



Appendix A

Transmitter Output Power

According to FCC Part 2.1046 & Part24.232



Conducted Power of Transmitter

		RF Output Power (Conducted)					
TEST CONDITIONS		Channel512(B)		Channel661(M)		Channel810(T)	
		1850.2MHz		1880.0MHz		1909.8MHz	
		dBm		dBm		dBm	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM1		29.05	33	29.08	33	29.07	33
TM2		25.17	33	25.15	33	25.11	33
TEST CONDITIONS		Channel9262(B)		Channel9400(M)		Channel9538(T)	
		1852.4MHz		1880.0MHz		1907.6MHz	
		dBm		dBm		dBm	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM3		21.94	33	21.73	33	21.52	33
TM4	Case1	21.93	33	21.75	33	21.54	33
	Case2	21.72	33	21.62	33	21.2	33
	Case3	21.06	33	21.22	33	20.72	33
	Case4	21.17	33	21.27	33	20.76	33
TM5	Case1	21.27	33	21.19	33	21.05	33
	Case2	19.98	33	19.74	33	19.49	33
	Case3	20.58	33	20.43	33	20.2	33
	Case4	19.97	33	19.62	33	19.42	33
	Case5	21.46	33	21.16	33	20.92	33



Effective Isotropic Radiated Power of Transmitter (EIRP)

Test Mod e	Freq. [MHz]	Meas. Level [dBm]	Substitutio n Antenna Type	SGP [dBm]	Substitutio n Gain [dBi]	Cabl e Loss [dB]	Substitutio n Level (EIRP)	FCC limit [dBm]	Resul t
							[dBm]		
TM1	1850.2	32.62	Horn Ant.	29.16	4.5	1	32.66	33	Pass
TM1	1880.0	32.65	Horn Ant.	29.13	4.5	1	32.63	33	Pass
TM1	1909.8	32.64	Horn Ant.	28.81	4.8	1	32.61	33	Pass
TM2	1850.2	28.74	Horn Ant.	25.27	4.5	1	28.77	33	Pass
TM2	1880.0	28.72	Horn Ant.	25.24	4.5	1	28.74	33	Pass
TM2	1909.8	28.68	Horn Ant.	24.85	4.8	1	28.65	33	Pass
TM3	1852.4	25.51	Horn Ant.	22.03	4.5	1	25.53	33	Pass
TM3	1880.0	25.30	Horn Ant.	21.86	4.5	1	25.36	33	Pass
TM3	1907.6	25.09	Horn Ant.	21.27	4.8	1	25.07	33	Pass

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

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

b, SGP=Signal Generator Level

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



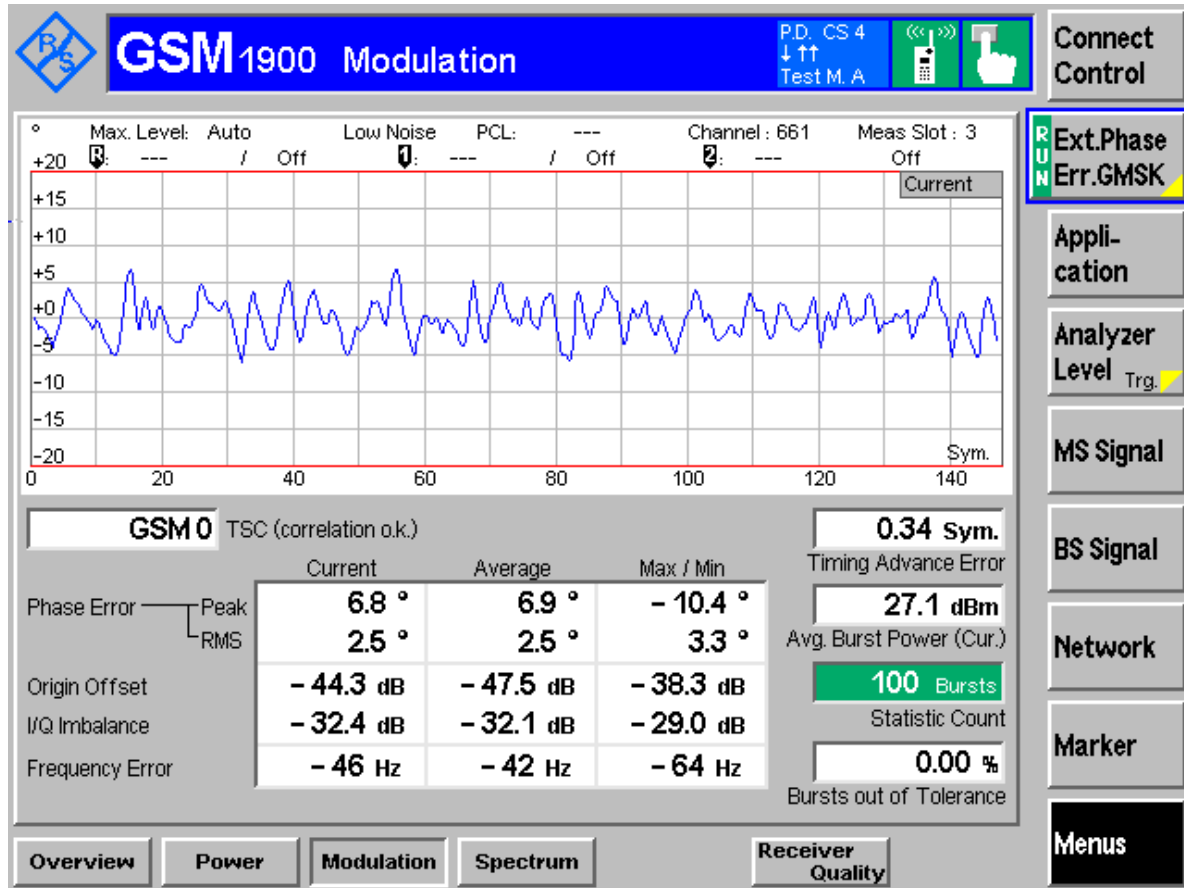
Appendix B

Modulation Characteristics

According to FCC Part 2.1047 & Part24 Subpart E

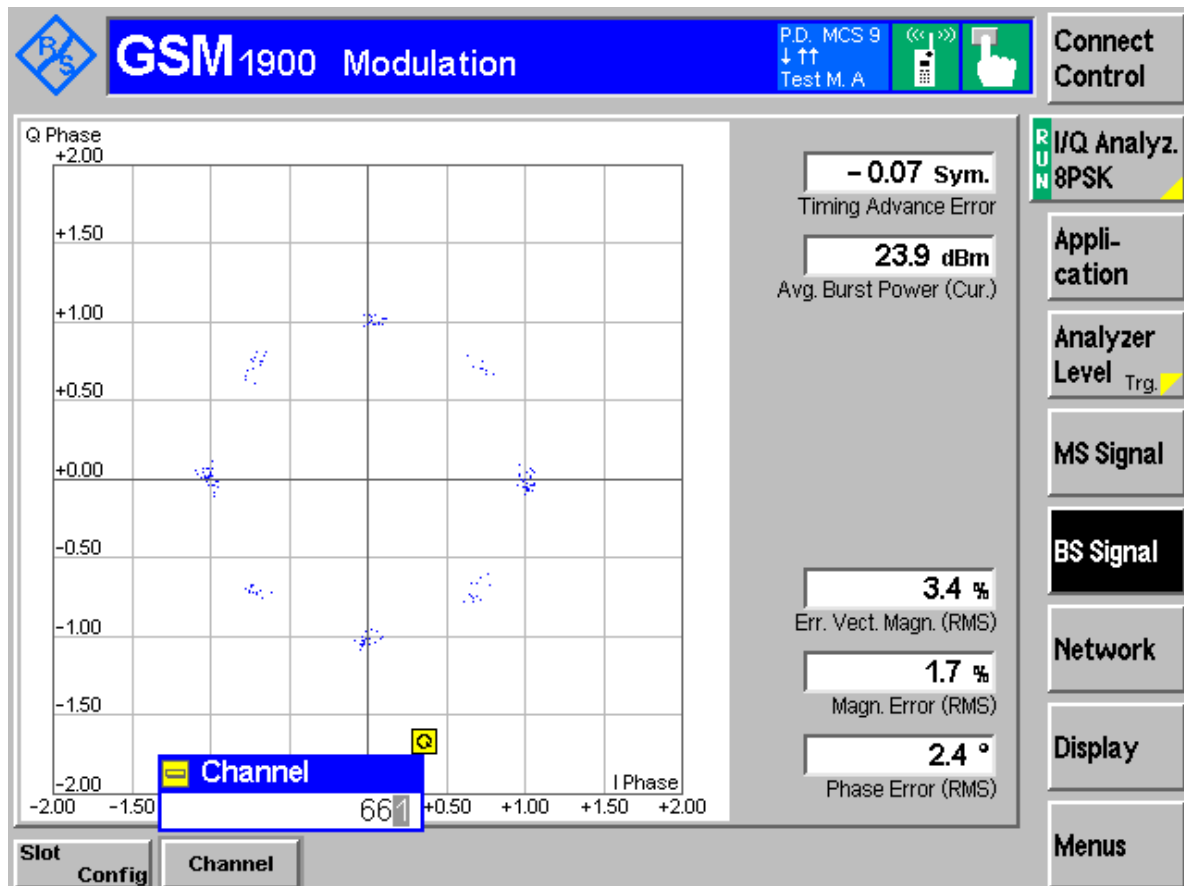


TM1:GPRS/GSM Channel 661



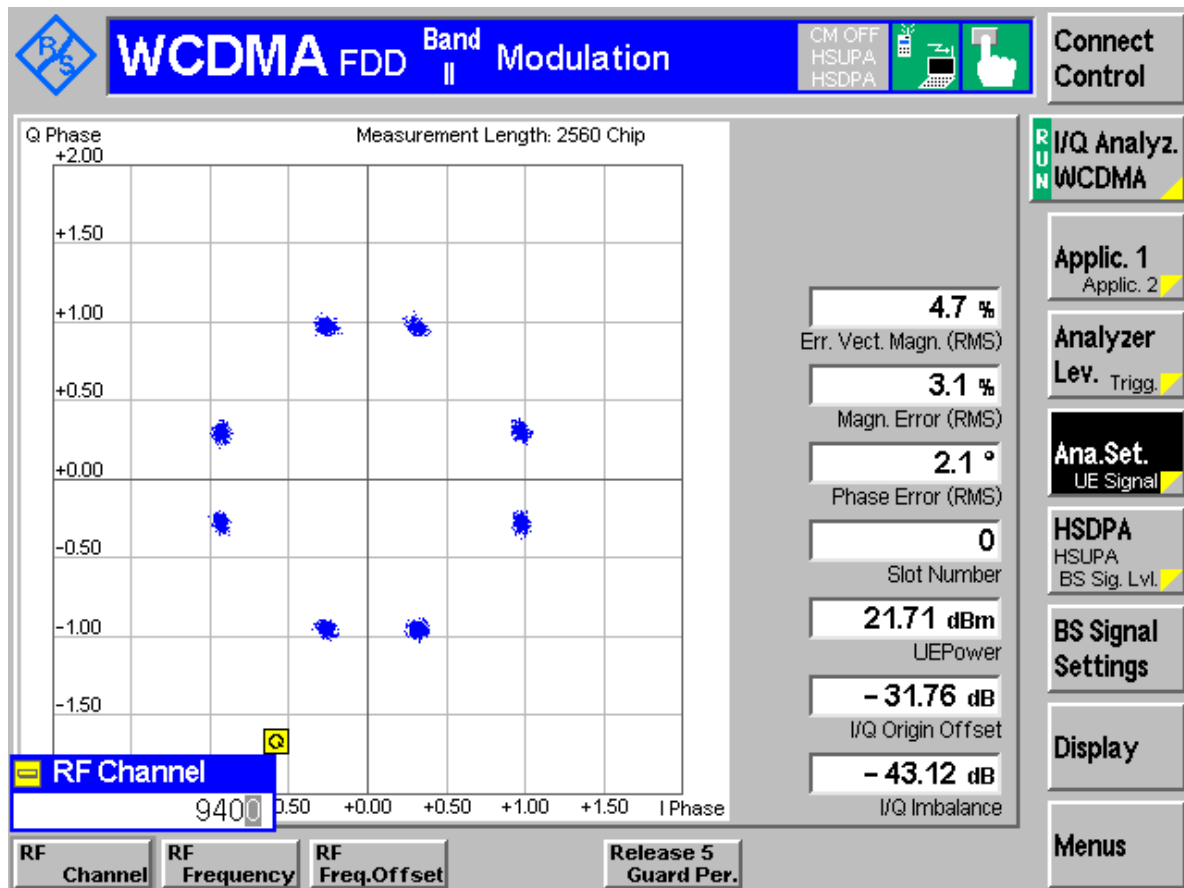


TM2:EDGE Channel 661





TM3: WCDMA Channel 9400



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



Appendix C

Occupied Bandwidth According to FCC Part 2.1049 & Part 24 Subpart E

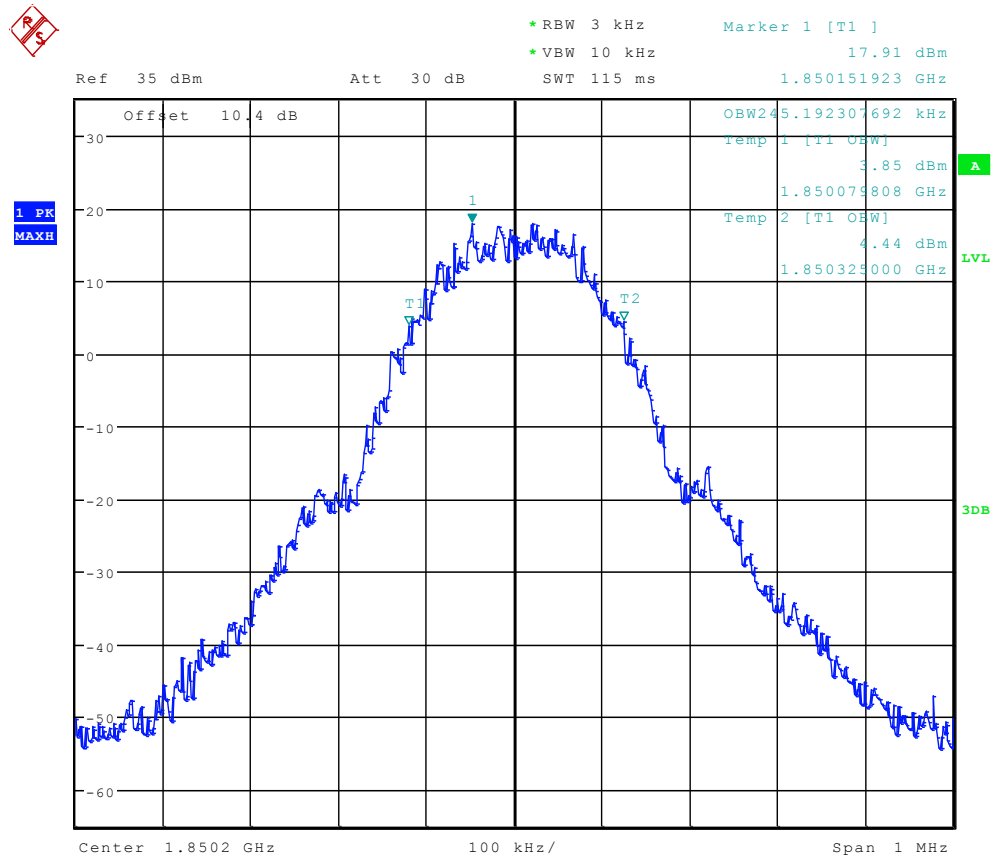


Table 1 Measurement Results

Test Mode	RF Channel	Occupied Bandwidth [kHz]	Verdict
TM1	512	245.19	Pass
	661	250.00	Pass
	810	245.19	Pass
TM2	512	254.81	Pass
	661	256.41	Pass
	810	251.60	Pass
Test Mode	RF Channel	Occupied Bandwidth [MHz]	Verdict
TM3	9262	4.17	Pass
	9400	4.17	Pass
	9538	4.17	Pass

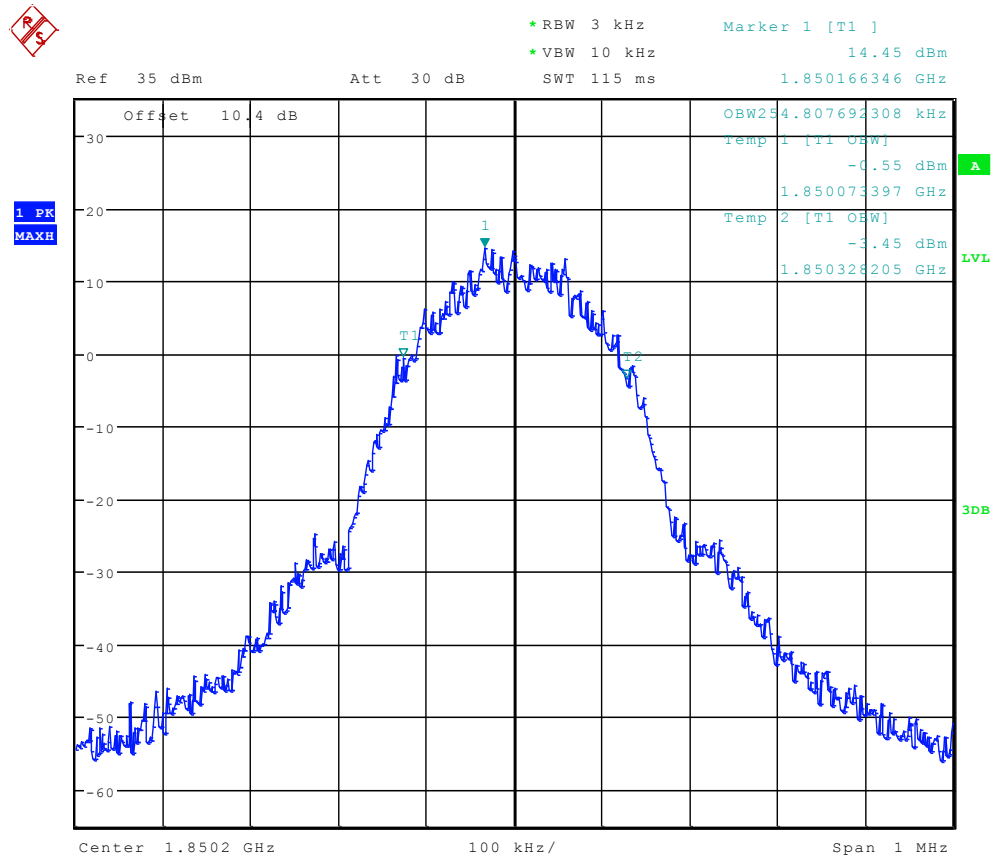


TM1:GPRS/GSM Channel 512



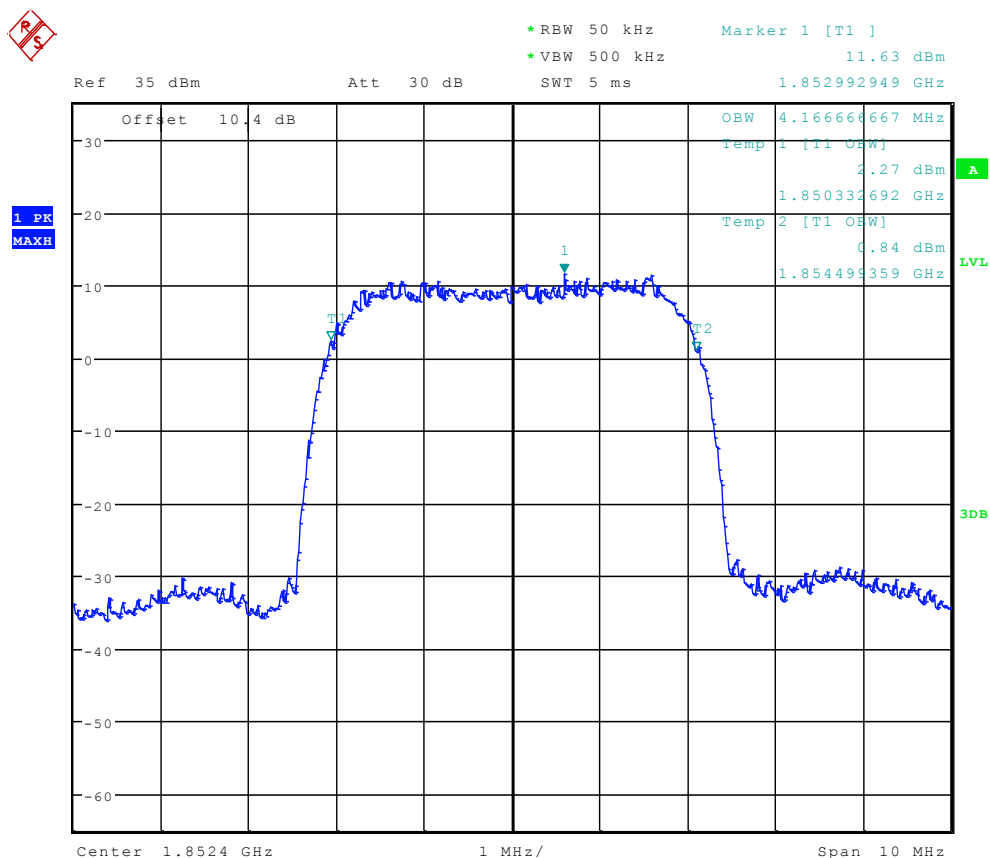


TM2:EDGE Channel 512



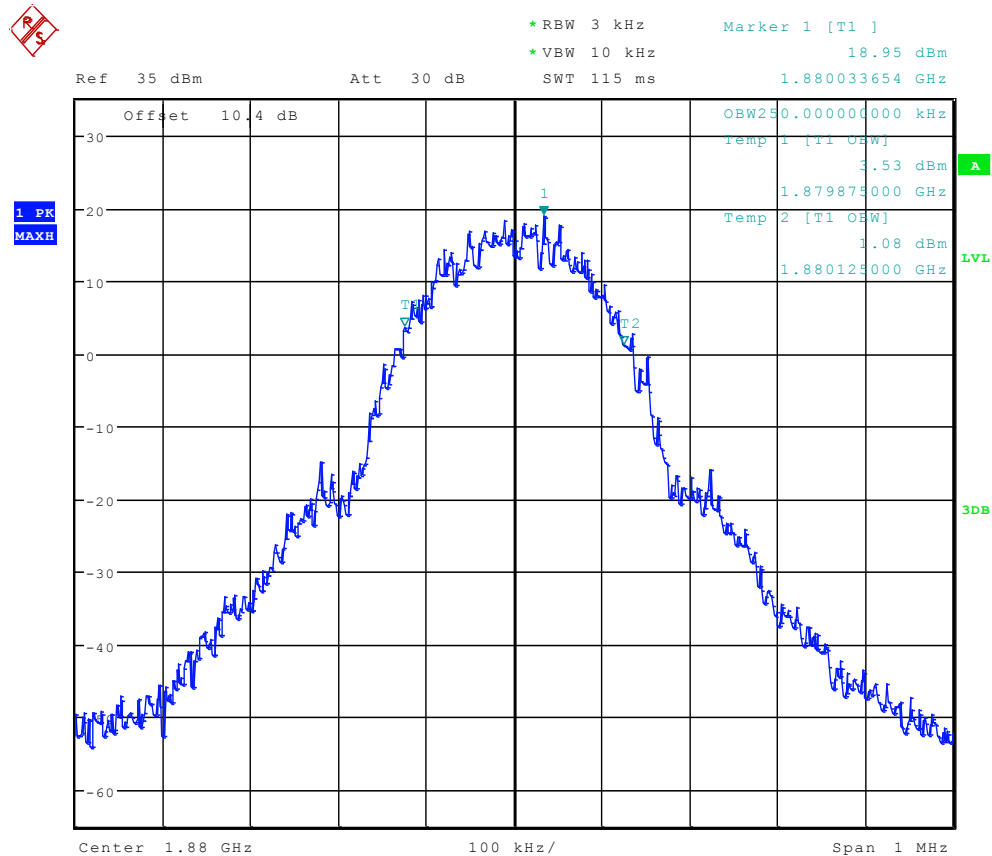


TM3: WCDMA Channel 9262



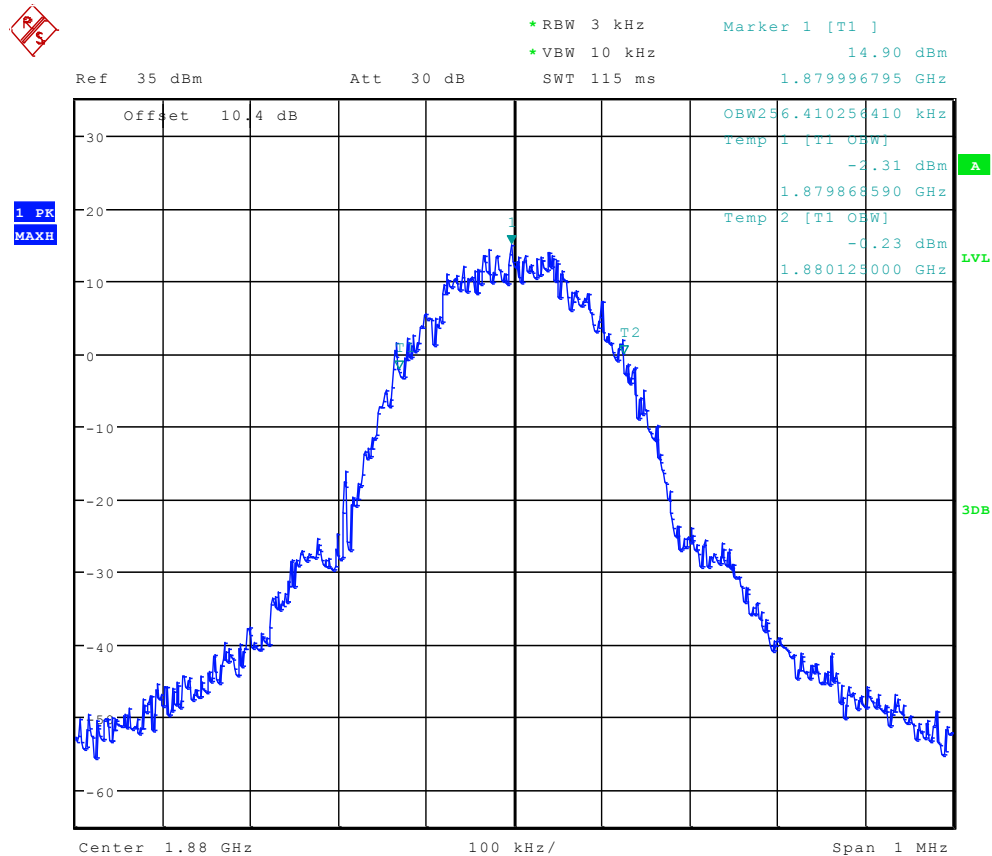


TM1:GPRS/GSM Channel 661



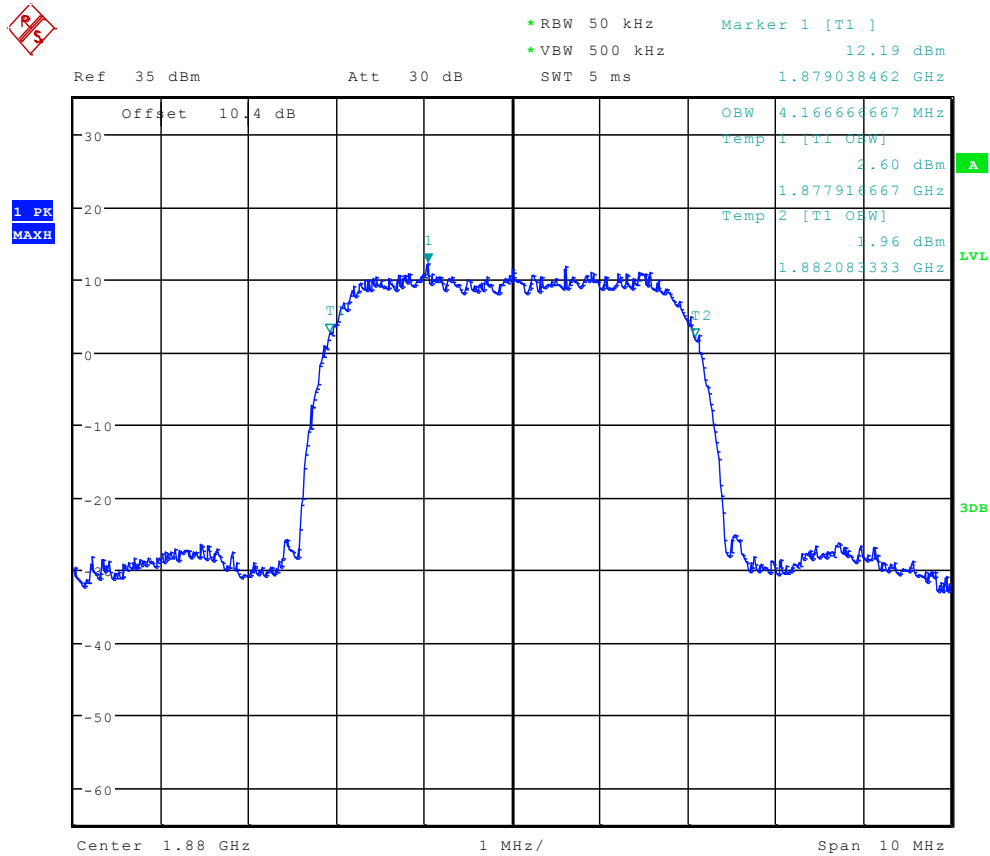


TM2:EDGE Channel 661



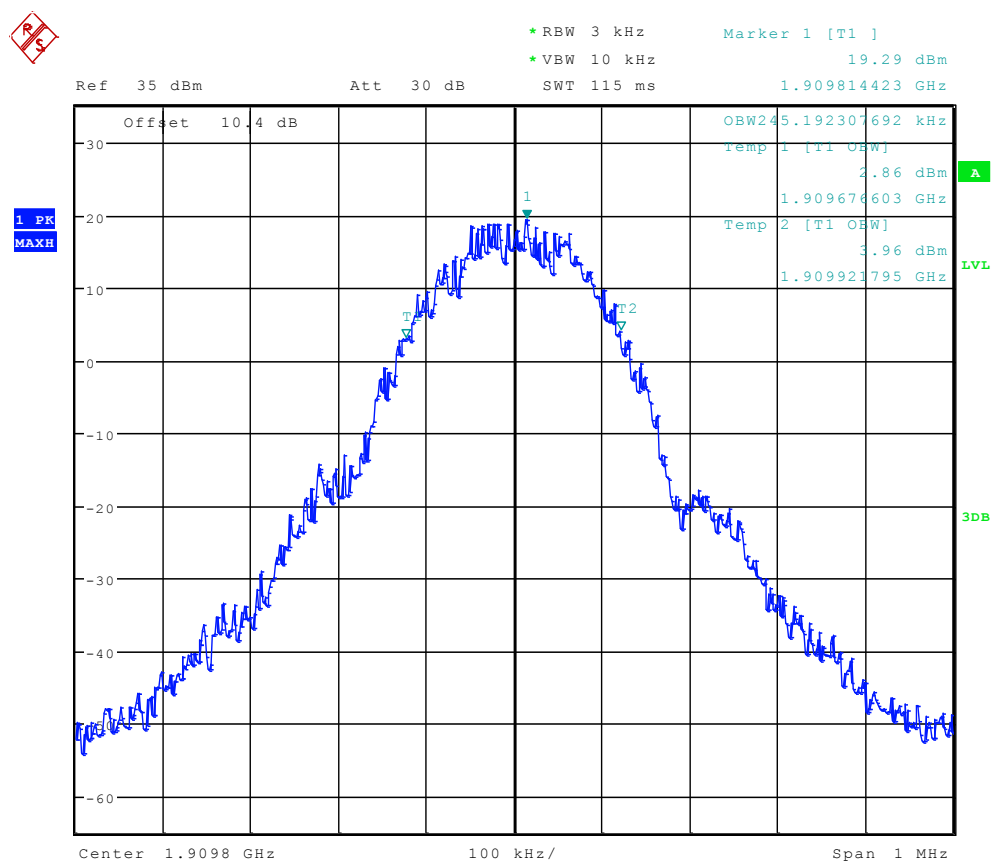


TM3: WCDMA Channel 9400



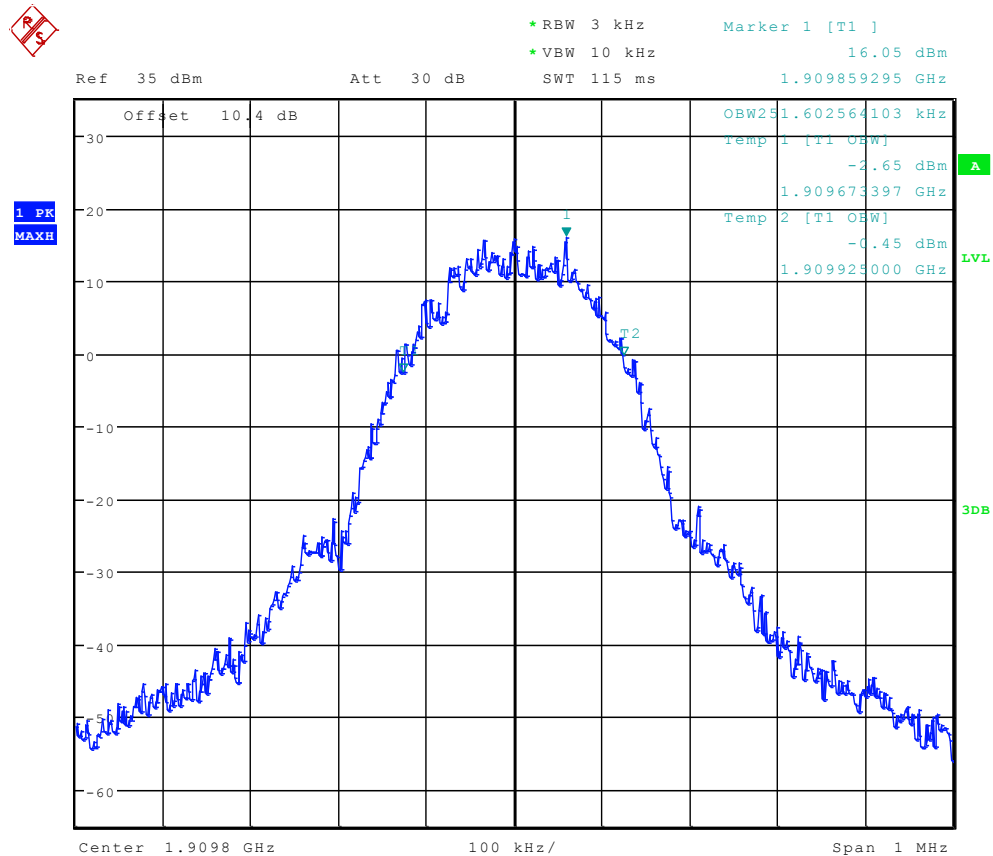


TM1:GPRS/GSM Channel 810



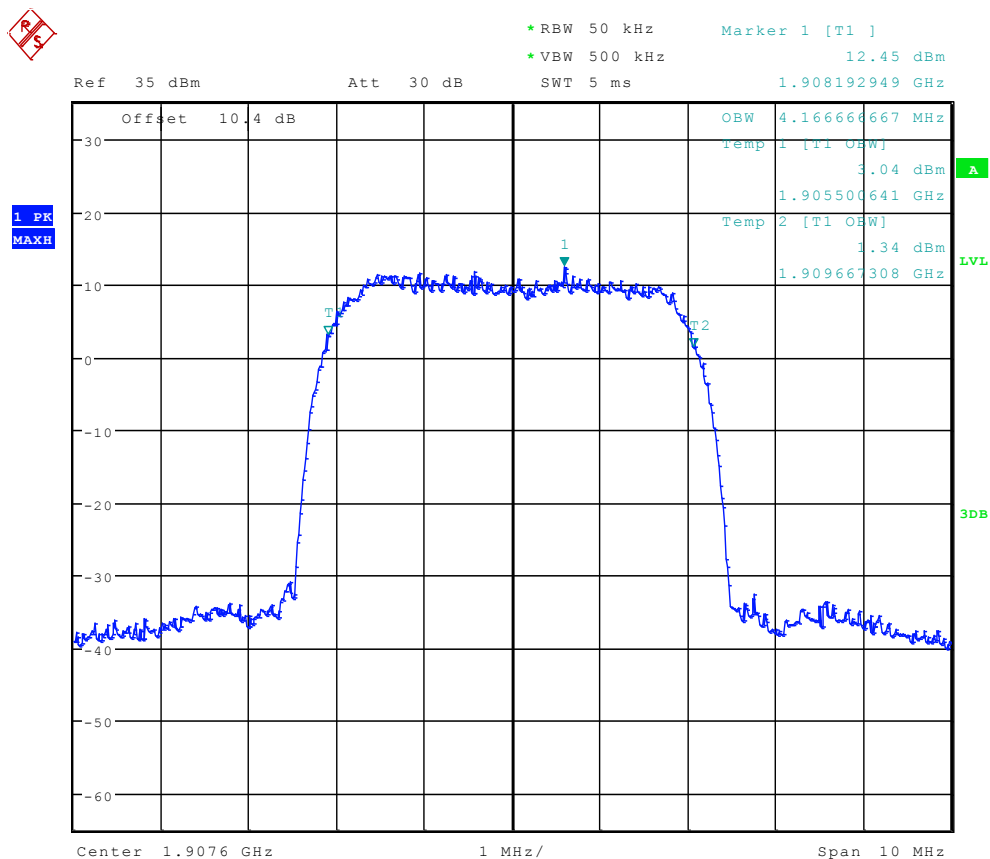


TM2:EDGE Channel 810





TM3: WCDMA Channel 9538



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



Appendix D

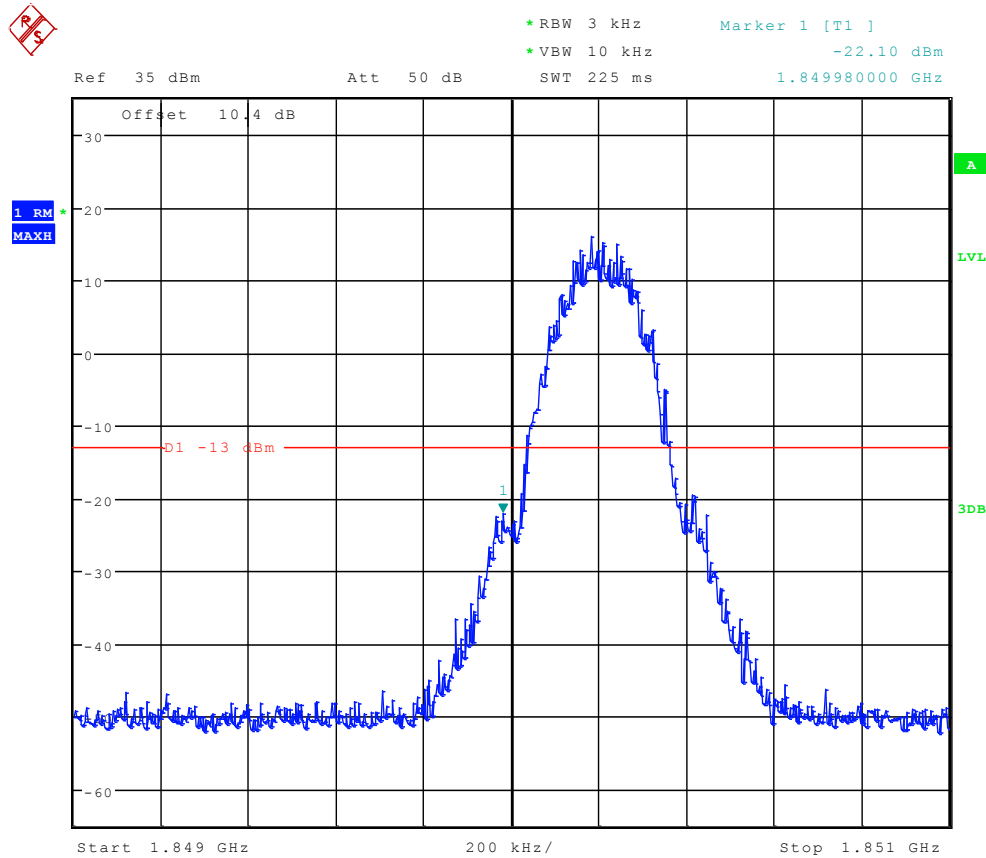
Band Edges Compliance According to FCC Part 2.1051 & 24.238



TM1:GPRS/GSM

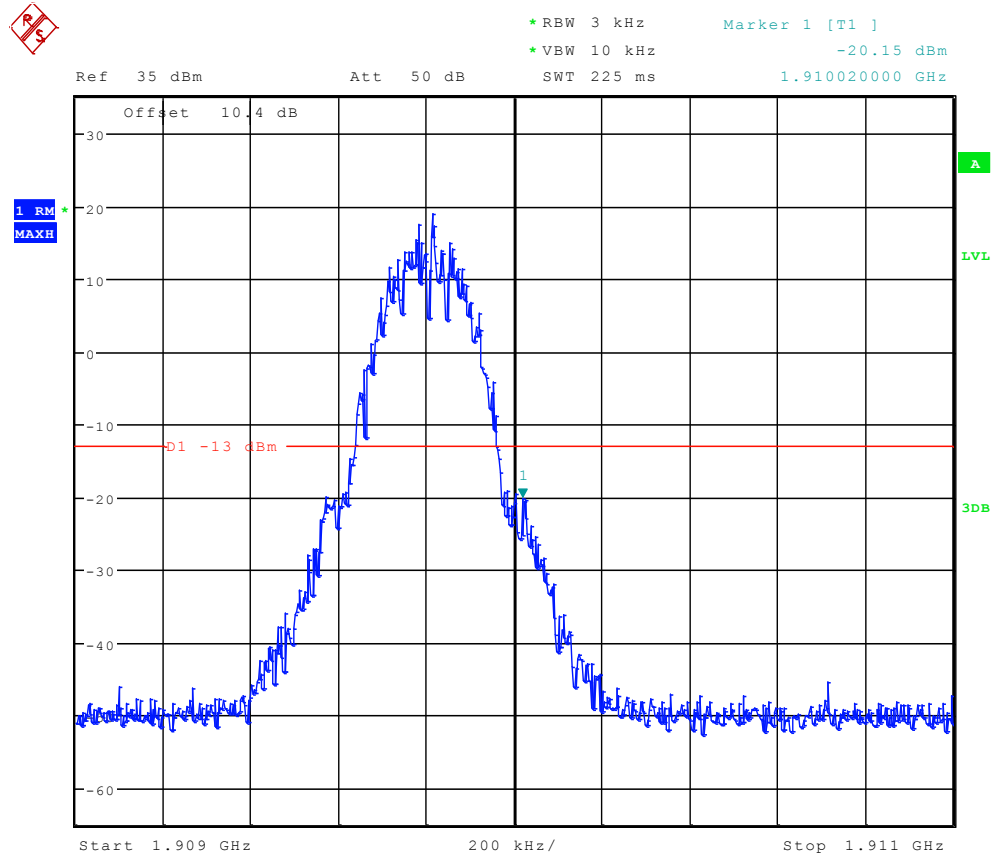
Left Edge

Channel 512



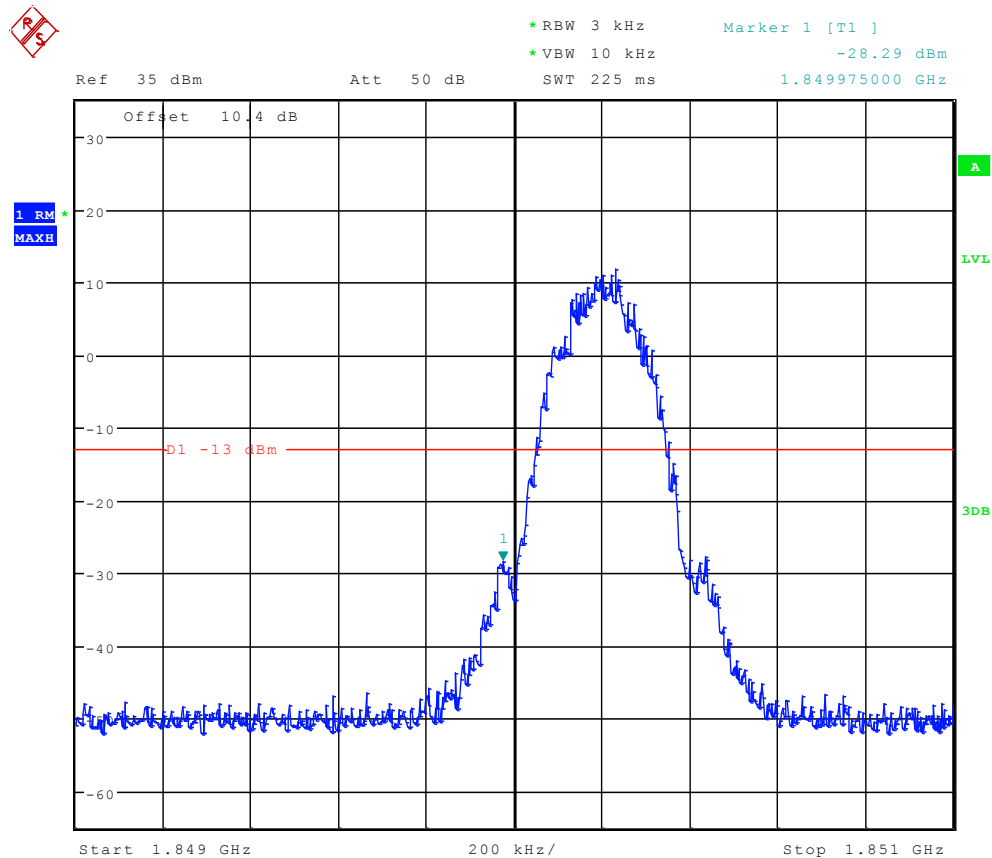


Right Edge Channel 810



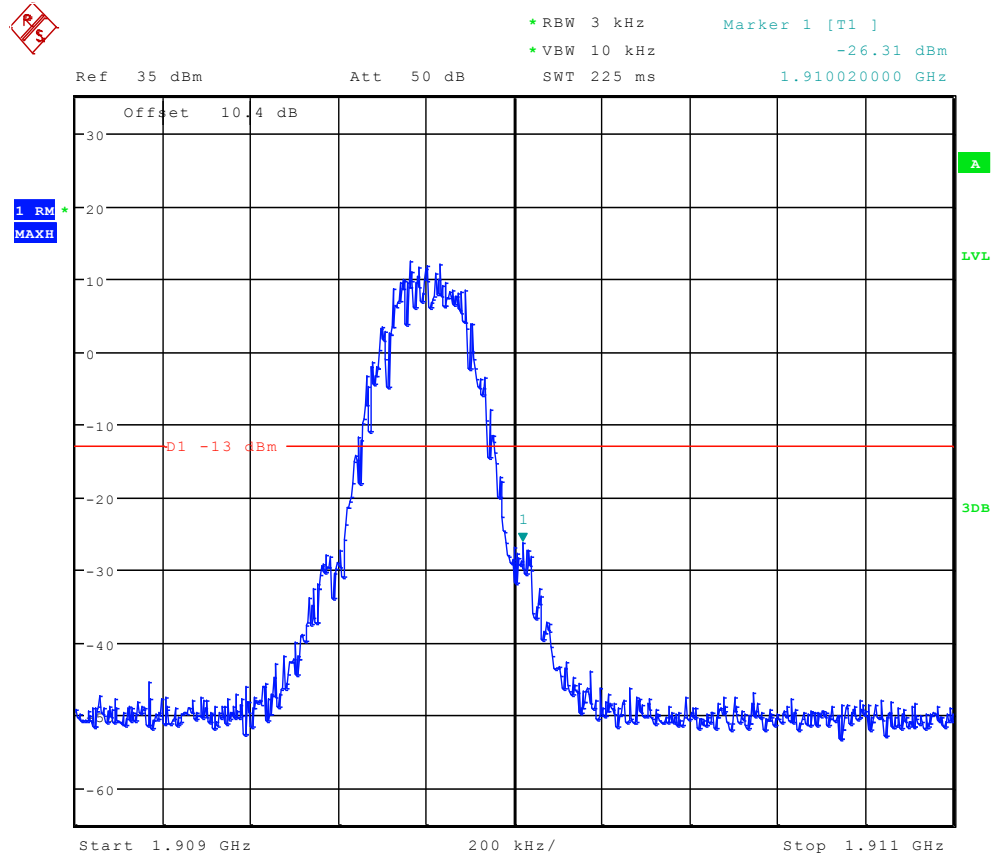


TM2:EDGE Left Edge Channel 512





Right Edge Channel 810

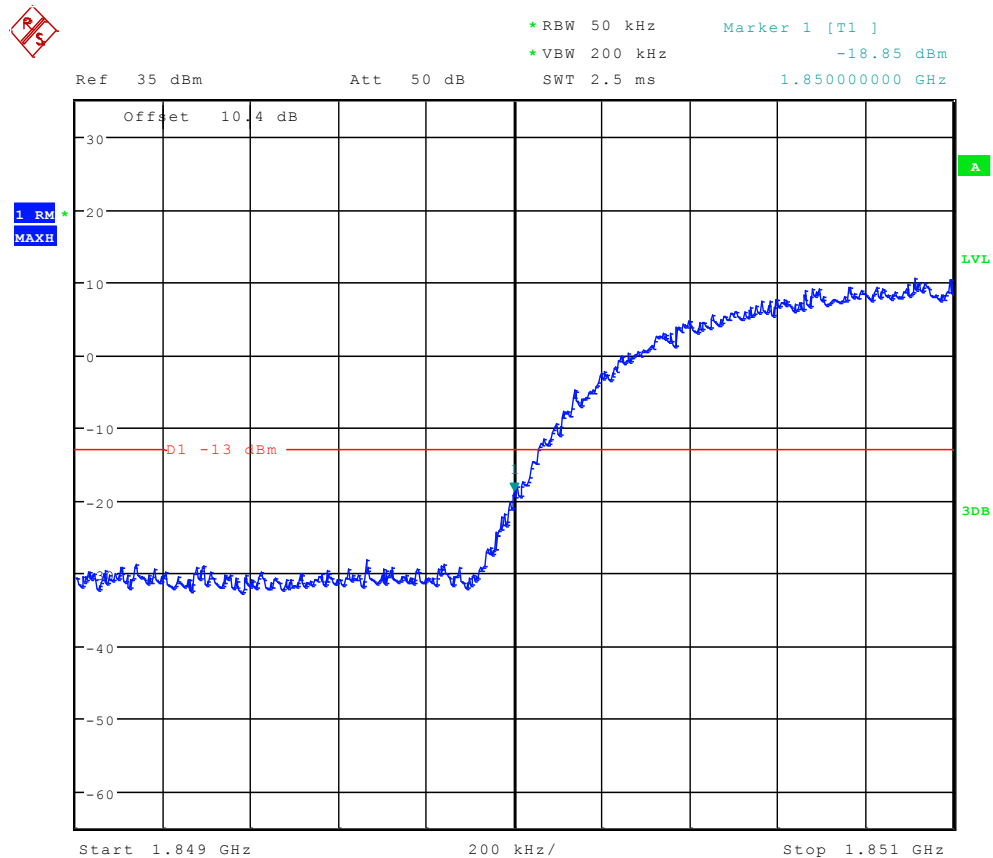




TM3: WCDMA

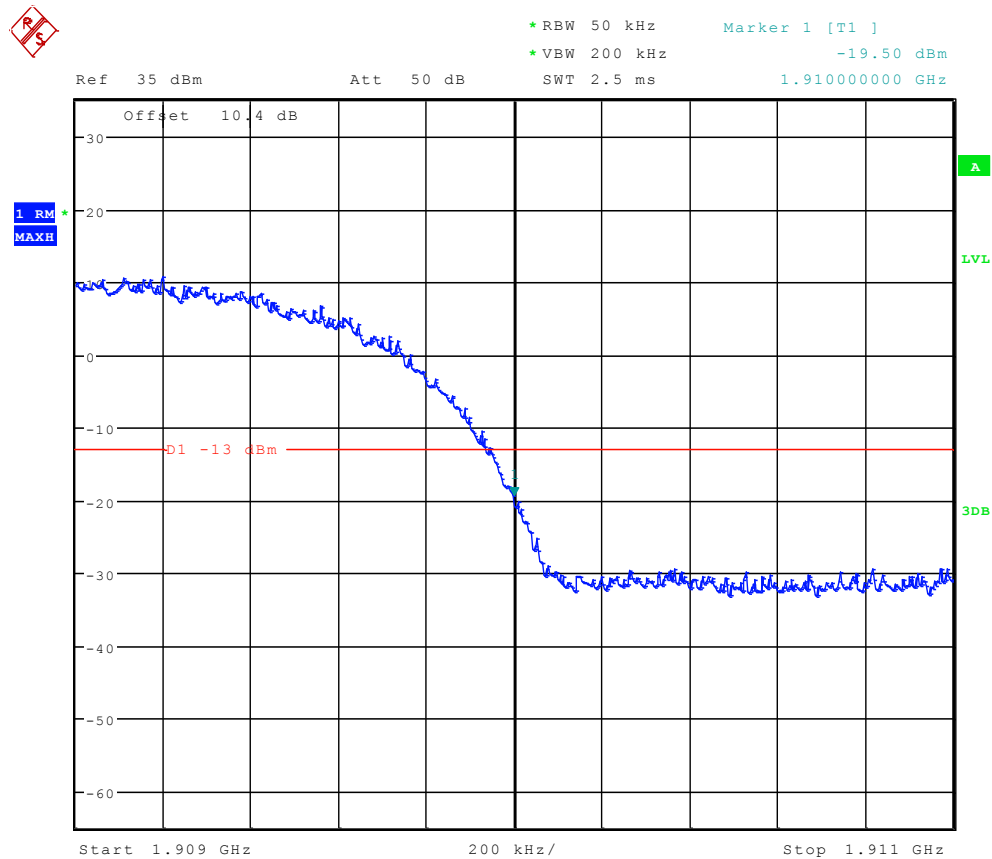
Left Edge

Channel 9262





Right Edge Channel 9538



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



Appendix E

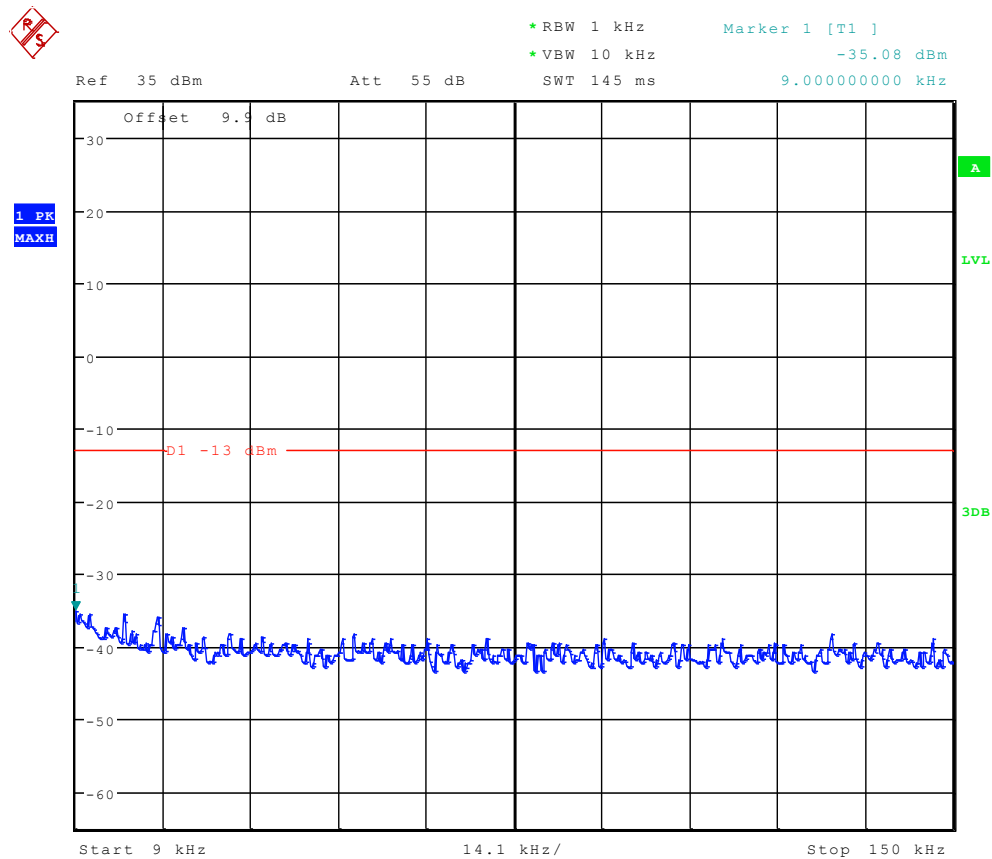
Spurious Emission at Antenna Terminal

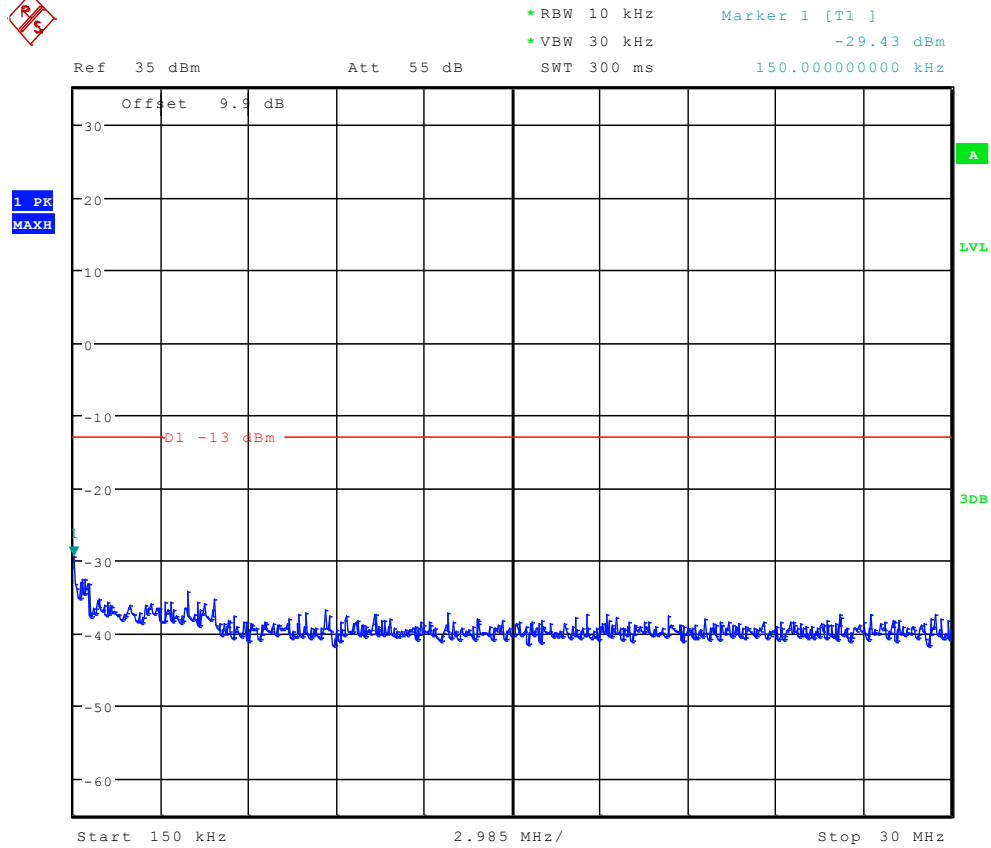
According to FCC Part 2.1051 & 24.238

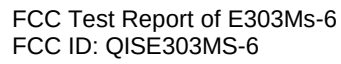


TM1:GPRS/GSM

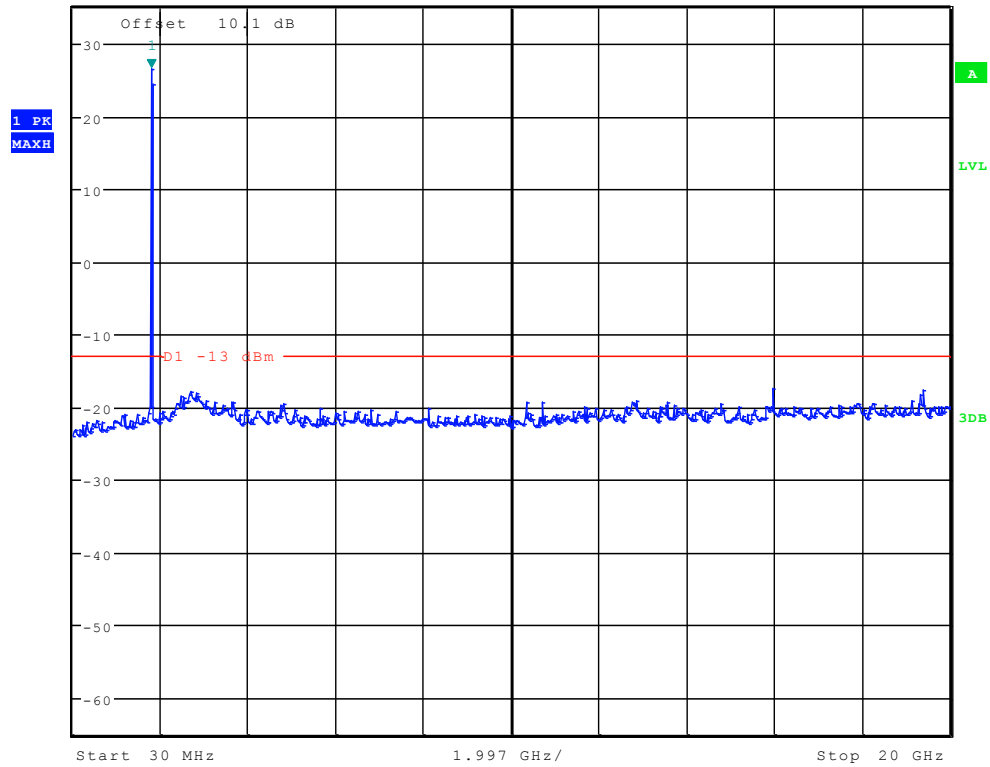
Channel 512





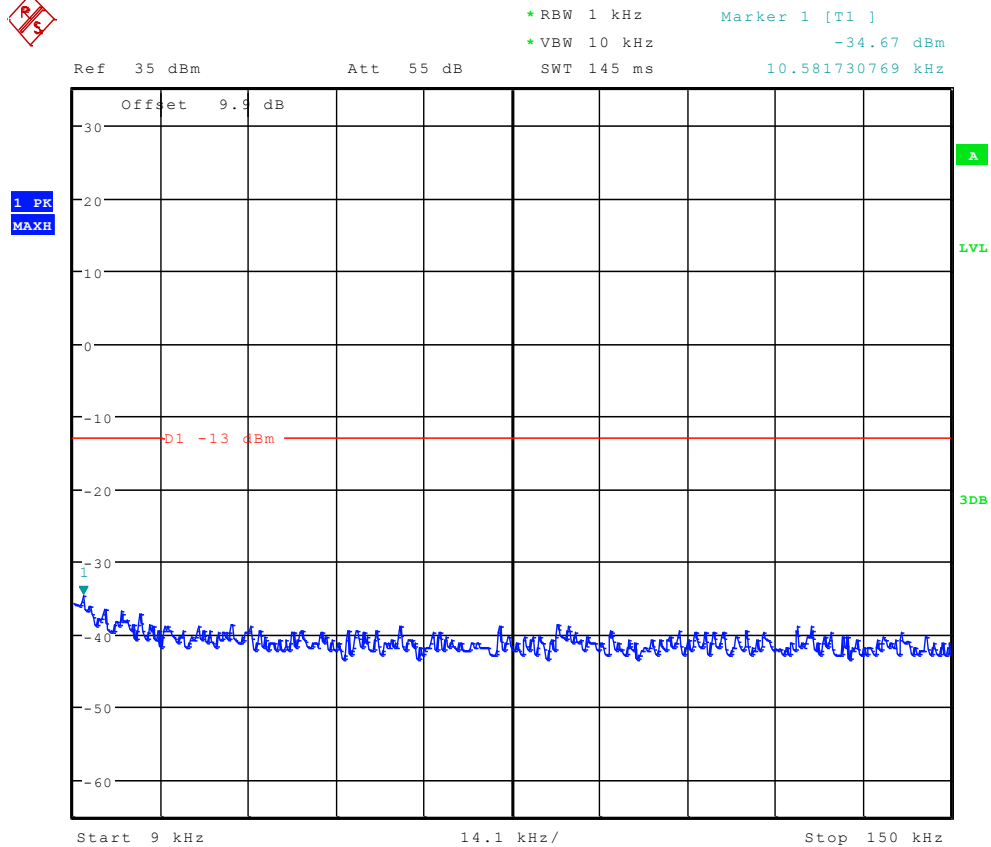


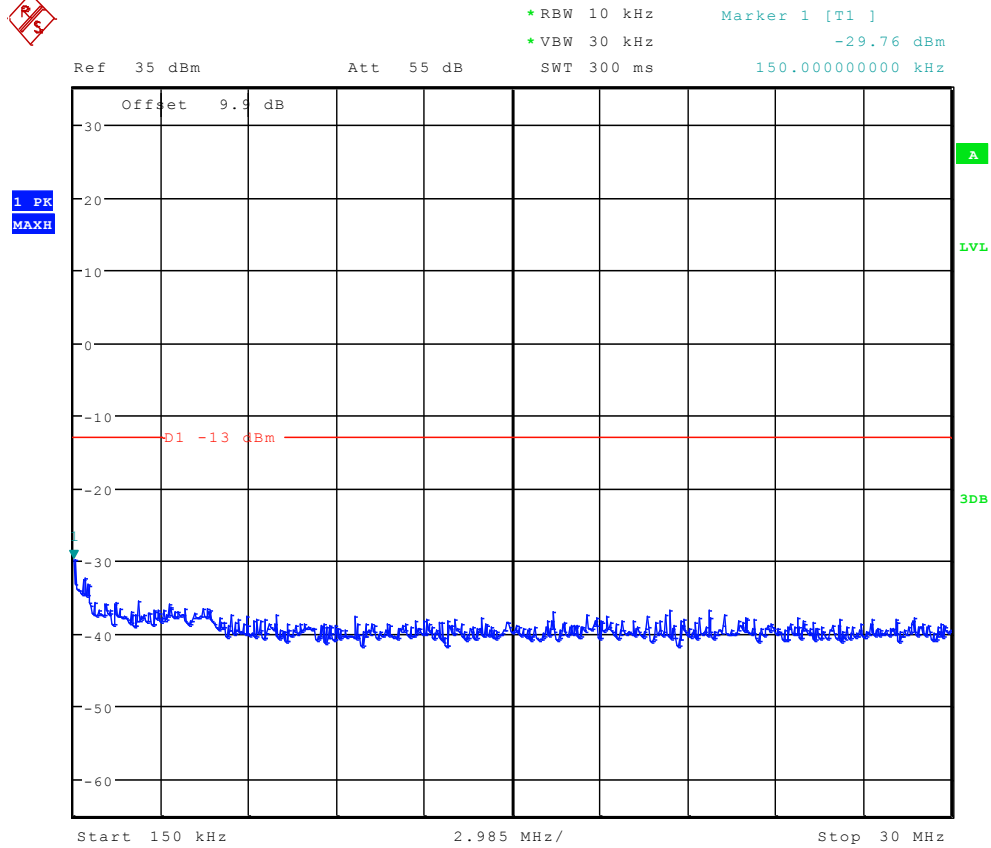
Ref	35 dBm	Att	50 dB	SWT	115 ms	1.822179487 GHz
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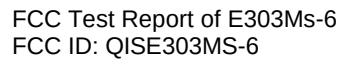




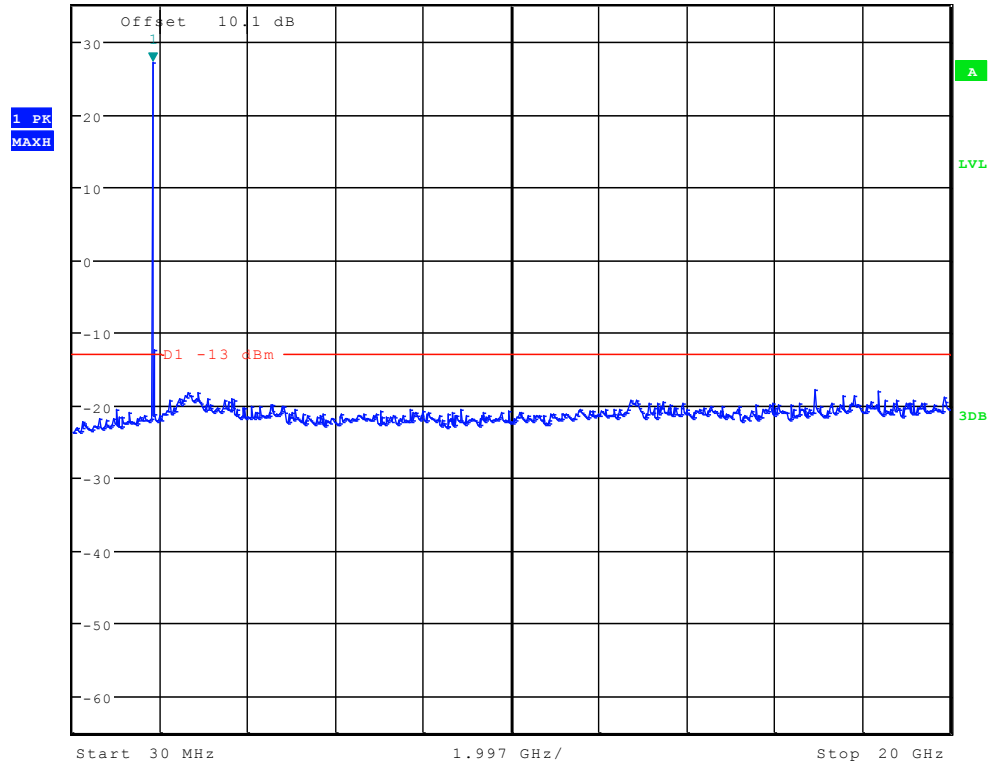
Channel 661





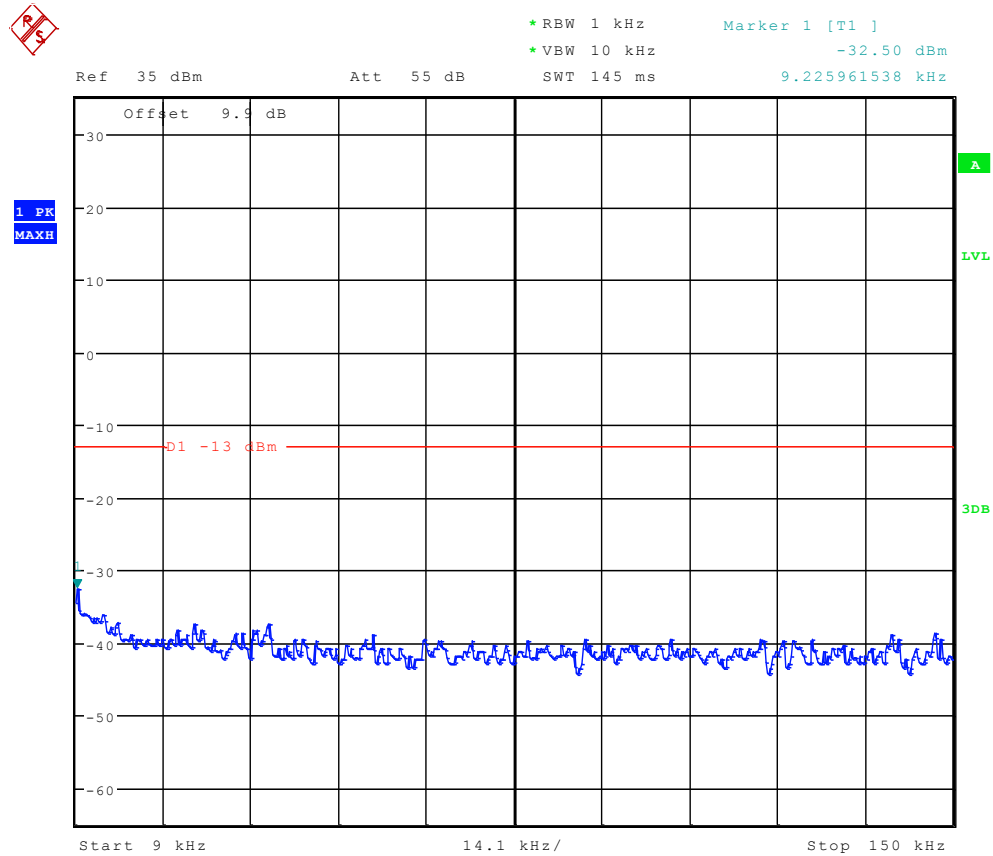


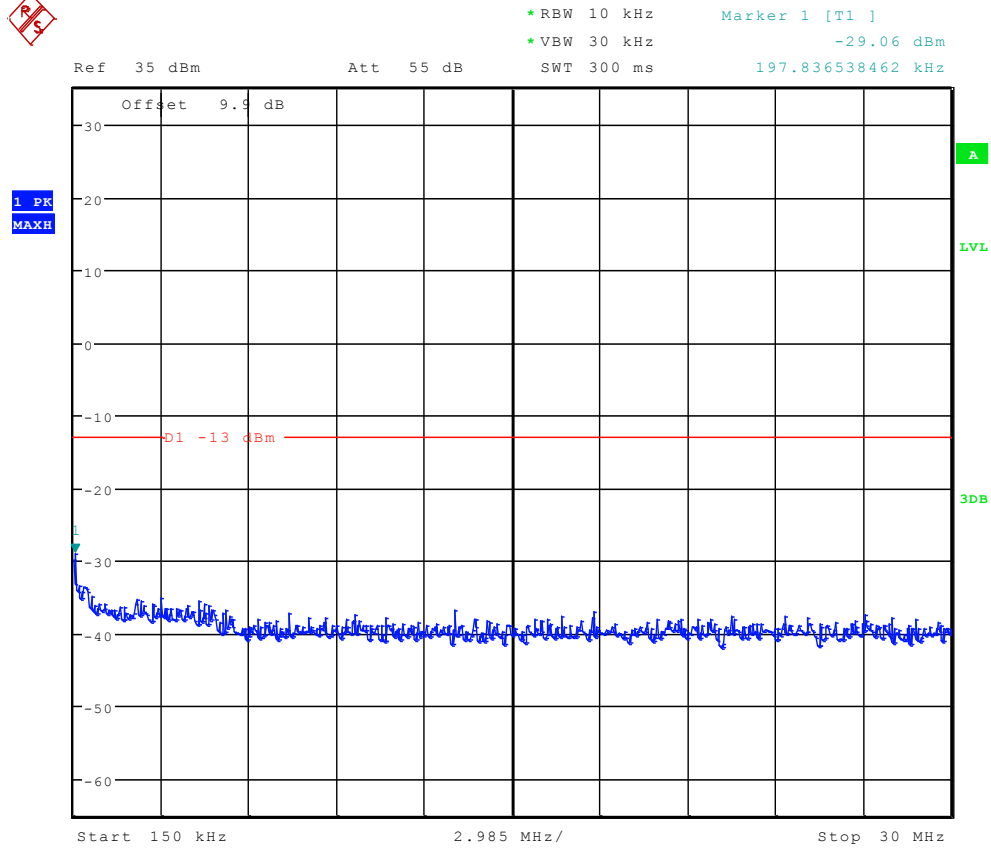
Ref	35 dBm	Att	50 dB	SWT	115 ms	1.854182692 GHz
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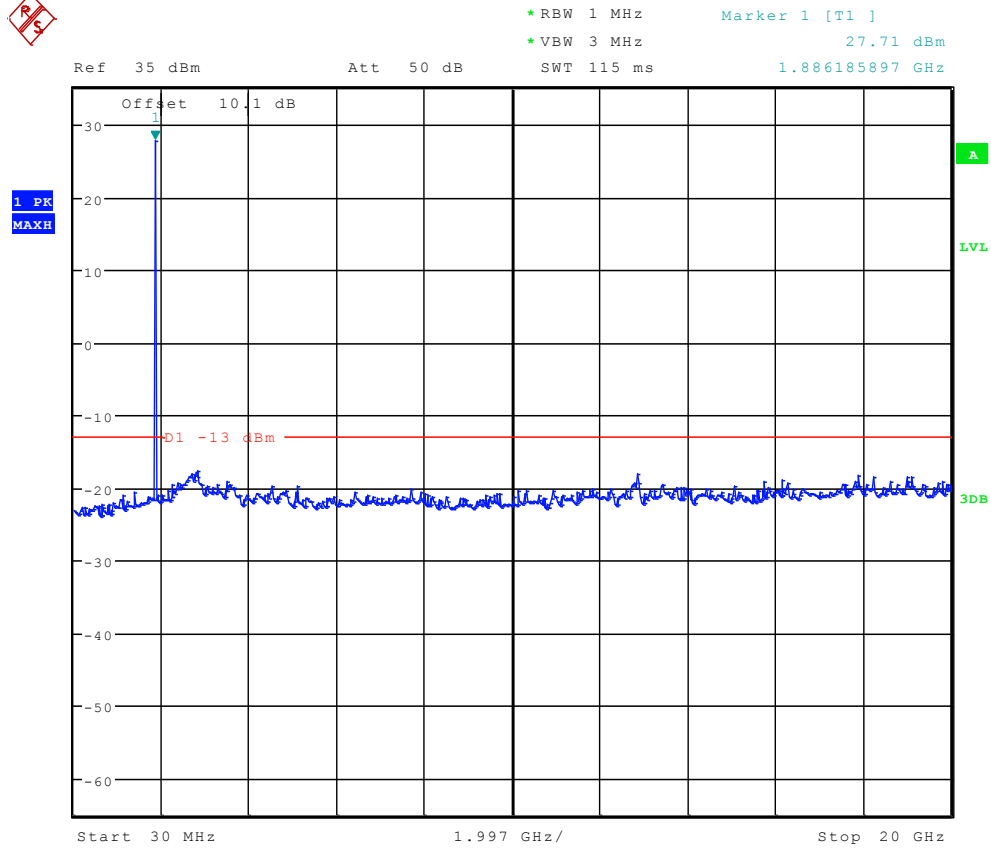




Channel 810

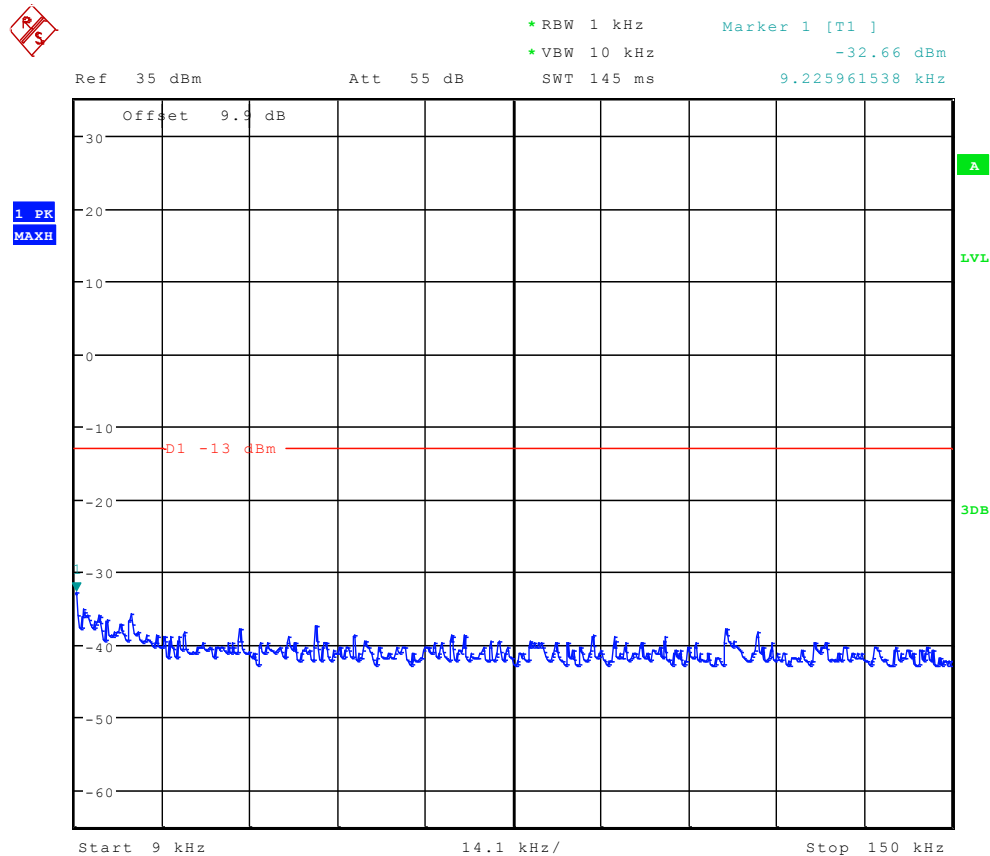


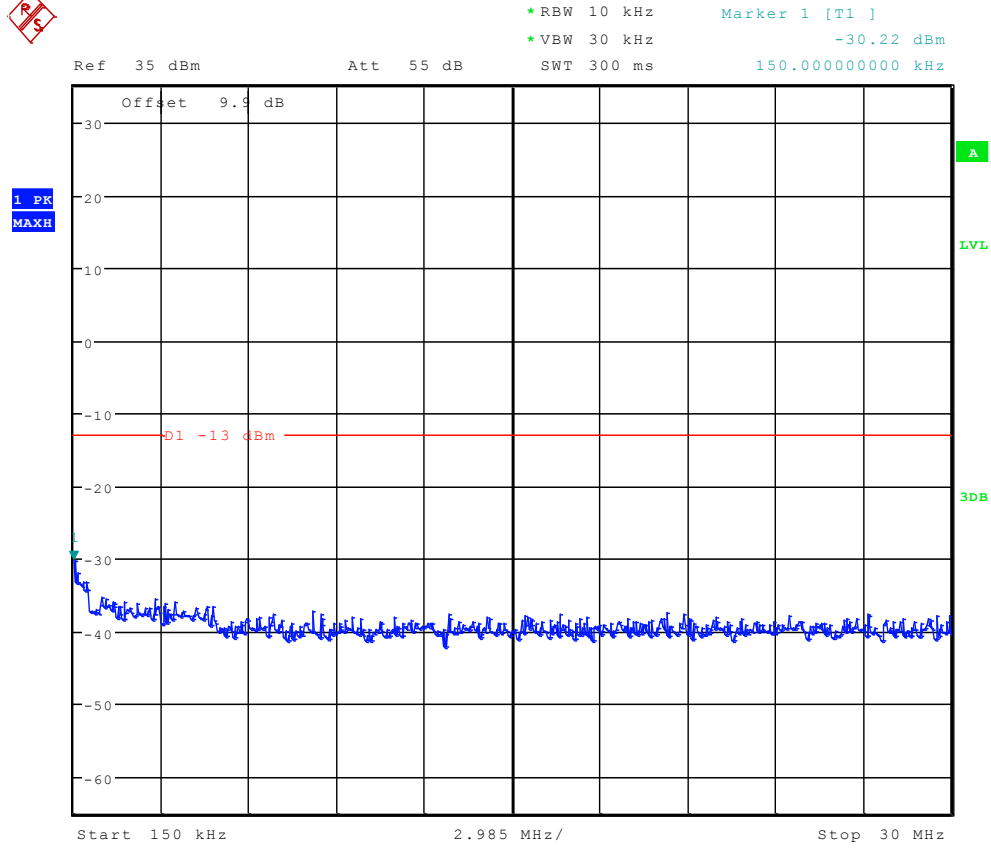


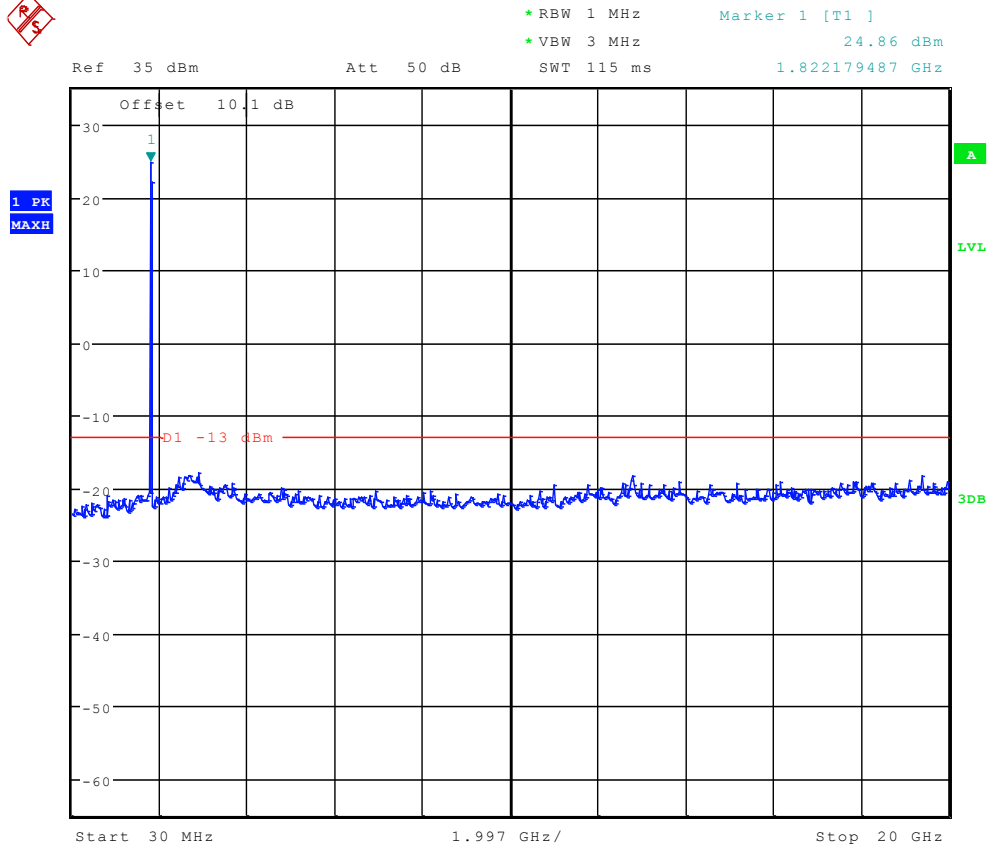


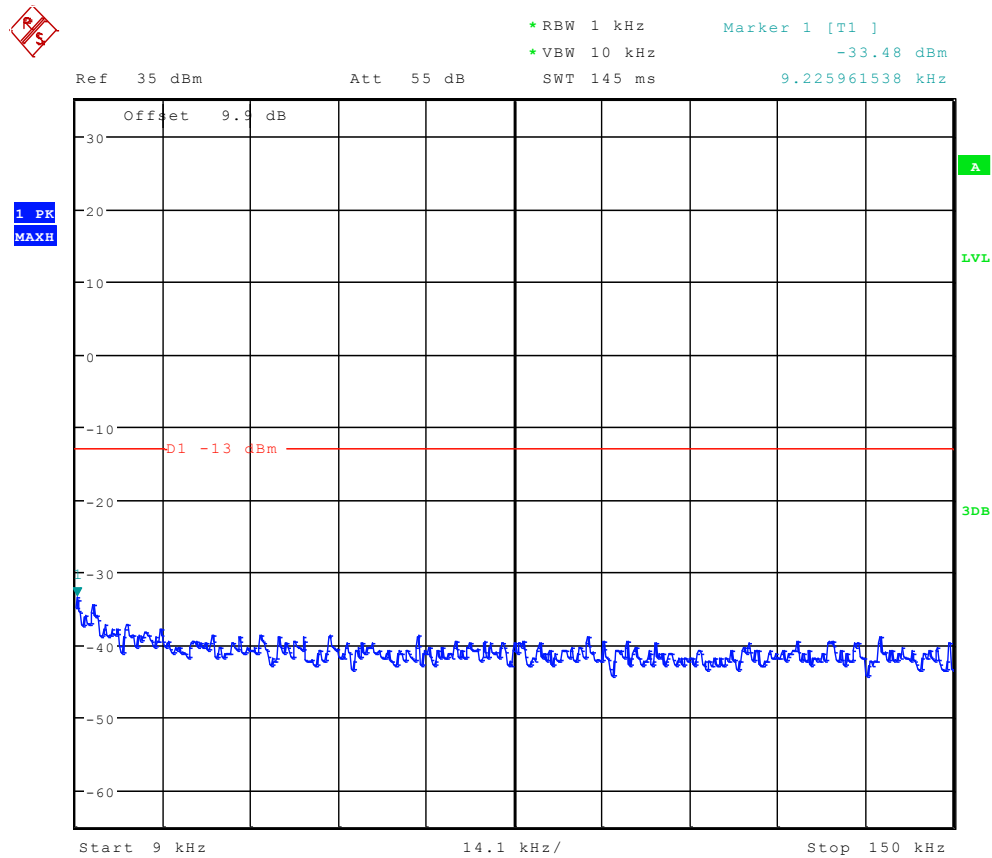
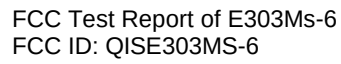


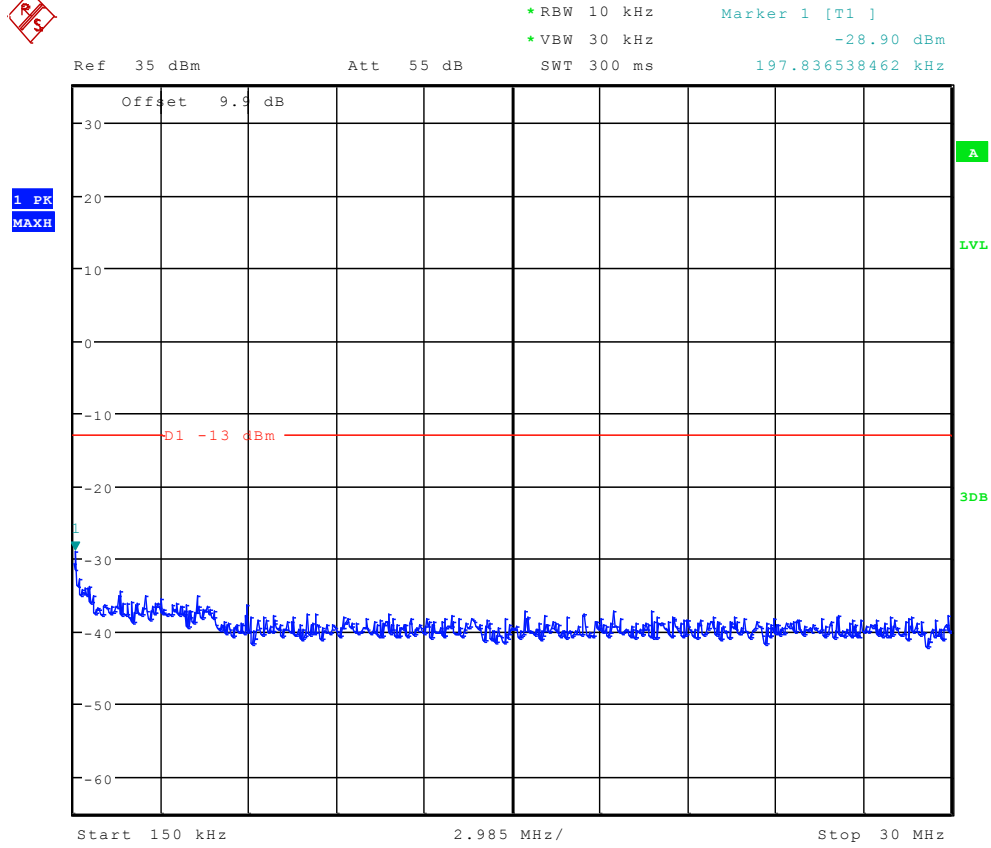
TM2:EDGE Channel 512

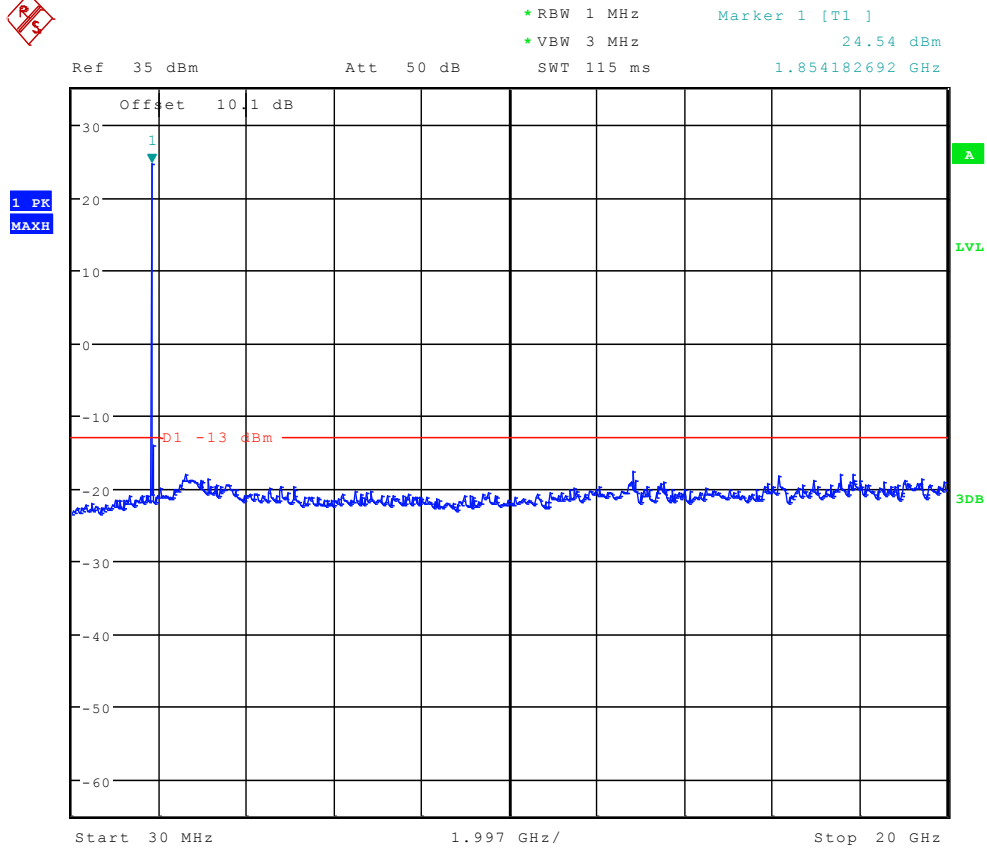






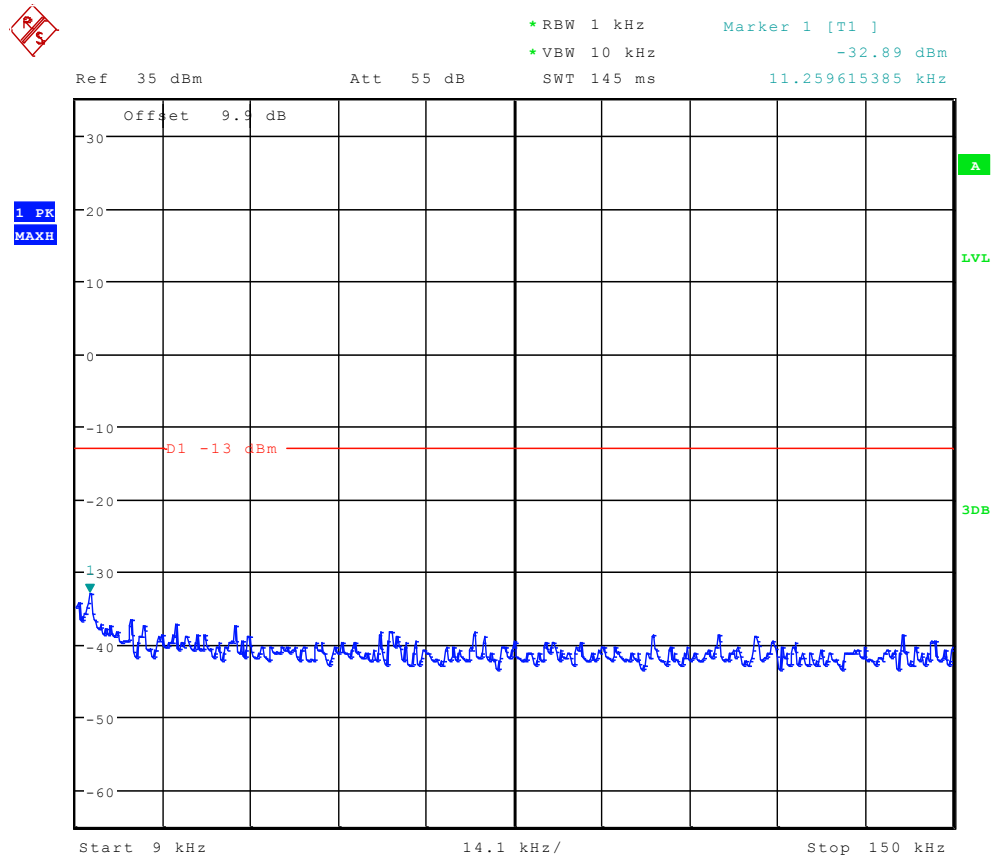


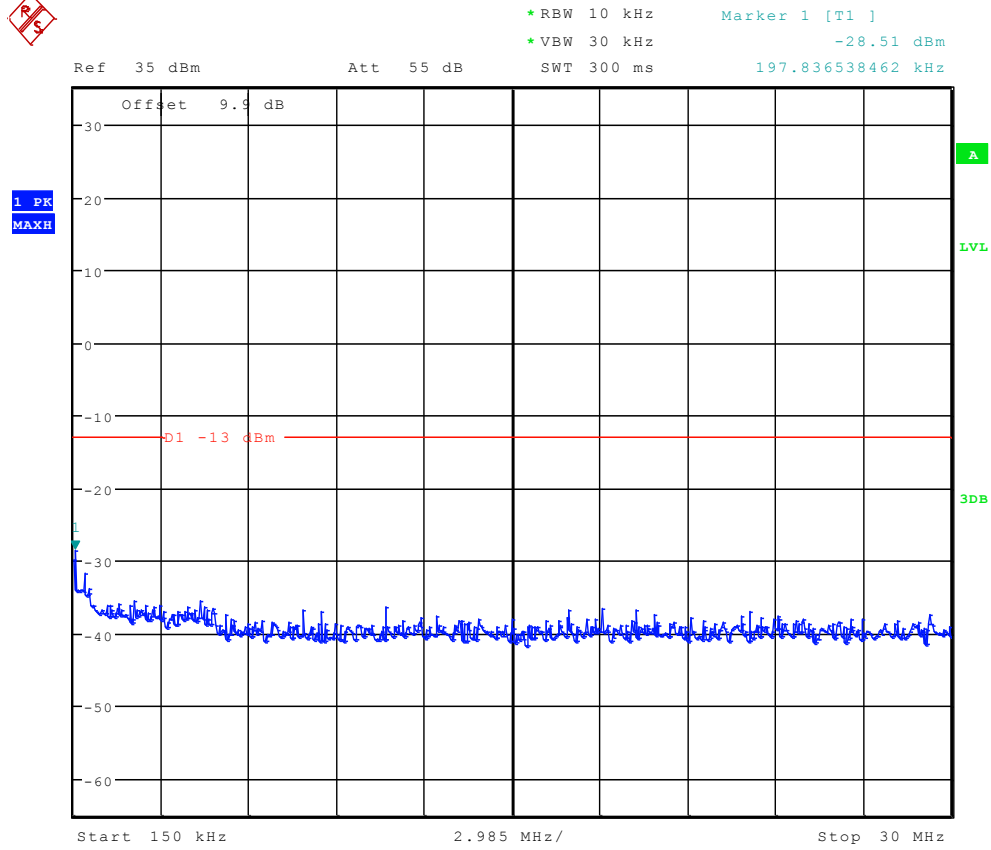


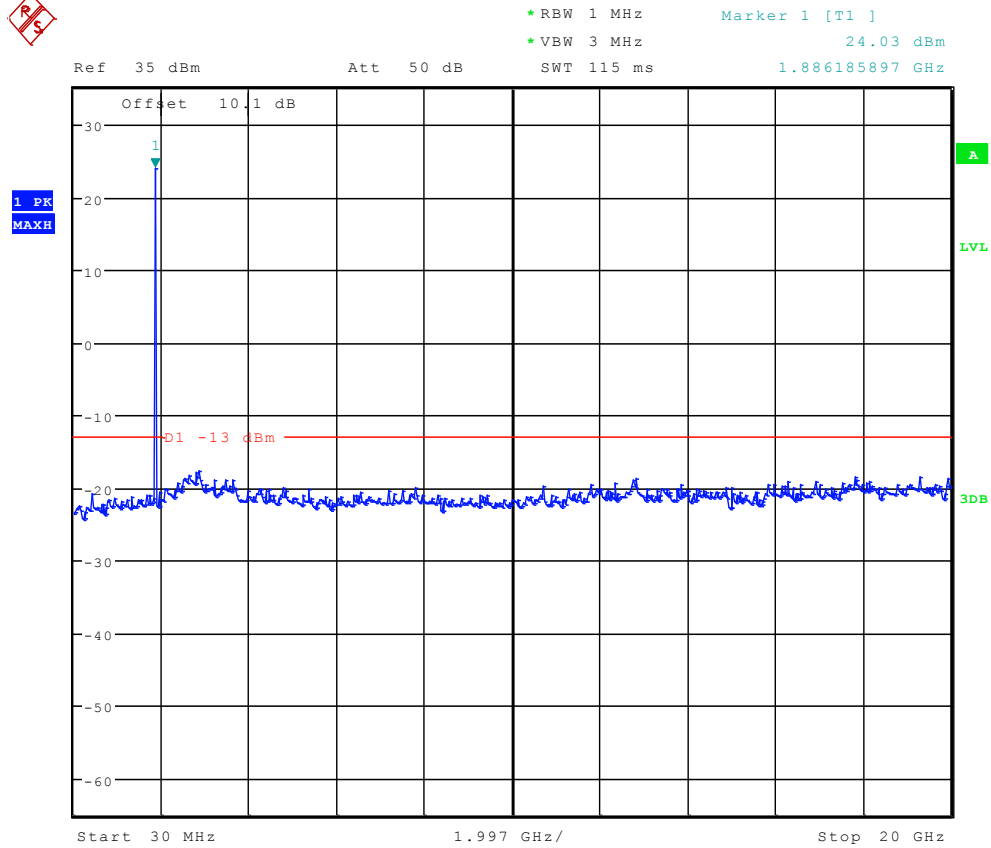


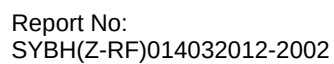
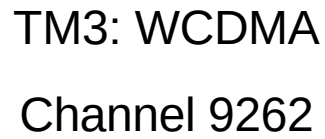
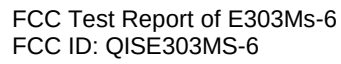


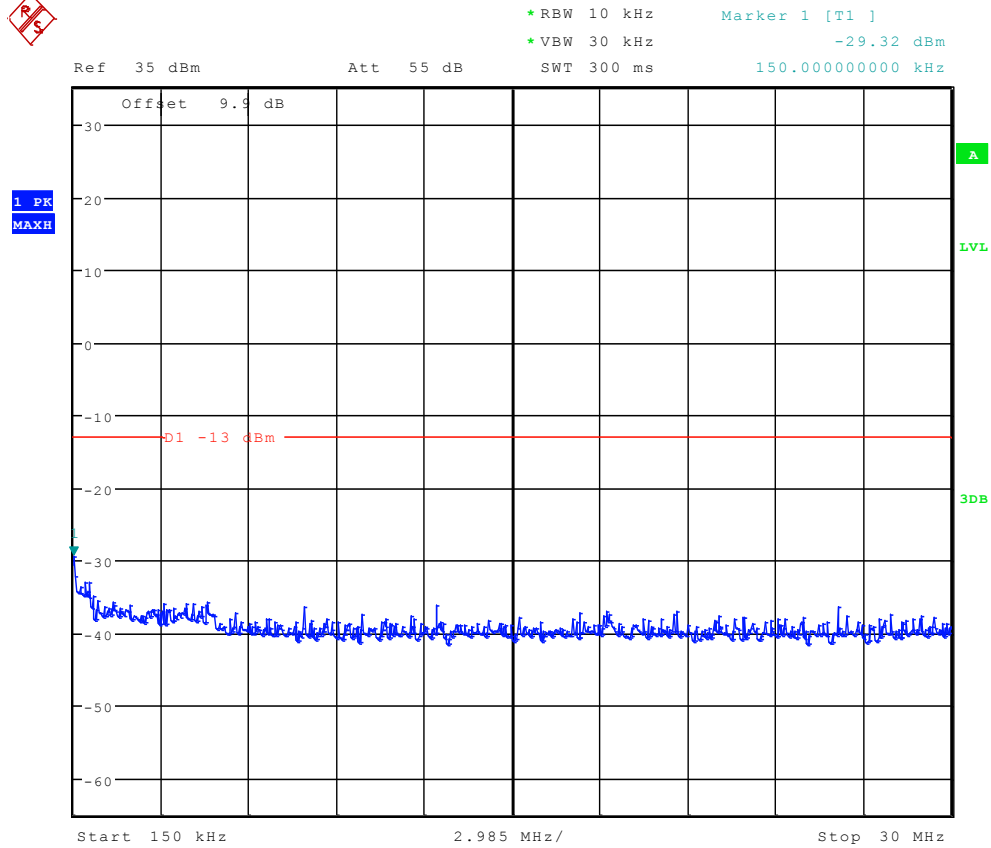
Channel 810

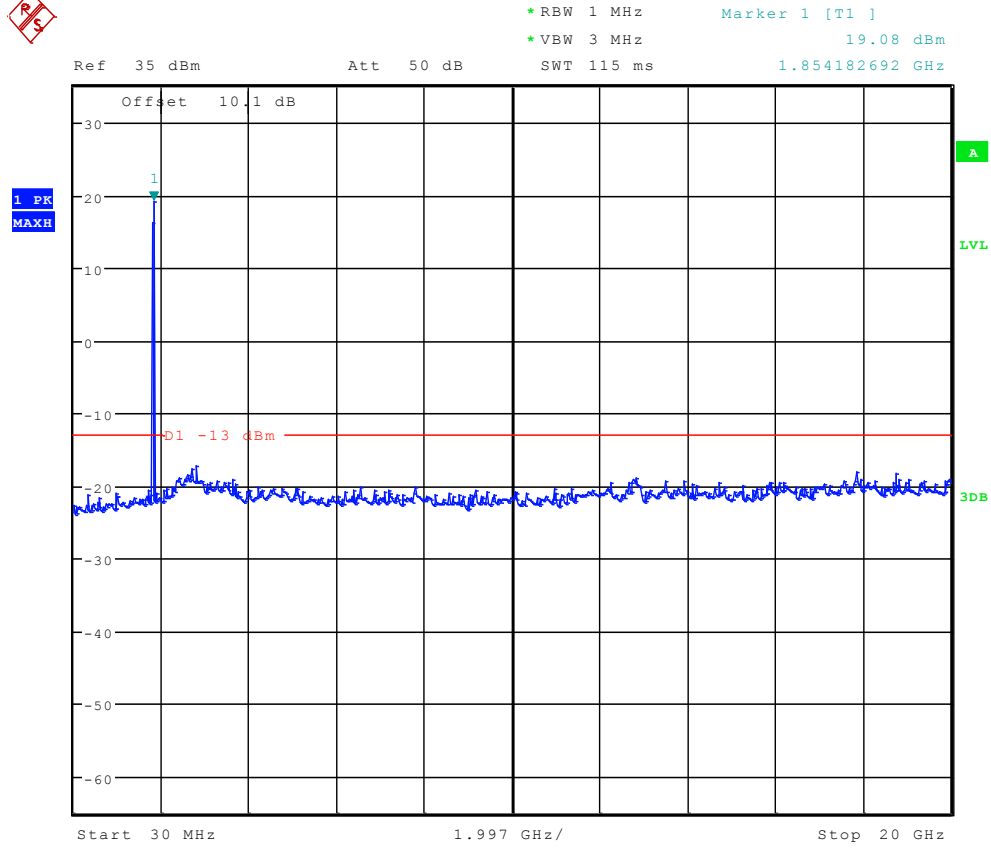






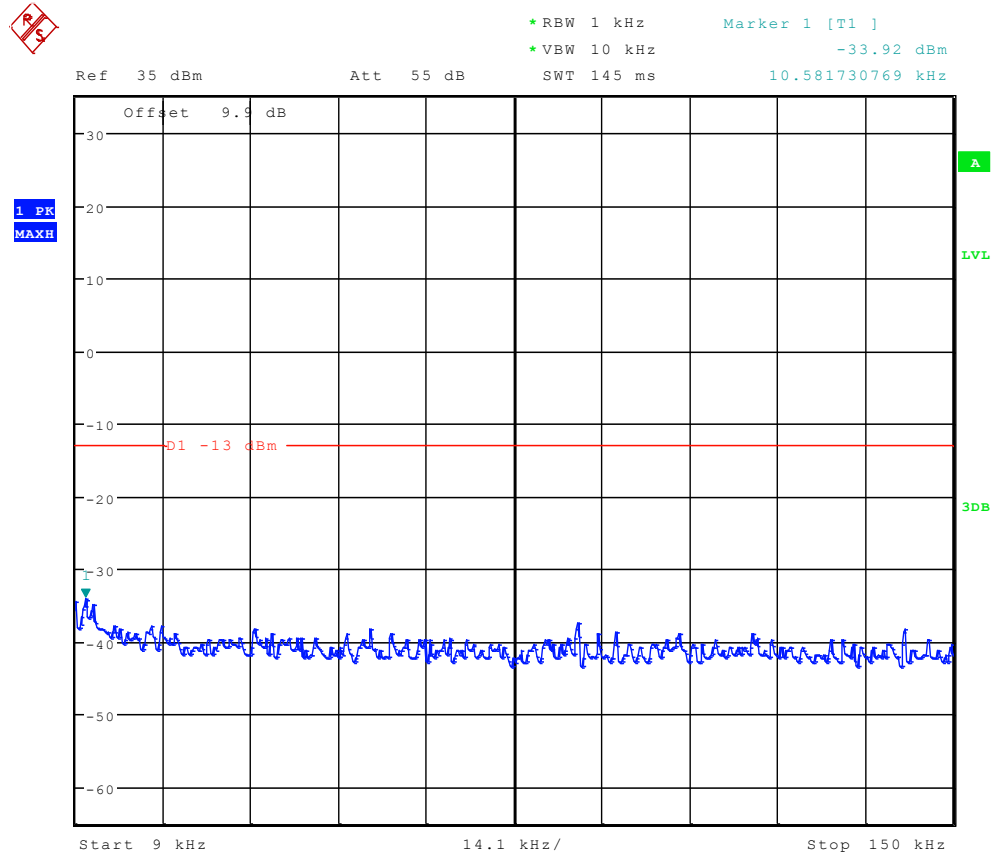


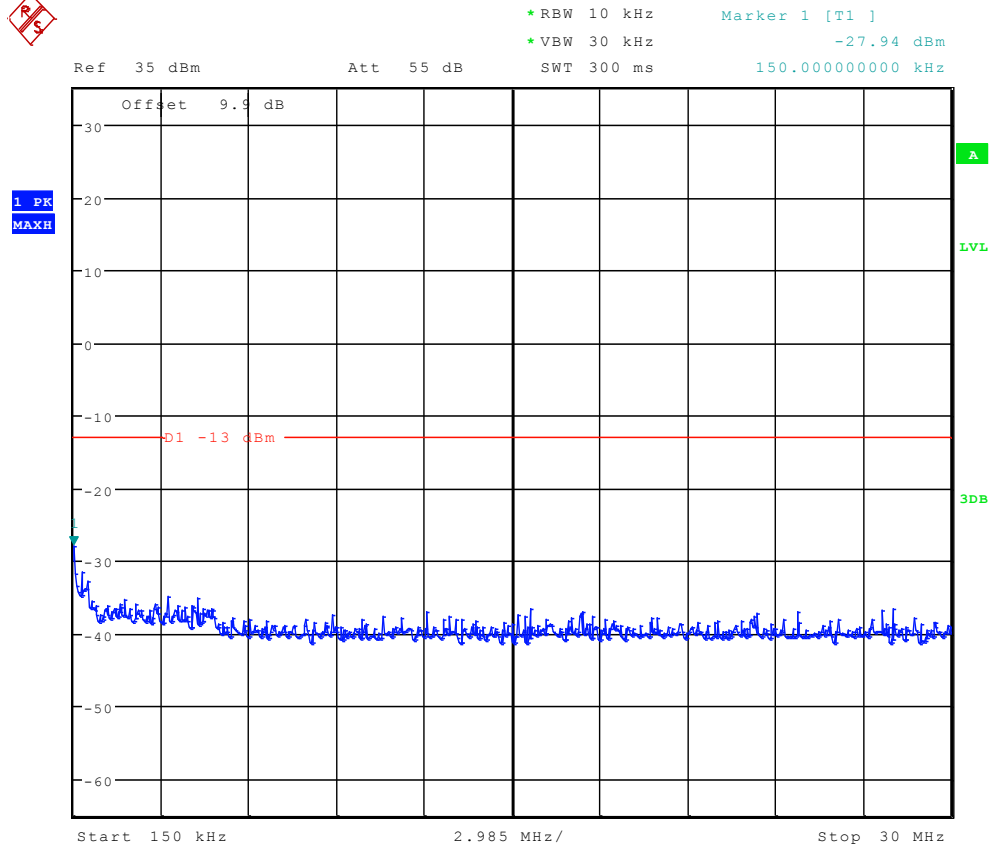


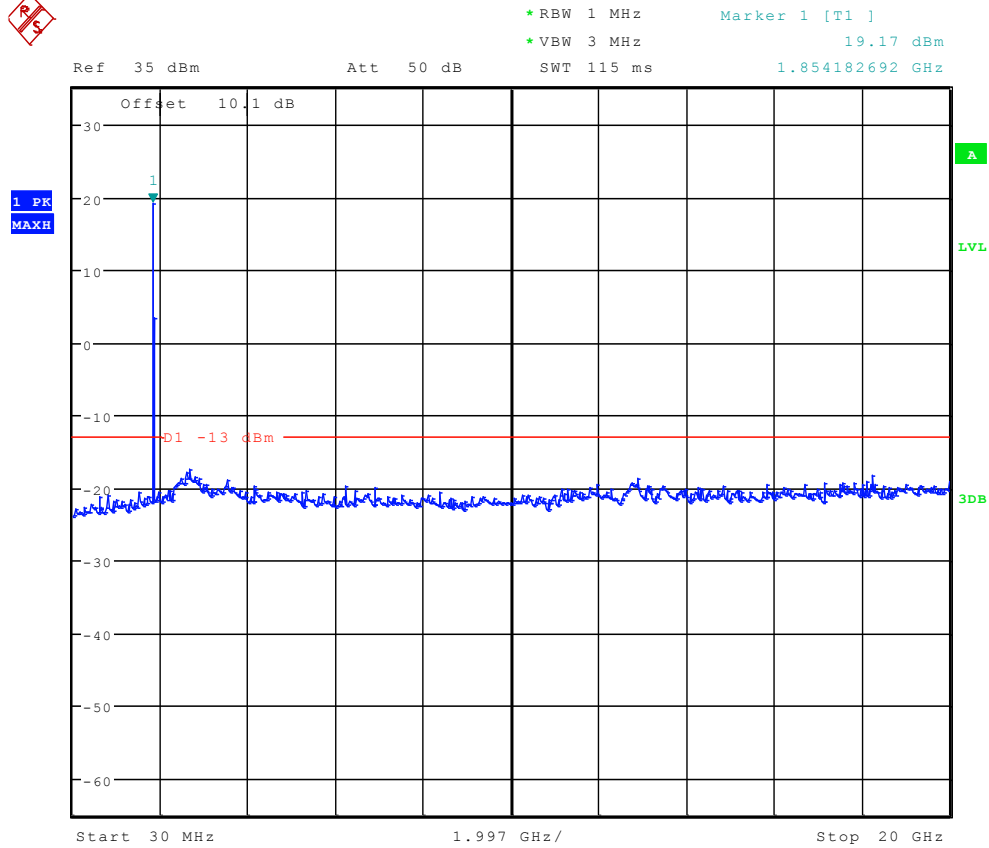




Channel 9400

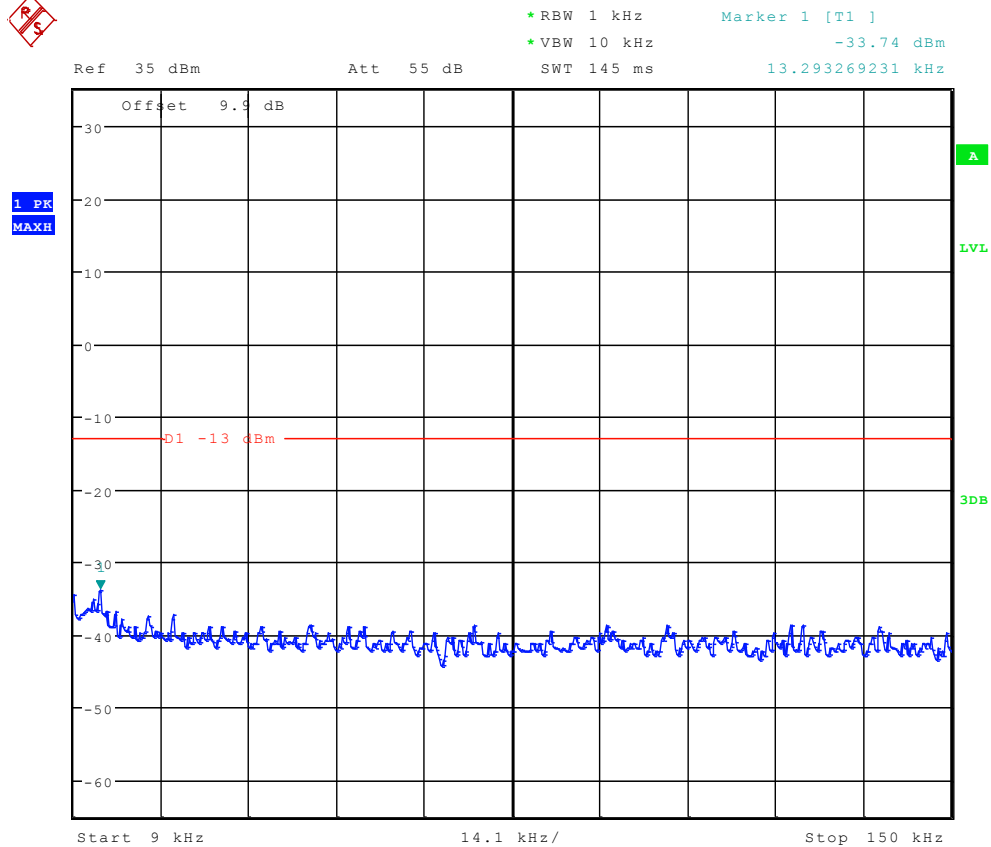


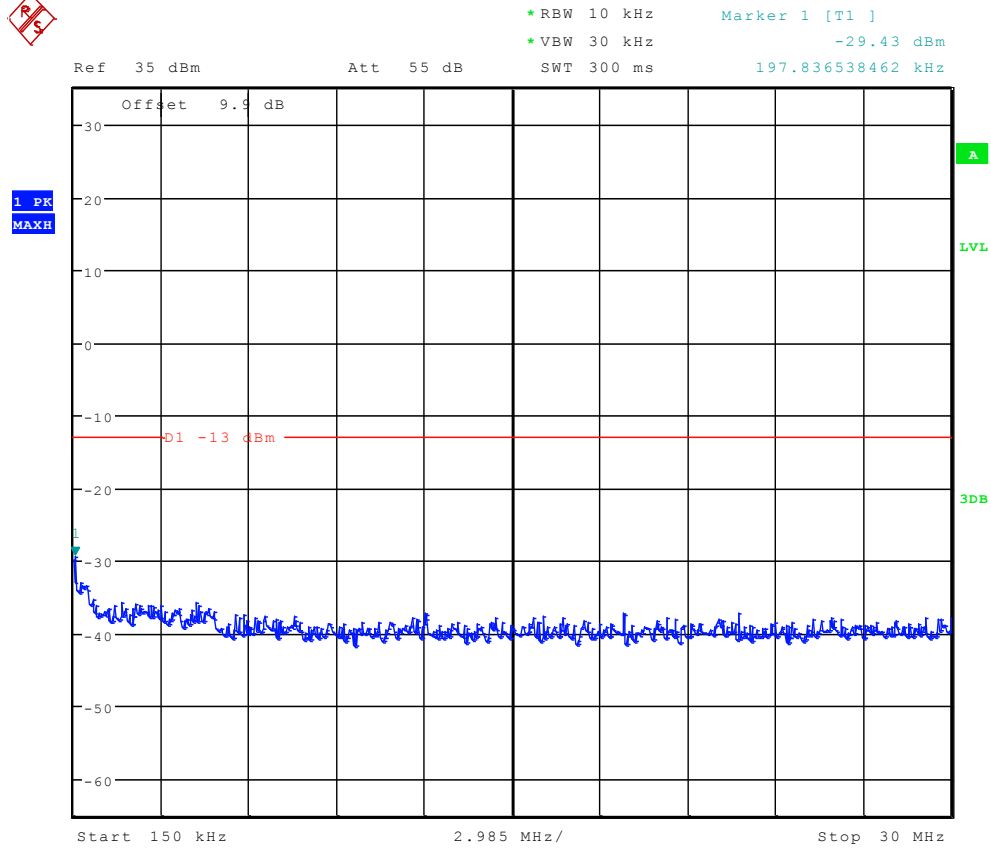


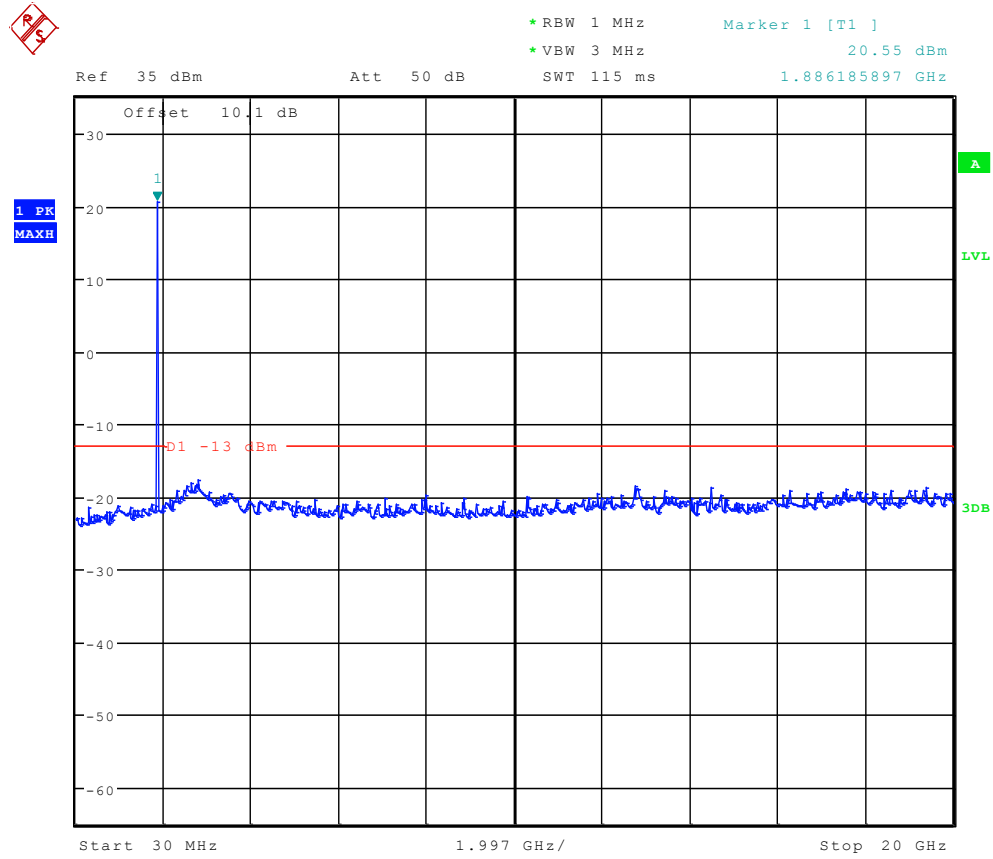




Channel 9538







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



Appendix F

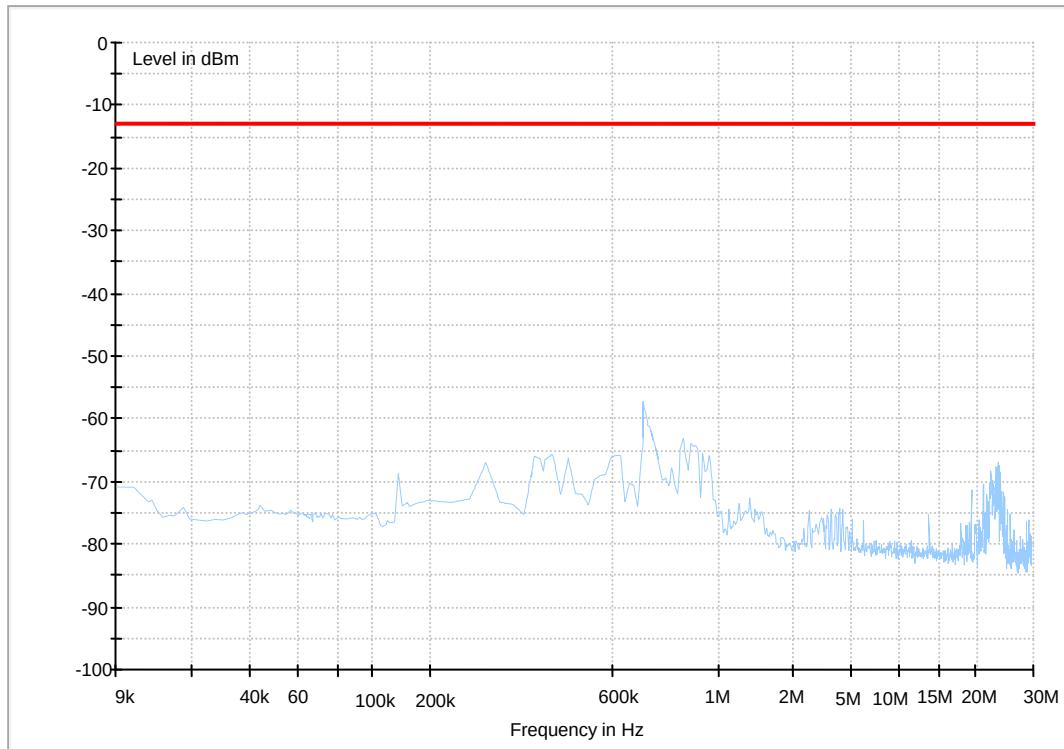
Radiated spurious emission

According to FCC Part 2.1053& Part 24.238

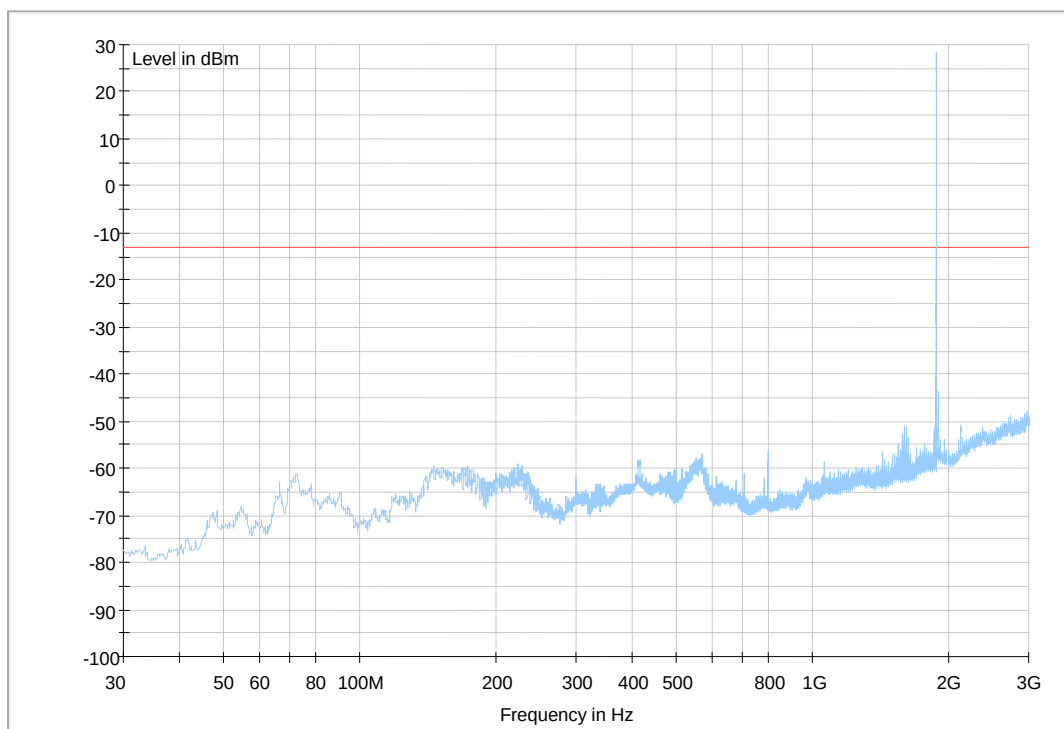


GPRS 1900

(9kHz-30MHz)

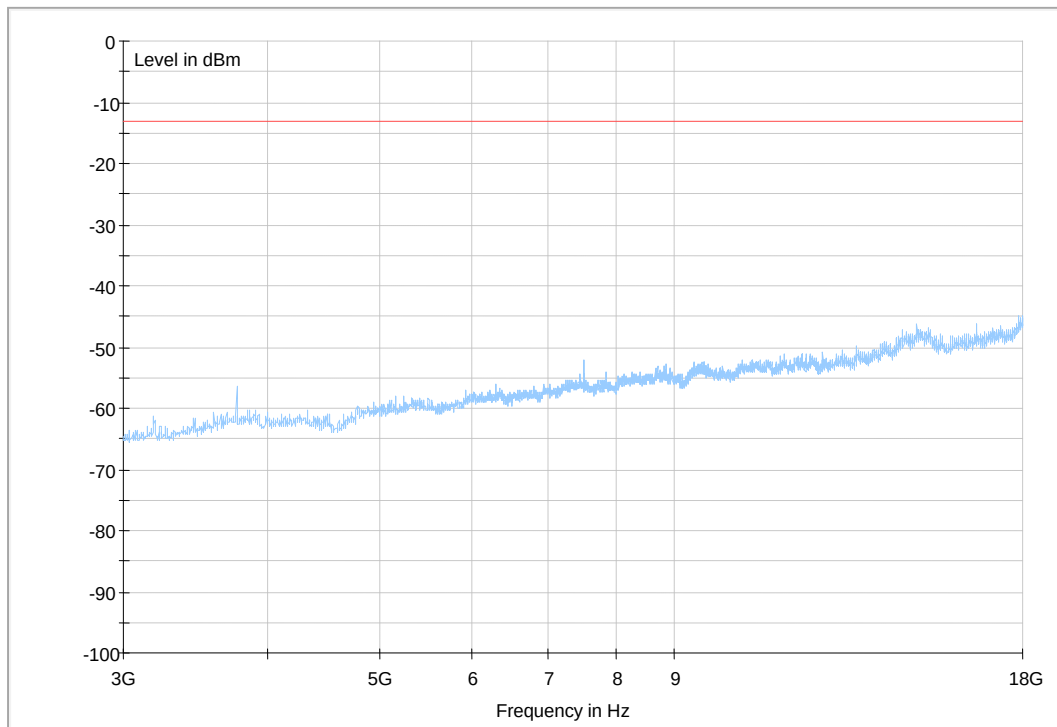


(30MHz~3GHz)

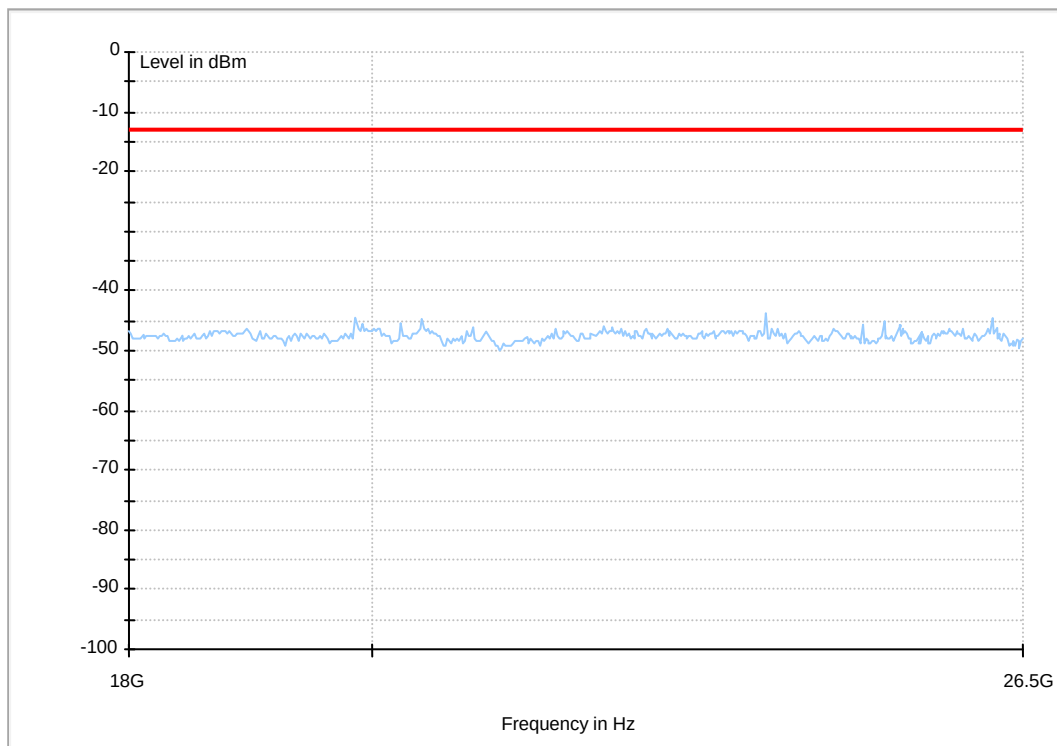




(3GHz~18GHz)



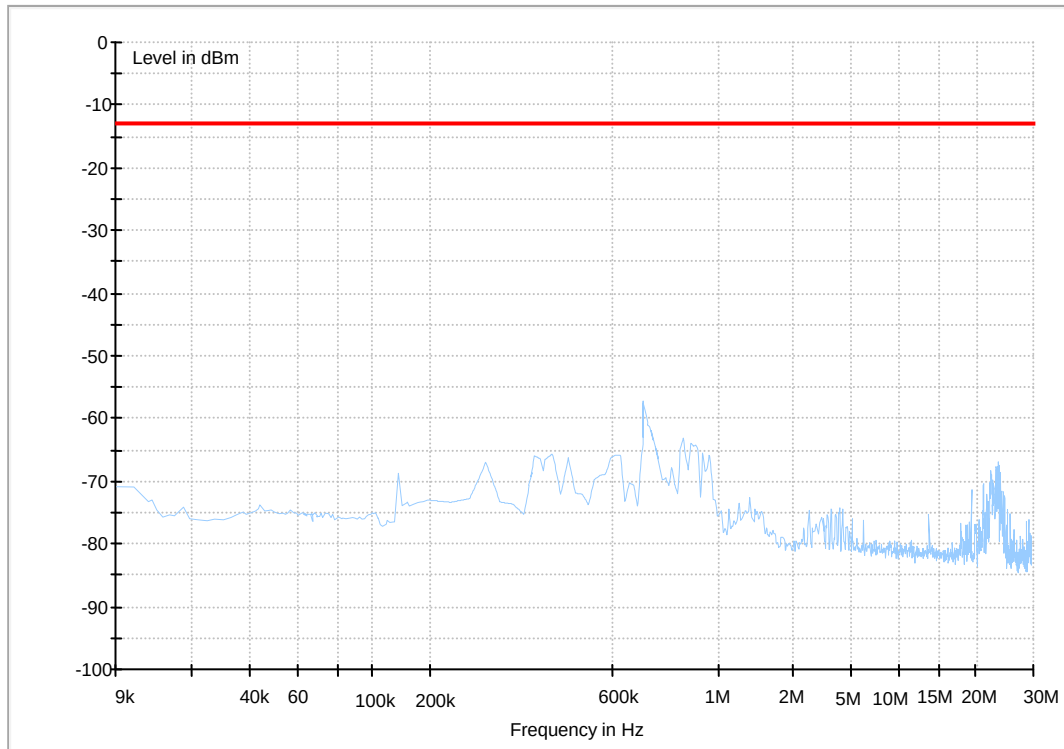
(18GHz-26.5GHz)



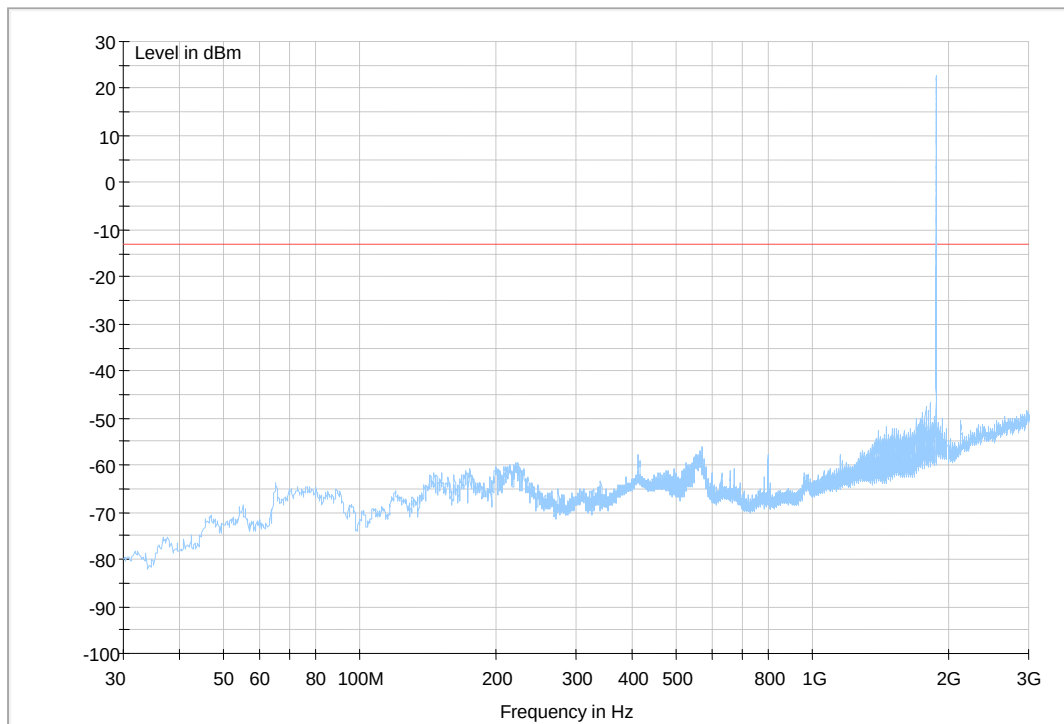


EDGE 1900

(9kHz-30MHz)

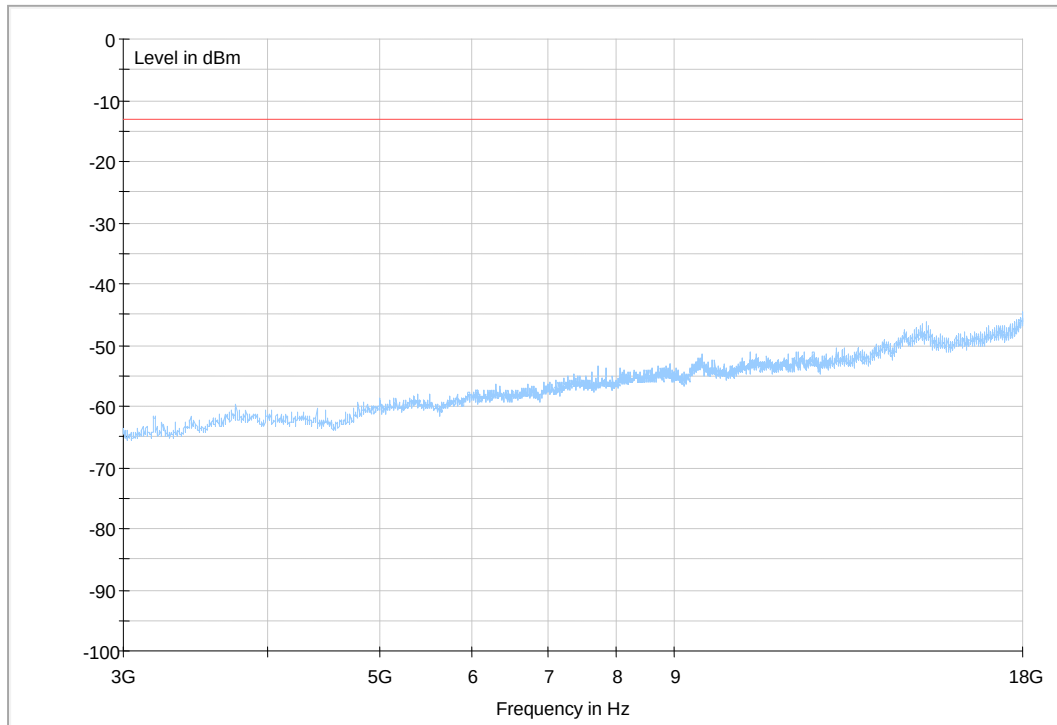


(30MHz~3GHz)

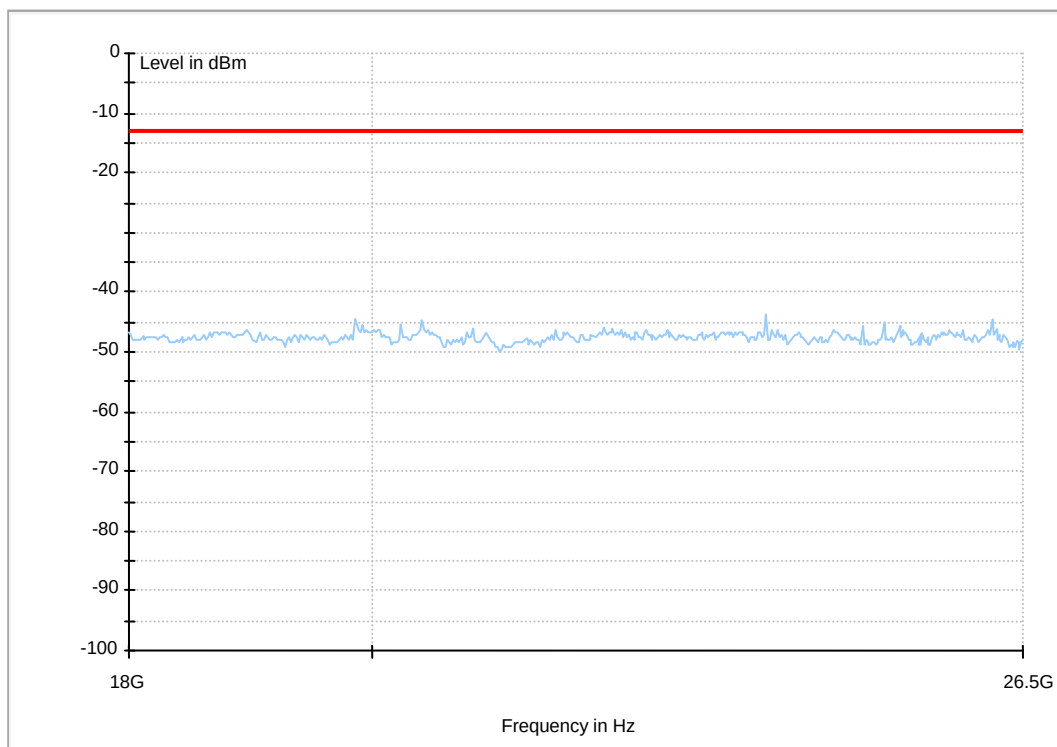




(3GHz~18GHz)

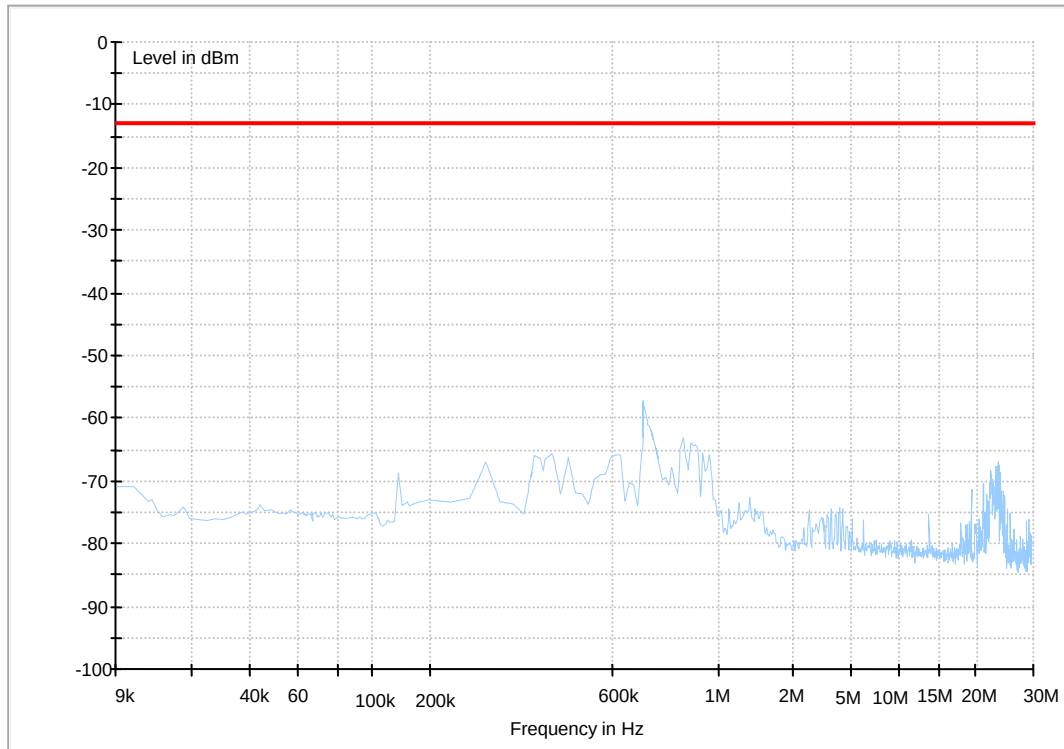


(18GHz-26.5GHz)

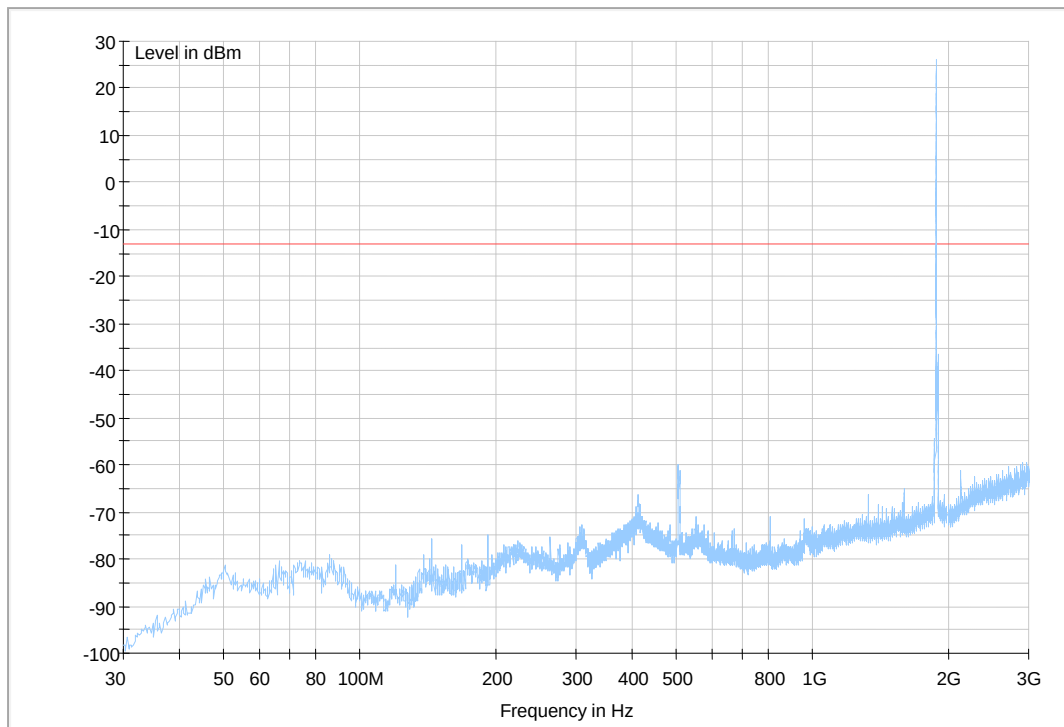


WCDMA Band II

(9KHz~30MHz)

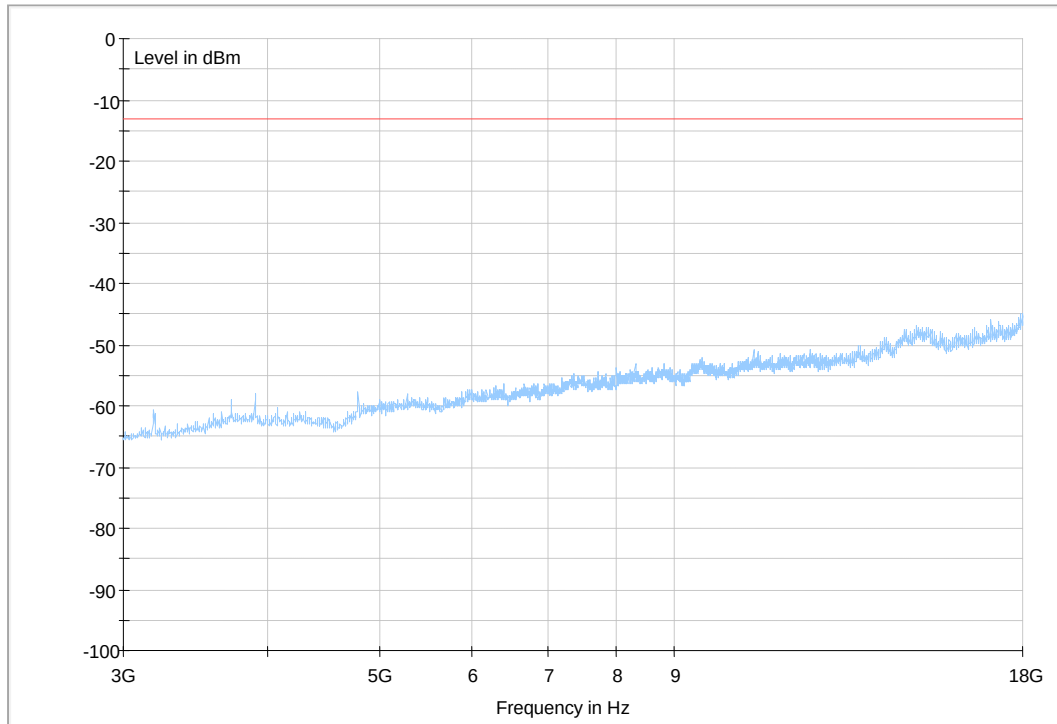


(30MHz~3GHz)

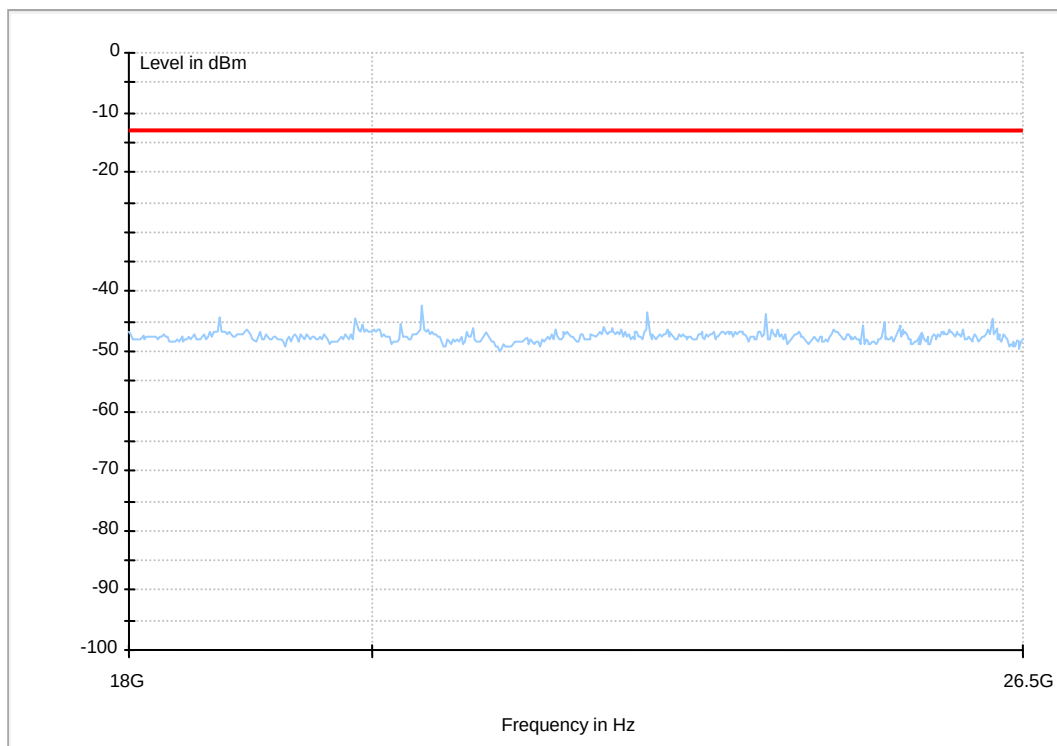




(3GHz~18GHz)



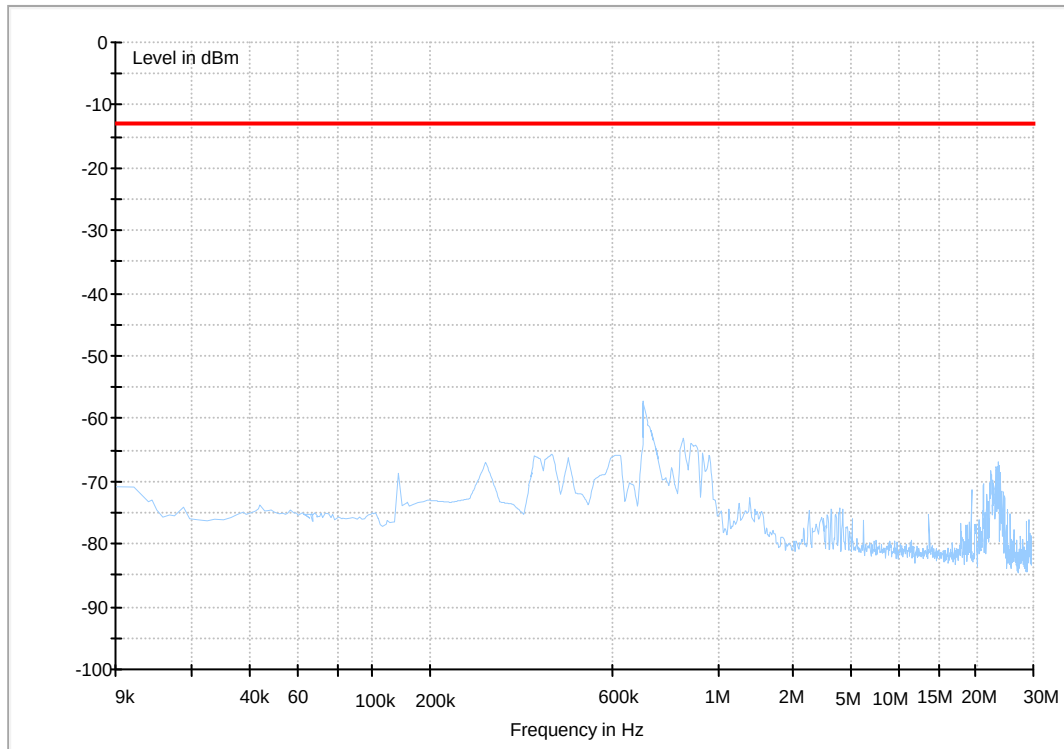
(18GHz~26.5GHz)



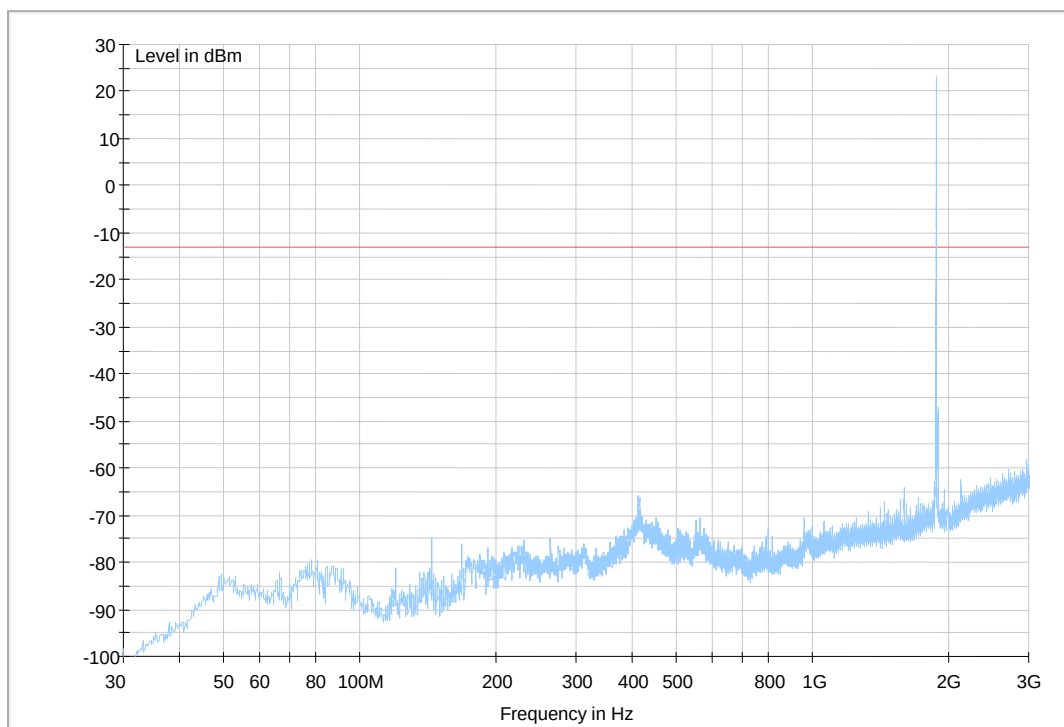


HSDPA Band II

(9KHz~30MHz)

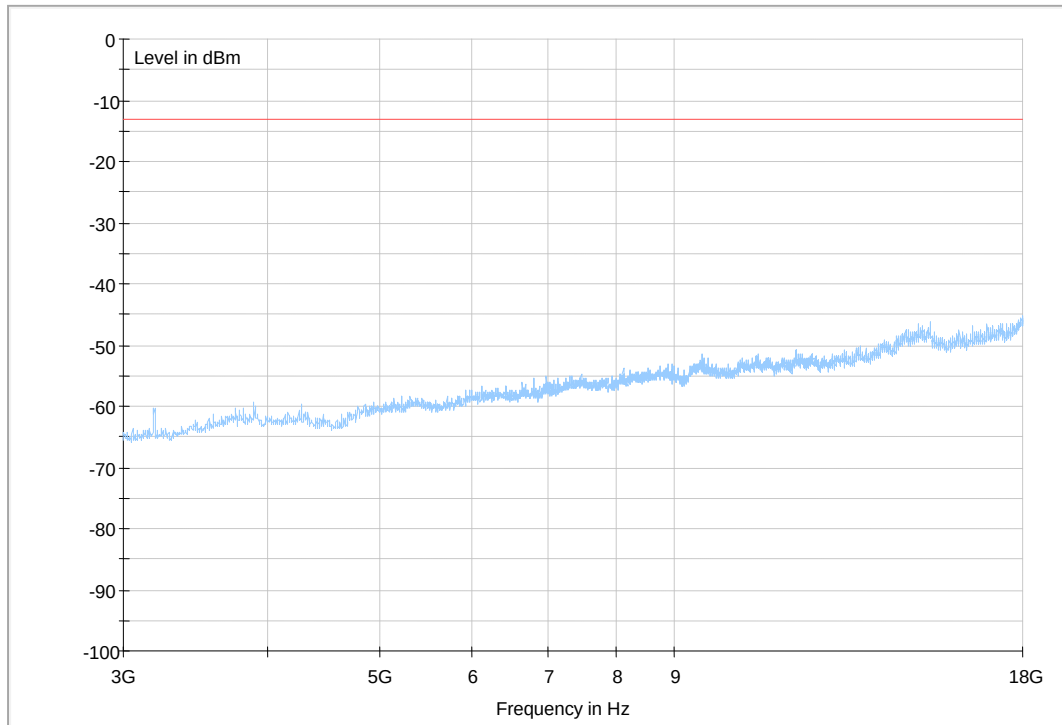


(30MHz ~3GHz)

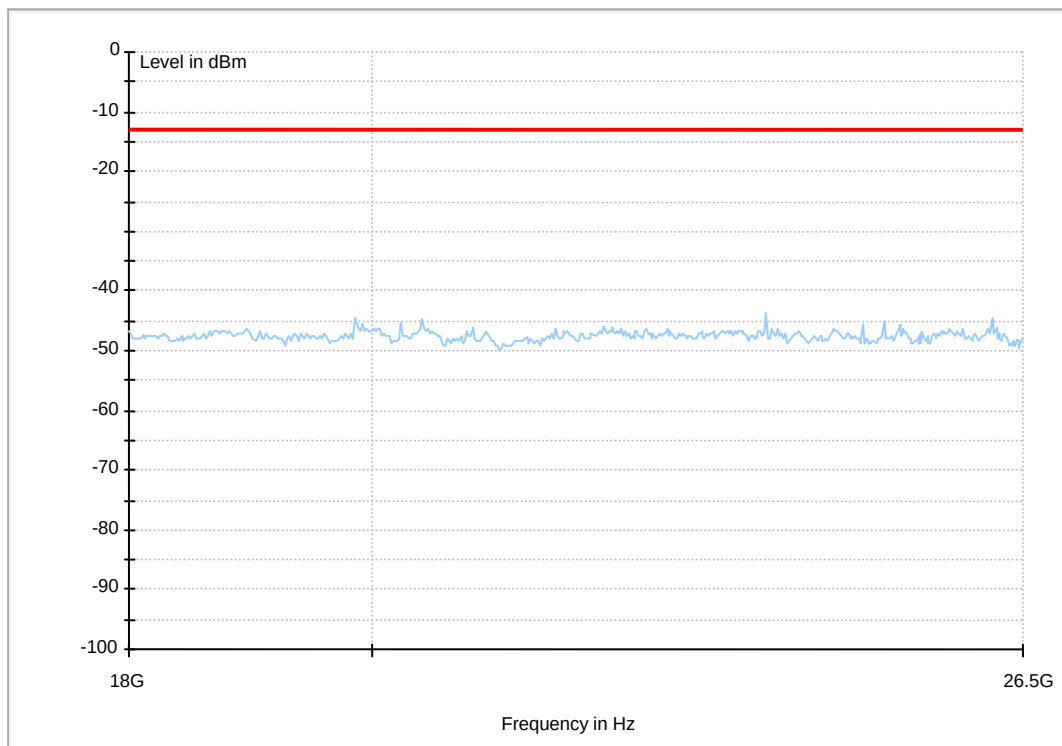




(3GHz~18GHz)



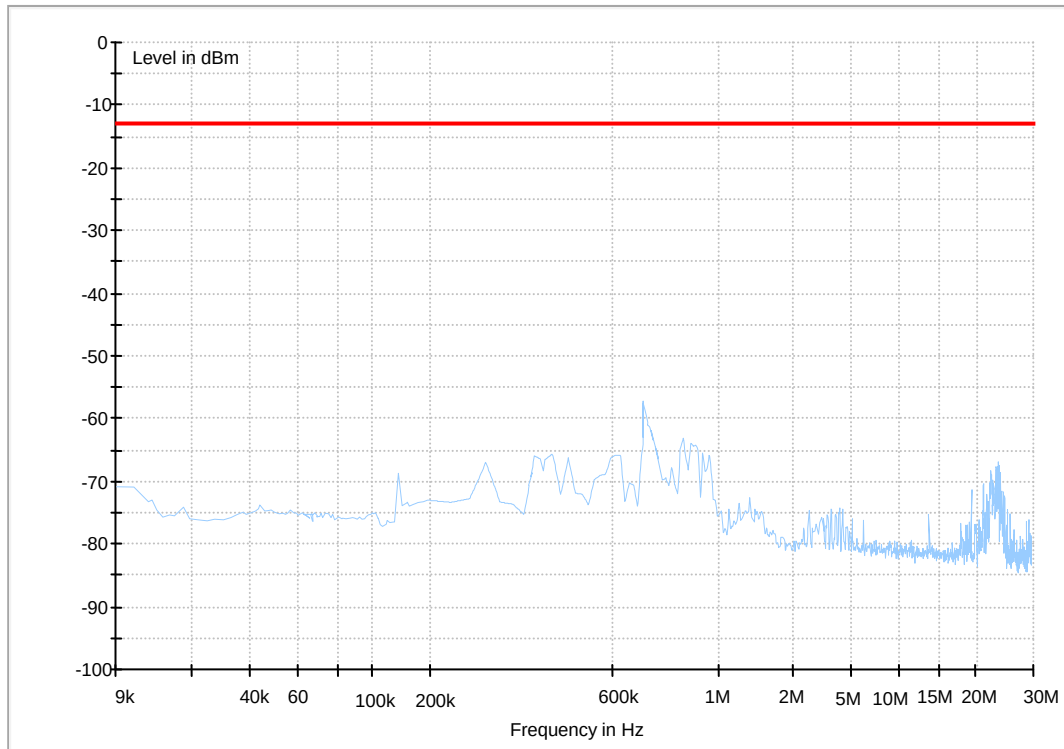
(18GHz~26.5GHz)



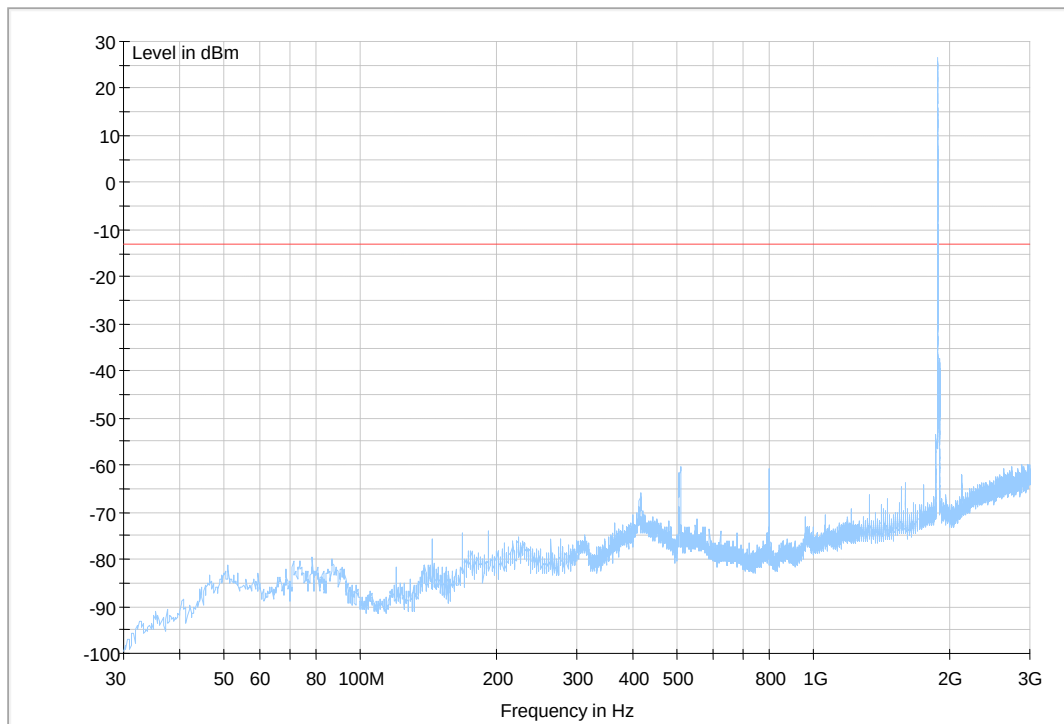


HSUPA Band II

(9KHz~30MHz)

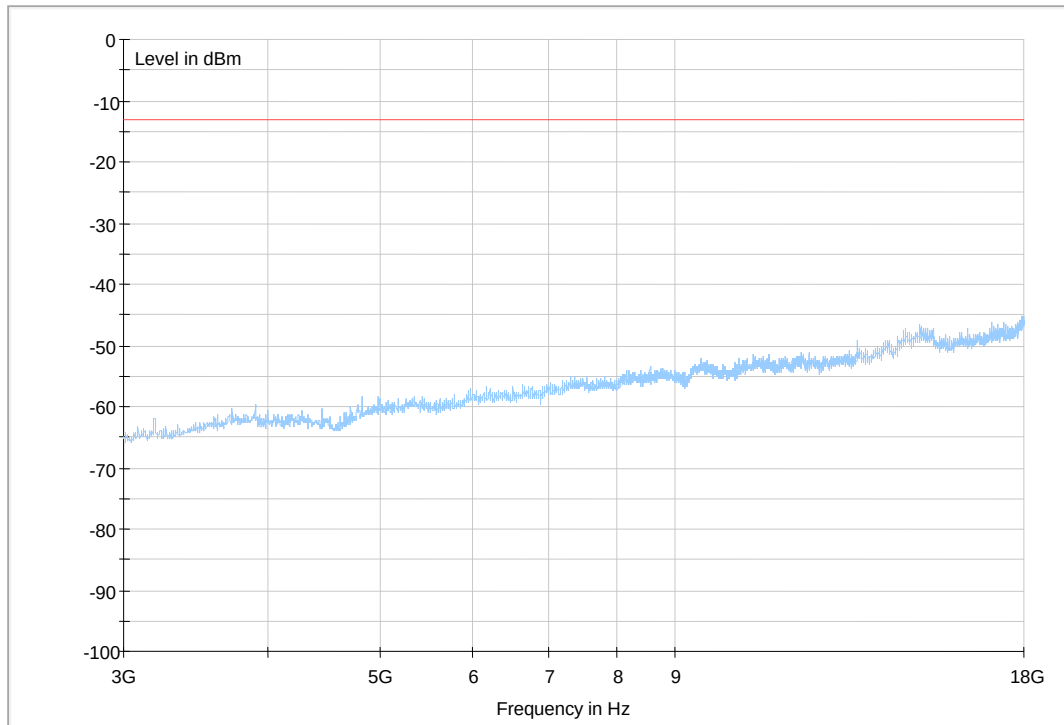


(30MHz~3GHz)

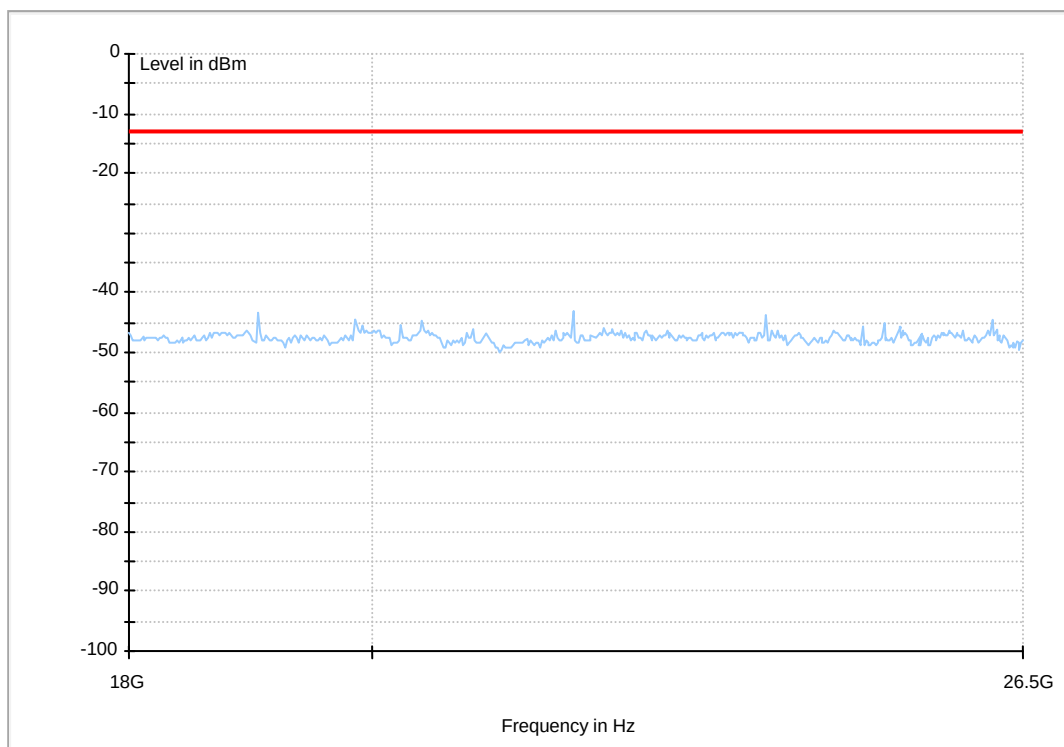




(3GHz~18GHz)



(18GHz~26.5GHz)



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



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	-13	-0.0069	---	±2.5	Pass
			-20 °C	18	0.0096	---	±2.5	Pass
			-10 °C	14	0.0074	---	±2.5	Pass
			0 °C	20	0.0106	---	±2.5	Pass
			10 °C	-19	-0.0101	---	±2.5	Pass
			20 °C	16	0.0085	---	±2.5	Pass
			30 °C	-17	-0.0090	---	±2.5	Pass
			40 °C	14	0.0074	---	±2.5	Pass
			50 °C	-18	-0.0096	---	±2.5	Pass
TM 2	M	VN	-30 °C	-17	-0.0090	---	±2.5	Pass
			-20 °C	-15	-0.0080	---	±2.5	Pass
			-10 °C	12	0.0064	---	±2.5	Pass
			0 °C	16	0.0085	---	±2.5	Pass
			10 °C	-16	-0.0085	---	±2.5	Pass
			20 °C	-13	-0.0069	---	±2.5	Pass
			30 °C	19	0.0101	---	±2.5	Pass
			40 °C	-14	-0.0074	---	±2.5	Pass
			50 °C	20	0.0106	---	±2.5	Pass
TM 3	M	VN	-30 °C	12	0.0064	---	±2.5	Pass
			-20 °C	-18	-0.0096	---	±2.5	Pass
			-10 °C	-12	-0.0064	---	±2.5	Pass
			0 °C	14	0.0074	---	±2.5	Pass
			10 °C	-18	-0.0096	---	±2.5	Pass
			20 °C	15	0.0080	---	±2.5	Pass
			30 °C	10	0.0053	---	±2.5	Pass
			40 °C	13	0.0069	---	±2.5	Pass
			50 °C	11	0.0059	---	±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	15	0.0080	---	±2.5	Pass
			VN	17	0.0090	---	±2.5	Pass
			VH	-15	-0.0080	---	±2.5	Pass
TM 2	M	TN	VL	18	0.0096	---	±2.5	Pass
			VN	-14	-0.0074	---	±2.5	Pass
			VH	10	0.0053	---	±2.5	Pass
TM 3	M	TN	VL	14	0.0074	---	±2.5	Pass
			VN	11	0.0059	---	±2.5	Pass
			VH	-20	-0.0106	---	±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 to18GHz)



Radiated Spurious Emission (18GHz to26.5GHz)

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