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)		Channel192(M)		Channel251(T)	
	824.2MHz		837.0MHz		848.8MHz	
	dBm		dBm		dBm	
T_{nom} / V_{nom}	Measured	Limit	Measured	Limit	Measured	Limit
TM1	32.44	38.5	32.61	38.5	32.59	38.5
TM2	25.86	38.5	26.05	38.5	26.12	38.5

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

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	31.29	Dipole Ant.	34.54	-2.75	0.6	31.19	38.5	Pass
TM1	837.0	31.46	Dipole Ant.	34.83	-2.87	0.6	31.36	38.5	Pass
TM1	848.8	31.44	Dipole Ant.	34.79	-2.85	0.6	31.34	38.5	Pass
TM2	824.2	24.71	Dipole Ant.	27.96	-2.75	0.6	24.61	38.5	Pass
TM2	837.0	24.90	Dipole Ant.	28.27	-2.87	0.6	24.80	38.5	Pass
TM2	848.8	24.97	Dipole Ant.	28.32	-2.85	0.6	24.87	38.5	Pass

Note1: RBW > emission bandwidth, VBW > 3 x RBW.

Note2: 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

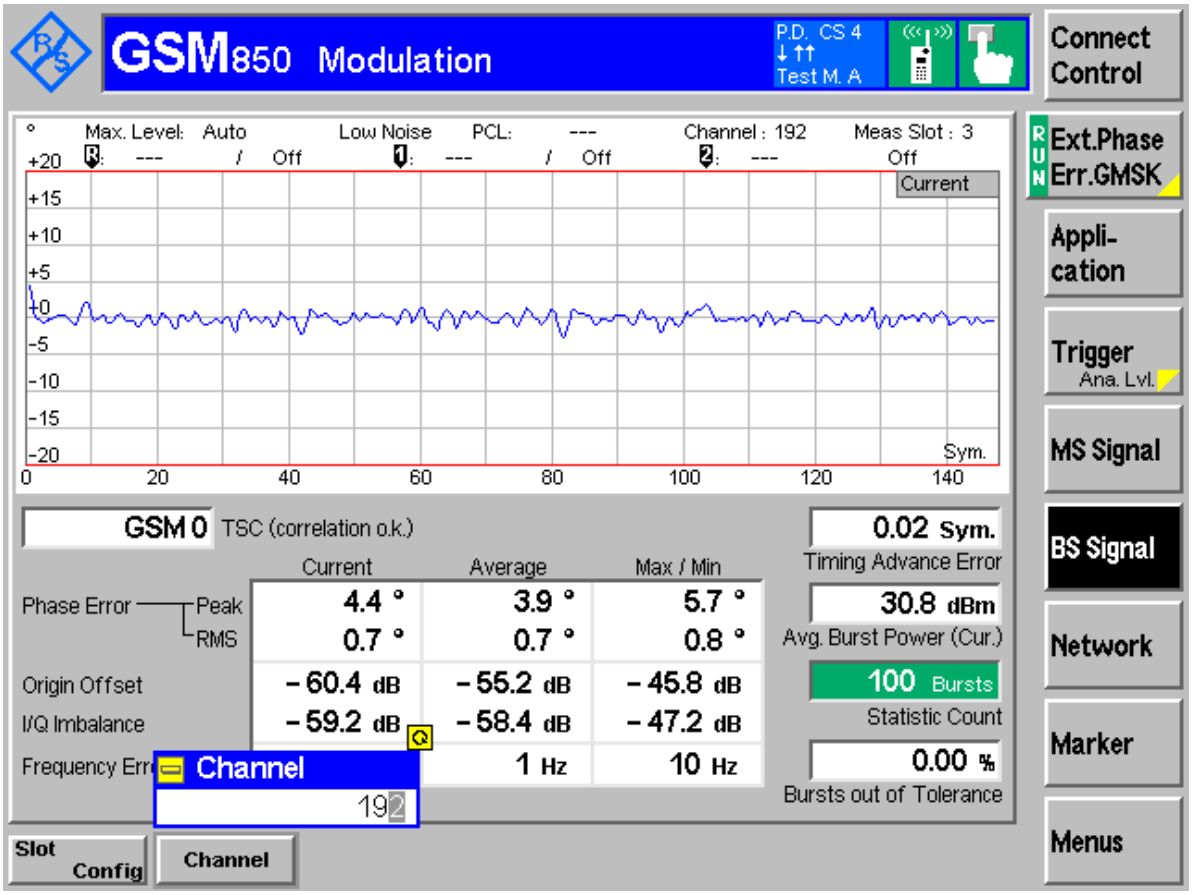
----------The END----------

Appendix B

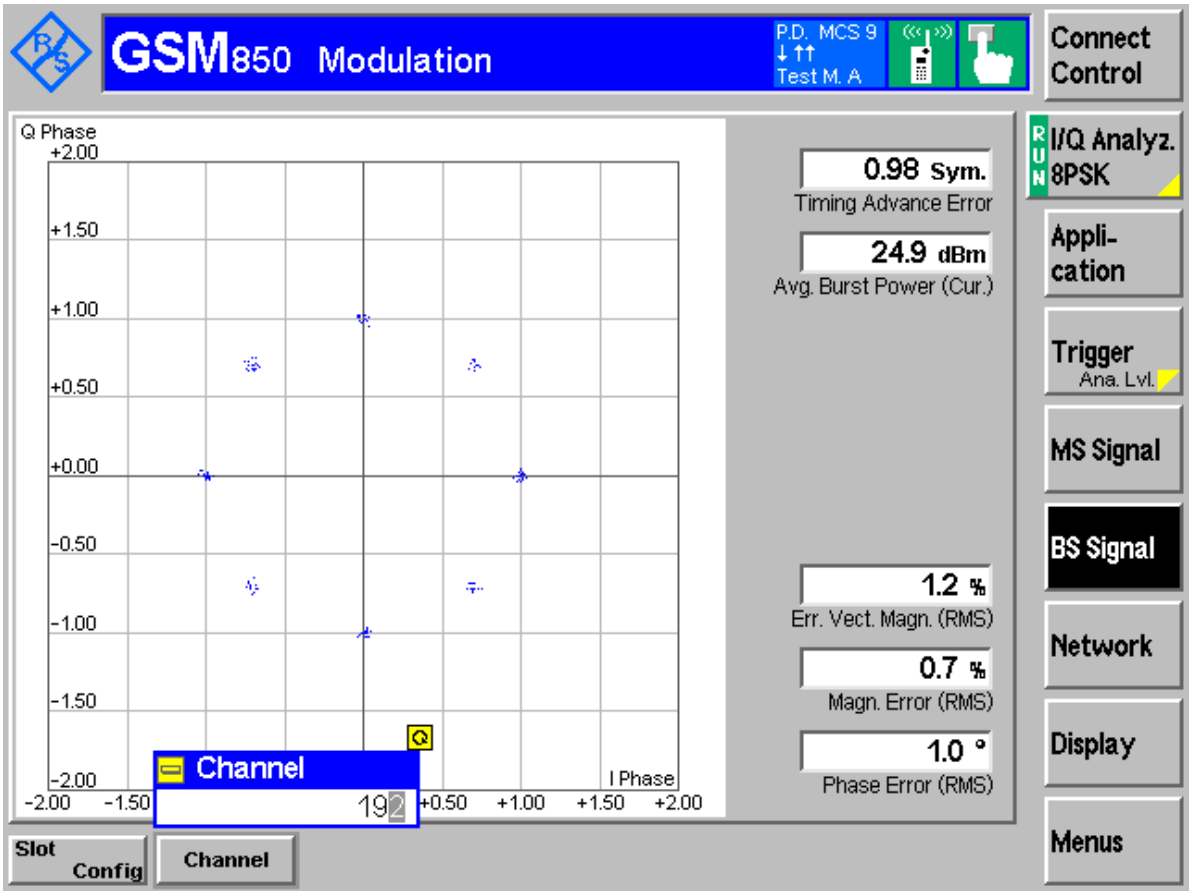
Modulation Characteristics

According to FCC Part 2.1047 & Part22 Subpart H

TM1:GPRS/GSM
Channel 192



TM2:EDGE
Channel 192



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

Appendix C

Occupied Bandwidth

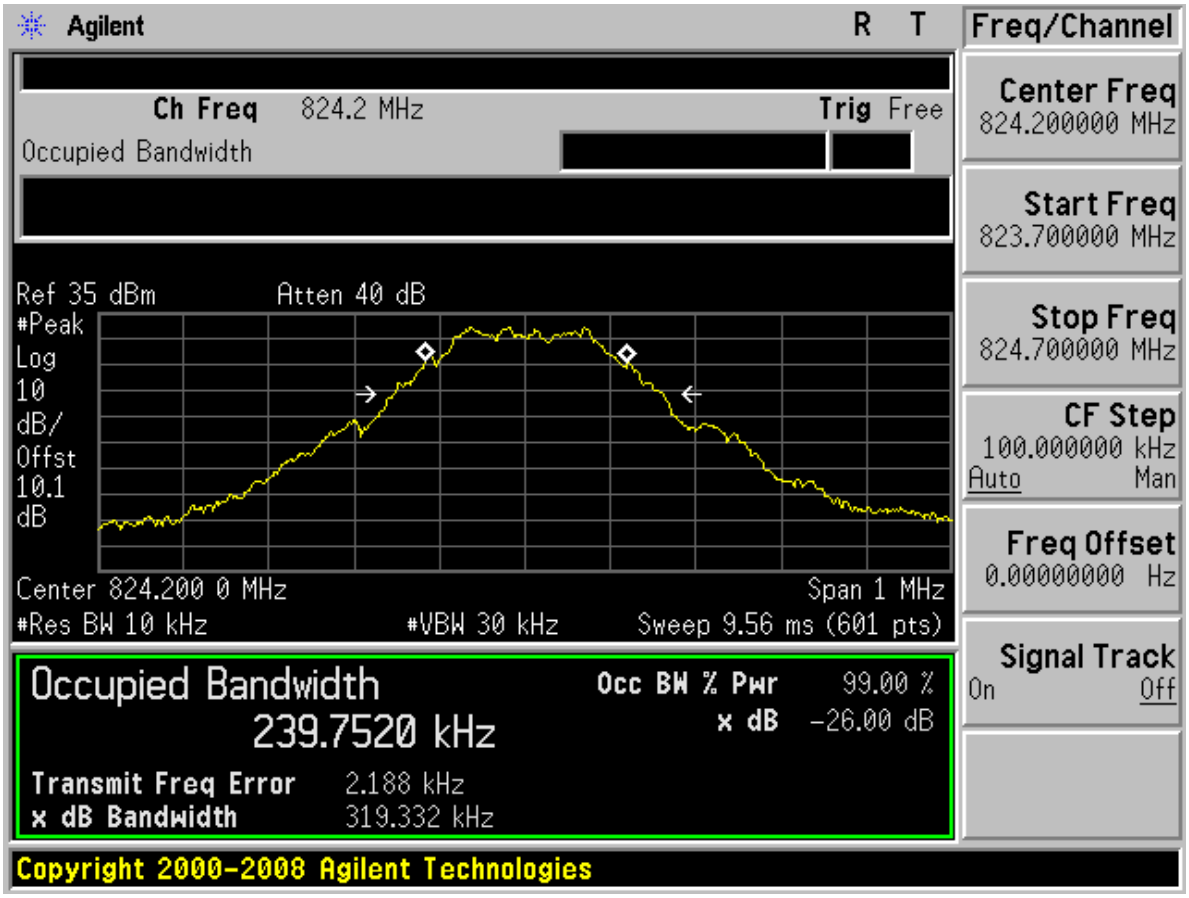
According to FCC Part 2.1049 & Part 22 Subpart H

Result Table

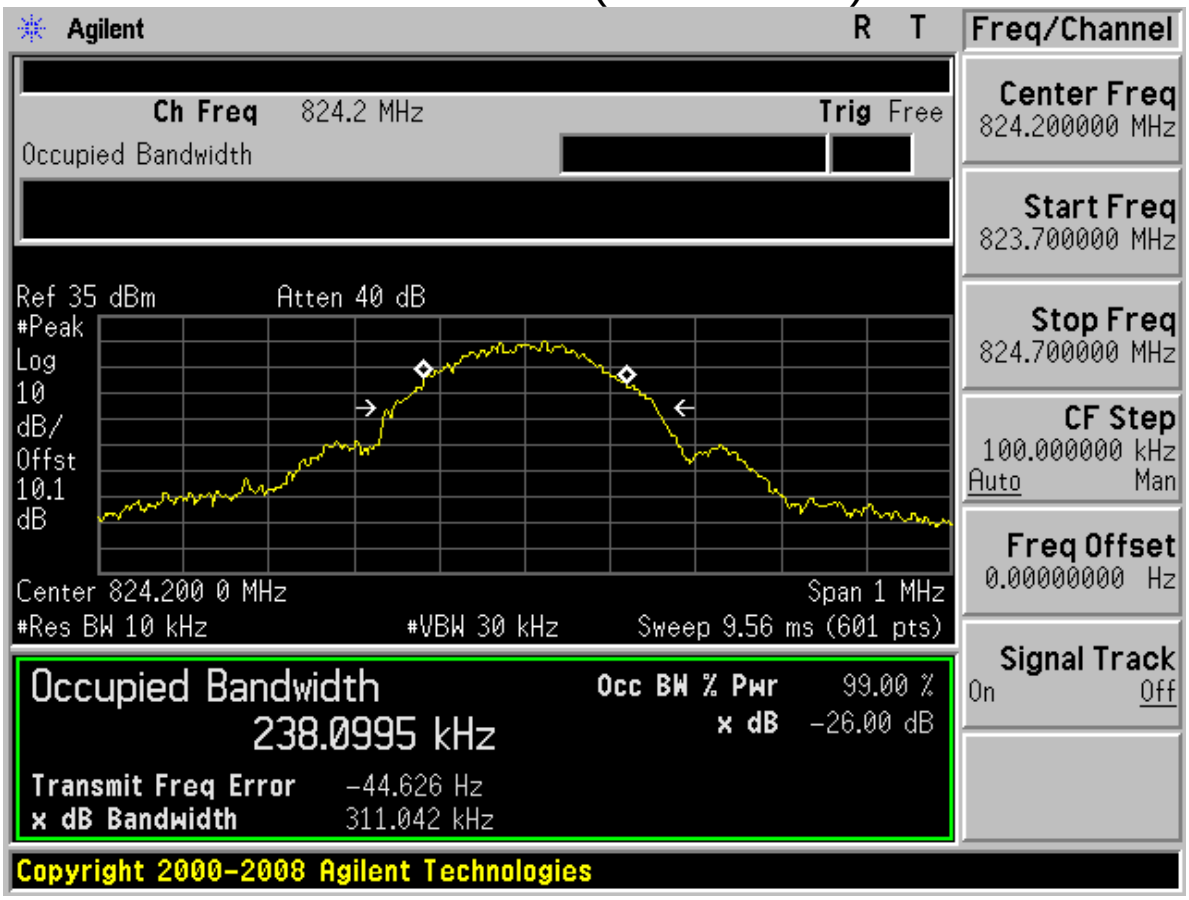
Table 1 Measurement Results

Test Mode	RF Channel	Occupied Bandwidth [kHz]	-26dB BW [kHz]	Verdict
TM1	128	239.8	319.3	Pass
	192	238.6	314.7	Pass
	251	238.9	318.7	Pass
TM2	128	238.1	311.0	Pass
	192	243.3	318.1	Pass
	251	239.7	308.6	Pass

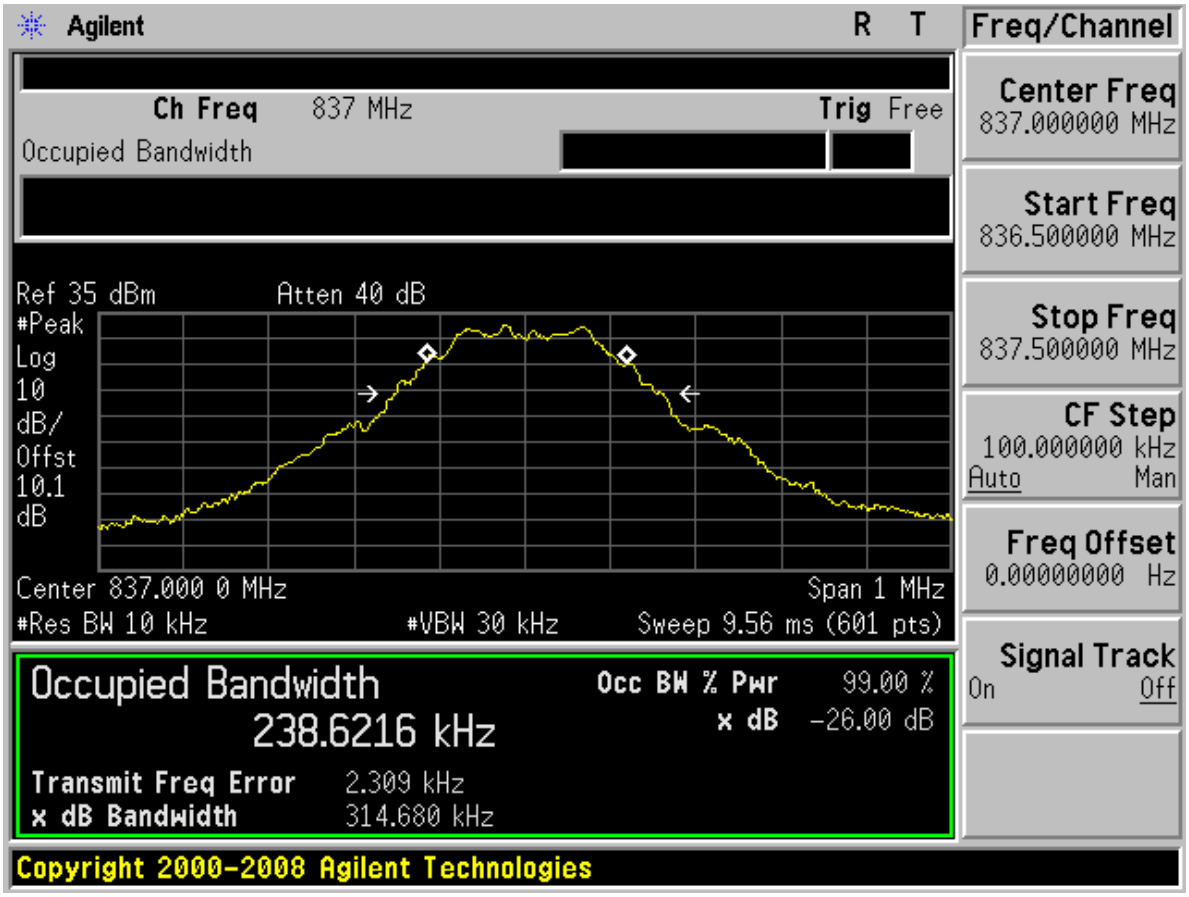
Channel 128(TM1:GPRS/GSM)



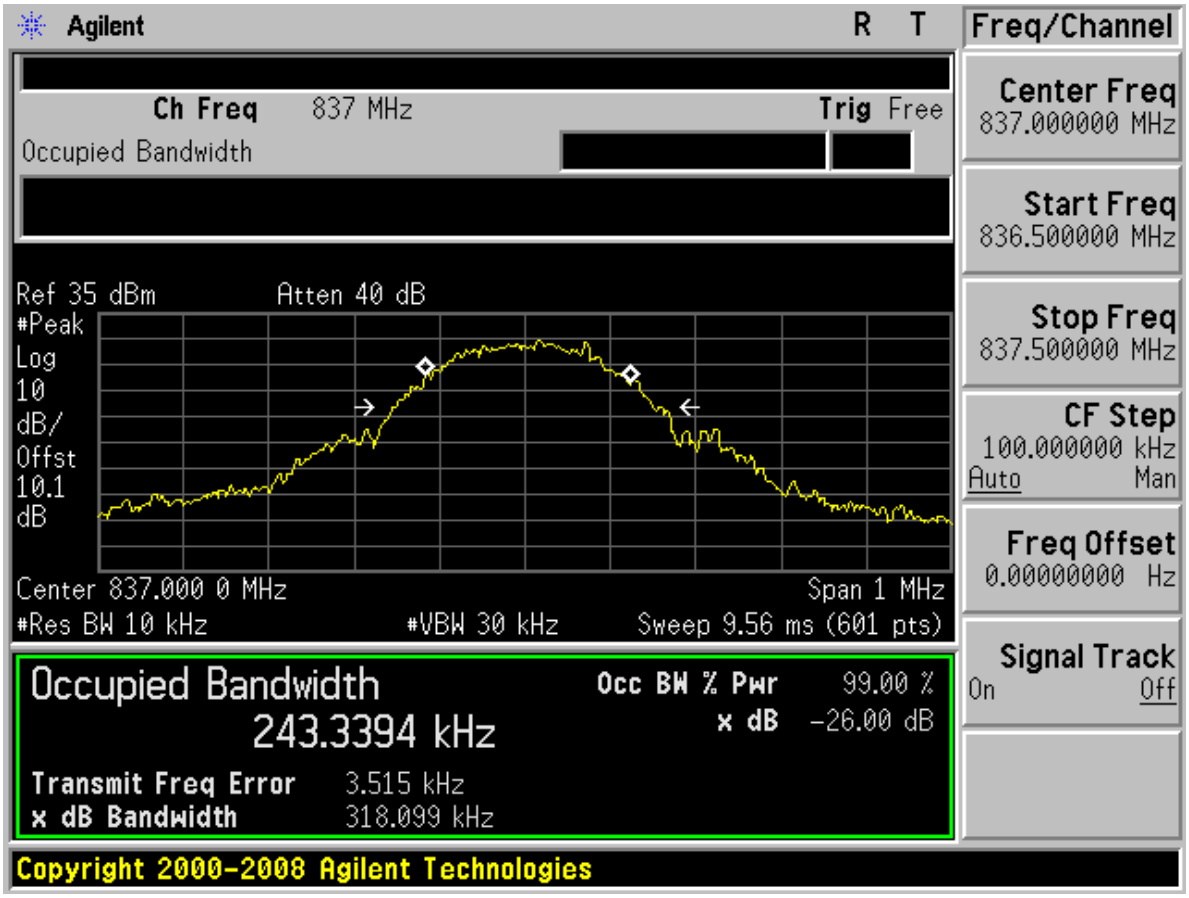
Channel 128(TM2:EDGE)



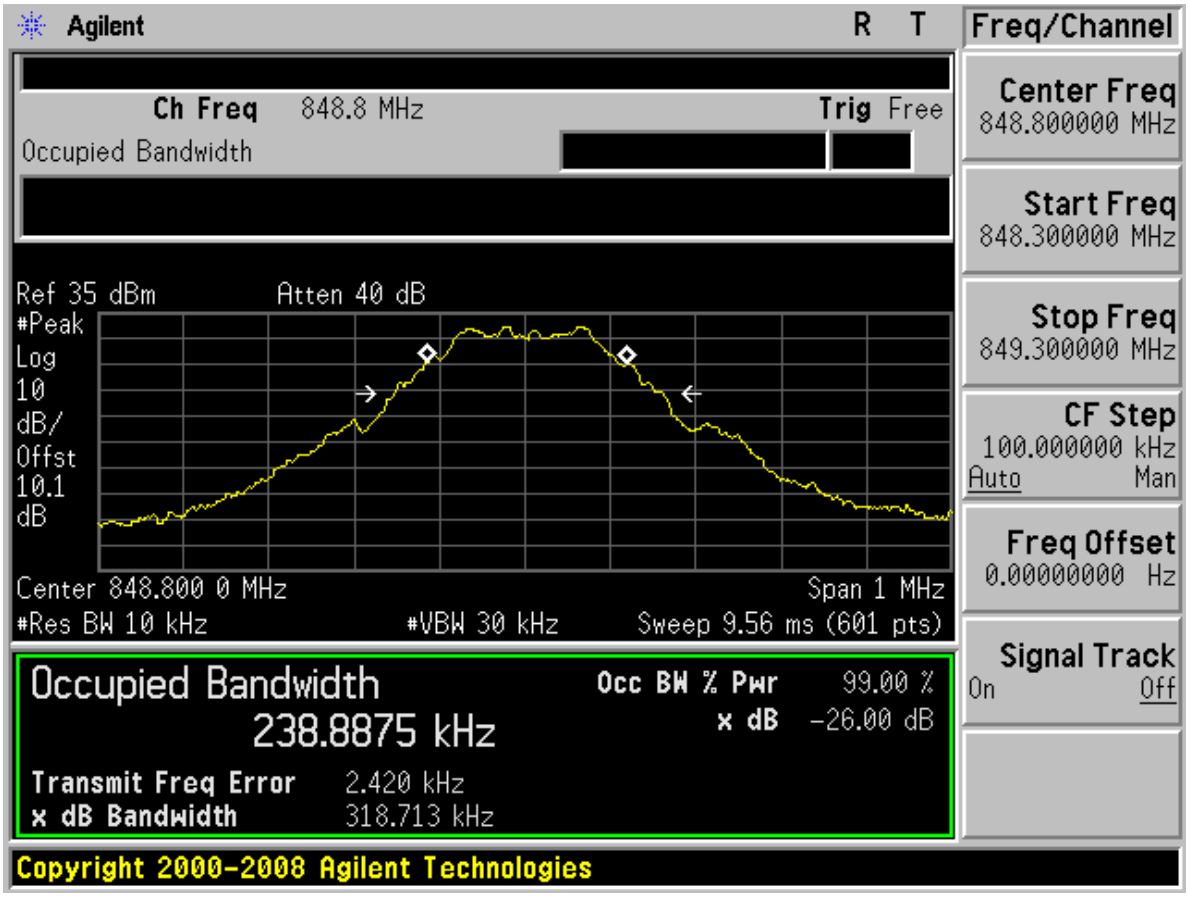
Channel 192(TM1:GPRS/GSM)



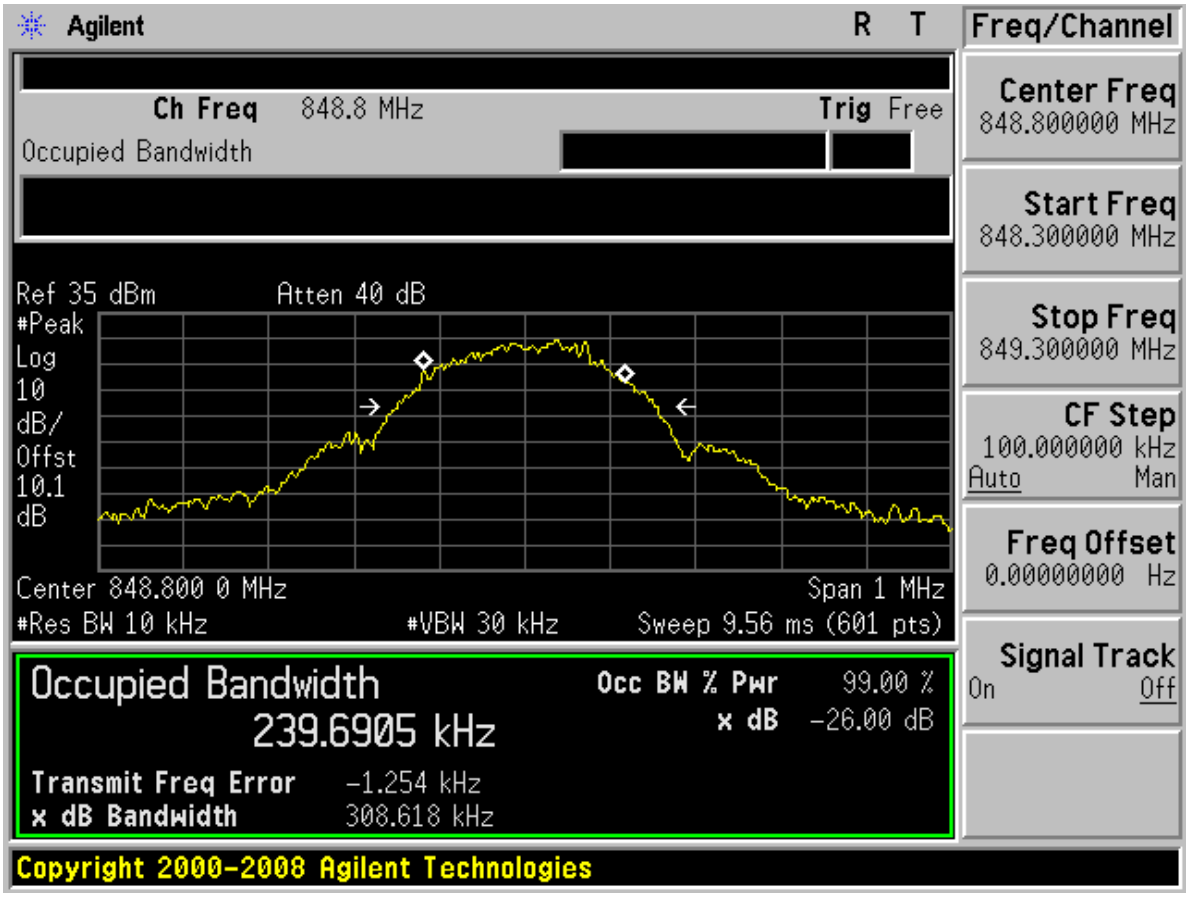
Channel 192(TM2:EDGE)



Channel 251(TM1:GPRS/GSM)



Channel 251(TM2:EDGE)



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

Appendix D

Band Edges Compliance

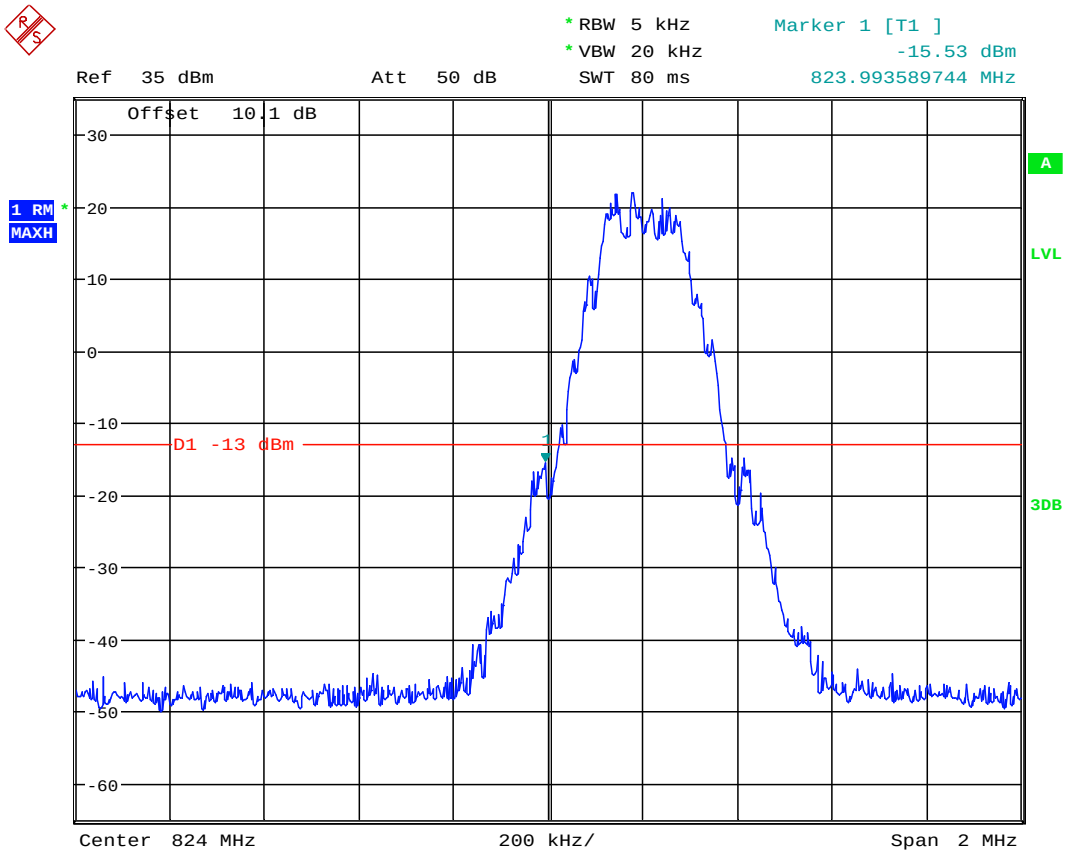
According to FCC Part 2.1051 & Part22 Subpart H

26dB Occupied Bandwidth

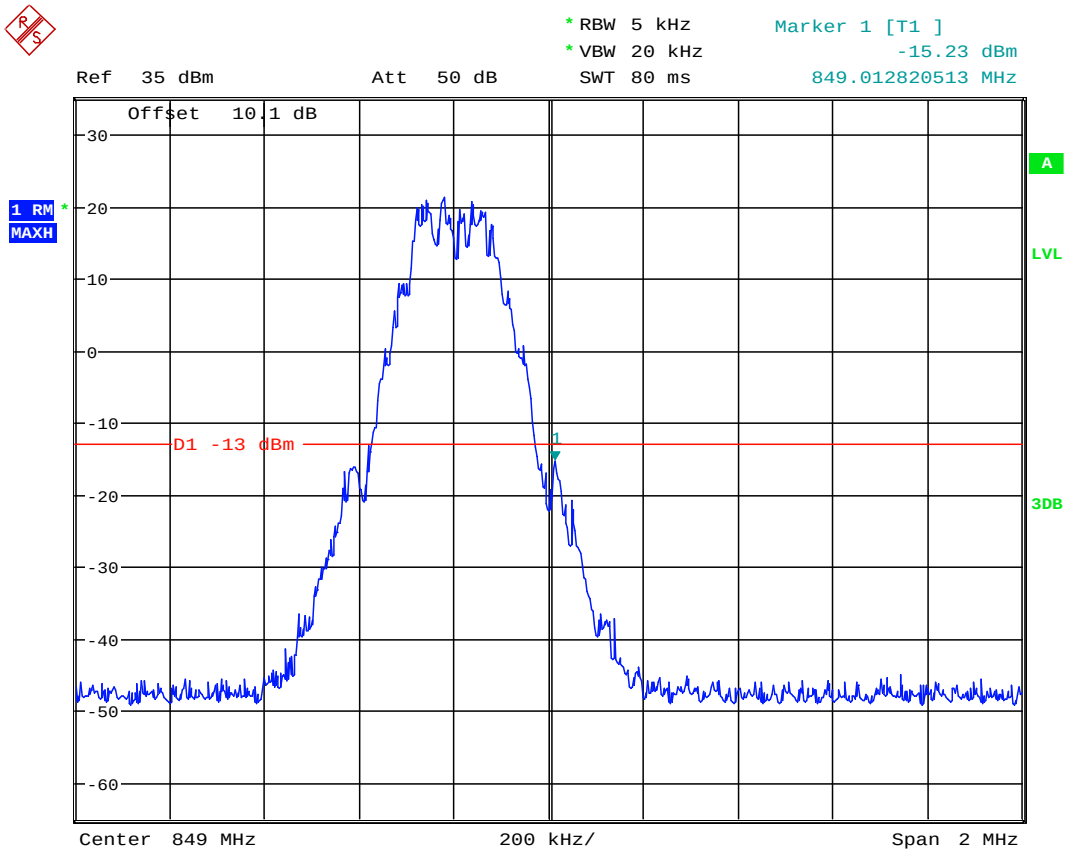
Note: All relevant operation modes have been tested, and the widest case data is included in this table.

Mode	-26dB BW [kHz]	RBW to Measure Band Edge [kHz]
TM1/TM2	319.3	≥3.19, used 5

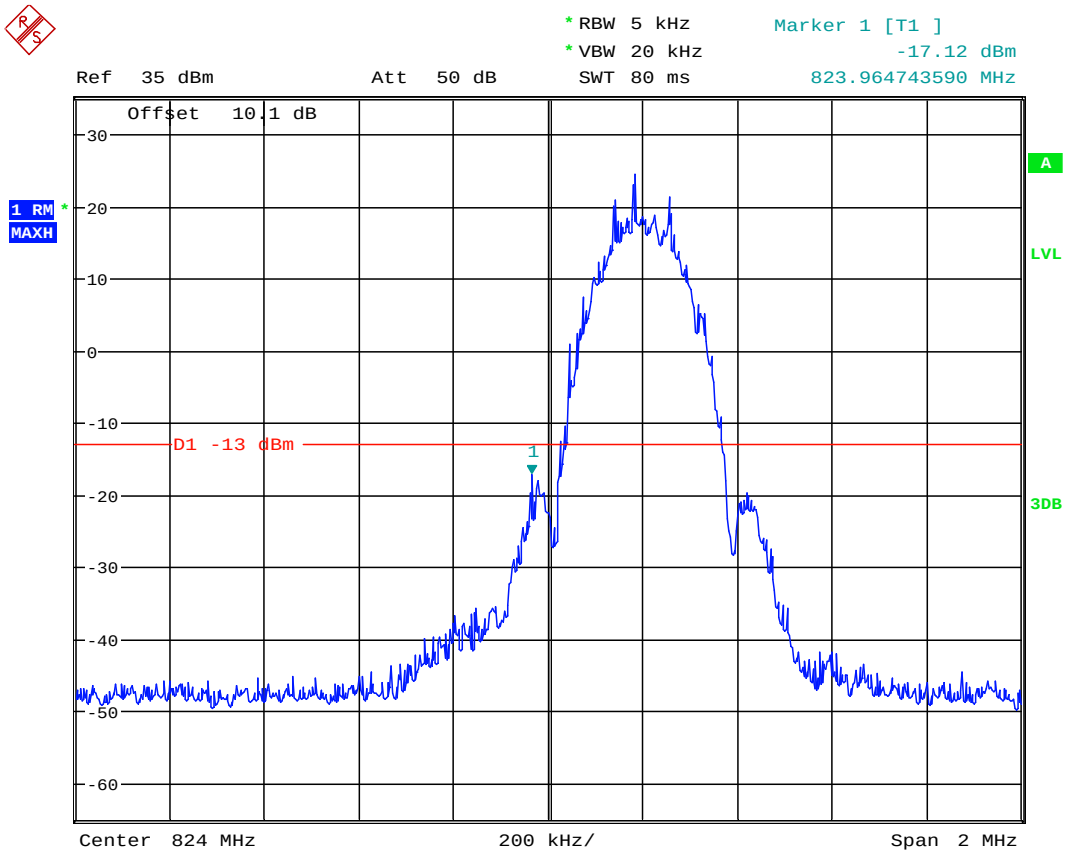
TM1:GPRS/GSM
Left Edge
Channel 128



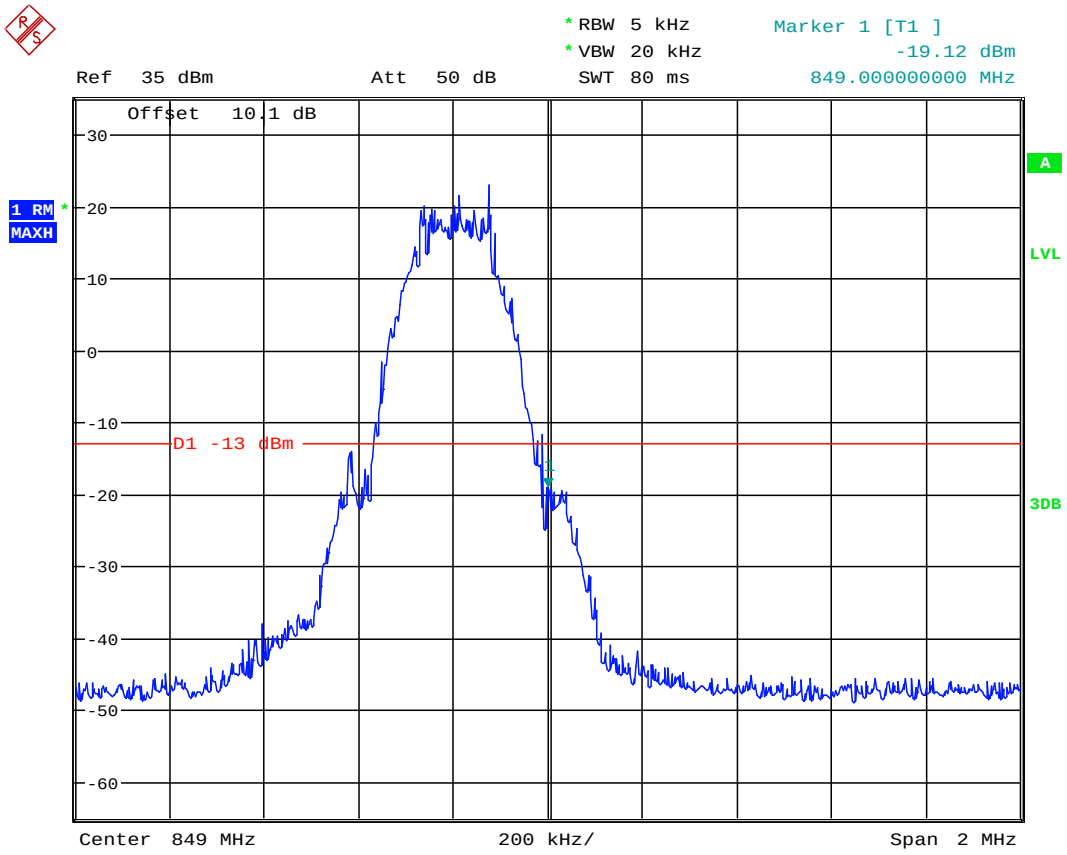
Right Edge
Channel 251



TM2:EDGE
Left Edge
Channel 128



Right Edge
Channel 251



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

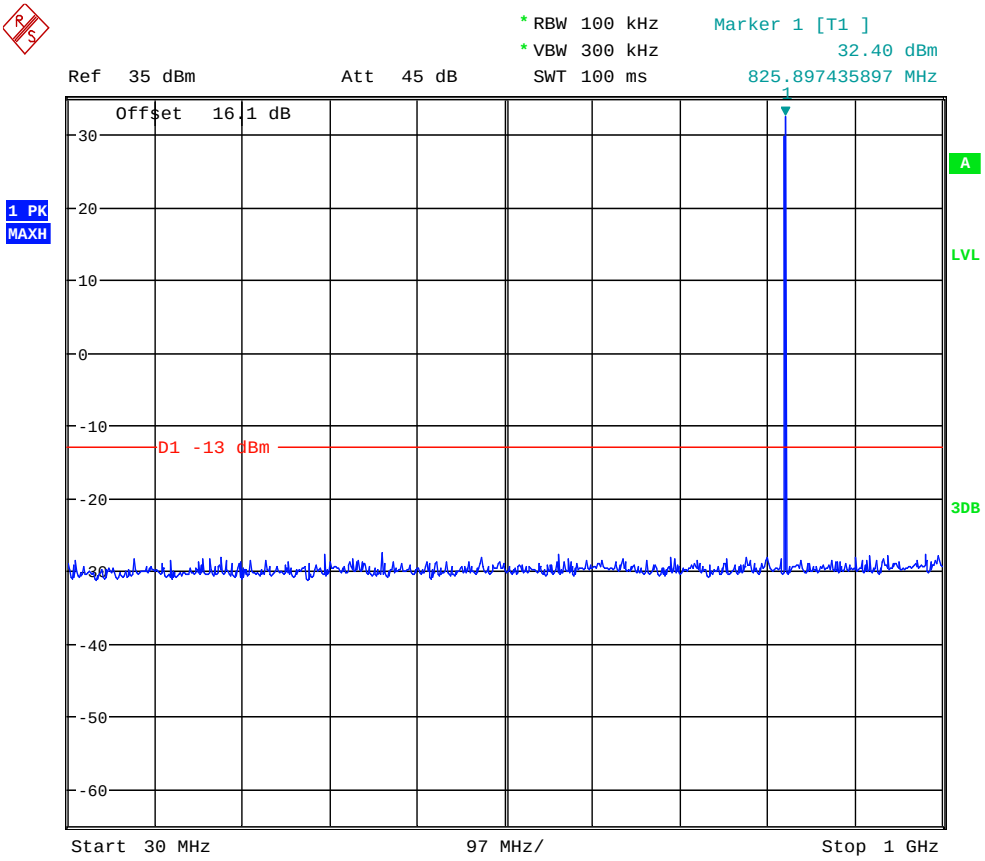
Appendix E

Spurious Emission at Antenna Terminal

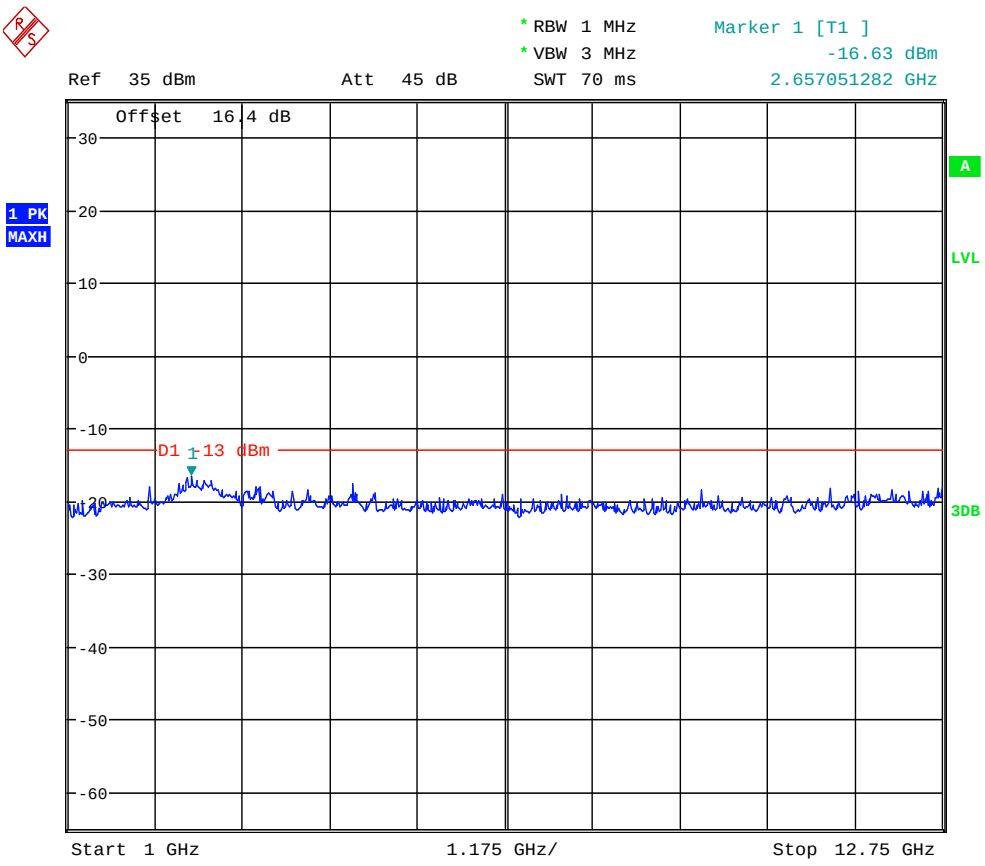
According to FCC Part 2.1051 & Part22 Subpart H

TM1:GPRS/GSM

Channel 128

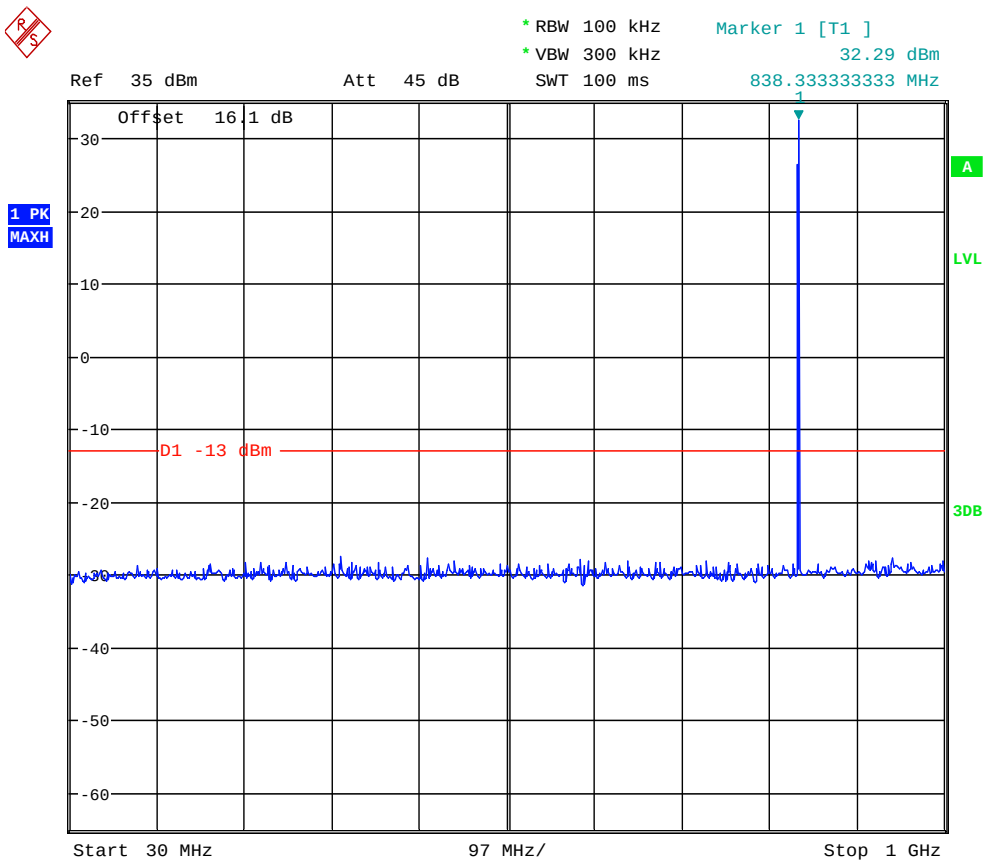


Date: 26.APR.2012 11:31:55

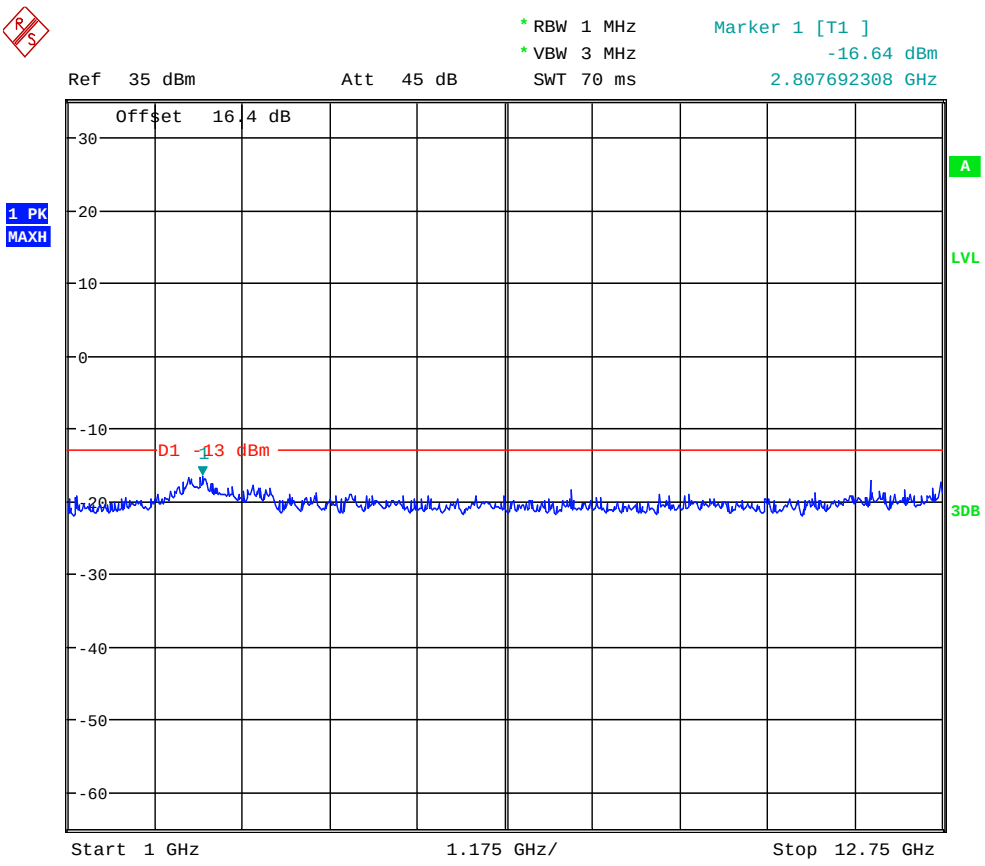


Date: 26.APR.2012 11:32:39

Channel 192

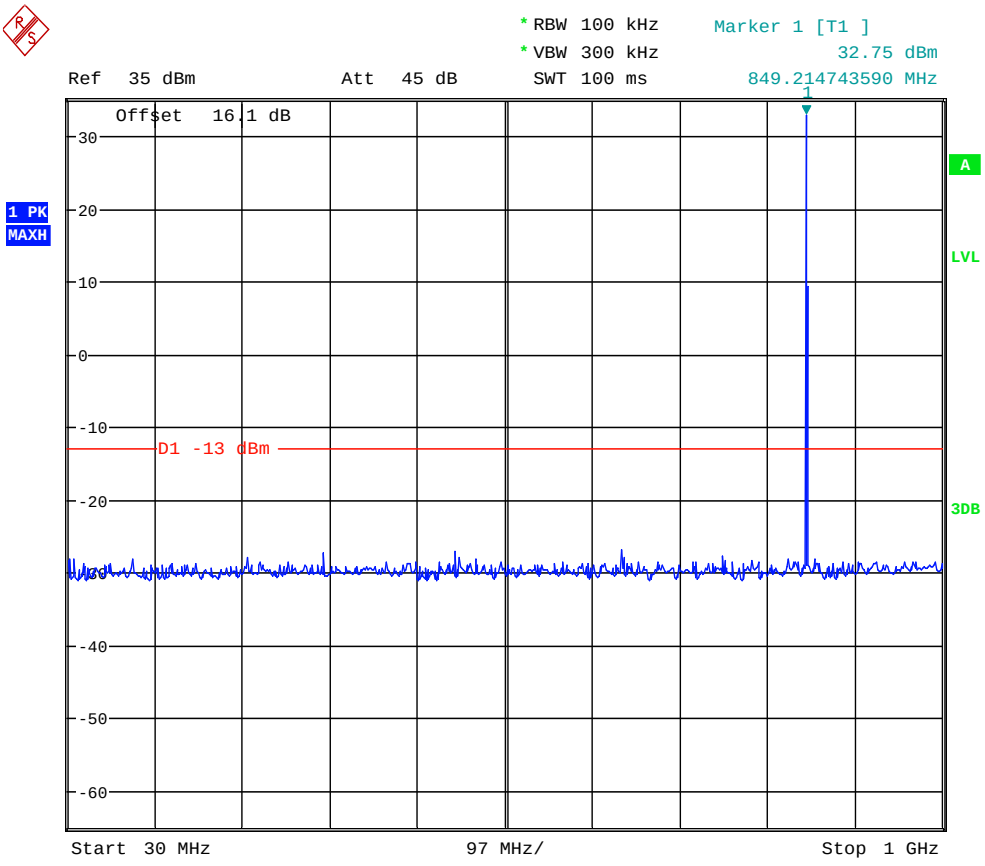


Date: 26.APR.2012 11:32:09

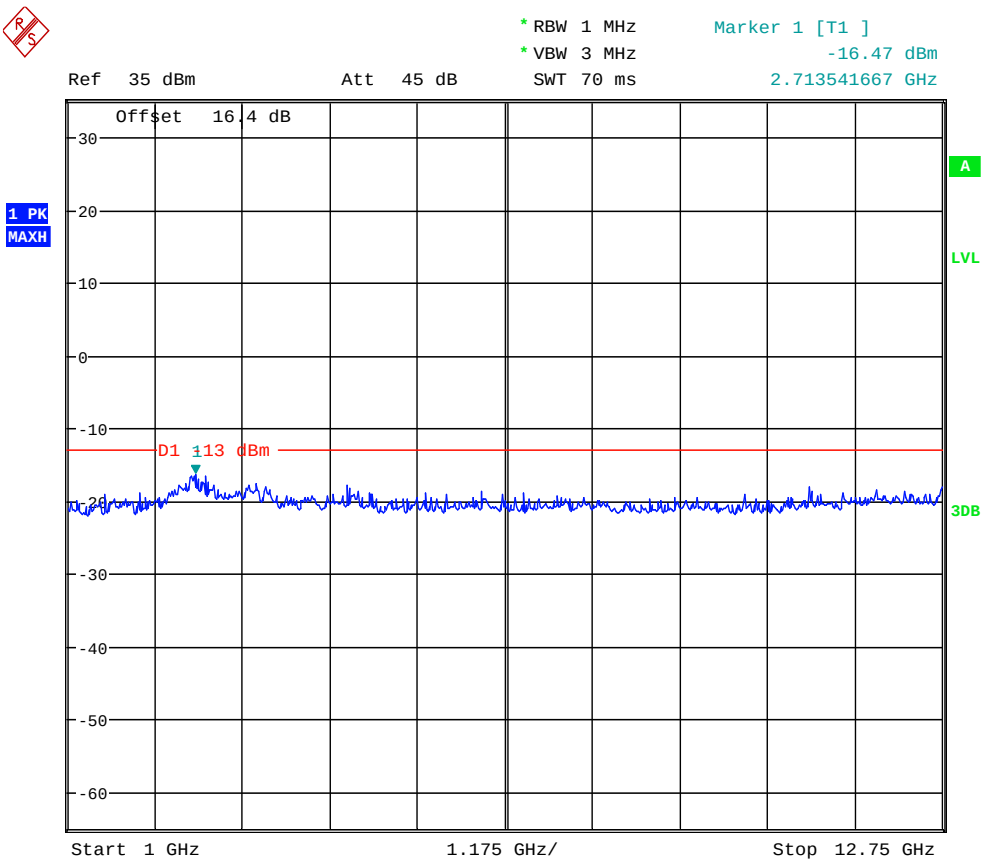


Date: 26.APR.2012 11:32:53

Channel 251

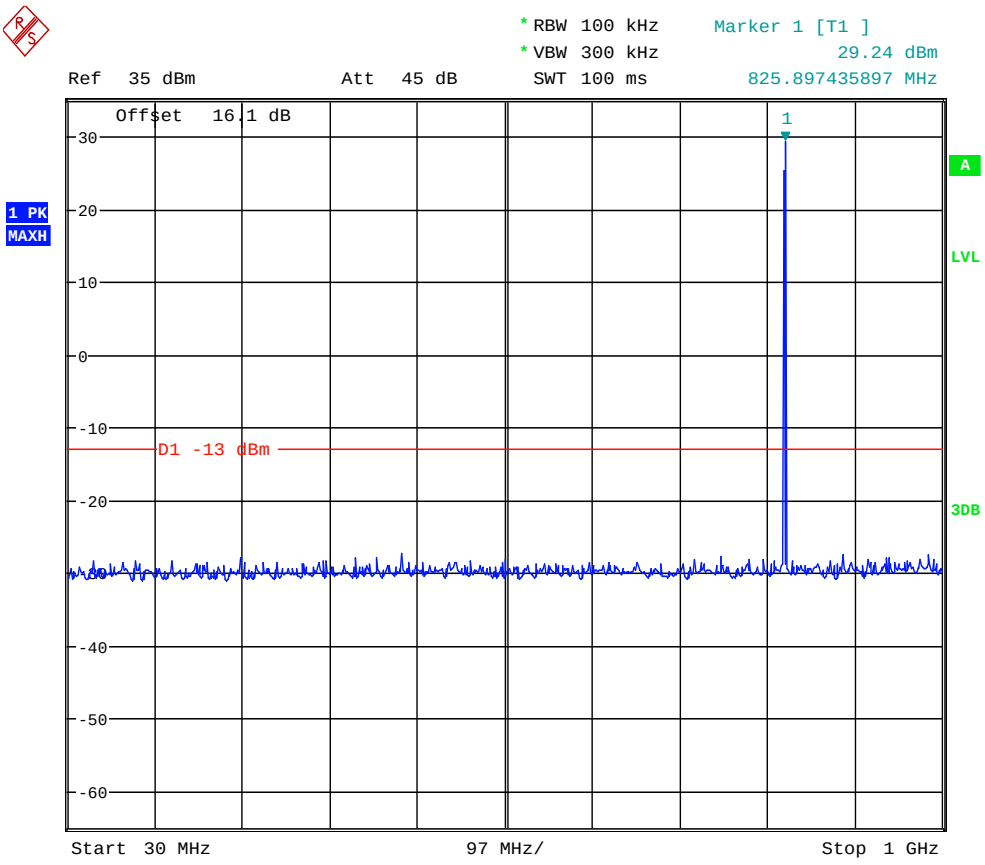


Date: 26.APR.2012 11:32:24

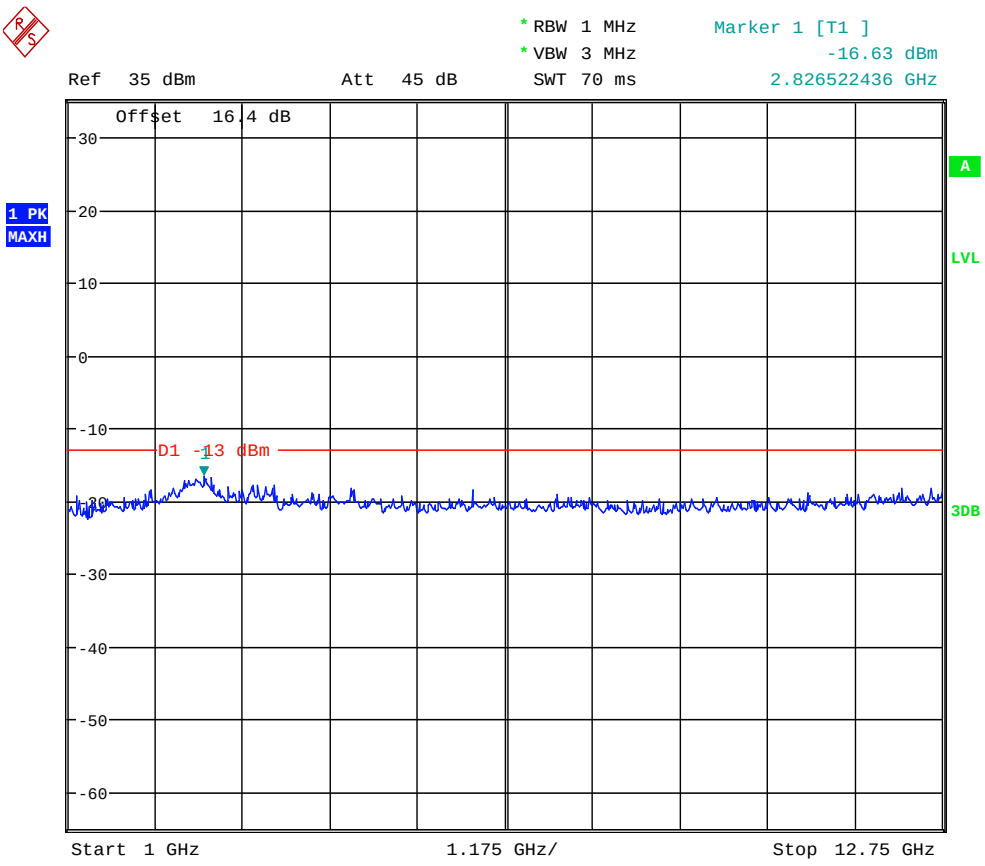


Date: 26.APR.2012 11:33:08

TM2:EDGE
Channel 128

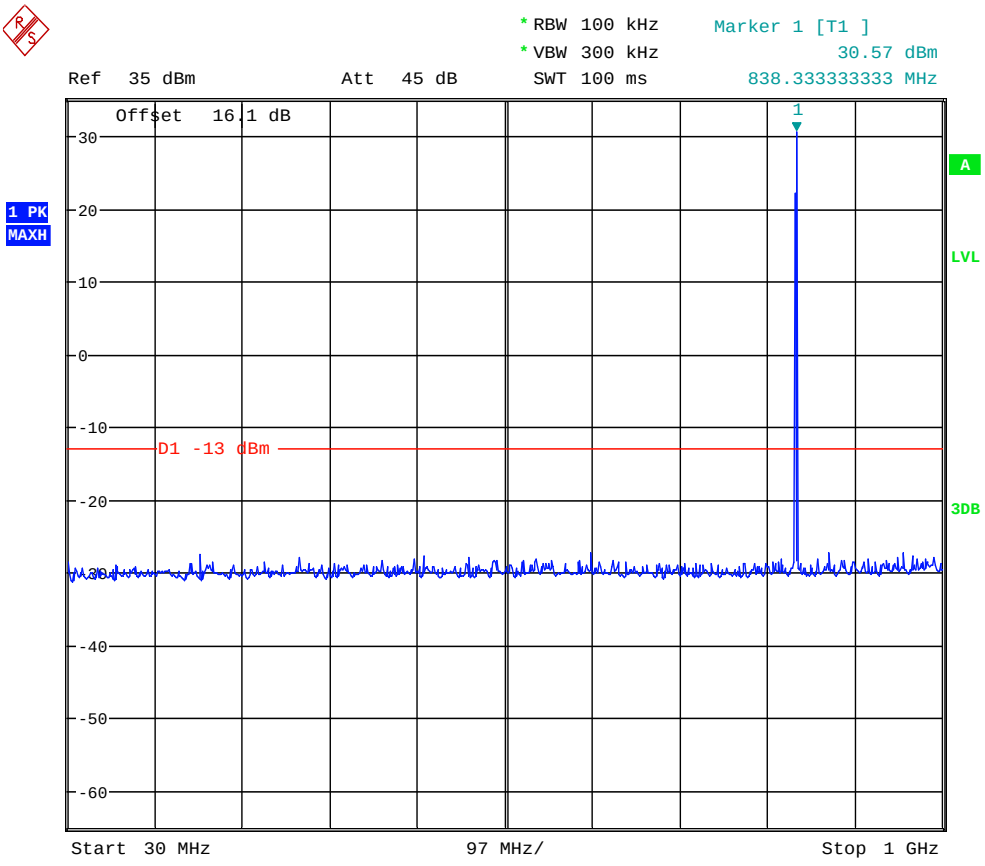


Date: 26.APR.2012 11:40:04

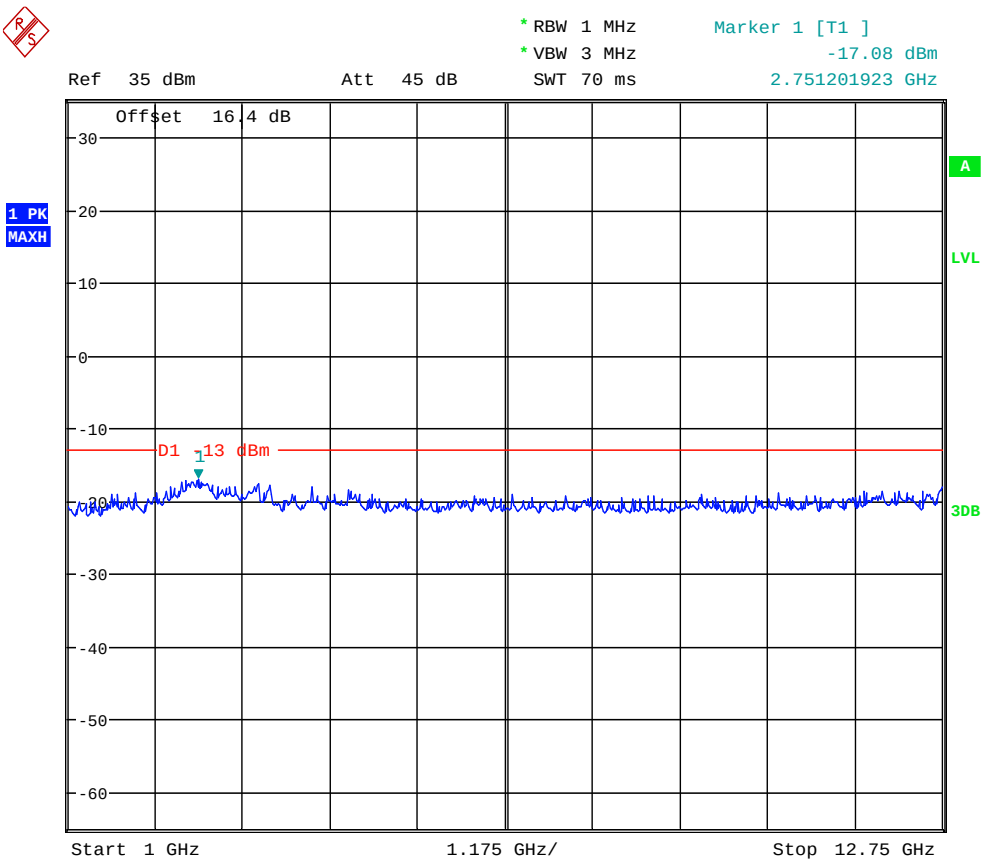


Date: 26.APR.2012 11:40:48

Channel 192

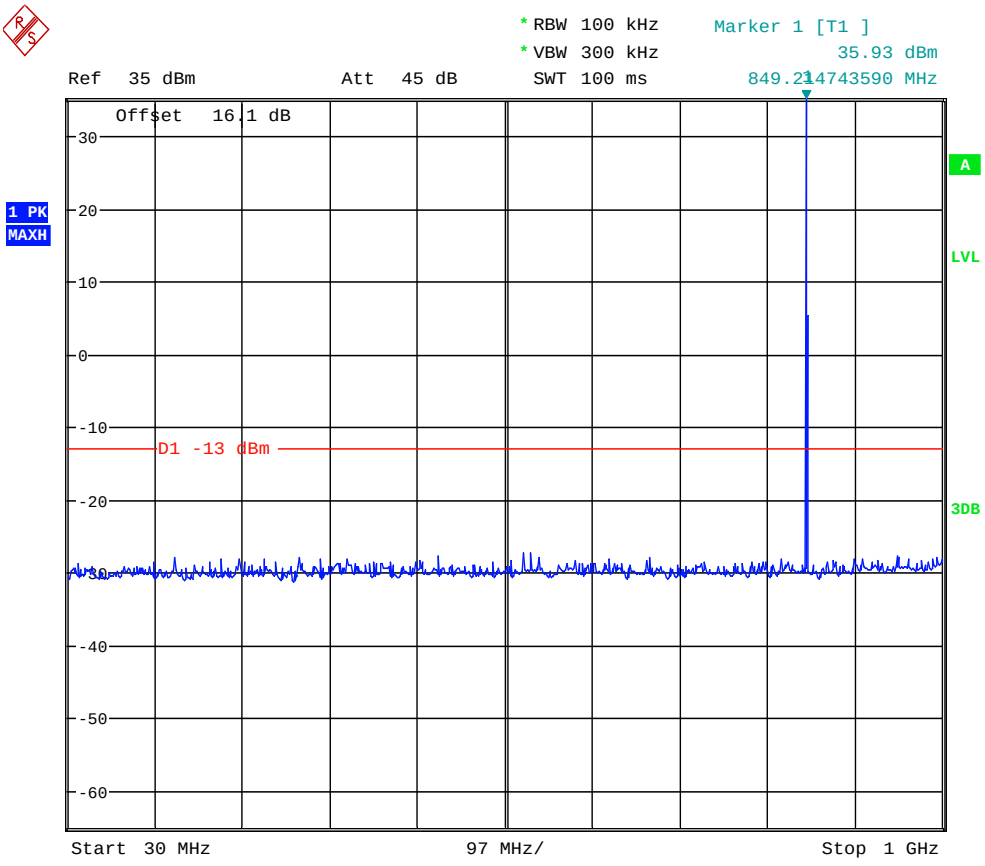


Date: 26.APR.2012 11:40:19

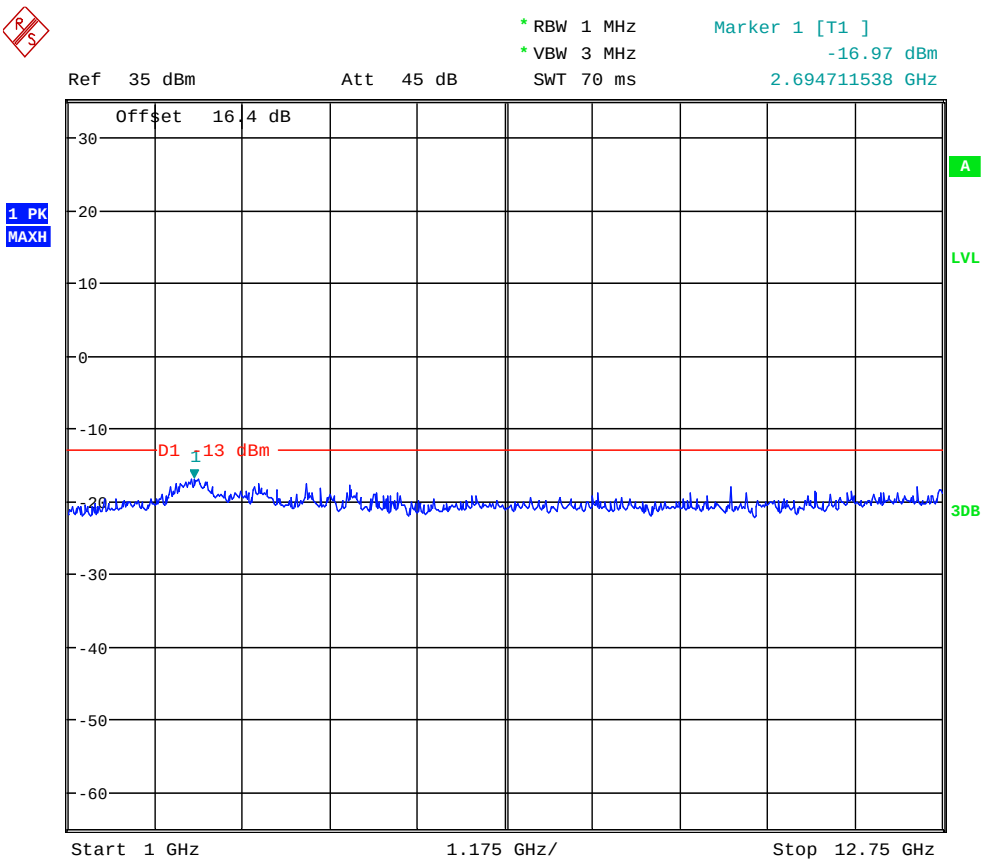


Date: 26.APR.2012 11:41:03

Channel 251



Date: 26.APR.2012 11:40:33



Date: 26.APR.2012 11:41:17

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

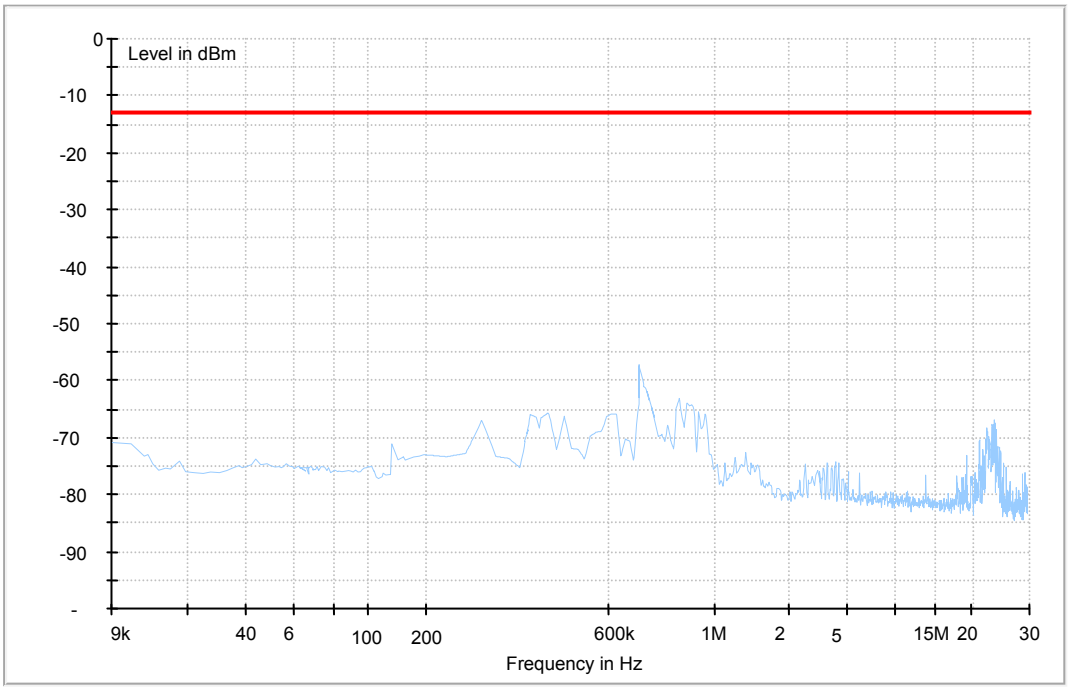
Appendix F

Radiated spurious emission

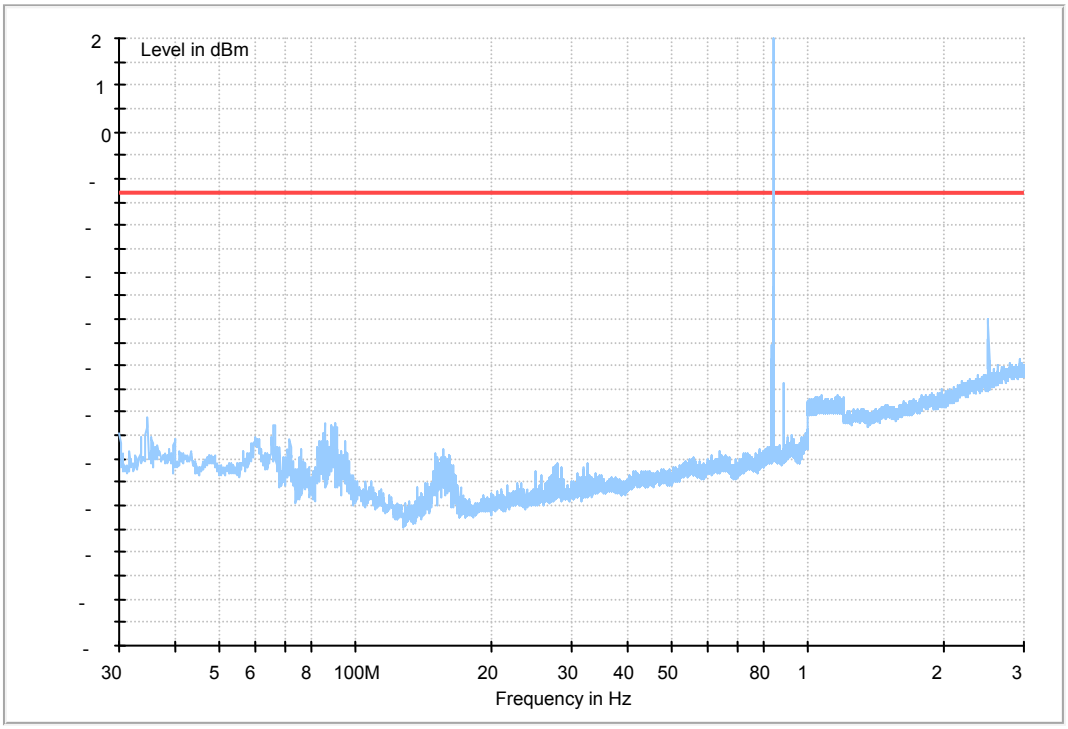
Note: 1. Simultaneous transmission was investigated and no new emissions were found.
2. RBW ≥ 100 kHz, VBW > 3 x RBW.

GSM 850

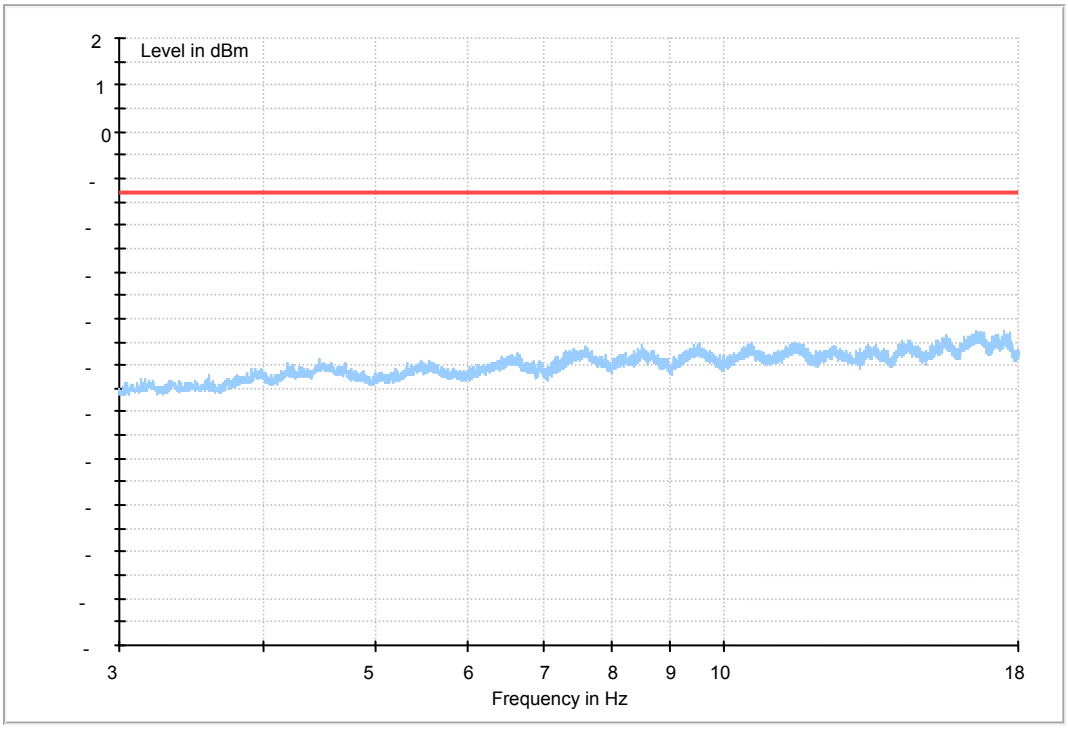
Traffic Mode (9kHz-30MHz)



Traffic Mode (30MHz-3GHz)

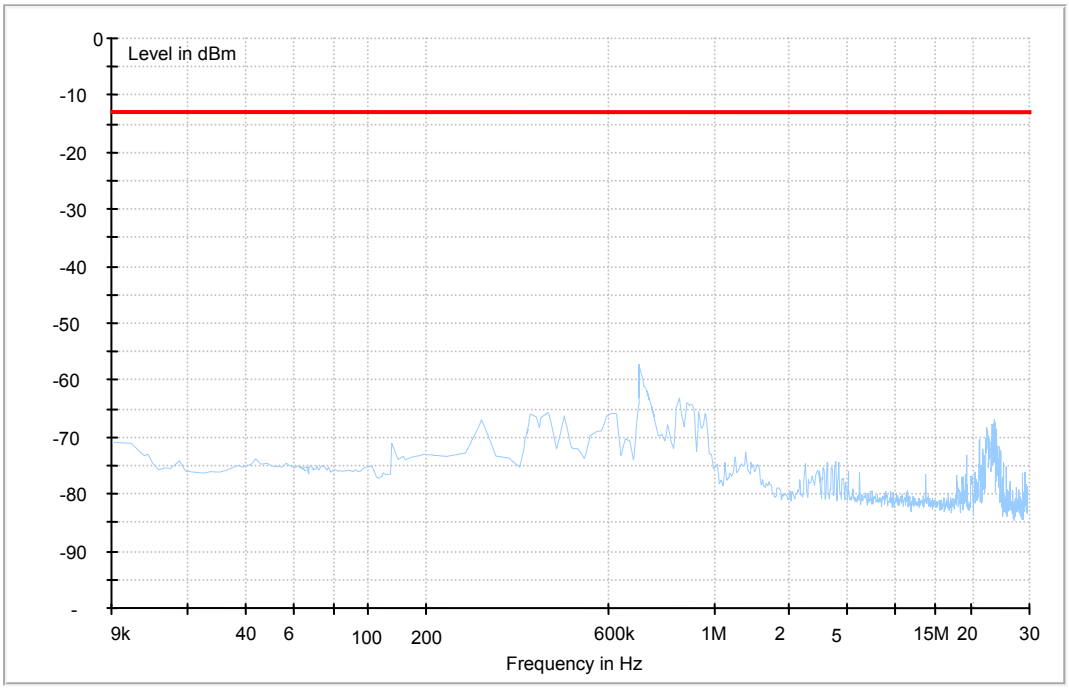


Traffic Mode (3GHz-18GHz)

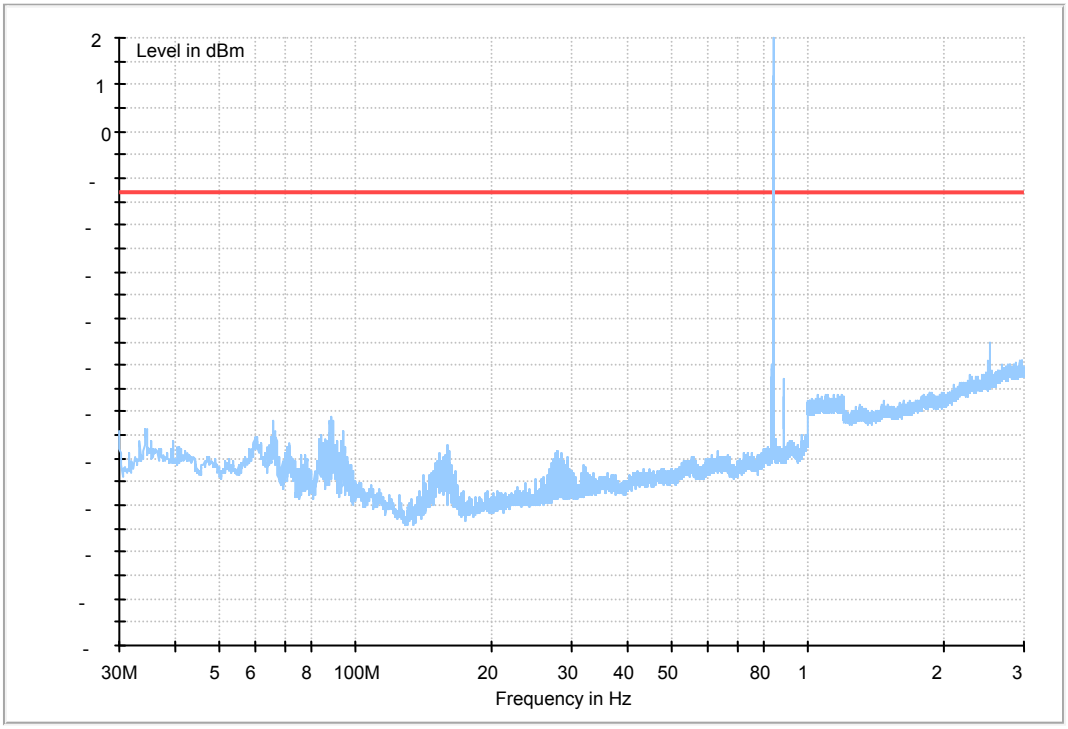


GPRS 850

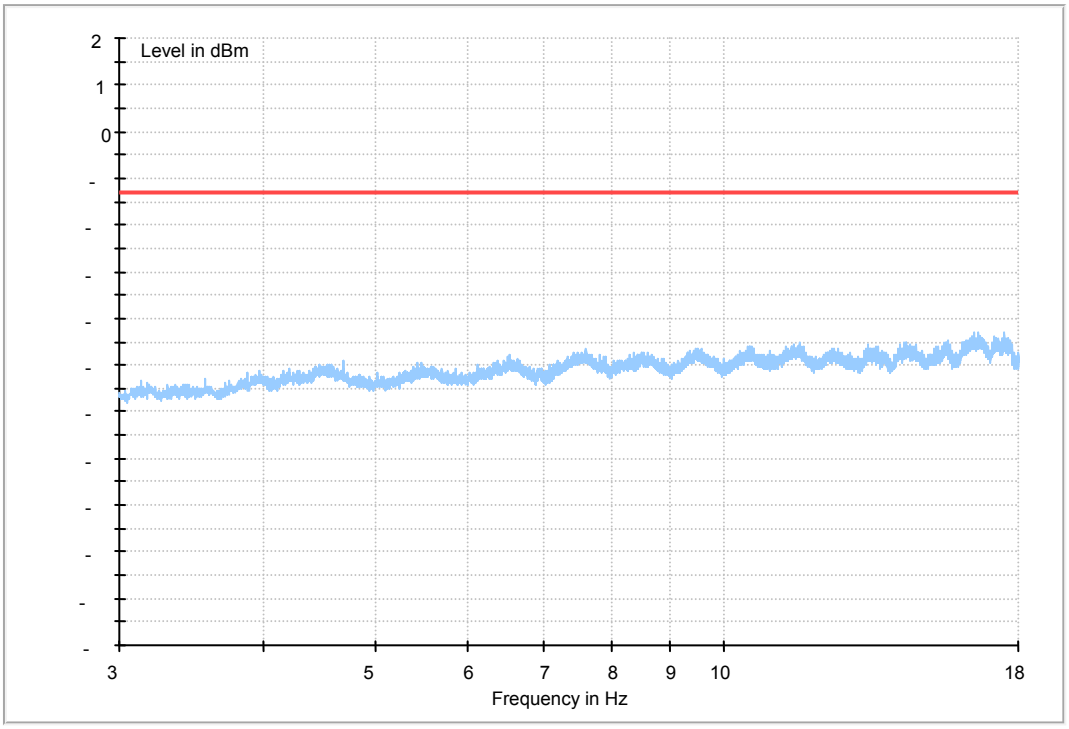
Traffic Mode (9kHz-30MHz)



Traffic Mode (30MHz-3GHz)

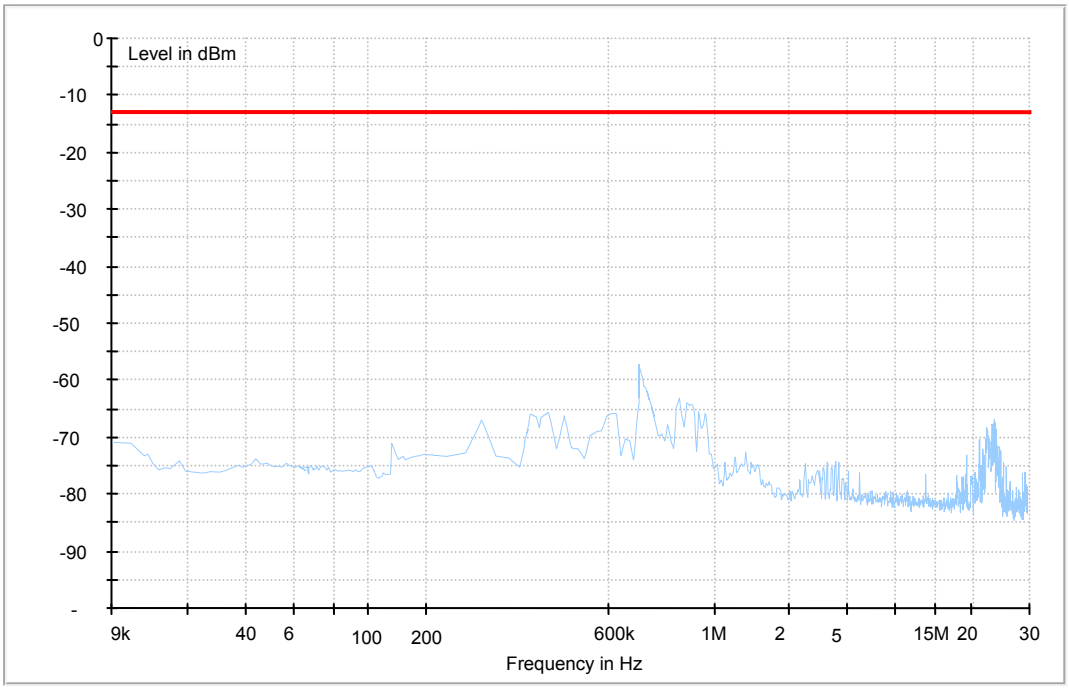


Traffic Mode (3GHz-18GHz)

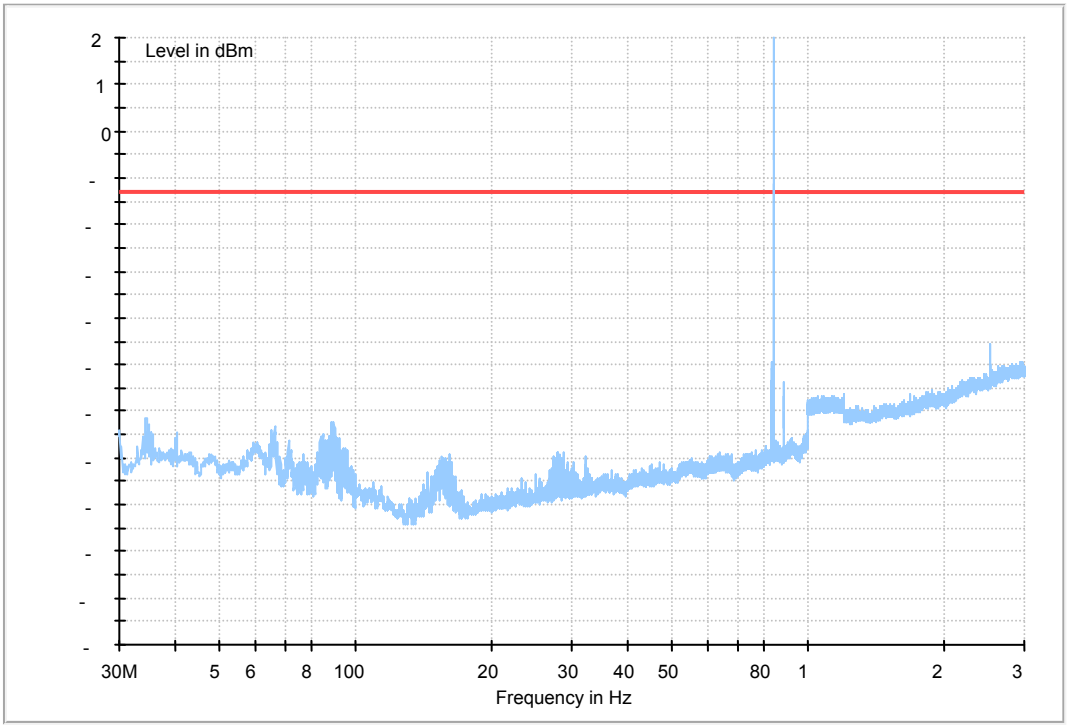


EDGE 850

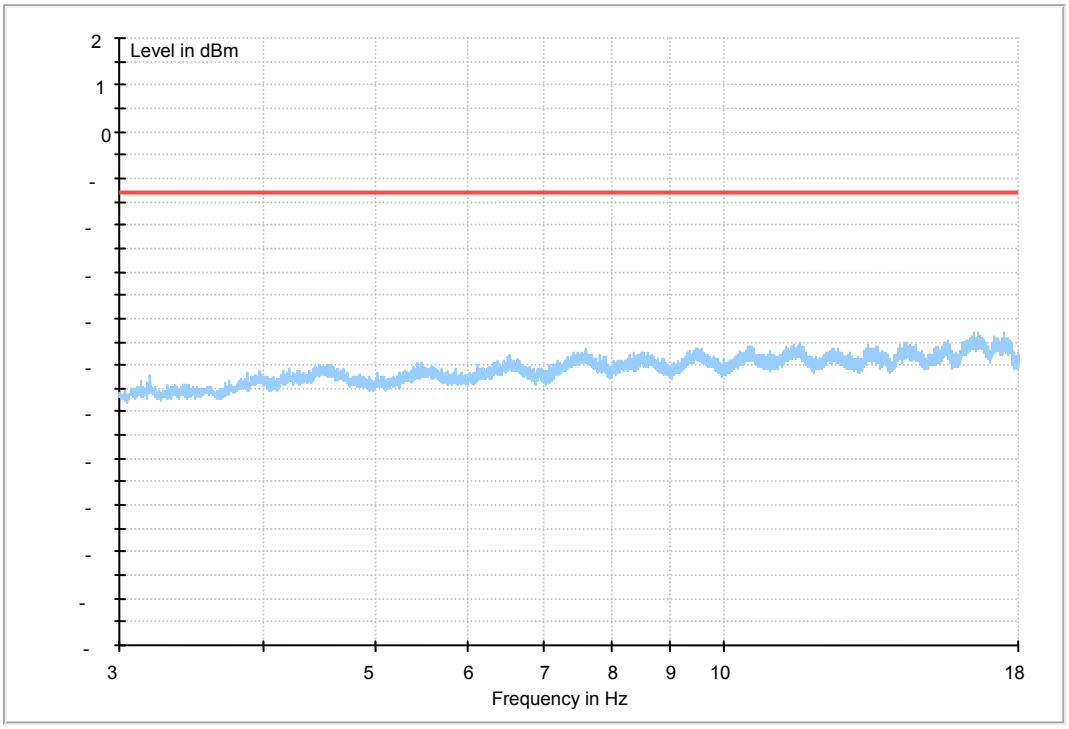
Traffic Mode (9kHz-30MHz)



Traffic Mode (30MHz-3GHz)



Traffic Mode (3GHz-18GHz)



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	14	0.016726	---	±2.5	Pass
			-20 °C	-15	-0.01792	---	±2.5	Pass
			-10 °C	-18	-0.02151	---	±2.5	Pass
			0 °C	15	0.017921	---	±2.5	Pass
			10 °C	17	0.020311	---	±2.5	Pass
			20 °C	-15	-0.01792	---	±2.5	Pass
			30 °C	13	0.015532	---	±2.5	Pass
			40 °C	-11	-0.01314	---	±2.5	Pass
			50 °C	17	0.020311	---	±2.5	Pass
TM 2	M	VN	-30 °C	-15	-0.01792	---	±2.5	Pass
			-20 °C	16	0.019116	---	±2.5	Pass
			-10 °C	-18	-0.02151	---	±2.5	Pass
			0 °C	-13	-0.01553	---	±2.5	Pass
			10 °C	-18	-0.02151	---	±2.5	Pass
			20 °C	19	0.0227	---	±2.5	Pass
			30 °C	15	0.017921	---	±2.5	Pass
			40 °C	-14	-0.01673	---	±2.5	Pass
			50 °C	15	0.017921	---	±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	14	0.016726	---	±2.5	Pass
			VN	-15	-0.01792	---	±2.5	Pass
			VH	18	0.021505	---	±2.5	Pass
TM 2	M	TN	VL	-13	-0.01553	---	±2.5	Pass
			VN	18	0.021505	---	±2.5	Pass
			VH	17	0.020311	---	±2.5	Pass

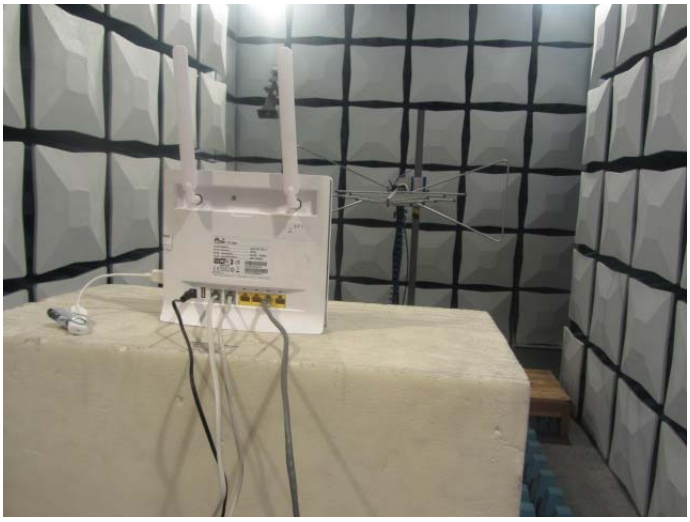
----------The END----------

Appendix H

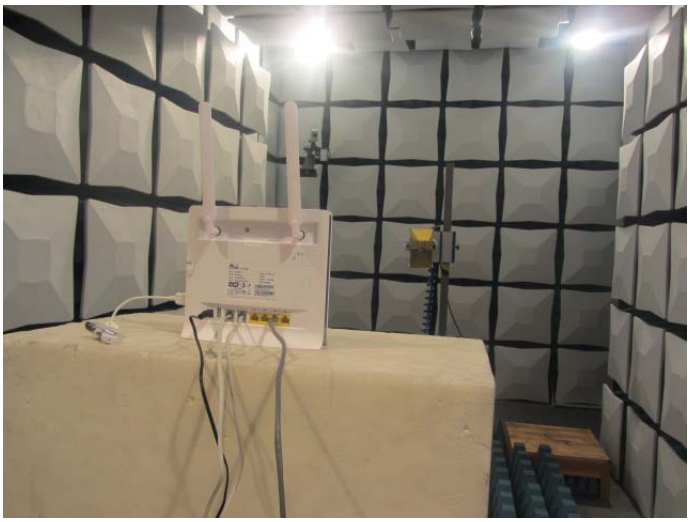
Photos of Radiated Spurious Emissions

Photos of Test Setup

1 Radiated Spurious Emissions



Radiated Spurious Emission (below 3GHz)



Radiated Spurious Emission (3GHz to18GHz)

----------END----------