



Appendix A

Transmitter Output Power According to FCC Part 2.1046 & Part24.232



Conducted Power of Transmitter

TEST CONDITIONS		RF Output Power (Conducted)					
		Channel512(L)		Channel661(M)		Channel810(H)	
		1850.2MHz		1880.0MHz		1909.8MHz	
		dBm		dBm		dBm	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM1		29.51	33	29.52	33	29.66	33
TM2		26.35	33	26.28	33	26.47	33
TEST CONDITIONS		Channel9262(L)		Channel9400(M)		Channel9538(H)	
		1852.4MHz		1880.0MHz		1907.6MHz	
		dBm		dBm		dBm	
		T_{nom} / V_{nom}		Measured	Limit	Measured	Limit
TM3		23.06	33	23.04	33	23.46	33
TM4	Case1	22.59	33	22.4	33	23.2	33
	Case2	22.37	33	22.37	33	23.21	33
	Case3	21.33	33	21.37	33	22.07	33
	Case4	21.29	33	21.33	33	22.05	33
TM5	Case1	22.55	33	21.86	33	22.52	33
	Case2	20.77	33	20.5	33	20.7	33
	Case3	20.39	33	20.29	33	20.19	33
	Case4	21.29	33	20.82	33	21.37	33
	Case5	22.43	33	21.94	33	22.45	33

Note: RBW > emission bandwidth, VBW > 3 x RBW.



Peak-to-Average Ratio

TEST CONDITIONS		Peak-to-Average Ratio					
		Channel512(L)		Channel661(M)		Channel810(H)	
		1850.2MHz		1880.0MHz		1909.8MHz	
		dB		dB		dB	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM1		0.4	13	0.5	13	0.3	13
TM2		3.1	13	3.3	13	3.2	13
TEST CONDITIONS		Channel9262(L)		Channel9400(M)		Channel9538(H)	
		1852.4MHz		1880.0MHz		1907.6MHz	
		dB		dB		dB	
		T_{nom} / V_{nom}		Measured	Limit	Measured	Limit
TM3		2.46	13	2.82	13	2.63	13
TM4	Case1	3.59	13	3.52	13	3.43	13
	Case2	4.23	13	4.21	13	4.12	13
	Case3	4.59	13	4.52	13	4.68	13
	Case4	4.61	13	4.62	13	4.64	13
TM5	Case1	5.41	13	5.34	13	5.21	13
	Case2	5.71	13	5.36	13	5.26	13
	Case3	6.26	13	6.29	13	6.23	13
	Case4	6.67	13	5.79	13	5.74	13
	Case5	5.28	13	5.19	13	5.07	13



Effective Isotropic Radiated Power of Transmitter (EIRP)

Test Mode	Freq. [MHz]	Meas. Level [dBm]	Substitution Antenna Type	SGP [dBm]	Substitution Gain [dBi]	Cable Loss [dB]	Substitution Level (EIRP) [dBm]	FCC limit [dBm]	Result
TM1	1850.2	27.51	Horn Ant.	24.03	4.5	1	27.53	33	Pass
TM1	1880.0	27.52	Horn Ant.	24.05	4.5	1	27.55	33	Pass
TM1	1909.8	27.69	Horn Ant.	23.69	4.8	1	27.49	33	Pass
TM2	1850.2	24.35	Horn Ant.	20.65	4.5	1	24.15	33	Pass
TM2	1880.0	24.28	Horn Ant.	20.78	4.5	1	24.28	33	Pass
TM2	1909.8	24.47	Horn Ant.	20.47	4.8	1	24.27	33	Pass
TM3	1852.4	21.05	Horn Ant.	17.35	4.5	1	20.85	33	Pass
TM3	1880.0	21.00	Horn Ant.	17.52	4.5	1	21.02	33	Pass
TM3	1907.6	21.42	Horn Ant.	17.42	4.8	1	21.22	33	Pass

Note1: a, For getting the EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should be taken to calculate it,

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

b, SGP=Signal Generator Level

Note2: RBW > emission bandwidth, VBW > 3 x RBW.

-----The END-----



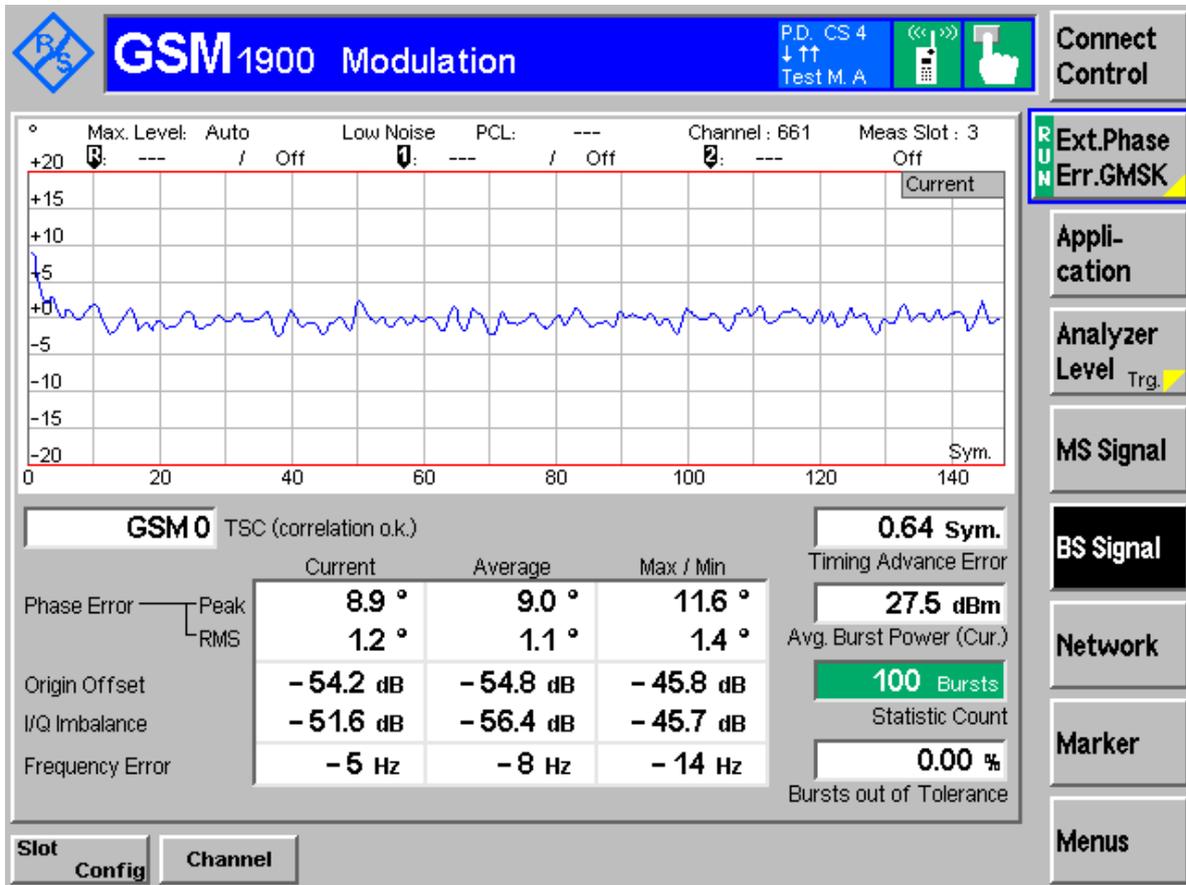
Appendix B

Modulation Characteristics

According to FCC Part 2.1047 & Part24 Subpart E

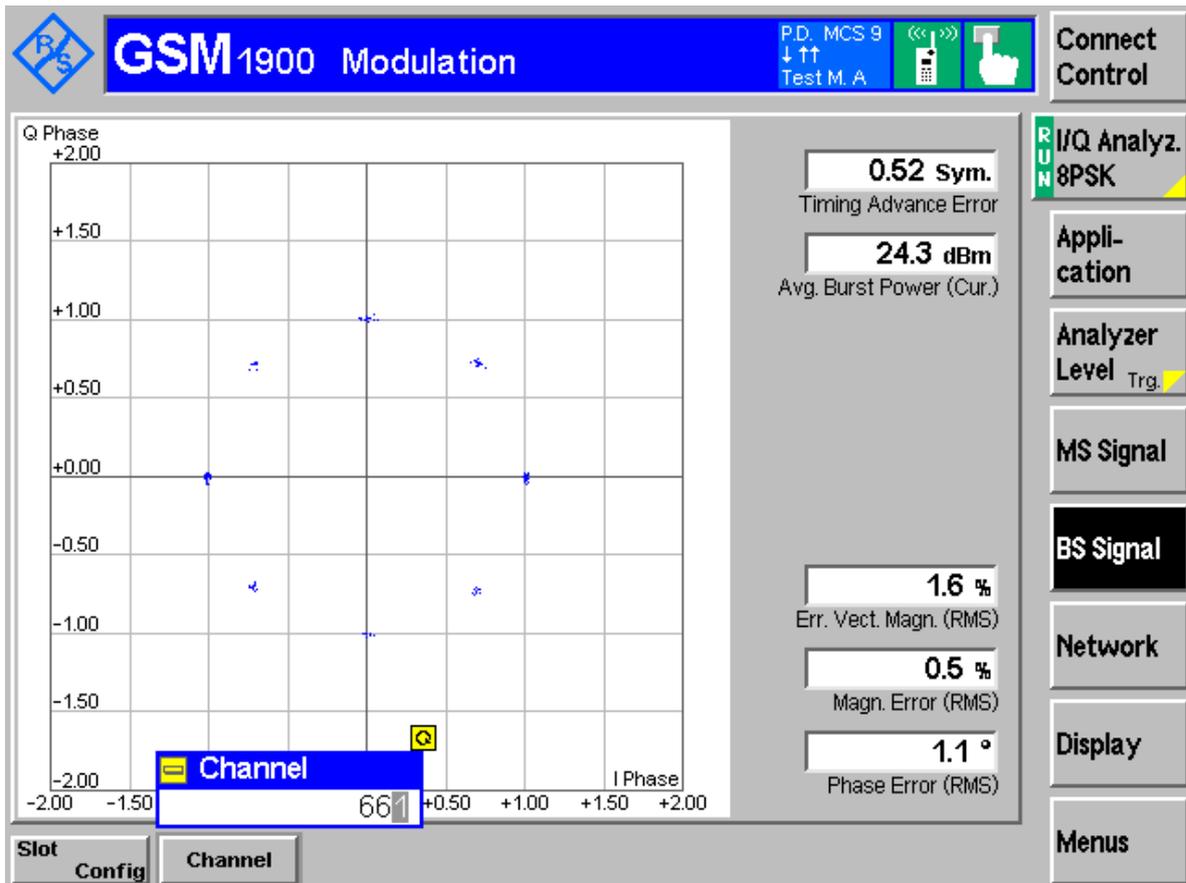


TM1:GPRS/GSM Channel 661



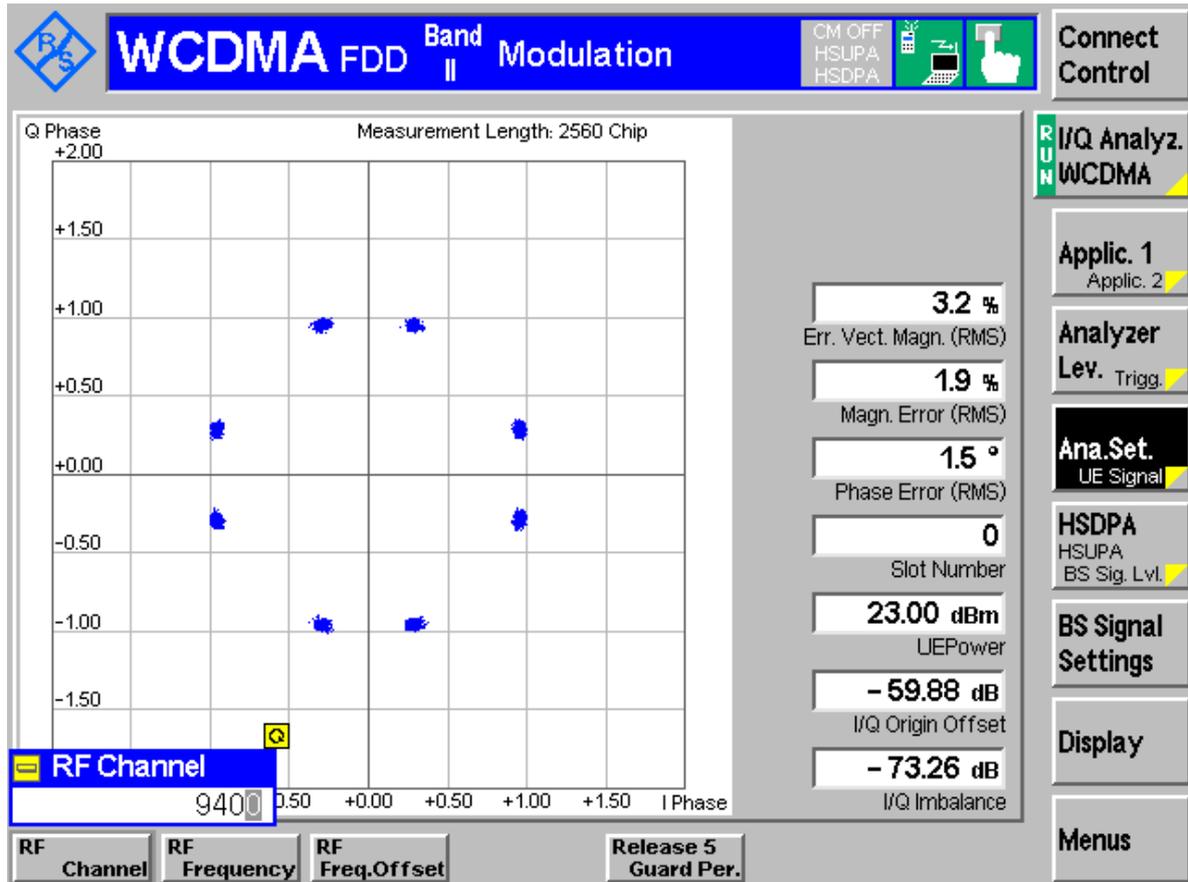


TM2:EDGE Channel 661





TM3: WCDMA Channel 9400



-----The END-----



Appendix C

Occupied Bandwidth According to FCC Part 2.1049 & Part24 Subpart E



Result Table

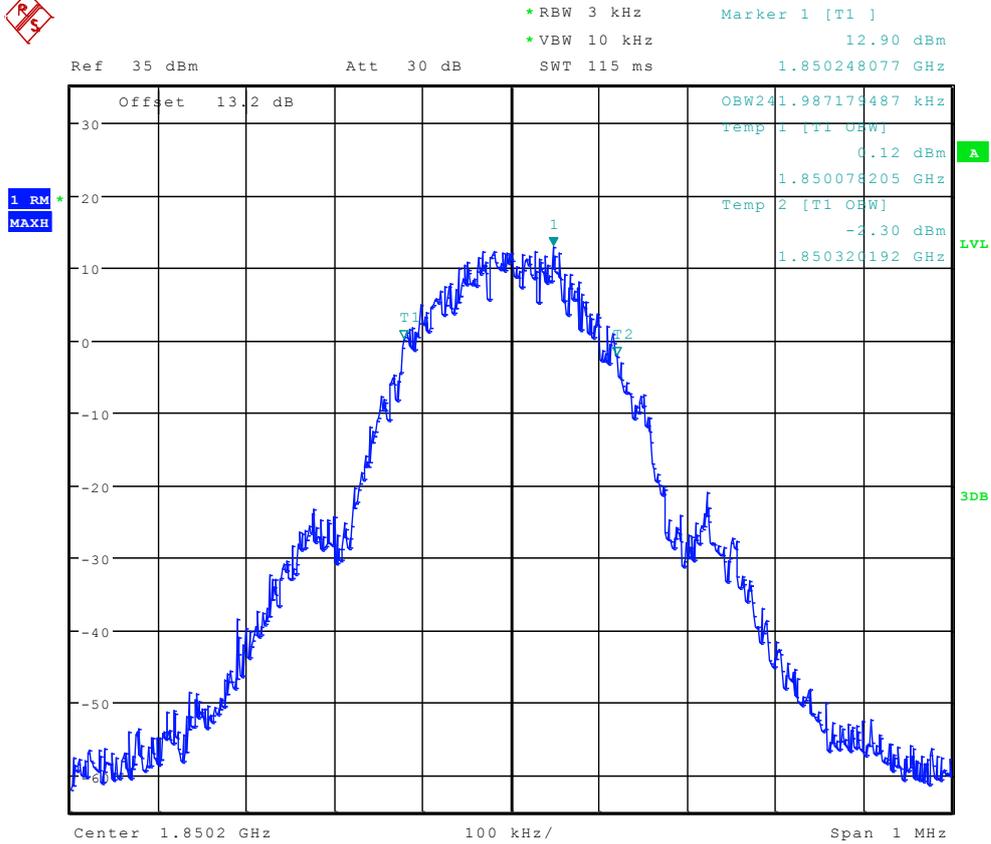
Table 1 Measurement Results

Test Mode	RF Channel	Occupied Bandwidth [kHz]	Verdict
TM1	512	241.99	Pass
	661	243.59	Pass
	810	245.20	Pass
TM2	512	241.99	Pass
	661	248.40	Pass
	810	243.59	Pass
Test Mode	RF Channel	Occupied Bandwidth [MHz]	Verdict
TM3	9262	4.17	Pass
	9400	4.17	Pass
	9538	4.06	Pass



TM1:GPRS/GSM

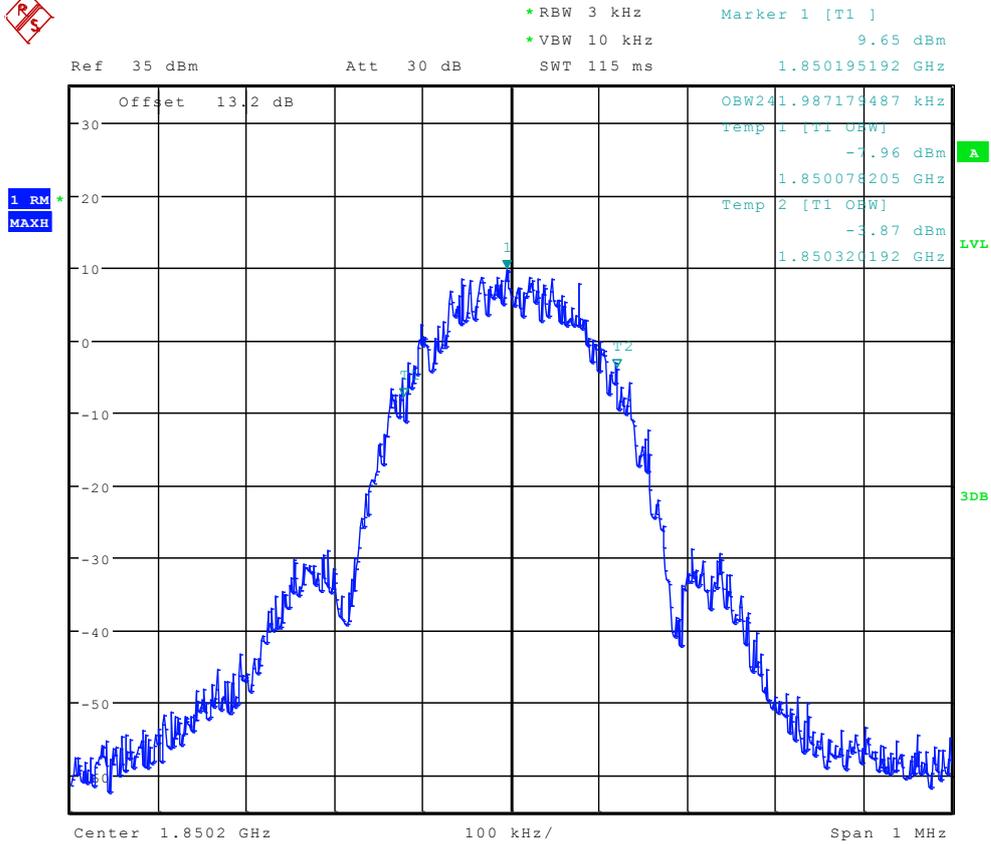
Channel 512



Date: 24.SEP.2012 23:45:26



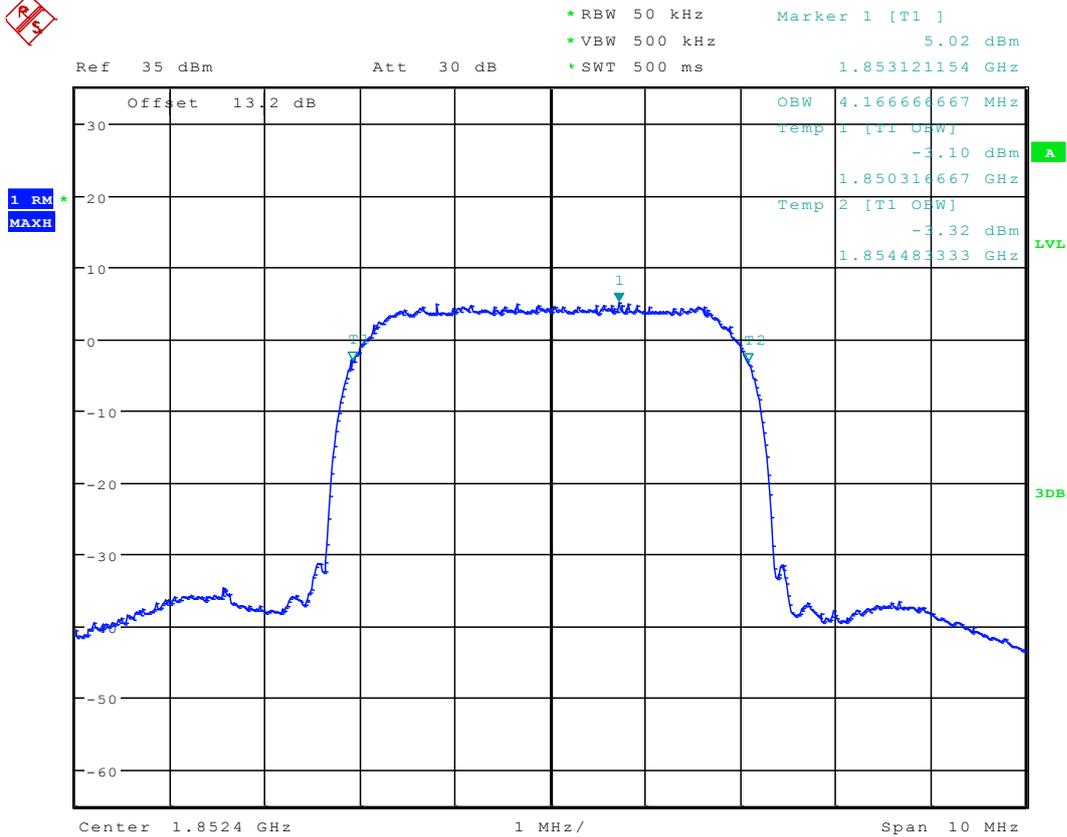
TM2:EDGE Channel 512



Date: 24.SEP.2012 23:50:45



TM3: WCDMA Channel 9262



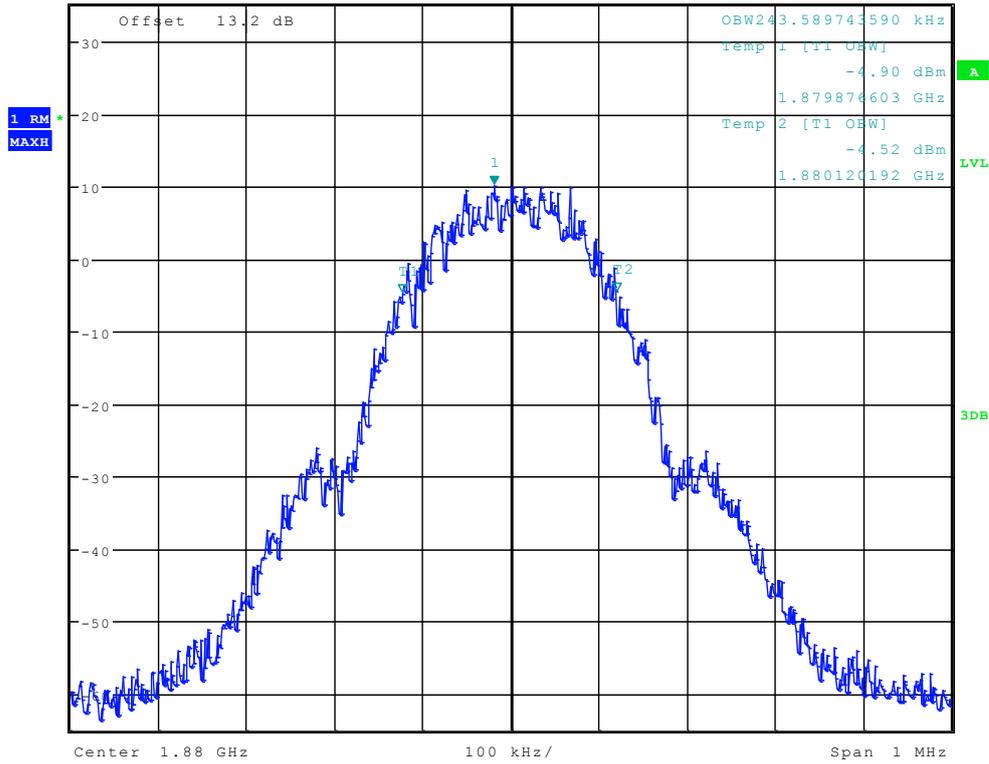
Date: 26.SEP.2012 00:02:25



TM1:GPRS/GSM Channel 661



Ref 35 dBm Att 30 dB SWT 115 ms Marker 1 [T1] 10.06 dBm
*RBW 3 kHz *VBW 10 kHz



Date: 24.SEP.2012 23:45:40

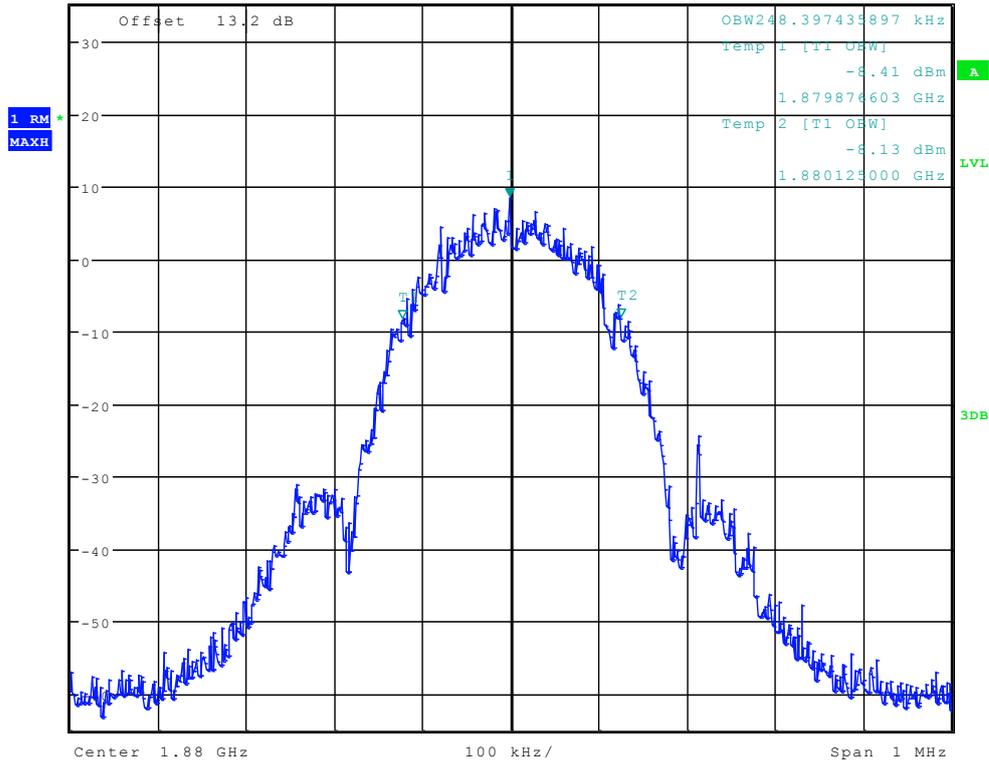


TM2:EDGE

Channel 661



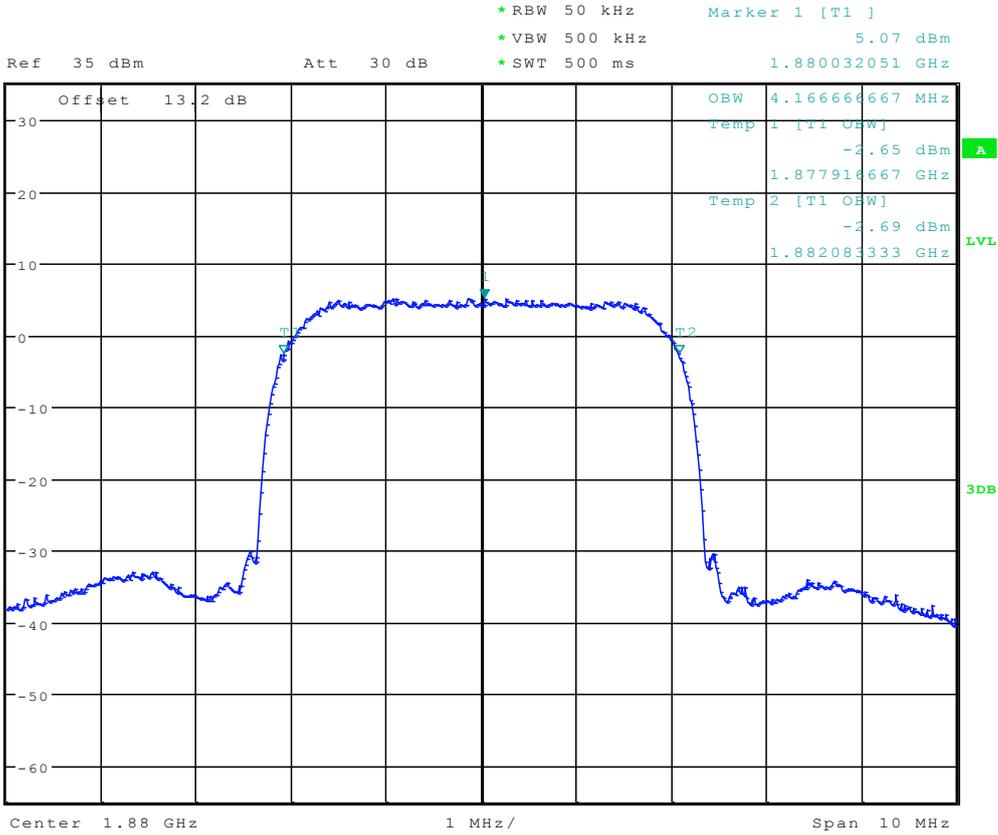
*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz 8.44 dBm
Ref 35 dBm Att 30 dB SWT 115 ms 1.879998397 GHz



Date: 24.SEP.2012 23:50:58



TM3: WCDMA Channel 9400



Date: 26.SEP.2012 00:02:38

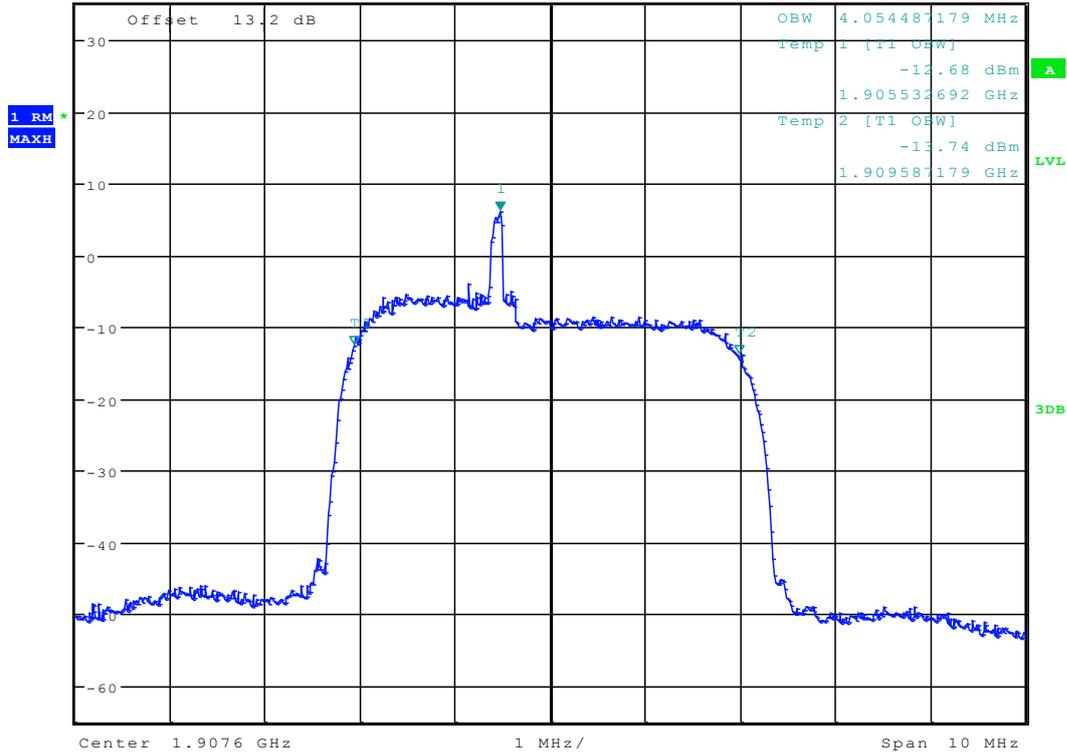


TM3: WCDMA

Channel 9538



*RBW 50 kHz Marker 1 [T1]
 *VBW 500 kHz 6.07 dBm
 *SWT 500 ms 1.907071154 GHz
 Ref 35 dBm Att 30 dB



Date: 26.SEP.2012 00:03:57

-----END-----



Appendix D

Band Edges Compliance

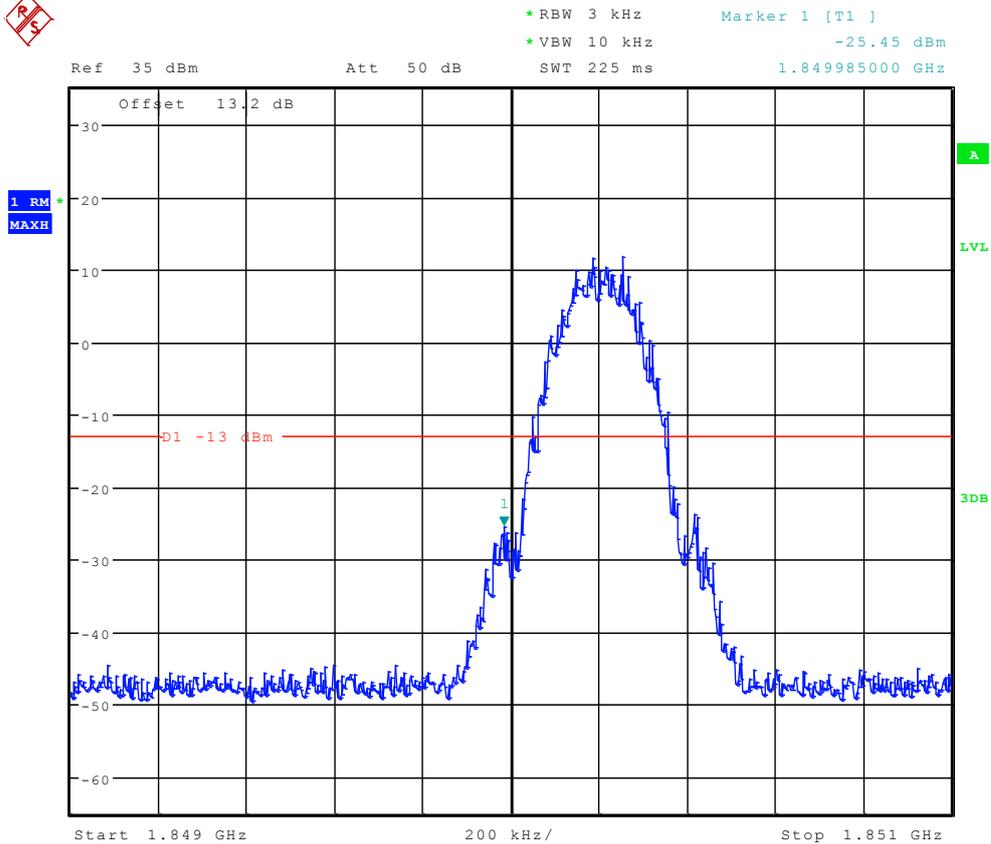
According to FCC Part 2.1051 & Part24 Subpart E



TM1:GPRS/GSM

Left Edge

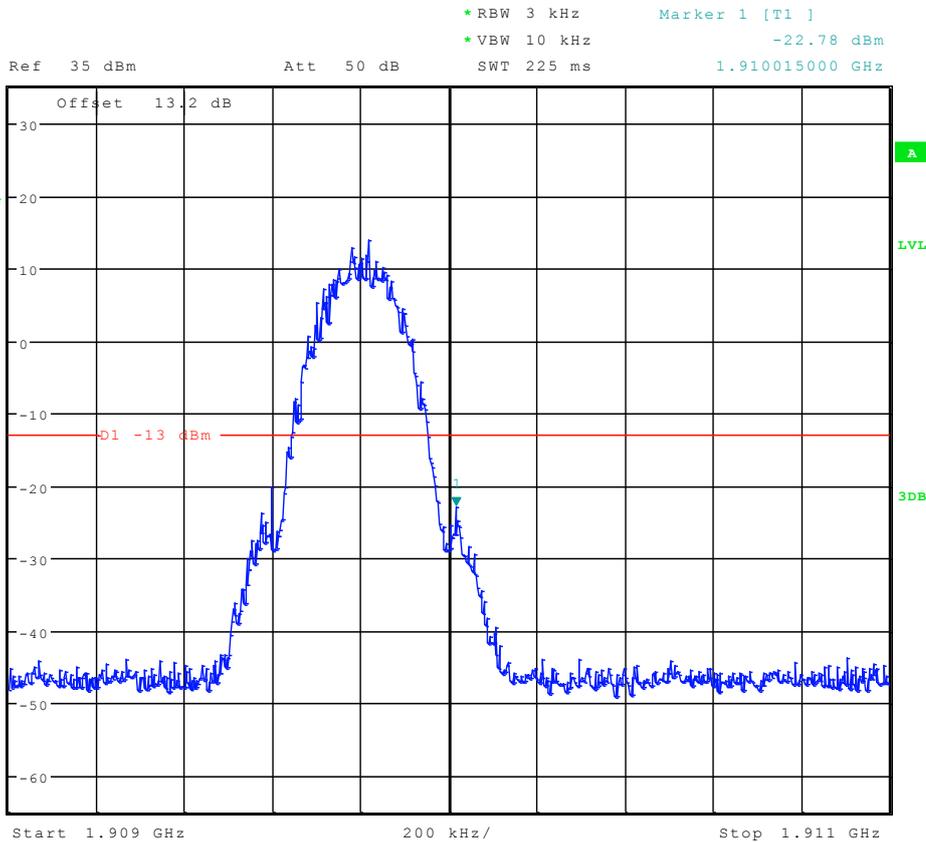
Channel 512



Date: 24.SEP.2012 23:59:45



Right Edge Channel 810



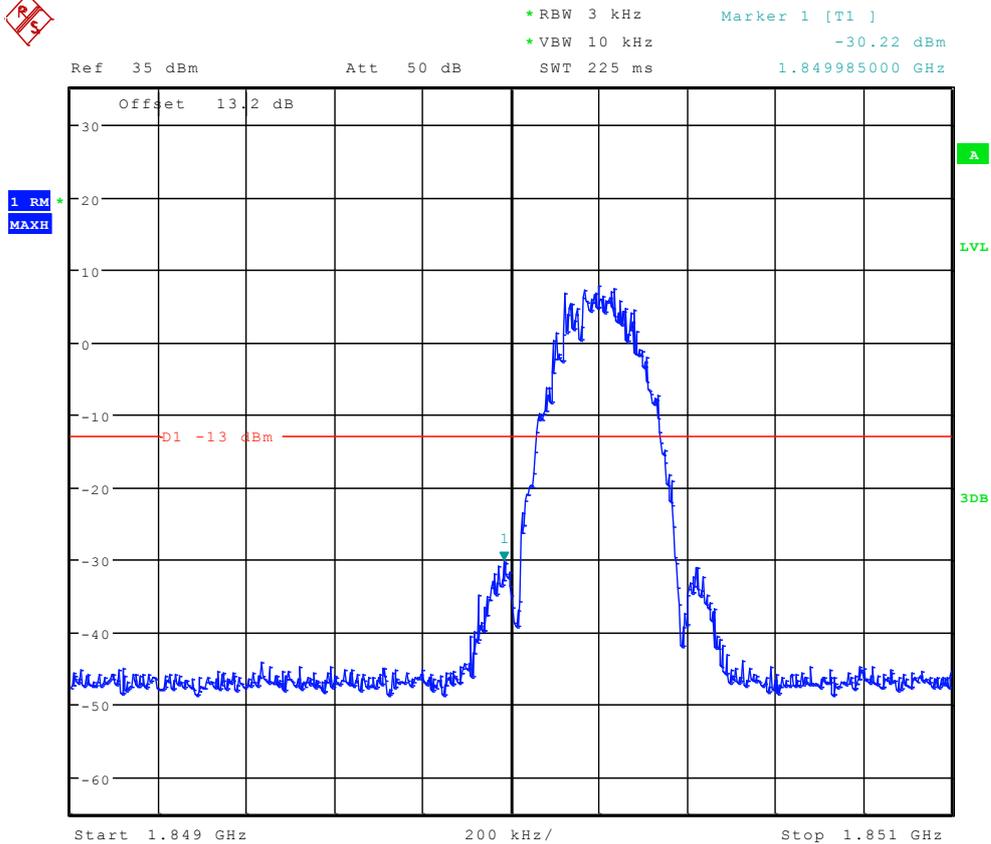
Date: 25.SEP.2012 00:00:15



TM2:EDGE

Left Edge

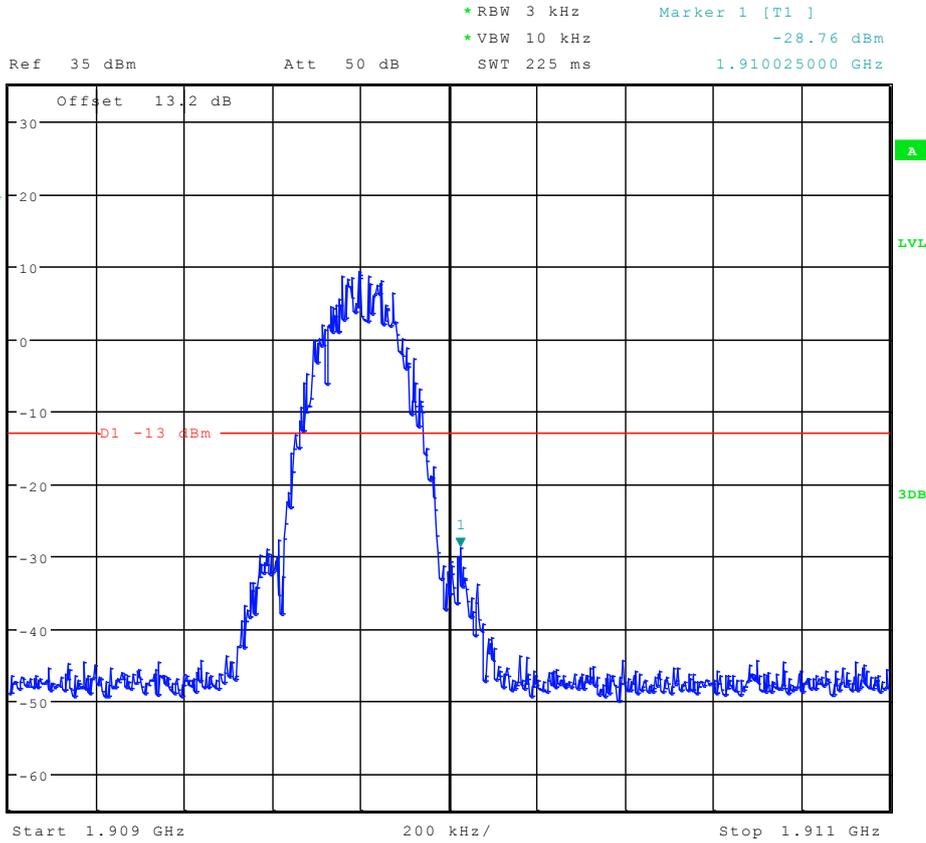
Channel 512



Date: 24.SEP.2012 23:50:17



Right Edge Channel 810



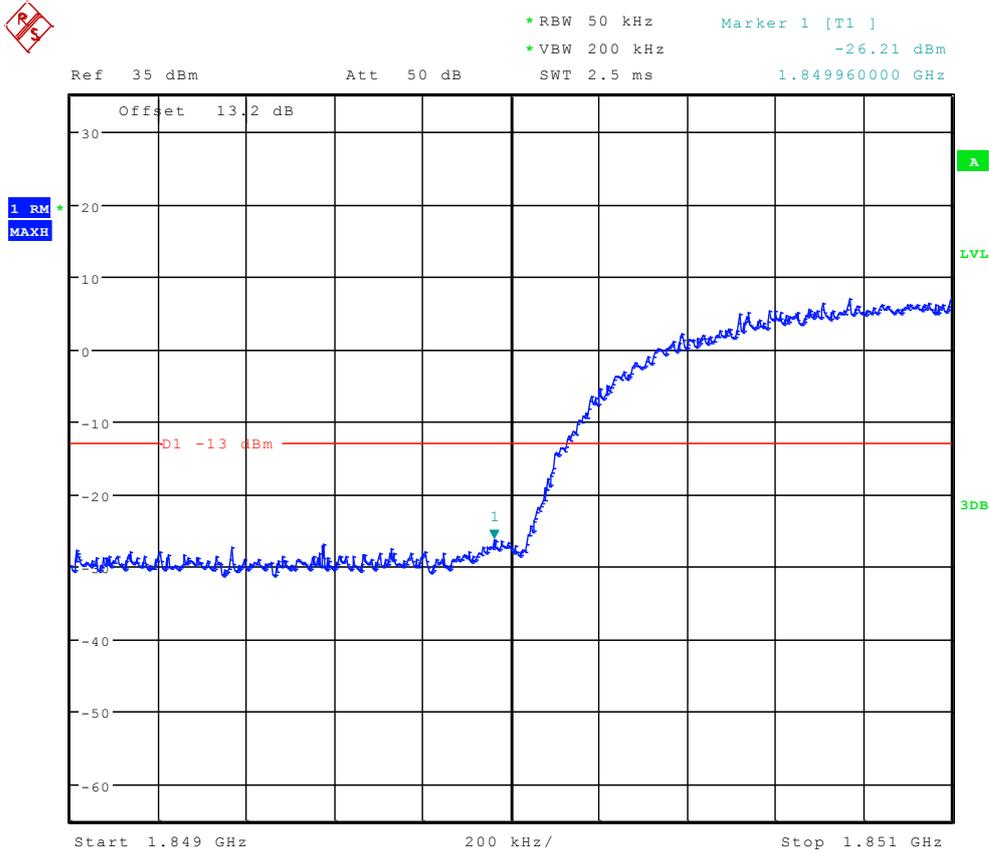
Date: 24.SEP.2012 23:50:30



TM3: WCDMA

Left Edge

Channel 9262



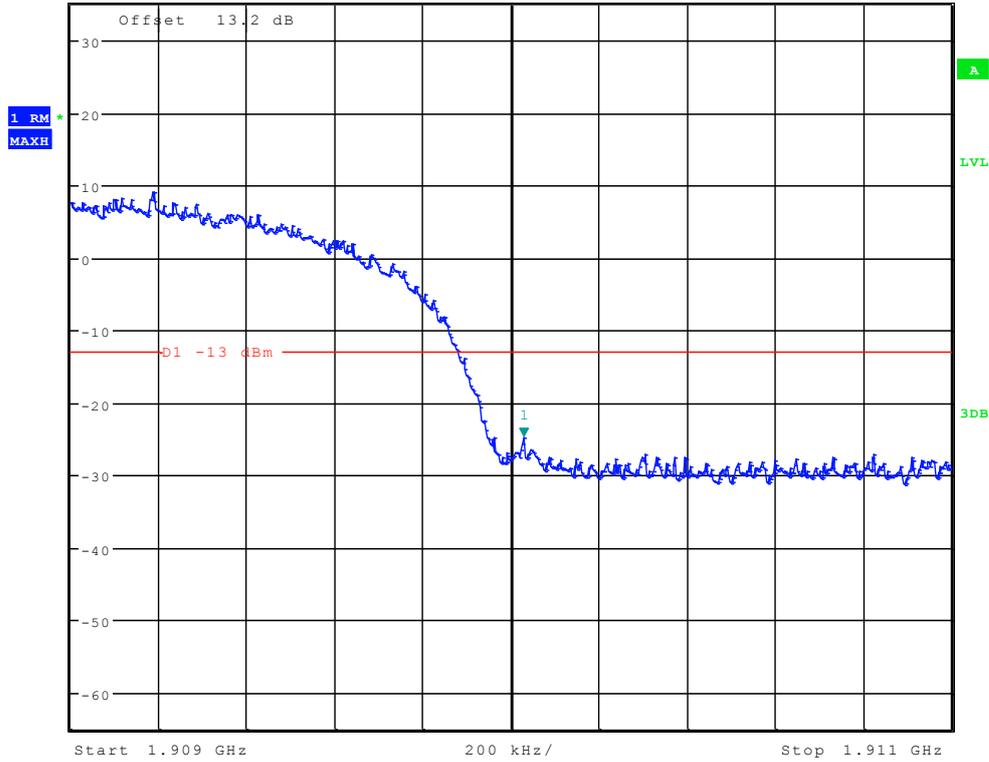
Date: 24.SEP.2012 23:55:07



Right Edge Channel 9538



Ref 35 dBm Att 50 dB SWT 2.5 ms
 *RBW 50 kHz *VBW 200 kHz
 Marker 1 [T1] -24.87 dBm
 1.910030000 GHz



Date: 24.SEP.2012 23:55:20

-----END-----



Appendix E

Spurious Emission at Antenna Terminal

According to FCC Part 2.1051 & Part24 Subpart E

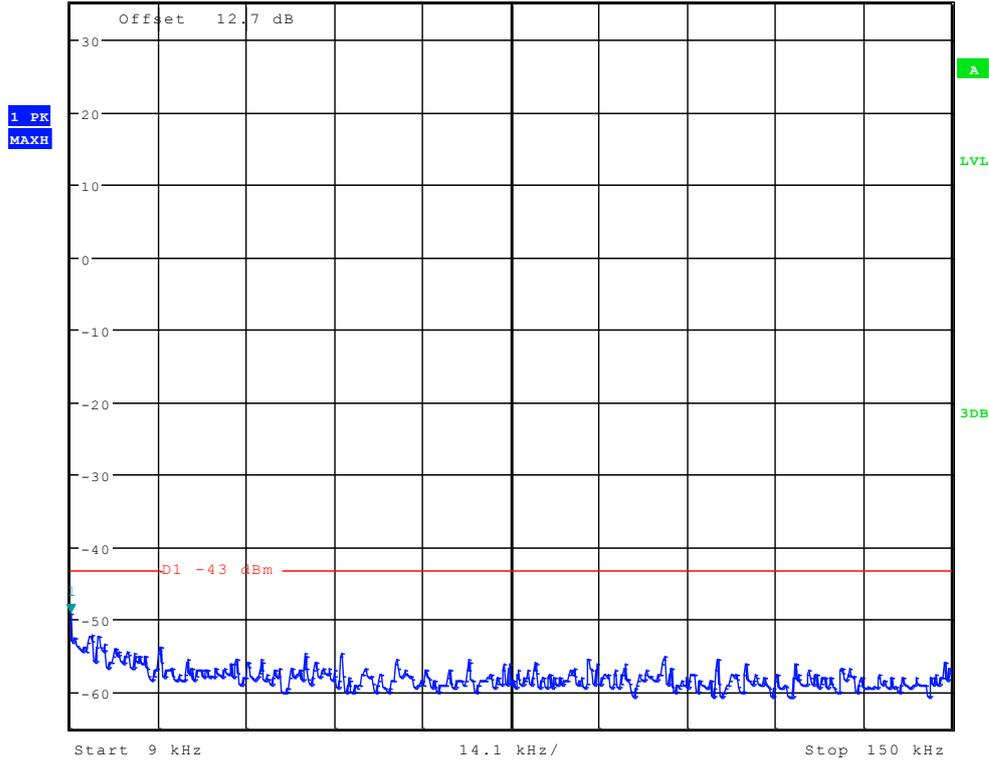


TM1:GPRS/GSM

Channel 512



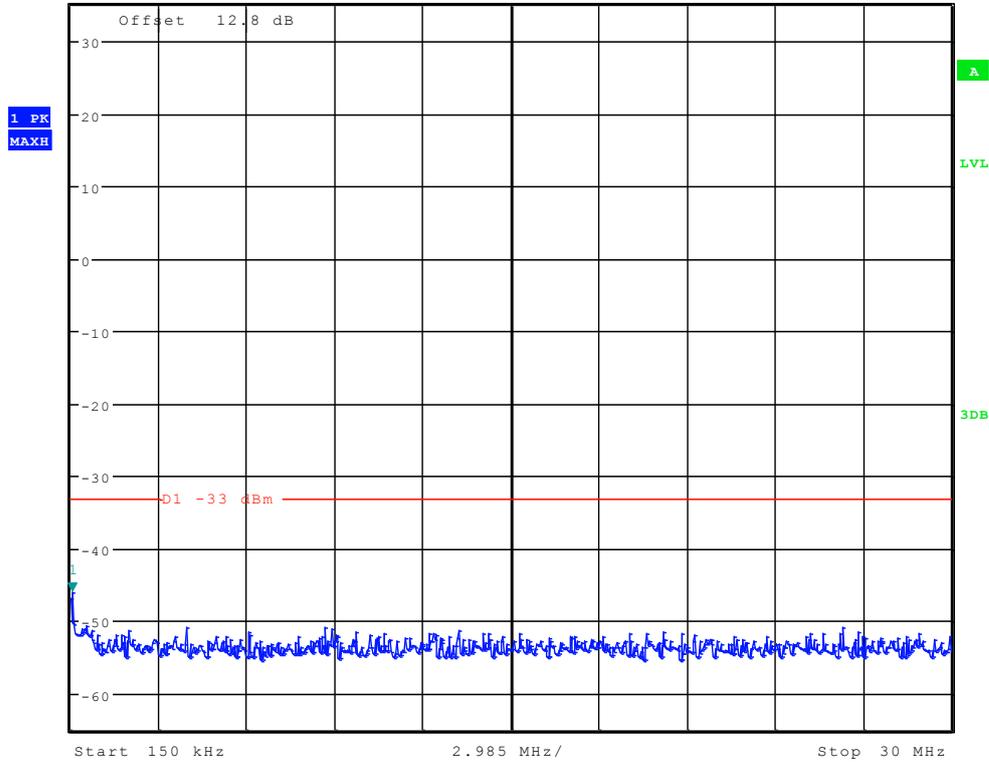
*RBW 1 kHz Marker 1 [T1]
 *VBW 10 kHz -49.11 dBm
 Ref 35 dBm *Att 35 dB SWT 145 ms 9.000000000 kHz



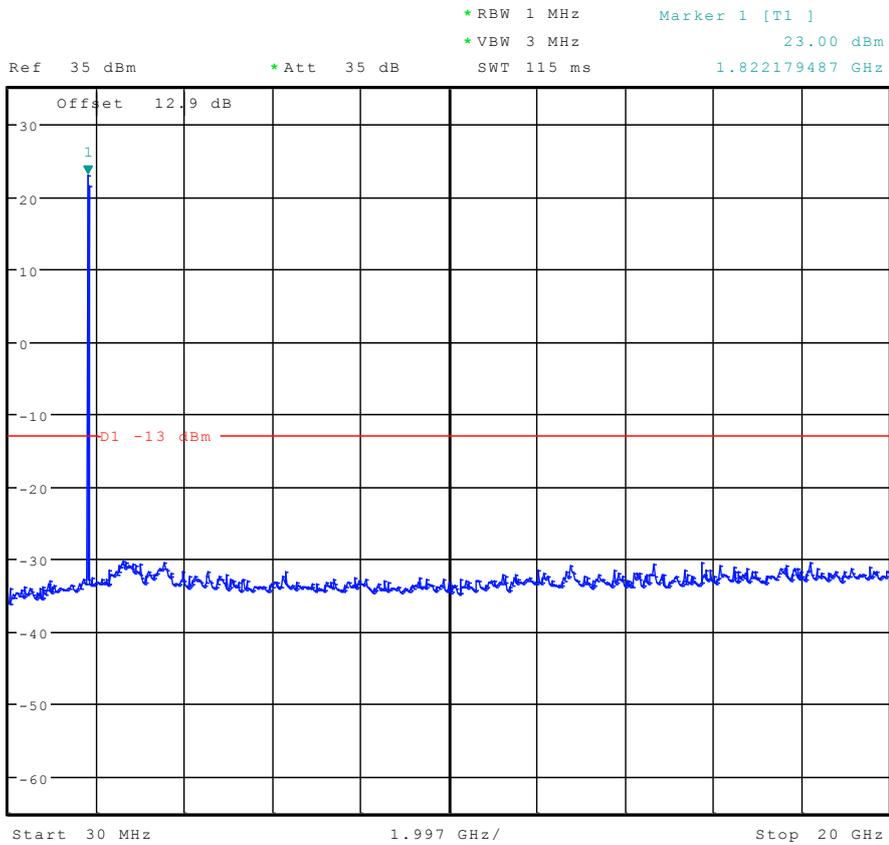
Date: 24.SEP.2012 23:46:08



Ref 35 dBm * Att 35 dB SWT 300 ms * RBW 10 kHz Marker 1 [T1] -46.00 dBm
* VBW 30 kHz 197.836538462 kHz



Date: 24.SEP.2012 23:46:52



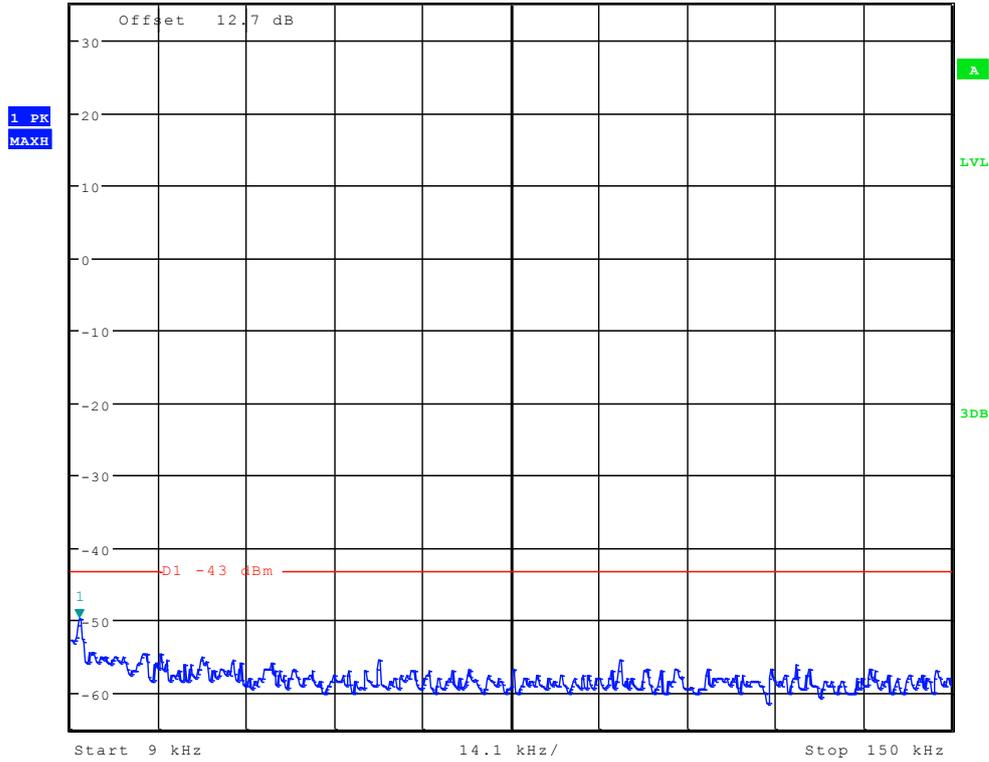
Date: 24.SEP.2012 23:47:35



Channel 661



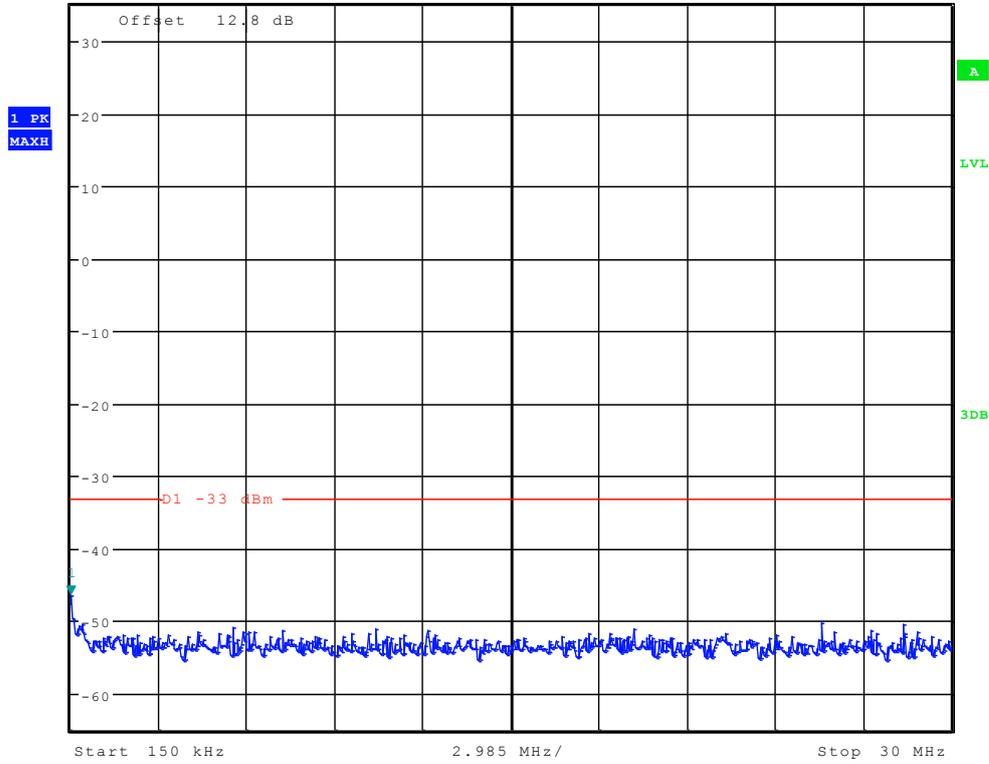
Ref 35 dBm * Att 35 dB * RBW 1 kHz Marker 1 [T1] -49.70 dBm
 * VBW 10 kHz SWT 145 ms 10.355769231 kHz



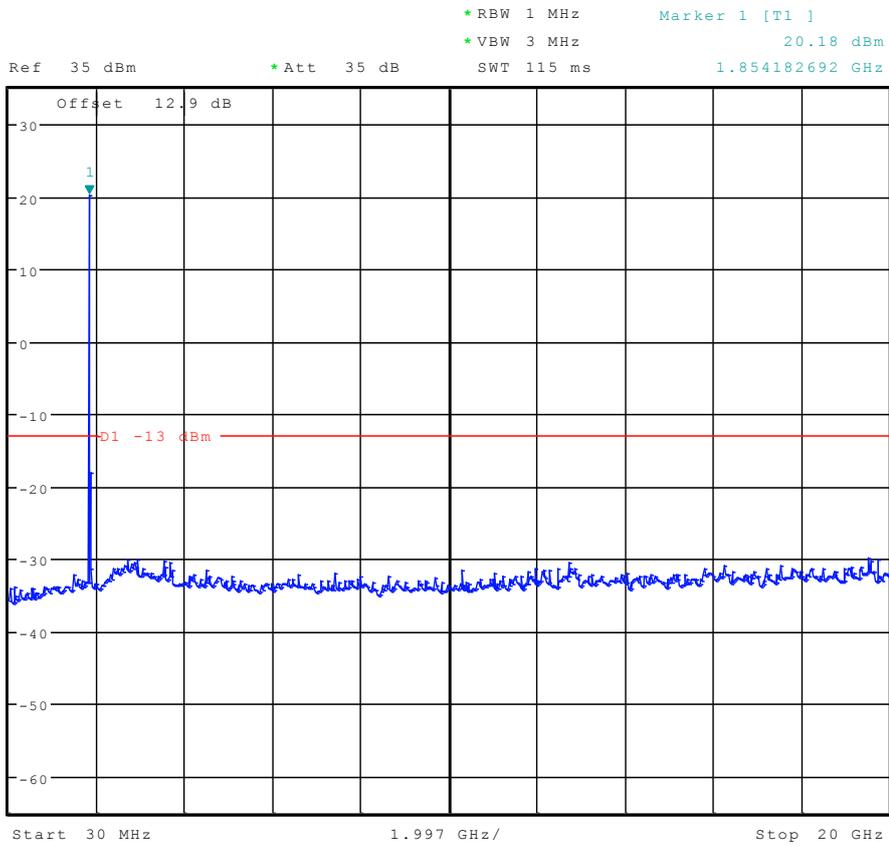
Date: 24.SEP.2012 23:46:22



Ref 35 dBm * Att 35 dB * RBW 10 kHz Marker 1 [T1] -46.42 dBm
* VBW 30 kHz 150.00000000 kHz
SWT 300 ms



Date: 24.SEP.2012 23:47:06



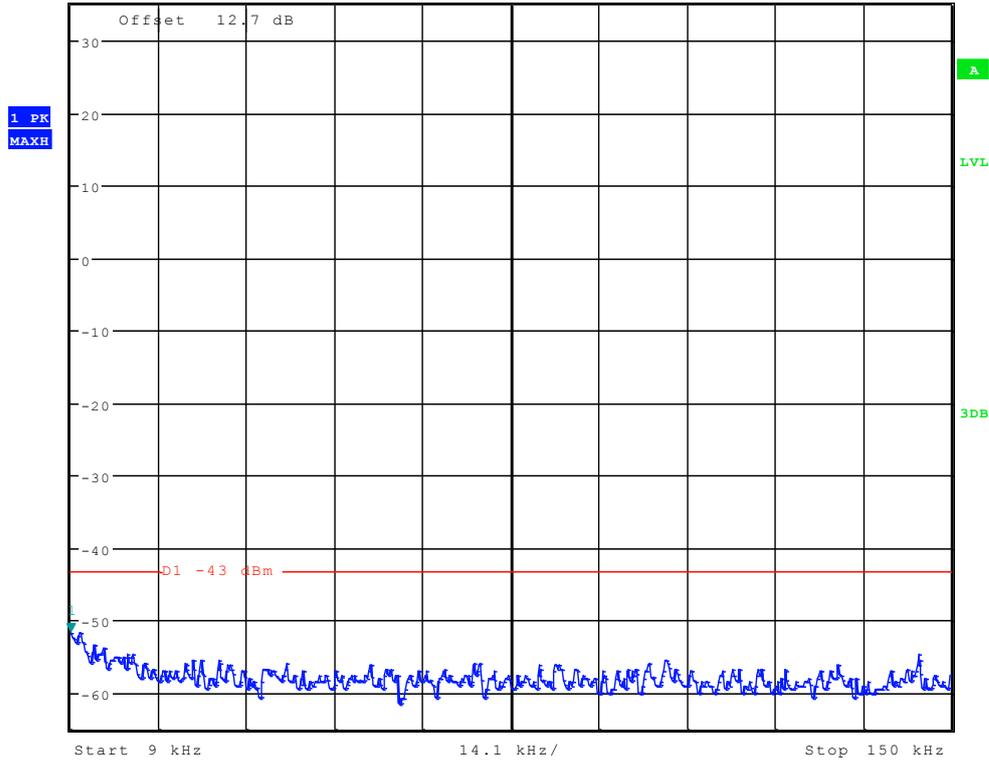
Date: 24.SEP.2012 23:47:50



Channel 810



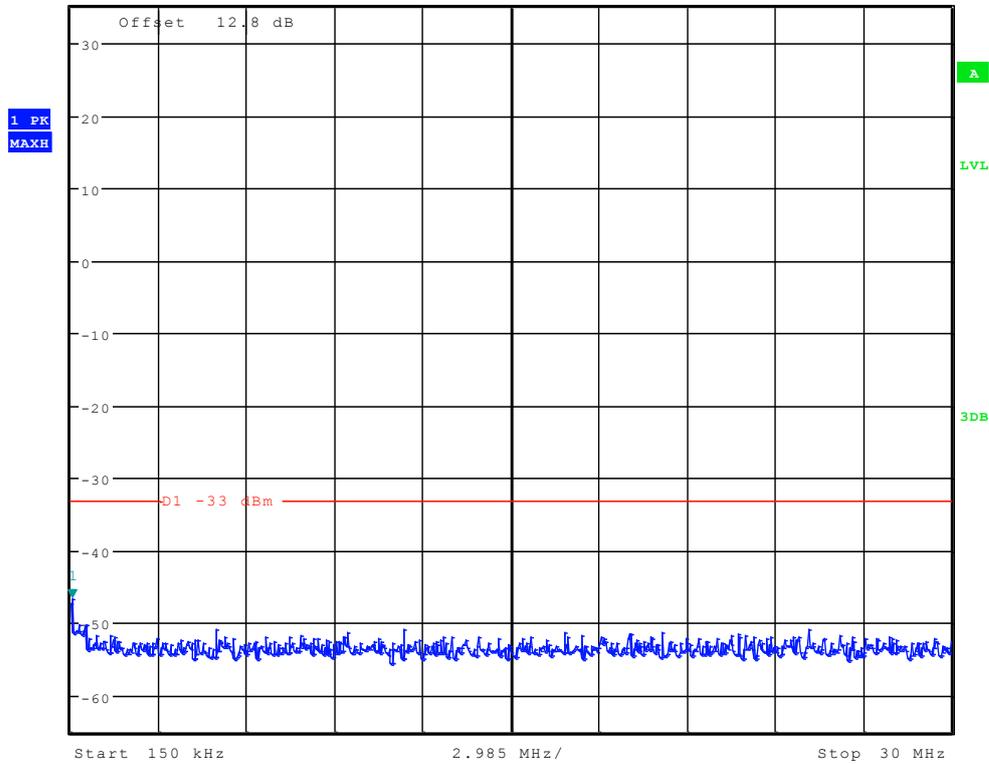
*RBW 1 kHz Marker 1 [T1]
*VBW 10 kHz -51.58 dBm
Ref 35 dBm *Att 35 dB SWT 145 ms 9.000000000 kHz



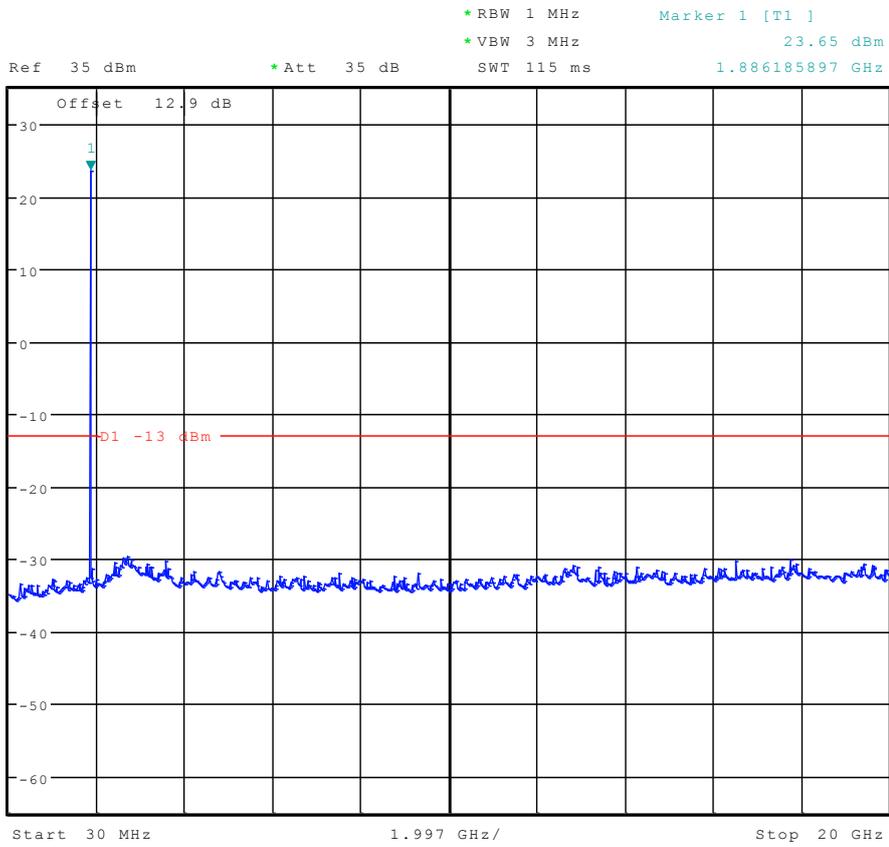
Date: 24.SEP.2012 23:46:37



Ref 35 dBm * Att 35 dB * RBW 10 kHz Marker 1 [T1] * VBW 30 kHz -46.53 dBm
SWT 300 ms 197.836538462 kHz



Date: 24.SEP.2012 23:47:20



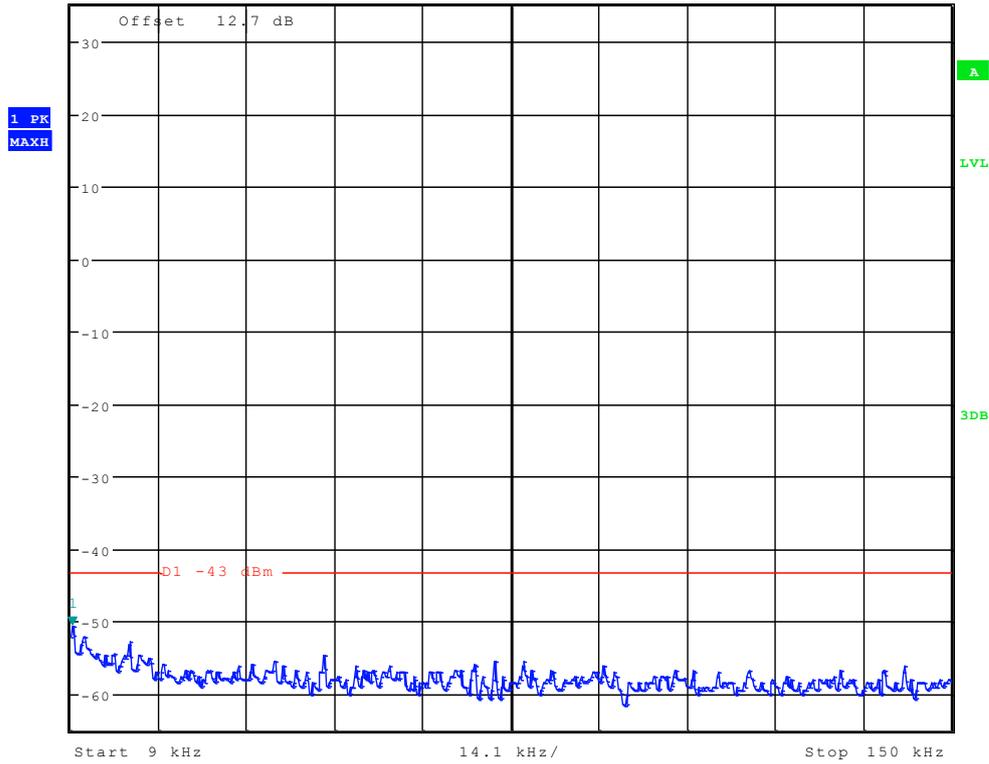
Date: 24.SEP.2012 23:48:08



TM2:EDGE Channel 512



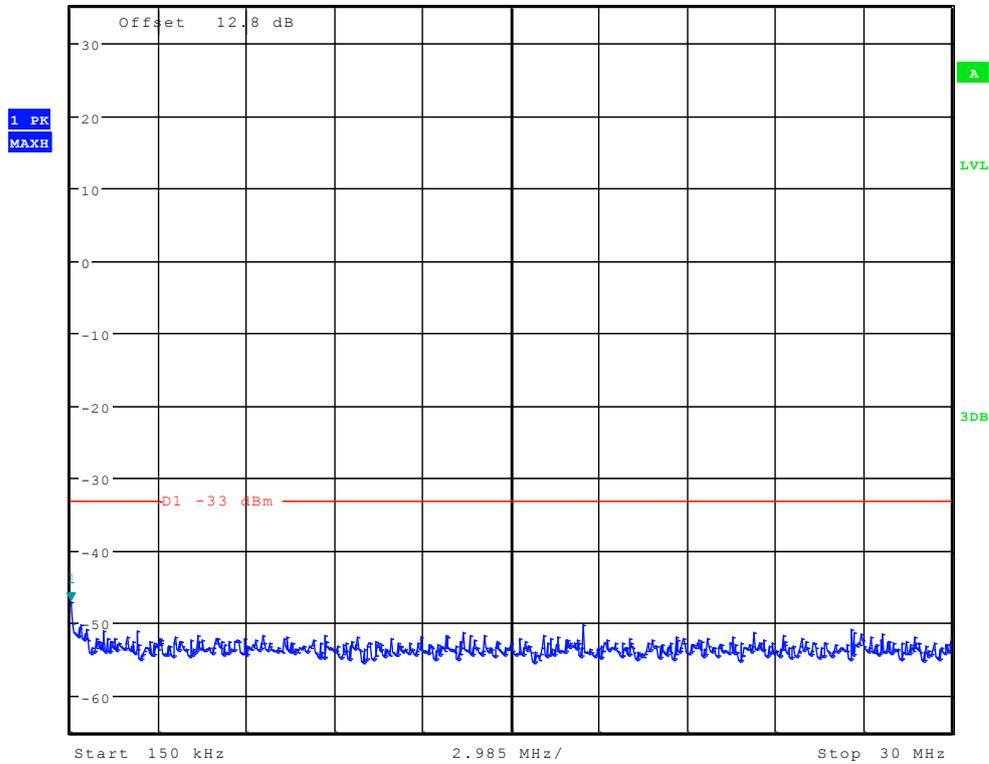
*RBW 1 kHz Marker 1 [T1]
 *VBW 10 kHz -50.51 dBm
 Ref 35 dBm *Att 35 dB SWT 145 ms 9.225961538 kHz



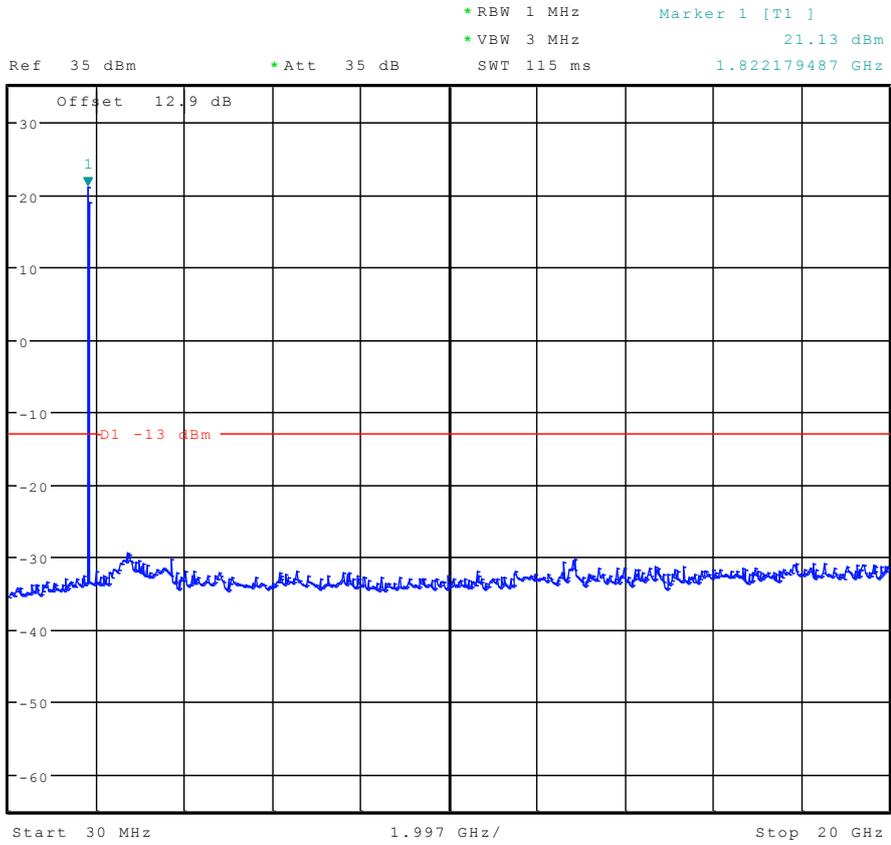
Date: 24.SEP.2012 23:51:27



Ref 35 dBm * Att 35 dB SWT 300 ms 150.00000000 kHz
* RBW 10 kHz Marker 1 [T1] -47.14 dBm
* VBW 30 kHz



Date: 24.SEP.2012 23:52:10



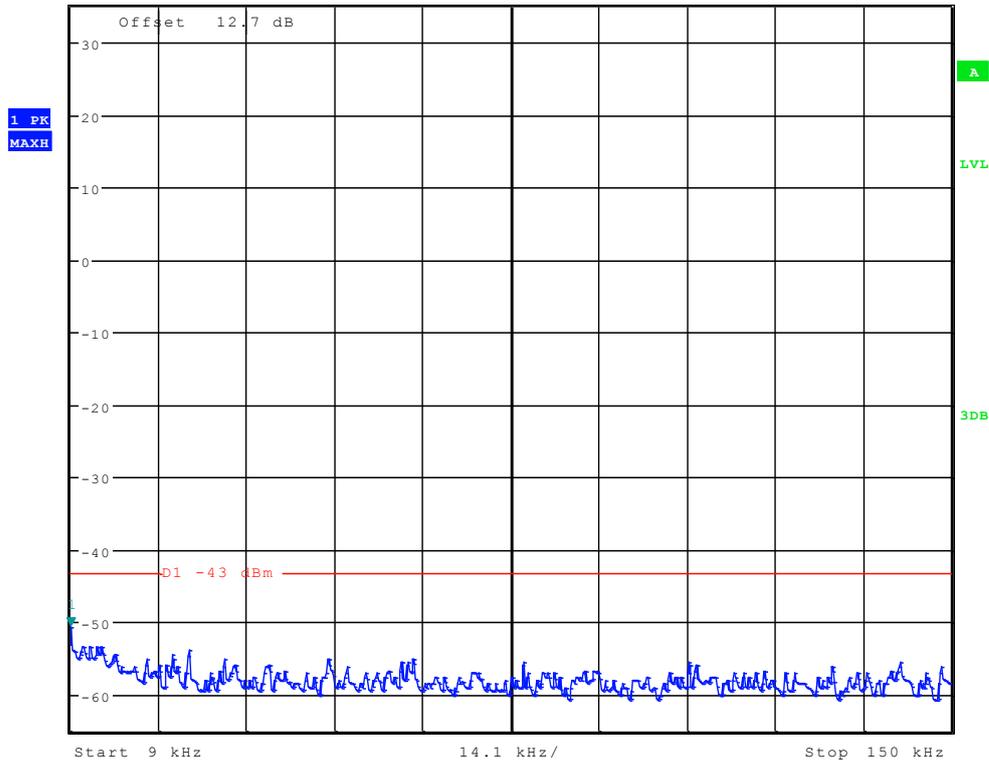
Date: 24.SEP.2012 23:52:54



Channel 661



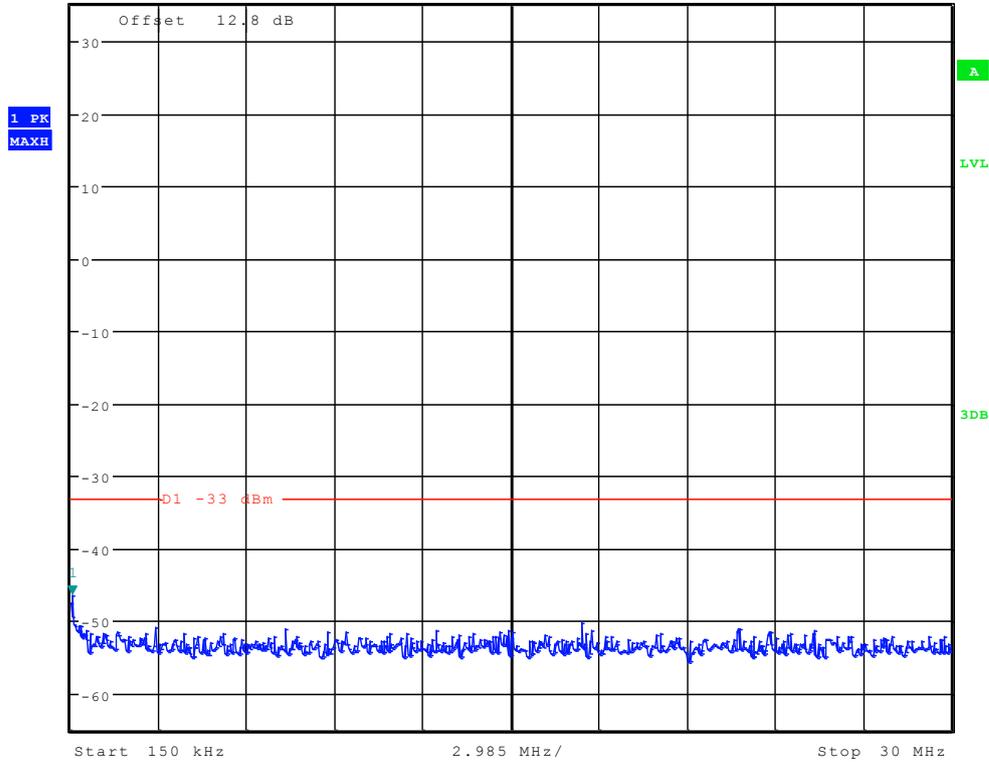
Ref 35 dBm * Att 35 dB * RBW 1 kHz Marker 1 [T1]
 * VBW 10 kHz -50.51 dBm
 SWT 145 ms 9.000000000 kHz



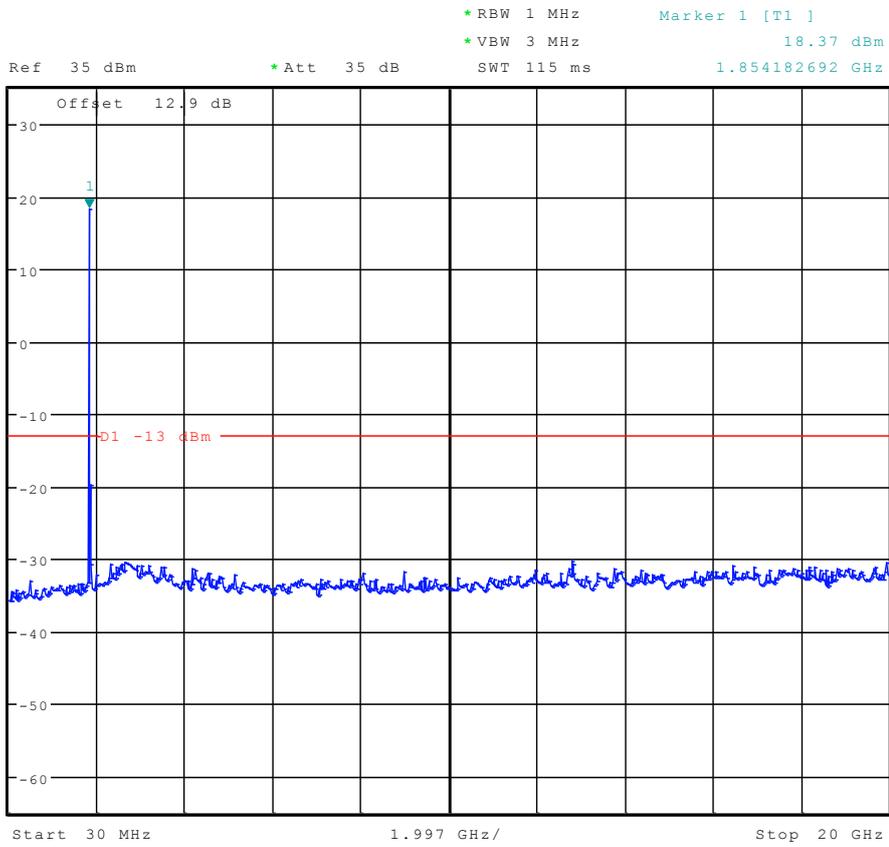
Date: 24.SEP.2012 23:51:41



* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -46.31 dBm
Ref 35 dBm * Att 35 dB SWT 300 ms 197.836538462 kHz



Date: 24.SEP.2012 23:52:25



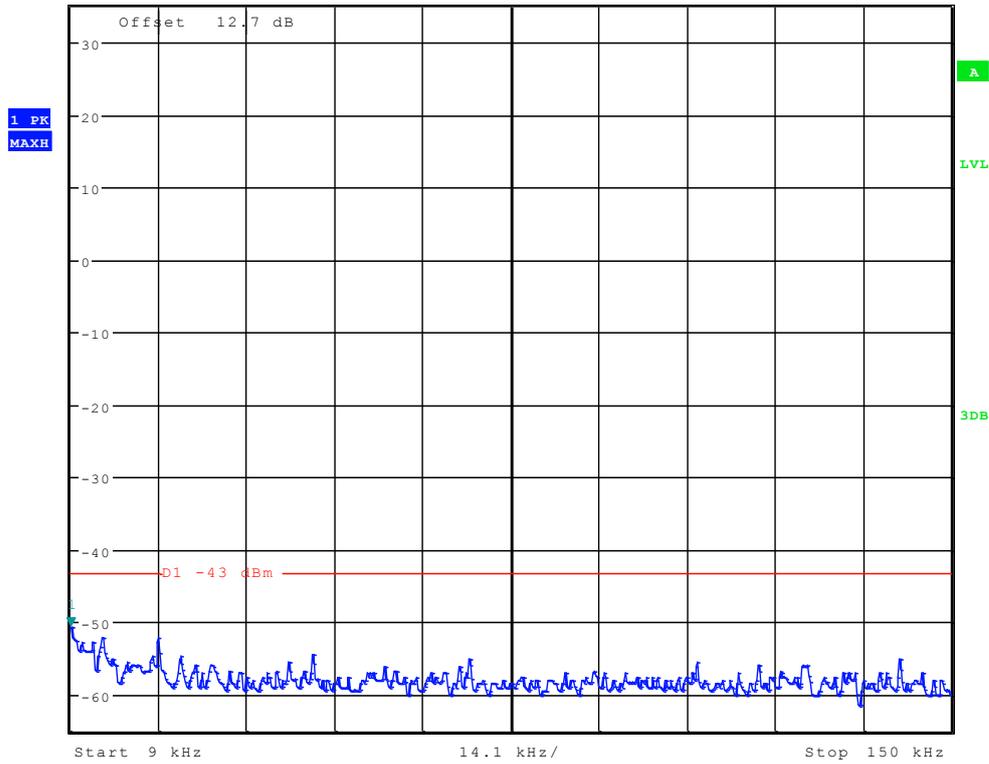
Date: 24.SEP.2012 23:53:09



Channel 810



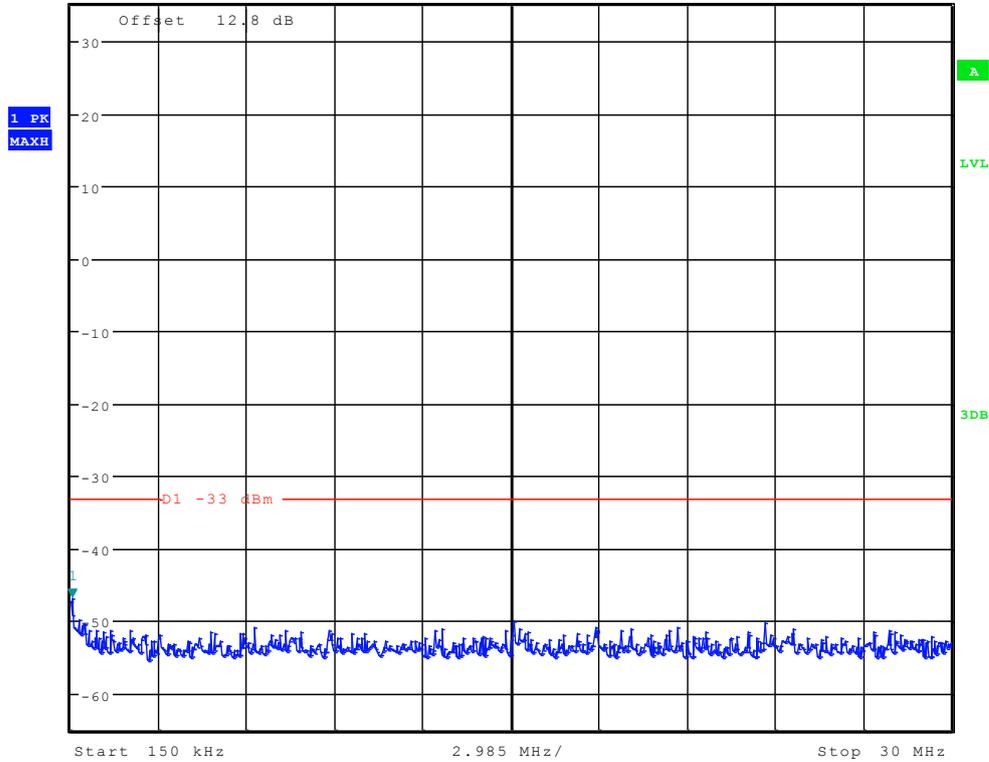
Ref 35 dBm * Att 35 dB SWT 145 ms
* RBW 1 kHz * VBW 10 kHz
Marker 1 [T1] -50.51 dBm
9.000000000 kHz



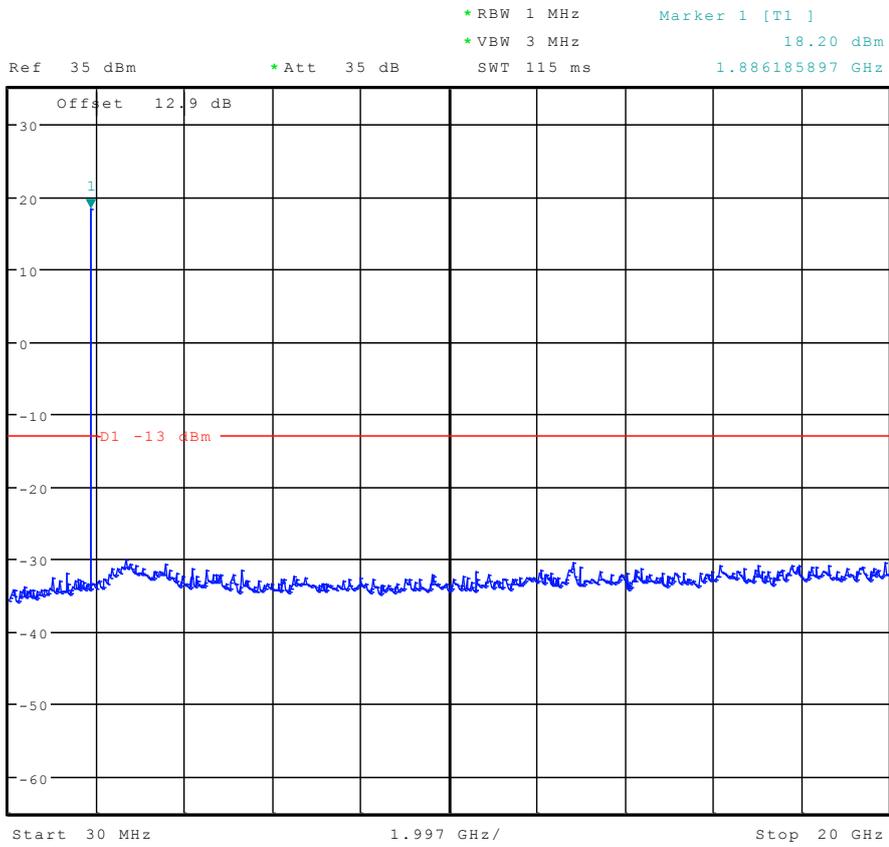
Date: 24.SEP.2012 23:51:55



Ref 35 dBm * Att 35 dB * RBW 10 kHz Marker 1 [T1] -46.86 dBm
* VBW 30 kHz 197.836538462 kHz
SWT 300 ms



Date: 24.SEP.2012 23:52:39



Date: 24.SEP.2012 23:53:23

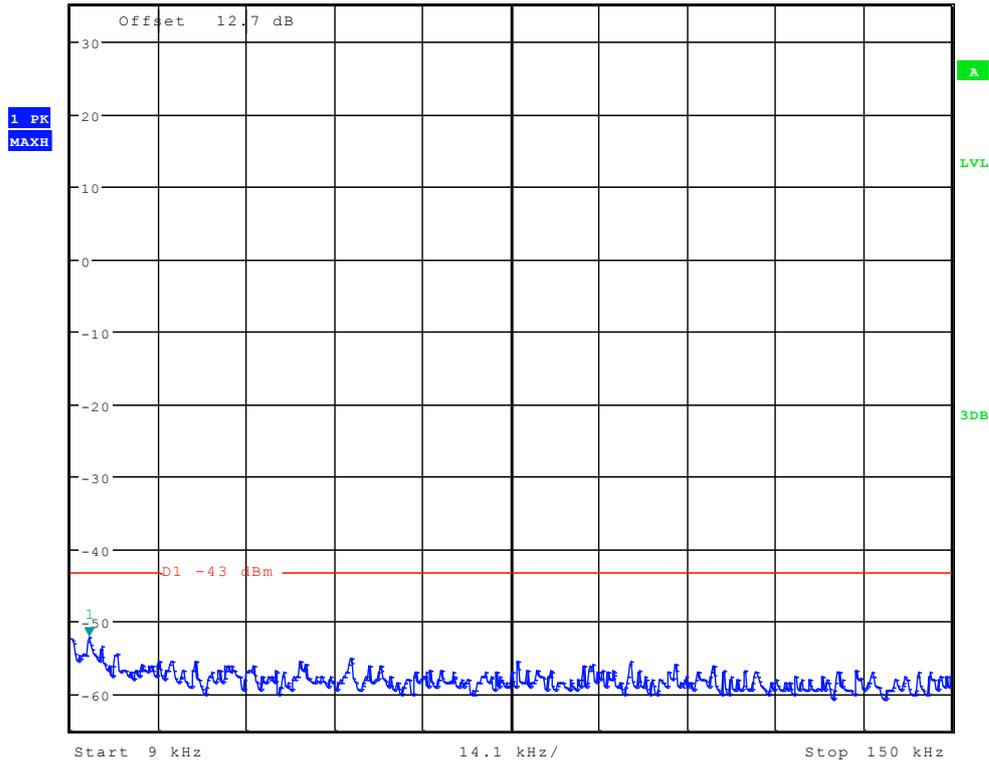


TM3: WCDMA

Channel 9262



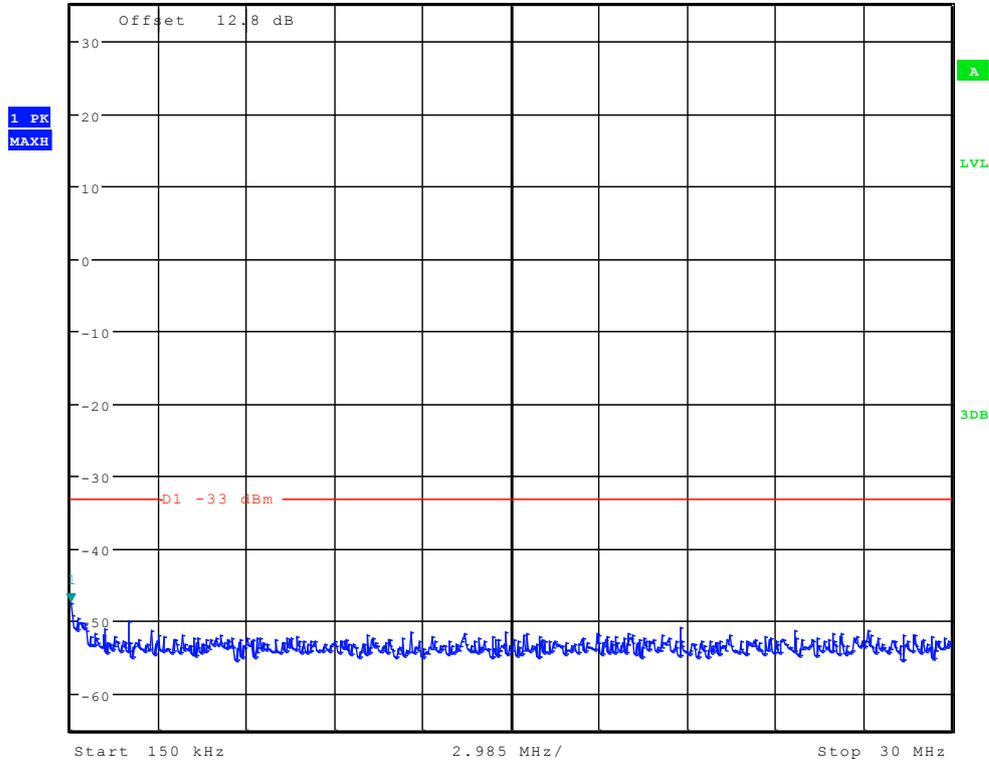
*RBW 1 kHz Marker 1 [T1]
*VBW 10 kHz -52.07 dBm
Ref 35 dBm *Att 35 dB SWT 145 ms 11.937500000 kHz



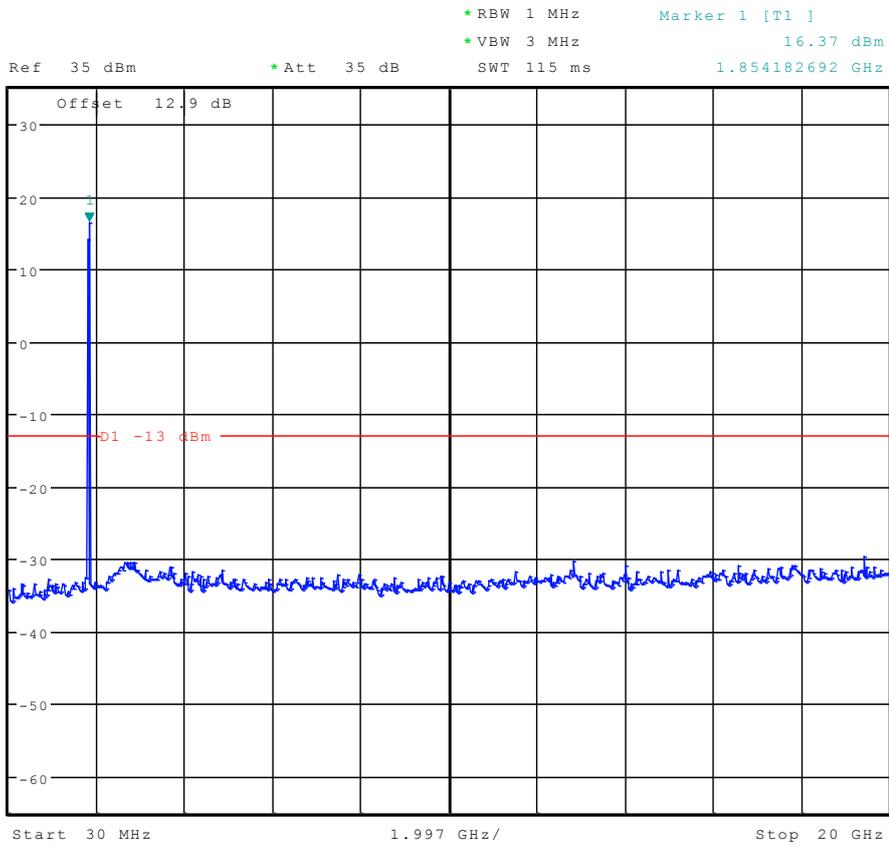
Date: 24.SEP.2012 23:55:35



Ref 35 dBm * Att 35 dB SWT 300 ms * RBW 10 kHz Marker 1 [T1] -47.38 dBm
* VBW 30 kHz 150.00000000 kHz



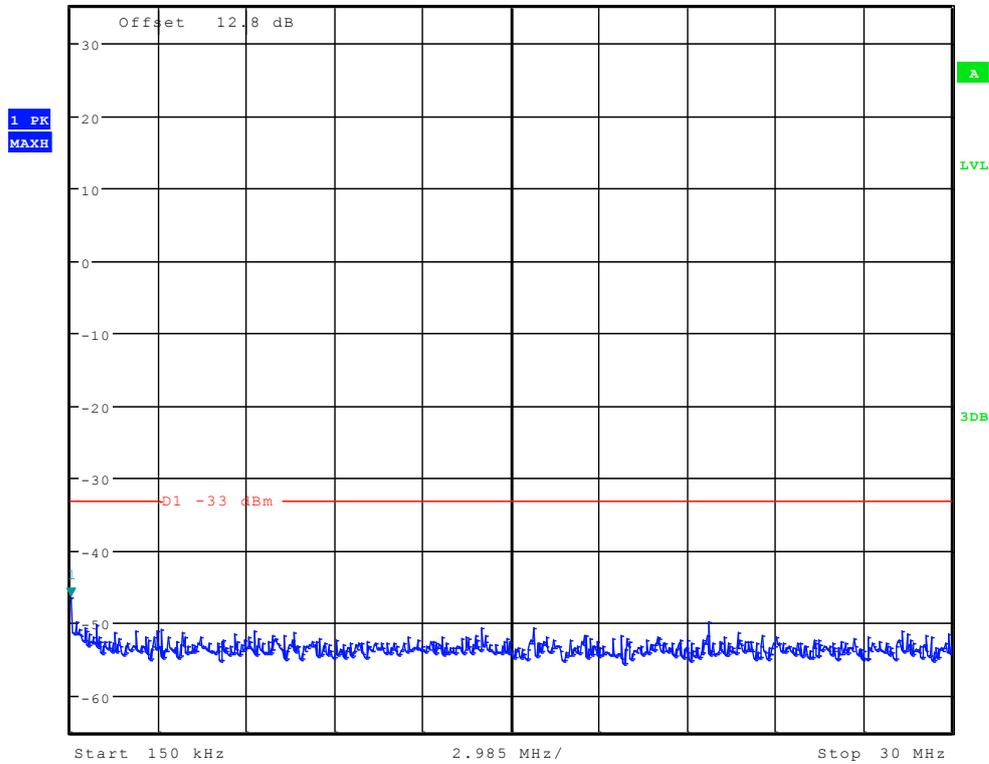
Date: 24.SEP.2012 23:56:19



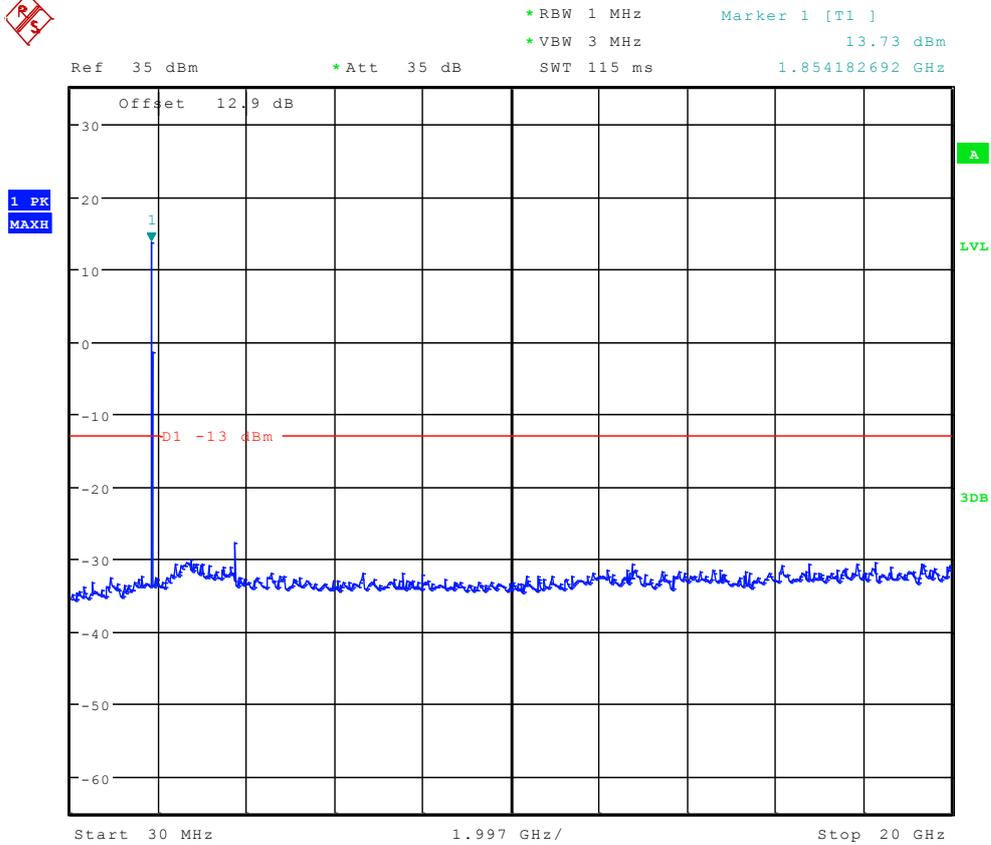
Date: 24.SEP.2012 23:57:03



Ref 35 dBm * Att 35 dB * RBW 10 kHz Marker 1 [T1] -46.42 dBm
* VBW 30 kHz 150.00000000 kHz
SWT 300 ms



Date: 24.SEP.2012 23:56:33



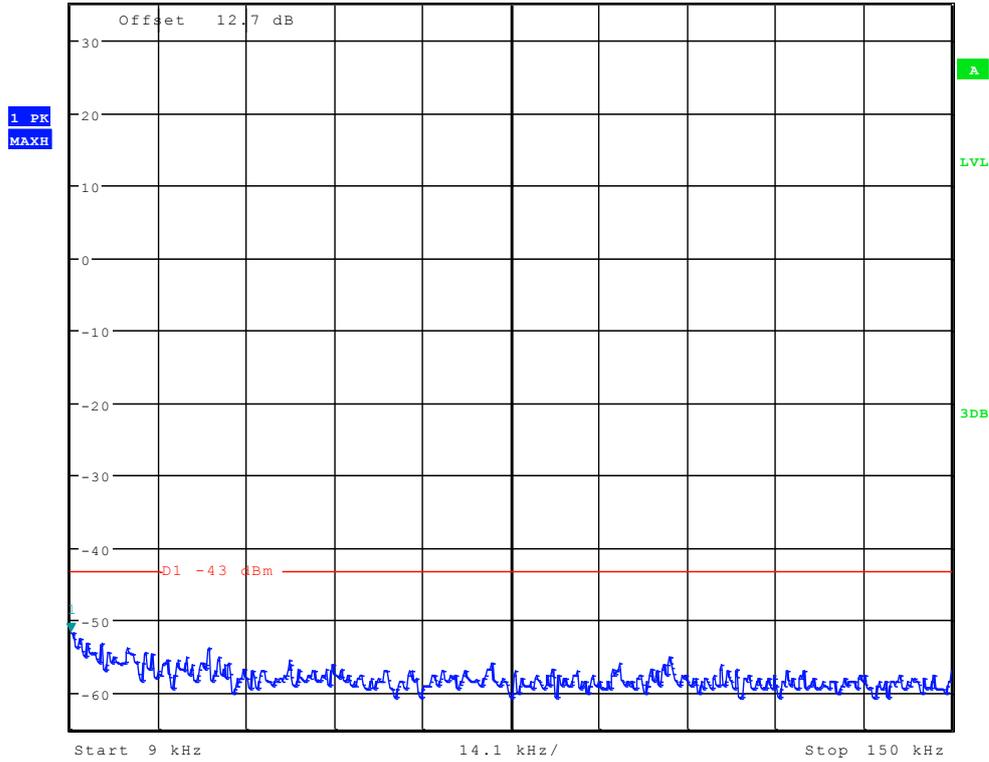
Date: 24.SEP.2012 23:57:17



Channel 9538



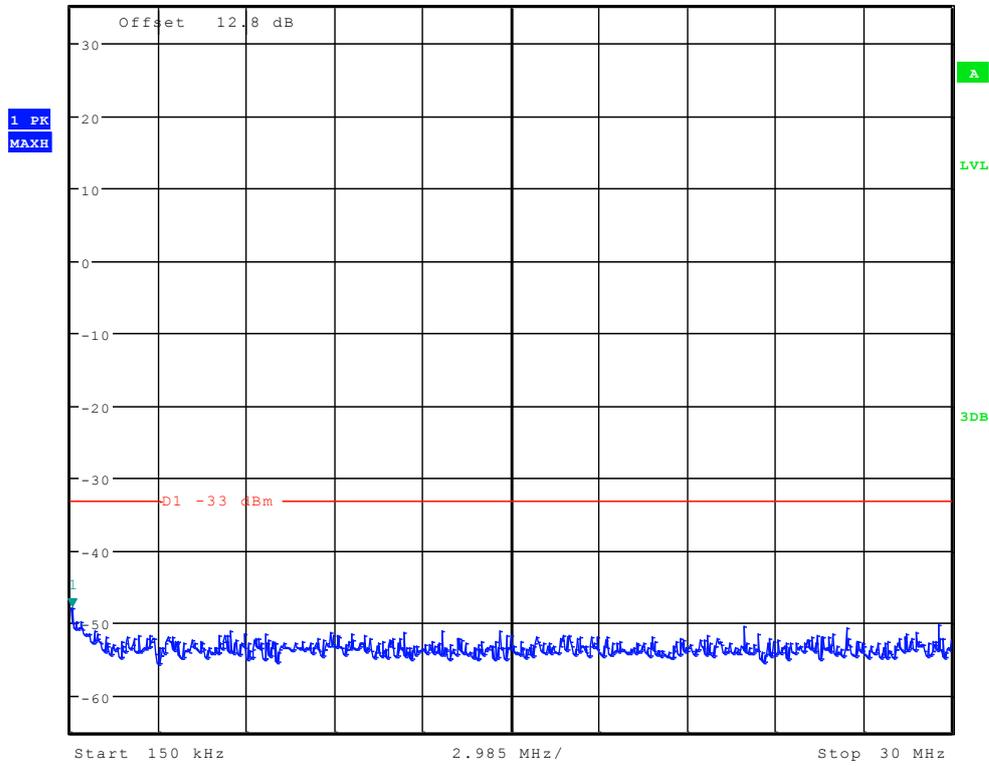
Ref 35 dBm * Att 35 dB SWT 145 ms Marker 1 [T1] -51.58 dBm
* RBW 1 kHz * VBW 10 kHz 9.000000000 kHz



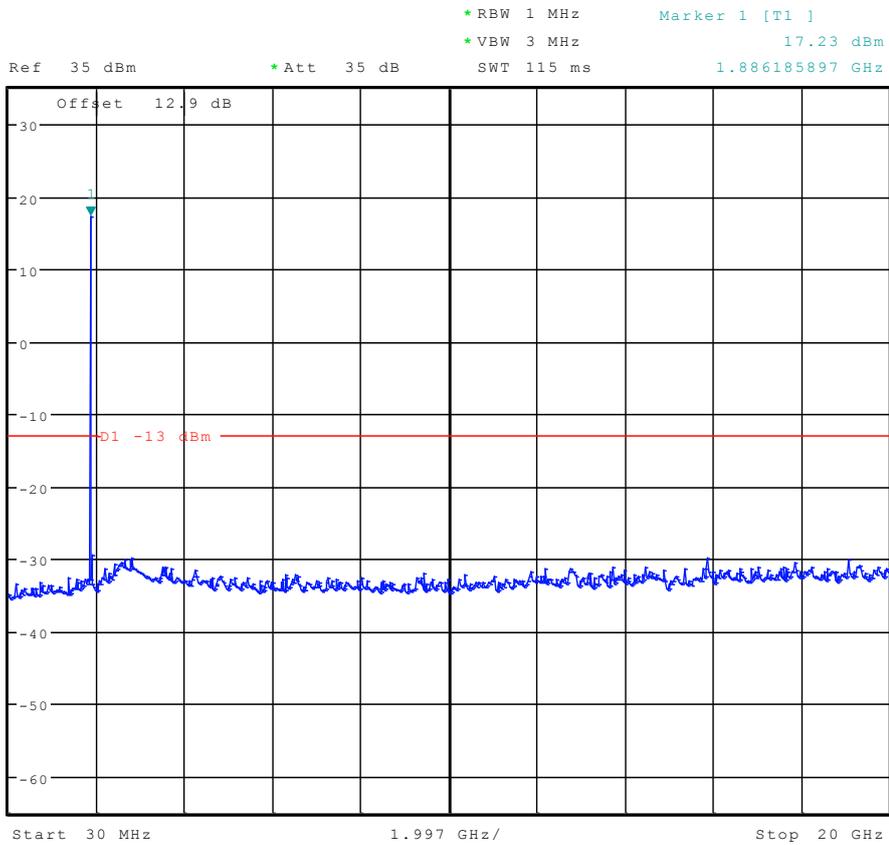
Date: 24.SEP.2012 23:56:04



* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -47.80 dBm
Ref 35 dBm * Att 35 dB SWT 300 ms 197.836538462 kHz



Date: 24.SEP.2012 23:56:48



Date: 24.SEP.2012 23:57:31

-----END-----

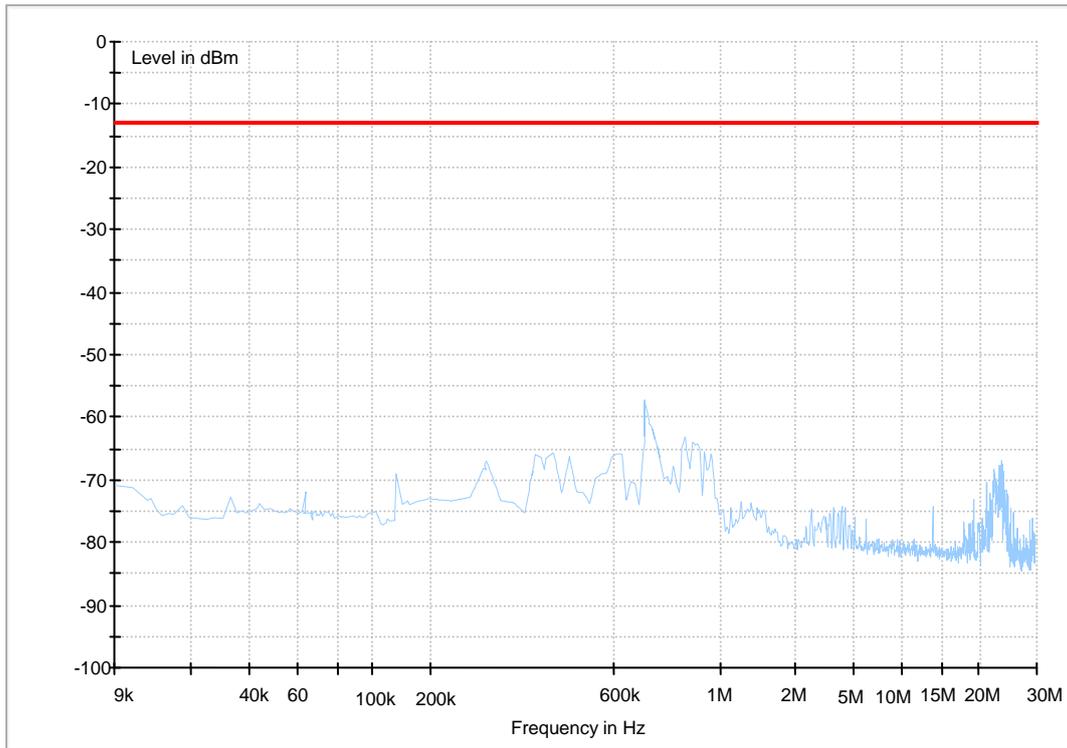
Appendix F

Radiated spurious emission

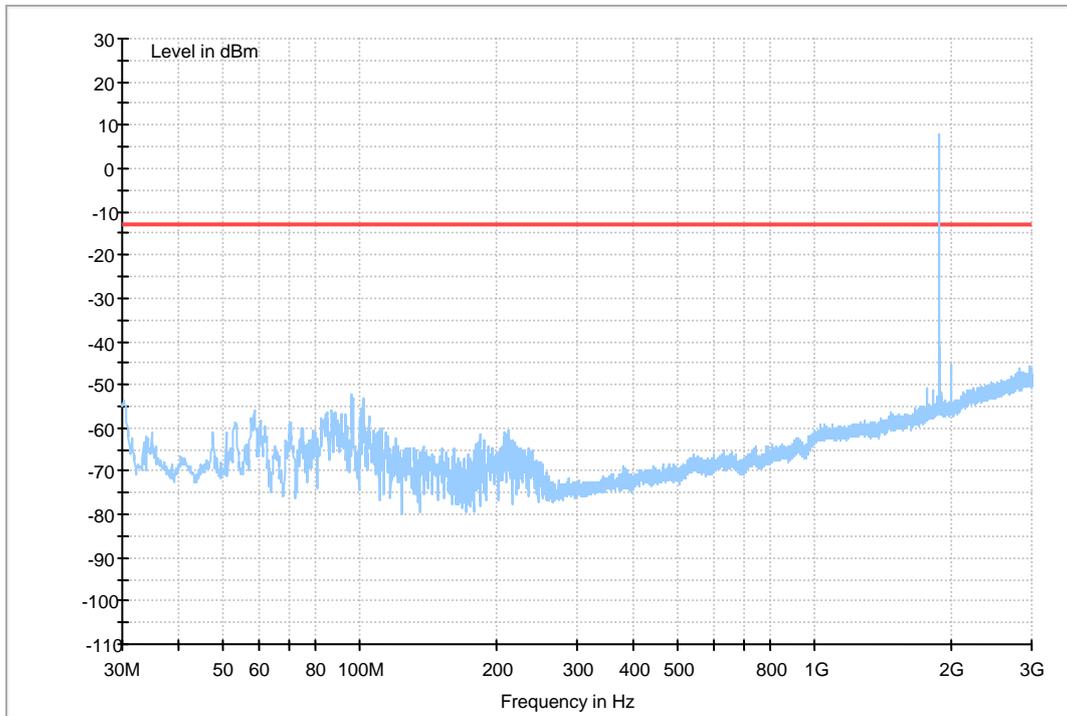
According to FCC Part 2.1053& Part 24.238

GSM 1900

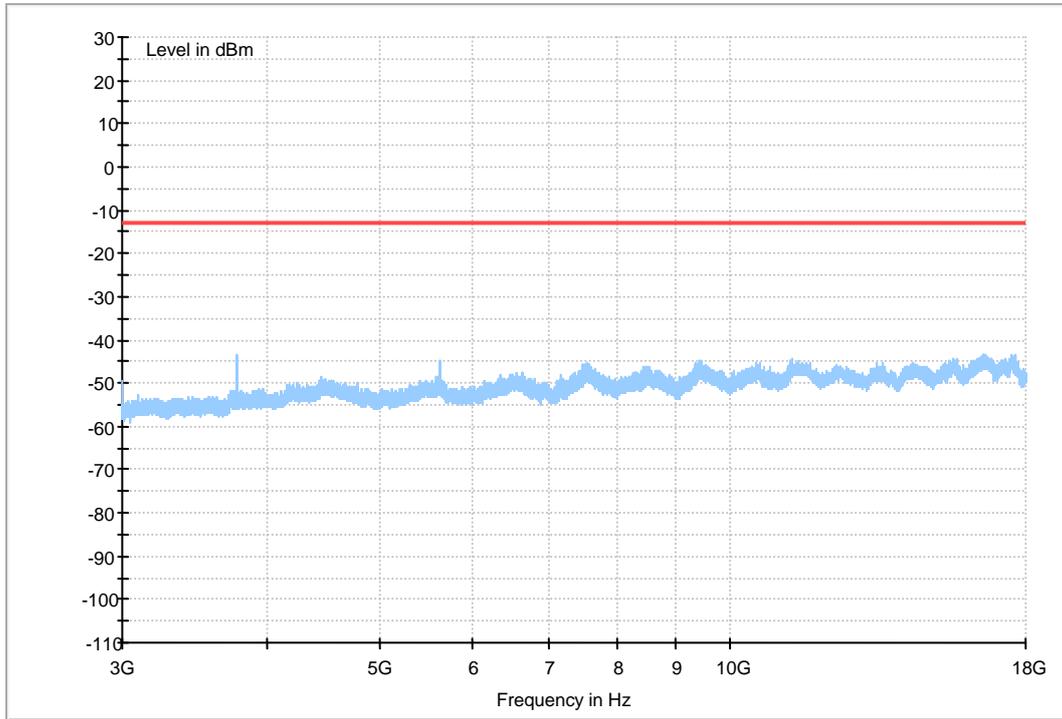
(9 kHz-30MHz)



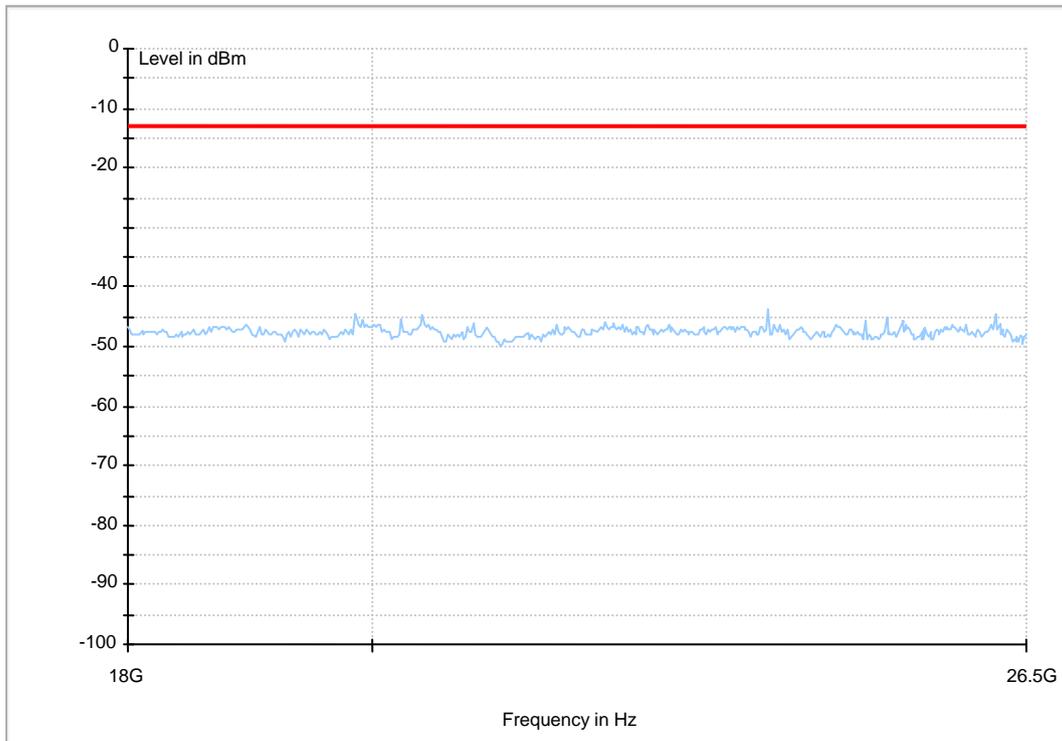
(30MHz~3GHz)



(3GHz~18GHz)

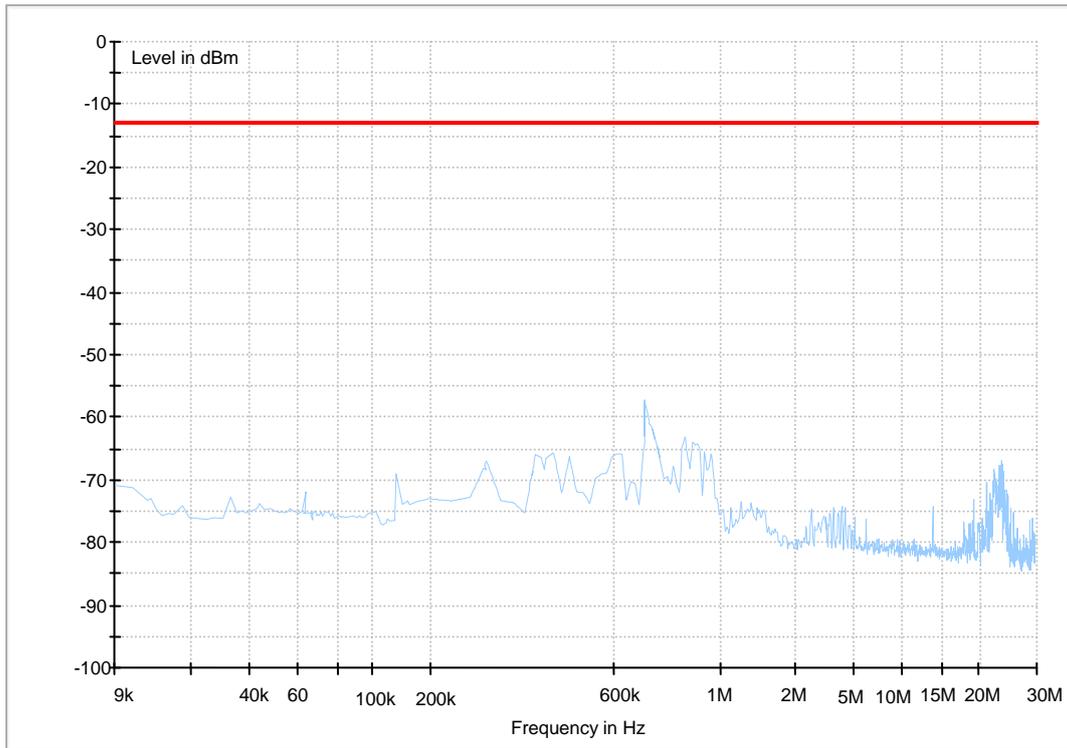


(18GHz-26.5GHz)

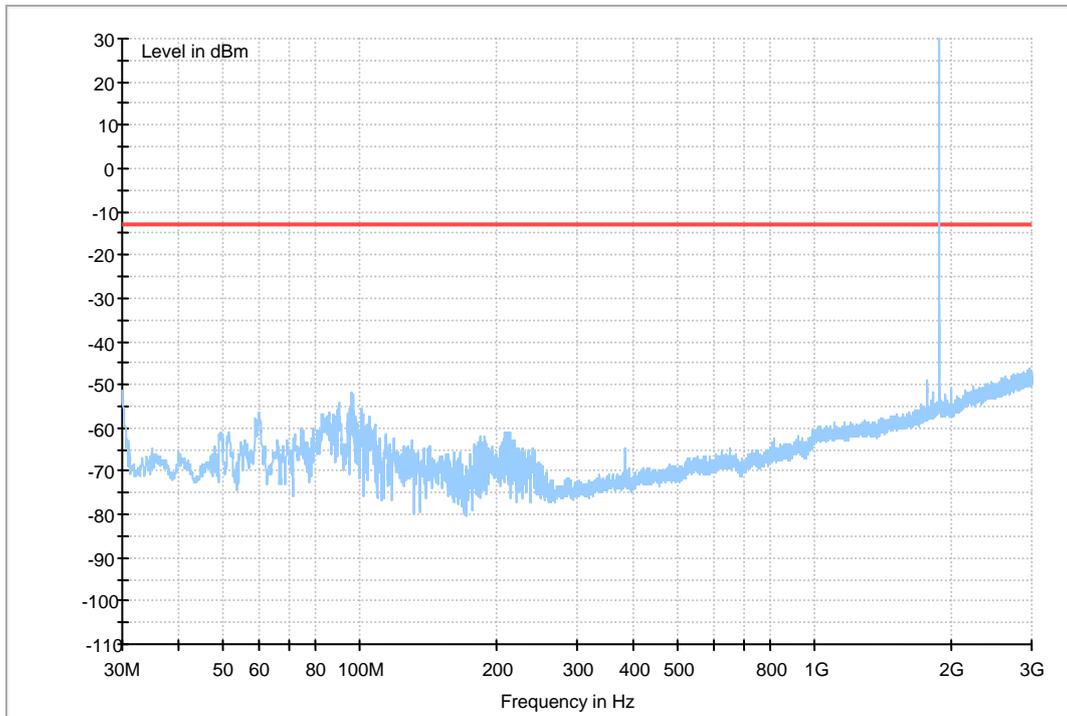


GPRS 1900

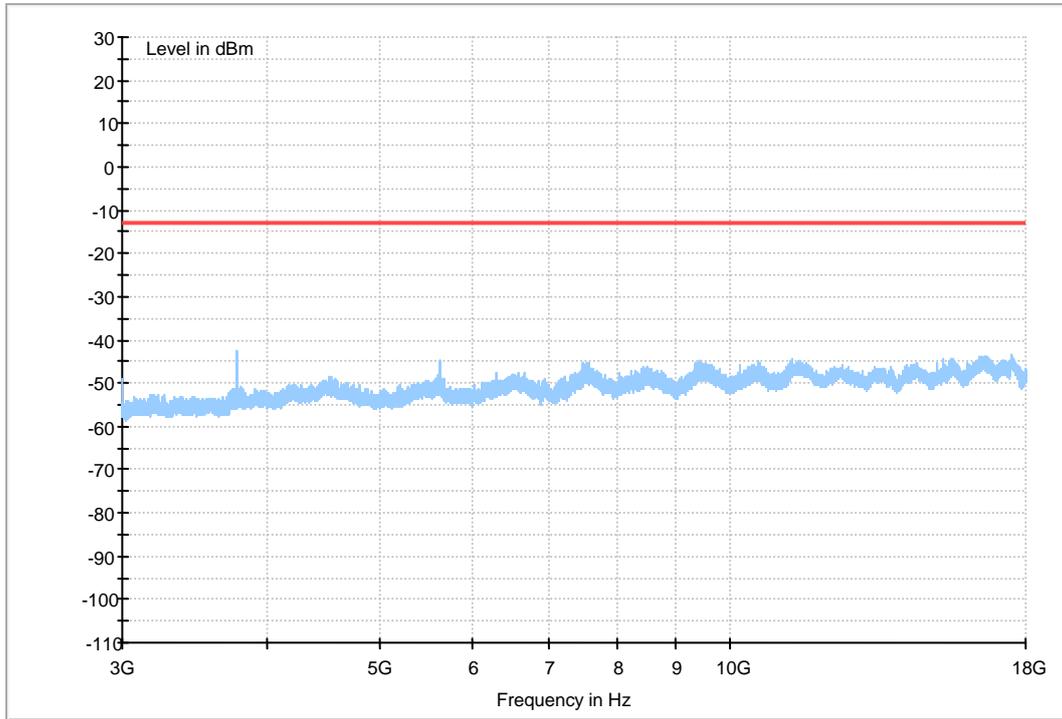
(9kHz-30MHz)



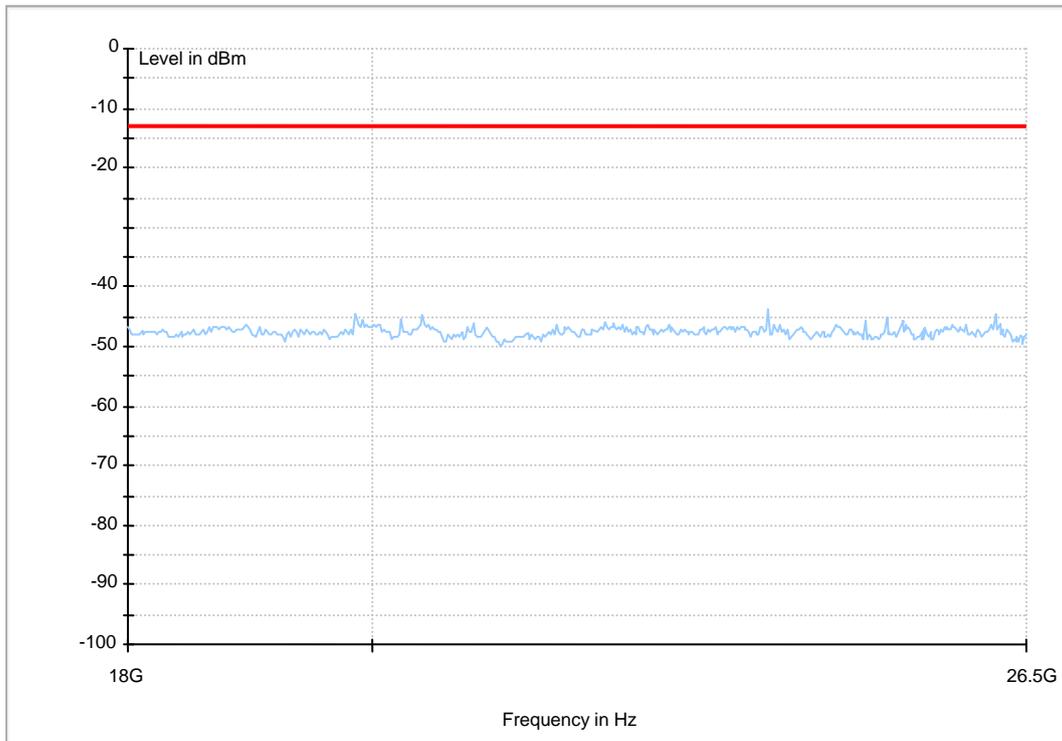
(30MHz~3GHz)



(3GHz~18GHz)

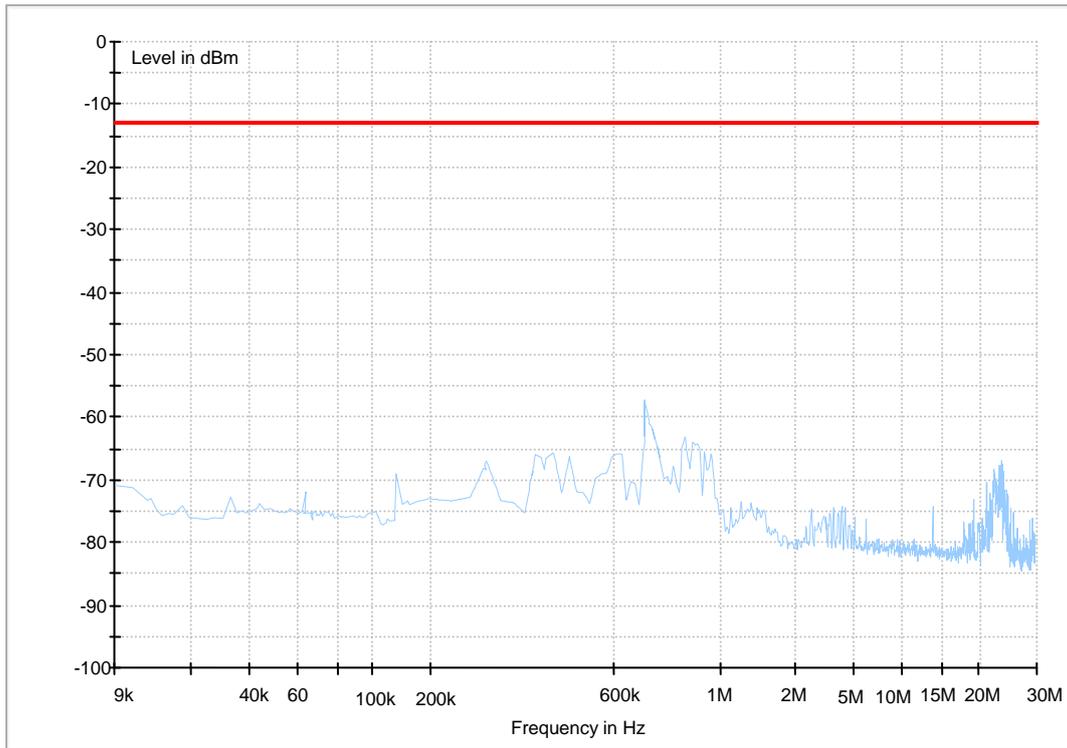


(18GHz-26.5GHz)

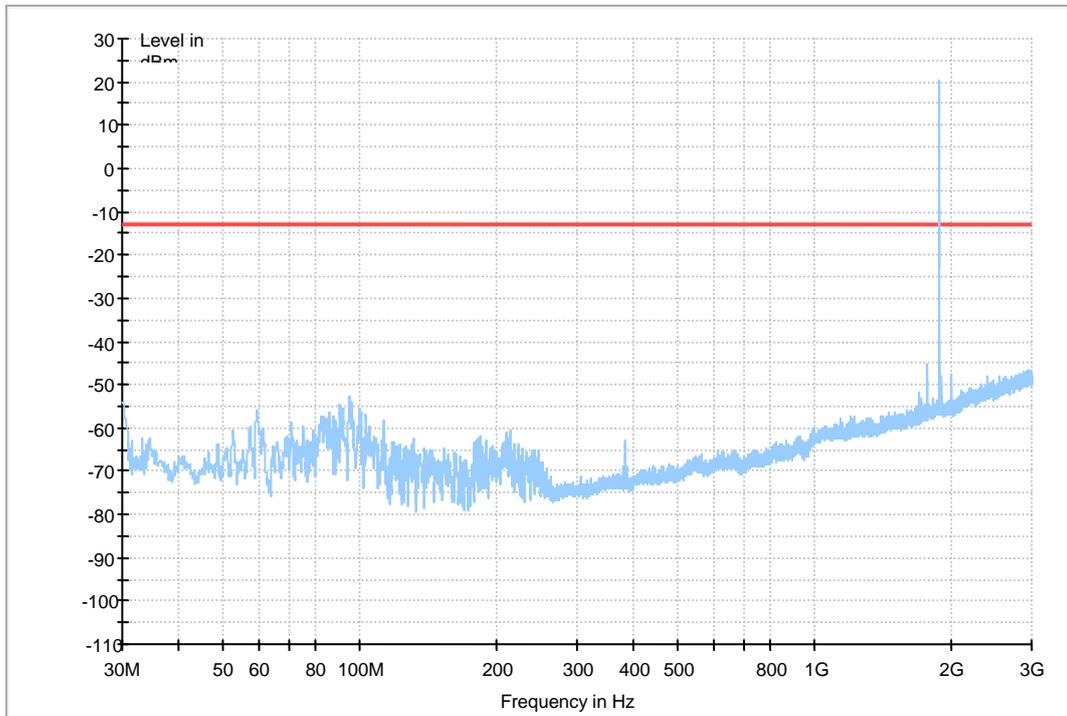


EDGE 1900

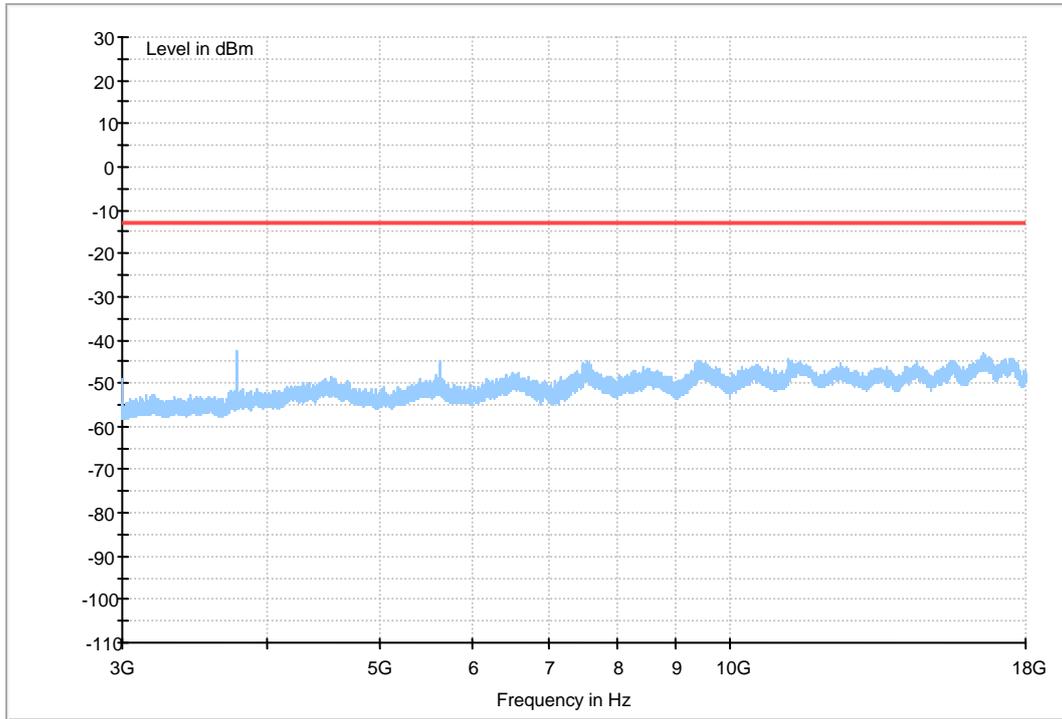
(9kHz-30MHz)



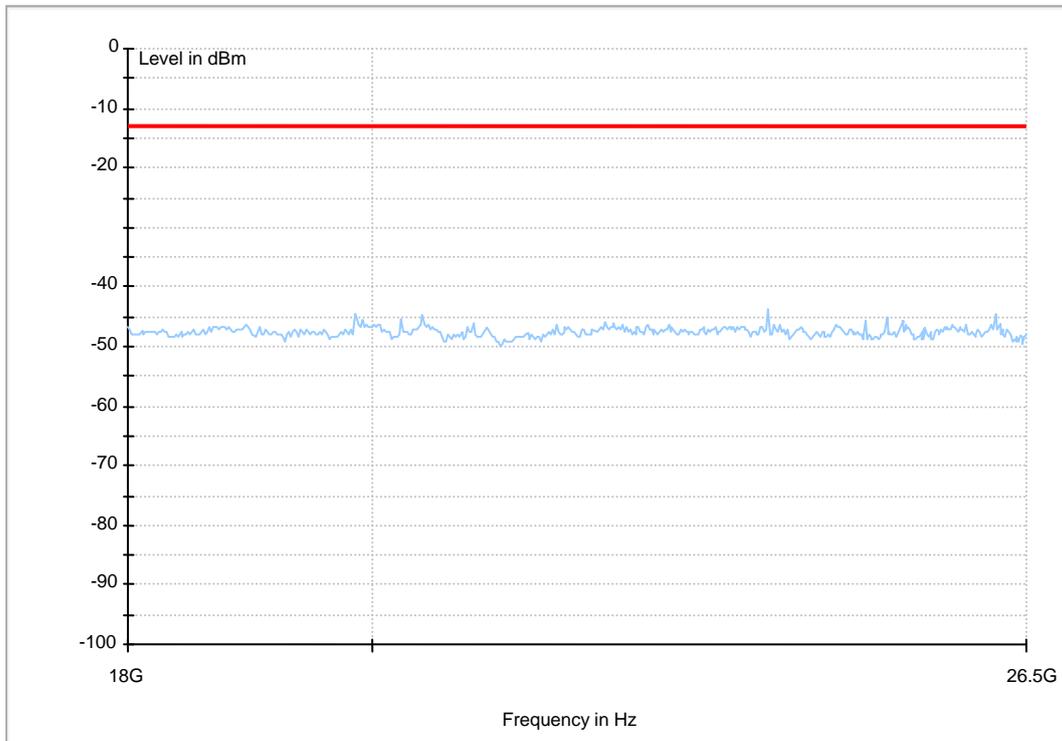
(30MHz~3GHz)



(3GHz~18GHz)

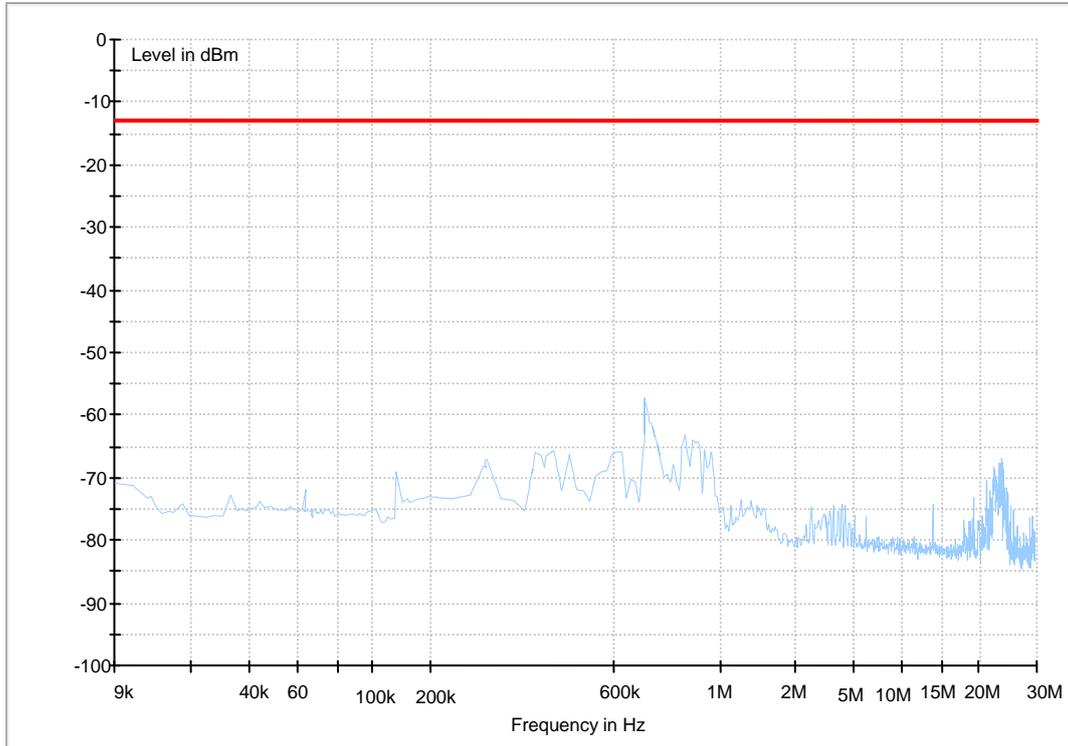


(18GHz-26.5GHz)

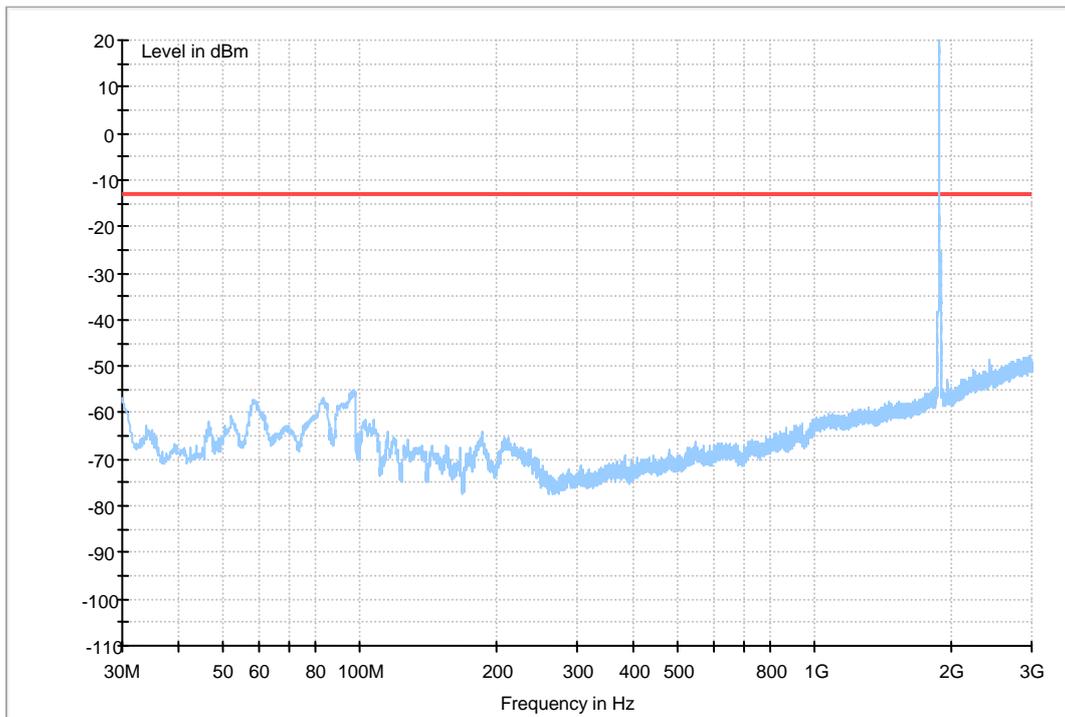


WCDMA Band II

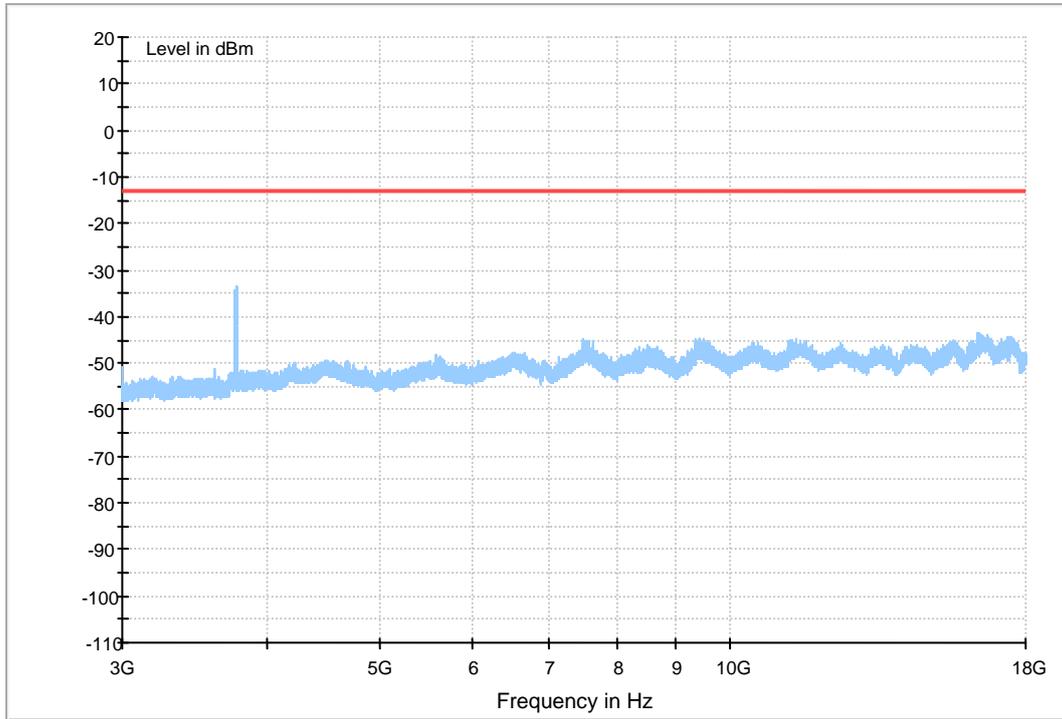
(9KHz~30MHz)



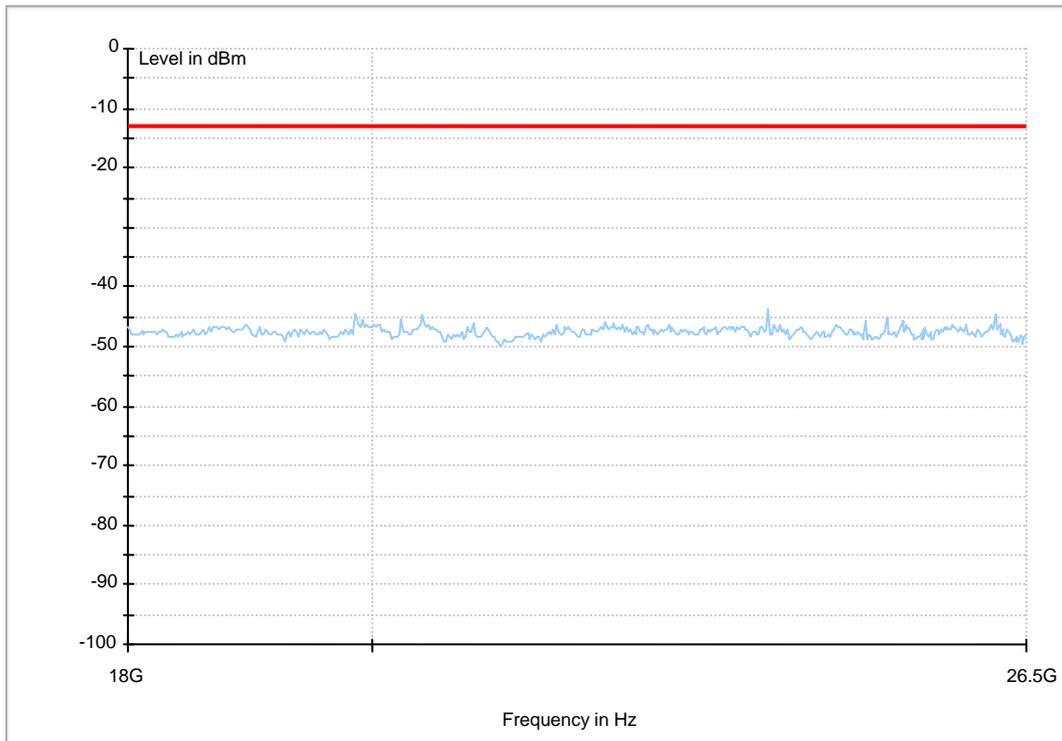
(30MHz~3GHz)



(3GHz~18GHz)

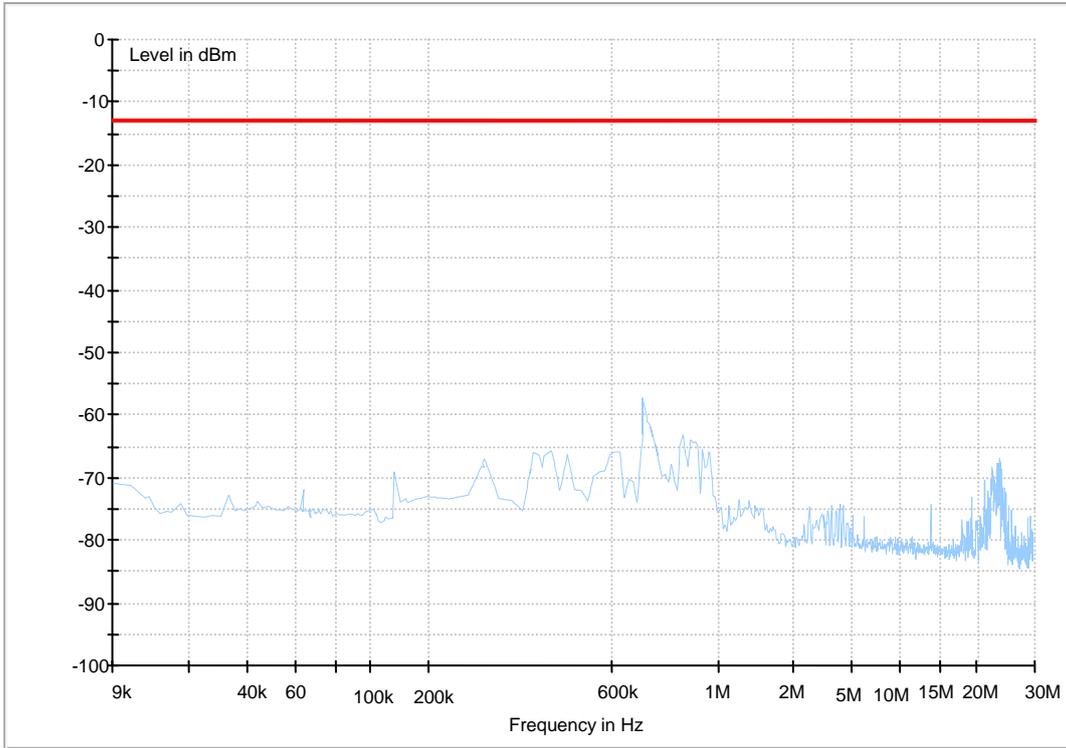


(18GHz~26.5GHz)

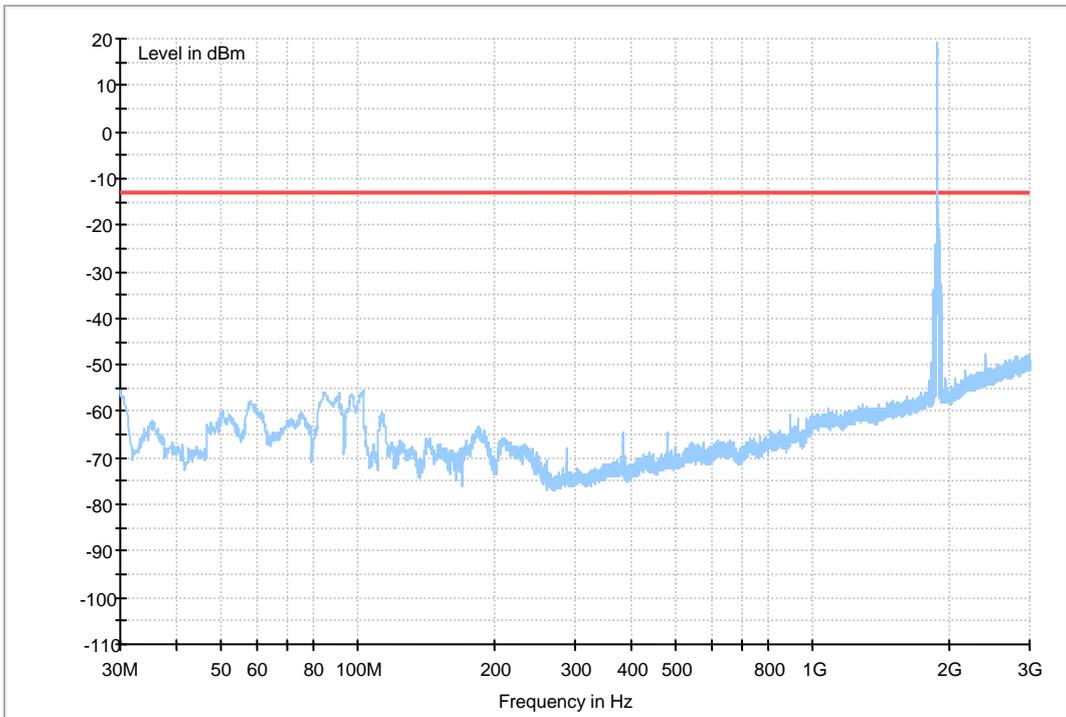


HSDPA Band II

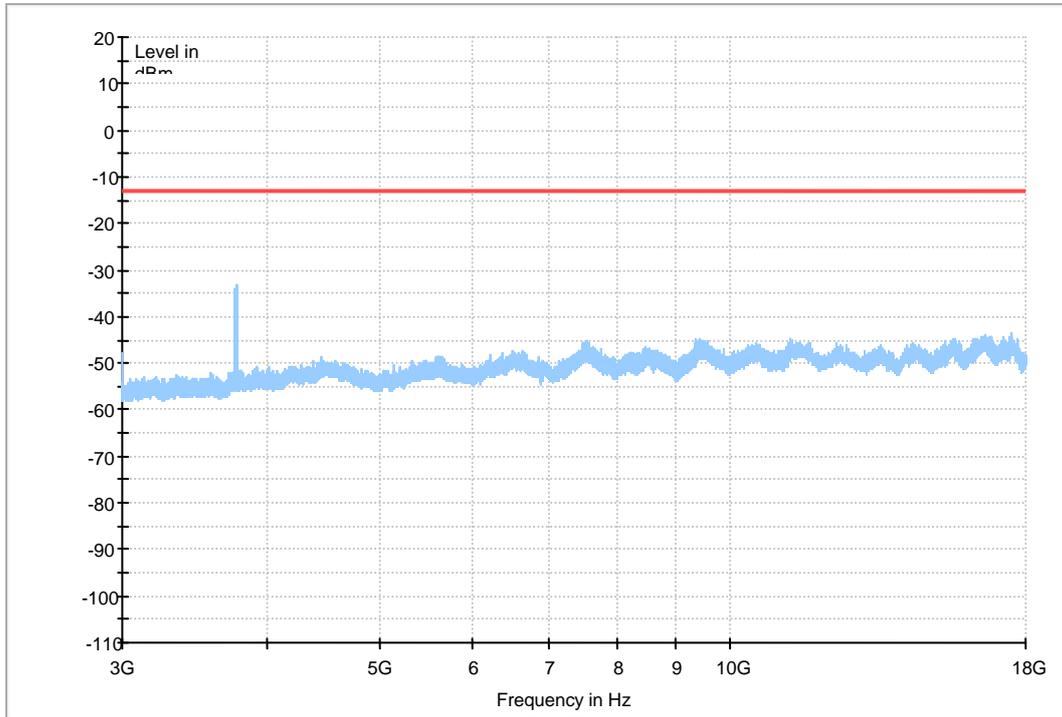
(9KHz~30MHz)



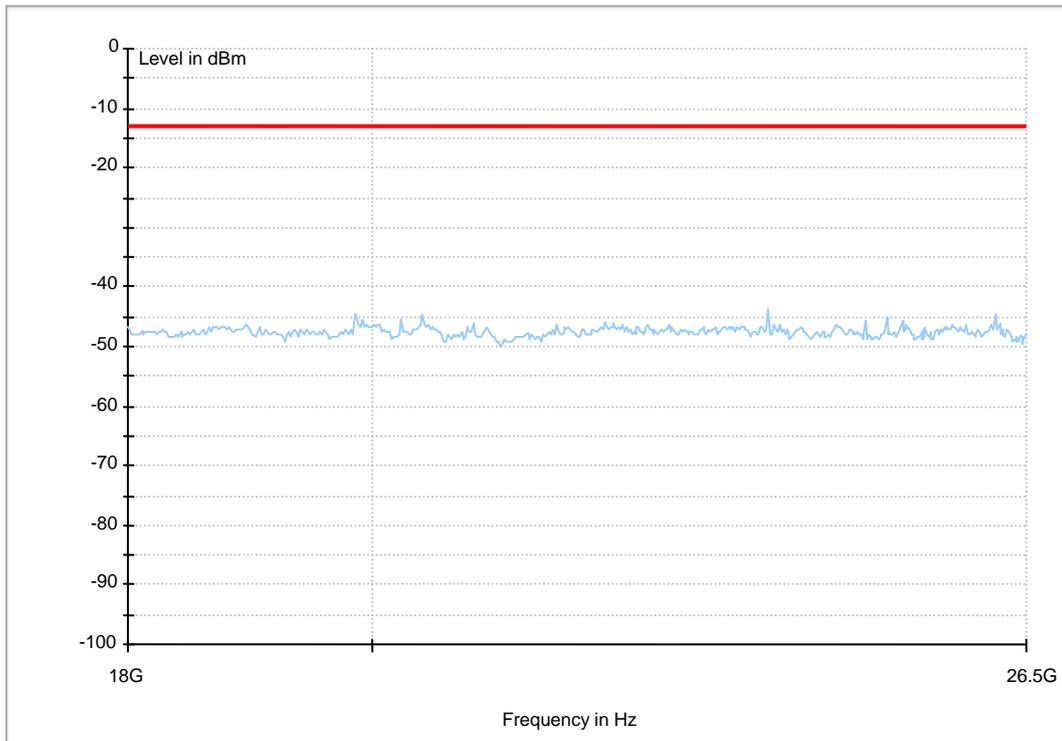
(30MHz ~3GHz)



(3GHz~18GHz)

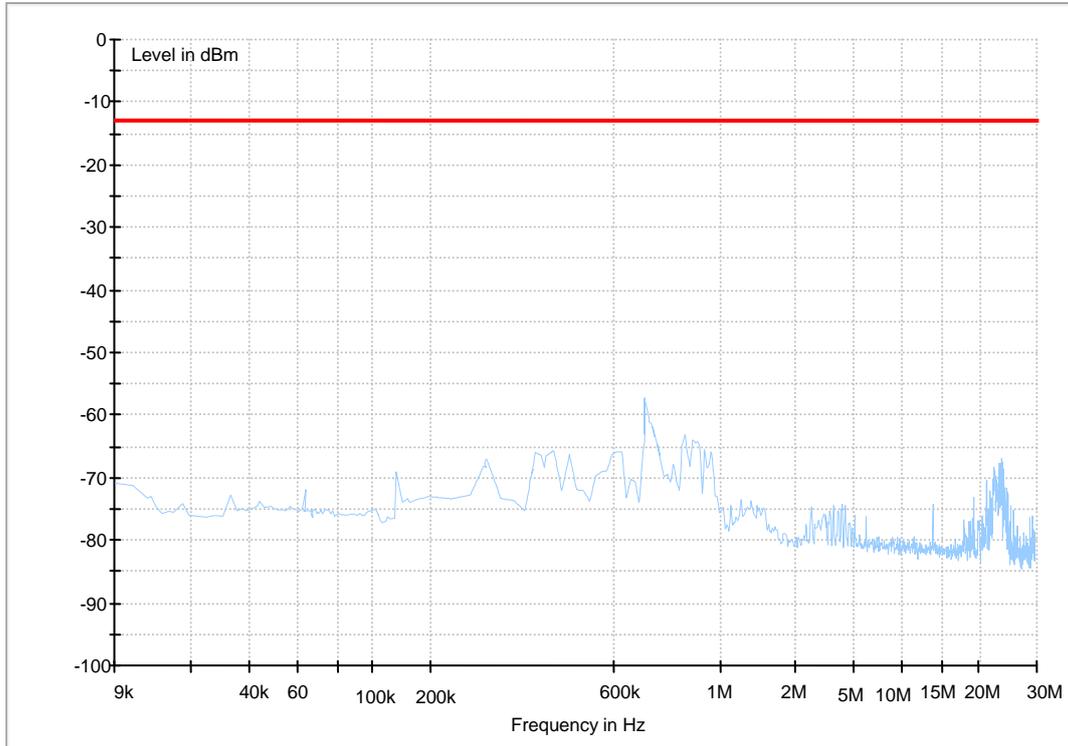


(18GHz~26.5GHz)

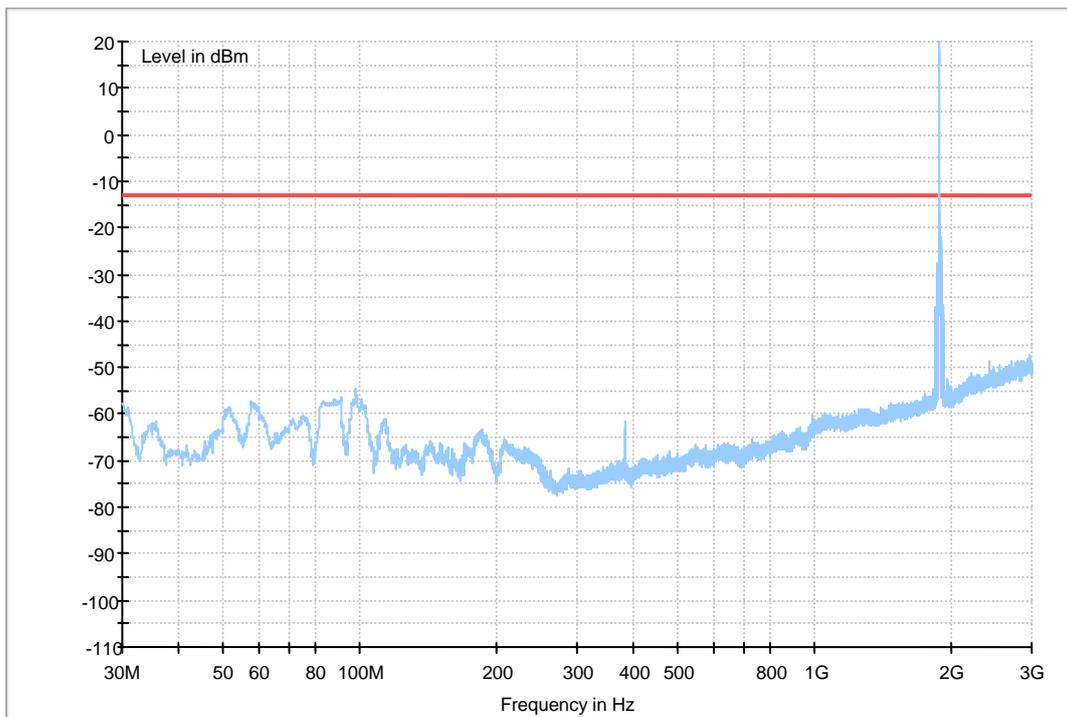


HSUPA Band II

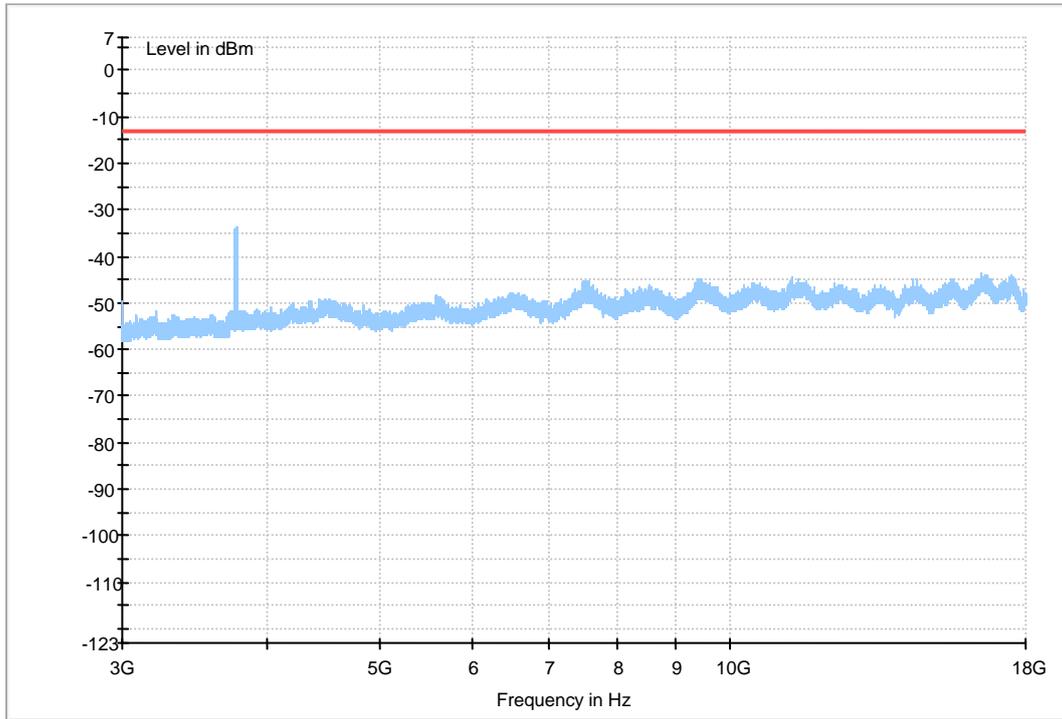
(9KHz~30MHz)



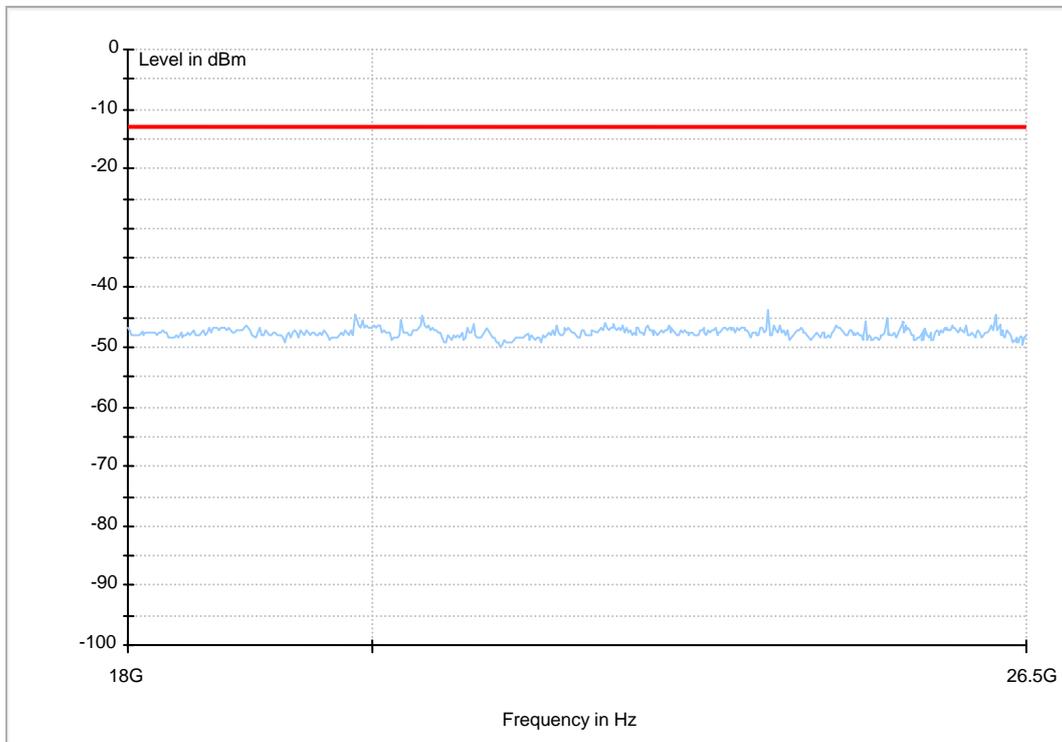
(30MHz~3GHz)



(3GHz~18GHz)



(18GHz~26.5GHz)



-----END-----



FCC Test Report of MU609T
FCC ID: QISMU609T



Appendix G

Frequency Stability

According to FCC Part 2.1055& Part 24.235



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	VN	-30 °C	-23	-0.01223	---	±2.5	Pass
			-20 °C	9	0.00479	---	±2.5	Pass
			-10 °C	-9	-0.00479	---	±2.5	Pass
			0 °C	-14	-0.00745	---	±2.5	Pass
			10 °C	-12	-0.00638	---	±2.5	Pass
			20 °C	11	0.00585	---	±2.5	Pass
			30 °C	9	0.00479	---	±2.5	Pass
			40 °C	10	0.00532	---	±2.5	Pass
TM 2	M	VN	50 °C	23	0.01223	---	±2.5	Pass
			-30 °C	-21	-0.01117	---	±2.5	Pass
			-20 °C	-8	-0.00426	---	±2.5	Pass
			-10 °C	10	0.00532	---	±2.5	Pass
			0 °C	25	0.01330	---	±2.5	Pass
			10 °C	-19	-0.01011	---	±2.5	Pass
			20 °C	14	0.00745	---	±2.5	Pass
			30 °C	14	0.00745	---	±2.5	Pass
TM 3	M	VN	40 °C	20	0.01064	---	±2.5	Pass
			50 °C	20	0.01064	---	±2.5	Pass
			-30 °C	20	0.01064	---	±2.5	Pass
			-20 °C	28	0.01489	---	±2.5	Pass
			-10 °C	18	0.00957	---	±2.5	Pass
			0 °C	-11	-0.00585	---	±2.5	Pass
			10 °C	-16	-0.00851	---	±2.5	Pass
			20 °C	28	0.01489	---	±2.5	Pass
30 °C	-12	-0.00638	---	±2.5	Pass			
40 °C	9	0.00479	---	±2.5	Pass			
50 °C	27	0.01436	---	±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	TN	VL	-8	-0.00426	---	±2.5	Pass
			VN	27	0.01436	---	±2.5	Pass
			VH	18	0.00957	---	±2.5	Pass
TM 2	M	TN	VL	-18	-0.00957	---	±2.5	Pass
			VN	-21	-0.01117	---	±2.5	Pass
			VH	14	0.00745	---	±2.5	Pass
TM 3	M	TN	VL	-7	-0.00372	---	±2.5	Pass
			VN	-13	-0.00691	---	±2.5	Pass
			VH	12	0.00638	---	±2.5	Pass

-----The END-----