



Appendix A

Transmitter Output Power

According to FCC Part 2.1046 & Part 22.913



Conducted Power of Transmitter

TEST CONDITIONS	RF Output Power (Conducted)					
	Channel128(L)		Channel192(M)		Channel251(H)	
	824.2MHz		837.0MHz		848.8MHz	
	dBm		dBm		dBm	
T_{nom} / V_{nom}	Measured	Limit	Measured	Limit	Measured	Limit
TM1	32.28	38.5	32.34	38.5	32.23	38.5
TM2	25.91	38.5	25.74	38.5	25.33	38.5



Effective Radiated Power of Transmitter (ERP)

Test Mode	Freq. [MHz]	Meas. Level [dBm]	Substitution Antenna Type	SGP [dBm]	Substitution Gain [dBi]	Cable Loss [dB]	Substitution Level (ERP)	FCC limit [dBm]	Result
							[dBm]		
TM1	824.2	31.8	Dipole Ant.	34.95	-2.75	0.6	31.6	38.5	Pass
TM1	837.0	31.86	Dipole Ant.	35.13	-2.87	0.6	31.66	38.5	Pass
TM1	848.8	31.75	Dipole Ant.	35	-2.85	0.6	31.55	38.5	Pass
TM2	824.2	25.43	Dipole Ant.	28.58	-2.75	0.6	25.23	38.5	Pass
TM2	837.0	25.26	Dipole Ant.	28.8	-2.87	0.6	25.33	38.5	Pass
TM2	848.8	24.85	Dipole Ant.	28.46	-2.85	0.6	25.01	38.5	Pass

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

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

b, SGP=Signal Generator Level

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



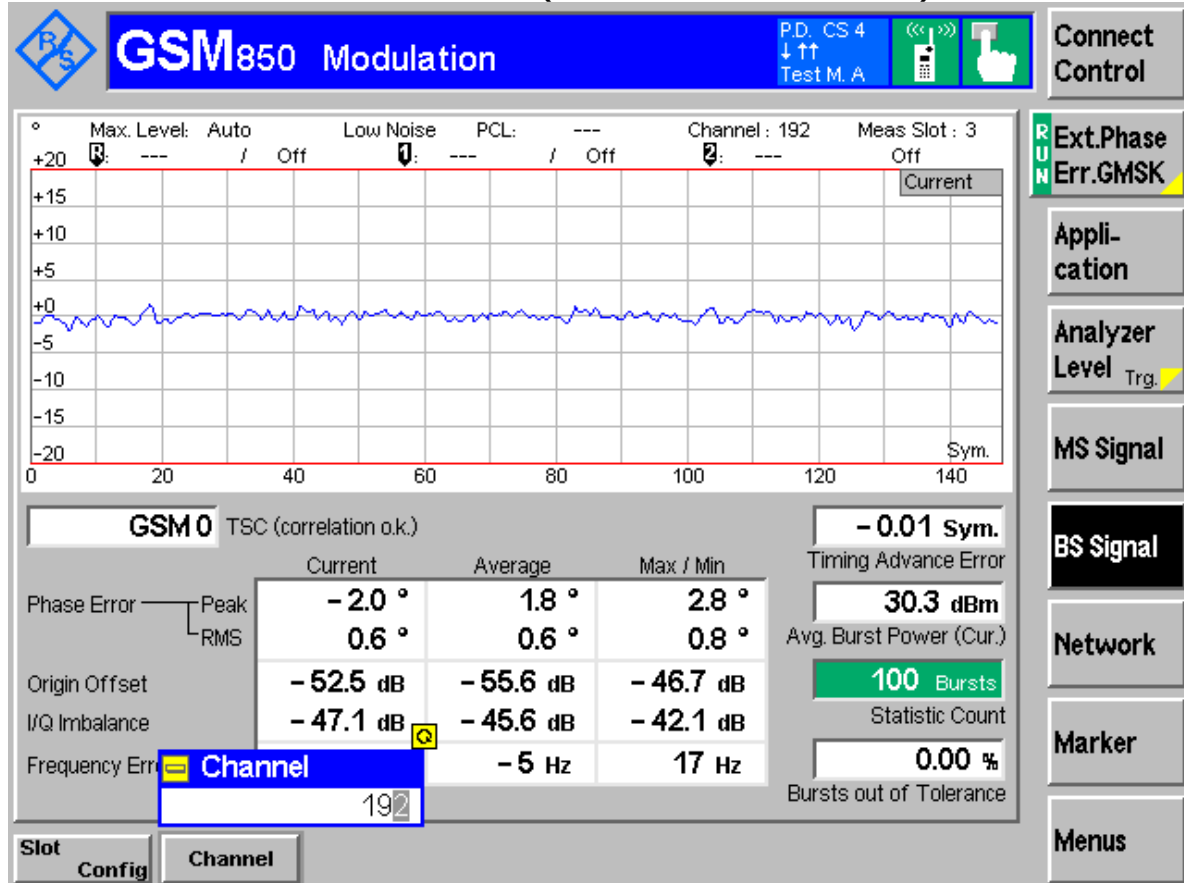
Appendix B

Modulation Characteristics

According to FCC Part 2.1047 & Part22 Subpart H

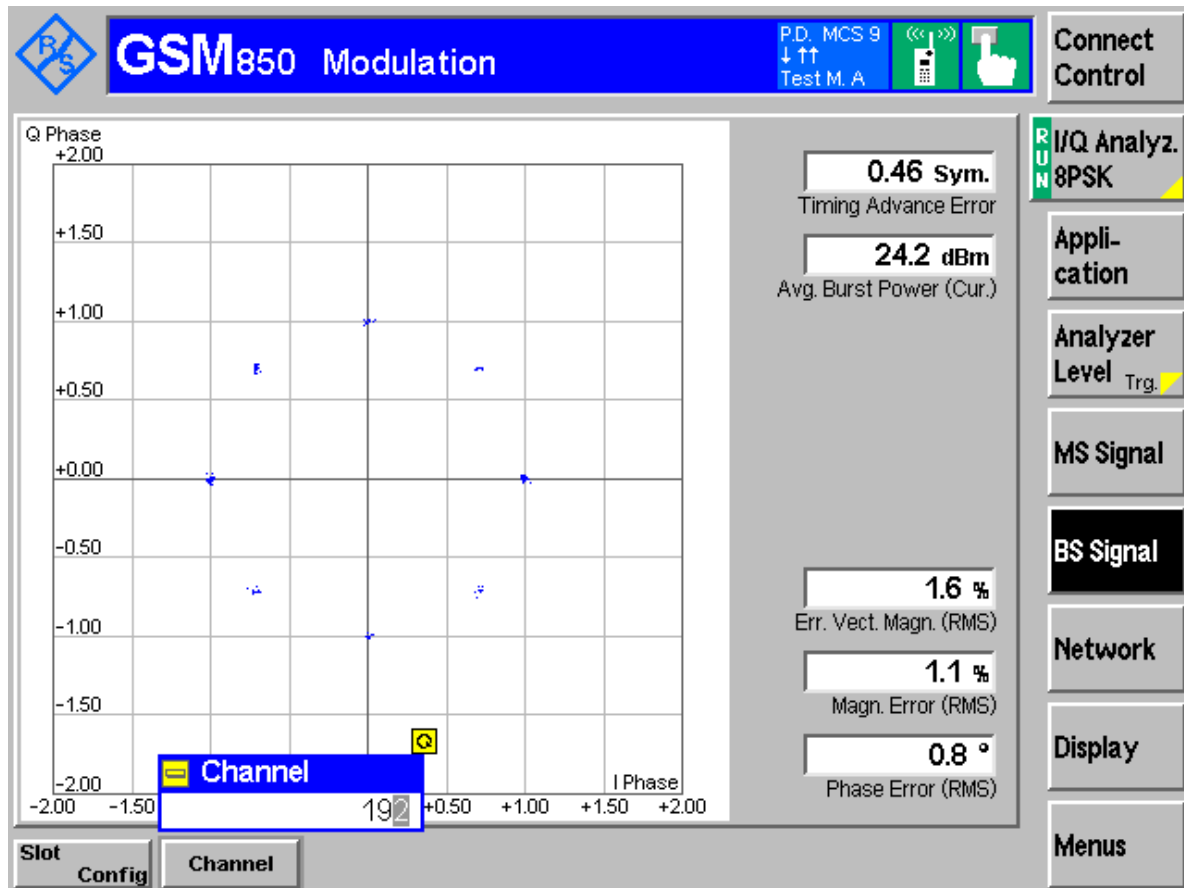


Channel 192(TM1:GPRS/GSM)





Channel 192(TM2:EDGE)



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



Appendix C

Occupied Bandwidth According to FCC Part 2.1049 & Part 22 Subpart H



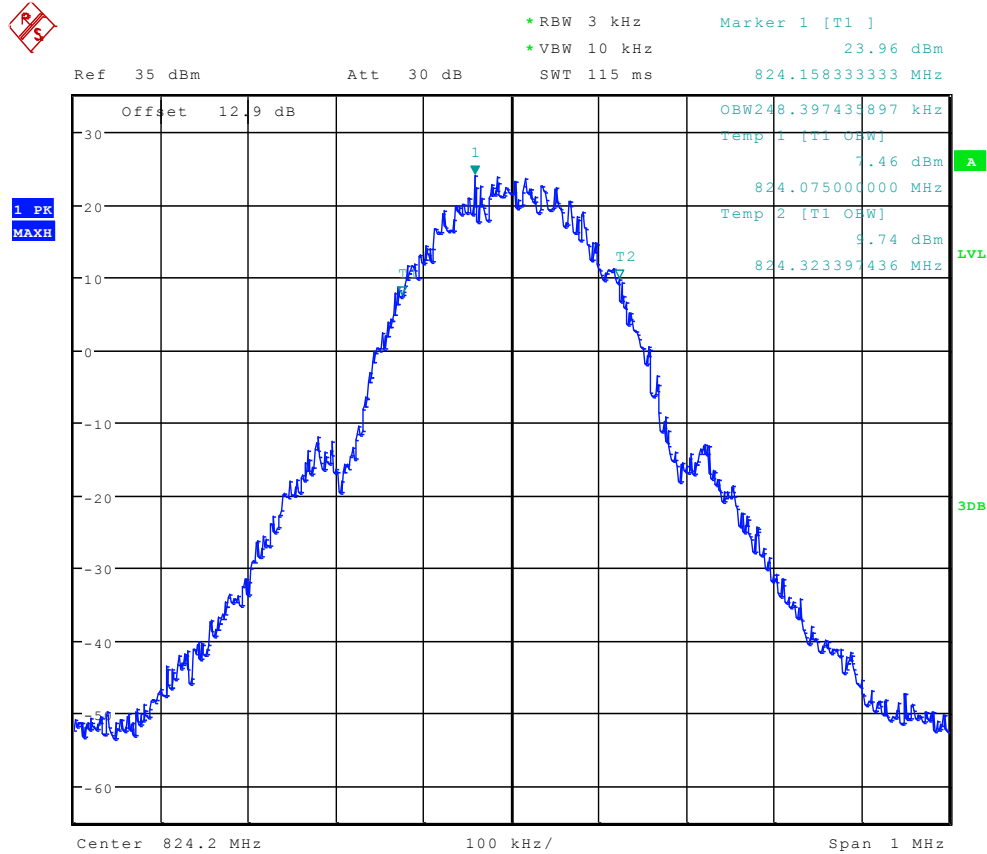
Result Table

Table 1 Measurement Results

Test Mode	RF Channel	Occupied Bandwidth [kHz]	Verdict
TM1	128	248.39	Pass
	192	243.59	Pass
	251	245.19	Pass
TM2	128	237.18	Pass
	192	243.59	Pass
	251	243.59	Pass



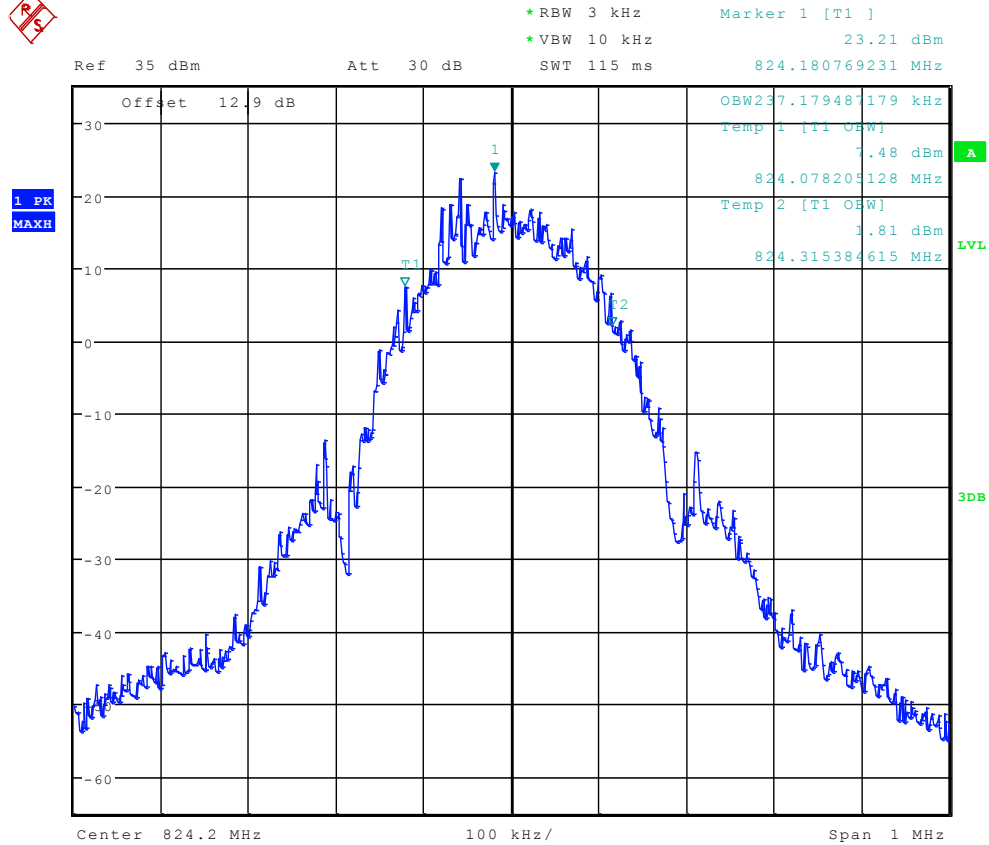
Channel 128 (TM1:GPRS/GSM)



Date: 8.AUG.2012 22:06:12



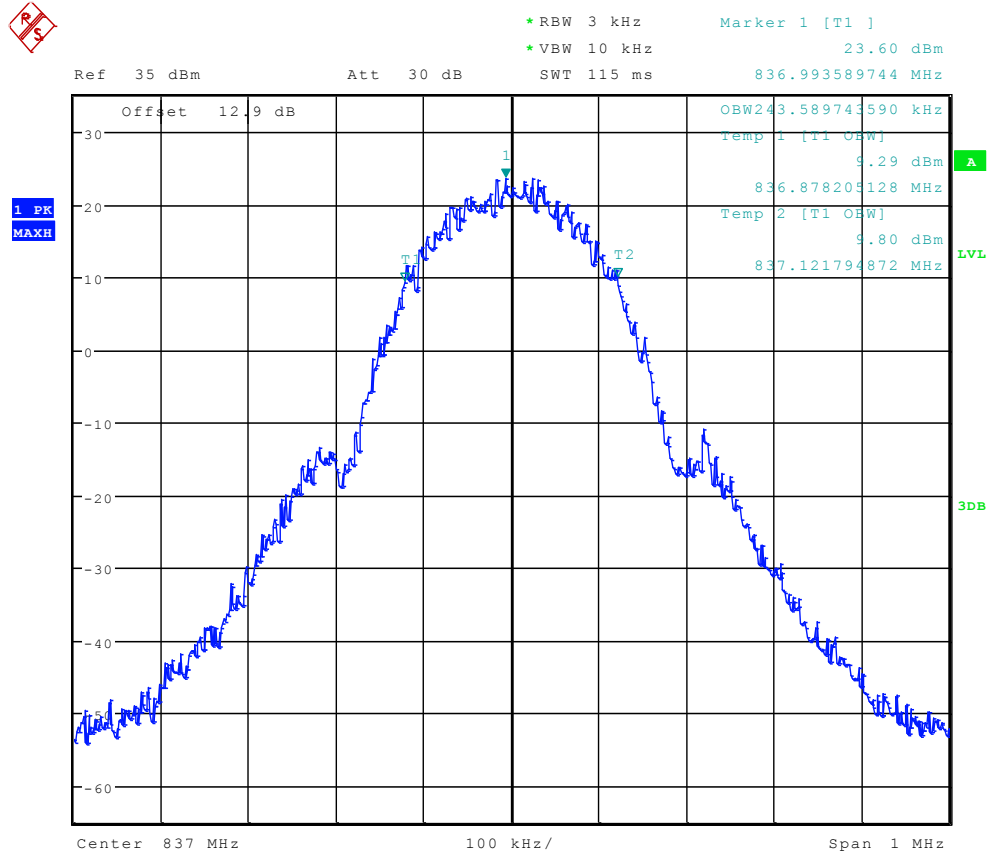
Channel 128 (TM2:EDGE)



Date: 8.AUG.2012 22:14:28



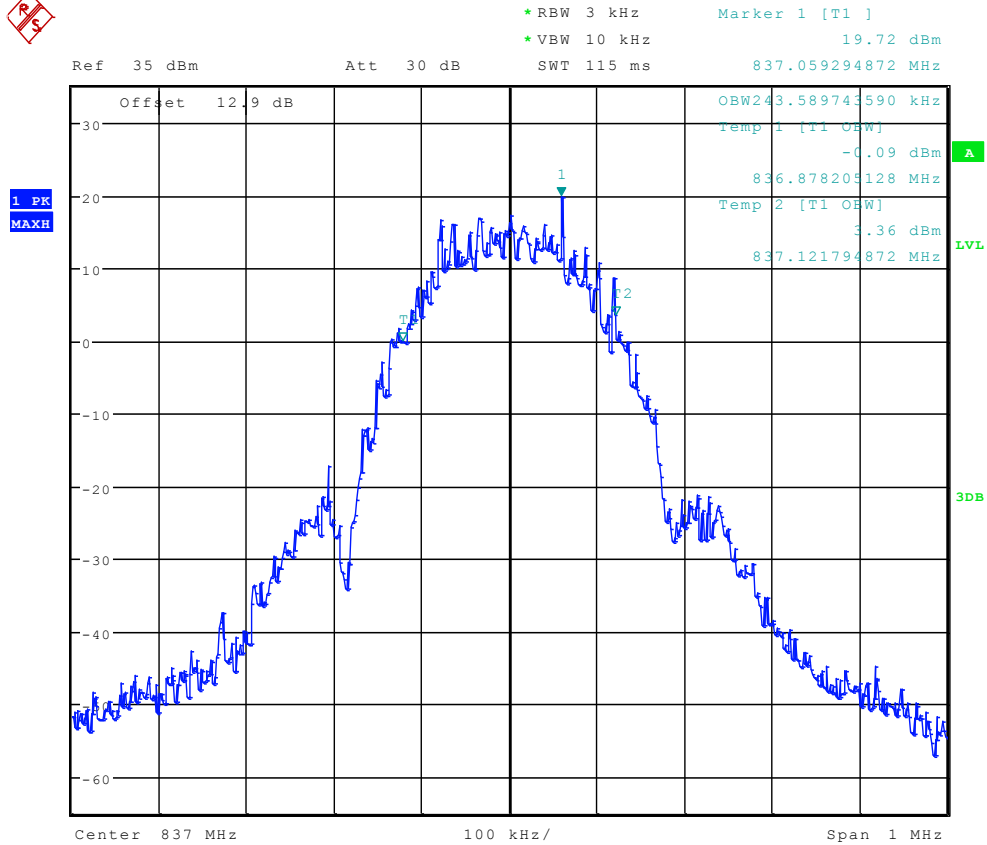
Channel 192 (TM1:GPRS/GSM)



Date: 8.AUG.2012 22:06:33



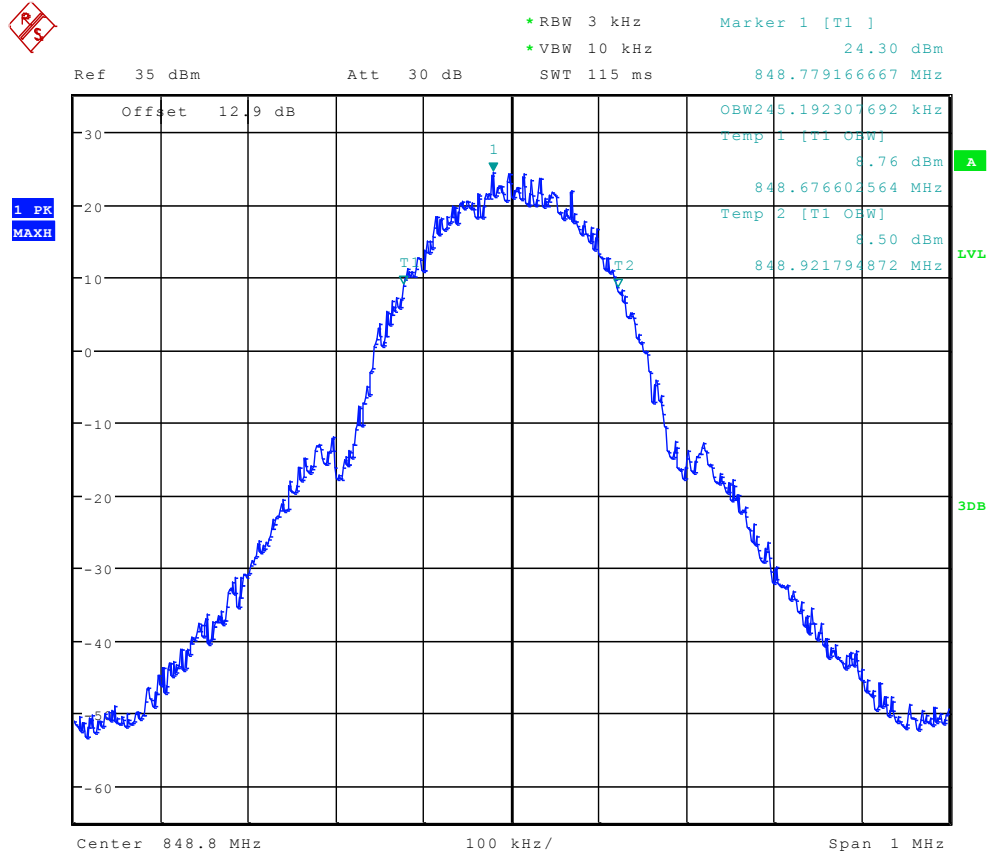
Channel 192 (TM2:EDGE)



Date: 8.AUG.2012 22:14:42



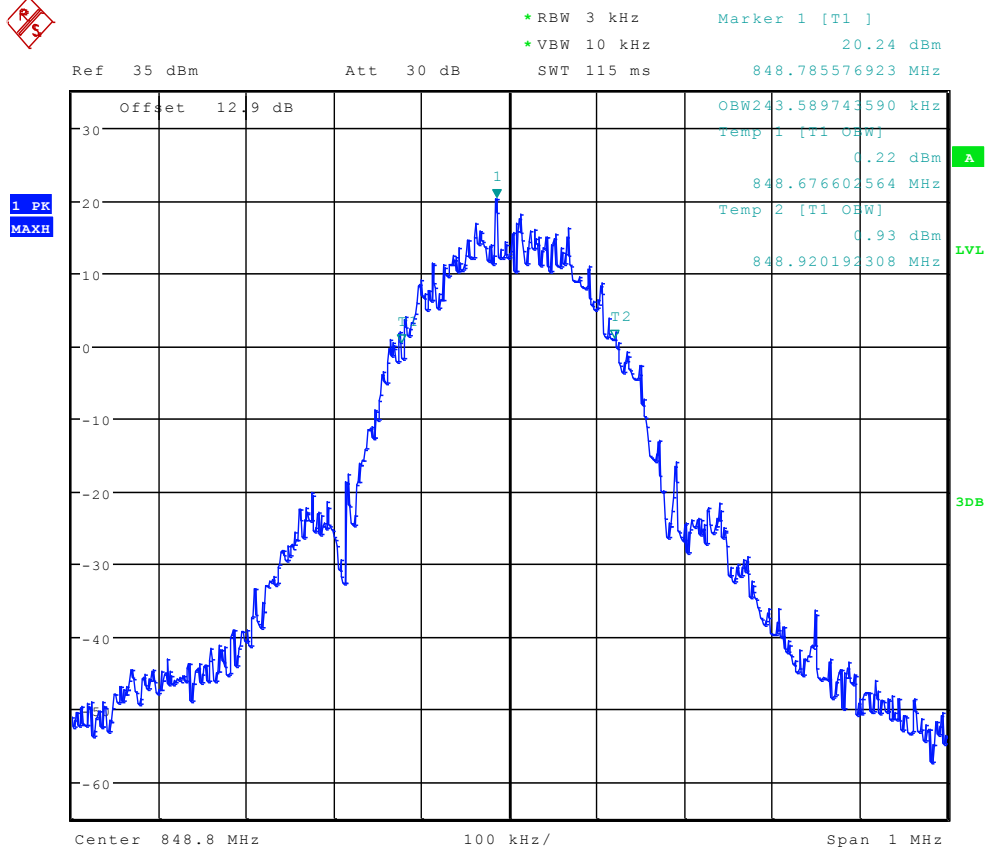
Channel 251 (TM1:GPRS/GSM)



Date: 8.AUG.2012 22:07:12



Channel 251 (TM2:EDGE)



Date: 8.AUG.2012 22:14:55

-----END-----



Appendix D

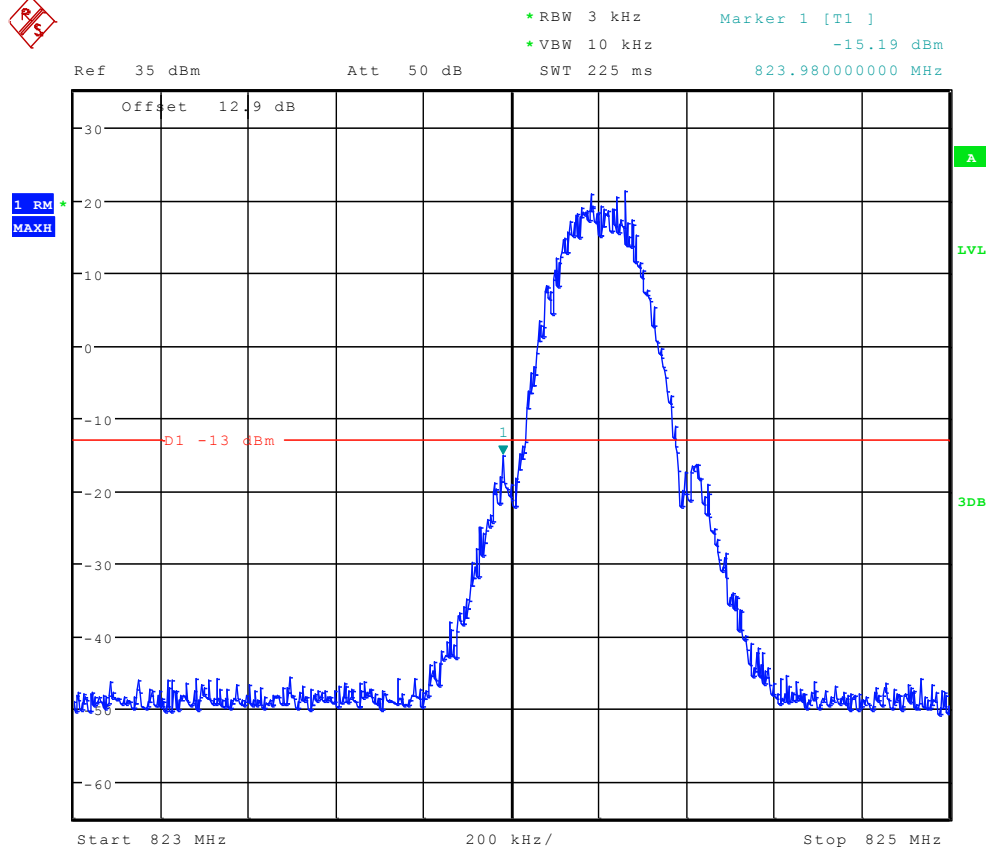
Band Edges Compliance According to FCC Part 2.1051 & Part22 Subpart H



TM1:GPRS/GSM

Left Edge

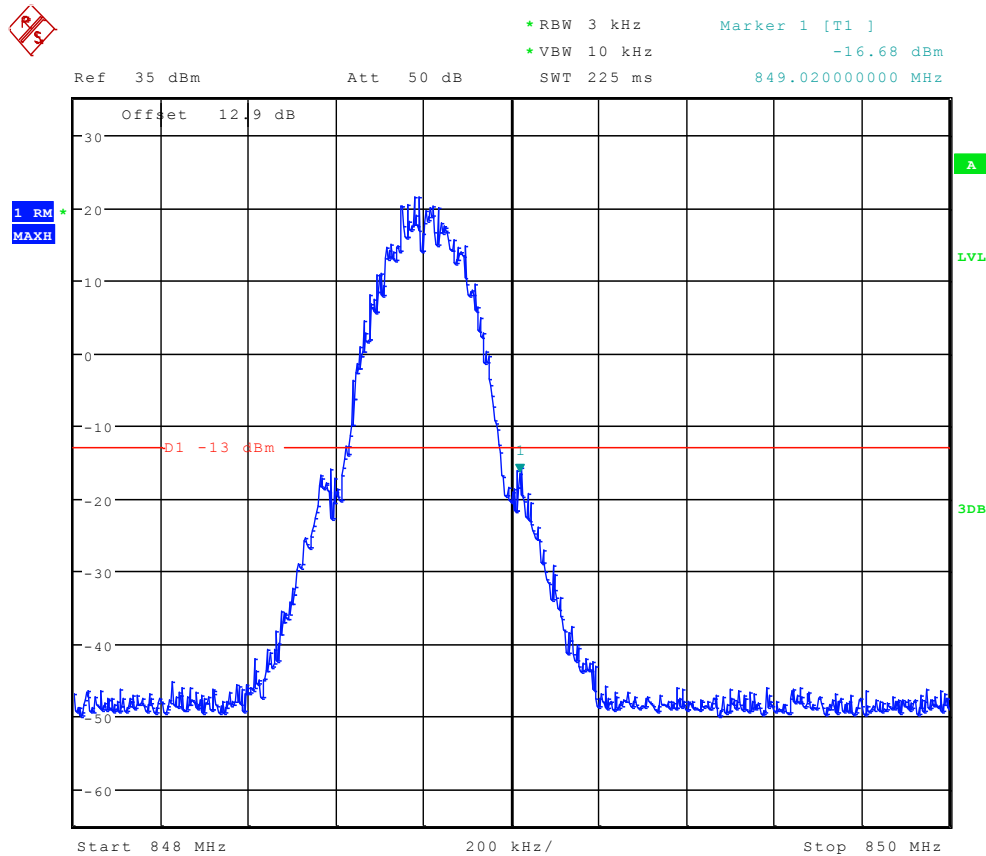
Channel 128



Date: 8.AUG.2012 22:11:58



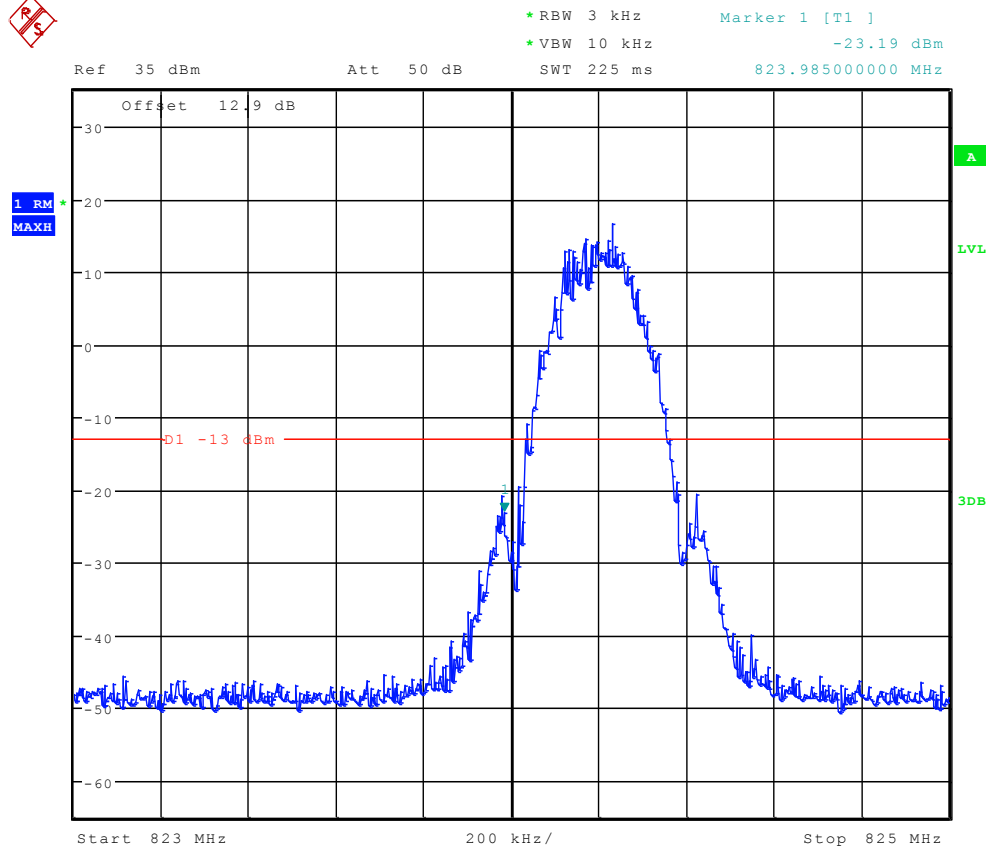
Right Edge Channel 251



Date: 8.AUG.2012 22:12:27



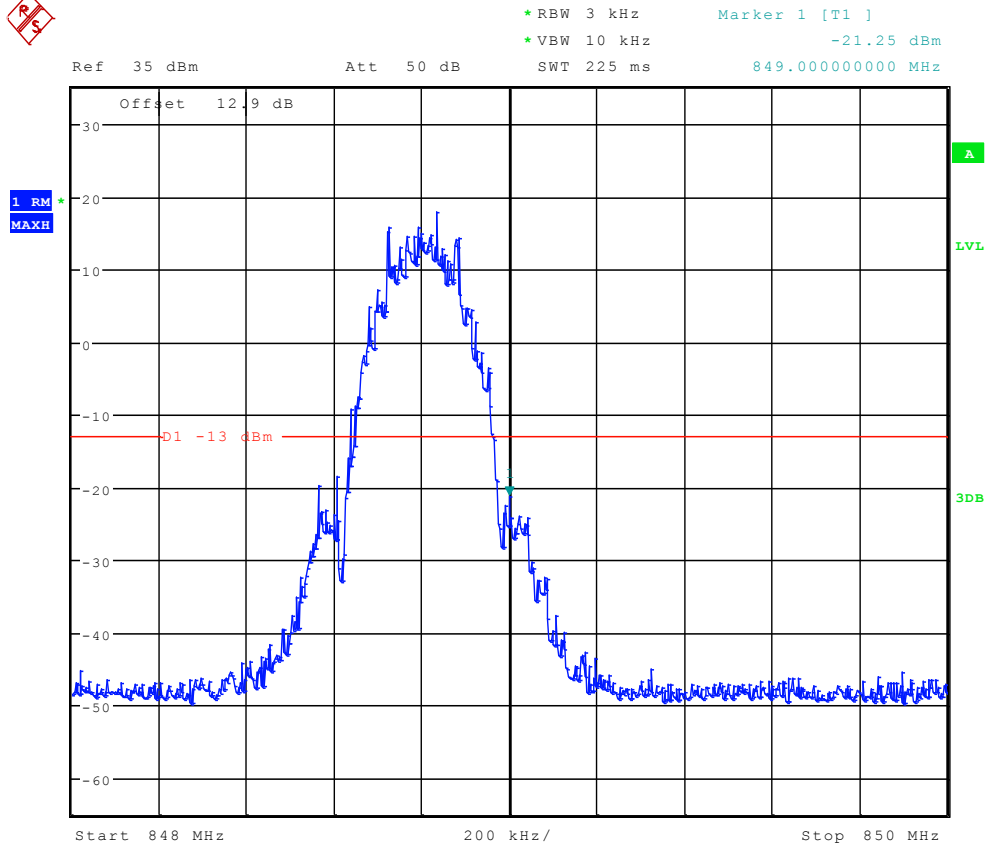
TM2:EDGE Left Edge Channel 128



Date: 8.AUG.2012 22:18:38



Right Edge Channel 251



Date: 8.AUG.2012 22:19:16

-----END-----

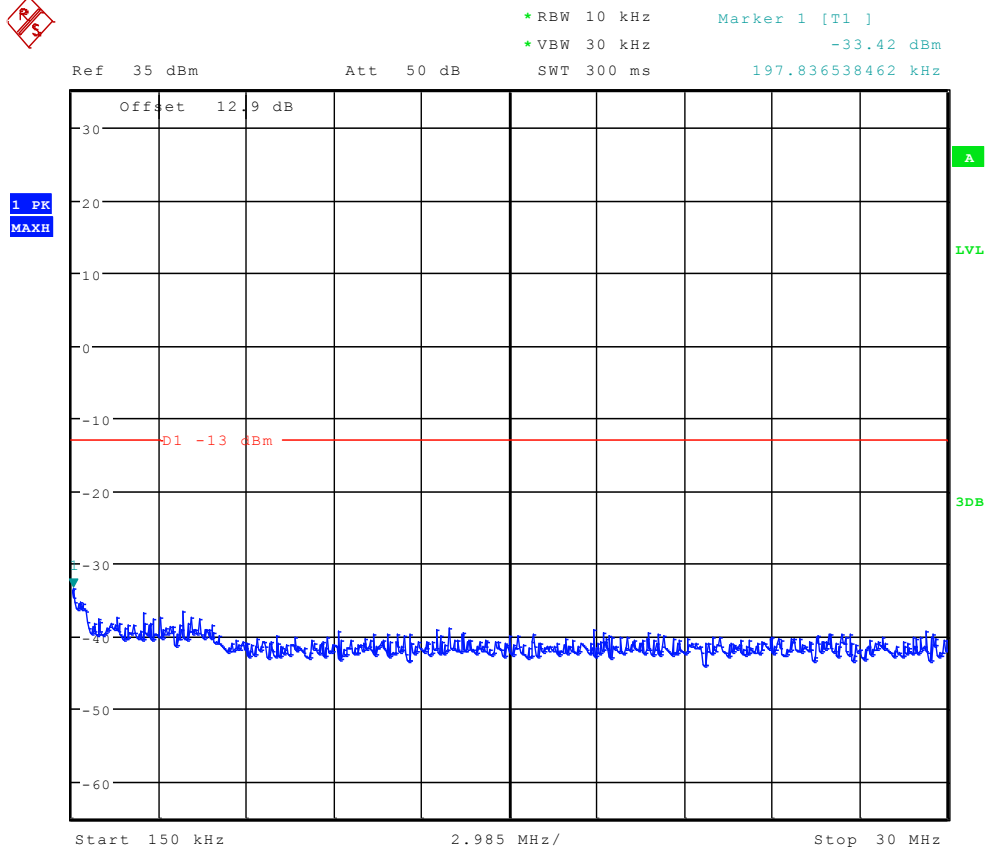


Appendix E

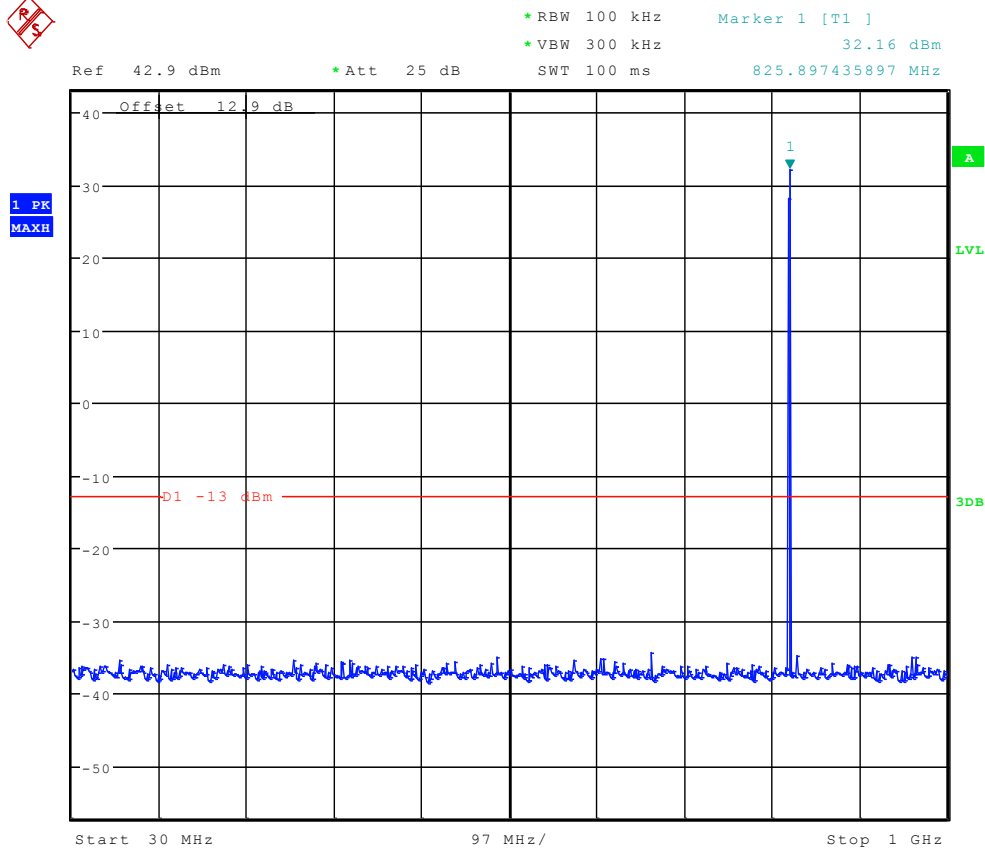
Spurious Emission at Antenna Terminal

According to FCC Part 2.1051 & Part22 Subpart H

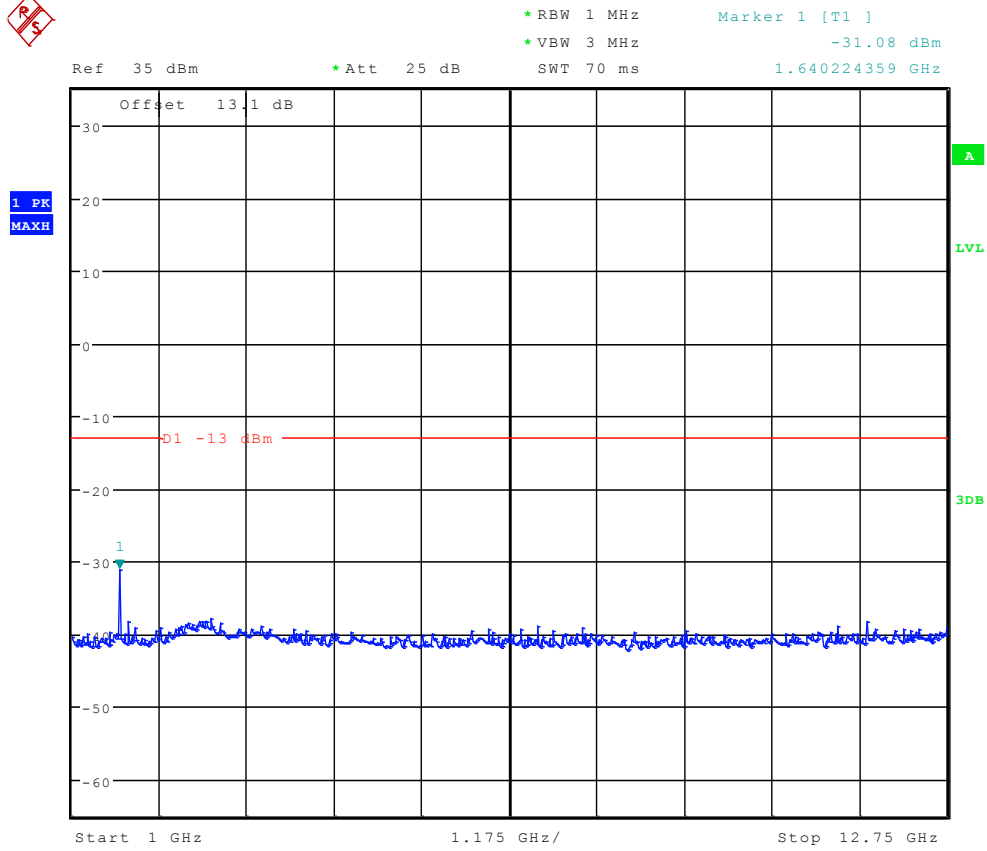




Date: 8.AUG.2012 22:08:11



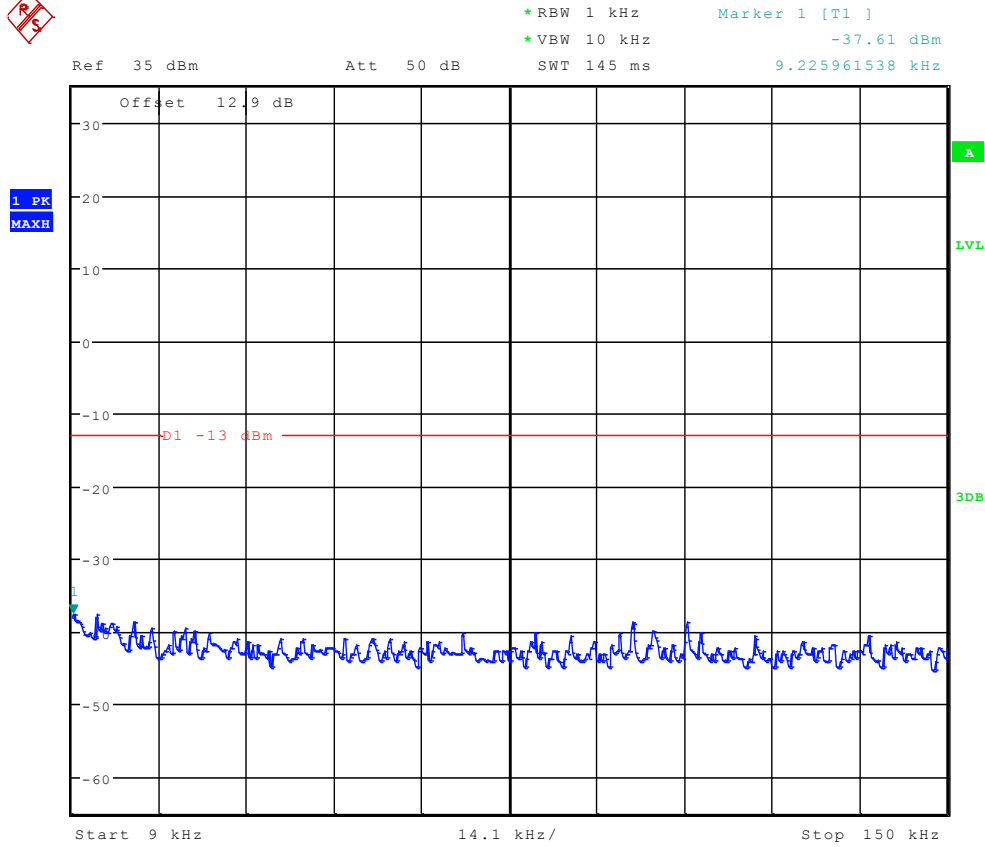
Date: 8.AUG.2012 22:10:25



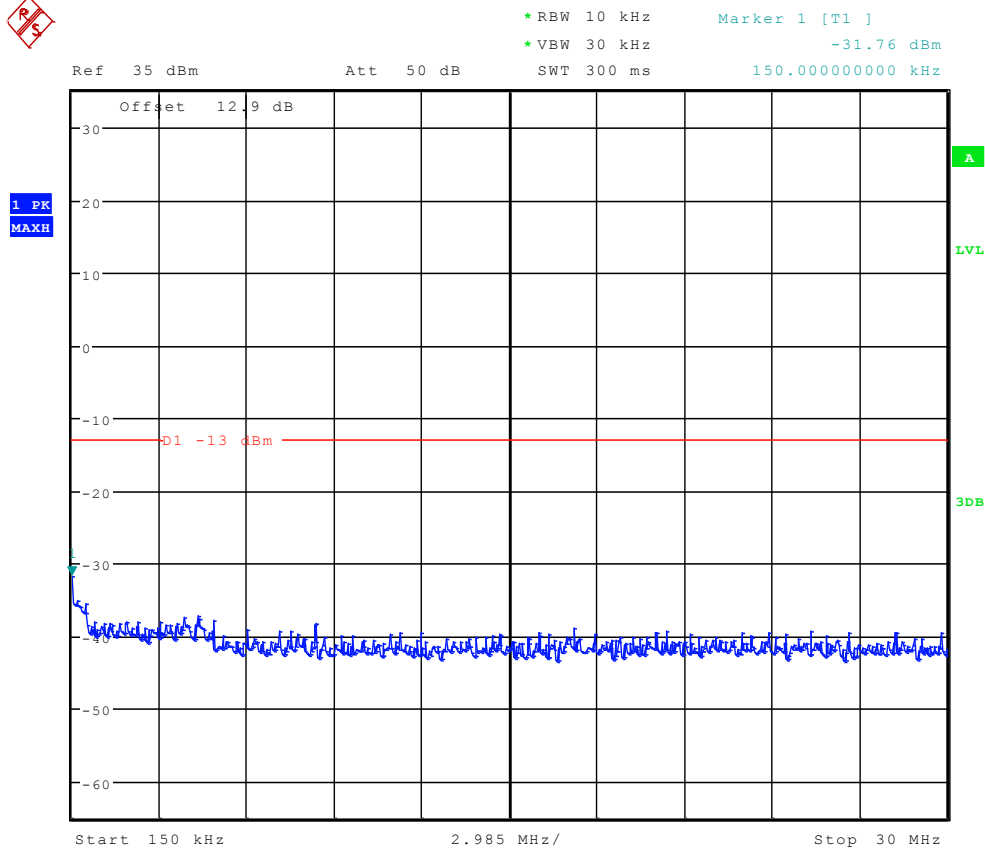
Date: 8.AUG.2012 22:11:09



Channel 192



Date: 8.AUG.2012 22:07:41



Date: 8.AUG.2012 22:08:25



```
Ref 42.9 dBm      * Att 25 dB      SWT 100 ms      838.333333333 MHz
```





Ref 35 dBm * Att 25 dB SWT 70 ms 1.659054487 GHz

Offset 13.1 dB

D1 -13 dBm

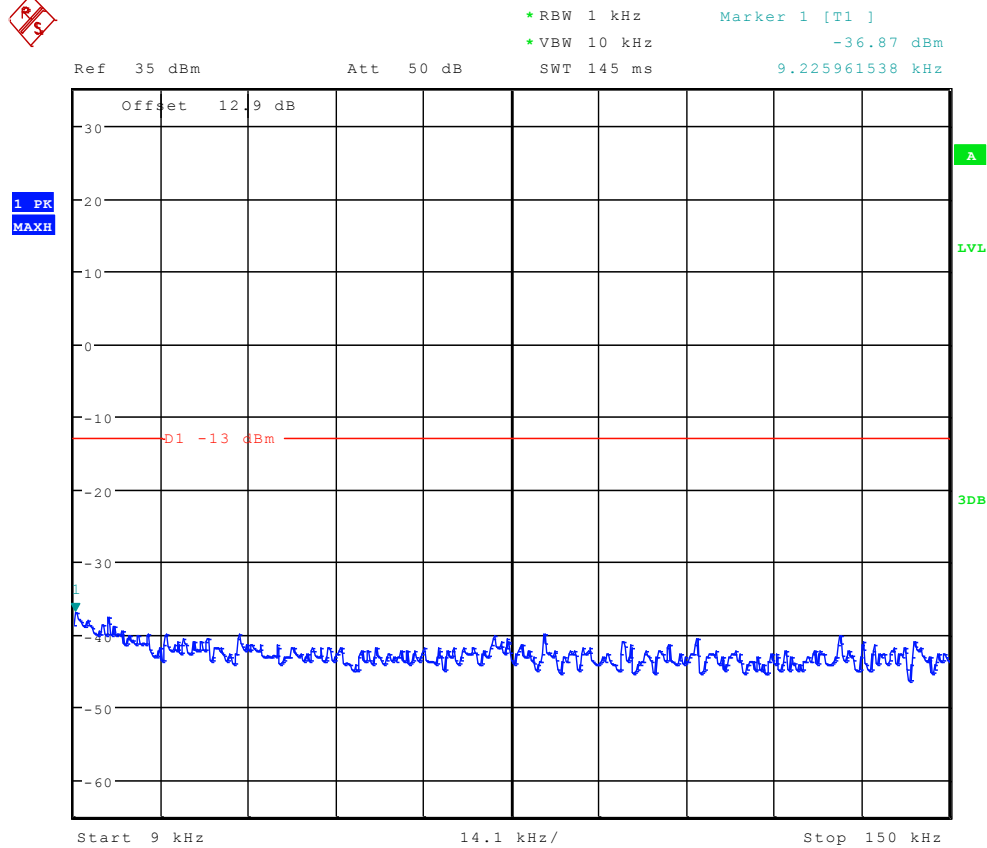
1

Start 1 GHz 1.175 GHz/ Stop 12.75 GHz

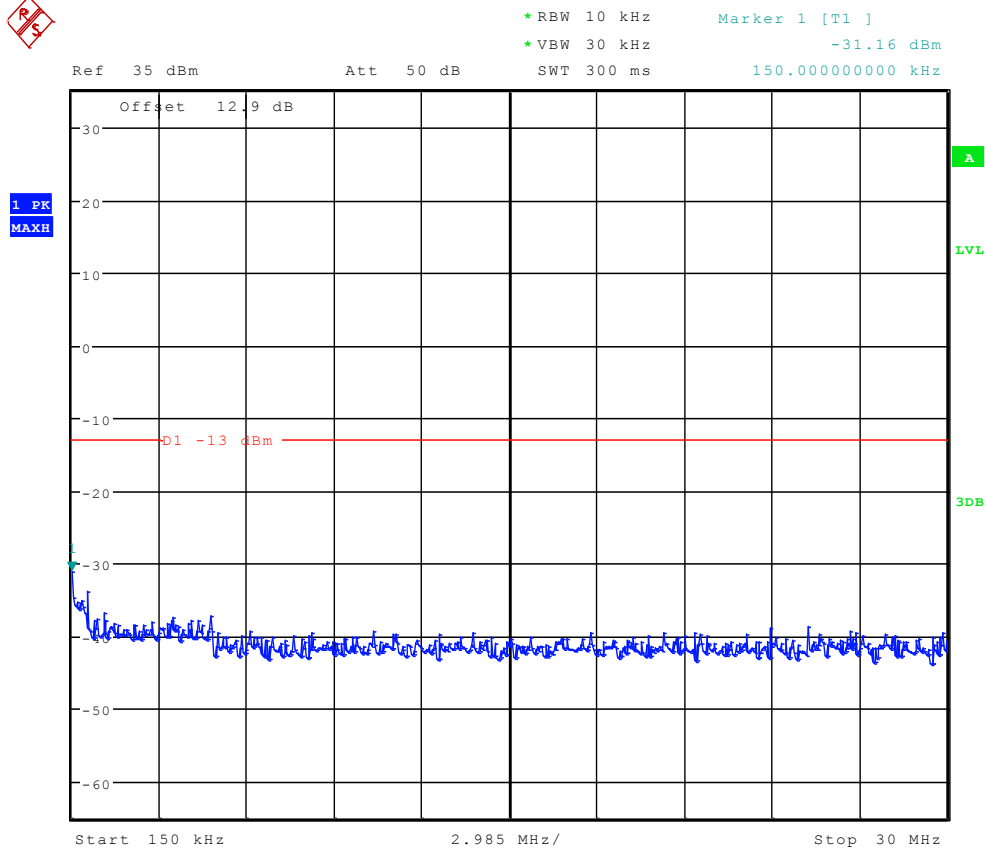
Date: 8.AUG.2012 22:11:24



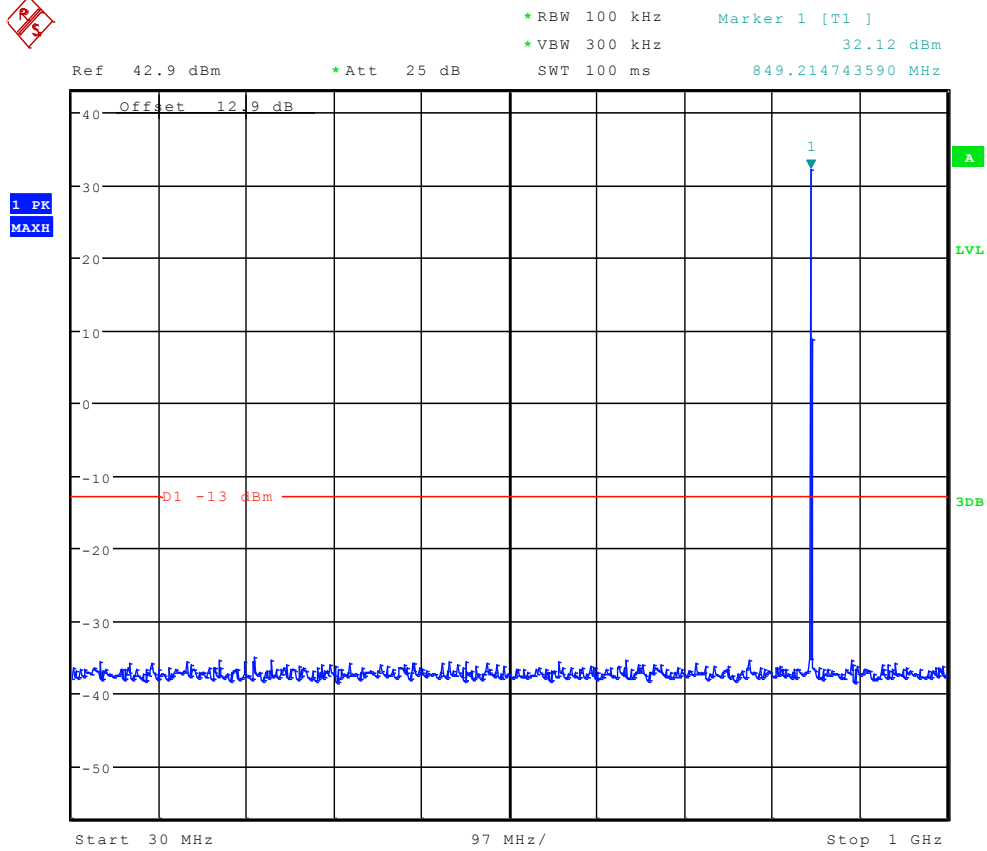
Channel 251



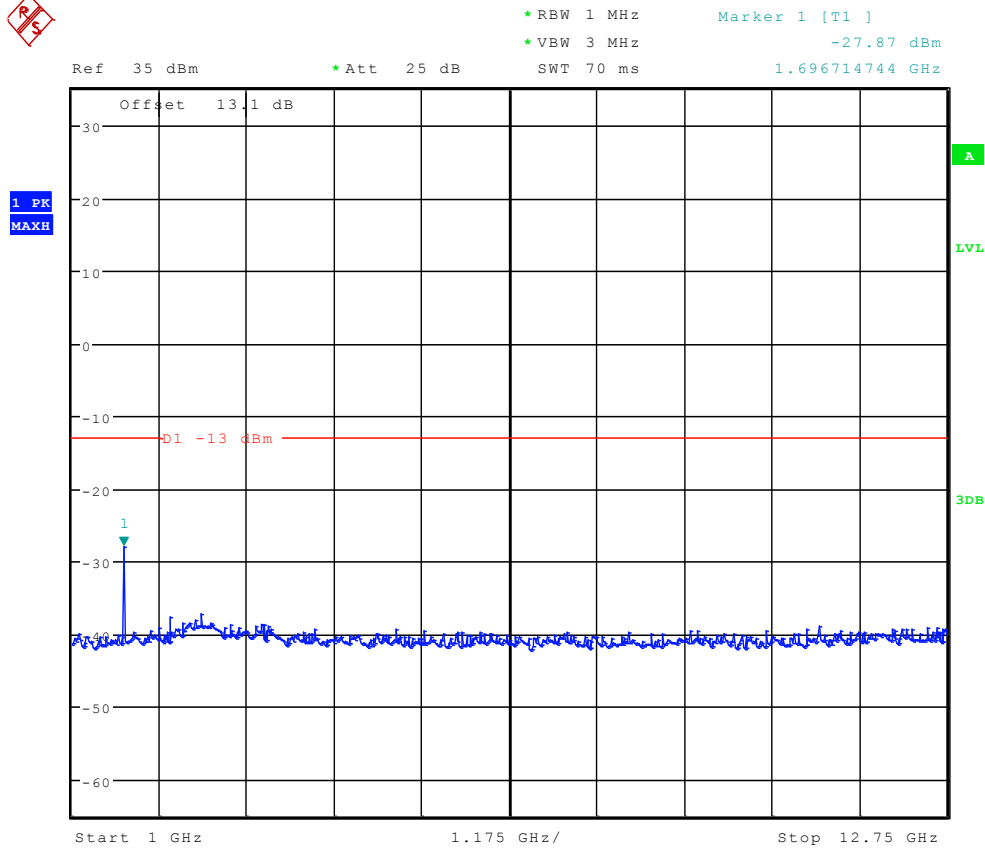
Date: 8.AUG.2012 22:07:56



Date: 8.AUG.2012 22:08:40



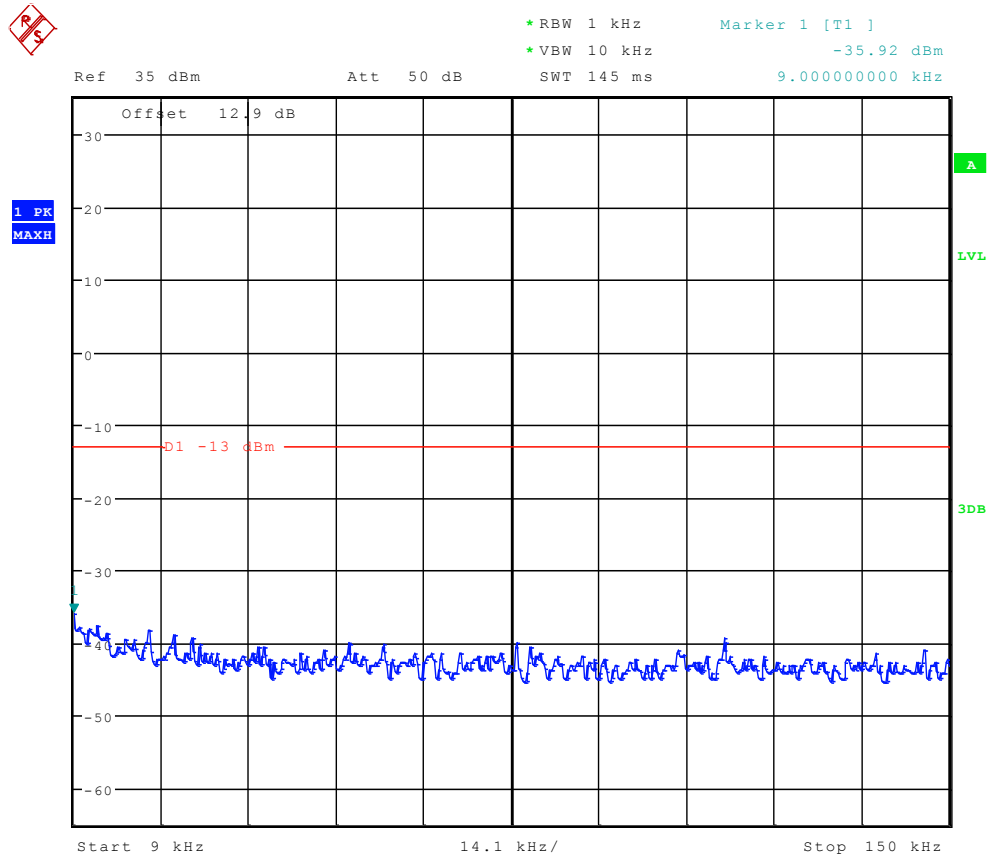
Date: 8.AUG.2012 22:10:54



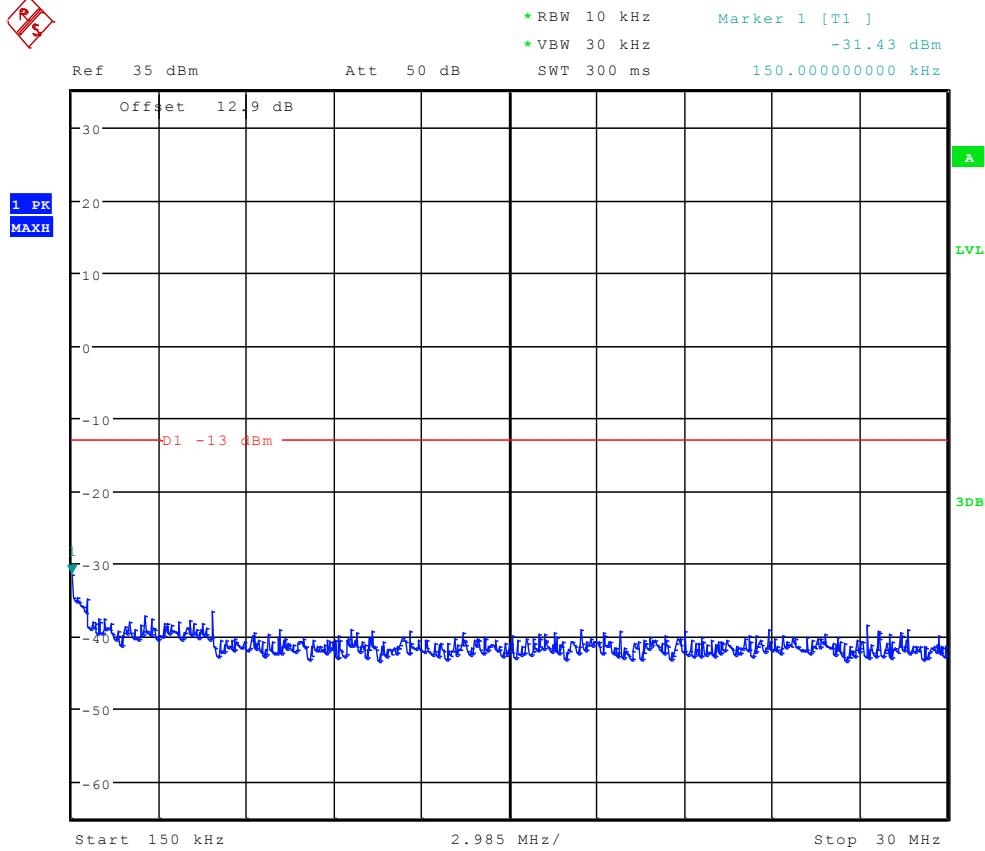
Date: 8.AUG.2012 22:11:38



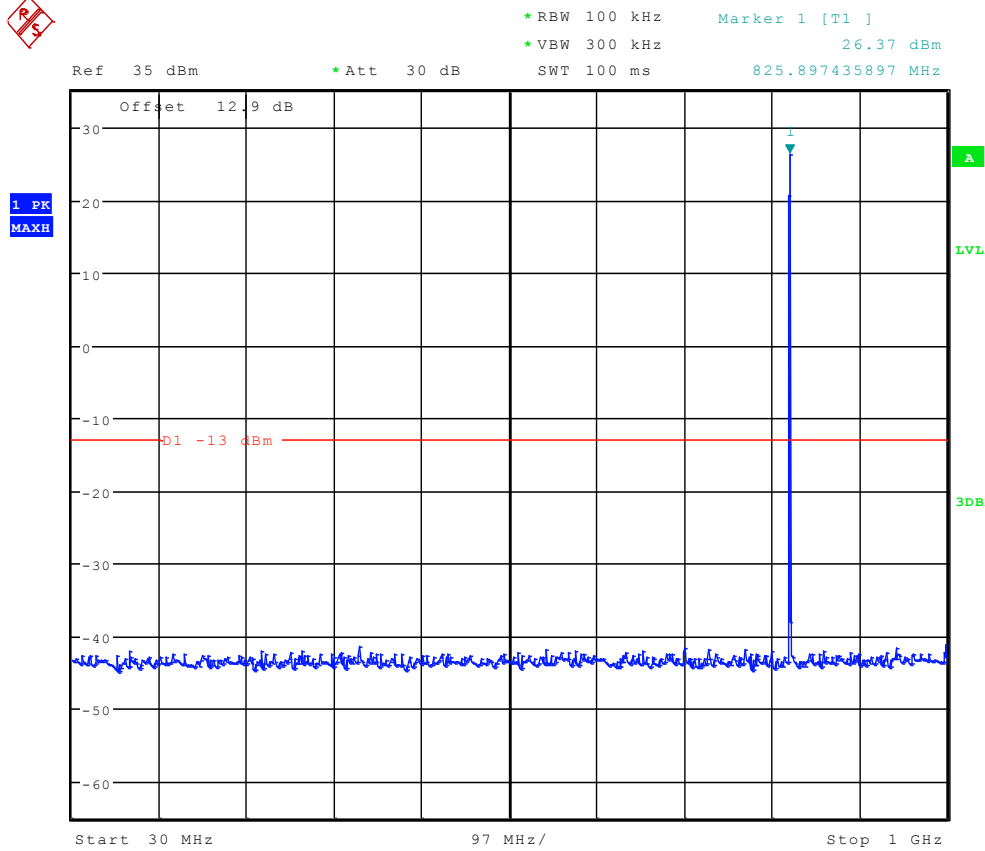
TM2:EDGE Channel 128



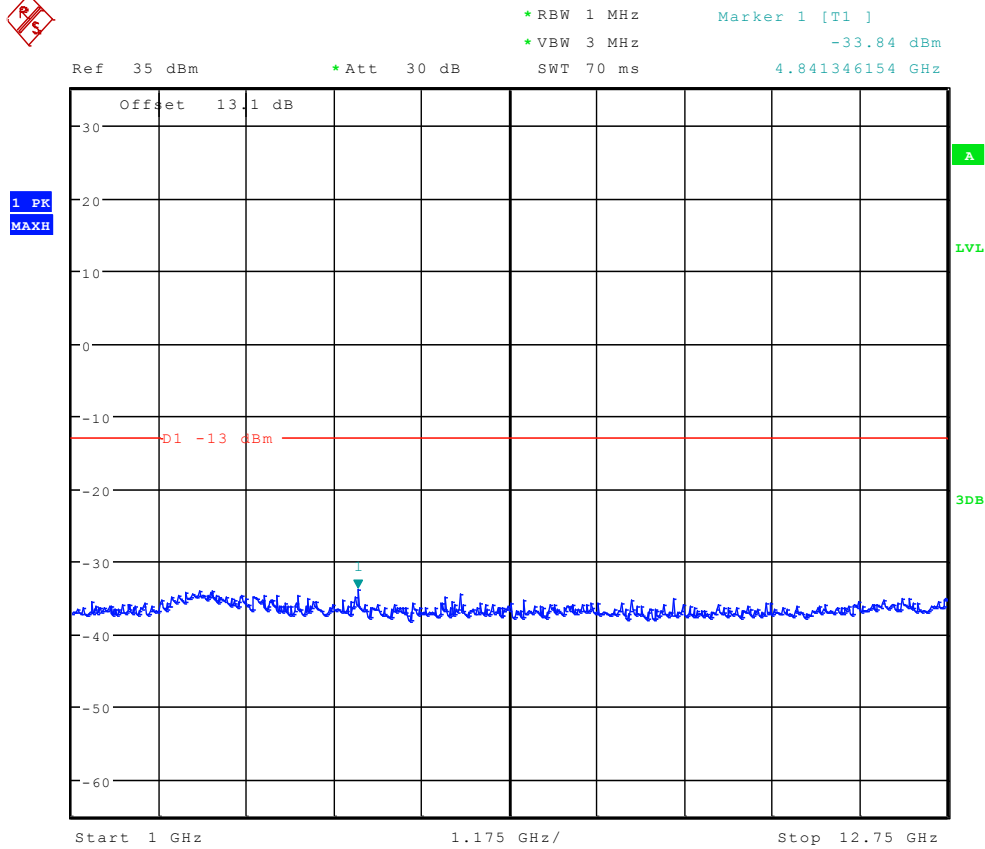
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Date: 8.AUG.2012 22:15:54



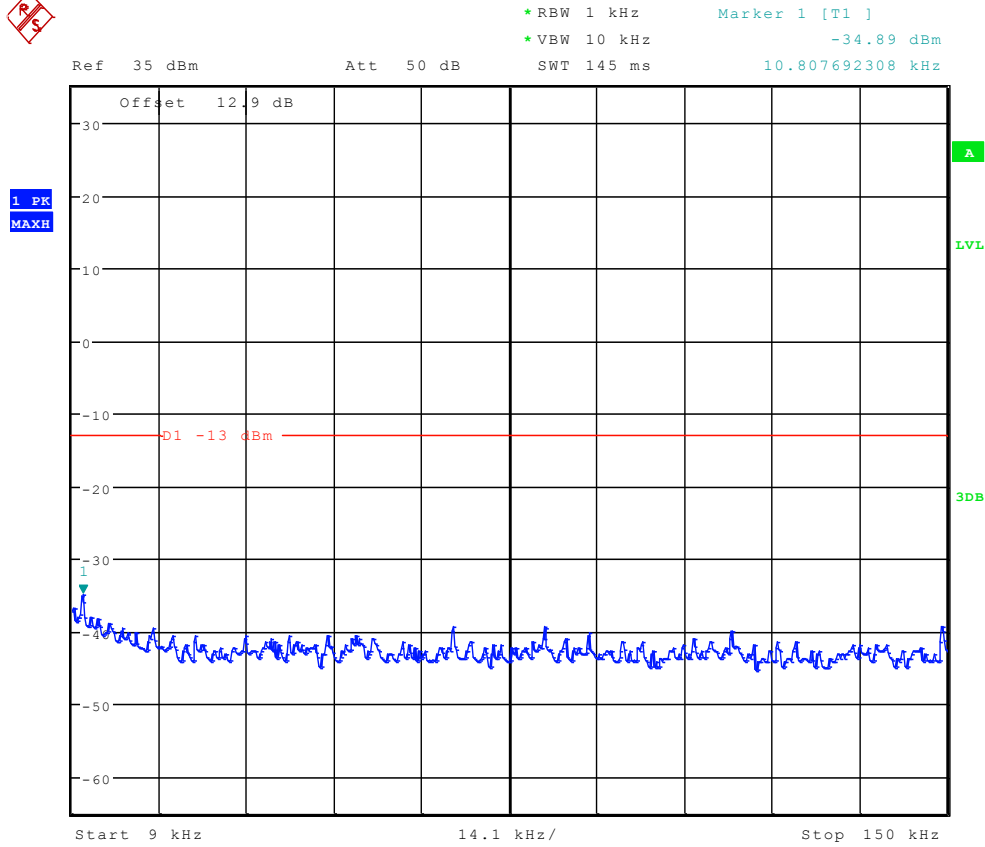
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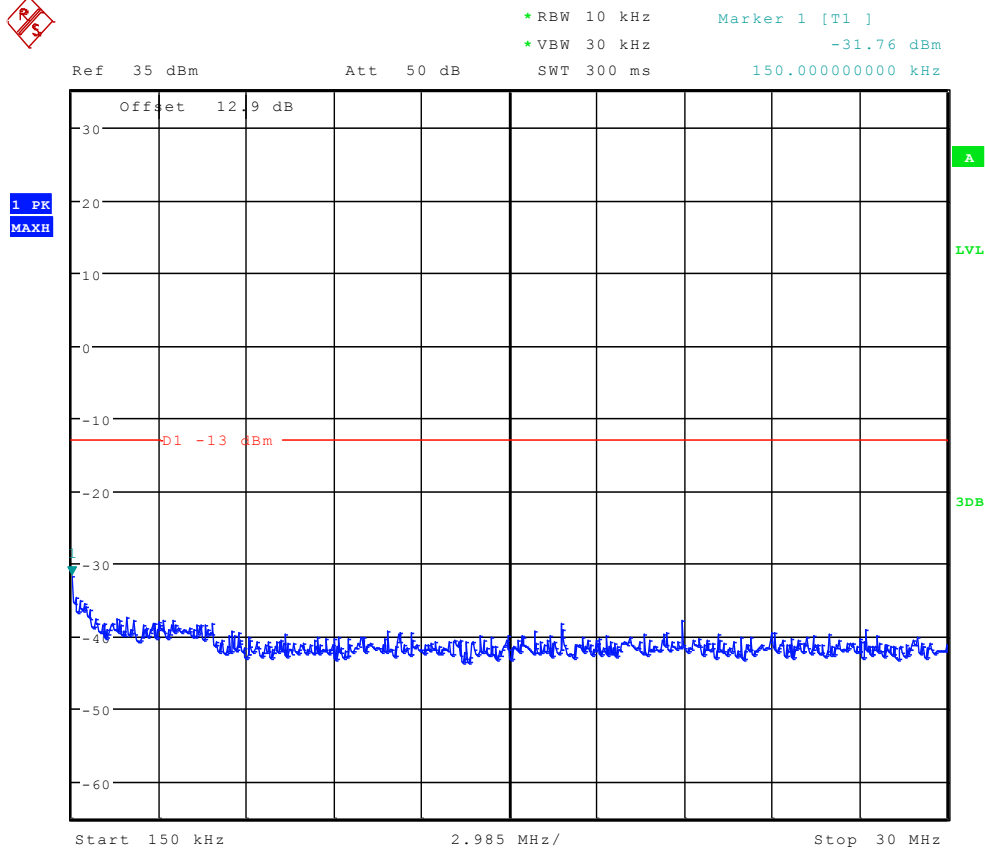
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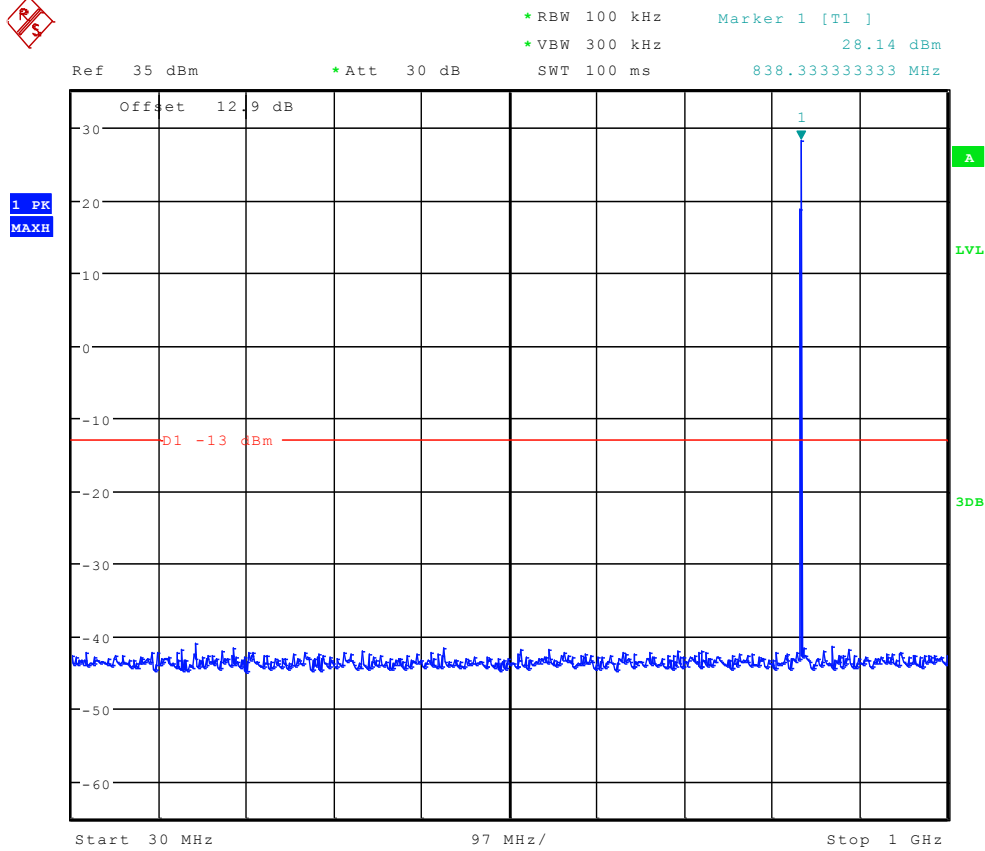
Channel 192



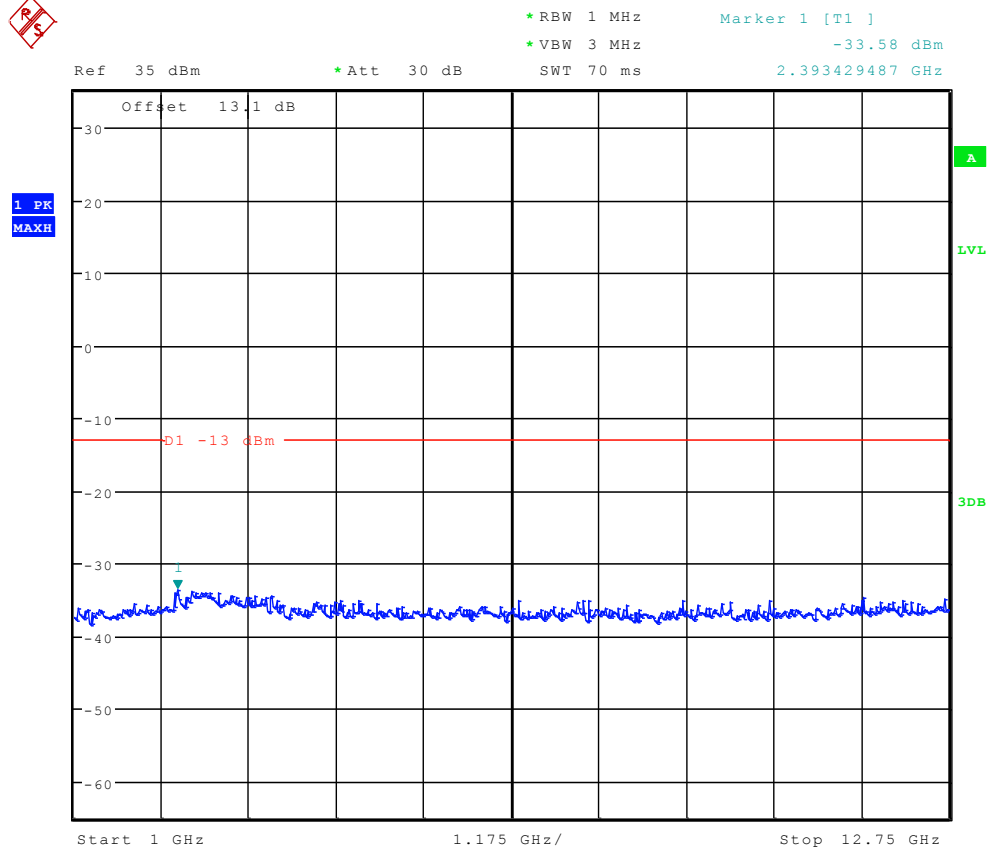
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Date: 8.AUG.2012 22:16:08



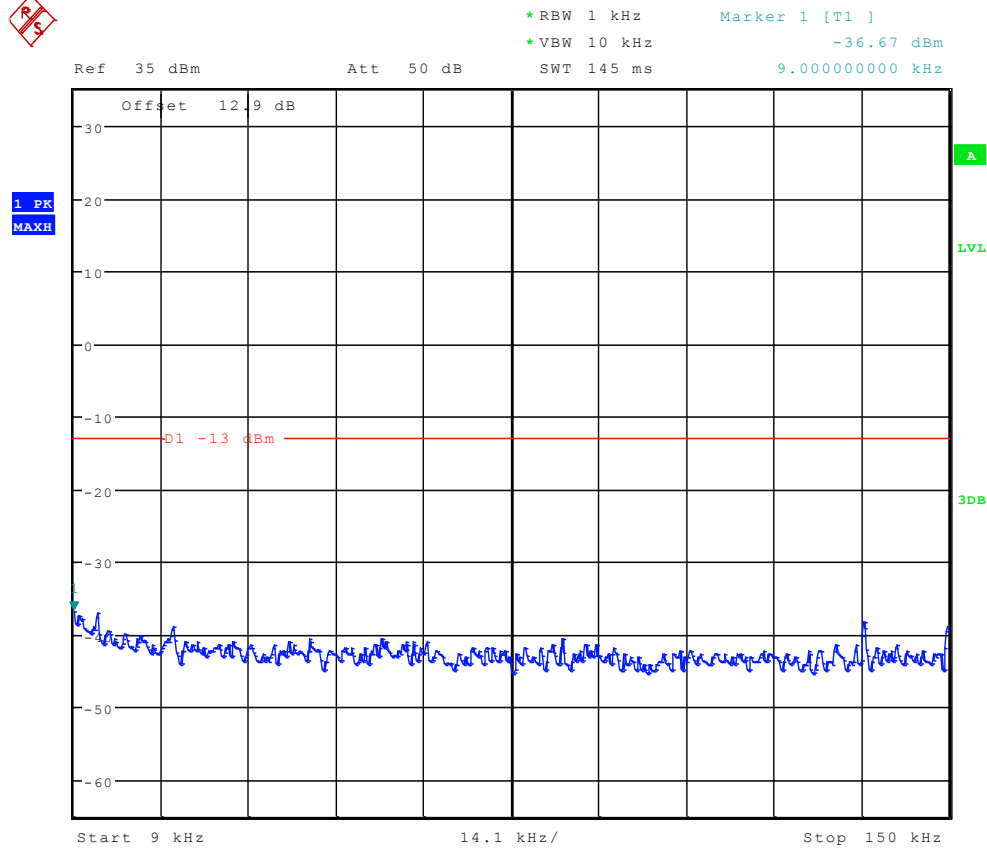
Date: 8.AUG.2012 22:17:10



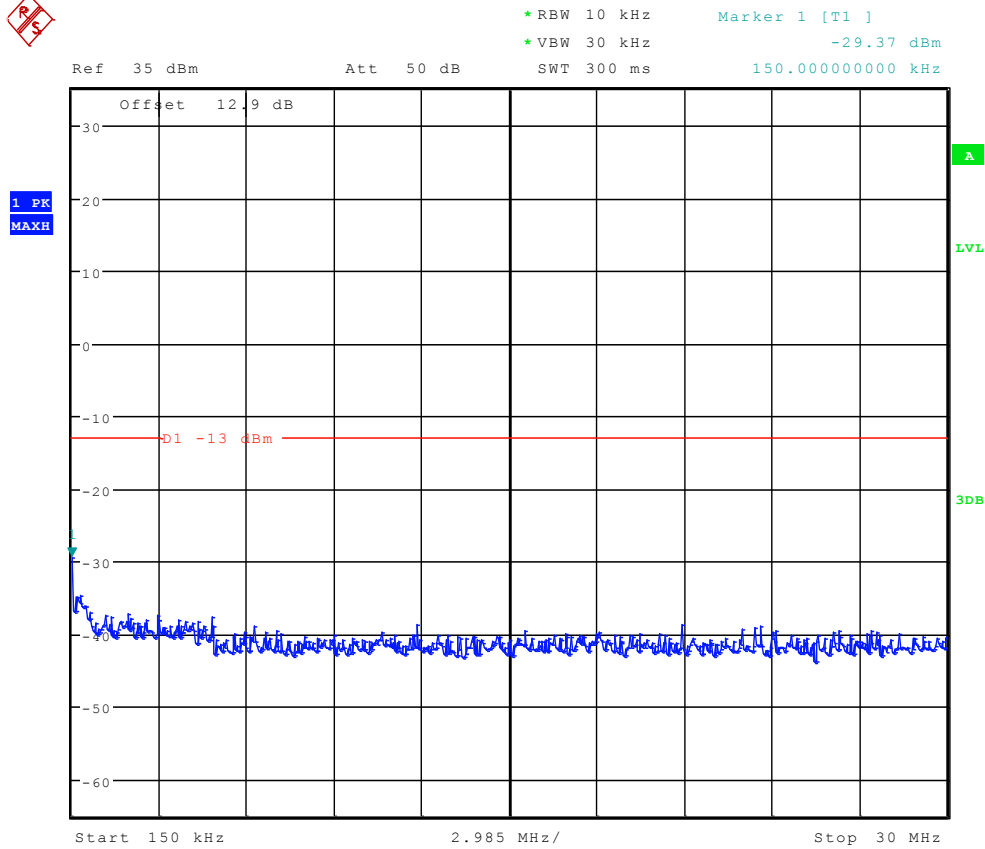
Date: 8.AUG.2012 22:17:54



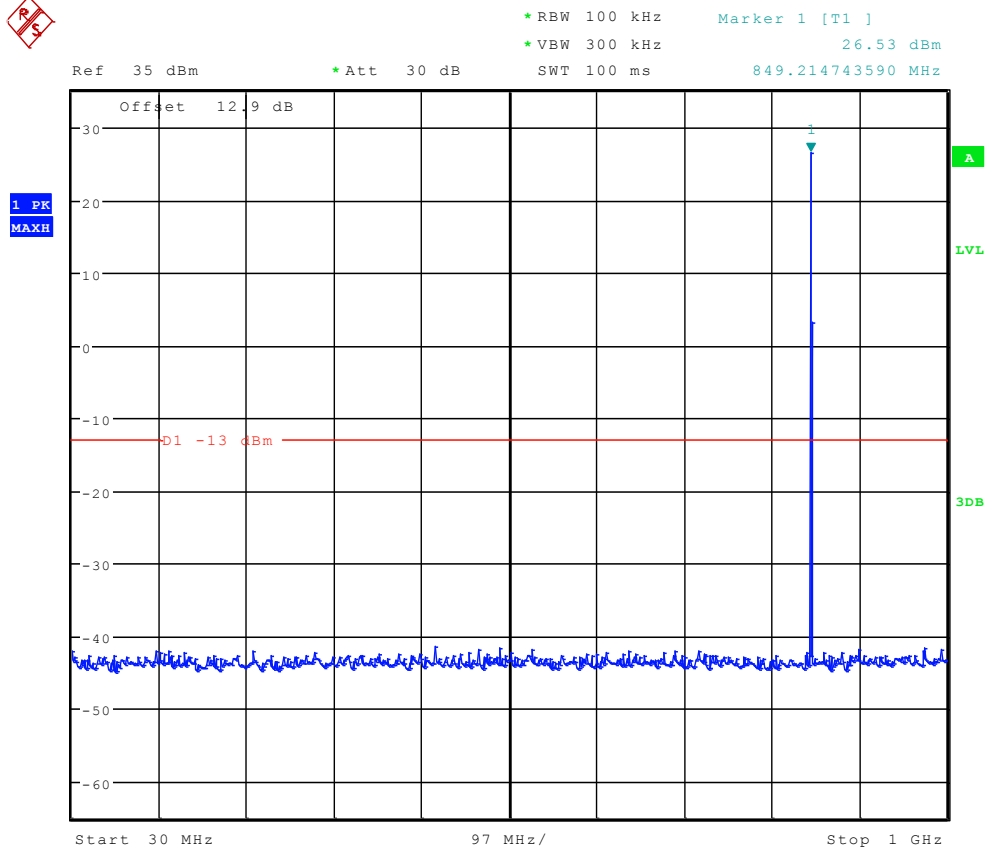
Channel 251



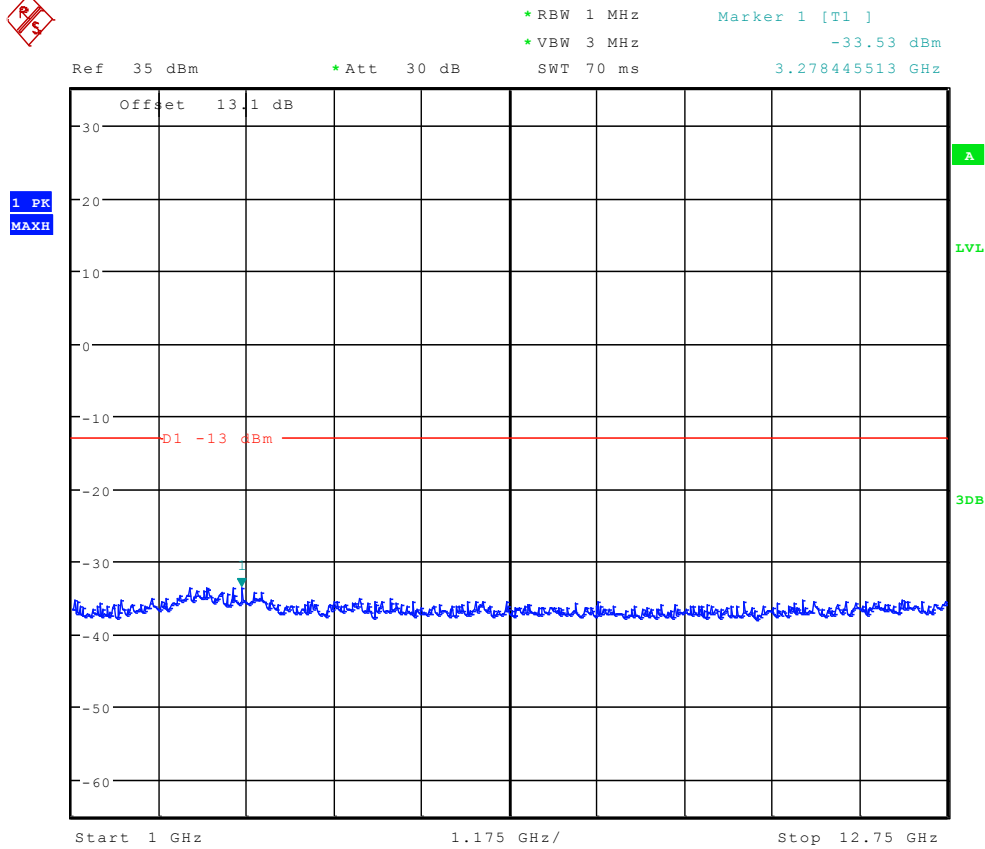
Date: 8.AUG.2012 22:15:39



Date: 8.AUG.2012 22:16:23



Date: 8.AUG.2012 22:17:25



Date: 8.AUG.2012 22:18:09

-----END-----



Appendix F

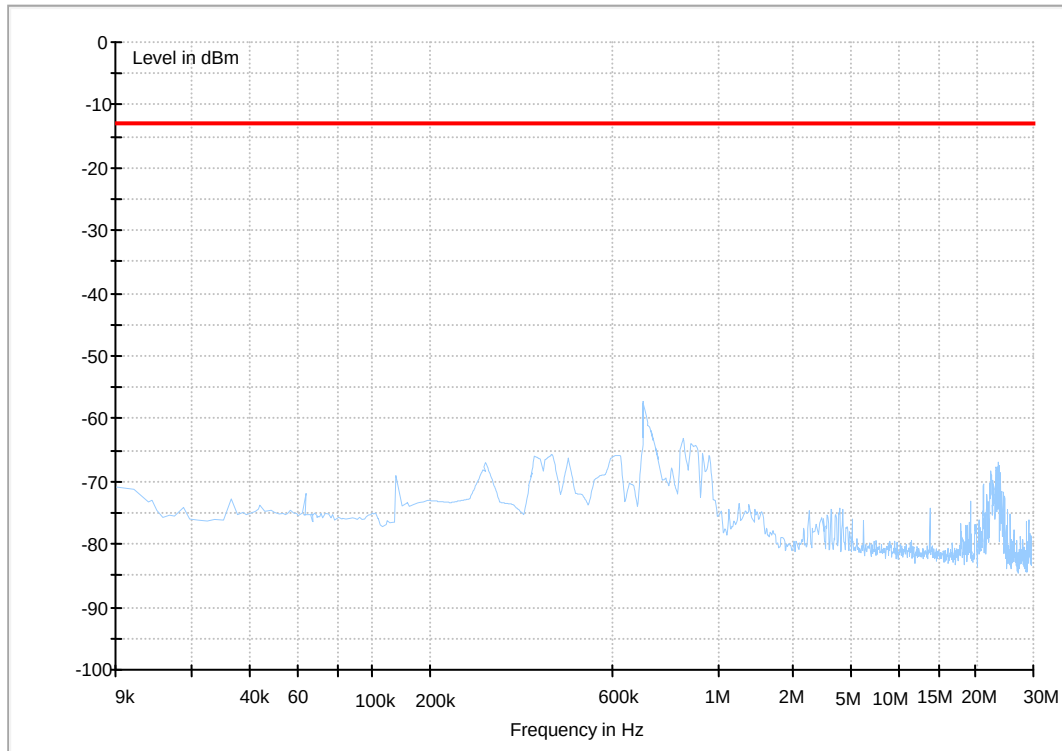
Radiated spurious emission

According to FCC Part 2.1053& Part 22.917



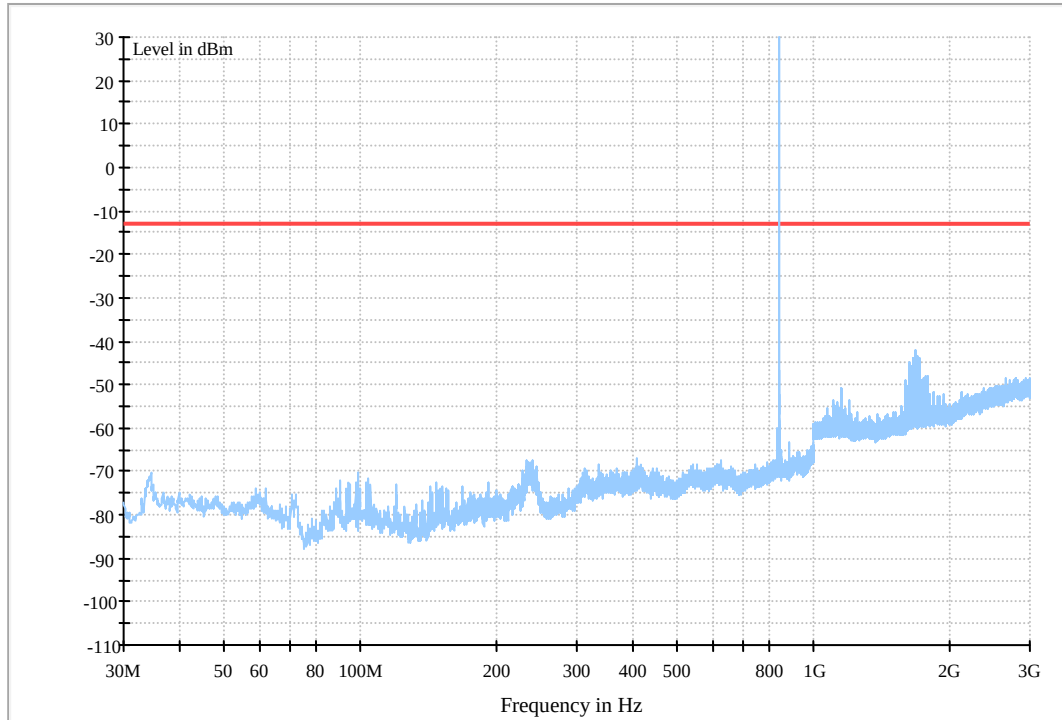
GPRS850

Traffic Mode (9kHz-30MHz)



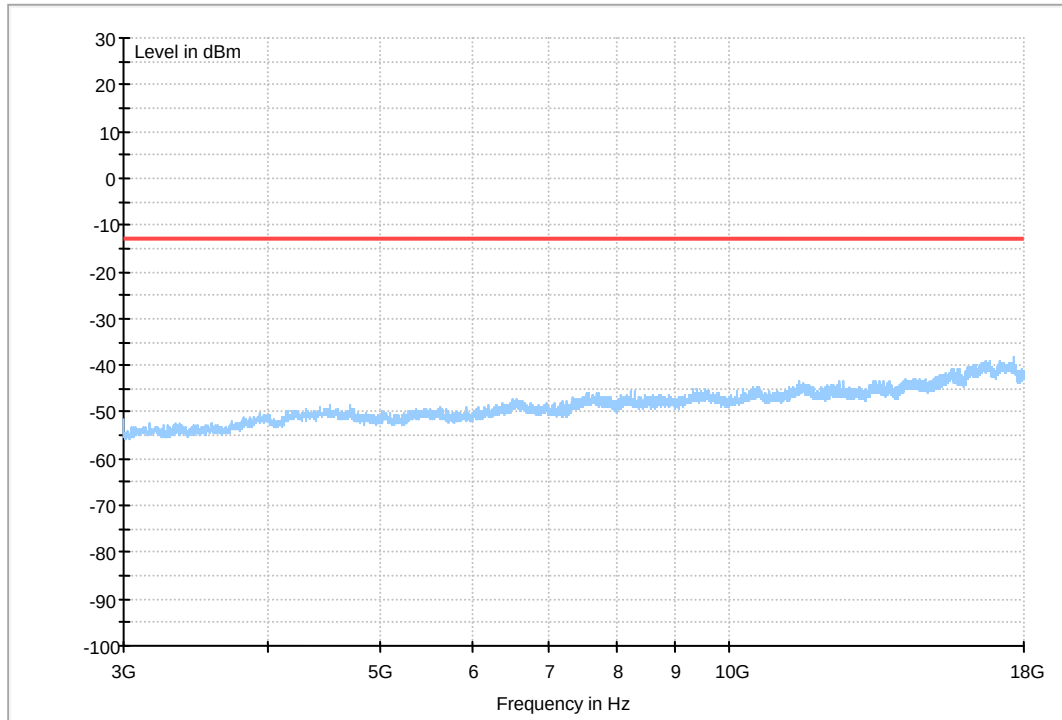


Traffic Mode (30MHz-3GHz)





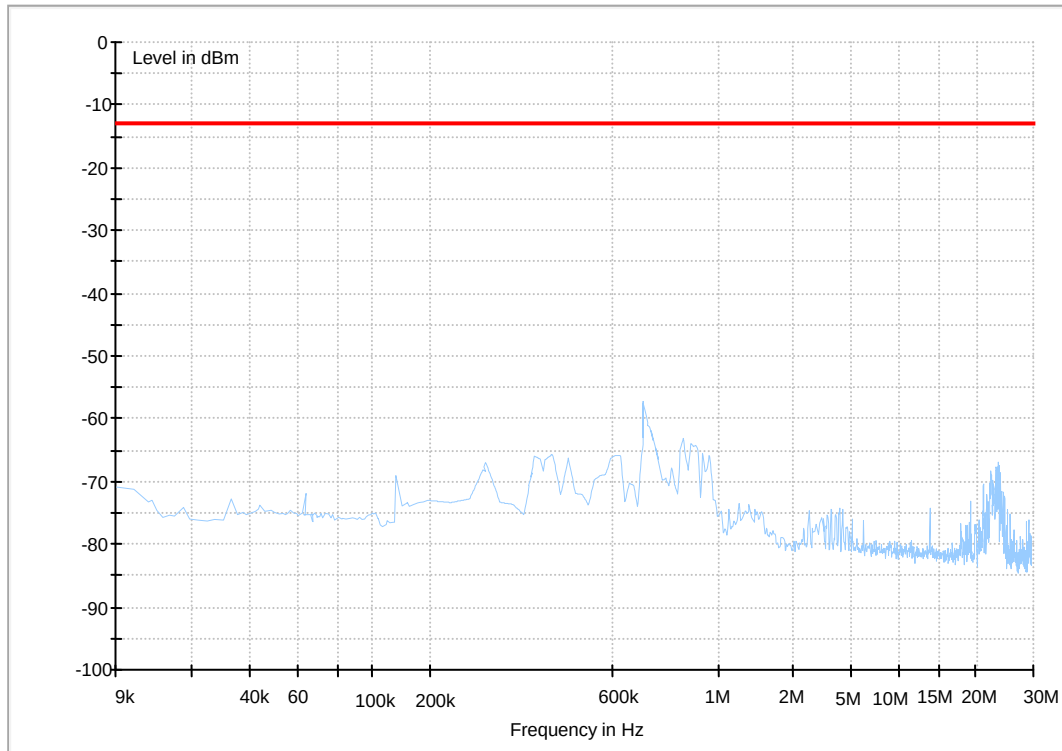
Traffic Mode (3GHz-18GHz)





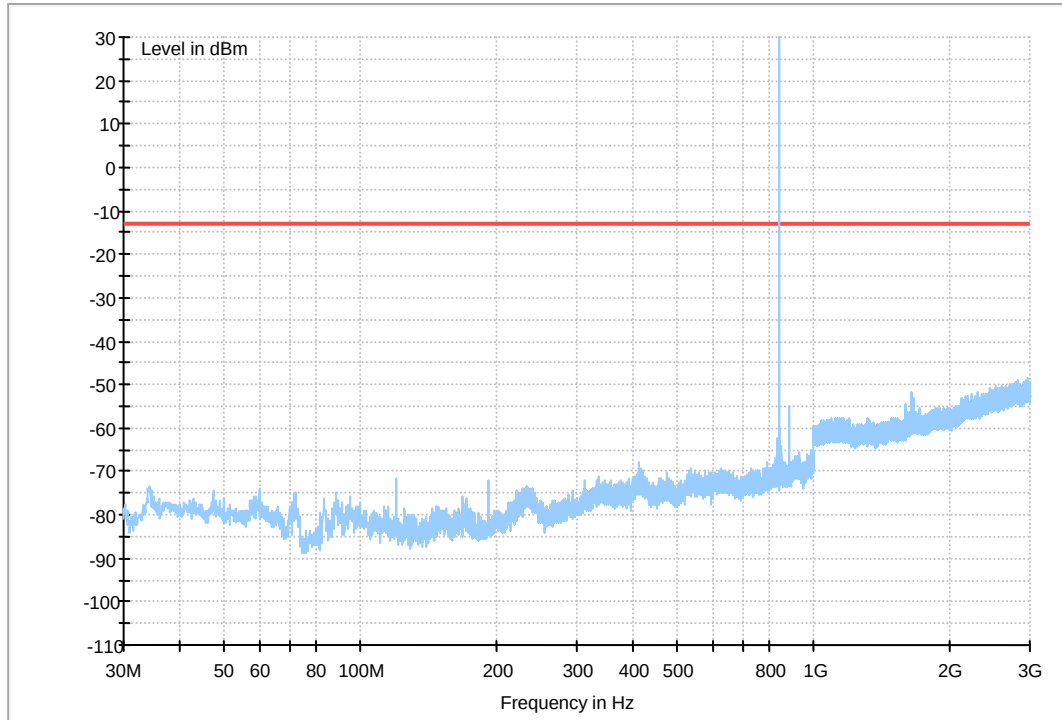
EDGE850

Traffic Mode (9kHz-30MHz)



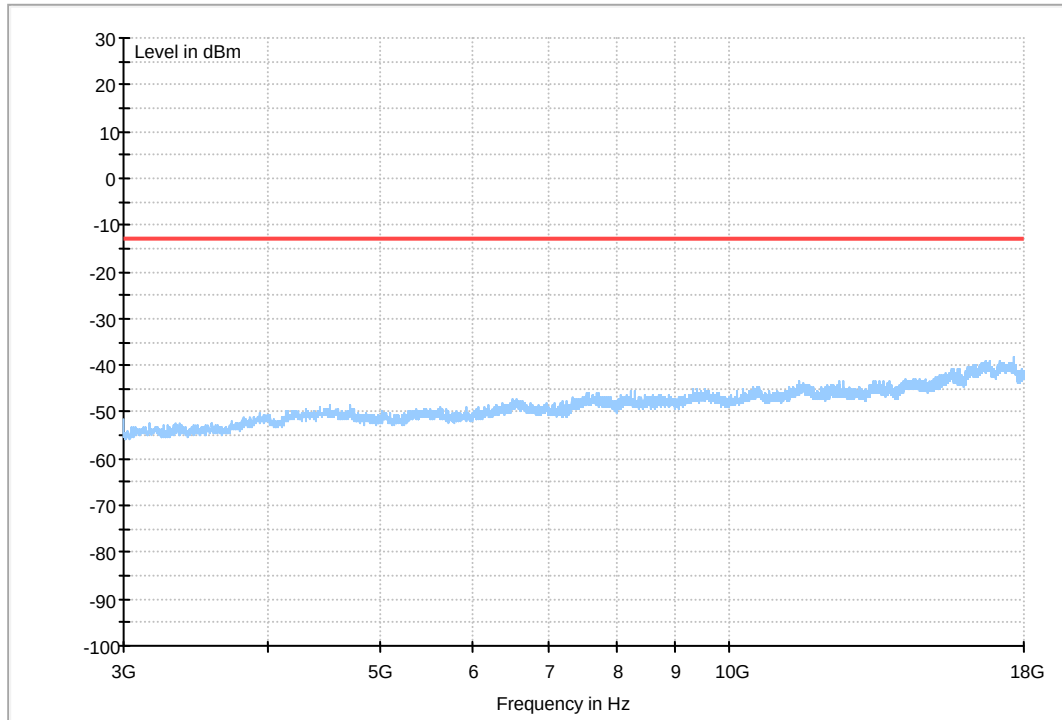


Traffic Mode (30MHz-3GHz)





Traffic Mode (3GHz-18GHz)



-----THE END-----



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	VN	-30 °C	-23	-0.02748	---	±2.5	Pass
			-20 °C	-16	-0.01912	---	±2.5	Pass
			-10 °C	16	0.01912	---	±2.5	Pass
			0 °C	9	0.01075	---	±2.5	Pass
			10 °C	-18	-0.02151	---	±2.5	Pass
			20 °C	12	0.01434	---	±2.5	Pass
			30 °C	-16	-0.01912	---	±2.5	Pass
			40 °C	-14	-0.01673	---	±2.5	Pass
			50 °C	7	0.00836	---	±2.5	Pass
TM 2	M	VN	-30 °C	16	0.01912	---	±2.5	Pass
			-20 °C	19	0.02270	---	±2.5	Pass
			-10 °C	-18	-0.02151	---	±2.5	Pass
			0 °C	-17	-0.02031	---	±2.5	Pass
			10 °C	25	0.02987	---	±2.5	Pass
			20 °C	15	0.01792	---	±2.5	Pass
			30 °C	-6	-0.00717	---	±2.5	Pass
			40 °C	-18	-0.02151	---	±2.5	Pass
			50 °C	-8	-0.00956	---	±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	20	0.02389	---	±2.5	Pass
			VN	-13	-0.01553	---	±2.5	Pass
			VH	16	0.01912	---	±2.5	Pass
TM 2	M	TN	VL	-15	-0.01792	---	±2.5	Pass
			VN	12	0.01434	---	±2.5	Pass
			VH	-14	-0.01673	---	±2.5	Pass

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



Appendix H

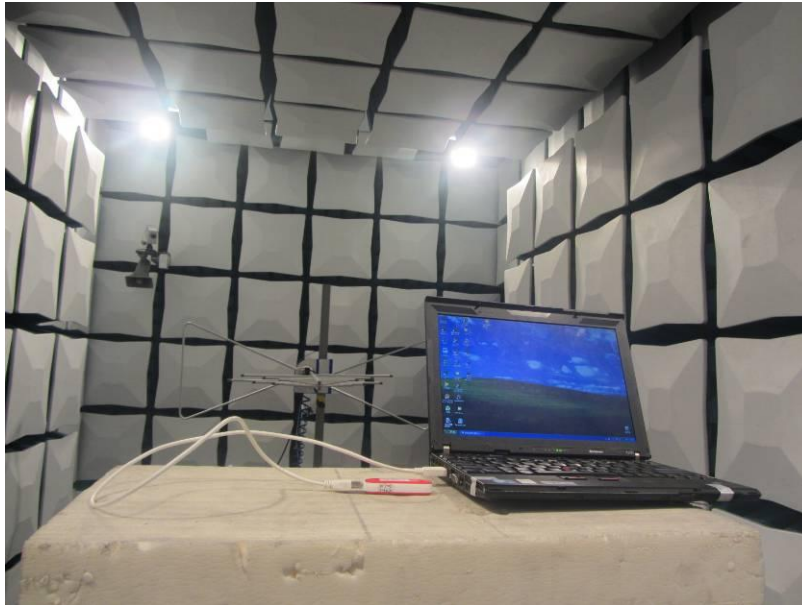
Photos of Radiated Spurious Emissions



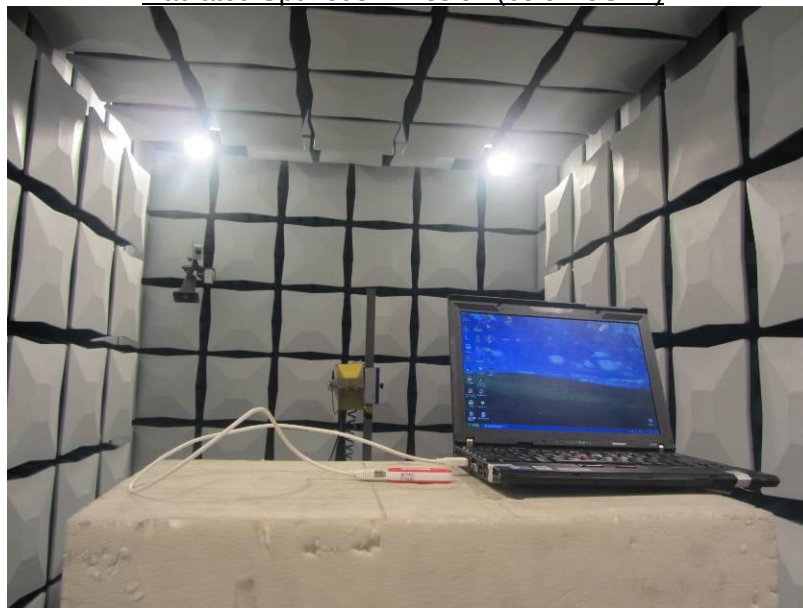
Photos of Test Setup



1 Radiated Spurious Emissions



Radiated Spurious Emission (below 3GHz)



Radiated Spurious Emission (3GHz to 18GHz)



Radiated Spurious Emission (18GHz to26.5GHz)