

Appendix B

GSM850&1900

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1 Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Part 1 – RF Conducted Power of Transmitter for GSM850

TEST CONDITIONS		RF Output Power(Conducted)					
		Channel128(L)		Channel190(M)		Channel251(H)	
		824.2MHz		836.6 MHz		848.8 MHz	
T _{nom} / V _{nom}		Measured (dBm)	Limit (dBm)	Measured (dBm)	Limit (dBm)	Measured (dBm)	Limit (dBm)
GSM/TM1 (GSM)		32.88	38.5	32.91	38.5	32.87	38.5
GSM/TM1 (GPRS)		32.75	38.5	32.87	38.5	32.83	38.5
GSM/TM2 (EGPRS)		27.24	38.5	27.27	38.5	27.14	38.5

Part 2– Effective Radiated Power of Transmitter (ERP) for GSM850

Test Mode	Freq. (MHz)	Meas. Level (dBm)	Substitution Antenna Type	SGP (dBm)	Substitution Gain(dBd)	Cable Loss (dB)	Substitution Level(ERP) / dBm	Limit (dBm)	Result
GSM/TM1 (GSM)	824.2	31.09	Dipole	36.55	-4.90	0.6	31.05	38.5	Pass
GSM/TM1 (GSM)	836.6	31.16	Dipole	36.75	-5.02	0.6	31.13	38.5	Pass
GSM/TM1 (GSM)	848.8	31.11	Dipole	36.68	-5.00	0.6	31.08	38.5	Pass
GSM/TM1 (GPRS)	824.2	31.04	Dipole	36.50	-4.90	0.6	31.00	38.5	Pass
GSM/TM1 (GPRS)	836.6	31.18	Dipole	36.77	-5.02	0.6	31.15	38.5	Pass
GSM/TM1 (GPRS)	848.8	31.17	Dipole	36.74	-5.00	0.6	31.14	38.5	Pass
GSM/TM2(E GPRS)	824.2	25.15	Dipole	30.63	-4.90	0.6	25.13	38.5	Pass
GSM/TM2(E GPRS)	836.6	25.20	Dipole	30.79	-5.02	0.6	25.17	38.5	Pass
GSM/TM2(E GPRS)	848.8	25.12	Dipole	30.70	-5.00	0.6	25.10	38.5	Pass

Note:

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

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

b: SGP=Signal Generator Level

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

Detector: RMS

Part 3 – RF Conducted Power of Transmitter for GSM1900

		RF Output Power(Conducted)				
TEST CONDITIONS		Channel512(L)		Channel661(M)		Channel810(H)
		1850.2MHz		1880.0 MHz		1909.8 MHz
Tnom/ Vnom		Measured (dBm)	Limit (dBm)	Measured (dBm)	Limit (dBm)	Measured (dBm)
GSM/TM1 (GSM)		30.28	33	30.17	33	30.09
GSM/TM1 (GPRS)		30.25	33	30.16	33	30.07
GSM/TM2 (EGPRS)		27.28	33	27.13	33	27.07

Part 4– Effective Isotropic Radiated Power of Transmitter (EIRP) for GSM1900

Test Mode	Freq. (MHz)	Meas. Level (dBm)	Substitution Antenna Type	SGP (dBm)	Substitution Gain(dBi)	Cable Loss (dB)	Substitution Level(EIRP) / dBm	Limit (dBm)	Result
GSM/TM1 (GSM)	1850.2	28.18	Horn Ant.	31.66	4.5	1	28.16	33	Pass
GSM/TM1 (GSM)	1880.0	28.15	Horn Ant.	31.62	4.5	1	28.12	33	Pass
GSM/TM1 (GSM)	1909.8	28.09	Horn Ant.	31.57	4.5	1	28.07	33	Pass
GSM/TM1 (GPRS)	1850.2	28.16	Horn Ant.	31.63	4.5	1	28.13	33	Pass
GSM/TM1 (GPRS)	1880.0	28.13	Horn Ant.	31.60	4.5	1	28.10	33	Pass
GSM/TM1 (GPRS)	1909.8	28.11	Horn Ant.	31.54	4.5	1	28.04	33	Pass
GSM/TM2(EGPRS)	1850.2	24.18	Horn Ant.	27.67	4.5	1	24.17	33	Pass
GSM/TM2(EGPRS)	1880.0	24.13	Horn Ant.	27.61	4.5	1	24.11	33	Pass
GSM/TM2(EGPRS)	1909.8	24.11	Horn Ant.	27.58	4.5	1	24.08	33	Pass

Note:

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

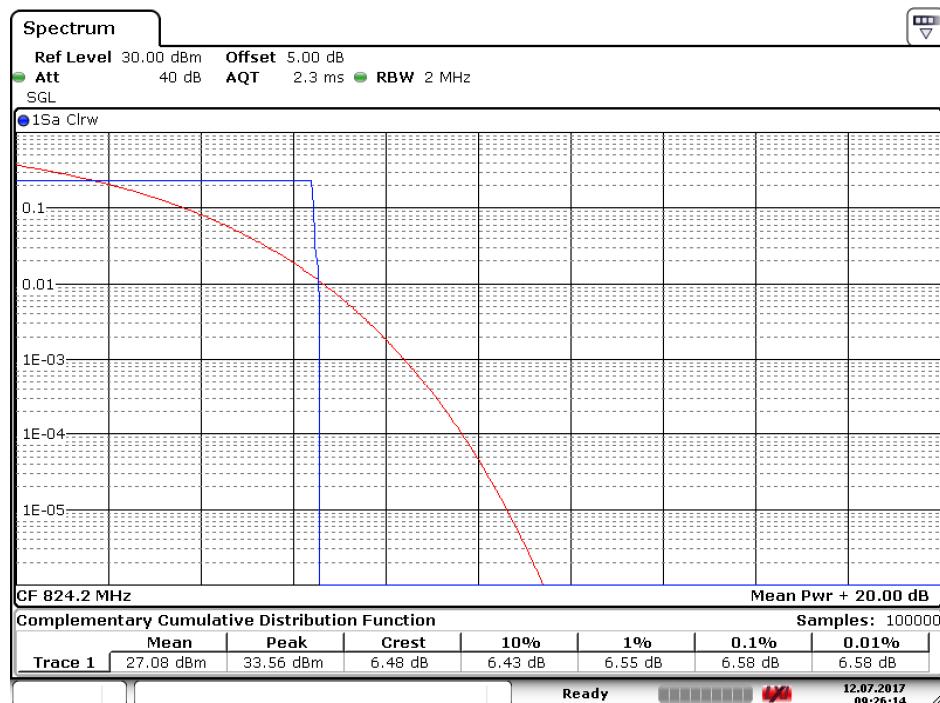
c: RBW > emission bandwidth, VBW > 3 x RBW.

Detector: RMS

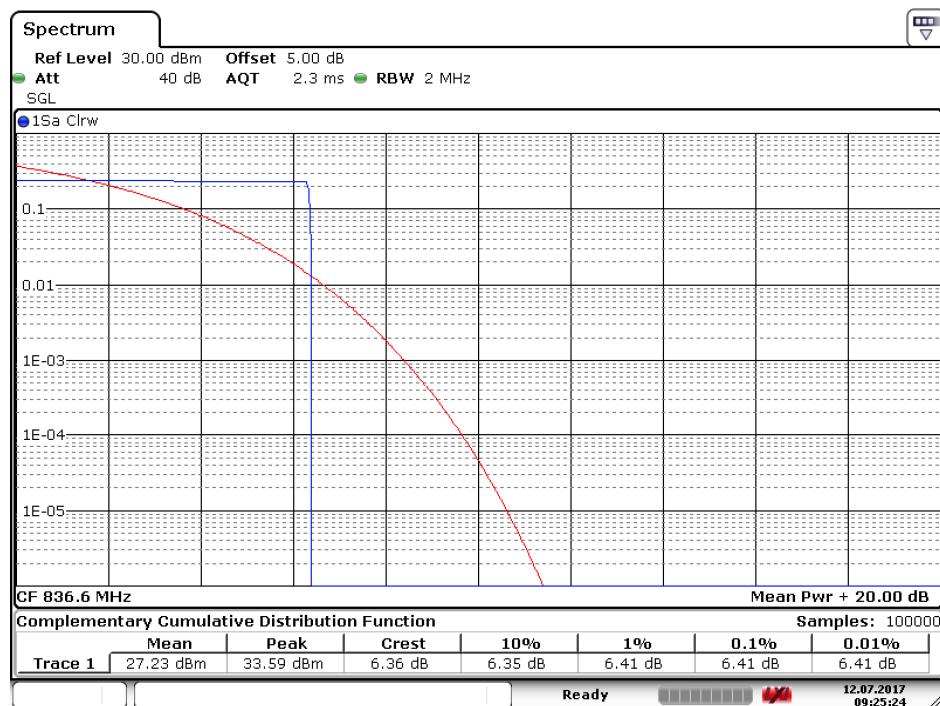
2 Peak-to-Average Ratio

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
GSM 850	GSM/TM1	LCH	6.58	13	PASS
		MCH	6.41	13	PASS
		HCH	6.49	13	PASS
	GSM/TM2	LCH	8.32	13	PASS
		MCH	8.32	13	PASS
		HCH	8.29	13	PASS
GSM 1900	GSM/TM1	LCH	6.46	13	PASS
		MCH	6.64	13	PASS
		HCH	6.49	13	PASS
	GSM/TM2	LCH	8.43	13	PASS
		MCH	8.29	13	PASS
		HCH	8.20	13	PASS

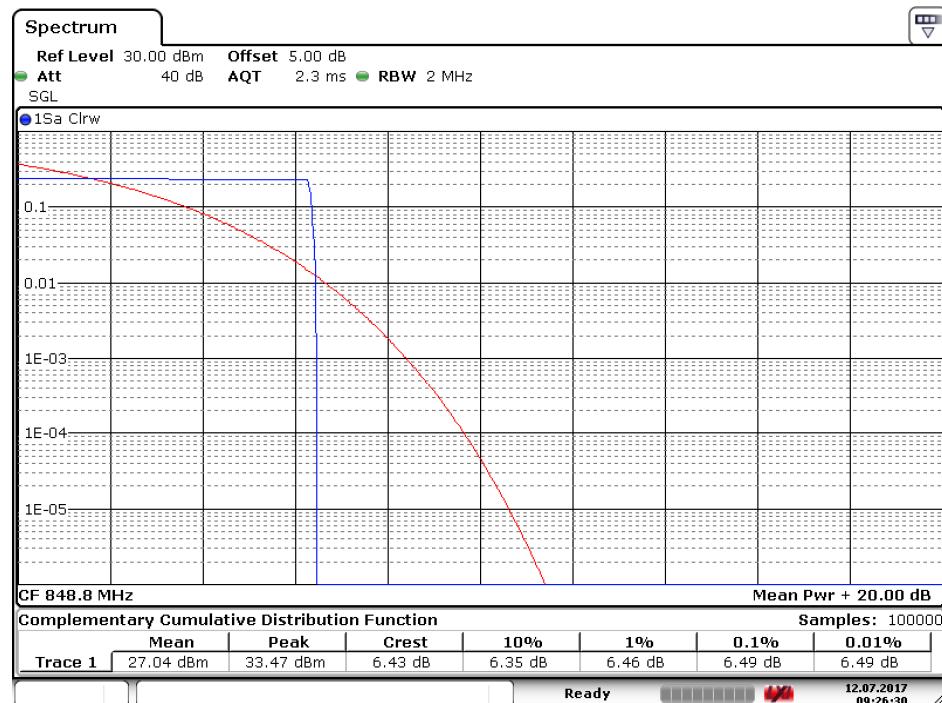
Part II - Test Plots
2.1 For GSM
2.1.1 Test Band = GSM 850
2.1.1.1 Test Mode = GSM/TM1
2.1.1.1.1 Test Channel = LCH


Date: 12.JUL.2017 09:26:15

2.1.1.1.2 Test Channel = MCH


Date: 12.JUL.2017 09:25:23

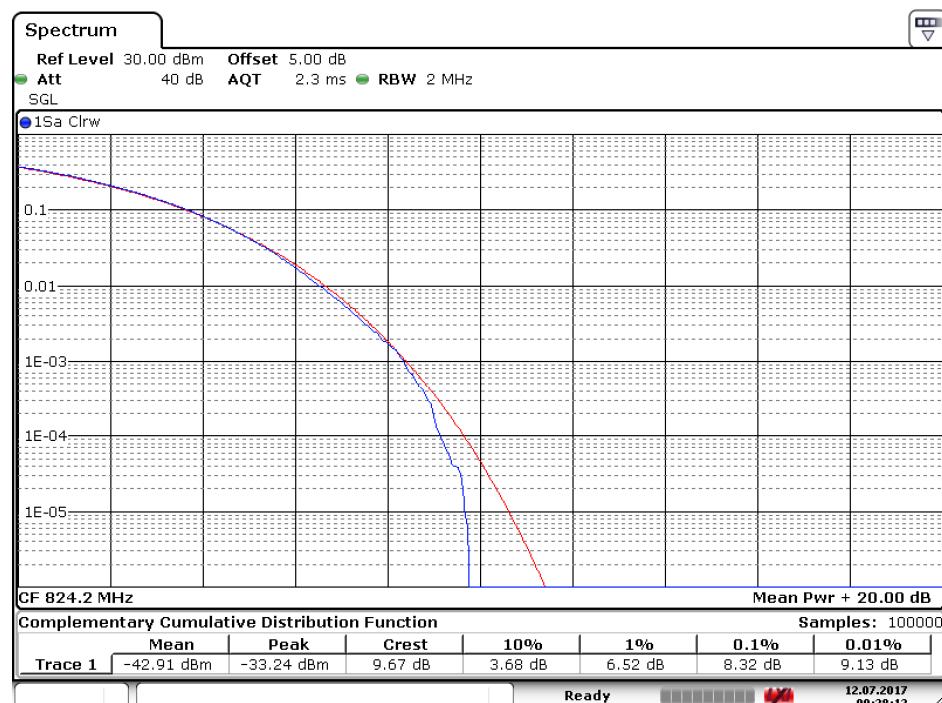
2.1.1.1.3 Test Channel = HCH



Date: 12.JUL.2017 09:26:31

2.1.1.2 Test Mode = GSM/TM2

2.1.1.2.1 Test Channel = LCH



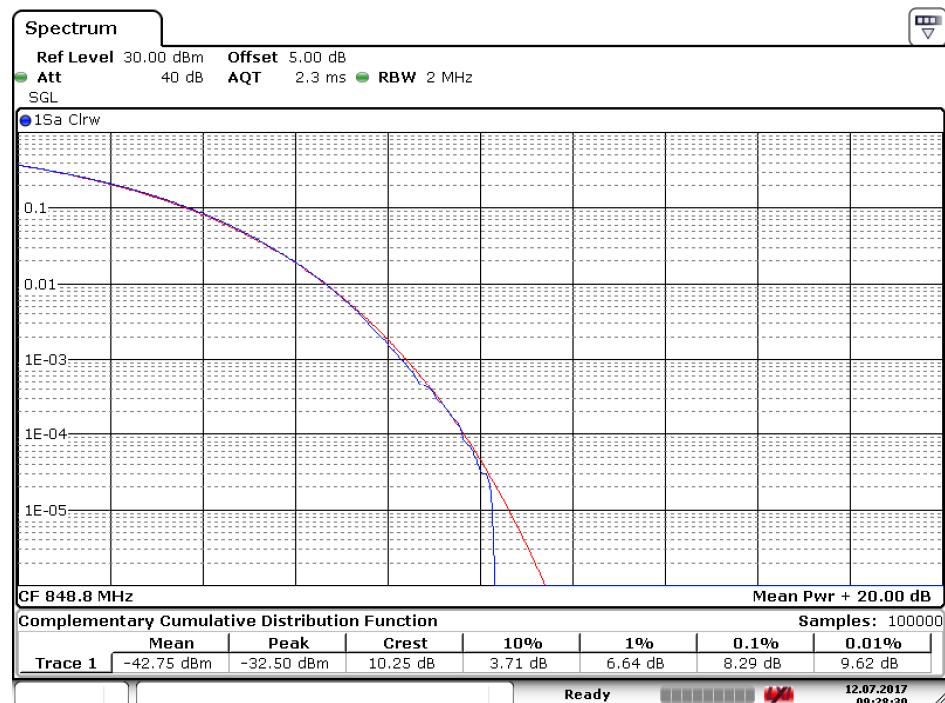
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2.1.1.2.2 Test Channel = MCH



Date: 12.JUL.2017 09:27:50

2.1.1.2.3 Test Channel = HCH

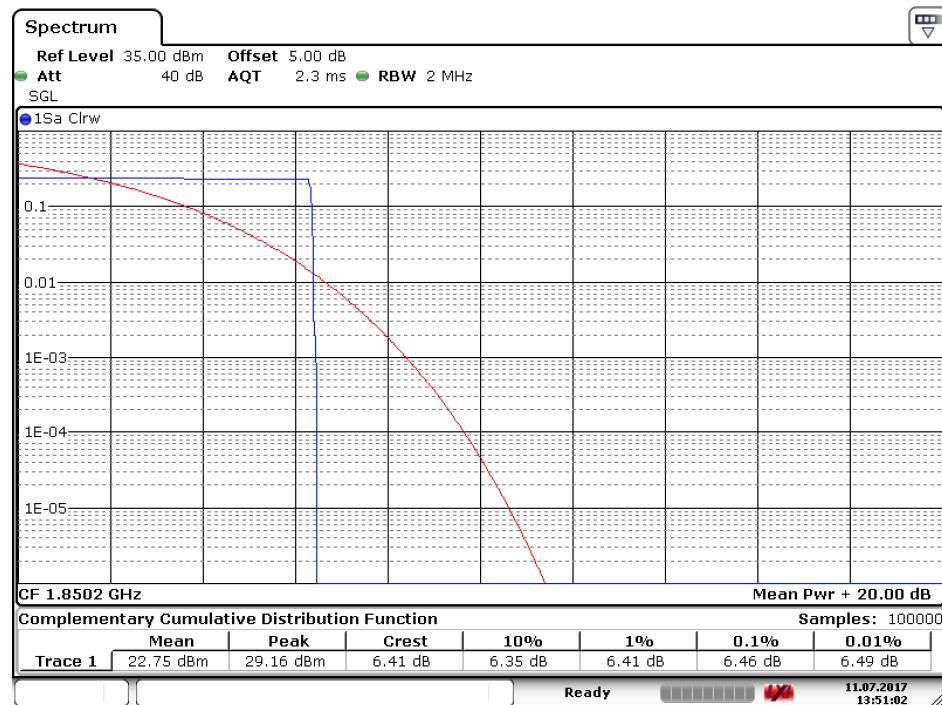


Date: 12.JUL.2017 09:28:30

2.1.2 Test Band = GSM 1900

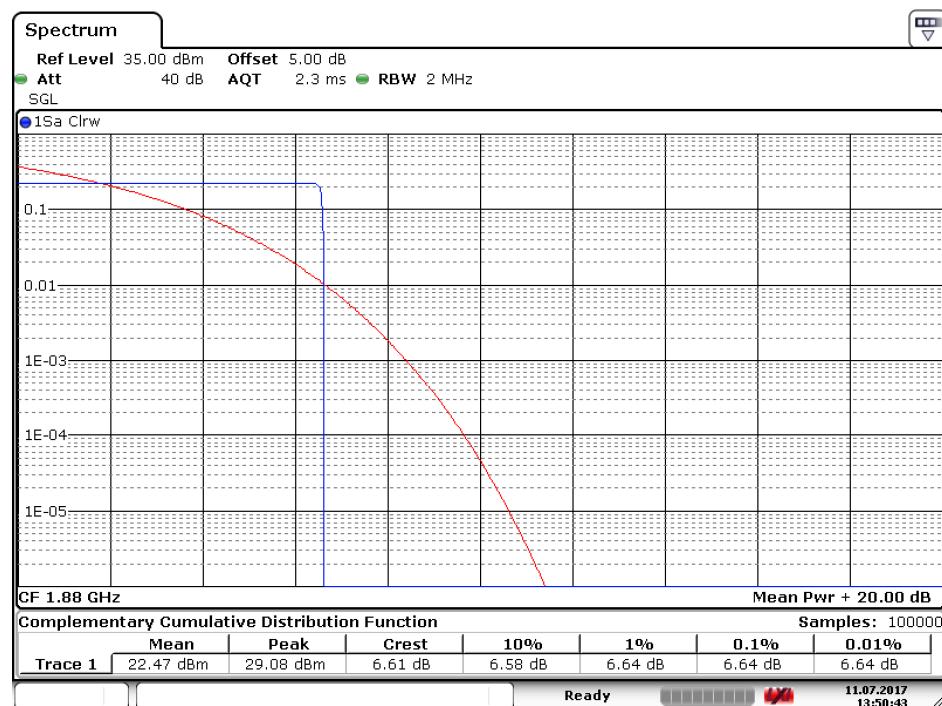
2.1.2.1 Test Mode = GSM/TM1

2.1.2.1.1 Test Channel = LCH



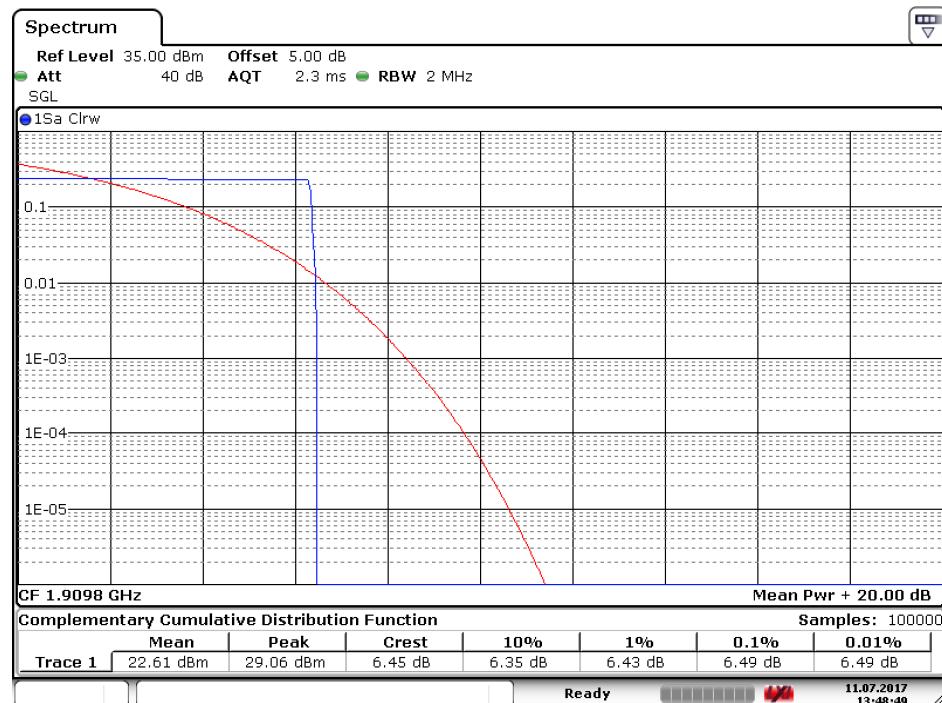
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2.1.2.1.2 Test Channel = MCH



Date: 11.JUL.2017 13:50:43

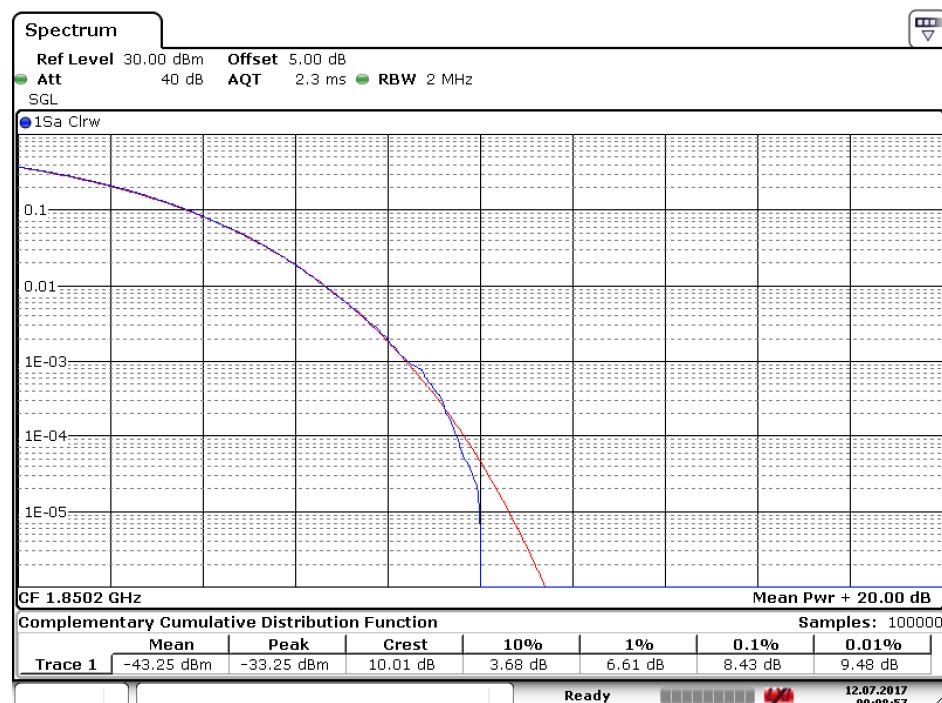
2.1.2.1.3 Test Channel = HCH



Date: 11.JUL.2017 13:48:50

2.1.2.2 Test Mode = GSM/TM2

2.1.2.2.1 Test Channel = LCH



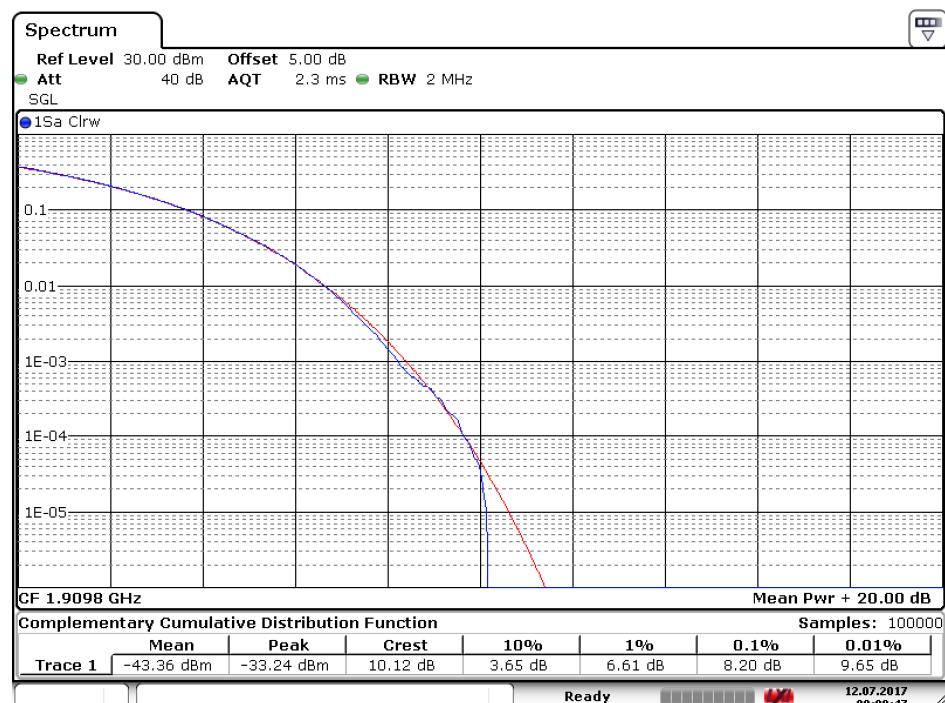
Date: 12.JUL.2017 09:08:57

2.1.2.2.2 Test Channel = MCH



Date: 12.JUL.2017 09:09:23

2.1.2.2.3 Test Channel = HCH



Date: 12.JUL.2017 09:09:47

3 Modulation Characteristics

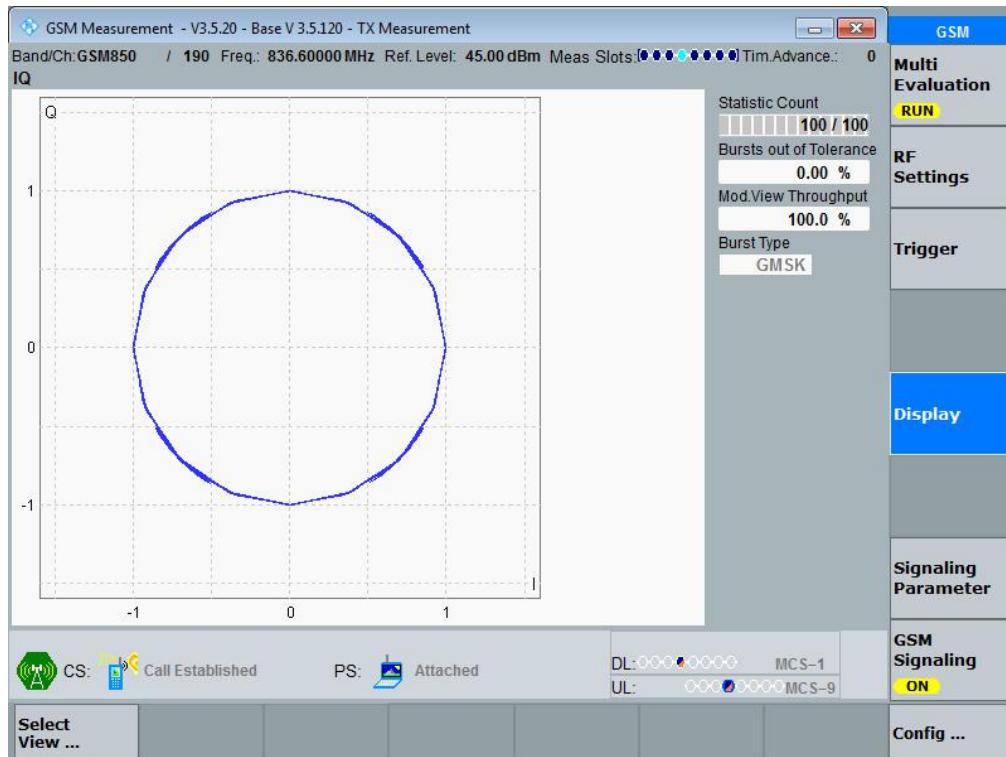
Part I - Test Plots

3.1 For GSM

3.1.1 Test Band = GSM 850

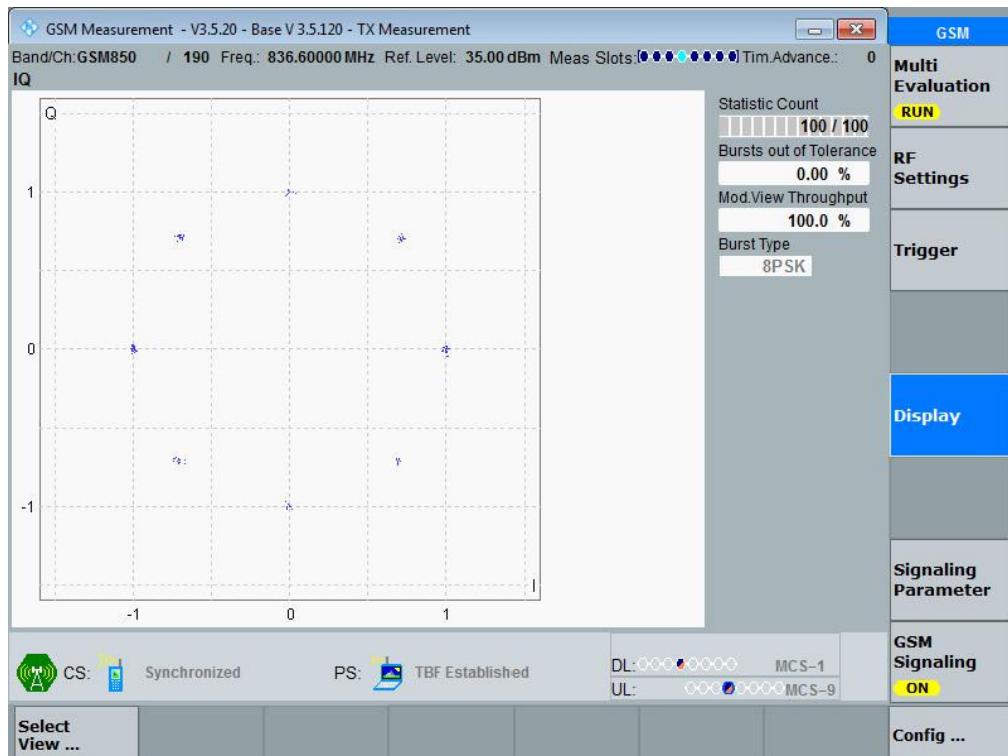
3.1.1.1 Test Mode = GSM/TM1

3.1.1.1.1 Test Channel = MCH



3.1.1.2 Test Mode = GSM/TM2

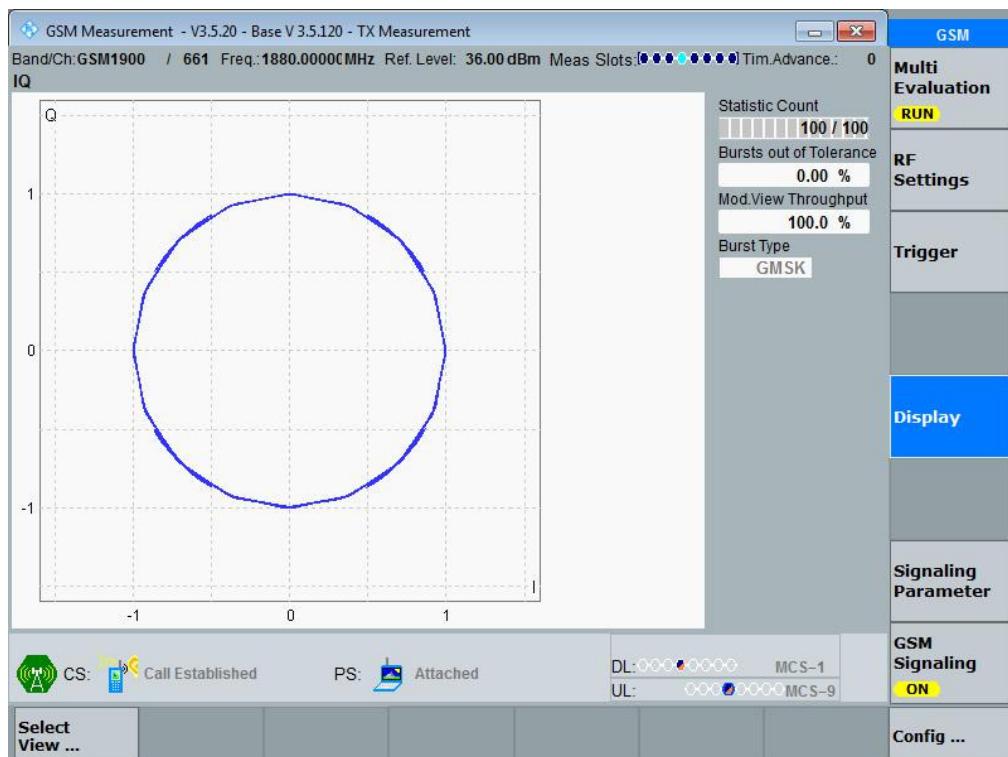
3.1.1.2.1 Test Channel = MCH



3.1.2 Test Band = GSM 1900

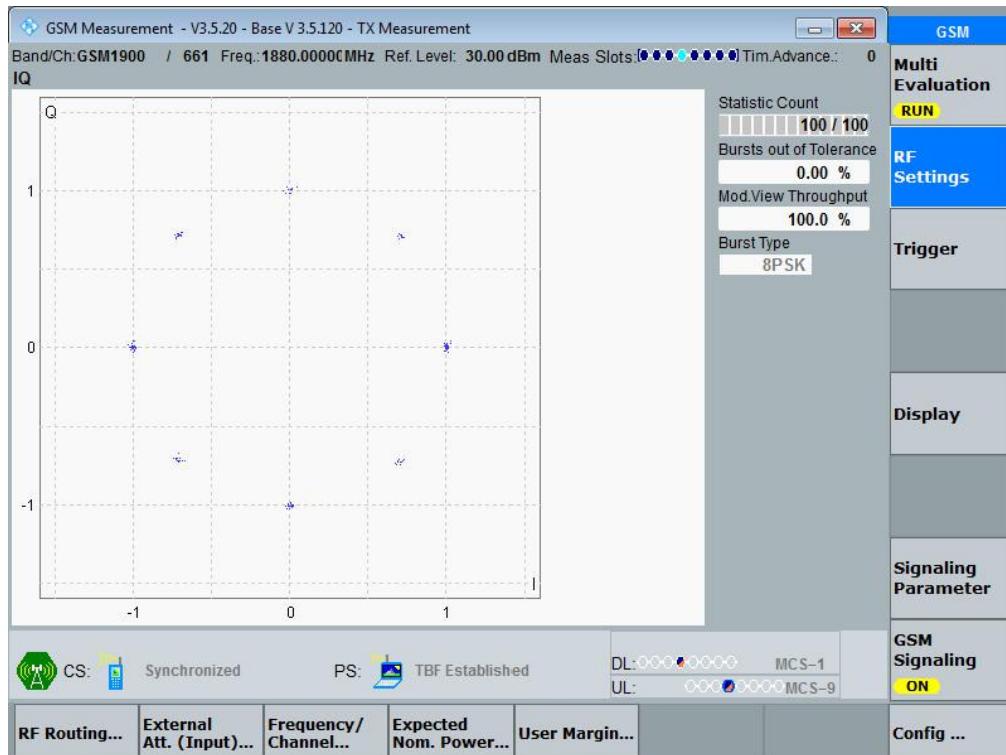
3.1.2.1 Test Mode = GSM/TM1

3.1.2.1.1 Test Channel = MCH



3.1.2.2 Test Mode = GSM/TM2

3.1.2.2.1 Test Channel = MCH



4 Bandwidth

Part I - Test Results

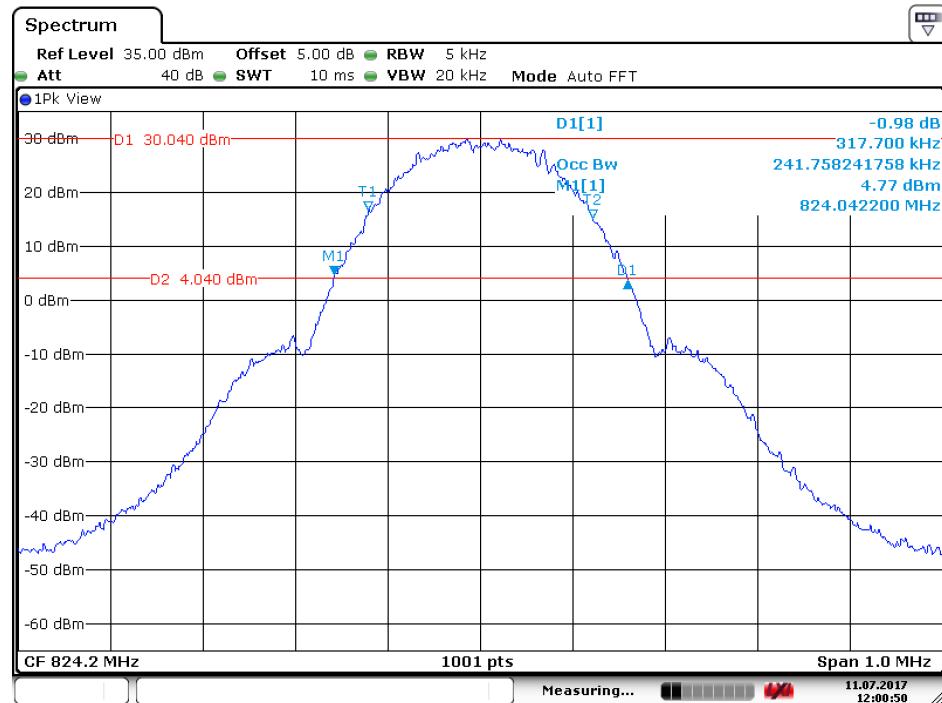
Test Band	Test Mode	Test Channel	Occupied Bandwidth [kHz]	Emission Bandwidth [kHz]	Verdict
GSM 850	GSM/TM1	LCH	241.8	317.7	PASS
		MCH	241.8	317.7	PASS
		HCH	241.8	317.7	PASS
	GSM/TM2	LCH	244.8	318.7	PASS
		MCH	245.8	314.7	PASS
		HCH	244.8	315.7	PASS
GSM 1900	GSM/TM1	LCH	241.8	319.7	PASS
		MCH	242.8	318.7	PASS
		HCH	242.8	321.7	PASS
	GSM/TM2	LCH	246.8	318.7	PASS
		MCH	245.8	316.7	PASS
		HCH	245.8	320.7	PASS

4.1 For GSM

4.1.1 Test Band = GSM 850

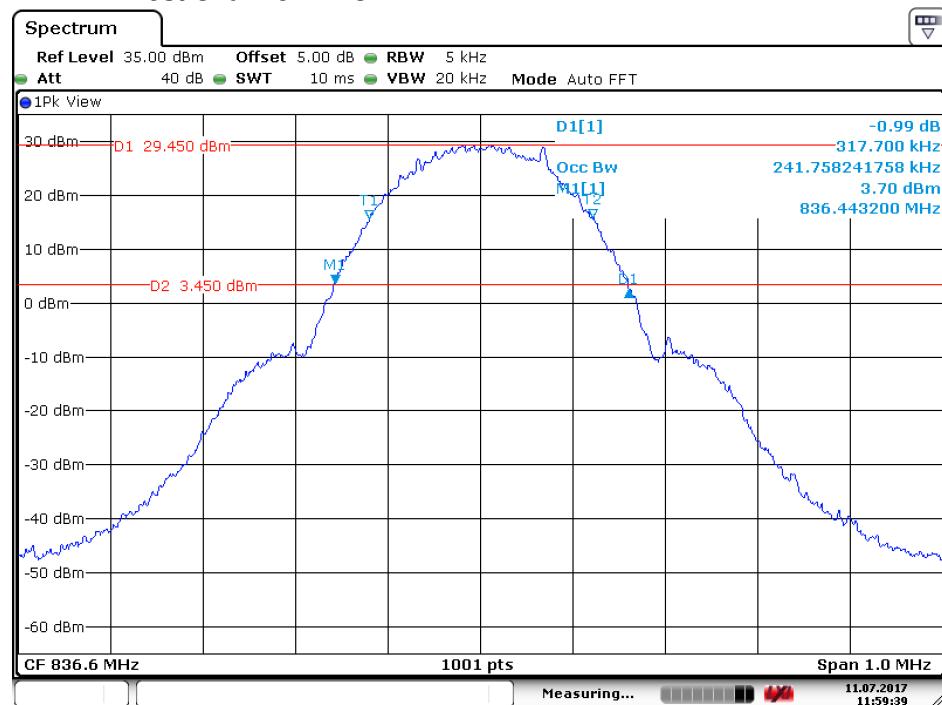
4.1.1.1 Test Mode = GSM/TM1

4.1.1.1.1 Test Channel = LCH



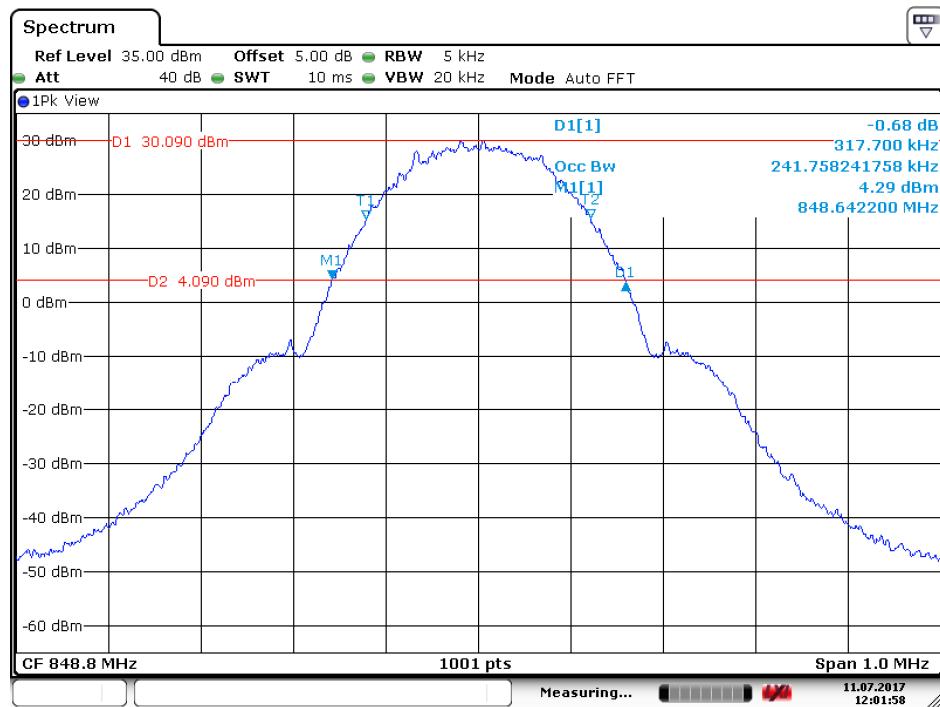
Date: 11.JUL.2017 12:00:51

4.1.1.1.2 Test Channel = MCH



Date: 11.JUL.2017 11:59:40

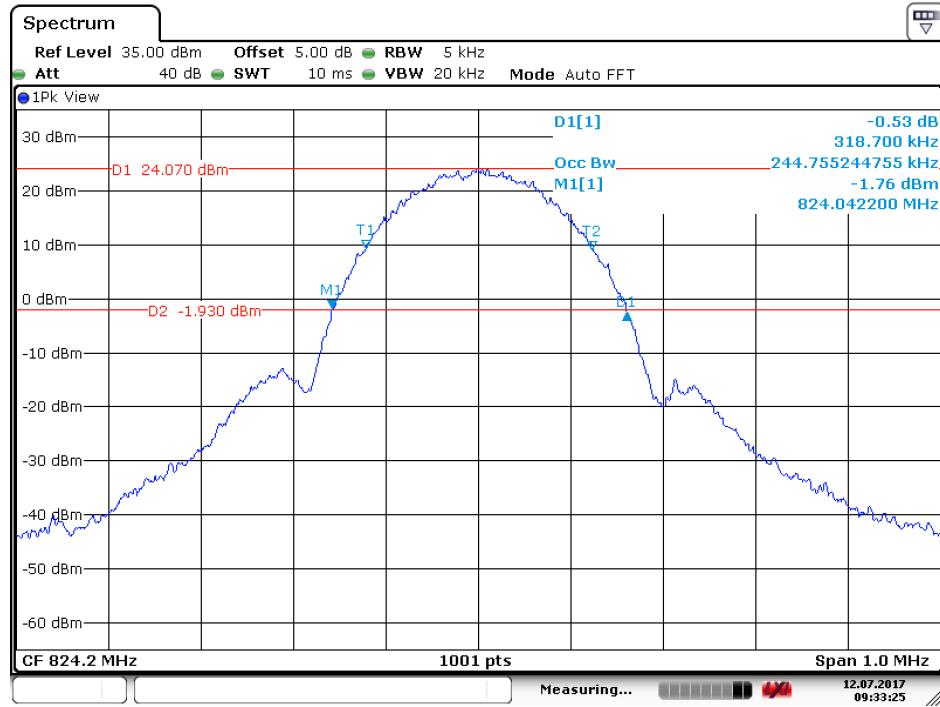
4.1.1.1.3 Test Channel = HCH



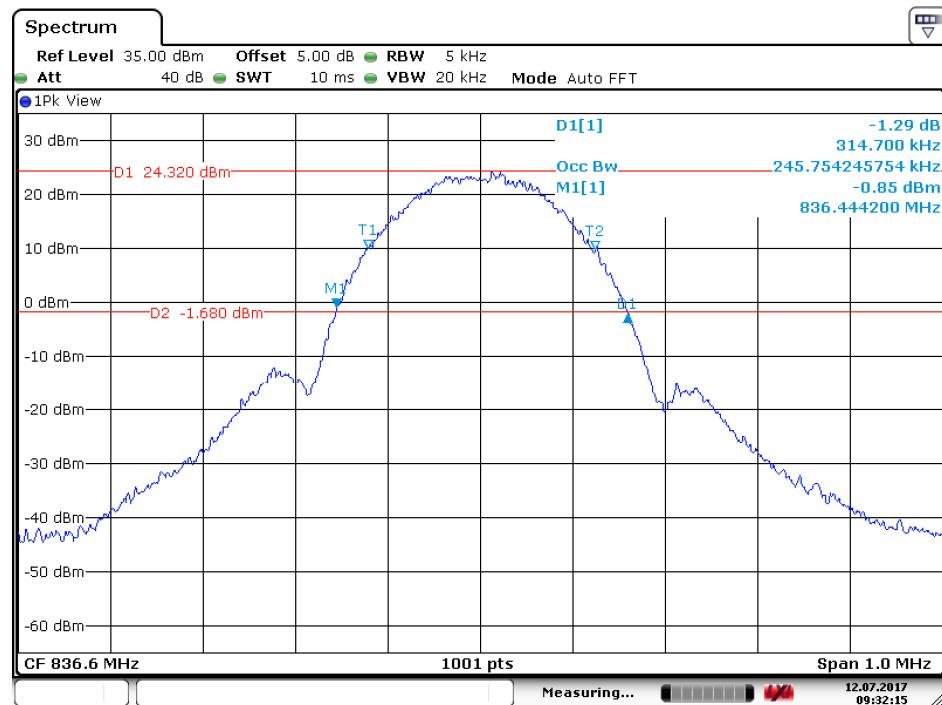
Date: 11.JUL.2017 12:01:59

4.1.1.2 Test Mode = GSM/TM2

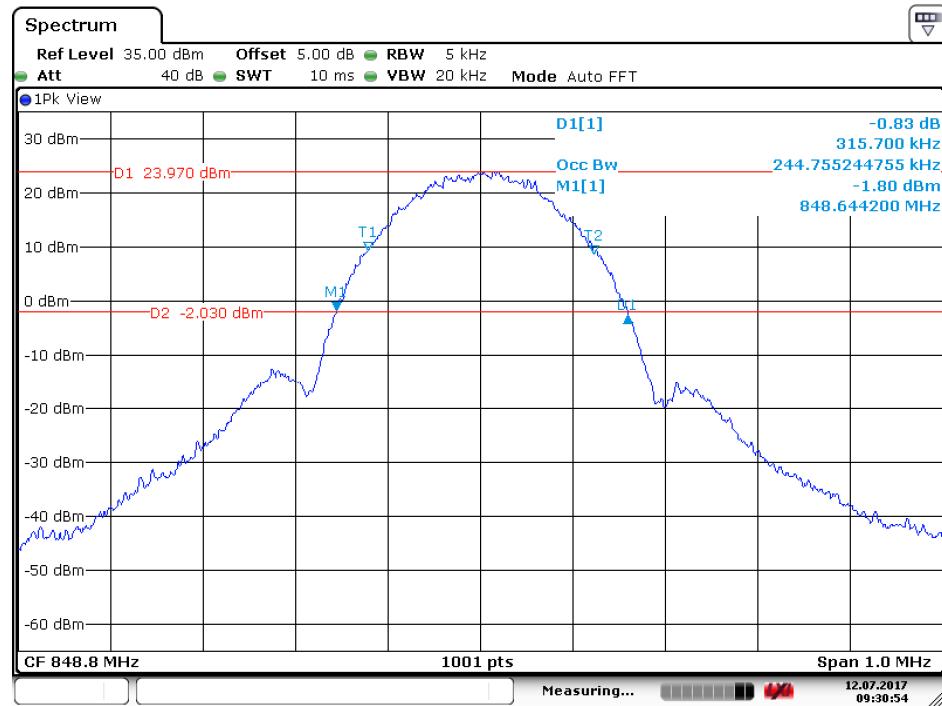
4.1.1.2.1 Test Channel = LCH



Date: 12.JUL.2017 09:33:26

4.1.1.2.2 Test Channel = MCH


Date: 12.JUL.2017 09:32:16

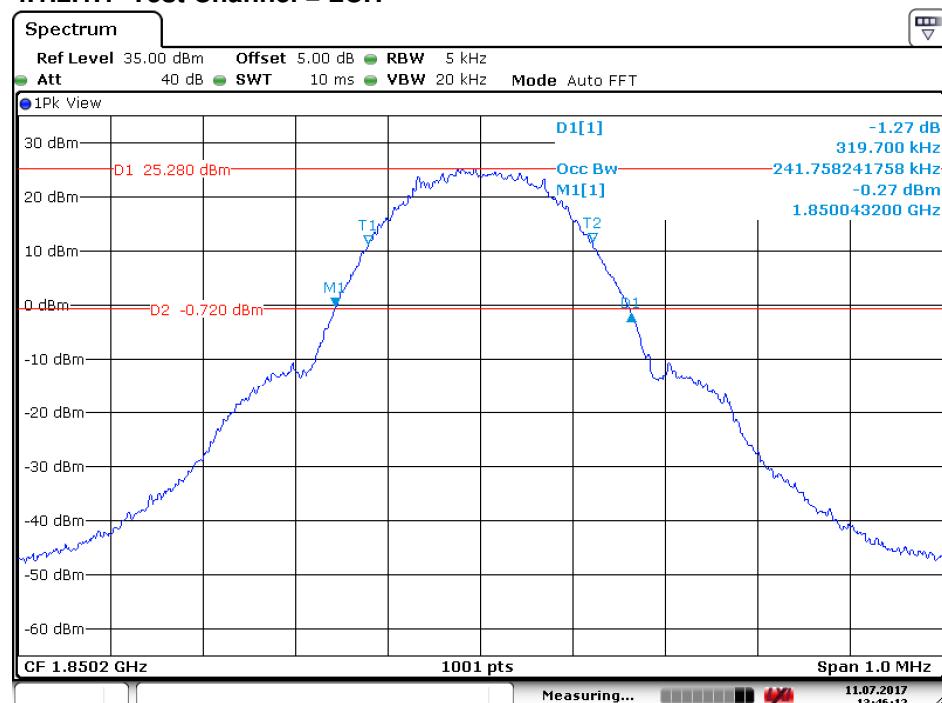
4.1.1.2.3 Test Channel = HCH


Date: 12.JUL.2017 09:30:55

4.1.2 Test Band = GSM 1900

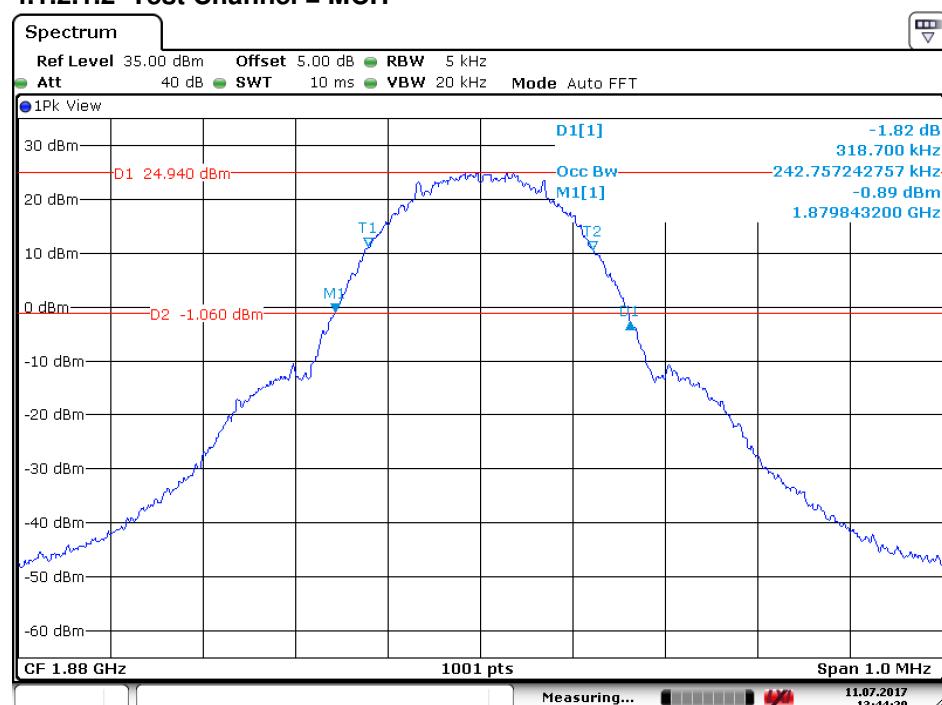
4.1.2.1 Test Mode = GSM/TM1

4.1.2.1.1 Test Channel = LCH



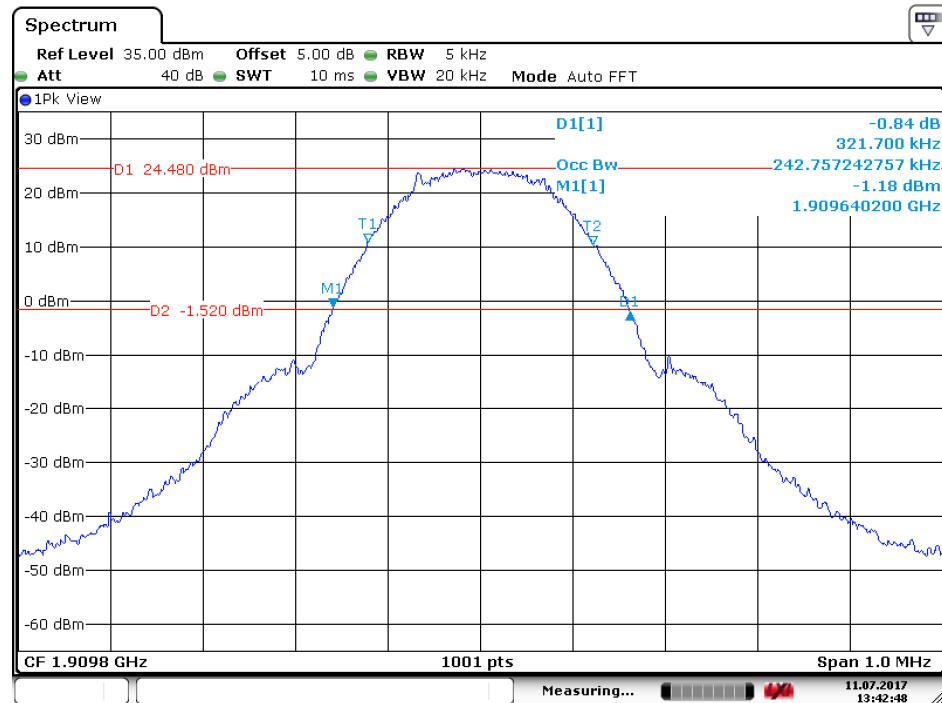
Date: 11.JUL.2017 13:46:12

4.1.2.1.2 Test Channel = MCH



Date: 11.JUL.2017 13:44:30

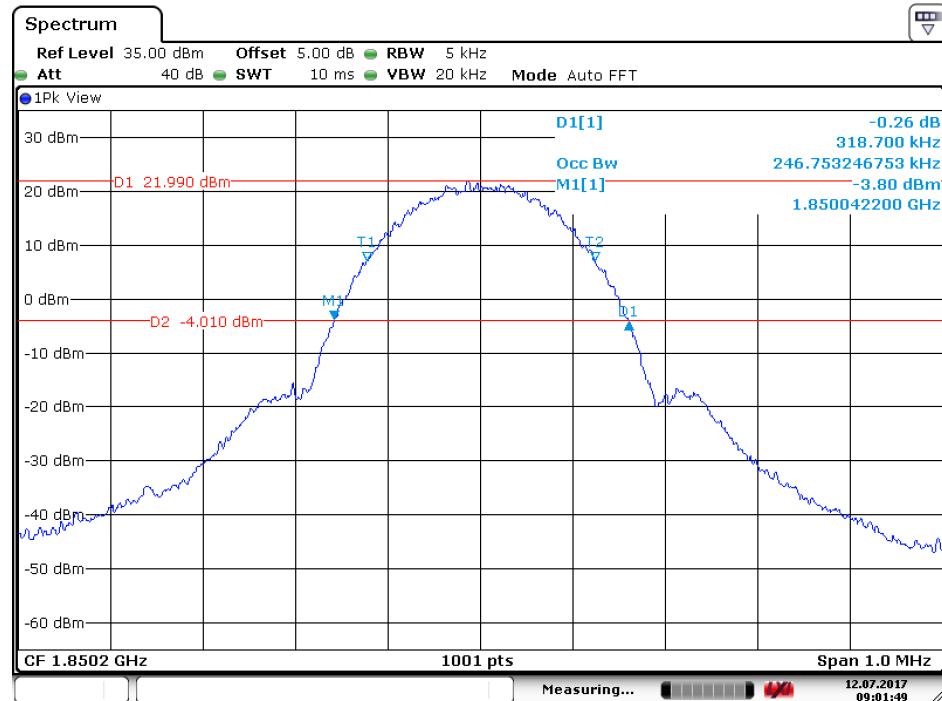
4.1.2.1.3 Test Channel = HCH



Date: 11.JUL.2017 13:42:48

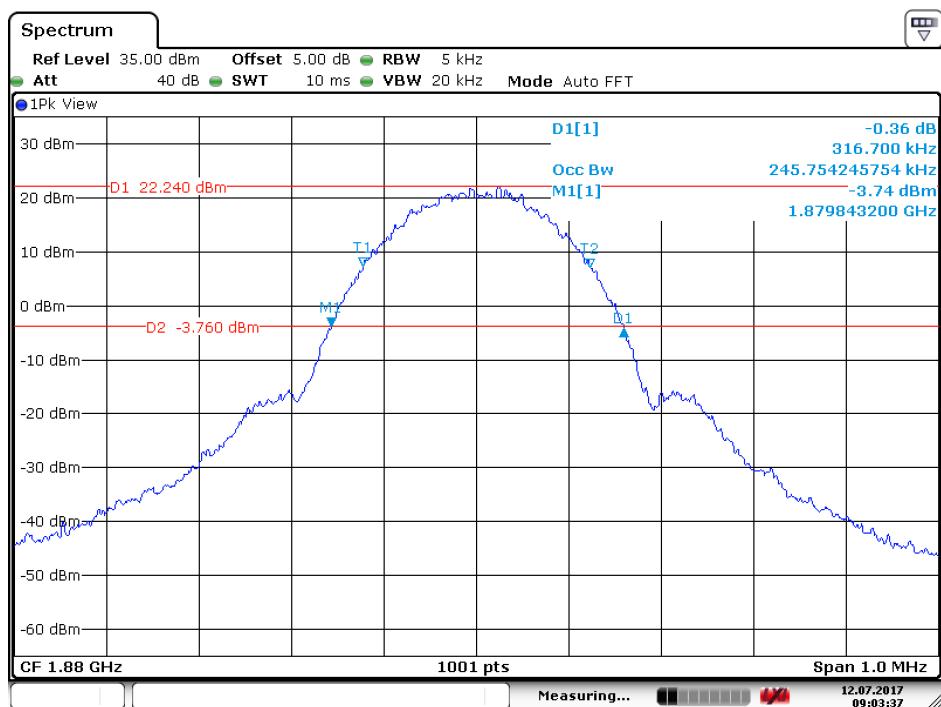
4.1.2.2 Test Mode = GSM/TM2

4.1.2.2.1 Test Channel = LCH



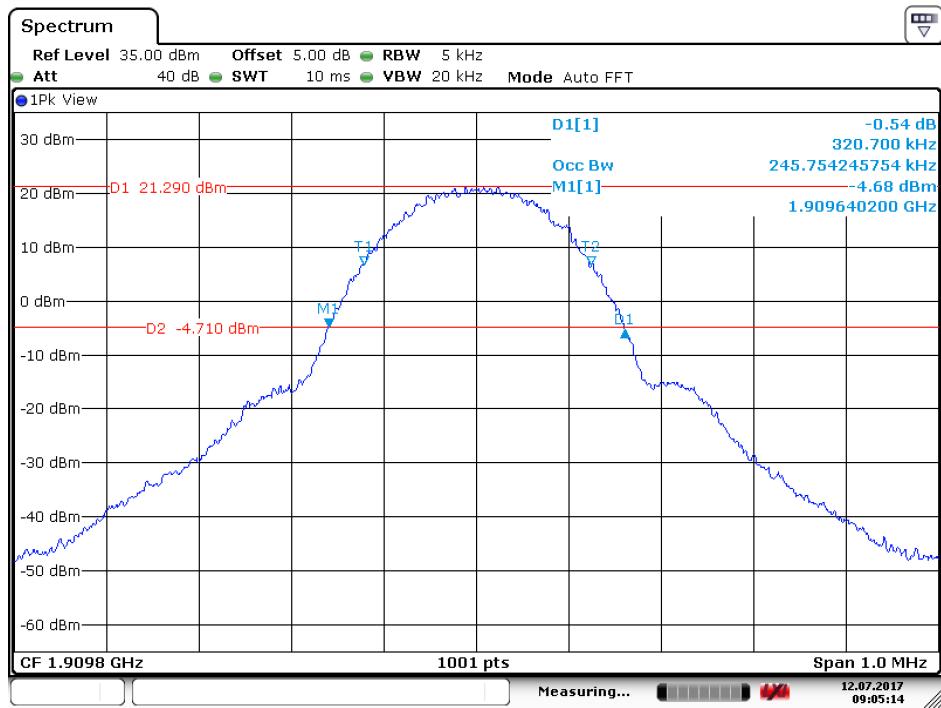
Date: 12.JUL.2017 09:01:49

4.1.2.2.2 Test Channel = MCH



Date: 12.JUL.2017 09:03:38

4.1.2.2.3 Test Channel = HCH



Date: 12.JUL.2017 09:05:14

5 Band Edges Compliance

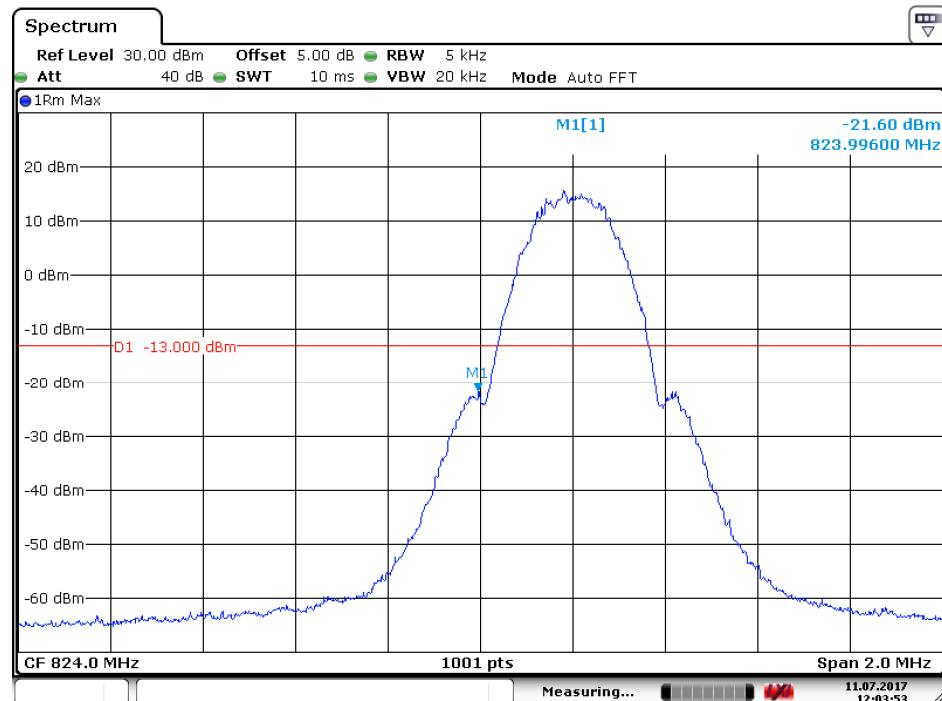
Part I - Test Plots

5.1 For GSM

5.1.1 Test Band = GSM 850

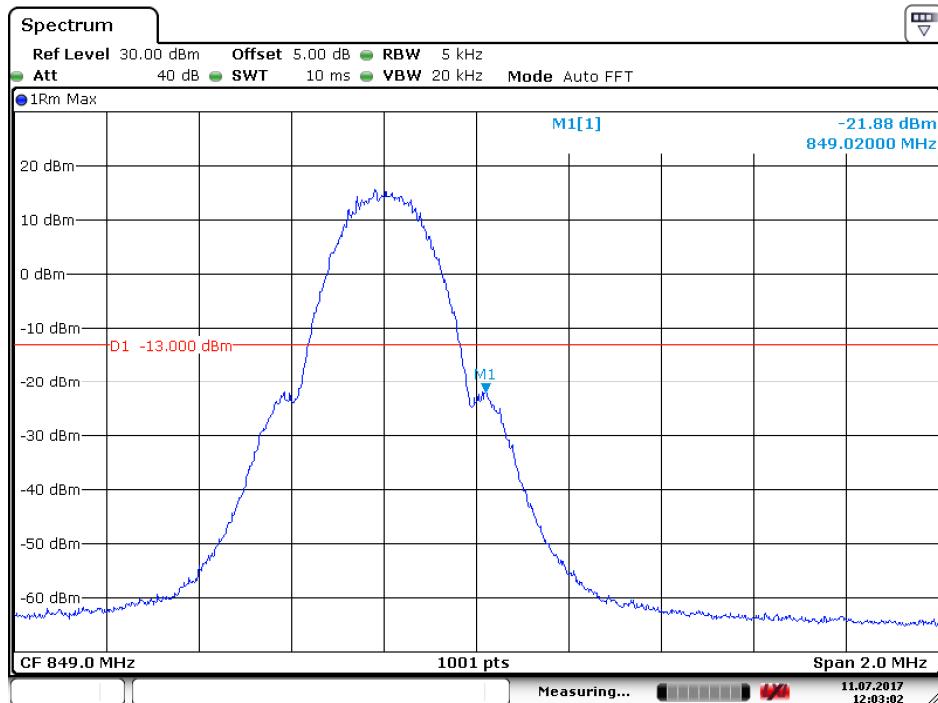
5.1.1.1 Test Mode = GSM/TM1

5.1.1.1.1 Test Channel = LCH



Date: 11.JUL.2017 12:03:53

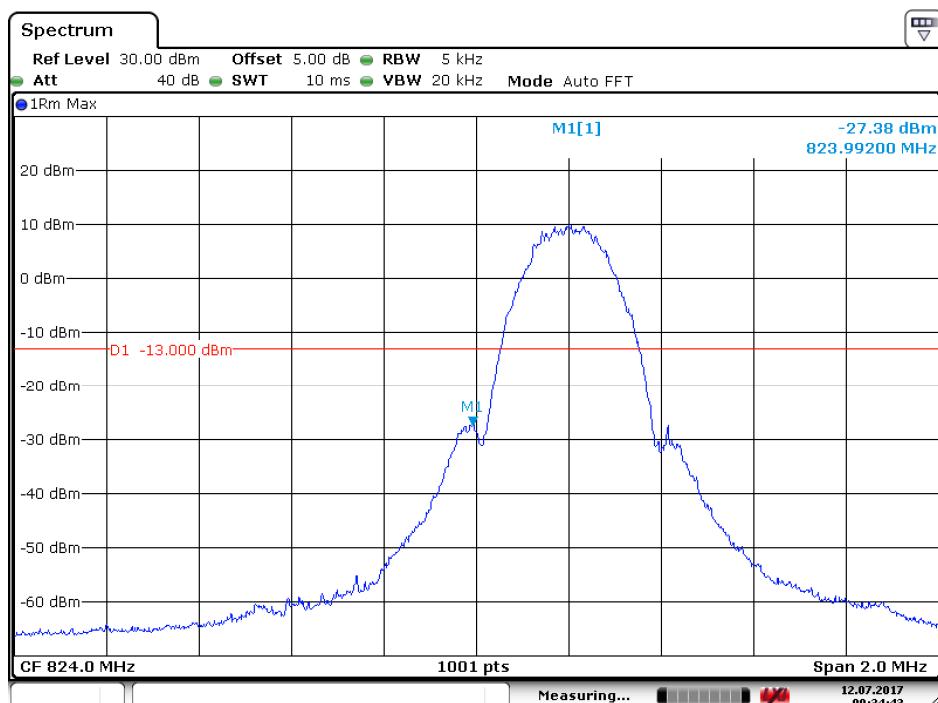
5.1.1.1.2 Test Channel = HCH



Date: 11.JUL.2017 12:03:02

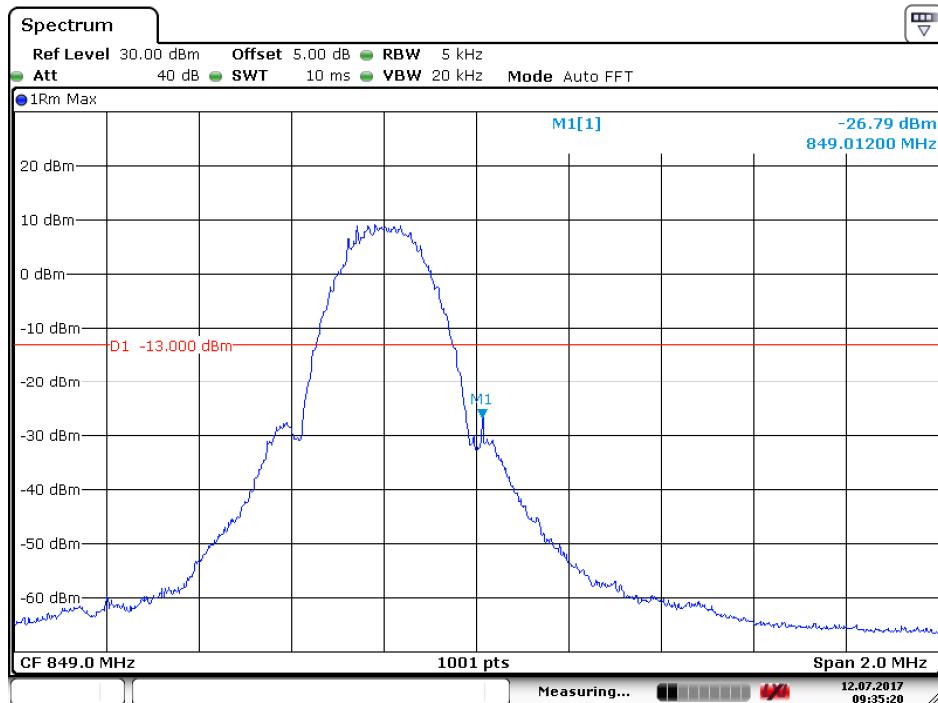
5.1.1.2 Test Mode = GSM/TM2

5.1.1.2.1 Test Channel = LCH



Date: 12.JUL.2017 09:34:44

5.1.1.2.2 Test Channel = HCH

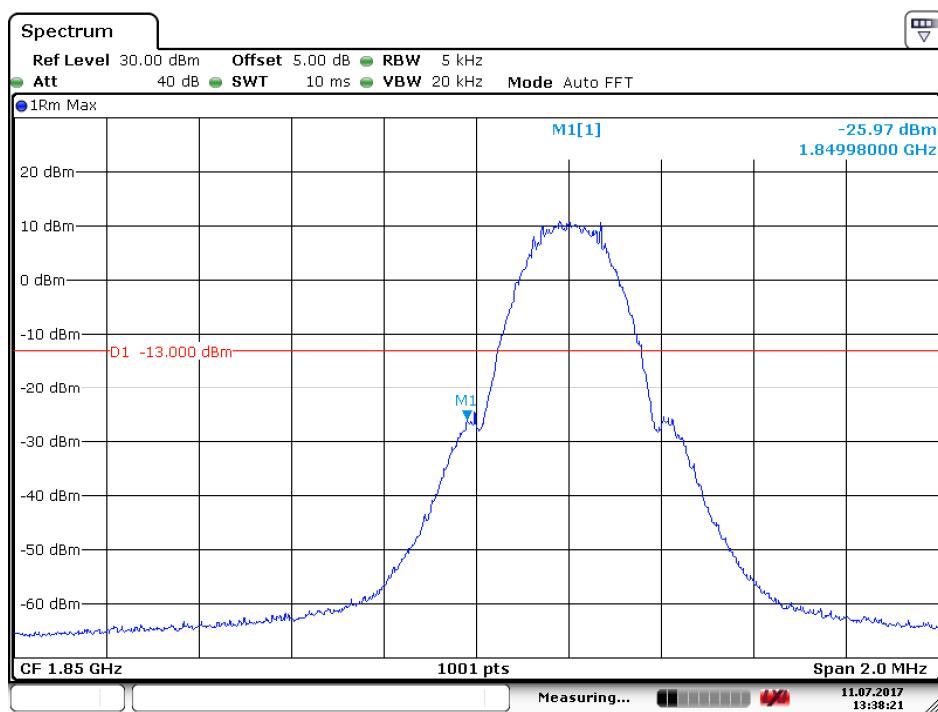


Date: 12.JUL.2017 09:35:20

5.1.2 Test Band = GSM 1900

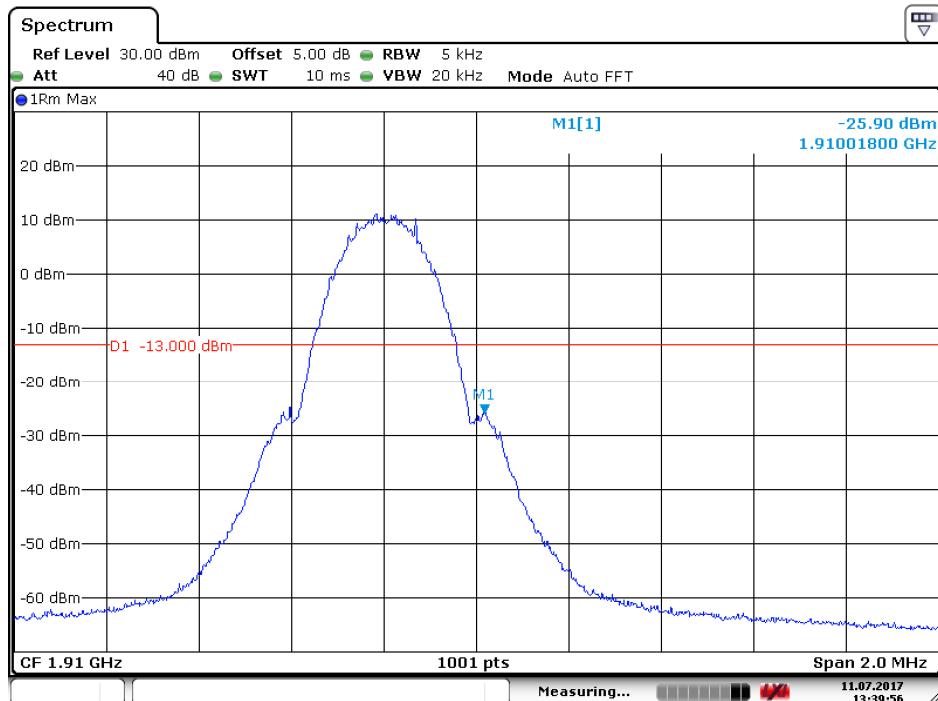
5.1.2.1 Test Mode = GSM/TM1

5.1.2.1.1 Test Channel = LCH



Date: 11.JUL.2017 13:38:22

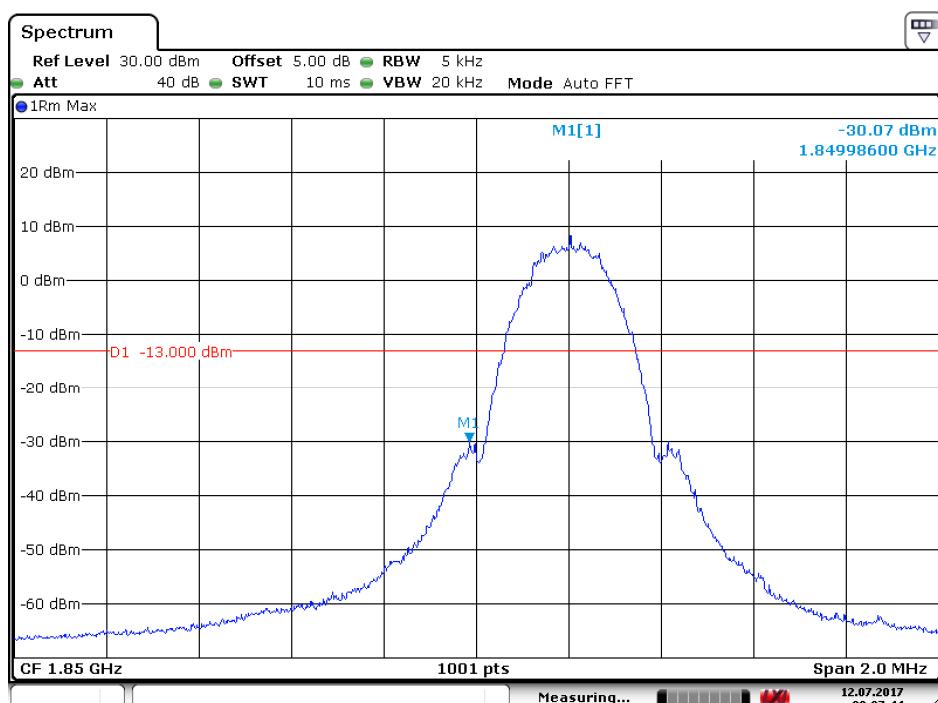
5.1.2.1.2 Test Channel = HCH



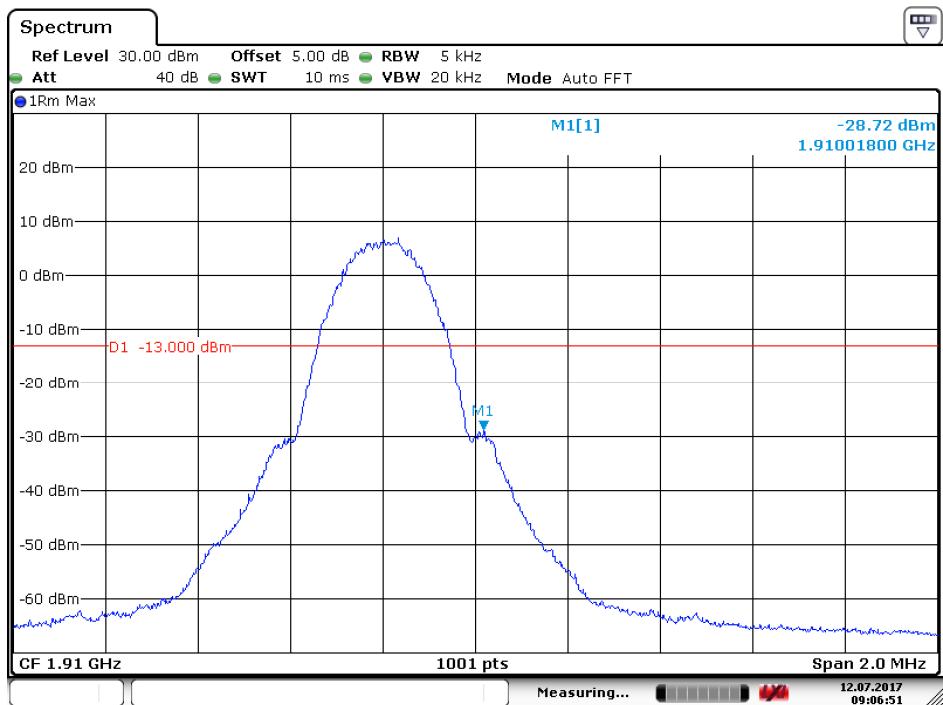
Date: 11.JUL.2017 13:39:56

5.1.2.2 Test Mode = GSM/TM2

5.1.2.2.1 Test Channel = LCH



Date: 12.JUL.2017 09:07:44

5.1.2.2.2 Test Channel = HCH

Date: 12.JUL.2017 09:06:52

Remark: All modes are tested, but the data presented above is the worst case (GSM mode).

6 Spurious Emission at Antenna Terminal

NOTE: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< \text{RBW}/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k * (\text{Span} / \text{RBW})$ " with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

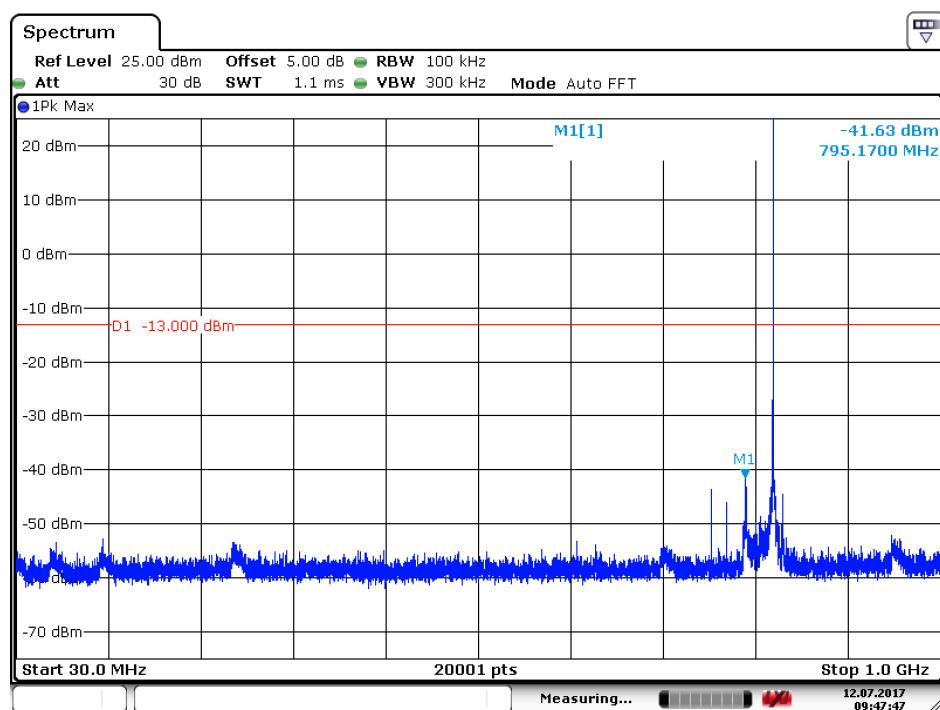
Part I - Test Plots

6.1 For GSM

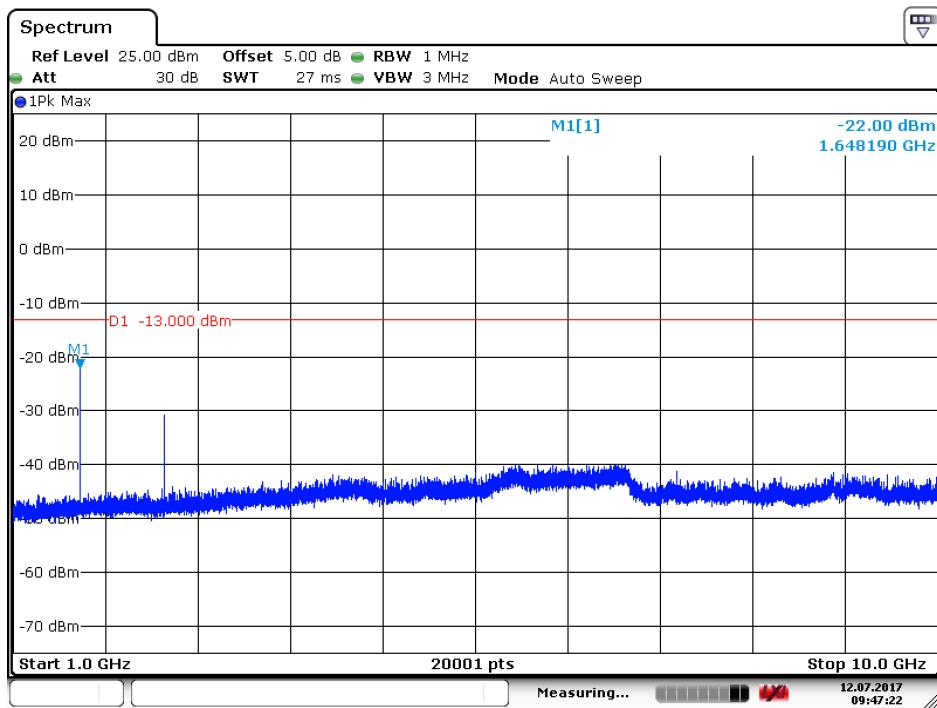
6.1.1 Test Band = GSM 850

6.1.1.1 Test Mode = GSM/TM1

6.1.1.1.1 Test Channel = LCH

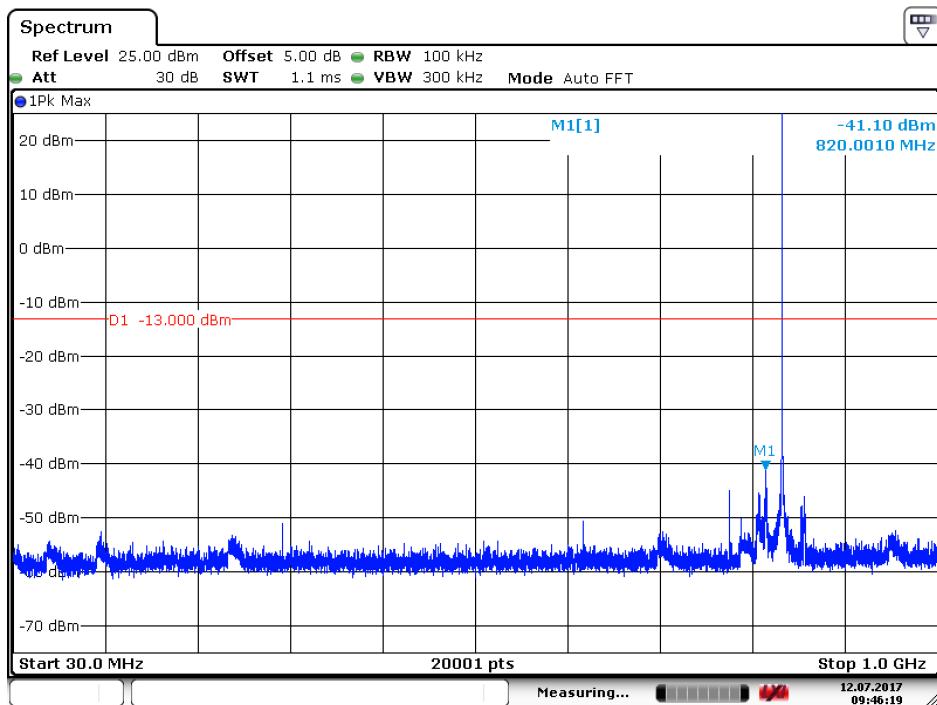


Date: 12.JUL.2017 09:47:48

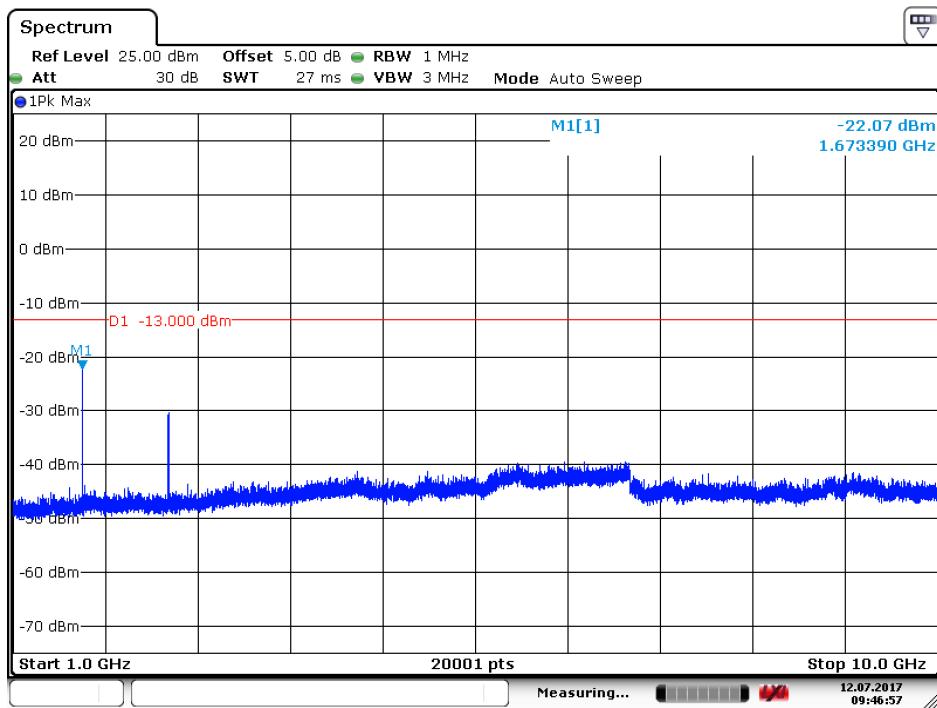


Date: 12.JUL.2017 09:47:22

6.1.1.1.2 Test Channel = MCH

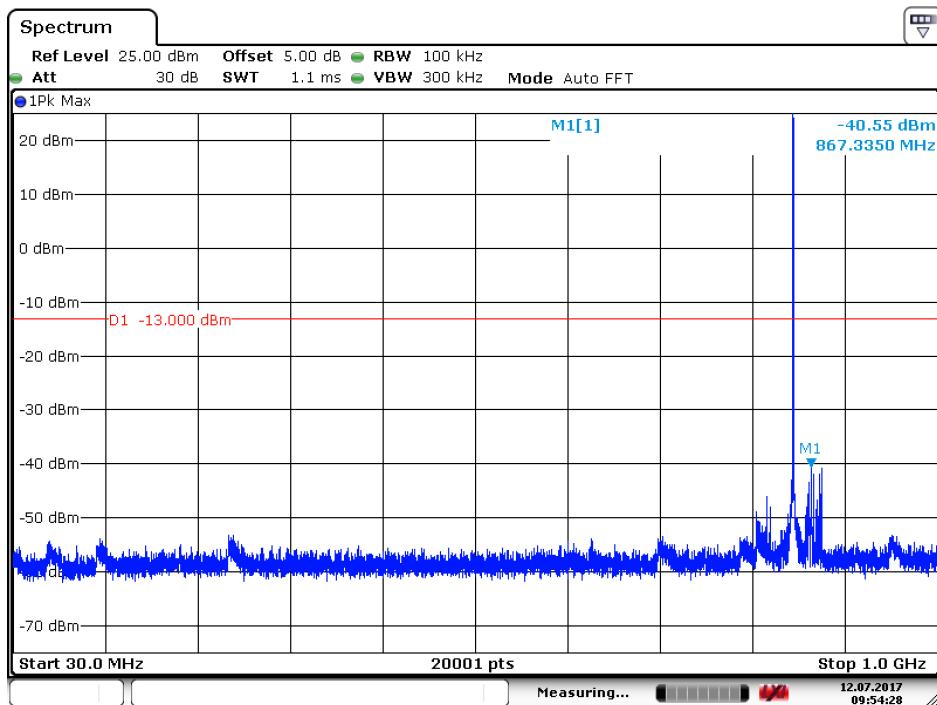


Date: 12.JUL.2017 09:46:19

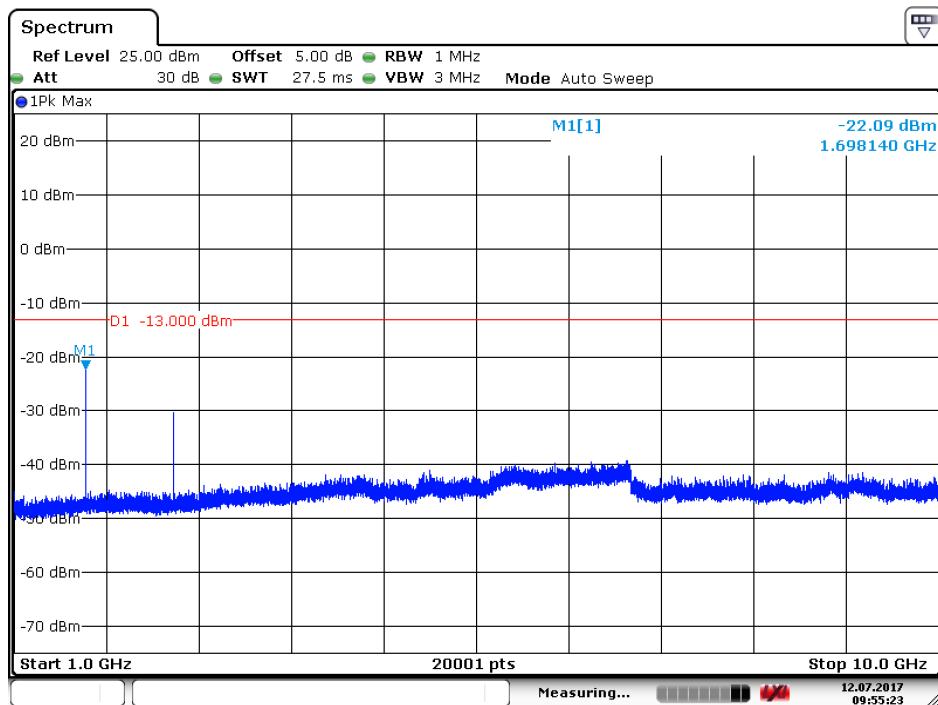


Date: 12.JUL.2017 09:46:58

6.1.1.1.3 Test Channel = HCH



Date: 12.JUL.2017 09:54:28

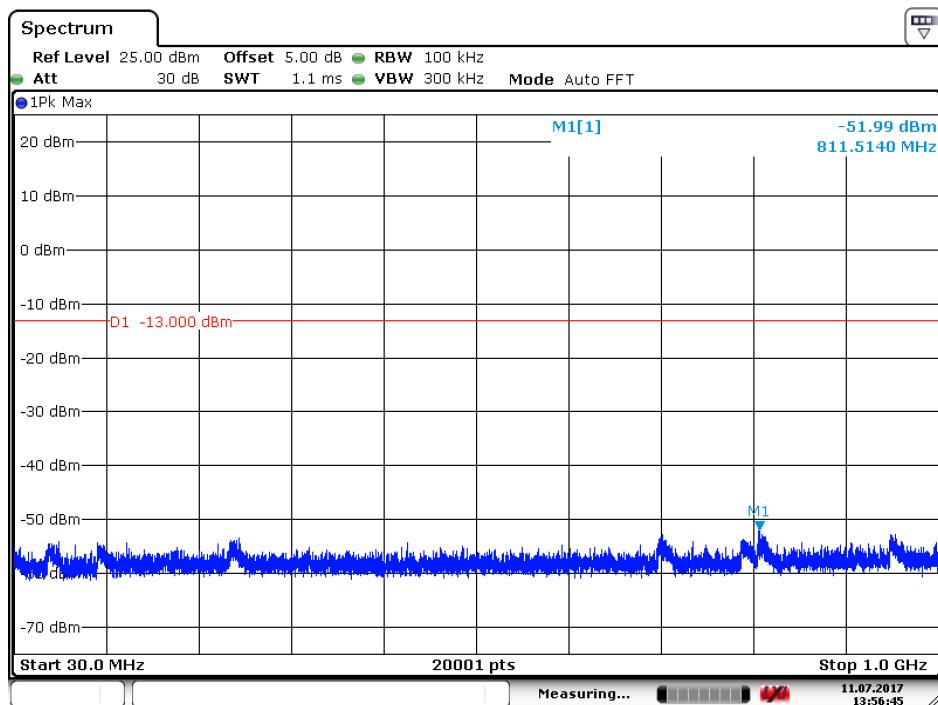


Date: 12.JUL.2017 09:55:24

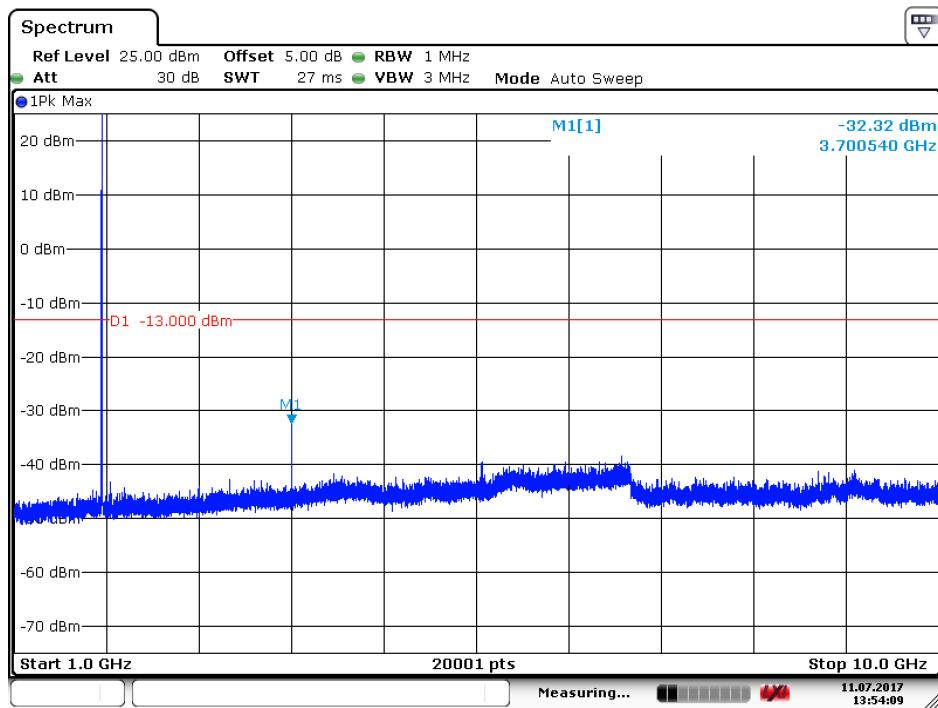
6.1.2 Test Band = GSM 1900

6.1.2.1 Test Mode = GSM/TM1

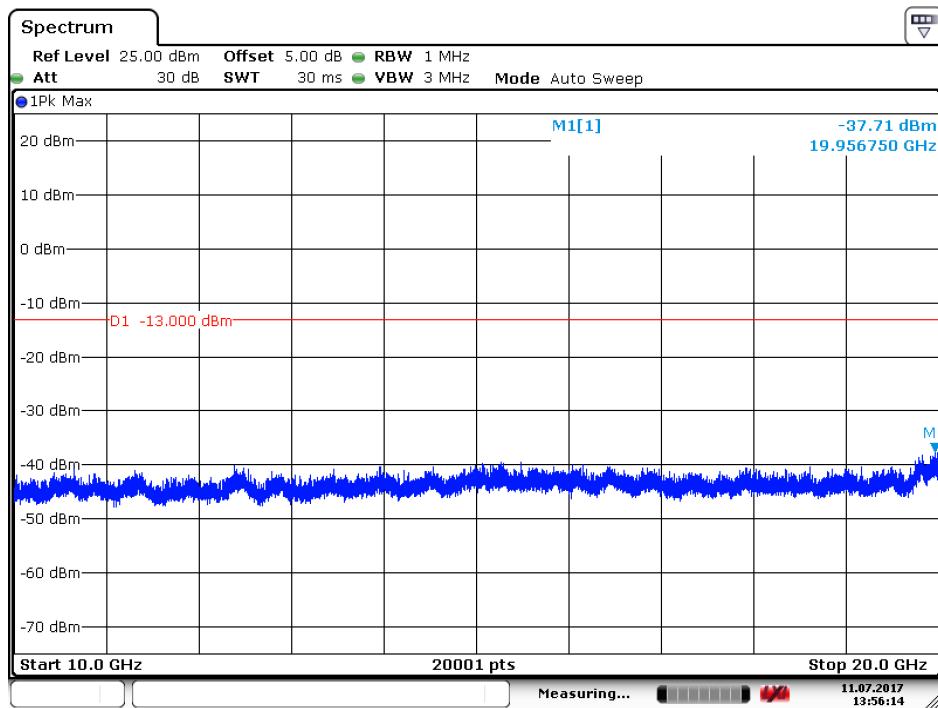
6.1.2.1.1 Test Channel = LCH



Date: 11.JUL.2017 13:56:45

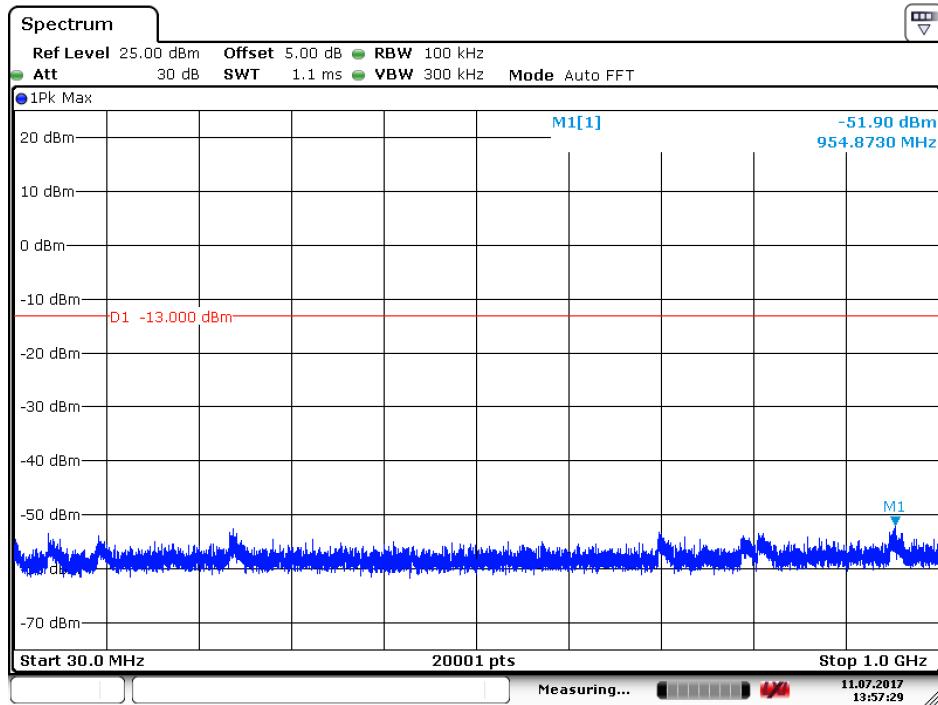


Date: 11.JUL.2017 13:54:10

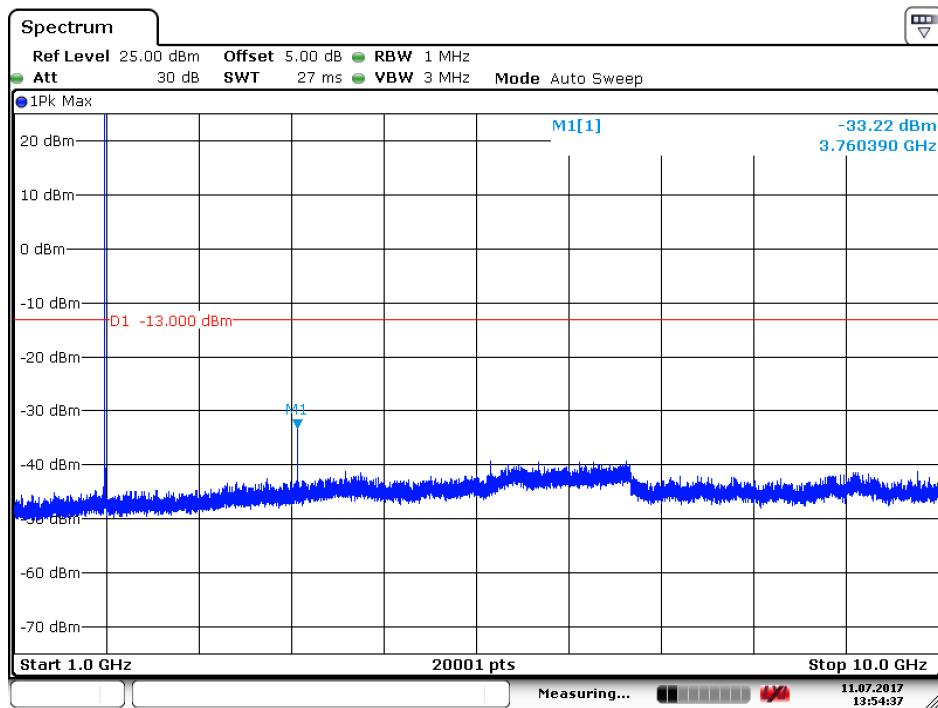


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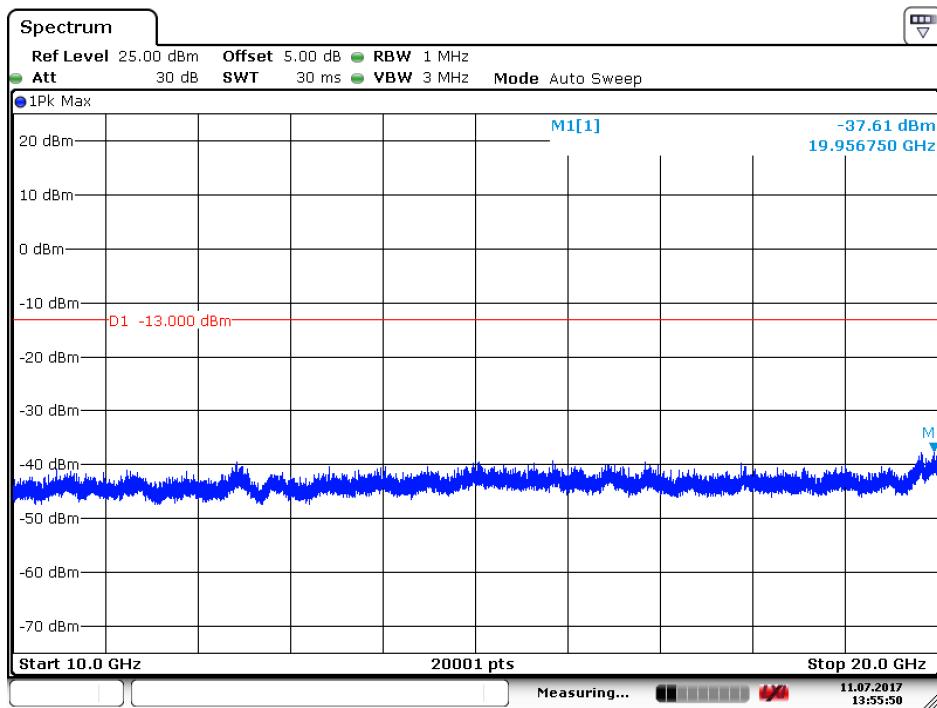
6.1.2.1.2 Test Channel = MCH



Date: 11.JUL.2017 13:57:29

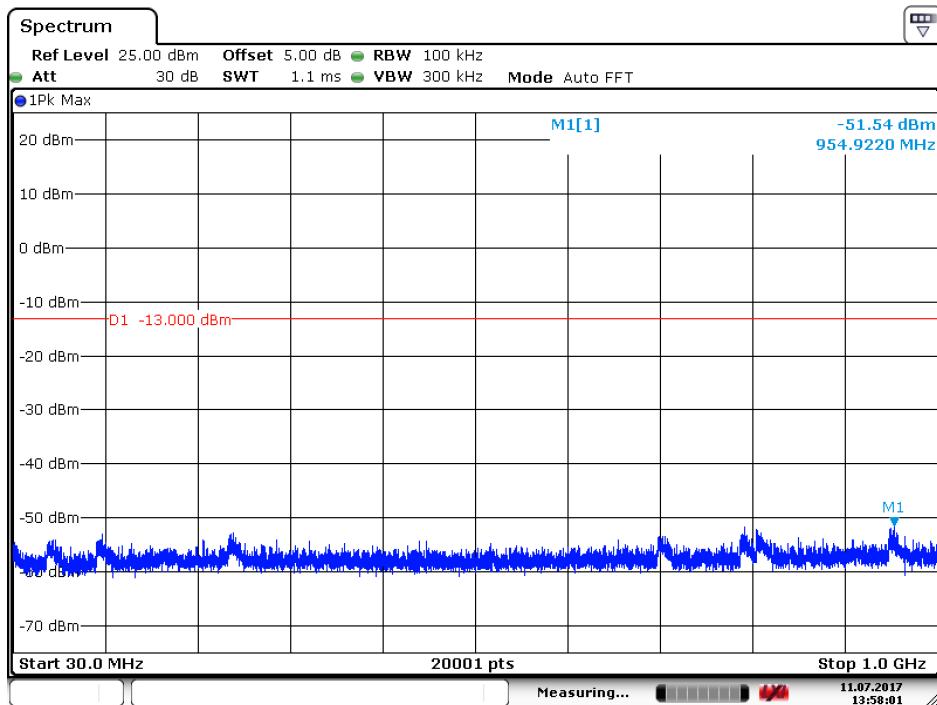


Date: 11.JUL.2017 13:54:37

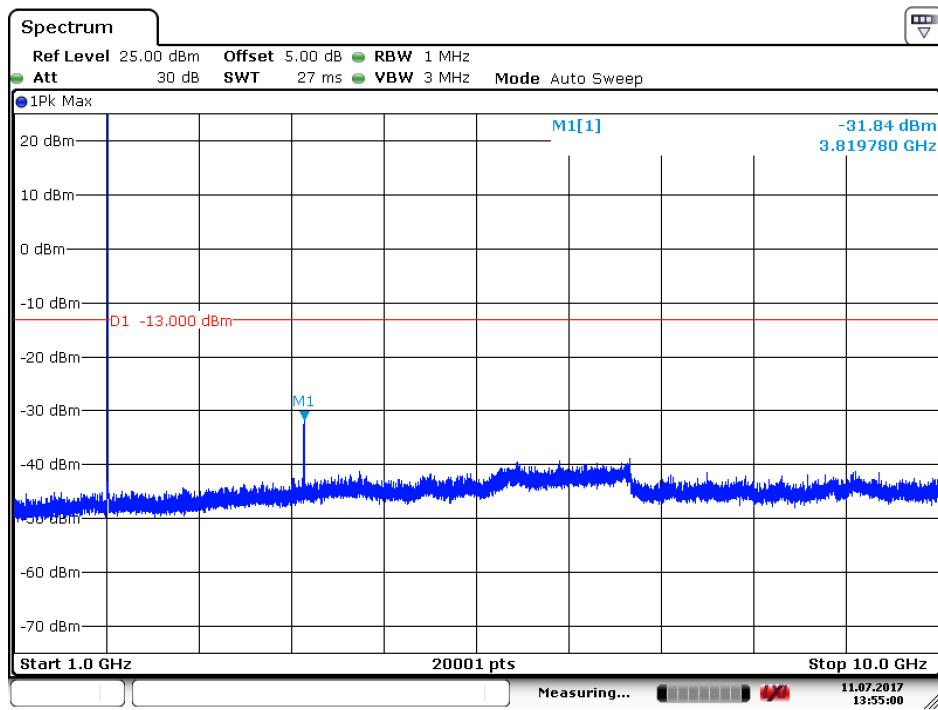


Date: 11.JUL.2017 13:55:50

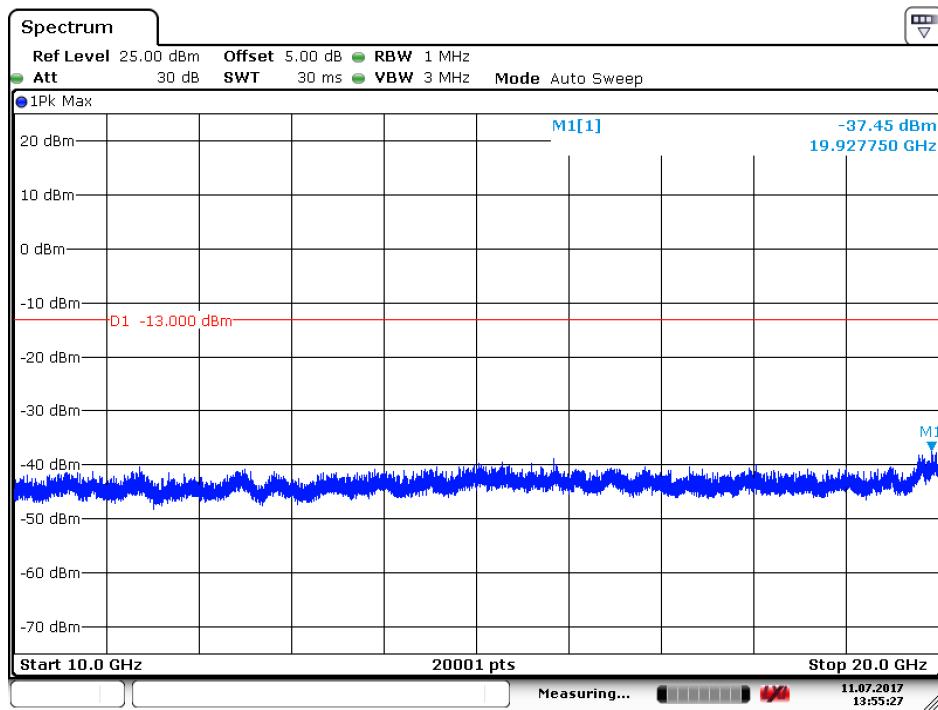
6.1.2.1.3 Test Channel = HCH



Date: 11.JUL.2017 13:58:01



Date: 11.JUL.2017 13:55:01



Date: 11.JUL.2017 13:55:27

Remark: All modes are tested, but the data presented above is the worst case (GSM mode).

7 Field Strength of Spurious Radiation

Part I - Test Plots

7.1 For GSM

7.1.1 Test Band = GSM 850

7.1.1.1 Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1503.750	-50.60	-13.00	37.60	Vertical
2524.500	-42.02	-13.00	29.02	Vertical
4015.875	-51.23	-13.00	38.23	Vertical
1483.333	-51.12	-13.00	38.12	Horizontal
2529.000	-44.00	-13.00	31.00	Horizontal
4870.500	-52.01	-13.00	39.01	Horizontal

7.1.1.2 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1586.250	-49.63	-13.00	36.63	Vertical
2418.000	-42.12	-13.00	29.12	Vertical
4203.375	-50.05	-13.00	37.05	Vertical
1593.000	-49.33	-13.00	36.33	Horizontal
2487.750	-42.18	-13.00	29.18	Horizontal
4302.375	-50.74	-13.00	37.74	Horizontal

7.1.1.3 Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1559.250	-49.78	-13.00	36.78	Vertical
2415.000	-40.48	-13.00	27.48	Vertical
4179.000	-51.05	-13.00	38.05	Vertical
1507.500	-50.07	-13.00	37.07	Horizontal
2412.000	-41.04	-13.00	28.04	Horizontal
4392.000	-52.49	-13.00	39.49	Horizontal

7.1.2 Test Band = GSM 1900**7.1.2.1.1 Test Channel = LCH**

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
707.000	-59.19	-13.00	46.19	Vertical
2771.295	-41.76	-13.00	28.76	Vertical
4251.375	-50.87	-13.00	37.87	Vertical
698.000	-59.91	-13.00	46.91	Horizontal
1130.333	-52.83	-13.00	39.83	Horizontal
2798.550	-42.21	-13.00	29.21	Horizontal

7.1.2.1.2 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1359.266	-51.87	-13.00	38.87	Vertical
2067.405	-47.16	-13.00	34.16	Vertical
4246.875	-51.61	-13.00	38.61	Vertical
1330.933	-51.68	-13.00	38.68	Horizontal
4029.375	-52.11	-13.00	39.11	Horizontal
5478.000	-49.80	-13.00	36.80	Horizontal

7.1.2.1.3 Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1282.200	-51.37	-13.00	38.37	Vertical
2695.455	-40.87	-13.00	27.87	Vertical
4183.875	-51.83	-13.00	38.83	Vertical
1290.133	-53.77	-13.00	40.77	Horizontal
2779.590	-41.85	-13.00	28.85	Horizontal
4271.250	-50.58	-13.00	37.58	Horizontal

NOTE:

- 1) All modes are tested, but the data presented above is the worst case. The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

8 Frequency Stability

8.1 Frequency Error VS. Voltage

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM850	GSM/TM1	LCH	TN	VL	2.60	0.00315	PASS
				VN	1.45	0.00176	PASS
				VH	-3.38	-0.00410	PASS
		MCH	TN	VL	-2.73	-0.00326	PASS
				VN	-1.82	-0.00218	PASS
				VH	-4.25	-0.00508	PASS
		HCH	TN	VL	3.02	0.00356	PASS
				VN	-1.92	-0.00226	PASS
				VH	-2.98	-0.00351	PASS
	GSM/TM2	LCH	TN	VL	-3.56	-0.00432	PASS
				VN	1.52	0.00184	PASS
				VH	-2.18	-0.00264	PASS
		MCH	TN	VL	3.03	0.00362	PASS
				VN	2.40	0.00287	PASS
				VH	-4.33	-0.00518	PASS
		HCH	TN	VL	1.44	0.00170	PASS
				VN	-3.39	-0.00399	PASS
				VH	2.73	0.00322	PASS



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Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM 1900	GSM/TM1	LCH	TN	VL	-4.33	-0.00234	PASS
				VN	2.13	0.00115	PASS
				VH	0.42	0.00023	PASS
		MCH	TN	VL	1.39	0.00074	PASS
				VN	-2.50	-0.00133	PASS
				VH	5.32	0.00283	PASS
		HCH	TN	VL	-2.58	-0.00135	PASS
				VN	2.45	0.00128	PASS
				VH	-4.37	-0.00229	PASS
	GSM/TM2	LCH	TN	VL	1.20	0.00065	PASS
				VN	-3.31	-0.00179	PASS
				VH	2.59	0.00140	PASS
		MCH	TN	VL	-4.22	-0.00224	PASS
				VN	6.49	0.00345	PASS
				VH	2.54	0.00135	PASS
		HCH	TN	VL	-2.43	-0.00127	PASS
				VN	3.50	0.00183	PASS
				VH	-4.26	-0.00223	PASS

8.2 Frequency Error VS. Temperature

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM 850 (824.2MHz)	GSM/TM1	LCH	VN	-30	-5.50	-0.00667	PASS
				-20	-6.47	-0.00785	PASS
				-10	-4.16	-0.00504	PASS
				0	6.80	0.00825	PASS
				10	5.51	0.00669	PASS
				20	3.92	0.00476	PASS
				30	-4.41	-0.00535	PASS
				40	2.31	0.00280	PASS
				50	-3.20	-0.00389	PASS
		MCH	VN	-30	-3.79	-0.00459	PASS
				-20	-4.29	-0.00521	PASS
				-10	6.36	0.00772	PASS
				0	-1.59	-0.00193	PASS
				10	4.32	0.00524	PASS
				20	1.96	0.00238	PASS
				30	6.30	0.00764	PASS
				40	2.42	0.00293	PASS
				50	4.23	0.00514	PASS
		HCH	VN	-30	5.36	0.00650	PASS
				-20	-0.42	-0.00051	PASS
				-10	-0.35	-0.00042	PASS
				0	-4.82	-0.00584	PASS
				10	4.13	0.00501	PASS
				20	-2.23	-0.00271	PASS
				30	-4.11	-0.00498	PASS
				40	-0.48	-0.00058	PASS
				50	1.16	0.00140	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM 850 (824.2MHz)	GSM/TM2	LCH	VN	-30	4.13	0.00501	PASS
				-20	2.40	0.00291	PASS
				-10	0.94	0.00114	PASS
				0	-3.47	-0.00421	PASS
				10	5.05	0.00613	PASS
				20	-4.00	-0.00485	PASS
				30	6.14	0.00744	PASS
				40	-2.94	-0.00357	PASS
				50	3.99	0.00484	PASS
		MCH	VN	-30	2.60	0.00316	PASS
				-20	0.93	0.00113	PASS
				-10	-5.34	-0.00648	PASS
				0	6.39	0.00775	PASS
				10	4.20	0.00510	PASS
				20	0.89	0.00108	PASS
				30	-3.32	-0.00403	PASS
				40	-5.34	-0.00648	PASS
				50	-5.20	-0.00631	PASS
		HCH	VN	-30	-4.45	-0.00540	PASS
				-20	1.00	0.00121	PASS
				-10	0.37	0.00045	PASS
				0	-0.30	-0.00037	PASS
				10	1.03	0.00125	PASS
				20	3.39	0.00411	PASS
				30	-0.68	-0.00082	PASS
				40	-0.17	-0.00020	PASS
				50	-1.50	-0.00183	PASS



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Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM 1900 (1850.2MHz)	GSM/TM1	LCH	VN	-30	0.30	0.00016	PASS
				-20	-3.44	-0.00186	PASS
				-10	4.07	0.00220	PASS
				0	-2.05	-0.00111	PASS
				10	-4.04	-0.00218	PASS
				20	-1.84	-0.00100	PASS
				30	-3.21	-0.00174	PASS
				40	6.03	0.00326	PASS
				50	-2.17	-0.00118	PASS
		MCH	VN	-30	2.11	0.00114	PASS
				-20	2.40	0.00130	PASS
				-10	-0.91	-0.00049	PASS
				0	6.56	0.00355	PASS
				10	-3.14	-0.00169	PASS
				20	5.29	0.00286	PASS
				30	-5.39	-0.00291	PASS
				40	3.97	0.00215	PASS
				50	-0.92	-0.00050	PASS
		HCH	VN	-30	-5.75	-0.00311	PASS
				-20	6.73	0.00364	PASS
				-10	3.18	0.00172	PASS
				0	3.76	0.00203	PASS
				10	4.91	0.00266	PASS
				20	5.66	0.00306	PASS
				30	-1.35	-0.00073	PASS
				40	3.24	0.00175	PASS
				50	6.36	0.00344	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM 1900 (1850.2MHz)	GSM/TM2	LCH	VN	-30	6.36	0.00344	PASS
				-20	6.13	0.00331	PASS
				-10	0.99	0.00054	PASS
				0	3.40	0.00184	PASS
				10	-3.89	-0.00210	PASS
				20	1.11	0.00060	PASS
				30	-3.61	-0.00195	PASS
				40	2.37	0.00128	PASS
				50	3.66	0.00198	PASS
		MCH	VN	-30	0.67	0.00036	PASS
				-20	-0.44	-0.00024	PASS
				-10	4.98	0.00269	PASS
				0	2.97	0.00161	PASS
				10	2.73	0.00147	PASS
				20	-0.55	-0.00030	PASS
				30	3.35	0.00181	PASS
				40	4.37	0.00236	PASS
				50	-1.56	-0.00084	PASS
		HCH	VN	-30	2.74	0.00148	PASS
				-20	-0.28	-0.00015	PASS
				-10	4.22	0.00228	PASS
				0	-3.82	-0.00206	PASS
				10	6.66	0.00360	PASS
				20	3.57	0.00193	PASS
				30	-4.50	-0.00243	PASS
				40	4.97	0.00269	PASS
				50	-1.42	-0.00077	PASS

The End