

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min.} -20°C (±3)	T _{amb.} 22°C (±3)	T _{max.} 55°C (±3)	
4 - MODULATION						Data and graphs pages 31 to 40
o biphasé-L		√	√	√	√	
o rise time	50 - 250	microsec.	70	70	80	
o fall time	50 - 250	microsec.	110	110	100	
o phase deviation : positive	+ (1.0 to 1.2)	radians	+ 1,06	+ 1,10	+ 1,15	
o phase deviation : negative	- (1.0 to 1.2)	radians	- 1,20	- 1,20	- 1,16	
o symmetry measurement	≤ 0.05		+ 0,0080	+ 0,0160	+ 0,0160	
5 - 406 MHz TRANSMITTED FREQUENCY						Data pages 32, 351 and 38
o nominal value	as specified in C/S T.001 and C/S T.012	MHz	406,0277907	406,0277462	406,0277010	
o short term stability	≤ 2 x 10 ⁻⁹	/100 ms	3,57E-10	3,80E-10	2,19E-10	
o medium term stability . slope	(-1 to +1) x 10 ⁻⁹	/minute	5,59E-11	-6,03E-11	7,72E-10	
. residual frequency variation	≤ 3 x 10 ⁻⁹		5,28E-10	4,99E-10	3,16E-10	
6 - SPURIOUS EMISSION ¹ (into 50 ohms) o in-band (406.0 - 406.1 MHz)	C/S T.001 mask	√	√	√	√	See graphs pages 41 to 44

¹ Include spectral plots of the 406,0-406,1 MHz band, showing the transmit signal and emission mask as defined in C/S T.001.

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min.} -20°C (±3)	T _{amb.} 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 o Modulation : - rise time - fall time - phase deviation : positive - phase deviation : negative - symmetry measurement - digital message	as specified in C/S T.001 50 - 250 50 - 250 + (1.0 to 1.2) - (1.0 to 1.2) ≤ 0.05 must be correct	MHz microsec. microsec. radians radians √ √	406,0277859 69,9 99,8 1,05 -1,17 + 0,0120 √	406,0277327 79,8 99,8 1,17 -1,10 + 0,0080 √	406,0276987 79,8 99,8 1,19 -1,09 + 0,0160 √	See data and graphs pages 45 to 51
8 - SELF-TEST MODE (if applicable) 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 o 121,5 MHz RF power (if applicable) o 406 MHz RF power	9 bits (011010000) 1/0 ≤ 440 /520 (+1%) must be correct protection provided one burst correct self-test checks that RF power emitted self-test checks that RF power emitted	√ bit ms √ √ √ √ √ √ √	√ 1 520,34 √ √ √ √ √ √			Data page 53 Manufacturer doc. Annex F

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS	COMMENTS
9 - THERMAL SHOCK¹ (30° C change) o Soak temperature : o Measurement temperature : the following parameters are to be met within 15 minutes of beacon and maintained for 2 hours o Transmitted frequency : - nominal value - short term stability - medium term stability : . slope . residual frequency variation o Transmitted power output o Digital message	 as specified in C/S T.001 and C/S T.012 $\leq 2 \times 10^{-9}$ $(-2 \text{ to } +2) \times 10^{-9}$ $\leq 3 \times 10^{-9}$ 35 - 39 must be correct	°C °C MHz /100 ms /minute dBm √	 Tsoak = 24 TMeas = -10 406,027764 / 406,027788 2,93E-10 4E-12 / 1,44E-09 1,11E-10 36,1 / 36,4 √	Data and graphs pages 54 to 61

1 Attach graphs depicting test results.

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS	COMMENTS
10 - OPERATING LIFETIME AT MINIMUM TEMPERATURE¹ o Duration o Transmitted frequency : - nominal value - short term stability - medium term stability . slope . residual frequency variation o Transmitted power output o Digital message	 > 24 as specified in C/S T.001 and C/S T.012 ≤ 2 x 10 ⁻⁹ (-1 to +1) x 10 ⁻⁹ ≤ 3 x 10 ⁻⁹ 35 - 39 must be corect	hours MHz /100 ms /minute dBm √	Battery Pack : AK 450 0010-1A: Ultralife U10014 (LiMnO2) 24 hours for 406 MHz and around 77 hours (90 hr - 13,03 hr) for 121,5/243 MHz 406,027779 / 406,027807 < 4,5E-10 -1,5E-09 / 8E-11 < 1,5E-09 36,3 / 36,5 √	Data and graphs pages 62 to 74
11 - TEMPERATURE GRADIENT (5° C/hr)¹ o Transmitted frequency : - nominal value - short term stability - medium term stability . Slope (A to B, C+15 to D, and E+15 to F) . Slope (B to C+15, and D to E+15) . residual frequency variation o Transmitted power output o Digital message	 as specified in C/S T.001 and C/S T.012 ≤ 2 x 10 ⁻⁹ (-1 to +1) x 10 ⁻⁹ (-2 to +2) x 10 ⁻⁹ ≤ 3 x 10 ⁻⁹ 35 - 39 must be corect	 MHz /100 ms /minute /minute dBm √	 406,027712 / 406,027812 < 4,5E-10 -9,5E-10 / 4,5E-10 < 1,5E-09 35,6 / 36,6 √	Data and graphs pages 75 to 84
12 - OSCILLATOR AGING (data provided)	C/S T.001 (-5 to +2) x 10 ⁻³	MHz	Specification Max OCXO manufacturer -1,62E-03	Annex F : Manufacturer explanations (TD-100120-00HW00-87 -rev.00)

1 Attach graphs depicting test results.

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS	COMMENTS
17 - NAVIGATION SYSTEM⁴				See data page 85 to 93
o position data default values	correct	√	√	
o position acquisition time	< 10 / 1	minutes	0,83	Annex E - Test Results per Table F-C.5
o position accuracy	C/S T.001			
o encoded position data update interval	> 20	minutes	20:51	
o position clearance after deactivation	cleared	√	√	A.3.8.4 Test Result page :
o position data input update interval (as applicable)	20 / 1	minutes		
o position data encoding	correct	√	√	Annex E : Results per Tables F-C.1, F-C.2 and F-C.3
o retained last valid position after navigation input lost	240 (± 5)	min	239,4	
o default position data transmitted after 240(± 5) minutes without valid position data	cleared	√	√	A.3.8.6 Test Result page :
o information provided on protection against beacon degradation due to navigation device, interface or signal failure or malfunction		√	√	Annex F : Manufacturer explanations

4 Attach navigation system test results as per Appendix C to Annex F

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min.} -20°C (±3)	T _{amb.} 22°C (±3)	T _{max.} 55°C (±3)	
1 - POWER OUTPUT						
o transmitter power output	35 - 39	dBm	36,1	35,7	35,3	
o Power output rise time	< 5	ms	0,06	0,05	0,05	Graphs p, 17, 20 and 23
o power output 1 ms before burst	< -10 dBm	√ *	√	√	√	Graphs pages 11 to 13 of E6567-CS Annex C
2 - DIGITAL MESSAGE						
	Bits number					
o bit sync	1-15	15 bits "1"	√	√	√	Data and graphs pages 14 to 23 of E6567-CS Annex C
o frame sync	16-24	9 bits (000101111)	√	√	√	
o format flag	25	1 bit	√	1	1	
o protocol flag	26	1 bit	√	0	0	
o identification/position code	27-85	59 bits	√	√	√	
o BCH code	86-106	21 bits	√	√	√	
o emerg. code/nat. use/supplem. data	107-112	6 bits	data bits	110101	110101	
o additional data/BCH (if applicable)	113-144	32 bits	√	√	√	
o position error (if applicable)	< 5	km	0,076 km	0,000 km	0,076 km	

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min.} -20°C (±3)	T _{amb.} 22°C (±3)	T _{max.} 55°C (±3)	
3 - DIGITAL MESSAGE GENERATOR						Data and graphs pages 14 to 23 of E6567-CS Annex C
o repetition rate T _R :						
average T _R =	48,5 - 51,5	seconds	50,11	50,11	50,11	
minimum T _R =	47,5≤T _R ≤48,0	seconds	48,00	47,99	48,00	
maximum T _R =	52,0≤T _R ≤52,5	seconds	52,01	52,01	52,01	
standard deviation =	0,5 - 2,0		1,56	1,56	1,56	
o bit rate						
minimum f _b =	396	bits/sec.	399,71	399,76	399,73	
maximum f _b =	404	bits/sec.	399,80	399,80	399,81	
o total transmission time :						
short message =	435.6 - 444.4	ms				
long message =	514.8 - 525.2	ms	520,39	520,33	520,32	
o unmodulated carrier						
minimum T ₁ =	158,4	ms	159,84	159,80	159,77	
maximum T ₁ =	161,6	ms	159,86	159,82	159,78	
o first burst delay	> 47,5	seconds	52,00	52,0	52,00	

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min.} -20°C (±3)	T _{amb.} 22°C (±3)	T _{max.} 55°C (±3)	
4 - MODULATION						Data and graphs pages 14 to 23 of E6567-CS Annex C
o biphasé-L		√	√	√	√	
o rise time	50 - 250	microsec.	80	70	80	
o fall time	50 - 250	microsec.	100	110	80	
o phase deviation : positive	+ (1.0 to 1.2)	radians	+ 1,13	+ 1,19	+ 1,20	
o phase deviation : negative	- (1.0 to 1.2)	radians	- 1,22	- 1,19	- 1,17	
o symmetry measurement	≤ 0.05		+ 0,012	+ 0,016	+ 0,008	
5 - 406 MHz TRANSMITTED FREQUENCY						Data pages 15, 18 and 21 of E6567-CS Annex C
o nominal value	as specified in C/S T.001 and C/S T.012	MHz	406,0278061	406,0277579	406,0277203	
o short term stability	≤ 2 x 10 ⁻⁹	/100 ms	3,66E-10	1,94E-10	2,75E-10	
o medium term stability . slope	(-1 to +1) x 10 ⁻⁹	/minute	2,20E-11	7,55E-11	-1,20E-10	
. residual frequency variation	≤ 3 x 10 ⁻⁹		5,70E-10	7,27E-10	4,26E-10	

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS	COMMENTS
9 - THERMAL SHOCK¹ (30° C change) o Soak temperature : o Measurement temperature : the following parameters are to be met within 15 minutes of beacon and maintained for 2 hours o Transmitted frequency : - nominal value - short term stability - medium term stability : . slope . residual frequency variation o Transmitted power output o Digital message	 as specified in C/S T.001 and C/S T.012 $\leq 2 \times 10^{-9}$ $(-2 \text{ to } +2) \times 10^{-9}$ $\leq 3 \times 10^{-9}$ 35 - 39 must be corect	°C °C MHz /100 ms /minute dBm √	 Tsoak = 23 TMeas = -10 406,027749 / 406,027779 < 3,1E-10 -1,5E-09 / -2E-12 < 1,1E-9 35,5 / 35,8 √	Data and graphs pages 24 to 31 of E6567-CS Annex C

1 Attach graphs depicting test results.

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min.} -20°C (±3)	T _{amb.} 22°C (±3)	T _{max.} 55°C (±3)	
1 - POWER OUTPUT						
o transmitter power output	35 - 39	dBm	35,9	36,3	35,9	Graphs p, 17, 20 and 23 Graphs pages 11 to 13 of E6567-CS Annex D
o Power output rise time	< 5	ms	0,05	0,06	0,05	
o power output 1 ms before burst	< -10 dBm	√ *	√	√	√	
2 - DIGITAL MESSAGE						
	Bits number					Data and graphs pages 15 to 23 of E6567-CS Annex D
o bit sync	1-15	15 bits "1"	√	√	√	
o frame sync	16-24	9 bits (000101111)	√	√	√	
o format flag	25	1 bit	√	1	1	
o protocol flag	26	1 bit	√	0	0	
o identification/position code	27-85	59 bits	√	√	√	
o BCH code	86-106	21 bits	√	√	√	
o emerg. code/nat. use/supplem. data	107-112	6 bits	data bits	110101	110101	
o additional data/BCH (if applicable)	113-144	32 bits	√	√	√	
o position error (if applicable)	< 5	km	0,076 km	0,076 km	0,076 km	

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min.} -20°C (±3)	T _{amb.} 22°C (±3)	T _{max.} 55°C (±3)	
3 - DIGITAL MESSAGE GENERATOR						Data and graphs pages 15 to 23
o repetition rate T _R :						of E6567-CS Annex D
average T _R =	48,5 - 51,5	seconds	50,11	50,11	50,11	
minimum T _R =	47,5≤T _R ≤48,0	seconds	48,00	48,00	48,00	
maximum T _R =	52,0≤T _R ≤52,5	seconds	52,01	52,01	52,01	
standard deviation =	0,5 - 2,0		1,56	1,56	1,56	
o bit rate						
minimum f _b =	396	bits/sec.	399,77	399,76	399,74	
maximum f _b =	404	bits/sec.	399,81	399,82	399,80	
o total transmission time :						
short message =	435.6 - 444.4	ms				
long message =	514.8 - 525.2	ms	520,39	520,34	520,33	
o unmodulated carrier						
minimum T ₁ =	158,4	ms	159,85	159,81	159,77	
maximum T ₁ =	161,6	ms	159,87	159,82	159,79	
o first burst delay	> 47,5	seconds	> 50	> 50	> 50	

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS			COMMENTS
			T _{min.} -20°C (±3)	T _{amb.} 22°C (±3)	T _{max.} 55°C (±3)	
4 - MODULATION						Data and graphs pages 15 to 23 of E6567-CS Annex D
o biphasé-L		√	√	√	√	
o rise time	50 - 250	microsec.	60	80	80	
o fall time	50 - 250	microsec.	110	110	90	
o phase deviation : positive	+ (1.0 to 1.2)	radians	+ 1,12	+ 1,13	+ 1,18	
o phase deviation : negative	- (1.0 to 1.2)	radians	- 1,16	- 1,20	- 1,18	
o symmetry measurement	≤ 0.05		4,01E-06	+ 0,0201	+ 0,0120	
5 - 406 MHz TRANSMITTED FREQUENCY						Data pages 15, 18 and 21 of E6567-CS Annex D
o nominal value	as specified in C/S T.001 and C/S T.012	MHz	406,0278010	406,0277529	406,0277156	
o short term stability	≤ 2 x 10 ⁻⁹	/100 ms	3,29E-10	2,34E-10	2,53E-10	
o medium term stability . slope	(-1 to +1) x 10 ⁻⁹	/minute	-5,16E-12	3,32E-11	-2,28E-10	
. residual frequency variation	≤ 3 x 10 ⁻⁹		7,83E-10	9,36E-10	5,14E-10	

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9 - THERMAL SHOCK¹ (30° C change) o Soak temperature : o Measurement temperature : the following parameters are to be met within 15 minutes of beacon and maintained for 2 hours o Transmitted frequency : - nominal value - short term stability - medium term stability : . slope . residual frequency variation o Transmitted power output o Digital message	 as specified in C/S T.001 and C/S T.012 $\leq 2 \times 10^{-9}$ $(-2 \text{ to } +2) \times 10^{-9}$ $\leq 3 \times 10^{-9}$ 35 - 39 must be corect	 °C °C MHz /100 ms /minute dBm √	 Tsoak = 23 TMeas = -10 406,027772 / 406,027798 < 4,00E-10 < 1,4E-09 < 1,2E-9 36,3 / 36,5 √	Data and graphs pages 24 to 31 of E6567-CS Annex D

1 Attach graphs depicting test results.

PARAMÈTRES TO BE MEASURED DURING TESTS	RANGE OF SPECIFICATION	UNITS	TEST RESULTS	COMMENTS
10 - OPERATING LIFETIME AT MINIMUM TEMPERATURE¹ o Duration o Transmitted frequency : - nominal value - short term stability - medium term stability . slope . residual frequency variation o Transmitted power output o Digital message	 > 24 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	 hours MHz /100 ms /minute dBm √	 24 hours for 406 MHz and around 82 hours (97 hrs - 14,86 hrs) for 121,5/243 MHz 406,027762 / 406,027779 < 5E-10 -8E-10 / 1E-10 < 2E-9 36,2 / 36,4 √	 Data and graphs pages 32 to 45 of E6567-CS Annex D
14 - SATELLITE QUALITATIVE TESTS² (results provided)	15 Hex ID provided by LUT and position within 5 km 80% of time	√	√	Table F-A7 page 11 of E6567-CS Annex D

1 Attach graphs depicting test results.

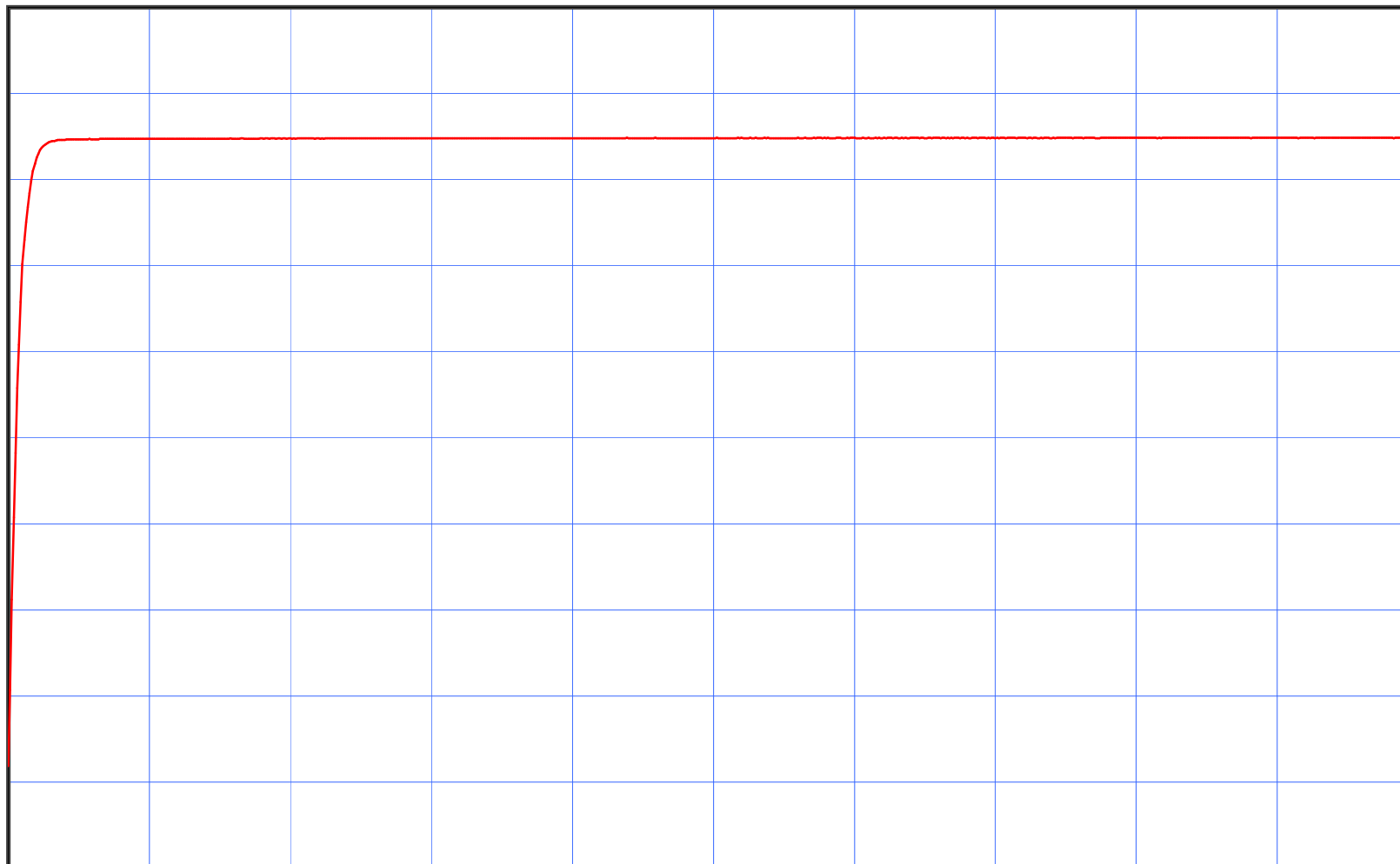
2 Attach a satellite qualitative test summary report (Appendix A to Annex F) for each test configuration.

TRANSMITTER OUTPUT POWER RISE TIME TEST RESULT ON
Ameri-King Corp. ELT & PLB
AK-451 ()Series ELT (AF)(AP)(S) & PLB
N° C/S 09 (But n°1) (Ultralife U10014)
(1 ms before 10 % of the burst)
at -20° C, 22° C and 55° C

CF : 406,028 MHz

Output Power Risetime (1 ms before the burst) : 26,87 dBm

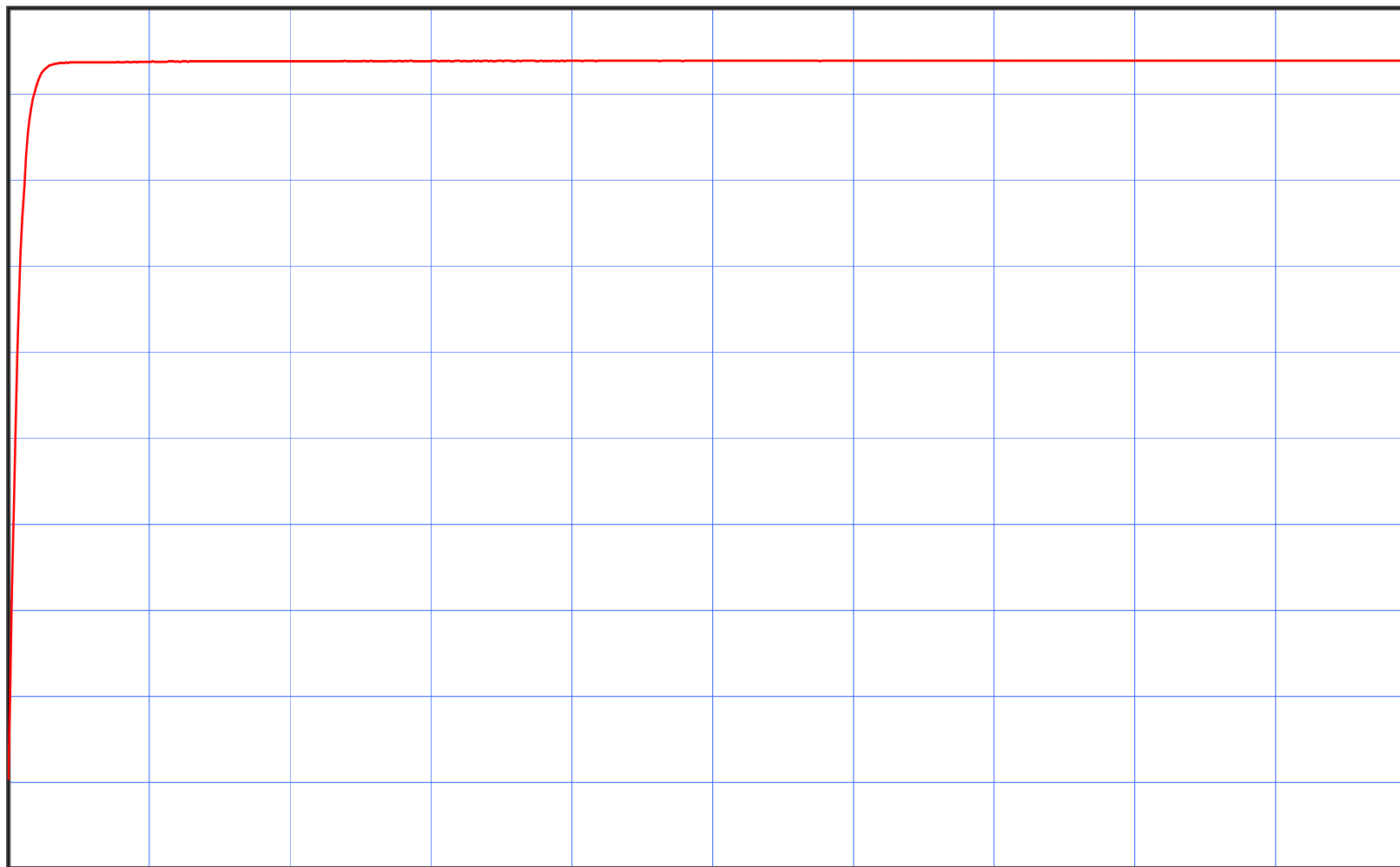
SP : 0 KHz



Rb : 1 KHz

10 dB/div.

St : 0,05 S

Output Power Risetime at 22°C**CF : 406,028 MHz****Output Power Risetime (1 ms before the burst) : 35,04 dBm****SP : 0 KHz****Rb : 1 KHz****10 dB/div.****St : 0,05 S**

Output Power Risetime at 55°C

CF : 406,028 MHz

Output Power Risetime (1 ms before the burst) : 34,71 dBm

SP : 0 KHz



Rb : 1 KHz

10 dB/div.

St : 0,05 S

**CERTIFICATION TEST RESULTS ON
Ameri-King Corp. ELT & PLB
AK-451 ()Series ELT (AF)(AP)(S) & PLB
N° C/S 09 (But n°1) (Ultralife U10014)
at -20° C, 22° C and 55° C**

Date of test : 21-juin-06

Manufacturer : Ameri-King

Beacon Type : AK-451 (J)Series (AF)(AP)(S)(PLB)

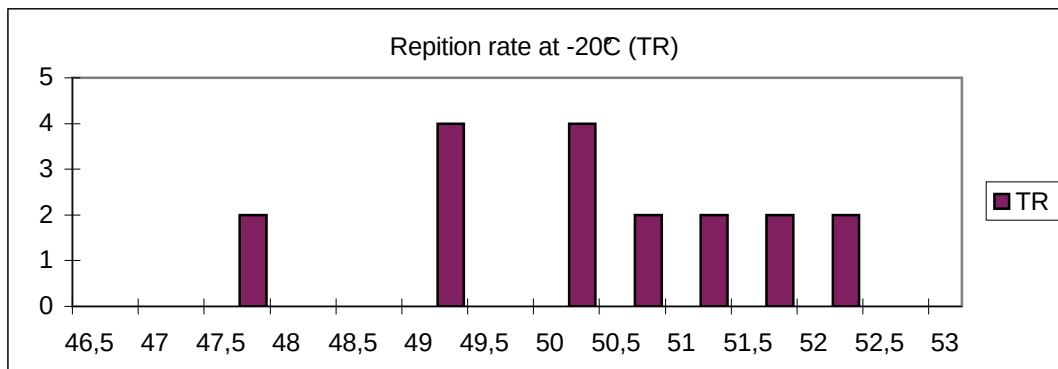
Number : C/S 09 (But n° 1)

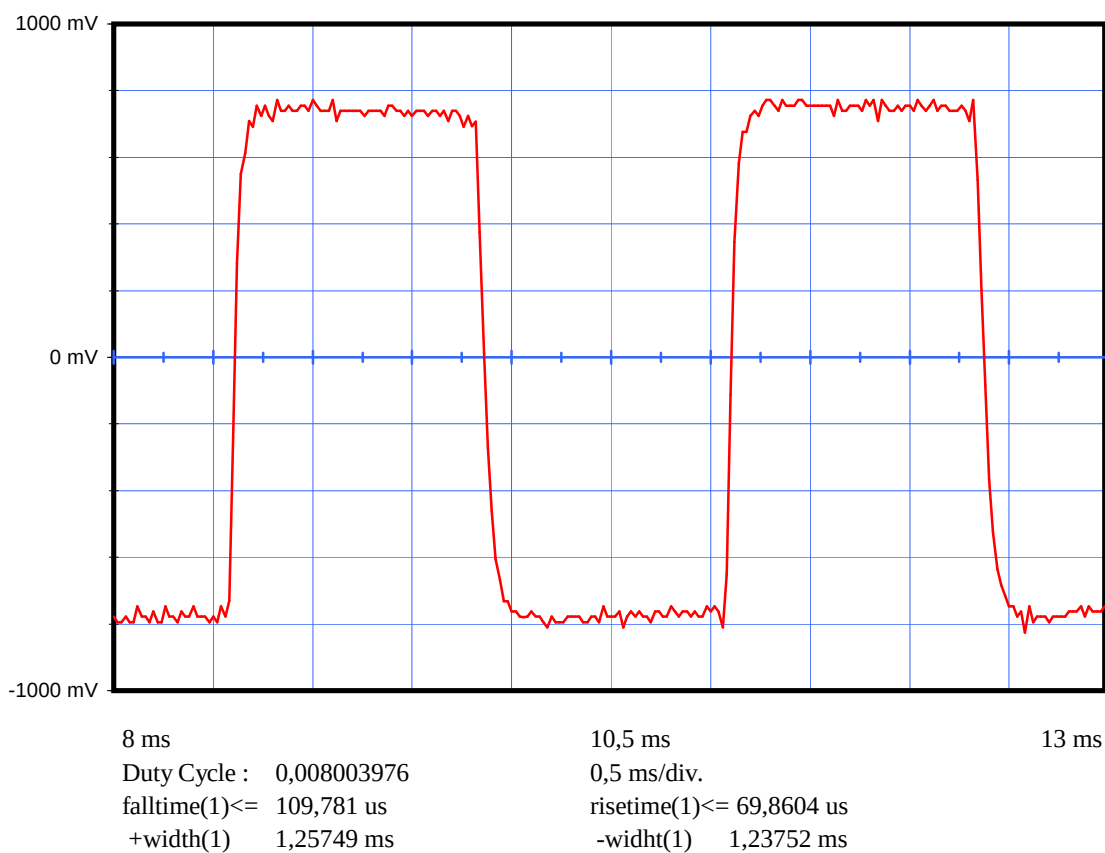
Message

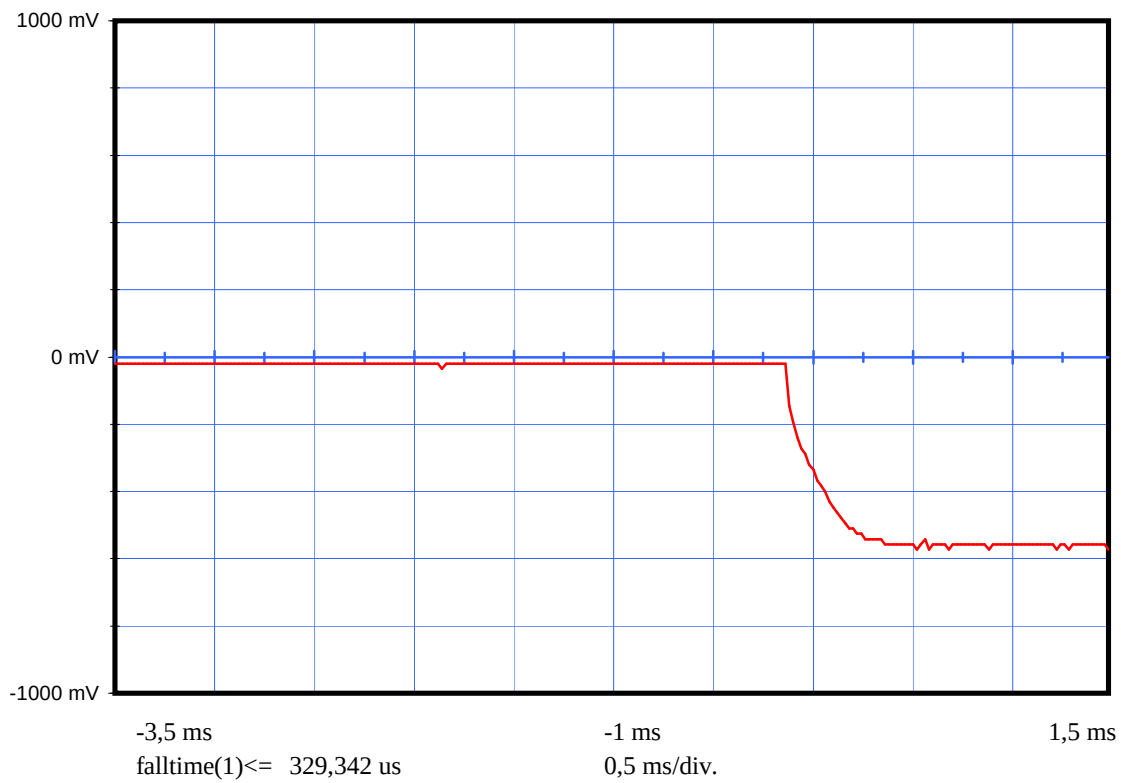
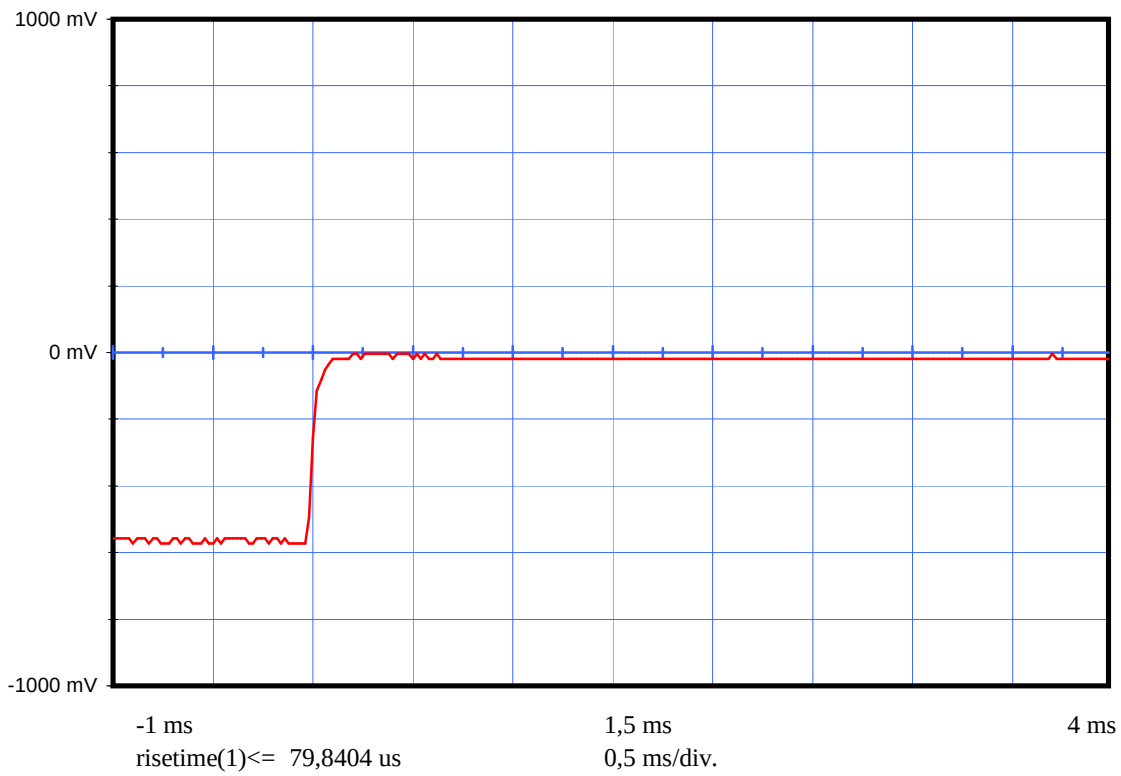
Message received		FFFE2FCC962000C6007CEDFCEC4570017F76
Format Flag	25	1
Protocol flag	26	1
Ident./Position code	27-85	992C40018C00F9D
Country Code/Country	27-36	201 / ALBANIA
Protocol Code : U/Std-Nat	37-39/37-40	011
Protocol Code Used	37-39/37-40	Serial User
Identification Data	40-85/41-64/41-58	0
Identification Used		::50:9W
Calculated BCH1	25-85	17F3B1
Encoded BCH1	86-106	17F3B1
Homing	84-85	01
Em.cod/nat.use/supp.data	107-112	000101
Emer cod / Encod pos data	107	0
Delta Pos	108	0
Calculated BCH2	107-132	F76
Encoded BCH2	133-144	F76
Latitude position		North 43° 32' 0"
Longitude position		East 1° 28' 0"
Delta position		3,055 km

Electrical and other parameters

CW preamble	ms	158,4 <	< 161,6	159,86
Total transmission time	ms	514,8 <	< 525,2	520,39
Modulation frequency	Hz	396 <	< 404	399,78
Phase deviation : total	rd		<=2,40	2,25
Phase deviation : positive	rd	1,00 <	< 1,20	1,06
Phase deviation : negative	rd	-1,20 <	< -1,00	-1,20
Symmetry measurement	%		<=5 %	0,80
Nominal frequency : F2	Hz			406027790,67
Short term2				1,61E-10
Short term3				3,57E-10
Slope				5,59E-11
Residual				5,28E-10
406 MHz power output	dBm			36,3
Homing frequency	MHz			121,50
121,5 MHz power output	dBm			22,3
Soak temperature	°C			-19,5
Extra feature				G-Switch







Certification Test at 22°C

Date of test : 22-juin-2006

Manufacturer : Ameri-King

Beacon Type : AK-451 (J)Series (AF)(AP)(S)(PLB)

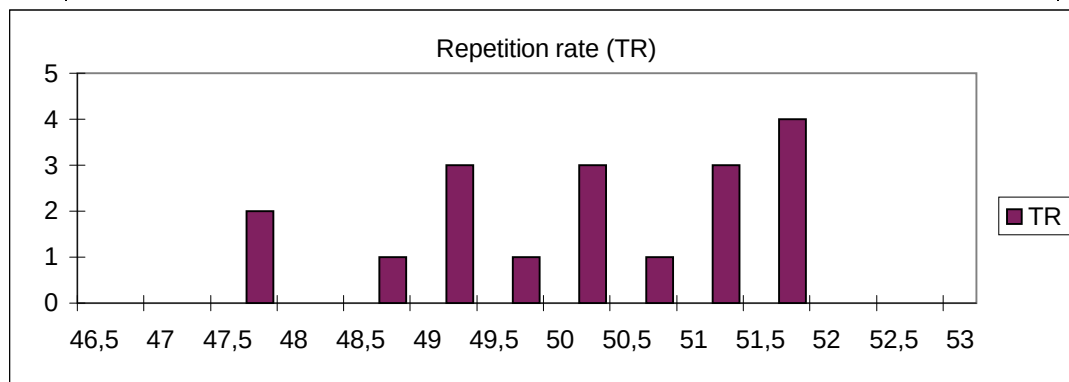
Number : C/S 09 (But n° 1)

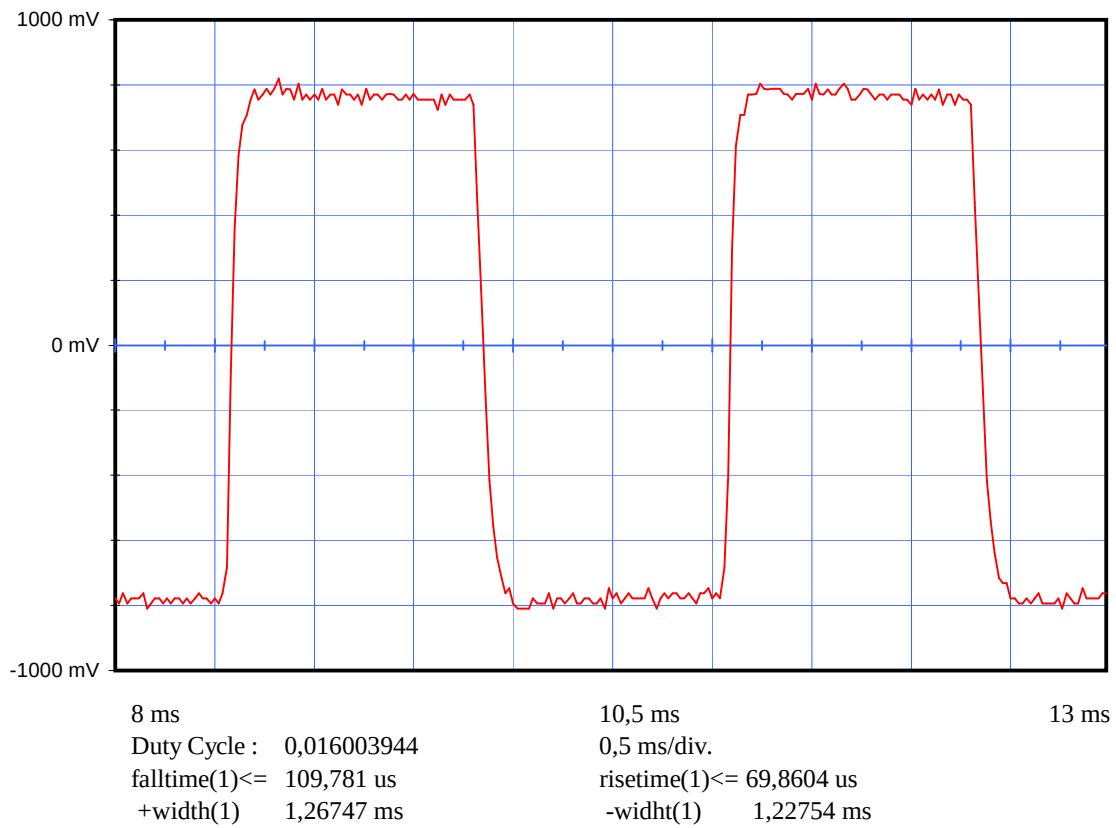
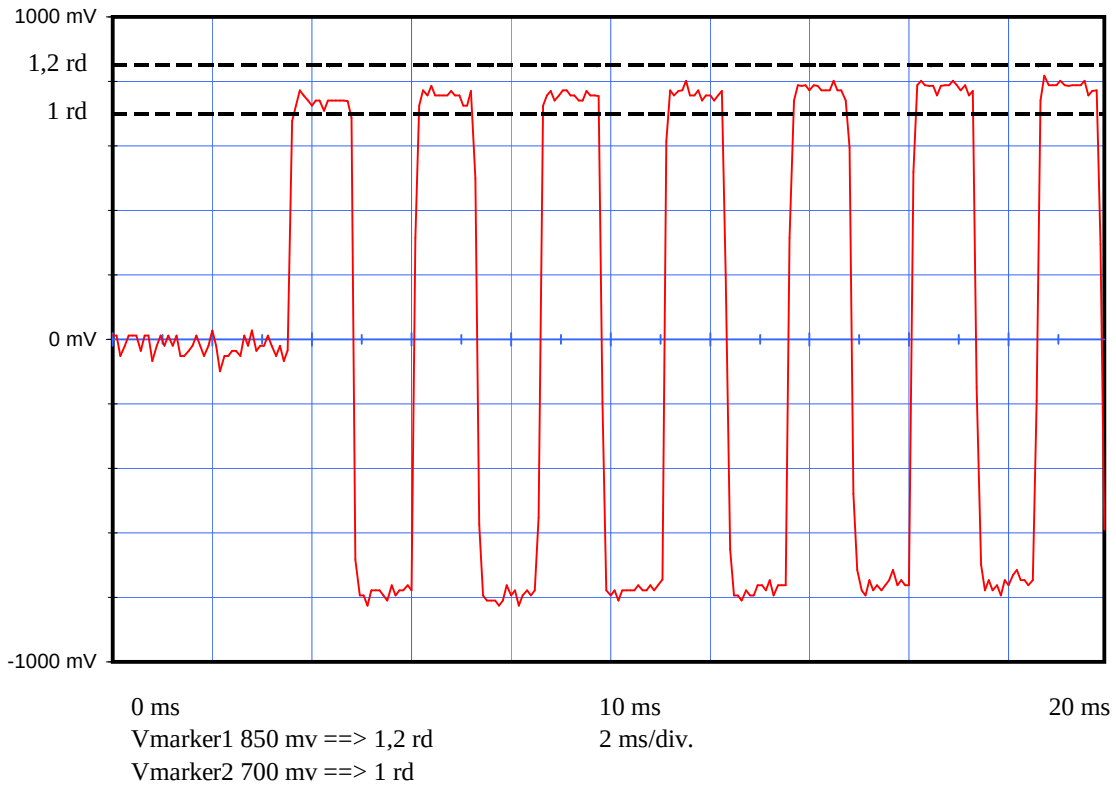
Message

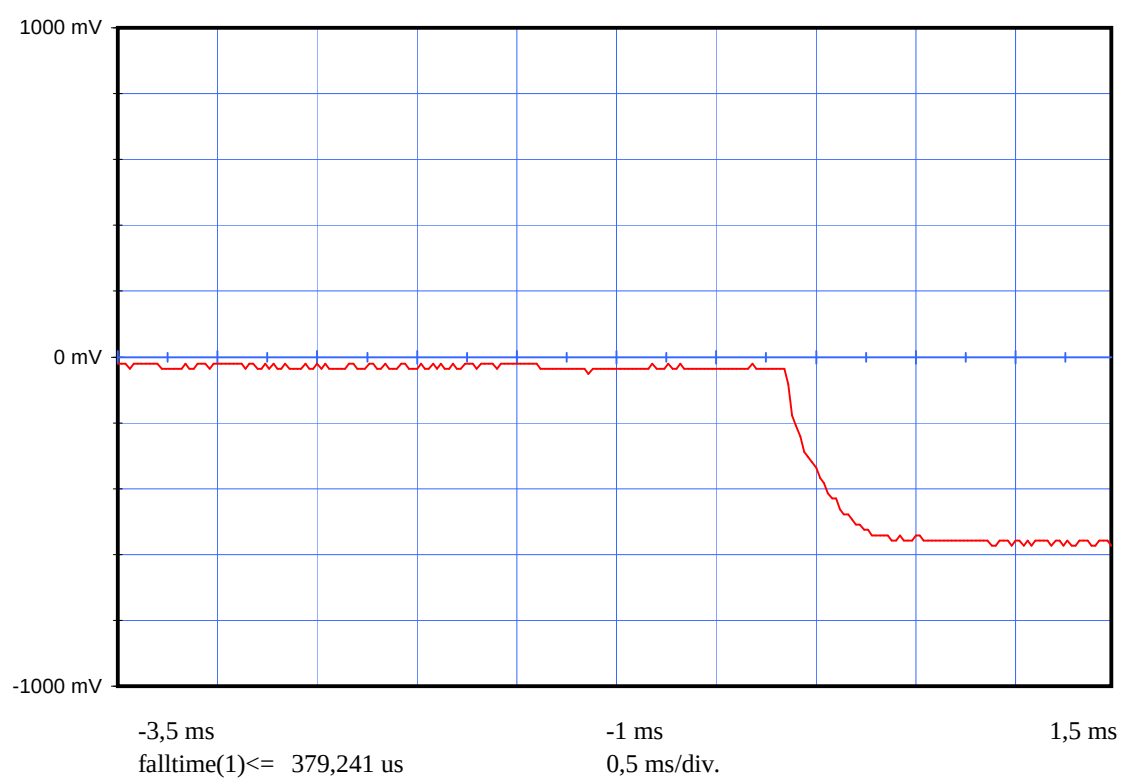
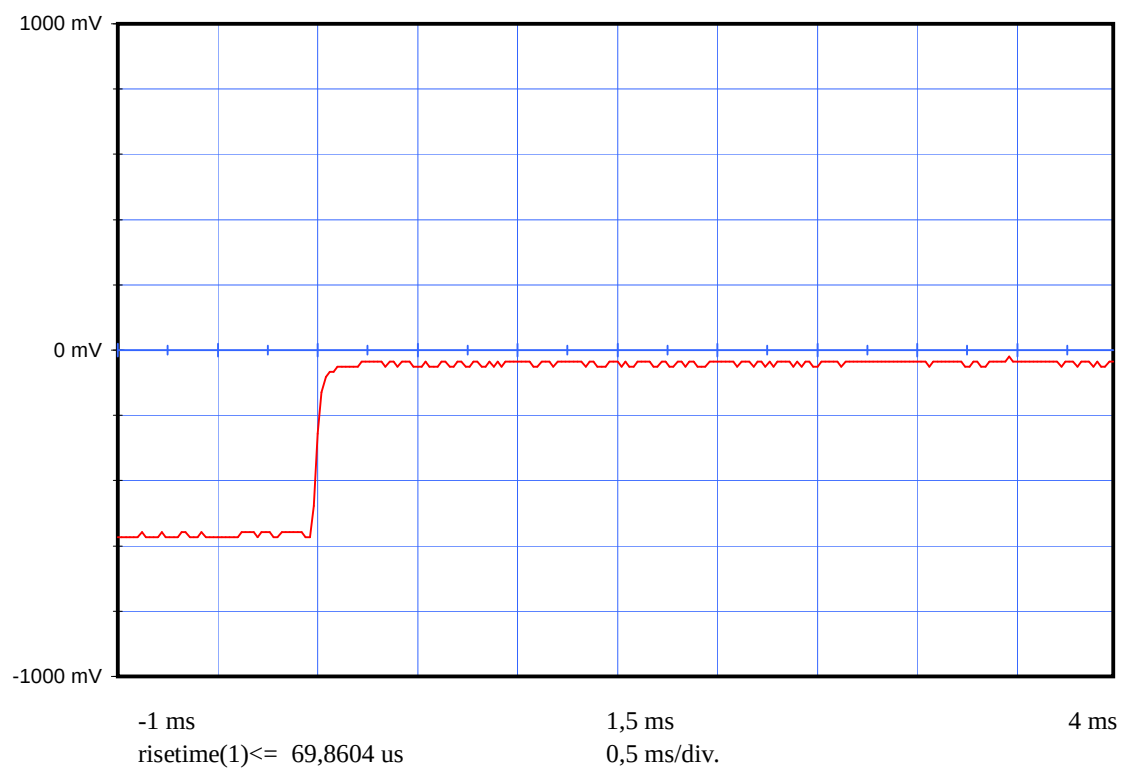
Message received		FFFE2FCC962000C6007CEDFCEC4570017F76
Format Flag	25	1
Protocol flag	26	1
Ident./Position code	27-85	992C40018C00F9D
Country Code/Country	27-36	201 / ALBANIA
Protocol Code : U/Std-Nat	37-39/37-40	011
Protocol Code Used	37-39/37-40	Serial User
Identification Data	40-85/41-64/41-58	0
Identification Used		::5O:9W
Calculated BCH1	25-85	17F3B1
Encoded BCH1	86-106	17F3B1
Homing	84-85	01
Em.cod/nat.use/supp.data	107-112	000101
Emer cod / Encod pos data	107	0
Delta Pos	108	0
Calculated BCH2	107-132	F76
Encoded BCH2	133-144	F76
Latitude position		North 43° 32' 0"
Longitude position		East 1° 28' 0"
Delta position		3,055 km

Electrical and other parameters

CW preamble	ms	158,4 <	< 161,6	159,84
Total transmission time	ms	514,8 <	< 525,2	520,36
Modulation frequency	Hz	396 <	< 404	399,80
Phase deviation : total	rd		<=2,40	2,30
Phase deviation : positive	rd	1,00 <	< 1,20	1,10
Phase deviation : negative	rd	-1,20 <	< -1,00	-1,20
Symmetry measurement	%		<=5 %	1,60
Nominal frequency : F2	Hz			406027746,15
Short term2				2,56E-10
Short term3				3,80E-10
Slope				-6,03E-11
Residual				4,99E-10
406 MHz power output	dBm			36,1
Homing frequency	MHz			121,50
121,5 MHz power output	dBm			22,9
Soak temperature	°C			22,2
Extra feature				G-Switch







Manufacturer : Ameri-King

Beacon Type : AK-451 ()Series (AF)(AP)(S)(PLB)

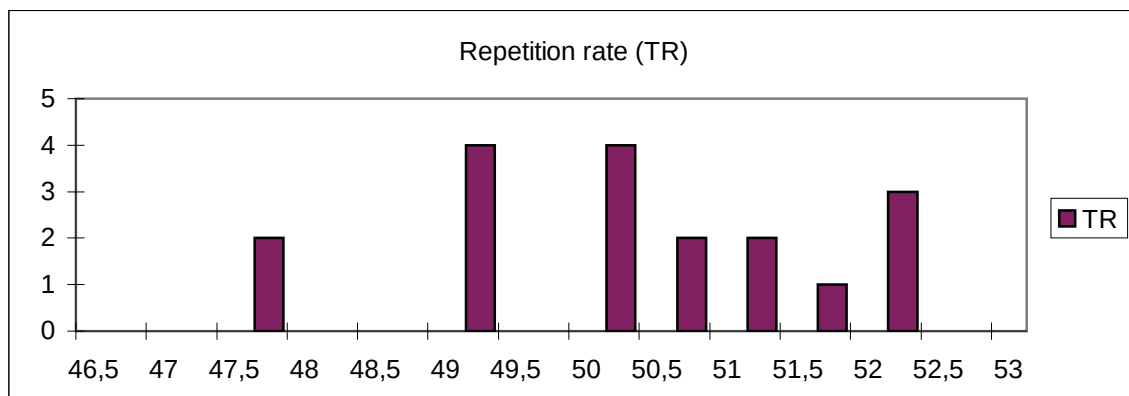
Number : C/S 09 (But n° 1)

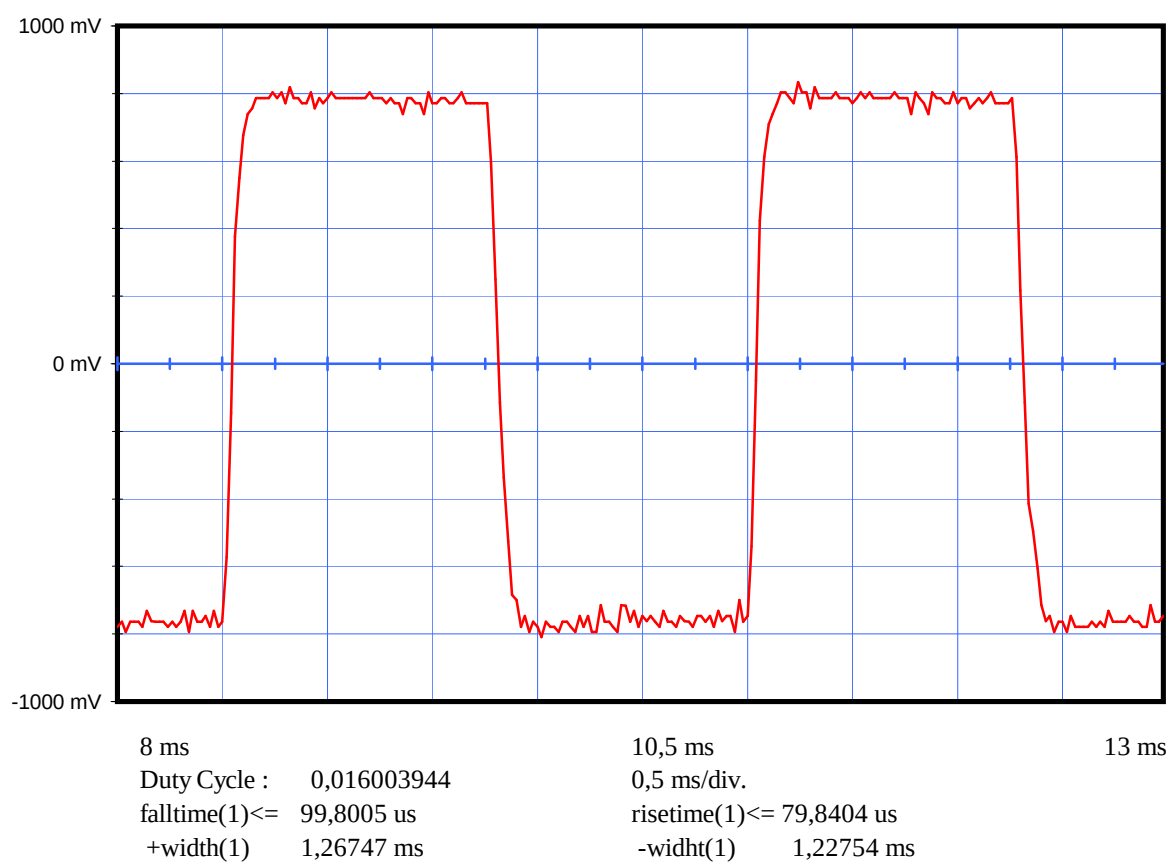
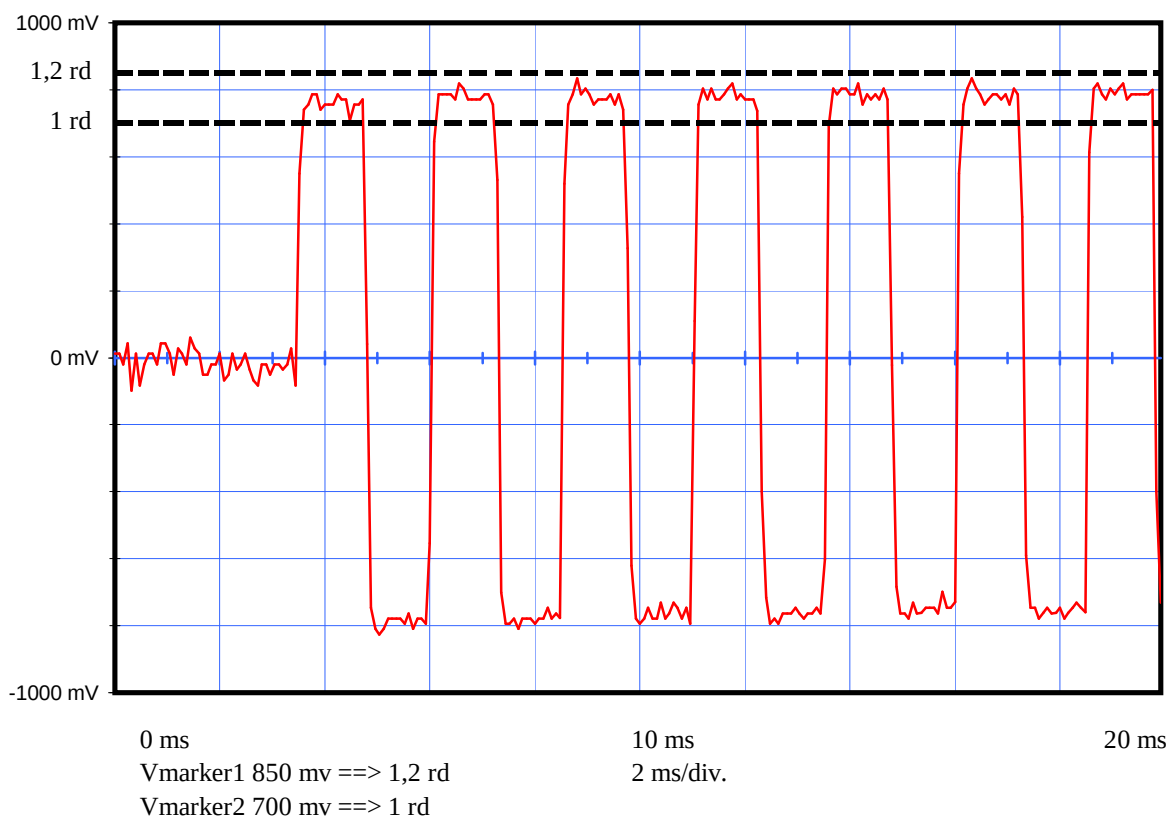
Message

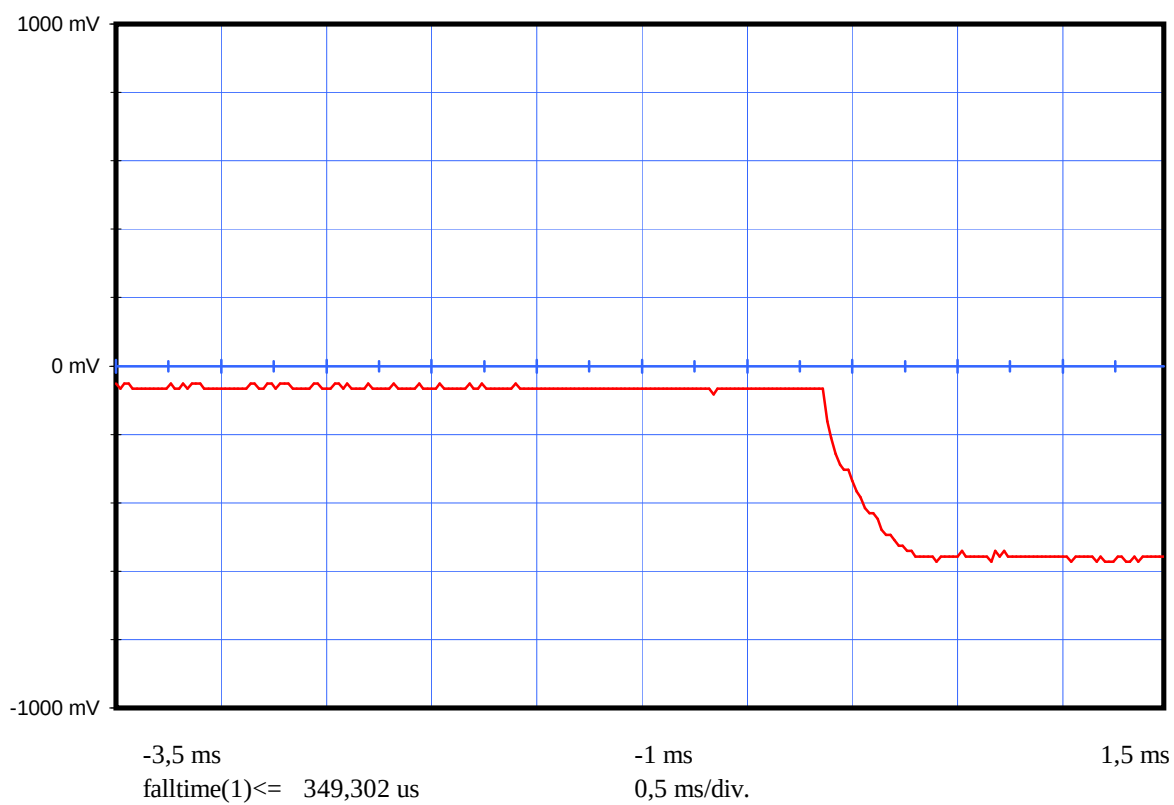
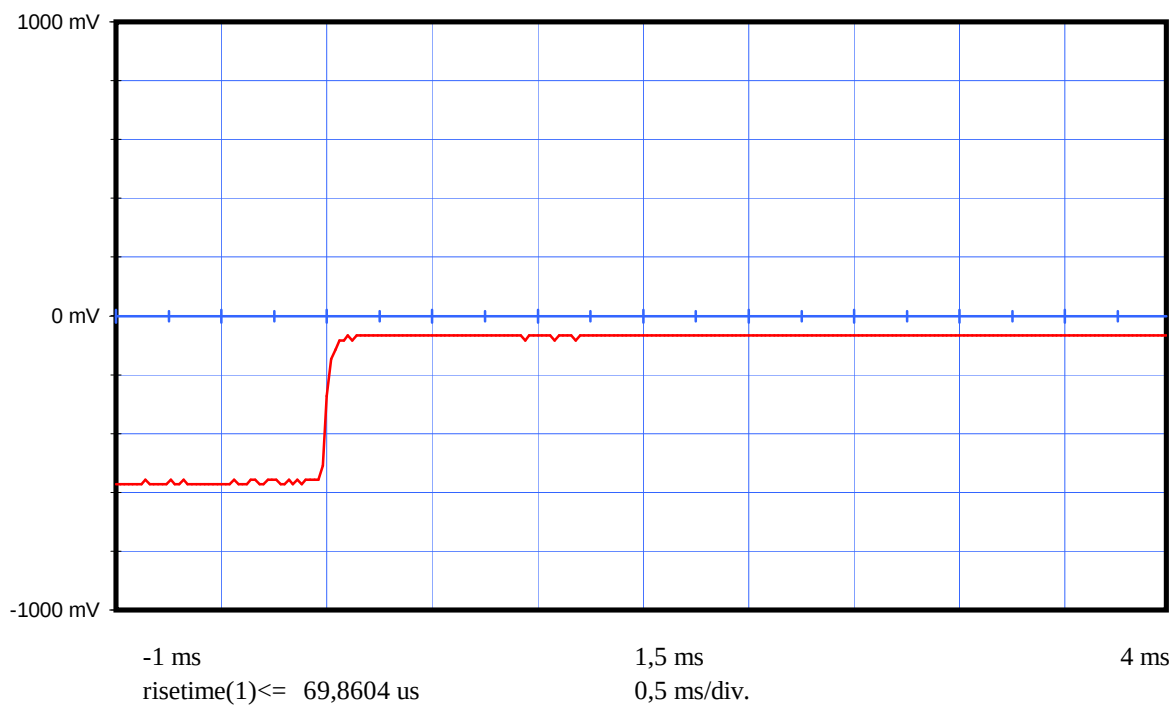
Message received		FFFE2FCC962000C6007CEDFCEC4570017F76
Format Flag	25	1
Protocol flag	26	1
Ident./Position code	27-85	992C40018C00F9D
Country Code/Country	27-36	201 / ALBANIA
Protocol Code : U/Std-Nat	37-39/37-40	011
Protocol Code Used	37-39/37-40	Serial User
Identification Data	40-85/41-64/41-58	0
Identification Used		::5O:9W
Calculated BCH1	25-85	17F3B1
Encoded BCH1	86-106	17F3B1
Homing	84-85	01
Em.cod/nat.use/supp.data	107-112	000101
Emer cod / Encod pos data	107	0
Delta Pos	108	0
Calculated BCH2	107-132	F76
Encoded BCH2	133-144	F76
Latitude position		North 43° 32' 0"
Longitude position		East 1° 28' 0"
Delta position		3,055 km

Electrical and other parameters

CW preamble	ms	158,4 <	< 161,6	159,80
Total transmission time	ms	514,8 <	< 525,2	520,34
Modulation frequency	Hz	396 <	< 404	399,77
Phase deviation : total	rd		<=2,40	2,31
Phase deviation : positive	rd	1,00 <	< 1,20	1,15
Phase deviation : negative	rd	-1,20 <	< -1,00	-1,16
Symmetry measurement	%		<=5 %	1,60
Nominal frequency : F2	Hz			406027701,00
Short term2				2,80E-10
Short term3				2,19E-10
Slope				7,72E-10
Residual				3,16E-10
406 MHz power output	dBm			35,7
Homing frequency	MHz			121,50
121,5 MHz power output	dBm			23,3
Soak temperature	°C			55,6
Extra feature				G-Switch







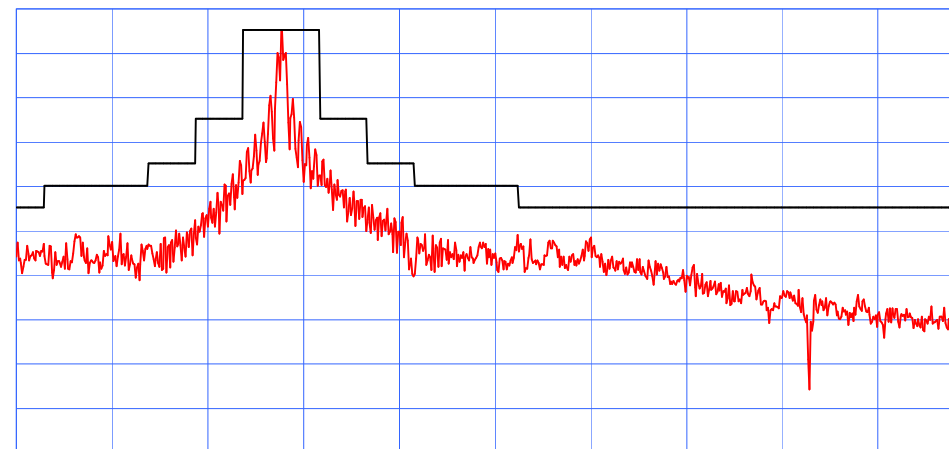
SPURIOUS EMISSIONS RESULTS
Ameri-King Corp. ELT & PLB
AK-451 ()Series ELT (AF)(AP)(S) & PLB
N° C/S 09 (But n°1) (Ultralife U10014)
at -20° C, 22° C and 55° C



Ameri-King Corp.
AK-451 ()Series ELT (AF)(AP)(S) & PLB
C/S 09 (But n°1) (Ultralife U10014)
Certification nominale
406 MHz
-20 °C

CF : 406,05 MHz

SP : 100 KHz



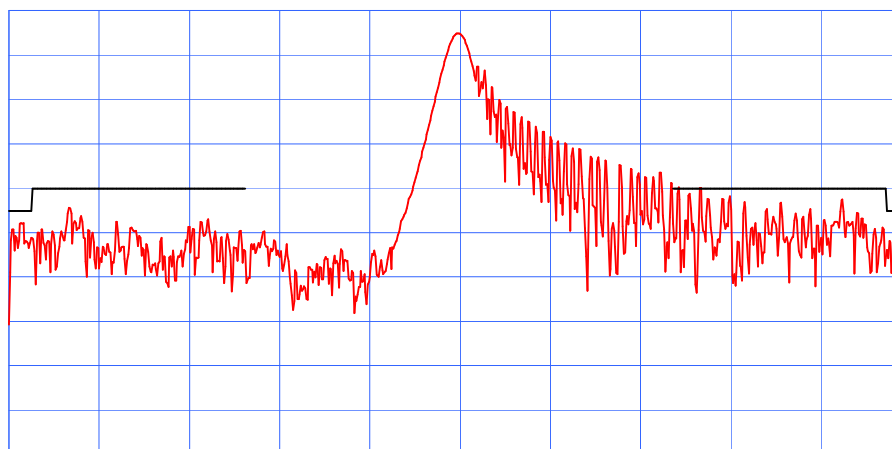
Rb : 0,1 KHz

10 dB/div.

St : 30 S

CF : 406,028 MHz

SP : 50 KHz



Rb : 1 KHz

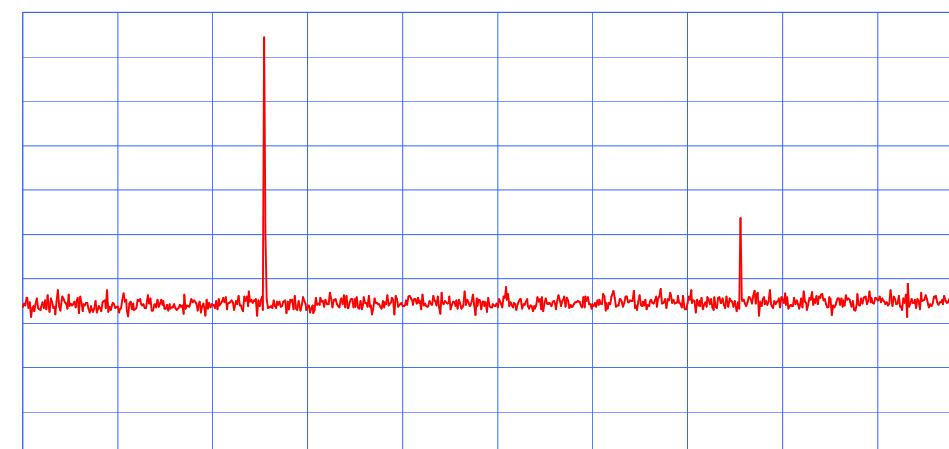
10 dB/div.

St : 0,305 S

CF : 600 MHz

Delta : -40,66 dB

SP : 800000 KHz



Rb : 100 KHz

10 dB/div.

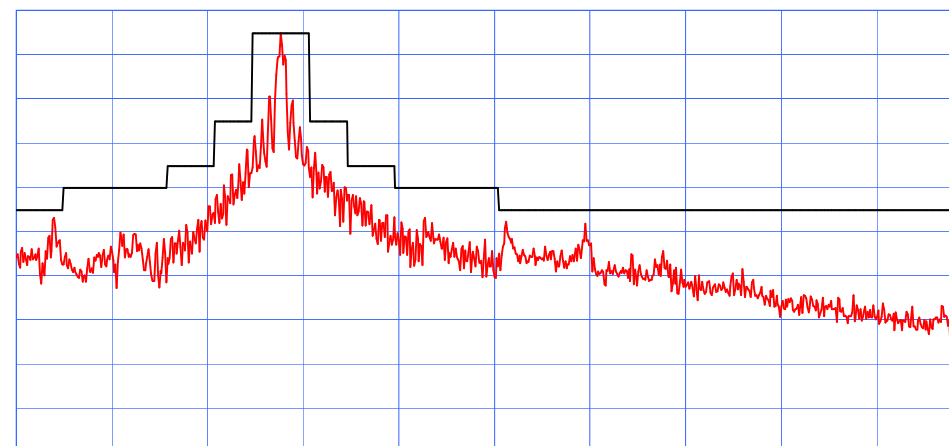
St : 0,24 S



Ameri-King Corp.
AK-451 ()Series ELT (AF)(AP)(S) & PLB
C/S 09 (But n°1) (Ultralife U10014)
Certification nominale
406 MHz
22 °C

CF : 406,05 MHz

SP : 100 KHz



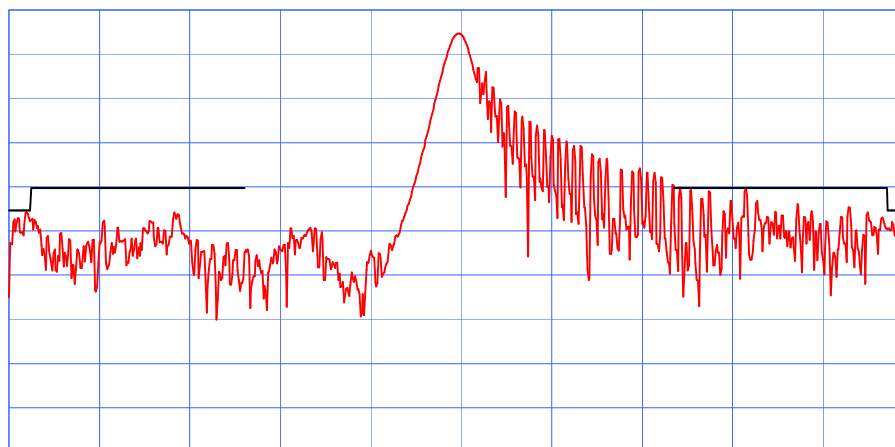
Rb : 0,1 KHz

10 dB/div.

St : 30 S

CF : 406,028 MHz

SP : 50 KHz



Rb : 1 KHz

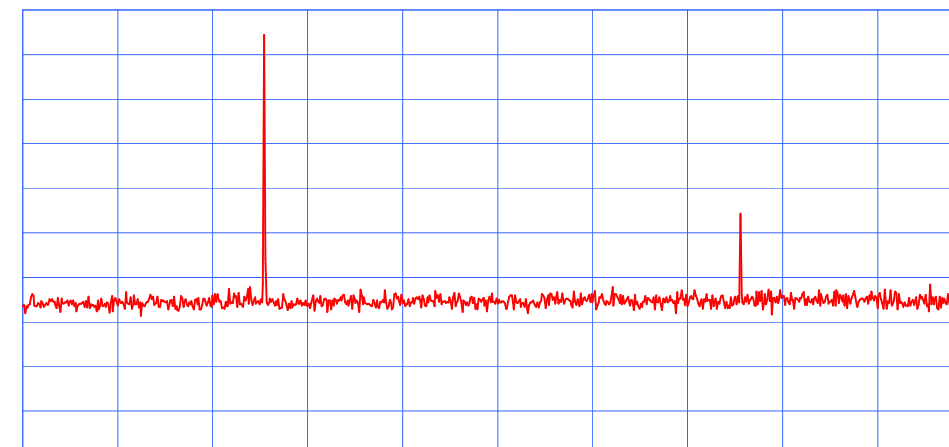
10 dB/div.

St : 0,305 S

CF : 600 MHz

Delta : -40,12 dB

SP : 800000 KHz



Rb : 100 KHz

10 dB/div.

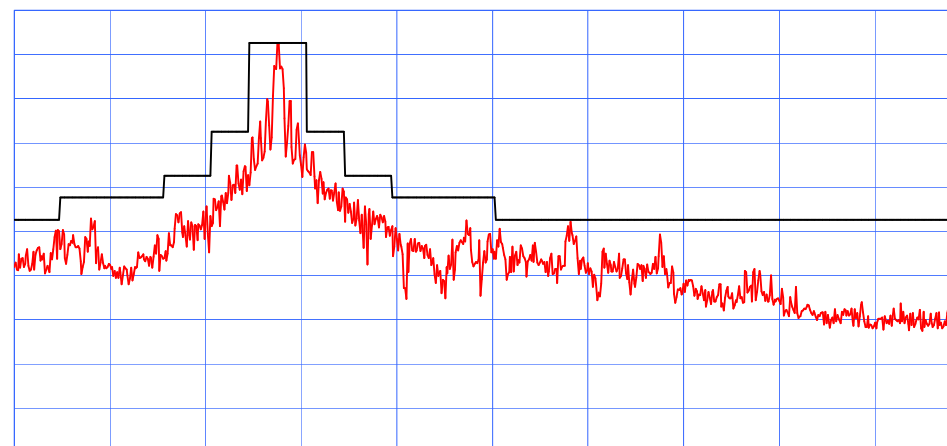
St : 0,24 S



Ameri-King Corp.
AK-451 ()Series ELT (AF)(AP)(S) & PLB
C/S 09 (But n°1) (Ultralife U10014)
Certification nominale
406 MHz
55 °C

CF : 406,05 MHz

SP : 100 KHz



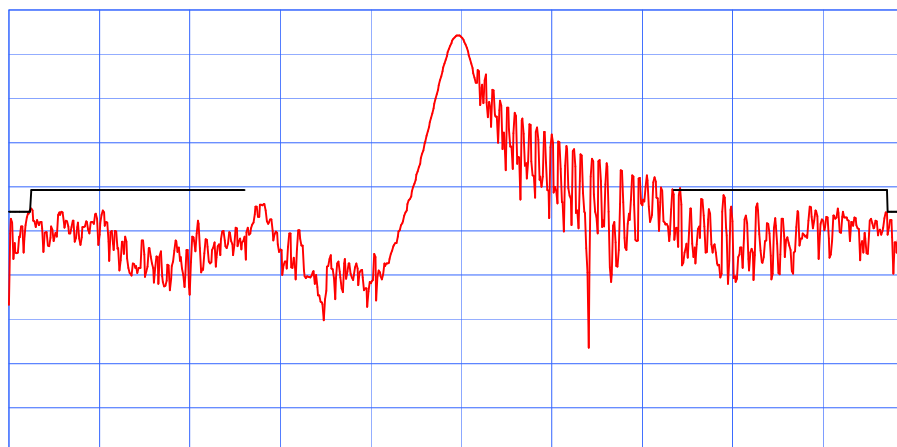
Rb : 0,1 KHz

10 dB/div.

St : 30 S

CF : 406,028 MHz

SP : 50 KHz



Rb : 1 KHz

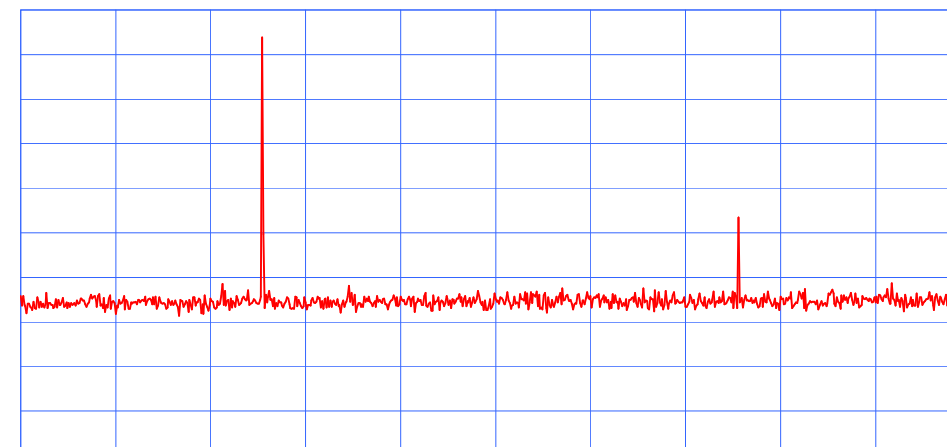
10 dB/div.

St : 0,305 S

CF : 600 MHz

Delta : -40,39 dB

SP : 800000 KHz



Rb : 100 KHz

10 dB/div.

St : 0,24 S

**406 MHz VSWR 3:1 TEST RESULTS ON
Ameri-King Corp. ELT & PLB
AK-451 ()Series ELT (AF)(AP)(S) & PLB
N° C/S 09 (But n°1) (Ultralife U10014)
at -20° C, 22° C and 55° C**

Certification Test VSWR at -20°C

Date of test : 28-juin-06

Manufacturer : Ameri-King

Beacon Type : AK-451 ()Series (AF)(AP)(S)(PLB)

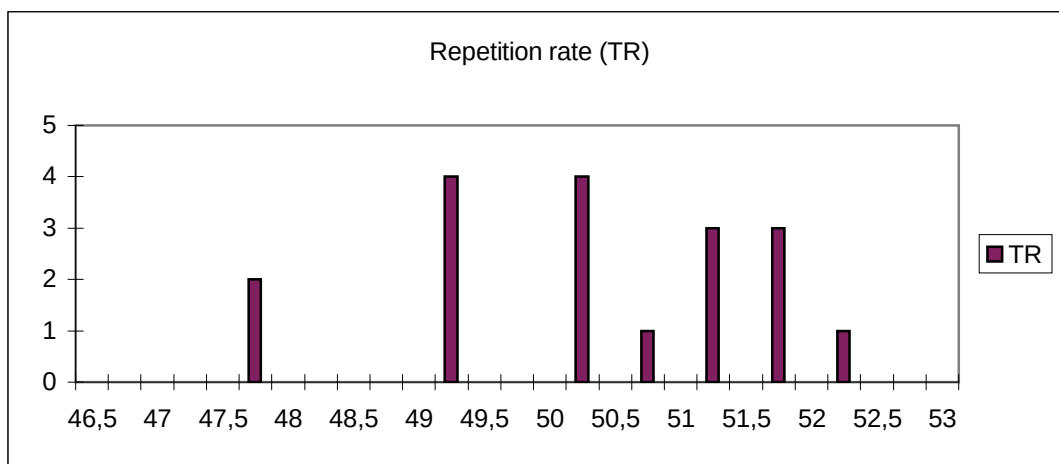
Number : C/S 09 (But n° 1)

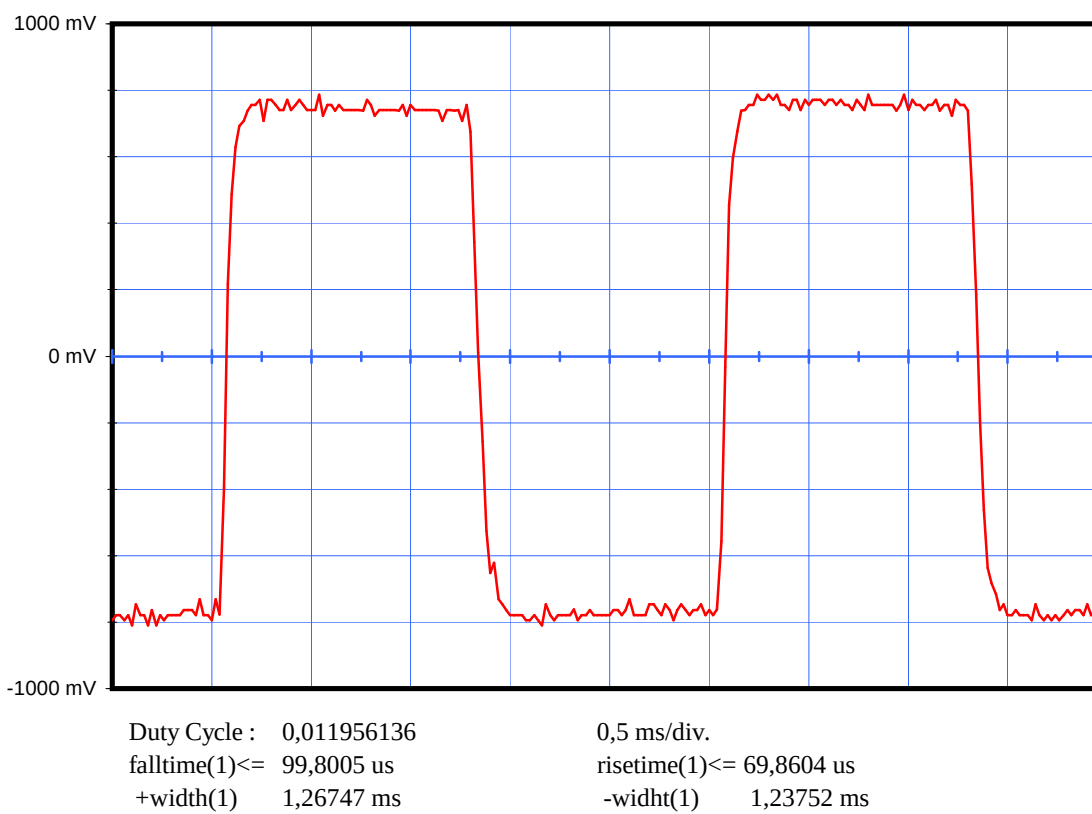
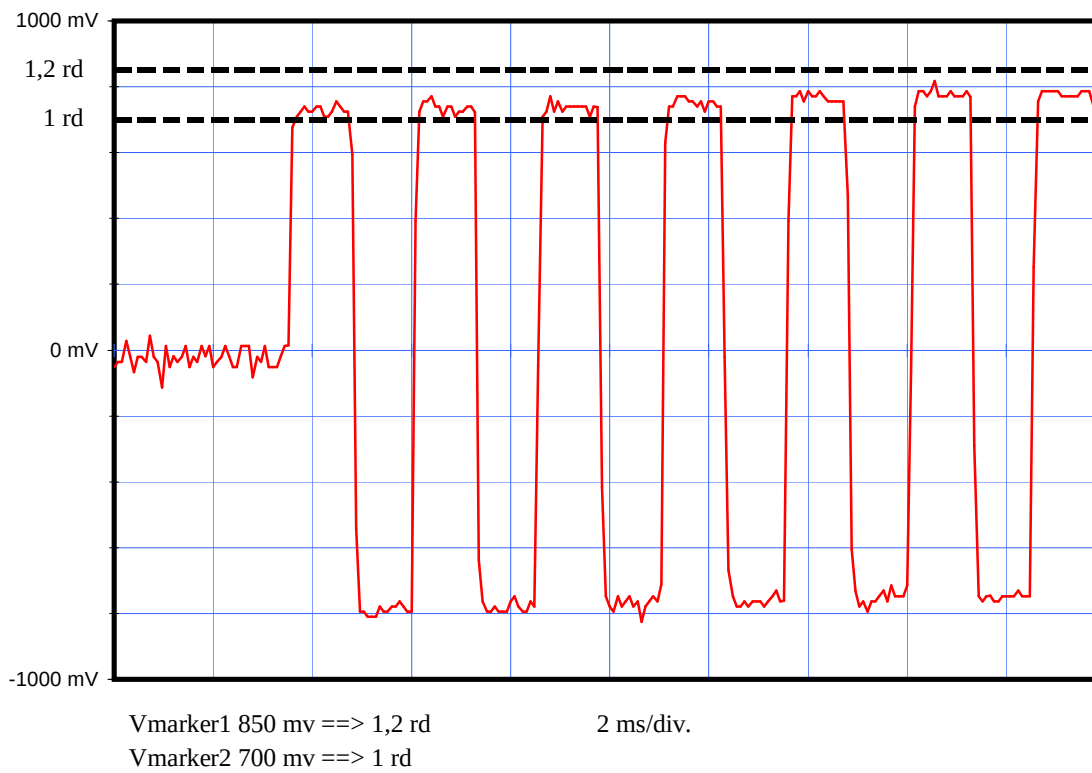
Message

Message received		FFFE2FCC962000C6007CEDFCEC4570017F76
Format Flag	25	1
Protocol flag	26	1
Ident./Position code	27-85	992C40018C00F9D
Country Code/Country	27-36	201 / ALBANIA
Protocol Code : U/Std-Nat	37-39/37-40	011
Protocol Code Used	37-39/37-40	Serial User
Identification Data	40-85/41-64/41-58	0
Identification Used		::50:9W
Calculated BCH1	25-85	17F3B1
Encoded BCH1	86-106	17F3B1
Homing	84-85	01
Em.cod/nat.use/supp.data	107-112	000101
Emer cod / Encod pos data	107	0
Delta Pos	108	0
Calculated BCH2	107-132	F76
Encoded BCH2	147-144	F76
Latitude position		North 43° 32' 0"
Longitude position		East 1° 28' 0"
Delta position		3,055 km

Electrical and other parameters

Rise time Modulation	ms	0,0699
Fall time Modulation	ms	0,0998
Phase deviation : positive	rd 1,00 < < 1,20	1,05
Phase deviation : negative	rd -1,20 < < -1,00	-1,17
Symmetry measurement	% <=5 %	1,20
Nominal frequency : F2	Hz	406027785,89





Certification Test VSWR at 22°C

Date of test : 27 juin 2006

Manufacturer : Ameri-King

Beacon Type : AK-451 ()Series (AF)(AP)(S)(PLB)

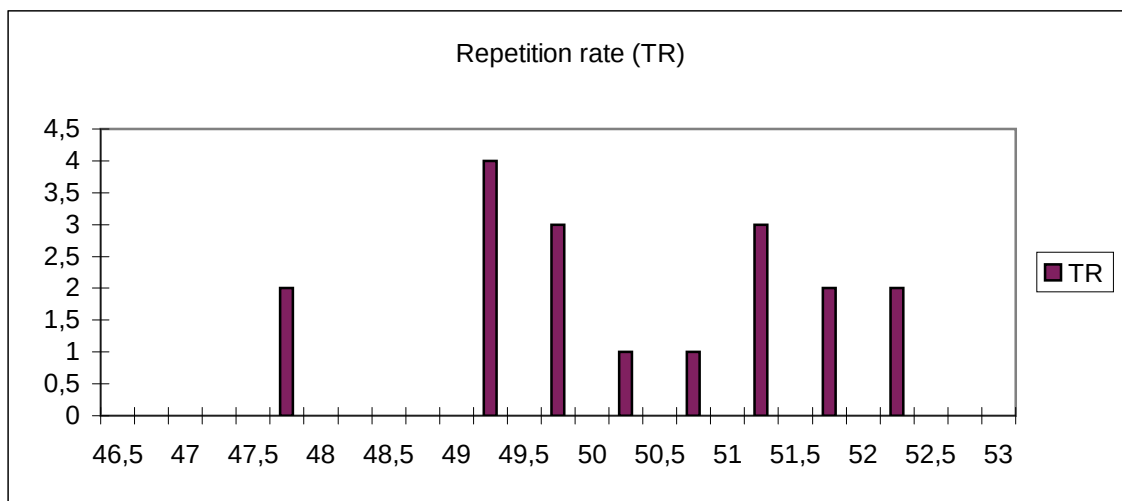
Number : C/S 09 (But n° 1)

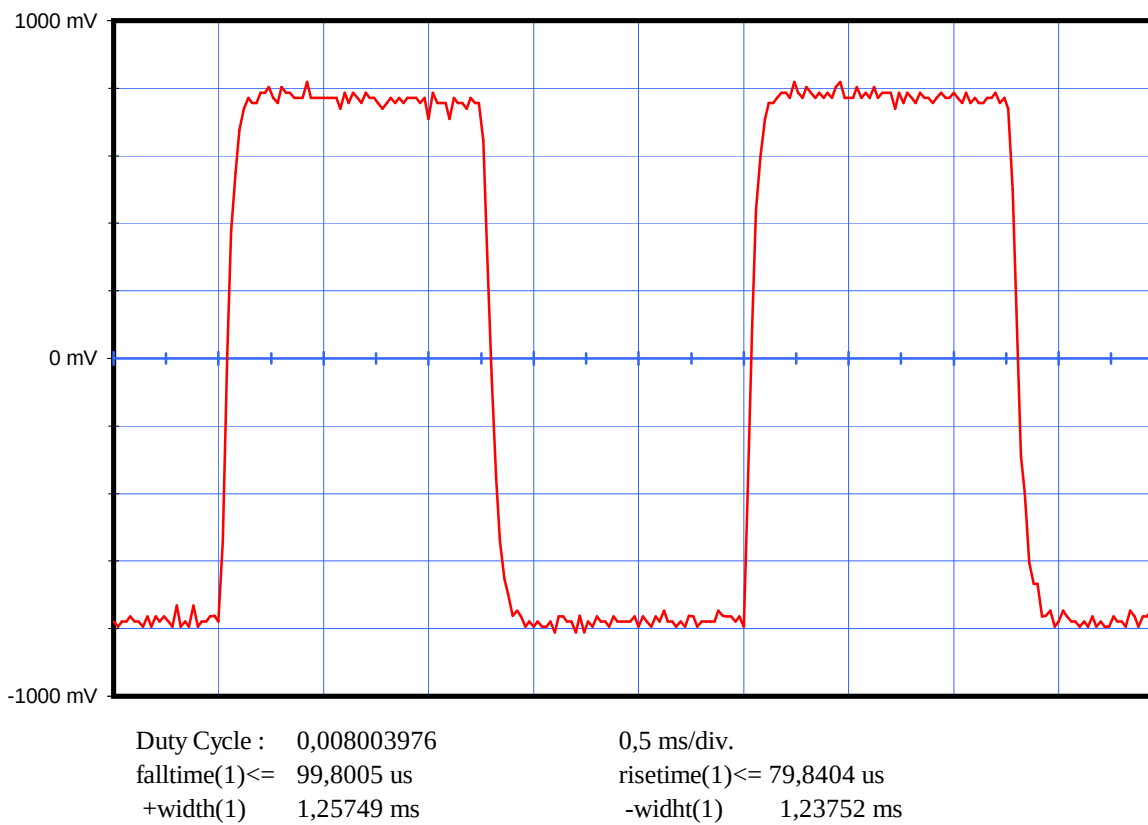
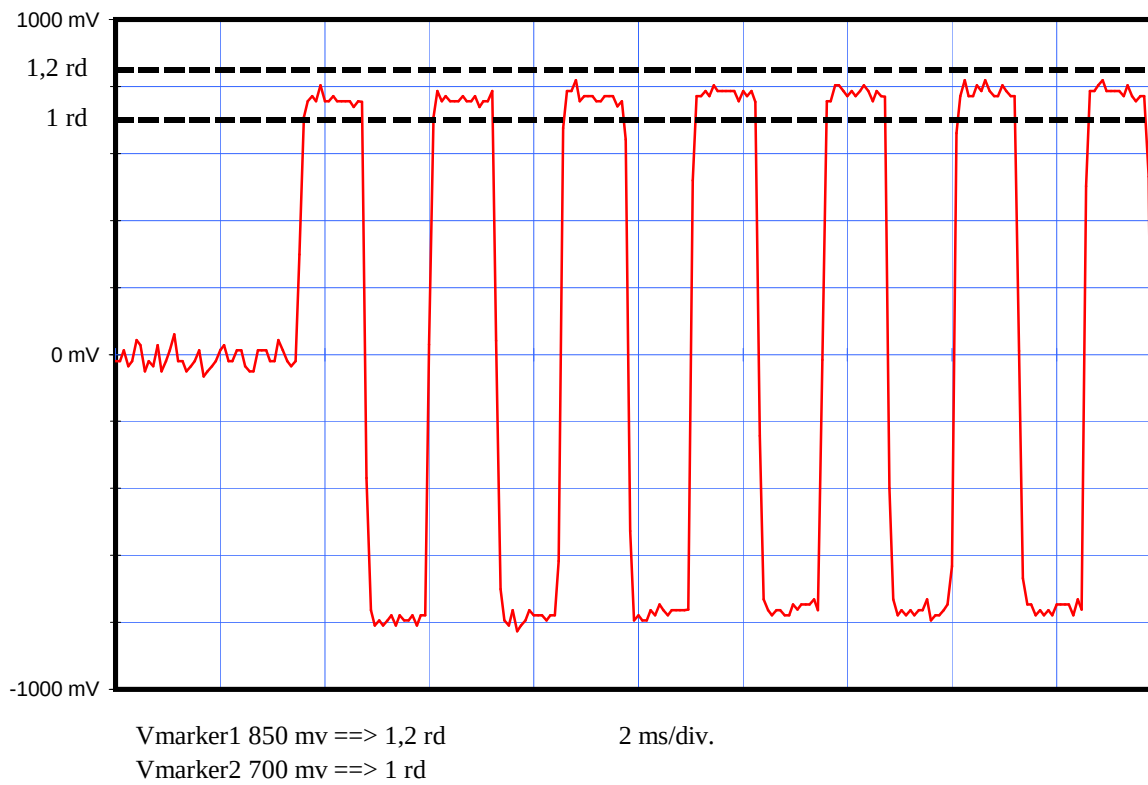
Message

Message received		FFFE2FCC962000C6007CEDFCEC4570017F76
Format Flag	25	1
Protocol flag	26	1
Ident./Position code	27-85	992C40018C00F9D
Country Code/Country	27-36	201 / ALBANIA
Protocol Code : U/Std-Nat	37-39/37-40	011
Protocol Code Used	37-39/37-40	Serial User
Identification Data	40-85/41-64/41-58	0
Identification Used		::5O:9W
Calculated BCH1	25-85	17F3B1
Encoded BCH1	86-106	17F3B1
Homing	84-85	01
Em.cod/nat.use/supp.data	107-112	000101
Emer cod / Encod pos data	107	0
Delta Pos	108	0
Calculated BCH2	107-132	F76
Encoded BCH2	147-144	F76
Latitude position		North 43° 32' 0"
Longitude position		East 1° 28' 0"
Delta position		3,055 km

Electrical and other parameters

Rise time Modulation	ms	0,0798
Fall time Modulation	ms	0,0998
Phase deviation : positive	rd 1,00 < < 1,20	1,17
Phase deviation : negative	rd -1,20 < < -1,00	-1,10
Symmetry measurement	% <=5 %	0,80
Nominal frequency : F2	Hz	406027732,70





Certification Test VSWR at 55°C

Date of test : 28 juin 2006

Manufacturer : Ameri-King

Beacon Type : AK-451 ()Series (AF)(AP)(S)(PLB)

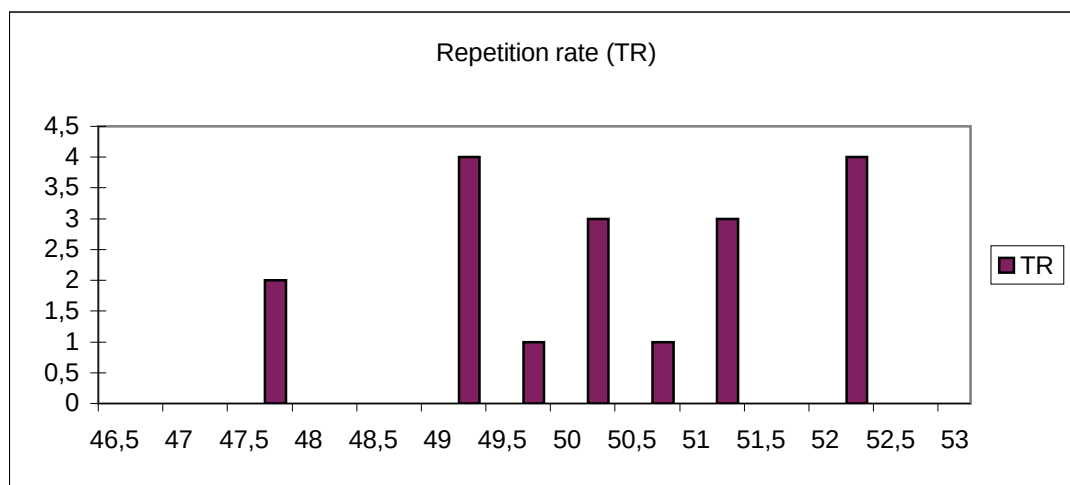
Number : C/S 09 (But n° 1)

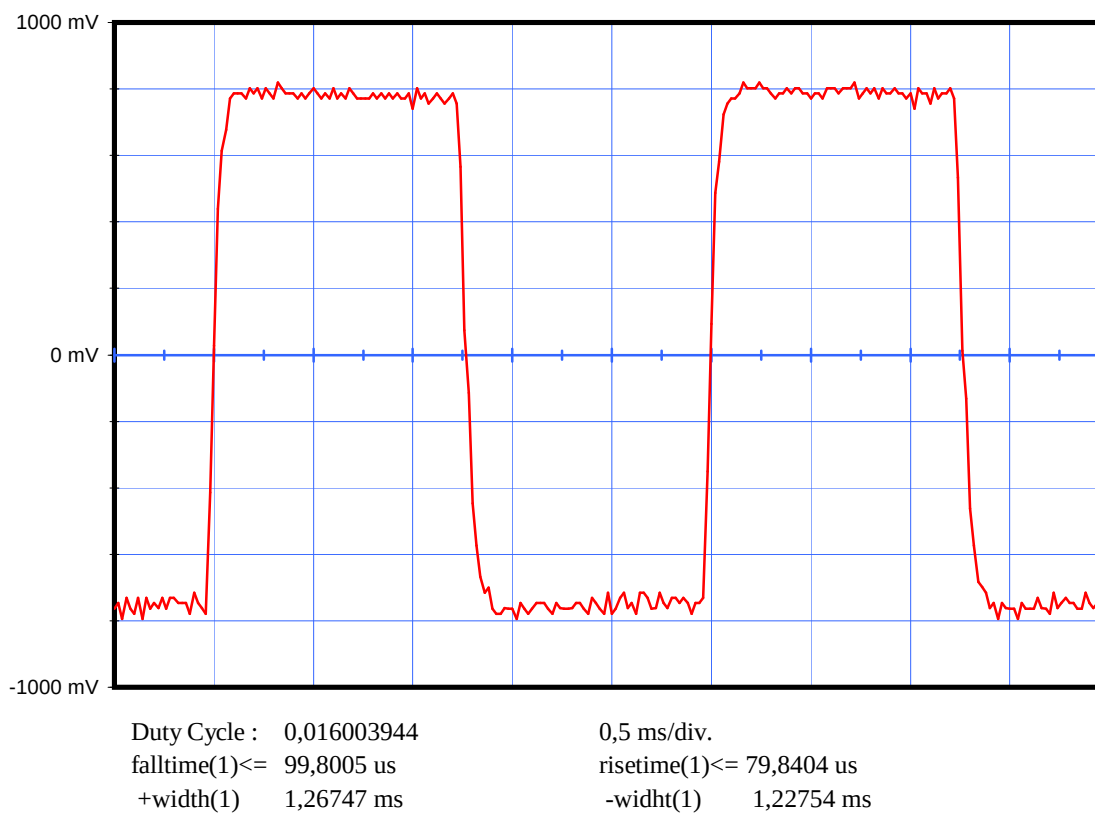
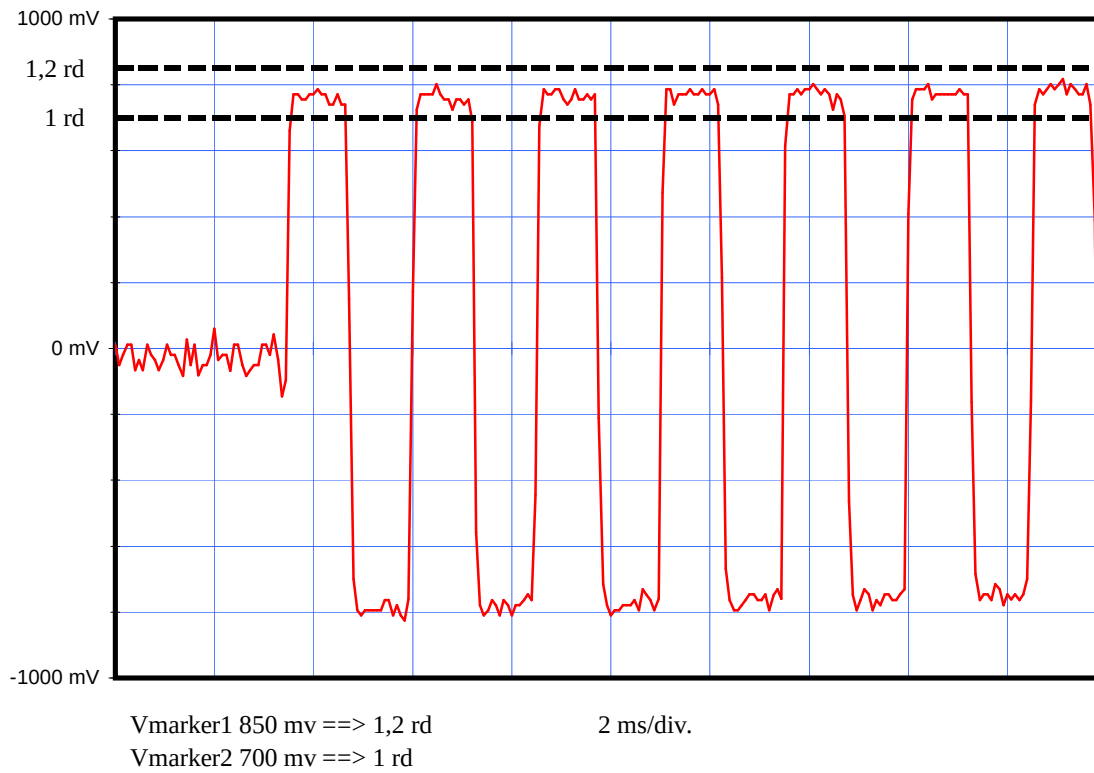
Message

Message received		FFFE2FCC962000C6007CEDFCEC4570017F76
Format Flag	25	1
Protocol flag	26	1
Ident./Position code	27-85	992C40018C00F9D
Country Code/Country	27-36	201 / ALBANIA
Protocol Code : U/Std-Nat	37-39/37-40	011
Protocol Code Used	37-39/37-40	Serial User
Identification Data	40-85/41-64/41-58	0
Identification Used		::50:9W
Calculated BCH1	25-85	17F3B1
Encoded BCH1	86-106	17F3B1
Homing	84-85	01
Em.cod/nat.use/supp.data	107-112	000101
Emer cod / Encod pos data	107	0
Delta Pos	108	0
Calculated BCH2	107-132	F76
Encoded BCH2	147-144	F76
Latitude position		North 43° 32' 0"
Longitude position		East 1° 28' 0"
Delta position		3,055 km

Electrical and other parameters

Rise time Modulation	ms	0,0798
Fall time Modulation	ms	0,0998
Phase deviation : positive	rd 1,00 < < 1,20	1,19
Phase deviation : negative	rd -1,20 < < -1,00	-1,09
Symmetry measurement	% <=5 %	1,60
Nominal frequency : F2	Hz	406027698,71





SELF-TEST MODE CONTROL ON
Ameri-King Corp. ELT & PLB
AK-451 ()Series ELT (AF)(AP)(S) & PLB
N° C/S 09 (But n°1) (Ultralife U10014)
at 22° C

Message at 22°C

Manufacturer	Ameri-King
Beacon model	AK-451 ()Series (AF)(AP)(S)(PLB)
Serial number	C/S 09 (But n°1) (Ultralife U10014)
Date of test	27-juin-06
Temperature	22,7
Message received	FFED0CC962000C6007CEDFCEC4FE0FF0F61
15 Hex ID	992C40018C00F9D
Frame synchro. pattern	011010000

Total transmission time	ms 514.8<	<525.2	520,34
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Furst burst at 50 sec

**THERMAL SHOCK TEST RESULT ON
Ameri-King Corp. ELT & PLB
AK-451 ()Series ELT (AF)(AP)(S) & PLB
N° C/S 09 (But n°1) (Ultralife U10014)
24°C to -10°C**

Temperature Soak : 24°C
Temperature Measure : -10°C

Warm Up	Δ Frequency (Hz)	Temp. (°C)	P406 (dBm)	P121.5 (dBm)
1 *	49756,77	24,7	36,1	22,7
2 *	49753,91	-10,7	36,1	22,8
3 *	49753,03	-10,7	36,1	22,9
4 *	49752,77	-10,2	36,1	22,8
5 *	49753,18	-10,0	36,1	22,8
6 *	49753,65	-9,9	36,1	22,8
7 *	49754,24	-10,1	36,1	22,7
8 *	49755,52	-10,0	36,1	22,7
9 *	49756,65	-10,1	36,1	22,7
10 *	49757,32	-10,1	36,1	22,6
11 *	49758,86	-10,1	36,1	22,7
12 *	49760,04	-10,1	36,1	22,7
13 *	49760,64	-10,1	36,1	22,7
14 *	49761,93	-10,1	36,2	22,6
15 *	49762,71	-10,2	36,2	22,6
16 *	49763,18	-10,1	36,2	22,6
17 *	49764,48	-10,2	36,2	22,6
18 *	49765,78	-10,1	36,2	22,6

* Warm up

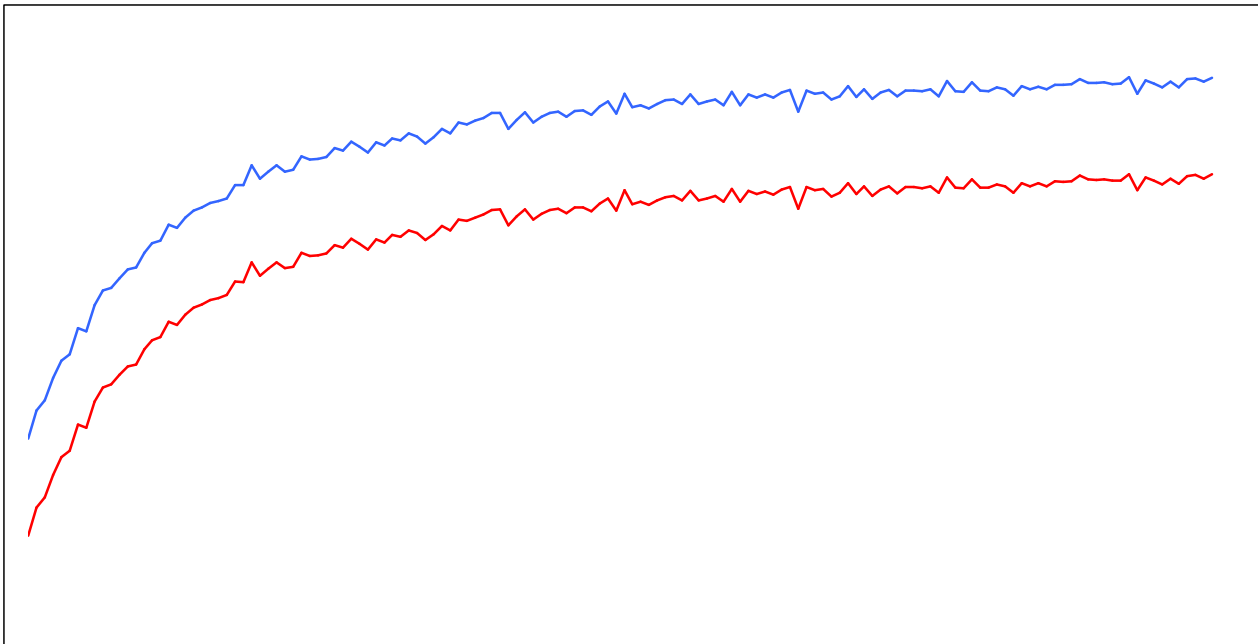
No	Temp.	Slope	Sigma	P406	Short term	P121.5
1*	-10,1	2,6E-9	2,2E-9	36,1	3,1E-10	22,6
18	-10,2	1,4E-9	1,1E-9	36,3	2,9E-10	22,5
31	-10,2	6,8E-10	5,8E-10	36,3	3,0E-10	22,3
61	-10,3	2,2E-10	5,1E-10	36,4	2,7E-10	22,4
91	-10,4	7,1E-11	3,8E-10	36,4	2,3E-10	22,3
121	-10,3	2,3E-11	4,0E-10	36,4	2,8E-10	22,4

Beacon message during and at the end of Thermal Shock Test :

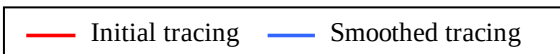
FFFE2FCC962000C6007CEDFCEC4570017F76

Frequency variation

406027788



406027764



**THERMAL SHOCK TEST / 30 °C change (24 °C to -10 ° C)**

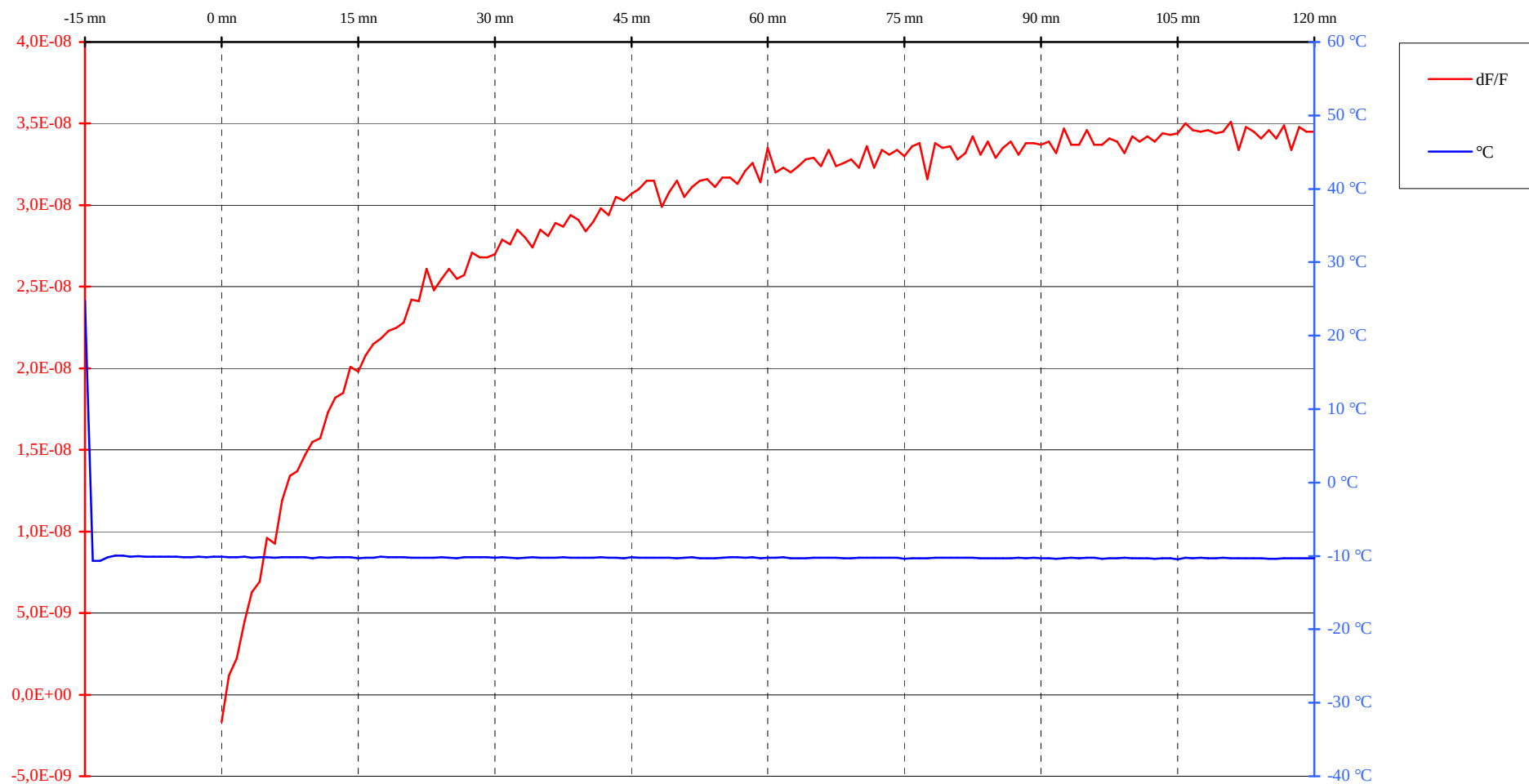
Manufacturer : Ameri-King Corp.

Model : AK-451 (Q)Series ELT (AF)(AP)(S) & PLB

Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 21/06/2006

Time : 13:58:19

FREQUENCY VARIATION

**THERMAL SHOCK TEST / 30 °C change (24 °C to -10 ° C)**

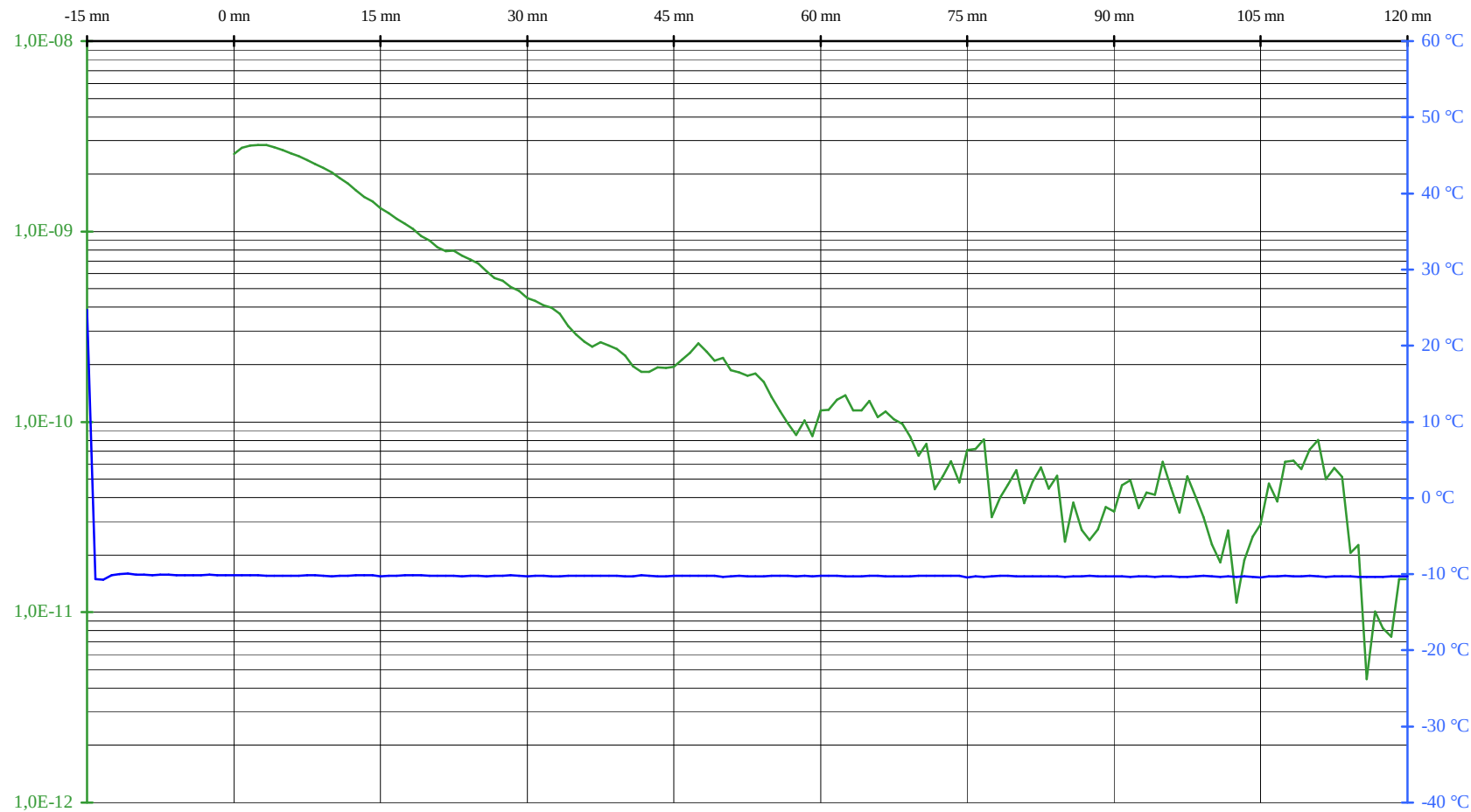
Manufacturer : Ameri-King Corp.

Model : AK-451 (Q)Series ELT (AF)(AP)(S) & PLB

Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 21/06/2006

Time : 13:58:19

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

THERMAL SHOCK TEST / 30 °C change (24 °C to -10 ° C)

Manufacturer : Ameri-King Corp.

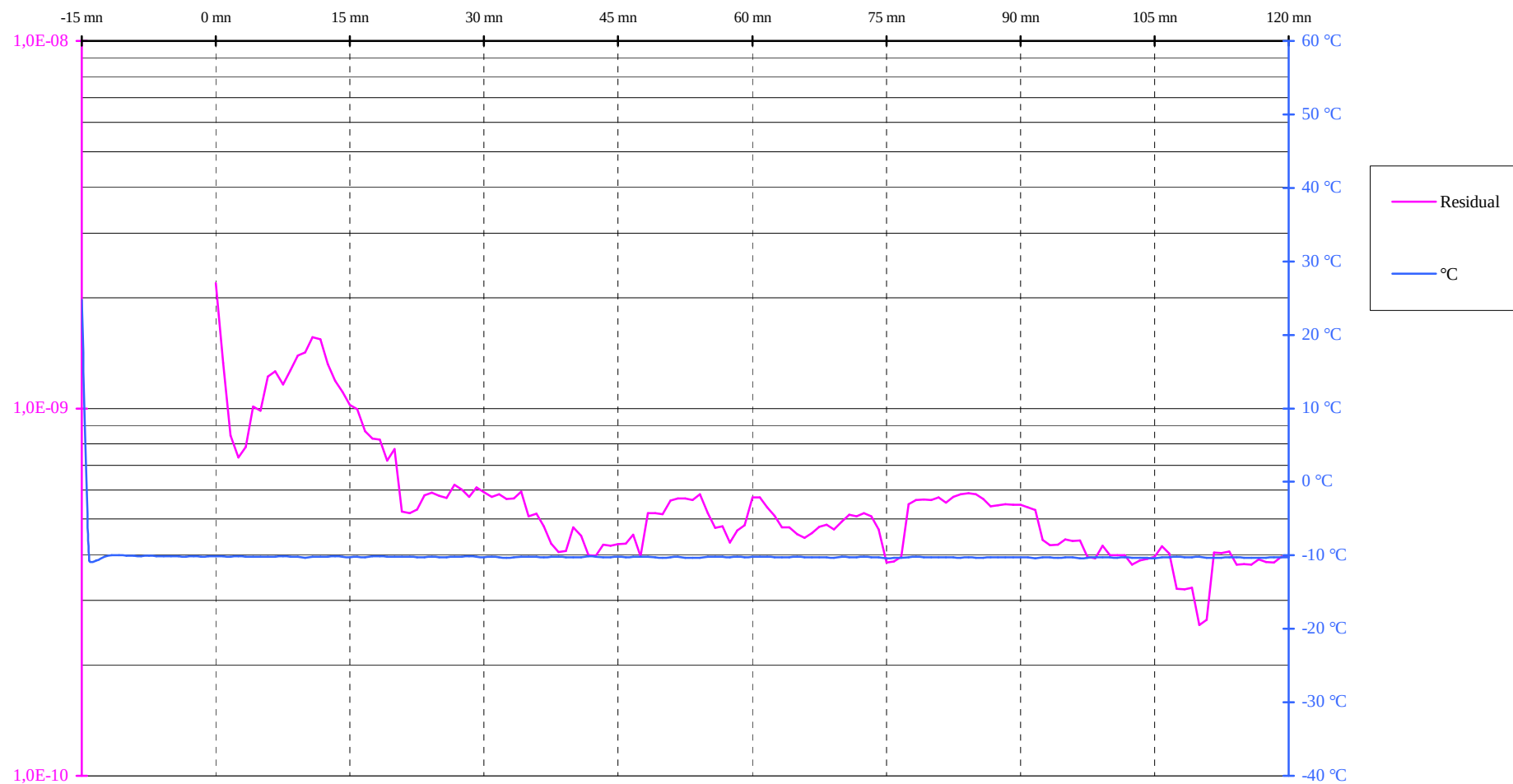
Model : AK-451 (Q)Series ELT (AF)(AP)(S) & PLB

Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 21/06/2006

Time : 13:58:19

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



**THERMAL SHOCK TEST / 30 °C change (24 °C to -10 ° C)**

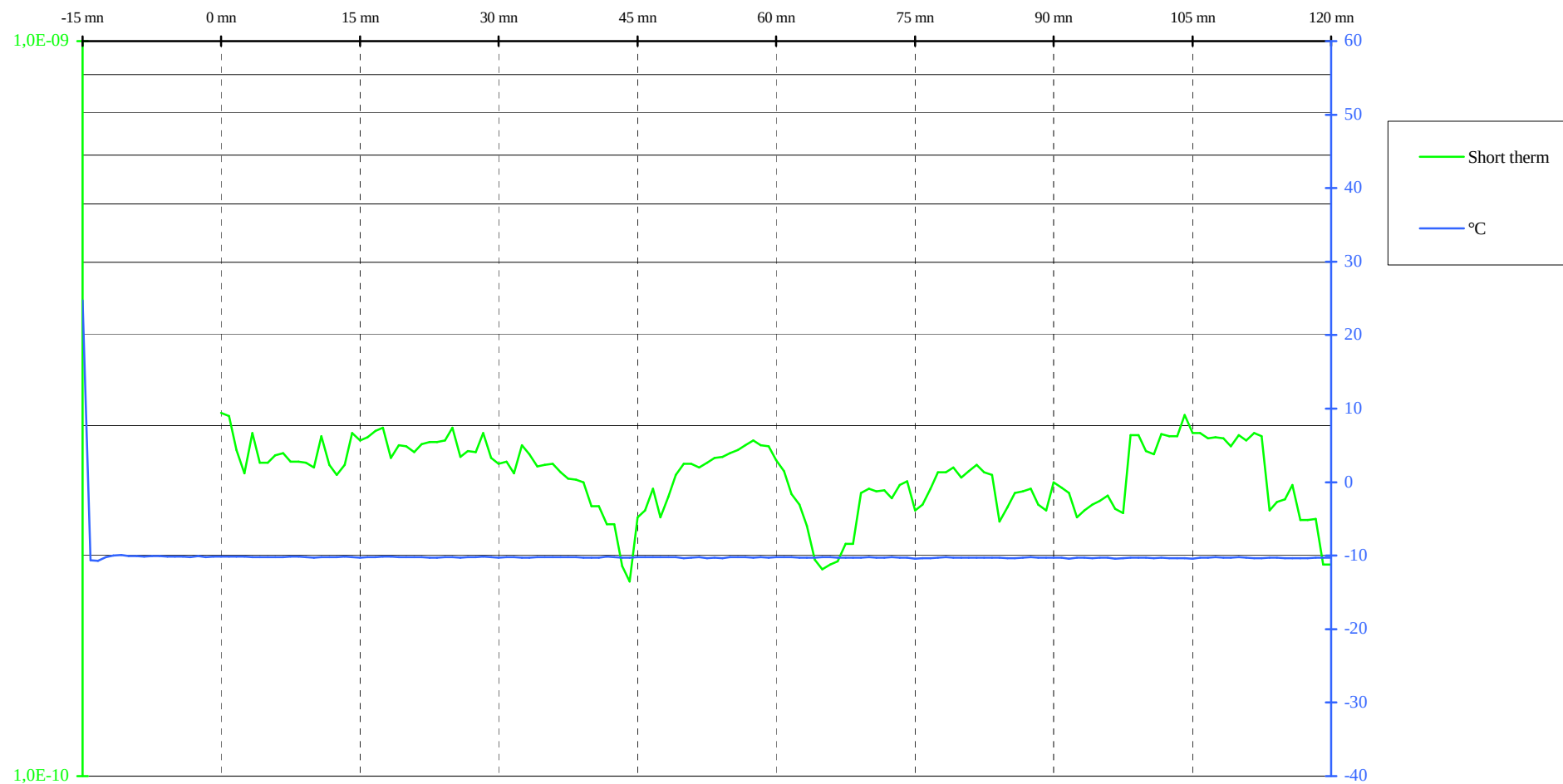
Manufacturer : Ameri-King Corp.

Model : AK-451 (Q)Series ELT (AF)(AP)(S) & PLB

Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 21/06/2006

Time : 13:58:19

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



THERMAL SHOCK TEST / 30 °C change (24 °C to -10 ° C)

Manufacturer : Ameri-King Corp.

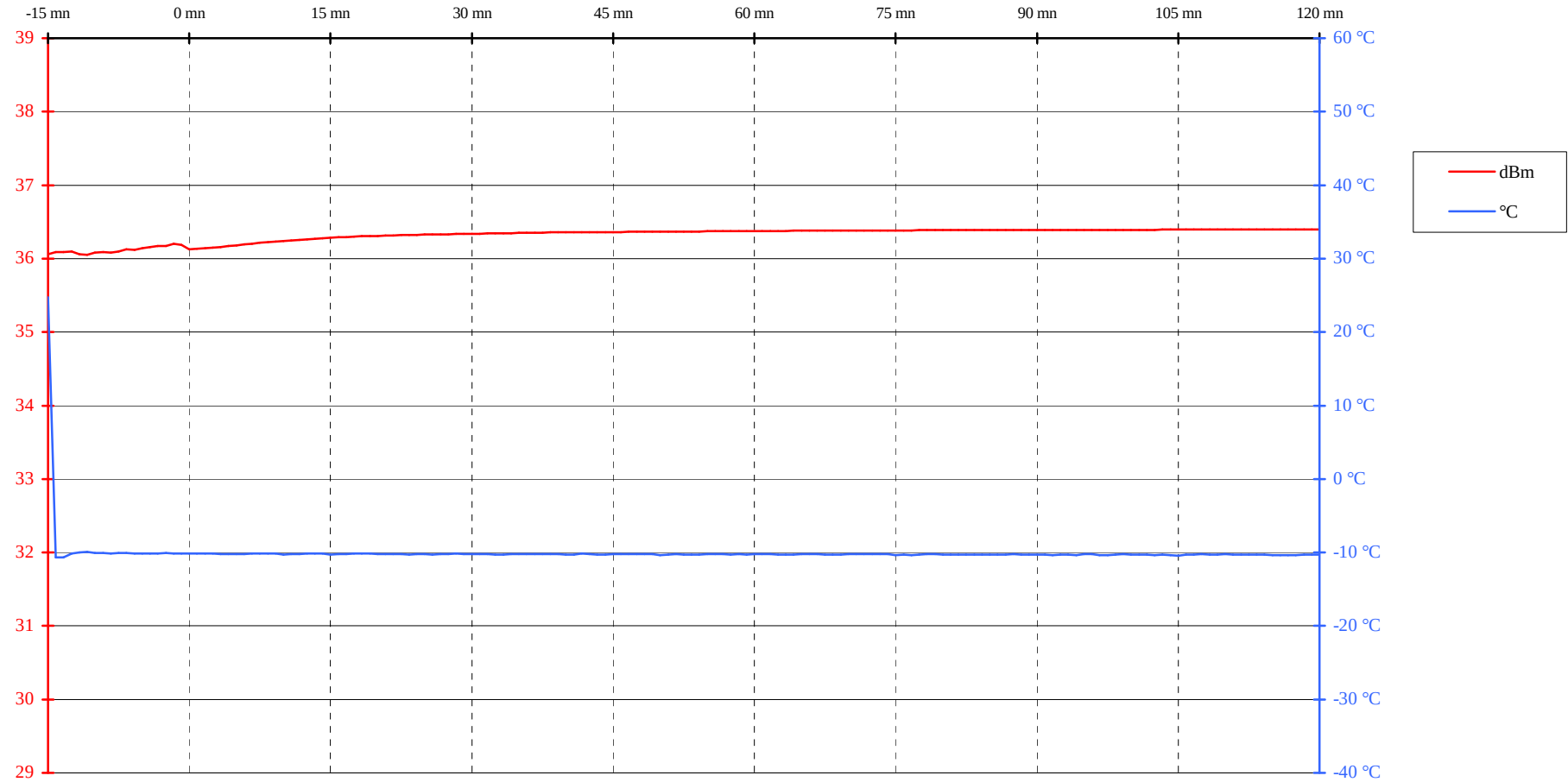
Model : AK-451 (Q)Series ELT (AF)(AP)(S) & PLB

Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 21/06/2006

Time : 13:58:19

OUTPUT POWER (35 to 39 dBm)



OPERATING LIFE TEST RESULTS ON
Ameri-King Corp. ELT & PLB
AK-451 ()Series ELT (AF)(AP)(S) & PLB
N° C/S 09 (But n° 1) (Ultralife U10014)
-20 °C

Note: The battery pack capacity has not been discharged before the operating life test. But following the table below, manufacturer calculation of battery discharge during 5 years beacon stowage, the operating lifetime with the Ultralife U10014 (Li-MnO₂) battery pack is :

- 24 hours for 406 MHz and
- around 77 hours (90 hr - 13,03 hr(VHF)) for 121,5/243 MHz

4 D CELL CONFIGURATION	
VHF(121.5/243.0)	: 0.100 Amp
UHF 406	: 1.700 Amp $\frac{0.520 \text{ sec}}{50 \text{ sec}} = 0.01768 \text{ Amp}$
Total	: $I_{ave} = 0.11768 \text{ Amp}$
Self Test: 5sec / month for 5 YRS = 300sec	
Self Test Discharge : 0.11768 $\frac{300 \text{ sec}}{3600 \text{ sec / HR}} = 0.0098066 \text{ AH}$	
Self Test Discharge /w 1.65 COEFF: = 0.01618 AH with 1.65 Coeff	
450-0010-1 Ultralife LiMN2	Bat self discharge: 1-1/2% (10.4 AH) 5years = 0.78AH Bat self discharge /w 1.65 coeff : (0.78)(1.65) = 1.287AH /w 1.65 coeff AH total bat must be discharged : 0.01618+1.287=1.303 AH $\frac{1.303 \text{ AH}}{0.11768 \text{ A}} = 11.07 \text{ Hrs}$ with UHF(406) & VHF(121.5/243.0) Loads $\frac{1.303 \text{ AH}}{0.100 \text{ A}} = 13.03 \text{ Hrs}$ with VHF(121.5/243.0) Loads only

Warm Up	Δ Frequency (Hz)	Temp. (°C)	P406 (dBm)	P121.5 (dBm)
1 *	49801,28	-22,0	36,5	21,7
2 *	49797,36	-21,5	36,5	21,8
3 *	49795,40	-21,1	36,5	21,8
4 *	49793,75	-21,1	36,5	21,8
5 *	49792,55	-21,1	36,5	21,9
6 *	49792,09	-21,1	36,5	21,9
7 *	49790,88	-21,1	36,5	21,9
8 *	49790,74	-21,1	36,5	21,9
9 *	49790,15	-21,1	36,5	21,9
10 *	49789,60	-21,1	36,5	21,9
11 *	49789,09	-21,1	36,5	22,0
12 *	49789,41	-21,1	36,5	22,0
13 *	49788,73	-21,1	36,5	22,0
14 *	49788,39	-21,1	36,5	22,0
15 *	49788,48	-21,1	36,5	22,0
16 *	49787,92	-21,1	36,5	22,0
17 *	49787,68	-21,1	36,5	22,0
18 *	49787,65	-21,0	36,5	22,0

* Warm up

No	Temp.	Slope	Sigma	P406	Short term	P121.5
1*	-21,1	-1,5E-9	2,5E-09	36,5	2,1E-10	22,1
18	-21,1	-2,4E-10	4,6E-10	36,4	2,6E-10	22,0
31	-21,1	-1,6E-10	5,4E-10	36,4	1,7E-10	22,0
61	-21,1	-1,2E-11	4,2E-10	36,4	2,0E-10	22,1
91	-21,1	-3,5E-12	3,9E-10	36,4	2,8E-10	22,1
121	-21,1	-2,5E-11	7,2E-10	36,4	3,1E-10	22,1
151	-21,1	-3,2E-11	5,2E-10	36,4	2,9E-10	22,1
181	-21,1	-2,3E-11	4,3E-10	36,4	3,0E-10	22,1
211	-21,1	-8,6E-12	3,5E-10	36,4	3,0E-10	22,1
241	-21,1	-3,0E-11	5,3E-10	36,4	2,2E-10	22,1
271	-21,1	-3,9E-11	3,0E-10	36,4	2,8E-10	22,1
301	-21,2	2,0E-11	6,4E-10	36,3	2,6E-10	22,1
331	-21,2	1,3E-11	5,0E-10	36,3	2,0E-10	22,1
361	-21,1	-2,5E-11	4,5E-10	36,3	2,8E-10	22,1
391	-21,1	-3,7E-12	5,6E-10	36,3	2,3E-10	22,2
421	-21,1	1,4E-11	4,1E-10	36,3	2,9E-10	22,1
451	-21,2	5,4E-12	3,2E-10	36,3	2,8E-10	22,1
481	-21,2	-1,4E-11	4,3E-10	36,3	2,0E-10	22,2
511	-21,2	-1,4E-11	4,6E-10	36,3	3,0E-10	22,2
541	-21,1	6,0E-12	5,4E-10	36,3	2,0E-10	22,1
571	-21,1	4,8E-11	4,8E-10	36,3	2,2E-10	22,1
601	-21,1	2,1E-11	4,1E-10	36,3	3,0E-10	22,1
631	-21,1	-2,5E-11	5,8E-10	36,3	2,9E-10	22,1
661	-21,2	-5,8E-11	3,7E-10	36,3	2,5E-10	22,1
691	-21,2	-4,3E-11	5,1E-10	36,3	3,4E-10	22,1
721	-21,1	-2,8E-11	4,5E-10	36,3	2,4E-10	22,1
751	-21,1	-2,6E-11	4,8E-10	36,3	2,1E-10	22,1
781	-21,2	1,1E-11	4,7E-10	36,3	3,1E-10	22,1
811	-21,2	-4,4E-12	4,4E-10	36,3	1,8E-10	22,1
841	-21,1	2,9E-11	4,2E-10	36,3	2,2E-10	22,1

No	Temp.	Slope	Sigma	P406	Short term	P121.5
871	-21,1	3,3E-11	6,0E-10	36,3	2,5E-10	22,1
901	-21,1	6,1E-12	4,9E-10	36,3	2,0E-10	22,1
931	-21,1	-8,8E-11	4,2E-10	36,3	3,6E-10	22,1
961	-21,1	-9,0E-12	4,6E-10	36,3	2,8E-10	22,2
991	-21,1	-1,5E-11	4,6E-10	36,3	2,7E-10	22,1
1021	-21,2	4,3E-11	5,2E-10	36,3	2,1E-10	22,1
1051	-21,1	-7,3E-11	4,8E-10	36,3	2,3E-10	22,1
1081	-21,1	-3,7E-11	3,3E-10	36,3	2,8E-10	22,1
1111	-21,2	3,1E-11	5,3E-10	36,3	4,1E-10	22,1
1141	-21,1	-2,0E-11	5,9E-10	36,3	3,5E-10	22,1
1171	-21,1	-3,9E-11	5,4E-10	36,3	3,0E-10	22,1
1201	-21,1	-3,0E-13	3,4E-10	36,3	1,9E-10	22,1
1231	-21,1	1,0E-11	5,7E-10	36,3	2,8E-10	22,2
1261	-21,1	-4,0E-11	6,2E-10	36,3	2,7E-10	22,1
1291	-21,1	6,8E-12	6,1E-10	36,3	3,4E-10	22,1
1321	-21,1	-4,6E-11	5,1E-10	36,3	2,4E-10	22,1
1351	-21,1	4,2E-11	5,2E-10	36,3	3,5E-10	22,1
1381	-21,1	-8,9E-12	5,6E-10	36,3	1,7E-10	22,1
1411	-21,1	9,9E-12	5,1E-10	36,3	1,6E-10	22,1
1441	-21,1	-8,1E-12	4,1E-10	36,3	2,2E-10	22,1
1471	-21,1	-5,3E-11	4,4E-10	36,3	3,6E-10	22,1
1501	-21,2	-4,9E-11	6,4E-10	36,3	2,9E-10	22,1
1531	-21,1	1,9E-11	5,8E-10	36,3	2,3E-10	22,1
1561	-21,1	1,5E-11	4,8E-10	36,3	3,2E-10	22,1
1591	-21,1	-2,9E-11	4,9E-10	36,3	1,8E-10	22,1
1621	-21,1	-1,9E-11	5,6E-10	36,3	1,9E-10	22,1
1651	-21,1	-3,0E-11	5,3E-10	36,3	2,5E-10	22,1
1681	-21,1	2,7E-11	6,8E-10	36,3	2,4E-10	22,2
1711	-21,1	3,6E-11	6,5E-10	36,3	2,4E-10	22,1
1728	-21,1	1,3E-11	6,5E-10	36,3	2,4E-10	22,1
1771	-21,1					22,1
1801	-21,1					22,1
1831	-21,1					22,1
1861	-21,1					22,1
1891	-21,1					22,1
1921	-21,1					22,1
1951	-21,1					22,1
1981	-21,1					22,1
2011	-21,1					22,1
2041	-21,1					22,1
2071	-21,1					22,1
2101	-21,1					22,1
2131	-21,1					22,1
2161	-21,1					22,1
2191	-21,1					22,1
2221	-21,1					22,1
2251	-21,1					22,1
2281	-21,1					22,1
2311	-21,1					22,1
2341	-21,1					22,1
2371	-21,1					22,1

24h

No	Temp.	Slope	Sigma	P406	Short term	P121.5
2401	-21,1					22,1
2431	-21,1					22,1
2461	-21,1					22,1
2491	-21,2					22,1
2521	-21,1					22,1
2551	-21,2					22,1
2581	-21,1					22,2
2611	-21,2					22,1
2641	-21,1					22,1
2671	-21,2					22,1
2701	-21,1					22,1
2731	-21,1					22,1
2761	-21,1					22,1
2791	-21,1					22,1
2821	-21,1					22,2
2851	-21,1					22,1
2881	-21,1					22,1
2911	-21,1					22,1
2941	-21,2					22,2
2971	-21,1					22,1
3001	-21,2					22,1
3031	-21,1					22,1
3061	-21,1					22,1
3091	-21,1					22,1
3121	-21,1					22,1
3151	-21,1					22,1
3181	-21,1					22,1
3211	-21,1					22,2
3241	-21,1					22,1
3271	-21,1					22,1
3301	-21,1					22,1
3331	-21,1					22,1
3361	-21,1					22,1
3391	-21,1					22,1
3421	-21,1					22,1
3451	-21,1					22,1
3481	-21,1					22,1
3511	-21,1					22,1
3541	-21,1					22,1
3571	-21,1					22,1
3601	-21,1					22,1
3631	-21,2					22,1
3661	-21,1					22,1
3691	-21,1					22,1
3721	-21,1					22,1
3751	-21,1					22,1
3781	-21,1					22,1
3811	-21,1					22,1
3841	-21,2					22,1
3871	-21,2					22,2
3901	-21,2					22,1

48h

No	Temp.	Slope	Sigma	P406	Short term	P121.5
3931	-21,1					22,1
3961	-21,1					22,1
3991	-21,2					22,1
4021	-21,1					22,1
4051	-21,2					22,1
4081	-21,2					22,1
4111	-21,1					22,1
4141	-21,1					22,1
4171	-21,1					22,1
4201	-21,1					22,1
4231	-21,2					22,1
4261	-21,2					22,1
4291	-21,2					22,1
4321	-21,1					22,1
4351	-21,2					22,1
4381	-21,2					22,1
4411	-21,2					22,1
4441	-21,2					22,1
4471	-21,2					22,1
4501	-21,1					22,1
4531	-21,1					22,1
4561	-21,1					22,2
4591	-21,2					22,1
4621	-21,1					22,1
4651	-21,1					22,1
4681	-21,1					22,2
4711	-21,1					22,1
4741	-21,1					22,1
4771	-21,1					22,1
4801	-21,1					22,2
4831	-21,2					22,1
4861	-21,2					22,2
4891	-21,2					22,2
4921	-21,2					22,1
4951	-21,2					22,2
4981	-21,1					22,1
5011	-21,2					22,1
5041	-21,2					22,1
5071	-21,2					22,2
5101	-21,2					22,1
5131	-21,2					22,1
5161	-21,2					22,1
5191	-21,2					22,1
5221	-21,2					22,1
5251	-21,2					22,2
5281	-21,2					22,1
5311	-21,2					22,1
5341	-21,2					22,1
5371	-21,2					22,1
5401	-21,2					22,1
5431	-21,2					22,1

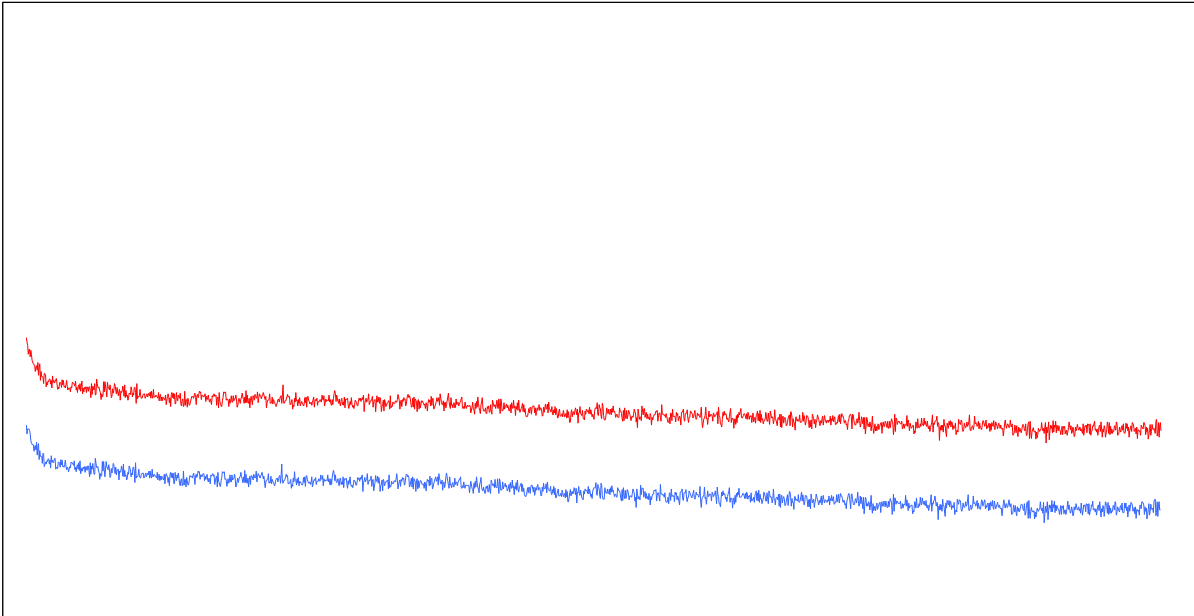
No	Temp.	Slope	Sigma	P406	Short term	P121.5
5461	-21,2					22,1
5491	-21,2					22,1
5521	-21,2					22,1
5551	-21,2					22,1
5581	-21,2					22,1
5611	-21,2					22,1
5641	-21,2					22,1
5671	-21,2					22,1
5701	-21,3					22,2
5731	-21,3					22,1
5761	-21,2					22,1
5791	-21,2					22,2
5821	-21,2					22,1
5851	-21,2					22,2
5881	-21,2					22,2
5911	-21,3					22,1
5941	-21,2					22,1
5971	-21,2					22,2
6001	-21,2					22,1
6031	-21,2					22,2
6061	-21,2					22,1
6091	-21,2					22,2
6121	-21,2					22,2
6151	-21,2					22,1
6181	-21,2					22,2
6211	-21,3					22,2
6241	-21,2					22,2
6271	-21,2					22,2
6301	-21,2					22,1
6331	-21,2					22,2
6361	-21,2					22,2
6391	-21,2					22,1
6421	-21,2					22,2
6451	-21,2		90 hours			21,9
6481	-21,2					20,2
6511	-21,3					18,4
6541	-21,2					16,2
6571	-21,3					20,3
6601	-21,2					13,4

Sample of beacon message during 24 hours of Operating Lifetime Test :

FFFE2F8C9EAF0F0F2B80348B18758E01401E

Frequency variation

406027,807 kHz



406027,779 kHz

— Initial tracing — Smoothed tracing



LIFE TEST AT -20 °C

Manufacturer : Ameri-King Corp.

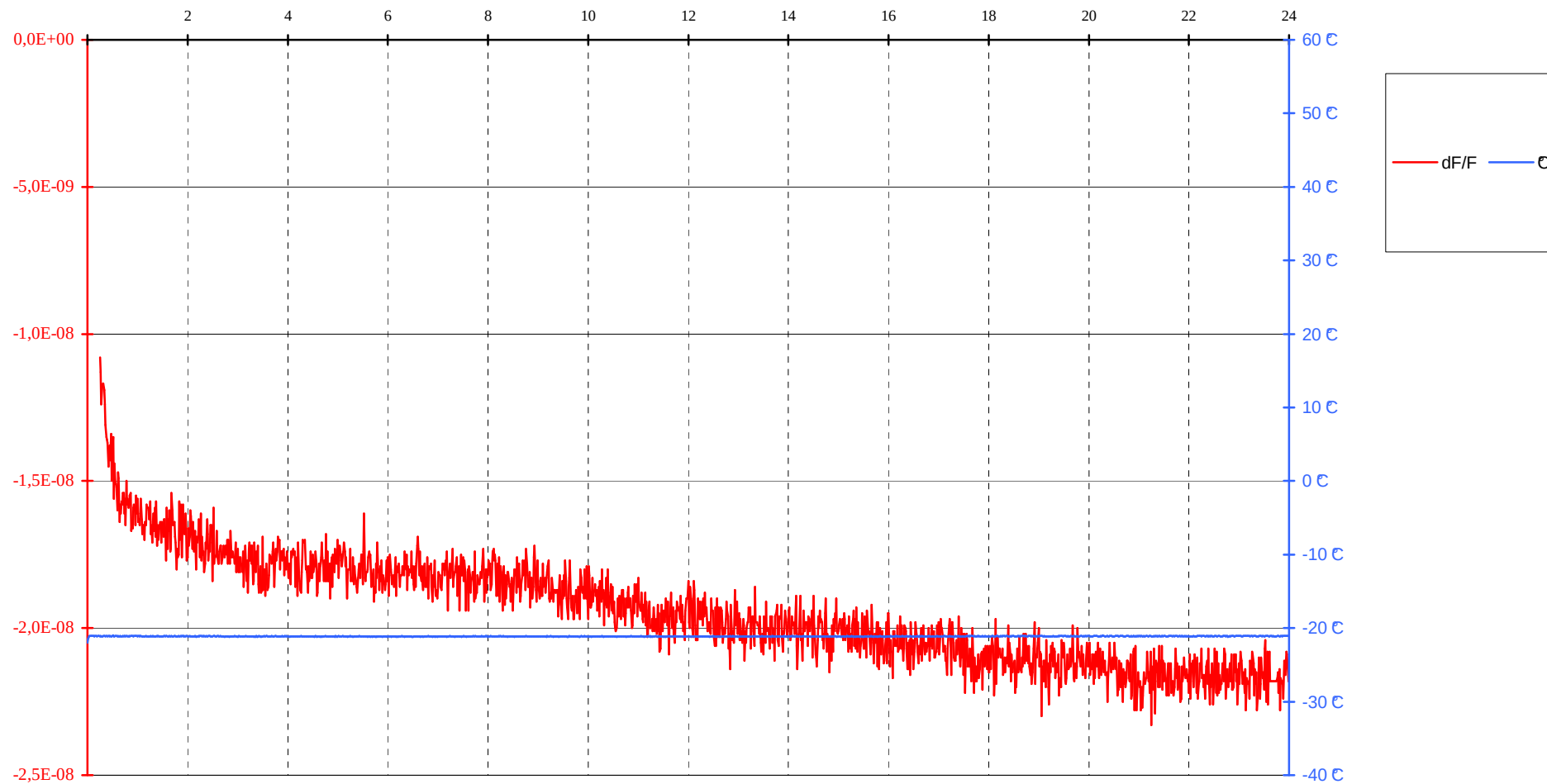
Model : AK-451 ()Series ELT (AF)(AP)(S) & PLB

Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 3 Jul 2006

Time : 13:54:05

FREQUENCY VARIATION



LIFE TEST AT -20 °C

Manufacturer : Ameri-King Corp.

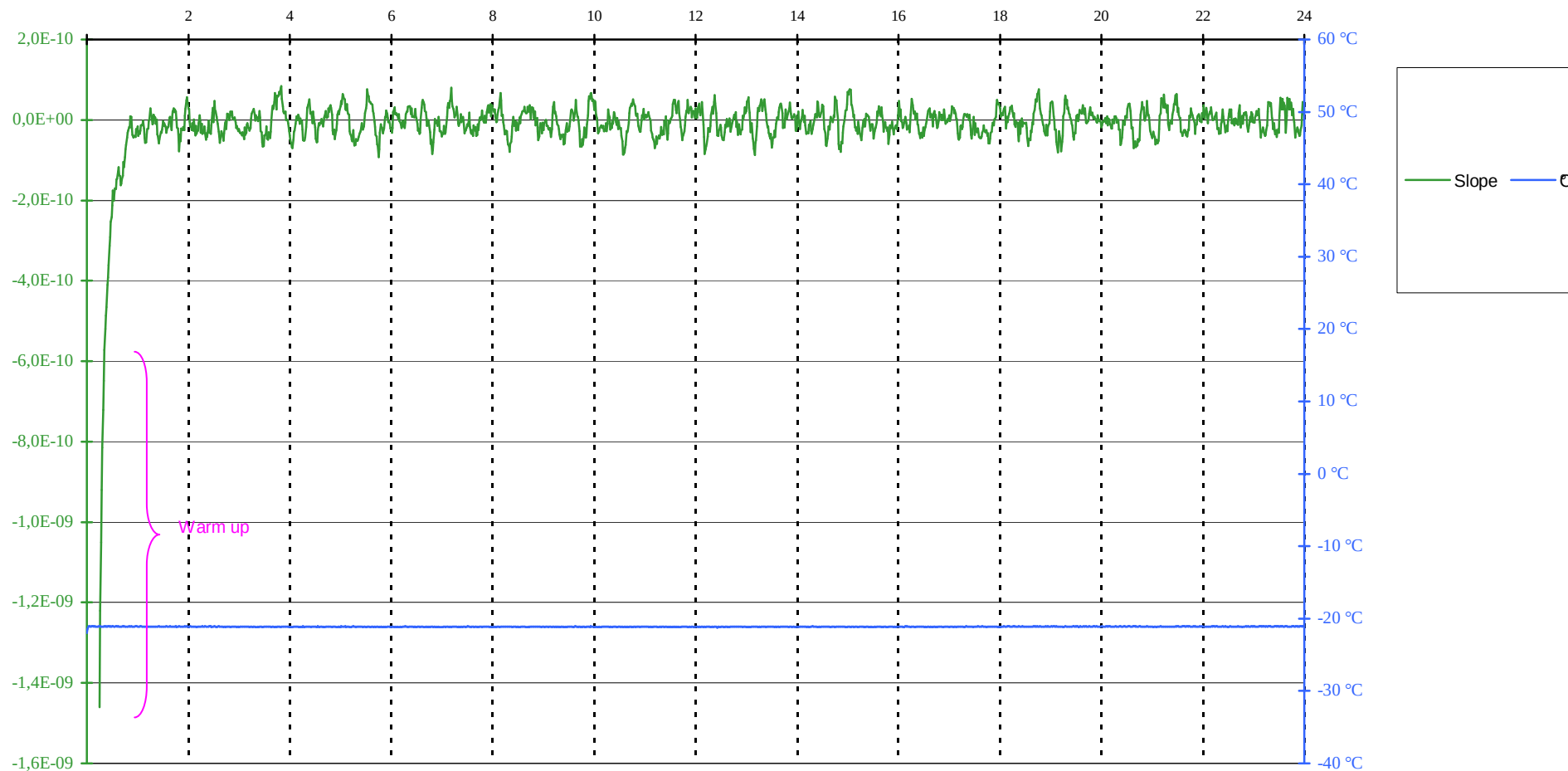
Model : AK-451 ()Series ELT (AF)(AP)(S) & PLB

Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 3 Jul 2006

Time : 13:54:05

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



LIFE TEST AT -20 °C

Manufacturer : Ameri-King Corp.

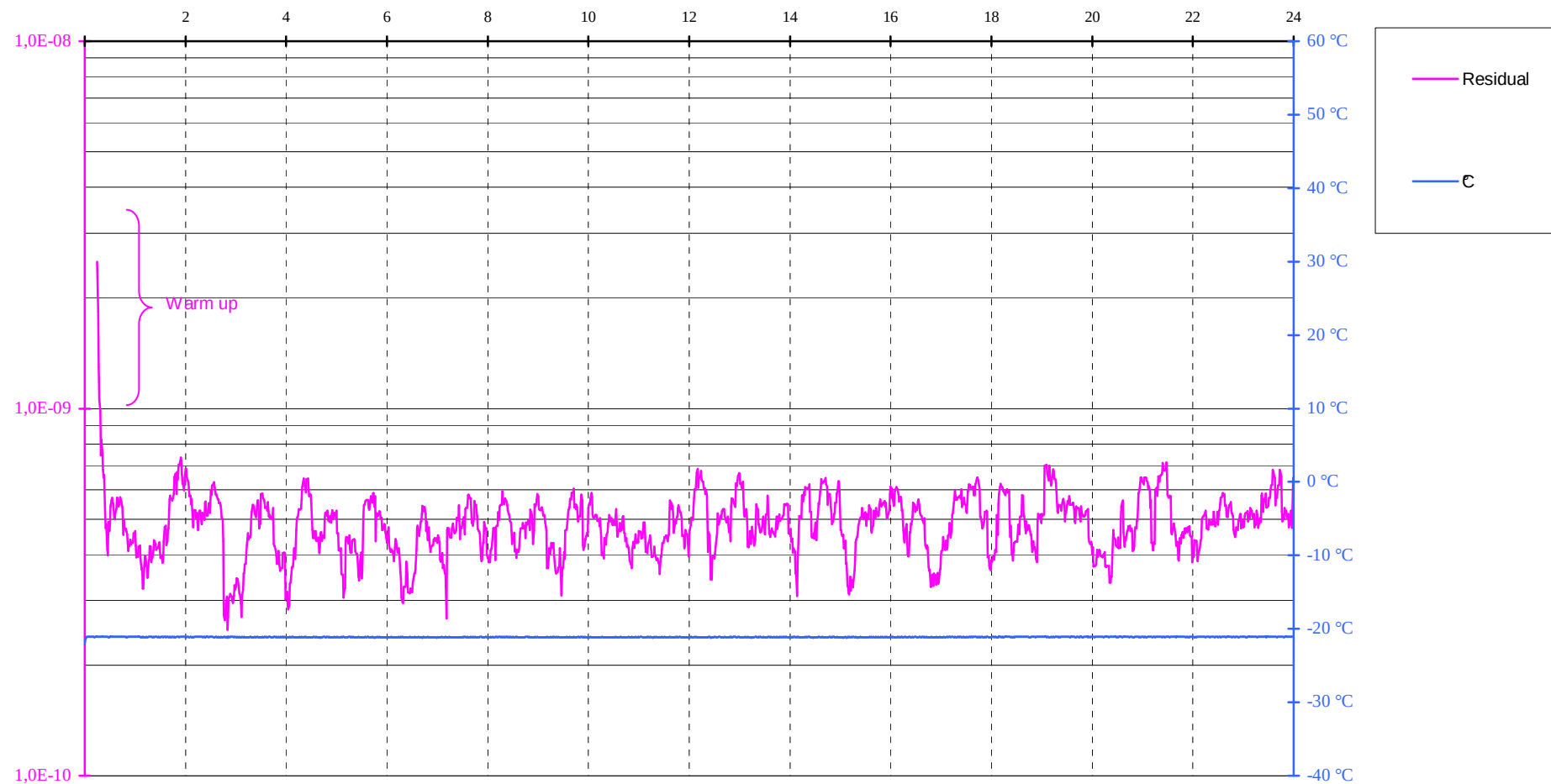
Model : AK-451 ()Series ELT (AF)(AP)(S) & PLB

Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 3 Jul 2006

Time : 13:54:05

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



LIFE TEST AT -20 °C

Manufacturer : Ameri-King Corp.

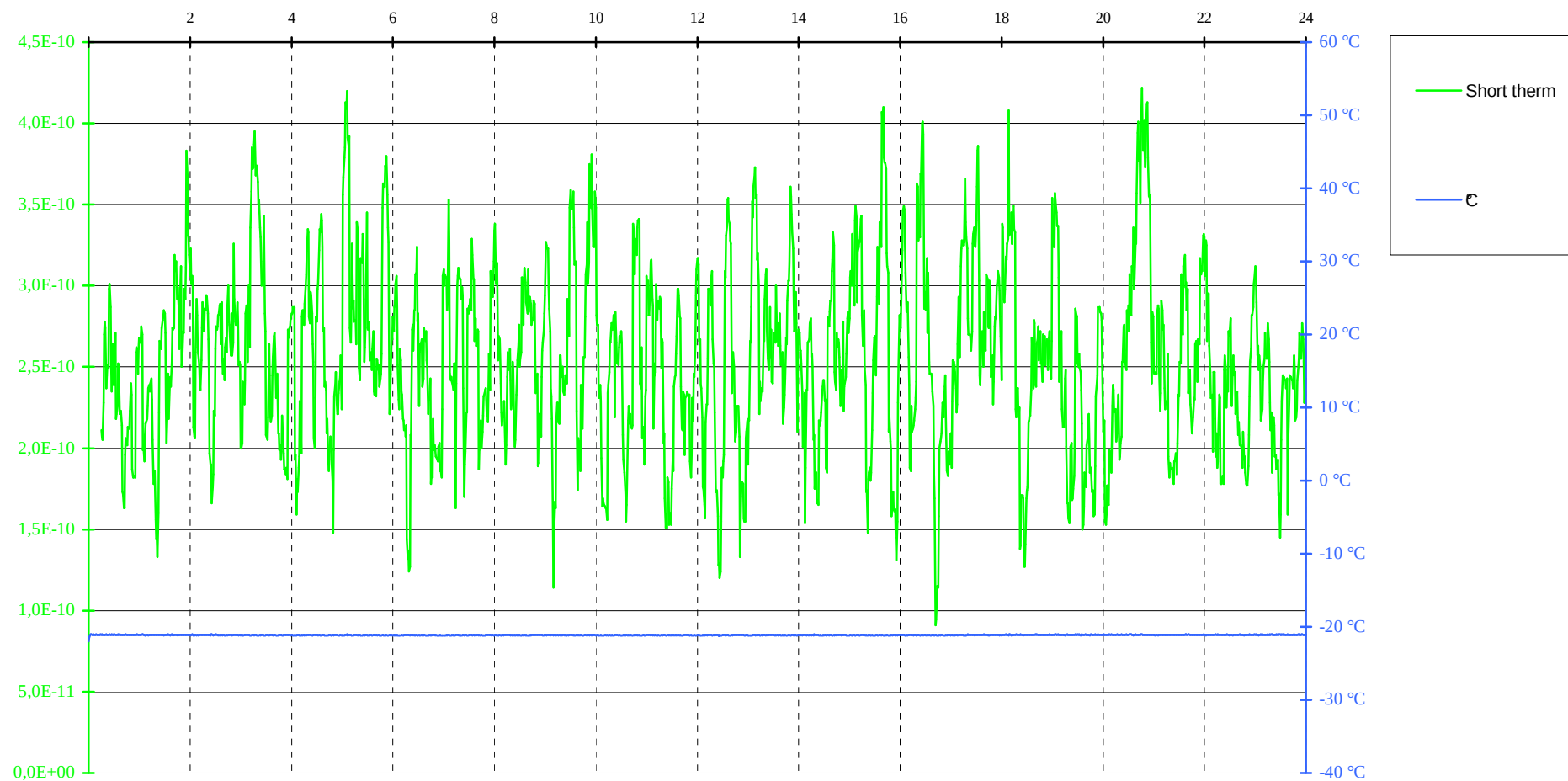
Model : AK-451 ()Series ELT (AF)(AP)(S) & PLB

Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 3 Jul 2006

Time : 13:54:05

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



**LIFE TEST AT -20 °C**

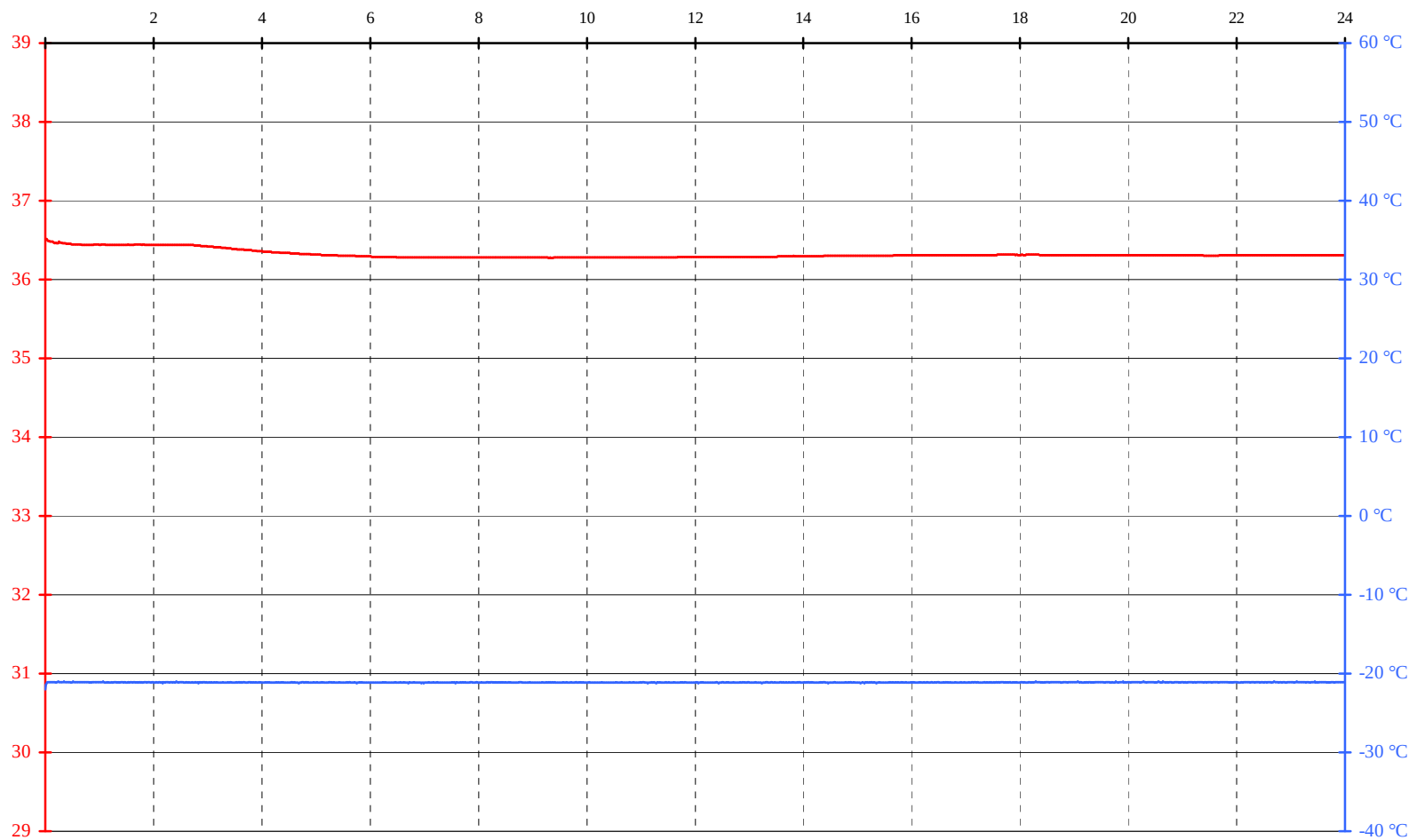
Manufacturer : Ameri-King Corp.

Model : AK-451 ()Series ELT (AF)(AP)(S) & PLB

Numero : C/S 09 (But n°1) (Ultralife U10014)

Date : 3 Jul 2006

Time : 13:54:05

OUTPUT POWER (35 to 39 dBm)



LIFE TEST AT -20 °C

Manufacturer : Ameri-King Corp.

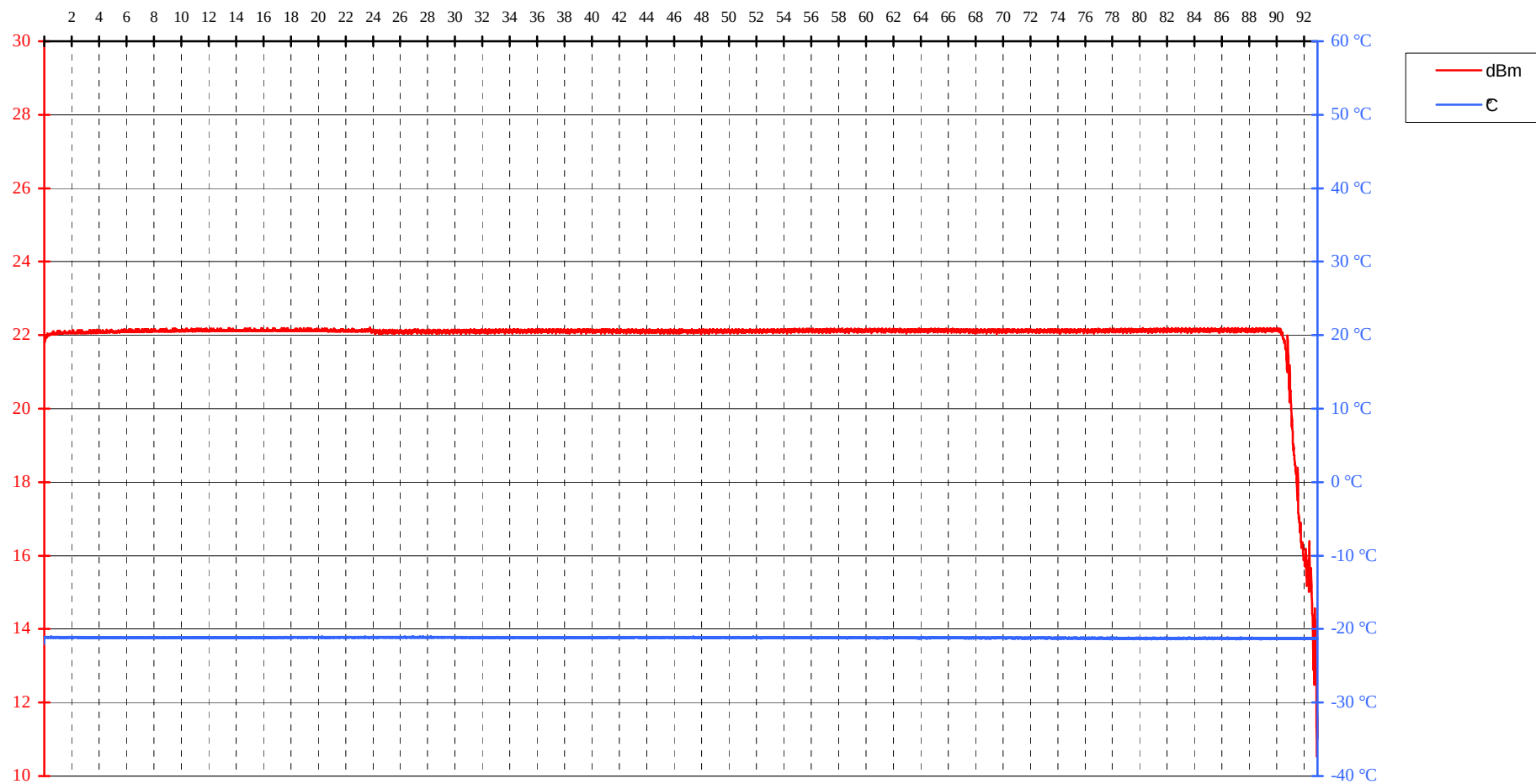
Model : AK-451 (J)Series ELT (AF)(AP)(S) & PLB

Numero : C/S 09 (But n°1) (Ultralife U10014)

Date : 3 Jul 2006

Time : 13:54:05

121,5 MHz OUTPUT POWER (23 dBm +/- 1 dBm)



TEMPERATURE GRADIENT TEST RESULT ON
Ameri-King Corp. ELT & PLB
AK-451 ()Series ELT (AF)(AP)(S) & PLB
N° C/S 09 (But n°1) (Ultralife U10014)
at -20° C, 22° C and 55° C

Warm Up	Δ Frequency (Hz)	Temp. (°C)	P406 (dBm)	P121.5 (dBm)
1 *	49812,84	-19,9	36,5	21,9
2 *	49809,23	-20,2	36,5	21,9
3 *	49808,75	-20,2	36,5	21,9
4 *	49807,61	-20,1	36,5	21,9
5 *	49807,73	-20,0	36,5	21,9
6 *	49807,17	-20,1	36,5	22,0
7 *	49806,20	-20,0	36,5	22,0
8 *	49806,71	-20,0	36,5	22,0
9 *	49805,77	-20,0	36,4	22,0
10 *	49804,60	-20,0	36,4	22,0
11 *	49804,94	-20,1	36,4	22,0
12 *	49804,65	-20,2	36,4	22,0
13 *	49804,38	-20,2	36,4	22,0
14 *	49804,11	-20,1	36,4	22,0
15 *	49804,52	-20,1	36,4	22,1
16 *	49804,40	-20,1	36,4	22,0
17 *	49804,17	-20,1	36,4	22,1
18 *	49804,01	-20,1	36,4	22,1

* Warm up

No	Temp.	Slope	Sigma	P406	Short term	P121.5
1 *	-20,1	-9,1E-10	1,4E-9	36,4	2,5E-10	22,0
18	-20,2	-4,4E-11	7,6E-10	36,4	2,3E-10	22,1
31	-20,1	-4,6E-11	6,2E-10	36,4	1,7E-10	22,1
61	-20,4	5,6E-11	4,4E-10	36,4	1,9E-10	22,1
91	-20,4	-6,8E-11	8,2E-10	36,4	3,6E-10	22,1
121	-20,0	5,2E-11	5,7E-10	36,4	2,3E-10	22,1
151	-17,9	-1,8E-10	7,0E-10	36,3	2,2E-10	22,1
181	-15,9	-2,6E-10	6,9E-10	36,3	2,7E-10	22,1
211	-13,8	-2,4E-10	7,6E-10	36,3	2,1E-10	22,2
241	-11,7	-2,6E-10	7,0E-10	36,3	2,6E-10	22,2
271	-9,6	-2,2E-10	5,3E-10	36,3	2,9E-10	22,3
301	-7,6	-1,8E-10	5,3E-10	36,3	2,3E-10	22,3
331	-5,5	-4,1E-10	8,8E-10	36,3	2,5E-10	22,3
361	-3,3	-3,0E-10	5,6E-10	36,3	2,8E-10	22,4
391	-1,2	-2,6E-10	5,2E-10	36,3	1,7E-10	22,4
421	0,9	-2,9E-10	7,0E-10	36,3	2,6E-10	22,5
451	3,1	-2,1E-10	6,2E-10	36,2	2,5E-10	22,6
481	5,2	-3,9E-10	5,2E-10	36,2	2,6E-10	22,5
511	7,2	-3,2E-10	1,0E-9	36,2	2,7E-10	22,6
541	9,2	-2,8E-10	6,5E-10	36,2	2,2E-10	22,7
571	11,4	-2,1E-10	5,6E-10	36,1	1,9E-10	22,7
601	13,6	-2,5E-10	8,1E-10	36,1	3,1E-10	22,7
631	15,7	-2,9E-10	5,4E-10	36,1	2,3E-10	22,7
661	17,7	-3,1E-10	4,9E-10	36,1	1,7E-10	22,8
691	19,8	-2,5E-10	7,0E-10	36,1	1,9E-10	22,8
721	21,8	-1,4E-10	7,5E-10	36,0	2,8E-10	22,8
751	24,0	-2,5E-10	6,7E-10	36,0	2,9E-10	22,9
781	26,1	-3,3E-10	6,5E-10	36,0	2,6E-10	22,9
811	28,3	-1,9E-10	8,2E-10	36,0	2,5E-10	22,9
841	30,3	-3,2E-10	8,4E-10	35,9	2,6E-10	22,9

No	Temp.	Slope	Sigma	P406	Short term	P121.5
871	32,4	-1,5E-10	7,1E-10	35,9	2,0E-10	23,0
901	34,6	-2,8E-10	7,3E-10	35,9	2,2E-10	23,0
931	36,7	-2,0E-10	7,3E-10	35,9	3,8E-10	23,0
961	38,8	-2,5E-10	7,8E-10	35,9	2,0E-10	23,0
991	41,0	-1,2E-10	6,7E-10	35,8	2,4E-10	23,0
1021	43,3	-2,9E-10	4,4E-10	35,8	2,3E-10	23,0
1051	45,5	-3,9E-10	7,7E-10	35,8	2,1E-10	23,0
1081	47,4	-2,3E-10	7,2E-10	35,8	2,1E-10	23,0
1111	49,6	-2,8E-10	6,5E-10	35,8	2,7E-10	23,1
1141	51,8	-2,4E-10	6,5E-10	35,7	2,1E-10	23,0
1171	53,9	-2,0E-10	7,1E-10	35,7	3,9E-10	23,1
1201	55,4	-3,3E-10	5,6E-10	35,7	3,1E-10	23,1
1231	55,6	-4,4E-11	6,2E-10	35,7	2,2E-10	23,1
1261	55,4	-8,7E-11	8,2E-10	35,6	2,3E-10	23,1
1291	55,3	-7,3E-11	7,2E-10	35,7	2,0E-10	23,1
1321	55,3	-1,4E-10	5,2E-10	35,7	2,3E-10	23,1
1351	55,3	-1,9E-11	6,8E-10	35,7	2,2E-10	23,1
1381	55,3	-5,2E-11	5,9E-10	35,7	3,0E-10	23,0
1411	55,3	5,6E-11	8,3E-10	35,7	2,7E-10	23,1
1441	54,0	1,0E-10	4,3E-10	35,7	2,2E-10	23,0
1471	51,9	1,8E-10	4,4E-10	35,8	2,8E-10	23,0
1501	49,8	2,3E-10	5,7E-10	35,8	2,2E-10	23,0
1531	47,6	2,6E-10	6,4E-10	35,8	2,4E-10	23,1
1561	45,4	2,3E-10	5,9E-10	35,8	1,9E-10	23,0
1591	43,3	1,3E-10	6,2E-10	35,9	3,1E-10	22,9
1621	41,3	2,7E-10	7,1E-10	35,9	2,6E-10	23,0
1651	39,0	3,0E-10	5,4E-10	35,9	2,3E-10	22,9
1681	36,9	2,1E-10	8,4E-10	35,9	2,1E-10	22,9
1711	34,8	2,4E-10	9,0E-10	35,9	2,1E-10	22,9
1741	32,9	2,7E-10	7,7E-10	36,0	2,3E-10	22,9
1771	30,9	1,9E-10	5,2E-10	36,0	2,3E-10	22,8
1801	28,5	2,8E-10	6,3E-10	36,0	1,8E-10	22,8
1831	26,6	3,0E-10	7,3E-10	36,0	2,1E-10	22,8
1861	24,4	2,2E-10	9,5E-10	36,1	2,4E-10	22,7
1891	22,1	2,5E-10	8,1E-10	36,1	1,8E-10	22,8
1921	20,0	2,7E-10	6,7E-10	36,1	2,7E-10	22,7
1951	18,2	2,2E-10	6,6E-10	36,1	2,2E-10	22,6
1981	16,0	3,2E-10	5,9E-10	36,2	2,3E-10	22,6
2011	13,8	2,4E-10	7,3E-10	36,2	2,1E-10	22,6
2041	11,6	3,1E-10	9,6E-10	36,2	2,4E-10	22,5
2071	9,7	3,3E-10	6,0E-10	36,2	2,5E-10	22,5
2101	7,4	4,0E-10	4,9E-10	36,3	2,2E-10	22,5
2131	5,1	4,1E-10	8,0E-10	36,3	2,0E-10	22,4
2161	3,2	2,5E-10	6,4E-10	36,3	2,1E-10	22,4
2191	1,1	2,8E-10	6,8E-10	36,3	2,2E-10	22,4
2221	-1,0	1,7E-10	7,7E-10	36,4	1,8E-10	22,3
2251	-3,1	1,5E-10	5,1E-10	36,4	2,1E-10	22,3
2281	-5,3	2,0E-10	5,2E-10	36,4	2,1E-10	22,3
2311	-7,4	4,8E-11	8,6E-10	36,4	2,7E-10	22,3
2341	-9,6	2,8E-10	9,6E-10	36,5	2,0E-10	22,2
2371	-11,9	2,4E-10	7,5E-10	36,5	1,5E-10	22,2

No	Temp.	Slope	Sigma	P406	Short term	P121.5
2401	-13,9	2,6E-10	9,3E-10	36,5	1,5E-10	22,1
2431	-16,1	3,2E-10	6,7E-10	36,5	2,1E-10	22,1
2461	-18,2	1,3E-10	6,6E-10	36,5	2,4E-10	22,0
2491	-20,3	2,2E-10	4,5E-10	36,6	2,1E-10	22,0
2521	-20,5	1,9E-10	6,4E-10	36,5	2,7E-10	22,0
2551	-20,4	2,6E-11	4,8E-10	36,4	1,7E-10	21,9
2581	-20,4	-7,9E-12	5,0E-10	36,3	2,3E-10	21,9
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						
3811						
3841						
3871						
3901						

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

FFFE2F8C9EAF0F0F2B80348B18758E414D34

FFFE2F8C9EAF0F0F2B80348B18758E814F73

FFFE2F8C9EAF0F0F2B80348B18758EC1682B

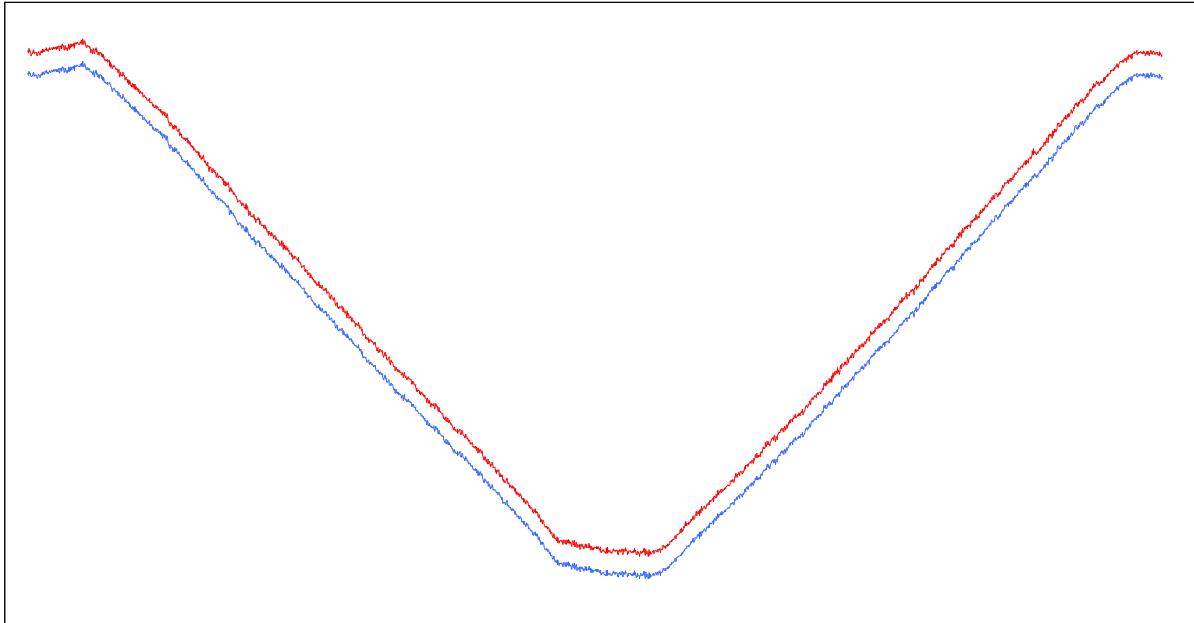
FFFE2F8C9EAF0F0F2B80348B18758E015527

FFFE2F8C9EAF0F0F2B80348B18758E01401E

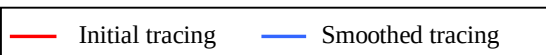
FFFE2F8C9EAF0F0F7FDFFFD230B583E0FAA8

Frequency variation

406027812



406027712



TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

Manufacturer : Ameri-King Corp.

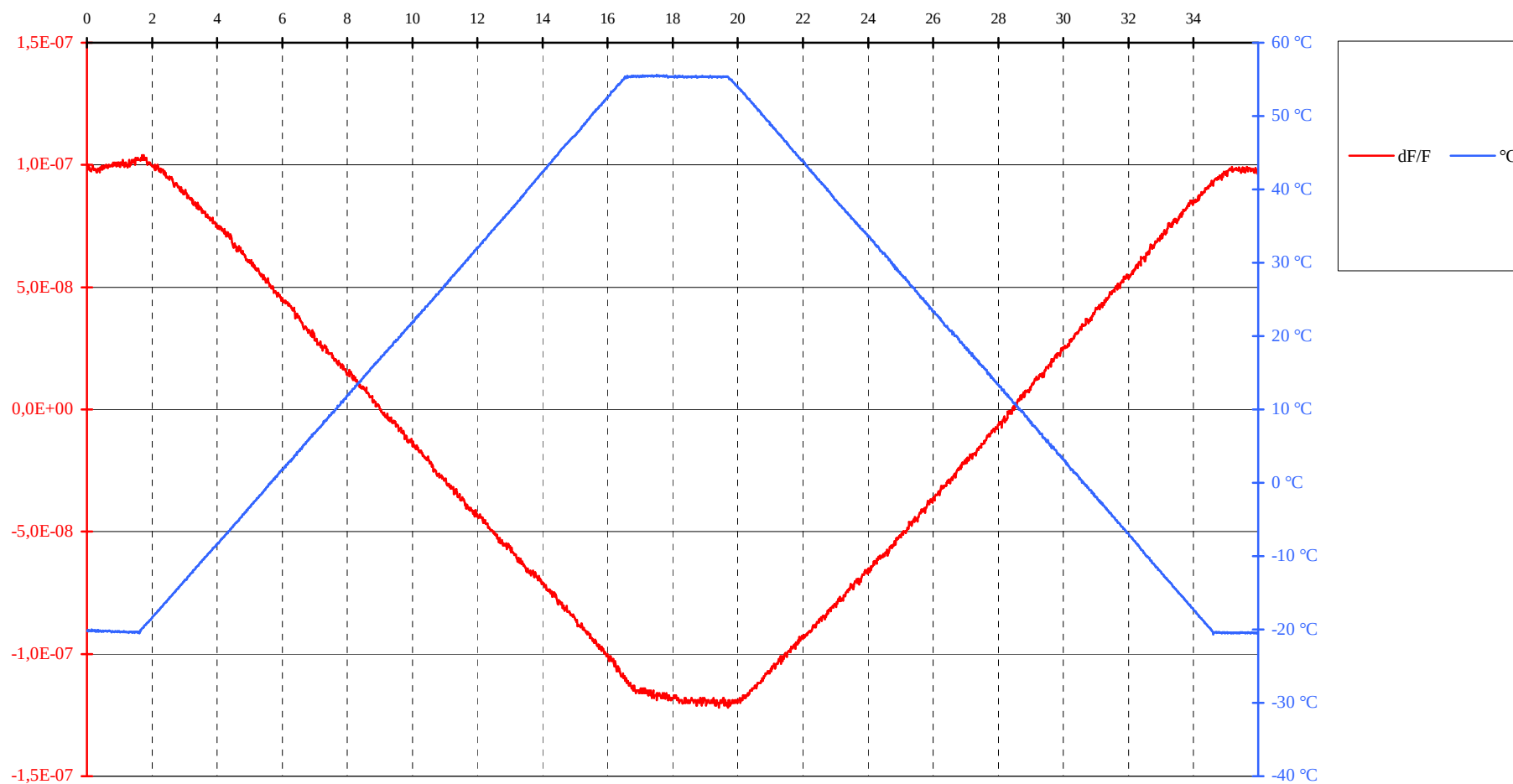
Model : AK-451 ()Series ELT (AF)(AP)(S) & PLB

Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 28/06/2006

Time : 19:40:00

FREQUENCY VARIATION



TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

Manufacturer : Ameri-King Corp.

Model : AK-451 ()Series ELT (AF)(AP)(S) & PLB

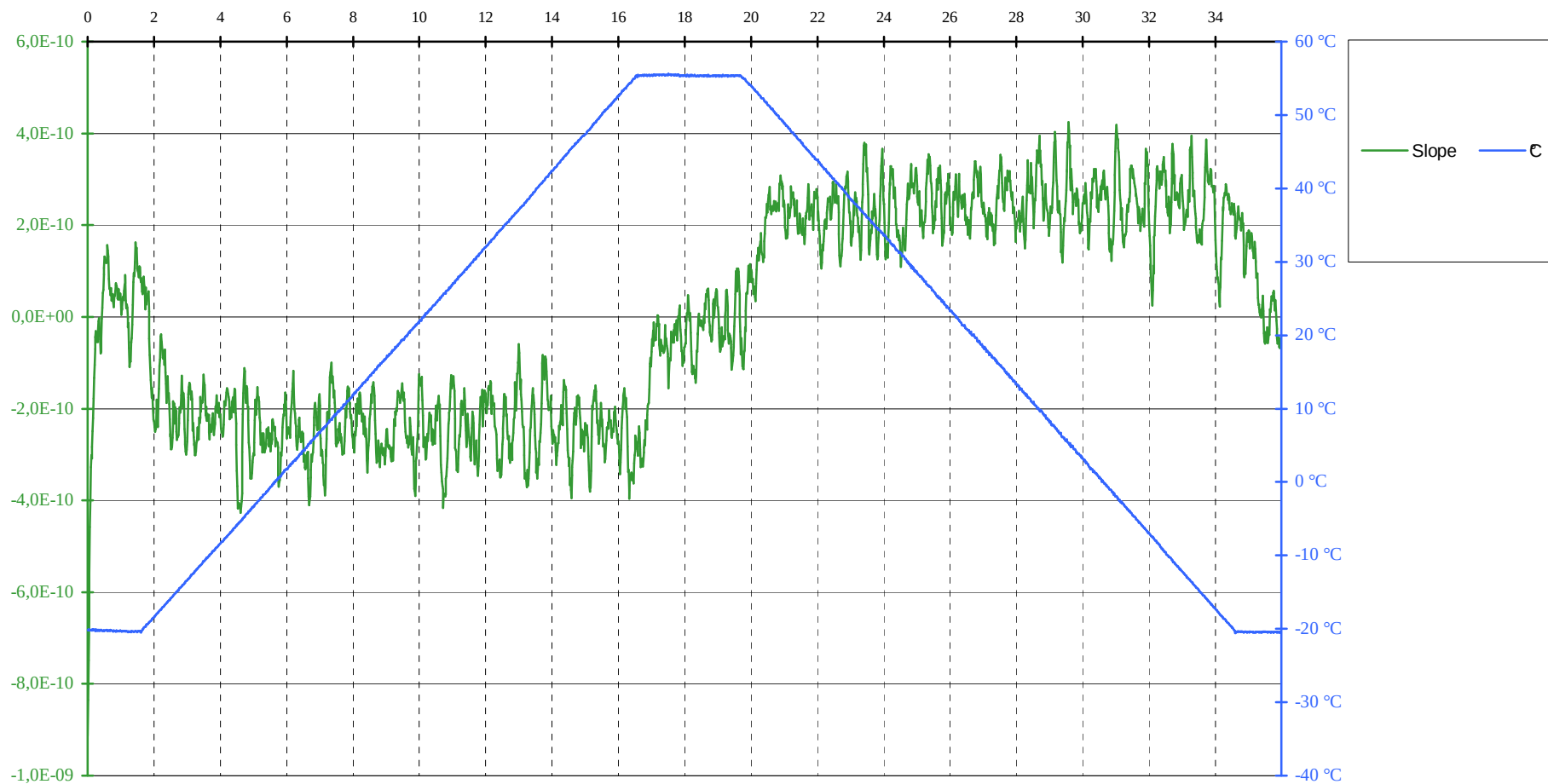
Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 28/06/2006

Time : 19:40:00

MEDIUM TERM STABILITY : MEAN SLOPE /mn A to B, C+15 to D, and E+15 to F (-1,0E-9 to 1,0E-9)

MEAN SLOPE /mn B to C+15, and D to E+15 (-2,0E-9 to 2,0E-9)



TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

Manufacturer : Ameri-King Corp.

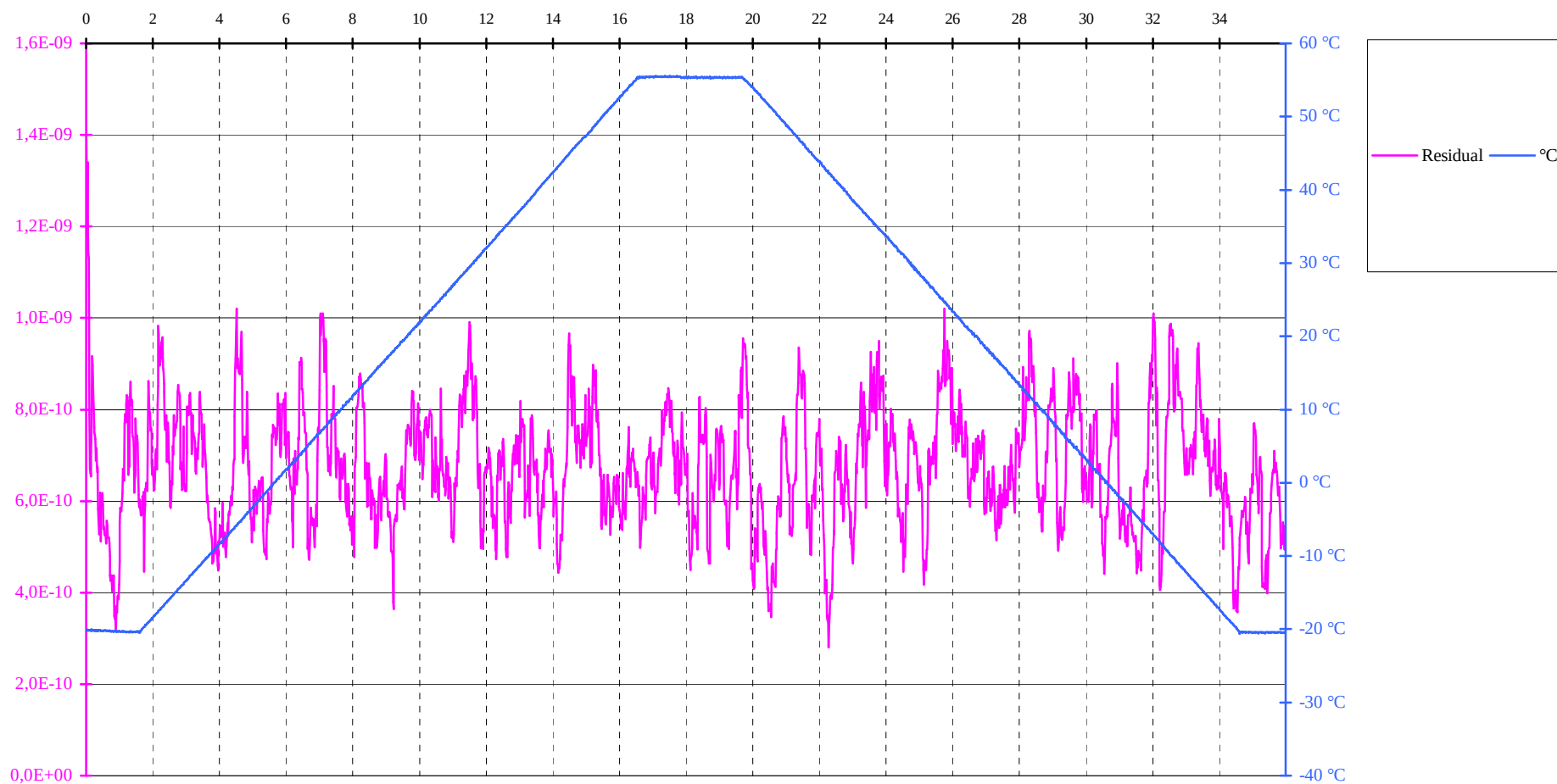
Model : AK-451 ()Series ELT (AF)(AP)(S) & PLB

Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 28/06/2006

Time : 19:40:00

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



TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)

Manufacturer : Ameri-King Corp.

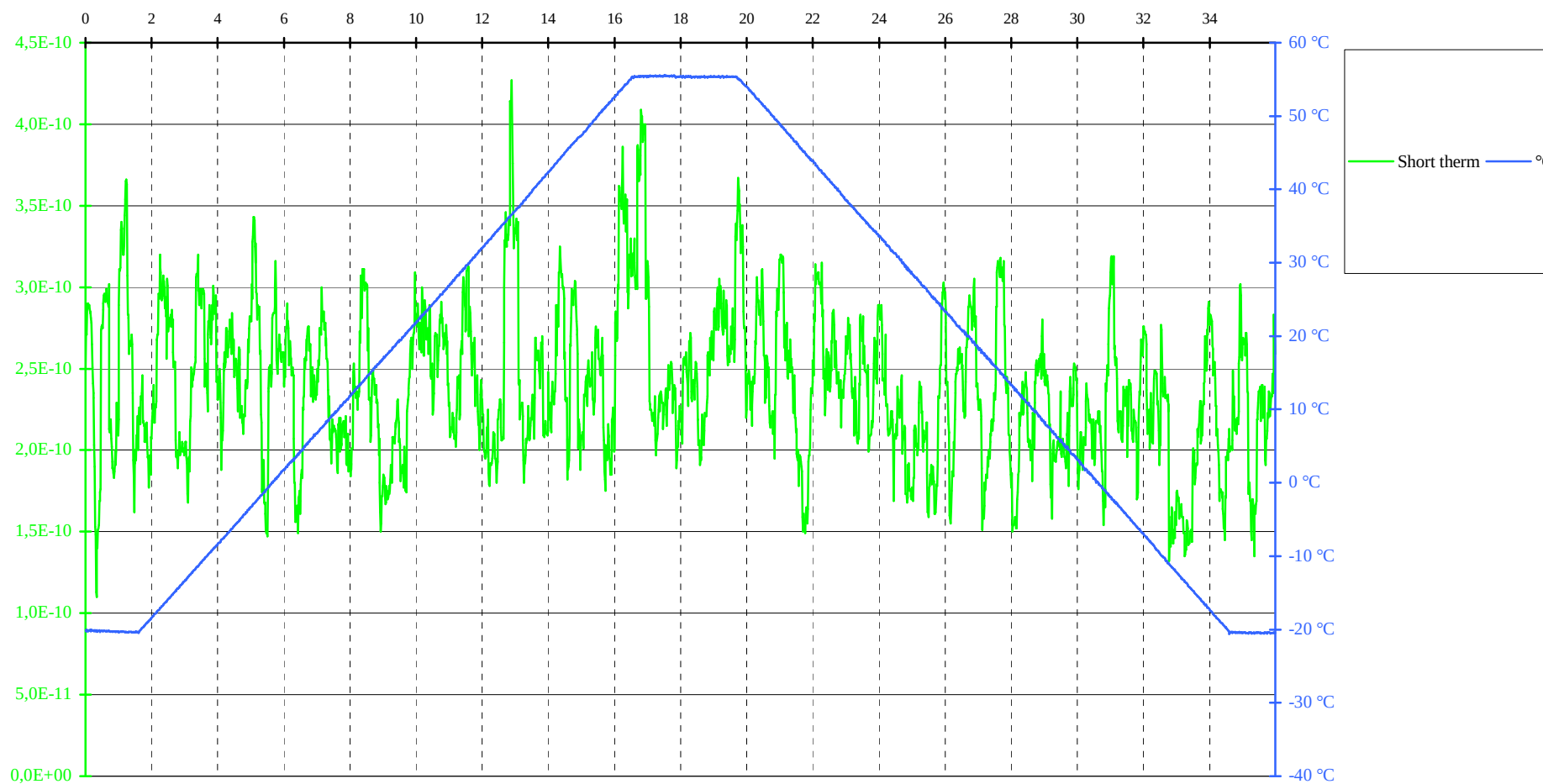
Model : AK-451 ()Series ELT (AF)(AP)(S) & PLB

Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 28/06/2006

Time : 19:40:00

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



**TEMPERATURE GRADIENT TEST RESULTS (5 °C / hour)**

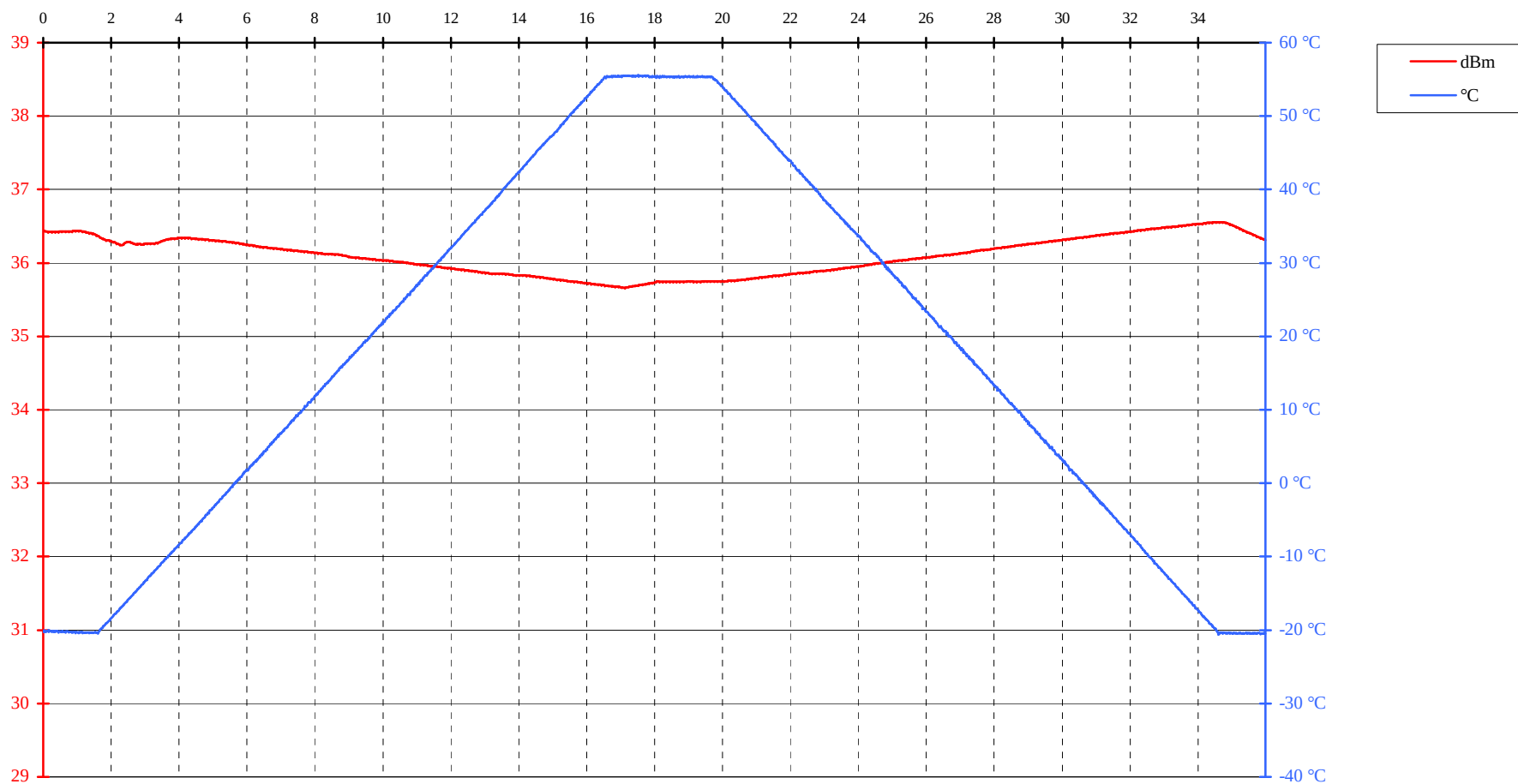
Manufacturer : Ameri-King Corp.

Model : AK-451 ()Series ELT (AF)(AP)(S) & PLB

Number : C/S 09 (But n°1) (Ultralife U10014)

Date : 28/06/2006

Time : 19:40:00

OUTPUT POWER (35 to 39 dBm)

**NAVIGATION SYSTEM TEST ON
Ameri-King Corp. ELT & PLB
AK-451 ()Series ELT (AF)(AP)(S) & PLB
N° C/S 07 (But n°2)**

For navigation system test it has been used an external GPS receiver :

-Manufacturer : GARMIN

-Model : GPS 150

- P/N: 011-00054-00

The GPS receiver it was connected to the beacon via RS232 serial link.