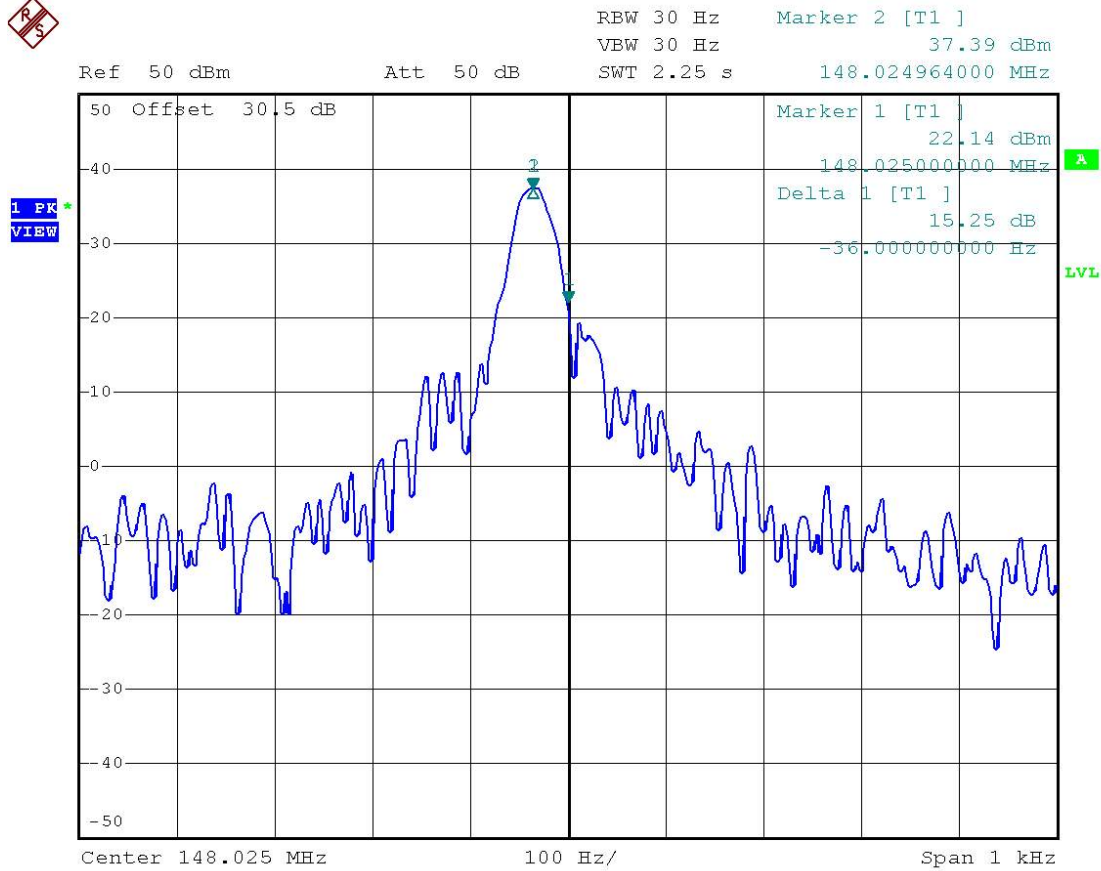
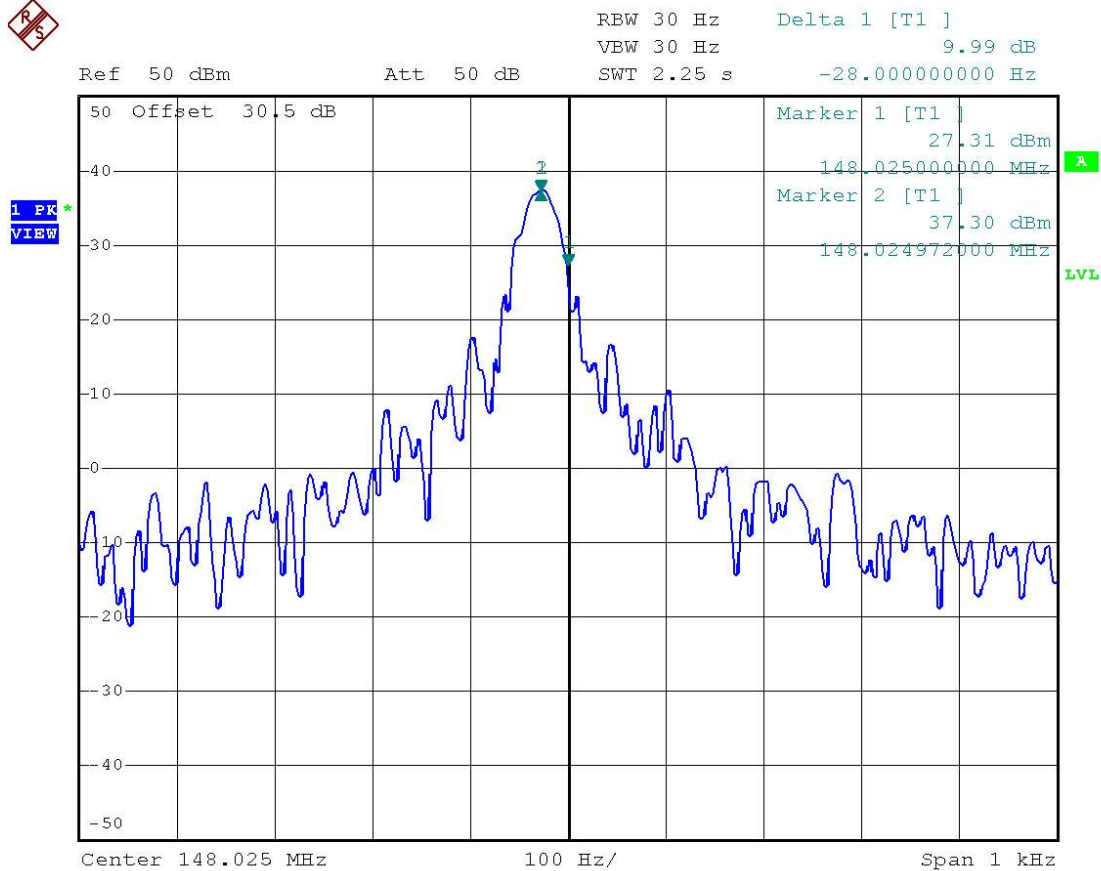


5.9.6.3 Plot 1 (-30°C)



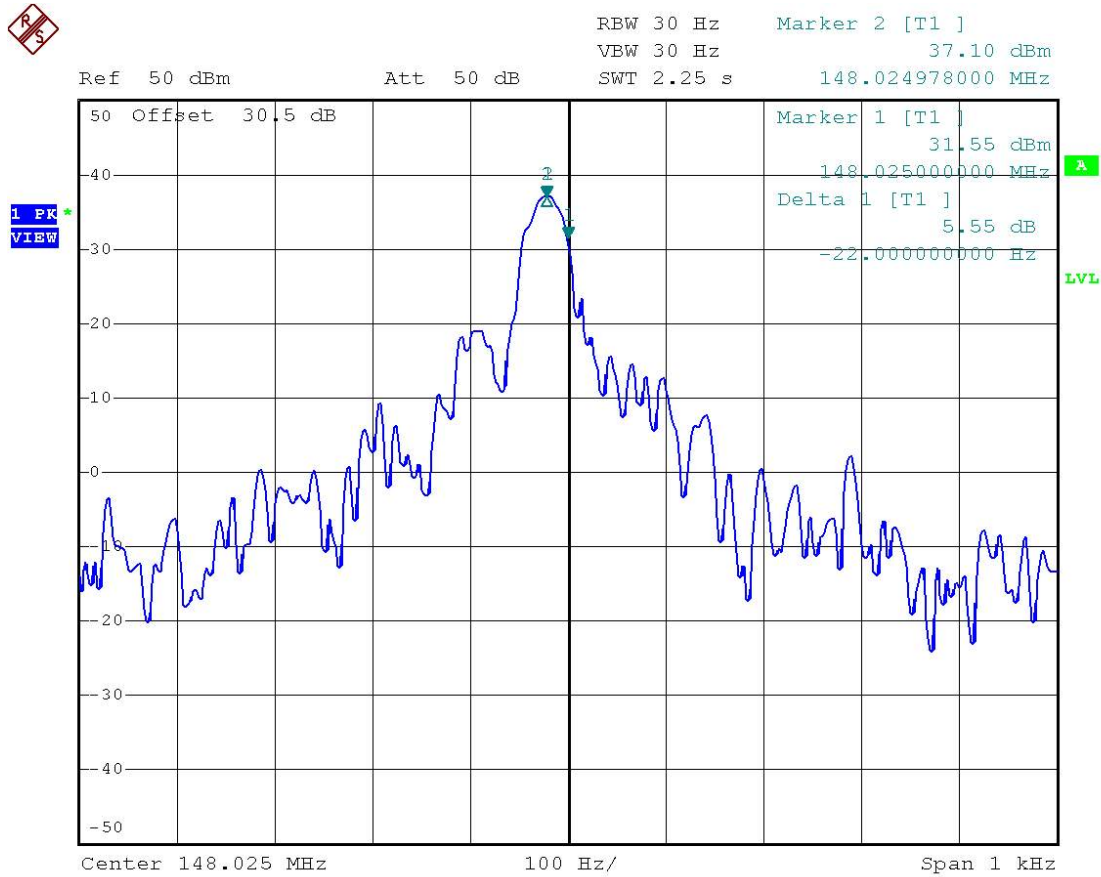
Date: 31.OCT.2008 14:48:44

5.9.6.4 Plot 2 (-20°C)



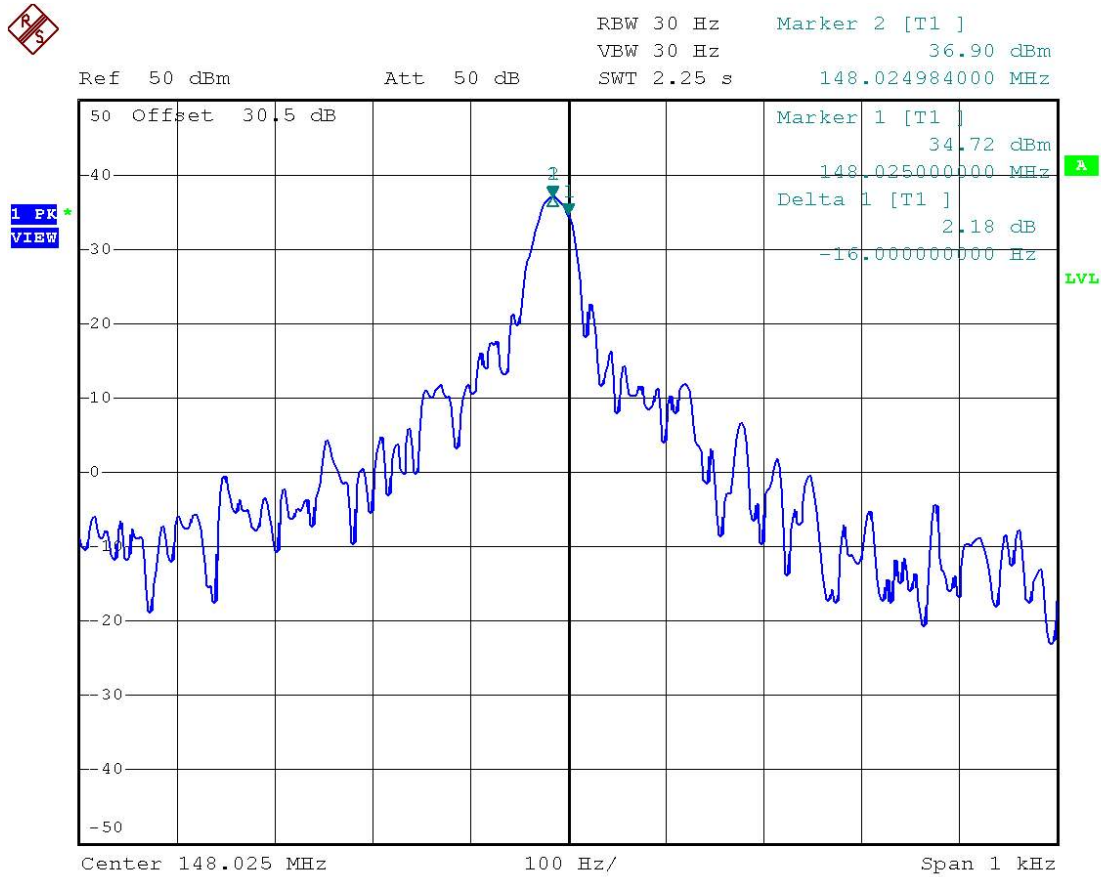
Date: 31.OCT.2008 14:52:04

5.9.6.5 Plot 3 (-10°C)



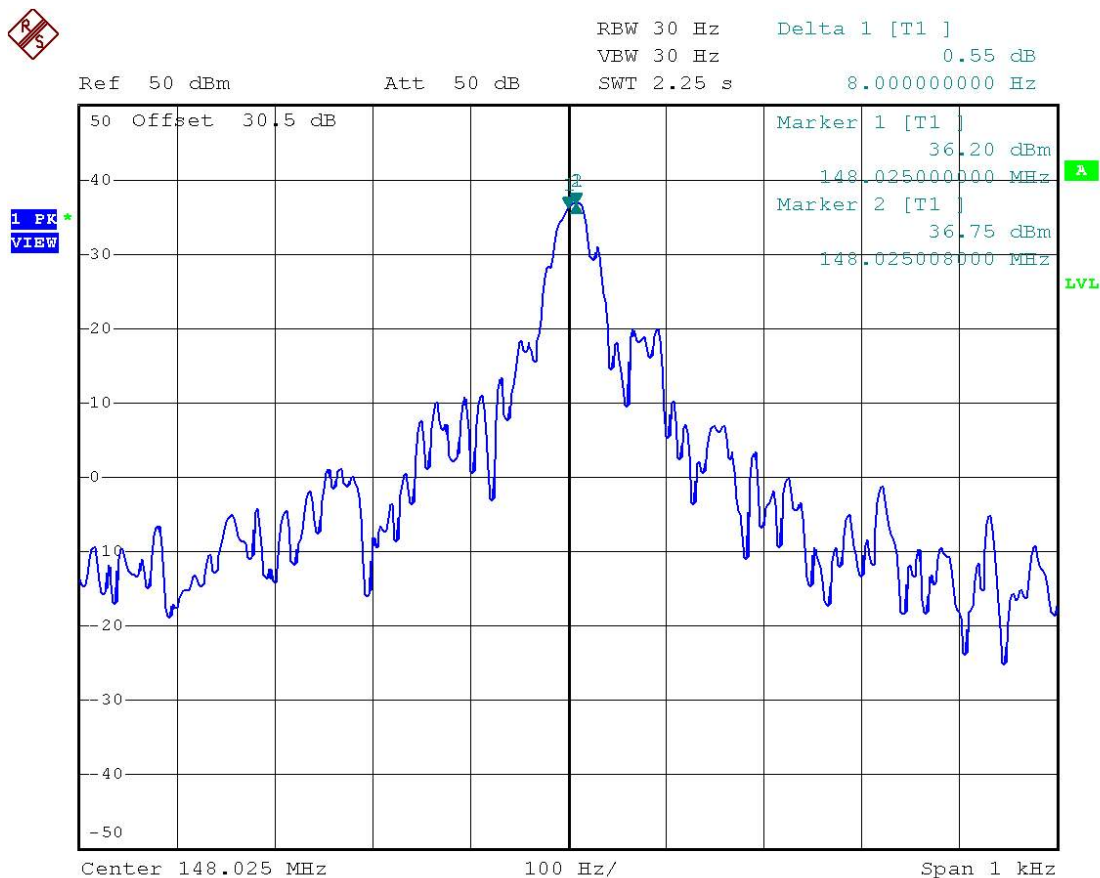
Date: 31.OCT.2008 15:11:05

5.9.6.6 Plot 4 (0°C)



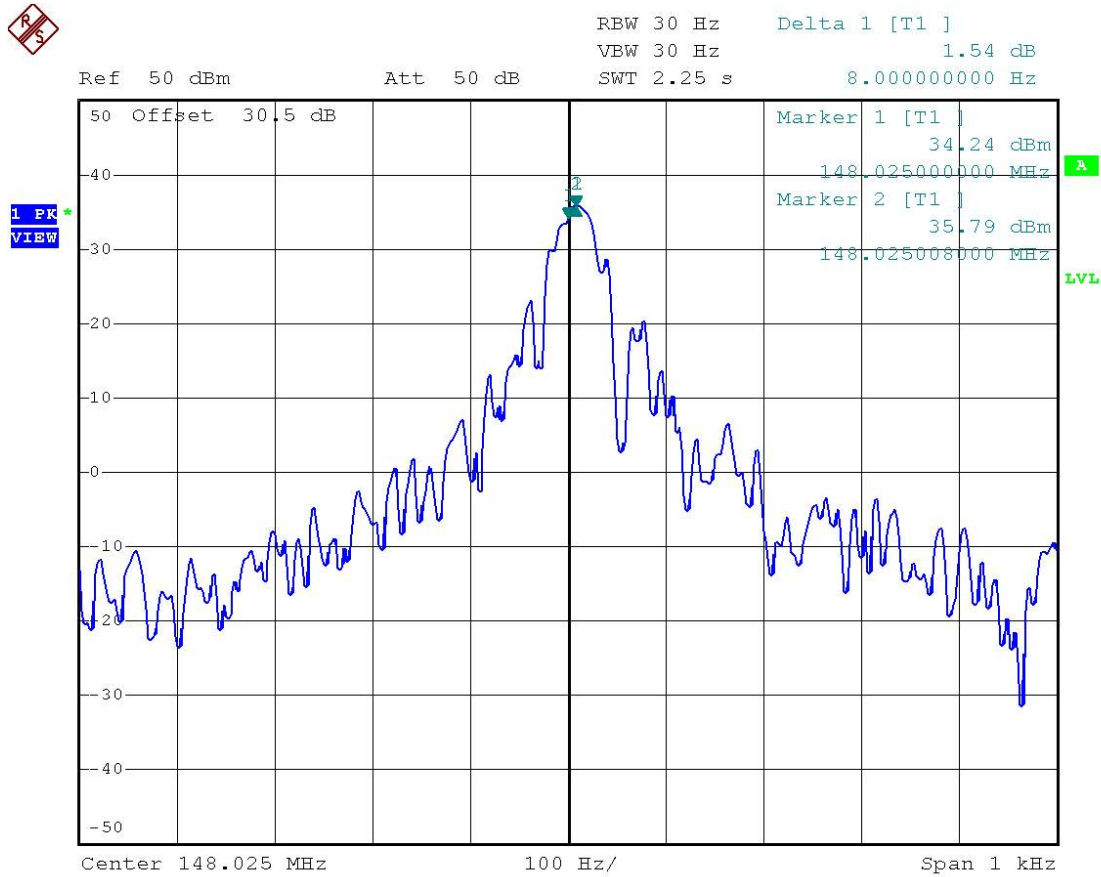
Date: 31.OCT.2008 15:23:32

5.9.6.7 Plot 5 (+10°C)



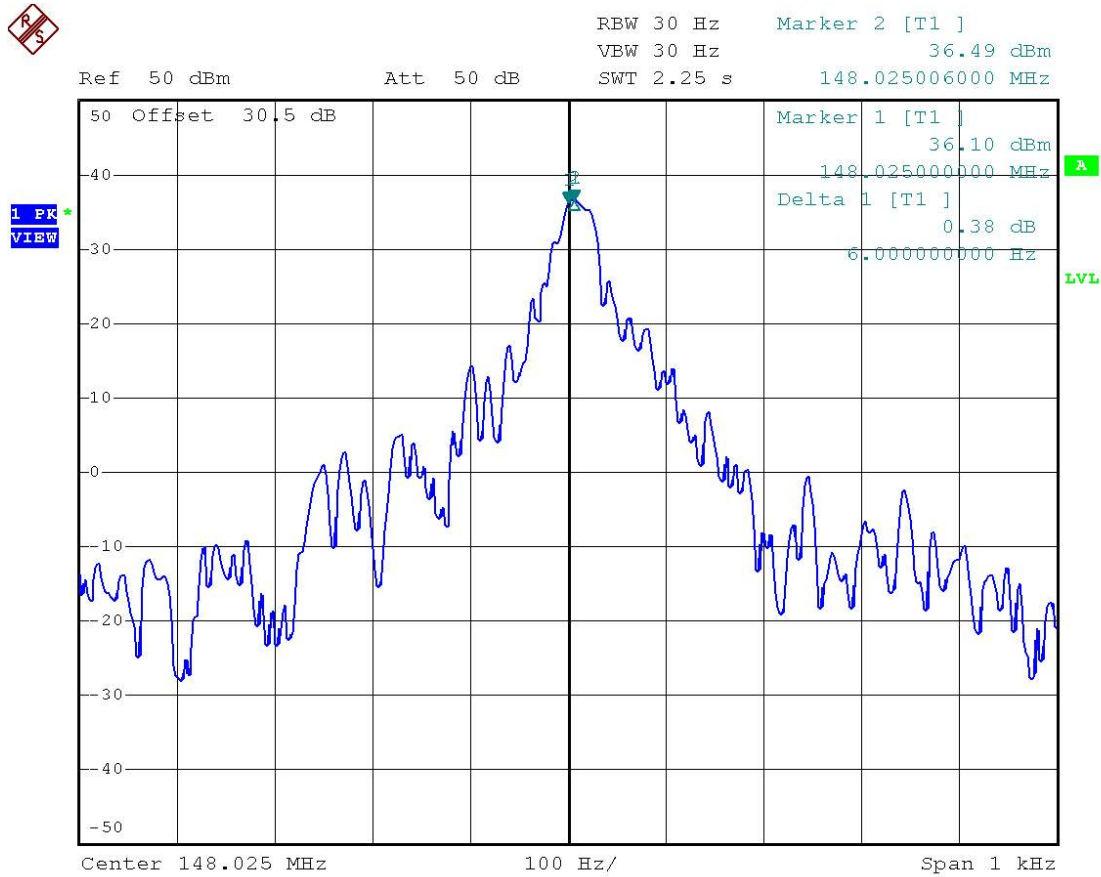
Date: 31.OCT.2008 15:40:04

5.9.6.8 Plot 6 (+20°C)



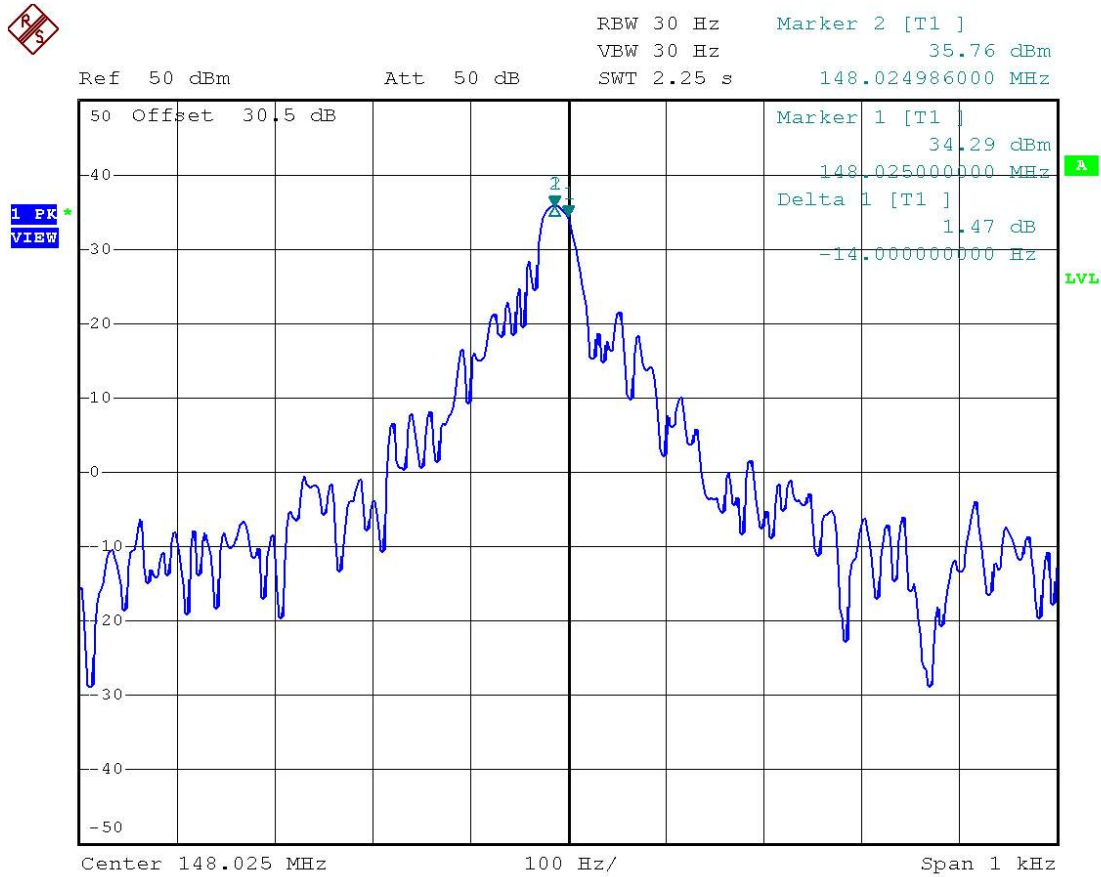
Date: 31.OCT.2008 13:57:39

5.9.6.9 Plot 7 (+30°C)



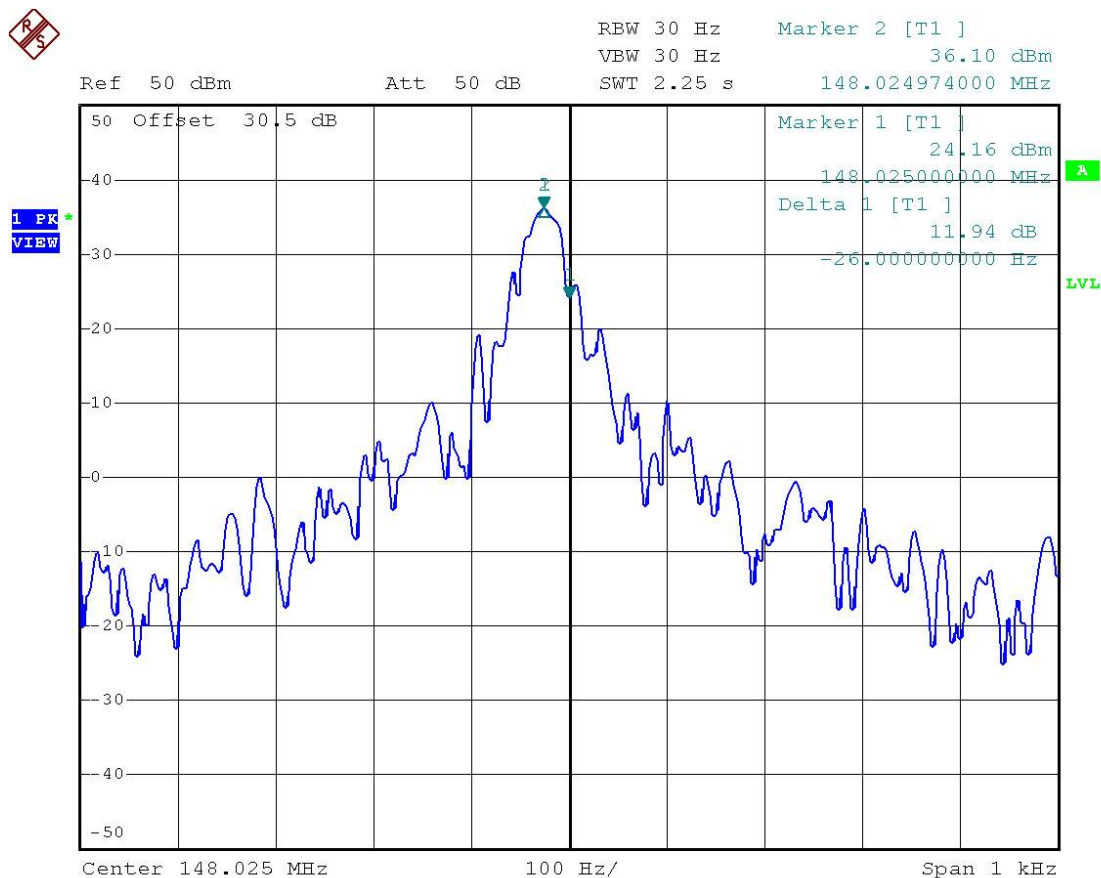
Date: 31.OCT.2008 15:53:35

5.9.6.10 Plot 8 (+40°C)



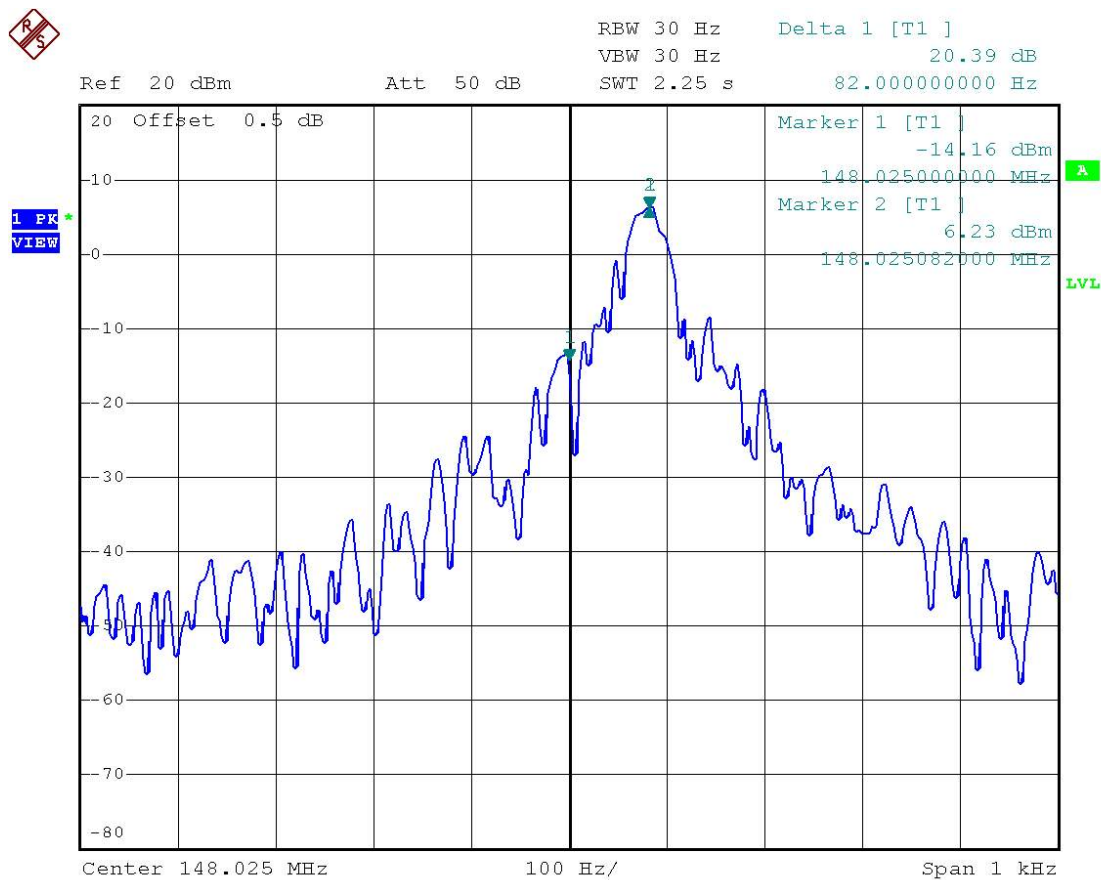
Date: 31.OCT.2008 16:10:18

5.9.6.11 Plot 9 (+50°C)



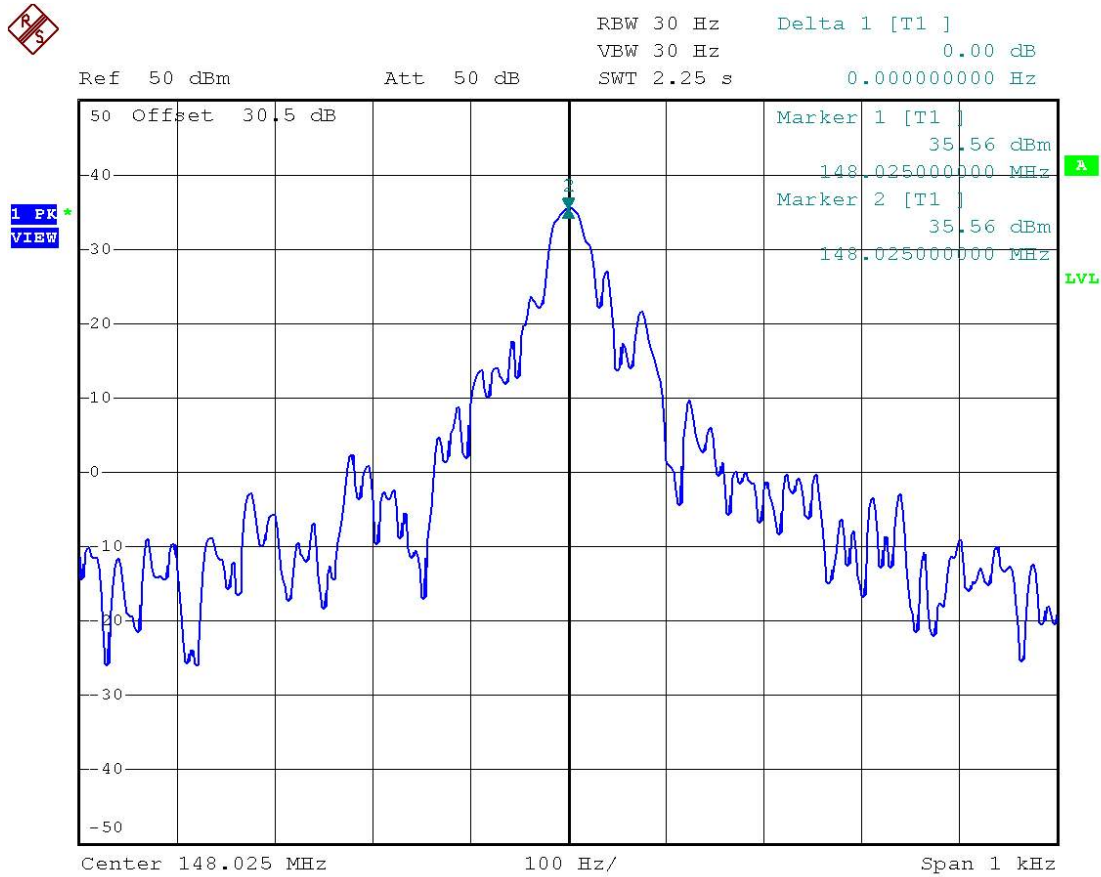
Date: 31.OCT.2008 18:46:18

5.9.6.12 Plot 10 (+60°C)



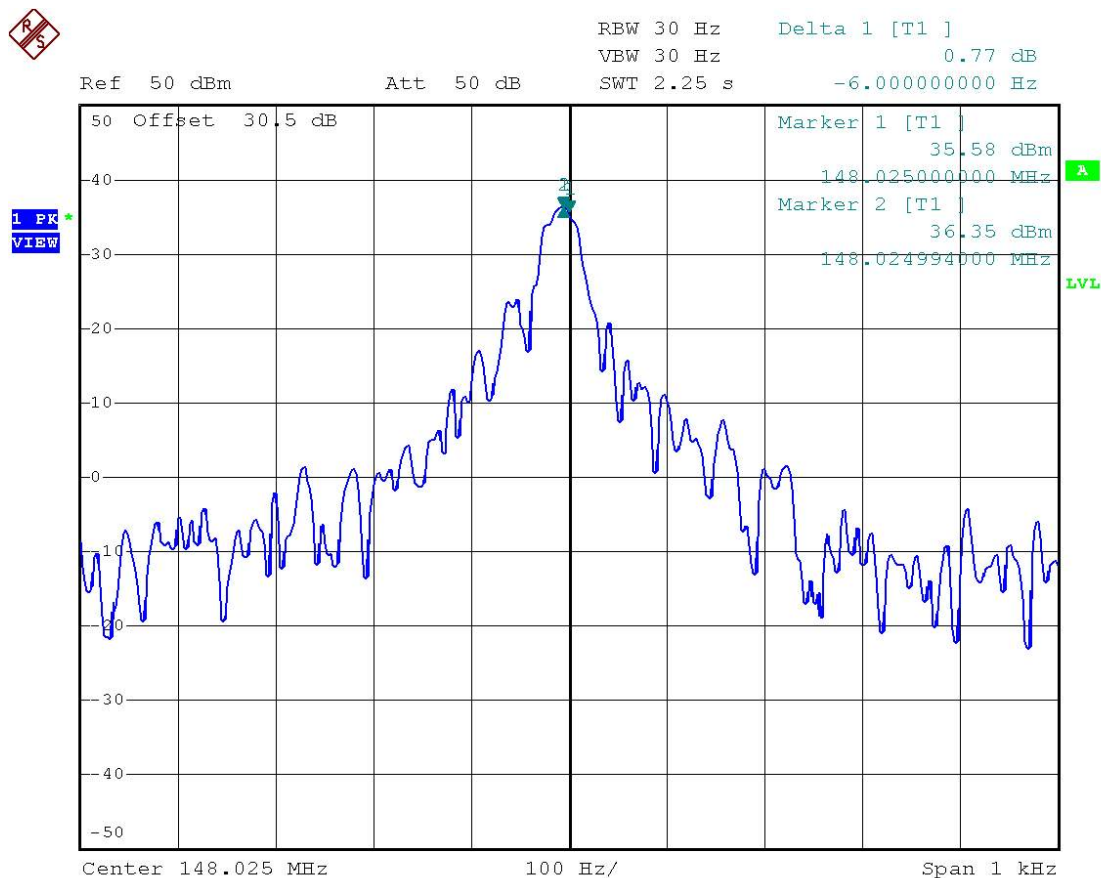
Date: 3.NOV.2008 09:49:05

5.9.6.13 Plot 11 (20°C, 6.29V)



Date: 31.OCT.2008 13:58:57

5.9.6.14 Plot 12 (20°C, 8.51V)



Date: 31.OCT.2008 13:59:55

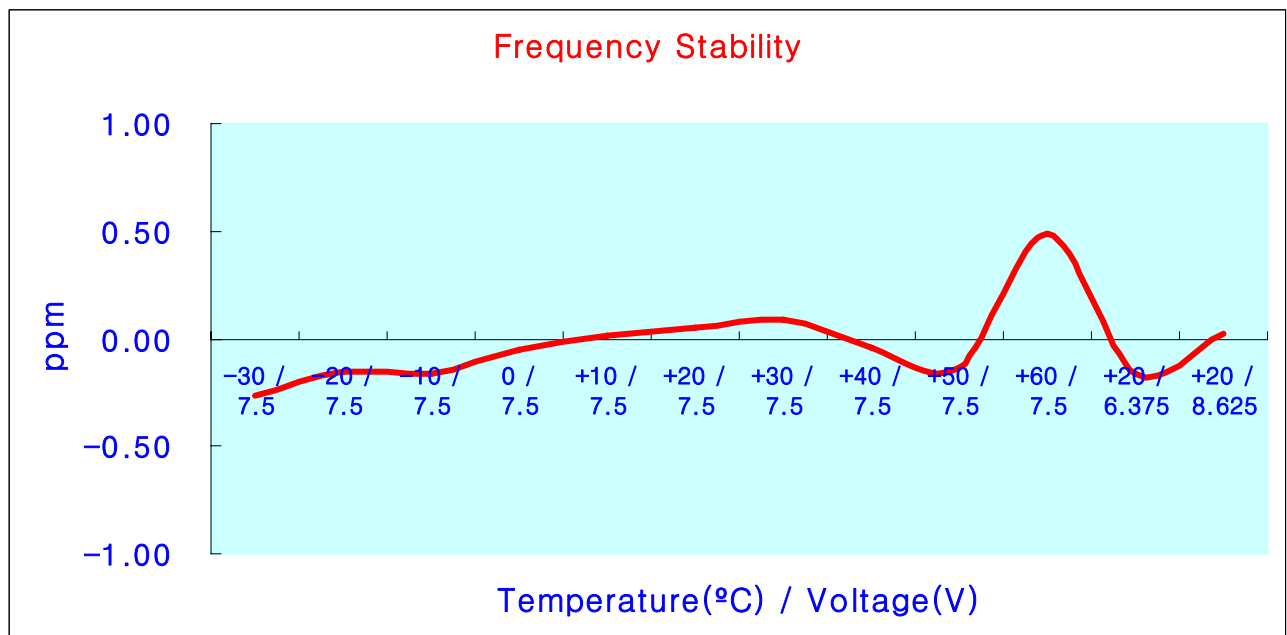
5.9.7 Test Result 2

FCC Rules :	Part 2 §2.1055 & §90.213
IC Rules :	RSS-119 Section 7.0
Operating Frequency :	161.025 MHz
Channel :	2nd Channel
Power Output :	5 Watts
Modulation :	Non-Modulation
Reference Voltage :	7.5 VDC

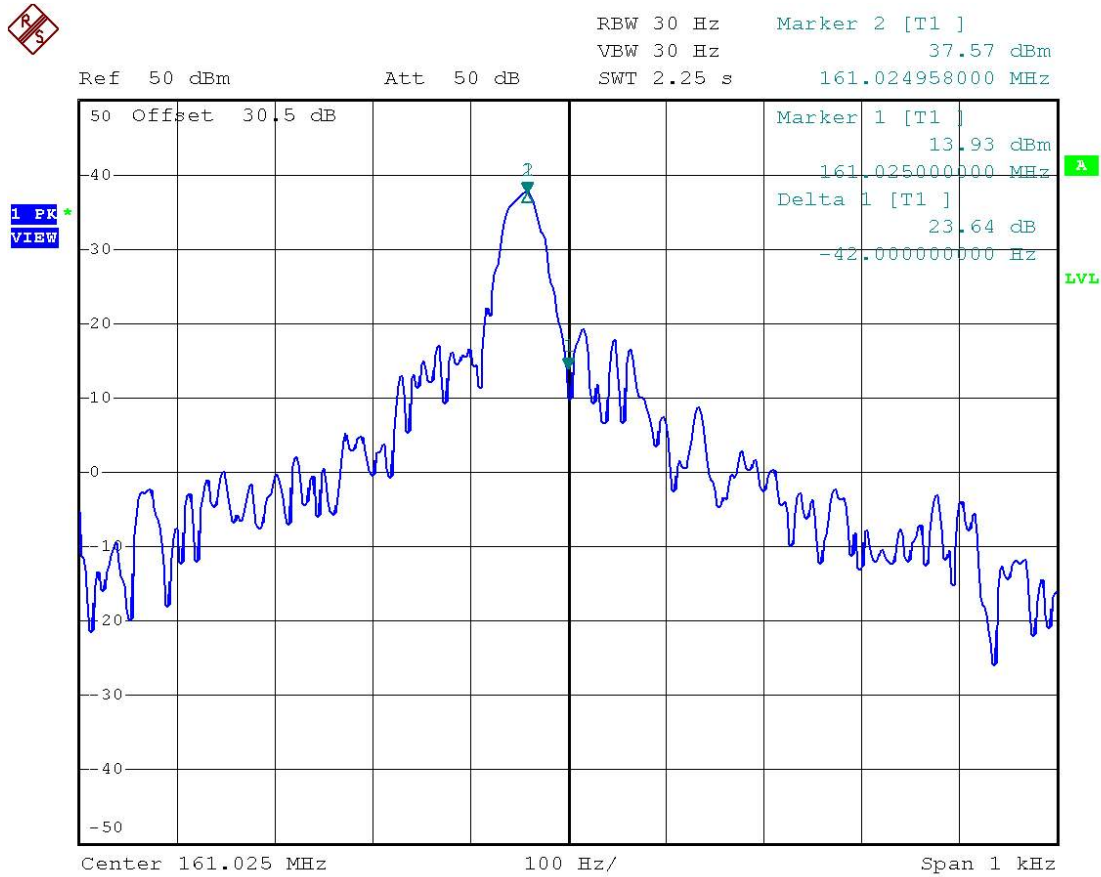
5.9.7.1 Data

Voltage (%)	Power Supply (Vdc)	Temperature (°C)	Frequency (Hz)	Deviation (ppm)	Limit (ppm)
100 %	7.5	-30	161024958	-0.26	2.5
100 %	7.5	-20	161024976	-0.15	2.5
100 %	7.5	-10	161024974	-0.16	2.5
100 %	7.5	0	161024992	-0.05	2.5
100 %	7.5	+10	161025002	0.01	2.5
100 %	7.5	+20 (ref)	161025008	0.05	2.5
100 %	7.5	+30	161025014	0.09	2.5
100 %	7.5	+40	161024994	-0.04	2.5
100 %	7.5	+50	161024978	-0.14	2.5
100 %	7.5	+60	161025078	0.48	2.5
85 %	6.375	+20	161024974	-0.16	2.5
115 %	8.625	+20	161025004	0.02	2.5

5.9.7.2 Graph

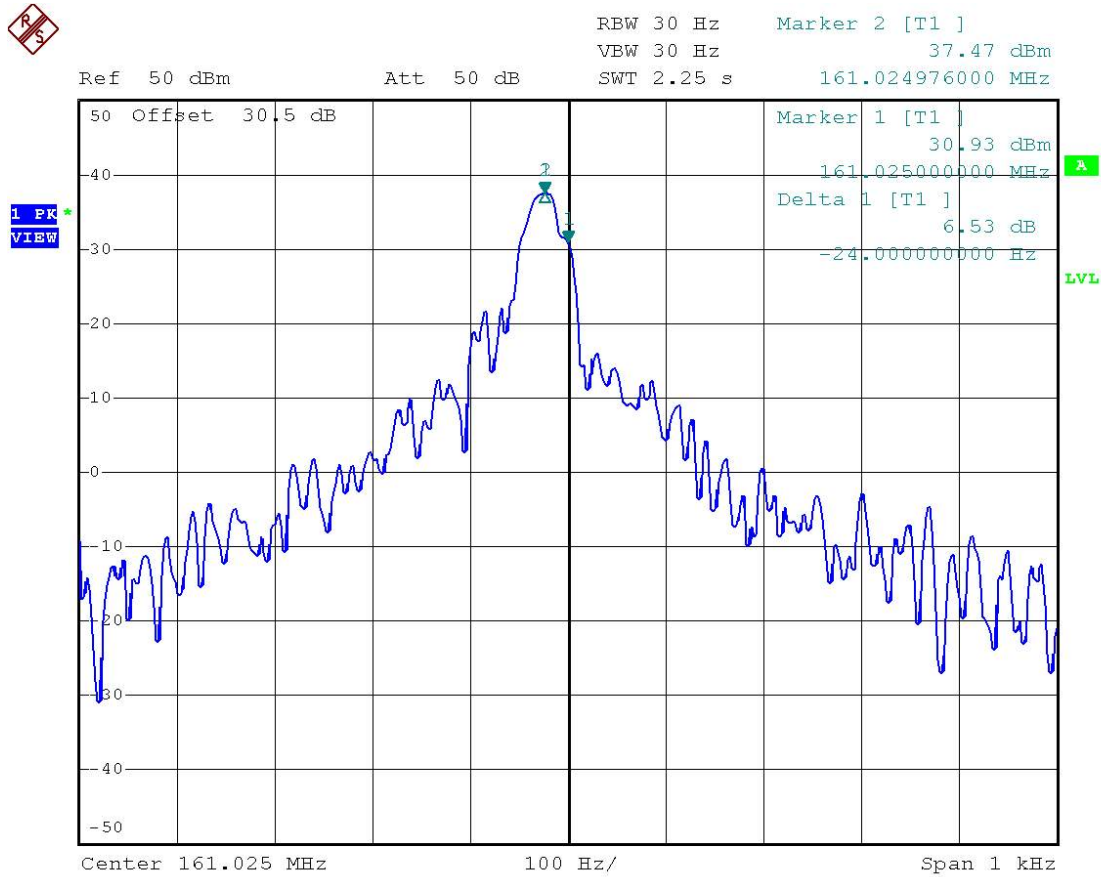


5.9.7.3 Plot 1 (-30°C)



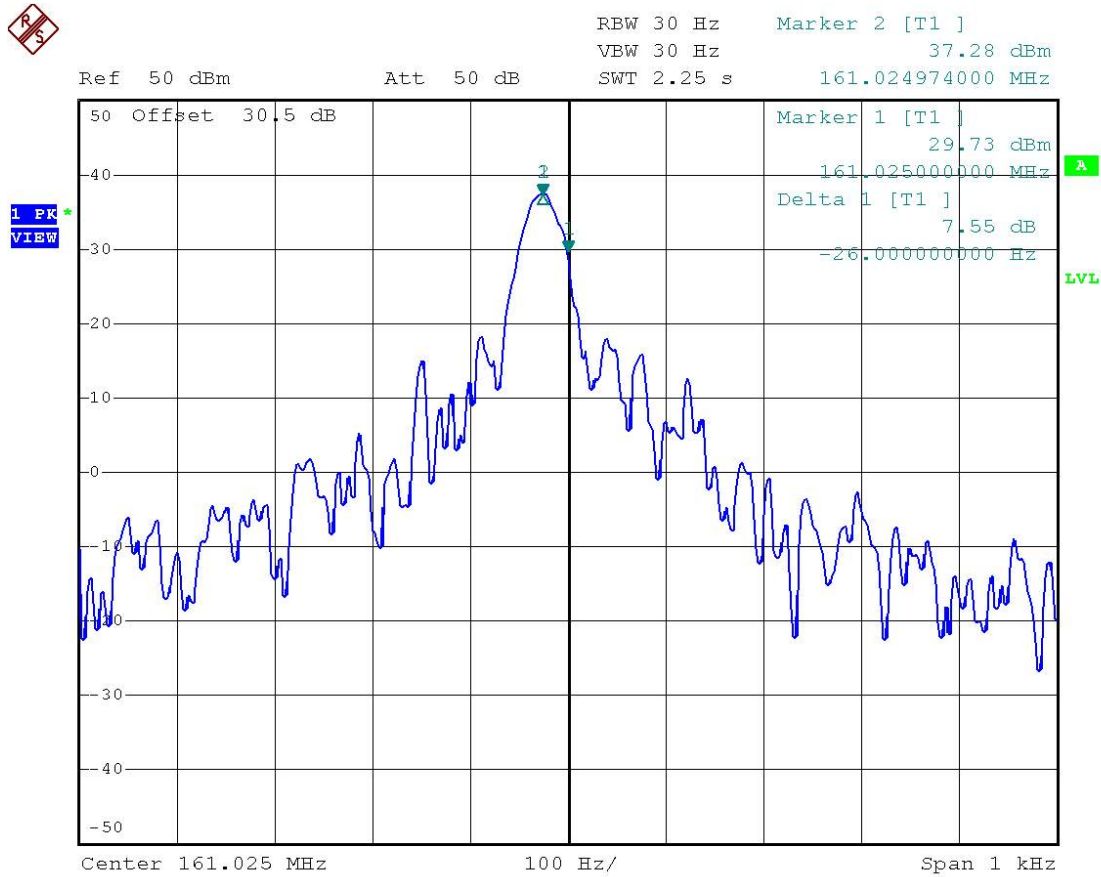
Date: 31.OCT.2008 14:47:42

5.9.7.4 Plot 2 (-20°C)



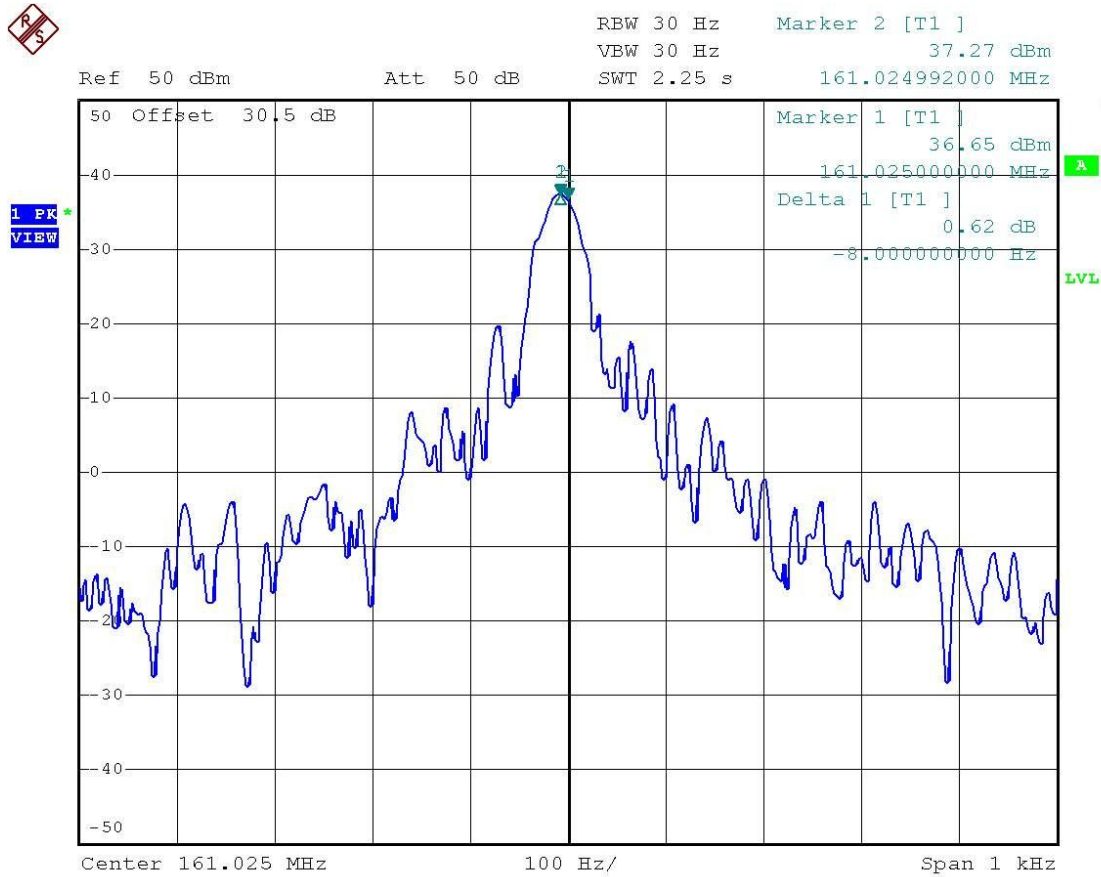
Date: 31.OCT.2008 14:53:17

5.9.7.5 Plot 3 (-10°C)



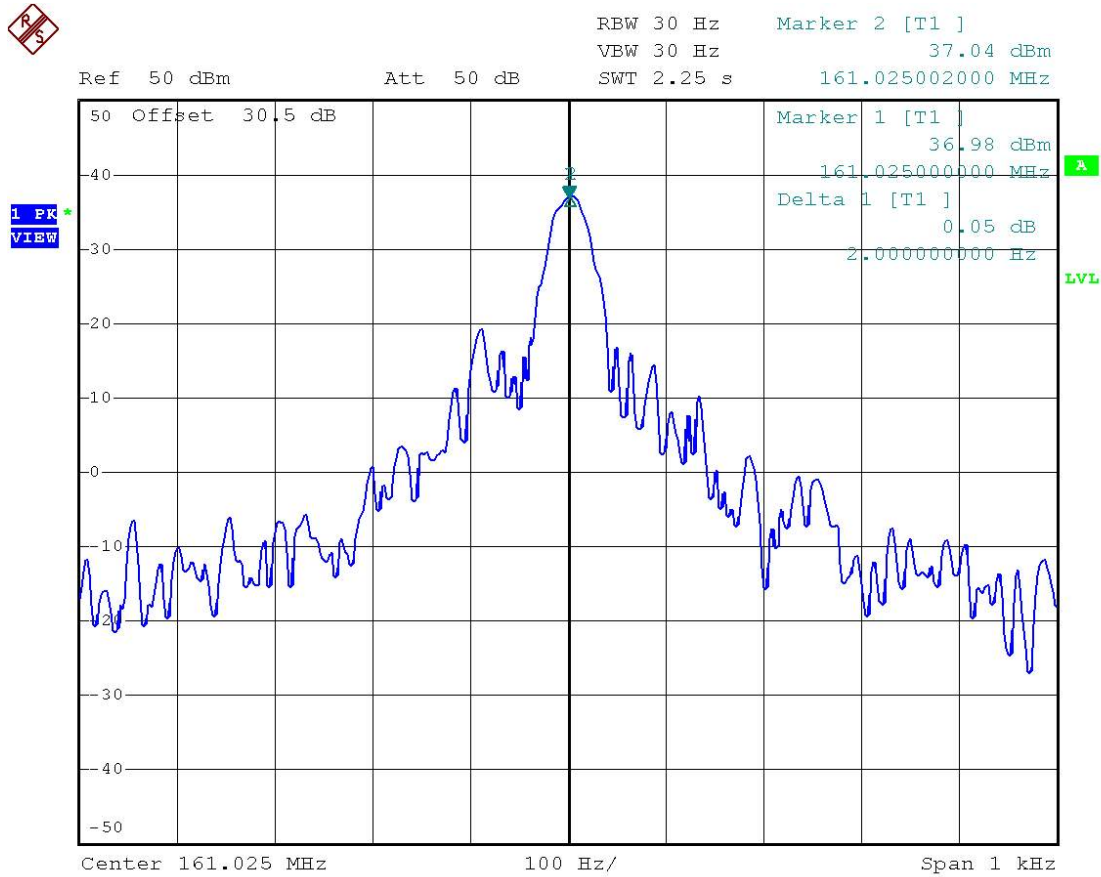
Date: 31.OCT.2008 15:10:07

5.9.7.6 Plot 4 (0°C)



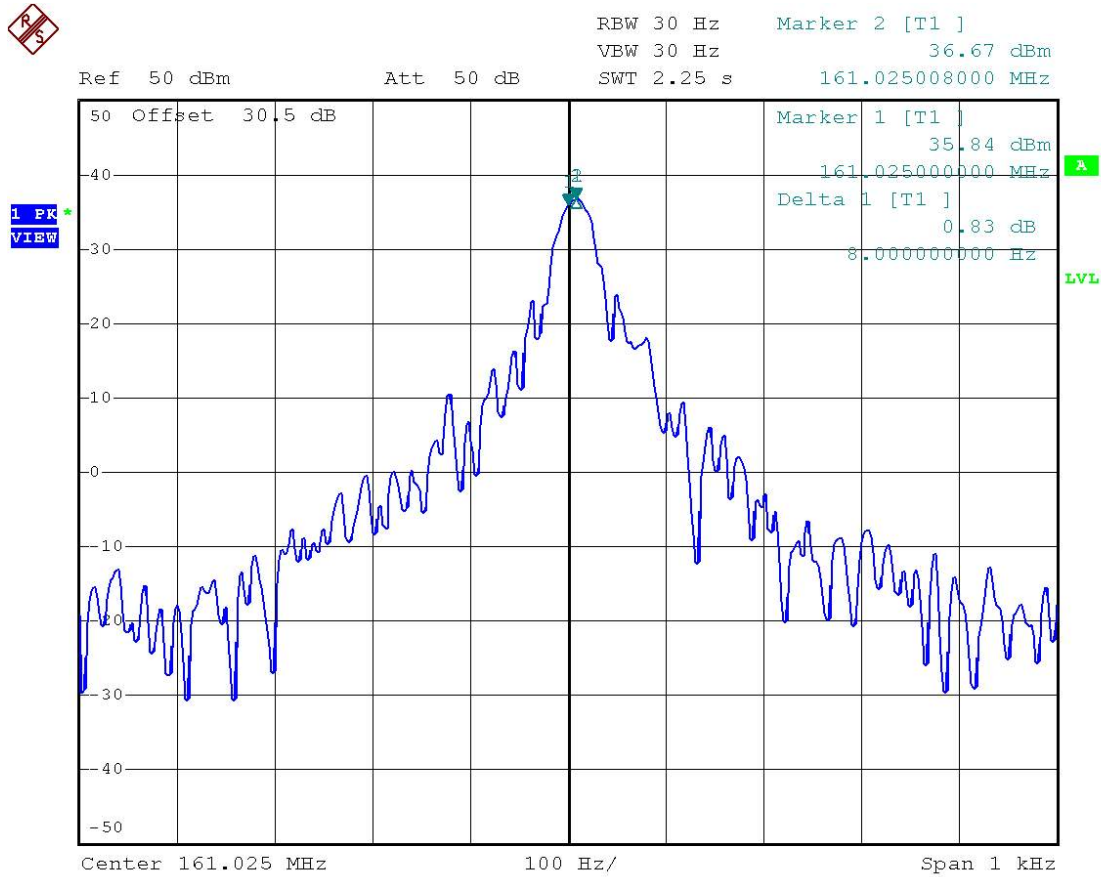
Date: 31.OCT.2008 15:25:39

5.9.7.7 Plot 5 (+10°C)



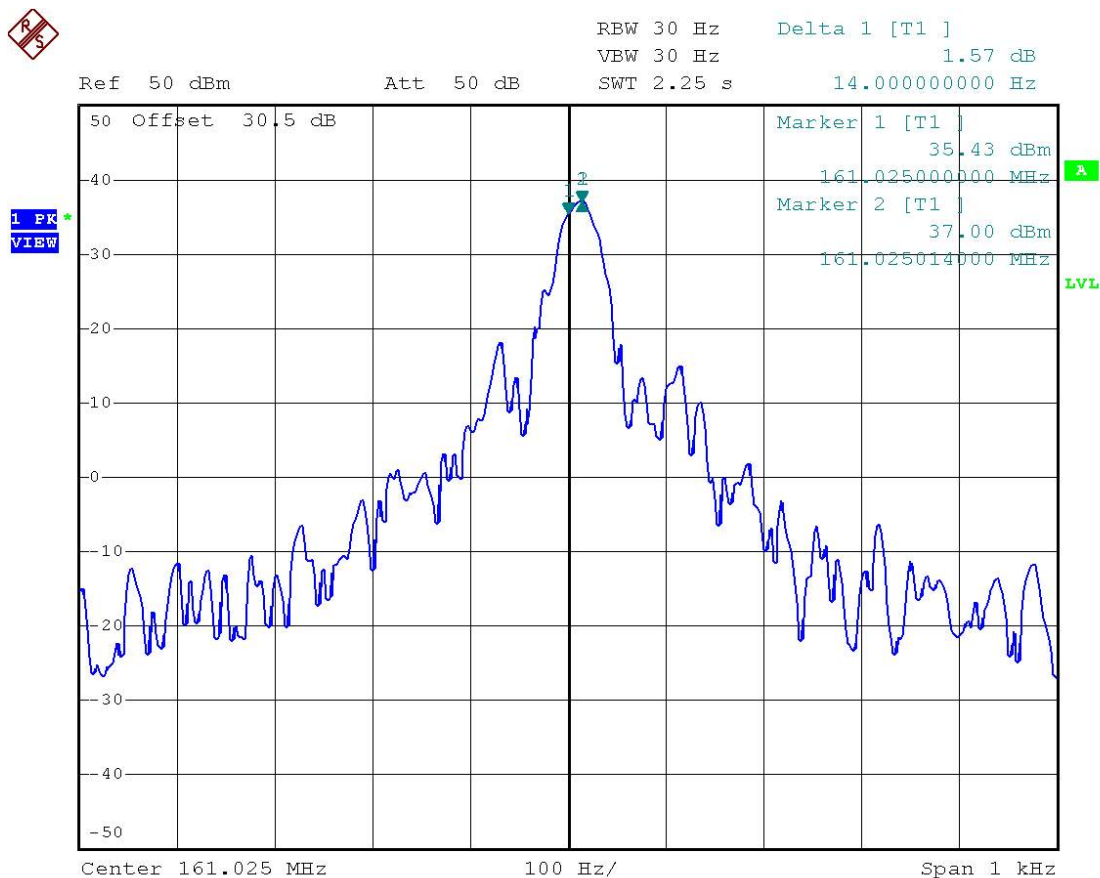
Date: 31.OCT.2008 15:38:59

5.9.7.8 Plot 6 (+20°C)



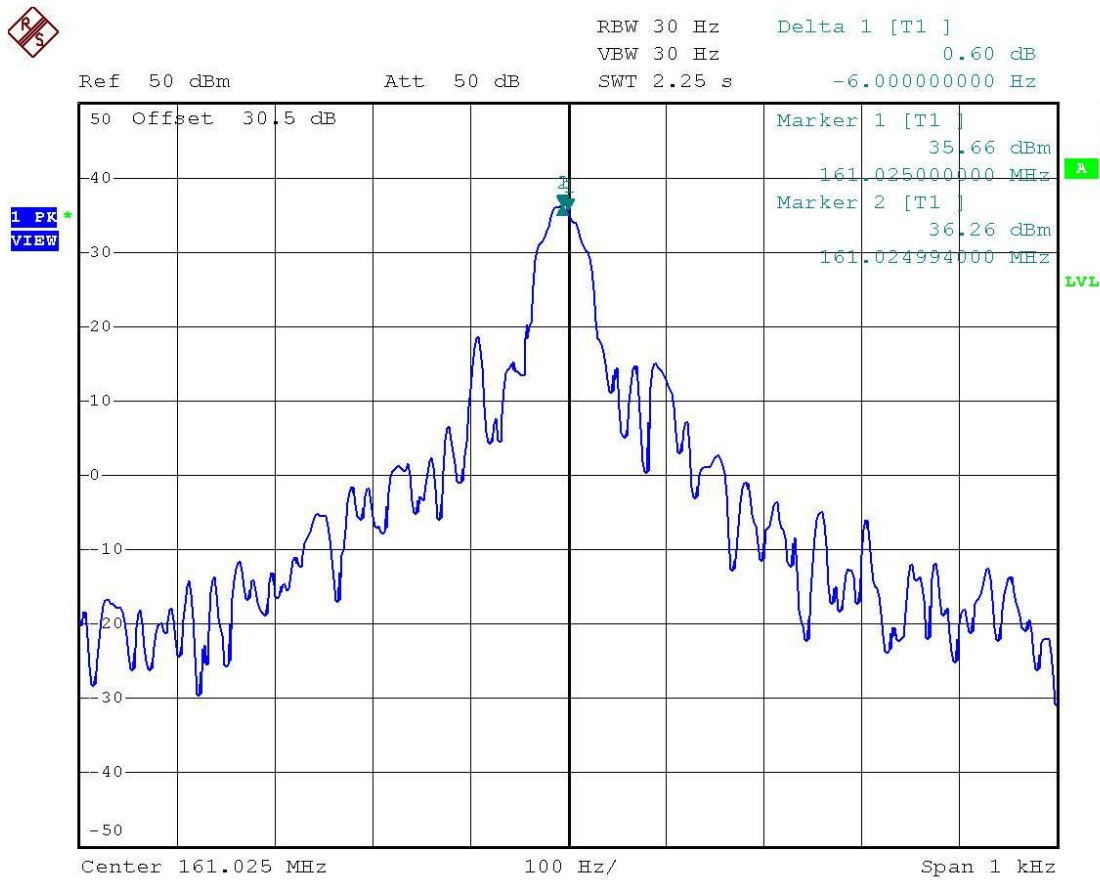
Date: 31.OCT.2008 14:02:28

5.9.7.9 Plot 7 (+30°C)



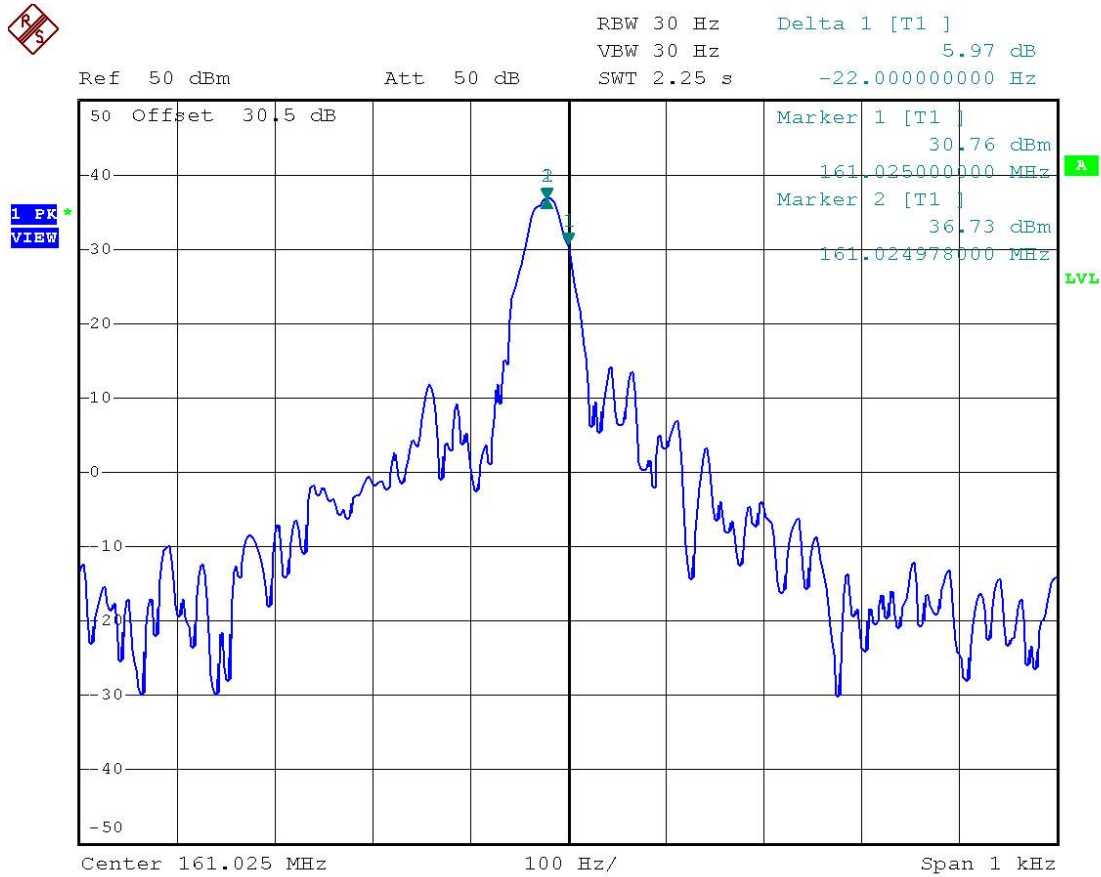
Date: 31.OCT.2008 15:54:33

5.9.7.10 Plot 8 (+40°C)



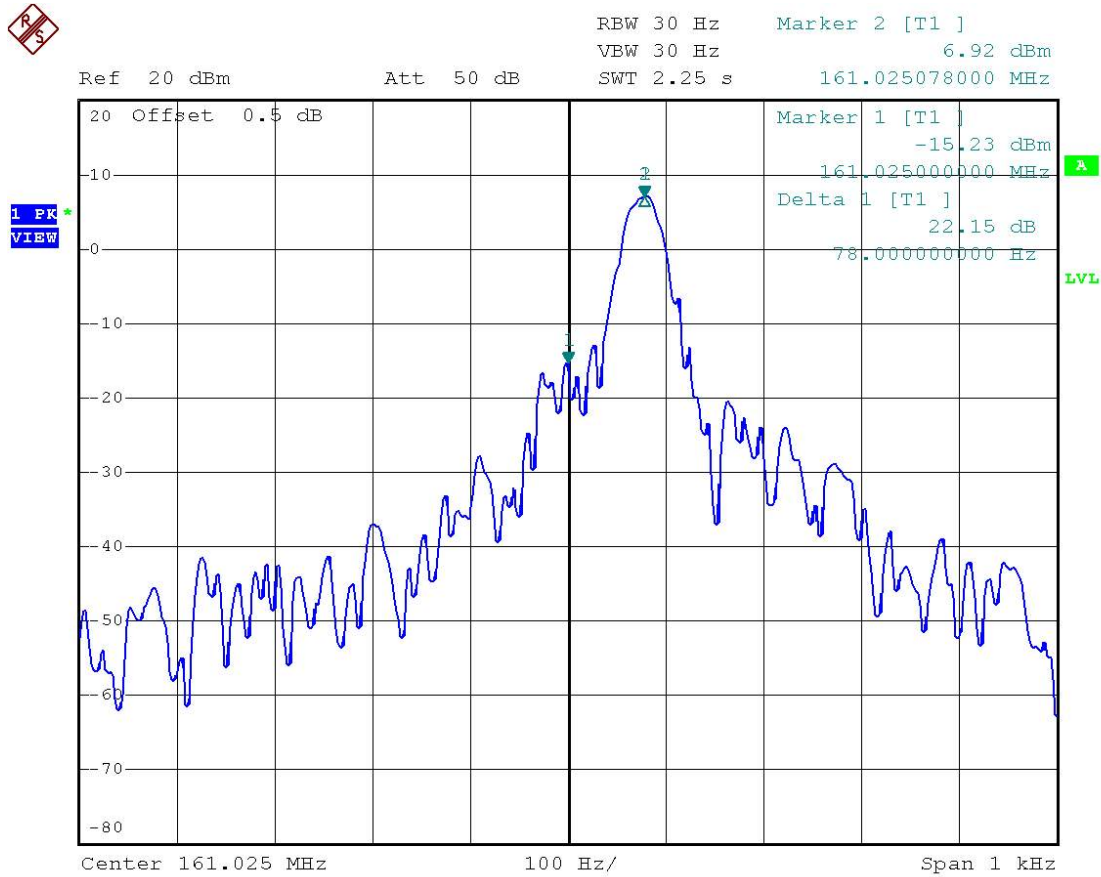
Date: 31.OCT.2008 16:09:07

5.9.7.11 Plot 9 (+50°C)



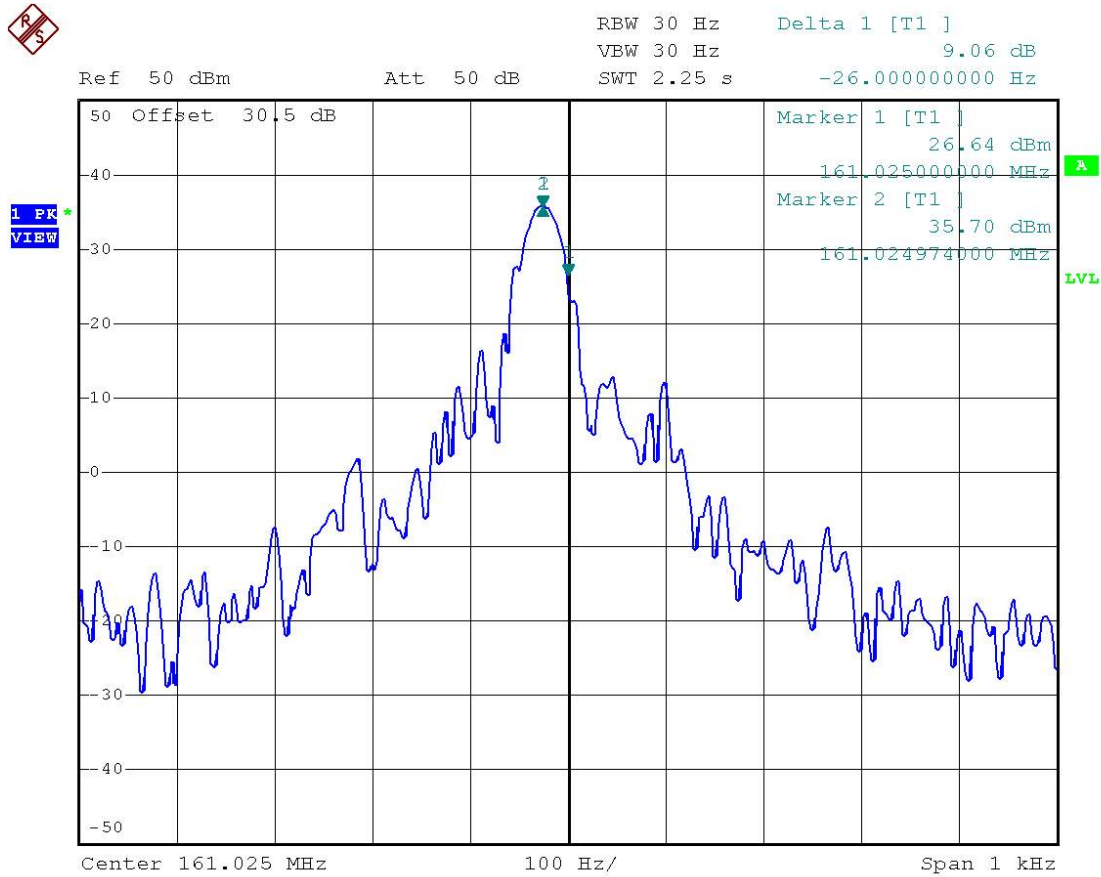
Date: 31.OCT.2008 18:47:30

5.9.7.12 Plot 10 (+60°C)



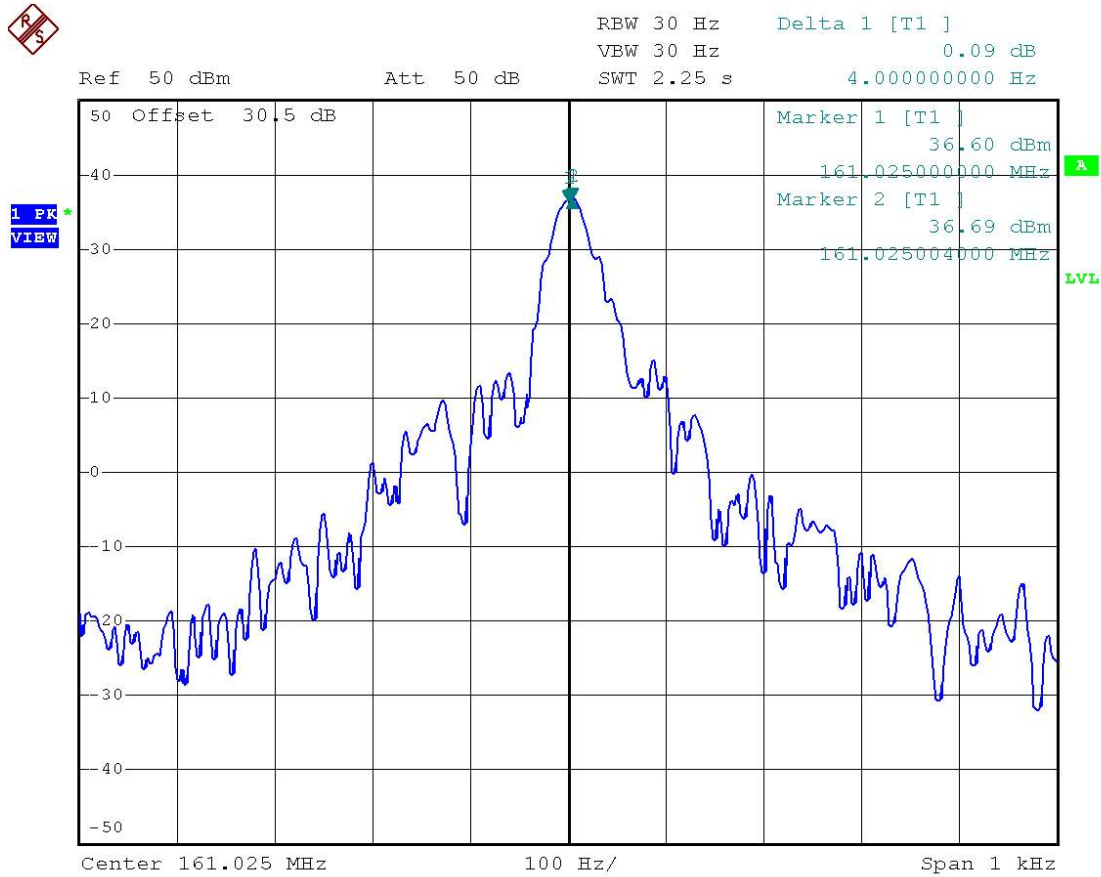
Date: 3.NOV.2008 09:50:07

5.9.7.13 Plot 11 (20 °C, 6.29V)



Date: 31.OCT.2008 14:03:08

5.9.7.14 Plot 12 (20°C, 8.51V)



Date: 31.OCT.2008 14:01:32

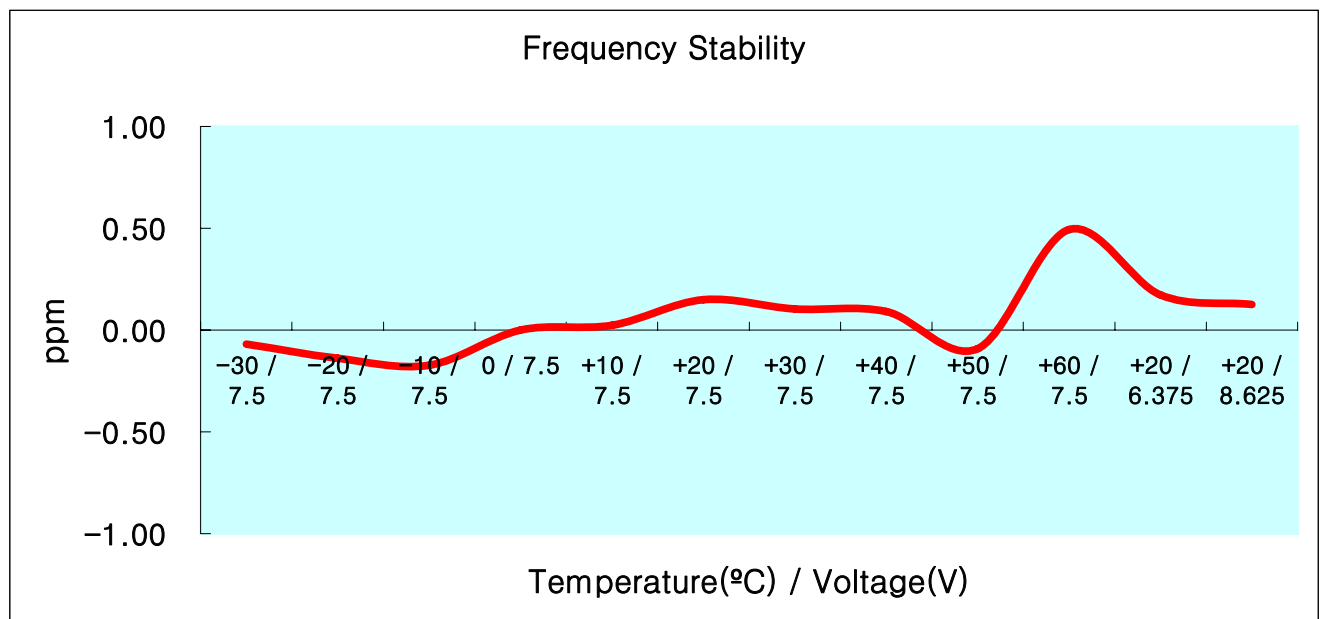
5.9.8 Test Result 3

FCC Rules :	Part 2 §2.1055 & §90.213
IC Rules :	RSS-119 Section 7.0
Operating Frequency :	173.975 MHz
Channel :	3rd Channel
Power Output :	5 Watts
Modulation :	Non-Modulation
Reference Voltage :	7.4 VDC

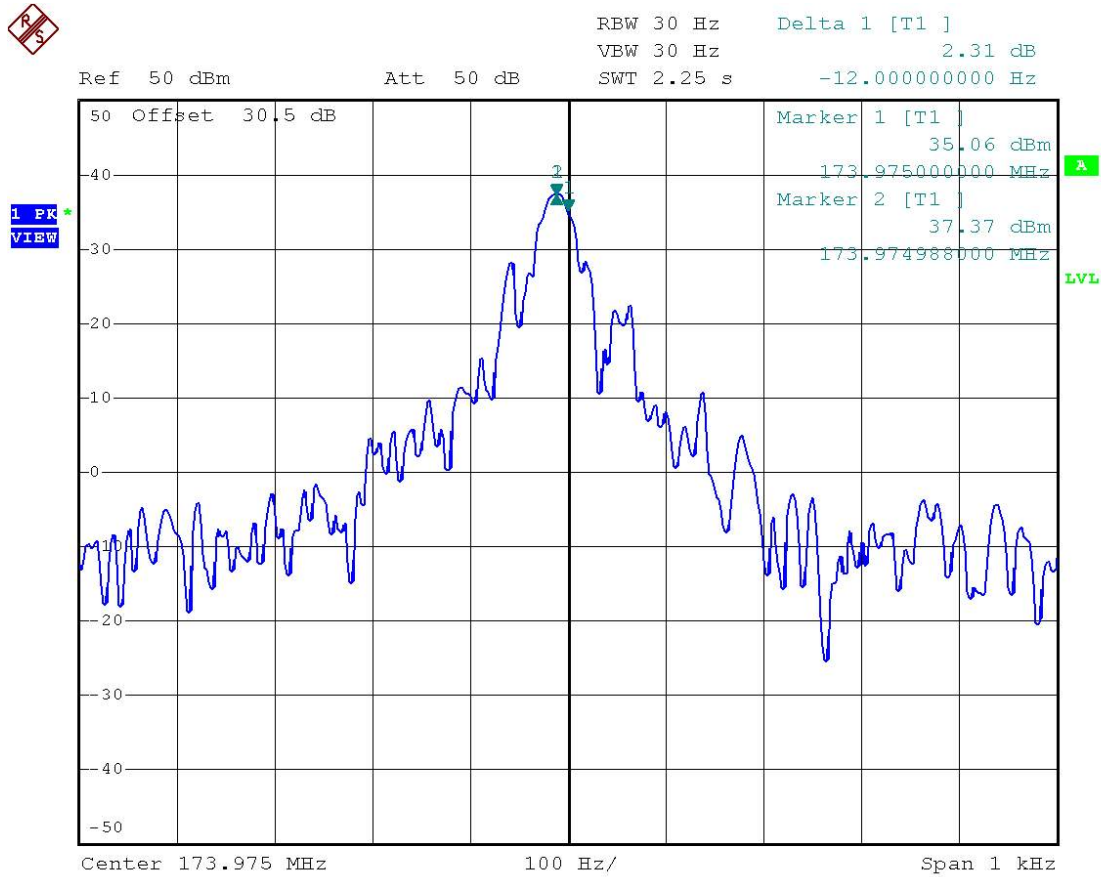
5.9.8.1 Data

Voltage (%)	Power Supply (Vdc)	Temperature (°C)	Frequency (Hz)	Deviation (ppm)	Limit (ppm)
100 %	7.5	-30	173974988	-0.07	2.5
100 %	7.5	-20	173974976	-0.14	2.5
100 %	7.5	-10	173974970	-0.17	2.5
100 %	7.5	0	173975000	0.00	2.5
100 %	7.5	+10	173975004	0.02	2.5
100 %	7.5	+20 (ref)	173975026	0.15	2.5
100 %	7.5	+30	173975018	0.10	2.5
100 %	7.5	+40	173975016	0.09	2.5
100 %	7.5	+50	173974984	-0.09	2.5
100 %	7.5	+60	173975086	0.49	2.5
85 %	6.375	+20	173975030	0.17	2.5
115 %	8.625	+20	173975022	0.13	2.5

5.9.8.2 Graph

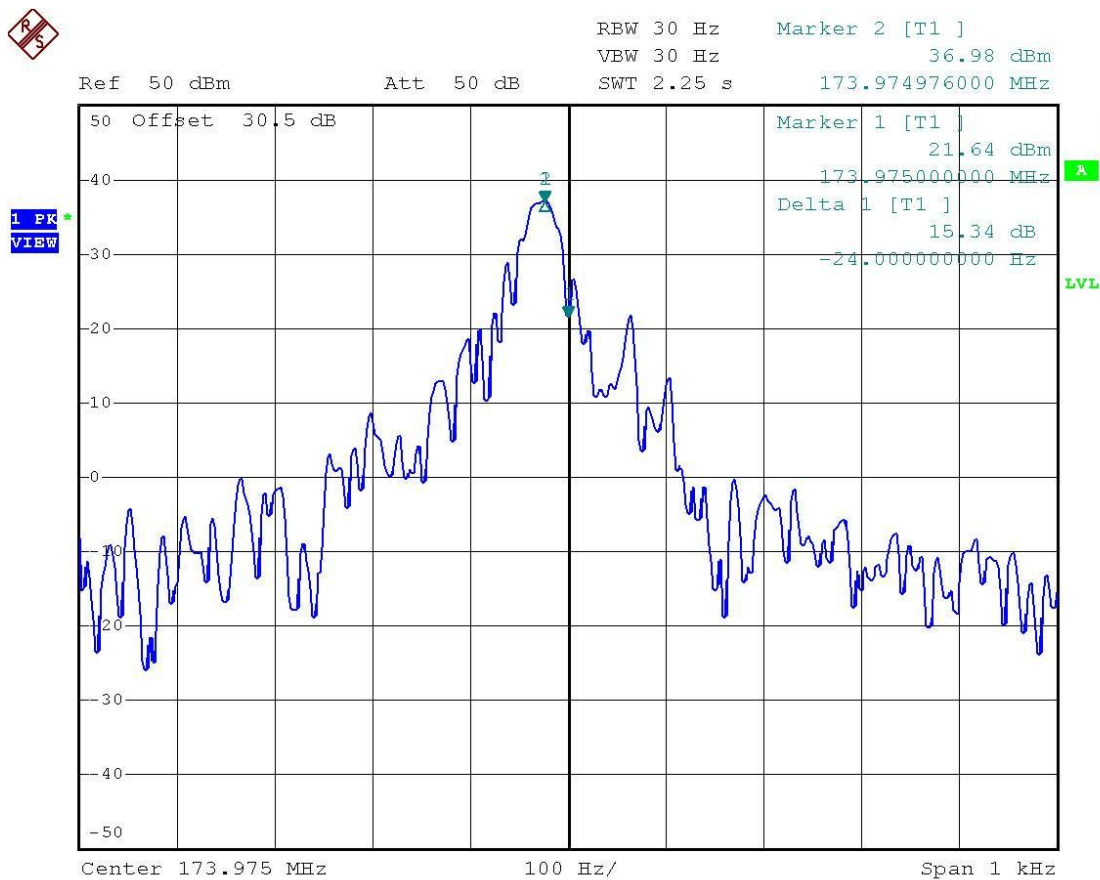


5.9.8.3 Plot 1 (-30°C)



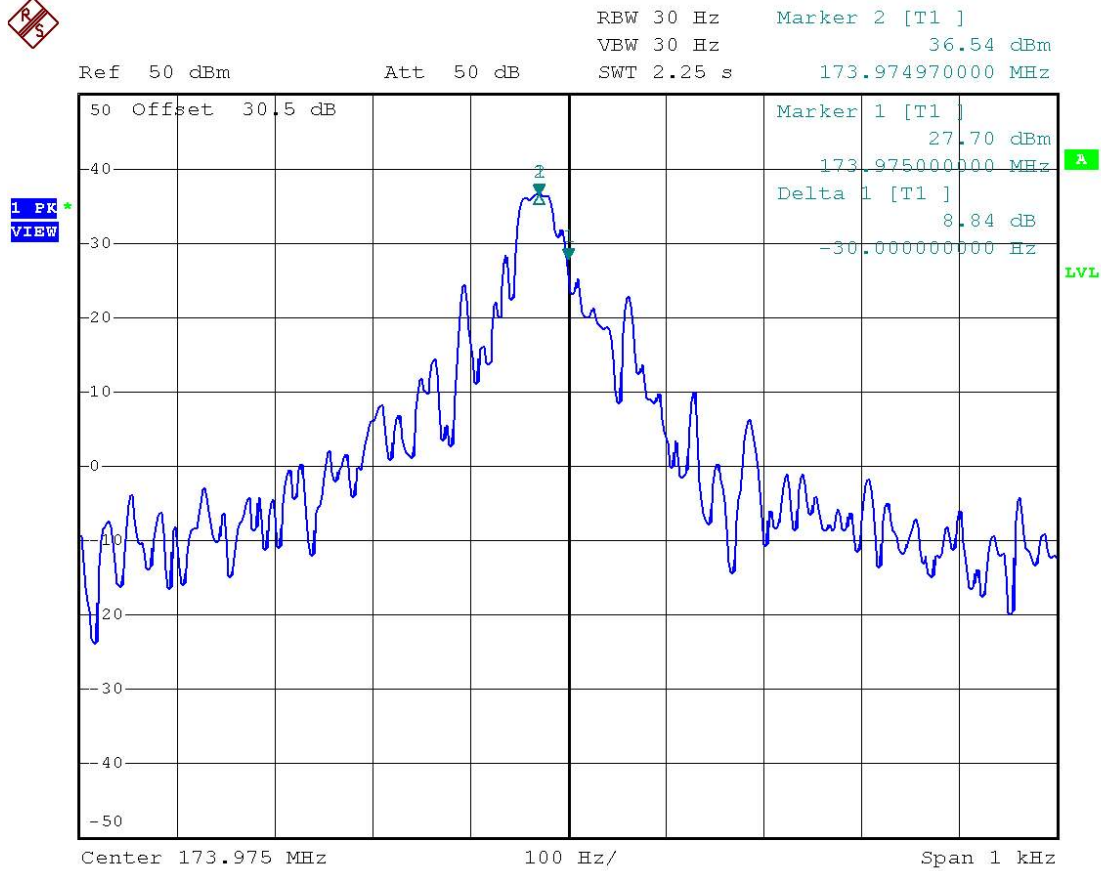
Date: 31.OCT.2008 14:46:25

5.9.8.4 Plot 2 (-20°C)



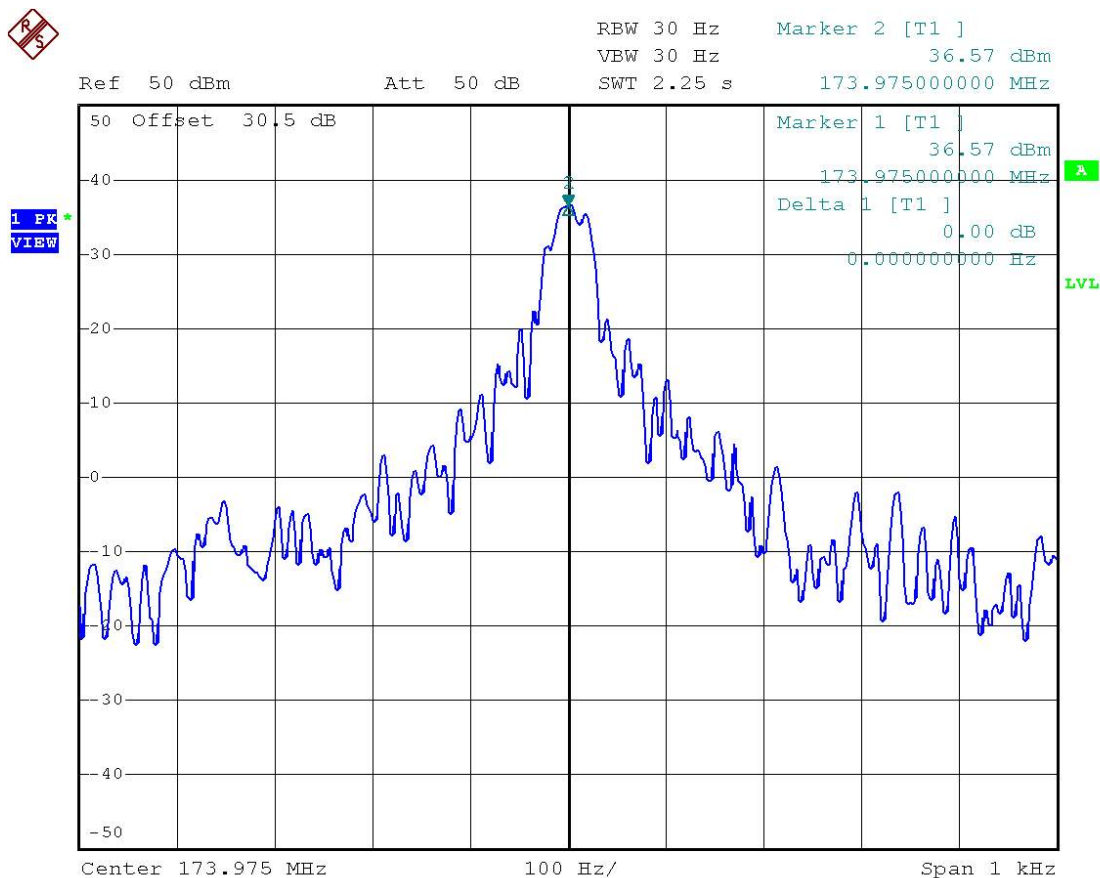
Date: 31.OCT.2008 14:54:49

5.9.8.5 Plot 3 (-10°C)



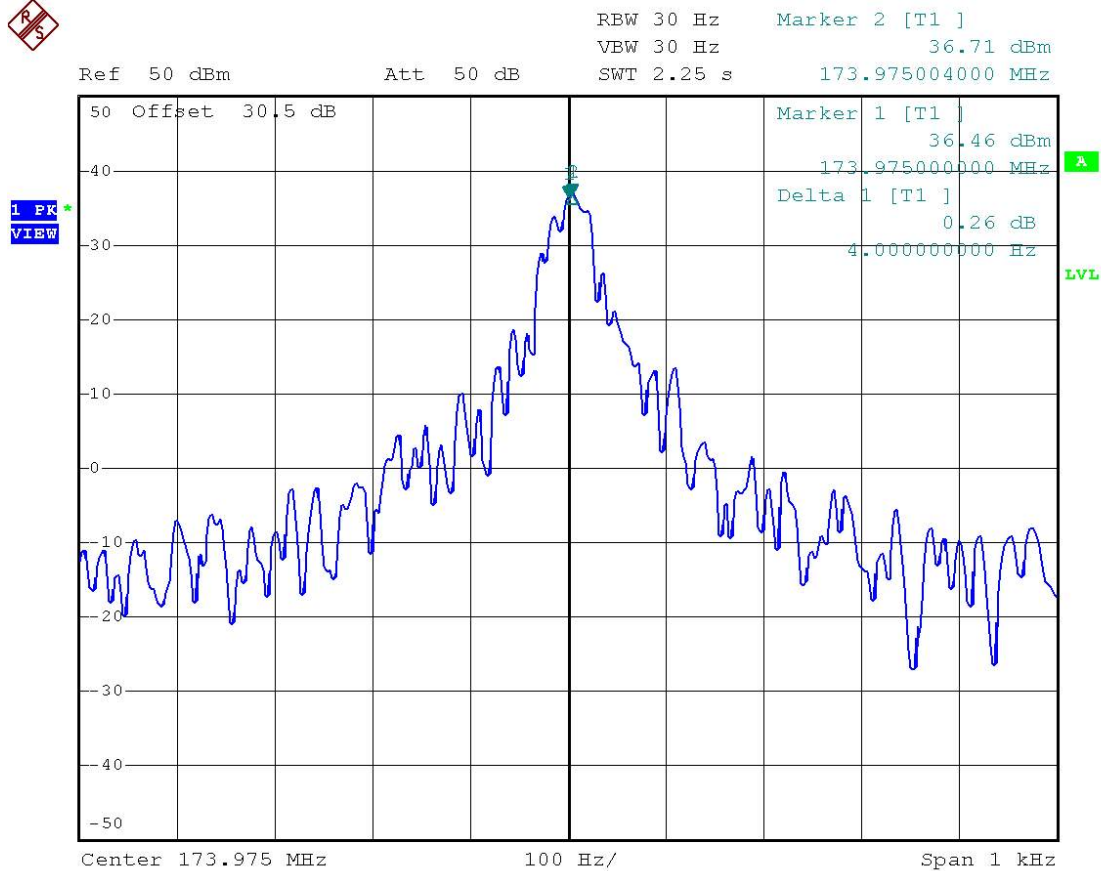
Date: 31.OCT.2008 15:08:55

5.9.8.6 Plot 4 (0°C)



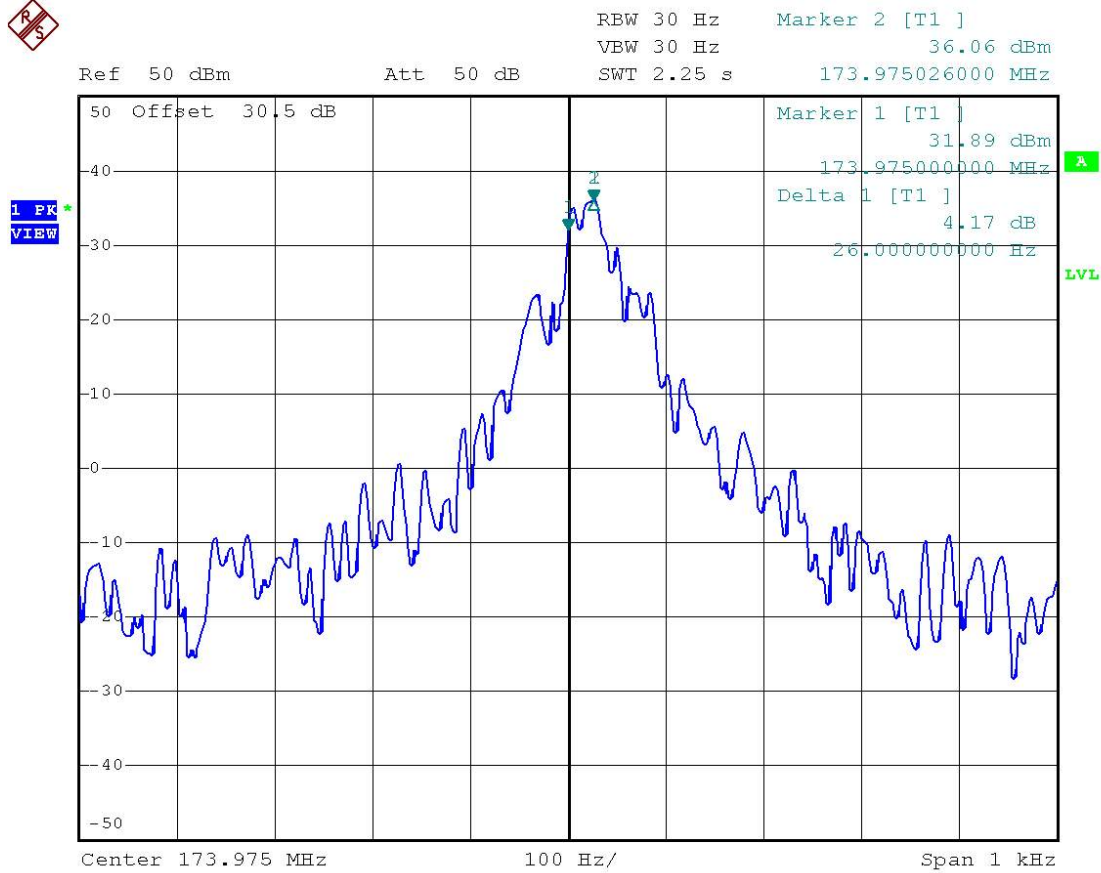
Date: 31.OCT.2008 15:26:40

5.9.8.7 Plot 5 (+10°C)



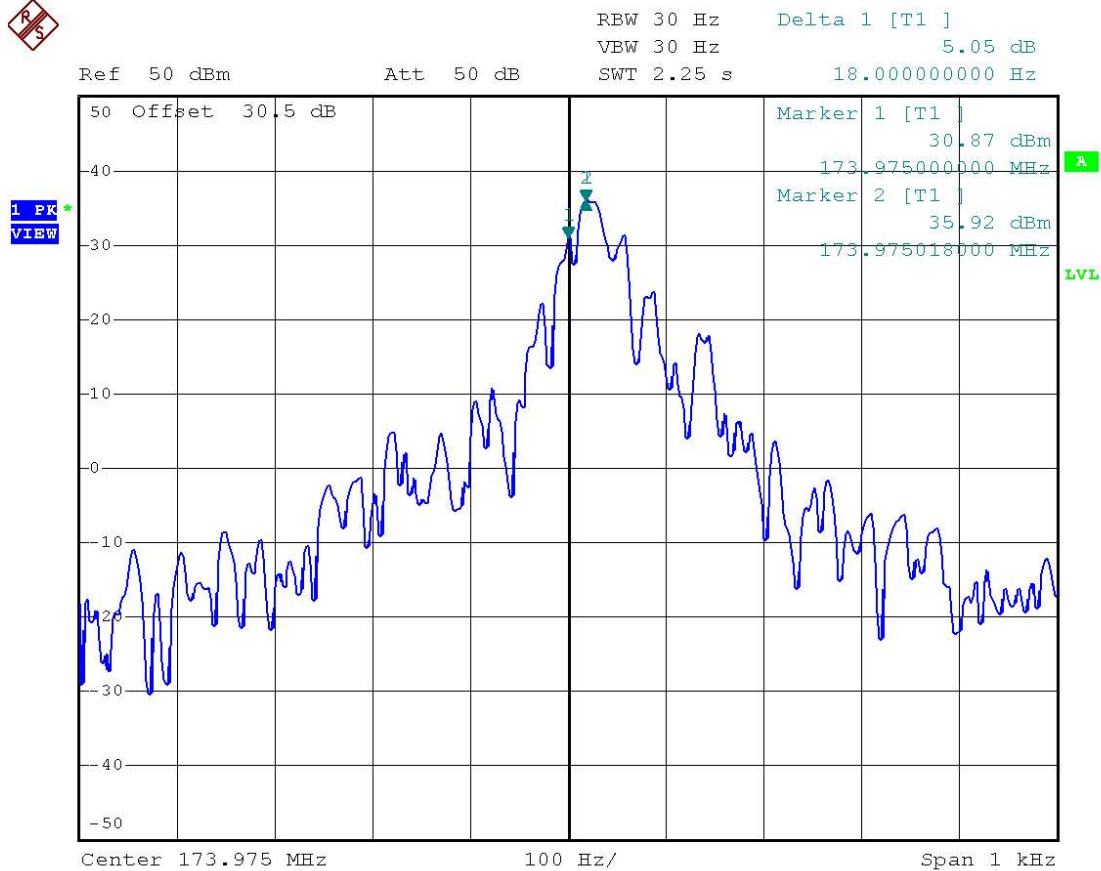
Date: 31.OCT.2008 15:37:51

5.9.8.8 Plot 6 (+20°C)



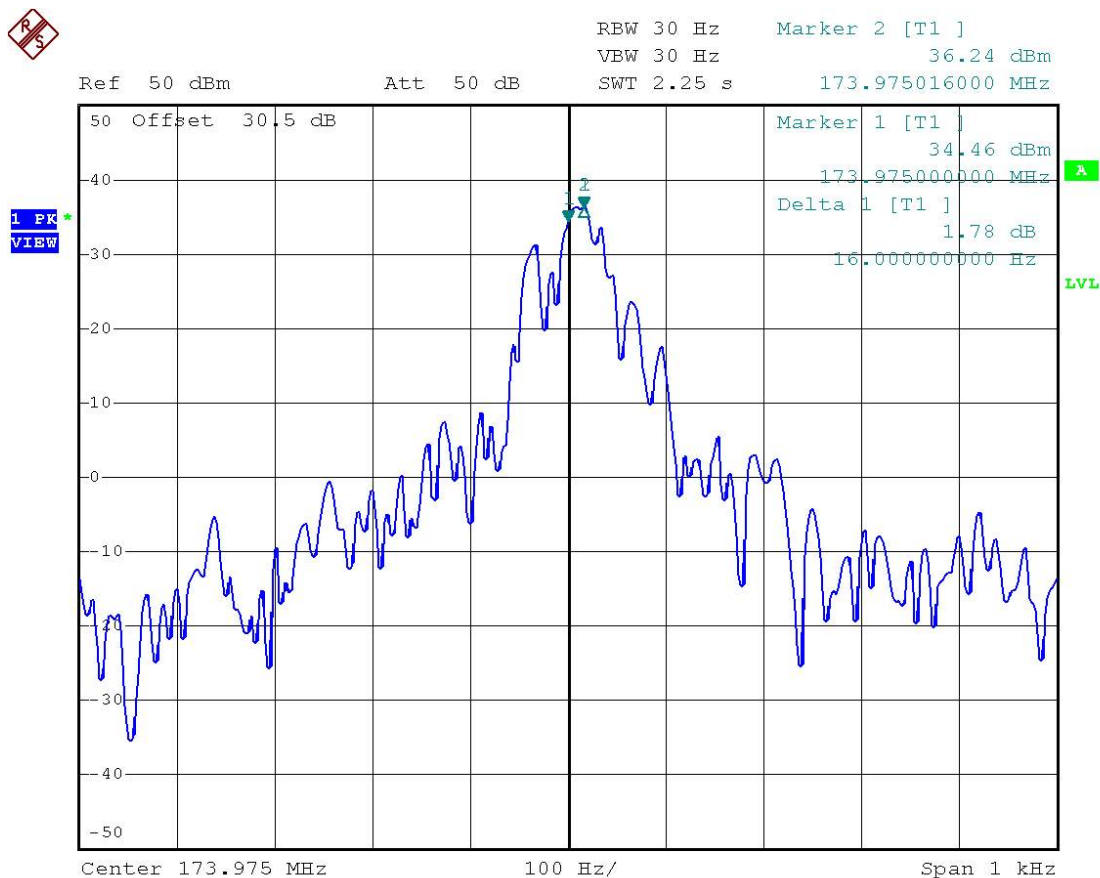
Date: 31.OCT.2008 14:16:34

5.9.8.9 Plot 7 (+30°C)



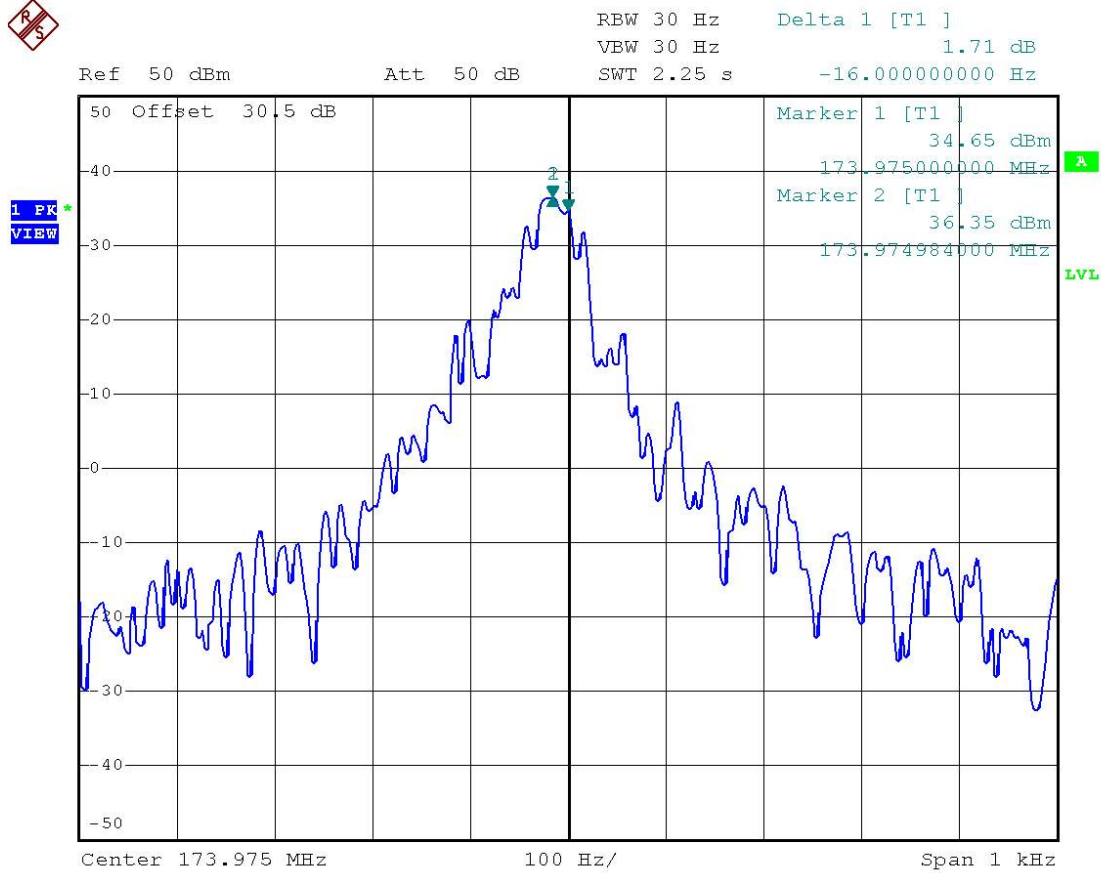
Date: 31.OCT.2008 15:55:43

5.9.8.10 Plot 8 (+40°C)



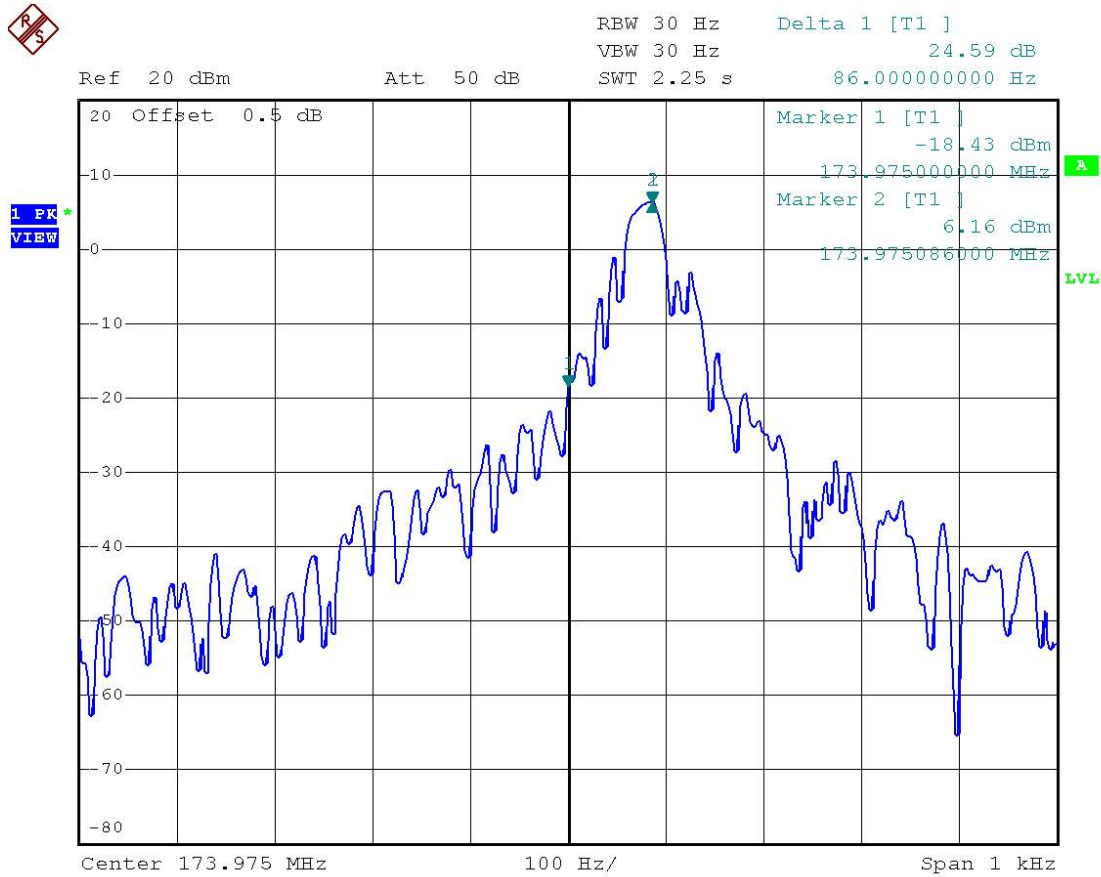
Date: 31.OCT.2008 16:07:56

5.9.8.11 Plot 9 (+50°C)



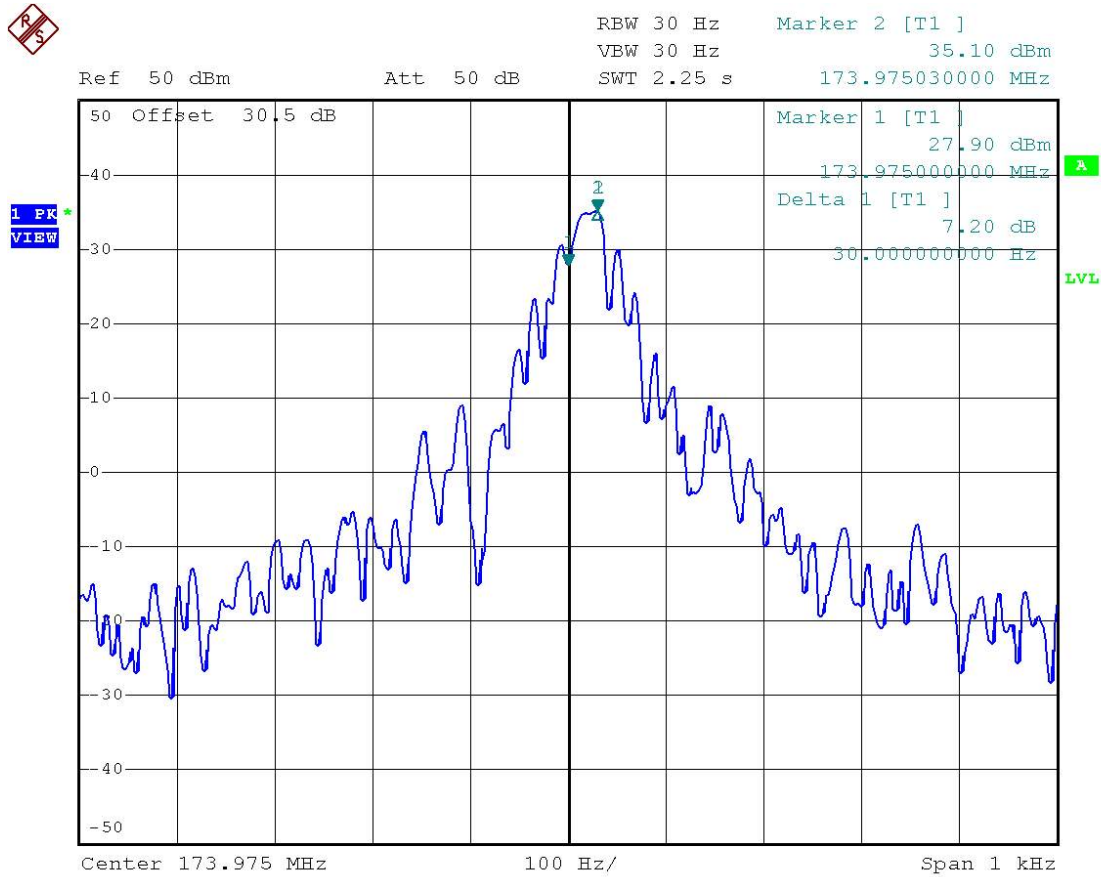
Date: 31.OCT.2008 18:48:40

5.9.8.12 Plot 10 (+60°C)



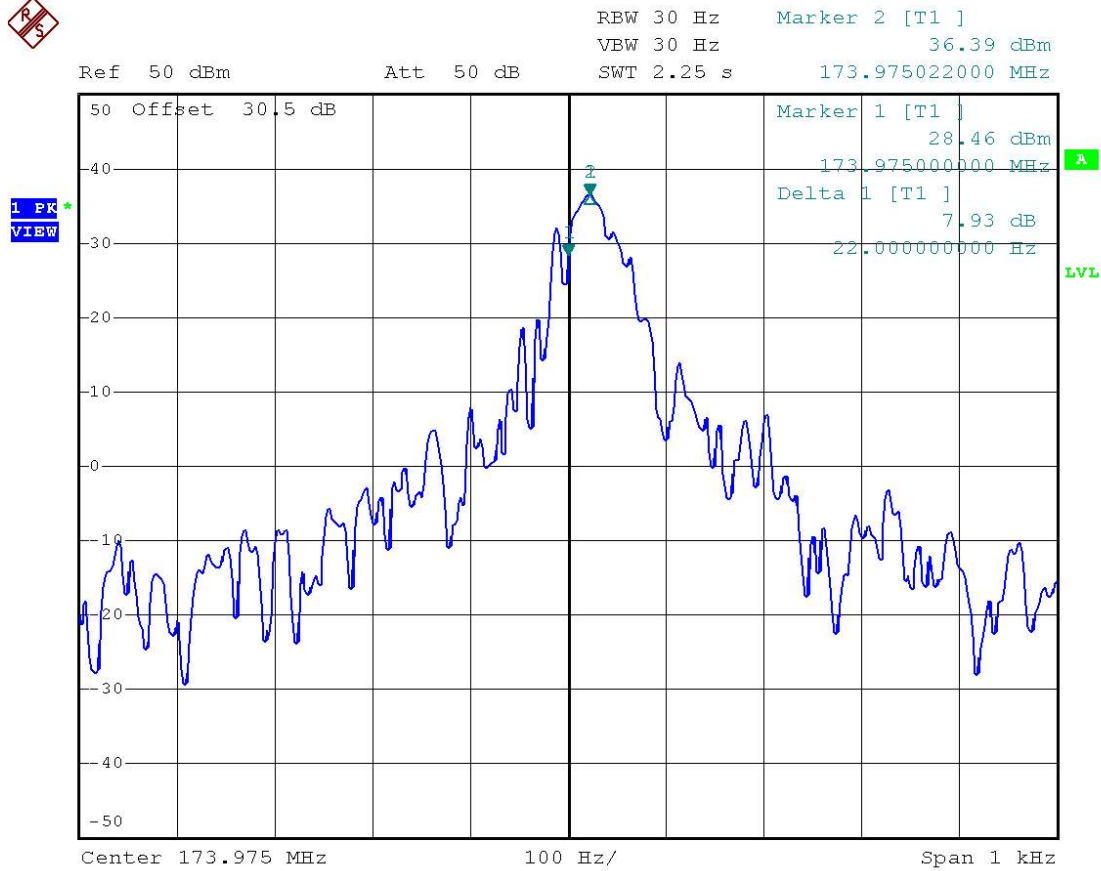
Date: 3.NOV.2008 09:51:18

5.9.8.13 Plot 11 (20°C, 6.29V)



Date: 31.OCT.2008 14:15:54

5.9.8.14 Plot 12 (20°C, 8.51V)



Date: 31.OCT.2008 14:17:23

5.10 Transient Frequency Behavior

5.10.1 Specification

FCC Rules Part 90, Section 90.214
Industry Canada, RSS-119 Section 7.0

5.10.2 Method of Measurement

ANSI/TIA-603-B-2002 Section 2.2.19

5.10.3 Measurement Set-Up

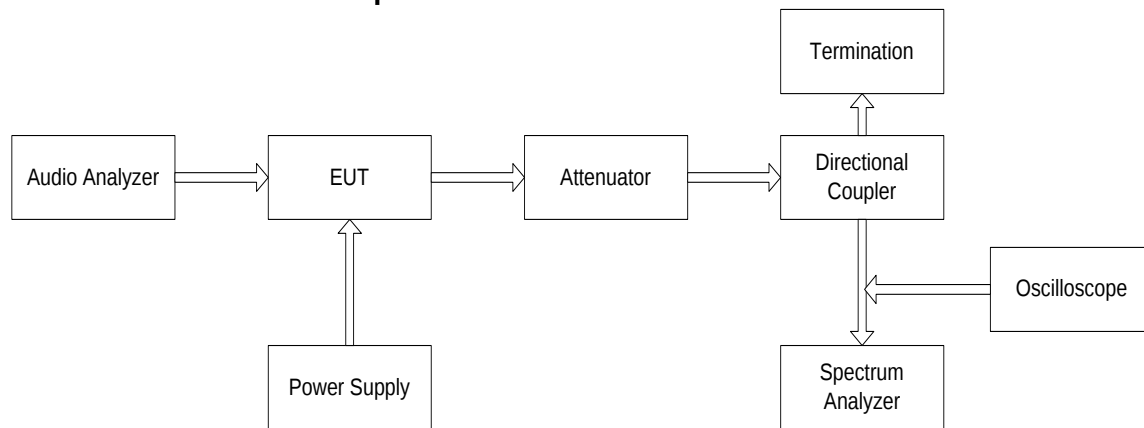


Fig.9

5.10.4 Test Equipment List

Equipment	Model Name	Manufacturer
EUT	SP1102	Maxon CIC Corp.
Power Supply	IPS-30B03DD	INTERACT
Audio Analyzer	8903B	Agilent
Attenuator	33-30-33	WEINSCHEL
Directional Coupler	778D	Agilent
Termination	8173	Bird
Oscilloscope	TDS3032	Tektronix
Spectrum Analyzer	FSP7	Rohde & Shwarz

5.10.5 Test Procedure

- The unit was turn-up in accordance with the alignment procedure stated in the FIG. 9, and was loaded into a 50 ohm resistive termination.
- Using the variable attenuator the transmitter level was set to 40 dB below the test receivers maximum input level, then the transmitter was turned off.
- With the transmitter off the signal generator was set 20dB below the level of the transmitter in the above step, this level will be maintained with the signal generator through-out the test.
- Reduce the attenuation between the transmitter and the RF detector by 30 dB.
- With the levels set as above the transient frequency behavior was observed & recorded.
- Requirements

5.10.6 Limit

Transient Frequency Difference Limits

Time Interval	Max. Permitted Frequency Difference for 25 and 30 kHz Channel Spacing (in kHz)	Max. Permitted Frequency Difference for 12.5 and 15 kHz Channel Spacing (in kHz)
t1 or t3	25	12.5
t2	12.5	6.25

Transient Duration Limits

Time Intervals	Frequency Ranges (MHz)		
	30 to 174	406 to 512	806 to 940
t1	5.0 ms	10.0 ms	20.0 ms
t2	20.0 ms	25.0 ms	50.0 ms
t3	5.0 ms	10.0 ms	10.0 ms

The transient frequency behaviour of the transmitter is the variation in time of the transmitter frequency difference from the nominal frequency of the transmitter when the RF output power is switched on and off.

ton: according to the method of measurement described the switch-on instant t_{on} of a transmitter is defined by the condition when the output power, measured at the antenna terminal, exceeds 0,1 % of the nominal power.

t1: period of time starting at t_{on} and finishing.

t2: period of time starting at the end of $t1$ and finishing.

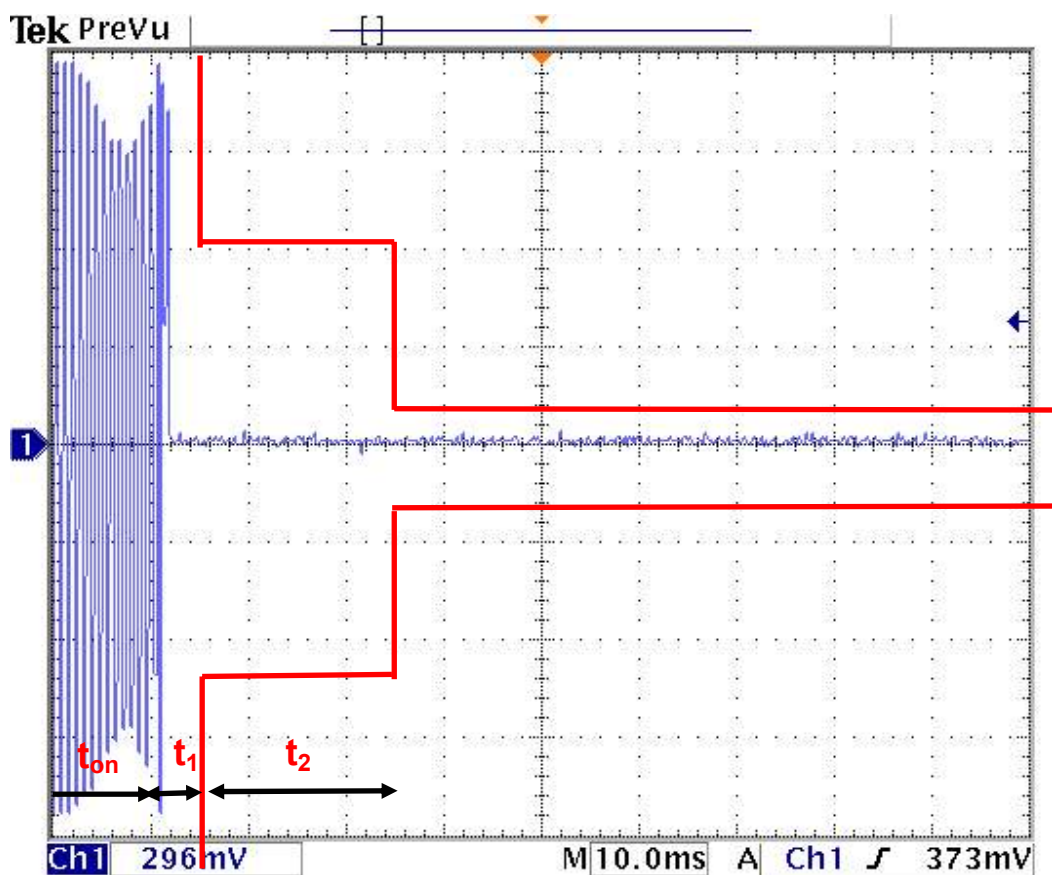
toff: switch-off instant defined by the condition when the nominal power falls below 0,1 % of the nominal power.

t3: period of time that finishing at t_{off} and starting.

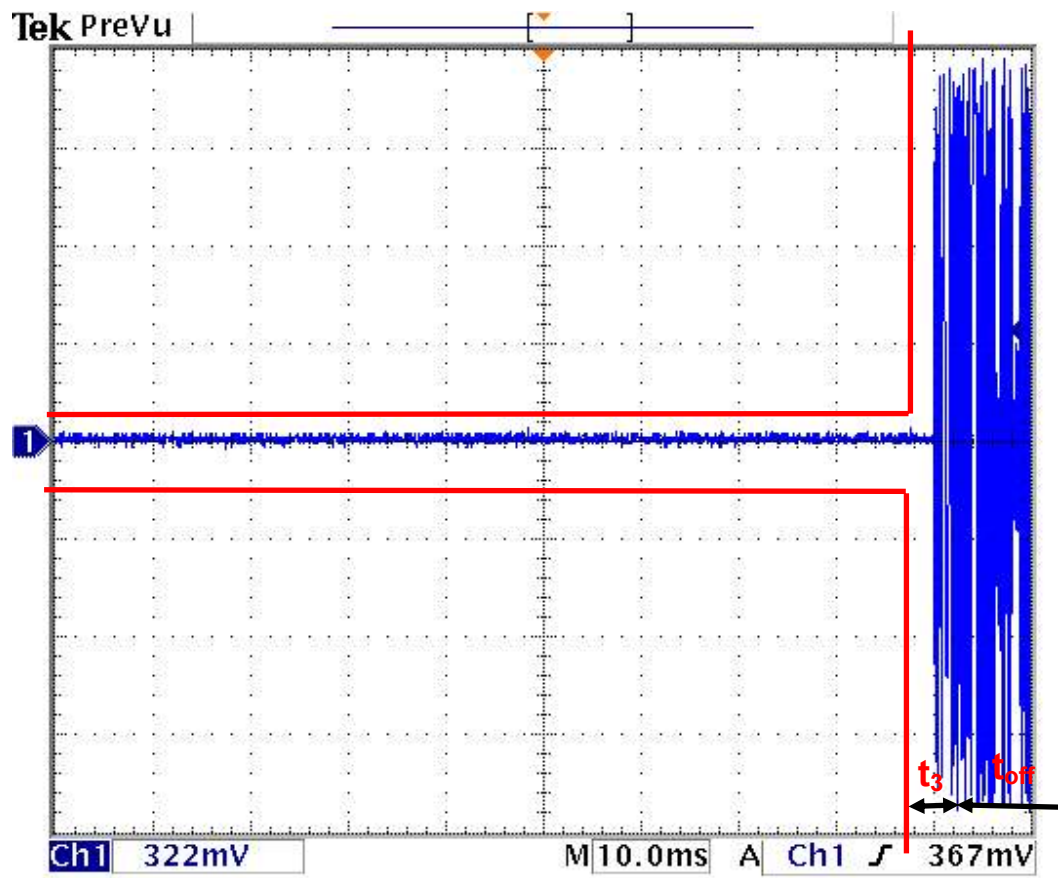
5.10.7 Test Plot 1

FCC Rules :	Part 90 §90.231
IC Rules :	RSS-119 Section 7.0
Operating Frequency :	148.025 MHz
Channel :	1st Channel
Power Output :	5 Watts
Channel Spacing :	Narrow Band
Reference Voltage :	7.5 VDC

5.10.7.1 Switch on condition t_{on} , t_1 and t_2



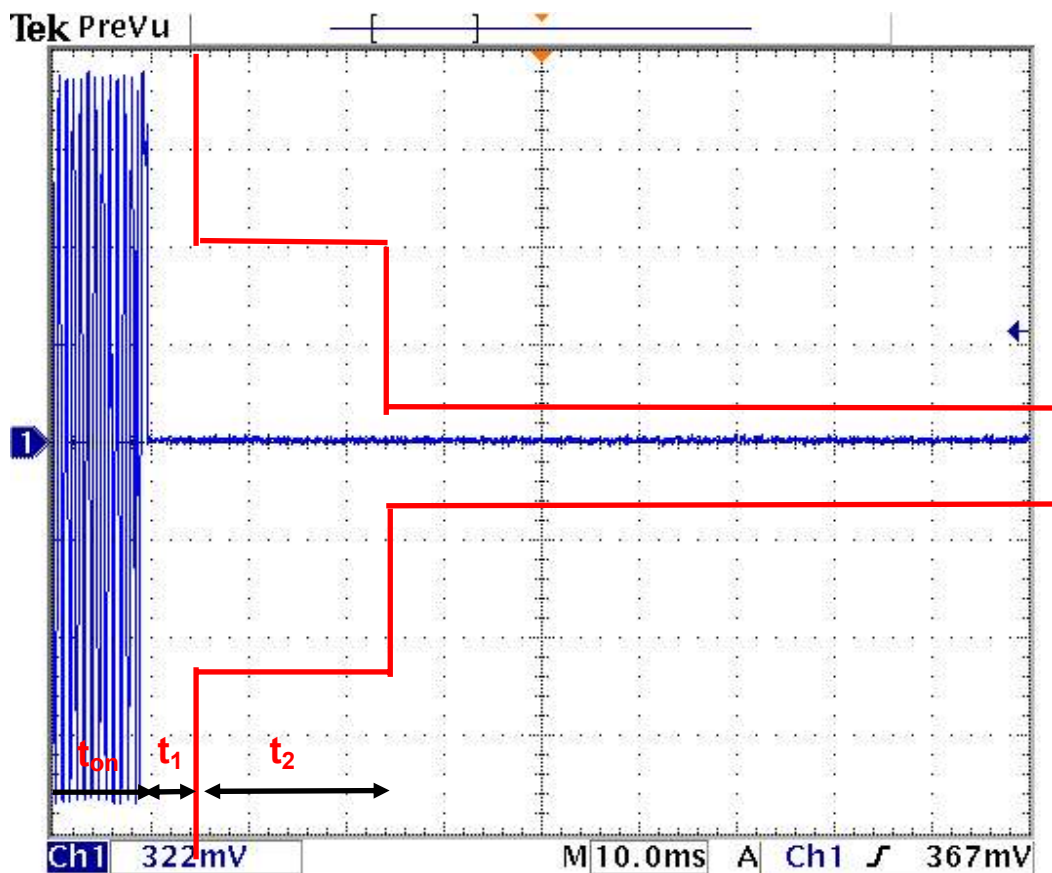
5.10.7.2 Switch off condition t_3 , t_{off}



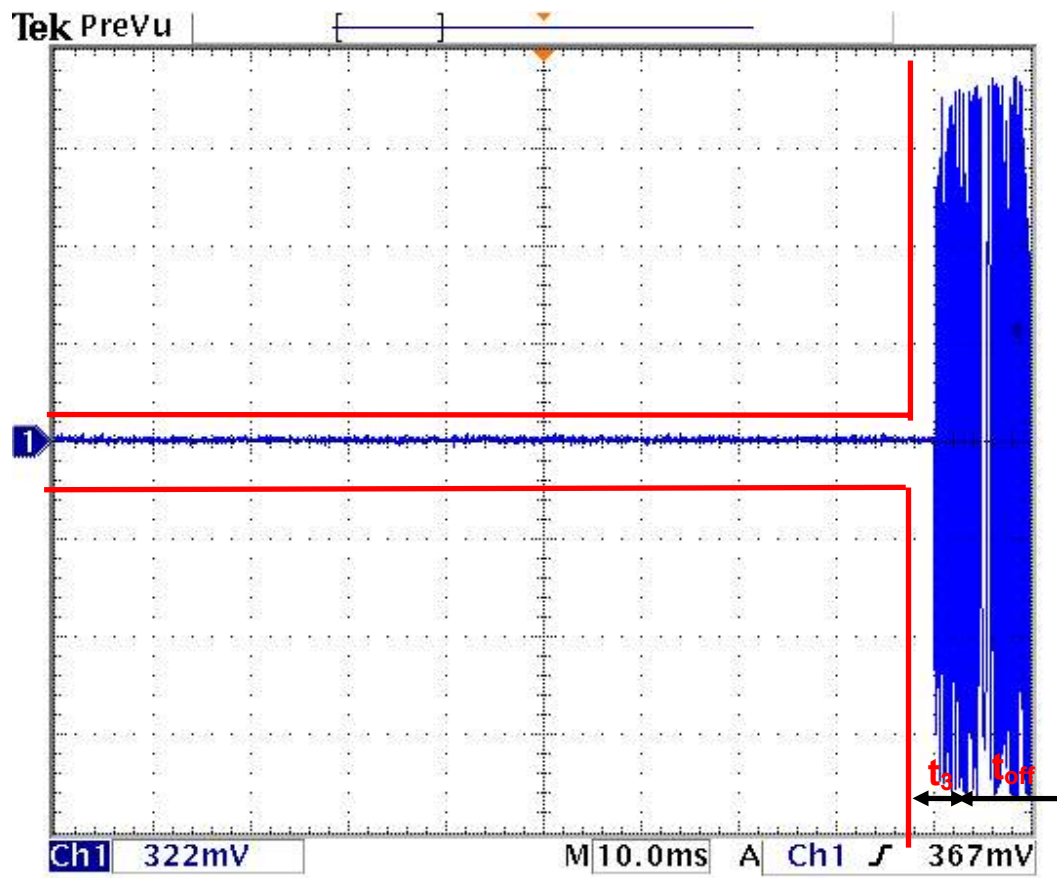
5.10.8 Test Plot 2

FCC Rules :	Part 90 §90.231
IC Rules :	RSS-119 Section 7.0
Operating Frequency :	161.025 MHz
Channel :	2nd Channel
Power Output :	5 Watts
Channel Spacing :	Narrow Band
Reference Voltage :	7.5 VDC

5.10.8.1 Switch on condition t_{on} , t_1 and t_2



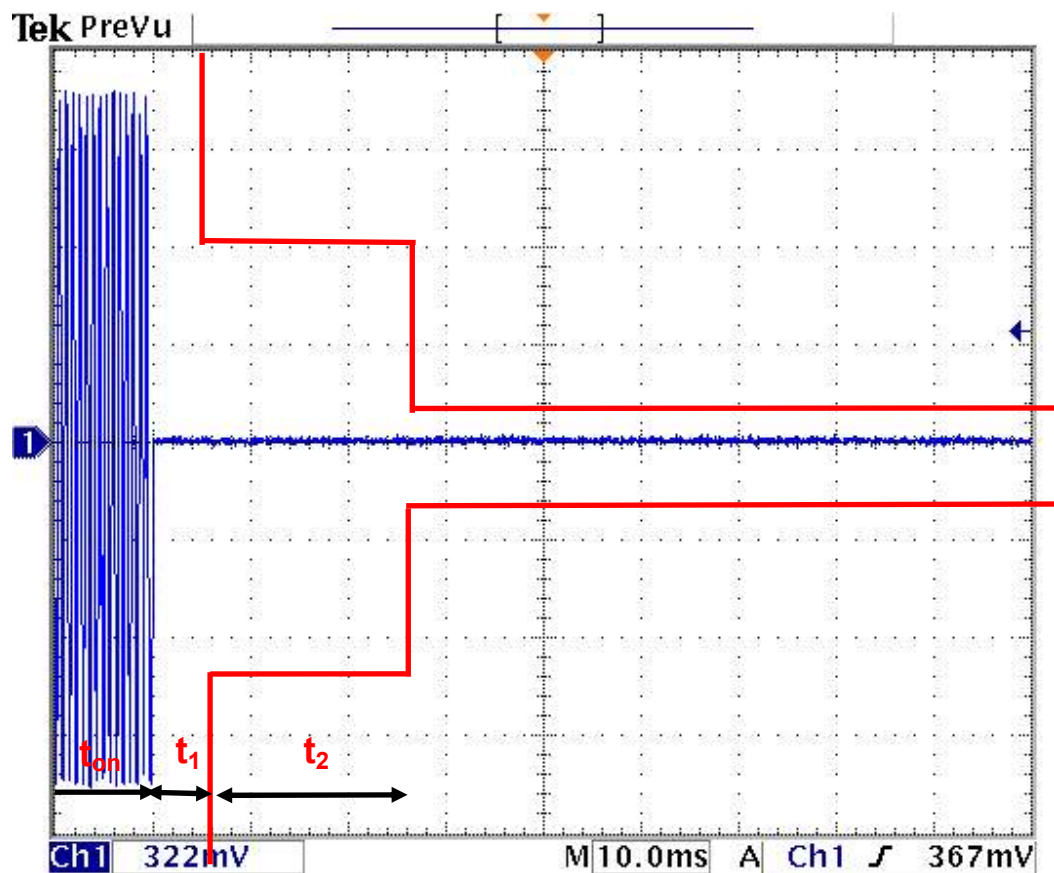
5.10.8.2 Switch off condition t_3 , t_{off}



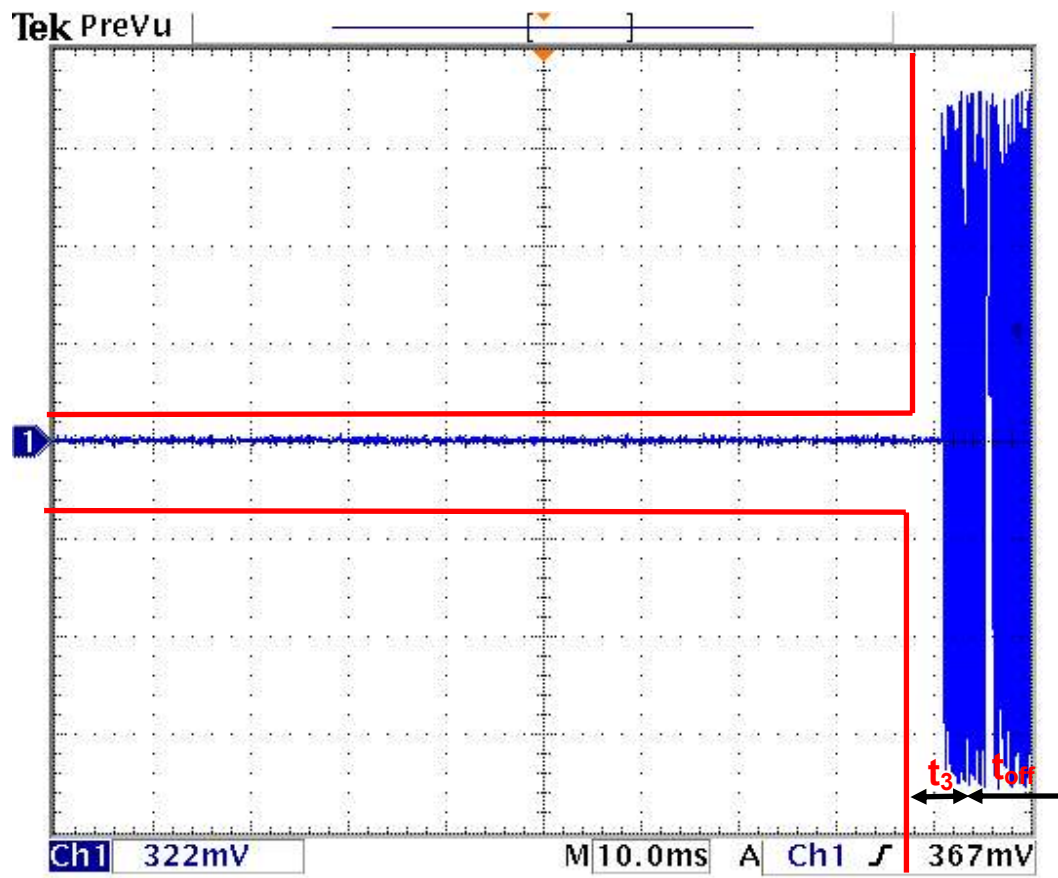
5.10.9 Test Plot 3

FCC Rules :	Part 90 §90.231
IC Rules :	RSS-119 Section 7.0
Operating Frequency :	173.975 MHz
Channel :	3rd Channel
Power Output :	5 Watts
Channel Spacing :	Narrow Band
Reference Voltage :	7.4 VDC

5.10.9.1 Switch on condition t_{on} , t_1 and t_2



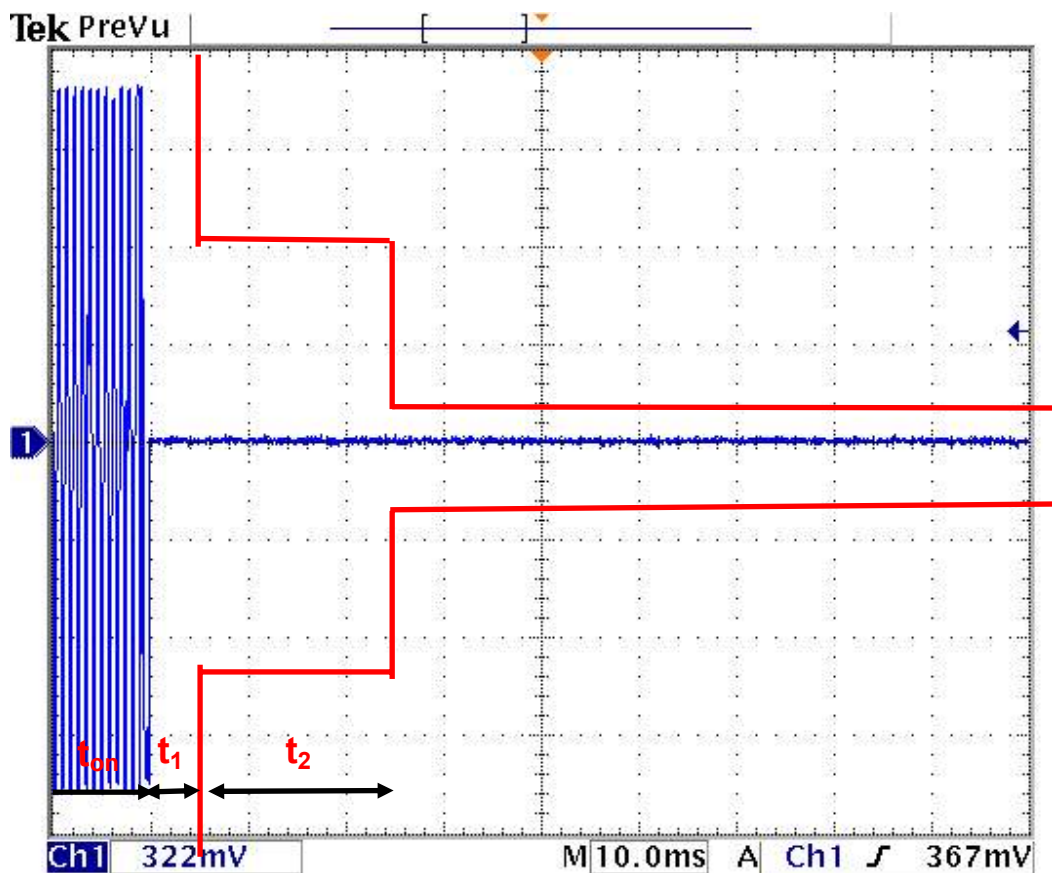
5.10.9.2 Switch off condition t_3 , t_{off}



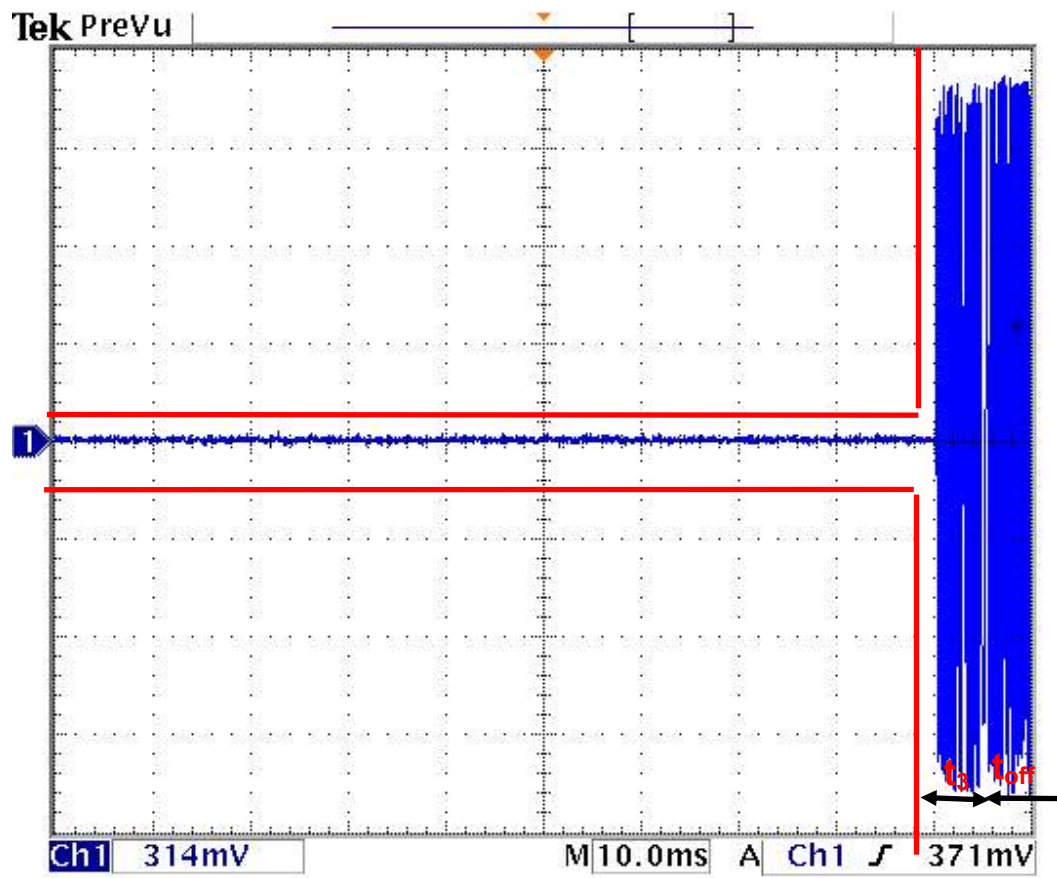
5.10.10 Test Plot 4

FCC Rules :	Part 90 §90.231
IC Rules :	RSS-119 Section 7.0
Operating Frequency :	148.025 MHz
Channel :	1st Channel
Power Output :	5 Watts
Channel Spacing :	WideBand
Reference Voltage :	7.5 VDC

5.10.10.1 Switch on condition t_{on} , t_1 and t_2



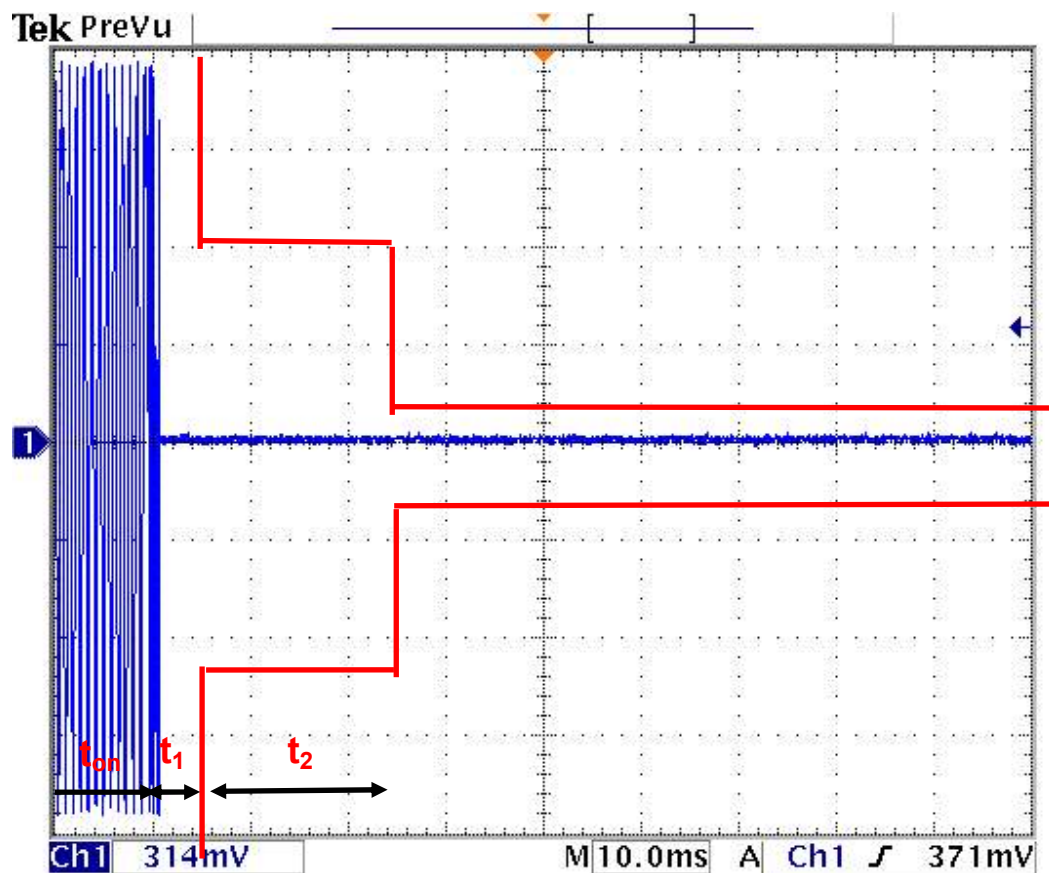
5.10.10.2 Switch off condition t_3, t_{off}



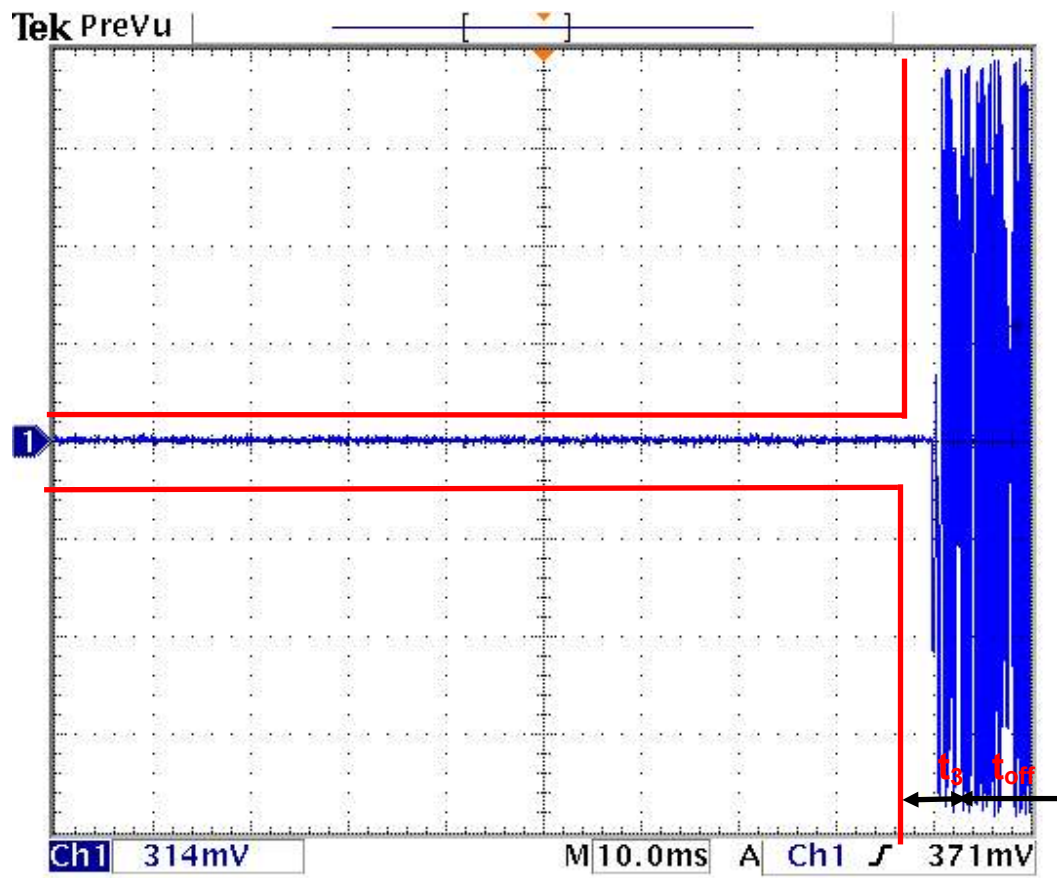
5.10.11 Test Plot 5

FCC Rules :	Part 90 §90.231
IC Rules :	RSS-119 Section 7.0
Operating Frequency :	161.025 MHz
Channel :	2nd Channel
Power Output :	5 Watts
Channel Spacing :	WideBand
Reference Voltage :	7.5 VDC

5.10.12.1 Switch on condition t_{on} , t_1 and t_2



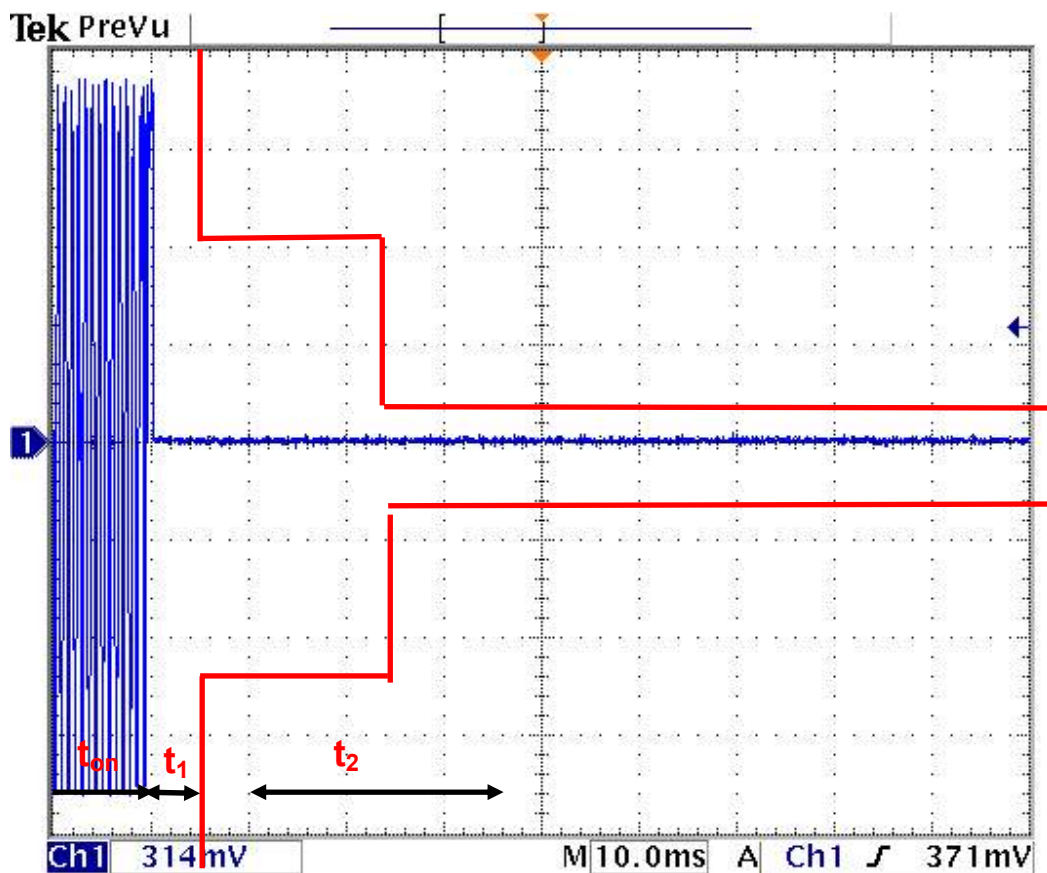
5.10.11.2 Switch off condition t_3, t_{off}



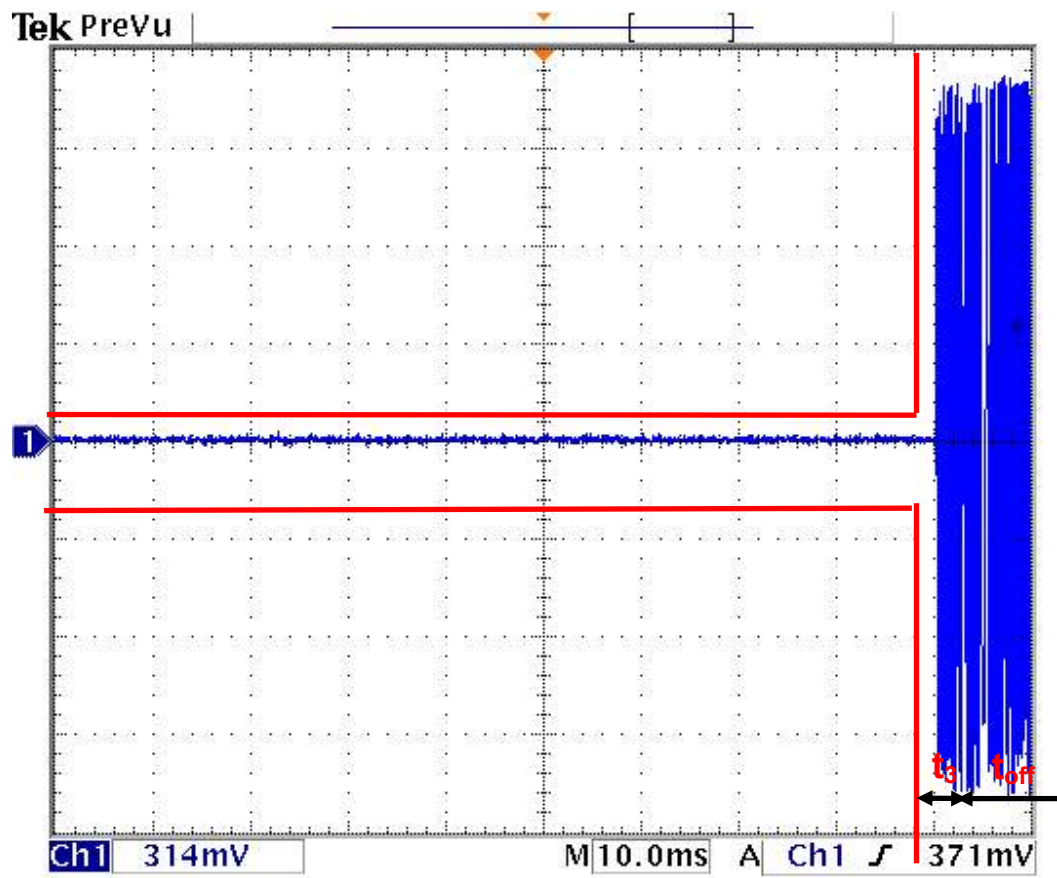
5.10.12 Test Plot 6

FCC Rules :	Part 90 §90.231
IC Rules :	RSS-119 Section 7.0
Operating Frequency :	173.975 MHz
Channel :	3rd Channel
Power Output :	5 Watts
Channel Spacing :	WideBand
Reference Voltage :	7.5 VDC

5.10.12.1 Switch on condition t_{on} , t_1 and t_2



5.10.12.2 Switch off condition t_3 , t_{off}



6. TEST EQUIPMENTS LIST

	EQUIPMENT	MODEL	MANUFACTURE	SERIAL NUMBER	Calibration Due date
1	Receiver	ESVN 30	Rohde & Schwarz	832854/010	07/25/09
2	Spectrum analyzer	FSP7	Rohde & Schwarz	100001	02/22/09
3	Signal Generator	E4432B	Agilent	US40053157	07/08/09
4	Signal Generator	GT9000	Gigatronics	9604010	02/22/09
6	Modulation Analyzer	8901B	Agilent	3028A03124	02/22/09
7	Audio Analyzer	8903B	Agilent	3011A09344	02/22/09
8	Digital Oscilloscope	TDS3032	Tektronix	B019436	11/20/09
9	Frequency Counter	R5372	Advantest	41855204	02/22/09
10	Shield Room (7m x 4m x 3m)	N/A	SJEMC	0004	N/A
11	Turn Table	OSC-30	N/A	BWS-01	N/A
12	Antenna Mast	JAC-3	Dail EMC	N/A	N/A
13	Temperature & Humidity chanber	EN-GLMP-54	Enex	N/A	03/21/09
14	Bilog Antenna	VULB9160	Schwarzbeck	VULB9160-3122	01/24/10
15	Bilog Antenna	VULB9161	Schwarzbeck	VULB9161-4067	11/19/09
16	Bilog Antenna	VULB9161	Schwarzbeck	VULB9161-4068	12/11/09
17	Horn Antenna	3115	ETS-Lindgren	00055005	02/07/10
18	Horn Antenna	BBHA 9120 D	Schwarzbeck	BBHA 9120 D 234	03/16/09
19	Horn Antenna	BBHA 9170	Schwarzbeck	BBHA9170157	12/07/10
20	Power Meter	E4418A	Agilent	GB38272621	02/22/09
21	Power Sensor	E9301B	Agilent	US40010238	02/22/09
22	Power supply	IPS-30B03DD	Interact	42052	03/20/09
23	Directional Coupler	778D	Agilent	1144A08477	11/07/09
24	Power Divider/Combiner	11636A	Agilent	05774	06/25/09
25	Power Divider/Combiner	11636A	Agilent	05870	06/25/09