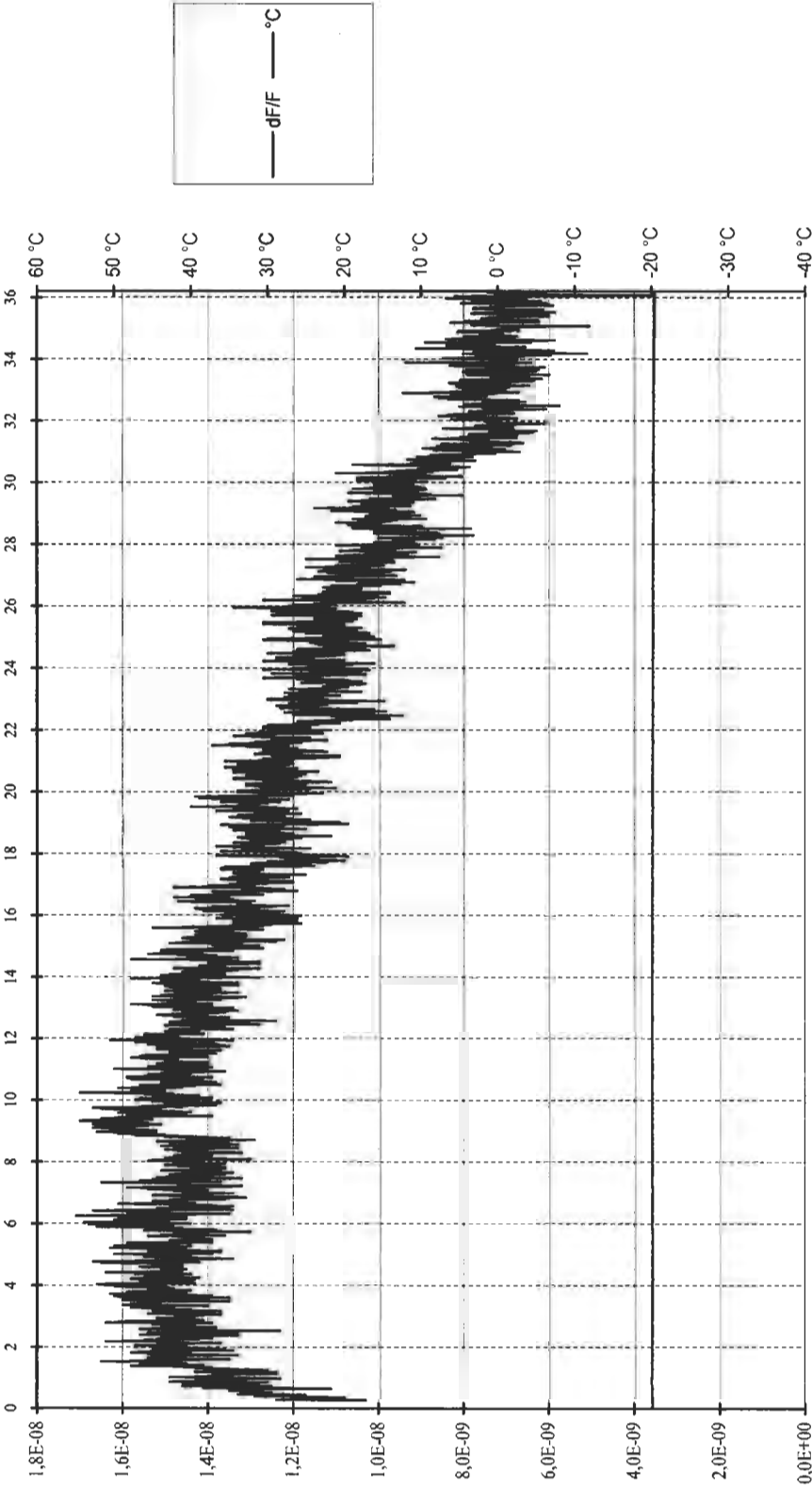
— Initial tracing — Smoothed tracing

LIFE TEST AT -20 °C

Manufacturer : ACR Electronics, Inc
Model : PLB 200
Number : 7

Date : 13/07/2004
Time : 15:28:45

FREQUENCY VARIATION



LIFE TEST AT -20 °C

Manufacturer : ACR Electronics, Inc

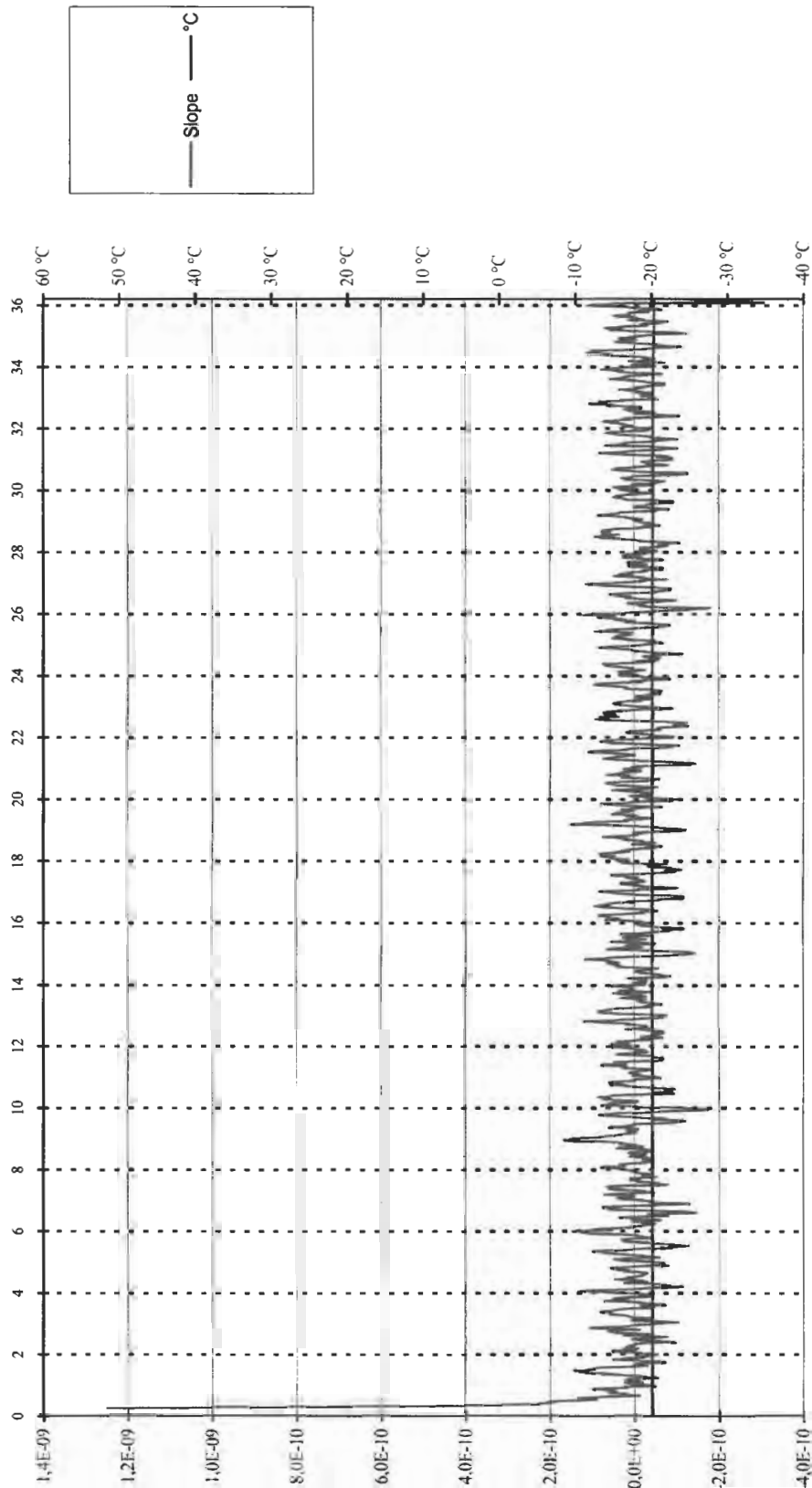
Model : PLB 200

Number : 7

Date : 13/07/2004

Time : 15:28:45

MEDIUM TERM STABILITY : MEAN SLOPE /mn (-1,0E-9 to 1,0E-9)

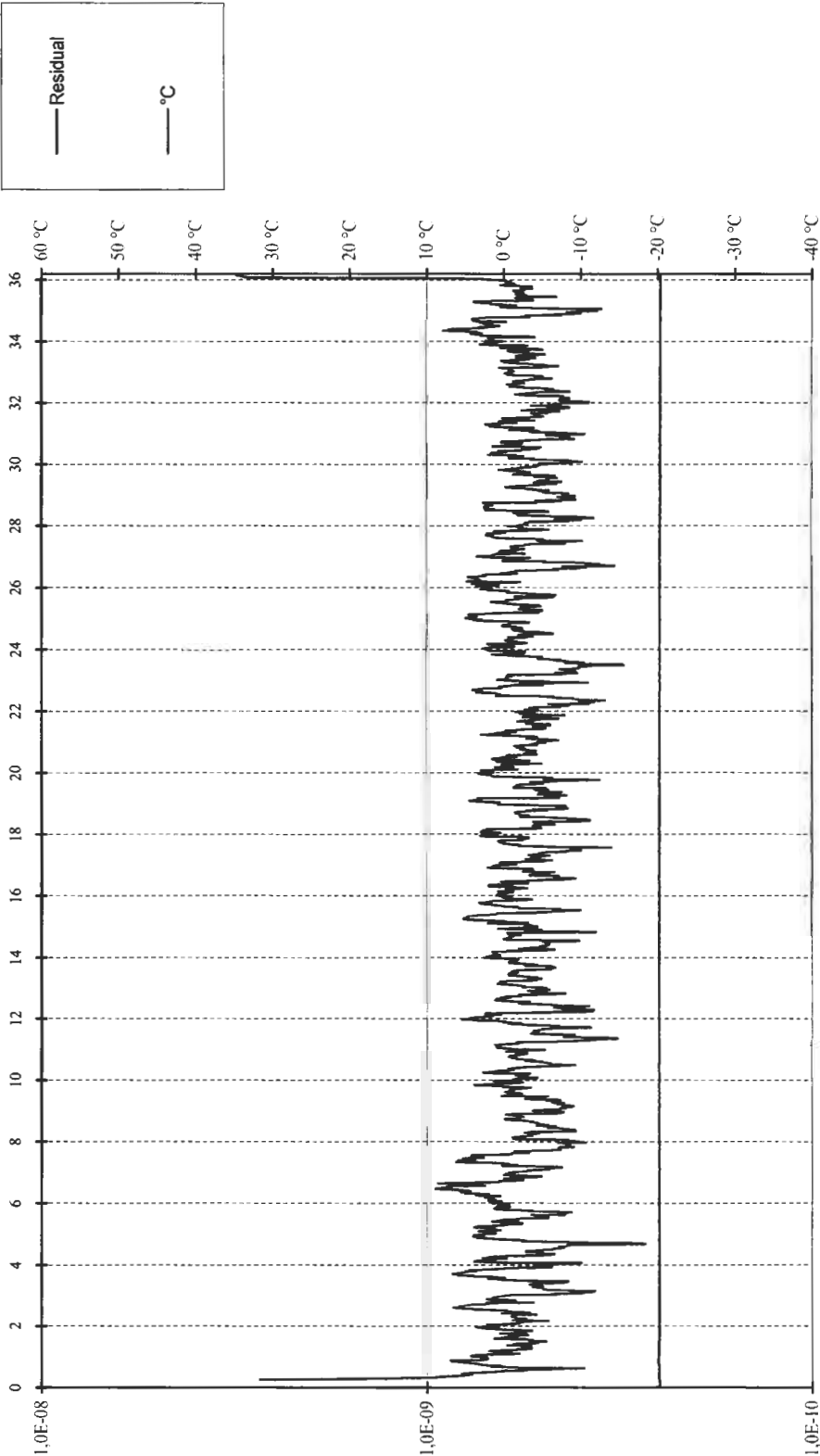


LIFE TEST AT -20 °C

Manufacturer : ACR Electronics, Inc
Model : PLB 200
Number : 7

Date : 13/07/2004
Time : 15:28:45

MEDIUM TERM STABILITY : RESIDUAL ($\leq 3.0E-9$)

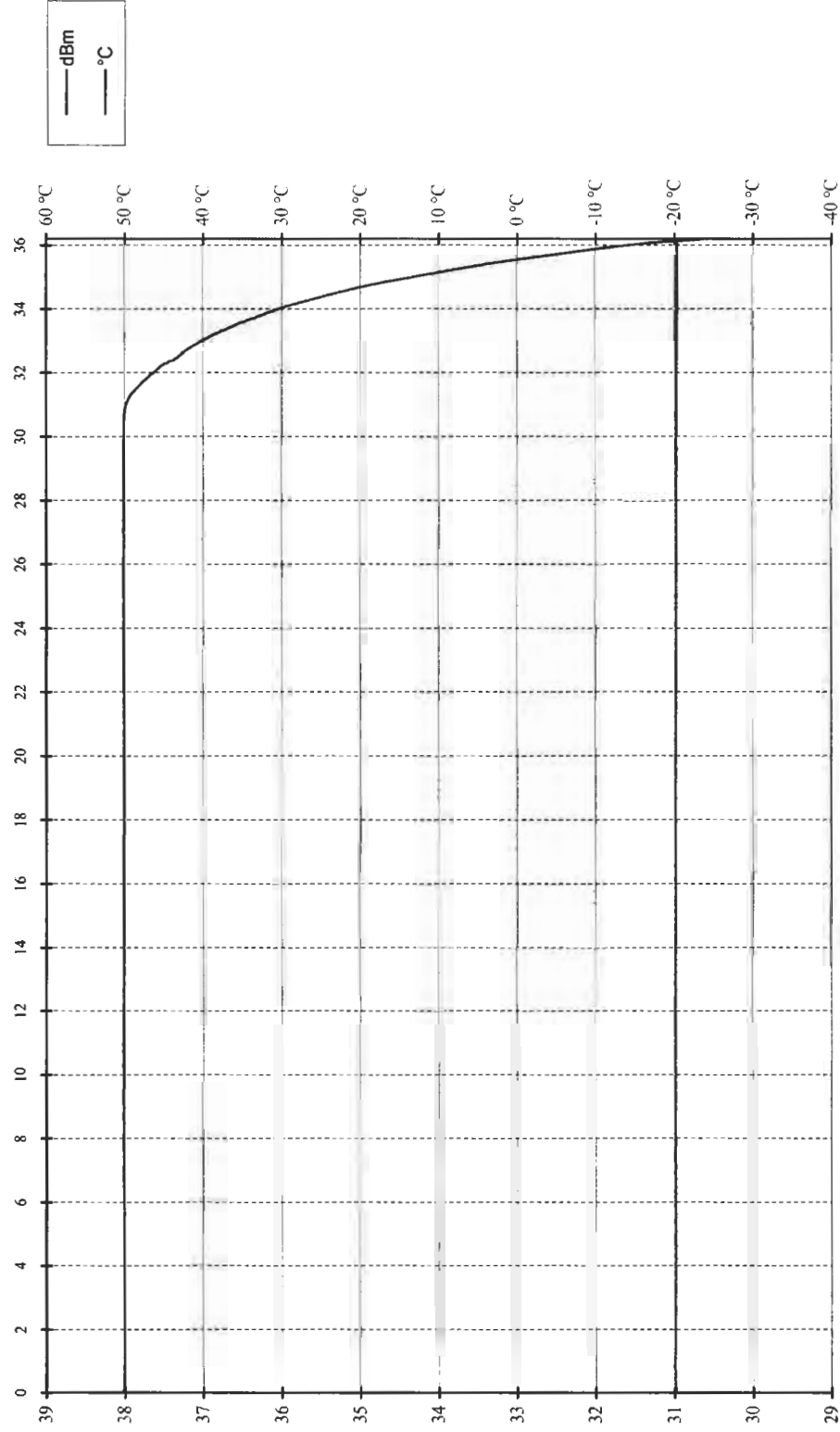


LIFE TEST AT -20 °C

Manufacturer : ACR Electronics, Inc
Model : PLB 200
Numero : 7

Date : 13/07/2004
Time : 15:28:45

OUTPUT POWER (35 to 39 dBm)

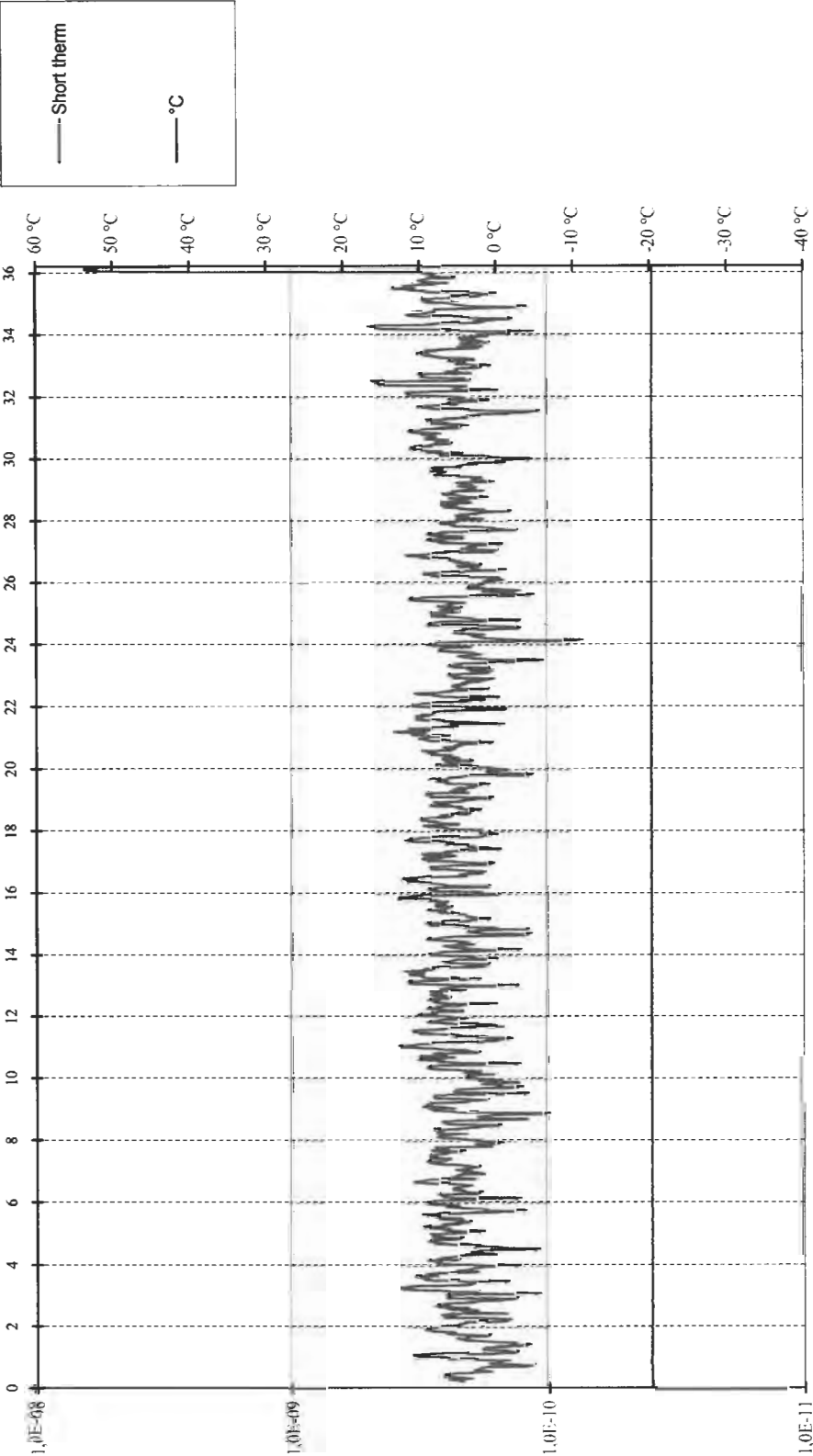


LIFE TEST AT -20 °C

Manufacturer : ACR Electronics, Inc
Model : PLB 200
Number : 7

Date : 13/07/2004
Time : 15:28:45

SHORT TERM STABILITY /100 mS ($\leq 2,0E-9$)



TEMPERATURE GRADIENT TEST RESULT ON
PLB 200 ACR Electronics, Inc Beacon
N° 7

at -20° C, 22° C and 55° C

No	Δ Frequency (Hz)	Temp. (°C)	P406 (dBm)	P121.5 (dBm)
1	49850,33	-20,4	34,3	15,7
2	49852,49	-20,3	34,3	15,8
3	49854,18	-20,3	34,3	15,8
4	49855,42	-20,2	34,3	15,8
5	49857,08	-20,2	34,3	15,8
6	49857,55	-20,1	34,3	15,8
7	49857,85	-20,1	34,3	15,8
8	49858,46	-20,1	34,3	15,8
9	49859,11	-20,1	34,3	15,8
10	49859,27	-20,1	34,3	15,8
11	49859,90	-20,1	34,3	15,8
12	49860,17	-20,0	34,3	15,8
13	49860,98	-20,1	34,3	15,9
14	49860,87	-20,0	34,3	15,8
15	49860,59	-20,0	34,3	15,8
16	49861,01	-20,0	34,3	15,8
17	49860,72	-20,0	34,3	15,9
18	49861,10	-20,0	34,3	15,9

Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
1	-20,0	1,3E-9	2,5E-9	34,3	2,0E-10	15,9
18	-19,9	9,6E-11	5,4E-10	34,3	1,4E-10	15,9
31	-19,9	1,1E-10	5,3E-10	34,3	2,5E-10	15,9
61	-19,9	6,0E-11	5,5E-10	32,5	2,0E-10	15,9
91	-20,0	1,1E-11	5,6E-10	34,3	2,3E-10	15,9
121	-19,9	5,8E-11	5,3E-10	34,3	1,9E-10	15,9
151	-19,1	-8,7E-11	8,9E-10	34,3	1,3E-10	15,9
181	-17,0	4,8E-11	6,3E-10	34,3	2,5E-10	15,9
211	-15,0	6,1E-13	6,3E-10	34,3	2,1E-10	16,0
241	-12,9	4,2E-11	5,6E-10	34,3	2,1E-10	16,0
271	-10,8	-3,9E-11	4,3E-10	34,3	2,1E-10	16,0
301	-8,8	2,4E-11	5,9E-10	34,2	2,2E-10	16,1
331	-6,7	8,3E-12	4,4E-10	34,2	1,7E-10	16,1
361	-4,6	-5,6E-11	5,7E-10	34,2	1,6E-10	16,1
391	-2,6	-5,4E-11	4,4E-10	34,2	1,8E-10	16,2
421	-0,4	-5,1E-11	5,8E-10	34,2	1,3E-10	16,2
451	1,6	2,1E-11	8,7E-10	34,2	1,7E-10	16,2
481	3,6	-7,1E-11	5,5E-10	34,2	1,6E-10	16,2
511	5,7	-4,4E-11	7,6E-10	34,2	2,6E-10	16,3
541	7,6	3,5E-11	6,0E-10	34,1	1,9E-10	16,3
571	9,8	4,0E-12	5,7E-10	34,1	2,7E-10	16,3
601	11,8	-1,7E-11	5,9E-10	34,1	2,5E-10	16,3
631	14,0	1,2E-10	4,9E-10	34,1	3,1E-10	16,3
661	16,1	-8,1E-11	5,0E-10	34,1	2,8E-10	16,3
691	18,1	1,1E-10	5,6E-10	34,1	1,6E-10	16,3
721	20,1	2,7E-11	3,3E-10	34,0	2,3E-10	16,4
751	22,2	8,6E-12	5,5E-10	34,0	1,7E-10	16,4
781	24,3	1,5E-10	5,6E-10	34,0	1,6E-10	16,4
811	26,4	1,0E-10	5,5E-10	34,0	1,8E-10	16,4
841	28,4	1,3E-11	5,6E-10	34,0	2,0E-10	16,3

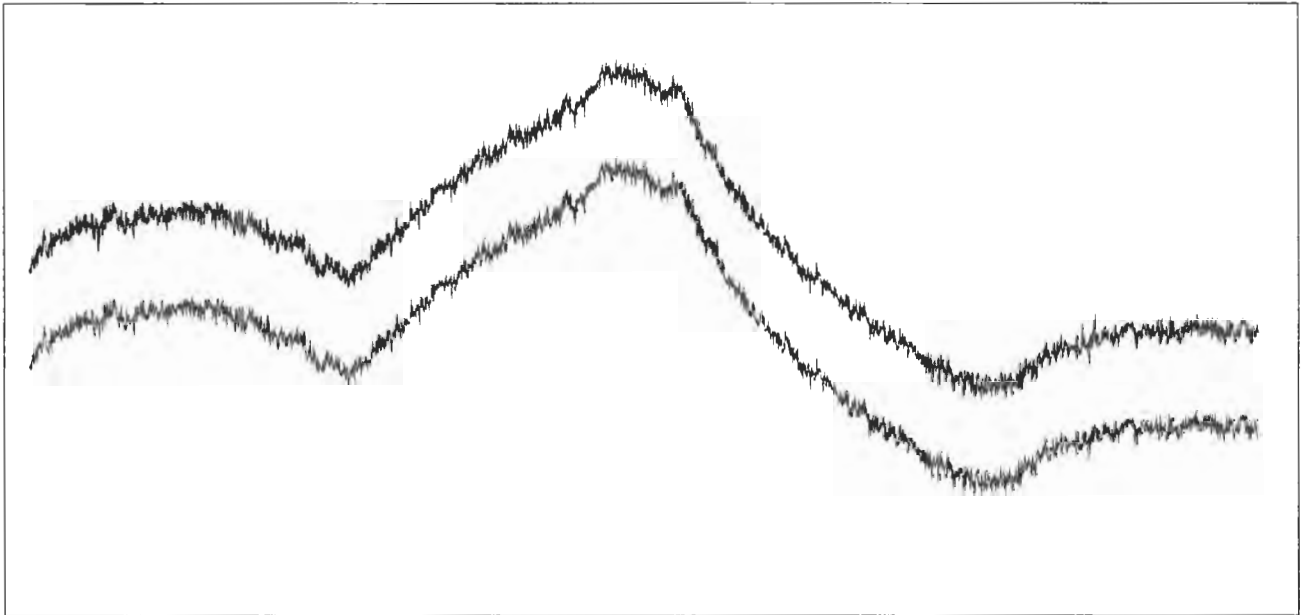
Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
871	30,5	6,4E-11	2,9E-10	33,9	2,1E-10	16,3
901	32,6	-9,5E-12	6,2E-10	33,9	3,0E-10	16,3
931	34,6	1,4E-11	5,3E-10	33,9	2,3E-10	16,3
961	36,7	5,3E-11	6,7E-10	33,9	2,3E-10	16,3
991	38,8	3,9E-11	5,3E-10	33,9	2,0E-10	16,3
1021	41,0	1,3E-10	6,0E-10	33,8	2,5E-10	16,3
1051	43,1	-2,1E-11	6,4E-10	33,8	3,0E-10	16,3
1081	45,2	7,7E-11	6,7E-10	33,8	2,2E-10	16,3
1111	47,4	-9,7E-13	7,1E-10	33,8	1,9E-10	16,3
1141	49,7	1,1E-11	6,0E-10	33,8	2,1E-10	16,2
1171	51,7	5,6E-11	4,4E-10	33,8	2,7E-10	16,2
1201	53,7	6,0E-11	3,1E-10	33,7	2,6E-10	16,2
1231	55,3	-4,6E-11	6,1E-10	33,7	1,9E-10	16,2
1261	55,6	-3,9E-11	5,6E-10	33,7	2,0E-10	16,2
1291	55,7	-1,1E-12	6,0E-10	33,7	2,4E-10	16,2
1321	55,7	-7,1E-11	6,5E-10	33,7	1,1E-10	16,2
1351	55,7	2,4E-11	5,2E-10	33,7	2,8E-10	16,2
1381	54,8	-2,2E-11	5,4E-10	33,7	2,0E-10	16,2
1411	52,8	-1,6E-10	6,3E-10	33,7	2,5E-10	16,2
1441	50,8	-1,7E-11	5,3E-10	33,8	3,1E-10	16,2
1471	48,7	-1,3E-10	4,6E-10	33,8	2,5E-10	16,2
1501	46,7	-4,4E-11	5,1E-10	33,8	2,4E-10	16,3
1531	44,5	-6,9E-11	6,0E-10	33,8	1,8E-10	16,3
1561	42,4	-1,1E-10	5,4E-10	33,8	2,3E-10	16,3
1591	40,4	-1,0E-10	5,2E-10	33,8	2,6E-10	16,3
1621	38,3	-6,8E-11	5,8E-10	33,9	2,0E-10	16,3
1651	36,2	-4,4E-11	6,2E-10	33,9	3,2E-10	16,3
1681	34,1	-1,0E-10	5,4E-10	33,9	2,7E-10	16,3
1711	32,0	-9,6E-11	3,8E-10	33,9	1,8E-10	16,3
1741	29,9	-7,7E-11	7,3E-10	33,9	2,0E-10	16,3
1771	27,8	-9,6E-11	4,2E-10	33,9	2,3E-10	16,4
1801	25,7	-1,8E-11	5,3E-10	34,0	2,5E-10	16,4
1831	23,6	-1,1E-10	6,0E-10	34,0	2,4E-10	16,4
1861	21,5	-5,3E-12	5,0E-10	34,0	1,8E-10	16,4
1891	19,4	-4,1E-11	4,2E-10	34,0	2,8E-10	16,4
1921	17,4	-1,4E-11	7,2E-10	34,0	2,4E-10	16,4
1951	15,3	-9,0E-11	7,2E-10	34,0	3,2E-10	16,4
1981	13,2	5,2E-12	6,8E-10	34,1	3,2E-10	16,3
2011	11,1	-1,6E-11	7,3E-10	34,1	2,1E-10	16,3
2041	9,1	-2,7E-11	5,8E-10	34,1	2,7E-10	16,3
2071	6,9	7,6E-11	5,9E-10	34,1	1,9E-10	16,3
2101	4,8	8,4E-11	7,8E-10	34,1	2,5E-10	16,3
2131	2,7	1,1E-10	7,2E-10	34,1	2,4E-10	16,2
2161	0,6	-2,8E-11	5,4E-10	34,2	1,2E-10	16,2
2191	-1,5	-3,0E-11	6,2E-10	34,2	2,8E-10	16,2
2221	-3,5	-2,9E-11	5,2E-10	34,2	1,9E-10	16,2
2251	-5,7	1,3E-10	8,6E-10	34,2	2,9E-10	16,1
2281	-7,8	-4,2E-11	4,3E-10	34,2	2,3E-10	16,1
2311	-9,9	8,0E-11	4,2E-10	34,3	1,6E-10	16,1
2341	-12,0	-9,3E-11	5,9E-10	34,3	2,3E-10	16,0
2371	-14,1	9,5E-12	4,7E-10	34,3	3,1E-10	15,9

Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
2401	-16,2	-5,9E-12	6,8E-10	34,3	2,8E-10	16,0
2431	-18,4	-5,2E-13	4,6E-10	34,2	2,5E-10	15,8
2461	-19,8	4,5E-11	4,2E-10	34,3	1,3E-10	15,9
2491	-20,0	2,7E-11	5,4E-10	34,3	2,0E-10	15,9
2521	-20,1	-9,1E-12	6,0E-10	34,3	1,5E-10	15,9
2551	-20,1	-9,2E-11	5,4E-10	34,3	2,6E-10	15,9
2581	-20,1	-1,1E-10	5,4E-10	34,3	2,5E-10	15,9
2611						
2641						
2671						
2701						
2731						
2761						
2791						
2821						
2851						
2881						
2911						
2941						
2971						
3001						
3031						
3061						
3091						
3121						
3151						
3181						
3211						
3241						
3271						
3301						
3331						
3361						
3391						
3421						
3451						
3481						
3511						
3541						
3571						
3601						
3631						
3661						
3691						
3721						
3751						
3781						
3811						
3841						
3871						
3901						

Beacon message at the end of Frequency Stability Test with Temperature Gradient :
FFFE2F96EE3240072B80302DC5F78E0159E3

Frequency variation

406024876



406024853

— Initial tracing — Smoothed tracing

TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

Manufacturer : ACR Electronics, Inc

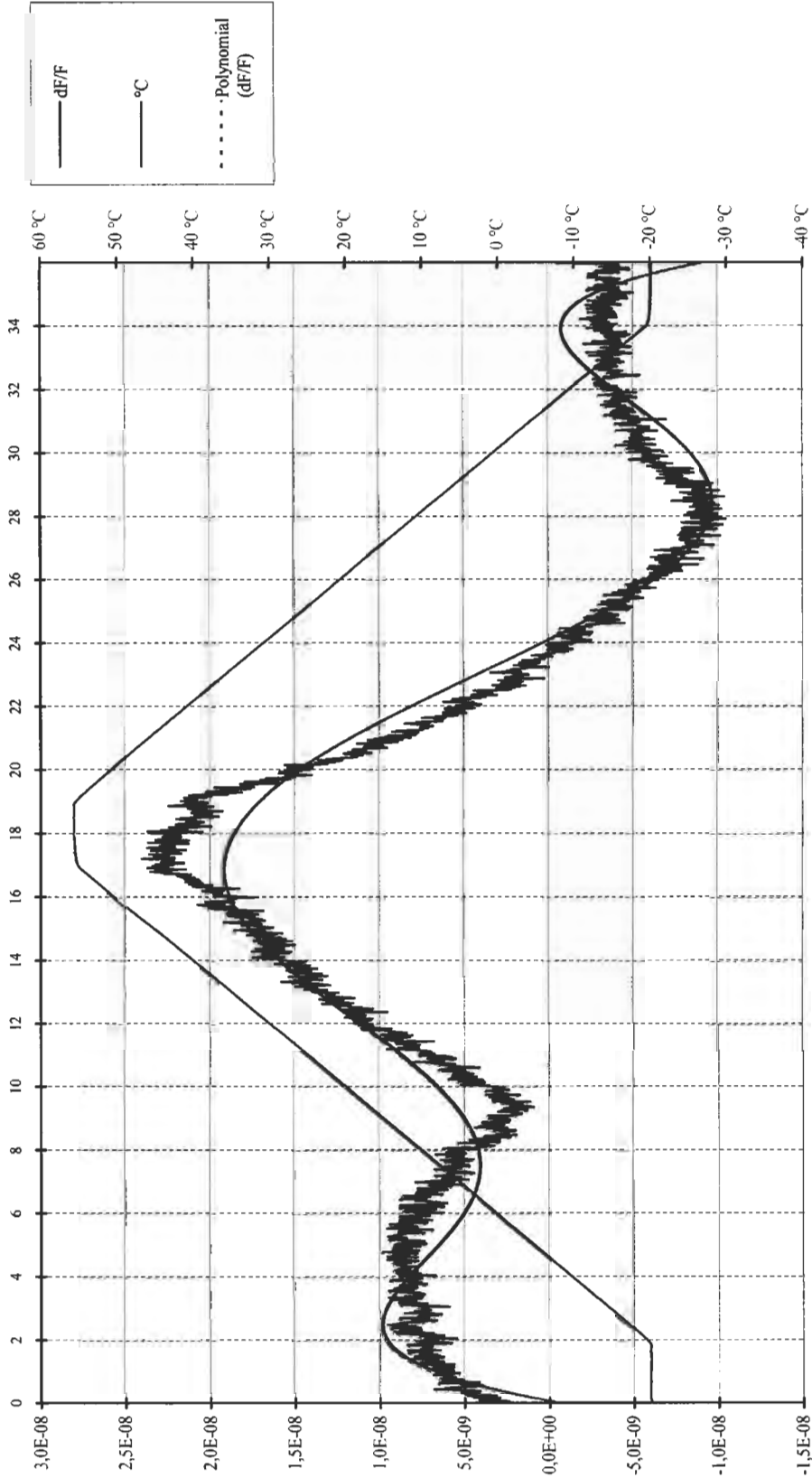
Model : PLB 200

Number : 7

Date : 16/07/2004

Time : 18:20:46

FREQUENCY VARIATION



TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

Manufacturer : ACR Electronics, Inc

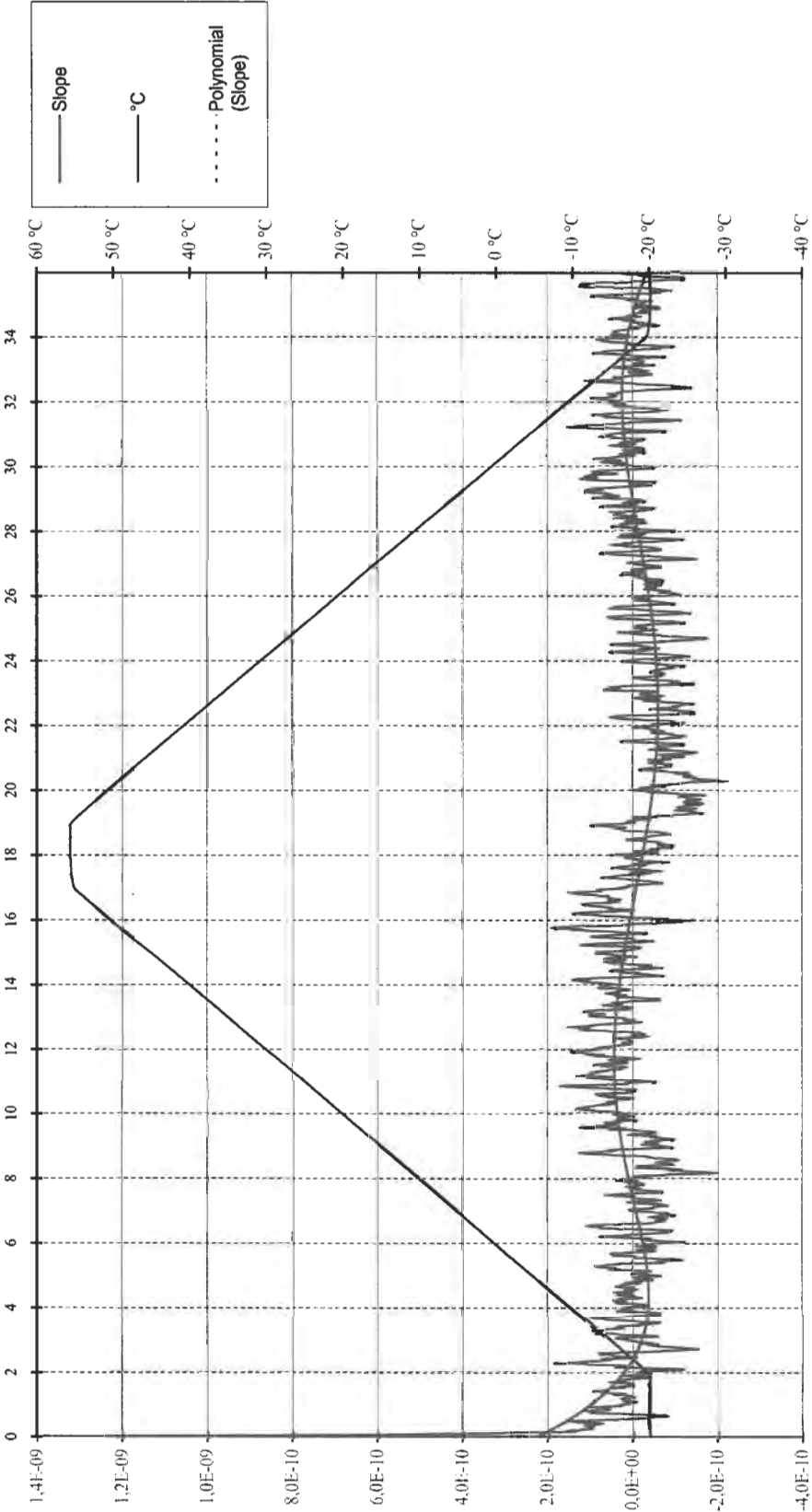
Model : PLB 200

Number : 7

Date : 16/07/2004

Time : 18:20:46

MEDIUM TERM STABILITY : MEAN SLOPE /mm (-1,0E-9 to 1,0E-9)



TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

Manufacturer : ACR Electronics, Inc

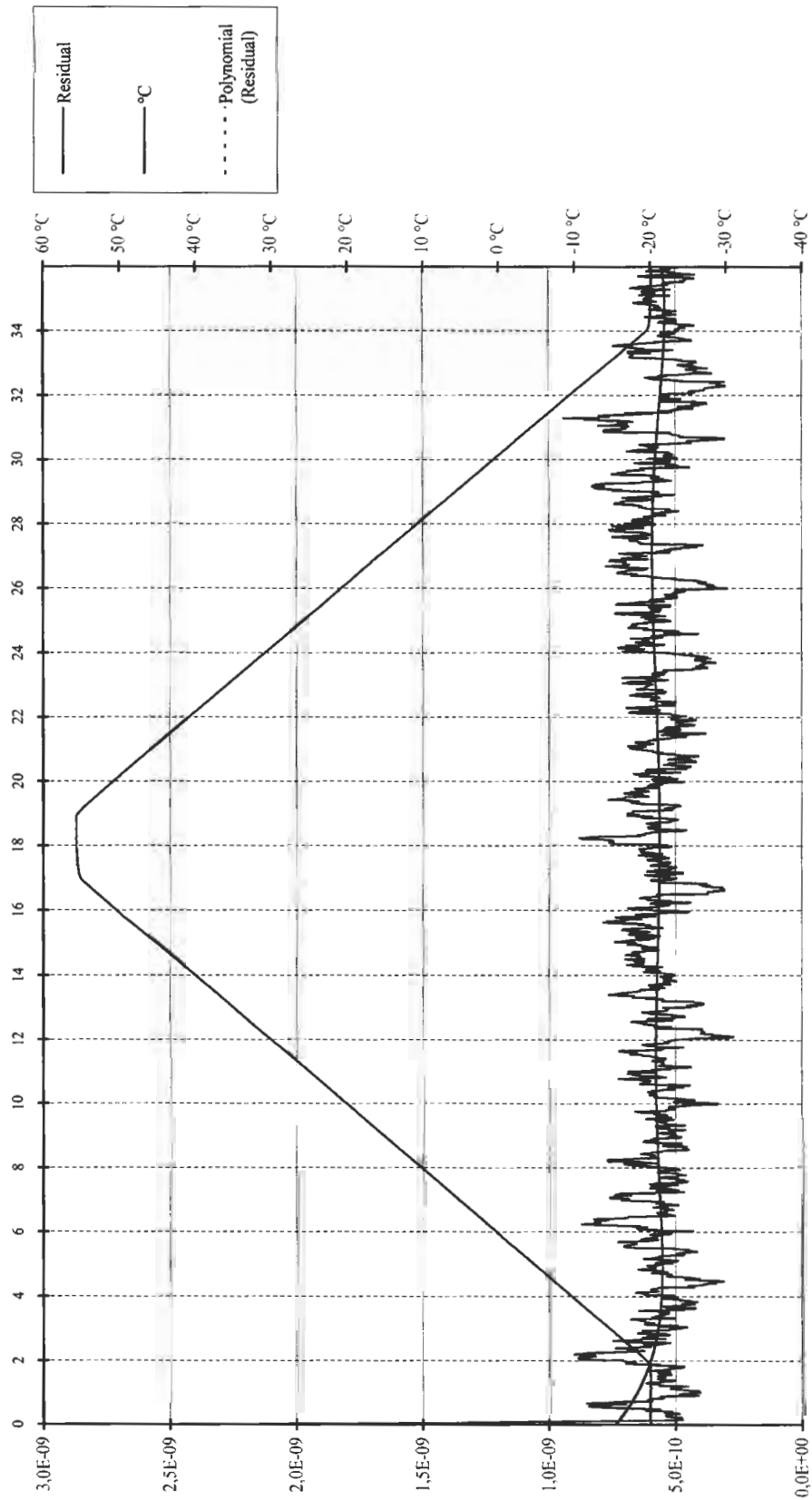
Model : PLB 200

Number : 7

Date : 16/07/2004

Time : 18:20:46

MEDIUM TERM STABILITY : RESIDUAL (≤ 3.0E-9)

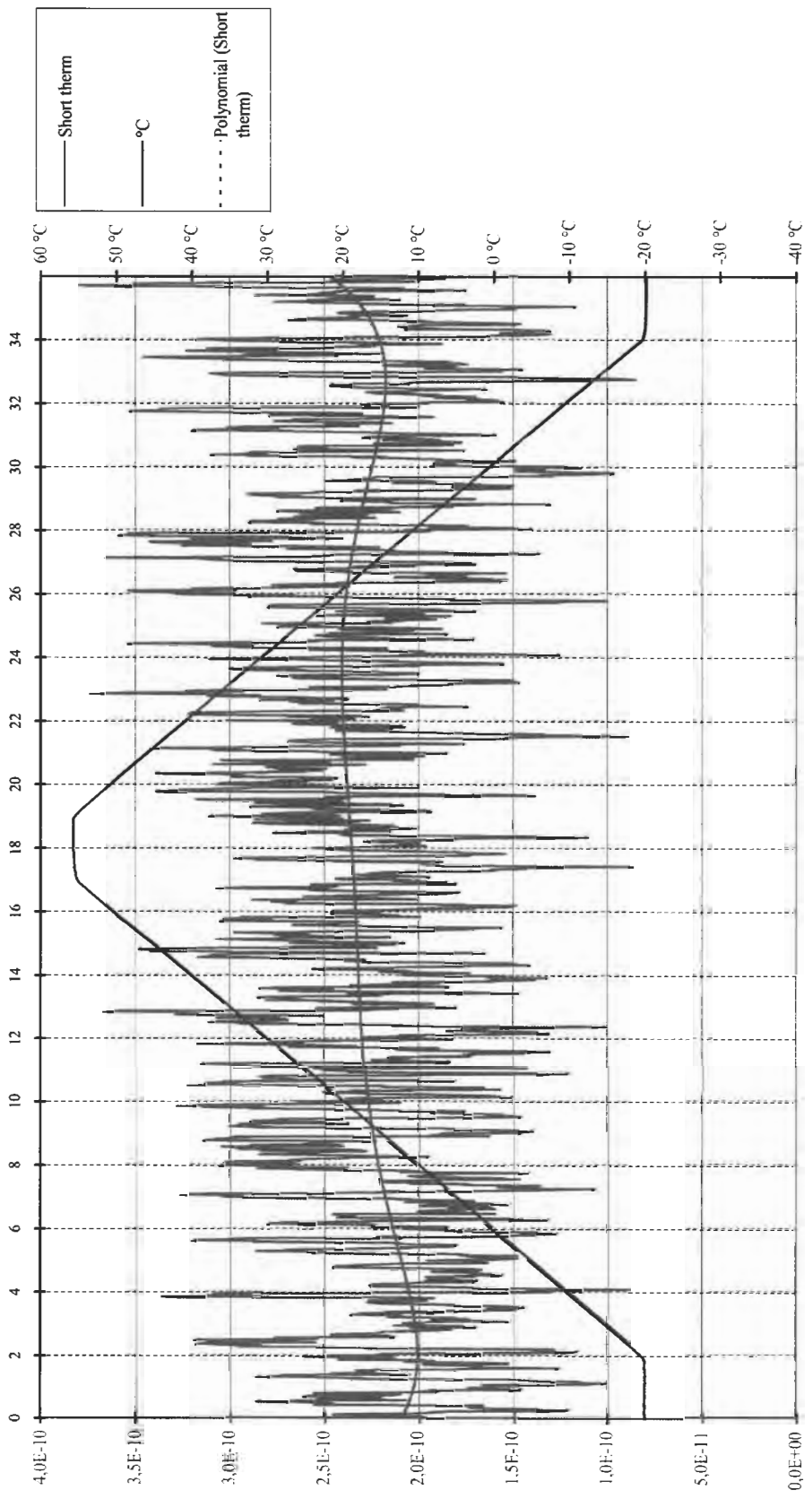


TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

Manufacturer : ACR Electronics, Inc
Model : PLB 200
Number : 7

Date : 16/07/2004
Time : 18:20:46

SHORT TERM STABILITY /100 mS (≤ 2,0E-9)



TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

Manufacturer : ACR Electronics, Inc

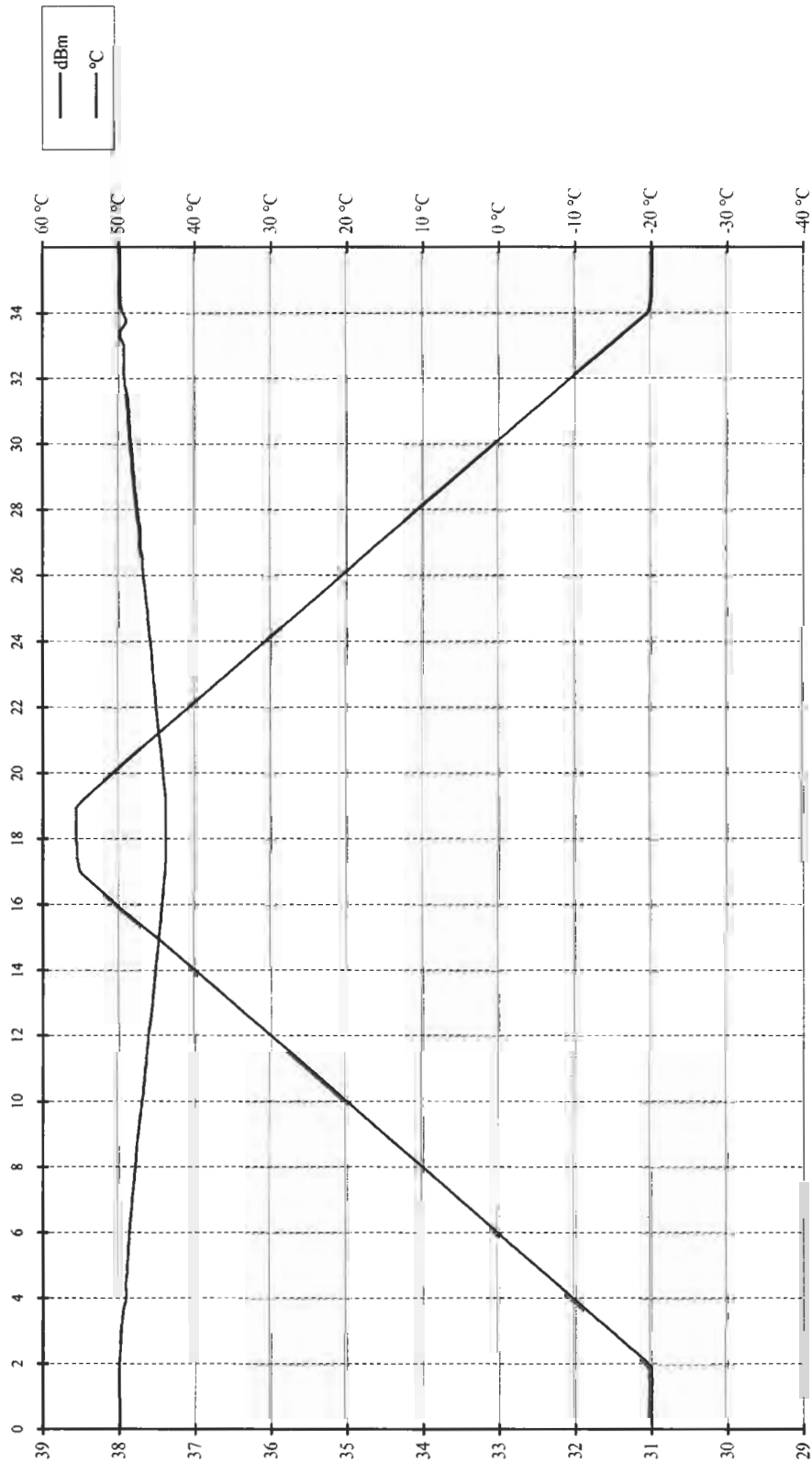
Model : PLB 200

Number : 7

Date : 16/07/2004

Time : 18:20:46

OUTPUT POWER (35 to 39 dBm)



**SATELLITE QUALITATIVE TEST RESULTS ON
PLB 200 ACR Electronics, Inc Beacon
N° 11**

The qualitative Satellite Test is done in two configurations :

- 1) The PLB is placed on dry ground on the top of Intespace building (Pascal C) and**
- 2) The PLB is placed on ground plane on the top of Intespace building (Pascal C)**

Test date :

- 1st Test Configuration : start 16/07/2004_13:00 to 19/07/2004_07:00 (UT)
- 2nd Test Configuration : start 19/07/2004_08:00 to 21/07/2004_15:00 (UT)

RECHERCHE du 28/07/2004 12:32:03

Test configuration : 1

PLB placed on dry ground on the top of Intespace building (Pascal C)

Code balise : 2DDC648016FFBFF

Nom balise : 8 ??

Pays : 366 USA

Classe utilisateur : TEST--

Periode de consultation : 16/07/2004 00 a 18/07/2004 00

Position de reference : et

Toutes les luts

Tous les satellites

Date activation balise : // :

Recherche dans base principale

Resultats edites suivant chronologie du TCA

1st pass

Satellite Pass used for level comparison

between PLB200 and Ref Beacon

* TCA	TPC	* SL	PTS	* LAT1	LONG	PB	MAJ	BIAIS	ERR	* LAT2	LONG2	* CTA	FB	WF	SDV	CF	SRCE	MCCN
* 16/07 14H20	14H21	* MG1	2	.....	.....	..	...	2826	.....	* .....	.....	* ....	4	9	.....	...	2273	817265
* 16/07 14H23	14H26	* MG1	4	.....	.....	..	...	2832	.....	* .....	.....	* ....	4	9	.....	...	2273	817270
* 16/07 14H26	14H36	* MG1	4	.....	.....	..	...	2837	.....	* .....	.....	* ....	4	9	.....	...	2273	817278
* 16/07 14H30	14H39	* S08	18	* 43.561	1.484	98	1	2834	0.24	* 38.638	-22.441	* 9.0	4	0	0.4	4/0	2272	817286
* 16/07 14H30	01H16	* S08	18	* 43.564	1.484	98	1	2834	0.39	* 38.781	-22.100	* 8.7	-4	0	0.5	4/3	2271	818374
* 16/07 14H30	01H17	* S08	18	* 43.562	1.484	98	1	2834	0.22	* 38.638	-22.441	* 9.0	-4	0	0.4	4/0	2272	818506
* 16/07 14H37	14H45	* MG1	3	.....	.....	..	...	2837	.....	* .....	.....	* ....	4	9	.....	...	2273	817312
* 16/07 14H46	14H50	* MG1	2	.....	.....	..	...	2834	.....	* .....	.....	* ....	4	9	.....	...	2273	817316
* 16/07 14H50	14H55	* MG1	2	.....	.....	..	...	2837	.....	* .....	.....	* ....	4	9	.....	...	2273	817319
* 16/07 14H55	15H01	* MG1	2	.....	.....	..	...	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	817323
* 16/07 15H03	15H12	* MG1	2	.....	.....	..	...	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	817335
* 16/07 15H11	15H17	* MG1	2	.....	.....	..	...	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	817340
* 16/07 15H17	15H23	* MG1	2	.....	.....	..	...	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	817344
* 16/07 15H22	15H37	* MG1	2	.....	.....	..	...	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	817355
* 16/07 15H37	15H42	* MG1	7	.....	.....	..	...	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	817363
* 16/07 15H42	15H47	* MG1	6	.....	.....	..	...	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	817368
* 16/07 15H47	15H52	* MG1	4	.....	.....	..	...	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	817371
* 16/07 15H52	16H00	* MG1	10	.....	.....	..	...	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	817375
* 16/07 16H00	16H05	* MG1	4	.....	.....	..	...	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	817381
* 16/07 16H05	16H10	* MG1	5	.....	.....	..	...	2842	.....	* .....	.....	* ....	4	9	.....	...	2273	817386
* 16/07 16H11	16H16	* MG1	4	.....	.....	..	...	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	817390
* 16/07 16H15	16H22	* MG1	8	.....	.....	..	...	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	817399
* 16/07 16H16	16H23	* S07	11	* 43.555	1.478	92	1	2842	0.75	* 51.668	44.083	* 15.7	-9	0	1.7	4/2	2271	817402
* 16/07 16H16	16H24	* S07	11	* 43.560	1.479	99	1	2838	0.17	* 51.633	44.143	* 15.4	4	0	0.3	4/0	2272	817530
* 16/07 16H16	18H03	* S07	11	* 43.564	1.477	99	1	2837	0.44	* 51.638	44.149	* 15.7	-4	0	0.2	4/4	2271	817679
* 16/07 16H16	18H04	* S07	11	* 43.560	1.478	99	1	2838	0.26	* 51.635	44.142	* 15.4	-4	0	0.3	4/0	2272	817698
* 16/07 16H22	16H27	* MG1	5	.....	.....	..	...	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	817545
* 16/07 16H28	16H32	* MG1	5	.....	.....	..	...	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	817554
* 16/07 16H32	16H37	* MG1	6	.....	.....	..	...	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	817561
* 16/07 16H38	16H42	* MG1	2	.....	.....	..	...	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	817567
* 16/07 16H42	16H47	* MG1	2	.....	.....	..	...	2836	.....	* .....	.....	* ....	4	9	.....	...	2273	817575
* 16/07 16H47	16H52	* MG1	2	.....	.....	..	...	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	817579
* 16/07 16H52	17H01	* MG1	4	.....	.....	..	...	2841	.....	* .....	.....	* ....	4	9	.....	...	2273	817585
* 16/07 17H01	17H06	* MG1	3	.....	.....	..	...	2837	.....	* .....	.....	* ....	4	9	.....	...	2273	817589
* 16/07 17H03	17H07	* S06	4	* 43.587	1.452	70	6	2821	3.69	* 56.188	66.628	* 22.4	8	0	0.4	3/1	2271	817601
* 16/07 17H06	17H11	* MG1	5	.....	.....	..	...	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	817616
* 16/07 17H11	17H16	* MG1	2	.....	.....	..	...	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	817628
* 16/07 17H17	17H21	* MG1	6	.....	.....	..	...	2841	.....	* .....	.....	* ....	4	9	.....	...	2273	817632
* 16/07 17H21	17H35	* MG1	3	.....	.....	..	...	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	817639
* 16/07 17H35	17H40	* MG1	3	.....	.....	..	...	2842	.....	* .....	.....	* ....	4	9	.....	...	2273	817644
* 16/07 17H39	17H49	* MG1	2	.....	.....	..	...	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	817653
* 16/07 17H49	17H54	* MG1	4	.....	.....	..	...	2844	.....	* .....	.....	* ....	4	9	.....	...	2273	817659
* 16/07 17H54	18H02	* MG1	9	.....	.....	..	...	2841	.....	* .....	.....	* ....	4	9	.....	...	2273	817663
* 16/07 17H55	18H04	* S07	16	* 43.557	1.464	50	1	2840	1.40	* 42.730	-2.889	* 1.6	4	0	0.2	4/0	2272	817699
* 16/07 17H55	19H41	* S07	16	* 43.562	1.479	98	1	2839	0.14	* 42.672	-3.151	* 1.4	-4	0	0.5	4/3	2271	817831
* 16/07 17H55	19H43	* S07	16	* 43.557	1.464	50	1	2840	1.40	* 42.731	-2.888	* 1.6	-4	0	0.2	4/0	2272	817848
* 16/07 18H03	18H07	* MG1	4	.....	.....	..	...	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	817720
* 16/07 18H07	18H13	* MG1	8	.....	.....	..	...	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	817729
* 16/07 18H13	18H18	* MG1	5	.....	.....	..	...	2841	.....	* .....	.....	* ....	4	9	.....	...	2273	817734
* 16/07 18H19	18H23	* MG1	3	.....	.....	..	...	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	817738

* 16/07 18H23	18H33	* MG1	13	*	.....	.....	..	...	2841	.....	*	.....	.....	*	....	4	9	.....	...	2273	817747
* 16/07 18H34	18H38	* MG1	6	*	.....	.....	..	...	2840	.....	*	.....	.....	*	....	4	9	.....	...	2273	817755
* 16/07 18H38	18H43	* MG1	6	*	.....	.....	..	...	2841	.....	*	.....	.....	*	....	4	9	.....	...	2273	817760
* 16/07 18H42	18H50	* S06	16	*	43.560	1.484	98	1	2833	0.32	* 46.892	18.007	* 6.5	8	0	1.3	4/3	2271	817782		
* 16/07 18H43	18H53	* MG1	12	*	.....	.....	..	...	2841	.....	*	.....	.....	*	....	4	9	.....	...	2273	817788
* 16/07 18H54	18H58	* MG1	6	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	817801
* 16/07 18H59	19H04	* MG1	2	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	817807
* 16/07 19H04	19H09	* MG1	3	*	.....	.....	..	...	2840	.....	*	.....	.....	*	....	4	9	.....	...	2273	817811
* 16/07 19H09	19H20	* MG1	3	*	.....	.....	..	...	2841	.....	*	.....	.....	*	....	4	9	.....	...	2273	817816
* 16/07 19H20	19H25	* MG1	5	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	817819
* 16/07 19H26	19H38	* MG1	4	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	817827
* 16/07 19H36	19H41	* S07	10	*	43.552	1.484	87	1	2844	1.08	* 33.184	-50.317	* 19.6	-9	0	1.0	4/3	2271	817832		
* 16/07 19H36	19H43	* S07	11	*	43.558	1.478	98	1	2841	0.41	* 33.204	-50.454	* 19.9	4	0	0.4	4/0	2272	817849		
* 16/07 19H36	06H18	* S07	11	*	43.558	1.485	97	1	2842	0.50	* 33.275	-50.478	* 19.6	-4	0	0.3	4/3	2271	818824		
* 16/07 19H36	06H19	* S07	11	*	43.561	1.482	98	1	2842	0.11	* 33.208	-50.457	* 19.9	-4	0	0.4	4/0	2272	818896		
* 16/07 19H39	19H43	* MG1	3	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	817859
* 16/07 19H44	19H48	* MG1	5	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	817864
* 16/07 19H48	19H53	* MG1	5	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	817866
* 16/07 19H53	20H07	* MG1	4	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	817874
* 16/07 20H02	20H09	* S09	13	*	43.554	1.463	98	1	2844	1.67	* 52.671	50.462	* 17.4	-9	0	1.6	4/3	2271	817930		
* 16/07 20H02	21H49	* S09	15	*	43.562	1.470	99	1	2842	0.88	* 52.682	50.397	* 17.4	-4	0	0.3	4/4	2271	818110		
* 16/07 20H02	21H50	* S09	15	*	43.561	1.480	98	1	2842	0.06	* 52.730	49.557	* 17.1	-4	0	0.5	4/0	2272	818165		
* 16/07 20H07	20H13	* MG1	3	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	818022
* 16/07 20H13	20H18	* MG1	4	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818033
* 16/07 20H18	20H23	* MG1	3	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818037
* 16/07 20H23	20H30	* S06	15	*	43.557	1.460	99	1	2836	1.76	* 37.252	-29.088	* 11.5	8	0	1.2	4/3	2271	818046		
* 16/07 20H23	20H28	* MG1	2	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818040
* 16/07 20H26	20H33	* MG1	6	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	818050
* 16/07 20H33	20H38	* MG1	3	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818056
* 16/07 20H38	20H43	* MG1	5	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818058
* 16/07 20H43	20H50	* MG1	4	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818064
* 16/07 20H50	20H55	* MG1	4	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	818066
* 16/07 20H55	21H02	* MG1	7	*	.....	.....	..	...	2846	.....	*	.....	.....	*	....	4	9	.....	...	2273	818069
* 16/07 21H02	21H07	* MG1	6	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818071
* 16/07 21H07	21H12	* MG1	5	*	.....	.....	..	...	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818074
* 16/07 21H13	21H28	* MG1	20	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818080
* 16/07 21H28	21H33	* MG1	6	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	818083
* 16/07 21H34	21H38	* MG1	4	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818088
* 16/07 21H38	21H43	* MG1	4	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	818093
* 16/07 21H41	21H49	* S09	17	*	43.555	1.441	75	4	2844	3.25	* 43.711	2.245	* 0.7	-9	0	1.7	4/2	2271	818111		
* 16/07 21H41	21H50	* S09	17	*	43.580	1.584	59	11	2843	8.54	* 43.704	2.224	* 0.3	4	0	0.3	4/0	2272	818166		
* 16/07 21H41	23H29	* S09	17	*	43.581	1.586	58	11	2843	8.76	* 43.706	2.231	* 0.3	-4	0	0.3	4/0	2272	818291		
* 16/07 21H44	21H51	* MG1	2	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818179
* 16/07 21H52	21H56	* MG1	6	*	.....	.....	..	...	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818207
* 16/07 21H56	22H02	* MG1	2	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818216
* 16/07 22H02	22H09	* MG1	7	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818219
* 16/07 22H09	22H16	* MG1	2	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818223
* 16/07 22H16	22H24	* MG1	4	*	.....	.....	..	...	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818225
* 16/07 22H24	22H30	* MG1	3	*	.....	.....	..	...	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818229
* 16/07 22H31	22H35	* MG1	4	*	.....	.....	..	...	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818231
* 16/07 22H35	22H40	* MG1	2	*	.....	.....	..	...	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818234
* 16/07 22H40	22H45	* MG1	7	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818237
* 16/07 22H45	22H50	* MG1	7	*	.....	.....	..	...	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818239
* 16/07 22H51	22H55	* MG1	5	*	.....	.....	..	...	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818241
* 16/07 22H55	23H01	* MG1	6	*	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	818245
* 16/07 23H00	23H07	* MG1	8	*	.....	.....	..	...	2841	.....	*	.....	.....	*	....	4	9	.....	...	2273	818251
* 16/07 23H08	23H12	* MG1	4	*	.....	.....	..	...	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818255
* 16/07 23H15	23H18	* MG1	5	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818257
* 16/07 23H18	23H23	* MG1	3	*	.....	.....	..	...	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818262
* 16/07 23H22	23H27	* S09	11	*	43.563	1.483	93	1	2843	0.29	* 34.184	-45.000	* 17.6	-9	0	1.0	4/3	2271	818270		
* 16/07 23H22	23H29	* S09	11	*	43.563	1.476	98	1	2841	0.44	* 34.136	-44.992	* 17.8	4	0	0.4	4/0	2272	818292		
* 16/07 23H22	10H04	* S09	12	*	43.564	1.488	99	1	2842	0.66	* 34.458	-44.562	* 17.6	-4	0	0.4	4/3	2271	819190		
* 16/07 23H22	11H45	* S09	10	*	43.567	1.479	98	1	2841	0.											

* 17/07 00H17	00H26	* MG1	2	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818346
* 17/07 00H26	00H32	* MG1	8	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818349
* 17/07 00H32	00H37	* MG1	3	*	.....	.....	..	..	2845	.....	*	.....	.....	*	....	4	9	.....	...	2273	818352
* 17/07 00H37	00H49	* MG1	4	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818356
* 17/07 00H50	00H57	* MG1	2	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818359
* 17/07 00H56	01H02	* MG1	6	*	.....	.....	..	..	2842	.....	*	.....	.....	*	....	4	9	.....	...	2273	818362
* 17/07 01H03	01H09	* MG1	3	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818366
* 17/07 01H10	01H16	* S08	13	*	43.564	1.487	99	1	2847	0.56	* 34.140	47.812	* 17.7	-9	0	0.7	4/3	2271	818375		
* 17/07 01H10	01H17	* S08	14	*	43.560	1.481	98	1	2843	0.13	* 33.841	48.333	* 18.0	4	0	0.4	4/0	2272	818507		
* 17/07 01H10	02H59	* S08	14	*	43.557	1.478	99	1	2844	0.50	* 34.110	47.833	* 17.7	-4	0	0.4	4/3	2271	818637		
* 17/07 01H10	03H00	* S08	14	*	43.561	1.481	98	1	2843	0.06	* 33.841	48.331	* 18.0	-4	0	0.5	4/0	2272	818651		
* 17/07 01H10	01H14	* MG1	5	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818368
* 17/07 01H15	01H19	* MG1	2	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818572
* 17/07 01H19	01H28	* MG1	3	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818584
* 17/07 01H29	01H33	* MG1	3	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818587
* 17/07 01H33	01H39	* MG1	2	*	.....	.....	..	..	2840	.....	*	.....	.....	*	....	4	9	.....	...	2273	818591
* 17/07 01H39	01H44	* MG1	2	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818593
* 17/07 01H44	01H49	* MG1	3	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818596
* 17/07 01H49	01H57	* MG1	2	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818599
* 17/07 01H58	02H05	* MG1	2	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818605
* 17/07 02H06	02H13	* MG1	2	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818611
* 17/07 02H14	02H18	* MG1	3	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818616
* 17/07 02H20	02H23	* MG1	3	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818618
* 17/07 02H23	02H29	* MG1	4	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818621
* 17/07 02H31	02H37	* MG1	2	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818625
* 17/07 02H38	02H46	* MG1	6	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818629
* 17/07 02H46	02H51	* MG1	3	*	.....	.....	..	..	2841	.....	*	.....	.....	*	....	4	9	.....	...	2273	818631
* 17/07 02H51	02H59	* S08	16	*	43.558	1.489	99	6	2845	0.76	* 47.672	0.982	* 0.6	-9	0	1.7	4/2	2271	818638		
* 17/07 02H51	03H00	* S08	18	*	43.567	1.437	50	9	2843	3.56	* 43.735	0.591	* 0.3	4	0	0.2	4/0	2272	818652		
* 17/07 02H51	04H37	* S08	18	*	43.553	1.500	96	5	2844	1.77	* 43.937	0.521	* 0.6	-4	0	0.5	4/3	2271	818715		
* 17/07 02H51	04H38	* S08	18	*	43.569	1.428	50	9	2843	4.36	* 43.733	0.599	* 0.3	-4	0	0.2	4/0	2272	818726		
* 17/07 02H51	02H56	* MG1	2	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818633
* 17/07 02H57	03H02	* MG1	6	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818657
* 17/07 03H02	03H08	* MG1	4	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818668
* 17/07 03H10	03H16	* MG1	6	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818671
* 17/07 03H18	03H21	* MG1	2	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818676
* 17/07 03H21	03H26	* MG1	5	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818678
* 17/07 03H27	03H31	* MG1	2	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818681
* 17/07 03H32	03H36	* MG1	2	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818684
* 17/07 03H37	03H43	* MG1	5	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818687
* 17/07 03H43	03H48	* MG1	3	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818689
* 17/07 03H49	03H53	* MG1	6	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818691
* 17/07 03H53	03H58	* MG1	3	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818694
* 17/07 03H58	04H04	* MG1	6	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818696
* 17/07 04H04	04H09	* MG1	3	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818700
* 17/07 04H10	04H14	* MG1	2	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818702
* 17/07 04H14	04H27	* MG1	13	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818706
* 17/07 04H26	04H32	* MG1	2	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818709
* 17/07 04H28	06H17	* S07	2	*	.....	.....	..	..	3449	.....	*	.....	.....	*	....	-4	9	.....	...	2271	818807
* 17/07 04H31	04H37	* S08	14	*	43.561	1.491	99	1	2845	0.84	* 52.955	-47.593	* 17.5	-9	0	1.1	4/3	2271	818716		
* 17/07 04H31	04H38	* S08	14	*	43.561	1.478	99	1	2844	0.22	* 53.065	-46.790	* 17.2	4	0	0.3	4/0	2272	818727		
* 17/07 04H31	11H04	* S08	14	*	43.561	1.477	99	1	2844	0.31	* 53.062	-46.794	* 17.2	-4	0	0.3	4/0	2272	819318		
* 17/07 04H31	06H19	* S07	2	*	.....	.....	..	..	0	.....	*	.....	.....	*	....	-4	9	.....	...	2272	818935
* 17/07 04H32	04H37	* MG1	6	*	.....	.....	..	..	2844	.....	*	.....	.....	*	....	4	9	.....	...	2273	818712
* 17/07 04H38	04H42	* MG1	3	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818740
* 17/07 04H42	04H47	* MG1	3	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818750
* 17/07 04H47	04H53	* MG1	6	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818752
* 17/07 04H53	04H58	* MG1	2	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818754
* 17/07 04H58	05H03	* MG1	2	*	.....	.....	..	..	2840	.....	*	.....	.....	*	....	4	9	.....	...	2273	818757
* 17/07 05H05	05H09	* MG1	2	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818761
* 17/07 05H11	05H15	* MG1	6	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818764
* 17/07 05H14	05H20	* MG1	5	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818766
* 17/07 05H22	05H26	* MG1	3	*	.....	.....	..	..	2846	.....	*	.....	.....	*	....	4	9	.....	...	2273	818771
* 17/07 05H27	05H31	* MG1	4	*	.....	.....	..	..	2843	.....	*	.....	.....	*	....	4	9	.....	...	2273	818774
* 17/07 05H31	05H36	* MG1	5	*	.....	.....	..	..	28												

* 17/07 06H10	06H19	* S07	14	* 43.559	1.481	99	1	2843	0.28	* 39.680	21.443	* 7.4	4	0	0.1	4/0	2272	818897
* 17/07 06H10	07H58	* S07	14	* 43.559	1.481	99	1	2843	0.27	* 39.680	21.441	* 7.4	-4	0	0.1	4/0	2272	819063
* 17/07 06H18	06H23	* MG1	10	*	.....	..	...	2843	.....	*	.....	* .....	4	9	.....	...	2273	818953
* 17/07 06H24	06H31	* MG1	11	*	.....	..	...	2843	.....	*	.....	* .....	4	9	.....	...	2273	818963
* 17/07 06H32	06H36	* MG1	5	*	.....	..	...	2843	.....	*	.....	* .....	4	9	.....	...	2273	818967
* 17/07 06H36	06H42	* MG1	2	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	818970
* 17/07 06H43	06H47	* MG1	5	*	.....	..	...	2843	.....	*	.....	* .....	4	9	.....	...	2273	818972
* 17/07 06H47	06H52	* MG1	2	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	818977
* 17/07 06H52	06H57	* MG1	4	*	.....	..	...	2844	.....	*	.....	* .....	4	9	.....	...	2273	818979
* 17/07 06H56	07H02	* MG1	4	*	.....	..	...	2843	.....	*	.....	* .....	4	9	.....	...	2273	818984
* 17/07 07H02	07H09	* S06	11	* 43.605	1.484	89	1	2841	4.91	* 35.119	41.998	* 15.3	8	0	1.9	4/2	2271	818995
* 17/07 07H03	07H07	* MG1	4	*	.....	..	...	2843	.....	*	.....	* .....	4	9	.....	...	2273	818988
* 17/07 07H07	07H12	* MG1	5	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819002
* 17/07 07H12	07H17	* MG1	5	*	.....	..	...	2843	.....	*	.....	* .....	4	9	.....	...	2273	819018
* 17/07 07H17	07H28	* MG1	3	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819023
* 17/07 07H29	07H33	* MG1	7	*	.....	..	...	2842	.....	*	.....	* .....	4	9	.....	...	2273	819027
* 17/07 07H33	07H40	* MG1	9	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819031
* 17/07 07H41	07H45	* MG1	7	*	.....	..	...	2842	.....	*	.....	* .....	4	9	.....	...	2273	819033
* 17/07 07H46	07H50	* MG1	2	*	.....	..	...	2842	.....	*	.....	* .....	4	9	.....	...	2273	819035
* 17/07 07H50	07H57	* S07	16	* 43.564	1.488	99	1	2843	0.64	* 48.777	-26.256	* 10.4	-9	0	2.0	4/3	2271	819044
* 17/07 07H50	07H58	* S07	16	* 43.560	1.476	99	1	2842	0.40	* 48.763	-25.794	* 10.1	4	0	0.2	4/0	2272	819064
* 17/07 07H50	09H32	* S07	16	* 43.560	1.476	99	1	2842	0.39	* 48.764	-25.793	* 10.1	-4	0	0.2	4/0	2272	819161
* 17/07 07H50	07H55	* MG1	5	*	.....	..	...	2842	.....	*	.....	* .....	4	9	.....	...	2273	819037
* 17/07 07H55	08H03	* MG1	4	*	.....	..	...	2841	.....	*	.....	* .....	4	9	.....	...	2273	819072
* 17/07 08H03	08H08	* MG1	2	*	.....	..	...	2842	.....	*	.....	* .....	4	9	.....	...	2273	819080
* 17/07 08H08	08H13	* MG1	6	*	.....	..	...	2841	.....	*	.....	* .....	4	9	.....	...	2273	819082
* 17/07 08H12	08H18	* MG1	7	*	.....	..	...	2841	.....	*	.....	* .....	4	9	.....	...	2273	819085
* 17/07 08H18	08H23	* MG1	2	*	.....	..	...	2842	.....	*	.....	* .....	4	9	.....	...	2273	819087
* 17/07 08H23	08H32	* MG1	2	*	.....	..	...	2838	.....	*	.....	* .....	4	9	.....	...	2273	819096
* 17/07 08H32	08H37	* MG1	2	*	.....	..	...	2841	.....	*	.....	* .....	4	9	.....	...	2273	819104
* 17/07 08H37	08H47	* MG1	3	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819111
* 17/07 08H43	08H51	* S06	16	* 43.600	1.460	98	1	2834	4.65	* 44.974	-5.316	* 2.9	8	0	0.7	4/3	2271	819119
* 17/07 08H48	08H52	* MG1	3	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819124
* 17/07 08H52	08H57	* MG1	3	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819136
* 17/07 08H56	09H02	* MG1	8	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819144
* 17/07 09H03	09H07	* MG1	5	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819147
* 17/07 09H07	09H12	* MG1	4	*	.....	..	...	2841	.....	*	.....	* .....	4	9	.....	...	2273	819150
* 17/07 09H13	09H17	* MG1	4	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819152
* 17/07 09H17	09H22	* MG1	4	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819154
* 17/07 09H22	09H30	* MG1	9	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819157
* 17/07 09H28	09H32	* S07	4	* 43.565	1.486	89	3	2843	0.59	* 57.492	-75.612	* 25.3	4	0	3.5	4/0	2272	819162
* 17/07 09H28	15H58	* S07	4	* 43.568	1.491	89	6	2841	1.11	* 57.492	-75.617	* 25.5	-4	0	0.1	3/2	2271	819752
* 17/07 09H31	09H35	* MG1	5	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819175
* 17/07 09H36	09H40	* MG1	2	*	.....	..	...	2839	.....	*	.....	* .....	4	9	.....	...	2273	819179
* 17/07 09H42	09H45	* MG1	4	*	.....	..	...	2841	.....	*	.....	* .....	4	9	.....	...	2273	819181
* 17/07 09H45	09H50	* MG1	3	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819183
* 17/07 09H51	09H57	* MG1	3	*	.....	..	...	2842	.....	*	.....	* .....	4	9	.....	...	2273	819186
* 17/07 09H56	10H04	* S09	15	* 43.562	1.480	99	1	2841	0.09	* 38.536	26.949	* 9.4	-9	0	1.4	4/3	2271	819191
* 17/07 09H56	11H45	* S09	15	* 43.560	1.482	99	1	2840	0.22	* 38.398	27.267	* 9.7	-4	0	0.1	4/0	2272	819442
* 17/07 09H57	10H03	* MG1	4	*	.....	..	...	2842	.....	*	.....	* .....	4	9	.....	...	2273	819189
* 17/07 10H03	10H08	* MG1	4	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819268
* 17/07 10H08	10H13	* MG1	2	*	.....	..	...	2839	.....	*	.....	* .....	4	9	.....	...	2273	819277
* 17/07 10H13	10H18	* MG1	3	*	.....	..	...	2838	.....	*	.....	* .....	4	9	.....	...	2273	819279
* 17/07 10H18	10H25	* MG1	7	*	.....	..	...	2839	.....	*	.....	* .....	4	9	.....	...	2273	819282
* 17/07 10H23	10H28	* S06	10	* 43.589	1.500	95	1	2831	3.47	* 54.372	-53.229	* 19.4	8	0	0.6	4/3	2271	819284
* 17/07 10H25	10H30	* MG1	2	*	.....	..	...	2839	.....	*	.....	* .....	4	9	.....	...	2273	819290
* 17/07 10H30	10H37	* MG1	4	*	.....	..	...	2839	.....	*	.....	* .....	4	9	.....	...	2273	819294
* 17/07 10H34	10H42	* MG1	6	*	.....	..	...	2840	.....	*	.....	* .....	4	9	.....	...	2273	819297
* 17/07 10H43	10H47	* MG1	3	*	.....	..	...	2839	.....	*	.....	* .....	4	9	.....	...	2273	819299
* 17/07 10H48	10H56	* MG1	2	*	.....	..	...	2836	.....	*	.....	* .....	4	9	.....	...	2273	819302
* 17/07 10H57	11H05	* MG1	4	*	.....	..	...	2838	.....	*	.....	* .....	4	9	.....	...	2273	819359
* 17/07 10H59	11H04	* S08	3	* 43.546	1.578	50	63	2862	7.98	* 58.317	80.567	* 25.7	4	1	0.0	1/0	2272	819319
* 17/07 10H59	12H46	* S08	3	* 43.419	2.849	50	20	2958	111.5	* 57.840	79.413	* 25.4	-4	1	0.0	1/1	2271	819517
* 17/07 11H00	12H47	* S08	3	* 43.548	1.582	50	63	2862	8.27	* 58.314	80.573	* 25.7	-4	1	0.0	1/0	2272	819591
* 17/07 11H08	11H13	* MG1	2	*	.....	..	...	2839	.....	*	.....	* .....	4	9	.....	...	2273	819364
* 17/07 11H14	11H18	* MG1	2	*	.....	..	...	2838	.....	*	.....	* .....	4	9	.....	...	2273	819366
* 17/07 11H18	11H23	* MG1	3	*	.....	..	...	2838	.....	*	.....	* .....	4	9	.....	...	2273	819368
* 17/07 11H22	11H28	* MG1	2	*	.....	..	...	2837	.....	*	.....	* .....	4	9	.....	...	2273	819371
* 17/07 11H29	11H37	* MG1	6	*	.....	..	...	2838	.....	*	.....	* .....	4	9	.....	...	2273	819375
* 17/07 11H36	11H43	* S09	17	* 43.563	1.484	99	1	2840	0.30	* 47.742	-20.258	* 8.3	-9	0	1.4	4/3	2271	819386
* 17/07 11H36	11H45	* S09	17	* 43.560	1.478	99	1	2838	0.28	* 47.721	-19.879	* 8.1	4	0	0.1	4/0	2272	819443
* 17/07 11H36	13H20	* S09	17	* 43.560	1.477	99	1	2838	0.28	* 47.722	-19.878	* 8.1	-4	0	0.1	4/0	2272	819623

* 17/07 11H37	11H42	* MG1	4	*	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	.....	...	2273	819378
* 17/07 11H42	11H48	* MG1	6	*	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	.....	...	2273	819475
* 17/07 11H49	11H54	* MG1	5	*	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	.....	...	2273	819484
* 17/07 11H53	11H59	* MG1	4	*	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	.....	...	2273	819486
* 17/07 11H58	12H04	* MG1	2	*	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	.....	...	2273	819490
* 17/07 12H04	12H10	* MG1	4	*	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	.....	...	2273	819493
* 17/07 12H09	12H17	* MG1	11	*	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	.....	...	2273	819498
* 17/07 12H17	12H22	* MG1	2	*	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	819500
* 17/07 12H22	12H27	* MG1	6	*	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	.....	...	2273	819503
* 17/07 12H27	12H32	* MG1	8	*	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	.....	...	2273	819507
* 17/07 12H32	12H37	* MG1	8	*	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	.....	...	2273	819512
* 17/07 12H37	12H42	* MG1	5	*	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	.....	...	2273	819516
* 17/07 12H38	12H46	* S08	14	*	43.560	1.479	99	1	2839	0.21	* 49.329	30.901	* 11.0	-9	0	1.4	4/3		2271	819518	
* 17/07 12H38	12H47	* S08	14	*	43.562	1.481	98	1	2836	0.08	* 49.372	30.441	* 10.7	4	0	0.4	4/0		2272	819592	
* 17/07 12H38	14H26	* S08	14	*	43.563	1.473	99	1	2837	0.66	* 49.336	30.896	* 11.0	-4	0	0.5	4/3		2271	819663	
* 17/07 12H38	14H28	* S08	14	*	43.562	1.480	98	1	2836	0.09	* 49.373	30.439	* 10.7	-4	0	0.4	4/0		2272	819684	
* 17/07 12H42	12H47	* MG1	2	*	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	.....	...	2273	819595
* 17/07 12H46	12H52	* MG1	3	*	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	.....	...	2273	819600
* 17/07 12H52	12H57	* MG1	3	*	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	.....	...	2273	819604
* 17/07 12H59	13H02	* MG1	2	*	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	.....	...	2273	819607
* 17/07 13H02	13H07	* MG1	2	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819610
* 17/07 13H07	13H12	* MG1	2	*	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	.....	...	2273	819613
* 17/07 13H12	13H17	* MG1	4	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819615
* 17/07 13H15	13H20	* S09	5	*	43.565	1.485	79	3	2839	0.54	* 56.683	-69.153	* 23.6	4	0	3.9	4/0		2272	819624	
* 17/07 13H15	19H44	* S09	5	*	43.568	1.489	79	4	2840	1.01	* 56.684	-69.160	* 23.9	-4	0	0.2	4/2		2271	820156	
* 17/07 13H17	13H26	* MG1	7	*	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	.....	...	2273	819629
* 17/07 13H25	13H33	* MG1	3	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819633
* 17/07 13H33	13H40	* MG1	10	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819637
* 17/07 13H39	13H45	* MG1	4	*	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	.....	...	2273	819640
* 17/07 13H44	13H51	* MG1	7	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819643
* 17/07 13H51	13H56	* MG1	3	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819645
* 17/07 13H56	14H01	* MG1	2	*	.....	.....	..	...	2835	.....	*	.....	.....	*	....	4	9	.....	...	2273	819647
* 17/07 14H01	14H06	* MG1	2	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819651
* 17/07 14H06	14H11	* MG1	5	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819654
* 17/07 14H11	14H19	* MG1	12	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819658
* 17/07 14H19	14H26	* S08	17	*	43.557	1.485	98	1	2838	0.52	* 39.872	-16.731	* 6.6	-9	0	1.6	4/3		2271	819664	
* 17/07 14H19	14H28	* S08	17	*	43.559	1.476	99	1	2835	0.48	* 39.769	-17.033	* 6.9	4	0	0.2	4/0		2272	819685	
* 17/07 14H19	01H03	* S08	17	*	43.564	1.483	99	1	2835	0.32	* 39.870	-16.747	* 6.6	-4	0	0.4	4/4		2271	820553	
* 17/07 14H19	01H05	* S08	17	*	43.559	1.476	99	1	2835	0.45	* 39.769	-17.031	* 6.9	-4	0	0.2	4/0		2272	820695	
* 17/07 14H19	14H24	* MG1	8	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819660
* 17/07 14H24	14H30	* MG1	5	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819697
* 17/07 14H30	14H35	* MG1	6	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819702
* 17/07 14H35	14H40	* MG1	10	*	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	819705
* 17/07 14H41	14H45	* MG1	5	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819707
* 17/07 14H45	14H50	* MG1	7	*	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	819710
* 17/07 14H50	14H55	* MG1	4	*	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	.....	...	2273	819712
* 17/07 14H55	15H00	* MG1	4	*	.....	.....	..	...	2835	.....	*	.....	.....	*	....	4	9	.....	...	2273	819715
* 17/07 15H00	15H05	* MG1	4	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819718
* 17/07 15H05	15H10	* MG1	2	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819721
* 17/07 15H11	15H15	* MG1	4	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819724
* 17/07 15H15	15H22	* MG1	4	*	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	819727
* 17/07 15H23	15H27	* MG1	2	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819729
* 17/07 15H27	15H32	* MG1	2	*	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	819731
* 17/07 15H31	15H37	* MG1	9	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819735
* 17/07 15H37	15H42	* MG1	2	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819738
* 17/07 15H41	15H47	* MG1	4	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819740
* 17/07 15H47	15H52	* MG1	6	*	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	819743
* 17/07 15H53	15H58	* S07	10	*	43.562	1.474	89	1	2836	0.51	* 53.717	55.895	* 19.3	-9	0	1.1	4/3		2271	819753	
* 17/07 15H53	16H00	* S07	10	*	43.562	1.477	99	1	2835	0.31	* 53.581	55.733	* 19.0	4	0	0.3	4/0		2272	819851	
* 17/07 15H53	17H41	* S07	10	*	43.562	1.477	99	1	2835	0.28	* 53.582	55.734	* 19.0	-4	0	0.3	4/0		2272	819960	
* 17/07 15H53	15H58	* MG1	6	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819751
* 17/07 15H58	16H03	* MG1	7	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	819857
* 17/07 16H00	01H03	* S08	2	*	.....	.....	..	...	4274	.....	*	.....	.....	*	....	-4	9	.....	...	2271	820602
* 17/07 16H01	01H05	* S08	2	*	.....	.....	..	...	0	.....	*	.....	.....	*	....	-4	9	.....	...	2272	

* 17/07 16H53	16H58	* MG1	5 *	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	....	...	2273	819900
* 17/07 16H58	17H03	* MG1	2 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	819908
* 17/07 17H03	17H08	* MG1	5 *	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	....	...	2273	819915
* 17/07 17H07	17H13	* MG1	8 *	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	....	...	2273	819917
* 17/07 17H13	17H18	* MG1	2 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	819919
* 17/07 17H18	17H27	* MG1	12 *	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	....	...	2273	819925
* 17/07 17H28	17H32	* MG1	3 *	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	....	...	2273	819927
* 17/07 17H30	17H37	* MG1	7 *	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	....	...	2273	819930
* 17/07 17H32	17H40	* S07	17 *	43.564	1.486	95	1	2837	0.52	* 44.808	7.990		* 2.8	-9	0	2.1	4/3	2271	819945	
* 17/07 17H32	17H41	* S07	16 *	43.561	1.489	98	1	2836	0.68	* 44.771	7.787		* 2.5	4	0	0.1	4/0	2272	819961	
* 17/07 17H32	19H20	* S07	16 *	43.561	1.489	98	1	2836	0.69	* 44.772	7.790		* 2.5	-4	0	0.1	4/0	2272	820125	
* 17/07 17H38	17H42	* MG1	4 *	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	....	...	2273	819977
* 17/07 17H43	17H49	* MG1	3 *	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	....	...	2273	819995
* 17/07 17H50	17H54	* MG1	5 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820000
* 17/07 17H54	18H02	* MG1	10 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820009
* 17/07 18H02	18H08	* MG1	4 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820016
* 17/07 18H09	18H13	* MG1	6 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	....	...	2273	820020
* 17/07 18H14	18H18	* MG1	2 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820024
* 17/07 18H18	18H23	* MG1	2 *	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	....	...	2273	820030
* 17/07 18H23	18H28	* MG1	6 *	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	....	...	2273	820032
* 17/07 18H28	18H34	* MG1	3 *	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	....	...	2273	820039
* 17/07 18H30	18H38	* S06	15 *	43.558	1.493	99	1	2830	1.02	* 48.103	24.168		* 8.7	8	0	1.0	4/3	2271	820057	
* 17/07 18H36	18H39	* MG1	3 *	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	....	...	2273	820062
* 17/07 18H39	18H44	* MG1	2 *	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	....	...	2273	820073
* 17/07 18H44	18H49	* MG1	3 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820084
* 17/07 18H49	18H54	* MG1	2 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	....	...	2273	820089
* 17/07 18H54	18H59	* MG1	4 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820091
* 17/07 18H59	19H06	* MG1	2 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820093
* 17/07 19H07	19H11	* MG1	6 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820096
* 17/07 19H11	19H16	* MG1	2 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820098
* 17/07 19H12	19H18	* S07	14 *	43.557	1.487	99	1	2839	0.67	* 35.670	-39.032		* 15.3	-9	0	1.5	4/3	2271	820106	
* 17/07 19H12	19H20	* S07	15 *	43.560	1.475	99	1	2837	0.47	* 35.412	-39.460		* 15.6	4	0	0.3	4/0	2272	820126	
* 17/07 19H12	05H53	* S07	15 *	43.560	1.487	99	1	2836	0.50	* 35.683	-38.997		* 15.3	-4	0	0.2	4/4	2271	820928	
* 17/07 19H12	05H54	* S07	15 *	43.562	1.478	99	1	2837	0.25	* 35.414	-39.460		* 15.6	-4	0	0.3	4/0	2272	821008	
* 17/07 19H16	19H21	* MG1	4 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820138
* 17/07 19H21	19H30	* MG1	5 *	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	....	...	2273	820149
* 17/07 19H30	19H36	* MG1	3 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820151
* 17/07 19H37	19H46	* MG1	11 *	.....	.....	..	...	2835	.....	*	.....	.....	*	....	4	9	....	...	2273	820222
* 17/07 19H40	19H44	* S09	7 *	43.561	1.483	92	1	2841	0.19	* 54.706	61.050		* 20.9	-9	0	0.5	4/3	2271	820157	
* 17/07 19H40	21H27	* S09	7 *	43.571	1.469	83	1	2835	1.46	* 54.835	61.143		* 20.8	-4	0	1.1	4/2	2271	820336	
* 17/07 19H40	21H28	* S09	7 *	43.560	1.477	96	2	2837	0.30	* 54.824	61.133		* 20.5	-4	0	1.1	4/0	2272	820382	
* 17/07 19H46	19H51	* MG1	2 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820239
* 17/07 19H51	19H56	* MG1	7 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820246
* 17/07 19H56	20H01	* MG1	5 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820249
* 17/07 20H01	20H09	* MG1	3 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820256
* 17/07 20H09	20H14	* MG1	6 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820258
* 17/07 20H10	20H18	* S06	14 *	43.555	1.462	99	1	2830	1.64	* 38.483	-23.103		* 9.1	8	0	1.2	4/3	2271	820268	
* 17/07 20H14	20H19	* MG1	4 *	.....	.....	..	...	2835	.....	*	.....	.....	*	....	4	9	....	...	2273	820275
* 17/07 20H20	20H24	* MG1	6 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820283
* 17/07 20H24	20H37	* MG1	17 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820287
* 17/07 20H38	20H42	* MG1	6 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820290
* 17/07 20H42	20H52	* MG1	13 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820295
* 17/07 20H52	20H57	* MG1	4 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820300
* 17/07 20H57	21H02	* MG1	7 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820302
* 17/07 21H02	21H07	* MG1	5 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820308
* 17/07 21H07	21H12	* MG1	2 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820313
* 17/07 21H12	21H17	* MG1	4 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820316
* 17/07 21H17	21H22	* MG1	5 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820320
* 17/07 21H19	21H27	* S09	16 *	43.562	1.479	98	1	2840	0.18	* 45.797	13.025		* 4.6	-9	0	1.6	4/3	2271	820337	
* 17/07 21H19	21H28	* S09	17 *	43.560	1.484	98	1	2838	0.30	* 45.762	12.769		* 4.4	4	0	0.2	4/0	2272	820383	
* 17/07 21H19	23H05	* S09	17 *	43.565	1.480	99	1	2838	0.44	* 45.798	13.013		* 4.7	-4	0	0.3	4/4	2271	820474	
* 17/07 21H23	21H30	* MG1	3 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820416
* 17/07 21H32	21H35	* MG1	2 *	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	....	...	2273	820426
* 17/07 21H35	21H40	* MG1	2 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820432
* 17/07 21H40	21H45	* MG1	3 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820434
* 17/07 21H45	21H50	* MG1	2 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820437
* 17/07 21H51	21H55	* MG1	5 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9</				

* 17/07 22H50	22H55	* MG1	3 *	.....	.....	..	...	2840	.....	*	.....	.....	*	....	4	9	....	...	2273	820462
* 17/07 22H55	23H03	* MG1	8 *	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	....	...	2273	820466
* 17/07 22H59	23H05	* S09	14 *	43.560	1.486	99	1	2840	0.44	*	36.539	-33.987	*	13.4	-9	0	1.2	4/3	2271	820475
* 17/07 22H59	09H40	* S09	15 *	43.562	1.487	99	1	2838	0.52	*	36.540	-33.992	*	13.4	-4	0	0.2	4/4	2271	821337
* 17/07 22H59	09H41	* S09	15 *	43.563	1.477	99	1	2838	0.38	*	36.315	-34.387	*	13.6	-4	0	0.2	4/0	2272	821421
* 17/07 23H04	23H08	* MG1	2 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820495
* 17/07 23H09	23H14	* MG1	2 *	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	....	...	2273	820497
* 17/07 23H14	23H22	* MG1	4 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820502
* 17/07 23H21	23H27	* MG1	6 *	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	....	...	2273	820505
* 17/07 23H26	23H32	* MG1	3 *	.....	.....	..	...	2840	.....	*	.....	.....	*	....	4	9	....	...	2273	820507
* 17/07 23H32	23H38	* MG1	5 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820509
* 17/07 23H38	23H43	* MG1	2 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820513
* 17/07 23H43	23H48	* MG1	2 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820518
* 17/07 23H49	23H53	* MG1	3 *	.....	.....	..	...	2842	.....	*	.....	.....	*	....	4	9	....	...	2273	820520
* 17/07 23H53	23H59	* MG1	3 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820523
* 18/07 00H02	00H04	* MG1	2 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820525
* 18/07 00H05	00H14	* MG1	2 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820529
* 18/07 00H15	00H23	* MG1	2 *	.....	.....	..	...	2838	.....	*	.....	.....	*	....	4	9	....	...	2273	820532
* 18/07 00H24	00H28	* MG1	2 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820534
* 18/07 00H28	00H33	* MG1	2 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820537
* 18/07 00H34	00H38	* MG1	2 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820540
* 18/07 00H38	00H43	* MG1	3 *	.....	.....	..	...	2840	.....	*	.....	.....	*	....	4	9	....	...	2273	820542
* 18/07 00H41	00H51	* MG1	10 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820546
* 18/07 00H50	00H57	* MG1	2 *	.....	.....	..	...	2839	.....	*	.....	.....	*	....	4	9	....	...	2273	820549
* 18/07 00H58	01H03	* S08	12 *	43.561	1.489	62	1	2841	0.64	*	32.992	53.668	*	19.8	-9	0	0.8	4/3	2271	820554
* 18/07 00H58	01H05	* S08	12 *	43.559	1.480	99	1	2839	0.24	*	32.708	53.630	*	20.1	4	0	0.2	4/0	2272	820634
* 18/07 00H59	01H04	* MG1	7 *	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	....	...	2273	820625

Zones géographiques BORDE/MARSA numero de dossier xxx

Nombre total de lignes (localisées + détectées) : 91 + 347 = 438

Nombre de localisées : 91

Nombre de balises-passage : 147

Nombre de localisations uniques : 34

Date première loc : 08/07/2004 14:20

Date dernière loc : 28/07/2004 12:23

Durée de l'émission : 34H 38mn

Reference pour calcul des erreurs : lat=+43.561 long= +1.481

First Sat Pass checked - Satellite Test Conf. N° 1 : Dry ground

Date	U. T.	PLB 200 N° : 11 Message without FFFE2F	PLB 200 Level (dBm)	Sarsat Sat
16/07/2004	14:24:04	96ee32400b2b80335c2cb7 8e014cda	-130	S08
16/07/2004	14:24:56	96ee32400b2b80335c2cb7 8e014cda	-125	S08
16/07/2004	14:25:46	96ee32400b2b80335c2cb7 8e014cda	-127	S08
16/07/2004	14:26:36	96ee32400b2b80335c2cb7 8e014cda	-120	S08
16/07/2004	14:27:27	96ee32400b2b80335c2cb7 8e014cda	-116	S08
16/07/2004	14:28:18	96ee32400b2b80335c2cb7 8e014cda	-113	S08
16/07/2004	14:29:07	96ee32400b2b80335c2cb7 8e014cda	-111	S08
16/07/2004	14:29:58	96ee32400b2b80335c2cb7 8e014cda	-111	S08
16/07/2004	14:30:47	96ee32400b2b80335c2cb7 8e014cda	-115	S08
16/07/2004	14:31:39	96ee32400b2b80335c2cb7 8e014cda	-123	S08
16/07/2004	14:32:29	96ee32400b2b80335c2cb7 8e014cda	-119	S08
16/07/2004	14:33:19	96ee32400b2b80335c2cb7 8e014cda	-117	S08
16/07/2004	14:34:11	96ee32400b2b80335c2cb7 8e014cda	-116	S08
16/07/2004	14:35:01	96ee32400b2b80335c2cb7 8e014cda	-120	S08
16/07/2004	14:35:51	96ee32400b2b80335c2cb7 8e014cda	-125	S08
16/07/2004	14:36:42	96ee32400b2b80335c2cb7 8e014cda	-128	S08
16/07/2004	14:37:31	96ee32400b2b80335c2cb7 8e014cda	-127	S08
16/07/2004	14:38:22	96ee32400b2b80335c2cb7 8e014cda	-135	S08
Total burst/pass	18	Level Average (dBm)	-117,0	S08

Second Sat Pass checked - Satellite Test Conf. N° 1 : Dry ground

Date	U. T.	PLB 200 N° : 11 Message without FFFE2F	PLB 200 Level (dBm)	Sarsat Sat
16/07/2004	17:49:09	96ee32400b2b80335c2cb7 8e014cda	-128	S07
16/07/2004	17:49:59	96ee32400b2b80335c2cb7 8e014cda	-123	S07
16/07/2004	17:50:48	96ee32400b2b80335c2cb7 8e014cda	-120	S07
16/07/2004	17:51:40	96ee32400b2b80335c2cb7 8e014cda	-117	S07
16/07/2004	17:52:31	96ee32400b2b80335c2cb7 8e014cda	-111	S07
16/07/2004	17:53:22	96ee32400b2b80335c2cb7 8e014cda	-110	S07
16/07/2004	17:54:13	96ee32400b2b80335c2cb7 8e014cda	-109	S07
16/07/2004	17:55:02	96ee32400b2b80335c2cb7 8e014cda	-112	S07
16/07/2004	17:55:52	96ee32400b2b80335c2cb7 8e014cda	-118	S07
16/07/2004	17:56:42	96ee32400b2b80335c2cb7 8e014cda	-125	S07
16/07/2004	17:57:31	96ee32400b2b80335c2cb7 8e014cda	-117	S07
16/07/2004	18:00:05	96ee32400b2b80335c2cb7 8e014cda	-115	S07
16/07/2004	18:00:57	96ee32400b2b80335c2cb7 8e014cda	-119	S07
16/07/2004	18:01:47	96ee32400b2b80335c2cb7 8e014cda	-123	S07
16/07/2004	18:03:28	96ee32400b2b80335c2cb7 8e014cda	-129	S07
Total burst/pass	15	Level Average (dBm)	-114,8	S07

First Sat Pass checked - Satellite Test Conf. N° 1 : Dry ground

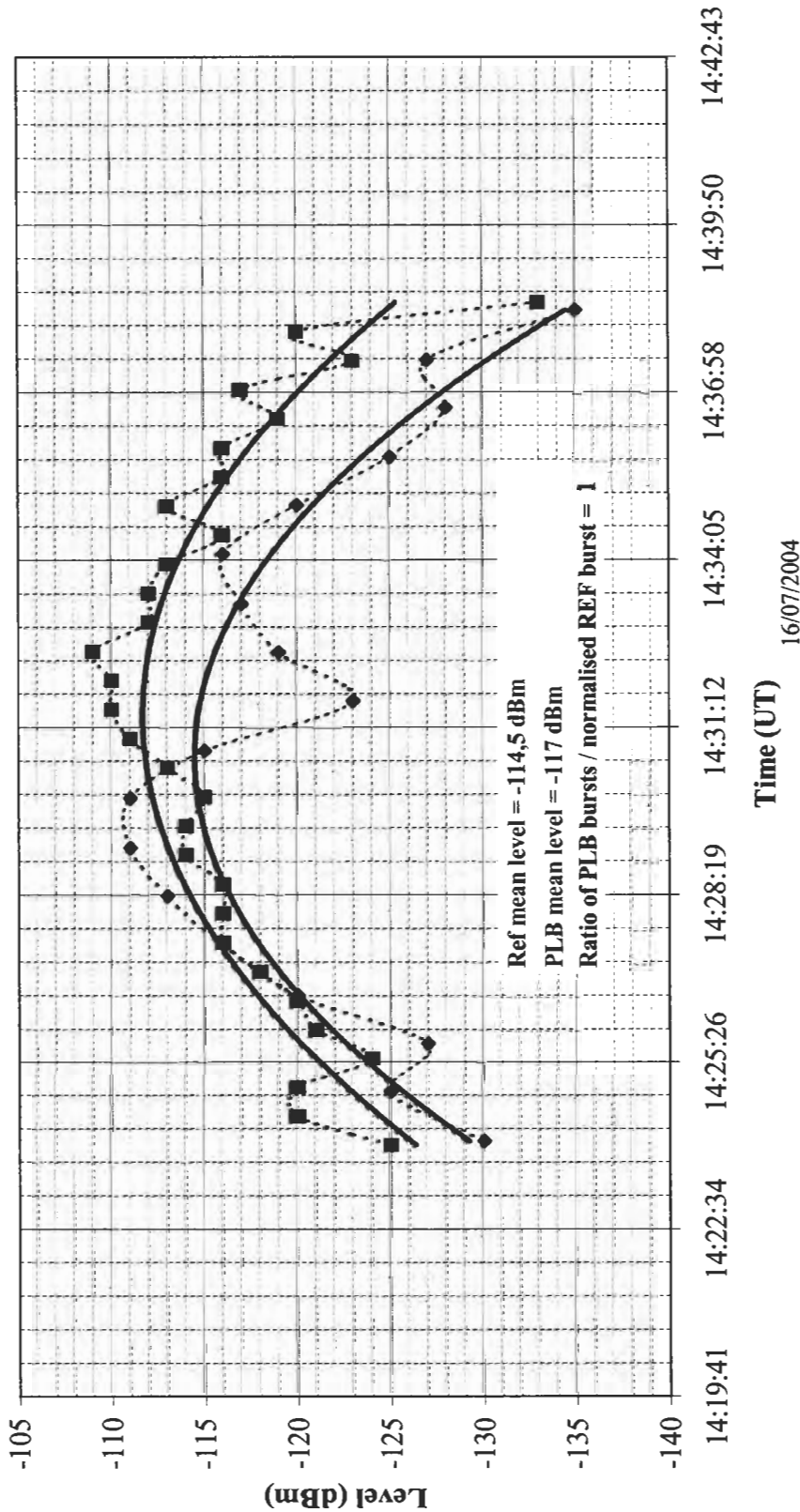
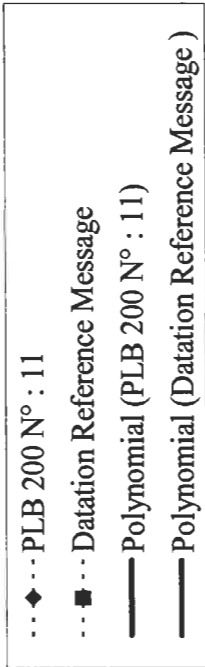
Date	U. T.	Datation Reference Message	Level (dBm)	Sarsat Sat
2004/07/16	14:24:00	ce300000000000dbd0e40 19814240	-125	S08
2004/07/16	14:24:30	ce300000000000dbd0e40 19814243	-120	S08
2004/07/16	14:25:00	ce300000000000dbd0e40 19814250	-120	S08
2004/07/16	14:25:30	ce300000000000dbd0e40 19814253	-124	S08
2004/07/16	14:26:00	ce300000000000dbd0e40 19814260	-121	S08
2004/07/16	14:26:30	ce300000000000dbd0e40 19814263	-120	S08
2004/07/16	14:27:00	ce300000000000dbd0e40 19814270	-118	S08
2004/07/16	14:27:30	ce300000000000dbd0e40 19814273	-116	S08
2004/07/16	14:28:00	ce300000000000dbd0e40 19814280	-116	S08
2004/07/16	14:28:30	ce300000000000dbd0e40 19814283	-116	S08
2004/07/16	14:29:00	ce300000000000dbd0e40 19814290	-114	S08
2004/07/16	14:29:30	ce300000000000dbd0e40 19814293	-114	S08
2004/07/16	14:30:00	ce300000000000dbd0e40 19814300	-115	S08
2004/07/16	14:30:30	ce300000000000dbd0e40 19814303	-113	S08
2004/07/16	14:31:00	ce300000000000dbd0e40 19814310	-111	S08
2004/07/16	14:31:30	ce300000000000dbd0e40 19814313	-110	S08
2004/07/16	14:32:00	ce300000000000dbd0e40 19814320	-110	S08
2004/07/16	14:32:30	ce300000000000dbd0e40 19814323	-109	S08
2004/07/16	14:33:00	ce300000000000dbd0e40 19814330	-112	S08
2004/07/16	14:33:30	ce300000000000dbd0e40 19814333	-112	S08
2004/07/16	14:34:00	ce300000000000dbd0e40 19814340	-113	S08
2004/07/16	14:34:30	ce300000000000dbd0e40 19814343	-116	S08
2004/07/16	14:35:00	ce300000000000dbd0e40 19814350	-113	S08
2004/07/16	14:35:30	ce300000000000dbd0e40 19814353	-116	S08
2004/07/16	14:36:00	ce300000000000dbd0e40 19814360	-116	S08
2004/07/16	14:36:30	ce300000000000dbd0e40 19814363	-119	S08
2004/07/16	14:37:00	ce300000000000dbd0e40 19814370	-117	S08
2004/07/16	14:37:30	ce300000000000dbd0e40 19814373	-123	S08
2004/07/16	14:38:00	ce300000000000dbd0e40 19814380	-120	S08
2004/07/16	14:38:30	ce300000000000dbd0e40 19814383	-133	S08

Total burst/pass	30	Level Average (dBm)	-114,5	S08
Total burst normalised at 3/5	18			

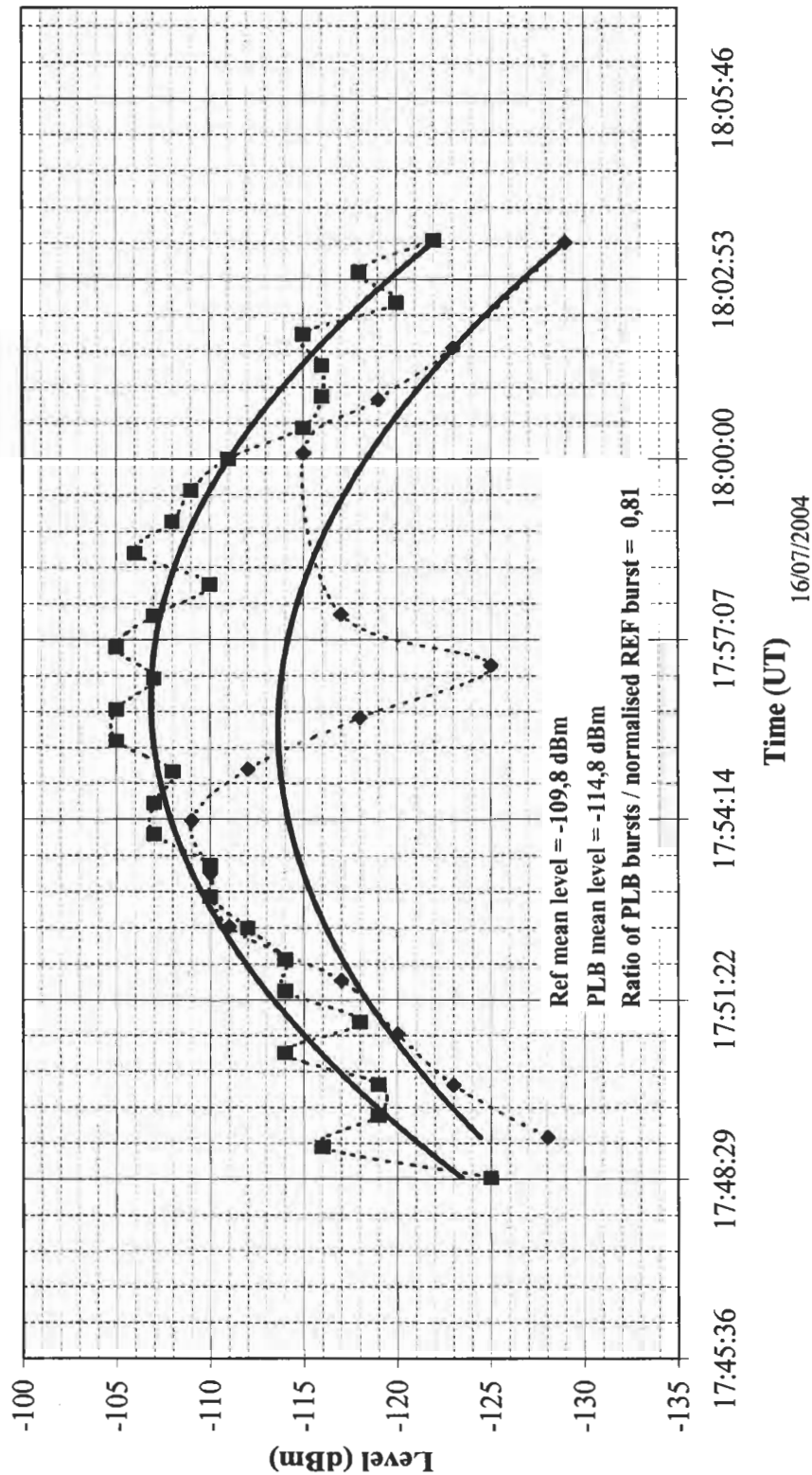
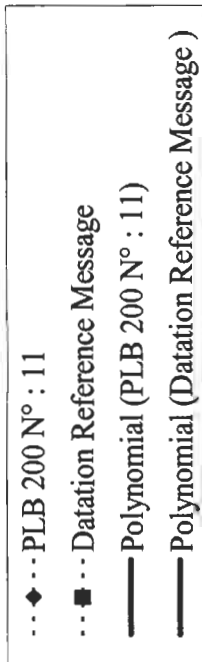
2004/07/16	17:48:30	ce300000000000dbd0e40 19817483	-125	S07
2004/07/16	17:49:00	ce300000000000dbd0e40 19817490	-116	S07
2004/07/16	17:49:30	ce300000000000dbd0e40 19817493	-119	S07
2004/07/16	17:50:00	ce300000000000dbd0e40 19817500	-119	S07
2004/07/16	17:50:30	ce300000000000dbd0e40 19817503	-114	S07
2004/07/16	17:51:00	ce300000000000dbd0e40 19817510	-118	S07
2004/07/16	17:51:30	ce300000000000dbd0e40 19817513	-114	S07
2004/07/16	17:52:00	ce300000000000dbd0e40 19817520	-114	S07
2004/07/16	17:52:30	ce300000000000dbd0e40 19817523	-112	S07
2004/07/16	17:53:00	ce300000000000dbd0e40 19817530	-110	S07
2004/07/16	17:53:30	ce300000000000dbd0e40 19817533	-110	S07
2004/07/16	17:54:00	ce300000000000dbd0e40 19817540	-107	S07
2004/07/16	17:54:30	ce300000000000dbd0e40 19817543	-107	S07
2004/07/16	17:55:00	ce300000000000dbd0e40 19817550	-108	S07
2004/07/16	17:55:30	ce300000000000dbd0e40 19817553	-105	S07
2004/07/16	17:56:00	ce300000000000dbd0e40 18817560	-105	S07
2004/07/16	17:56:30	ce300000000000dbd0e40 19817563	-107	S07
2004/07/16	17:57:00	ce300000000000dbd0e40 19817570	-105	S07
2004/07/16	17:57:30	ce300000000000dbd0e40 19817573	-107	S07
2004/07/16	17:58:00	ce300000000000dbd0e40 19817580	-110	S07
2004/07/16	17:58:30	ce300000000000dbd0e40 19817583	-106	S07
2004/07/16	17:59:00	ce300000000000dbd0e40 19817590	-108	S07
2004/07/16	17:59:30	ce300000000000dbd0e40 19817593	-109	S07
2004/07/16	18:00:00	ce300000000000dbd0e40 19818000	-111	S07
2004/07/16	18:00:30	ce300000000000dbd0e40 19818003	-115	S07
2004/07/16	18:01:00	ce300000000000dbd0e40 19818010	-116	S07
2004/07/16	18:01:30	ce300000000000dbd0e40 19818013	-116	S07
2004/07/16	18:02:00	ce300000000000dbd0e40 19818020	-115	S07
2004/07/16	18:02:30	ce300000000000dbd0e40 19818023	-120	S07
2004/07/16	18:03:00	ce300000000000dbd0e40 19818030	-118	S07
2004/07/16	18:03:30	ce300000000000dbd0e40 19818033	-122	S07

Total burst/pass	31	Level Average (dBm)	-109,8	S07
Total burst normalised at 3/5	18,6			

First Sat Pass checked - Satellite Test Conf. N° 1 : Dry ground



Second Sat Pass checked - Satellite Test Conf. N° 1 : Dry ground



RECHERCHE du 28/07/2004 12:35:23

Code balise : 2DDC648016FFBFF

Nom balise : 8 ??

Pays : 366 USA

Classe utilisateur : TEST--

Periode de consultation : 18/07/2004 00 a 20/07/2004 00

Position de reference : et

Toutes les luts

Tous les satellites

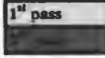
Date activation balise : // :

Recherche dans base principale

Resultats edites suivant chronologie du TCA

Test configuration : 2

PLB placed on Aluminium Ground Plane and on the top of Intespace building (Pascal C)



Satellite Pass used for level comparison between PLB200 and Ref Beacon

* TCA	TPC	* SL	PTS	* LAT1	LONG PB	MAJ	BIAS	ERR	* LAT2	LONG2	* CTA	FB	WF	SDV	CF	SRCE	MCCN
* 18/07 00H02	00H04	* MG1	2 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820525
* 18/07 00H05	00H14	* MG1	2 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820529
* 18/07 00H15	00H23	* MG1	2 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820532
* 18/07 00H24	00H28	* MG1	2 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820534
* 18/07 00H28	00H33	* MG1	2 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820537
* 18/07 00H34	00H38	* MG1	2 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820540
* 18/07 00H38	00H43	* MG1	3 *	.....	.....	..	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	820542
* 18/07 00H41	00H51	* MG1	10 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820546
* 18/07 00H50	00H57	* MG1	2 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820549
* 18/07 00H58	01H03	* S08	12 *	43.561	1.489	62	1	2841 0.65	* 32.992	53.668	* 19.8	-9	0	0.8	4/3	2271	820554
* 18/07 00H58	01H05	* S08	12 *	43.559	1.480	99	1	2839 0.13	* 32.708	53.630	* 20.1	4	0	0.2	4/0	2272	820634
* 18/07 00H59	01H04	* MG1	7 *	.....	.....	..	2836	.....	* .....	.....	* ....	4	9	.....	...	2273	820625
* 18/07 01H05	01H09	* MG1	2 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820701
* 18/07 01H09	01H14	* MG1	3 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820714
* 18/07 01H14	01H19	* MG1	4 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820717
* 18/07 01H18	01H28	* MG1	3 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820722
* 18/07 01H27	01H33	* MG1	4 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820724
* 18/07 01H32	01H38	* MG1	5 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820728
* 18/07 01H38	01H43	* MG1	2 *	.....	.....	..	2842	.....	* .....	.....	* ....	4	9	.....	...	2273	820730
* 18/07 01H43	01H48	* MG1	2 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820733
* 18/07 01H49	01H56	* MG1	2 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820736
* 18/07 01H57	02H01	* MG1	5 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820739
* 18/07 02H03	02H12	* MG1	3 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820746
* 18/07 02H12	02H17	* MG1	3 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820748
* 18/07 02H16	02H23	* MG1	7 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820752
* 18/07 02H24	02H28	* MG1	4 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820754
* 18/07 02H29	02H34	* MG1	5 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820757
* 18/07 02H34	02H39	* MG1	3 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820761
* 18/07 02H40	02H48	* S08	14 *	43.561	1.471	95	2	2841 0.82	* 42.605	6.213	* 1.4	-9	0	1.4	4/3	2271	820767
* 18/07 02H40	02H49	* S08	16 *	43.557	1.488	97	1	2839 0.67	* 42.573	6.376	* 1.7	4	0	0.1	4/0	2272	820781
* 18/07 02H40	04H26	* S08	5 *	43.055	3.592	51	465	2911 180.0	* 42.916	4.299	* 0.0	-4	2	9.0	1/1	2271	820857
* 18/07 02H40	04H28	* S08	16 *	43.557	1.490	97	1	2839 0.79	* 42.573	6.373	* 1.7	-4	0	0.1	4/0	2272	820873
* 18/07 02H40	02H47	* MG1	7 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820763
* 18/07 02H46	02H52	* MG1	4 *	.....	.....	..	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	820788
* 18/07 02H53	02H57	* MG1	4 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820794
* 18/07 02H58	03H02	* MG1	2 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820796
* 18/07 03H00	03H08	* MG1	7 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820799
* 18/07 03H07	03H13	* MG1	2 *	.....	.....	..	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	820802
* 18/07 03H12	03H17	* MG1	2 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820804
* 18/07 03H17	03H23	* MG1	4 *	.....	.....	..	2836	.....	* .....	.....	* ....	4	9	.....	...	2273	820808
* 18/07 03H23	03H28	* MG1	4 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820810
* 18/07 03H28	03H33	* MG1	3 *	.....	.....	..	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	820812
* 18/07 03H32	03H38	* MG1	3 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820814
* 18/07 03H38	03H44	* MG1	3 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820823
* 18/07 03H44	03H49	* MG1	2 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820830
* 18/07 03H49	03H54	* MG1	2 *	.....	.....	..	2840	.....	* .....	.....	* ....	4	9	.....	...	2273	820833
* 18/07 03H55	04H00	* MG1	3 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820835
* 18/07 04H00	04H08	* MG1	2 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820838
* 18/07 04H09	04H13	* MG1	2 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820840
* 18/07 04H15	04H18	* MG1	2 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820846
* 18/07 04H16	04H23	* MG1	2 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820852
* 18/07 04H20	04H26	* S08	14 *	43.566	1.484	99	1	2841 0.68	* 51.936	-41.925	* 15.7	-9	0	1.1	4/3	2271	820858
* 18/07 04H20	04H28	* S08	15 *	43.561	1.477	99	1	2839 0.32	* 51.954	-41.172	* 15.4	4	0	0.3	4/0	2272	820874
* 18/07 04H20	12H35	* S08	15 *	43.561	1.485	99	1	2838 0.34	* 51.935	-41.916	* 15.7	-4	0	0.3	4/4	2271	821651
* 18/07 04H20	12H35	* S08	15 *	43.561	1.477	99	1	2839 0.35	* 51.952	-41.176	* 15.4	-4	0	0.3	4/0	2272	821725
* 18/07 04H26	04H28	* MG1	4 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820876
* 18/07 04H28	04H33	* MG1	4 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820882
* 18/07 04H33	04H42	* MG1	4 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820887
* 18/07 04H41	04H47	* MG1	2 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820889
* 18/07 04H46	04H52	* MG1	6 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820893
* 18/07 04H52	04H57	* MG1	2 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820895
* 18/07 04H56	05H02	* MG1	5 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820897
* 18/07 05H02	05H11	* MG1	3 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820901
* 18/07 05H11	05H16	* MG1	2 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820904
* 18/07 05H15	05H21	* MG1	2 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820910
* 18/07 05H21	05H26	* MG1	4 *	.....	.....	..	2839	.....	* .....	.....	* ....	4	9	.....	...	2273	820914
* 18/07 05H27	05H32	* MG1	2 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820918
* 18/07 05H32	05H40	* MG1	2 *	.....	.....	..	2841	.....	* .....	.....	* ....	4	9	.....	...	2273	820922
* 18/07 05H40	05H45	* MG1	2 *	.....	.....	..	2838	.....	* .....	.....	* ....	4	9	.....	...	2273	820925
* 18/07 05H46	05H53	* S07	14 *	43.562	1.483	99	1	2839 0.31	* 37.584	32.270	* 11.5	-9	0	1.2	4/3	2271	820929

* 18/07 05H46	05H54	* S07	14	* 43.559	1.482	99	1	2838	0.14	* 37.405	32.687	* 11.8	4	0	0.2	4/0	2272	821009
* 18/07 05H46	07H34	* S07	14	* 43.559	1.479	99	1	2837	0.24	* 37.570	32.262	* 11.5	-4	0	0.3	4/3	2271	821180
* 18/07 05H46	05H53	* MG1	6	.....	.....	.....	.....	2839	.....	.....	.....	.....	4	9	.....	.....	2273	820977
* 18/07 05H54	05H58	* MG1	4	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821074
* 18/07 05H58	06H03	* MG1	2	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821082
* 18/07 06H04	06H08	* MG1	5	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821086
* 18/07 06H09	06H17	* MG1	2	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821093
* 18/07 06H17	06H25	* MG1	4	.....	.....	.....	.....	2837	.....	.....	.....	.....	4	9	.....	.....	2273	821097
* 18/07 06H26	06H30	* MG1	2	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821104
* 18/07 06H30	06H35	* MG1	7	.....	.....	.....	.....	2834	.....	.....	.....	.....	4	9	.....	.....	2273	821106
* 18/07 06H36	06H40	* MG1	2	.....	.....	.....	.....	2839	.....	.....	.....	.....	4	9	.....	.....	2273	821109
* 18/07 06H40	06H45	* MG1	6	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821112
* 18/07 06H44	06H50	* MG1	5	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821114
* 18/07 06H49	06H55	* S06	12	* 43.616	1.492	98	2	2835	6.26	* 34.093	47.571	* 17.6	8	0	2.1	4/2	2271	821123
* 18/07 06H49	06H55	* MG1	2	.....	.....	.....	.....	2837	.....	.....	.....	.....	4	9	.....	.....	2273	821127
* 18/07 06H58	07H00	* MG1	3	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821135
* 18/07 07H00	07H06	* MG1	10	.....	.....	.....	.....	2839	.....	.....	.....	.....	4	9	.....	.....	2273	821148
* 18/07 07H07	07H11	* MG1	5	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821158
* 18/07 07H11	07H18	* MG1	9	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821161
* 18/07 07H18	07H23	* MG1	3	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821165
* 18/07 07H23	07H30	* MG1	5	.....	.....	.....	.....	2840	.....	.....	.....	.....	4	9	.....	.....	2273	821169
* 18/07 07H26	07H34	* S07	16	* 43.565	1.479	98	1	2840	0.59	* 46.677	-14.946	* 6.4	-9	0	1.4	4/3	2271	821181
* 18/07 07H26	07H35	* S07	17	* 43.560	1.476	99	1	2838	0.38	* 46.648	-14.655	* 6.1	4	0	0.1	4/0	2272	821194
* 18/07 07H26	09H08	* S07	17	* 43.562	1.481	99	1	2838	0.14	* 46.676	-14.947	* 6.4	-4	0	0.3	4/4	2271	821311
* 18/07 07H26	17H17	* S07	17	* 43.560	1.477	99	1	2837	0.33	* 46.649	-14.661	* 6.2	-4	0	0.1	4/0	2272	822200
* 18/07 07H31	07H36	* MG1	7	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821201
* 18/07 07H36	07H41	* MG1	8	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821214
* 18/07 07H42	07H46	* MG1	3	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821226
* 18/07 07H46	07H51	* MG1	4	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821228
* 18/07 07H51	07H57	* MG1	4	.....	.....	.....	.....	2838	.....	.....	.....	.....	4	9	.....	.....	2273	821232
* 18/07 07H58	08H03	* MG1	5	.....	.....	.....	.....	2837	.....	.....	.....	.....	4	9	.....	.....	2273	821234
* 18/07 08H03	08H08	* MG1	5	.....	.....	.....	.....	2837	.....	.....	.....	.....	4	9	.....	.....	2273	821238
* 18/07 08H08	08H13	* MG1	5	.....	.....	.....	.....	2834	.....	.....	.....	.....	4	9	.....	.....	2273	821244
* 18/07 08H13	08H18	* MG1	3	.....	.....	.....	.....	2834	.....	.....	.....	.....	4	9	.....	.....	2273	821250
* 18/07 08H19	08H23	* MG1	5	.....	.....	.....	.....	2837	.....	.....	.....	.....	4	9	.....	.....	2273	821254
* 18/07 08H23	08H28	* MG1	4	.....	.....	.....	.....	2837	.....	.....	.....	.....	4	9	.....	.....	2273	821256
* 18/07 08H28	08H34	* MG1	7	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821258
* 18/07 08H30	08H38	* S06	15	* 43.659	1.208	96	5	2830	24.59	* 44.816	0.591	* 0.4	8	0	2.2	4/1	2271	821275
* 18/07 08H34	08H39	* MG1	5	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821280
* 18/07 08H40	08H44	* MG1	4	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821287
* 18/07 08H45	08H49	* MG1	4	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821296
* 18/07 08H50	08H55	* MG1	3	.....	.....	.....	.....	2837	.....	.....	.....	.....	4	9	.....	.....	2273	821303
* 18/07 08H56	09H00	* MG1	4	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821305
* 18/07 09H00	09H05	* MG1	4	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821307
* 18/07 09H05	09H08	* S07	8	* 43.572	1.493	89	1	2841	1.66	* 55.534	-63.356	* 22.4	-9	0	0.9	4/3	2271	821312
* 18/07 09H05	15H33	* S07	9	* 43.568	1.480	97	1	2838	0.88	* 55.445	-63.138	* 22.3	-4	0	0.4	4/3	2271	822001
* 18/07 09H05	17H17	* S07	9	* 43.563	1.474	98	1	2836	0.61	* 55.438	-63.135	* 22.0	-4	0	0.6	4/0	2272	822201
* 18/07 09H05	09H10	* MG1	4	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821320
* 18/07 09H09	09H15	* MG1	2	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821322
* 18/07 09H15	09H21	* MG1	4	.....	.....	.....	.....	2835	.....	.....	.....	.....	4	9	.....	.....	2273	821324
* 18/07 09H21	09H27	* MG1	4	.....	.....	.....	.....	2835	.....	.....	.....	.....	4	9	.....	.....	2273	821328
* 18/07 09H28	09H32	* MG1	3	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821331
* 18/07 09H32	09H37	* MG1	3	.....	.....	.....	.....	2837	.....	.....	.....	.....	4	9	.....	.....	2273	821333
* 18/07 09H33	09H40	* S09	15	* 43.560	1.479	99	1	2837	0.16	* 36.434	37.558	* 13.6	-9	0	0.8	4/3	2271	821338
* 18/07 09H33	09H41	* S09	15	* 43.560	1.481	99	1	2836	0.02	* 36.205	38.004	* 13.9	4	0	0.3	4/0	2272	821422
* 18/07 09H33	11H22	* S09	15	* 43.561	1.481	99	1	2836	0.04	* 36.205	38.002	* 13.9	-4	0	0.3	4/0	2272	821585
* 18/07 09H37	09H42	* MG1	5	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821466
* 18/07 09H42	09H47	* MG1	2	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821497
* 18/07 09H47	09H52	* MG1	2	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821508
* 18/07 09H54	10H00	* MG1	2	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821511
* 18/07 10H00	10H05	* MG1	5	.....	.....	.....	.....	2835	.....	.....	.....	.....	4	9	.....	.....	2273	821513
* 18/07 10H05	10H10	* MG1	5	.....	.....	.....	.....	2835	.....	.....	.....	.....	4	9	.....	.....	2273	821516
* 18/07 10H10	10H16	* S06	10	* 43.597	1.510	96	1	2829	4.74	* 53.138	-46.818	* 17.5	8	0	0.9	4/3	2271	821520
* 18/07 10H10	10H15	* MG1	5	.....	.....	.....	.....	2835	.....	.....	.....	.....	4	9	.....	.....	2273	821518
* 18/07 10H15	10H20	* MG1	4	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821527
* 18/07 10H20	10H28	* MG1	4	.....	.....	.....	.....	2835	.....	.....	.....	.....	4	9	.....	.....	2273	821534
* 18/07 10H28	10H35	* MG1	6	.....	.....	.....	.....	2835	.....	.....	.....	.....	4	9	.....	.....	2273	821537
* 18/07 10H35	10H39	* MG1	3	.....	.....	.....	.....	2836	.....	.....	.....	.....	4	9	.....	.....	2273	821540
* 18/07 10H39	10H47	* MG1	3	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	821543
* 18/07 10H48	10H52	* MG1	5	.....	.....	.....	.....	2835	.....	.....	.....	.....	4	9	.....	.....	2273	821550
* 18/07 10H49	12H35	* S08	1	.....	.....	.....	.....	2514	.....	.....	.....	.....	-4	9	.....	.....	2271	821706
* 18/07 10H49	12H35	* S08	1	.....	.....	.....	.....	0	.....	.....	.....	.....	-4	9	.....	.....	2272	821795
* 18/07 10H53	11H06	* MG1	14	.....	.....	.....	.....	2839	.....	.....	.....	.....	4	9	.....	.....	2273	821561
* 18/07 11H10	11H12	* MG1	2	.....	.....	.....	.....	2835	.....	.....	.....	.....	4	9	.....	.....	2273	821564
* 18/07 11H13	11H19	* MG1	2	.....	.....	.....	.....	2834	.....	.....	.....	.....	4	9	.....	.....	2273	821566
* 18/07 11H14	11H21	* S09	17	* 43.562	1.485	97	1	2837	0.36	* 45.670	-9.401	* 4.4	-9	0	1.7	4/3	2271	821576
* 18/07 11H14	11H22	* S09	17	* 43.561	1.473	98	1	2835	0.63	* 45.647	-9.180	* 4.1	4	0	0.2	4/0	2272	821586
* 18/07 11H14	19H23	* S09	17	* 43.560	1.475	98	1	2835	0.47	* 45.648	-9.187	* 4.1	-4	0	0.2	4/0	2272	822466
* 18/07 11H20	11H24	* MG1	3	.....	.....	.....	.....	2834	.....	.....	.....	.....	4	9	.....	.....	2273	821596
* 18/07 11H24	11H29	* MG1	3	.....	.....	.....	.....	2834	.....	.....	.....	.....	4	9	.....	.....</		

* 18/07 12H27	14H15	* S08	15	* 43.563	1.475	99	1	2833	0.57	* 50.383	36.457	* 12.9	-4	0	0.2	4/4	2271	821899
* 18/07 12H27	14H16	* S08	15	* 43.559	1.480	99	1	2833	0.09	* 50.385	35.847	* 12.6	-4	0	0.2	4/0	2272	821920
* 18/07 12H27	12H36	* MG1	8	.....	.....	.....	.....	2834	.....	.....	.....	.....	4	9	.....	.....	2273	821774
* 18/07 12H39	12H41	* MG1	7	.....	.....	.....	.....	2834	.....	.....	.....	.....	4	9	.....	.....	2273	821807
* 18/07 12H41	12H46	* MG1	5	.....	.....	.....	.....	2833	.....	.....	.....	.....	4	9	.....	.....	2273	821813
* 18/07 12H44	12H51	* MG1	5	.....	.....	.....	.....	2833	.....	.....	.....	.....	4	9	.....	.....	2273	821817
* 18/07 12H51	12H56	* MG1	3	.....	.....	.....	.....	2833	.....	.....	.....	.....	4	9	.....	.....	2273	821823
* 18/07 12H52	12H57	* S09	10	* 43.563	1.487	90	1	2835	0.58	* 54.723	-57.511	* 20.7	-9	0	0.8	4/3	2271	821828
* 18/07 12H52	19H23	* S09	10	* 43.558	1.475	99	1	2833	0.50	* 54.599	-57.298	* 20.3	-4	0	0.3	4/0	2272	822467
* 18/07 12H52	21H04	* S09	9	* 43.562	1.481	97	1	2833	0.16	* 54.724	-57.478	* 20.6	-4	0	0.2	4/3	2271	822560
* 18/07 12H55	13H01	* MG1	3	.....	.....	.....	.....	2833	.....	.....	.....	.....	4	9	.....	.....	2273	821841
* 18/07 13H02	13H06	* MG1	3	.....	.....	.....	.....	2833	.....	.....	.....	.....	4	9	.....	.....	2273	821843
* 18/07 13H07	13H12	* MG1	2	.....	.....	.....	.....	2833	.....	.....	.....	.....	4	9	.....	.....	2273	821851
* 18/07 13H13	13H17	* MG1	3	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	821854
* 18/07 13H16	13H22	* MG1	5	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	821857
* 18/07 13H22	13H30	* MG1	10	.....	.....	.....	.....	2835	.....	.....	.....	.....	4	9	.....	.....	2273	821863
* 18/07 13H31	13H35	* MG1	4	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	821865
* 18/07 13H35	13H40	* MG1	7	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	821868
* 18/07 13H40	13H45	* MG1	5	.....	.....	.....	.....	2829	.....	.....	.....	.....	4	9	.....	.....	2273	821870
* 18/07 13H46	13H50	* MG1	2	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	821872
* 18/07 13H50	13H55	* MG1	2	.....	.....	.....	.....	2834	.....	.....	.....	.....	4	9	.....	.....	2273	821876
* 18/07 13H55	14H00	* MG1	3	.....	.....	.....	.....	2829	.....	.....	.....	.....	4	9	.....	.....	2273	821881
* 18/07 13H58	14H15	* MG1	4	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	821890
* 18/07 14H07	14H15	* S08	17	* 43.560	1.484	98	1	2832	0.22	* 40.972	-11.352	* 4.5	-9	0	1.6	4/3	2271	821900
* 18/07 14H07	14H16	* S08	17	* 43.559	1.474	99	1	2830	0.54	* 40.901	-11.573	* 4.8	4	0	0.1	4/0	2272	821921
* 18/07 14H13	14H20	* MG1	2	.....	.....	.....	.....	2829	.....	.....	.....	.....	4	9	.....	.....	2273	821940
* 18/07 14H21	14H27	* MG1	2	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	821950
* 18/07 14H28	14H32	* MG1	5	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	821953
* 18/07 14H34	14H37	* MG1	5	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	821955
* 18/07 14H38	14H42	* MG1	3	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	821959
* 18/07 14H43	14H49	* MG1	2	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	821970
* 18/07 14H50	14H54	* MG1	6	.....	.....	.....	.....	2828	.....	.....	.....	.....	4	9	.....	.....	2273	821973
* 18/07 14H54	14H59	* MG1	7	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	821975
* 18/07 14H59	15H04	* MG1	6	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	821977
* 18/07 15H04	15H09	* MG1	6	.....	.....	.....	.....	2830	.....	.....	.....	.....	4	9	.....	.....	2273	821980
* 18/07 15H09	15H14	* MG1	6	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	821983
* 18/07 15H14	15H19	* MG1	3	.....	.....	.....	.....	2828	.....	.....	.....	.....	4	9	.....	.....	2273	821985
* 18/07 15H19	15H26	* MG1	7	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	821989
* 18/07 15H26	15H31	* MG1	2	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	821992
* 18/07 15H30	15H33	* S07	4	* 43.535	1.762	51	20	2902	22.86	* 55.661	67.669	* 22.6	9	1	3.8	3/1	2271	822002
* 18/07 15H30	17H16	* S07	4	* 43.563	1.467	92	5	2829	1.18	* 55.840	68.029	* 22.8	-4	1	0.1	4/3	2271	822178
* 18/07 15H30	17H17	* S07	4	* 43.565	1.458	89	3	2824	1.95	* 55.845	68.032	* 22.4	-4	1	4.3	4/0	2272	822202
* 18/07 15H32	15H36	* MG1	3	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	822055
* 18/07 15H37	15H41	* MG1	2	.....	.....	.....	.....	2830	.....	.....	.....	.....	4	9	.....	.....	2273	822059
* 18/07 15H42	15H46	* MG1	6	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	822061
* 18/07 15H46	15H51	* MG1	5	.....	.....	.....	.....	2830	.....	.....	.....	.....	4	9	.....	.....	2273	822063
* 18/07 15H49	15H53	* S08	7	* 43.550	1.486	89	2	2834	1.23	* 31.281	-58.751	* 23.0	-9	0	0.2	4/3	2271	822065
* 18/07 15H49	15H55	* S08	7	* 43.548	1.481	90	2	2835	1.36	* 31.268	-58.750	* 23.3	4	0	1.5	4/0	2272	822079
* 18/07 15H52	15H56	* MG1	2	.....	.....	.....	.....	2830	.....	.....	.....	.....	4	9	.....	.....	2273	822092
* 18/07 15H56	16H01	* MG1	2	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	822095
* 18/07 16H00	16H06	* MG1	2	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822098
* 18/07 16H05	16H11	* MG1	6	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	822101
* 18/07 16H11	16H18	* MG1	2	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822103
* 18/07 16H18	16H23	* MG1	2	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822106
* 18/07 16H25	16H29	* MG1	2	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	822111
* 18/07 16H30	16H34	* MG1	2	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822113
* 18/07 16H34	16H39	* MG1	3	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822116
* 18/07 16H41	16H44	* MG1	3	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	822124
* 18/07 16H44	16H49	* MG1	2	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	822134
* 18/07 16H49	16H54	* MG1	3	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822137
* 18/07 16H54	17H04	* MG1	12	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822144
* 18/07 17H05	17H09	* MG1	2	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	822147
* 18/07 17H08	17H16	* S07	17	* 43.557	1.482	98	1	2834	0.32	* 46.919	19.203	* 6.9	-9	0	1.6	4/3	2271	822179
* 18/07 17H08	17H17	* S07	17	* 43.561	1.484	99	1	2831	0.25	* 46.886	18.899	* 6.6	4	0	0.1	4/0	2272	822203
* 18/07 17H08	05H30	* S07	17	* 43.560	1.483	99	1	2831	0.15	* 46.886	18.898	* 6.6	-4	0	0.1	4/0	2272	823271
* 18/07 17H09	17H14	* MG1	3	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822154
* 18/07 17H14	17H24	* MG1	13	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	822276
* 18/07 17H25	17H29	* MG1	2	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822281
* 18/07 17H29	17H34	* MG1	2	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822286
* 18/07 17H34	17H44	* MG1	5	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	822291
* 18/07 17H44	17H49	* MG1	2	.....	.....	.....	.....	2831	.....	.....	.....	.....	4	9	.....	.....	2273	822293
* 18/07 17H49	17H54	* MG1	2	.....	.....	.....	.....	2834	.....	.....	.....	.....	4	9	.....	.....	2273	822297
* 18/07 17H54	18H00	* MG1	4	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822302
* 18/07 17H59	18H05	* MG1	6	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822307
* 18/07 18H05	18H10	* MG1	4	.....	.....	.....	.....	2829	.....	.....	.....	.....	4	9	.....	.....	2273	822310
* 18/07 18H10	18H15	* MG1	5	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822312
* 18/07 18H15	18H20	* MG1	5	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822314
* 18/07 18H17	18H25	* S06	14	* 43.557	1.497	99	1	2825	1.33	* 49.308	30.350	* 10.8	8	0	1.4	4/2	2271	822327
* 18/07 18H20	18H25	* MG1	3	.....	.....	.....	.....	2833	.....	.....	.....	.....	4	9	.....	.....	2273	822331
* 18/07 18H25	18H36	* MG1	4	.....	.....	.....	.....	2832	.....	.....	.....	.....	4	9	.....	.....	2273	822354
* 18/07 18H36	18H41	* MG1																

* 18/07 19H15	19H20	* MG1	4 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822412
* 18/07 19H18	19H23	* S09	4 *	43.548	1.487	94	1	2838	1.42	* 56.602	72.628	* 23.7	4	0	1.1	4/0	2272	822468		
* 18/07 19H18	21H04	* S09	4 *	43.552	1.486	94	7	2838	1.06	* 56.604	72.640	* 24.1	-4	0	0.0	3/3	2271	822561		
* 18/07 19H20	19H25	* MG1	3 *	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	822473
* 18/07 19H25	19H30	* MG1	7 *	.....	.....	..	...	2835	.....	*	.....	.....	*	....	4	9	.....	...	2273	822482
* 18/07 19H30	19H35	* MG1	3 *	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	822487
* 18/07 19H35	19H40	* MG1	5 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822490
* 18/07 19H39	19H45	* MG1	3 *	.....	.....	..	...	2832	.....	*	.....	.....	*	....	4	9	.....	...	2273	822493
* 18/07 19H45	19H51	* MG1	2 *	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	822496
* 18/07 19H52	19H56	* MG1	3 *	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	822498
* 18/07 19H57	20H08	* MG1	2 *	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	822514
* 18/07 19H58	20H05	* S06	15 *	43.549	1.461	99	1	2826	2.04	* 39.736	-17.086	* 6.8	8	0	0.6	4/3	2271	822507		
* 18/07 20H08	20H13	* MG1	3 *	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	822526
* 18/07 20H13	20H18	* MG1	4 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822528
* 18/07 20H18	20H23	* MG1	2 *	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	822531
* 18/07 20H23	20H28	* MG1	3 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822534
* 18/07 20H28	20H37	* MG1	13 *	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	822539
* 18/07 20H37	20H42	* MG1	6 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822542
* 18/07 20H42	20H47	* MG1	7 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822547
* 18/07 20H47	20H52	* MG1	7 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822549
* 18/07 20H52	21H00	* MG1	3 *	.....	.....	..	...	2835	.....	*	.....	.....	*	....	4	9	.....	...	2273	822555
* 18/07 20H56	21H04	* S09	16 *	43.562	1.477	99	1	2835	0.35	* 47.859	23.903	* 8.6	-9	0	1.6	4/3	2271	822562		
* 18/07 20H56	21H04	* S09	17 *	43.560	1.481	99	1	2833	0.02	* 47.825	23.484	* 8.3	4	0	0.2	4/0	2272	822626		
* 18/07 20H56	22H43	* S09	17 *	43.564	1.477	99	1	2833	0.58	* 47.863	23.873	* 8.6	-4	0	0.4	4/4	2271	822711		
* 18/07 20H56	22H44	* S09	17 *	43.560	1.480	99	1	2833	0.02	* 47.826	23.482	* 8.3	-4	0	0.2	4/0	2272	822731		
* 18/07 21H02	21H05	* MG1	5 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822638
* 18/07 21H05	21H18	* MG1	2 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822661
* 18/07 21H18	21H25	* MG1	6 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822664
* 18/07 21H25	21H31	* MG1	5 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822667
* 18/07 21H31	21H36	* MG1	2 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822669
* 18/07 21H36	21H45	* MG1	3 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822673
* 18/07 21H45	21H50	* MG1	6 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822675
* 18/07 21H50	21H55	* MG1	2 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822678
* 18/07 21H55	22H00	* MG1	3 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822681
* 18/07 22H00	22H07	* MG1	5 *	.....	.....	..	...	2835	.....	*	.....	.....	*	....	4	9	.....	...	2273	822684
* 18/07 22H07	22H12	* MG1	5 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822687
* 18/07 22H12	22H17	* MG1	4 *	.....	.....	..	...	2835	.....	*	.....	.....	*	....	4	9	.....	...	2273	822691
* 18/07 22H18	22H23	* MG1	4 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822693
* 18/07 22H24	22H28	* MG1	2 *	.....	.....	..	...	2831	.....	*	.....	.....	*	....	4	9	.....	...	2273	822696
* 18/07 22H27	22H33	* MG1	5 *	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	822698
* 18/07 22H32	22H39	* MG1	2 *	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	822702
* 18/07 22H36	22H43	* S09	15 *	43.557	1.484	54	1	2836	0.37	* 38.768	-23.452	* 9.2	-9	0	1.5	4/3	2271	822712		
* 18/07 22H36	09H17	* S09	17 *	43.561	1.476	98	1	2833	0.41	* 38.506	-23.696	* 9.5	-4	0	0.3	4/0	2272	823531		
* 18/07 22H39	22H44	* MG1	4 *	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	822724
* 18/07 22H43	22H49	* MG1	10 *	.....	.....	..	...	2835	.....	*	.....	.....	*	....	4	9	.....	...	2273	822751
* 18/07 22H49	22H54	* MG1	4 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822756
* 18/07 22H53	22H59	* MG1	5 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822760
* 18/07 22H59	23H04	* MG1	4 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822762
* 18/07 23H04	23H15	* MG1	15 *	.....	.....	..	...	2837	.....	*	.....	.....	*	....	4	9	.....	...	2273	822766
* 18/07 23H16	23H20	* MG1	5 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822768
* 18/07 23H20	23H25	* MG1	3 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822771
* 18/07 23H25	23H31	* MG1	4 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822774
* 18/07 23H30	23H36	* MG1	3 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822777
* 18/07 23H35	23H41	* MG1	2 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822781
* 18/07 23H42	23H47	* MG1	5 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822783
* 18/07 23H48	23H53	* MG1	3 *	.....	.....	..	...	2835	.....	*	.....	.....	*	....	4	9	.....	...	2273	822785
* 18/07 23H54	23H58	* MG1	6 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822789
* 19/07 00H00	00H03	* MG1	5 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822791
* 19/07 00H03	00H08	* MG1	5 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822793
* 19/07 00H10	00H13	* MG1	2 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822797
* 19/07 00H13	00H21	* MG1	2 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822799
* 19/07 00H22	00H30	* MG1	2 *	.....	.....	..	...	2831	.....	*	.....	.....	*	....	4	9	.....	...	2273	822805
* 19/07 00H31	00H35	* MG1	3 *	.....	.....	..	...	2831	.....	*	.....	.....	*	....	4	9	.....	...	2273	822808
* 19/07 00H36	00H41	* MG1	4 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822811
* 19/07 00H42	00H48	* MG1	6 *	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	822817
* 19/07 00H46	00H51	* S08	9 *	43.567	1.479	91	1	2836	0.77	* 31.590	58.920	* 21.9	-9	0	0.7	4/3	2271	822820		
* 19/07 00H46	00H53	* S08	10 *	43.566	1.482	98	1	2835	0.62	* 31.603	58.973	* 22.2	4	0	0.4	4/0	2272	822884		
* 19/07 00H46	02H36	* S08	10 *	43.563	1.482	96	1	2835	0.39	* 31.751	59.028	* 21.9	-4	0	0.2	4/3	2271	823023		
* 19/07 00H46	02H37	* S08	10 *	43.566	1.481	98	1	2835	0.60	* 31.603	58.970	* 22.2	-4	0	0.4	4/0	2272	823044		
* 19/07 00H49	00H53	* MG1	2 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822939
* 19/07 00H54	00H58	* MG1	2 *	.....	.....	..	...	2831	.....	*	.....	.....	*	....	4	9	.....	...	2273	822946
* 19/07 00H58	01H03	* MG1	4 *	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	822953
* 19/07 01H04	01H08	* MG1	4 *	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	822957
* 19/07 01H08	01H13	* MG1	4 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822960
* 19/07 01H13	01H25	* MG1	15 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822963
* 19/07 01H25	01H30	* MG1	2 *	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822966
* 19/07 01H31	01H37	* MG1	2 *	.....	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	.....	...	2273	822970
* 19/07 01H37	01H47	* MG1	5 *	.....	.....	..	...	2832	.....	*	.....	.....	*	....	4	9	.....	...	2273	822974
* 19/07 01H48	01H55	* MG1	6 *	.....	.....	..</														

* 19/07 02H11	02H15	* MG1	4	*	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822995
* 19/07 02H15	02H23	* MG1	2	*	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	822998
* 19/07 02H23	02H29	* MG1	2	*	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	823001
* 19/07 02H28	02H36	* S08	18	*	43.564	1.483	97	1	2835	0.46	* 41.524	11.612	* 3.5	-9	0	1.9	4/3	2271	823024		
* 19/07 02H28	02H37	* S08	18	*	43.559	1.485	98	1	2834	0.36	* 41.457	11.818	* 3.8	4	0	0.2	4/0	2272	823045		
* 19/07 02H28	04H16	* S08	18	*	43.558	1.485	98	1	2834	0.42	* 41.457	11.816	* 3.8	-4	0	0.2	4/0	2272	823106		
* 19/07 02H31	02H34	* MG1	2	*	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	823005
* 19/07 02H34	02H41	* MG1	4	*	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	823050
* 19/07 02H43	02H49	* MG1	2	*	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	823054
* 19/07 02H49	02H54	* MG1	2	*	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	823056
* 19/07 02H53	02H59	* MG1	2	*	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	823059
* 19/07 02H58	03H04	* MG1	3	*	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	823062
* 19/07 03H04	03H12	* MG1	3	*	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	823066
* 19/07 03H12	03H17	* MG1	2	*	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	823068
* 19/07 03H24	03H24	* MG1	2	*	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	823070
* 19/07 03H29	03H31	* MG1	2	*	.....	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	.....	...	2273	823072
* 19/07 03H33	03H37	* MG1	2	*	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	823076
* 19/07 03H37	03H42	* MG1	2	*	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	823079
* 19/07 03H43	03H47	* MG1	2	*	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	823081
* 19/07 04H00	04H01	* MG1	2	*	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	823084
* 19/07 04H01	04H07	* MG1	2	*	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	823087
* 19/07 04H06	04H12	* MG1	4	*	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	823091
* 19/07 04H08	04H15	* S08	15	*	43.564	1.487	99	1	2836	0.69	* 50.905	-36.302	* 13.9	-9	0	1.7	4/3	2271	823092		
* 19/07 04H08	04H16	* S08	15	*	43.560	1.479	99	1	2834	0.18	* 50.925	-35.664	* 13.6	4	0	0.2	4/0	2272	823107		
* 19/07 04H08	12H24	* S08	15	*	43.560	1.478	99	1	2834	0.25	* 50.924	-35.667	* 13.6	-4	0	0.2	4/0	2272	823737		
* 19/07 04H24	04H26	* MG1	3	*	.....	.....	..	...	2834	.....	*	.....	.....	*	....	4	9	.....	...	2273	823116
* 19/07 04H26	04H31	* MG1	3	*	.....	.....	..	...	2836	.....	*	.....	.....	*	....	4	9	.....	...	2273	823118
* 19/07 04H36	04H36	* MG1	3	*	.....	.....	..	...	2833	.....	*	.....	.....	*	....	4	9	.....	...	2273	823121
* 19/07 05H22	05H29	* S07	11	*	43.566	1.480	89	1	2836	0.67	* 35.461	43.636	* 15.8	-9	0	0.8	4/3	2271	823147		
* 19/07 05H22	05H30	* S07	12	*	43.558	1.479	99	1	2833	0.28	* 35.265	43.708	* 16.1	4	0	0.3	4/0	2272	823273		
* 19/07 05H22	07H10	* S07	12	*	43.559	1.476	99	1	2833	0.40	* 35.418	43.246	* 15.8	-4	0	0.1	4/4	2271	823366		
* 19/07 05H22	07H11	* S07	12	*	43.558	1.480	99	1	2833	0.25	* 35.265	43.707	* 16.1	-4	0	0.3	4/0	2272	823382		
* 19/07 07H13	07H16	* MG1	3	*	.....	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	.....	...	2273	823391
* 19/07 07H16	07H21	* MG1	3	*	.....	.....	..	...	2832	.....	*	.....	.....	*	....	4	9	.....	...	2273	823398
* 19/07 07H21	07H26	* MG1	4	*	.....	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	.....	...	2273	823400
* 19/07 07H27	07H33	* MG1	9	*	.....	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	.....	...	2273	823404
* 19/07 07H34	07H38	* MG1	2	*	.....	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	.....	...	2273	823406
* 19/07 07H38	07H43	* MG1	7	*	.....	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	.....	...	2273	823409
* 19/07 07H43	07H48	* MG1	7	*	.....	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	.....	...	2273	823413
* 19/07 07H48	08H00	* MG1	17	*	.....	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	.....	...	2273	823417
* 19/07 08H01	08H05	* MG1	4	*	.....	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	.....	...	2273	823420
* 19/07 08H05	08H13	* MG1	11	*	.....	.....	..	...	2829	.....	*	.....	.....	*	....	4	9	.....	...	2273	823423
* 19/07 08H13	08H18	* MG1	5	*	.....	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	.....	...	2273	823425
* 19/07 08H18	08H26	* MG1	9	*	.....	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	.....	...	2273	823429
* 19/07 08H27	08H31	* MG1	3	*	.....	.....	..	...	2829	.....	*	.....	.....	*	....	4	9	.....	...	2273	823437
* 19/07 08H31	08H40	* MG1	4	*	.....	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	.....	...	2273	823447
* 19/07 08H41	08H46	* MG1	6	*	.....	.....	..	...	2829	.....	*	.....	.....	*	....	4	9	.....	...	2273	823449
* 19/07 08H42	15H11	* S07	13	*	43.567	1.480	98	1	2830	0.78	* 53.457	-51.377	* 18.6	-4	0	0.4	4/0	2272	823958		
* 19/07 08H42	16H52	* S07	13	*	43.563	1.488	99	1	2830	0.63	* 53.320	-52.194	* 18.9	-4	0	0.4	4/3	2271	824063		
* 19/07 08H45	08H51	* MG1	2	*	.....	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	.....	...	2273	823451
* 19/07 08H50	08H56	* MG1	5	*	.....	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	.....	...	2273	823453
* 19/07 08H56	09H10	* MG1	2	*	.....	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	.....	...	2273	823459
* 19/07 09H10	09H17	* S09	14	*	43.558	1.482	99	1	2828	0.23	* 34.031	48.675	* 18.1	4	0	0.2	4/0	2272	823470		
* 19/07 09H10	10H59	* S09	14	*	43.559	1.482	99	1	2828	0.15	* 34.032	48.674	* 18.1	-4	0	0.2	4/0	2272	823618		
* 19/07 09H10	20H40	* S09	14	*	43.556	1.483	99	1	2829	0.47	* 34.290	48.169	* 17.8	-4	0	0.2	4/4	2271	824382		
* 19/07 09H11	09H15	* MG1	4	*	.....	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	.....	...	2273	823461
* 19/07 09H15	09H20	* MG1	2	*	.....	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	.....	...	2273	823537
* 19/07 09H20	09H25	* MG1	3	*	.....	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	.....	...	2273	823552
* 19/07 09H25	09H32	* MG1	6	*	.....	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	.....	...	2273	823558
* 19/07 09H32	09H37	* MG1	3	*	.....	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	.....	...	2273	823561
* 19/07 09H37	09H44	* MG1	8	*	.....	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	.....	...	2273	823565
* 19/07 09H45	09H49	* MG1	3	*	.....	.....	..	...	2825	.....	*	.....	.....	*	....	4	9	.....	...	2273	823568
* 19/07 09H50	09H59	* MG1	11	*	.....	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	.....	...	2273	823571
* 19/07 09H59	10H04	* MG1	6	*	.....	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	.....	...	2273	823576
* 19/07 10H03	10H09	* MG1	7	*	.....	.....	..	...	2824	.....	*	.....	.....	*	....	4	9	.....	...	2273	823582
* 19/07 10H09	10H14	* MG1	4	*	.....	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	.....	...	2273	823590
* 19/07 10H14	10H19	* MG1	2	*	.....	.....	..	...	2825	.....	*	.....	.....	*	....	4	9	.....	...	2273	823592
* 19/07 10H19	10H24	* MG1	7	*	.....	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	.....	...	2273	823594
* 19/07 10H24	10H29	* MG1	2	*	.....	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	.....	...	2273	823597
* 19/07 10H29	10H34	* MG1	3	*	.....	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	.....	...	2273	8

* 19/07 10H47	10H57	* MG1	14	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823610
* 19/07 10H51	10H59	* S09	17	*	43.542	1.566	51	23	2826	7.20	* 43.623	1.146	*	0.2	4	0	0.3	4/0	2272	823619	
* 19/07 10H51	20H40	* S09	17	*	43.582	1.357	90	6	2828	10.29	* 43.868	0.888	*	0.3	-4	0	0.3	4/3	2271	824383	
* 19/07 10H51	20H42	* S09	17	*	43.550	1.523	50	15	2826	3.61	* 43.630	1.108	*	0.2	-4	0	0.2	4/0	2272	824554	
* 19/07 10H56	11H02	* MG1	2	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823624
* 19/07 11H02	11H13	* MG1	9	*	.....	.....	..	...	2823	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823651
* 19/07 11H13	11H18	* MG1	8	*	.....	.....	..	...	2828	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823653
* 19/07 11H34	11H38	* MG1	5	*	.....	.....	..	...	2823	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823660
* 19/07 11H38	11H43	* MG1	3	*	.....	.....	..	...	2826	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823664
* 19/07 12H03	12H12	* MG1	4	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823674
* 19/07 12H13	12H17	* MG1	4	*	.....	.....	..	...	2828	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823676
* 19/07 12H16	12H24	* S08	10	*	43.559	1.480	96	1	2827	0.16	* 51.204	41.793	*	14.5	4	0	0.4	4/0	2272	823682	
* 19/07 12H16	14H04	* S08	10	*	43.563	1.479	92	1	2827	0.31	* 51.191	41.901	*	14.7	-4	0	0.3	4/3	2271	823829	
* 19/07 12H28	12H32	* MG1	5	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823753
* 19/07 12H30	20H40	* S09	10	*	43.565	1.479	98	1	2828	0.58	* 52.452	-46.193	*	17.2	-4	0	0.2	4/4	2271	824384	
* 19/07 12H30	20H42	* S09	10	*	43.563	1.475	98	1	2827	0.53	* 52.448	-46.193	*	16.9	-4	0	0.3	4/0	2272	824555	
* 19/07 12H33	12H37	* MG1	4	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823758
* 19/07 12H36	13H07	* MG1	19	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823768
* 19/07 13H48	13H48	* MG1	19	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823786
* 19/07 13H49	13H53	* MG1	5	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823788
* 19/07 13H53	13H58	* MG1	6	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823792
* 19/07 13H56	14H04	* S08	15	*	43.560	1.484	46	1	2803	0.25	* 42.099	-5.944	*	2.5	-9	0	1.7	4/3	2271	823830	
* 19/07 13H56	14H05	* S08	15	*	43.558	1.470	97	1	2827	0.95	* 42.037	-6.118	*	2.7	4	0	0.2	4/0	2272	823879	
* 19/07 13H59	14H23	* MG1	6	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823927
* 19/07 15H38	15H42	* S08	9	*	43.558	1.481	90	2	2826	0.20	* 32.188	-53.296	*	20.9	-9	0	0.6	4/3	2271	824002	
* 19/07 15H38	15H44	* S08	10	*	43.562	1.472	93	2	2826	0.75	* 32.131	-53.254	*	21.1	4	0	1.3	4/0	2272	824030	
* 19/07 15H38	00H40	* S08	11	*	43.563	1.475	94	2	2825	0.55	* 32.080	-53.211	*	21.1	-4	0	1.1	4/0	2272	824849	
* 19/07 15H38	02H24	* S08	11	*	43.562	1.480	94	1	2825	0.24	* 32.078	-53.209	*	20.9	-4	0	0.6	4/3	2271	824929	
* 19/07 15H38	15H38	* MG1	5	*	.....	.....	..	...	2826	.....	*	.....	.....	*	.....	4	9	.....	...	2273	823998
* 19/07 15H39	15H43	* MG1	3	*	.....	.....	..	...	2826	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824015
* 19/07 15H44	15H48	* MG1	4	*	.....	.....	..	...	2826	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824033
* 19/07 15H48	15H53	* MG1	3	*	.....	.....	..	...	2826	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824037
* 19/07 15H53	16H08	* MG1	5	*	.....	.....	..	...	2826	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824042
* 19/07 16H15	16H17	* MG1	4	*	.....	.....	..	...	2825	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824047
* 19/07 16H17	16H22	* MG1	2	*	.....	.....	..	...	2825	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824049
* 19/07 16H22	16H30	* MG1	4	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824052
* 19/07 16H30	16H35	* MG1	2	*	.....	.....	..	...	2826	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824055
* 19/07 16H35	16H40	* MG1	6	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824059
* 19/07 16H41	16H45	* MG1	2	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824061
* 19/07 16H45	16H52	* S07	12	*	43.560	1.483	99	1	2828	0.15	* 48.959	30.465	*	10.9	-9	0	1.2	4/3	2271	824064	
* 19/07 16H45	16H53	* S07	12	*	43.559	1.480	99	1	2826	0.14	* 48.955	30.076	*	10.6	4	0	0.2	4/0	2272	824138	
* 19/07 16H45	18H33	* S07	12	*	43.558	1.480	99	1	2826	0.22	* 48.956	30.073	*	10.6	-4	0	0.2	4/0	2272	824253	
* 19/07 16H45	16H56	* MG1	9	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824154
* 19/07 16H57	17H01	* MG1	3	*	.....	.....	..	...	2826	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824170
* 19/07 17H01	17H06	* MG1	2	*	.....	.....	..	...	2823	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824173
* 19/07 17H06	17H11	* MG1	6	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824177
* 19/07 17H11	17H16	* MG1	2	*	.....	.....	..	...	2828	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824181
* 19/07 17H17	17H21	* MG1	4	*	.....	.....	..	...	2826	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824183
* 19/07 17H23	17H41	* MG1	2	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824192
* 19/07 17H42	17H46	* MG1	4	*	.....	.....	..	...	2825	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824194
* 19/07 17H46	17H53	* MG1	9	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824197
* 19/07 17H54	17H58	* MG1	4	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824200
* 19/07 17H57	18H05	* MG1	9	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824204
* 19/07 18H04	18H11	* S06	11	*	43.550	1.496	98	1	2819	1.63	* 50.511	36.576	*	13.0	8	0	1.4	####	2271	824216	
* 19/07 18H06	18H11	* MG1	3	*	.....	.....	..	...	2826	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824208
* 19/07 18H13	18H16	* MG1	2	*	.....	.....	..	...	2823	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824221
* 19/07 18H18	18H21	* MG1	4	*	.....	.....	..	...	2826	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824223
* 19/07 18H21	18H26	* MG1	3	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824226
* 19/07 18H25	18H32	* S07	17	*	43.559	1.489	99	1	2828	0.66	* 39.993	-16.951	*	6.7	-9	0	1.4	####	2271	824233	
* 19/07 18H25	18H33	* S07	18	*	43.560	1.478	99	1	2826	0.27	* 39.902	-17.240	*	7.0	4	0	0.2	4/0	2272	824254	
* 19/07 18H25	05H03	* S07	18	*	43.565	1.487	99	1	2825	0.69	* 39.992	-16.965	*	6.7	-4	0	0.4	####	2271	825132	
* 19/07 18H25	05H05	* S07	18	*	43.560	1.478	99	1	2826	0.24	* 39.902	-17.240	*	7.0	-4	0	0.2	4/0	2272	825216	
* 19/07 18H26	18H31	* MG1	3	*	.....	.....	..	...	2828	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824228
* 19/07 18H32	18H36	* MG1	2	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824272
* 19/07 18H37	18H41	* MG1	4	*	.....	.....	..	...	2826	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824283
* 19/07 18H41	18H46	* MG1	2	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824287
* 19/07 18H46	18H51	* MG1	4	*	.....	.....	..	...	2826	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824291
* 19/07 18H51	18H58	* MG1	6	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824293
* 19/07 18H55	20H40	* S09	2	*	.....	.....	..	...	2929	.....	*	.....	.....	*	.....	-4	9	.....	...	2271	824437
* 19/07 18H56	20H42	* S09	2	*	.....	.....	..	...	0	.....	*	.....	.....	*	.....	-4	9	.....	...	2272	824587
* 19/07 18H59	19H03	* MG1	2	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824296
* 19/07 19H03	19H22	* MG1	2	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824312
* 19/07 19H23	19H28	* MG1	4	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824317
* 19/07 19H29	19H33	* MG1	3	*	.....	.....	..	...	2827	.....	*	.....	.....	*	.....	4	9	.....	...	2273	824319
* 19/07 19H34	19H38	* MG1	4	*	.....	.....	..	...	2828	.....	*	.....</									

* 19/07 19H53	20H00	* MG1	7	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824355
* 19/07 20H01	20H05	* MG1	4	*	.....	..	...	2829	.....	*	.....	.....	*	....	4	9	....	...	2273	824357
* 19/07 20H05	20H20	* MG1	15	*	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	....	...	2273	824368
* 19/07 20H06	05H03	* S07	3	*	43.515	1.441	50	21	2845	5.91	*	30.447	-63.914	* 25.0	-4	1	0.0	####	2271	825133
* 19/07 20H06	05H05	* S07	3	*	43.518	1.438	50	66	2846	5.84	*	30.451	-63.918	* 25.2	-4	1	0.0	1/0	2272	825217
* 19/07 20H21	20H25	* MG1	3	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824371
* 19/07 20H25	20H30	* MG1	3	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824373
* 19/07 20H30	20H35	* MG1	3	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824375
* 19/07 20H34	20H40	* S09	15	*	43.560	1.475	99	1	2830	0.50	*	49.899	34.860	* 12.4	-9	0	1.3	####	2271	824385
* 19/07 20H34	20H42	* S09	15	*	43.561	1.482	99	1	2827	0.14	*	49.893	34.301	* 12.1	4	0	0.2	4/0	2272	824556
* 19/07 20H34	22H20	* S09	16	*	43.564	1.474	99	1	2828	0.69	*	49.907	34.820	* 12.4	-4	0	0.3	####	2271	824682
* 19/07 20H34	22H22	* S09	16	*	43.562	1.481	99	1	2827	0.15	*	49.924	34.271	* 12.1	-4	0	0.3	4/0	2272	824697
* 19/07 20H34	20H44	* MG1	13	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824592
* 19/07 20H46	20H49	* MG1	2	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824613
* 19/07 20H49	20H54	* MG1	6	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824617
* 19/07 20H54	20H59	* MG1	5	*	.....	..	...	2829	.....	*	.....	.....	*	....	4	9	....	...	2273	824619
* 19/07 21H00	21H04	* MG1	2	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824623
* 19/07 21H04	21H09	* MG1	3	*	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	....	...	2273	824628
* 19/07 21H09	21H21	* MG1	15	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824634
* 19/07 21H22	21H26	* MG1	4	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824636
* 19/07 21H26	21H30	* S06	5	*	43.573	1.461	85	3	2814	2.16	*	31.139	-58.259	* 22.9	8	0	0.2	####	2271	824640
* 19/07 21H26	21H32	* MG1	3	*	.....	..	...	2825	.....	*	.....	.....	*	....	4	9	....	...	2273	824644
* 19/07 21H33	21H37	* MG1	2	*	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	....	...	2273	824651
* 19/07 21H38	21H46	* MG1	2	*	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	....	...	2273	824657
* 19/07 21H47	21H51	* MG1	3	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824659
* 19/07 21H51	21H59	* MG1	9	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824662
* 19/07 21H59	22H04	* MG1	3	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824666
* 19/07 22H04	22H09	* MG1	2	*	.....	..	...	2825	.....	*	.....	.....	*	....	4	9	....	...	2273	824670
* 19/07 22H09	22H15	* MG1	3	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824674
* 19/07 22H13	22H20	* S09	17	*	43.559	1.484	99	1	2830	0.30	*	40.776	-12.695	* 5.1	-9	0	1.3	####	2271	824683
* 19/07 22H13	22H22	* S09	18	*	43.558	1.475	99	1	2827	0.55	*	40.703	-12.936	* 5.3	4	0	0.2	4/0	2272	824698
* 19/07 22H13	00H00	* S09	18	*	43.558	1.474	99	1	2827	0.58	*	40.702	-12.935	* 5.3	-4	0	0.2	4/0	2272	824770
* 19/07 22H13	08H51	* S09	18	*	43.562	1.484	99	1	2828	0.37	*	40.773	-12.707	* 5.1	-4	0	0.5	####	2271	825540
* 19/07 22H15	22H29	* MG1	10	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824719
* 19/07 22H30	22H34	* MG1	3	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824722
* 19/07 22H34	22H41	* MG1	2	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824726
* 19/07 22H41	22H47	* MG1	2	*	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	....	...	2273	824729
* 19/07 22H48	22H52	* MG1	2	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824731
* 19/07 22H52	22H58	* MG1	5	*	.....	..	...	2829	.....	*	.....	.....	*	....	4	9	....	...	2273	824734
* 19/07 22H58	23H04	* MG1	3	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824737
* 19/07 23H05	23H10	* MG1	6	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824741
* 19/07 23H11	23H23	* MG1	2	*	.....	..	...	2828	.....	*	.....	.....	*	....	4	9	....	...	2273	824746
* 19/07 23H23	23H28	* MG1	4	*	.....	..	...	2829	.....	*	.....	.....	*	....	4	9	....	...	2273	824749
* 19/07 23H28	23H33	* MG1	5	*	.....	..	...	2826	.....	*	.....	.....	*	....	4	9	....	...	2273	824752
* 19/07 23H33	23H38	* MG1	3	*	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	....	...	2273	824756
* 19/07 23H38	23H47	* MG1	10	*	.....	..	...	2827	.....	*	.....	.....	*	....	4	9	....	...	2273	824761
* 19/07 23H49	23H52	* MG1	2	*	.....	..	...	2829	.....	*	.....	.....	*	....	4	9	....	...	2273	824763
* 19/07 23H52	00H00	* MG1	10	*	.....	..	...	2829	.....	*	.....	.....	*	....	4	9	....	...	2273	824782
* 19/07 23H54	00H00	* S09	7	*	43.571	1.476	93	2	2825	1.28	*	31.137	-59.763	* 23.6	4	0	1.4	4/0	2272	824771
* 19/07 23H54	08H51	* S09	7	*	43.568	1.483	93	2	2826	0.89	*	31.138	-59.761	* 23.4	-4	0	0.3	####	2271	825541
* 19/07 23H54	08H53	* S09	7	*	43.570	1.479	92	2	2825	1.13	*	31.141	-59.762	* 23.6	-4	0	1.4	4/0	2272	825678
* 20/07 00H00	00H05	* MG1	3	*	.....	..	...	2829	.....	*	.....	.....	*	....	4	9	....	...	2273	824789
* 20/07 00H05	00H11	* MG1	2	*	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	....	...	2273	824795
* 20/07 00H11	00H16	* MG1	6	*	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	....	...	2273	824798
* 20/07 00H17	00H37	* MG1	24	*	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	....	...	2273	824811
* 20/07 00H35	00H40	* S08	11	*	43.559	1.482	92	2	2829	0.20	*	30.535	64.391	* 24.3	4	0	1.3	4/0	2272	824850
* 20/07 00H35	02H24	* S08	11	*	43.557	1.487	90	1	2829	0.61	*	30.612	64.413	* 24.0	-4	0	0.6	####	2271	824930
* 20/07 00H35	02H26	* S08	11	*	43.560	1.483	92	2	2829	0.21	*	30.537	64.390	* 24.3	-4	0	1.3	4/0	2272	825000
* 20/07 00H38	00H42	* MG1	3	*	.....	..	...	2829	.....	*	.....	.....	*	....	4	9	....	...	2273	824876
* 20/07 00H42	00H48	* MG1	4	*	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	....	...	2273	824878
* 20/07 00H47	00H52	* MG1	5	*	.....	..	...	2830	.....	*	.....	.....	*	....	4	9	....	...	2273	824882
* 20/07 00H52	00H58	* MG1	5	*	.....	..	...	2829	.....	*	.....	.....	*	....	4	9	....	...	2273	824885
* 20/07 00H57	01H03	* MG1	5	*	.....	..	...	2829	.....	*	.....	.....	*	....	4	9	....	...	2273	824888

Zones géographiques BORDE/MARSA numero de dossier xxx
 Nombre total de lignes (localisées + détectées) : 118 + 428 = 546
 Nombre de localisées : 118
 Nombre de balises-passage : 181
 Nombre de localisations uniques : 44
 Date première loc : 08/07/2004 14:20
 Date dernière loc : 28/07/2004 12:29
 Durée de l'émission : 48H 55mn
 Reference pour calcul des erreurs : lat=+43.560 long= +1.481

First Sat Pass checked - Satellite Test Conf. N° 2 : Aluminium Ground plane

Date	U. T.	PLB 200 N° : 11 Message without FFFE2F	PLB 200 Level (dBm)	Sarsat Sat
19/07/2004	10:44:17	96ee32400b2b80335c2cb7 8e014cda	-123	S9
19/07/2004	10:45:09	96ee32400b2b80335c2cb7 8e014cda	-115	S9
19/07/2004	10:46:00	96ee32400b2b80335c2cb7 8e014cda	-114	S9
19/07/2004	10:46:50	96ee32400b2b80335c2cb7 8e014cda	-112	S9
19/07/2004	10:47:40	96ee32400b2b80335c2cb7 8e014cda	-110	S9
19/07/2004	10:48:29	96ee32400b2b80335c2cb7 8e014cda	-111	S9
19/07/2004	10:49:20	96ee32400b2b80335c2cb7 8e014cda	-108	S9
19/07/2004	10:50:09	96ee32400b2b80335c2cb7 8e014cda	-108	S9
19/07/2004	10:51:00	96ee32400b2b80335c2cb7 8e014cda	-112	S9
19/07/2004	10:51:52	96ee32400b2b80335c2cb7 8e016cda	-123	S9
19/07/2004	10:52:43	96ee32400b2b80335c2cb7 8e014cda	-107	S9
19/07/2004	10:53:33	96ee32400b2b80335c2cb7 8e014cda	-114	S9
19/07/2004	10:54:23	96ee32400b2b80335c2cb7 8e014cda	-110	S9
19/07/2004	10:55:13	96ee32400b2b80335c2cb7 8e014cda	-112	S9
19/07/2004	10:56:04	96ee32400b2b80335c2cb7 8e014cda	-118	S9
19/07/2004	10:56:54	96ee32400b2b80335c2cb7 8e014c5a	-122	S9
19/07/2004	10:57:45	96ee32400b2b80335c2cb7 8e014cda	-128	S9
Total burst/pass	17	Level Average (dBm)	-111,8	S9

Second Sat Pass checked - Satellite Test Conf. N° 3 : Aluminium Ground plane

19/07/2004	22:06:36	96ee32400b2b80335c2cb7 8e014cda	-133	S9
19/07/2004	22:07:26	96ee32400b2b80335c2cb7 8e014cda	-117	S9
19/07/2004	22:08:16	96ee32400b2b80335c2cb7 8e014cda	-116	S9
19/07/2004	22:09:05	96ee32400b2b80335c2cb7 8e014cda	-113	S9
19/07/2004	22:09:57	96ee32400b2b80335c2cb7 8e014cda	-110	S9
19/07/2004	22:10:48	96ee32400b2b80335c2cb7 8e014cda	-111	S9
19/07/2004	22:11:39	96ee32400b2b80335c2cb7 8e014cda	-111	S9
19/07/2004	22:12:30	96ee32400b2b80335c2cb7 8e014cda	-112	S9
19/07/2004	22:13:19	96ee32400b2b80335c2cb7 8e014cda	-111	S9
19/07/2004	22:14:09	96ee32400b2b80335c2cb7 8e014cda	-115	S9
19/07/2004	22:14:59	96ee32400b2b80335c2cb7 8e014cda	-113	S9
19/07/2004	22:15:48	96ee32400b2b80335c2cb7 8e014cda	-121	S9
19/07/2004	22:16:40	96ee32400b2b80335c2cb7 8e014cda	-116	S9
19/07/2004	22:17:31	96ee32400b2b80335c2cb7 8e014cda	-113	S9
19/07/2004	22:18:22	96ee32400b2b80335c2cb7 8e014cda	-113	S9
19/07/2004	22:19:13	96ee32400b2b80335c2cb7 8e014cda	-121	S9
19/07/2004	22:20:02	96ee32400b2b80335c2cb7 8e014cda	-124	S9
19/07/2004	22:20:52	96ee32400b2b80335c2cb7 8e014cda	-129	S9
Total burst/pass	18	Level Average (dBm)	-113,9	S9

First Sat Pass checked - Satellite Test Conf. N° 2 : Aluminium Ground plane

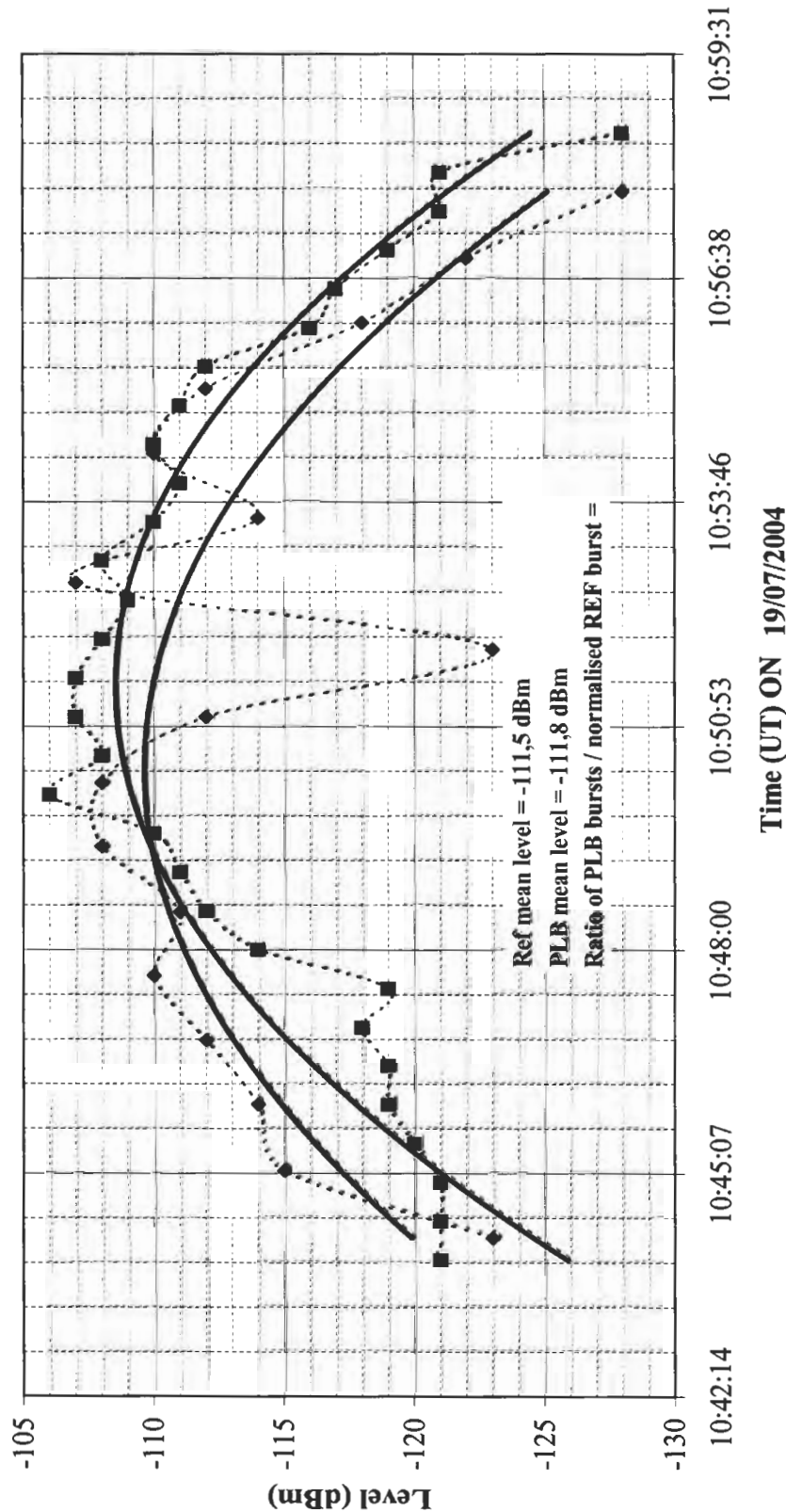
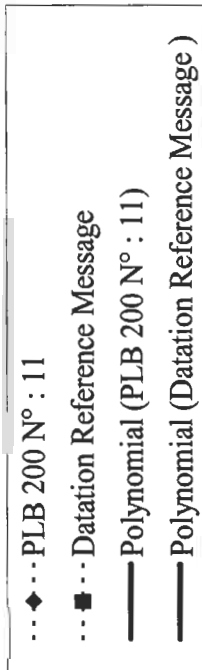
Date	U. T.	Datation Reference Message	Level (dBm)	Sarsat Sat
2004/07/19	10:44:00	ce300000000000dbd0e40 20110440	-121	S9
2004/07/19	10:44:30	ce300000000000dbd0e40 20110443	-121	S9
2004/07/19	10:45:00	ce300000000000dbd0e40 20110450	-121	S9
2004/07/19	10:45:30	ce300000000000dbd0e40 20110453	-120	S9
2004/07/19	10:46:00	ce300000000000dbd0e40 20110460	-119	S9
2004/07/19	10:46:30	ce300000000000dbd0e40 20110463	-119	S9
2004/07/19	10:47:00	ce300000000000dbd0e40 20110470	-118	S9
2004/07/19	10:47:30	ce300000000000dbd0e40 20110473	-119	S9
2004/07/19	10:48:00	ce300000000000dbd0e40 20110480	-114	S9
2004/07/19	10:48:30	ce300000000000dbd0e40 20110483	-112	S9
2004/07/19	10:49:00	ce300000000000dbd0e40 20110490	-111	S9
2004/07/19	10:49:30	ce300000000000dbd0e40 20110493	-110	S9
2004/07/19	10:50:00	ce300000000000dbd0e40 20110500	-106	S9
2004/07/19	10:50:30	ce300000000000dbd0e40 20110503	-108	S9
2004/07/19	10:51:00	ce300000000000dbd0e40 20110500	-107	S9
2004/07/19	10:51:30	ce300000000000dbd0e40 20110513	-107	S9
2004/07/19	10:52:00	ce300000000000dbd0e40 20110520	-108	S9
2004/07/19	10:52:30	ce300000000000dbd0e40 20110523	-109	S9
2004/07/19	10:53:00	ce300000000000dbd0e40 20110530	-108	S9
2004/07/19	10:53:30	ce300000000000dbd0e40 20110533	-110	S9
2004/07/19	10:54:00	ce300000000000dbd0e40 20110540	-111	S9
2004/07/19	10:54:30	ce300000000000dbd0e40 20110543	-110	S9
2004/07/19	10:55:00	ce300000000000dbd0e40 20110550	-111	S9
2004/07/19	10:55:30	ce300000000000dbd0e40 20110553	-112	S9
2004/07/19	10:56:00	ce300000000000dbd0e40 20110560	-116	S9
2004/07/19	10:56:30	ce300000000000dbd0e40 20010563	-117	S9
2004/07/19	10:57:00	ce300000000000dbd0e40 20110570	-119	S9
2004/07/19	10:57:30	ce300000000000dbd0e40 20110573	-121	S9
2004/07/19	10:58:00	ce300000000000dbd0e40 20110580	-121	S9
2004/07/19	10:58:30	ce300000000000dbd0e40 20110583	-128	S9

Total burst/pass	30	Level Average (dBm)	-111,5	S9
Total burst normalised at 3/5	18	0,944444444		

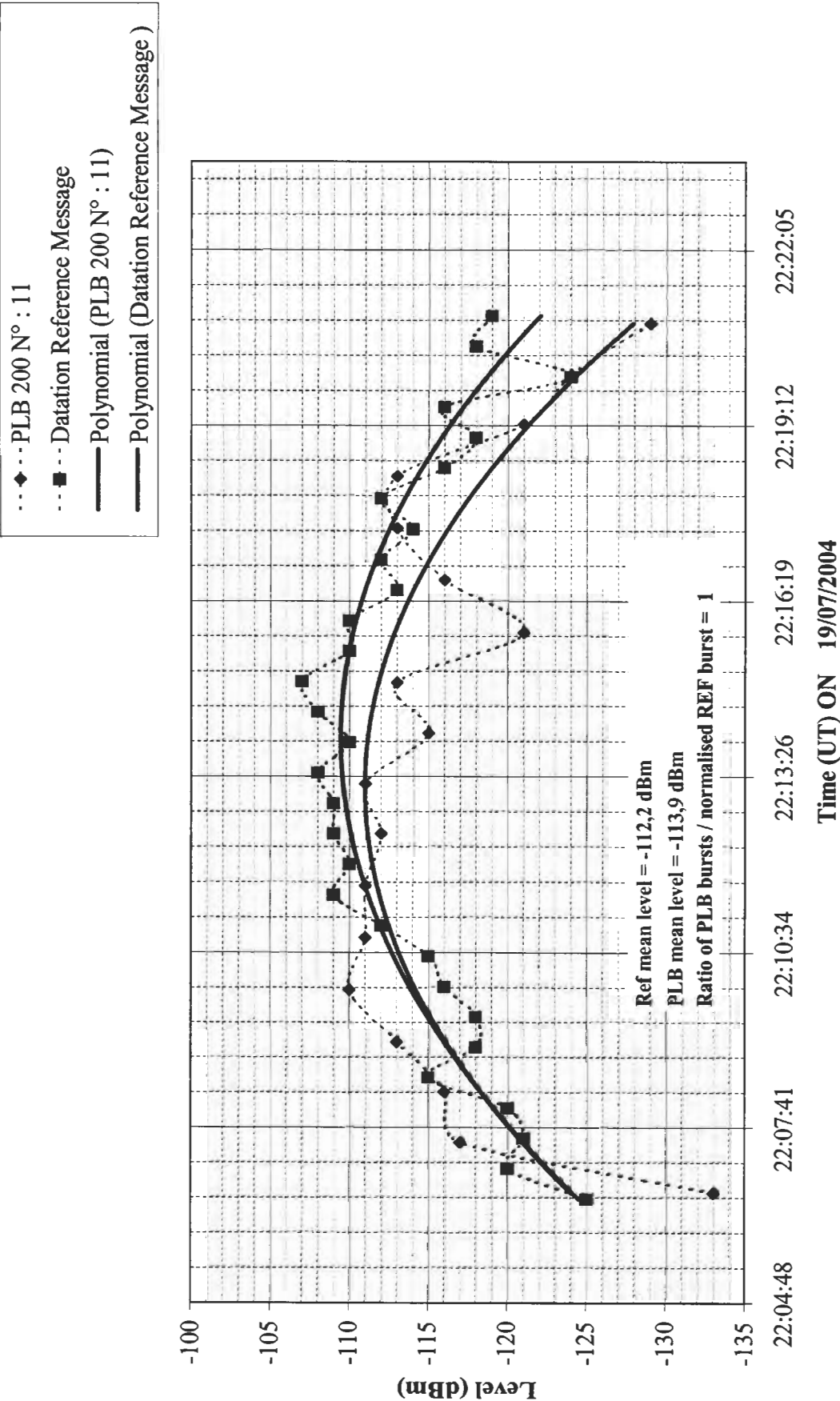
2004/07/19	22:06:30	ce300000000000dbd0e40 20122063	-125	S9
2004/07/19	22:07:00	ce300000000000dbd0e40 20122070	-120	S9
2004/07/19	22:07:30	ce300000000000dbd0e40 20122073	-121	S9
2004/07/19	22:08:00	ce300000000000dbd0e40 20122080	-120	S9
2004/07/19	22:08:30	ce300000000000dbd0e40 20122083	-115	S9
2004/07/19	22:09:00	ce300000000000dbd0e40 20122090	-118	S9
2004/07/19	22:09:30	ce300000000000dbd0e40 20122093	-118	S9
2004/07/19	22:10:00	ce300000000000dbd0e40 20122100	-116	S9
2004/07/19	22:10:30	ce300000000000dbd0e40 20122103	-115	S9
2004/07/19	22:11:00	ce300000000000dbd0e40 20122110	-112	S9
2004/07/19	22:11:30	ce300000000000dbd0e40 20122113	-109	S9
2004/07/19	22:12:00	ce300000000000dbd0e40 20122120	-110	S9
2004/07/19	22:12:30	ce300000000000dbd0e40 20122123	-109	S9
2004/07/19	22:13:00	ce300000000000dbd0e40 20122130	-109	S9
2004/07/19	22:13:30	ce300000000000dbd0e40 20122133	-108	S9
2004/07/19	22:14:00	ce300000000000dbd0e40 20122140	-110	S9
2004/07/19	22:14:30	ce300000000000dbd0e40 20122143	-108	S9
2004/07/19	22:15:00	ce300000000000dbd0e40 20122150	-107	S9
2004/07/19	22:15:30	ce300000000000dbd0e40 20122153	-110	S9
2004/07/19	22:16:00	ce300000000000dbd0e40 20122160	-110	S9
2004/07/19	22:16:30	ce300000000000dbd0e40 20122163	-113	S9
2004/07/19	22:17:00	ce300000000000dbd0e40 20122170	-112	S9
2004/07/19	22:17:30	ce300000000000dbd0e40 20122173	-114	S9
2004/07/19	22:18:00	ce300000000000dbd0e40 20122180	-112	S9
2004/07/19	22:18:30	ce300000000000dbd0e40 20122183	-116	S9
2004/07/19	22:19:00	ce300000000000dbd0e40 20122190	-118	S9
2004/07/19	22:19:30	ce300000000000dbd0e40 20122193	-116	S9
2004/07/19	22:20:00	ce300000000000dbd0e40 20122200	-124	S9
2004/07/19	22:20:30	ce300000000000dbd0e40 20122203	-118	S9
2004/07/19	22:21:00	ce300000000000dbd0e40 20122210	-119	S9

Total burst/pass	30	Level Average (dBm)	-112,2	S9
Total burst normalised at 3/5	18			

First Sat Pass checked - Satellite Test Conf. N° 1 : Dry ground



Second Sat Pass checked - Satellite Test Conf. N° 1 : Dry ground



ANTENNA TEST RESULTS ON
PLB 200 ACR Electronics, Inc Beacon
N° 11

1 - ADMINISTRATION

1. WORK ORDER : Reference ITS : E5503-C/S

1. TEST TEAM : Joseph COMMENGES

1. SCHEDULE : 23 to 25 June 2004

2 - PURPOSE

The radiation tests of the dedicated radio beacon are performed in INTESPACE EMC Laboratory in compliance with the test methods described in the COSPAS-SARSAT 406 MHz distress beacon type approval standard : C/S T 007- Issue 3 Revision 10 October 2003 .

3 - RADIO BEACON IDENTIFICATIONS

Manufacturer : ACR Electronics, Inc

Model N° : PLB 200

Serial N° : 11

Antenna : ACR A3-06-2328 quarter wave

4 - TEST SITE DESCRIPTION

Tests are performed in an anechoic chamber (size 16 m x 10 m x 11 m)
Walls, ceiling and doors are lined with EMERSON CUMING foams VHP 36 and VHP 26 type.
The BEACON is placed as shown on figure N° 1 and N° 2.

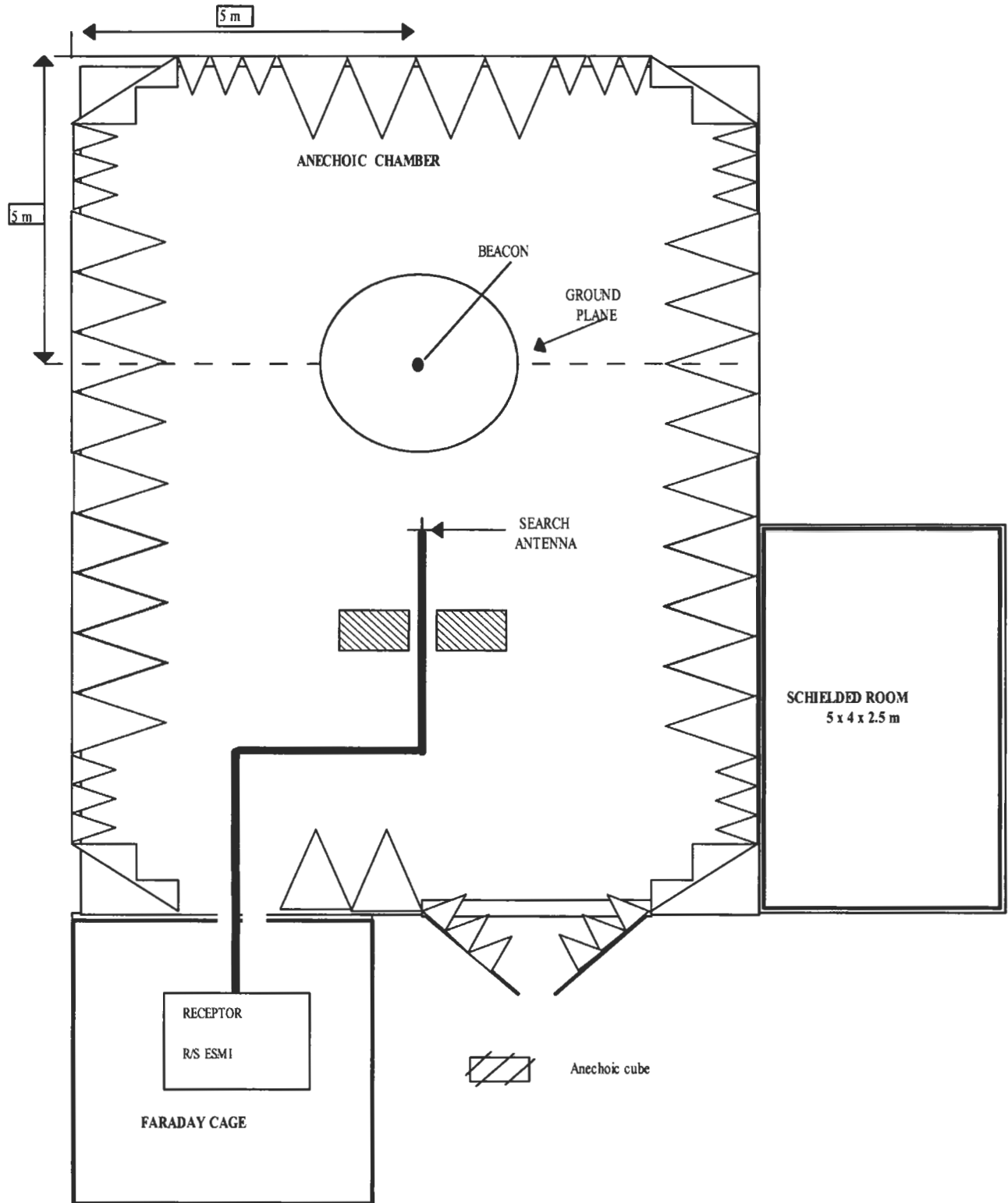


FIGURE 1

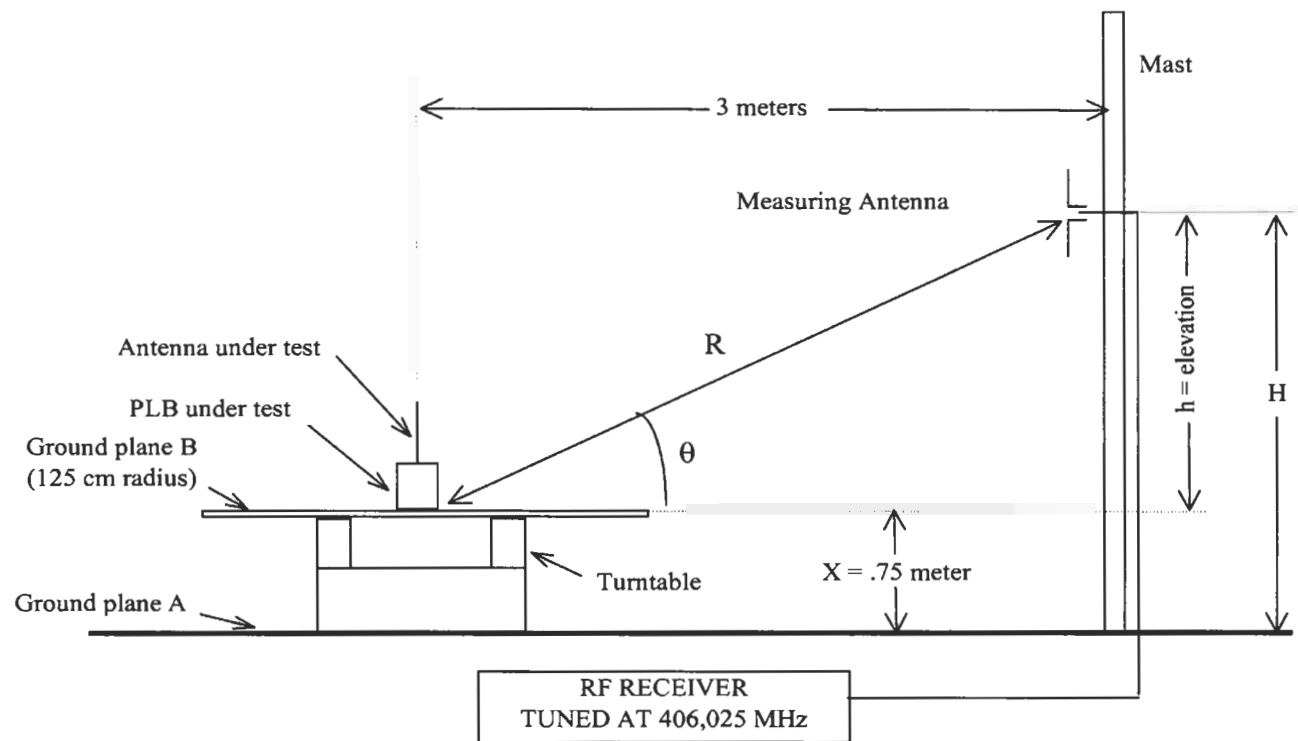


FIGURE B2a : Equipement Test Set-Up For BEACON Antenna Test .
(For BEACON designed for normal operation without a ground plane, ex: PLB)

5 - TEST METHOD

The test method describes here after, according to "C/S T 007 - Issue 3 -Revision 9 - October 2002" test sequences is executed for 406 MHz frequency .

Following measurements are performed :

- 1/ Electrical ground plane of 1.25 m of radius is placed at flotation level of the beacon.
- 2/ BEACON transmitting antenna polarization is determined prior to test.
- 3/ Determination of E field strength in term of $\text{dB}\mu\text{V/m}$ at 3 m far from the Beacon Antenna for all direction (0° to 360° by step of 30°) and for search antenna elevation (10° to 50°). For all elevations the search antenna is left in vertical position for the linear vertical polarization and in horizontal position for the linear horizontal polarization . The lenght of search antenna is adjusted to proper $l/2 \lambda$ conditions .
- 4/ An ERP (Equivalent Radiated Power) from the PLB is calculated
- 5/ ERP is corrected with EOL (end of life factor)
- 6/ Actual ERP are compared to specified ERP to be in the range 1.6 W to 20 W (+ 32 dBm to + 43 dBm).

6 - TESTS EQUIPMENTS

6.1. SEARCH ANTENNA

- 406 MHz test : EMCO Ref 3121 C- DB4 Dipole antenna
Serial number : S/N 763
Calibration data shown table N° 1

6.2. SPECTRUM ANALYSER

- R/S ESMI

6.3. CABLES

- 2x10 m cable SUCOFLEX type N
Cable loss at 406 MHz is : 4,1 dB

7 - TESTS OPERATIONS

7.1. EMISSION FIELD STRENGTH FROM BEACON ANTENNA

The electrical field intensity is measured with the following antenna :

- EMCO 3121 C - DB4 - SN- 763

Beacon Antenna electric field strength is obtained from measurement of the output voltage (dB μ V RMS) at antenna port (typical set up are shown figure N° 3 for 406 MHz) and computed with following parameters :

- Antenna factor of search antenna AF in dB (manufacturer calibration) showing table N° 1.
- Directivity factor of the antenna Dm in dB (Theoretical directivity shown paragraph B-5-4 of C/S T007) as :

$$Dm = 20 \log [\cos (90 \times \sin q) / \cos q]$$

- Cable loss L = 4,1 dB at 406 MHz
- DF : distance factor in dB - To calculate field at a constant distance (3 m) from Beacon Antenna due to the elevation of the search antenna.
- Power correction factor : end of life correction factor EOL is calculated from the difference between RF power measured during test and end of life power after 24 hours operation. This factor is applied to correct ERP as shown on final test result table
- The measurements are performed on the carrier signal, just before to apply the modulation.
- The effective field strength at 3 m from Beacon Antenna is computed from :

$$EdB\mu V/m = UdB\mu V + AF - Dm + L + DF$$

7.2. POWER CORRECTION FACTORS

EOL factor

TEST FREQUENCY	RF Power measured at Ambient Temp. Test	RF Power measured at the end of Operating Lifetime Test	Loss Factor ERP _{LOSS}
406 MHz	37,7 dBm	38,0 dBm	0,0 dB

8 - RADIATED POWER CALCULATIONS

8.1. EFFECTIVE RADIATED POWER OF Beacon Antenna

ERP of Beacon Antenna is directly calculated from equation :

$$ERP = E^2 \times D^2 / 30$$

$$ERP = W$$

$$E = V/m$$

$$D = m$$

Results shown in table N° C1 are given in dBm where :

$$ERP \text{ dBm} = 10 \log (ERP \text{ W}) + 30$$

and apparent antenna gain :

$$GidB = ERPdBm - RF \text{ PowerdBm}$$

9 - SUCCESS CRITERIA

90% of Beacon Antenna measurements must be equal or greater than 1,6 W ERP (32 dBm) .
and less than 20 W ERP (43 dBm)

10 - BEACON ANTENNA POLARIZATION

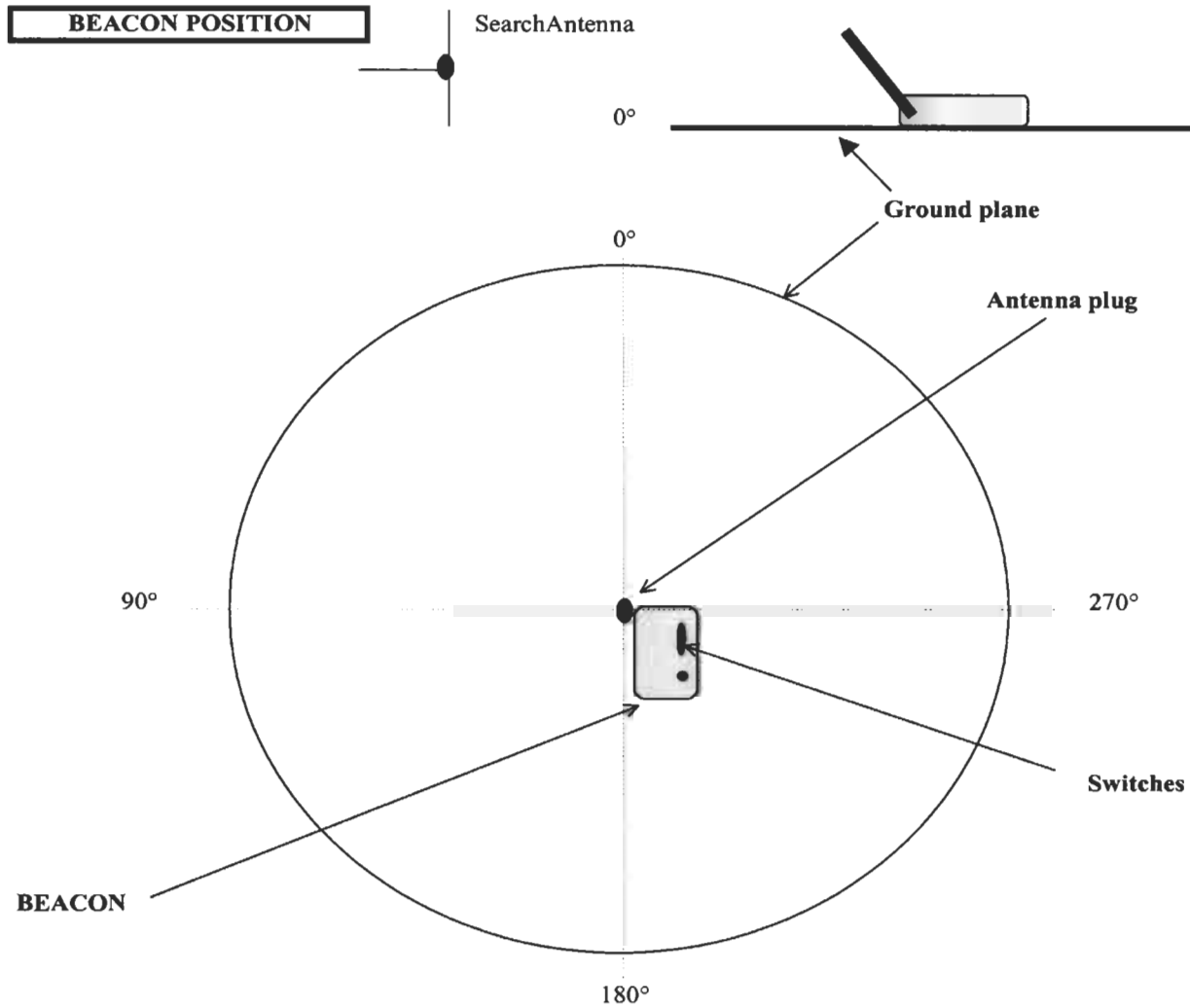
Beacon antenna polarization is checked according to C/S T007 procedure paragraph B9 ELT antenna polarization is declared vertical when measurement obtained with vertical polarization search antenna are 10 dB greater or more than measurement obtained with

See Table C1b for Beacon Antenna Induced Voltage Measurements

11 - BEACON MECHANICAL SET UP

BEACON 0°axis is identified with 0° azimuth direction of turn table .

Antenna is the center of rotation of azimuth angle.



NOT TO SCALE

12 - RESULTS

Test frequency	Polarization	Reference ERP (W)	Measurement ERP
406 MHz	Vertical	$1.6 < \text{ERP Ref} < 20$	According table C1

CONCLUSIONS

The ERP Beacon Antenna is always greater than the ERP reference.

Table C1a : EFFECTIVE RADIATED POWER (dBm) / ANTENNA GAIN (dBi)

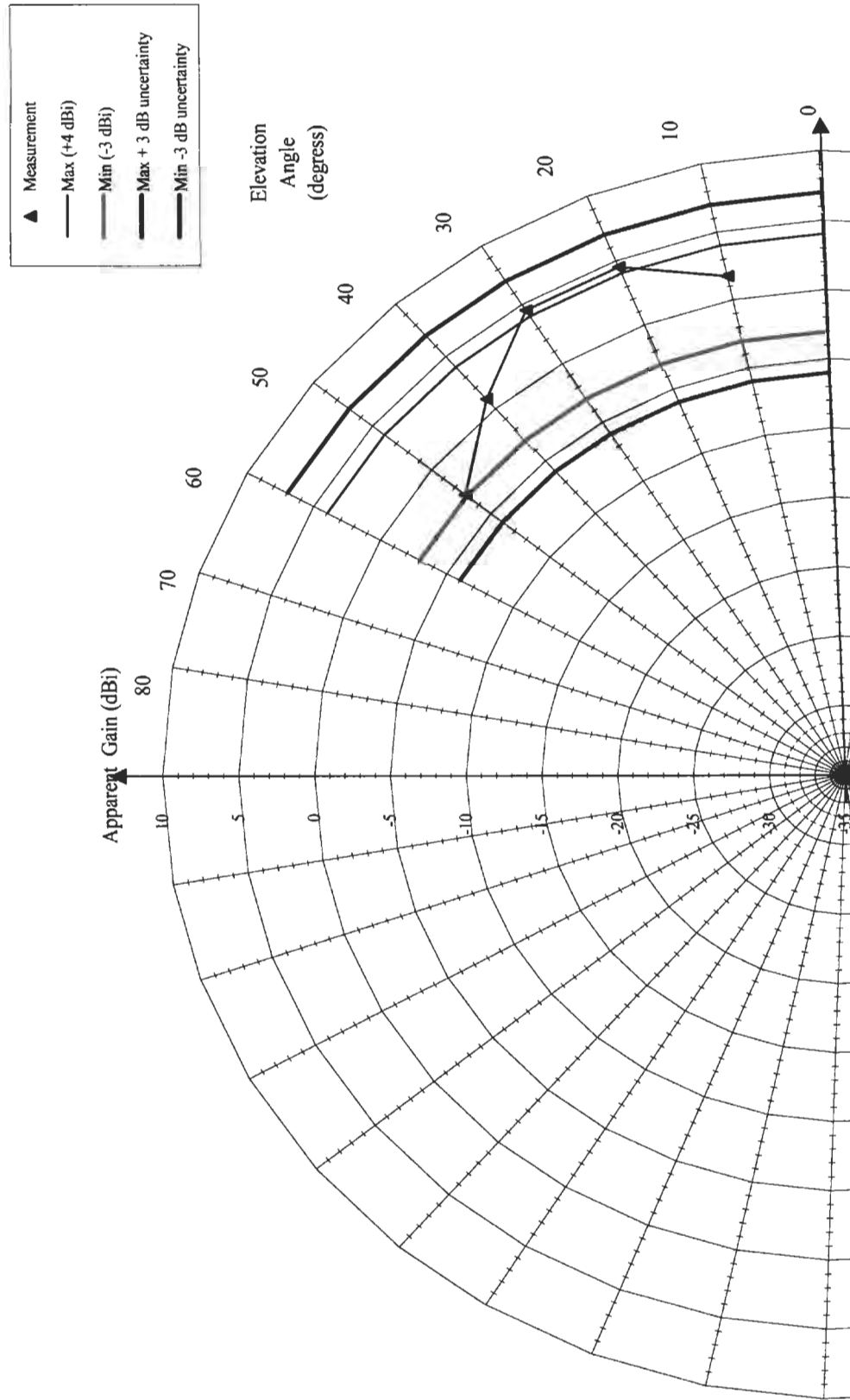
Azimuth Angle (Degrees)	Elevation Angle (Degrees)									
	10		20		30		40		50	
	dBm	dBi	dBm	dBi	dBm	dBi	dBm	dBi	dBm	dBi
0	39,51	1,81	42,00	4,30	42,11	4,41	39,35	1,65	31,39	-6,31
30	39,56	1,86	41,90	4,20	42,13	4,43	39,27	1,57	32,91	-4,79
60	39,39	1,69	42,11	4,41	42,46	4,76	39,43	1,73	35,05	-2,65
90	39,57	1,87	42,51	4,81	42,53	4,83	38,75	1,05	36,53	-1,17
120	39,44	1,74	42,39	4,69	42,43	4,73	38,75	1,05	36,95	-0,75
150	39,20	1,50	42,09	4,39	42,13	4,43	38,23	0,53	37,06	-0,64
180	39,20	1,50	42,12	4,42	42,09	4,39	37,97	0,27	36,73	-0,97
210	39,22	1,52	42,08	4,38	41,96	4,26	37,78	0,08	36,31	-1,39
240	39,45	1,75	42,24	4,54	42,21	4,51	37,87	0,17	35,49	-2,21
270	39,74	2,04	42,45	4,75	42,21	4,51	38,08	0,38	34,58	-3,12
300	39,52	1,82	42,22	4,52	42,16	4,46	38,76	1,06	33,29	-4,41
330	39,50	1,80	42,05	4,35	42,09	4,39	39,16	1,46	31,63	-6,07
Average	39,44	1,74	42,18	4,48	42,21	4,51	38,62	0,92	34,83	-2,87
Overall Gain Variation	0,54 dB		0,61 dB		0,57 dB		1,65 dB		5,67 dB	

$$ERP_{\max \text{ EOL}} = \text{MAX} [ERP_{\max}, (ERP_{\max} - ERP_{\text{LOSS}})] = \text{MAX} (\underline{42,53} , \underline{42,53}) = \underline{42,53 \text{ dBm}}$$

$$ERP_{\min \text{ EOL}} = \text{MIN} [ERP_{\min}, (ERP_{\min} - ERP_{\text{LOSS}})] = \text{MIN} (\underline{31,39} , \underline{31,39}) = \underline{31,39 \text{ dBm}}$$

Table C1b : INDUCED Voltage Measurements Vv / Vh (dBμV)

Azimuth Angle (Degrees)	Elevation Angle (Degrees)									
	10		20		30		40		50	
	Vv	Vh	Vv	Vh	Vv	Vh	Vv	Vh	Vv	Vh
0	109,59	83,30	111,68	83,00	111,06	89,90	107,16	90,90	97,75	75,50
30	109,59	91,20	111,58	83,20	110,96	96,40	106,76	96,80	98,55	91,30
60	109,39	92,80	111,78	88,50	111,16	99,30	106,56	99,50	100,05	95,80
90	109,59	92,00	112,18	88,70	111,26	99,00	105,76	99,40	101,85	96,30
120	109,49	89,50	112,08	82,50	111,26	96,60	106,16	97,00	102,85	93,60
150	109,29	80,50	111,78	81,00	111,06	91,50	105,96	92,10	103,35	86,80
180	109,29	79,20	111,78	90,70	111,06	85,00	105,86	83,00	103,05	84,70
210	109,29	86,20	111,68	95,10	110,86	93,50	105,46	92,80	102,15	93,40
240	109,49	90,30	111,78	97,20	111,06	95,80	105,36	95,40	100,55	96,10
270	109,79	89,40	111,98	97,60	111,06	96,00	105,56	95,70	98,45	97,40
300	109,59	87,10	111,78	96,60	111,06	93,70	106,46	93,30	97,25	96,00
330	109,59	81,00	111,68	93,40	111,06	82,80	107,06	80,20	97,05	91,00
Min (Vv-Vh)	16,6		14,4		11,9		6,4		1,1	



**NAVIGATION SYSTEM TEST ON
PLB 200 ACR Electronics, Inc Beacon
N° 7**

1) **Internal GPS Mode****1-1) Position Data Default Values**

Date : 12 July 2004

Beacon without navigation input.

Default position:

Message :

FFFE2F96EE3240077FDFFB74ED3783E0F66C

Correct

Always default value after 30 min. :

00:30:21

Correct

Time	Latitude	Longitude	Def.	Delta	BCH1 lu/calculé	BCH2 lu/calculé
13:01:46	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B4	66C / 66C
13:02:37	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B4	66C / 66C
13:03:27	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B5	66C / 66C
13:04:18	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B6	66C / 66C
13:05:08	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B7	66C / 66C
13:06:00	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B8	66C / 66C
13:06:50	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B9	66C / 66C
13:07:41	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B10	66C / 66C
13:08:33	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B11	66C / 66C
13:09:24	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B12	66C / 66C
13:10:14	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B13	66C / 66C
13:11:05	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B14	66C / 66C
13:11:55	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B15	66C / 66C
13:12:47	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B16	66C / 66C
13:13:37	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B17	66C / 66C
13:14:28	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B18	66C / 66C
13:15:20	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B19	66C / 66C
13:16:11	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B20	66C / 66C
13:17:01	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B21	66C / 66C
13:17:52	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B22	66C / 66C
13:18:41	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B23	66C / 66C
13:19:32	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B24	66C / 66C
13:20:22	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B25	66C / 66C
13:21:12	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B26	66C / 66C
13:22:04	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B27	66C / 66C
13:22:54	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B28	66C / 66C
13:23:44	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B29	66C / 66C
13:24:35	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B30	66C / 66C
13:25:24	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B31	66C / 66C
13:26:15	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B32	66C / 66C
13:27:05	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B33	66C / 66C
13:27:55	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B34	66C / 66C
13:28:47	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B35	66C / 66C
13:29:38	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B36	66C / 66C
13:30:27	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B37	66C / 66C
13:31:18	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B38	66C / 66C
13:32:07	127,75° 0' 60" N	255,75° 0' 60" E	*		0DD3B4 / 0DD3B39	66C / 66C

1-2) Position Acquisition Time and Position Accuracy

Reference position :

N° 1	Lanta:	43° 33' 36" N 01° 39' 48" E
N° 2	ITS - Lab	43° 33' 34" N 01° 28' 48" E

Test Results :

- Location N°1 : Lanta Ref. 43° 33' 36" N
01° 39' 48" E

Date : 12 july 2004

Default position : correct FFFE2F96EE3240077FDFFB74ED3783E0F66C

Time of first GPS location : correct

At the 1st burst after $\approx$ 100 seconds of beacon turn ON (= 2 repetition period)

- Location N°4 : ITS Lab 43° 33' 34" N
01° 28' 48" E

Date : 11 june 2004

Default position : FFFE2F96EE3240077FDFFB74ED3783E0F66C

Time of first

GPS location : At the 1st burst after $\approx$ 100 seconds of beacon turn ON

Ref. Pos	Date	Time	Latitude	Longitude	Def.	Delta < 5 km	BCH1 read./calcul.	BCH2 read./calcul.
N° 1 Mes.	12/07/04	07:12:51	43° 33' 36" N	1° 39' 44" E		0,087 km	066EF4 / 066EF4	919 / 919
			FFFE2F96EE3240072B80399BBD378E454919					
N° 4 Mes.	11/06/04	07:12:17	43° 33' 36" N	1° 28' 40" E		0,255 km	00B717 / 00B717	4C9 / 4C9
			FFFE2F96EE3240072B80302DC5F78E4154C9					

1-3) Encoded Position Data Update Interval

Date : 12 July 2004

Reference position :

N° 1	Lanta:	43° 33' 36" N 01° 39' 48" E
N° 2	Lauzerville :	43° 33' 14" N 01° 34' 14" E
N°3	CNES - E. Gallois	43° 33' 27" N 01° 29' 11" E

Results :

No updating message before 20 min. : Correct
 Time of first update GPS location : 00:22:41
 Time of second update GPS location : 00:22:39
 No updating with encoded position : Not available

Ref. Pos	Date	Time	Latitude	Longitude	Def.	Delta < 5 km	BCH1 read./calcul.	BCH2 read./calcul.
N° 1 Mes.	12/07/04	07:12:51	43° 33' 36"	1° 39' 44"		0,087 km	066EF4 / 066EF4	919 / 919
			FFFE2F96EE3240072B80399BBD378E454919					
N° 2 Mes.	12/07/04	07:35:32	43° 33' 16"	1° 34' 12"		0,087 km	066EF4 / 066EF4	B0B / B0B
			FFFE2F96EE3240072B80399BBD378D0ACB0B					
N° 3 Mes.	12/07/04	07:58:11	43° 33' 28"	1° 29' 12"		0,044 km	066EF4 / 066EF4	
			FFFE2F96EE3240072B80399BBD378DCFC6D1					

1-4) Position Clearance after Deactivation

Date : 12 July 2004

Default value position with beacon restart without navigation input
 after Encoded Position Data Update Interval Test : At the 1st burst after ≈100 seconds of beacon restart

Ref. Pos	Date	Time	Latitude	Longitude	Def.	Delta < 5 km	BCH1 read./calcul.	BCH2 read./calcul.
ITS Lab Mes.	12/07/04	08:30:00	127,75° 0' 60" N	255,75° 0' 60" E	*	N/A	0DD3B4 / 0DD3B4	66C / 66C
			FFFE2F96EE3240077FDFFB74ED3783E0F66C					

1-5) Last Valid Position

Date : 16 July 2004

First valid GPS acquisition time : 10:55:22

Last valid GPS acquisition time : 14:55:13

Valid position retained after 4 hours (± 5 min) : 03:59:51Default values encoded in the message after 4 hours (± 5 min) : Correct

Constructeur : ACR
 Type : PLB 200
 Numero : 7
 Reference INTESPACE : E5503-07

Mesures du 16 Jul 2004

Tps	Latitude	Longitude	BCH1 l/c	BCH2 l/c	Delta	E D
10:43:06	127.75°0'60	255.75°0'60'	0DD3B4/0DD3B4	66C/66C	0.00	*
10:43:57	127.75°0'60	255.75°0'60'	0DD3B4/0DD3B4	66C/66C	0.00	*
10:46:02	127.75°0'60	255.75°0'60'	0DD3B4/0DD3B4	66C/66C	0.00	*
10:46:54	127.75°0'60	255.75°0'60'	0DD3B4/0DD3B4	66C/66C	0.00	*
10:47:43	127.75°0'60	255.75°0'60'	0DD3B4/0DD3B4	66C/66C	0.00	*
10:48:35	127.75°0'60	255.75°0'60'	0DD3B4/0DD3B4	66C/66C	0.00	*
10:49:25	127.75°0'60	255.75°0'60'	0DD3B4/0DD3B4	66C/66C	0.00	*
10:50:16	127.75°0'60	255.75°0'60'	0DD3B4/0DD3B4	66C/66C	0.00	*
10:51:07	127.75°0'60	255.75°0'60'	0DD3B4/0DD3B4	66C/66C	0.00	*
10:51:58	127.75°0'60	255.75°0'60'	0DD3B4/0DD3B4	66C/66C	0.00	*
10:52:50	127.75°0'60	255.75°0'60'	0DD3B4/0DD3B4	66C/66C	0.00	*
10:53:41	127.75°0'60	255.75°0'60'	0DD3B4/0DD3B4	66C/66C	0.00	*
10:54:30	127.75°0'60	255.75°0'60'	0DD3B4/0DD3B4	66C/66C	0.00	*
10:55:22	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
10:56:11	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
10:57:02	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
10:57:53	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
10:58:42	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
10:59:34	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:00:25	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:01:14	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:02:05	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:02:54	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:03:46	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:04:36	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:05:26	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:06:17	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:07:08	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:07:57	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:08:48	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:09:37	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:10:29	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:11:19	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:12:09	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:13:01	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:13:51	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:14:41	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:15:32	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:16:21	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:17:13	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:18:04	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:18:54	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:19:45	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:20:35	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:21:25	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:22:17	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:23:08	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:24:00	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:24:51	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:25:41	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:26:31	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:27:21	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:28:10	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:29:02	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:29:54	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:30:44	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:31:35	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:32:24	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:33:14	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:34:04	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:34:53	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:35:45	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:36:37	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:37:27	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:38:18	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:39:08	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:39:57	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:40:48	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	
11:41:37	43.5°3'32''	.5°58'44''	00B717/00B717	CDA/CDA	.14	

[illegible]

[illegible]

[illegible]

02/09/04 22:18:00	PLB 200 with external navigation data download on GPS receiver Garmin model :Etrex
02/09/04 22:20:00	PLB Start with encoded position ITS lab and without GPS signal Loc N° 4
02/09/04 22:22:16	First burst without GPS signal in the lab
03/09/04 00:27:36	GPS signal on in the lab
03/09/04 00:35:13	PLB message with internal nav location
03/09/04 06:07:10	PLB message updated

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

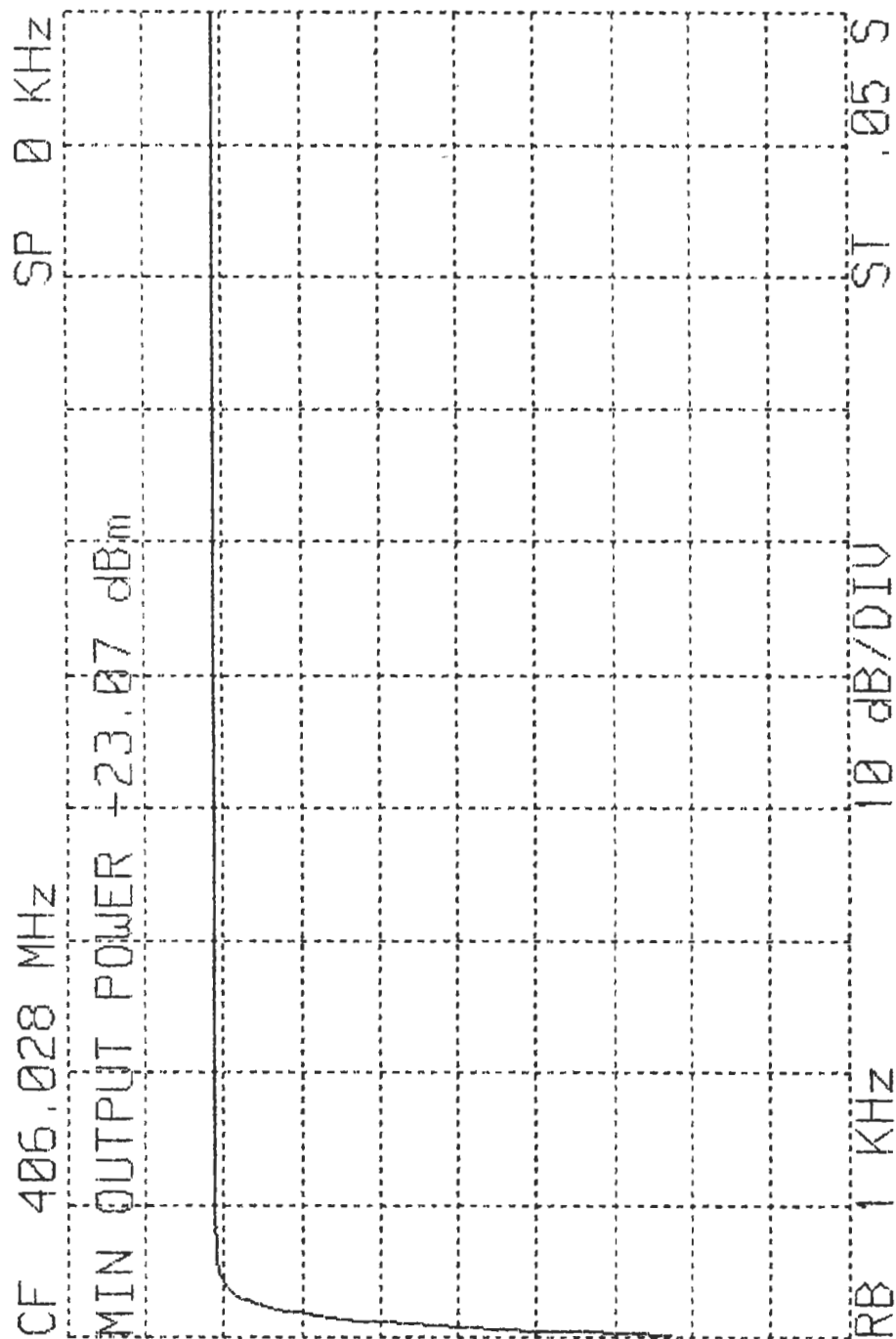
[illegible]

[illegible]

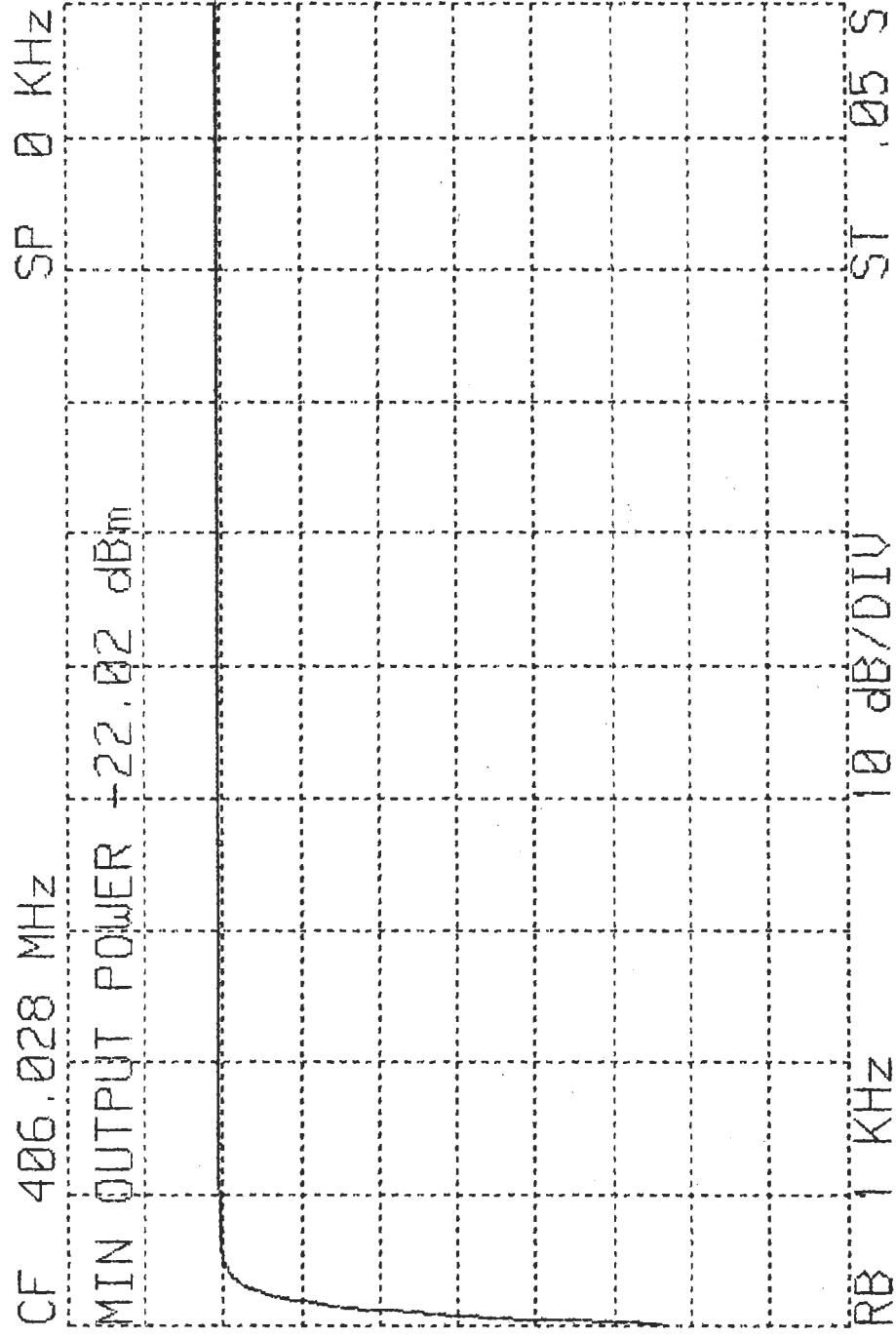
[illegible]

TRANSMITTER OUTPUT POWER RISE TIME TEST RESULT ON
PLB 201 ACR Electronics, Inc Beacon
N° 12
(1 ms before 10 % of the burst)
at -20° C, 22° C and 55° C

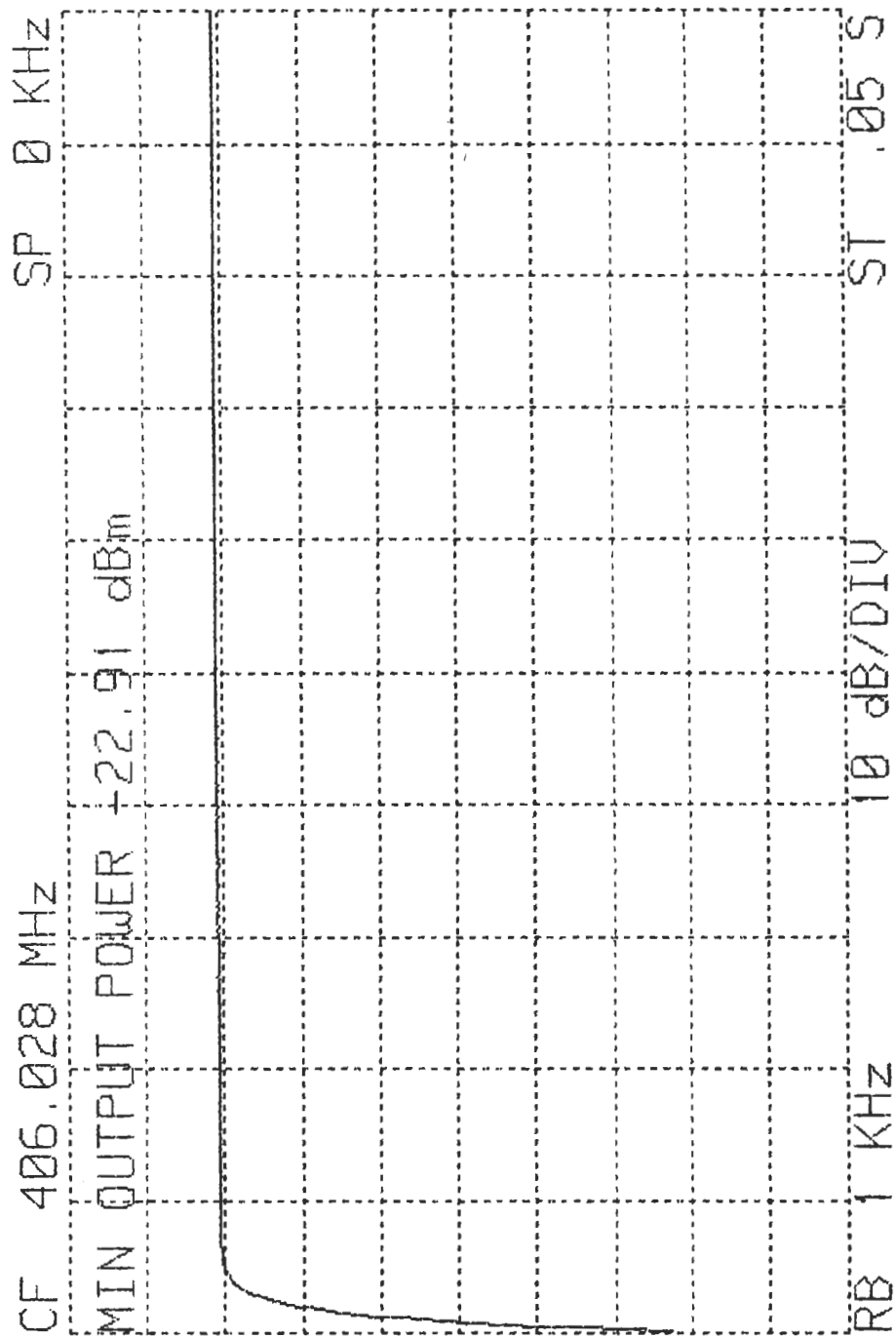
Output Power Risettime at -20°C



Output Power Risetime at 22°C



Output Power Risettime at 55°C



**CERTIFICATION TEST RESULTS ON
PLB 201 ACR Electronics, Inc Beacon
N° 12**

at -20° C, 22° C and 55° C

Certification Test at -20°C

Date of test : 11-juin-04

Manufacturer : ACR

Beacon Type : PLB 201

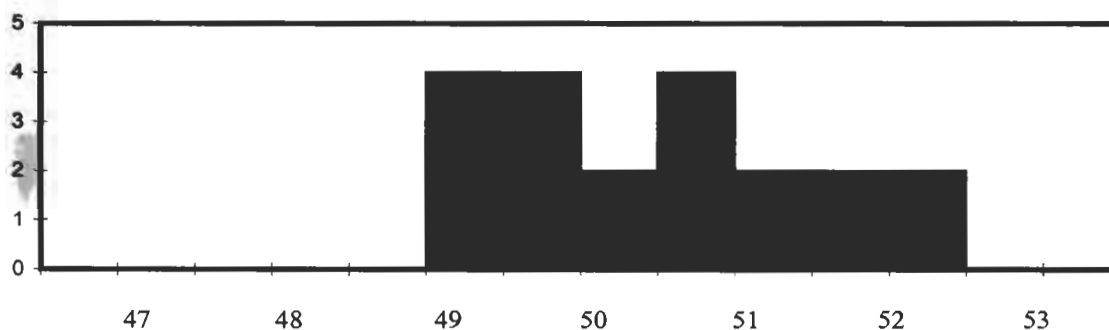
Number : 12

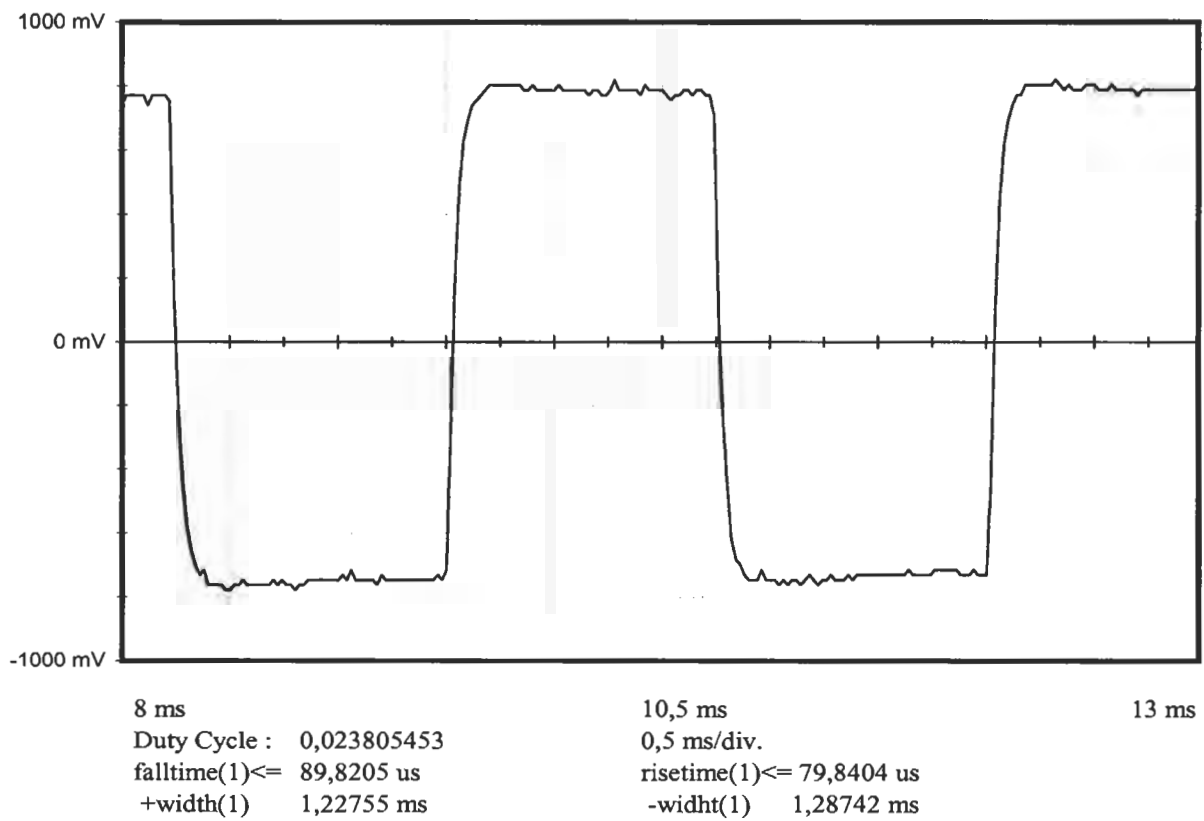
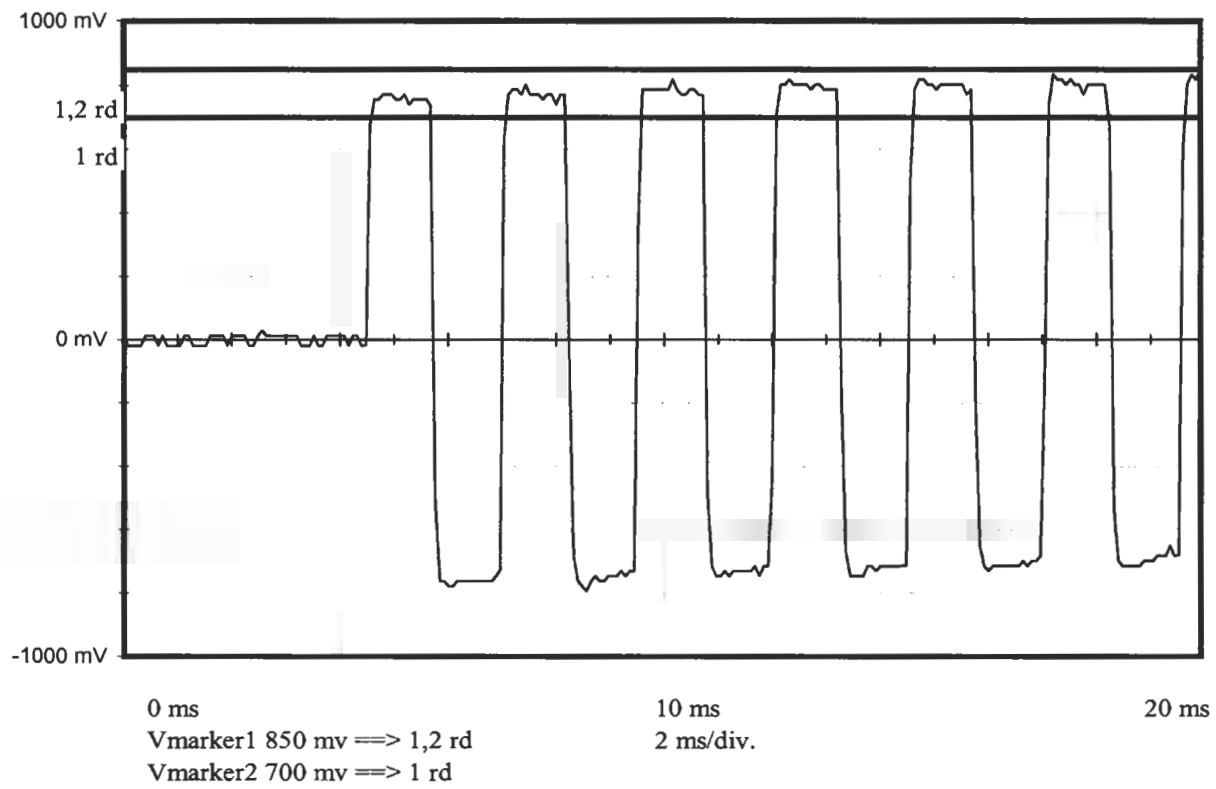
Message

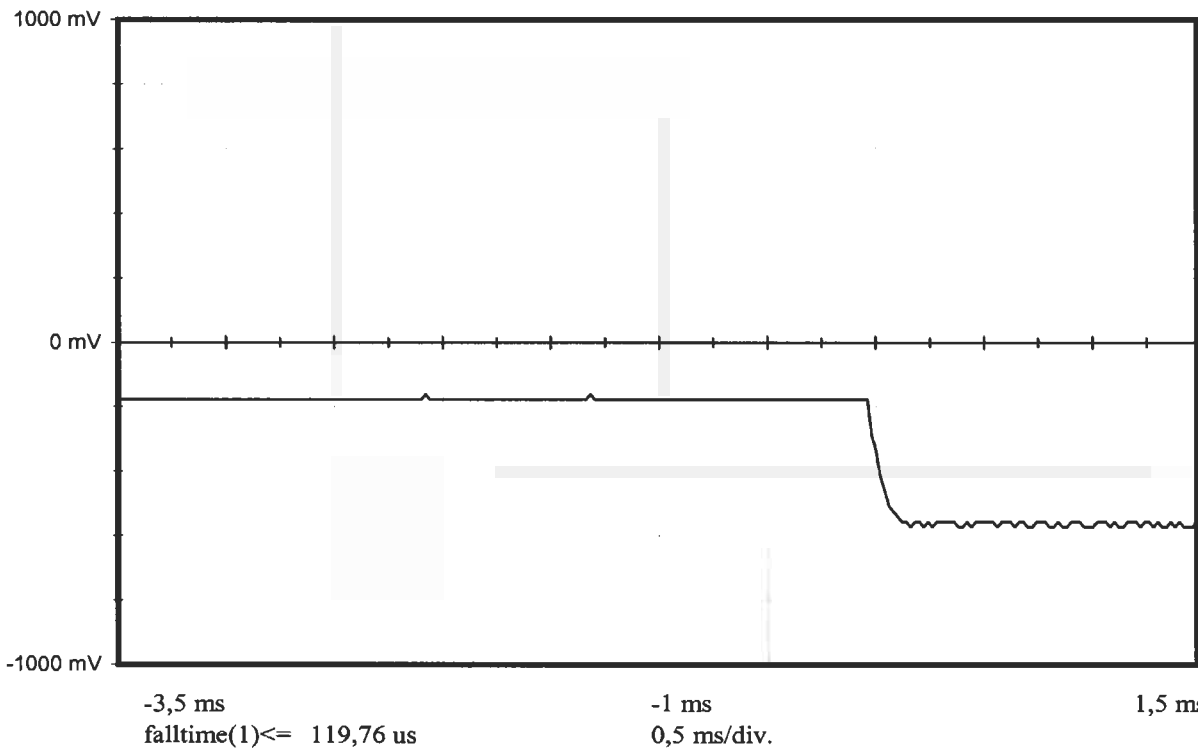
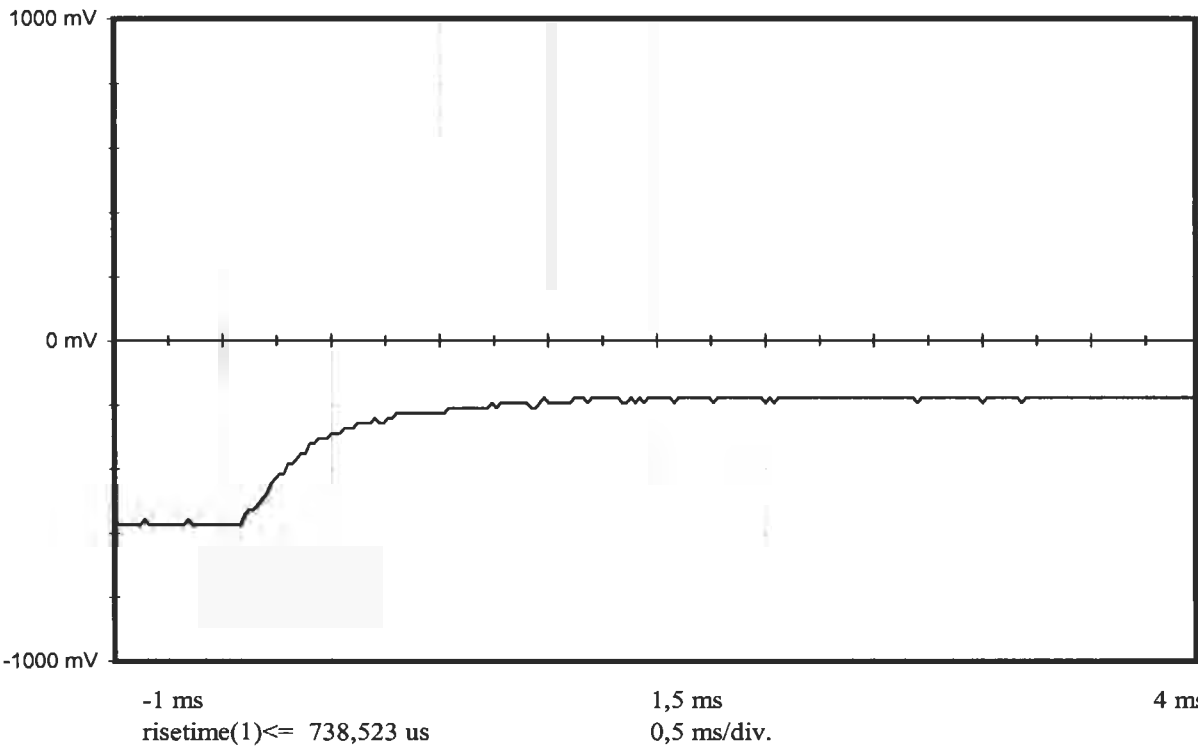
Message received		FFFE2F96EF00031FC0FF001895F59F3C0CD4
Format Flag	25	1
Protocol flag	26	0
Ident./Position code	27-85	0
Country Code/Country	27-36	366 / USA
Protocol Code : U/Std-Nat	37-39/37-40	1111
Protocol Code Used	37-39/37-40	Test-National Location
Identification Data	40-85/41-64/41-58	
Identification Used		12
Calculated BCH1	25-85	006257
Readed BCH1	86-106	006258
Homing	112	1
Em.cod/nat.use/supp.data	107-112	110101
Encod pos data	111	0
Fixed Data "1"	108	1 OK
Calculated BCH2	107-132	CD4
Readed BCH2	133-144	CD4
Latitude position		Nord 127° 0' 60"
Longitude position		Est 255° 0' 60"
Delta position		Default pos.

Electrical and other parameters

CW preamble	ms	158,4 <	< 162,6	160,76
Total transmission time	ms	513,8 <	< 526,2	522,47
Modulation frequency	Hz	395,4 <	< 404,6	398,34
Phase deviation : total	rd		<=2,40	2,24
Phase deviation : positive	rd	1,00 <	< 1,20	1,14
Phase deviation : negative	rd	-1,20 <	< -1,00	-1,10
Symmetry measurement	%		<=5 %	2,38
Nominal frequency : F2	Hz			406027934,18
Short term2				1,68E-10
Short term3				3,12E-10
Slope				1,65E-10
Residual				6,07E-10
406 MHz power output	dBm			37,4
Homing frequency	MHz			121,50
121,5 MHz power output	dBm			20,4
Soak temperature	°C			-19,6
Extra feature				No







Certification Test at 22°C

Date of test : 10-juin-2004

Manufacturer : ACR

Beacon Type : PLB 201

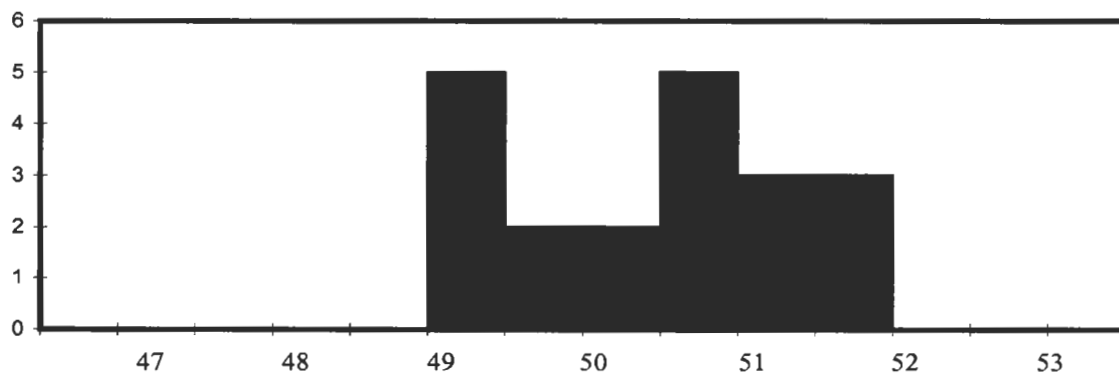
Number : 12

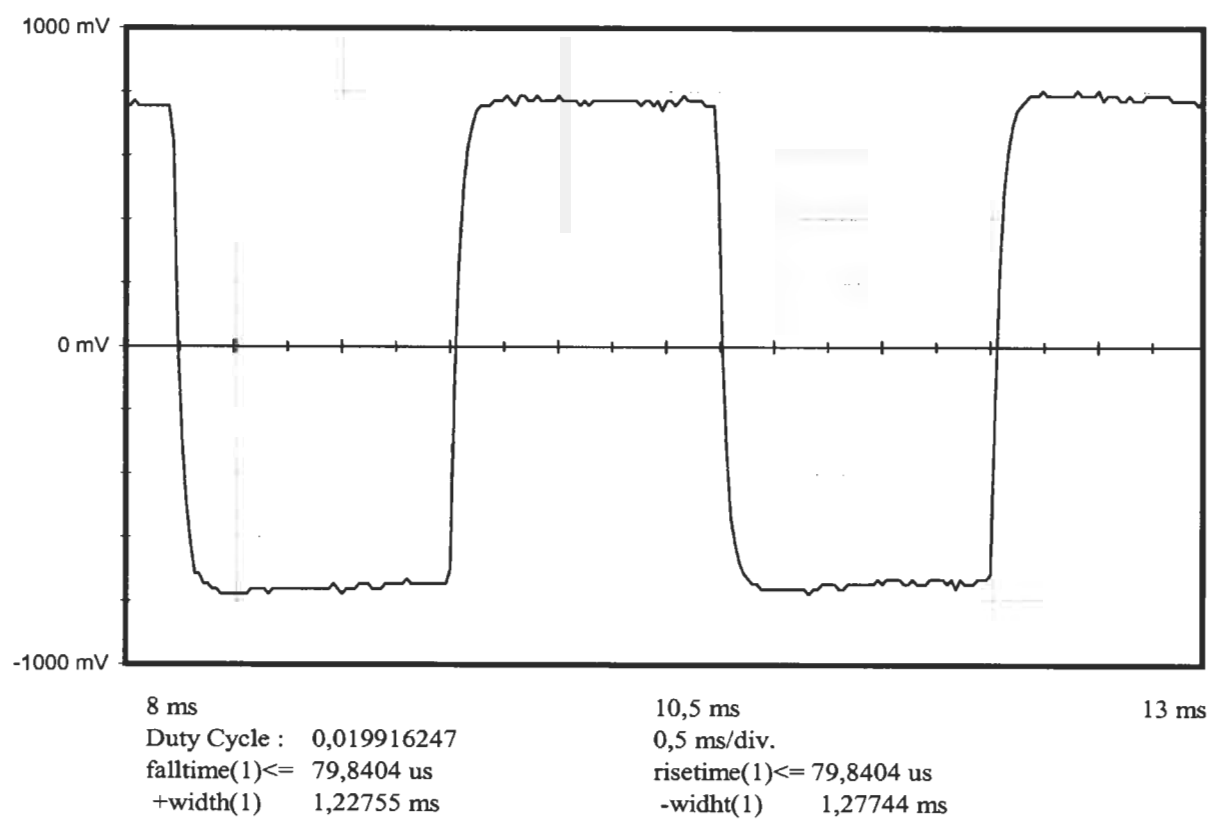
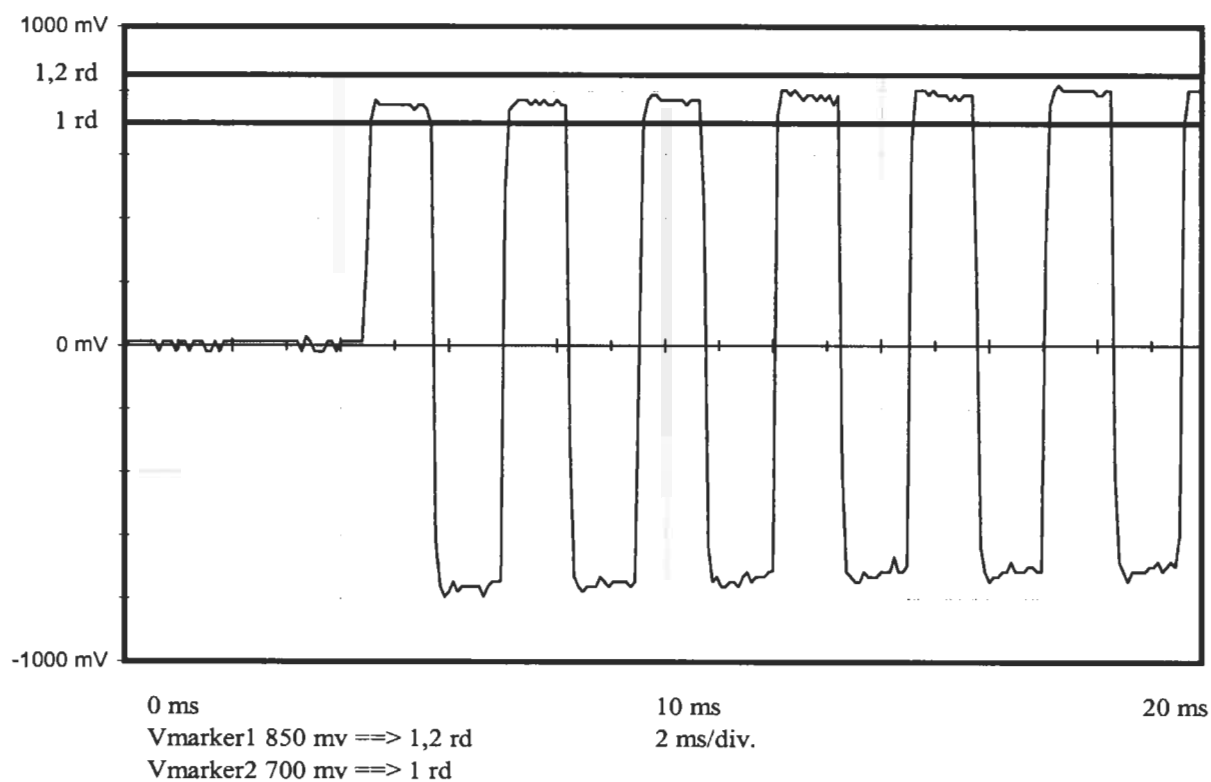
Message

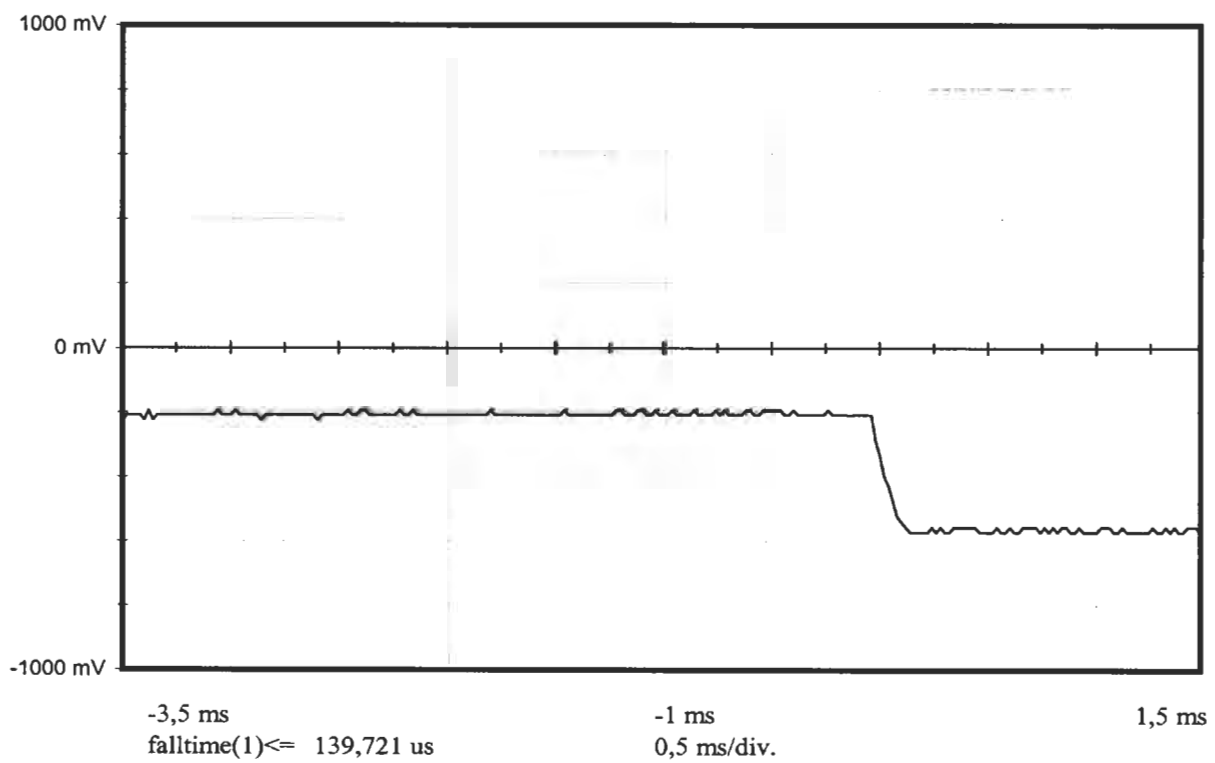
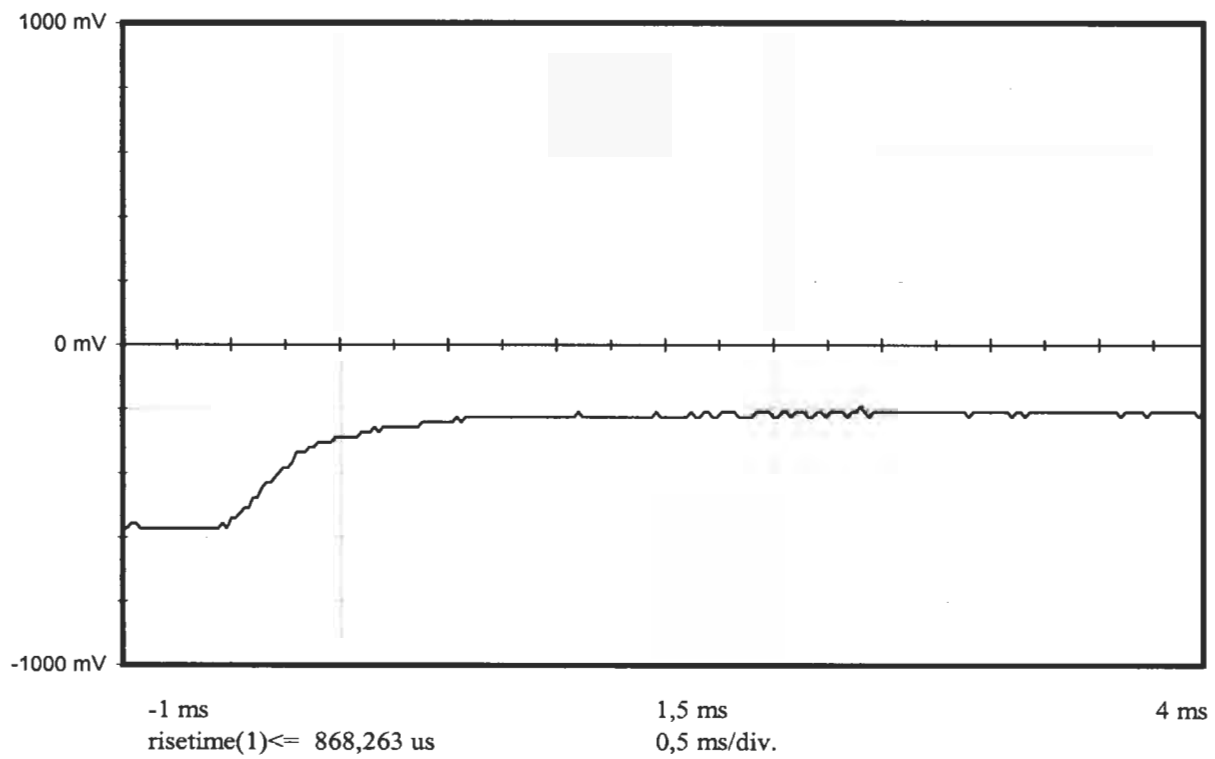
Message received		FFFE2F96EF00030AE20177558FF50D2C060D
Format Flag	25	1
Protocol flag	26	0
Ident./Position code	27-85	0
Country Code/Country	27-36	366 / USA
Protocol Code : U/Std-Nat	37-39/37-40	1111
Protocol Code Used	37-39/37-40	Test-National Location
Identification Data	40-85/41-64/41-58	
Identification Used		12
Calculated BCH1	25-85	1D563F
Readed BCH1	86-106	1D563F
Homing	112	1
Em.cod/nat.use/supp.data	107-112	110101
Encod pos data	111	0
Fixed Data "1"	108	1
Calculated BCH2	107-132	60D
Readed BCH2	133-144	60D
Latitude position		Nord 43° 33' 36"
Longitude position		Est 1° 28' 44"
Delta position		0,138 km

Electrical and other parameters

CW preamble	ms	158,4 <	< 162,6	160,76
Total transmission time	ms	513,8 <	< 526,2	522,48
Modulation frequency	Hz	395,4 <	< 404,6	398,33
Phase deviation : total	rd		<=2,40	2,22
Phase deviation : positive	rd	1,00 <	< 1,20	1,11
Phase deviation : negative	rd	-1,20 <	< -1,00	-1,10
Symmetry measurement	%		<=5 %	1,99
Nominal frequency : F2	Hz			406027921,05
Short term2				2,02E-10
Short term3				3,17E-10
Slope				3,81E-11
Residual				5,37E-10
406 MHz power output	dBm			36,8
Homing frequency	MHz			121,50
121,5 MHz power output	dBm			39,8
Soak temperature	°C			21,4
Extra feature				No







Certification Test at 55°C

Date of test : 11-juin-2004

Manufacturer : ACR

Beacon Type : PLB 201

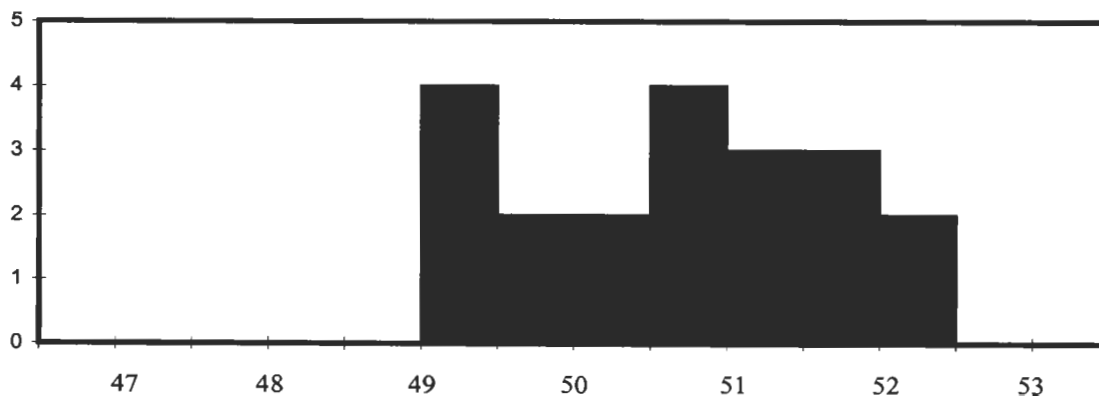
Number : 12

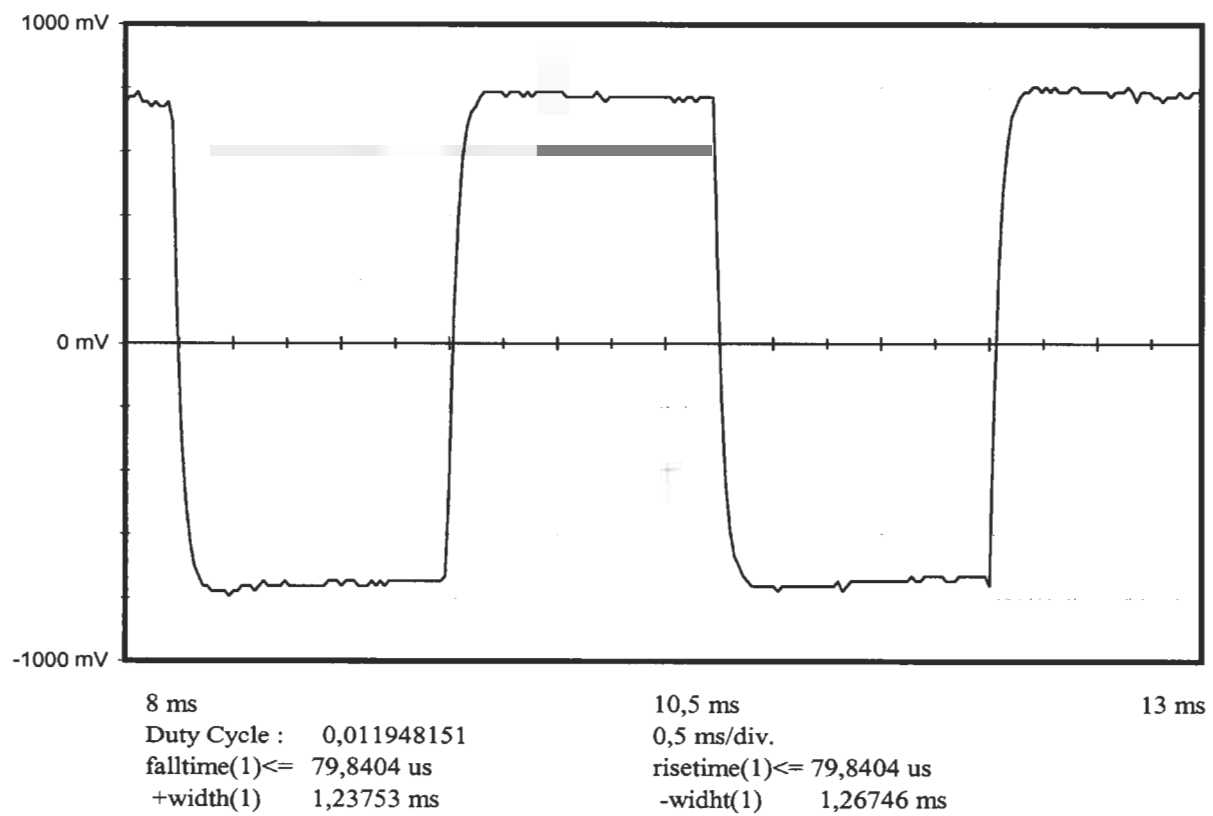
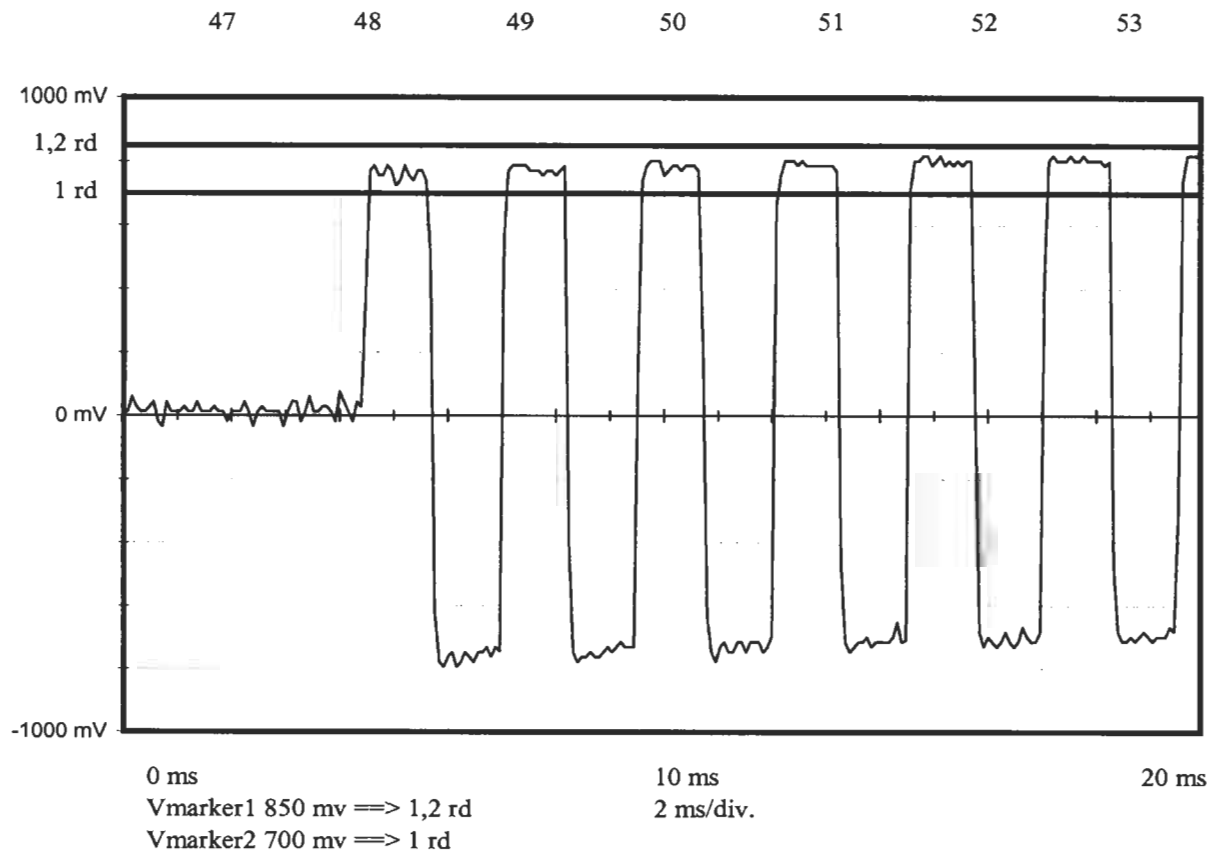
Message

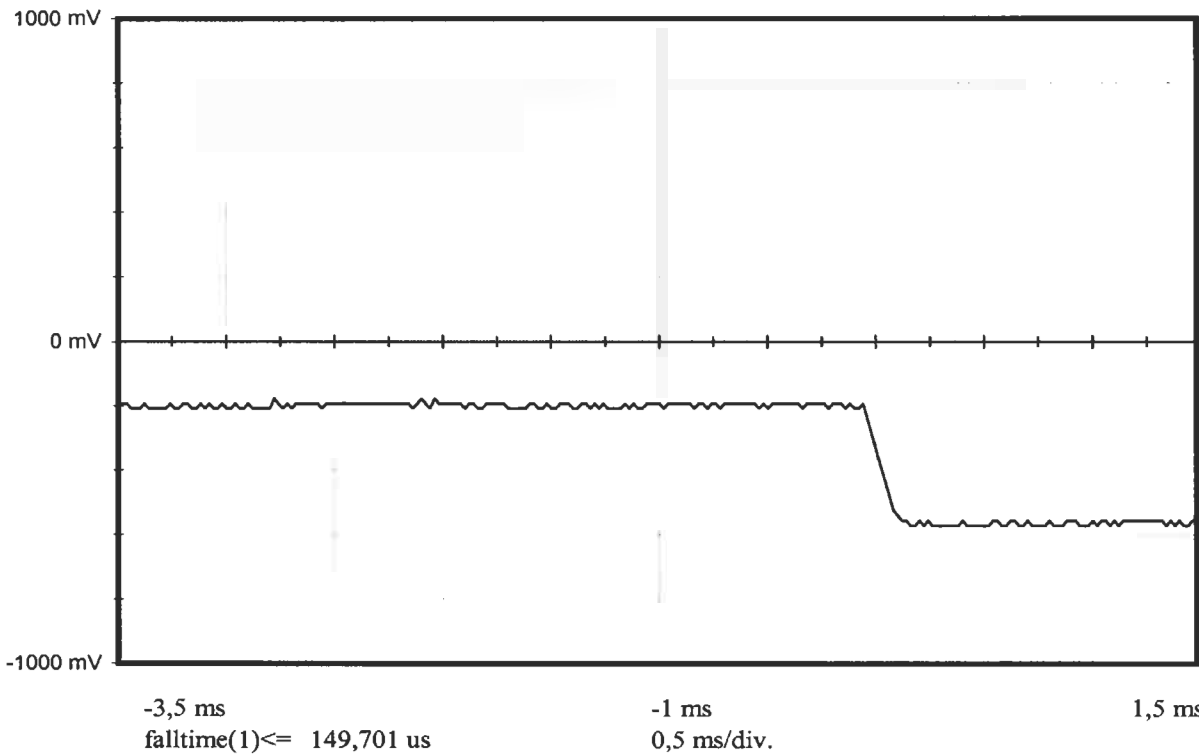
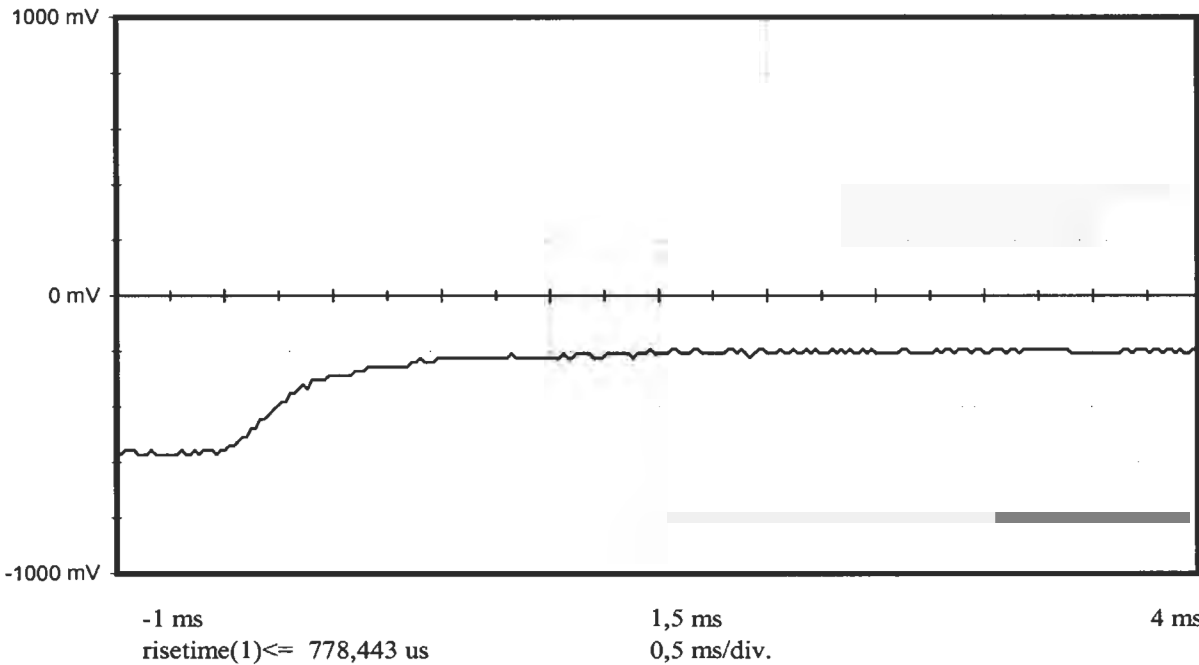
Message received		FFFE2F96EF00031FC0FF001895F59F3C0CD4
Format Flag	25	1
Protocol flag	26	0
Ident./Position code	27-85	0
Country Code/Country	27-36	366 / USA
Protocol Code : U/Std-Nat	37-39/37-40	1111
Protocol Code Used	37-39/37-40	Test-National Location
Identification Data	40-85/41-64/41-58	
Identification Used		12
Calculated BCH1	25-85	006257
Readed BCH1	86-106	006258
Homing	112	1
Em.cod/nat.use/supp.data	107-112	110101
Encod pos data	111	0
Fixed Data "1"	108	1
Calculated BCH2	107-132	CD4
Readed BCH2	133-144	CD4
Latitude position		Nord 127° 0' 60"
Longitude position		Est 255° 0' 60"
Delta position		Default pos.

Electrical and other parameters

CW preamble	ms	158,4 <	< 162,6	160,75
Total transmission time	ms	513,8 <	< 526,2	522,49
Modulation frequency	Hz	395,4 <	< 404,6	398,33
Phase deviation : total	rd		<= 2,40	2,23
Phase deviation : positive	rd	1,00 <	< 1,20	1,12
Phase deviation : negative	rd	-1,20 <	< -1,00	-1,10
Symmetry measurement	%		<= 5 %	1,19
Nominal frequency : F2	Hz			406027930,87
Short term2				2,75E-10
Short term3				4,71E-10
Slope				-3,27E-11
Residual				6,16E-10
406 MHz power output	dBm			37,0
Homing frequency	MHz			121,50
121,5 MHz power output	dBm			20,0
Soak temperature	°C			54,0
Extra feature				No

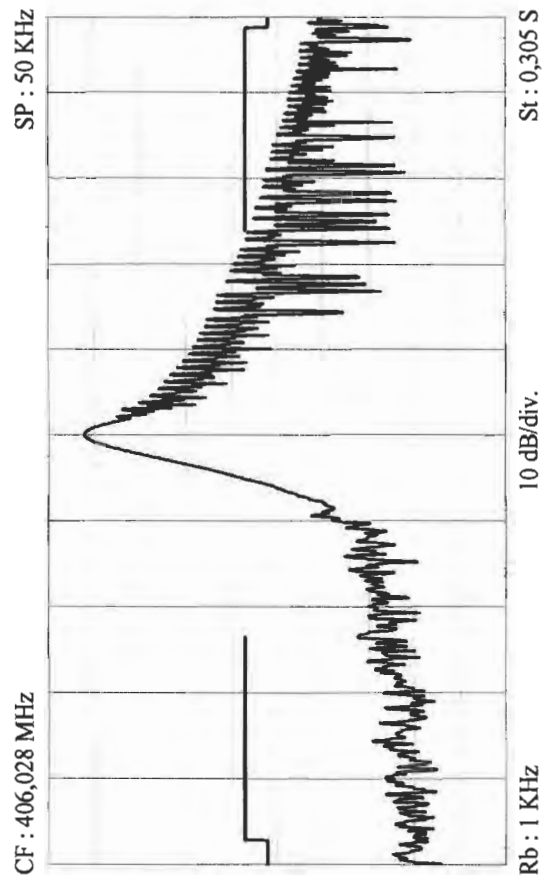
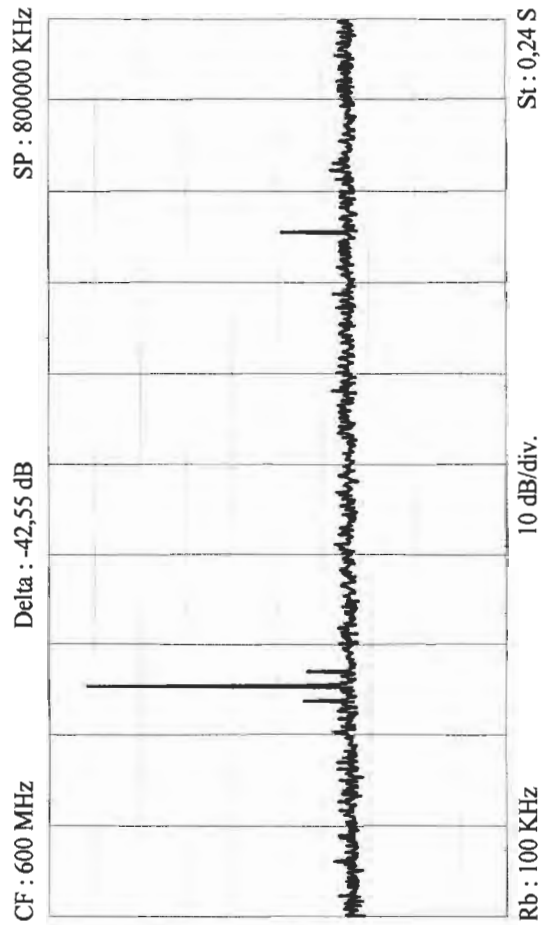
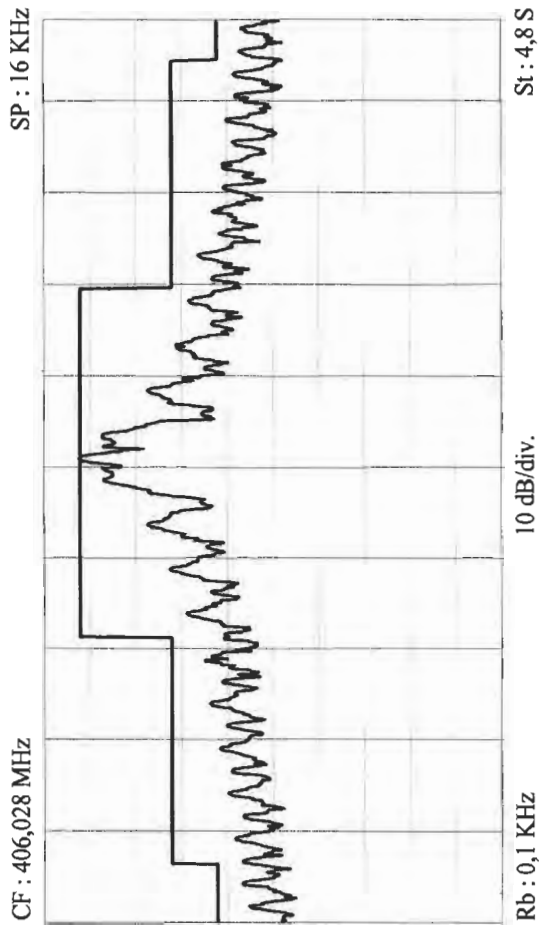




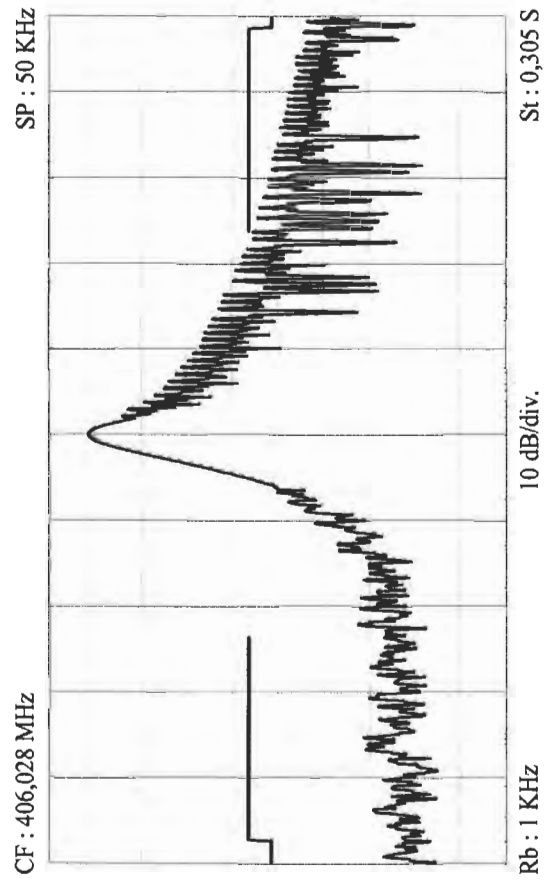
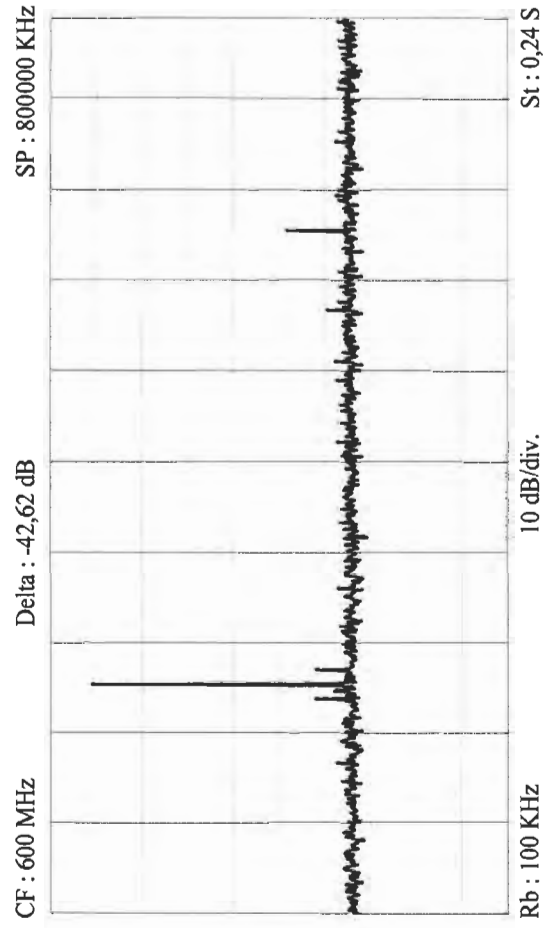
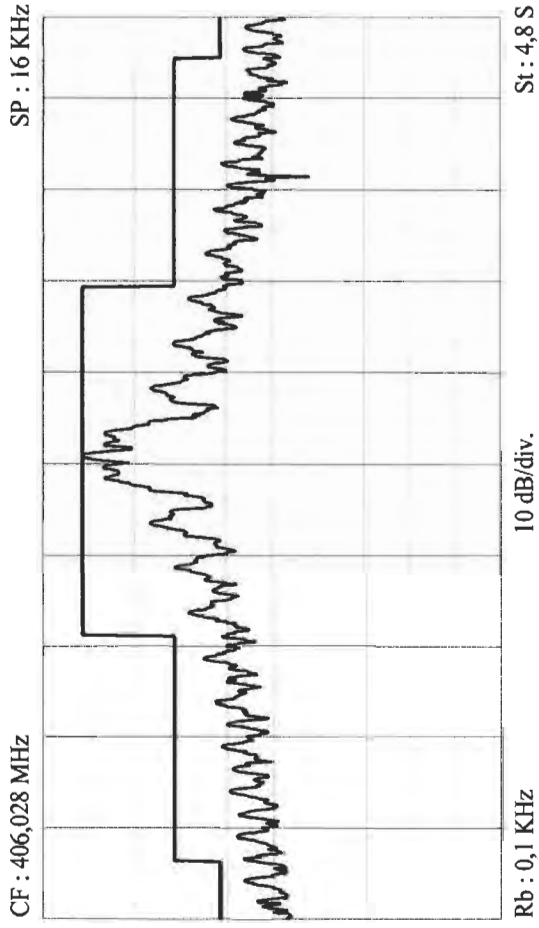


SPURIOUS EMISSIONS RESULTS
PLB 201 ACR Electronics, Inc Beacon
N° 12
at -20° C, 22° C and 55° C

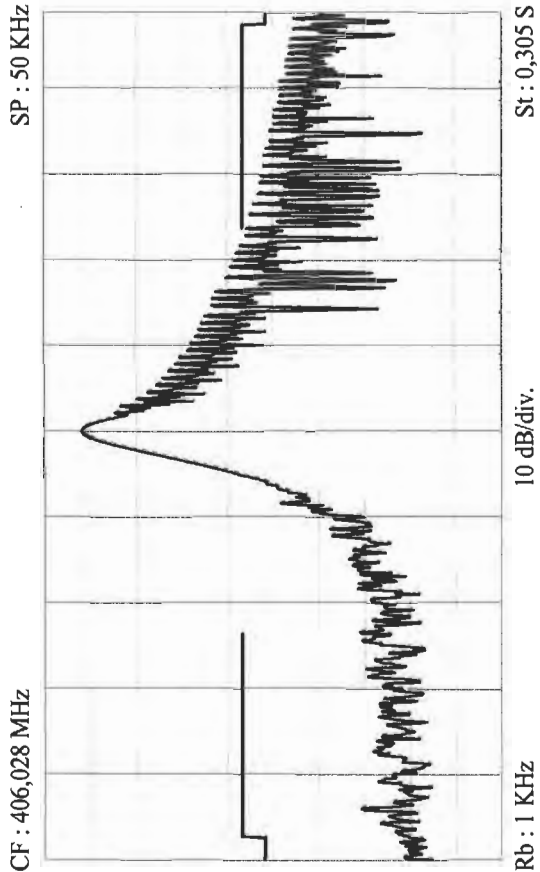
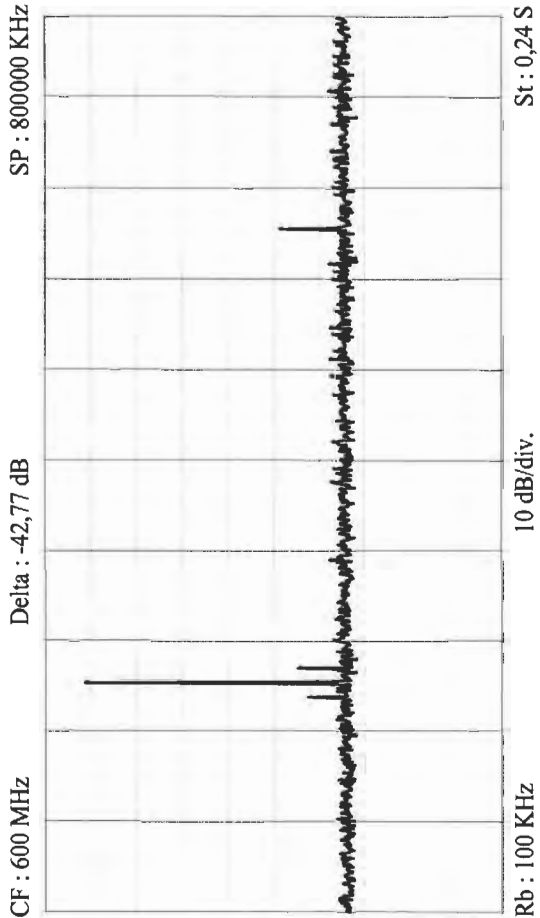
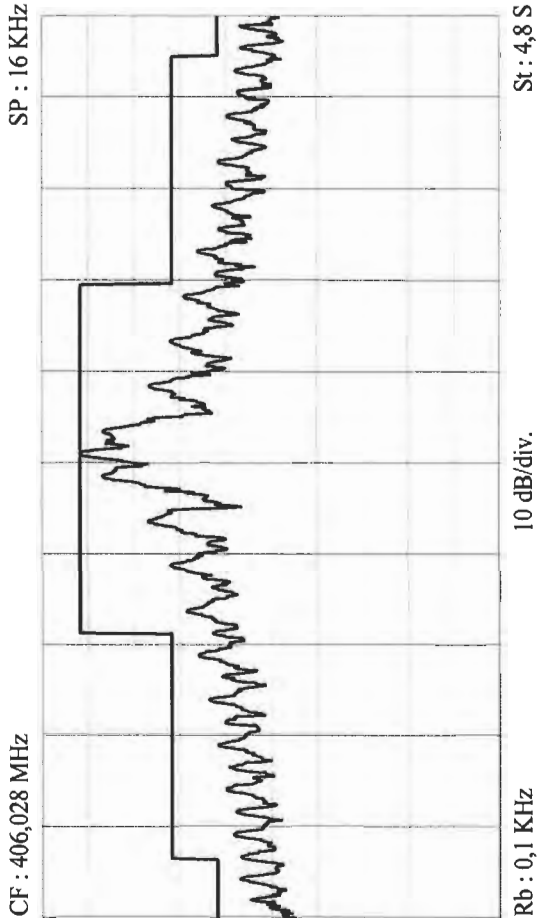
ACR Electronics, Inc
PLB 201
12
Certification nominale
406 MHz
-20 °C



ACR Electronics, Inc
PLB 201
12
Certification nominale
406 MHz
22 °C



ACR Electronics, Inc
PLB 201
12
Certification nominale
406 MHz
55 °C



**406 MHz VSWR 3:1 TEST RESULTS ON
PLB 201 ACR Electronics, Inc Beacon
N° 12**

at -20° C, 22° C and 55° C

Certification Test VSWR at -20°C

Date of test : 14-juin-04

Manufacturer : ACR

Beacon Type : PLB 201

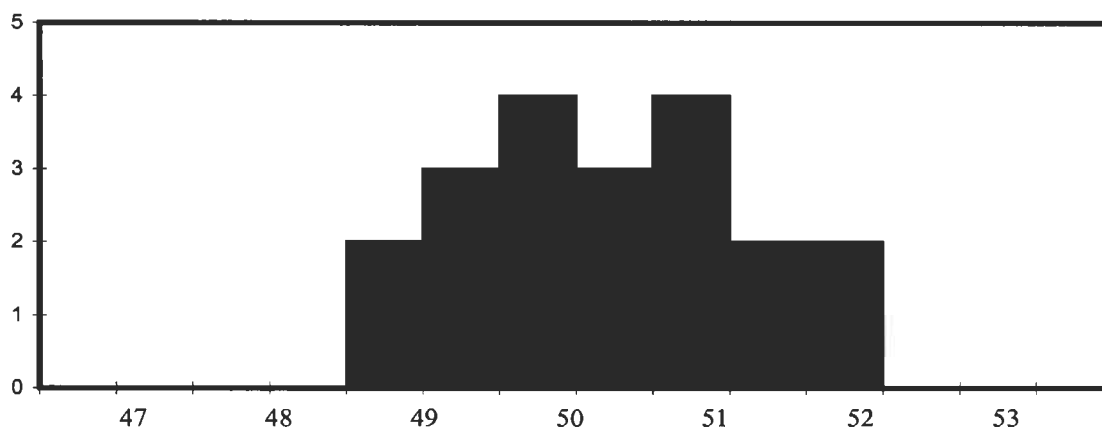
Number : 12

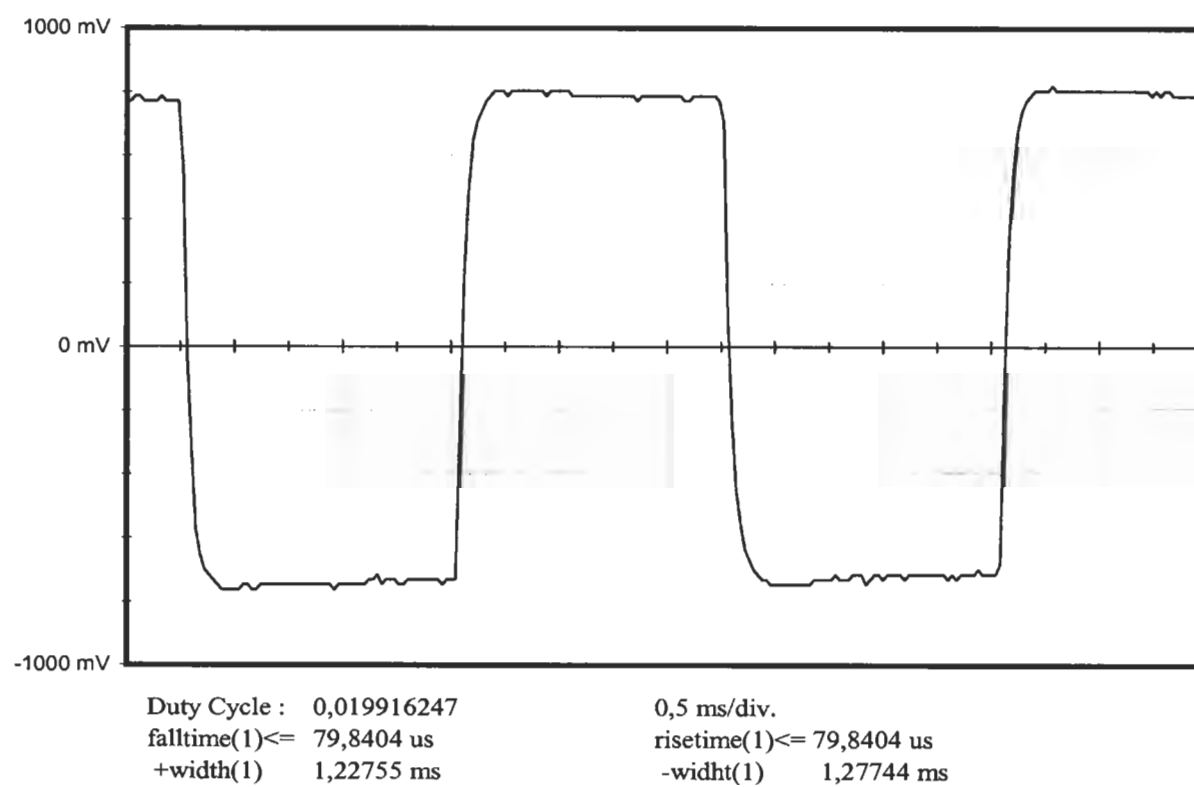
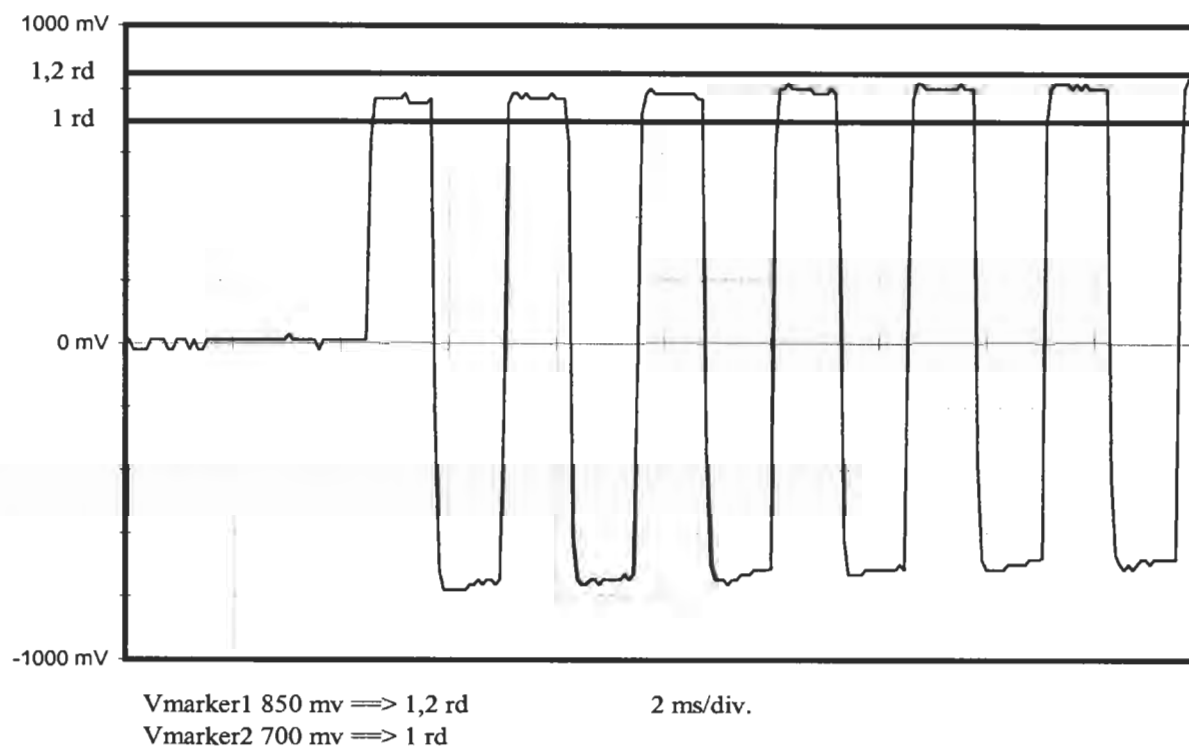
Message

Message received		FFFE2F96EF00030AE20177558FF50D2C060D
Format Flag	25	1
Protocol flag	26	0
Ident./Position code	27-85	0
Country Code/Country	27-36	366 / USA
Protocol Code : U/Std-Nat	37-39/37-40	1111
Protocol Code Used	37-39/37-40	Test-National Location
Identification Data	40-85/41-64/41-58	
Identification Used		12
Calculated BCH1	25-85	1D563F
Readed BCH1	86-106	1D563F
Homing	112	1
Em.cod/nat.use/supp.data	107-112	110101
Encod pos data	111	0
Fixed Data "1"	108	1
Calculated BCH2	107-132	60D
Readed BCH2	147-144	60D
Latitude position		Nord 43° 33' 36"
Longitude position		Est 1° 28' 44"
Delta position		0,138 km

Electrical and other parameters

Rise time Modulation	ms	0,0798
Fall time Modulation	ms	0,0798
Phase deviation : positive	rd 1,00 < < 1,20	1,14
Phase deviation : negative	rd -1,20 < < -1,00	-1,09
Symmetry measurement	% <=5 %	1,99
Nominal frequency : F2	Hz	406027933,94





Certification Test VSWR at 22°C

Date of test : 14 juin 2004

Manufacturer : ACR

Beacon Type : PLB 201

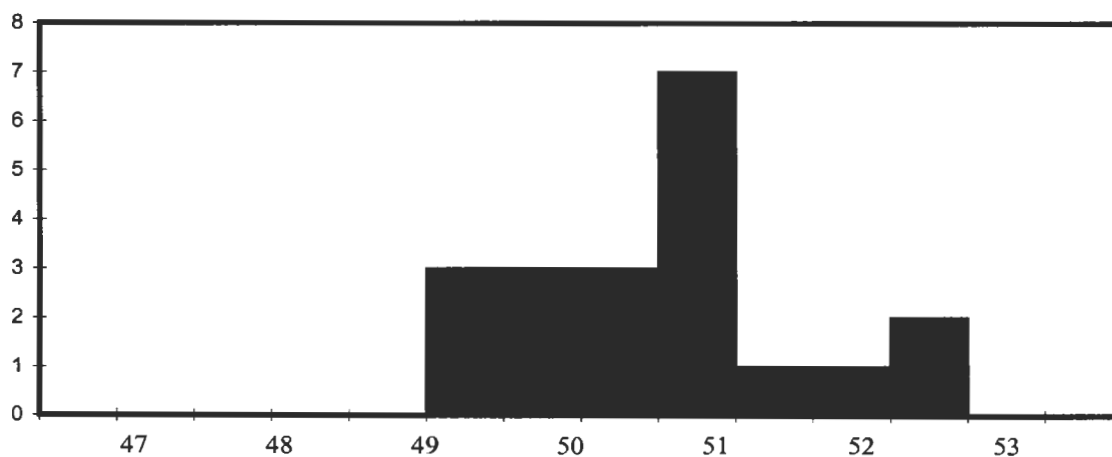
Number : 12

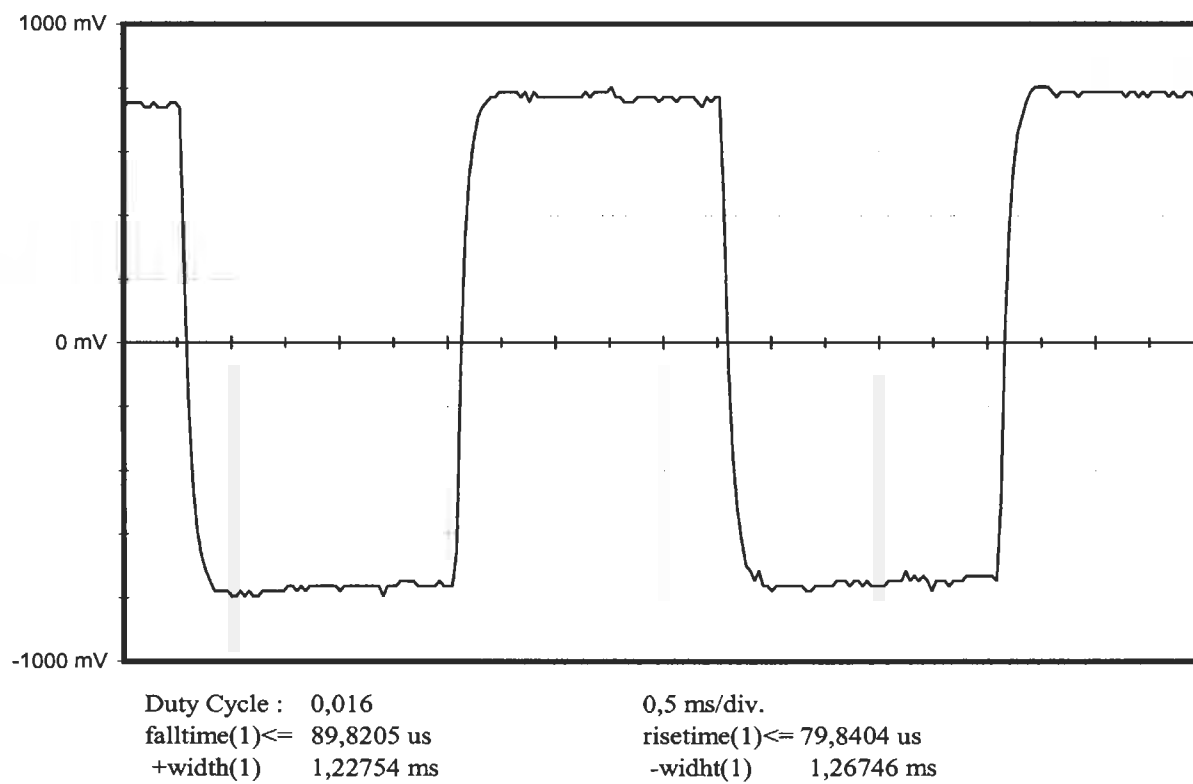
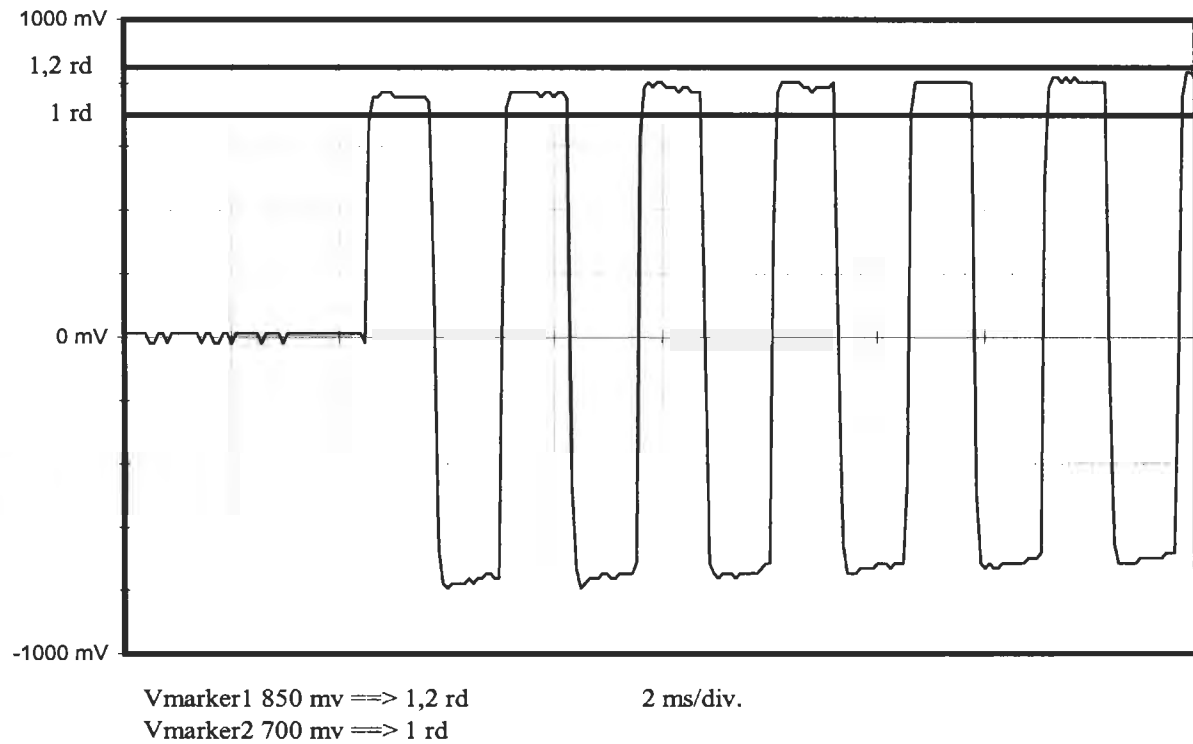
Message

Message received		FFFE2F96EF00030AE20177558FF50D2C060D
Format Flag	25	1
Protocol flag	26	0
Ident./Position code	27-85	0
Country Code/Country	27-36	366 / USA
Protocol Code : U/Std-Nat	37-39/37-40	1111
Protocol Code Used	37-39/37-40	Test-National Location
Identification Data	40-85/41-64/41-53	
Identification Used		12
Calculated BCH1	25-85	1D563F
Readed BCH1	86-106	1D563F
Homing	112	1
Em.cod/nat.use/supp.data	107-112	110101
Encod pos data	111	0
Fixed Data "1"	108	1
Calculated BCH2	107-132	60D
Readed BCH2	147-144	60D
Latitude position		Nord 43° 33' 36"
Longitude position		Est 1° 28' 44"
Delta position		0,138 km

Electrical and other parameters

Rise time Modulation	ms	0,0798
Fall time Modulation	ms	0,0898
Phase deviation :positive	rd 1,00 < < 1,20	1,13
Phase deviation : negative	rd -1,20 < < -1,00	-1,12
Symmetry measurement	% <=5 %	1,60
Nominal frequency : F2	Hz	406027928,19





Certification Test VSWR at 55°C

Date of test : 15 juin 2004

Manufacturer : ACR

Beacon Type : PLB 201

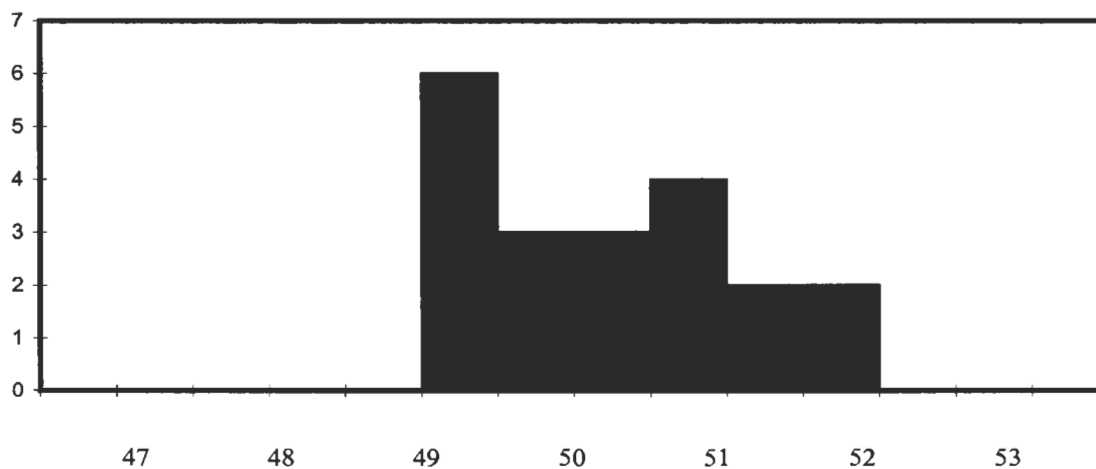
Number : 12

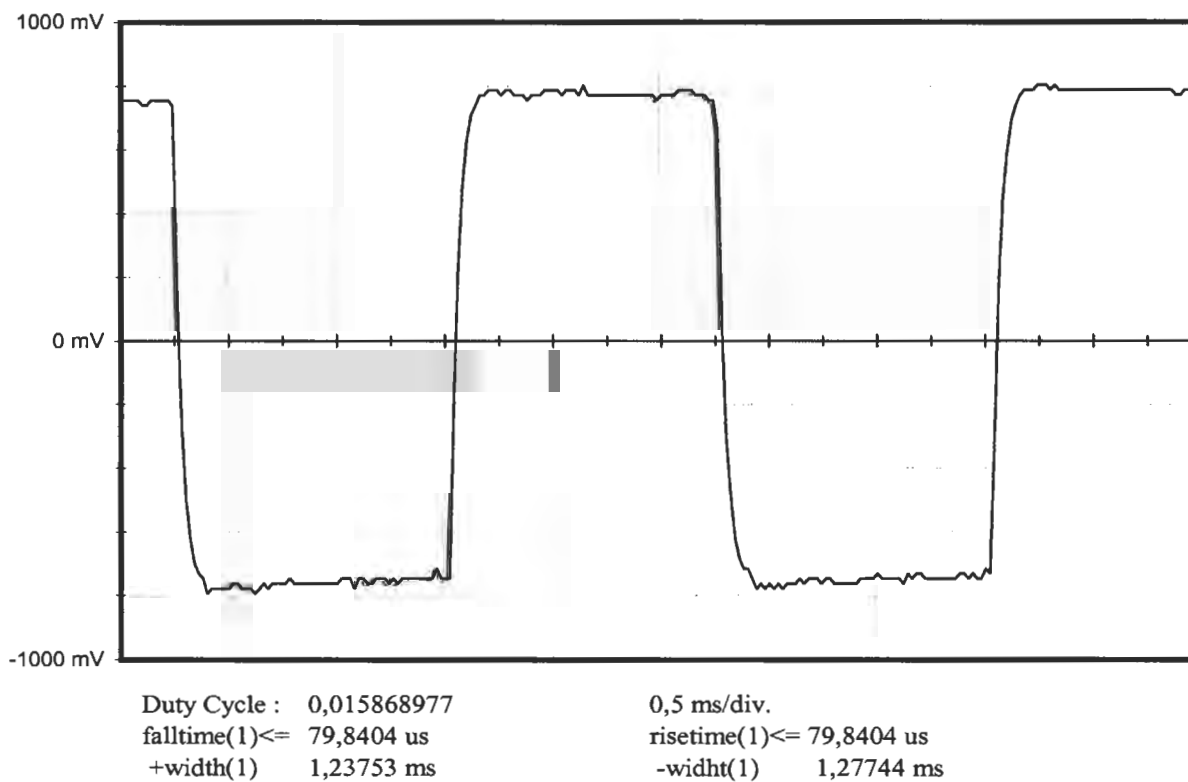
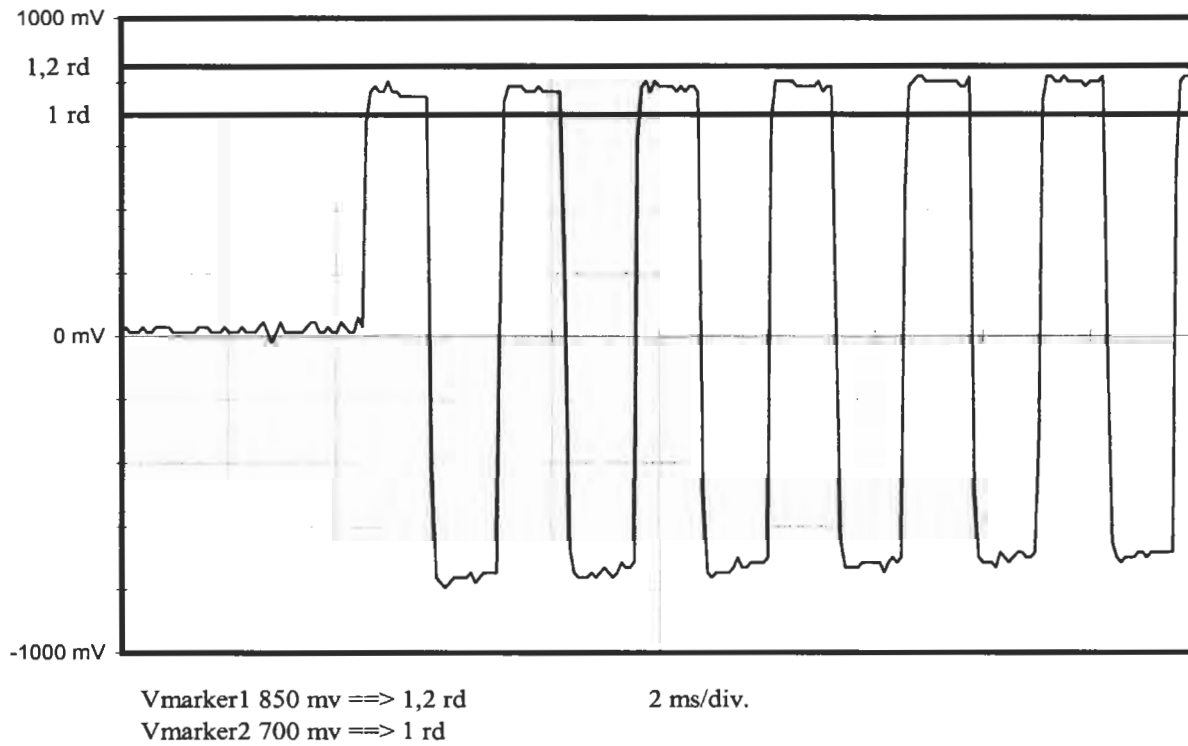
Message

Message received		FFFE2F96EF00031FC0FF001895F59F3C0CD4
Format Flag	25	1
Protocol flag	26	0
Ident./Position code	27-85	0
Country Code/Country	27-36	366 / USA
Protocol Code : U/Std-Nat	37-39/37-40	1111
Protocol Code Used	37-39/37-40	Test-National Location
Identification Data	40-85/41-64/41-58	
Identification Used		12
Calculated BCH1	25-85	006257
Readed BCH1	86-106	006258
Homing	112	1
Em.cod/nat.use/supp.data	107-112	110101
Encod pos data	111	0
Fixed Data "1"	108	1
Calculated BCH2	107-132	CD4
Readed BCH2	147-144	CD4
Latitude position		Nord 127° 0' 60"
Longitude position		Est 255° 0' 60"
Delta position		Default pos.

Electrical and other parameters

Rise time Modulation	ms	0,0798
Fall time Modulation	ms	0,0798
Phase deviation : positive	rd 1,00 < < 1,20	1,11
Phase deviation : negative	rd -1,20 < < -1,00	-1,11
Symmetry measurement	% <=5 %	1,59
Nominal frequency : F2	Hz	406027927,23





SELF-TEST MODE CONTROL ON
PLB 201 ACR Electronics, Inc Beacon
N° 12
at 22° C

Message at -20°C

Manufacturer	ACR
Beacon model	PLB 200
Serial number	7
Date of test	21-juin-04
Temperature	-20,5
Message received	FFFED096EF00031FC0FF001895F5
Default Position if appli.	OK
Frame synchro. pattern	011010000

Total transmission time	ms 513.8<	ms 526.2<	442,16
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Message at 22°C

Manufacturer	ACR
Beacon model	PLB 201
Serial number	12
Date of test	11-juin-04
Temperature	26,2
Message received	FFFED096EF00031FC0FF001895F5
Default Position if appli.	OK
Frame synchro. pattern	011010000

Total transmission time	ms 513.8<	ms 526.2<	442,26
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Message at 55 °C

Manufacturer	ACR
Beacon model	PLB 200-201
Serial number	7
Date of test	11-juin-04
Temperature	50,1
Message received	FFFED096EF00031FC0FF001895F5
Default Position if appli.	OK
Frame synchro. pattern	011010000

Total transmission time	ms 513.8<	ms 526.2<	442,21
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406 MHz BEACON SELF-TEST CHARACTERISTICS

406 MHz beacon Model(s) : PLB 201

Answer (X)

Yes No

1. Does beacon have a self-test mode ?

☒ | ☐

If yes :

- ♦ does self-test have a separate switch position ? ☒ | ☐
- ♦ does self-test switch automatically return to normal position when released ? ☒ | ☐
- ♦ does self-test transmit a 406 MHz signal ? ☒ | ☐
if yes :
 - unmodulated signal only ☐ | ☒
 - normal data, but with inverted frame synchronization pattern ☒ | ☐
 - 1 burst only ☒ | ☐
- ♦ can beacon be configured in self-test to transmit position data ☐ | ☒
- ♦ does self-test transmit a 121.5 MHz signal ? ☐ | ☒
if yes :
 - for less than 1 second ☐ | ☐
 - continually while self-test switch is activated ☐ | ☐
 - other (please specify) : ☐ | ☐
- ♦ does self-test transmit any other frequency (e.g. 243 MHz) ? ☐ | ☒

2. Result of self-test is indicated by :

- ♦ pass/fail display indicator light ☒ | ☐
- ♦ strobe light flash ☐ | ☒
- ♦ other (please specify) : ☐ | ☒

3. Can the self-test be performed without removing the beacon from its mounting bracket ?

☒ | ☐

4. What parameters are internally tested by the self-test ?

- ♦ battery voltage ☒ | ☐
- ♦ RF power ☒ | ☐
- ♦ approximate RF frequency ☒ | ☐
- ♦ phase locked loop ☒ | ☐
- ♦ other (please specify) : EEPROM, GPS ☒ | ☐

5. Do the above characteristics apply to this beacon model :

- ♦ for all countries where beacon is sold , ☒ | ☐
if no, please specify :
- ♦ for all production serial numbers ? ☒ | ☐
if no, specify :

6. Comments

**THERMAL SHOCK TEST RESULT ON
PLB 201 ACR Electronics, Inc Beacon
N° 12**

-10°C to 22°C

Temperature Soak : -10°C
 Temperature Measure : 22°C

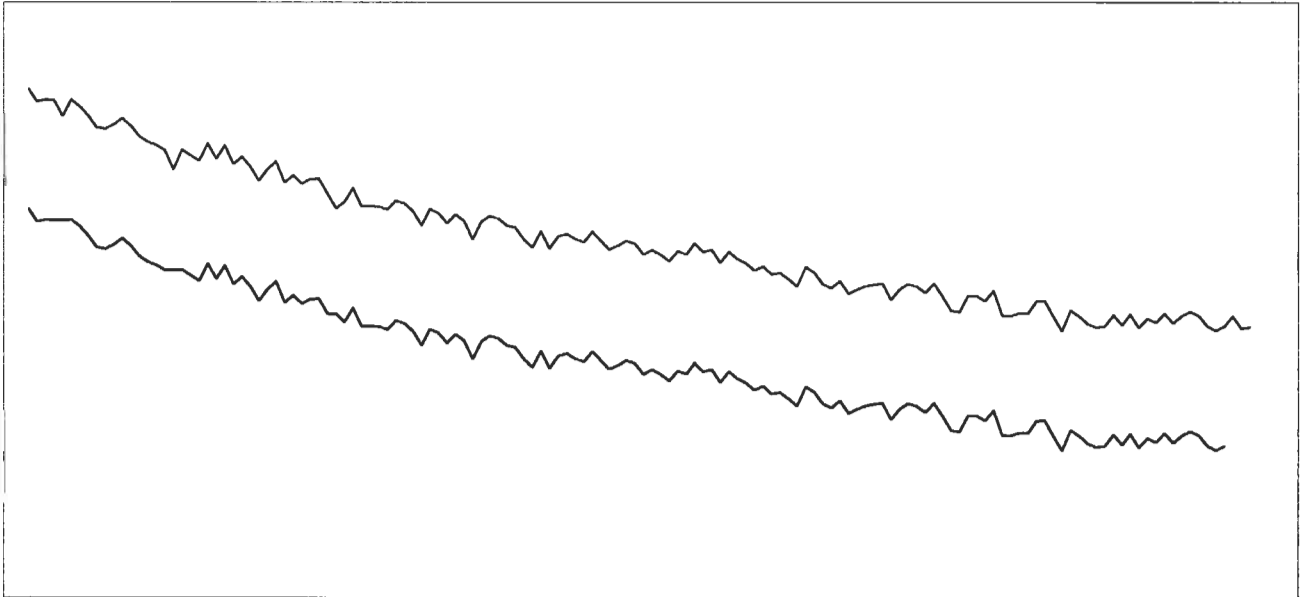
No	Δ Frequency (Hz)	Temp. (°C)	P406 (dBm)	P121.5 (dBm)
1	49932,72	-10,6	38,0	16,5
2	49933,15	-10,6	38,0	15,9
3	49934,55	-10,6	37,9	15,8
4	49935,11	-10,6	37,8	15,7
5	49935,45	-10,6	37,8	15,7
6	49935,60	-10,6	37,6	16,1
7	49935,41	-10,6	37,6	16,3
8	49936,10	-10,6	37,5	16,5
9	49936,32	-10,6	37,4	16,7
10	49936,41	-10,6	37,3	17,0
11	49936,30	-10,6	37,3	17,3
12	49936,87	-10,6	37,2	17,7
13	49936,76	-10,6	37,2	18,0
14	49936,79	-10,6	37,3	18,3
15	49936,30	-10,6	37,3	20,1
16	49936,28	-10,7	37,5	20,2
17	49936,06	-10,6	37,5	20,2
18	49935,99	-10,7	37,5	20,2

Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
1	-10,7	3,5E-10	1,6E-9	37,5	2,6E-10	20,2
18	-10,7	-3,7E-10	5,8E-10	37,4	2,5E-10	20,2
31	-10,7	-1,8E-10	6,9E-10	37,4	2,1E-10	20,1
61	-10,7	-1,8E-10	6,3E-10	37,4	2,3E-10	20,1
91	-10,7	-1,8E-10	5,2E-10	37,3	2,3E-10	20,1
121	-10,8	-1,4E-10	6,8E-10	37,3	2,0E-10	20,1

Beacon message at the end of Thermal Shock Test :
FFFE2F96EF00030AE20177558FF50D2C060D

Frequency variation

406024943



406024925

— Initial tracing — Smoothed tracing

THERMAL SHOCK TEST / 30 °C change (-10 °C to 22 °C)

Manufacturer : ACR Electronics, Inc

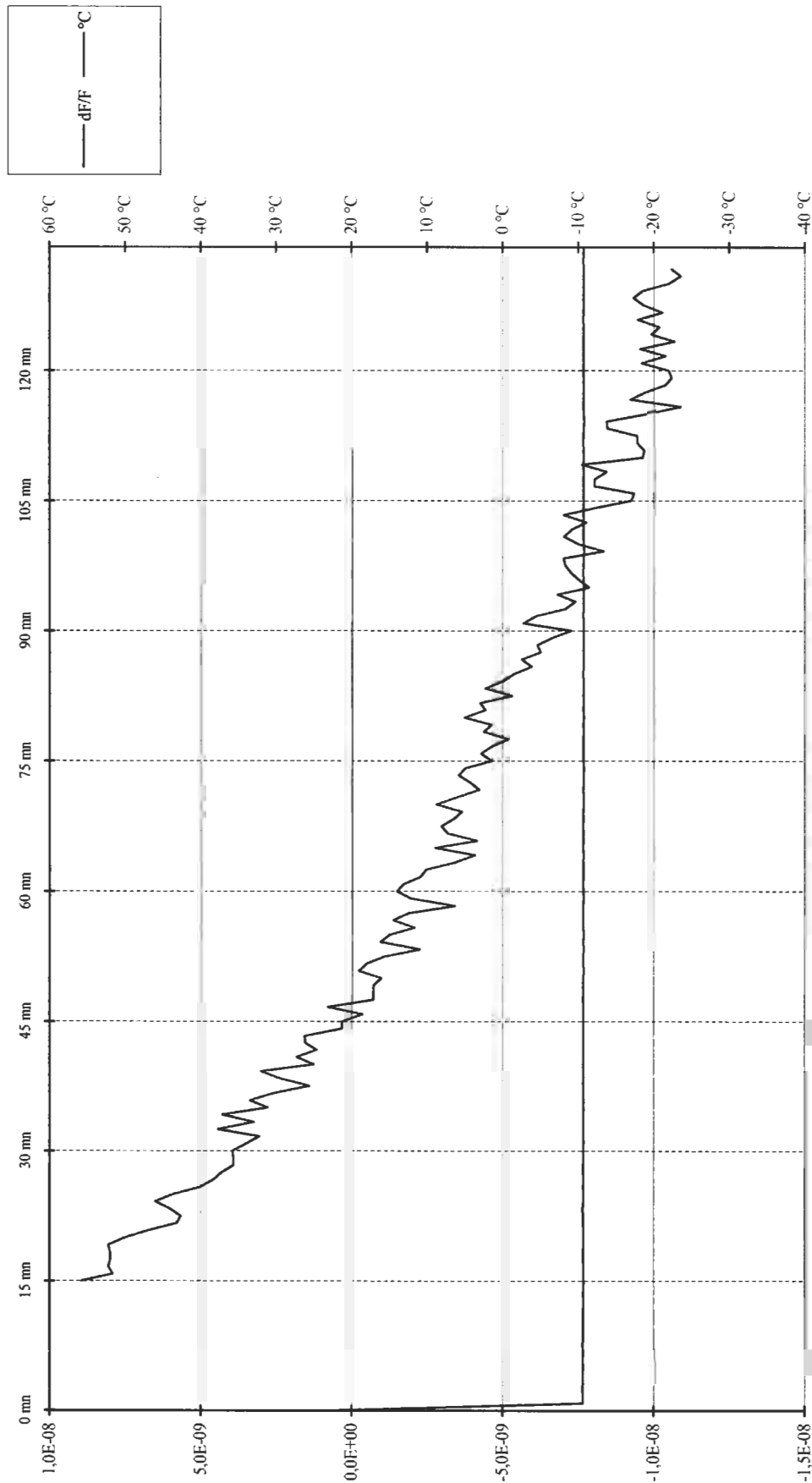
Model : PLB 201

Number : 12

Date : 14/06/2004

Time : 12:37:25

FREQUENCY VARIATION

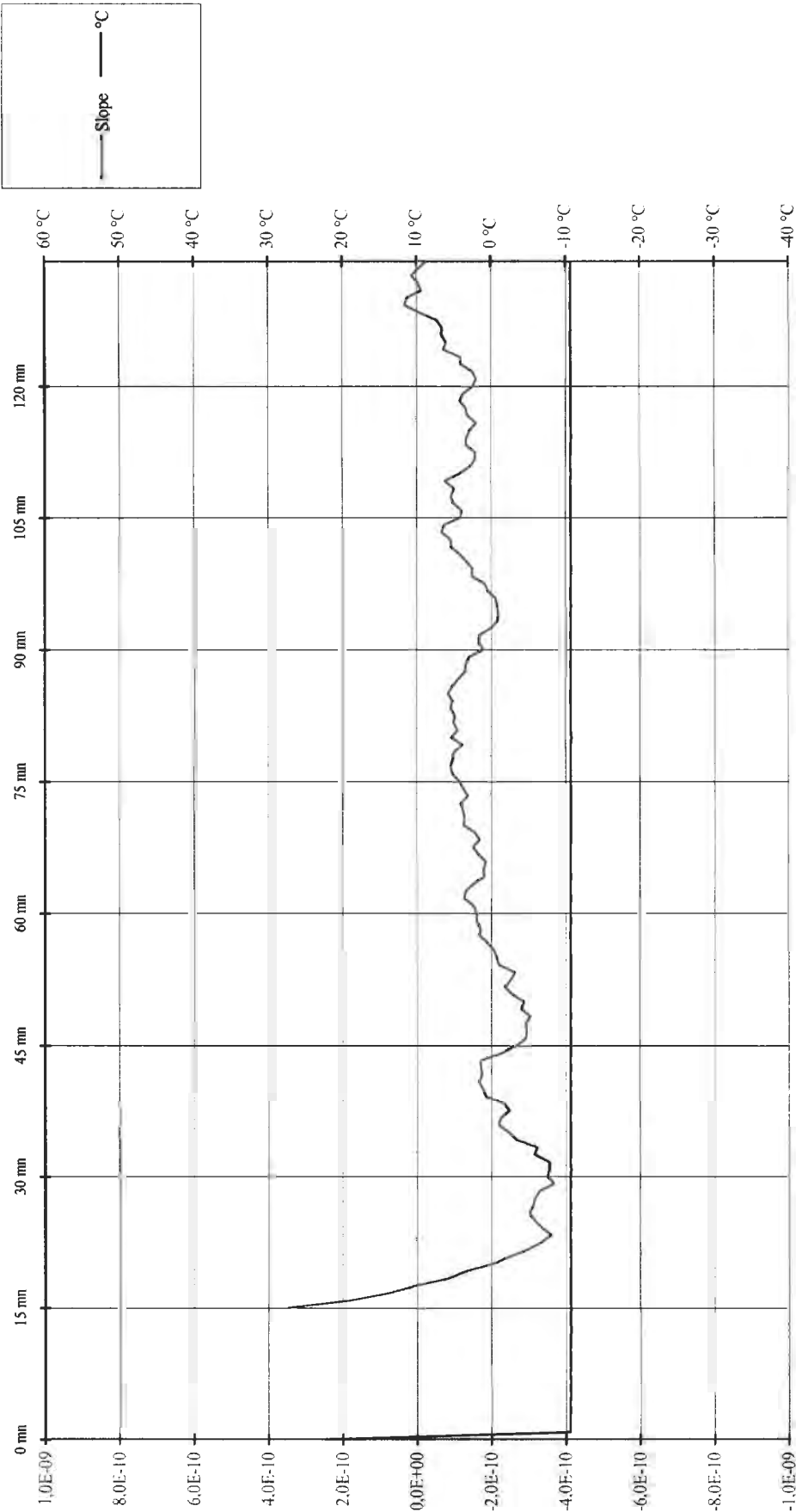


THERMAL SHOCK TEST / 30 °C change (-10 °C to 22 °C)

Manufacturer : ACR Electronics, Inc
Model : PLB 201
Number : 12

Date : 14/06/2004
Time : 12:37:25

MEDIUM TERM STABILITY : MEAN SLOPE /mm (-1,0E-9 to 1,0E-9)



THERMAL SHOCK TEST / 30 °C change (-10 °C to 22 °C)

Manufacturer : ACR Electronics, Inc

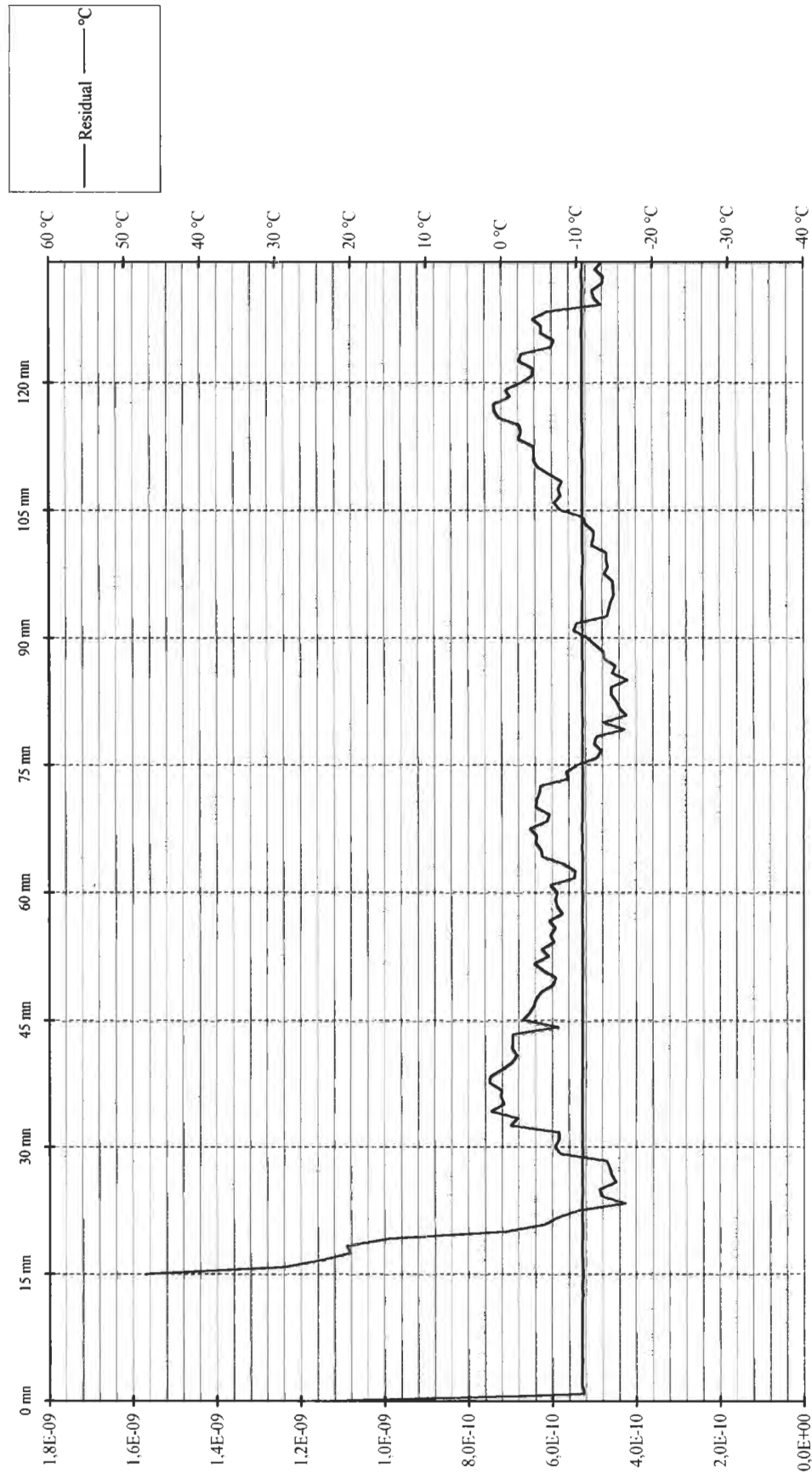
Model : PLB 201

Number : 12

Date : 14/06/2004

Time : 12:37:25

MEDIUM TERM STABILITY : RESIDUAL (≤ 3,0E-9)



THERMAL SHOCK TEST / 30 °C change (-10 °C to 22 °C)

Manufacturer : ACR Electronics, Inc

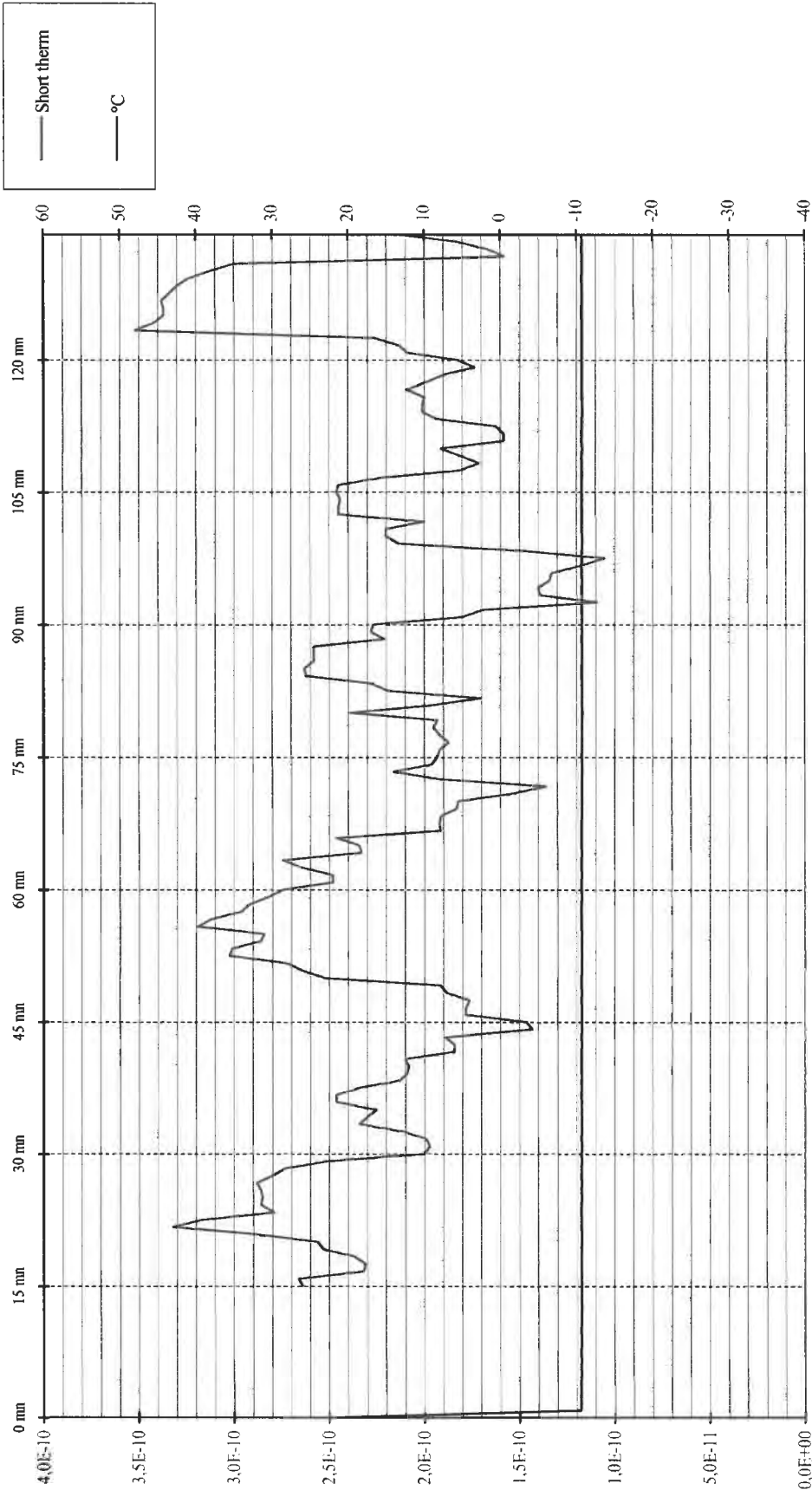
Model : PLB 201

Number : 12

Date : 14/06/2004

Time : 12:37:25

SHORT TERM STABILITY /100 mS (≤ 2,0E-9)



THERMAL SHOCK TEST / 30 °C change (-10 °C to 22 °C)

Manufacturer : ACR Electronics, Inc

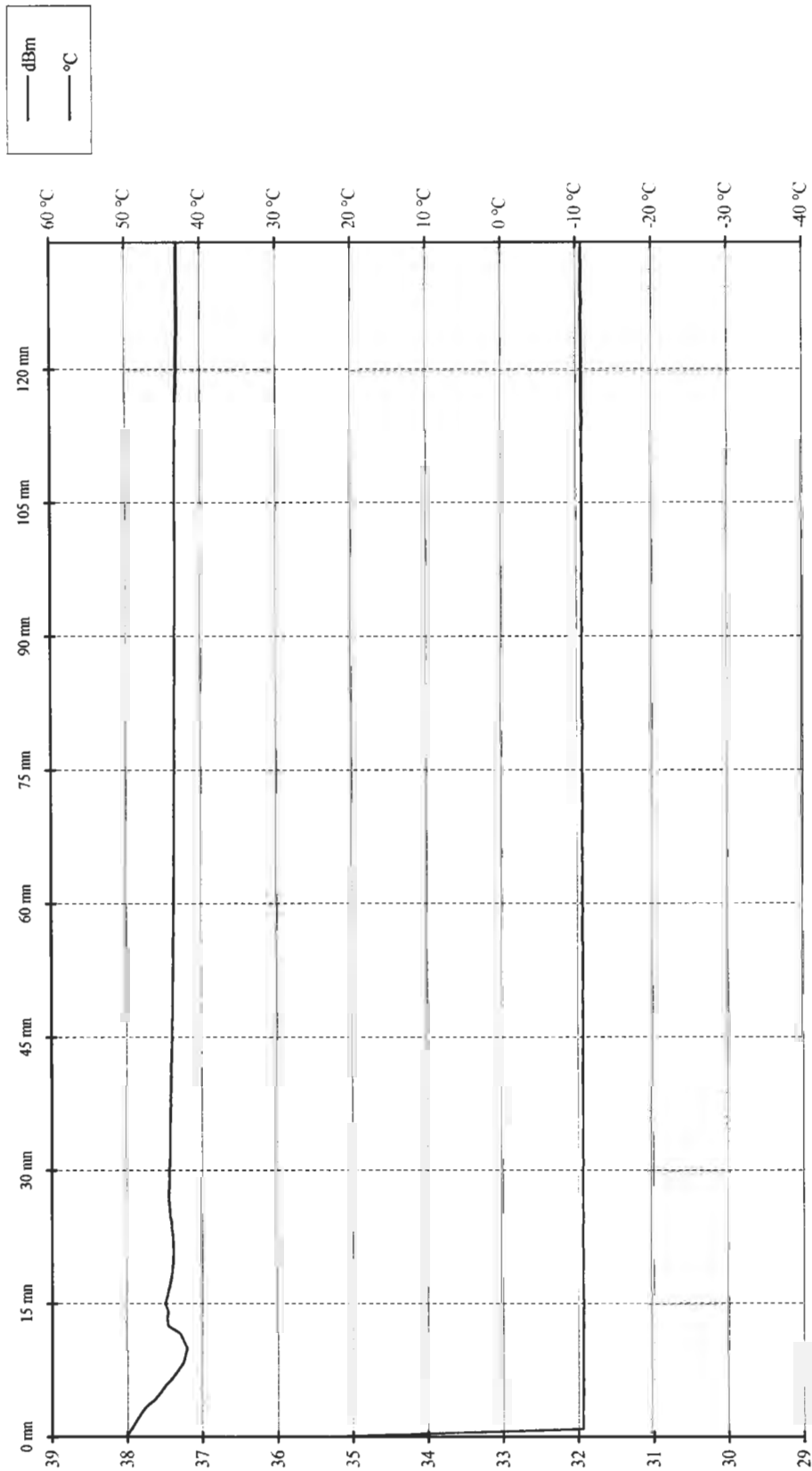
Model : PLB 201

Number : 12

Date : 14/06/2004

Time : 12:37:25

OUTPUT POWER (35 to 39 dBm)



OPERATING LIFE TEST RESULTS ON
PLB 201 ACR Electronics, Inc Beacon
N° 12
-20 °C

No	Δ Frequency (Hz)	Temp. (°C)	P406 (dBm)	P121.5 (dBm)
1	49870,91	-19,9	37,4	20,3
2	49875,22	-21,1	37,4	20,3
3	49876,81	-20,1	37,4	20,3
4	49879,09	-20,5	37,4	20,3
5	49880,99	-20,7	37,4	20,3
6	49882,11	-20,7	37,4	20,3
7	49884,10	-20,9	37,4	20,3
8	49885,01	-20,8	37,4	20,3
9	49885,62	-21,0	37,4	20,3
10	49886,52	-21,0	37,4	20,3
11	49887,34	-21,0	37,4	20,3
12	49887,88	-21,0	37,4	20,3
13	49888,52	-21,0	37,4	20,3
14	49889,05	-21,0	37,4	20,3
15	49890,10	-20,9	37,4	20,3
16	49890,65	-20,8	37,4	20,3
17	49891,50	-20,9	37,4	20,3
18	49891,93	-21,0	37,4	20,3

Note : The first Slope value is out of spec because before starting the PLB we have to make acquire it the position given by the external GPS . It disrupted the working of the steamroom.

Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
1	-21,0	2,8E-9	2,9E-09	37,4	2,5E-10	20,2
18	-21,0	6,8E-10	5,5E-10	37,4	2,9E-10	20,2
31	-21,0	5,4E-10	7,8E-10	37,4	2,1E-10	20,2
61	-20,9	2,1E-10	5,7E-10	37,4	1,9E-10	20,2
91	-21,1	1,8E-10	5,6E-10	37,4	2,0E-10	20,2
121	-21,0	2,2E-10	4,2E-10	37,4	1,7E-10	20,2
151	-21,1	-6,1E-11	6,7E-10	37,4	1,3E-10	20,2
181	-21,1	3,0E-11	6,6E-10	37,4	1,9E-10	20,2
211	-21,1	-6,9E-11	6,6E-10	37,4	8,9E-11	20,2
241	-21,1	1,0E-10	4,2E-10	37,4	1,8E-10	20,2
271	-21,1	-1,1E-11	6,4E-10	37,4	2,2E-10	20,2
301	-21,1	6,1E-11	7,3E-10	37,4	2,2E-10	20,2
331	-21,1	-3,0E-11	4,7E-10	37,4	2,1E-10	20,2
361	-21,2	1,2E-10	5,6E-10	37,4	2,3E-10	20,2
391	-21,1	9,9E-11	6,6E-10	37,4	2,8E-10	20,2
421	-21,2	1,0E-10	5,9E-10	37,3	2,2E-10	20,2
451	-21,2	7,7E-12	5,6E-10	37,3	3,0E-10	20,2
481	-21,1	-7,1E-11	5,5E-10	37,3	2,1E-10	20,2
511	-21,2	-4,1E-11	5,8E-10	37,3	2,2E-10	20,2
541	-21,1	1,7E-11	6,5E-10	37,3	1,4E-10	20,2
571	-21,1	-7,6E-12	5,7E-10	37,3	2,4E-10	20,2
601	-21,2	-6,4E-11	6,2E-10	37,3	2,2E-10	20,2
631	-21,1	-7,2E-11	6,3E-10	37,3	2,8E-10	20,2
661	-21,2	-3,0E-11	5,5E-10	37,3	3,0E-10	20,2
691	-21,1	5,1E-11	6,5E-10	37,3	2,4E-10	20,2
721	-21,1	-3,6E-11	6,3E-10	37,3	1,6E-10	20,2
751	-21,2	2,1E-11	2,8E-10	37,3	1,9E-10	20,2
781	-21,2	9,0E-11	5,9E-10	37,3	2,2E-10	20,2
811	-21,2	2,9E-12	5,4E-10	37,3	1,7E-10	20,2
841	-21,1	-3,2E-11	5,9E-10	37,3	2,5E-10	20,2

Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
871	-21,1	-7,0E-11	6,1E-10	37,3	1,8E-10	20,2
901	-21,2	6,4E-11	7,1E-10	37,3	1,2E-10	20,2
931	-21,1	-8,1E-11	6,4E-10	37,3	2,2E-10	20,2
961	-21,2	-1,5E-11	6,8E-10	37,3	2,3E-10	20,2
991	-21,1	-1,0E-10	4,7E-10	37,3	2,3E-10	20,2
1021	-21,1	9,3E-11	5,6E-10	37,3	1,9E-10	20,2
1051	-21,2	4,3E-11	4,2E-10	37,3	1,4E-10	20,2
1081	-21,0	-5,4E-12	6,2E-10	37,3	2,7E-10	20,2
1111	-21,2	5,1E-11	5,8E-10	37,3	1,7E-10	20,2
1141	-21,2	2,3E-11	4,6E-10	37,3	2,3E-10	20,2
1171	-21,2	-1,8E-11	4,4E-10	37,3	2,2E-10	20,2
1201	-21,2	4,9E-11	3,6E-10	37,3	2,6E-10	20,2
1231	-21,3	-8,8E-12	6,3E-10	37,3	3,2E-10	20,2
1261	-21,2	7,8E-11	3,3E-10	37,3	2,3E-10	20,2
1291	-21,1	8,3E-11	4,7E-10	37,3	2,4E-10	20,2
1321	-21,2	-2,9E-11	6,5E-10	37,3	2,6E-10	20,2
1351	-21,2	3,7E-11	6,8E-10	37,3	1,1E-10	20,2
1381	-21,2	-5,8E-11	5,1E-10	37,3	2,6E-10	20,2
1411	-21,1	-7,9E-11	8,1E-10	37,3	2,3E-10	20,2
1441	-21,2	-1,0E-10	6,1E-10	37,3	2,4E-10	20,2
1471	-21,2	7,5E-11	4,5E-10	37,3	2,5E-10	20,2
1501	-21,2	5,6E-11	5,1E-10	37,3	1,9E-10	20,2
1531	-21,3	1,4E-12	5,8E-10	37,3	2,1E-10	20,2
1561	-21,2	-1,9E-11	6,9E-10	37,3	2,4E-10	20,2
1591	-21,2	4,6E-11	5,9E-10	37,3	4,2E-10	20,2
1621	-21,2	-3,9E-11	7,4E-10	37,3	1,9E-10	20,2
1651	-21,2	8,1E-11	5,0E-10	37,3	1,7E-10	20,2
1681	-21,2	-6,1E-11	4,9E-10	37,3	2,7E-10	20,2
1711	-21,2	2,8E-12	5,3E-10	37,3	2,6E-10	20,2
1741	-21,2	6,7E-12	5,5E-10	37,3	2,5E-10	20,2
1771	-21,2	-1,5E-11	4,6E-10	37,3	2,4E-10	20,2
1801	-21,2	-7,3E-11	5,4E-10	37,3	2,2E-10	20,2
1831	-21,1	-4,9E-11	5,4E-10	37,3	1,8E-10	20,2
1861	-21,2	-2,5E-11	6,1E-10	37,3	1,2E-10	20,2
1891	-21,2	-3,2E-12	5,4E-10	37,3	2,0E-10	20,2
1921	-21,2	2,4E-11	7,6E-10	37,3	3,0E-10	20,2
1951	-21,1	-7,4E-11	4,4E-10	37,3	2,5E-10	20,2
1981	-21,2	-6,3E-11	5,0E-10	37,3	2,9E-10	20,2
2011	-21,2	4,6E-11	5,9E-10	37,3	2,8E-10	20,2
2041	-21,1	-4,8E-11	8,7E-10	37,3	1,9E-10	20,2
2071	-21,2	-3,4E-11	7,1E-10	37,3	1,6E-10	20,2
2101	-21,2	-3,3E-11	4,9E-10	37,3	2,6E-10	20,2
2131	-21,2	7,5E-12	5,6E-10	37,3	2,2E-10	20,2
2161	-21,2	-1,3E-11	5,6E-10	37,3	2,0E-10	20,2
2191	-21,2	3,6E-11	6,0E-10	37,3	1,8E-10	20,2
2221	-21,2	4,8E-11	6,0E-10	37,3	3,5E-10	20,2
2251	-21,2	-2,6E-11	5,3E-10	37,3	2,5E-10	20,2
2281	-21,2	-9,5E-13	4,9E-10	37,3	1,8E-10	20,2
2311	-21,2	-9,0E-12	3,2E-10	37,2	2,4E-10	20,2
2341	-21,2	-4,3E-11	6,5E-10	37,0	2,4E-10	20,2
2371	-21,2	-1,1E-10	4,9E-10	36,8	3,1E-10	20,2

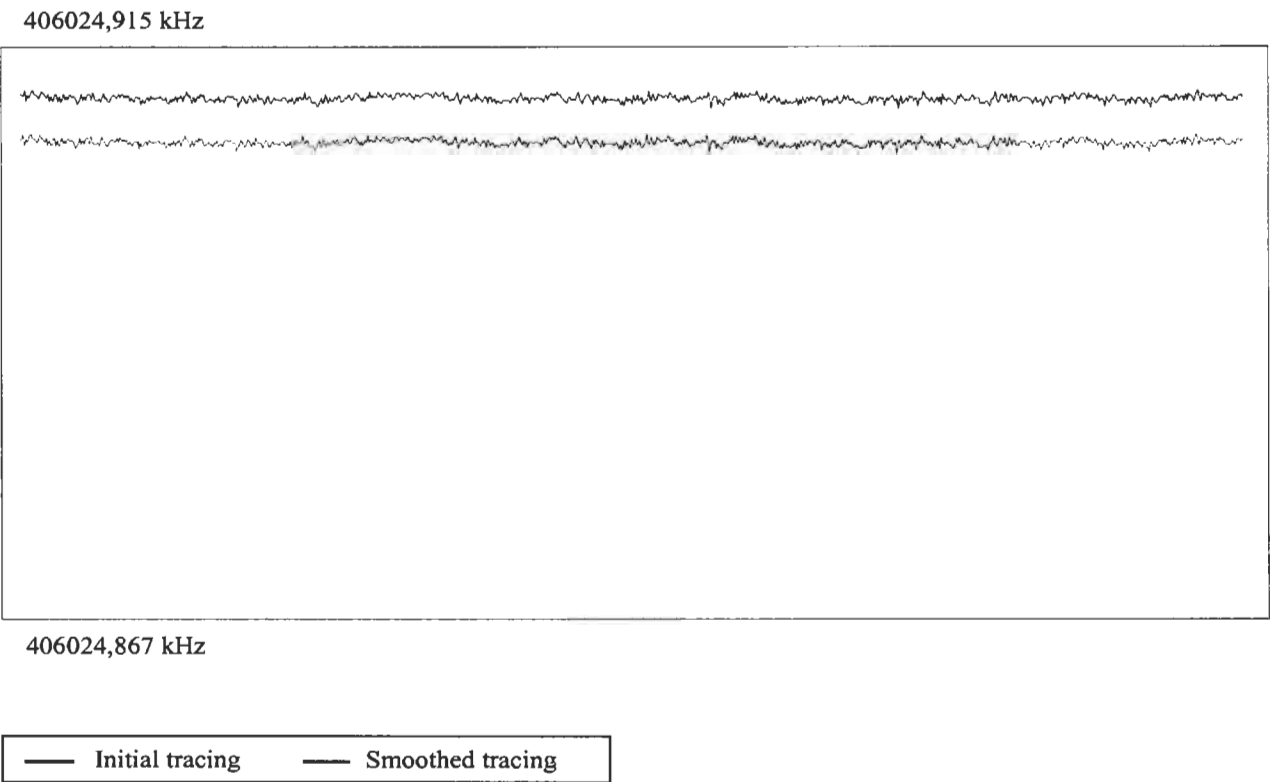
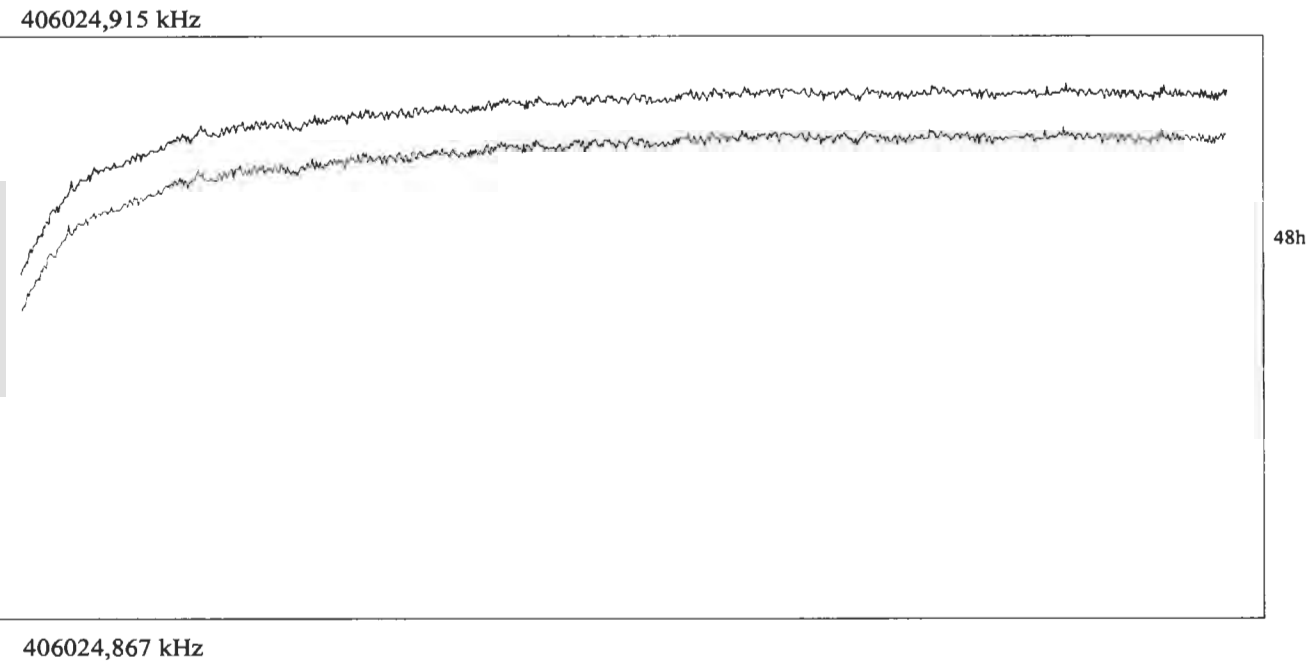
24h

Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
2401	-21,2	3,8E-11	5,1E-10	36,5	2,3E-10	20,2
2431	-21,2	2,3E-11	6,1E-10	36,1	2,2E-10	20,2
2461	-21,3	-1,6E-11	5,8E-10	35,7	3,3E-10	20,2
2491	-21,3	8,8E-11	5,3E-10	35,1	1,9E-10	20,1
2521	-21,2	-2,3E-11	5,8E-10	34,4	2,4E-10	19,9
2551	-21,2	-4,6E-11	6,0E-10	33,6	2,5E-10	19,8
2581	-21,2	-2,2E-11	6,4E-10	32,6	2,8E-10	19,6
2611	-21,3	-5,3E-10	2,9E-09	31,3	4,9E-9	19,3
2641						
2671						
2701						
2731						= 35,2 hours
2761						
2791						
2821						
2851						
2881						
2911						
2941						
2971						
3001						

Beacon message at the beginning and at the end of Operating LifetimeTest :

FFFE2F96EF00030AE20177558FF50D2C060D < 4 hours < FFFE2F96EF00031FC0FF001895F59F3C0CD4
 ITS Laboratory Ext GPS Loc < 4 hours < Default GPS Loc

Frequency variation

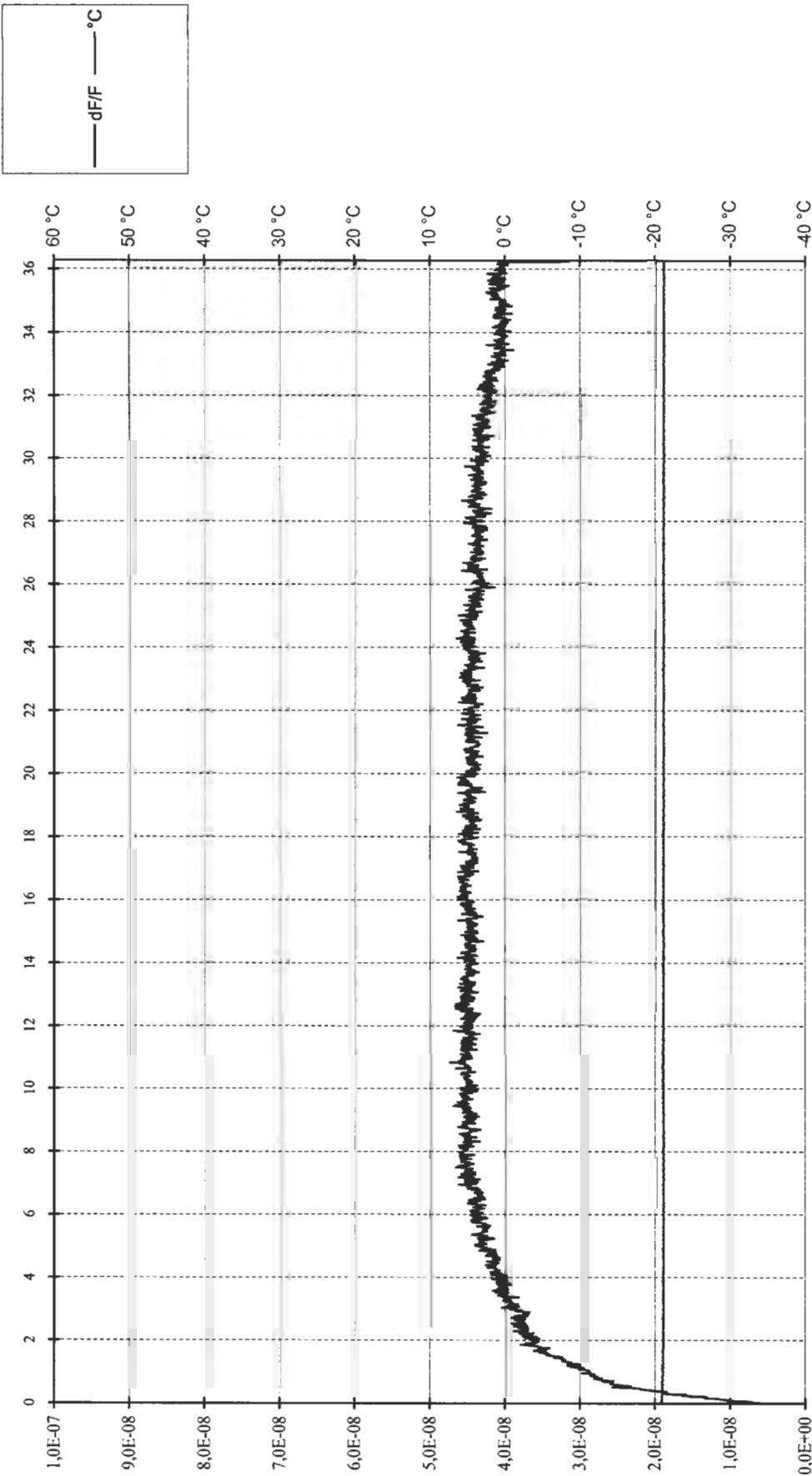


LIFE TEST AT -20 °C

Manufacturer : ACR Electronics, Inc
Model : PLB 201
Number : 12

Date : 10/07/2004
Time : 06:28:16

FREQUENCY VARIATION

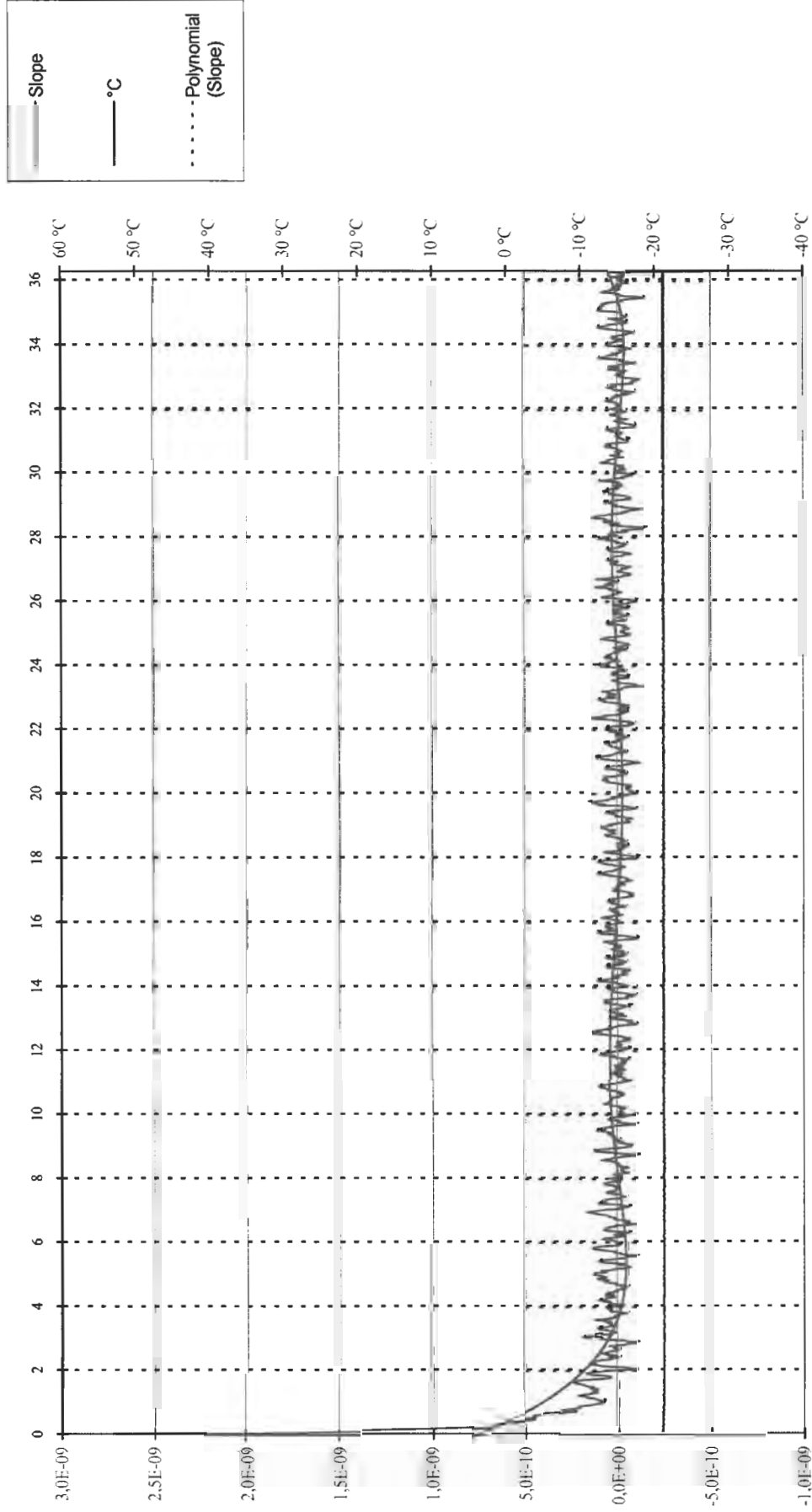


LIFE TEST AT -20 °C

Manufacturer : ACR Electronics, Inc
Model : PLB 201
Number : 12

Date : 10/07/2004
Time : 06:28:16

MEDIUM TERM STABILITY : MEAN SLOPE /mn (-1,0E-9 to 1,0E-9)

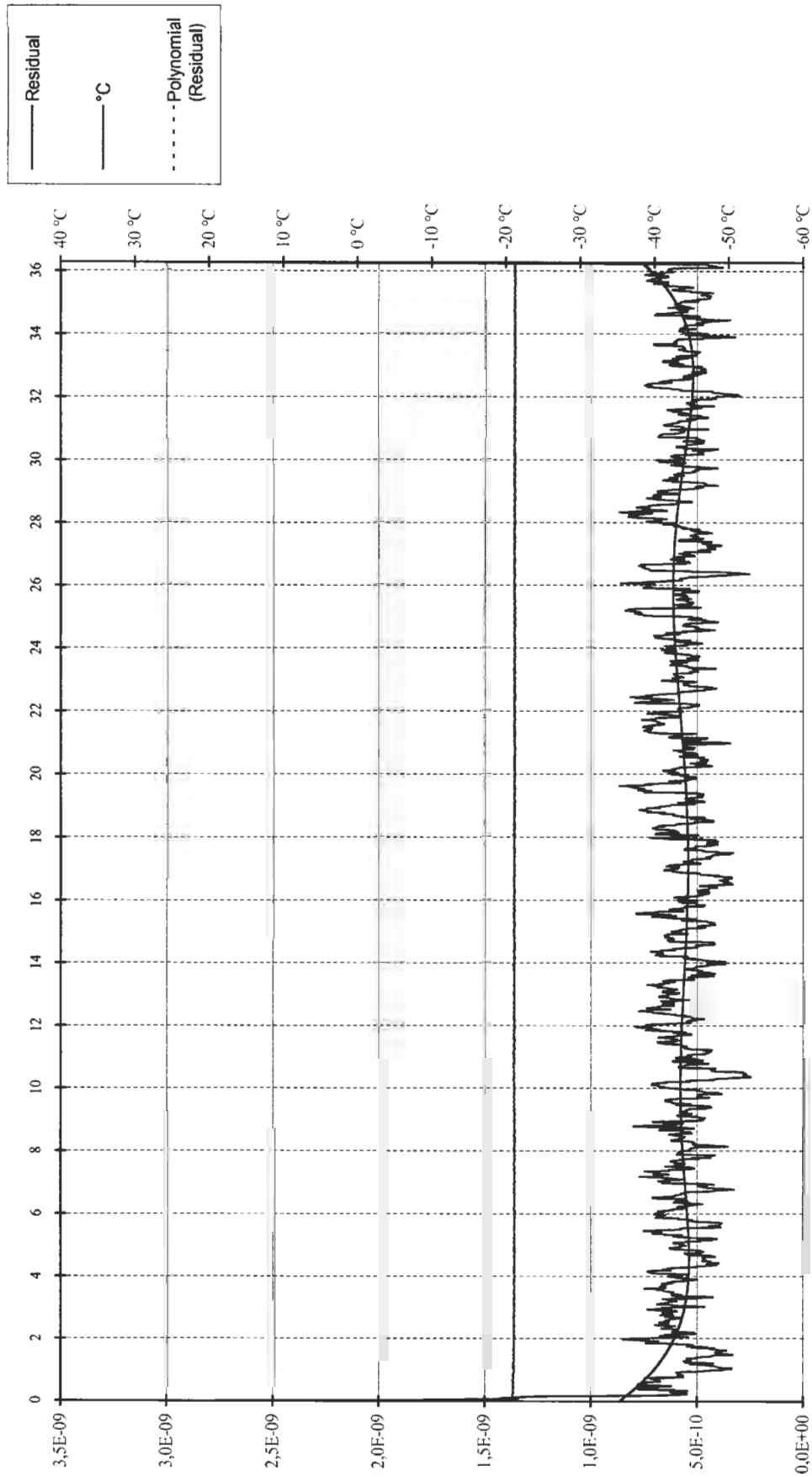


LIFE TEST AT -20 °C

Manufacturer : ACR Electronics, Inc
Model : PLB 201
Number : 12

Date : 10/07/2004
Time : 06:28:16

MEDIUM TERM STABILITY : RESIDUAL ($\leq 3,0E-9$)

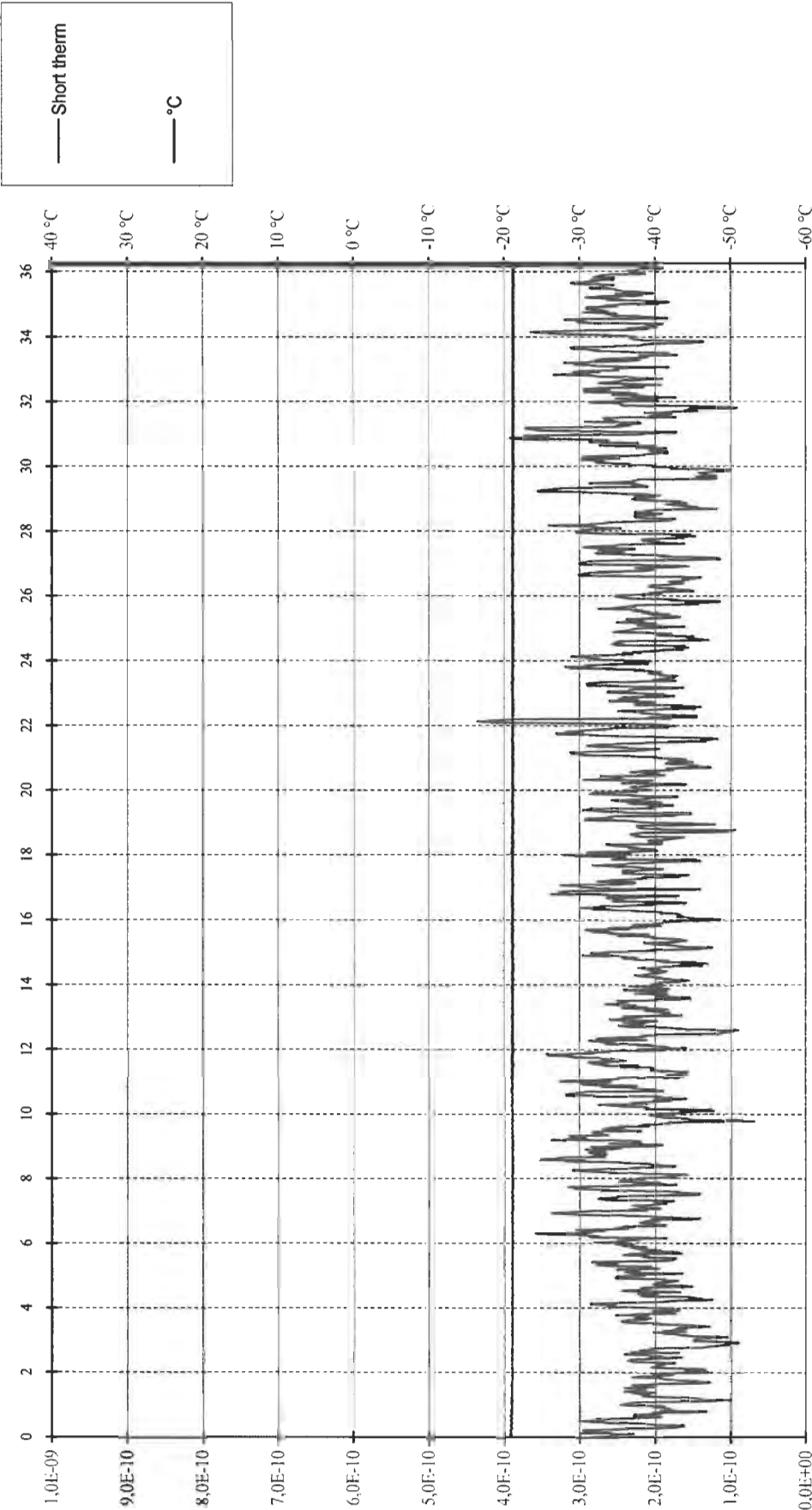


LIFE TEST AT -20 °C

Manufacturer : ACR Electronics, Inc
Model : PLB 201
Number : 12

Date : 10/07/2004
Time : 06:28:16

SHORT TERM STABILITY /100 mS ($\leq 2,0E-9$)

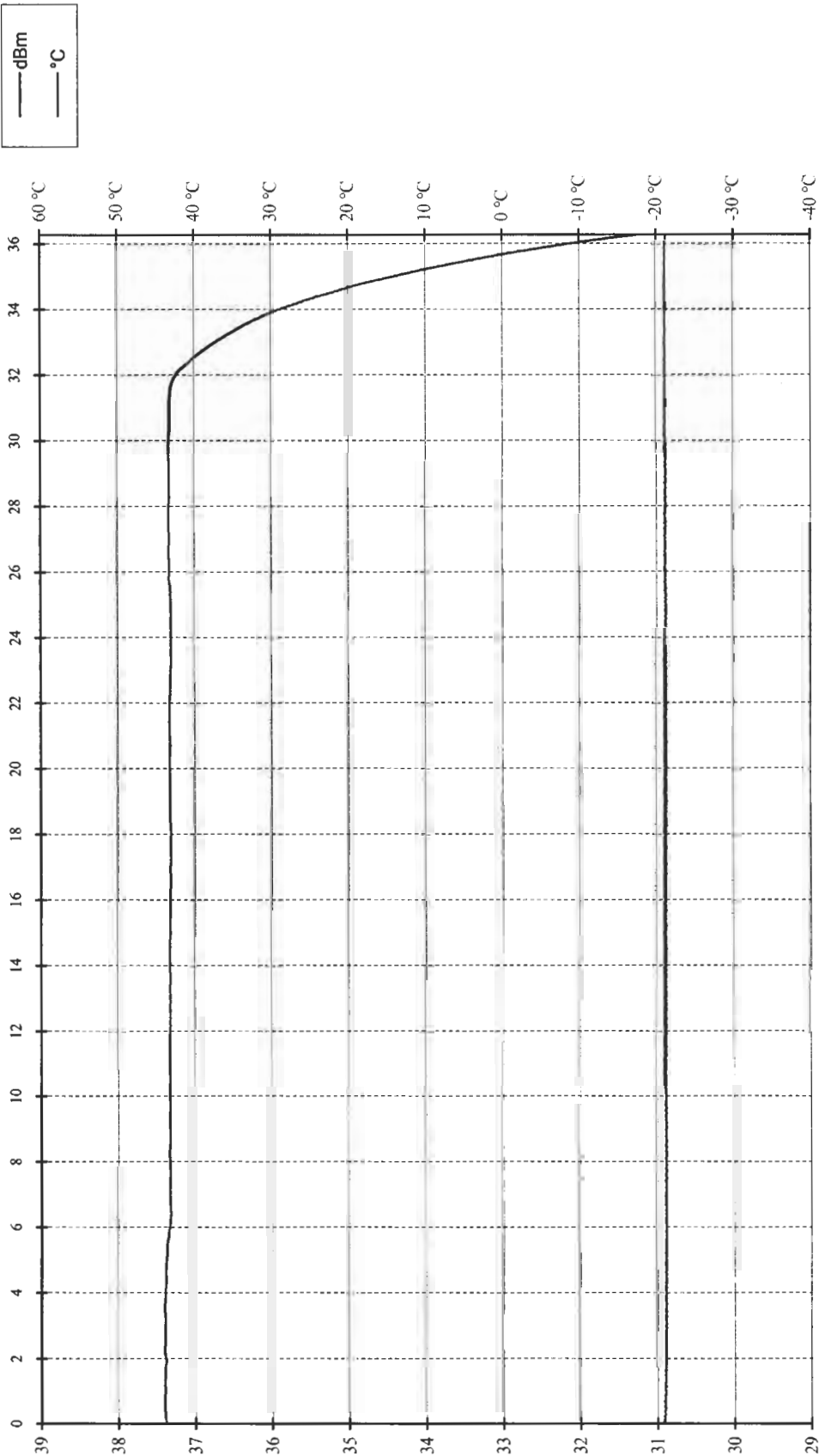


LIFE TEST AT -20 °C

Manufacturer : ACR Electronics, Inc
Model : PLB 201
Numero : 12

Date : 10/07/2004
Time : 06:28:16

OUTPUT POWER (35 to 39 dBm)



TEMPERATURE GRADIENT TEST RESULT ON
PLB 201 ACR Electronics, Inc Beacon
N° 12

at -20° C, 22° C and 55° C

No	Δ Frequency (Hz)	Temp. (°C)	P406 (dBm)	P121.5 (dBm)
1	49923,66	-21,0	38,1	20,3
2	49923,71	-20,9	38,1	20,3
3	49923,41	-21,0	38,1	20,3
4	49923,89	-20,9	38,1	20,3
5	49923,48	-20,9	38,1	20,3
6	49923,63	-21,0	38,1	20,3
7	49923,67	-20,9	38,1	20,3
8	49923,68	-21,0	38,1	20,3
9	49923,38	-21,0	38,1	20,3
10	49923,95	-20,9	38,1	20,3
11	49923,08	-21,0	38,1	20,3
12	49924,10	-21,0	38,1	20,3
13	49923,06	-20,9	38,1	20,3
14	49923,76	-21,0	38,1	20,3
15	49923,52	-21,0	38,1	20,3
16	49923,60	-21,0	38,1	20,3
17	49923,92	-21,0	38,1	20,3
18	49923,40	-21,0	38,1	20,3

Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
1	-21,1	-1,2E-11	6,7E-10	38,1	1,4E-10	20,3
18	-21,0	-5,5E-11	6,6E-10	38,1	2,1E-10	20,3
31	-21,0	3,6E-11	4,4E-10	38,1	1,5E-10	20,3
61	-21,0	8,8E-11	5,2E-10	38,1	2,5E-10	20,3
91	-19,8	8,4E-11	4,2E-10	38,1	2,6E-10	20,3
121	-17,7	-7,9E-11	4,6E-10	38,1	1,8E-10	20,3
151	-15,6	-2,1E-11	6,1E-10	38,1	2,3E-10	20,3
181	-13,4	-5,8E-12	5,6E-10	38,0	2,1E-10	20,3
211	-11,3	7,7E-11	5,2E-10	38,0	1,8E-10	20,3
241	-9,2	-1,0E-10	6,2E-10	38,0	1,7E-10	20,4
271	-7,2	-4,1E-11	4,5E-10	38,0	1,8E-10	20,4
301	-5,1	-5,1E-11	6,3E-10	38,0	2,1E-10	20,4
331	-3,0	-2,1E-11	6,2E-10	37,9	2,8E-10	20,4
361	-0,9	3,1E-11	5,2E-10	37,9	2,7E-10	20,4
391	1,1	-7,3E-11	7,4E-10	37,9	1,9E-10	20,3
421	3,3	-1,1E-10	5,6E-10	37,9	1,8E-10	20,3
451	5,5	1,1E-10	5,0E-10	37,8	2,7E-10	20,3
481	7,5	-1,1E-10	6,4E-10	37,8	2,1E-10	20,3
511	9,7	2,1E-11	6,5E-10	37,8	3,3E-10	20,3
541	11,8	-9,3E-11	3,3E-10	37,8	2,8E-10	20,3
571	13,9	-6,3E-11	5,8E-10	37,8	2,1E-10	20,3
601	16,0	-6,3E-11	7,1E-10	37,7	3,5E-10	20,3
631	18,1	-1,1E-10	5,7E-10	37,7	1,7E-10	20,3
661	20,2	-1,4E-10	8,2E-10	37,7	3,3E-10	20,2
691	22,4	-1,9E-10	5,5E-10	37,6	2,5E-10	20,2
721	24,4	-3,9E-11	6,3E-10	37,6	1,5E-10	20,2
751	26,6	-1,7E-10	5,4E-10	37,6	3,0E-10	20,2
781	28,7	-1,1E-10	7,2E-10	37,6	2,3E-10	20,2
811	30,9	-1,8E-10	5,7E-10	37,6	1,5E-10	20,1
841	33,0	-1,9E-10	7,3E-10	37,5	3,1E-10	20,1

Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
871	35,1	-9,4E-11	4,8E-10	37,5	1,8E-10	20,1
901	37,3	2,0E-11	5,3E-10	37,5	3,0E-10	20,1
931	39,4	9,3E-11	5,2E-10	37,5	2,0E-10	20,0
961	41,5	4,7E-11	5,8E-10	37,4	2,0E-10	20,0
991	43,8	9,3E-11	4,7E-10	37,0	3,2E-10	20,0
1021	46,0	9,6E-11	4,3E-10	37,4	2,2E-10	20,0
1051	48,1	4,7E-11	5,2E-10	37,4	2,8E-10	19,9
1081	50,3	9,0E-11	6,5E-10	37,4	3,5E-10	19,9
1111	52,4	1,0E-10	5,3E-10	37,3	3,8E-10	19,9
1141	54,5	2,2E-11	6,6E-10	37,3	2,1E-10	19,8
1171	54,6	2,0E-11	5,9E-10	37,3	2,2E-10	19,8
1201	54,7	1,9E-11	5,0E-10	37,3	1,7E-10	19,8
1231	54,6	-2,1E-11	5,6E-10	37,3	1,9E-10	19,8
1261	54,7	5,2E-11	7,7E-10	37,3	1,9E-10	19,8
1291	55,4	4,6E-11	3,7E-10	37,3	2,7E-10	19,8
1321	55,4	-5,1E-11	4,5E-10	37,3	1,9E-10	19,8
1351	55,5	-2,4E-12	7,5E-10	37,3	2,7E-10	19,8
1381	55,6	-7,0E-12	6,8E-10	37,3	2,7E-10	19,8
1411	55,5	2,4E-11	6,0E-10	37,3	2,1E-10	19,8
1441	53,7	-3,9E-11	4,4E-10	37,3	3,1E-10	19,8
1471	51,7	-4,1E-11	5,5E-10	37,3	1,6E-10	19,9
1501	49,6	-1,3E-10	6,1E-10	37,3	1,5E-10	19,9
1531	47,4	-5,2E-11	6,3E-10	37,4	2,8E-10	19,9
1561	45,3	4,2E-11	6,0E-10	37,4	3,3E-10	19,9
1591	43,2	-1,0E-11	6,8E-10	37,4	2,6E-10	20,0
1621	41,1	-1,3E-10	6,7E-10	37,4	2,9E-10	20,0
1651	39,0	-5,7E-11	4,8E-10	37,5	1,5E-10	20,0
1681	36,9	-5,9E-11	6,2E-10	37,5	2,0E-10	20,1
1711	34,8	2,2E-12	4,4E-10	37,5	2,4E-10	20,1
1741	32,7	5,5E-12	5,7E-10	37,5	2,5E-10	20,1
1771	30,6	-8,7E-11	6,1E-10	37,5	3,4E-10	20,1
1801	28,4	5,0E-11	4,4E-10	37,6	2,7E-10	20,1
1831	26,3	8,5E-11	4,6E-10	37,6	2,4E-10	20,2
1861	24,1	-4,1E-11	6,0E-10	37,6	1,7E-10	20,2
1891	22,0	1,2E-10	3,4E-10	37,6	2,5E-10	20,2
1921	20,0	1,9E-10	6,3E-10	37,7	2,5E-10	20,2
1951	17,9	7,9E-11	6,3E-10	37,7	2,3E-10	20,2
1981	15,9	4,1E-11	6,3E-10	37,7	2,8E-10	20,2
2011	14,0	4,1E-11	5,8E-10	37,7	1,5E-10	20,3
2041	11,8	6,6E-11	8,0E-10	37,7	1,9E-10	20,3
2071	9,5	7,6E-13	5,2E-10	37,8	2,5E-10	20,3
2101	7,5	7,3E-11	4,8E-10	37,8	1,9E-10	20,3
2131	5,3	8,6E-11	7,4E-10	37,8	3,1E-10	20,3
2161	3,2	2,3E-11	4,5E-10	37,8	1,7E-10	20,3
2191	0,9	1,5E-11	5,5E-10	37,9	2,4E-10	20,3
2221	-1,1	-2,3E-11	6,2E-10	37,9	3,0E-10	20,3
2251	-3,1	-1,6E-11	5,3E-10	37,9	1,6E-10	20,3
2281	-5,5	8,3E-11	5,1E-10	37,9	1,7E-10	20,3
2311	-7,4	-5,5E-11	3,9E-10	37,9	2,8E-10	20,3
2341	-9,4	6,9E-11	4,9E-10	38,0	1,6E-10	20,3
2371	-11,7	2,0E-11	5,6E-10	38,0	1,6E-10	20,3

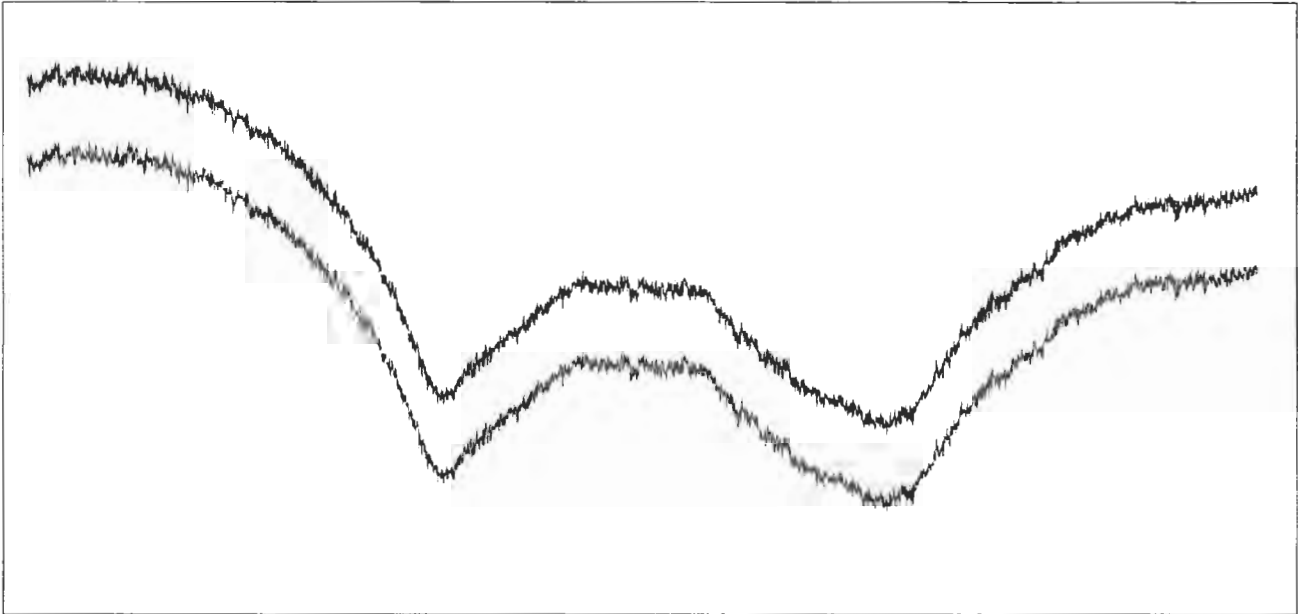
Meas	Temp.	Slope	Sigma	P406	Short term	P121.5
2401	-13,8	1,4E-12	5,2E-10	38,0	2,2E-10	20,3
2431	-15,9	-8,6E-11	9,0E-10	38,0	3,3E-10	20,3
2461	-18,1	-1,2E-11	6,3E-10	38,0	1,6E-10	20,3
2491	-20,2	-4,6E-11	7,1E-10	38,1	2,4E-10	20,3
2521	-20,9	8,1E-11	5,4E-10	38,1	2,3E-10	20,3
2551	-20,9	1,9E-11	5,7E-10	38,1	2,4E-10	20,3
2581	-20,9	2,7E-11	5,8E-10	38,1	1,8E-10	20,3
2611						
2641						
2671						
2701						
2731						
2761						
2791						
2821						
2851						
2881						
2911						
2941						
2971						
3001						
3031						
3061						
3091						
3121						
3151						
3181						
3211						
3241						
3901						

Beacon message at the beginning and at the end of Frequency Stability Test with Temperature Gradient :

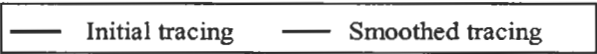
FFFE2F96EF00030AE20177558FF50D2C060D < 4 hours < FFFE2F96EF00031FC0FF001895F59F3C0CD4
 ITS Laboratory Ext GPS Loc < 4 hours < Default GPS Loc

Frequency variation

406024931



406024903



TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

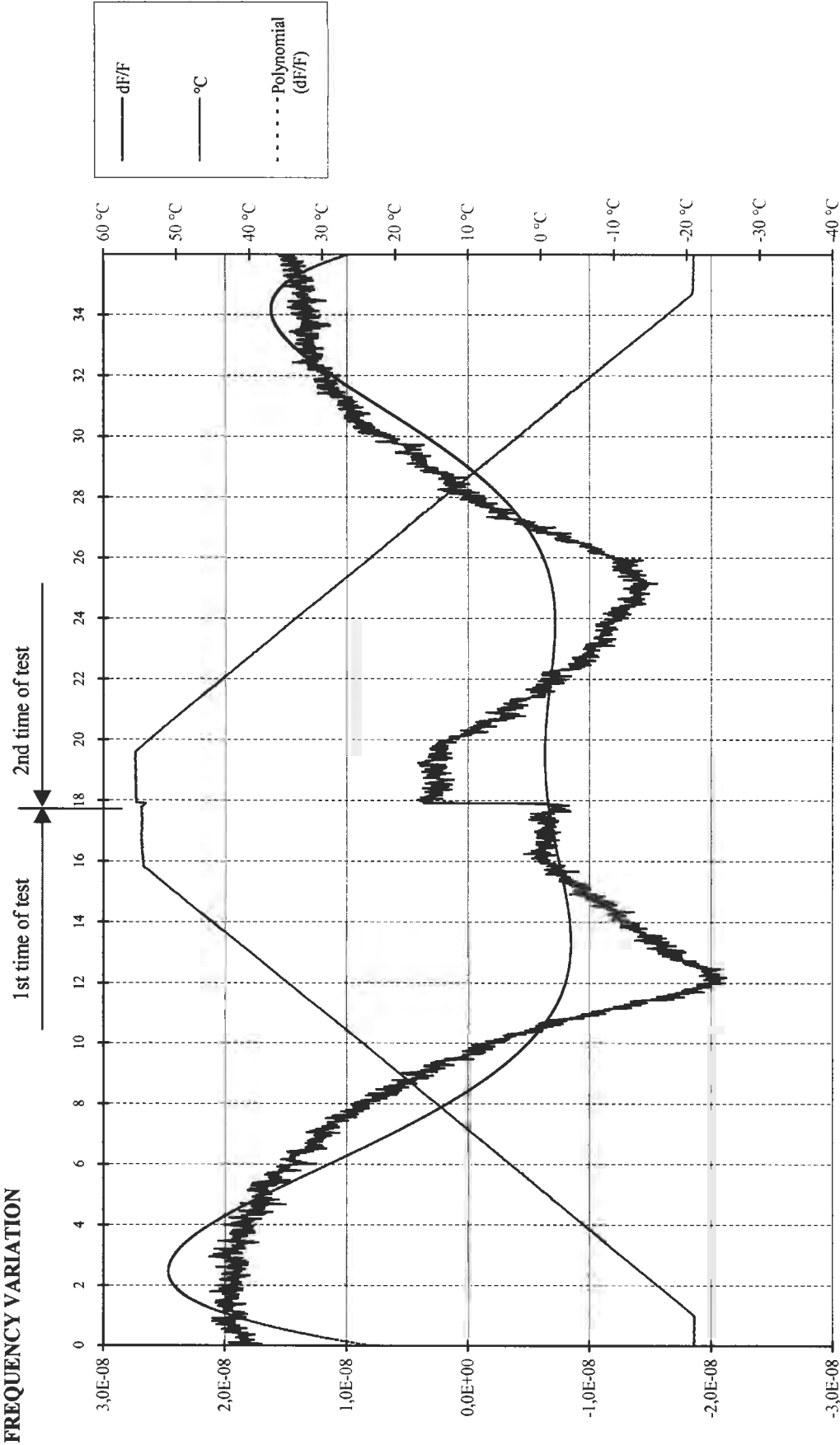
Manufacturer : ACR Electronics, Inc

Model : PLB 201

Number : 12

Date : 29/06/2004 and 30/06/2004

Time : 14:18:46 16:59:26



TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

Manufacturer : ACR Electronics, Inc

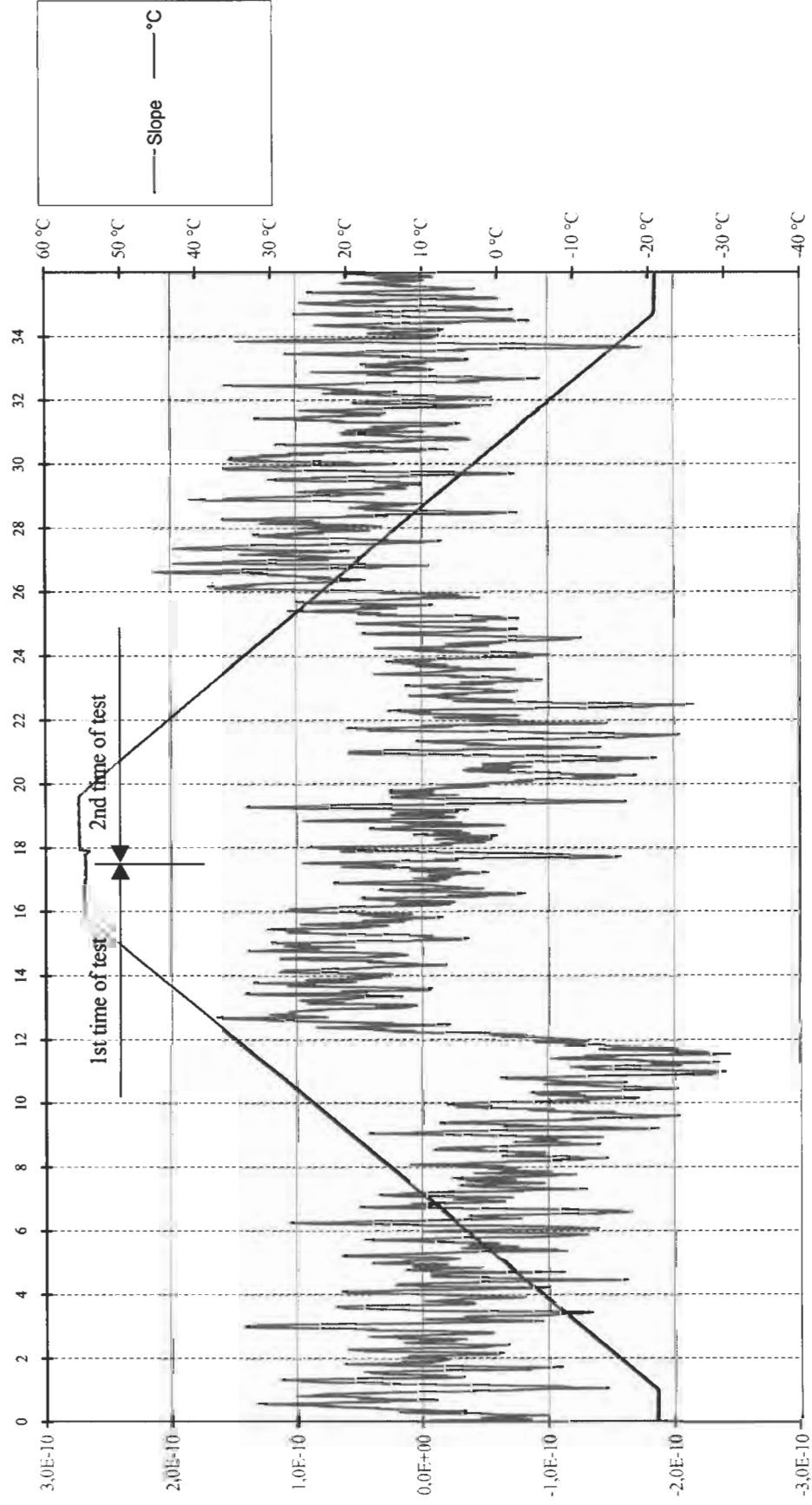
Model : PLB 201

Number : 12

Date : 29/06/2004 and 30/06/2004

Time : 14:18:46 16:59:26

MEDIUM TERM STABILITY : MEAN SLOPE /mm (-1,0E-9 to 1,0E-9)



TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

Manufacturer : ACR Electronics, Inc

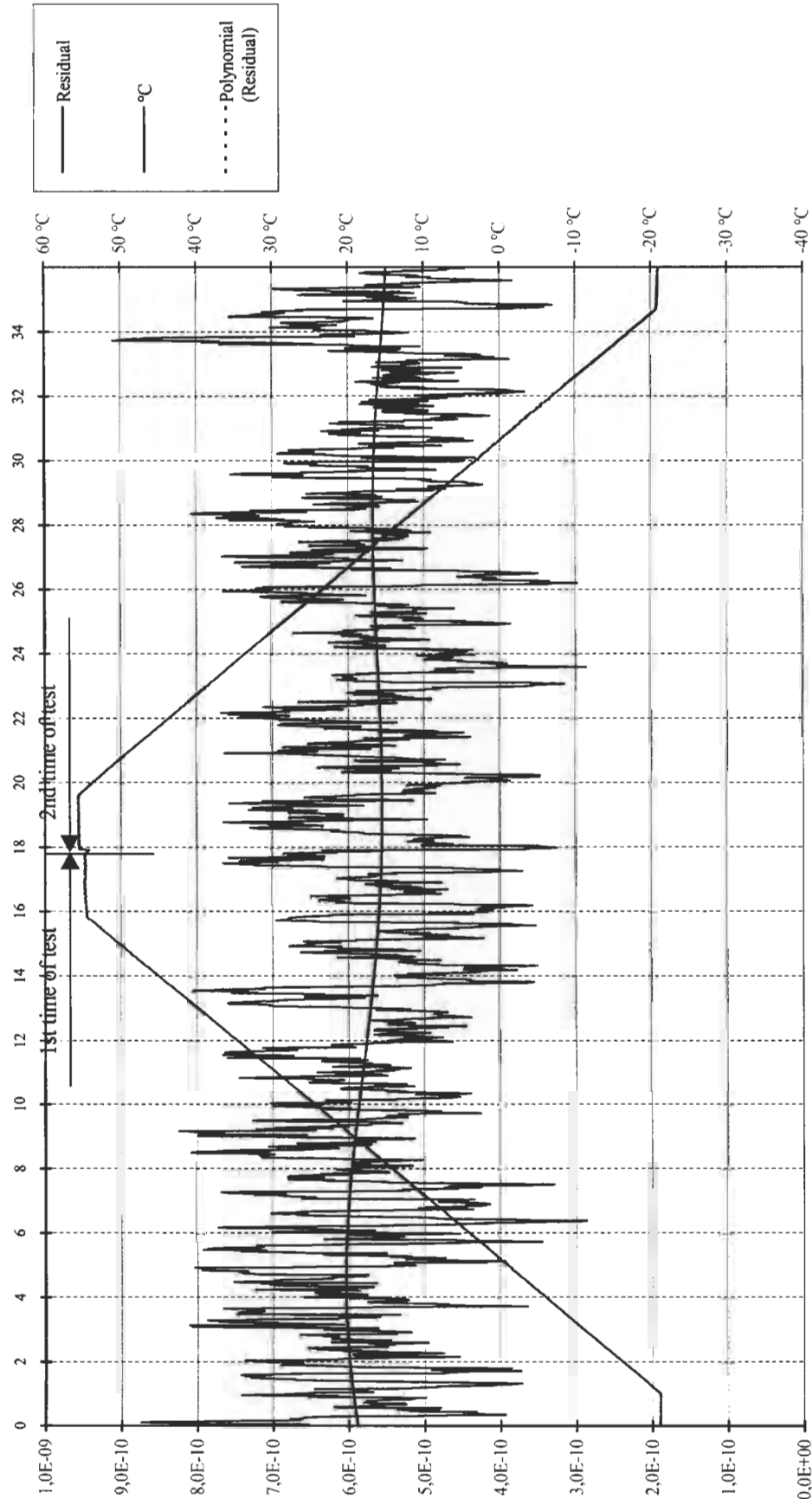
Model : PLB 201

Number : 12

Date : 29/06/2004 and 30/06/2004

Time : 14:18:46 16:59:26

MEDIUM TERM STABILITY : RESIDUAL ($\leq 3,0E-9$)

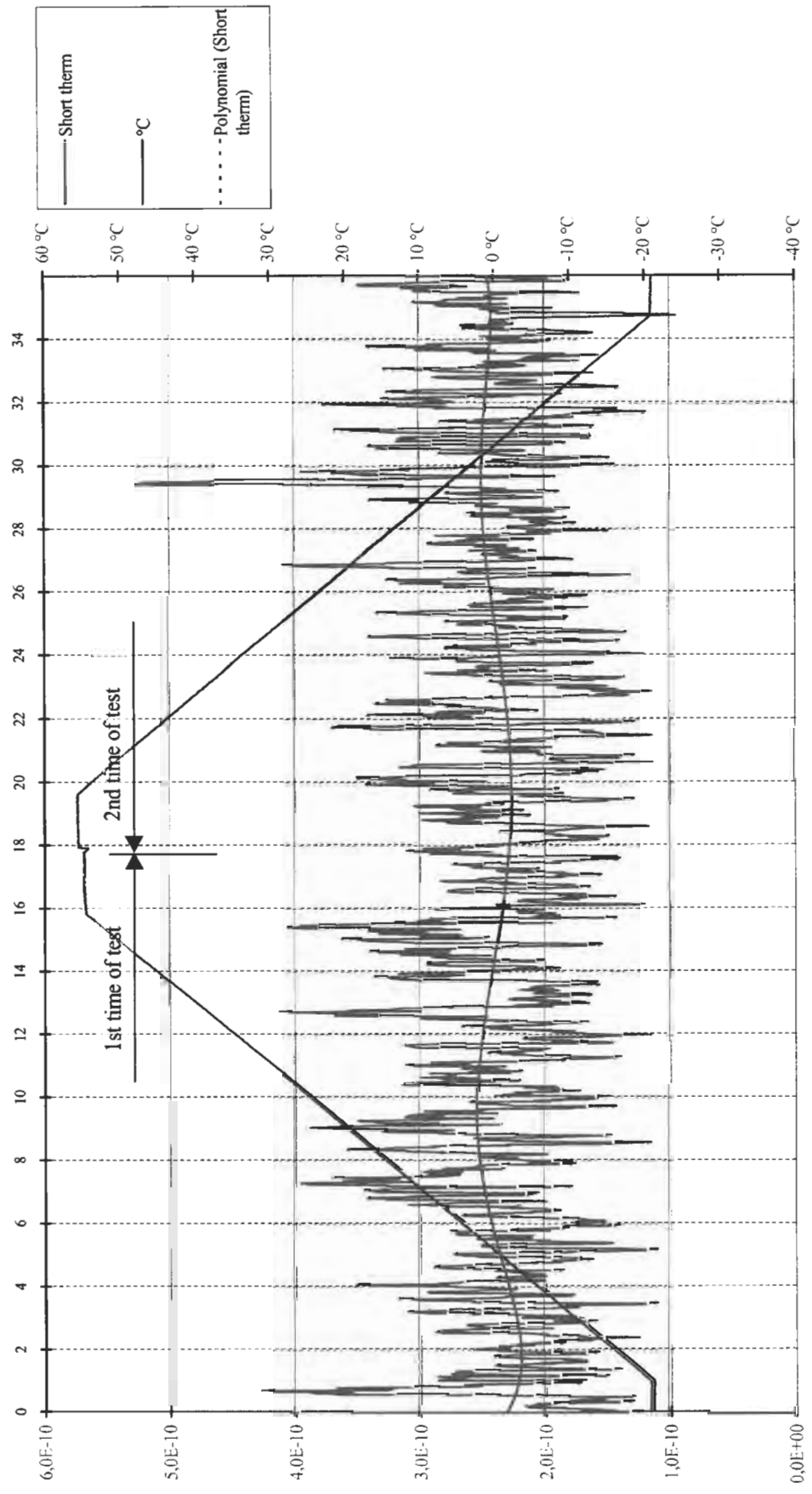


TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

Manufacturer : ACR Electronics, Inc
Model : PLB 201
Number : 12

Date : 29/06/2004 and 30/06/2004
Time : 14:18:46 16:59:26

SHORT TERM STABILITY /100 mS (≤ 2,0E-9)



TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

Manufacturer : ACR Electronics, Inc

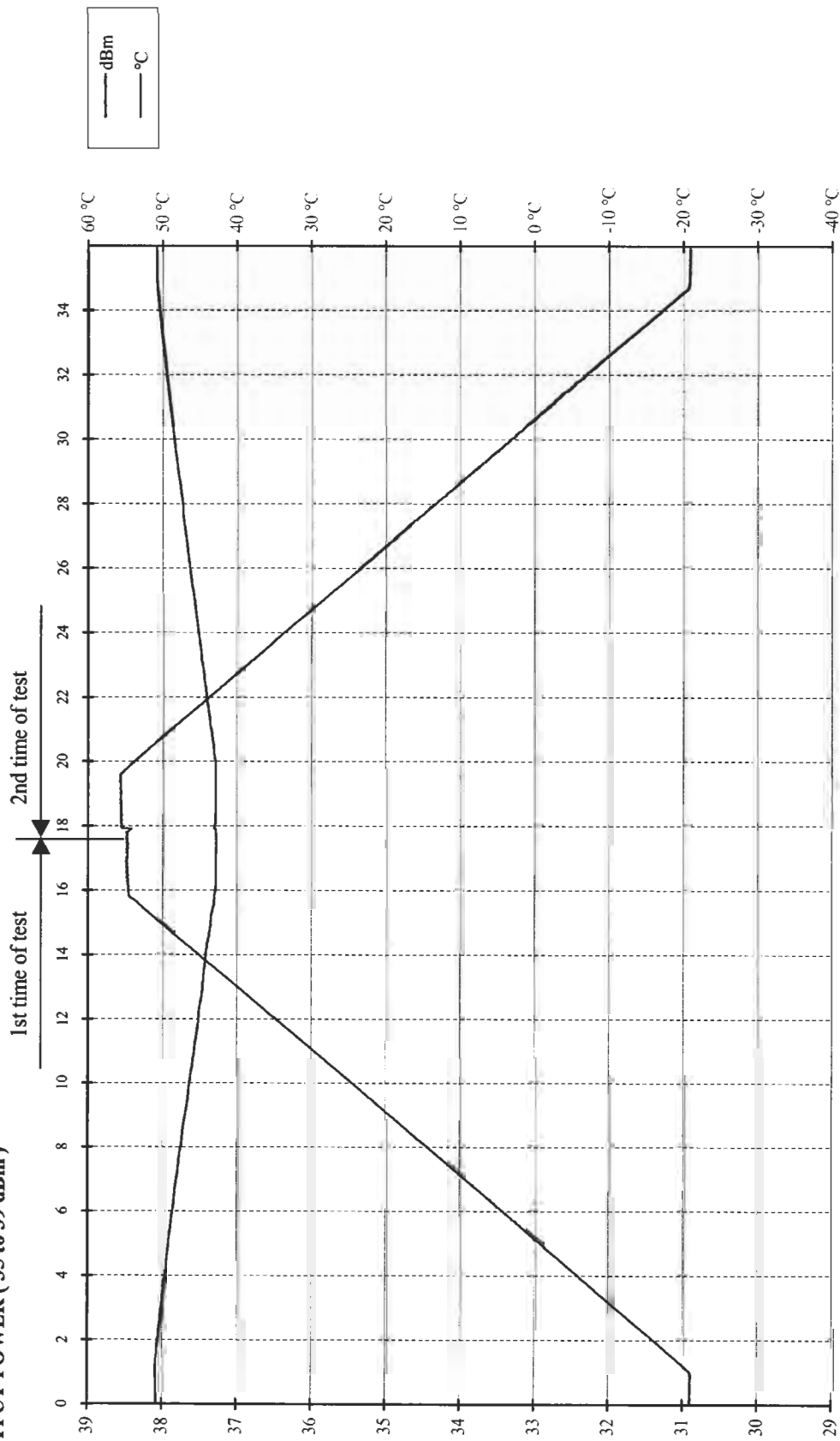
Model : PLB 201

Number : 12

Date : 29/06/2004 and 30/06/2004

Time : 14:18:46 16:59:26

OUTPUT POWER (35 to 39 dBm)



**BEACON CODING SOFTWARE AND
NAVIGATION SYSTEM TEST ON
PLB 201 ACR Electronics, Inc Beacon
N° 12**

External GPS mode only :**External GPS used :**

Manufacturer : GARMIN

Model : ETREX Venture

Tests of default position**Beacon without navigation input.**

Date : 01-sept-04

Always default value after 30 min. : Correct

Time	Latitude	Longitude	Def.	Delta	BCH1 lu/calculé	BCH2 lu/calculé
16:46:13	127° 0' 60" N	255° 0' 60" E	*		006257 / 006257	CD4 / CD4
16:47:04	127° 0' 60" N	255° 0' 60" E	*		006257 / 006257	CD4 / CD4
16:47:53	127° 0' 60" N	255° 0' 60" E	*		006257 / 006257	CD4 / CD4
16:48:44	127° 0' 60" N	255° 0' 60" E	*		006257 / 006258	CD4 / CD5
16:49:35	127° 0' 60" N	255° 0' 60" E	*		006257 / 006259	CD4 / CD6
16:50:24	127° 0' 60" N	255° 0' 60" E	*		006257 / 006260	CD4 / CD7
16:51:17	127° 0' 60" N	255° 0' 60" E	*		006257 / 006261	CD4 / CD8
16:52:09	127° 0' 60" N	255° 0' 60" E	*		006257 / 006262	CD4 / CD9
16:53:01	127° 0' 60" N	255° 0' 60" E	*		006257 / 006263	CD4 / CD10
16:53:51	127° 0' 60" N	255° 0' 60" E	*		006257 / 006264	CD4 / CD11
16:54:41	127° 0' 60" N	255° 0' 60" E	*		006257 / 006265	CD4 / CD12
16:55:30	127° 0' 60" N	255° 0' 60" E	*		006257 / 006266	CD4 / CD13
16:56:21	127° 0' 60" N	255° 0' 60" E	*		006257 / 006267	CD4 / CD14
16:57:10	127° 0' 60" N	255° 0' 60" E	*		006257 / 006268	CD4 / CD15
16:58:01	127° 0' 60" N	255° 0' 60" E	*		006257 / 006269	CD4 / CD16
16:58:53	127° 0' 60" N	255° 0' 60" E	*		006257 / 006270	CD4 / CD17
16:59:44	127° 0' 60" N	255° 0' 60" E	*		006257 / 006271	CD4 / CD18
17:00:34	127° 0' 60" N	255° 0' 60" E	*		006257 / 006272	CD4 / CD19
17:01:24	127° 0' 60" N	255° 0' 60" E	*		006257 / 006273	CD4 / CD20
17:02:14	127° 0' 60" N	255° 0' 60" E	*		006257 / 006274	CD4 / CD21
17:03:04	127° 0' 60" N	255° 0' 60" E	*		006257 / 006275	CD4 / CD22
17:03:53	127° 0' 60" N	255° 0' 60" E	*		006257 / 006276	CD4 / CD23
17:04:45	127° 0' 60" N	255° 0' 60" E	*		006257 / 006277	CD4 / CD24
17:05:36	127° 0' 60" N	255° 0' 60" E	*		006257 / 006278	CD4 / CD25
17:06:27	127° 0' 60" N	255° 0' 60" E	*		006257 / 006279	CD4 / CD26
17:07:17	127° 0' 60" N	255° 0' 60" E	*		006257 / 006280	CD4 / CD27
17:08:07	127° 0' 60" N	255° 0' 60" E	*		006257 / 006281	CD4 / CD28
17:08:57	127° 0' 60" N	255° 0' 60" E	*		006257 / 006282	CD4 / CD29
17:09:47	127° 0' 60" N	255° 0' 60" E	*		006257 / 006283	CD4 / CD30
17:10:36	127° 0' 60" N	255° 0' 60" E	*		006257 / 006284	CD4 / CD31
17:11:28	127° 0' 60" N	255° 0' 60" E	*		006257 / 006285	CD4 / CD32
17:12:19	127° 0' 60" N	255° 0' 60" E	*		006257 / 006286	CD4 / CD33
17:13:10	127° 0' 60" N	255° 0' 60" E	*		006257 / 006287	CD4 / CD34
17:14:01	127° 0' 60" N	255° 0' 60" E	*		006257 / 006288	CD4 / CD35
17:14:50	127° 0' 60" N	255° 0' 60" E	*		006257 / 006289	CD4 / CD36
17:15:40	127° 0' 60" N	255° 0' 60" E	*		006257 / 006290	CD4 / CD37
17:16:30	127° 0' 60" N	255° 0' 60" E	*		006257 / 006291	CD4 / CD38
17:17:19	127° 0' 60" N	255° 0' 60" E	*		006257 / 006292	CD4 / CD39
17:18:11	127° 0' 60" N	255° 0' 60" E	*		006257 / 006293	CD4 / CD40
17:19:02	127° 0' 60" N	255° 0' 60" E	*		006257 / 006294	CD4 / CD41
17:19:53	127° 0' 60" N	255° 0' 60" E	*		006257 / 006295	CD4 / CD42
17:20:44	127° 0' 60" N	255° 0' 60" E	*		006257 / 006296	CD4 / CD43
17:21:33	127° 0' 60" N	255° 0' 60" E	*		006257 / 006297	CD4 / CD44
17:22:23	127° 0' 60" N	255° 0' 60" E	*		006257 / 006298	CD4 / CD45
17:23:13	127° 0' 60" N	255° 0' 60" E	*		006257 / 006299	CD4 / CD46

Date : 19/07/2004

Nº 1 Lanta: 43° 33' 36" N
 01° 39' 48" E

Nº 4 ITS Lab. 43° 33' 34" N
01° 28' 48" E

Time of first acquisition GPS location : at the first burst after GPS data was correctly acquired

Accuracy : correct

Ref. Pos	Time	Latitude	Longitude	Def.	Delta	BCH1 read./calcul.	BCH2 read./calcul.
N° 1 Mes	07:16:02	43° 33' 36" N	1° 39' 44" E		0,087 km	060417 / 060417	EAF / EAF
	FFFE2F96	EF00030AE201	A181C5F50C100EAF				
N° 4 Mes	08:17:38	43° 33' 36" N	1° 28' 44" E		0,138 km	1D563F / 1D563F	60D / 60D
	FFFE2F96	EF00030AE201	77558FF50D2C060D				

Last position GPS retained without navigation signal

Date : 1 Sept 2004

Reference position : **N° 4** **ITS Lab.** **43° 33' 34" N**
01° 28' 48" E

First burst with encoded GPS Location in the message : 12:46:26

FFFE2F96EF00030AE20177558FF50F280C1B

National Location Protocol

US TEST 12 Homing External GPS

pst: N 43d34m delta:-0m28s E 001d28m delta:+0m40s

Last burst with encoded GPS Location in the message : 16:45:22

Valid position retained during : 03:58:56 Correct

Default message after 4 hours with encoded valid GPS location : 16:46:13

FFFE2F96EF00031FC0FF001895F59F3C0CD4

Correct

National Location Protocol

US TEST 12 Homing External GPS

pst: default value

Time	Latitude	Longitude	Def.	Delta	BCH1 read./calcul.	BCH2 read./calcul.
12:46:26	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:47:17	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:48:06	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:48:57	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:49:46	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:50:38	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:51:28	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:52:18	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:53:09	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:54:00	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:54:49	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:55:40	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:56:29	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:57:21	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:58:11	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:59:01	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
12:59:53	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:00:43	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:01:33	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:02:24	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:03:13	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:04:04	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:04:54	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:05:44	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:06:36	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:07:27	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:08:17	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:09:09	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:09:58	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:10:50	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:11:41	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:12:32	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:13:24	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:14:16	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:15:06	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:15:57	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:16:47	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:17:38	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:18:29	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:19:18	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:20:08	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:20:58	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:21:47	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:22:39	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
13:23:31	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B

[illegible]

[illegible]

[illegible]

16:21:01	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:21:50	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:22:41	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:23:30	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:24:21	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:25:13	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:26:04	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:26:54	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:27:44	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:28:34	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:29:24	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:30:13	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:31:05	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:31:56	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:32:47	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:33:37	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:34:27	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:35:17	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:36:07	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:36:56	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:37:48	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:38:39	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:39:30	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:40:21	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:41:10	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:42:00	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:42:50	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:43:39	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:44:31	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:45:22	43° 33' 32" N	1° 28' 40" E		0,26 km	1D563F / 1D563F	C1B / C1B
16:46:13	127° 0' 60" N	255° 0' 60" E	*		006257 / 006257	CD4 / CD4
16:47:04	127° 0' 60" N	255° 0' 60" E	*		006257 / 006257	CD4 / CD4
16:47:53	127° 0' 60" N	255° 0' 60" E	*		006257 / 006257	CD4 / CD4