Appendix A

Transmitter Output Power

According to FCC Part 2.1046 &Part22.913

Conducted Power of Transmitter

Table 1 Measurement Results

		RF Output Power (Conducted)					
TEST CONDITIONS		Channel128(B) 824.2MHz		Channel192(M) 837.0MHz		Channel251(T) 848.8MHz	
		dBm		dBm		dBm	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM1		31.84	38.5	31.81	38.5	31.87	38.5
TM2		25.36	38.5	25.63	38.5	25.58	38.5
TEST CONDITIONS		Channel4132(B) 826.4MHz		Channel4182(M) 836.4MHz		Channel4233(T) 846.6MHz	
		dBm		dBm		dBm	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM3		21.87	38.5	21.68	38.5	21.76	38.5
TM4	Case1	21.89	38.5	21.67	38.5	21.86	38.5
	Case2	21.13	38.5	21.01	38.5	21.1	38.5
	Case3	21.01	38.5	20.87	38.5	20.98	38.5
	Case4	21.03	38.5	20.92	38.5	21.01	38.5
TM5	Case1	21.21	38.5	21.18	38.5	21.29	38.5
	Case2	18.72	38.5	18.68	38.5	18.77	38.5
	Case3	19.58	38.5	19.36	38.5	19.49	38.5
	Case4	18.76	38.5	18.52	38.5	18.69	38.5
	Case5	21.18	38.5	21.23	38.5	21.37	38.5

Effective Radiated Power of Transmitter (ERP)

Table 2 Substitution Results

Test Mode	Freq. [MHz]	Meas. Level [dBm]	Substitution Antenna Type	SGP [dBm]	Substitution Gain [dBd]	Cable Loss [dB]	Substitution Level (ERP) [dBm]	FCC limit [dBm]	Result
TM1	824.2	31.91	Dipole Ant.	35.31	-2.75	0.6	31.96	38.5	Pass
TM1	837.0	31.88	Dipole Ant.	35.39	-2.87	0.6	31.92	38.5	Pass
TM1	848.8	31.94	Dipole Ant.	35.43	-2.85	0.6	31.98	38.5	Pass
TM2	824.2	25.43	Dipole Ant.	28.83	-2.75	0.6	25.48	38.5	Pass
TM2	837.0	25.70	Dipole Ant.	29.19	-2.87	0.6	25.72	38.5	Pass
TM2	848.8	25.65	Dipole Ant.	29.12	-2.85	0.6	25.67	38.5	Pass
TM3	826.4	21.94	Dipole Ant.	25.27	-2.75	0.6	21.92	38.5	Pass
TM3	836.4	21.75	Dipole Ant.	25.26	-2.87	0.6	21.79	38.5	Pass
TM3	846.6	21.83	Dipole Ant.	25.31	-2.85	0.6	21.86	38.5	Pass

Note: a, For getting the ERP (Efficient Radiated Power) in substitution method, the following formula should take to calculate it,

ERP [dBm] = SGP [dBm] – Cable Loss [dB] + Gain [dBd]

b, SGP=Signal Generator Level

Appendix B

Modulation Characteristics

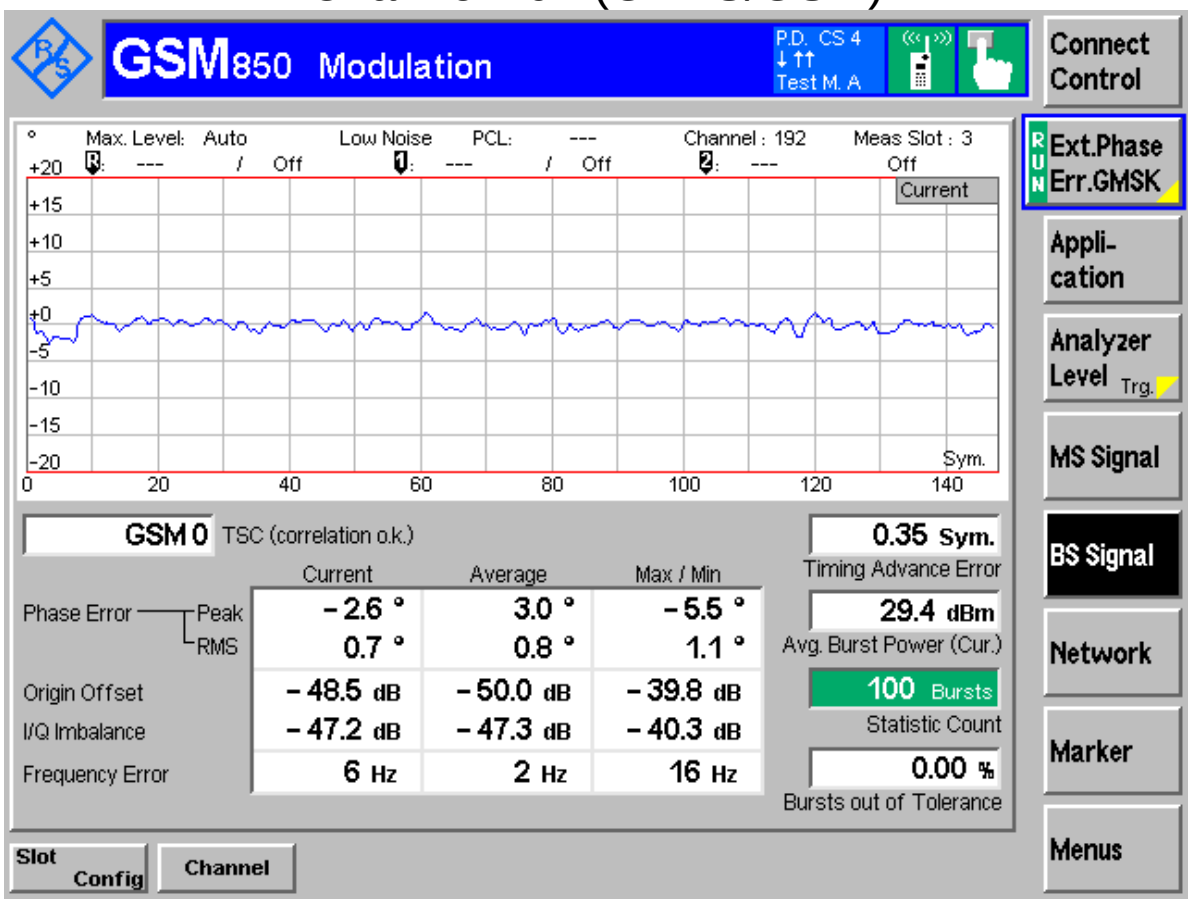
According to FCC Part 2.1047 & Part22 Subpart H

Confidential Information of Huawei.
No Distribution without Written Permission

1 Test Plot

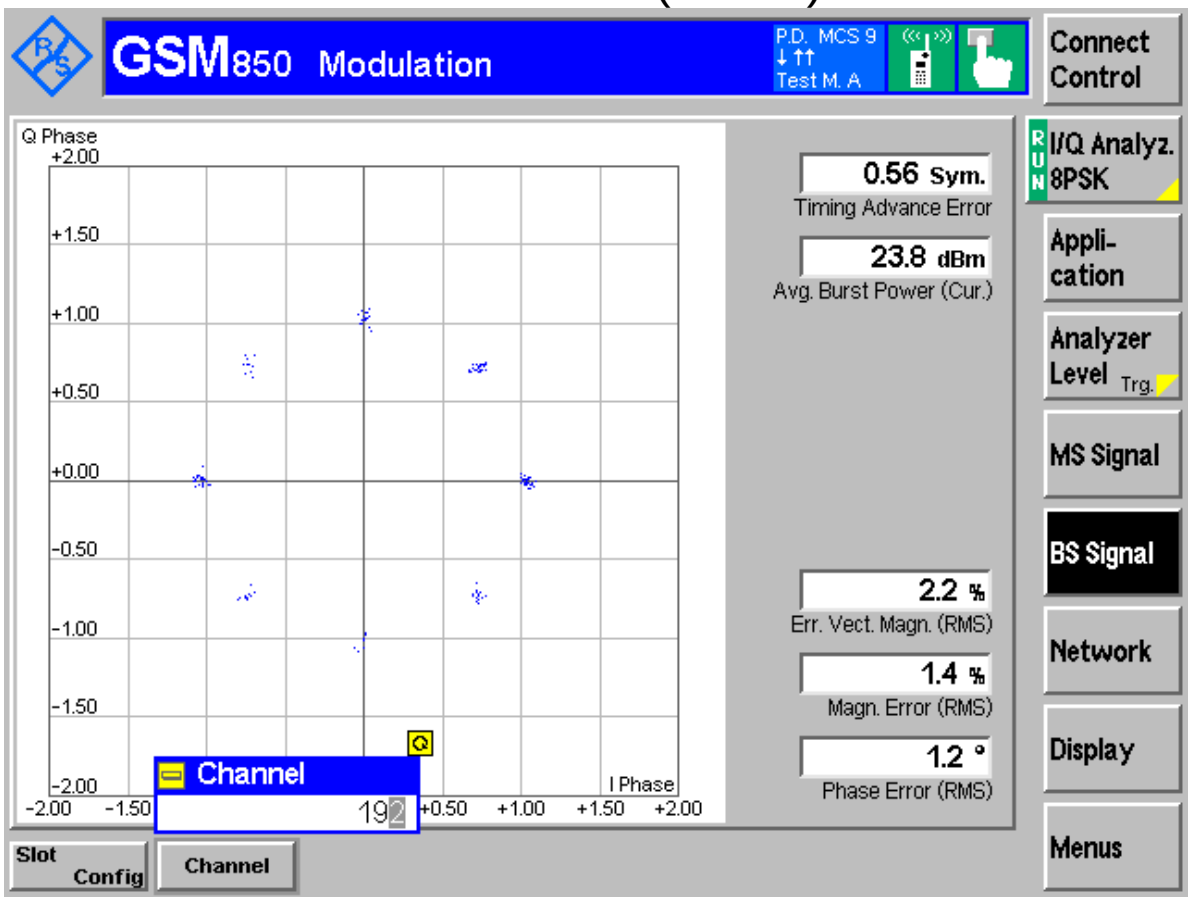
1.1 Test Mode = TM 1

Channel 192 (GPRS/GSM)



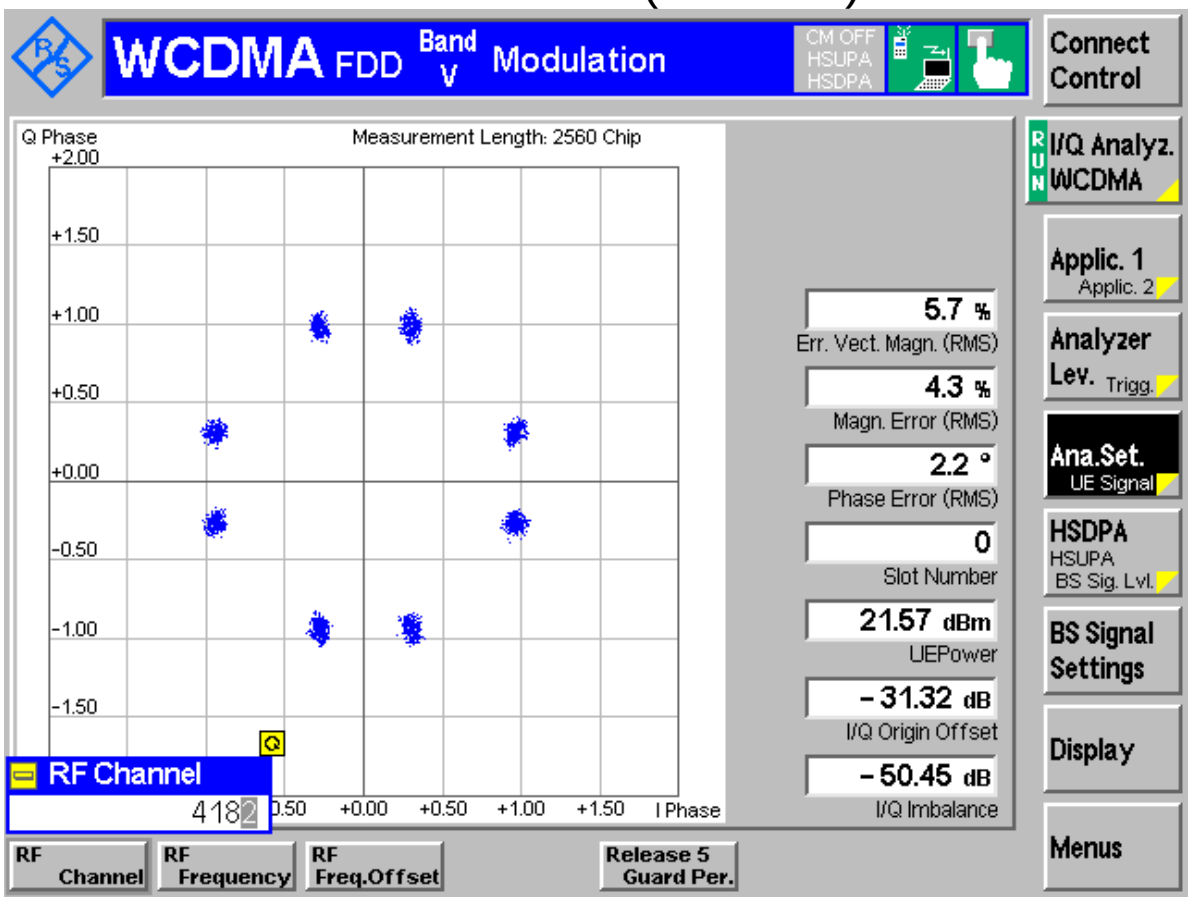
1.2 Test Mode = TM 2

Channel 192 (EDGE)



1.3 Test Mode = TM 3

Channel 4182 (WCDMA)



END

Appendix C

Occupied Bandwidth

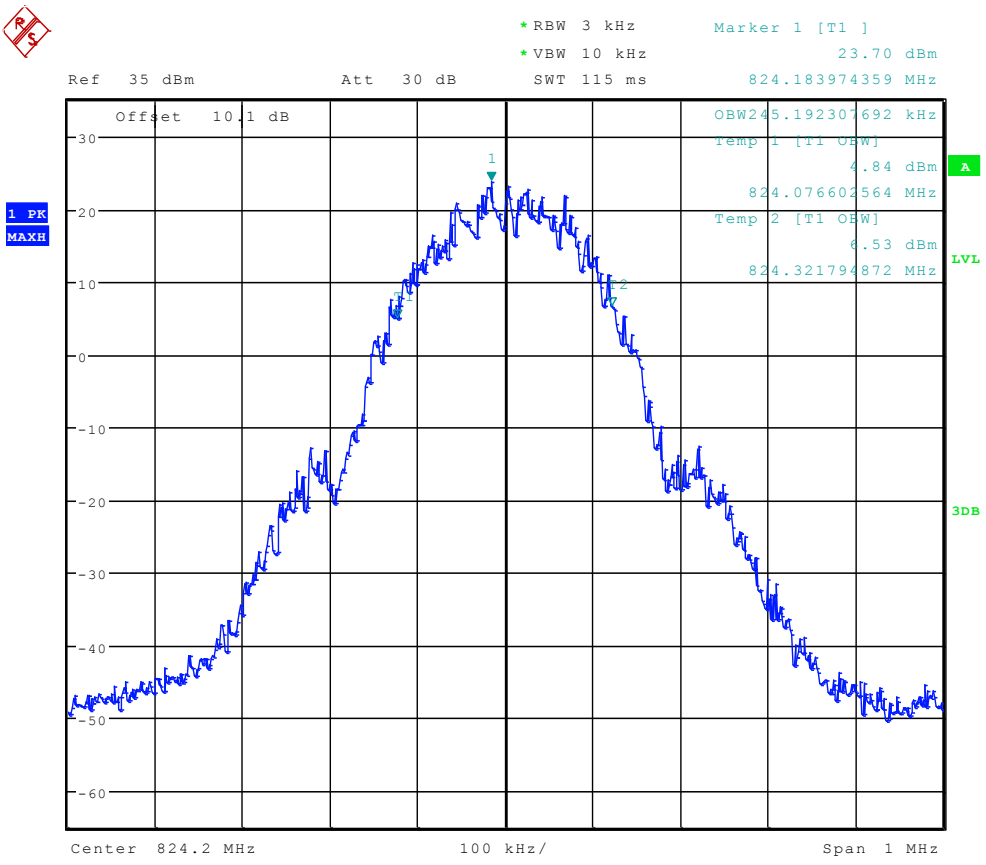
According to FCC Part 2.1049 & Part 22 Subpart H

Result Table

Table 1 Measurement Results

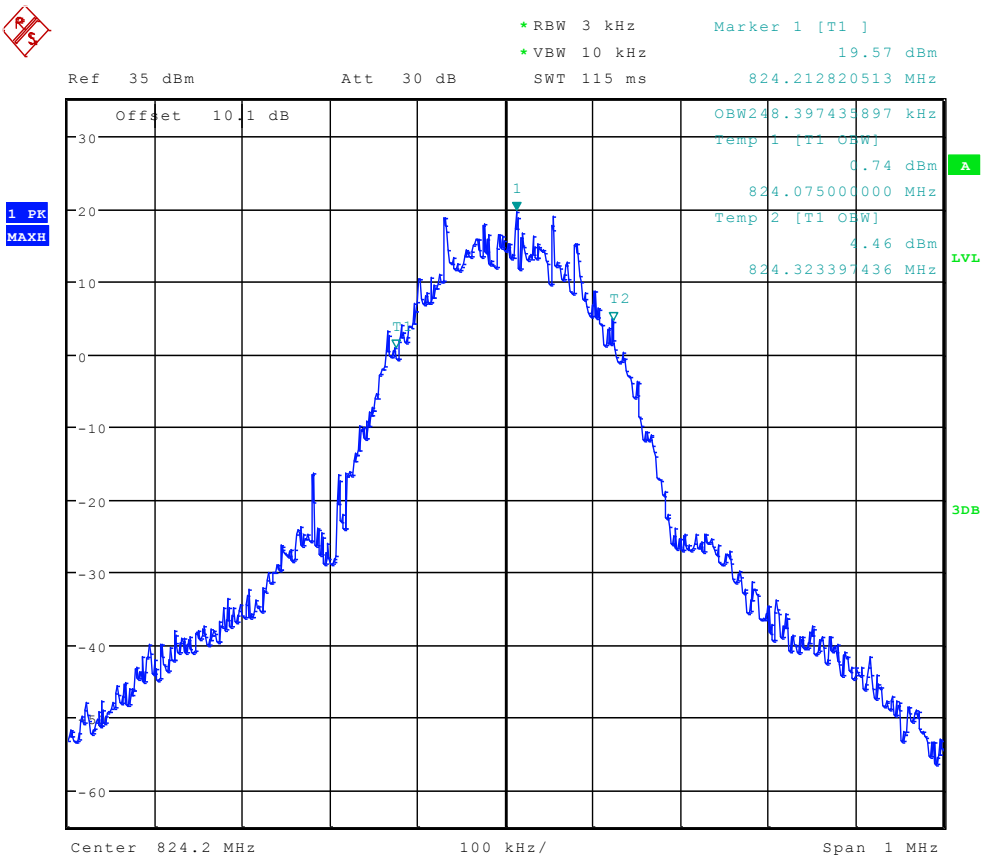
Test Mode	RF Channel	Occupied Bandwidth [kHz]	Verdict
TM1	128	245.19	Pass
	192	245.19	Pass
	251	246.79	Pass
TM2	128	248.40	Pass
	192	254.81	Pass
	251	251.60	Pass
Test Mode	RF Channel	Occupied Bandwidth [MHz]	Verdict
TM3	4132	4.17	Pass
	4182	4.18	Pass
	4233	4.15	Pass

Channel 128（TM1:GPRS/GSM）



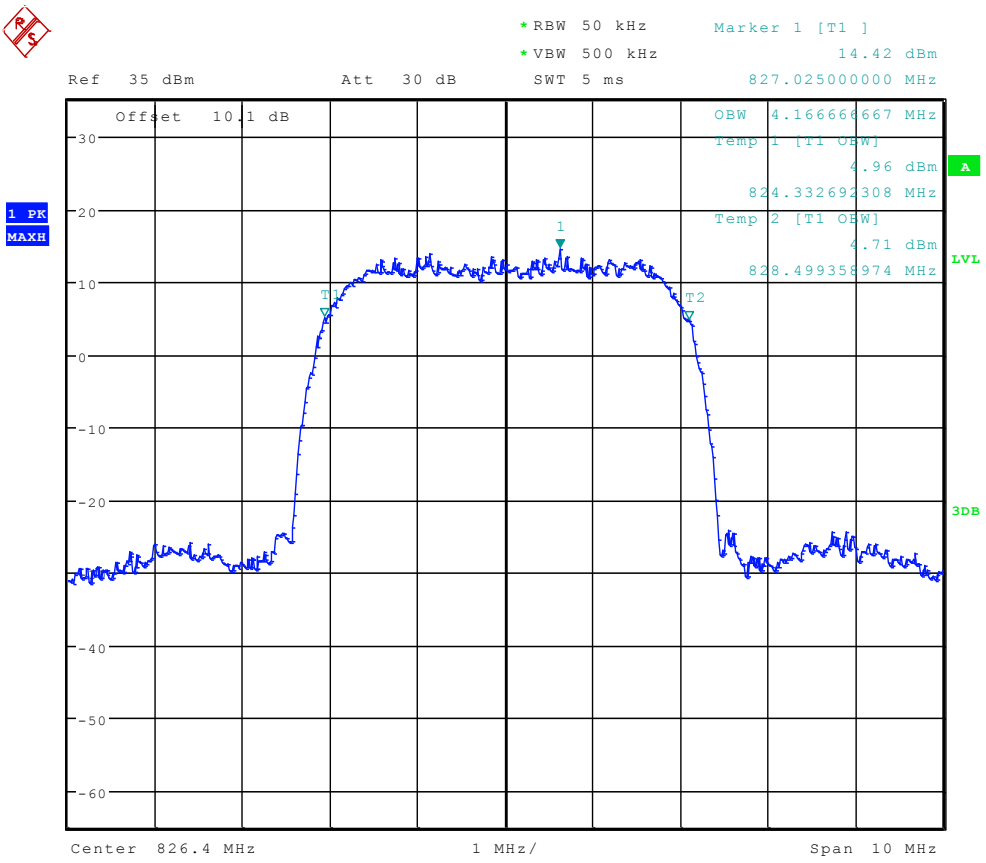
Date: 18.DEC.2011 11:23:50

Channel 128（TM2:EDGE）



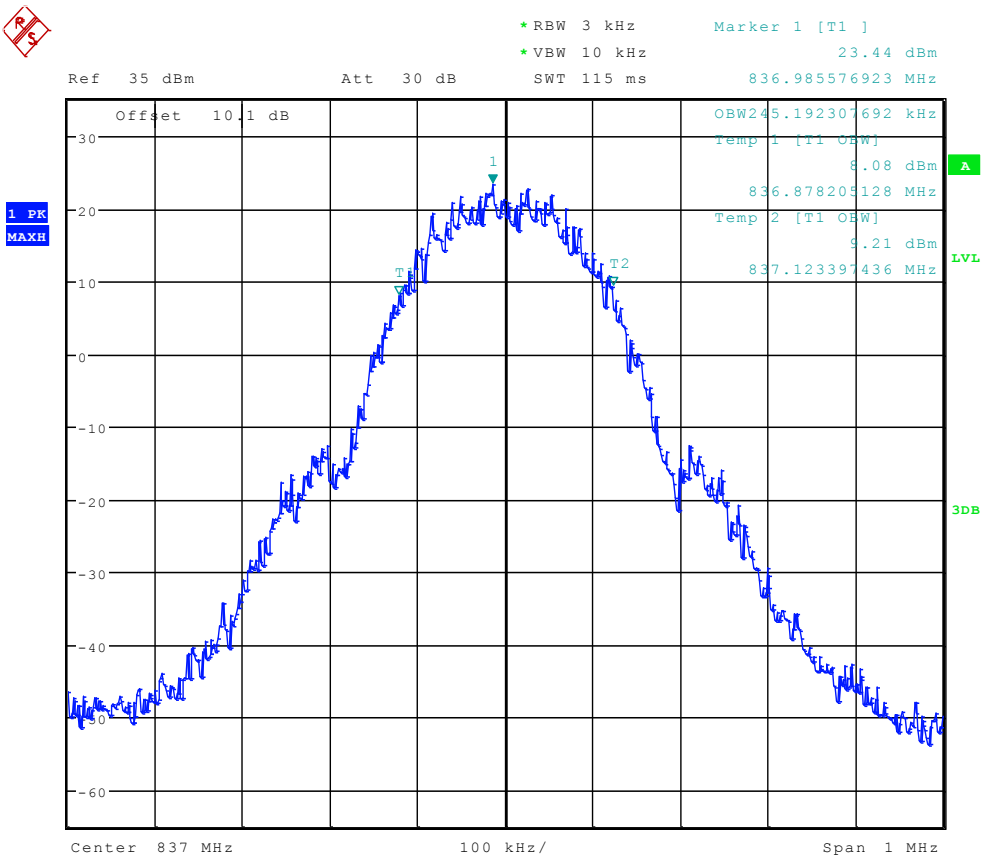
Date: 18.DEC.2011 11:29:24

Channel 4132（TM3: WCDMA）



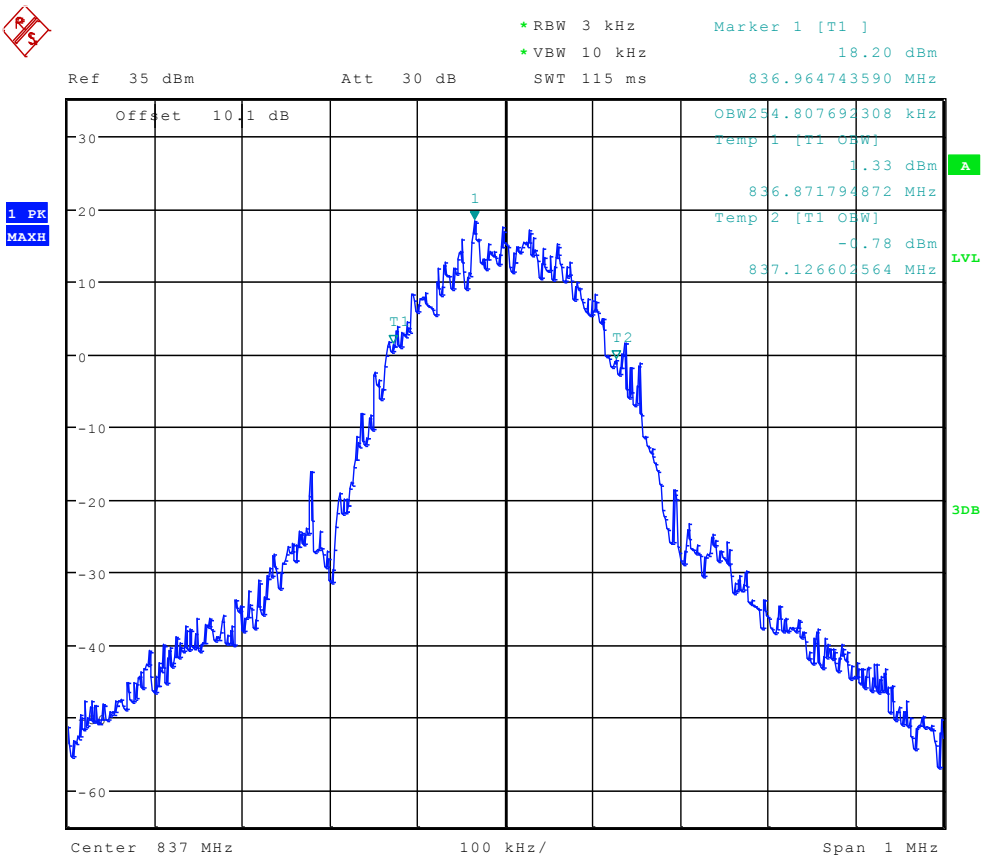
Date: 18.DEC.2011 11:34:51

Channel 192（TM1:GPRS/GSM）



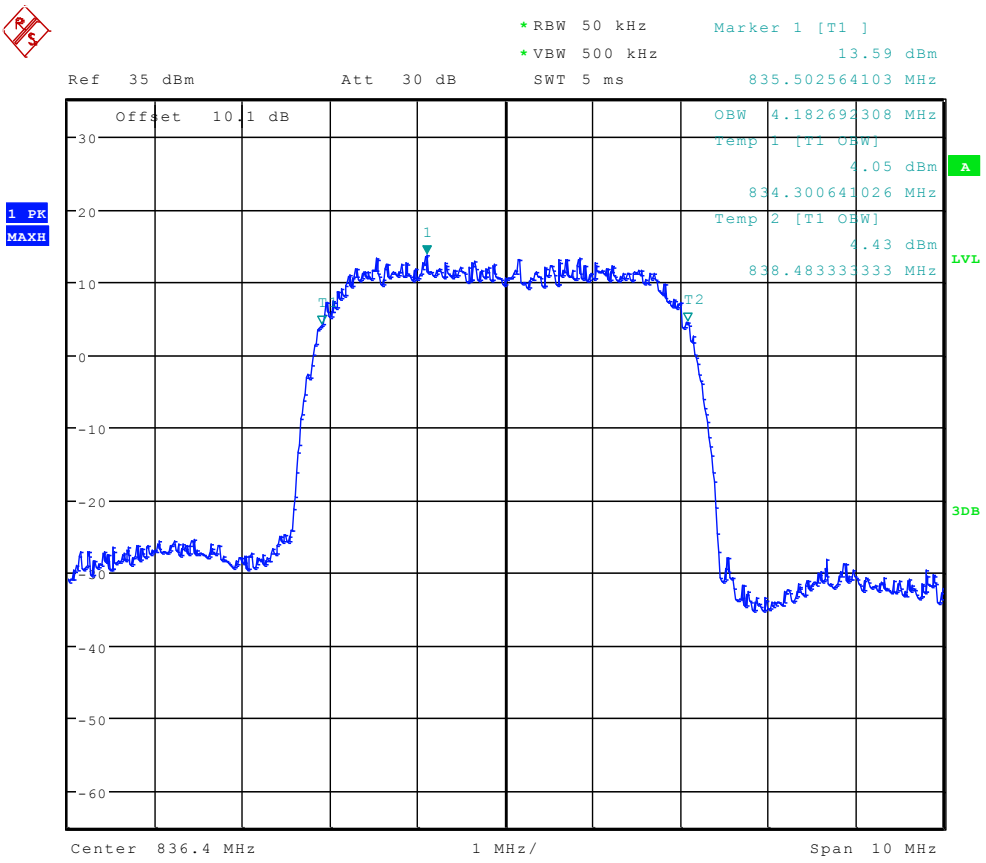
Date: 18.DEC.2011 11:24:04

Channel 192（TM2:EDGE）



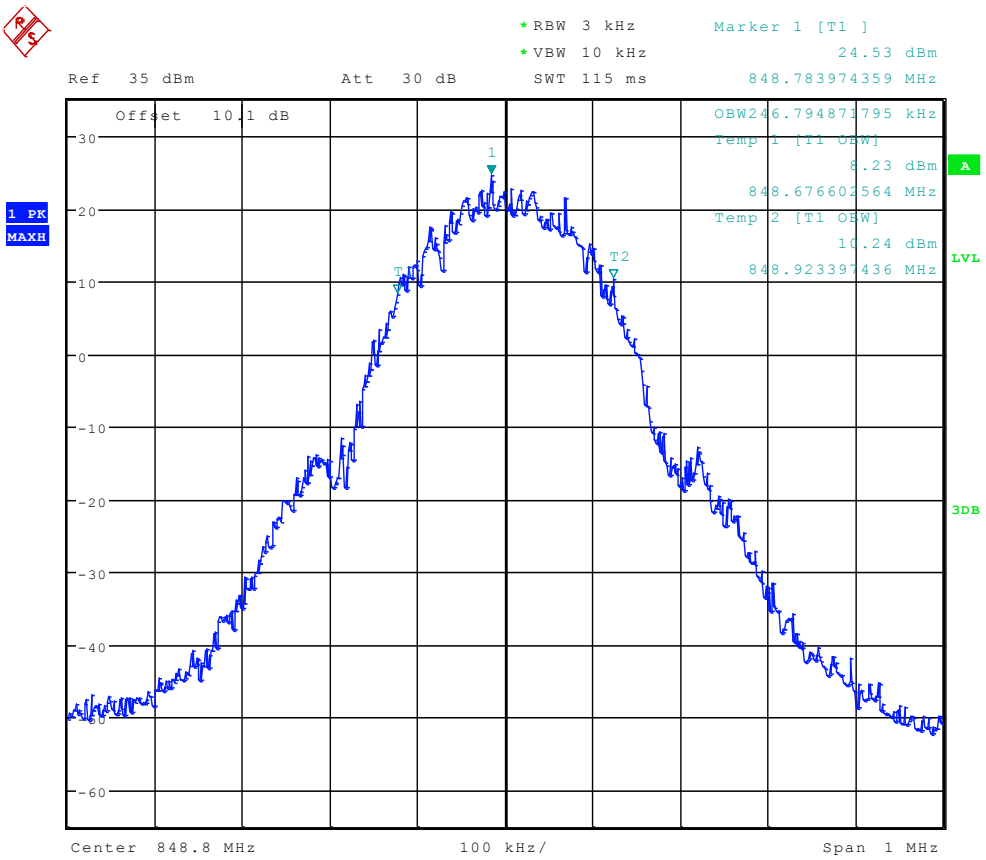
Date: 18.DEC.2011 11:29:38

Channel 4182（TM3: WCDMA）



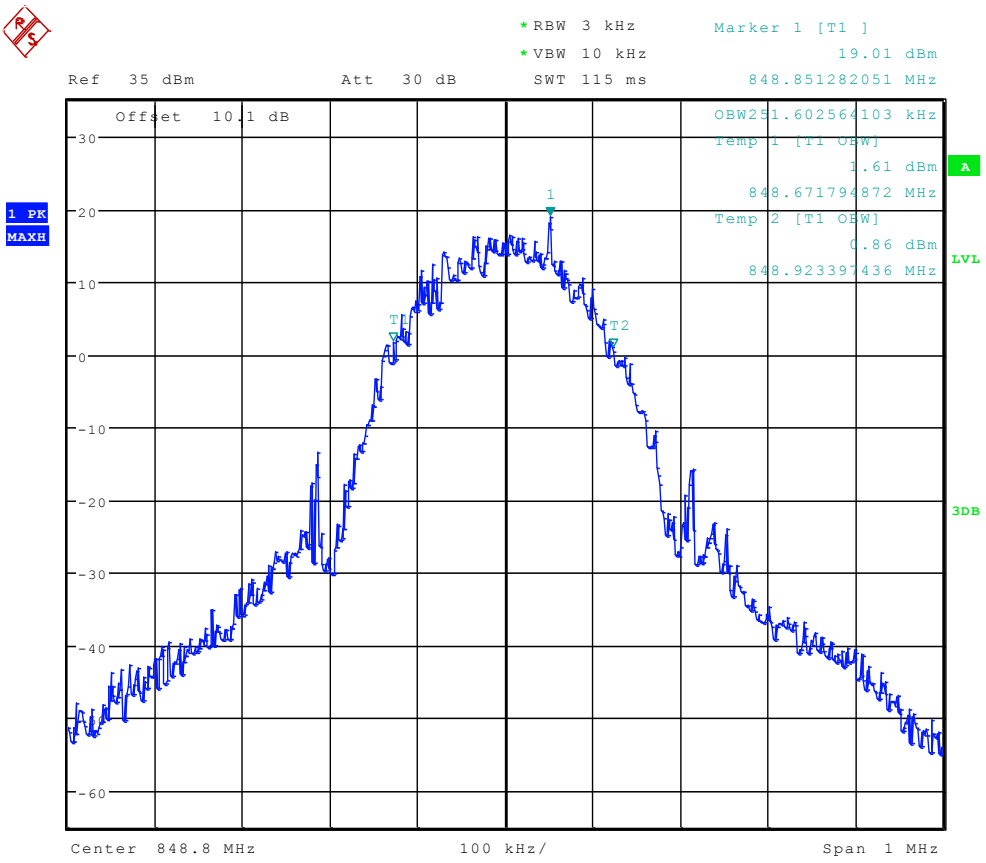
Date: 18.DEC.2011 11:35:05

Channel 251（TM1:GPRS/GSM）



Date: 18.DEC.2011 11:24:17

Channel 251（TM2:EDGE）



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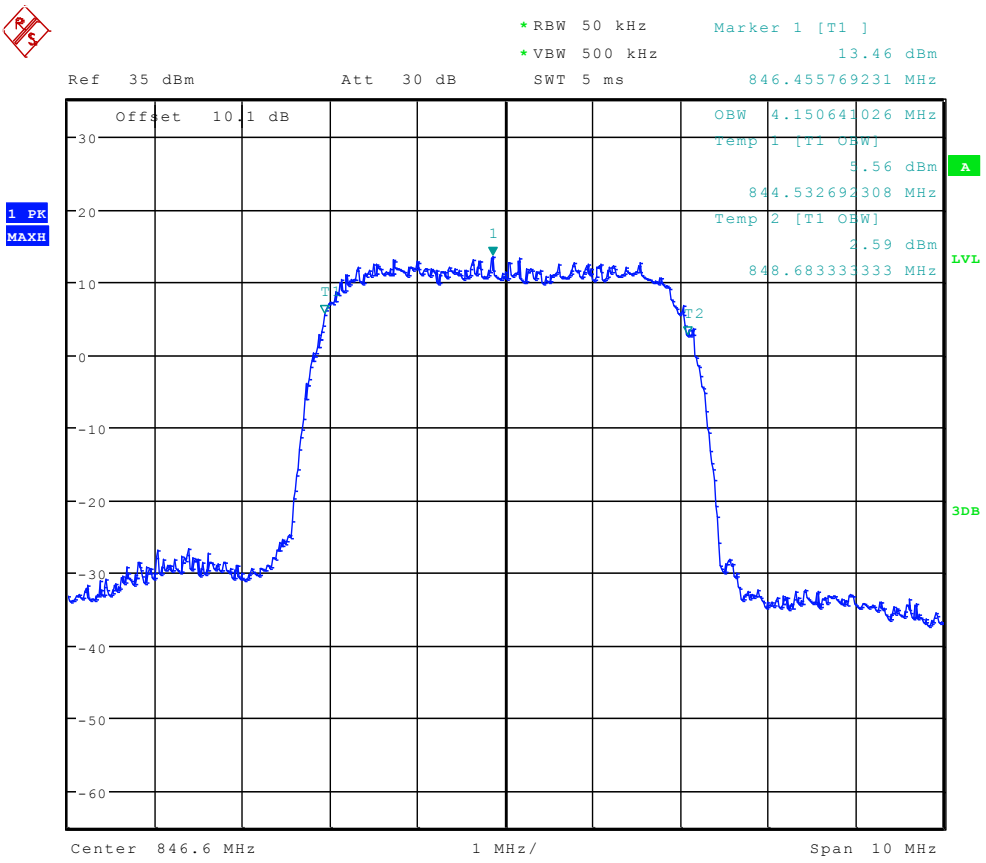
Channel 4233（TM3: WCDMA）



Date: 18.DEC.2011 11:35:18

END

Appendix D

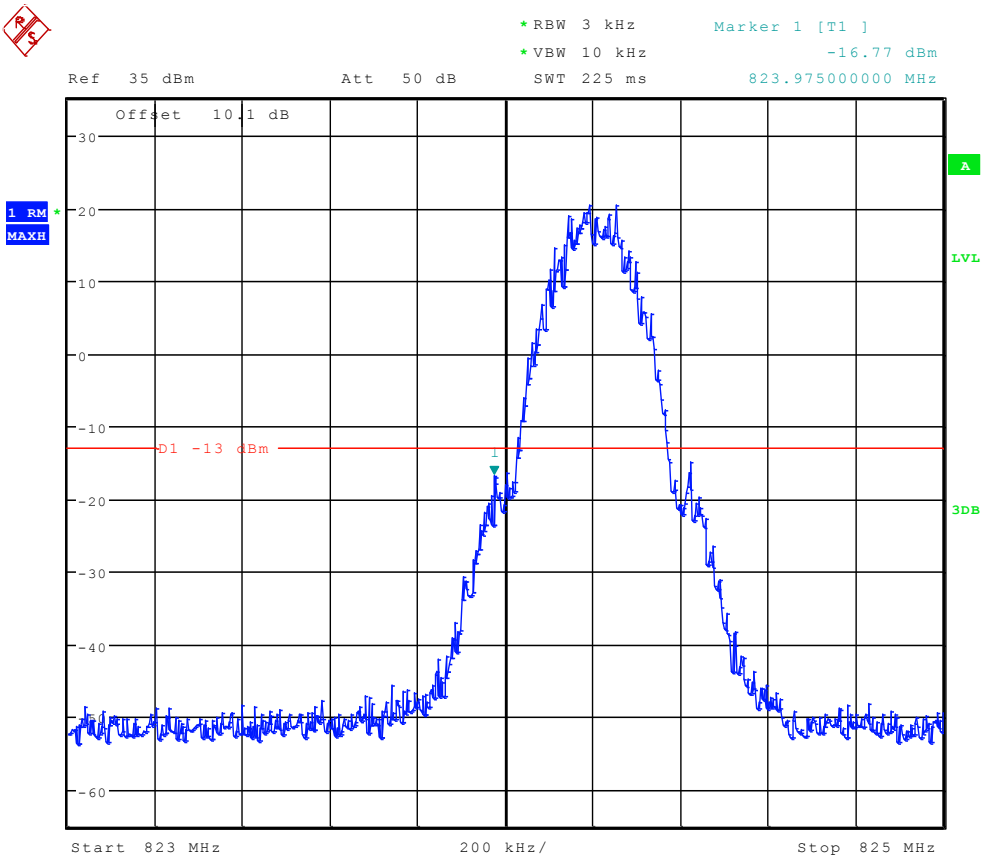
Band Edges Compliance

According to FCC Part 2.1051 & Part 22 Subpart H

TM1:GPRS/GSM

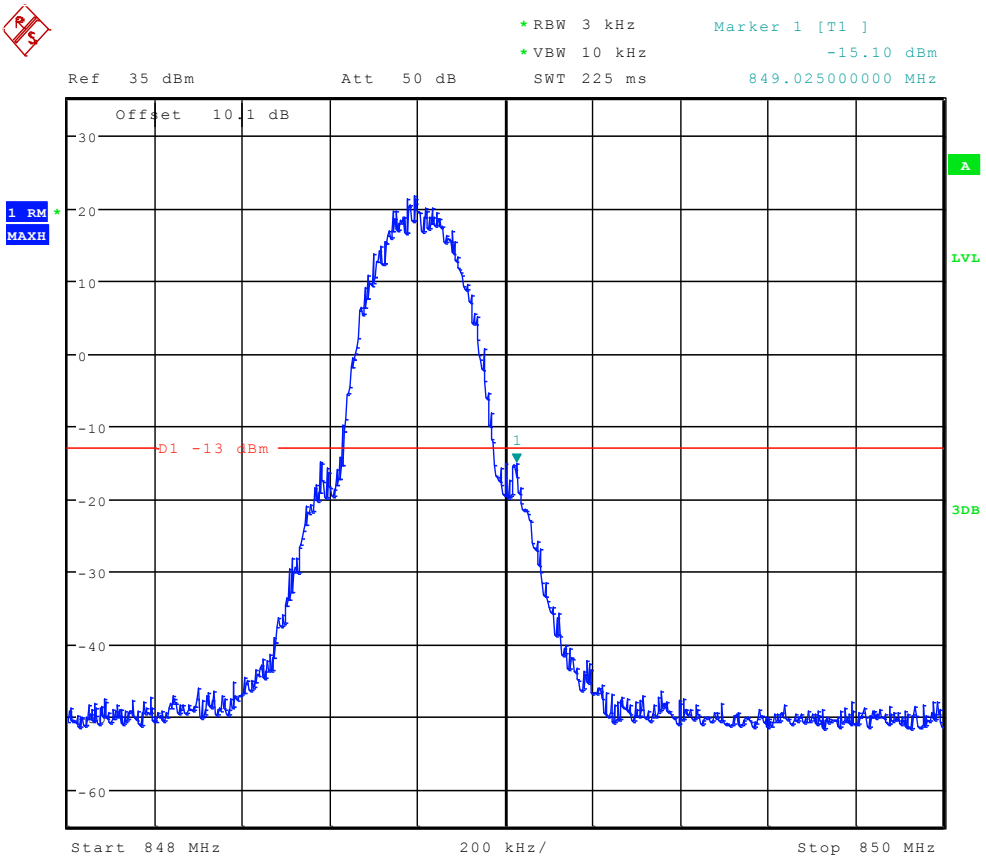
Left Edge

Channel 128



Date: 18.DEC.2011 11:27:27

Right Edge
Channel 251

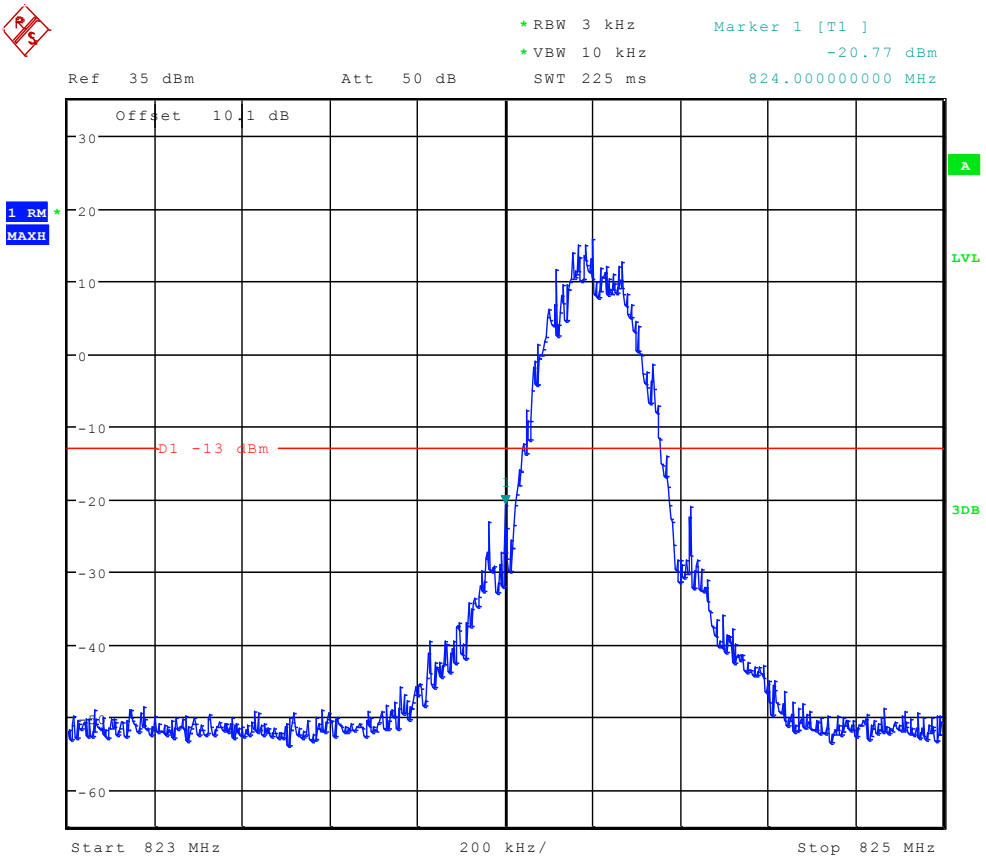


Date: 18.DEC.2011 11:28:17

TM2:EDGE

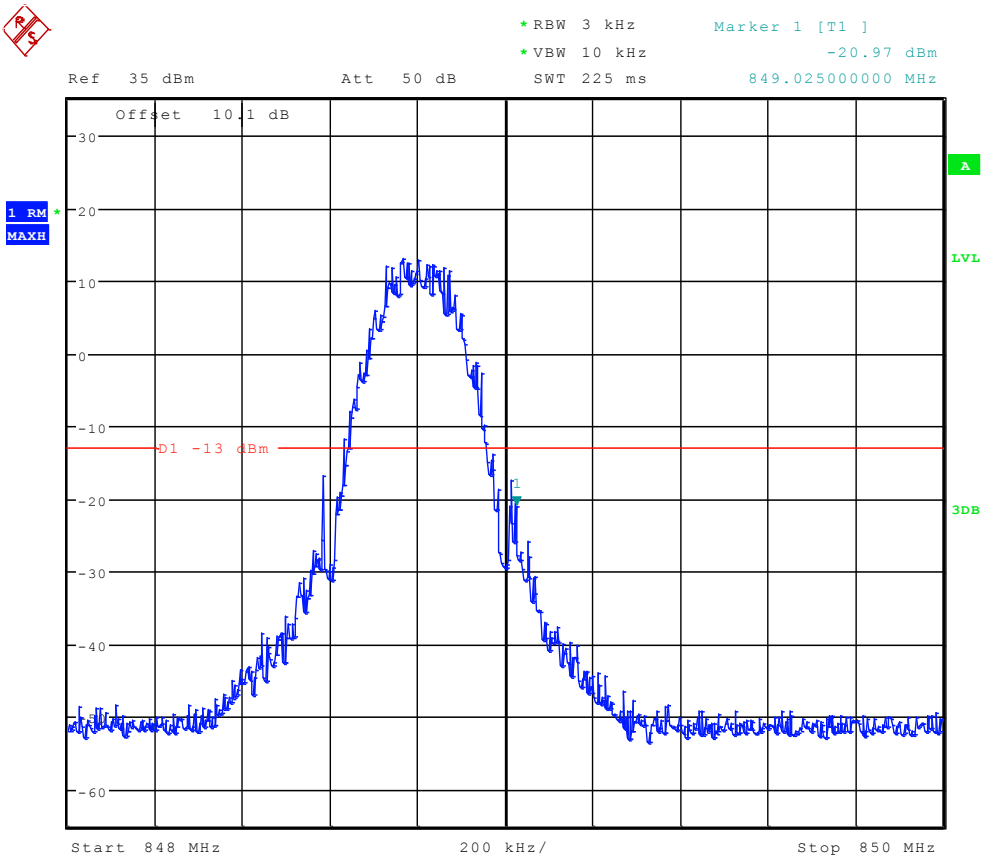
Left Edge

Channel 128



Date: 18.DEC.2011 11:33:04

Right Edge
Channel 251

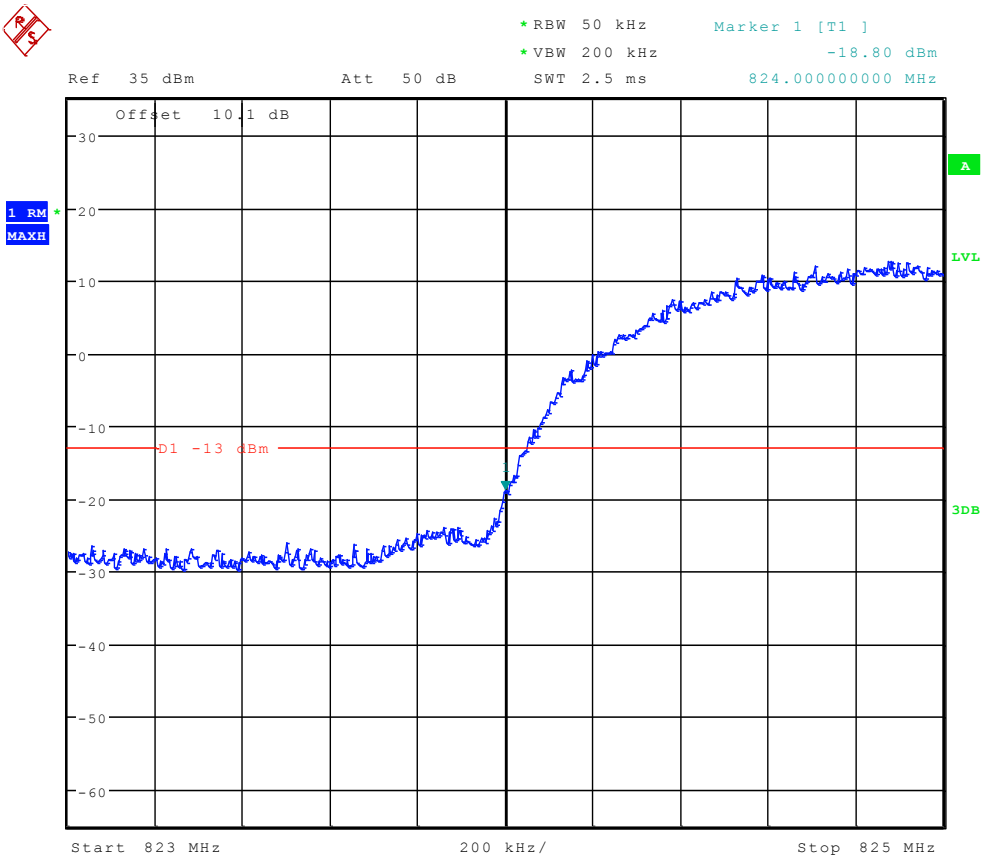


Date: 18.DEC.2011 11:33:25

TM3: WCDMA

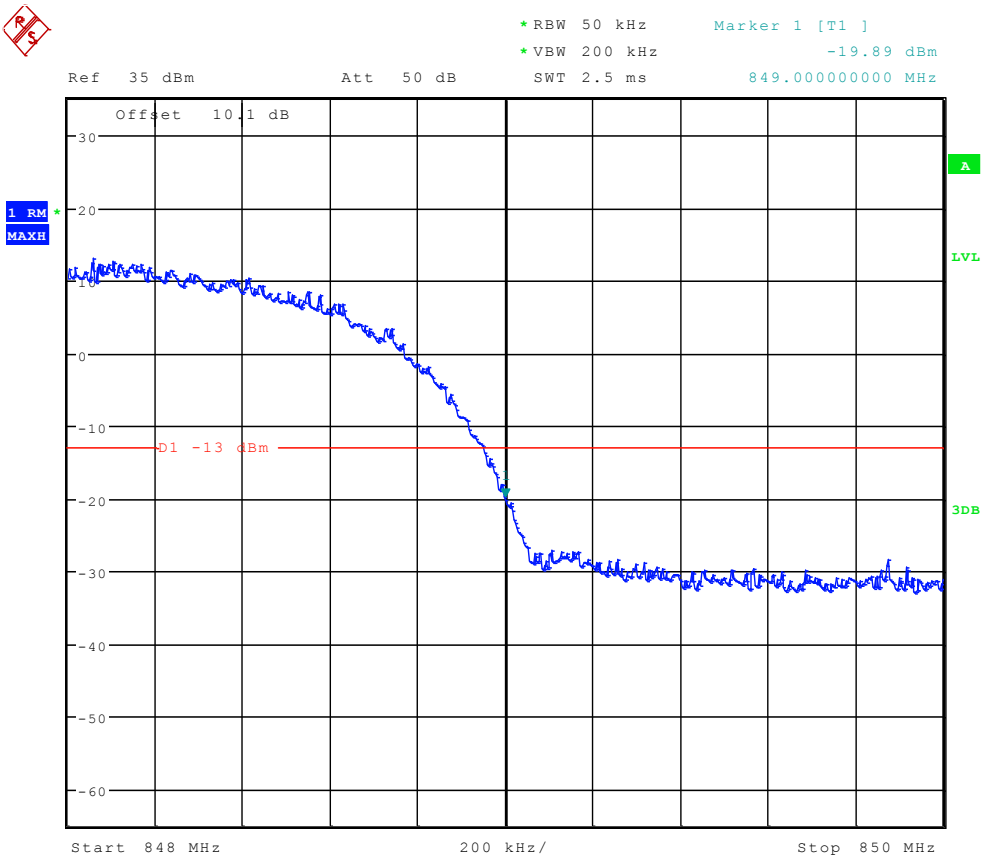
Left Edge

Channel 4132



Date: 18.DEC.2011 11:38:31

Right Edge
Channel 4233



Date: 18.DEC.2011 11:38:45

END

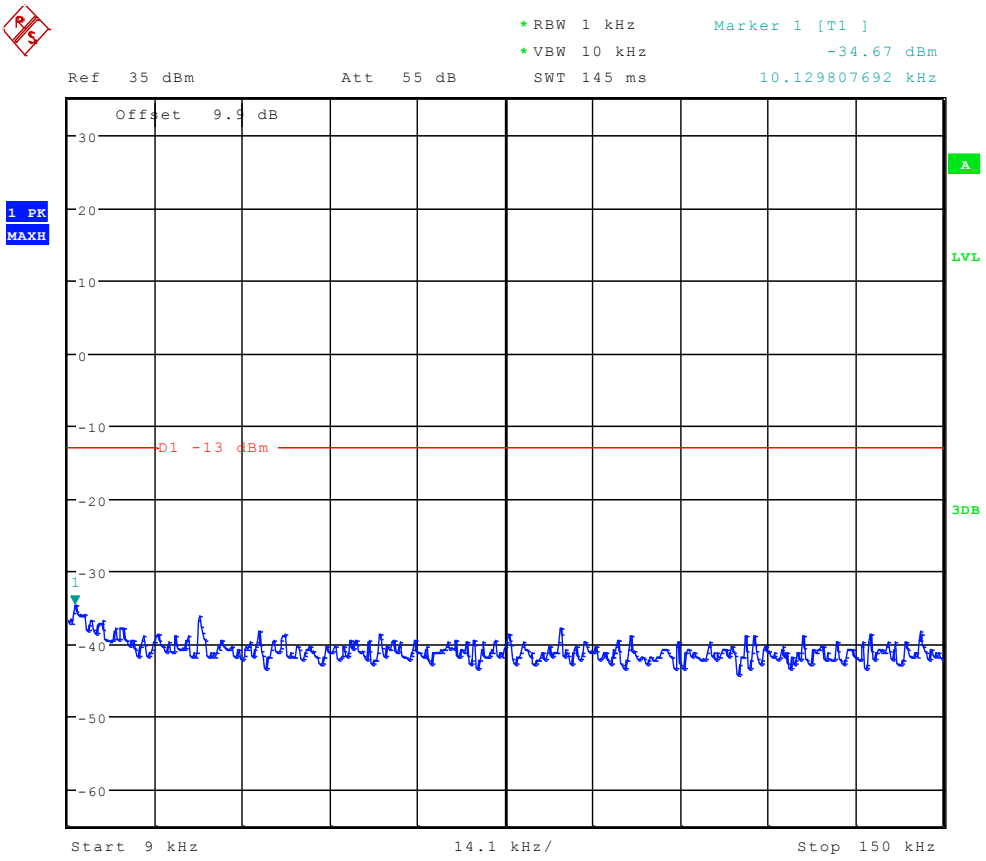
Appendix E

Spurious Emission at Antenna Terminal

According to FCC Part 2.1051 & Part 22 Subpart H

TM1:GPRS/GSM

Channel 128



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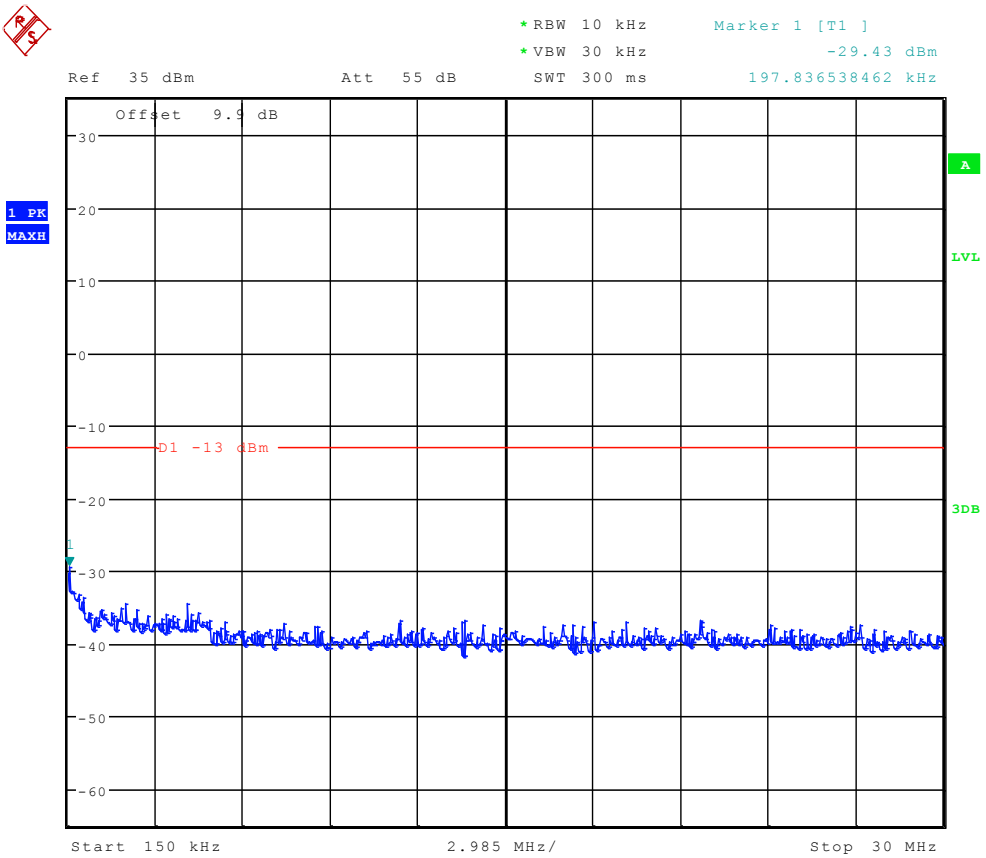

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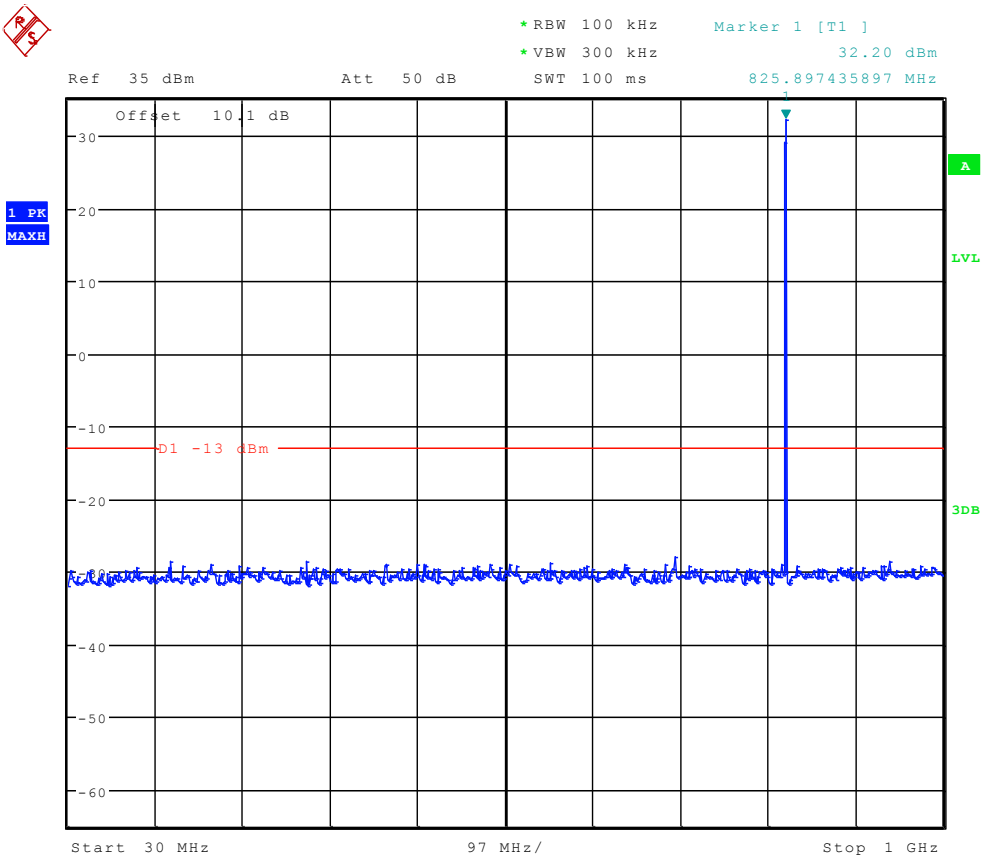

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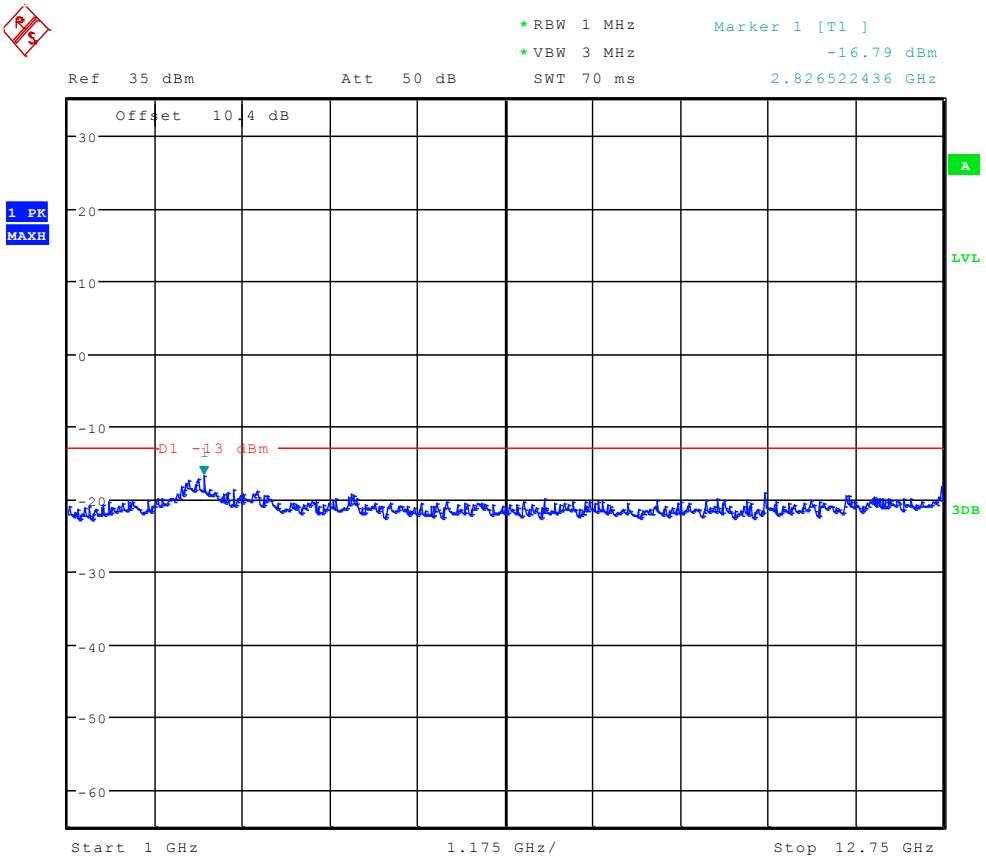

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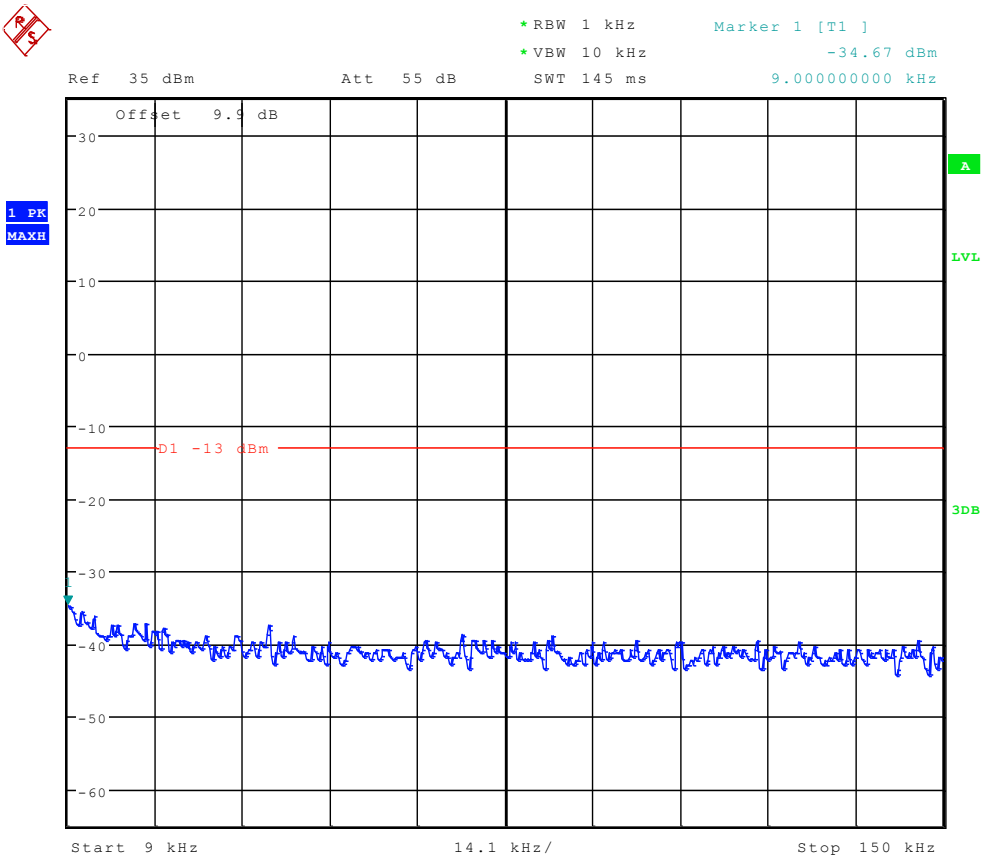
Channel 192



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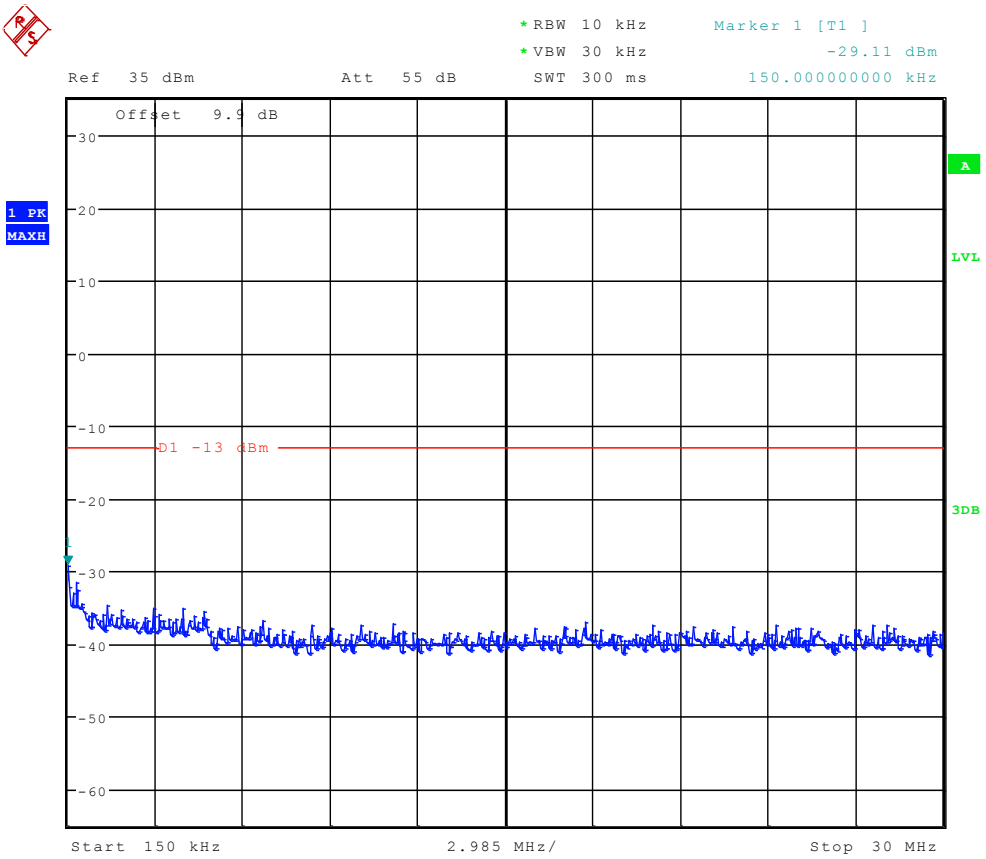

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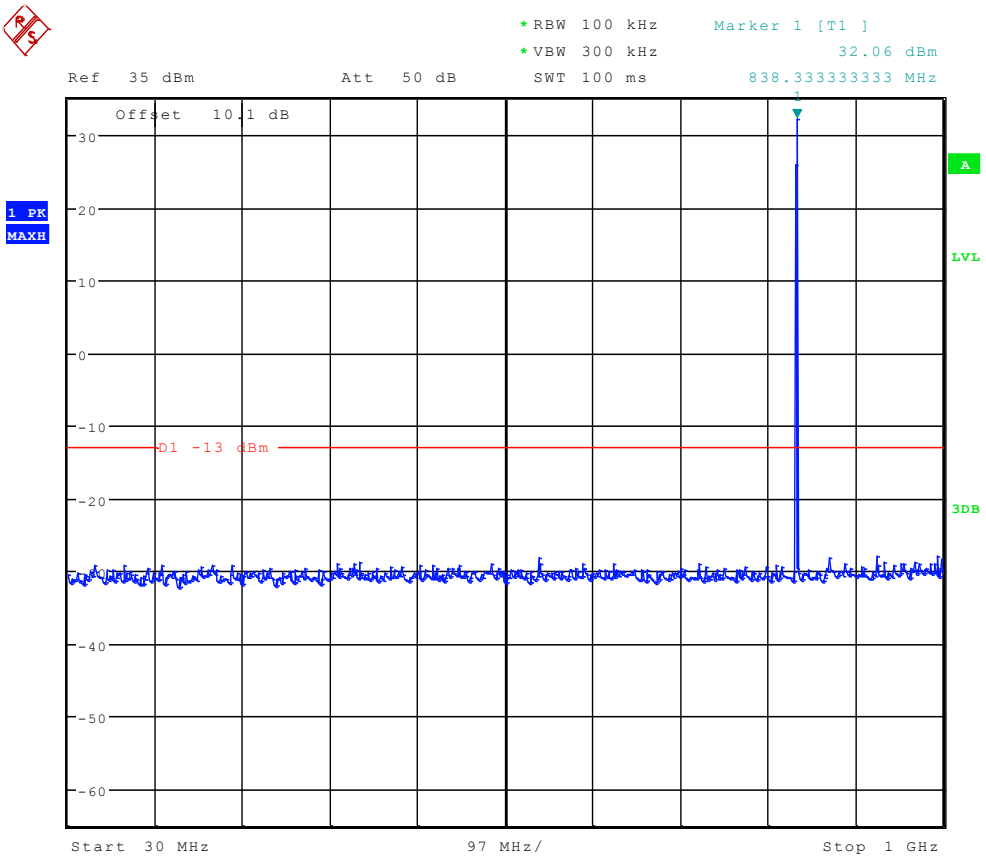

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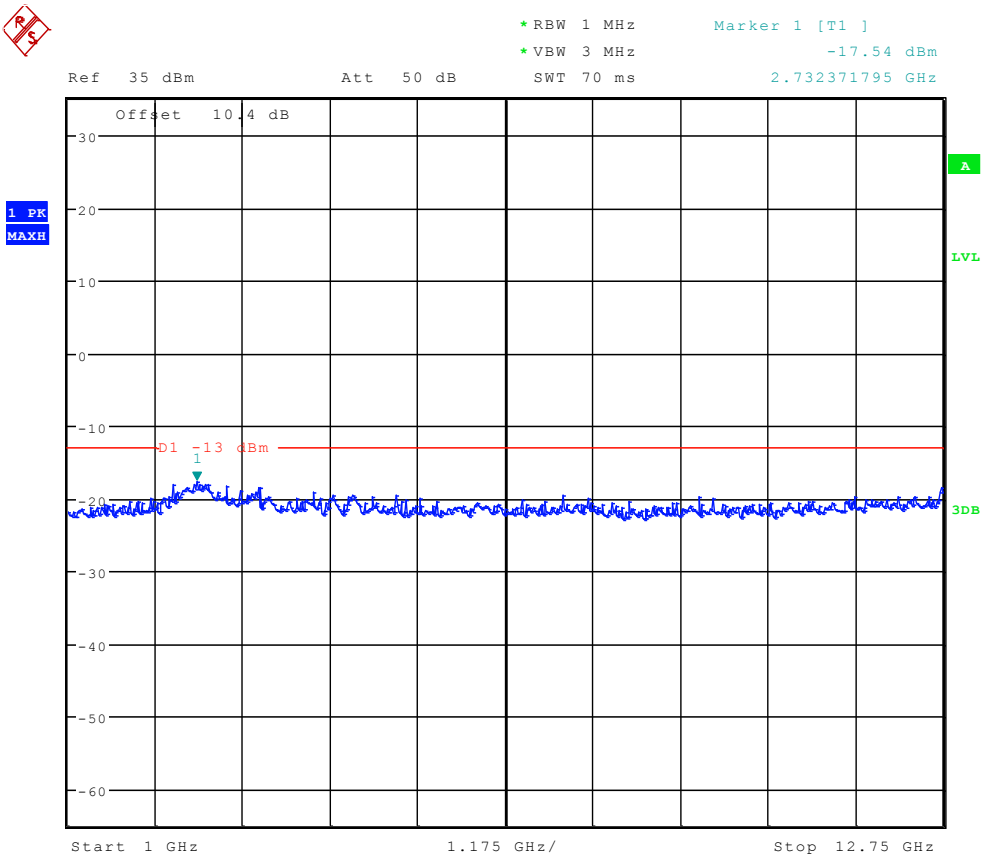
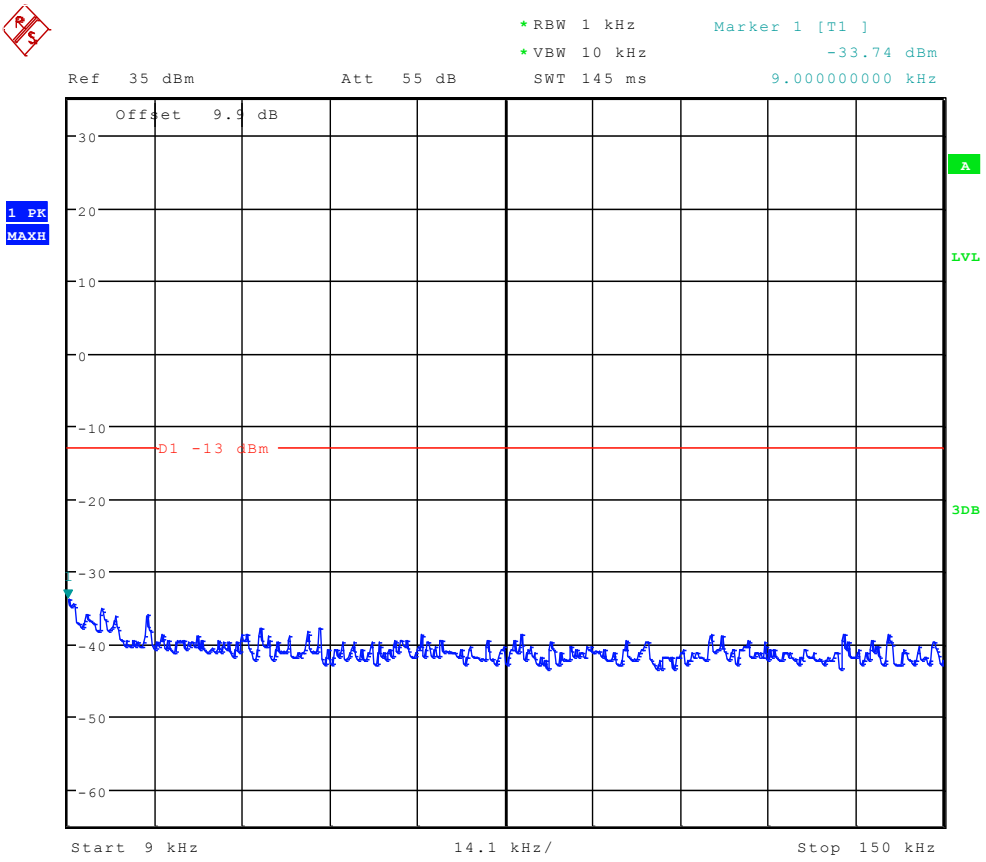


Date: 18.DEC.2011 11:26:58

Channel 251



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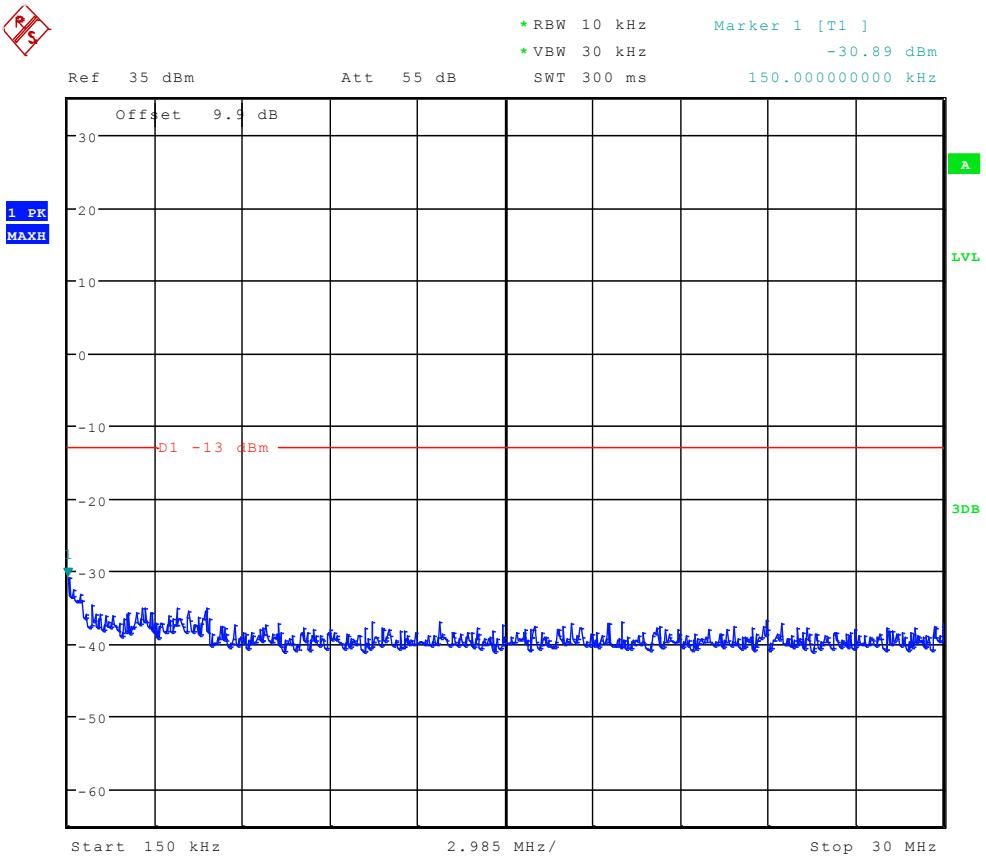
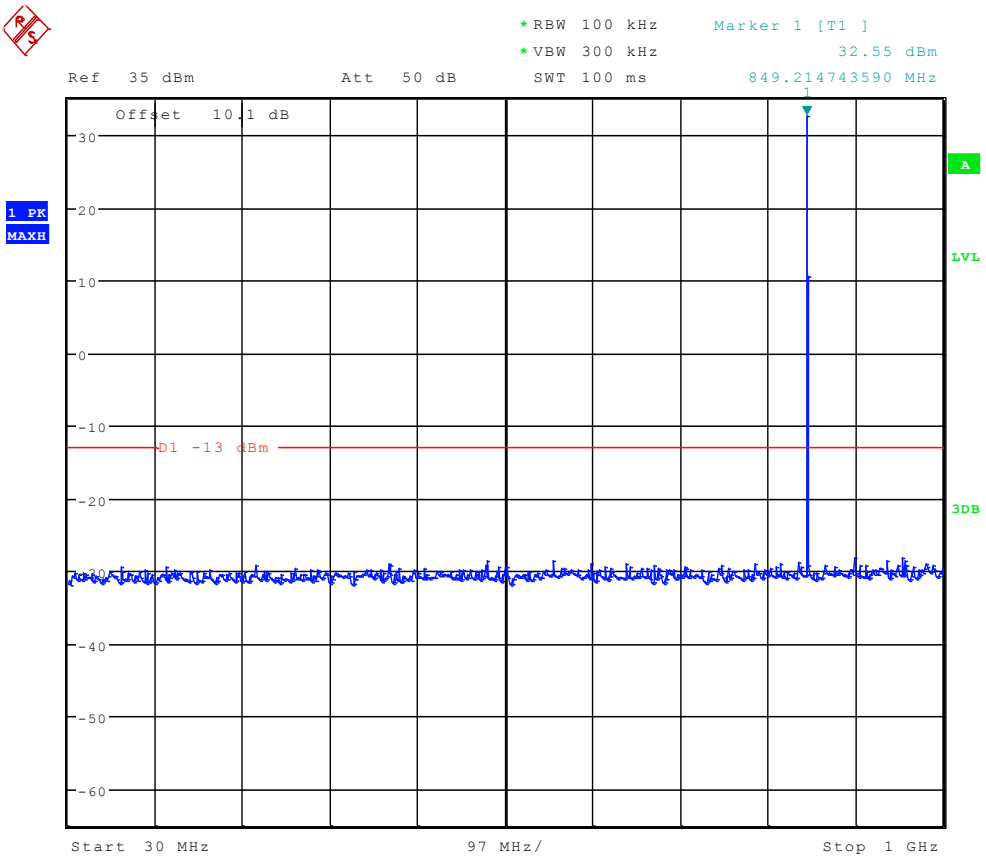


Date: 18.DEC.2011 11:25:45



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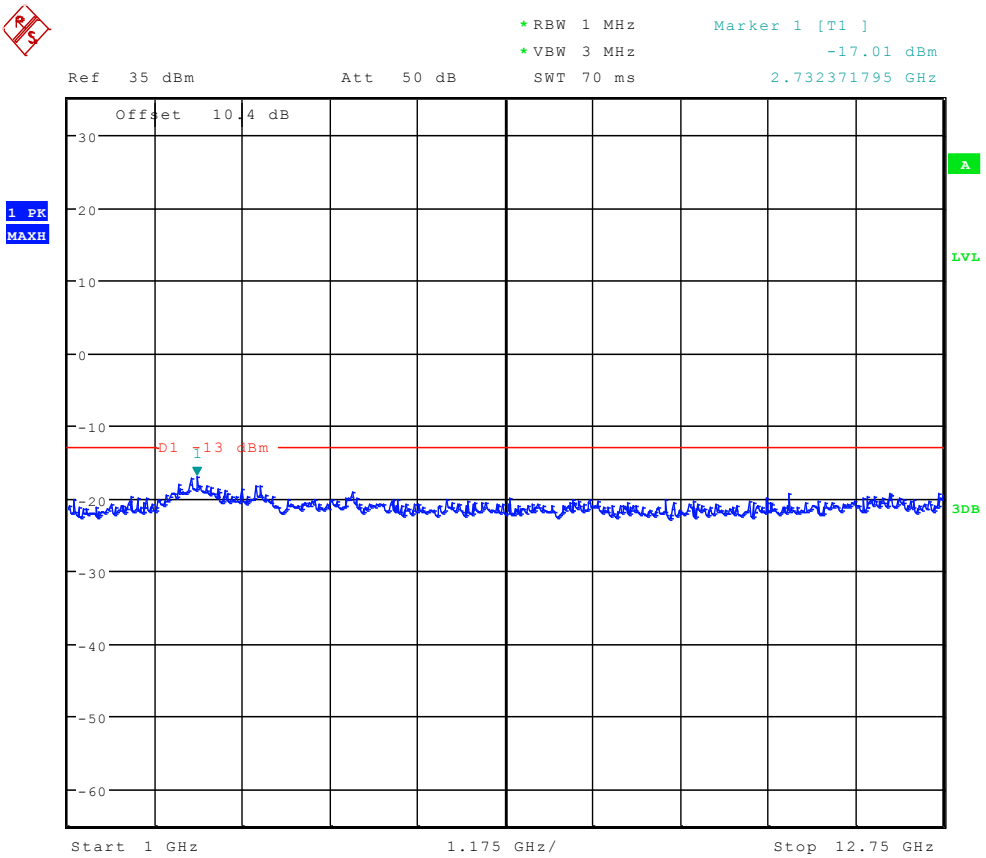
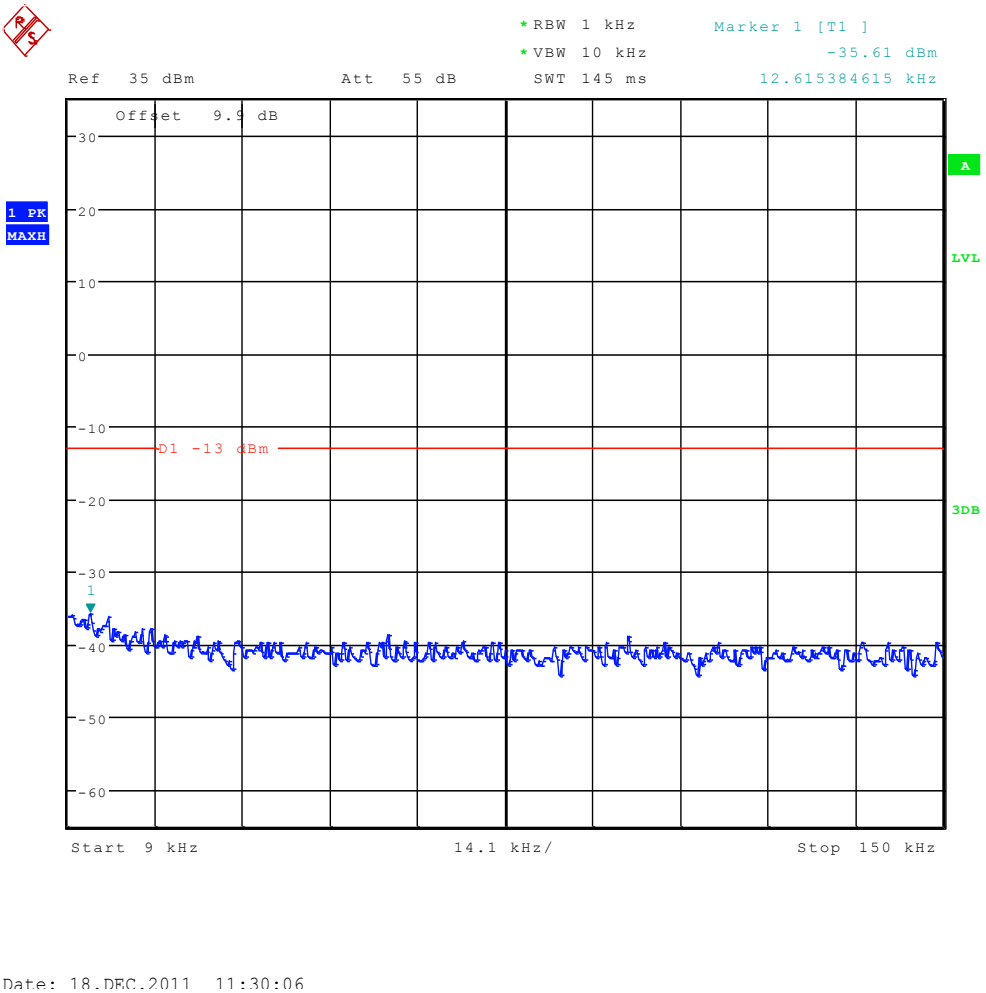
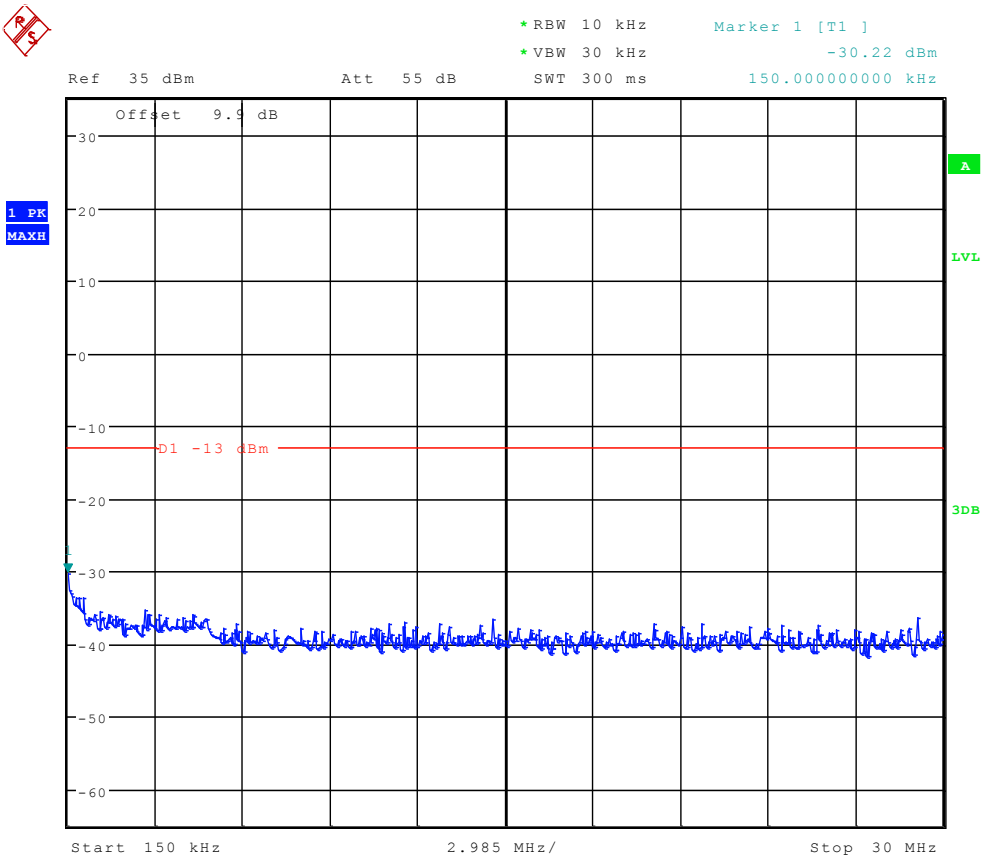


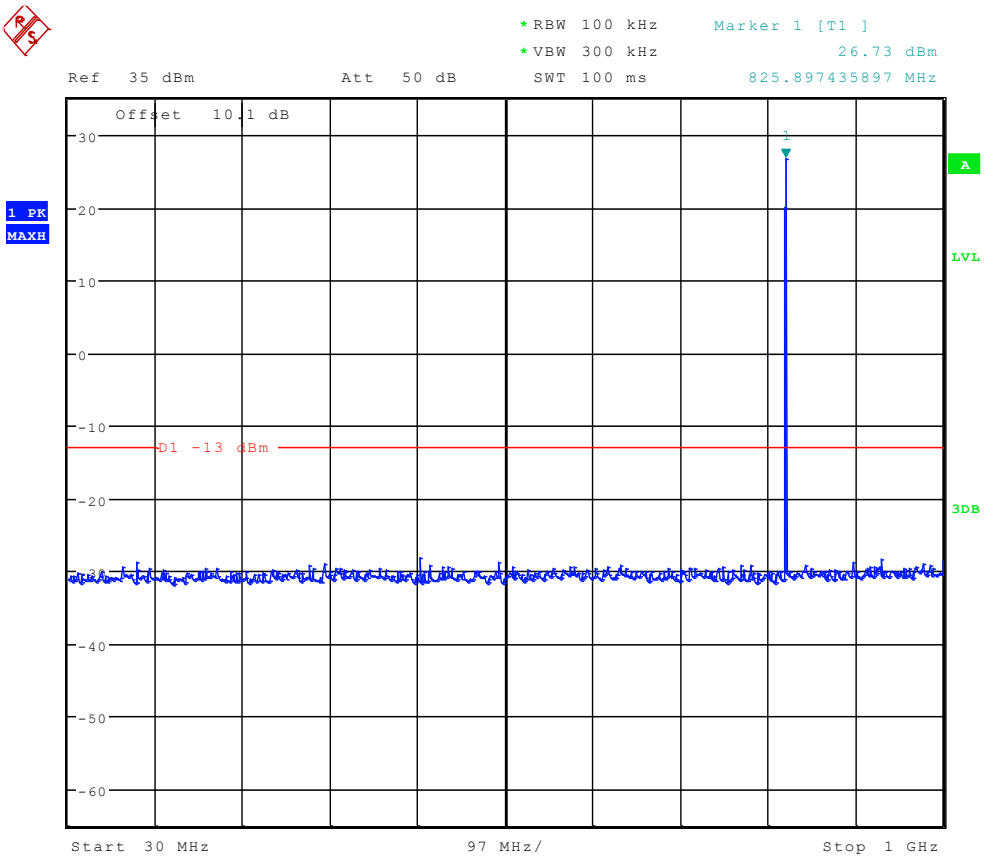
Date: 18.DEC.2011 11:27:13

TM2:EDGE
Channel 128





Date: 18.DEC.2011 11:30:50



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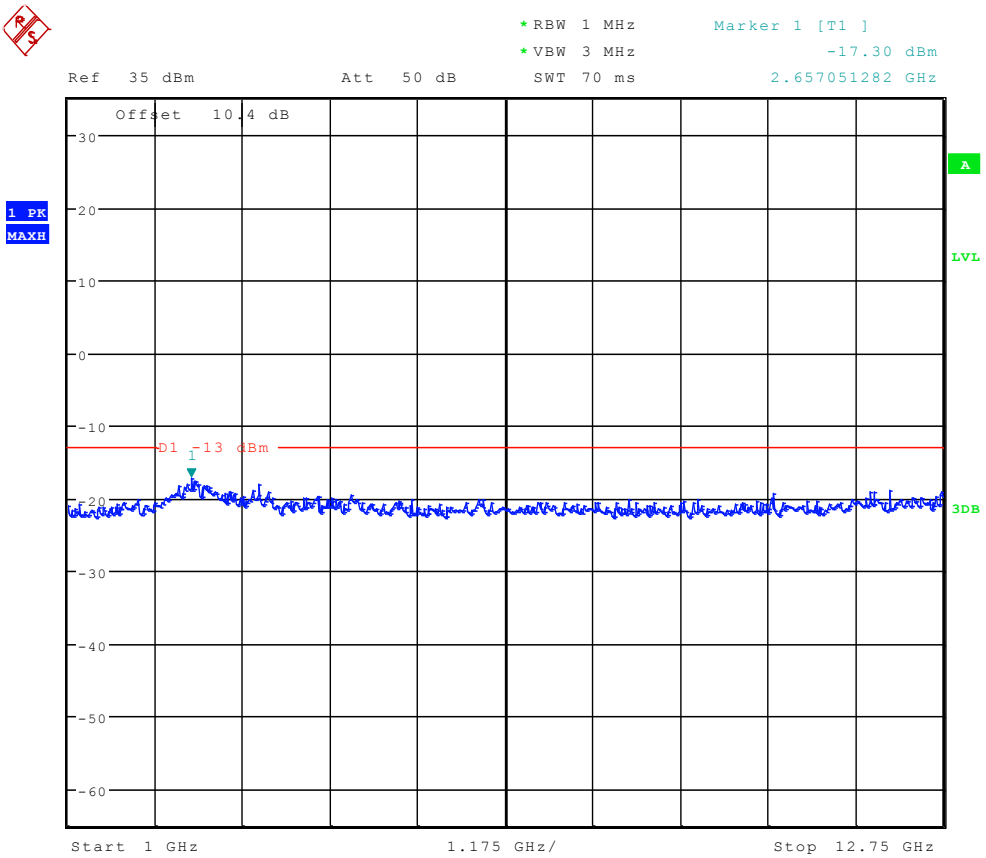
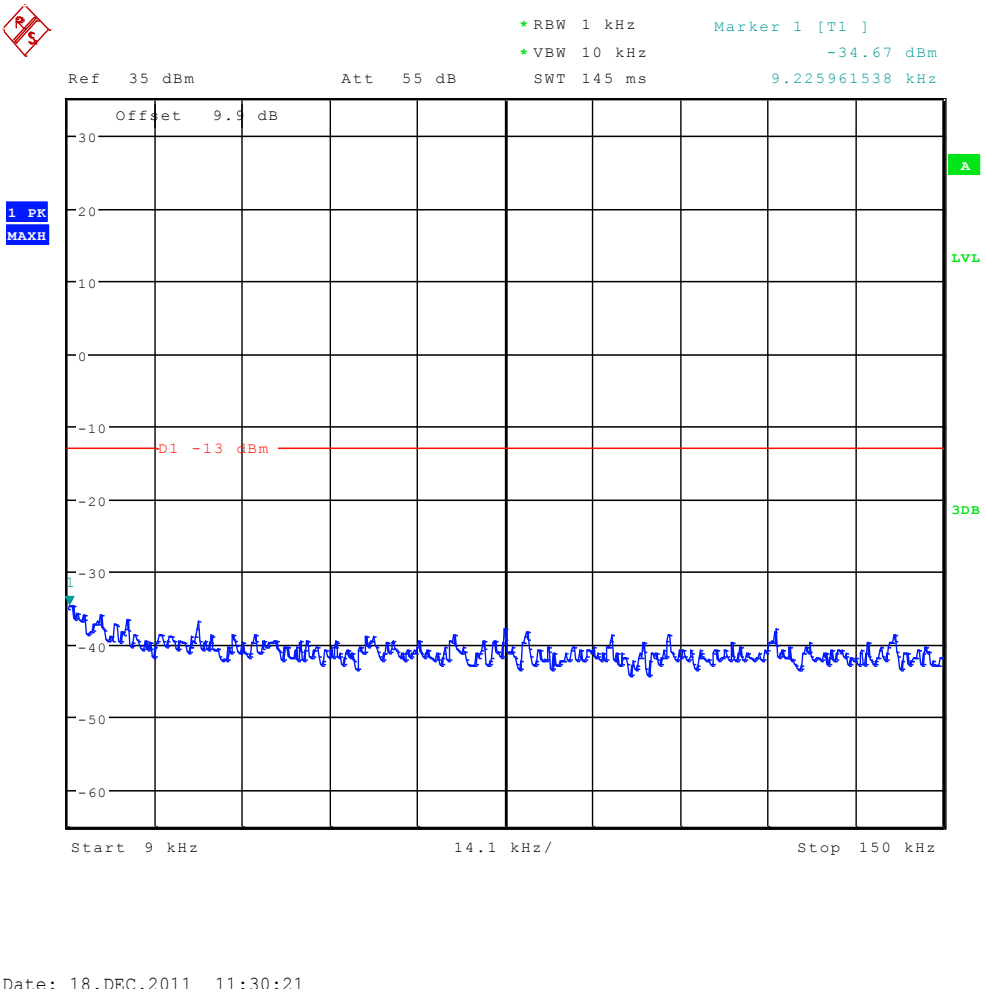
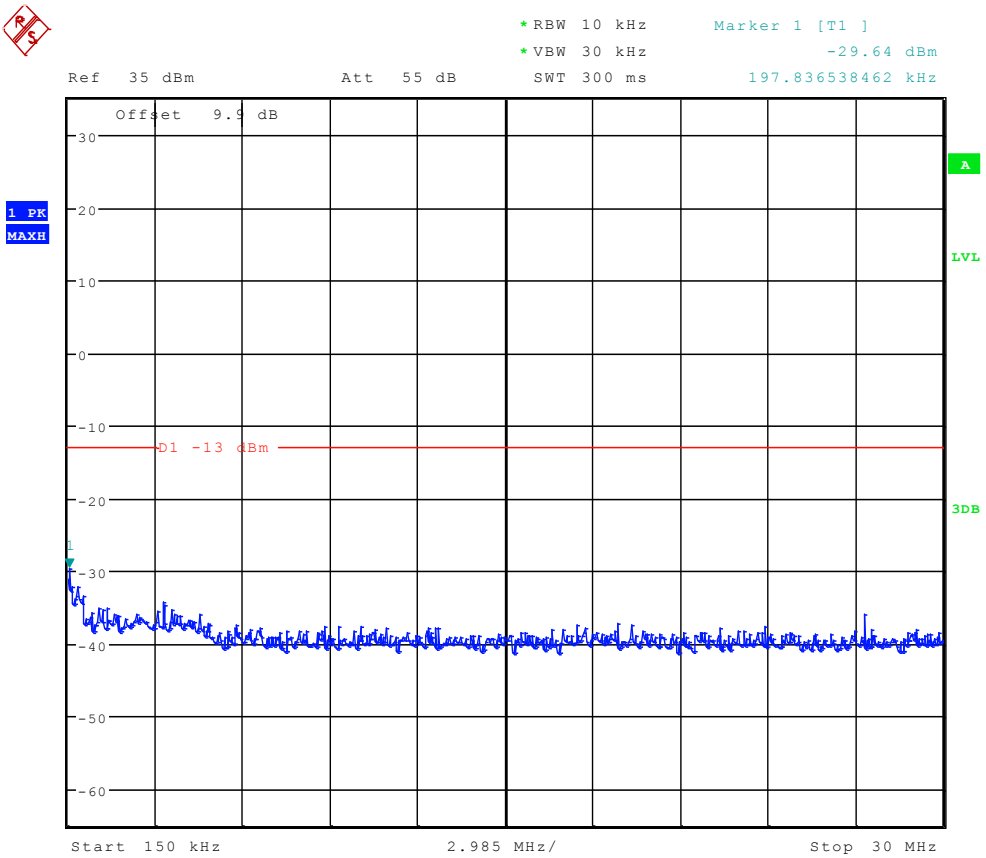


Date: 18.DEC.2011 11:32:18

Channel 192


RBW 1 kHz
VBW 10 kHz
SWT 145 ms
Marker 1 [T1]
-34.67 dBm
9.225961538 kHz
Ref 35 dBm
Att 55 dB
Offset 9.9 dB
1 PK
MAXH
A
LVL
3DB
D1 -13 dBm
30
20
10
0
-10
-20
-30
-40
-50
-60
Start 9 kHz
14.1 kHz/
Stop 150 kHz
Date: 18.DEC.2011 11:30:21



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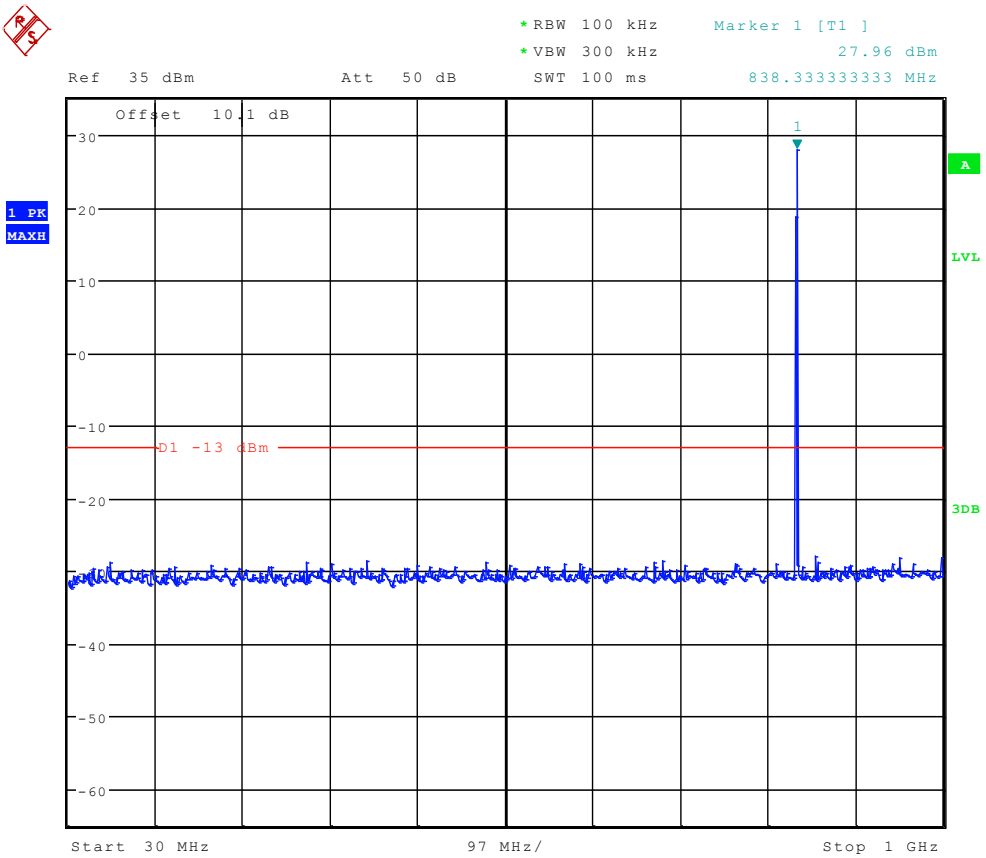

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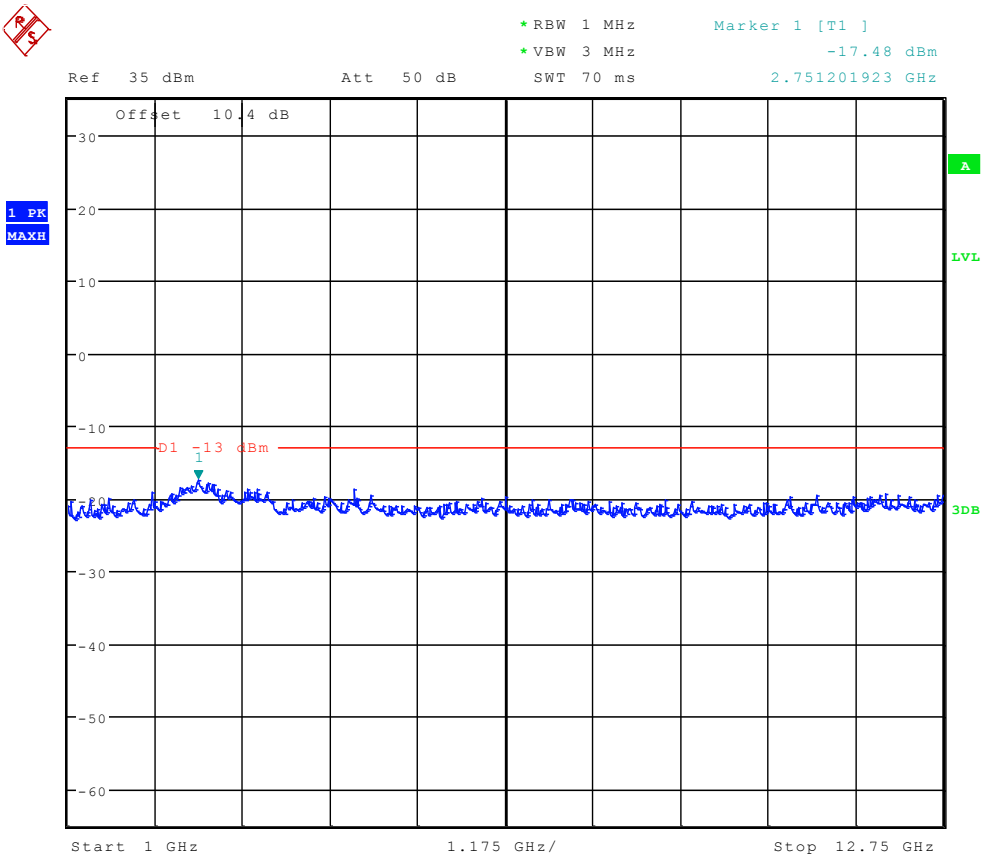
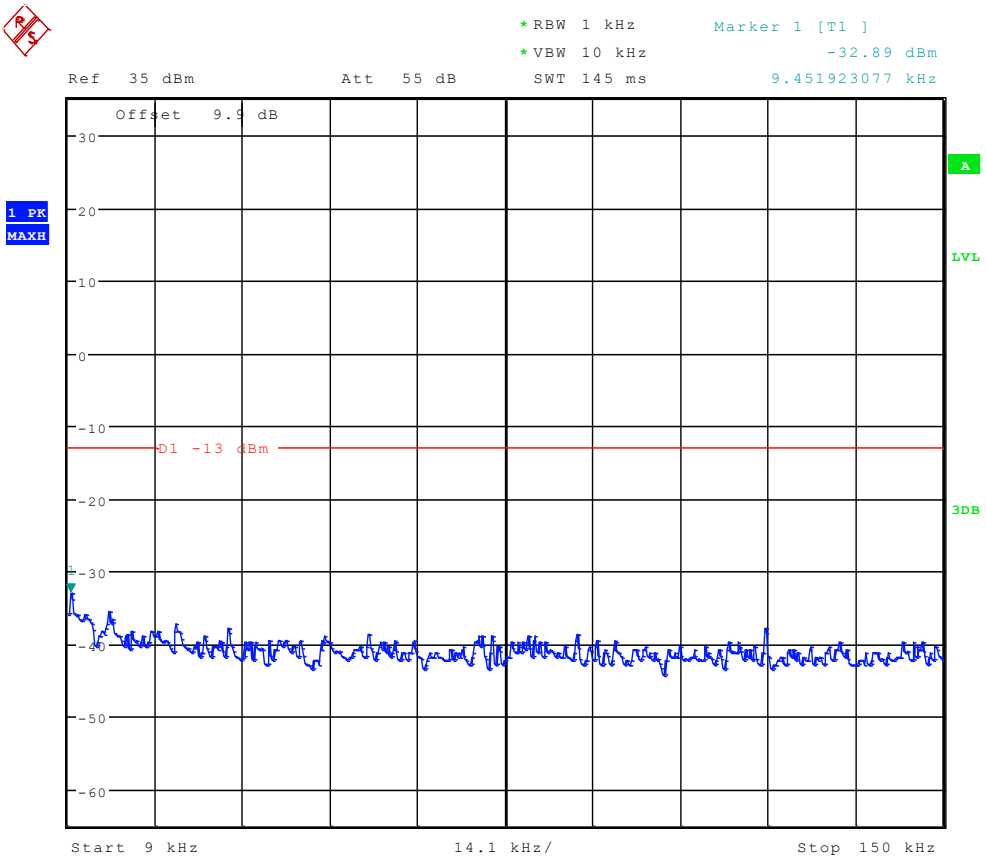


Date: 18.DEC.2011 11:32:32

Channel 251



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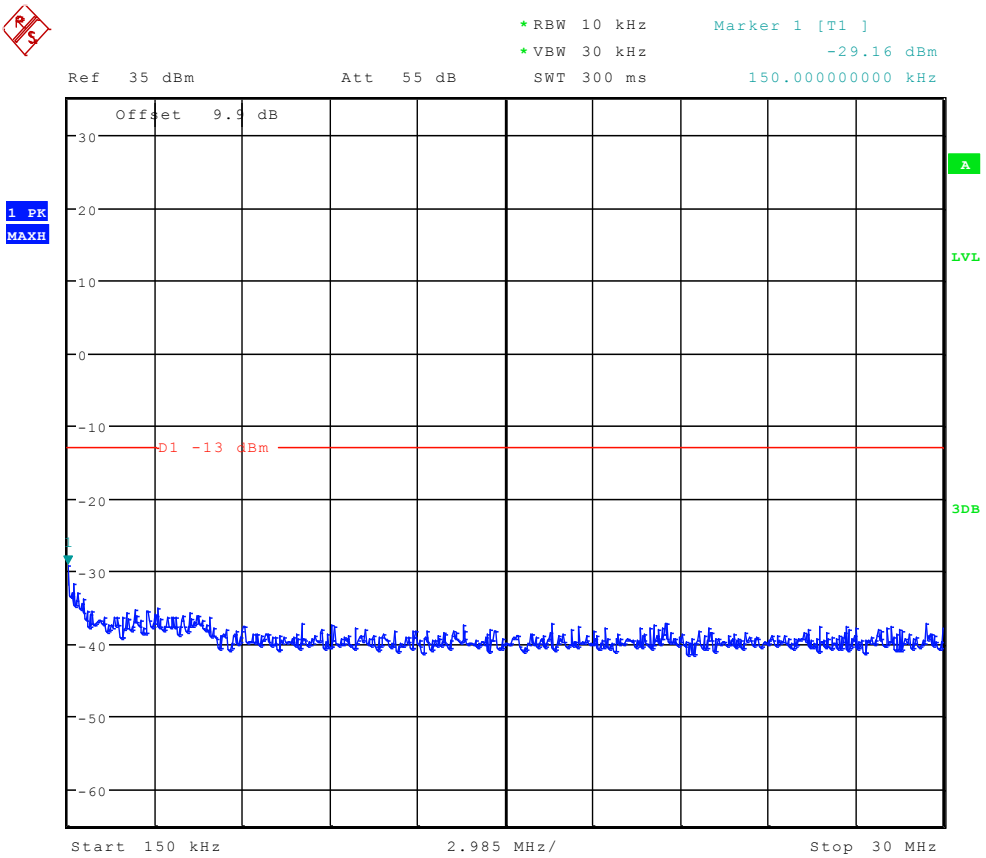

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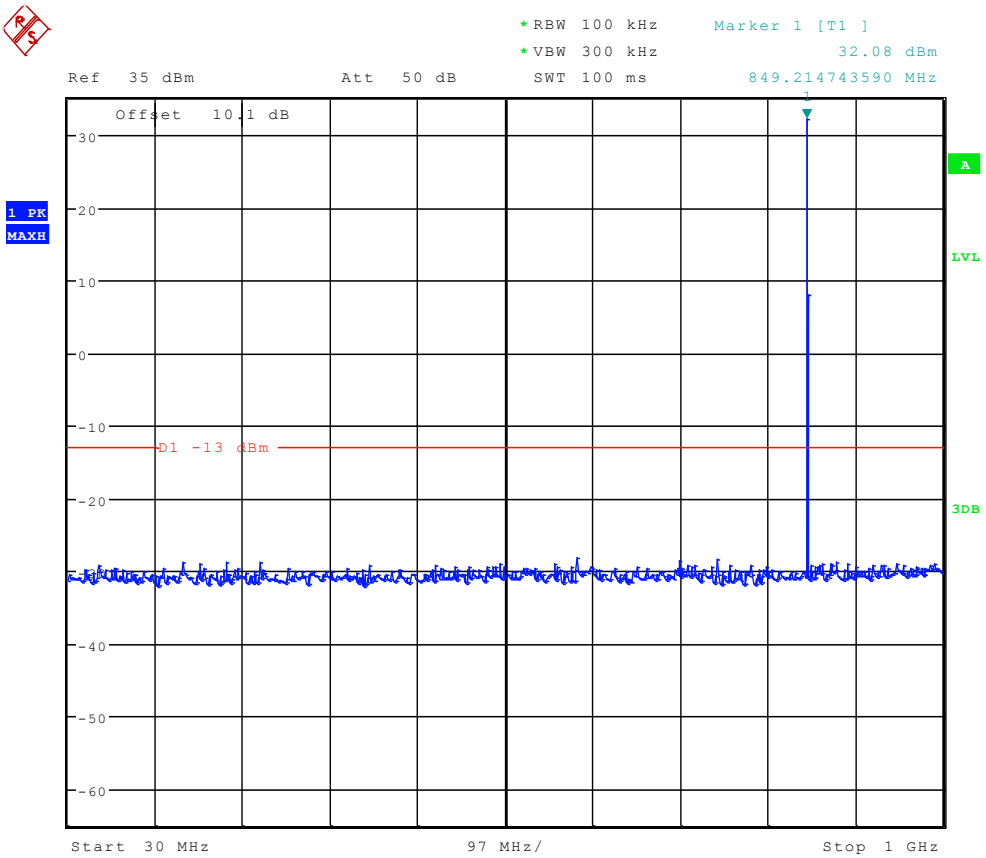
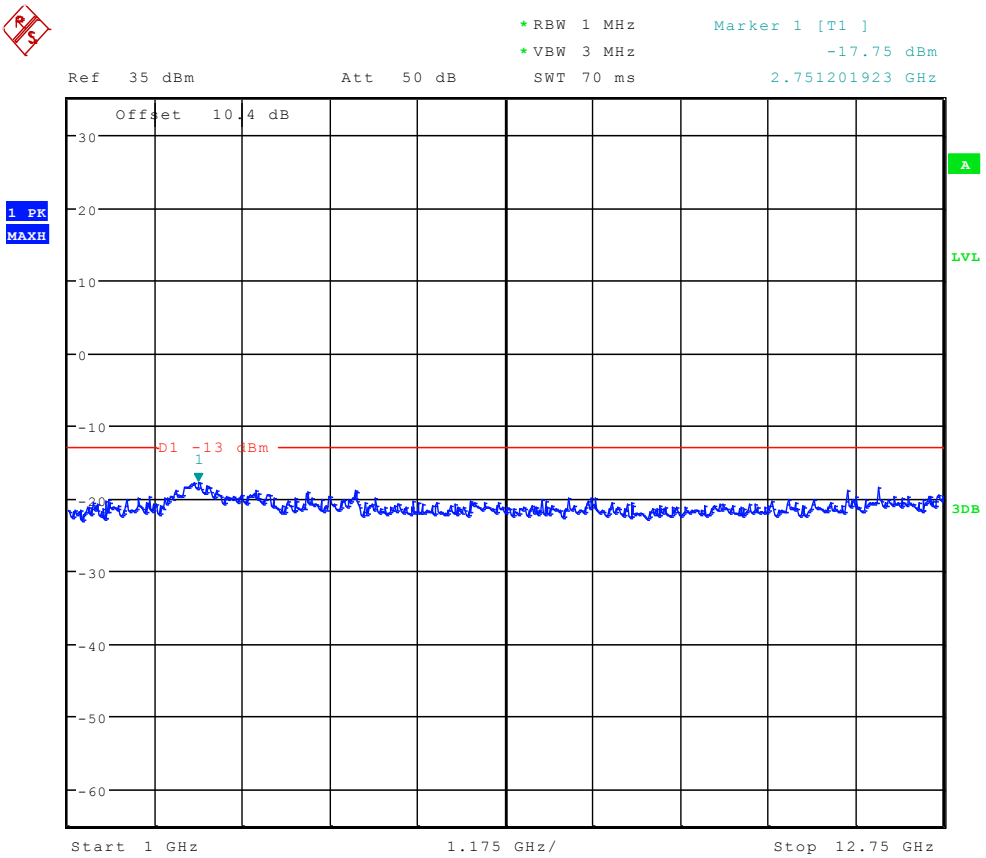
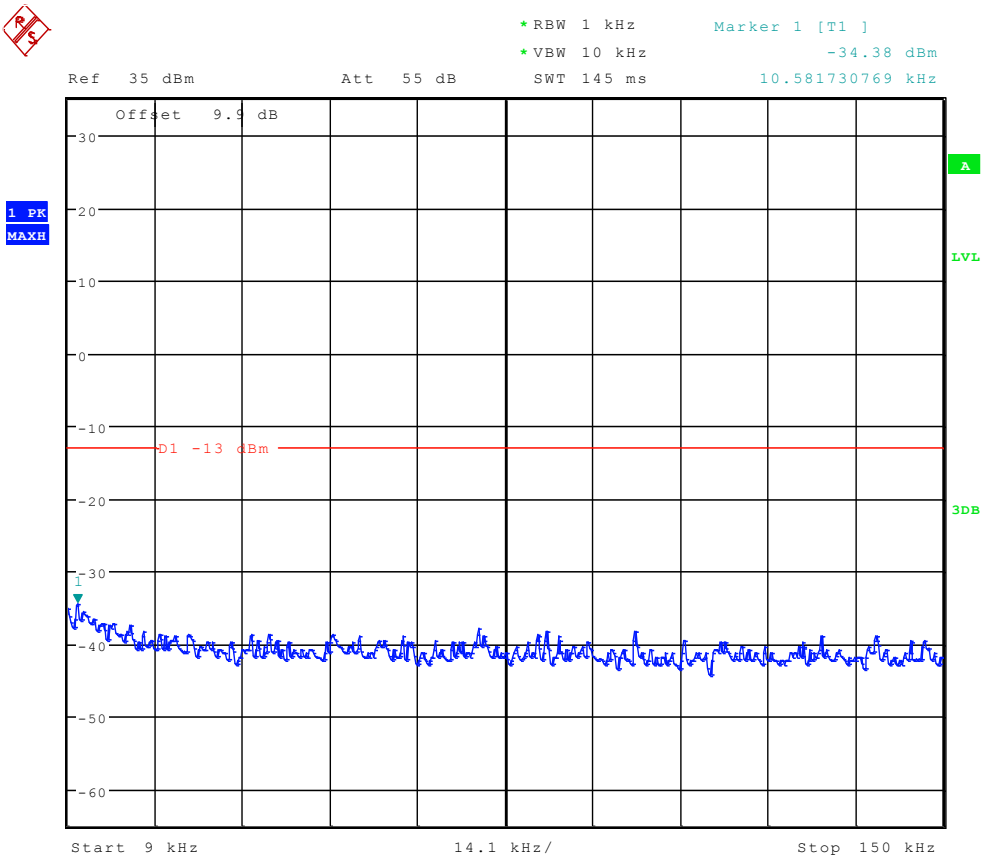


Date: 18.DEC.2011 11:32:03

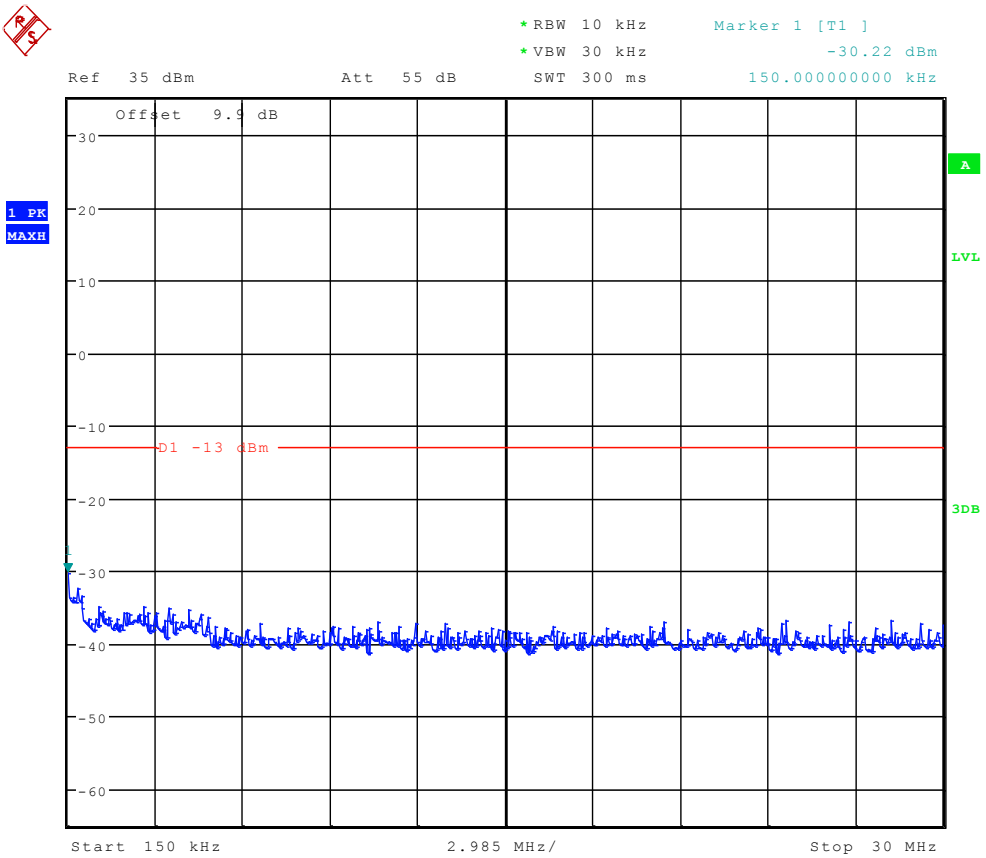


Date: 18.DEC.2011 11:32:47

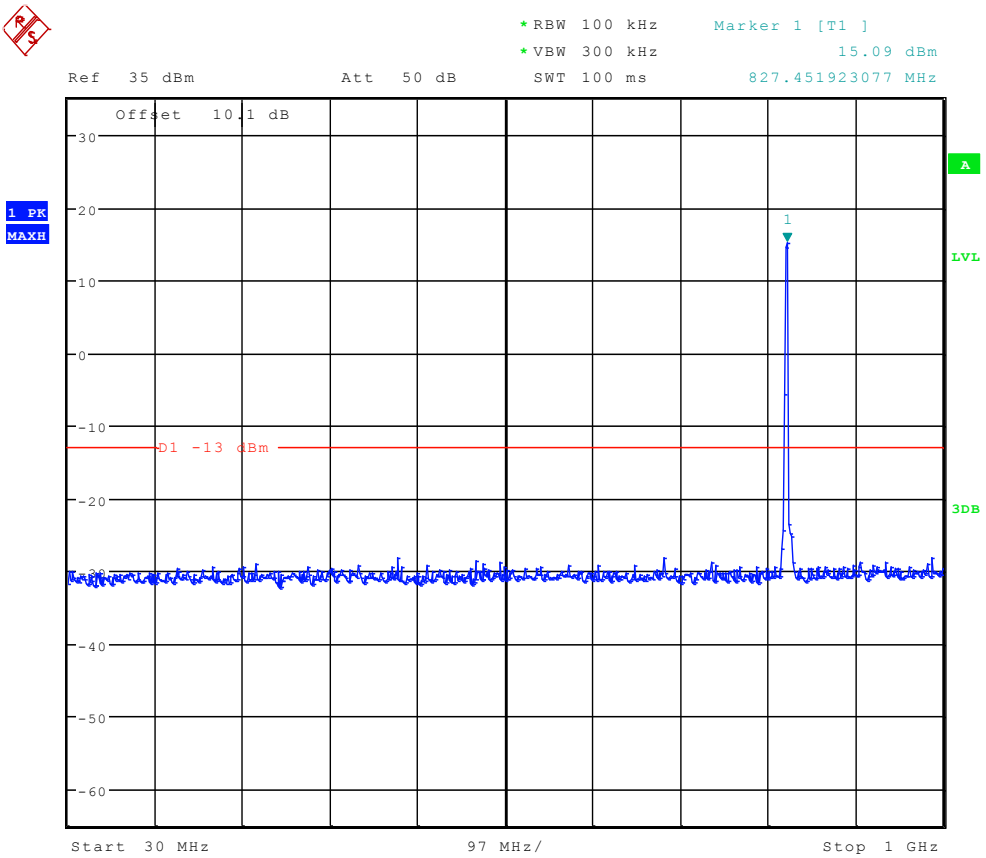
TM3: WCDMA
Channel 4132



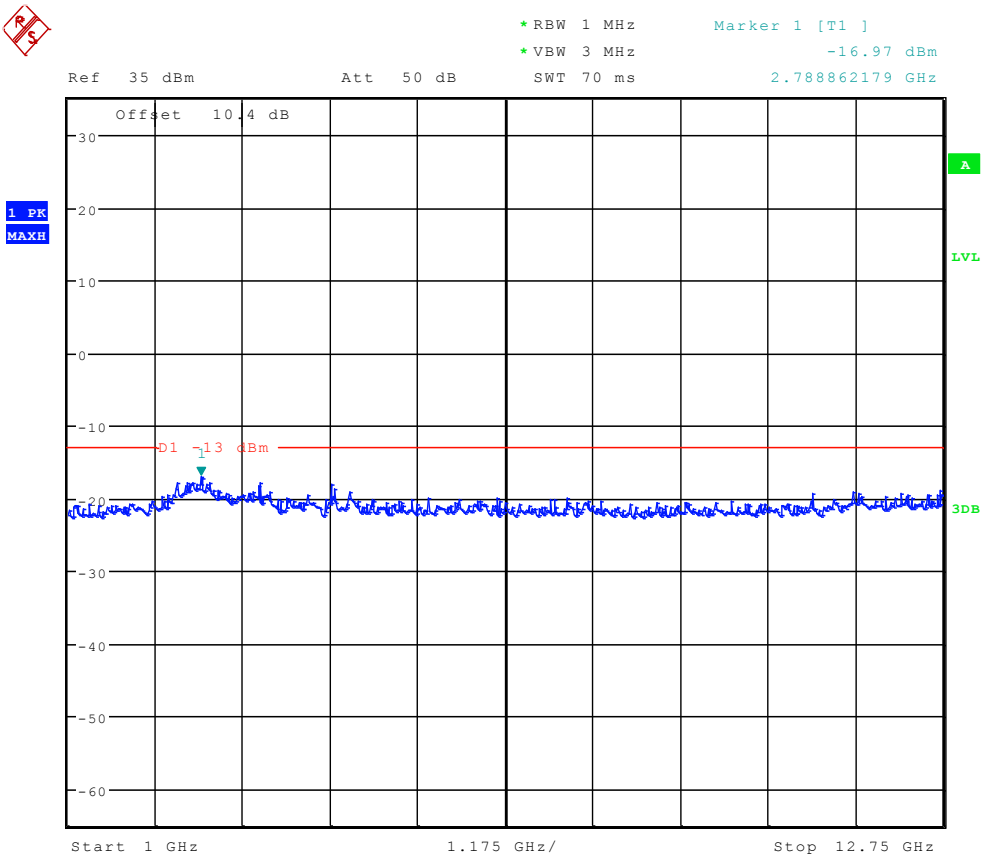
Date: 18.DEC.2011 11:35:33



Date: 18.DEC.2011 11:36:17

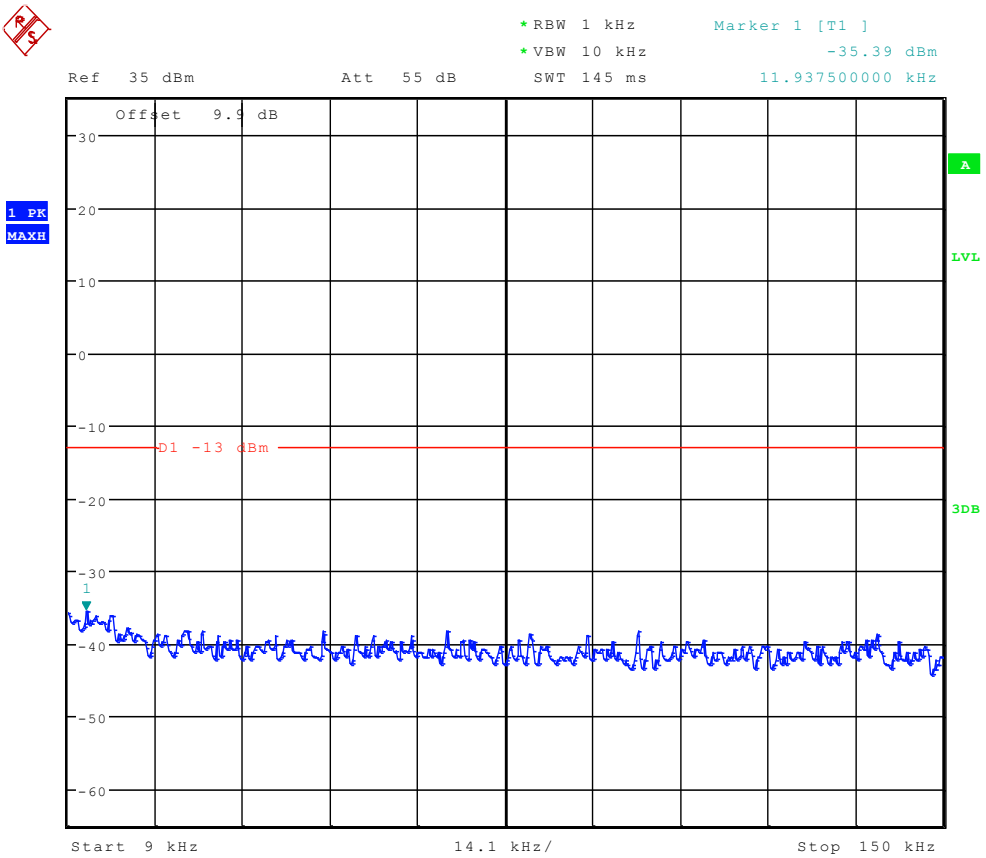


Date: 18.DEC.2011 11:37:01

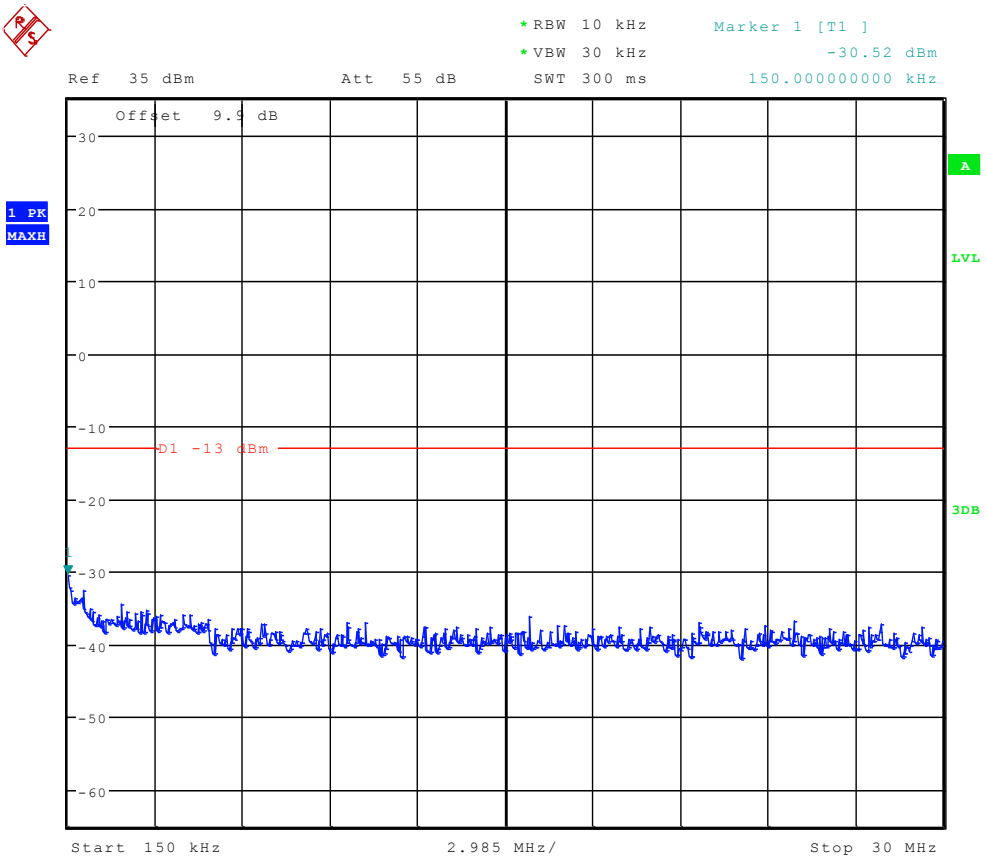


Date: 18.DEC.2011 11:37:45

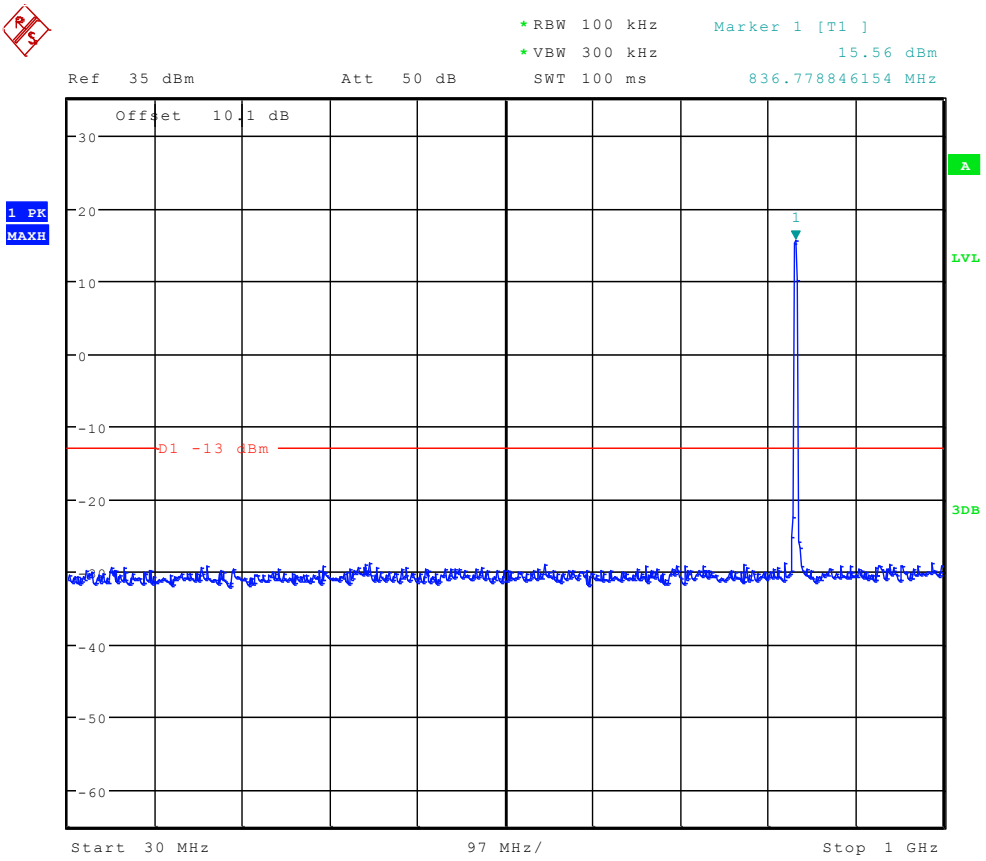
Channel 4182



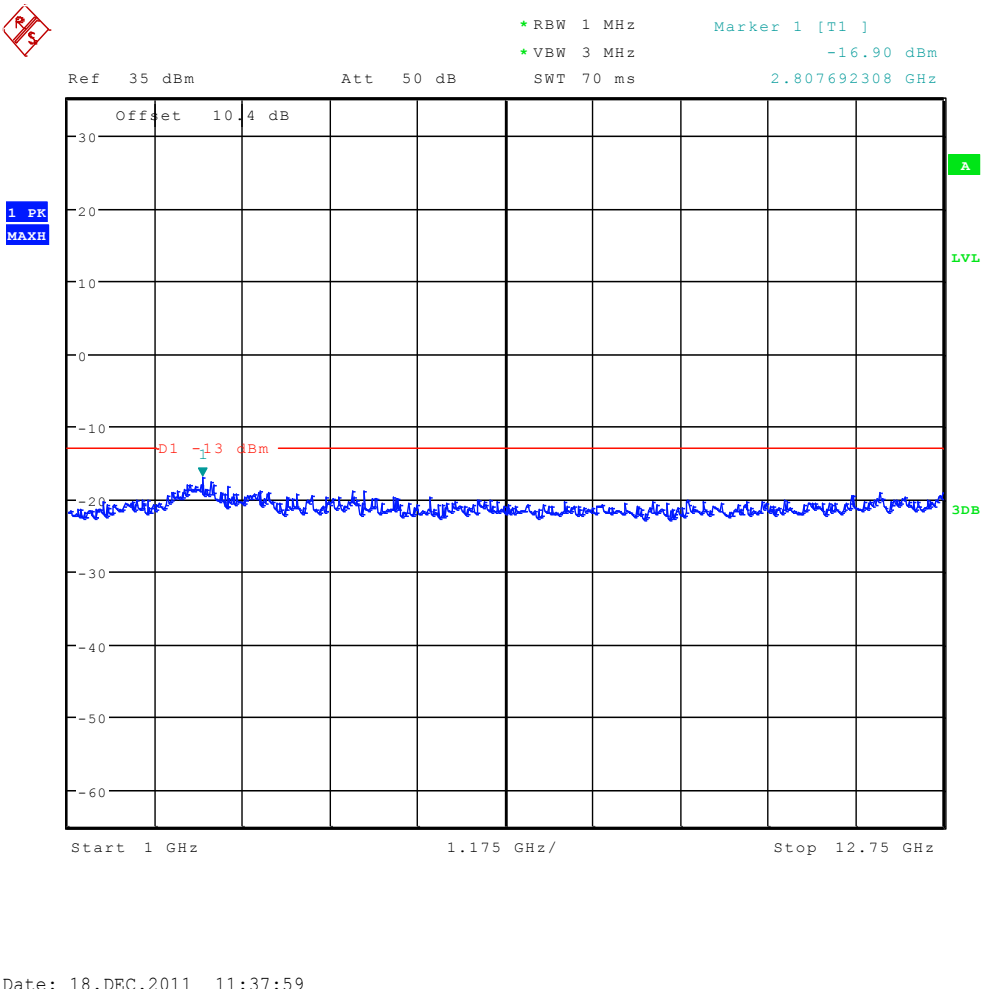
Date: 18.DEC.2011 11:35:48



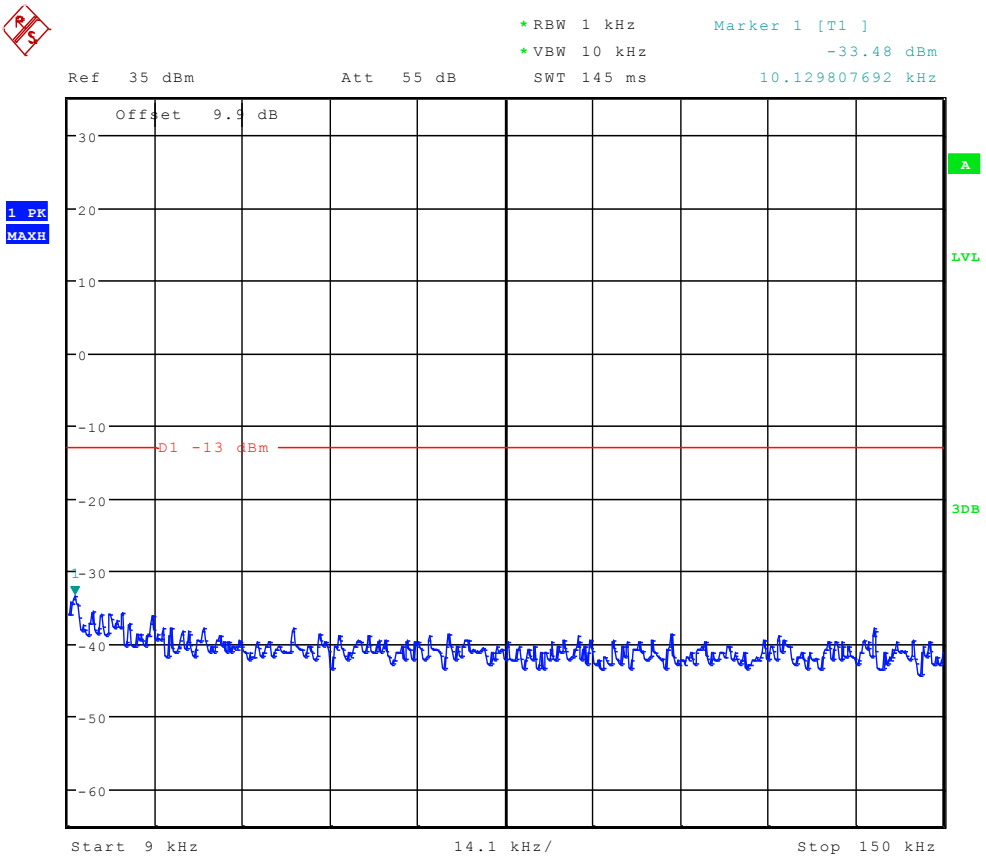
Date: 18.DEC.2011 11:36:31



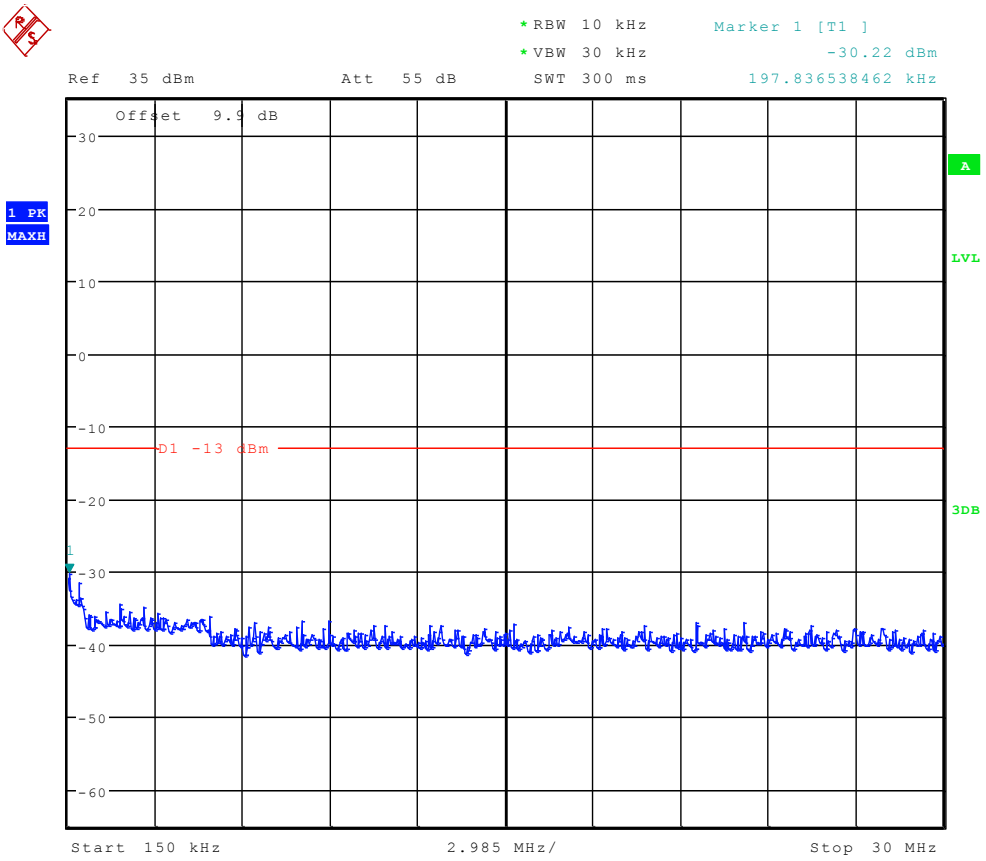
Date: 18.DEC.2011 11:37:15


RBW 1 MHz
VBW 3 MHz
SWT 70 ms
Marker 1 [T1]
-16.90 dBm
2.807692308 GHz
Ref 35 dBm
Att 50 dB
Offset 10.4 dB
1 PK
MAXH
A
LVL
3DB
D1 -13 dBm
30
20
10
0
-10
-20
-30
-40
-50
-60
Start 1 GHz
1.175 GHz/
Stop 12.75 GHz
Date: 18.DEC.2011 11:37:59

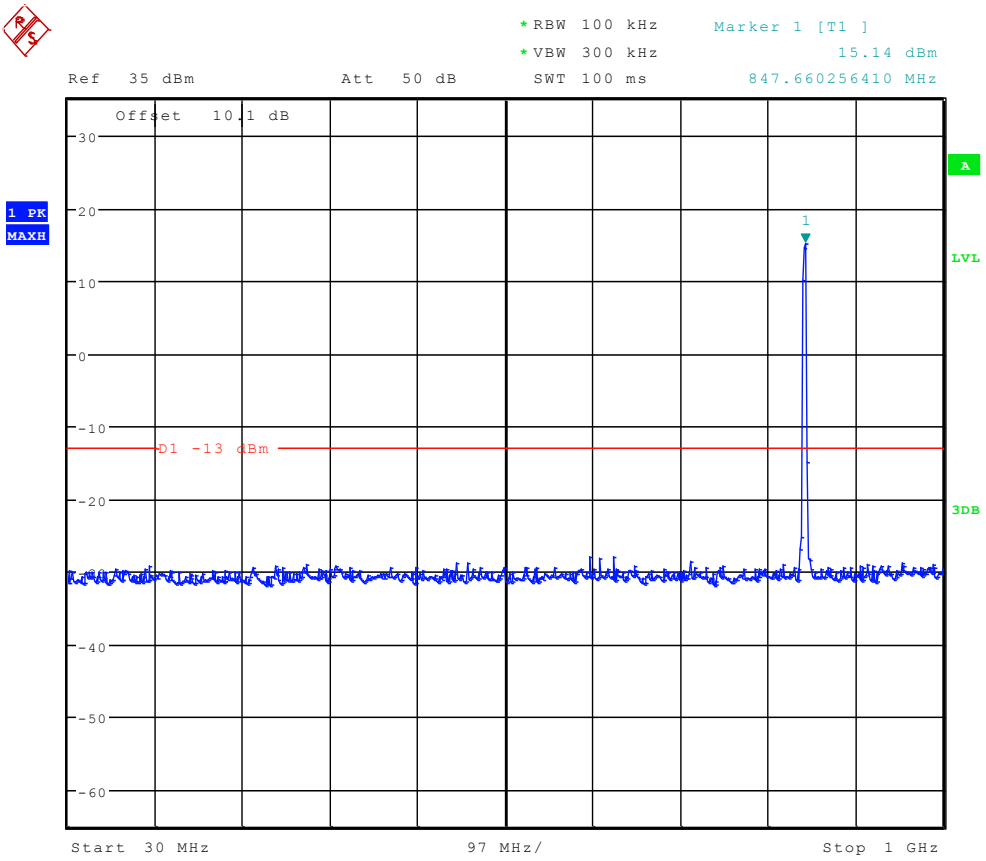
Channel 4233



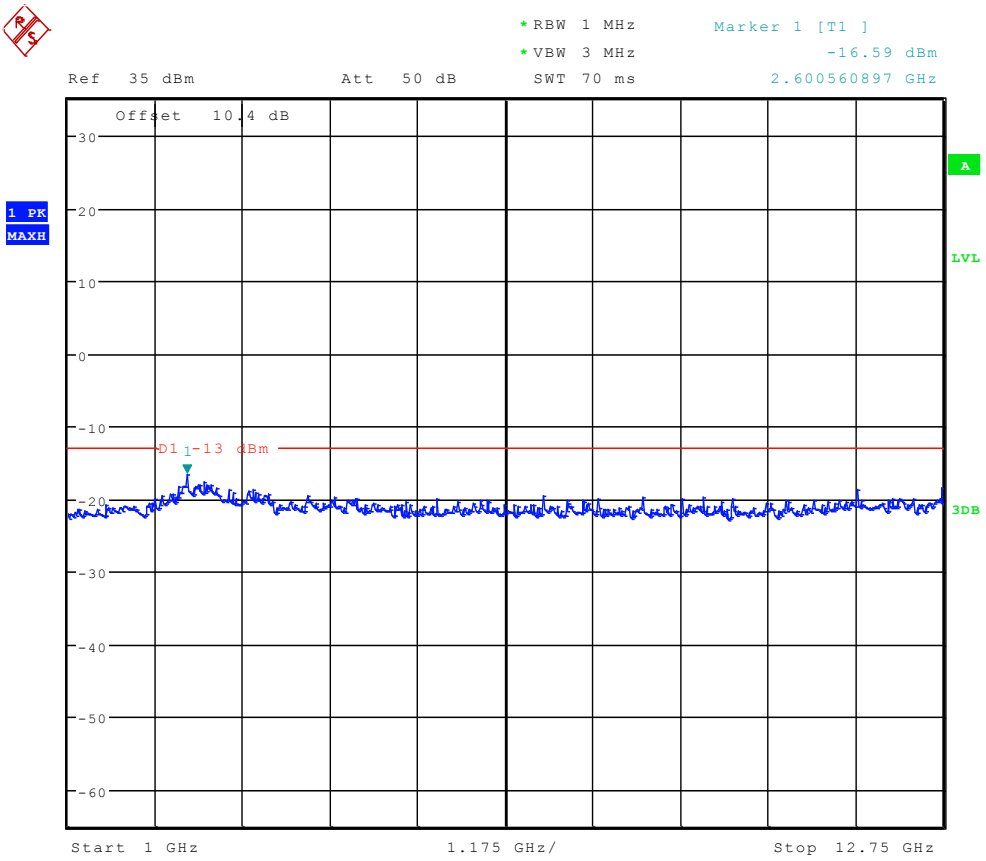
Date: 18.DEC.2011 11:36:02



Date: 18.DEC.2011 11:36:46



Date: 18.DEC.2011 11:37:30



Date: 18.DEC.2011 11:38:13

END

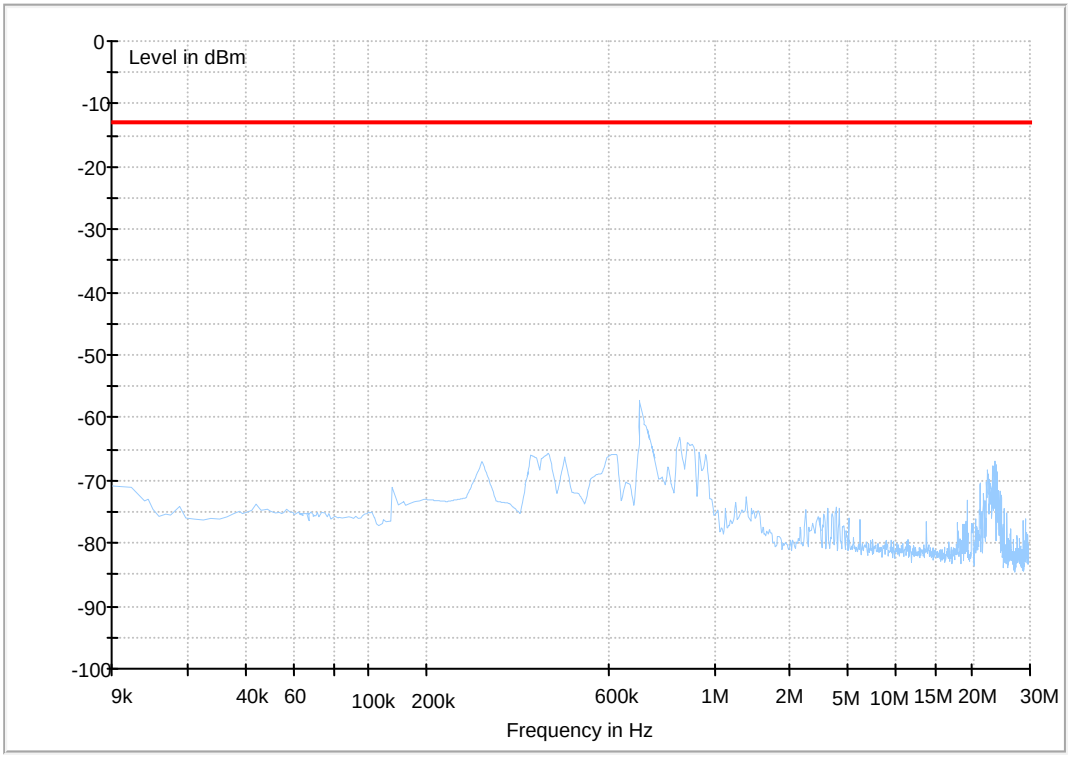
Appendix F

Radiated spurious emission

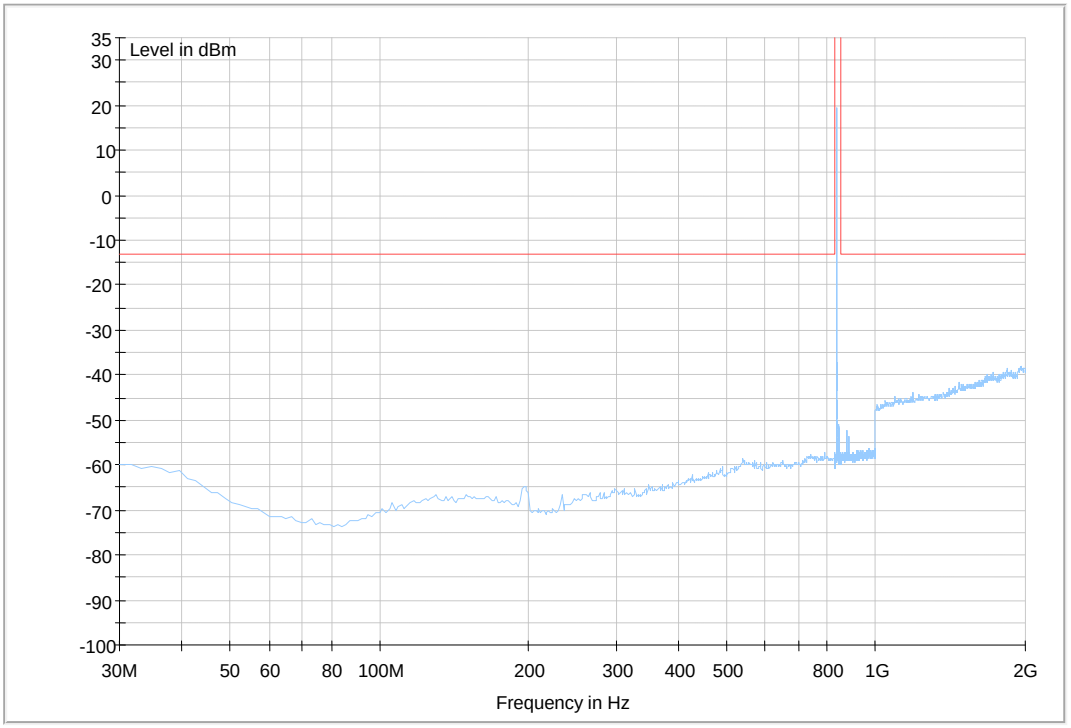
According to FCC Part 2.1053& Part 22.917

GPRS 850

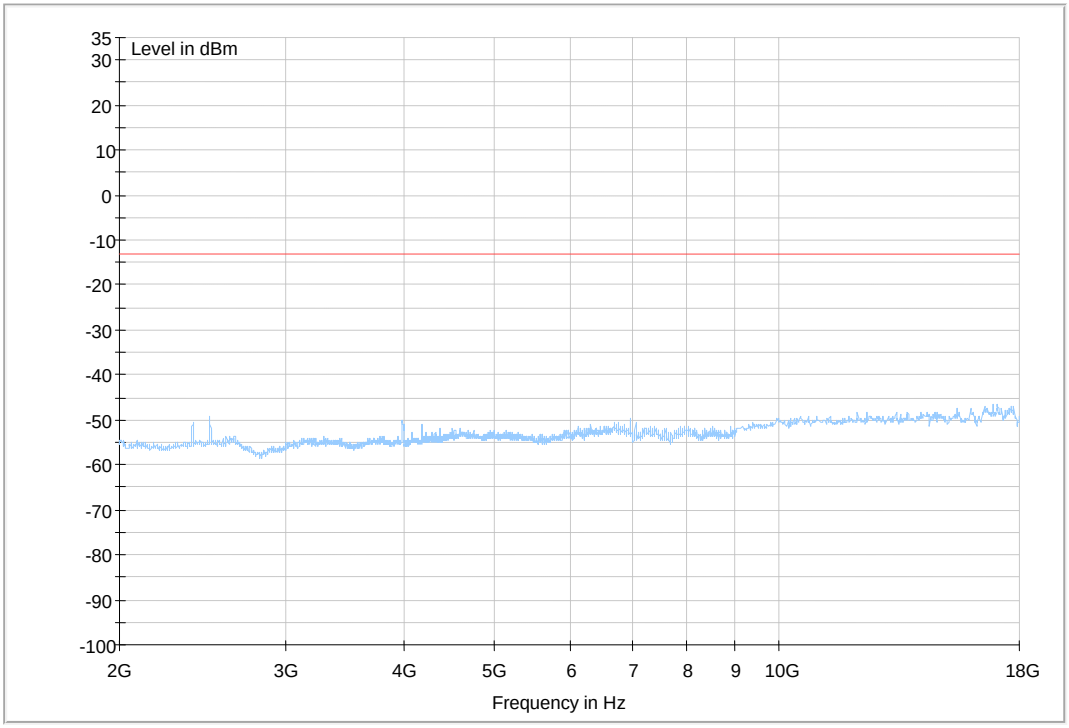
(9kHz~30MHz)



(30MHz~2GHz)

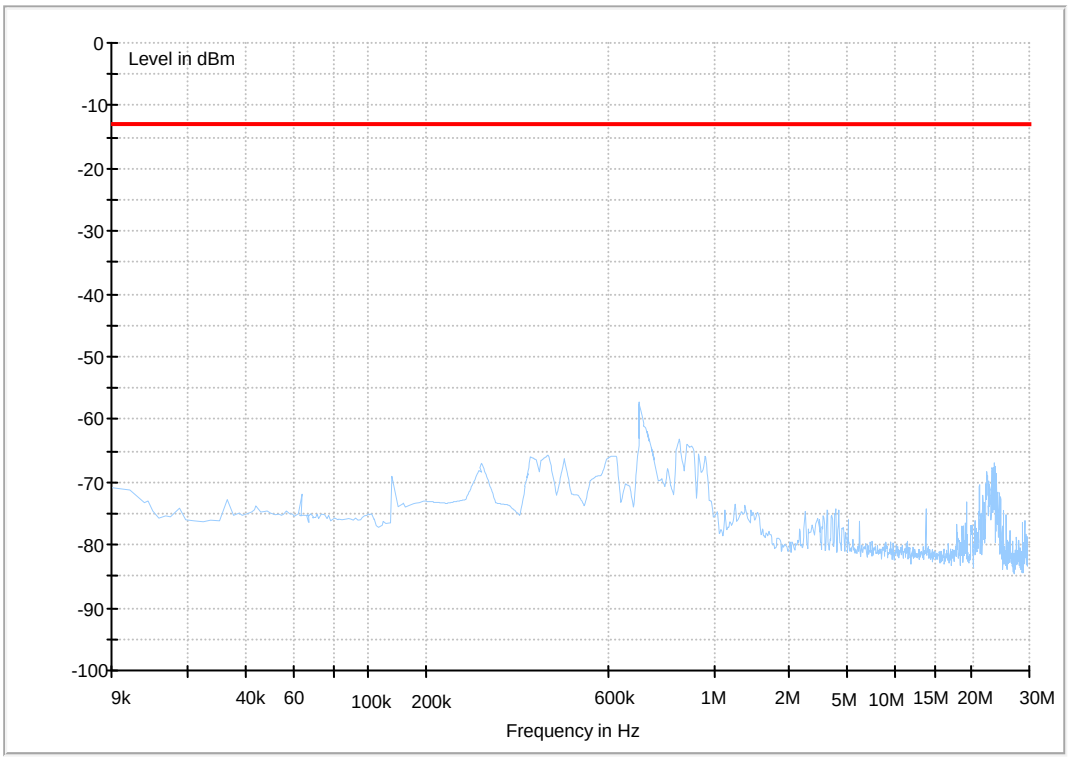


(2GHz~18GHz)

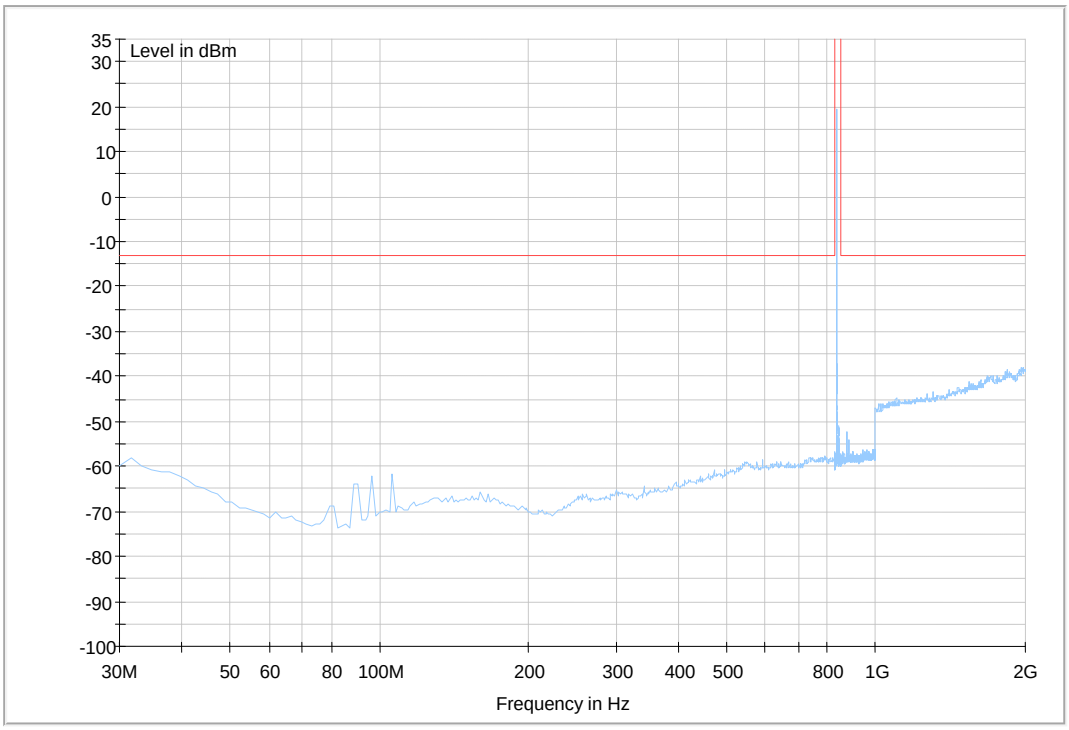


EDGE 850

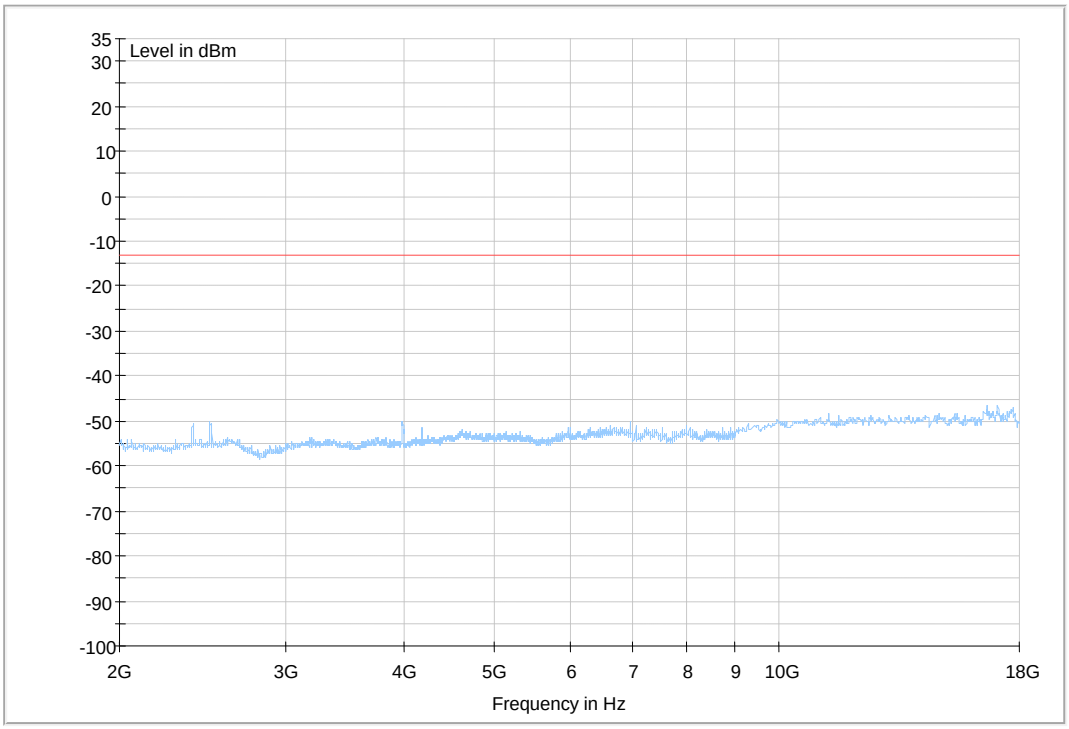
(9kHz~30MHz)



(30MHz~2GHz)

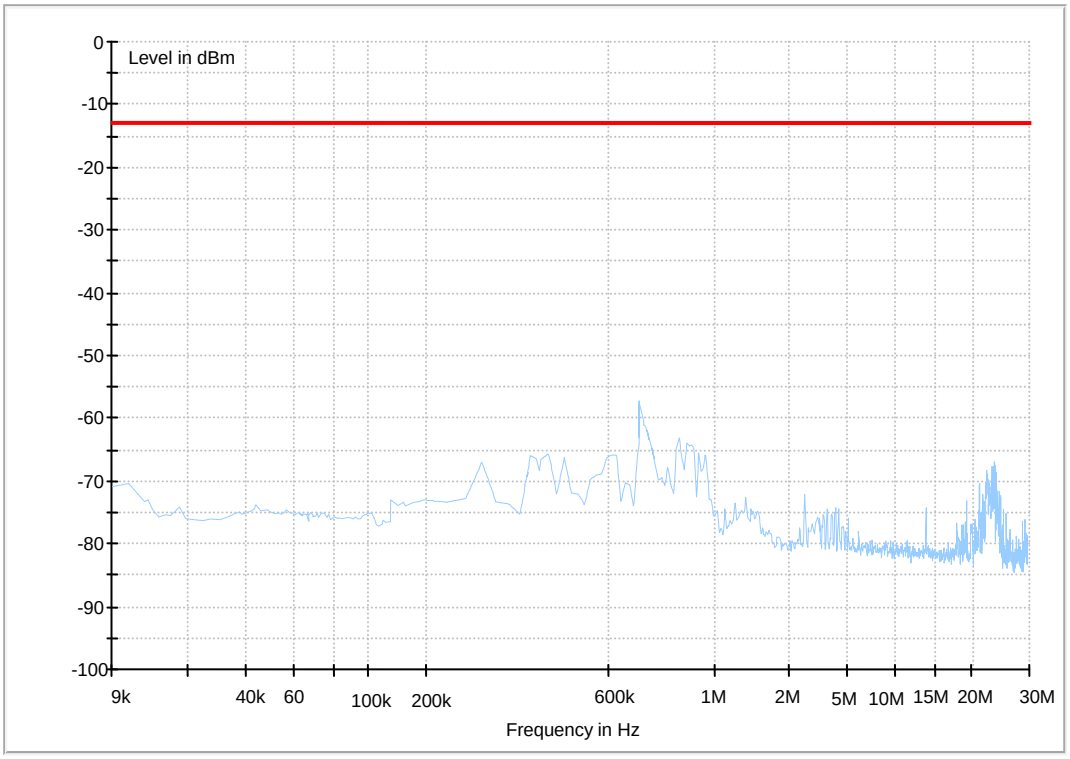


(2GHz~18GHz)

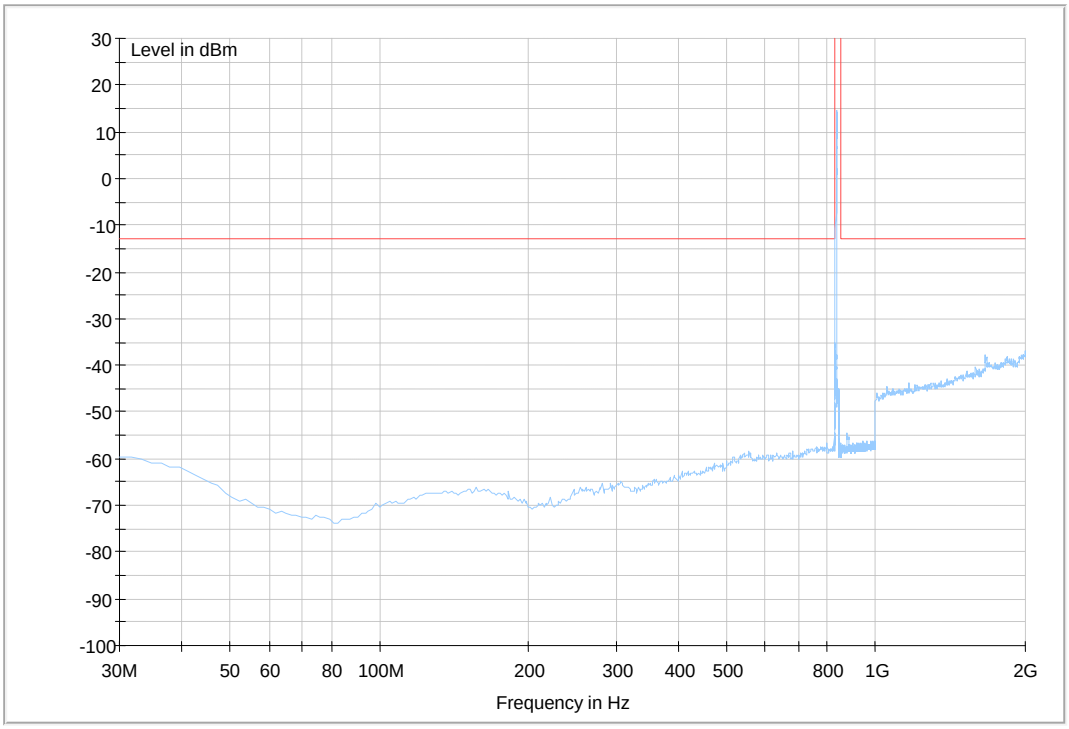


WCDMA Band V

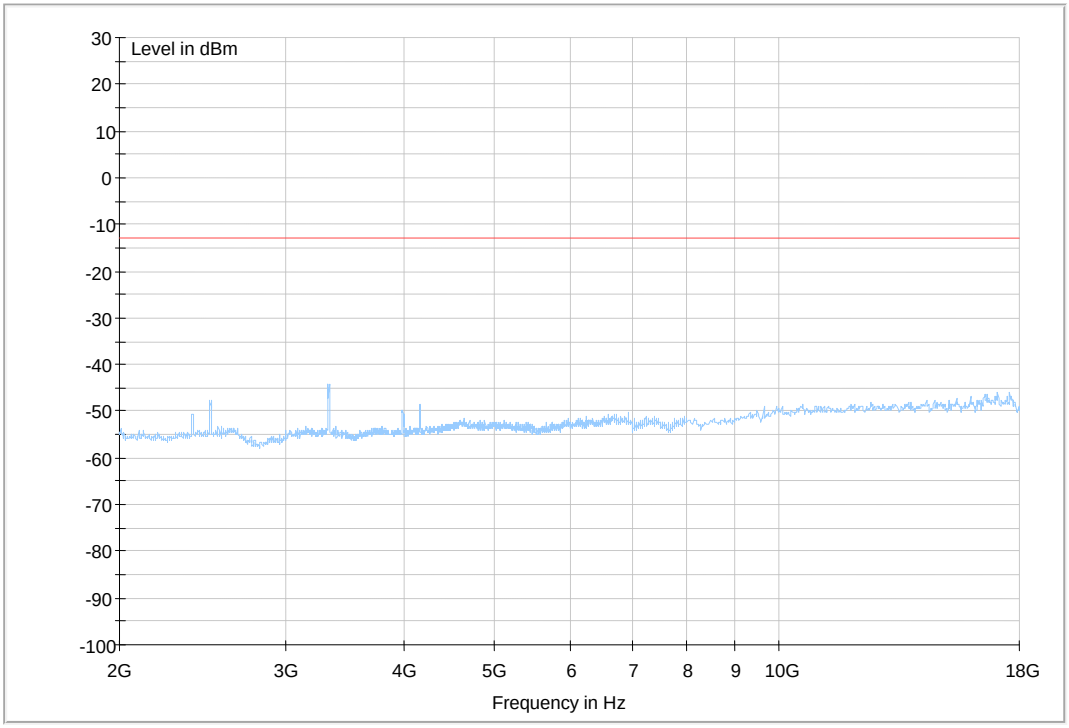
(9KHz~30MHz)



(30MHz~2GHz)

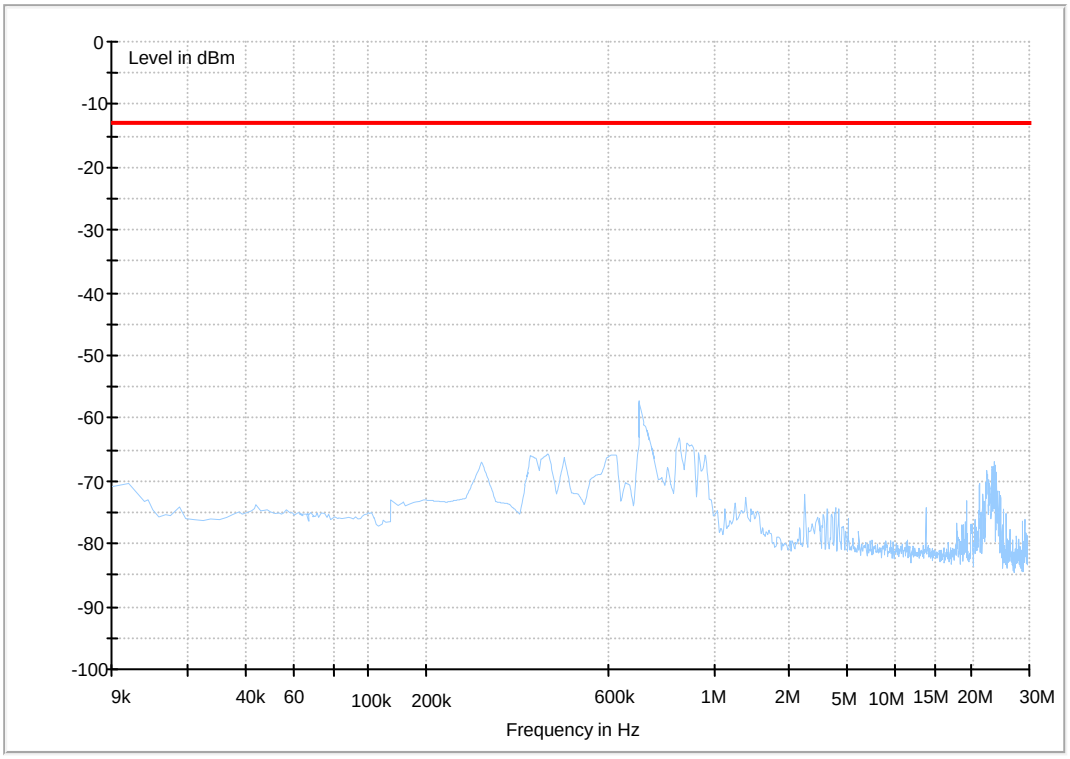


(2GHz~18GHz)

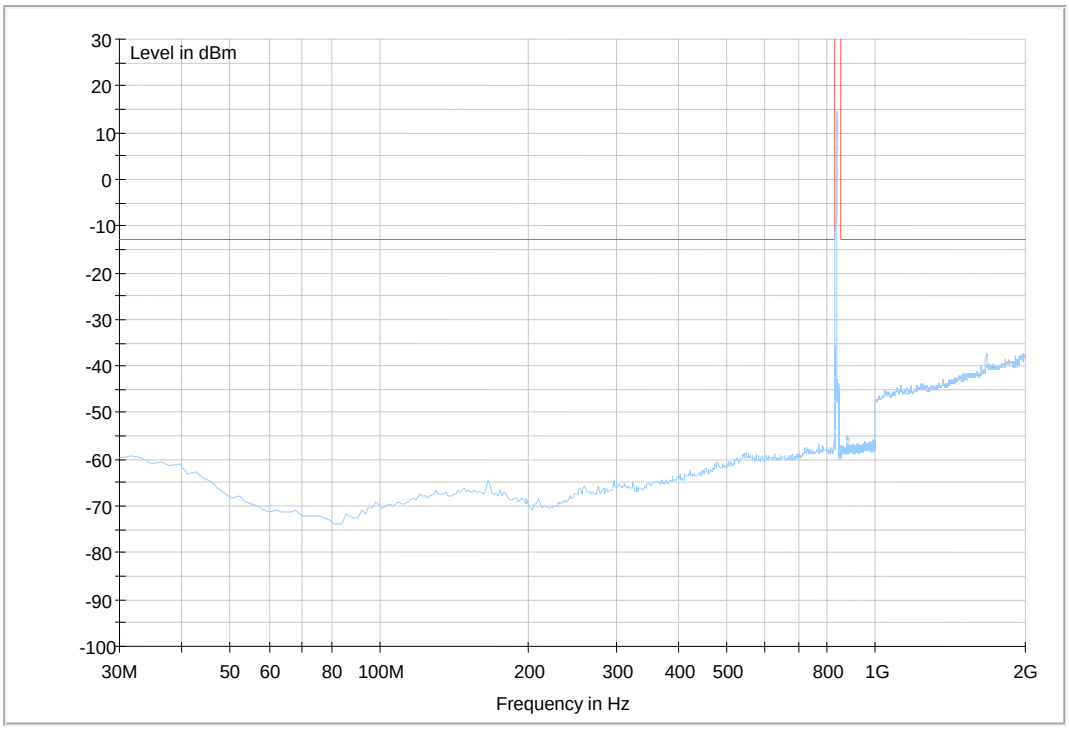


HSDPA Band V

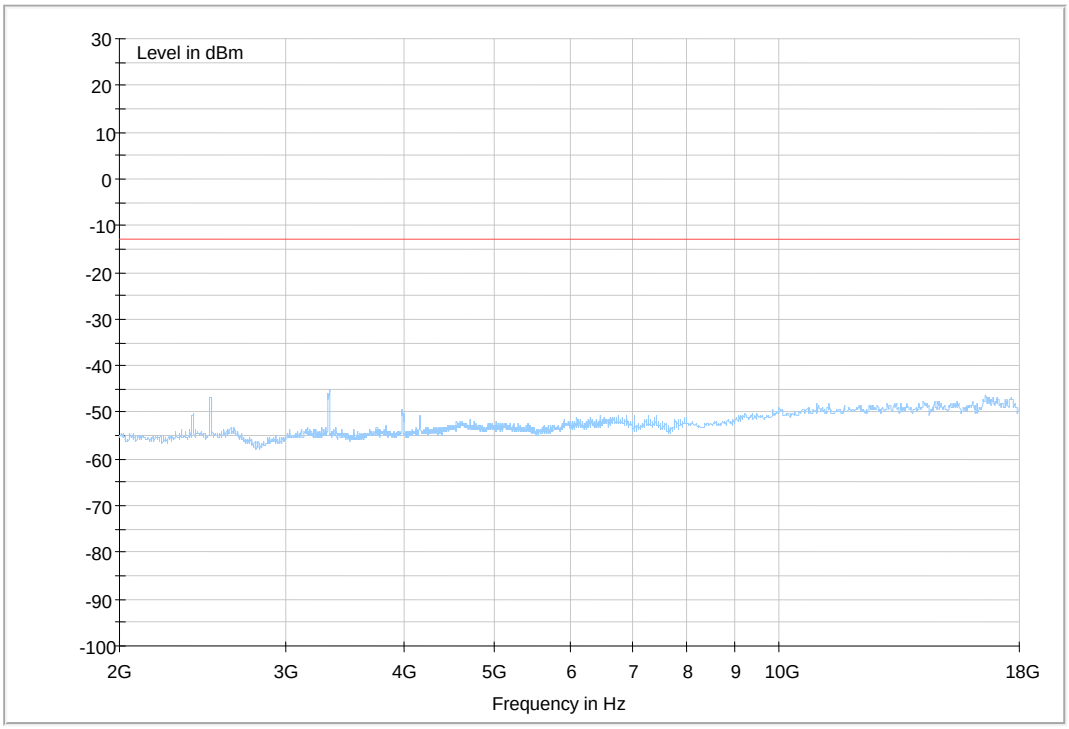
(9KHz~30MHz)



(30MHz~2GHz)

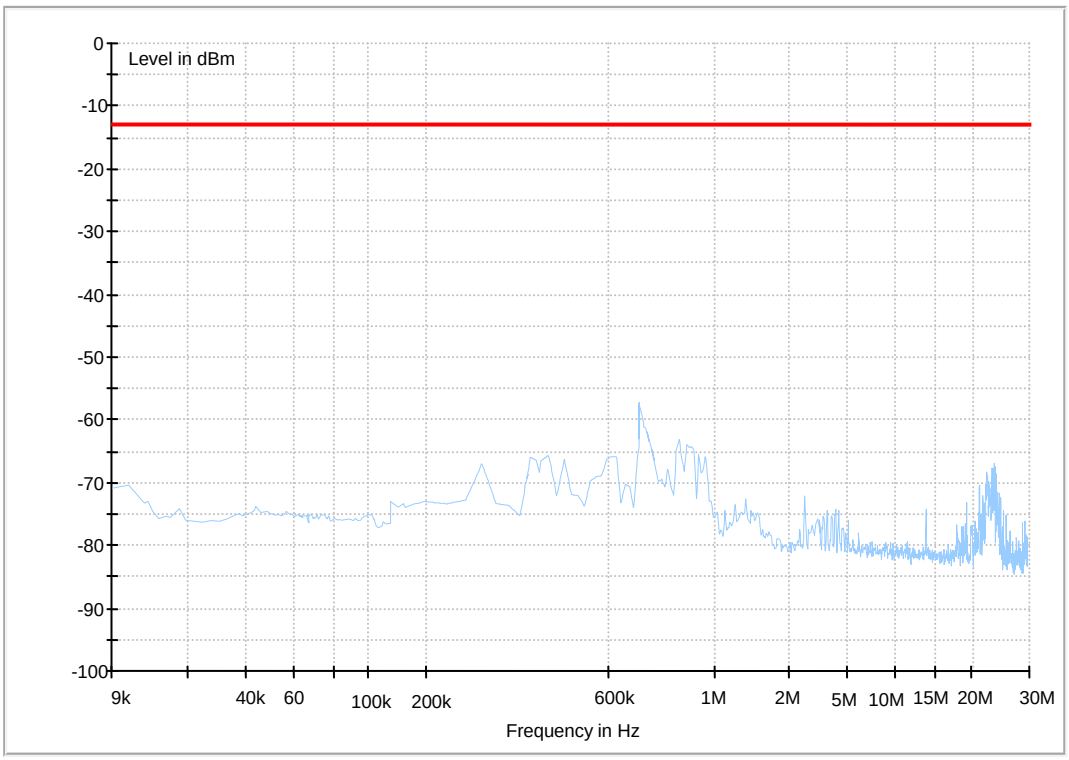


.
(2GHz~18GHz)

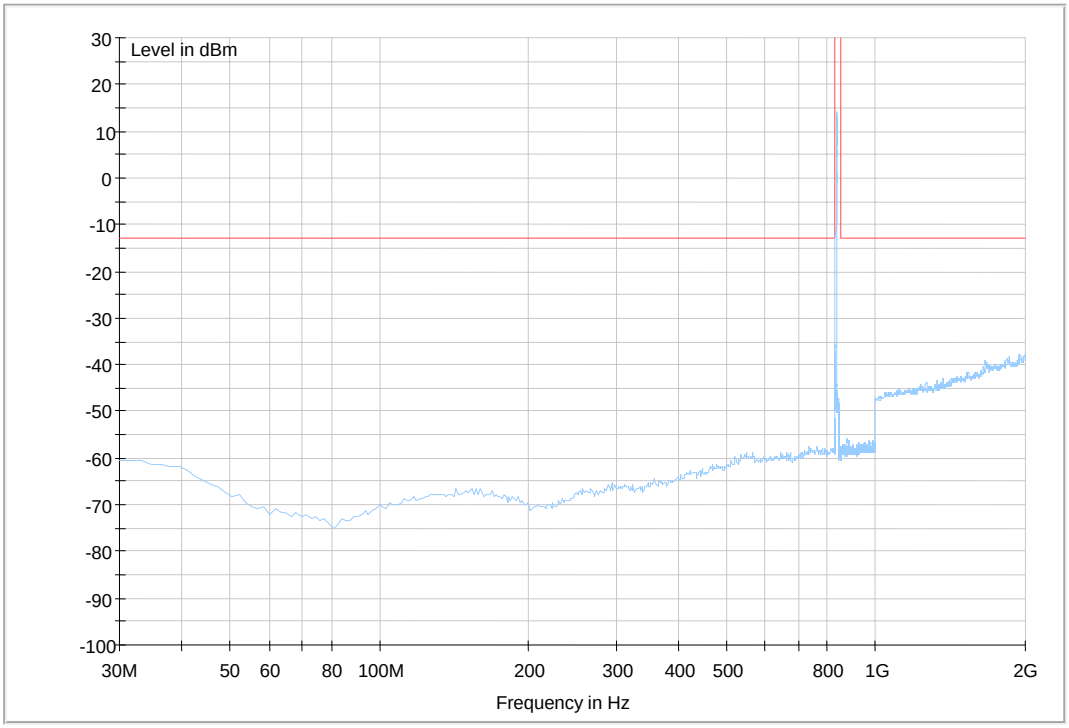


HSUPA Band V

(9KHz~30MHz)

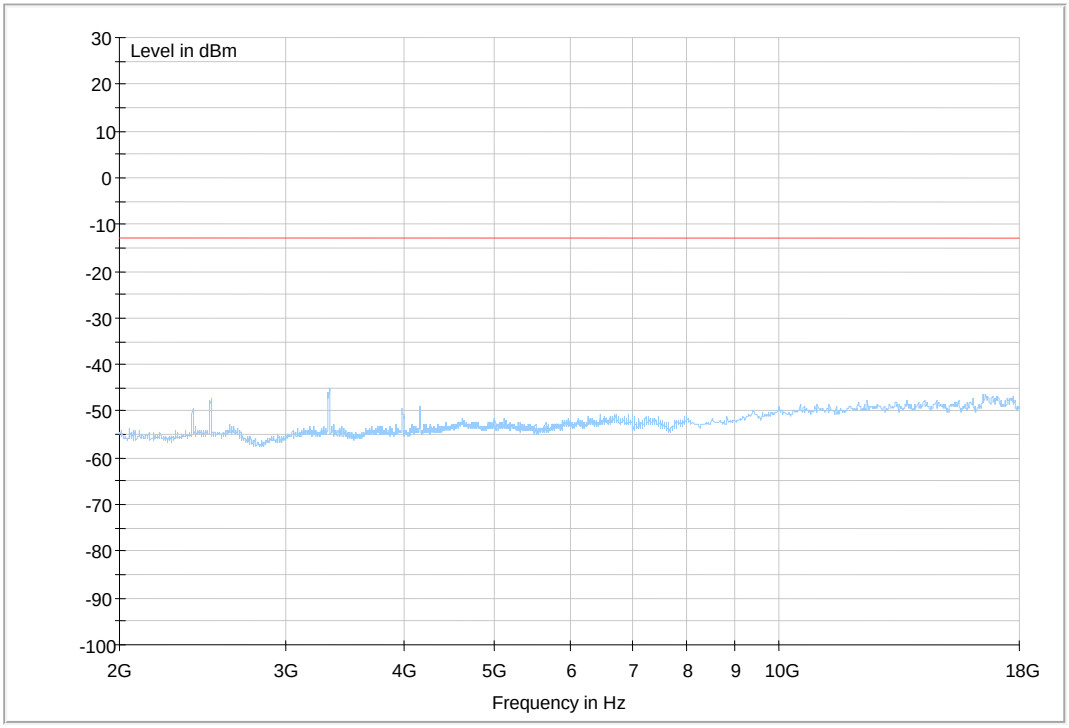


(30MHz~2GHz)



.

(2GHz~18GHz)


Level in dBm
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
2G
3G
4G
5G
6
7
8
9
10G
18G
Frequency in Hz

Appendix G

Frequency Stability

According to FCC Part 2.1055& Part 22.355

Frequency Error vs. Temperature:

Test Mode	RF Ch.	Volt.	Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Limit [ppm]	Verdict
TM 1	M	100%	-30 °C	18	0.021505	---	±2.5	Pass
			-20 °C	16	0.019116	---	±2.5	Pass
			-10 °C	-15	-0.017921	---	±2.5	Pass
			0 °C	11	0.013142	---	±2.5	Pass
			10 °C	13	0.015532	---	±2.5	Pass
			20 °C	-12	-0.014337	---	±2.5	Pass
			30 °C	-14	-0.016726	---	±2.5	Pass
			40 °C	20	0.023895	---	±2.5	Pass
			50 °C	-17	-0.020311	---	±2.5	Pass
TM 2	M	100%	-30 °C	13	0.015532	---	±2.5	Pass
			-20 °C	-12	-0.014337	---	±2.5	Pass
			-10 °C	15	0.017921	---	±2.5	Pass
			0 °C	-17	-0.020311	---	±2.5	Pass
			10 °C	12	0.014337	---	±2.5	Pass
			20 °C	9	0.010753	---	±2.5	Pass
			30 °C	-8	-0.009558	---	±2.5	Pass
			40 °C	11	0.013142	---	±2.5	Pass
			50 °C	-14	-0.016726	---	±2.5	Pass
TM 3	M	100%	-30 °C	15	0.017934	---	±2.5	Pass
			-20 °C	11	0.013152	---	±2.5	Pass
			-10 °C	-12	-0.014347	---	±2.5	Pass
			0 °C	6	0.007174	---	±2.5	Pass
			10 °C	-14	-0.016738	---	±2.5	Pass
			20 °C	-17	-0.020325	---	±2.5	Pass
			30 °C	-12	-0.014347	---	±2.5	Pass
			40 °C	13	0.015543	---	±2.5	Pass
			50 °C	-18	-0.021521	---	±2.5	Pass

Frequency Error vs. Voltage:

Test Mode	RF Ch.	Temp.	Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Limit [ppm]	Verdict
TM 1	M	20 °C	85 %	-8	-0.009558	---	±2.5	Pass
			100 %	11	0.013142	---	±2.5	Pass
			115 %	16	0.019116	---	±2.5	Pass
TM 2	M	20 °C	85 %	13	0.015532	---	±2.5	Pass
			100 %	9	0.010753	---	±2.5	Pass
			115 %	-15	-0.017921	---	±2.5	Pass
TM 3	M	20 °C	85 %	-15	-0.017934	---	±2.5	Pass
			100 %	18	0.021521	---	±2.5	Pass
			115 %	-12	-0.014347	---	±2.5	Pass

Appendix H

Photos of Radiated Spurious Emissions

Photos of Test Setup

1 Radiated Spurious Emissions

Radiated Spurious Emission (below 2GHz)

Radiated Spurious Emission (2GHz to18GHz)