



Appendix B

GSM850&1900



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1 Effective (Isotropic) Radiated Power Output Data

1.1. Part I - Test Results

Main Antenna

Test Band	Test Mode	Test Channel	Measured [dBm]	ERP[dBm]	Limit[dBm]	Verdict
GSM 850	GSM/TM1	LCH	33.66	27.91	38.45	PASS
		MCH	33.77	28.02	38.45	PASS
		HCH	33.74	27.99	38.45	PASS
	GSM/TM2	LCH	26.14	20.39	38.45	PASS
		MCH	26.12	20.37	38.45	PASS
		HCH	26.41	20.66	38.45	PASS

Test Band	Test Mode	Test Channel	Measured [dBm]	EIRP[dBm]	Limit[dBm]	Verdict
GSM 1900	GSM/TM1	LCH	30.99	29.59	33	PASS
		MCH	31.01	29.61	33	PASS
		HCH	30.78	29.38	33	PASS
	GSM/TM2	LCH	26.40	25.00	33	PASS
		MCH	26.13	24.73	33	PASS
		HCH	25.78	24.38	33	PASS

Secondary Antenna

Test Band	Test Mode	Test Channel	Measured [dBm]	ERP[dBm]	Limit[dBm]	Verdict
GSM 850	GSM/TM1	LCH	33.01	27.26	38.45	PASS
		MCH	33.21	27.46	38.45	PASS
		HCH	33.32	27.57	38.45	PASS
	GSM/TM2	LCH	25.73	19.98	38.45	PASS
		MCH	25.78	20.03	38.45	PASS
		HCH	25.79	20.04	38.45	PASS

Test Band	Test Mode	Test Channel	Measured [dBm]	EIRP[dBm]	Limit[dBm]	Verdict
GSM 1900	GSM/TM1	LCH	28.48	25.88	33	PASS
		MCH	28.39	25.79	33	PASS
		HCH	28.38	25.78	33	PASS
	GSM/TM2	LCH	24.21	21.61	33	PASS
		MCH	24.04	21.44	33	PASS
		HCH	23.89	21.29	33	PASS



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Remark:

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

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

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

b: SGP=Signal Generator Level



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2 Peak-to-Average Ratio

2.1. Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
GSM 850	GSM/TM1	LCH	7.86	13	PASS
		MCH	7.83	13	PASS
		HCH	7.80	13	PASS
	GSM/TM2	LCH	10.64	13	PASS
		MCH	7.83	13	PASS
		HCH	10.12	13	PASS
GSM 1900	GSM/TM1	LCH	7.86	13	PASS
		MCH	7.88	13	PASS
		HCH	7.94	13	PASS
	GSM/TM2	LCH	11.07	13	PASS
		MCH	10.26	13	PASS
		HCH	10.70	13	PASS



3 Modulation Characteristics

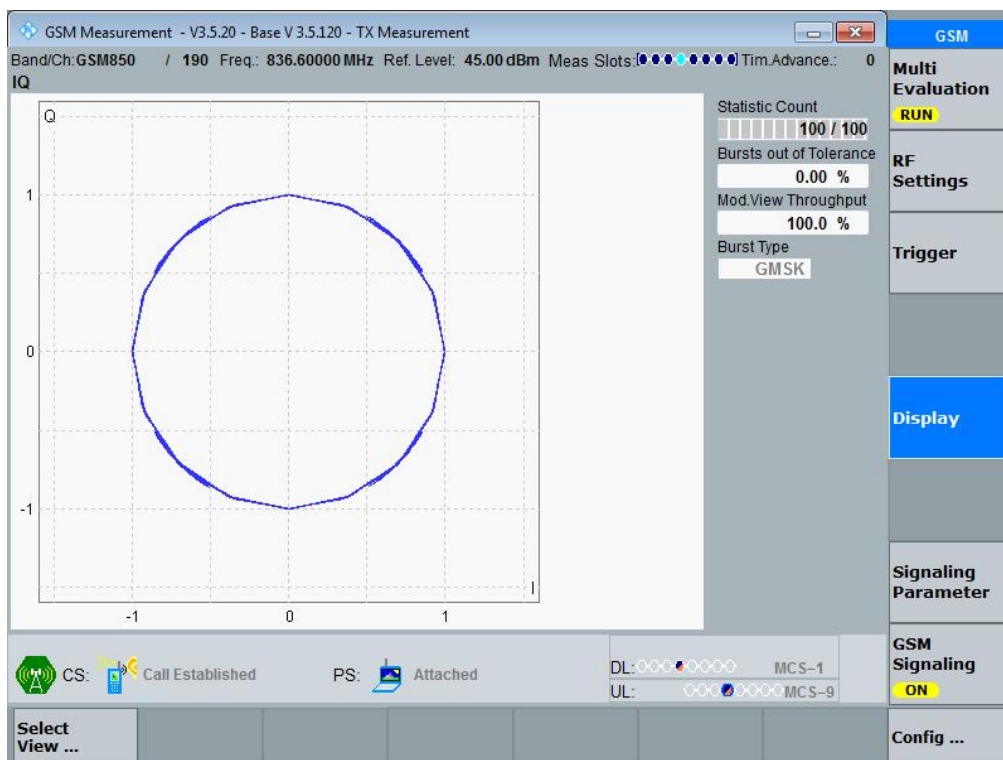
Part I - Test Plots

3.1 For GSM

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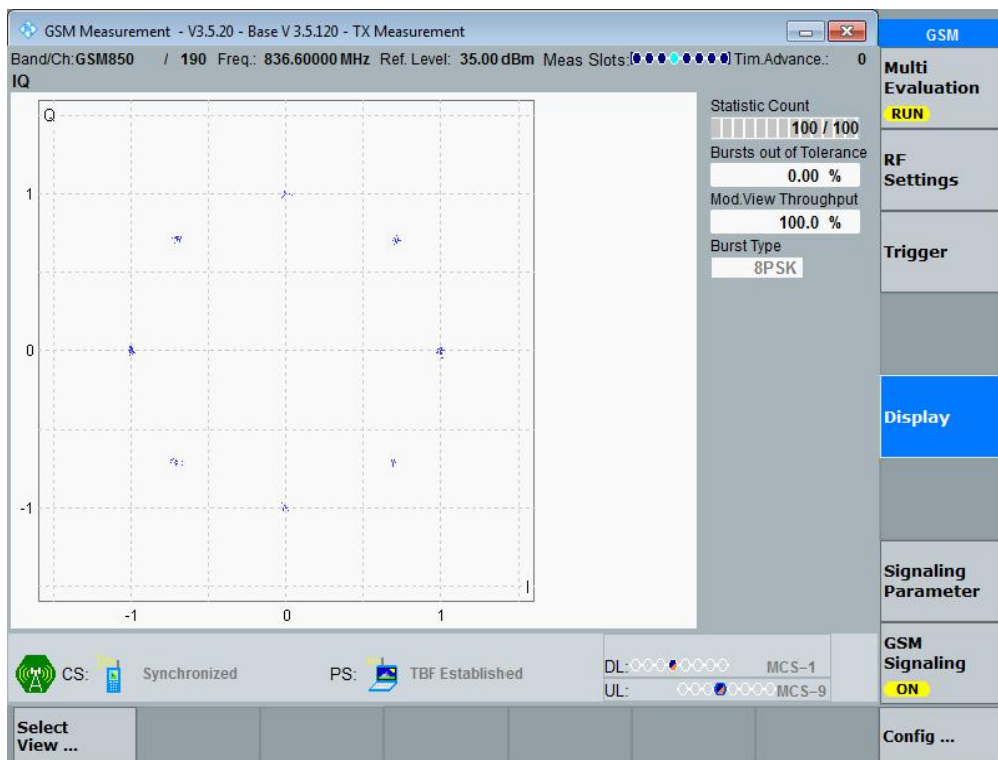
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3.1.1.1.1 Test Channel = MCH



3.1.1.2 Test Mode = GSM/TM2

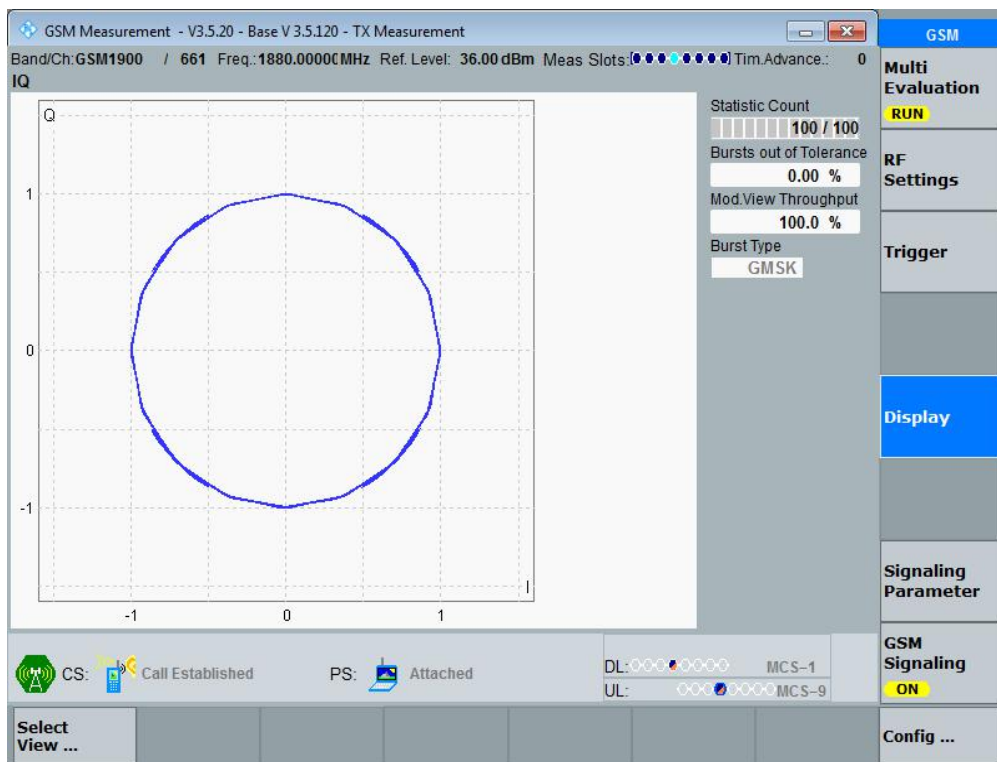
3.1.1.2.1 Test Channel = MCH



3.1.2 Test Band = GSM 1900

3.1.2.1 Test Mode = GSM/TM1

3.1.2.1.1 Test Channel = MCH

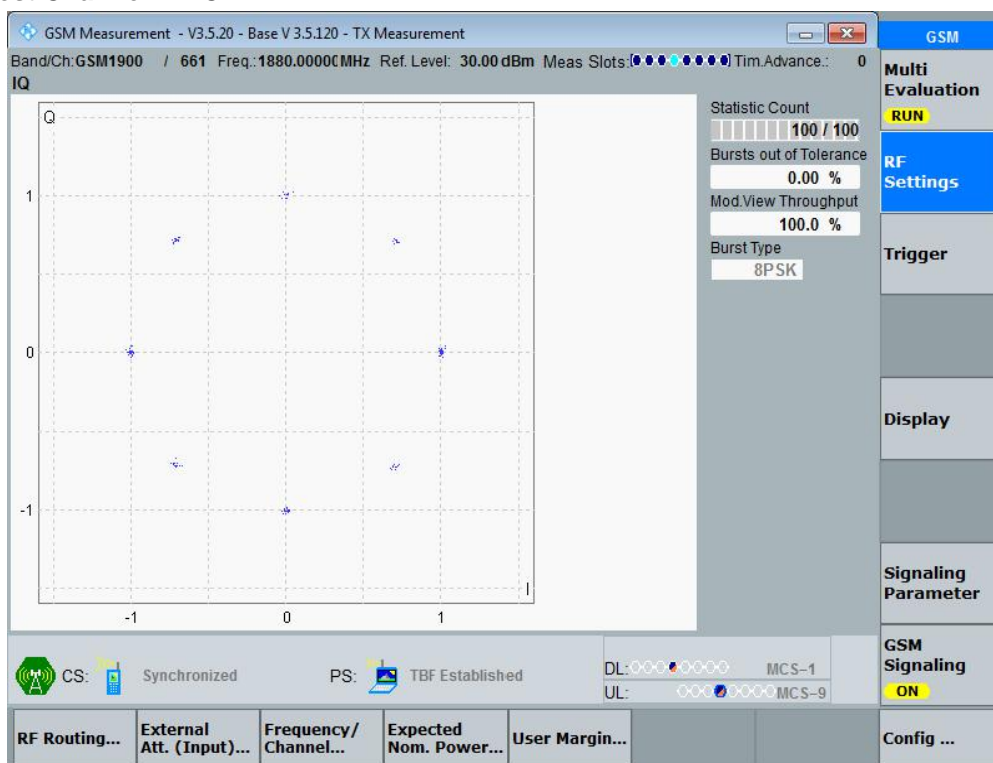


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3.1.2.2 Test Mode = GSM/TM2

3.1.2.2.1 Test Channel = MCH



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4 Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [kHz]	Emission Bandwidth [kHz]	Verdict
GSM 850	GSM/TM1	LCH	246.02	307.25	PASS
		MCH	248.91	294.20	PASS
		HCH	243.13	301.45	PASS
	GSM/TM2	LCH	251.81	305.80	PASS
		MCH	256.15	323.19	PASS
		HCH	254.70	307.25	PASS
GSM 1900	GSM/TM1	LCH	247.47	307.25	PASS
		MCH	247.47	314.49	PASS
		HCH	248.91	313.04	PASS
	GSM/TM2	LCH	250.36	305.80	PASS
		MCH	253.26	310.14	PASS
		HCH	253.26	284.06	PASS



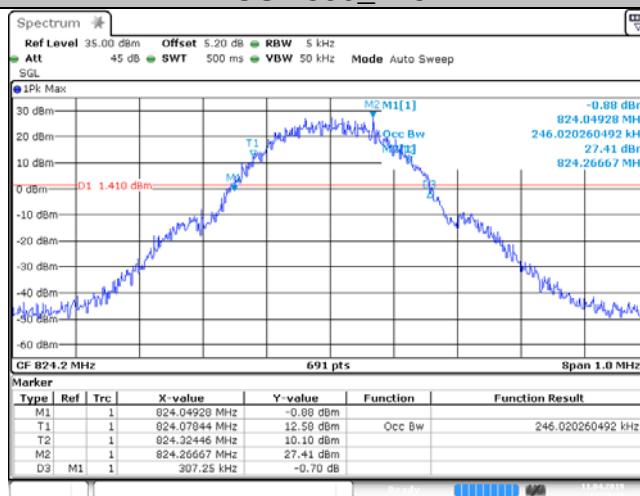
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4.1 For GSM

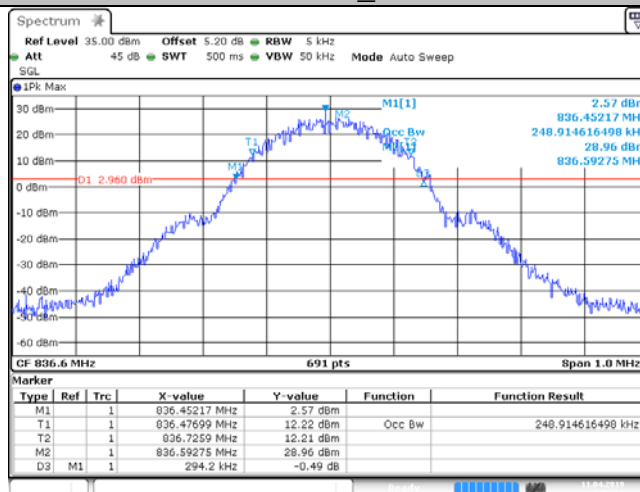
4.1.1 Test Graphs

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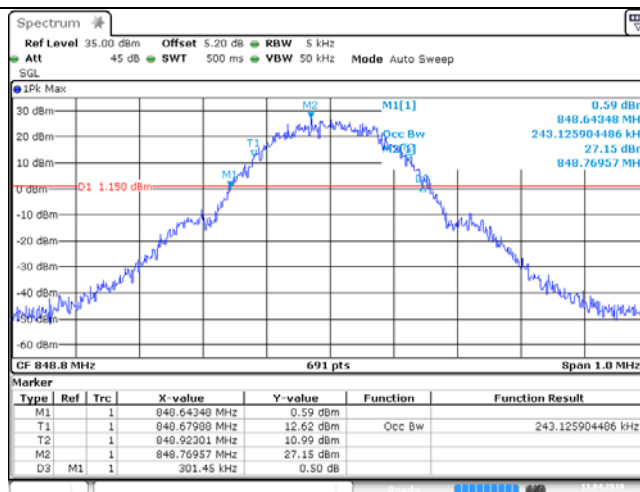
GSM850_190



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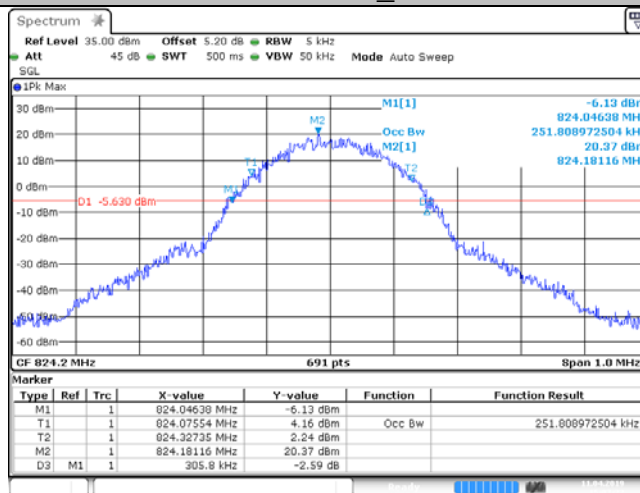
GSM850_251





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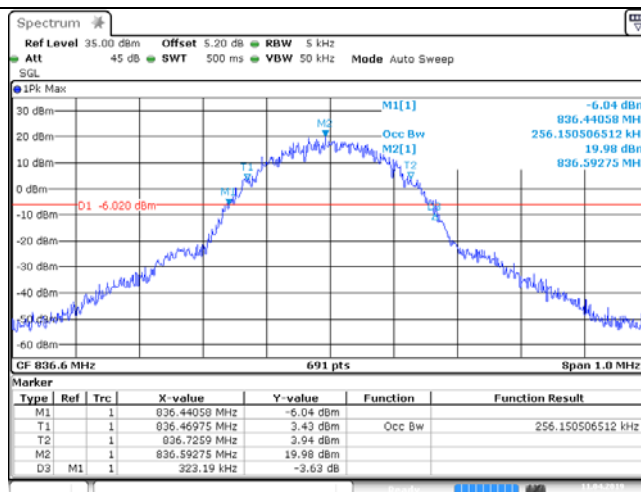
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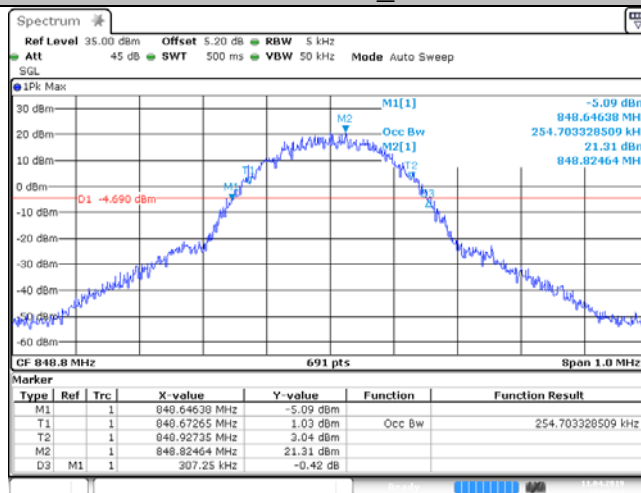
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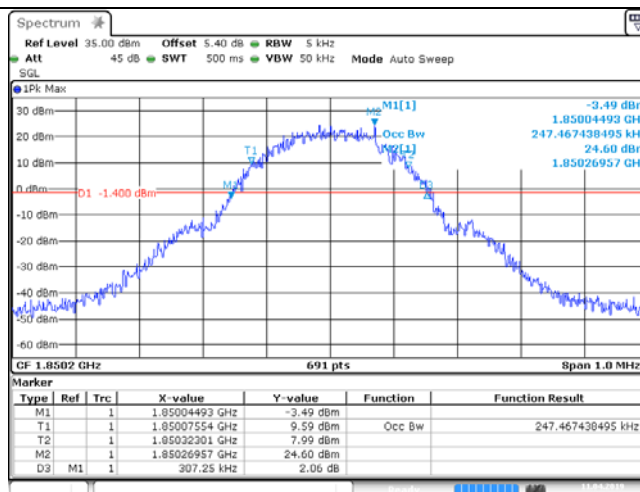
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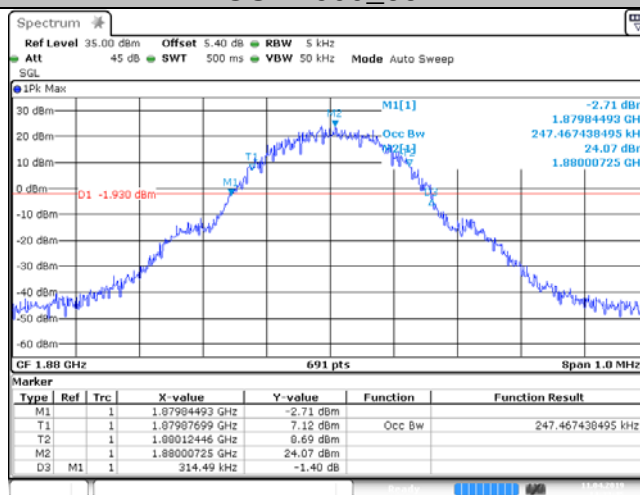
GSM1900_512





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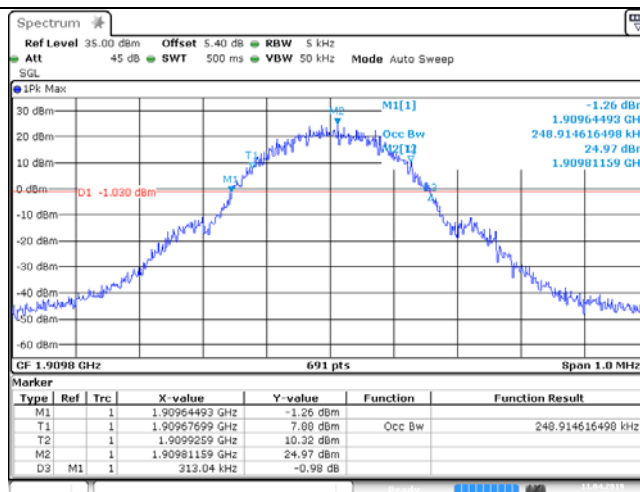
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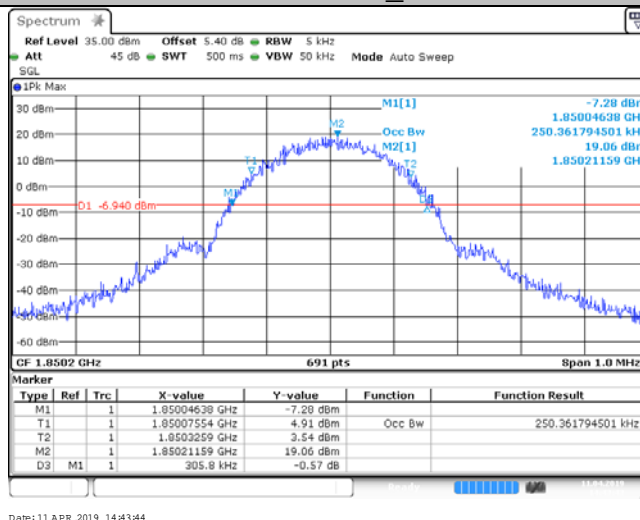
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GSM1900_810



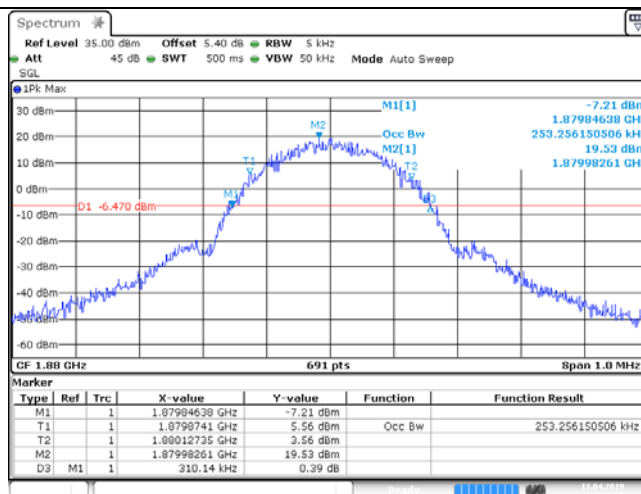


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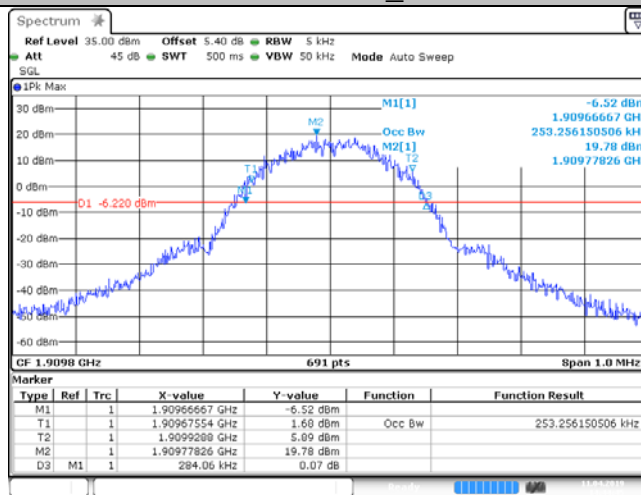
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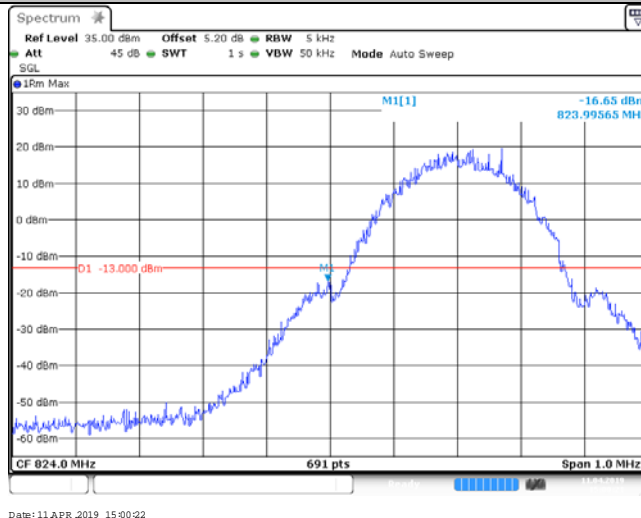
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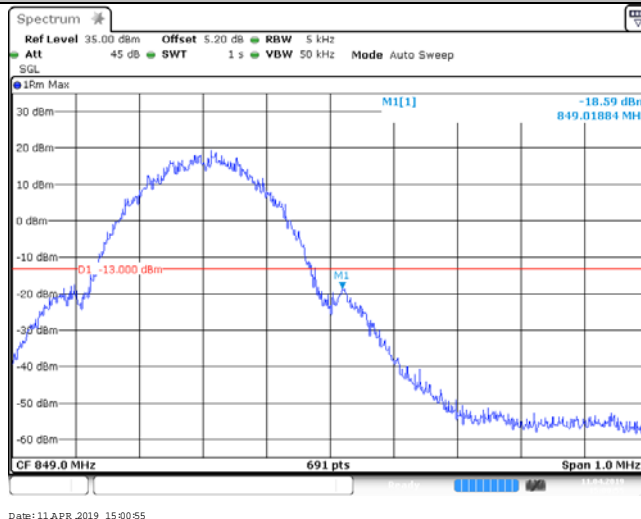
5 Band Edges Compliance

Part I - Test Plots

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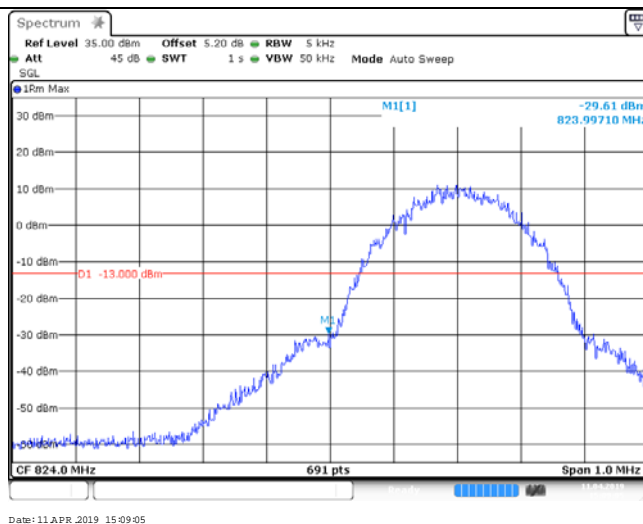


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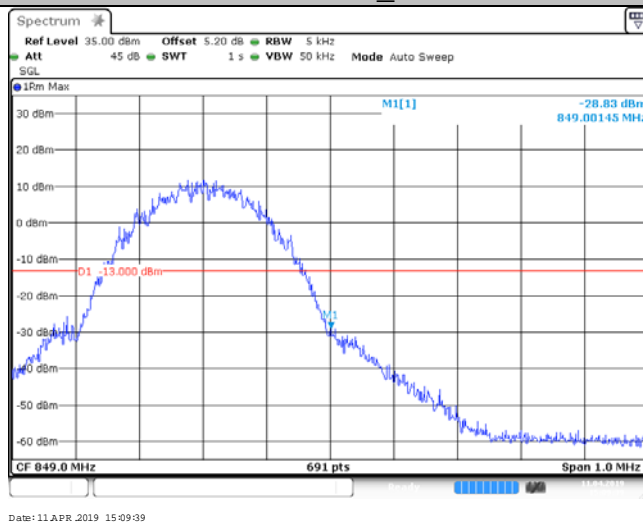


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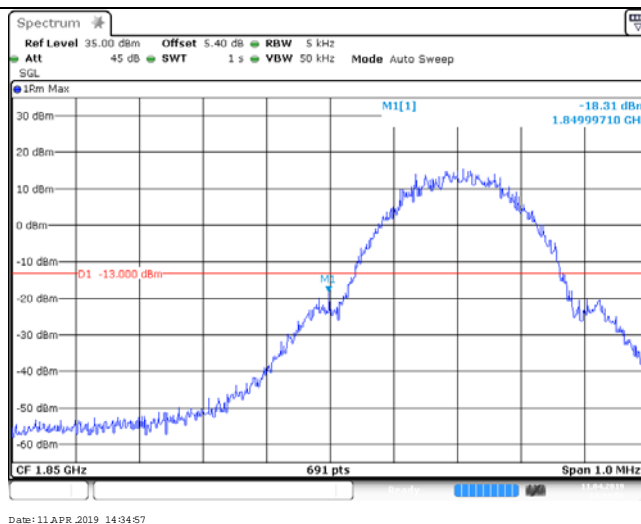


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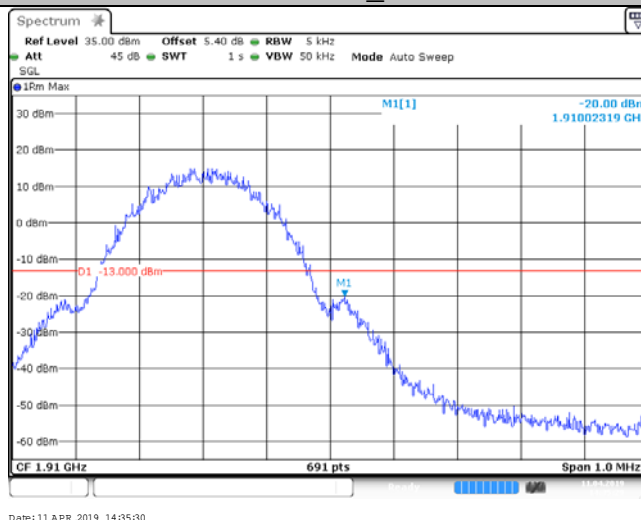


GSM1900_512





GSM1900_810



EGPRS1900_512

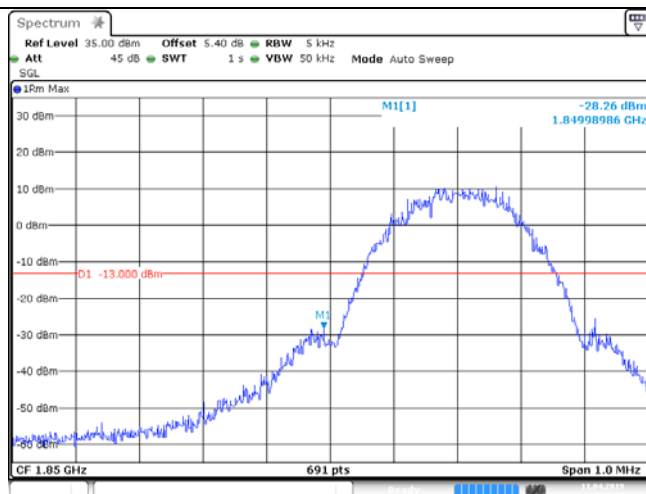


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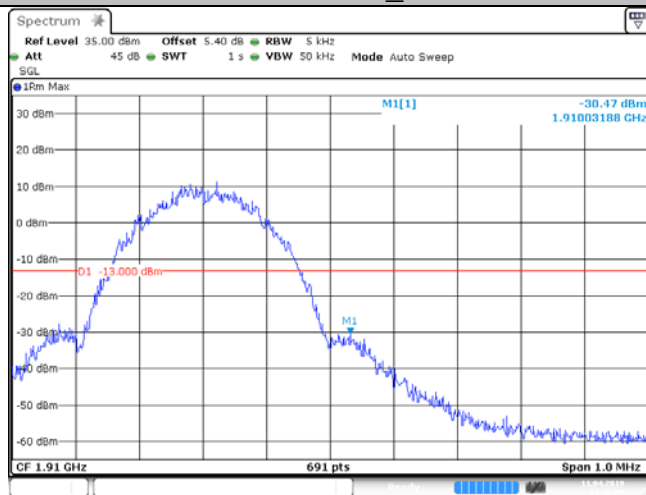
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Date: 11 APR. 2019 14:45:27

EGPRS1900_810



Date: 11 APR. 2019 14:46:00



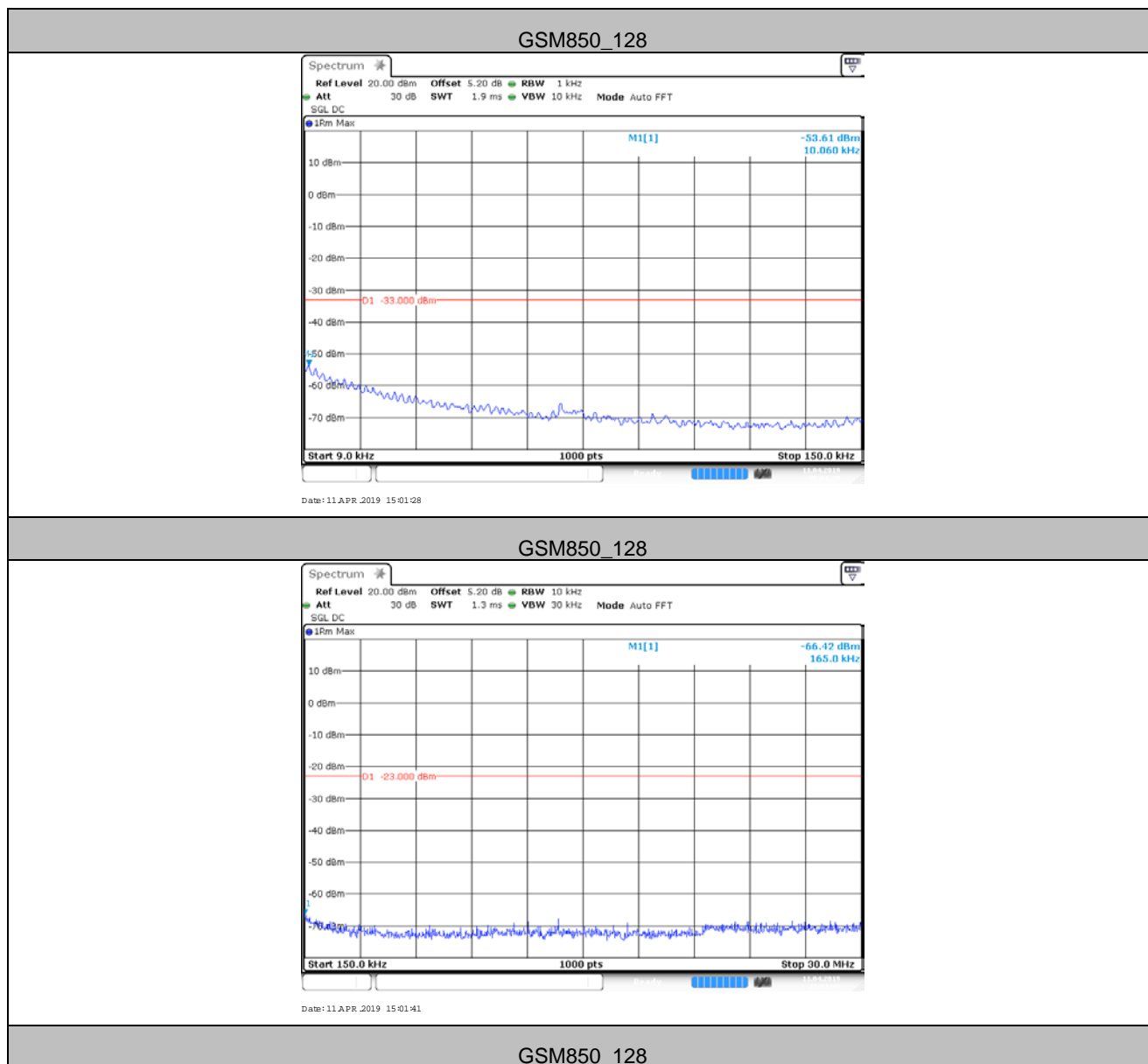
6 Spurious Emission at Antenna Terminal

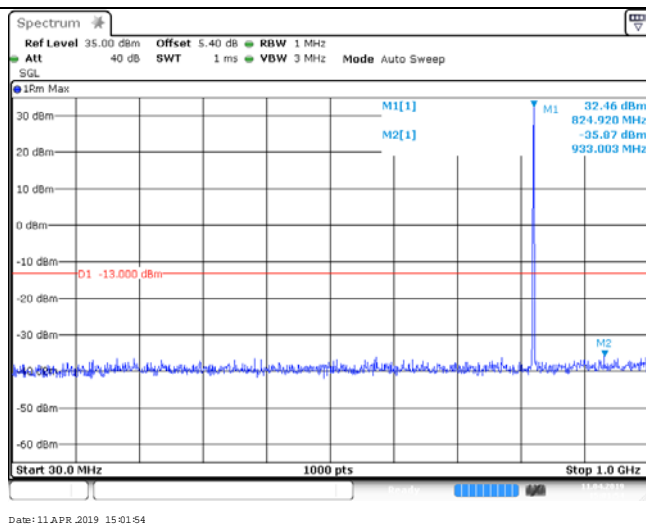
REMARK: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k * (Span / RBW)$ " 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

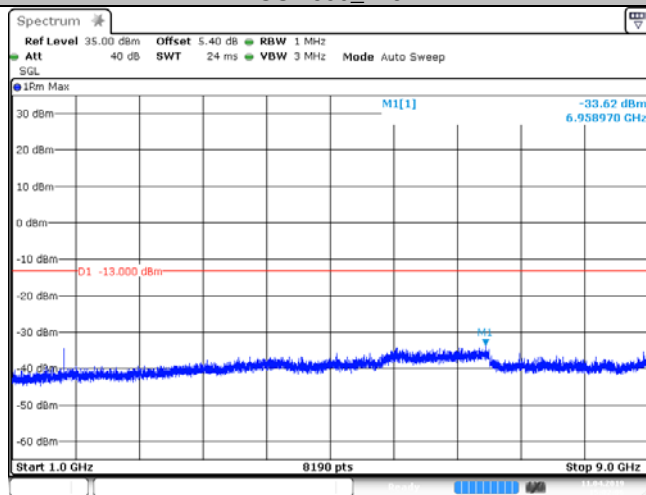
6.1.1 Test Graphs





Date: 11 APR 2019 15:01:54

GSM850 128



Date: 11 APR 2019 15:02:07

GSM850 190

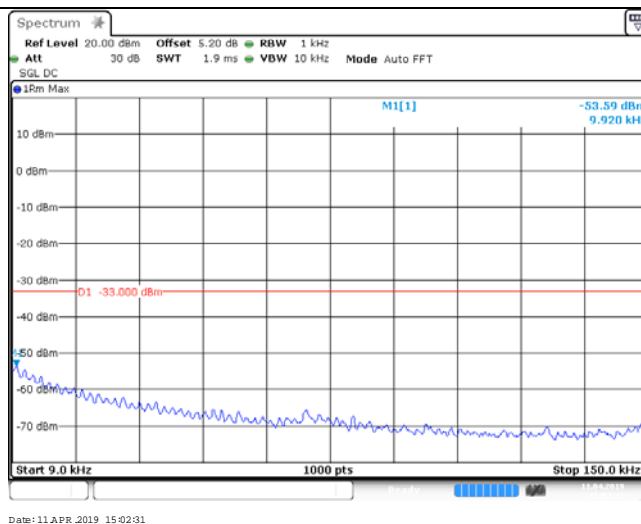


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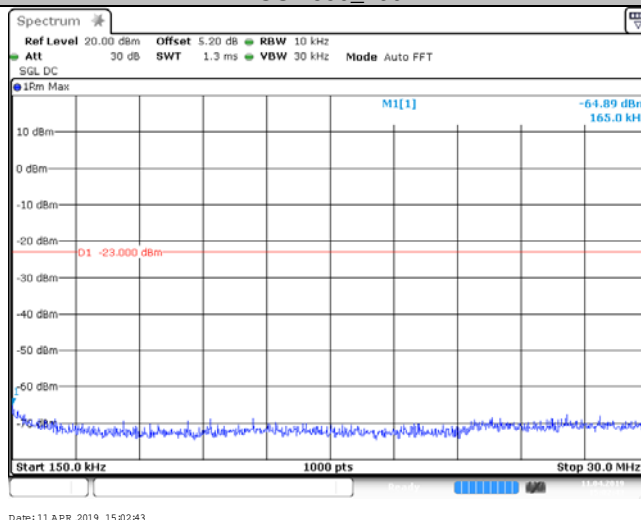
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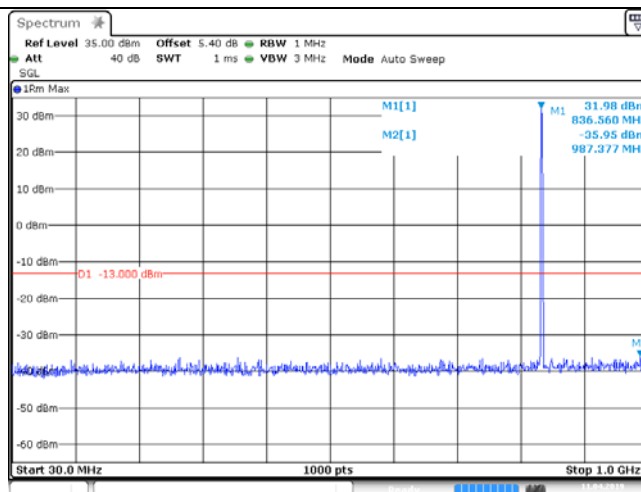


GSM850_190



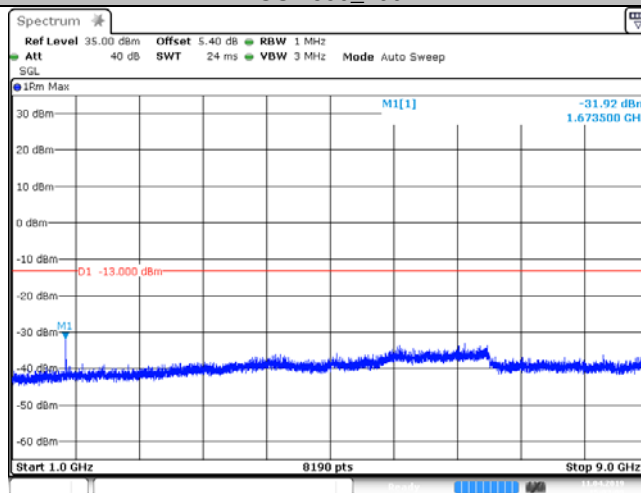
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GSM850 190



Date: 11 APR 2019 15:03:10

GSM850 251



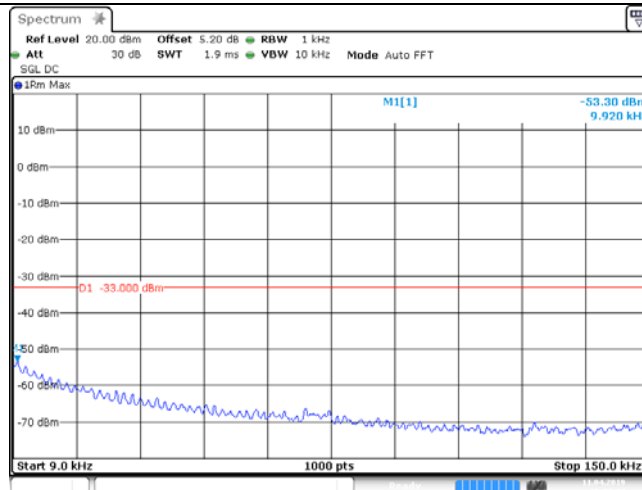
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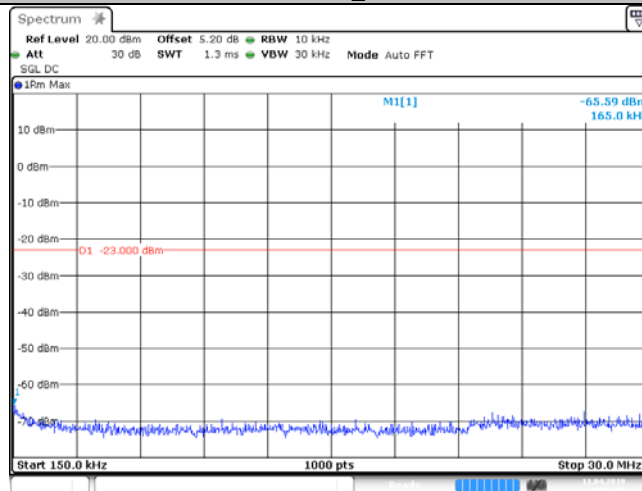
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Date: 11 APR. 2019 15:03:33

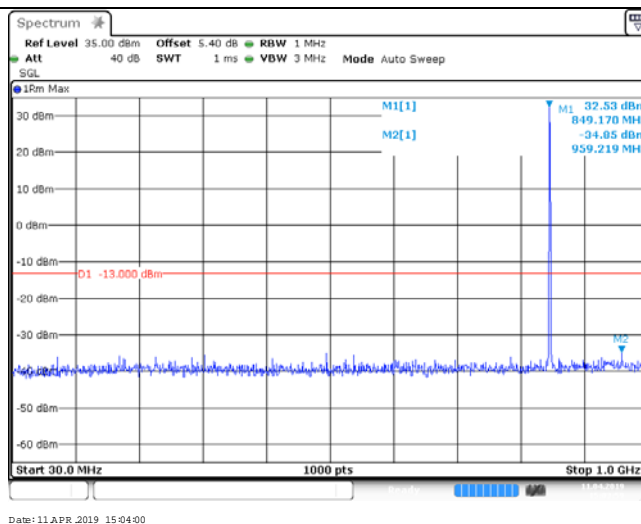
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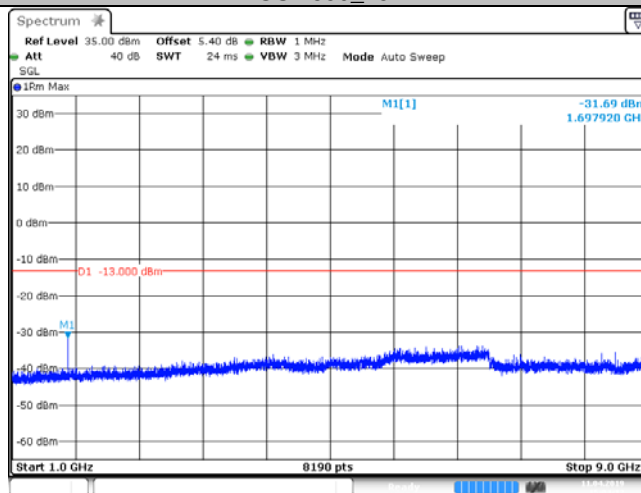
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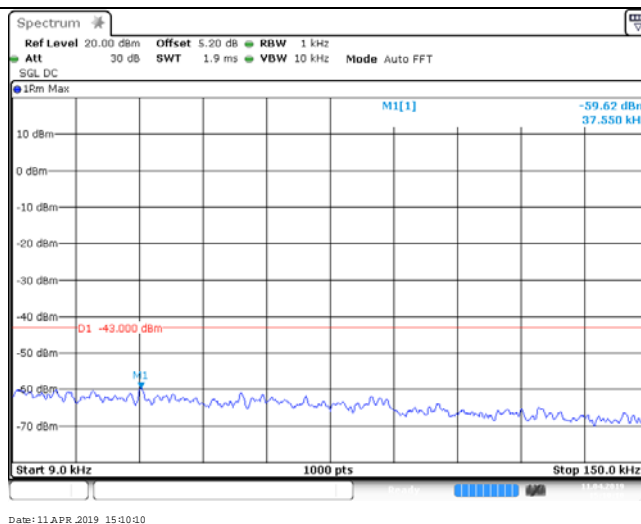
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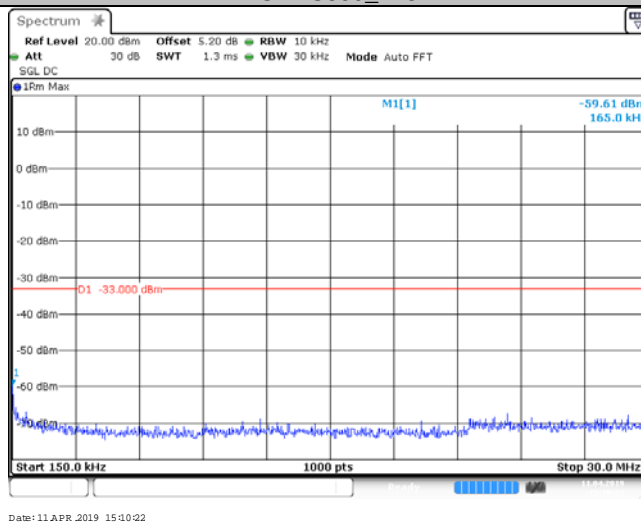
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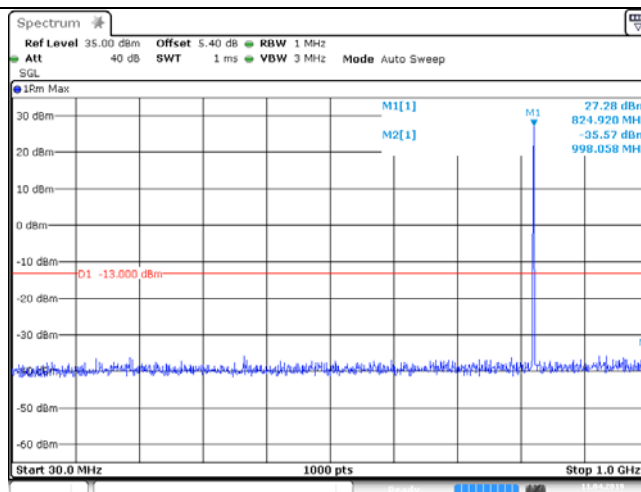


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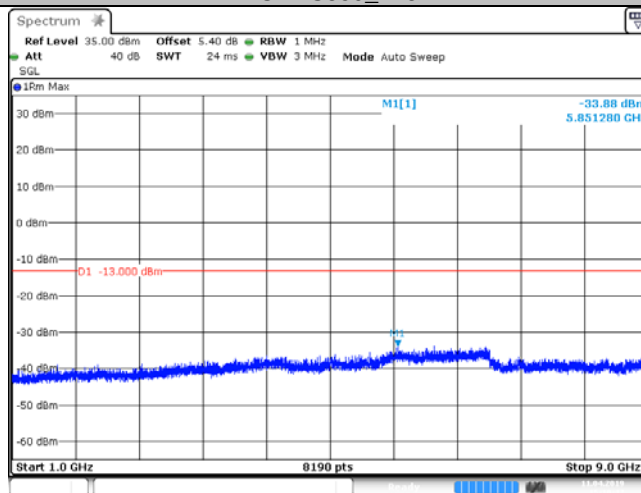
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Date: 11 APR 2019 15:10:47

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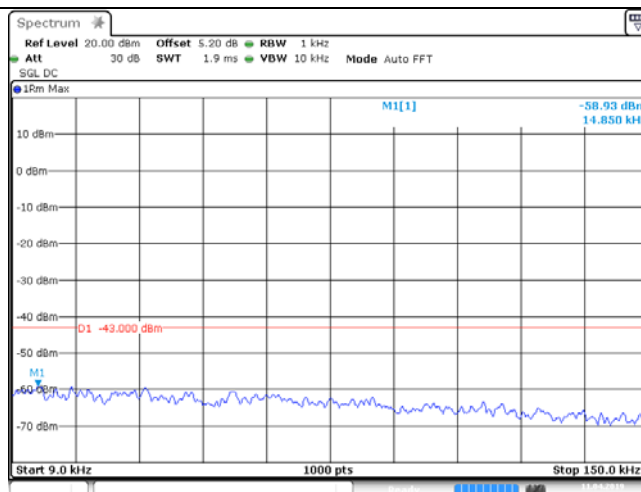


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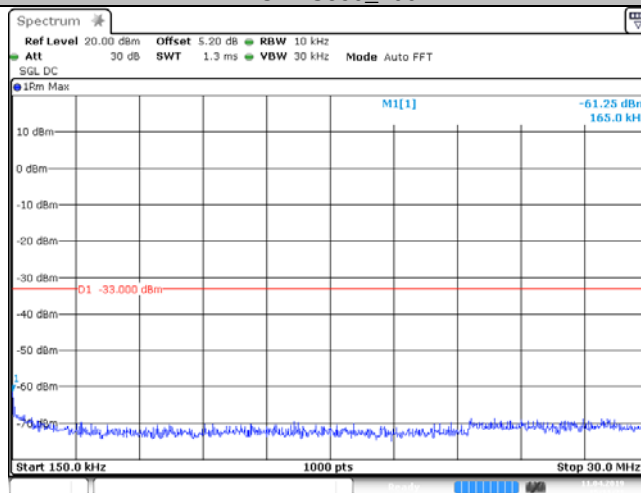
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Date: 11 APR. 2019 15:11:09

EGPRS850_190



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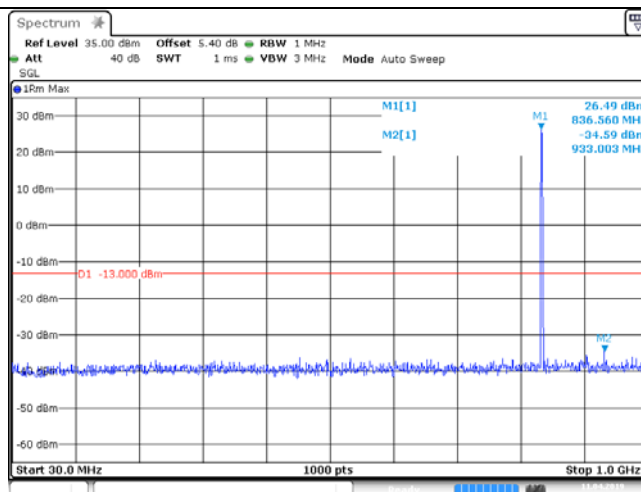
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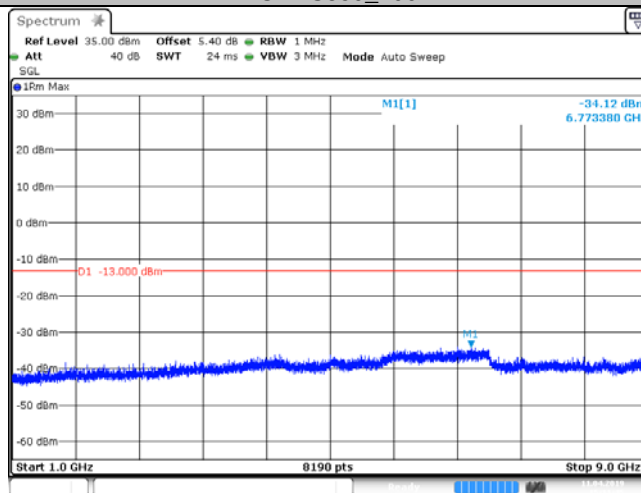
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Date: 11 APR 2019 15:11:34

EGPRS850_190



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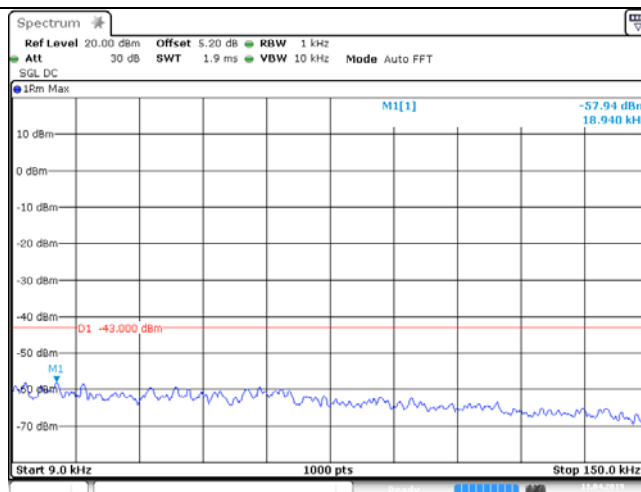
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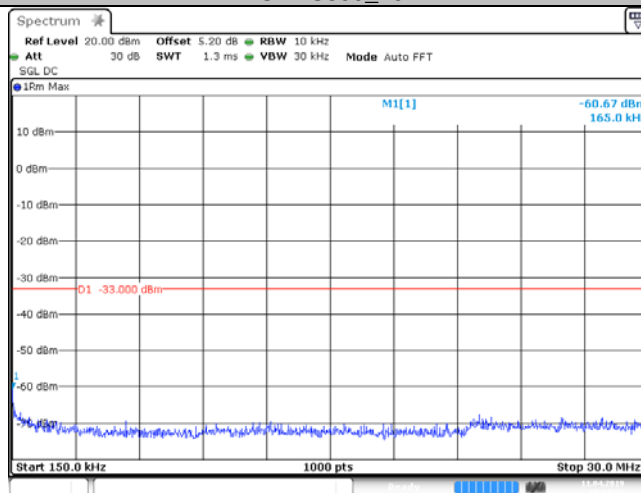
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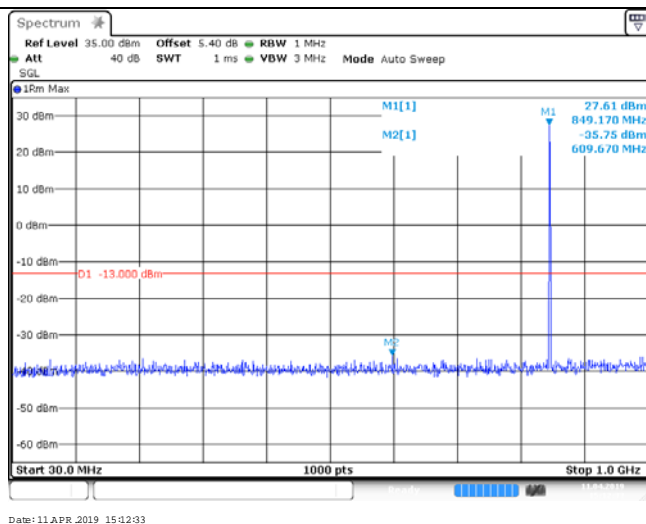
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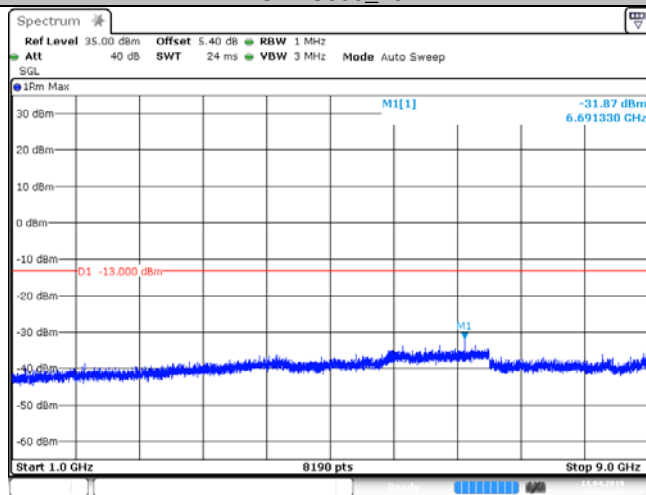
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Date: 11 APR 2019 15:12:33

EGPRS850 251



Date: 11 APR 2019 15:12:45

GSM1900 512



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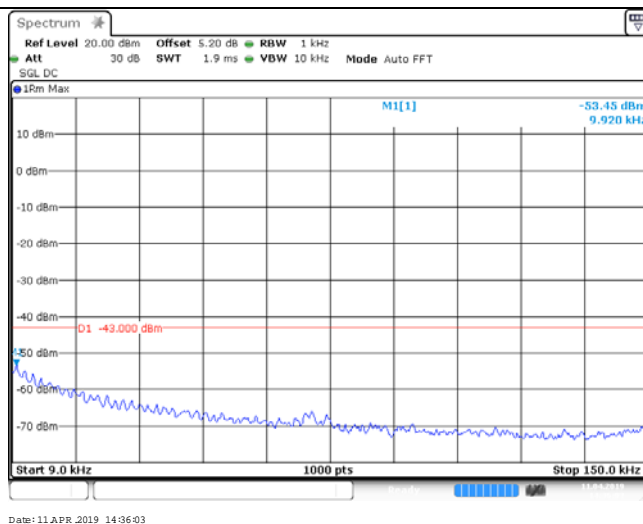
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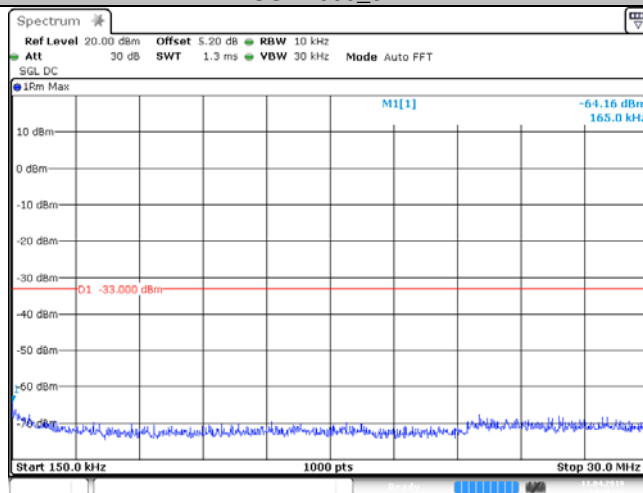
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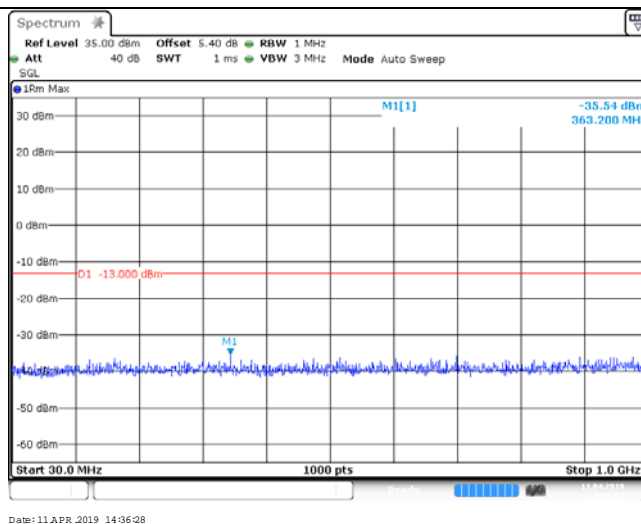
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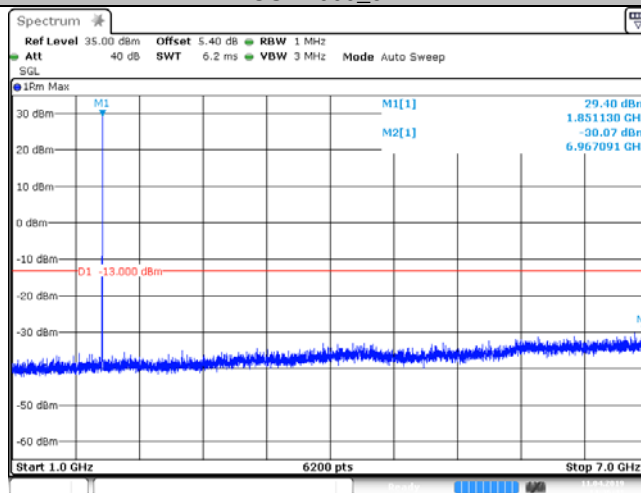
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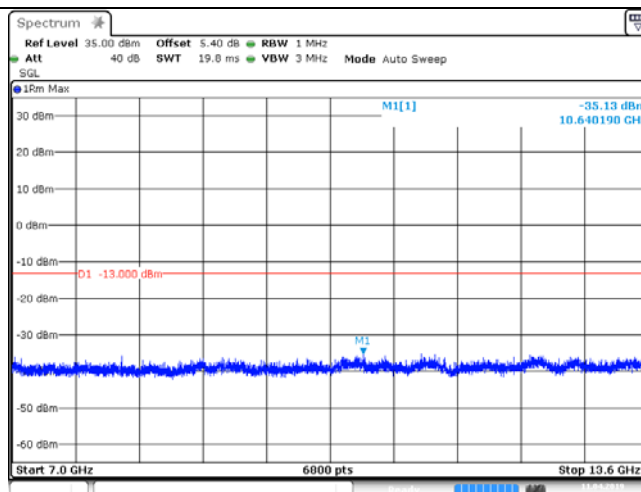
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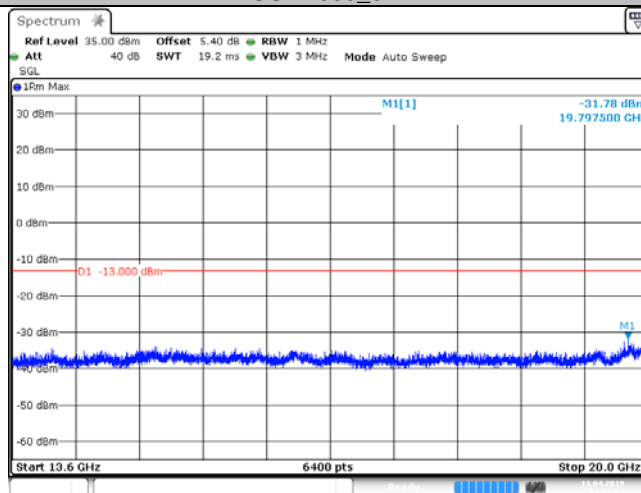
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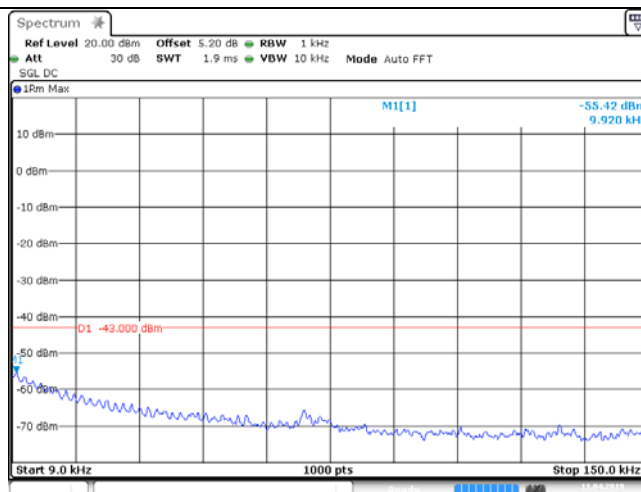
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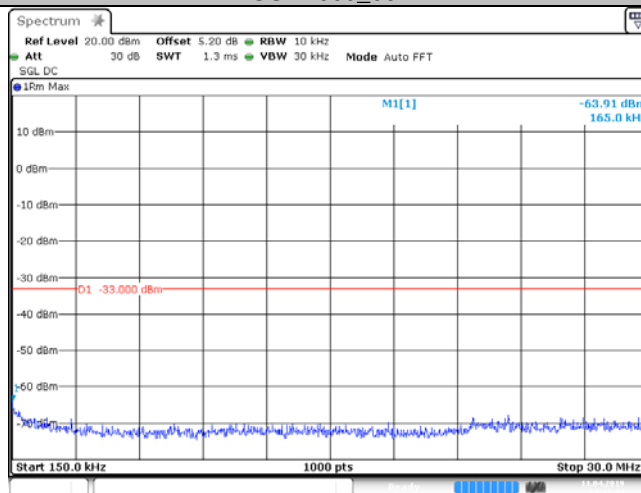
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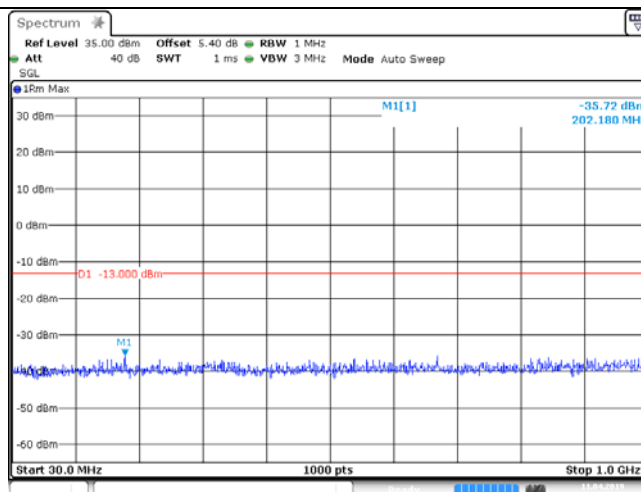
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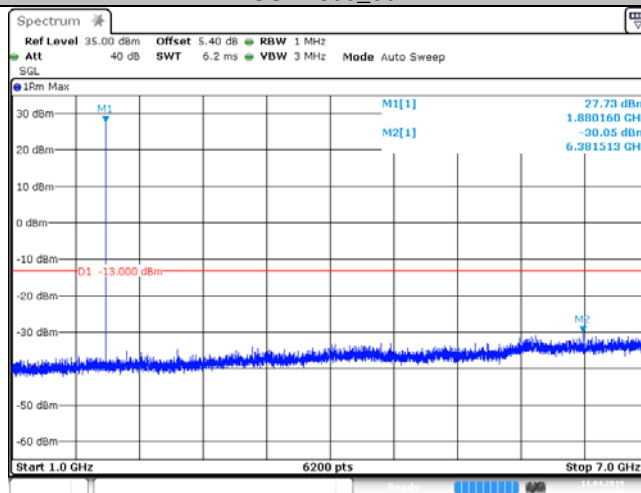
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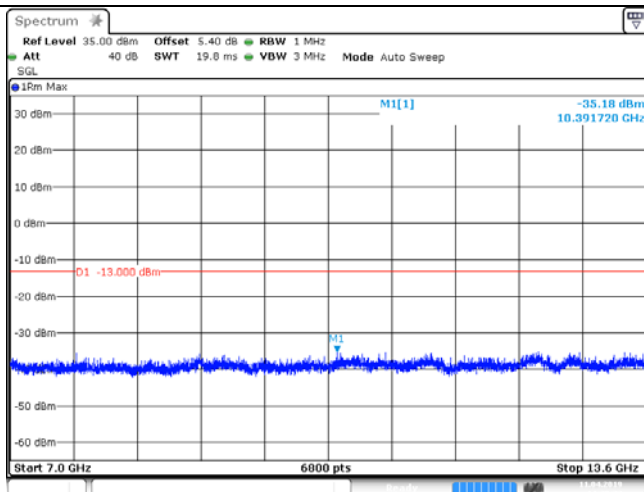
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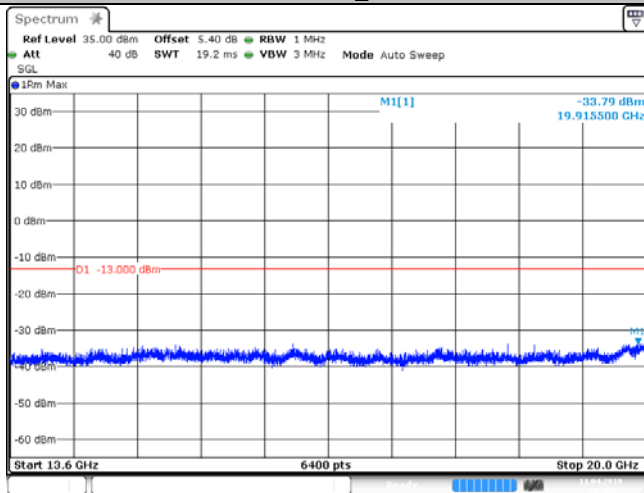
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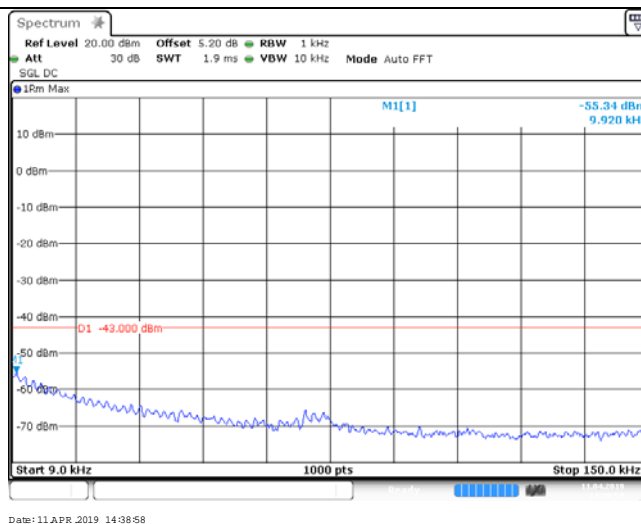
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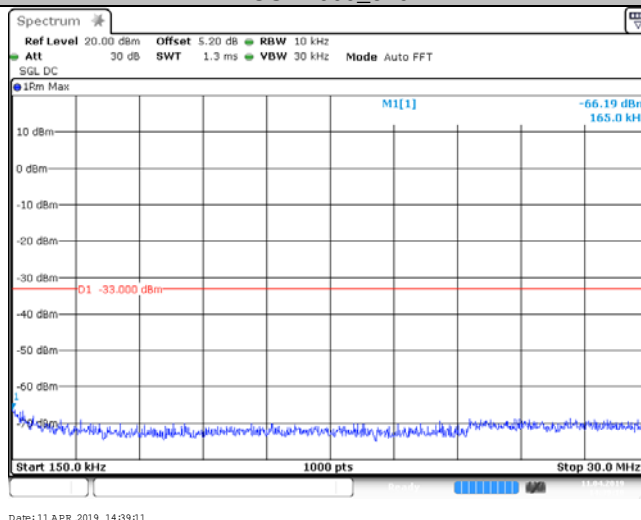
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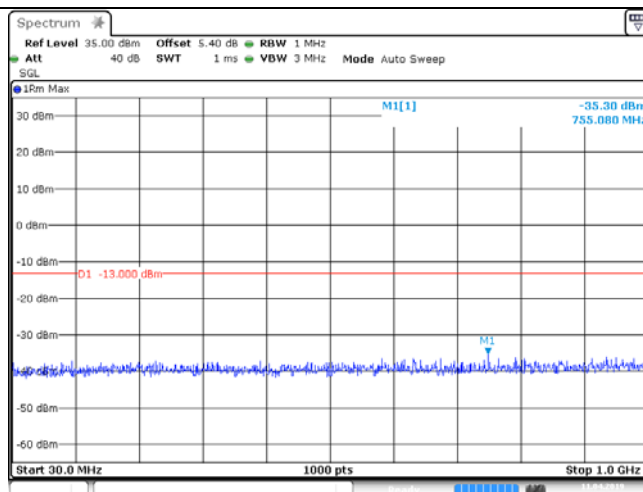


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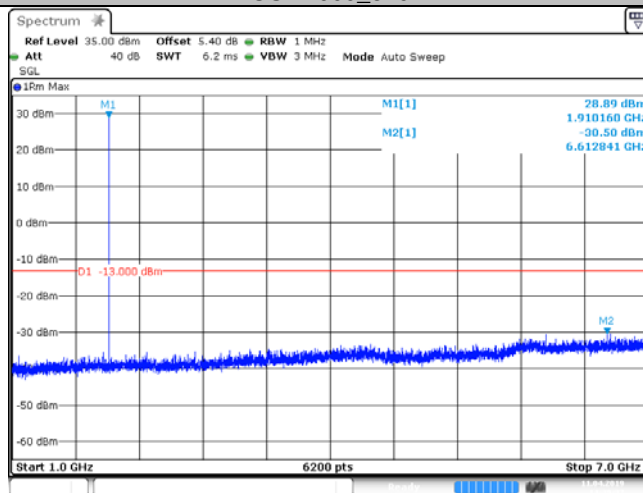
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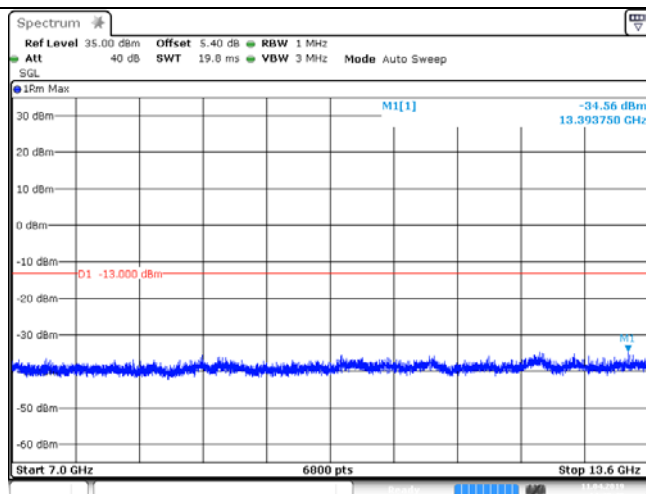
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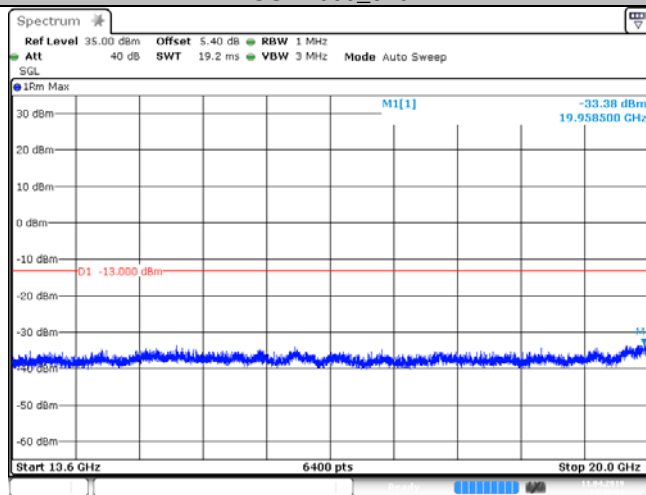
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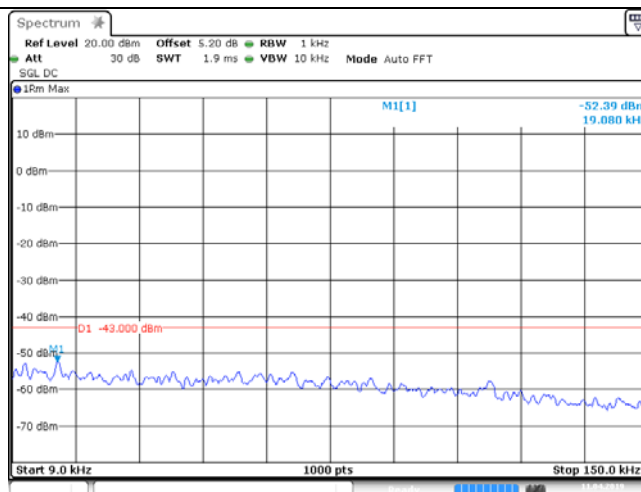
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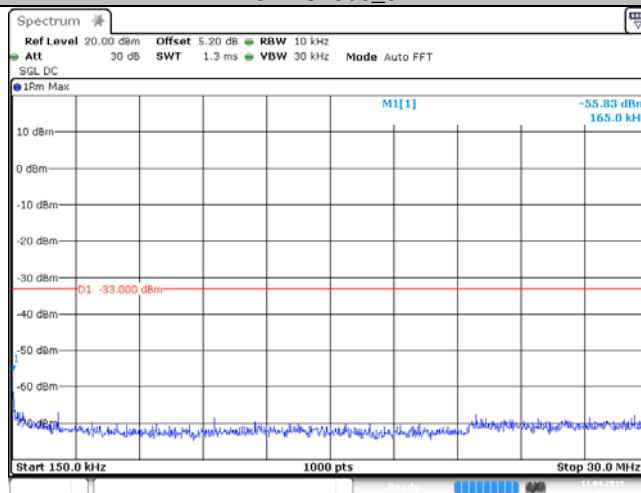
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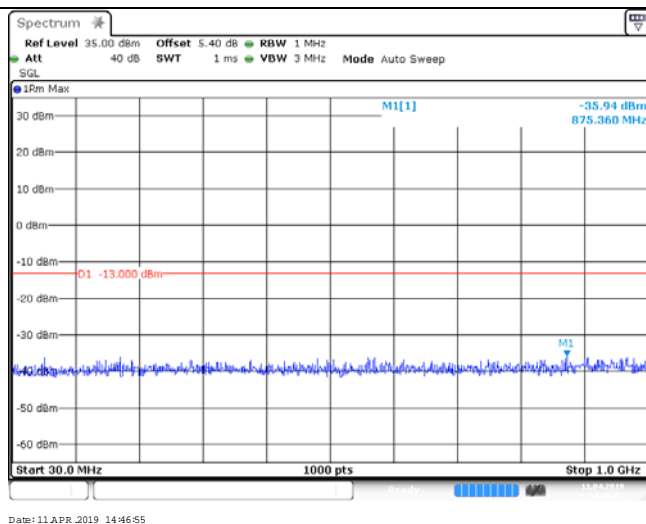
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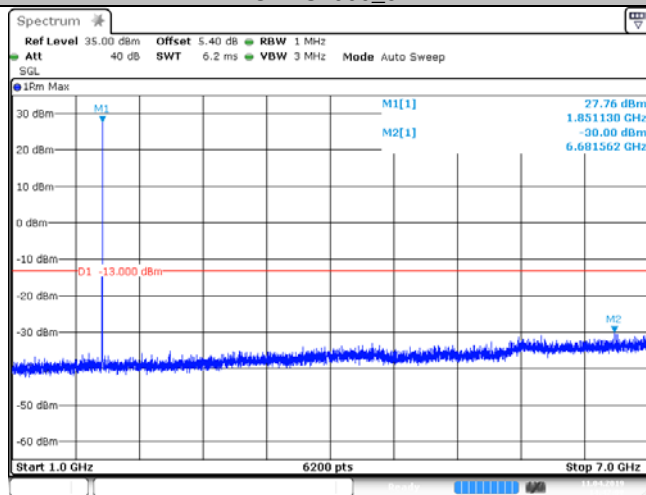
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EGPRS1900 512



Date: 11 APR 2019 14:47:08

EGPRS1900 512



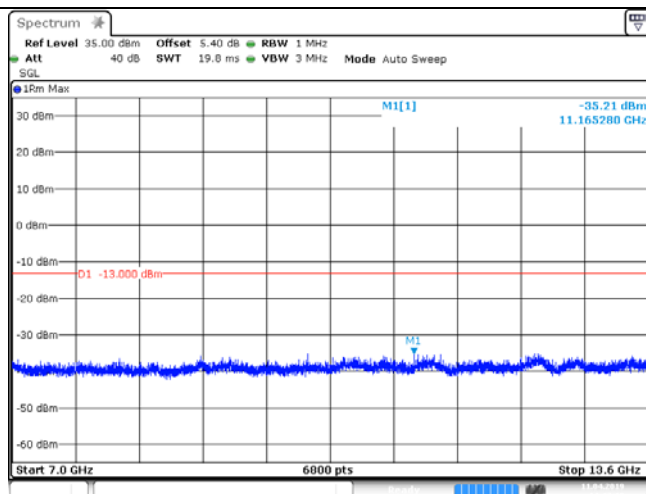
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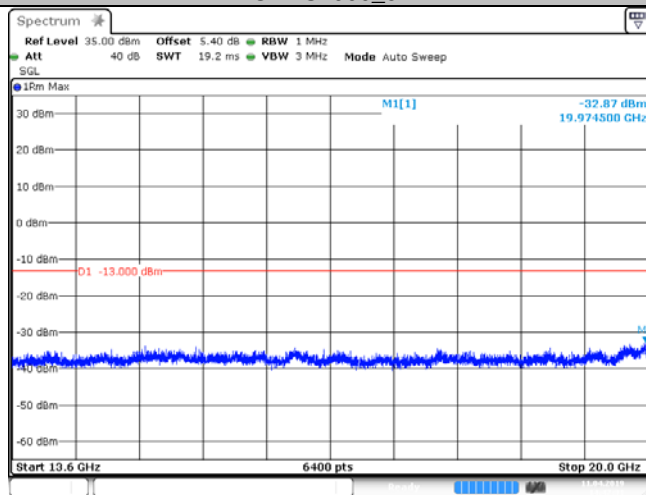
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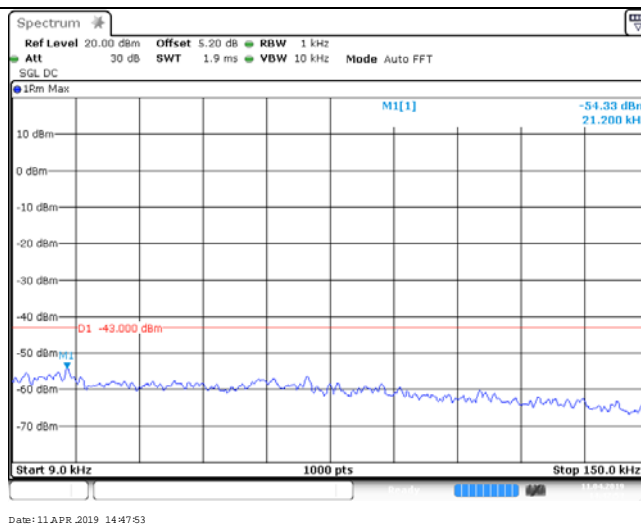
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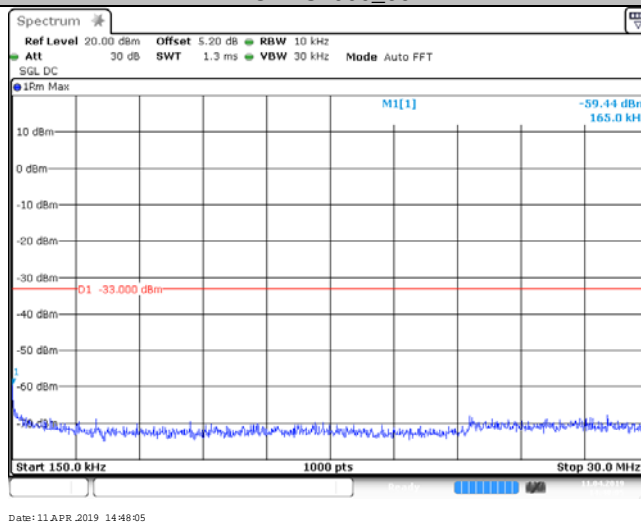
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EGPRS1900_661



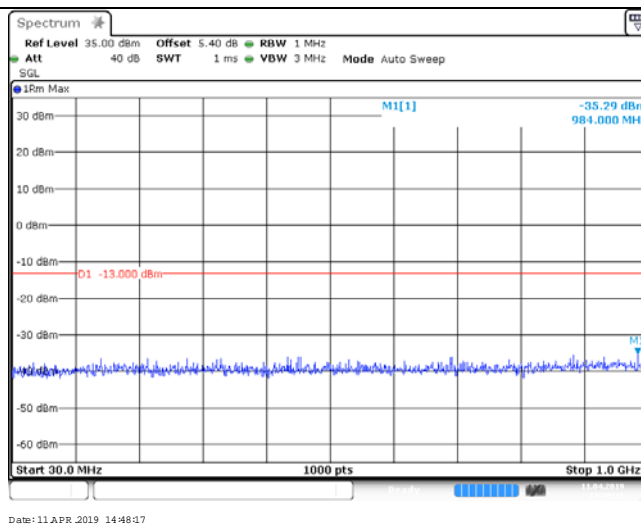


EGPRS1900_661



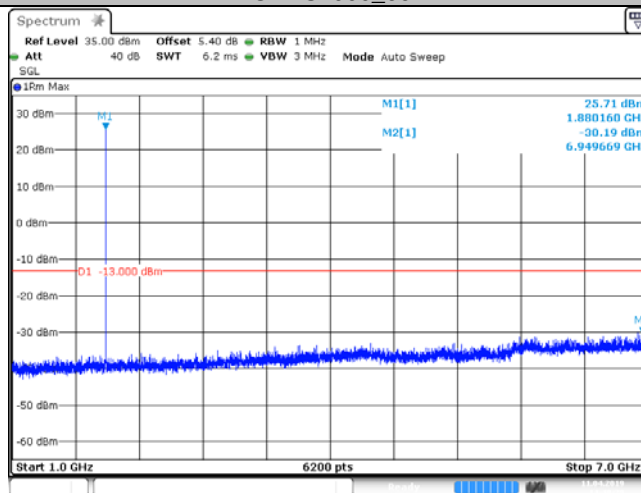
EGPRS1900_661





Date: 11 APR 2019 14:48:17

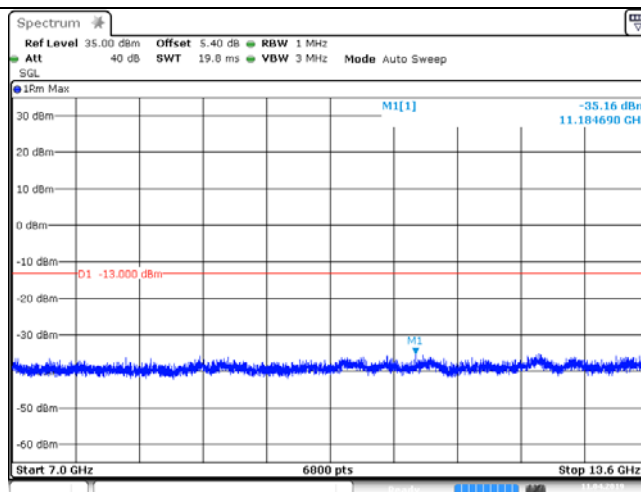
EGPRS1900_661



Date: 11 APR 2019 14:48:30

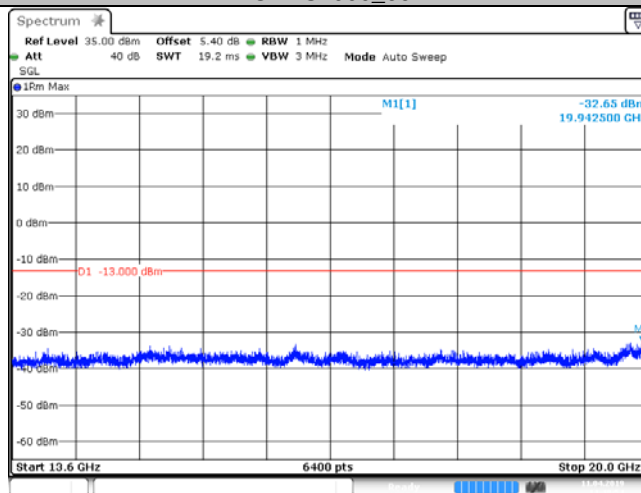
EGPRS1900_661





Date: 11 APR 2019 14:48:42

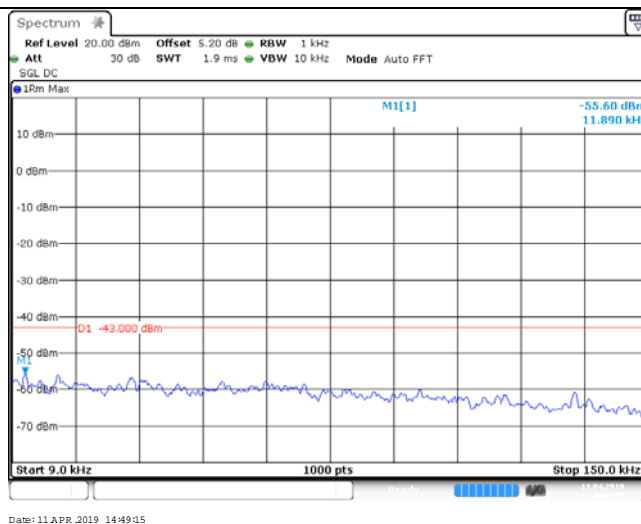
EGPRS1900_661



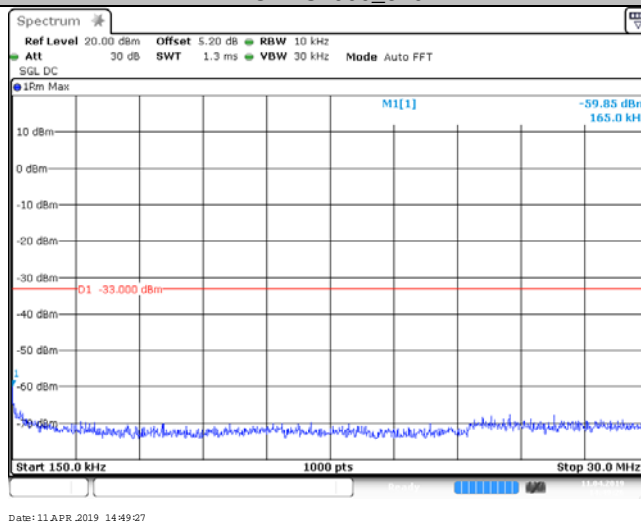
Date: 11 APR 2019 14:48:54

EGPRS1900_810



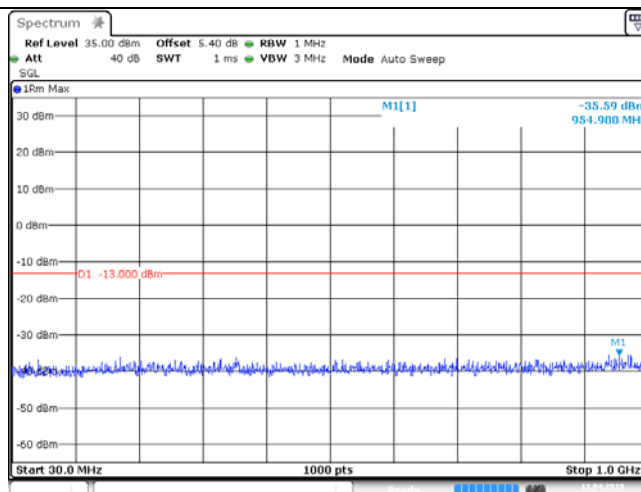


EGPRS1900_810



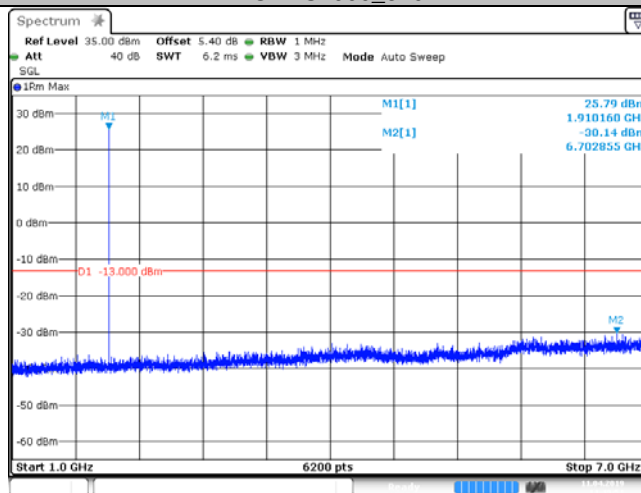
EGPRS1900_810





Date: 11 APR 2019 14:49:39

EGPRS1900_810



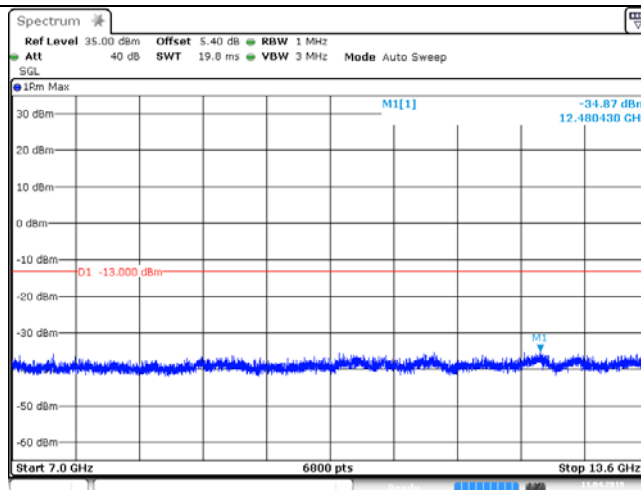
Date: 11 APR 2019 14:49:52

EGPRS1900_810



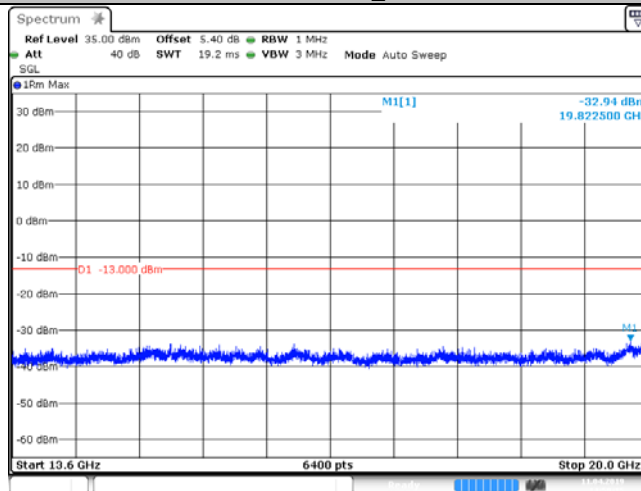
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Date: 11 APR 2019 14:50:03

EGPRS1900_810



Date: 11 APR 2019 14:50:15



7 Field Strength of Spurious Radiation

Part I - Test Plots

7.1 For GSM

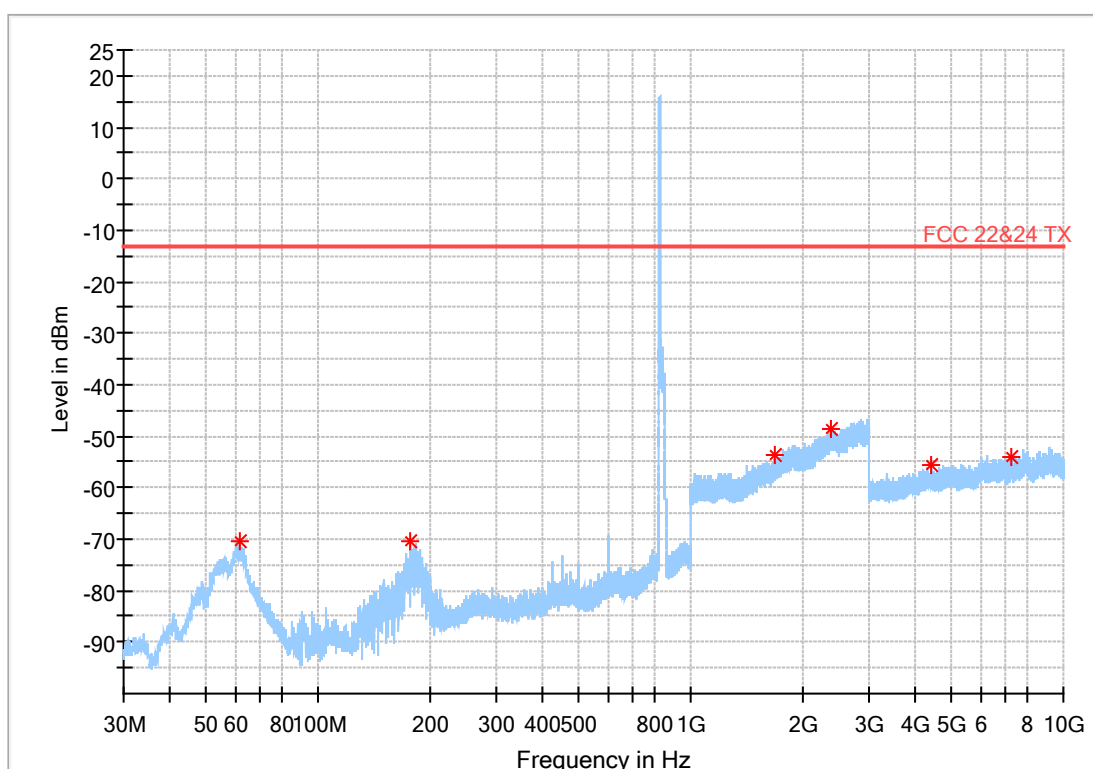
7.1.1 Main Antenna

7.1.1.1 Test Band = GSM 850

7.1.1.1.1 Test Channel = LCH

7.1.1.1.1.1 _Horizontal

Full Spectrum



Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
61.816000	-70.35	-13.00	57.35	---	---	200.0	H	354.0	-107.2
176.906500	-70.56	-13.00	57.56	---	---	200.0	H	29.0	-119.9
1673.475000	-53.65	-13.00	40.65	---	---	200.0	H	53.0	-97.6
2387.250000	-48.41	-13.00	35.41	---	---	200.0	H	339.0	-91.5
4410.500000	-55.63	-13.00	42.63	---	---	200.0	H	253.0	-102.7
7202.450000	-53.96	-13.00	40.96	---	---	200.0	H	305.0	-99.5



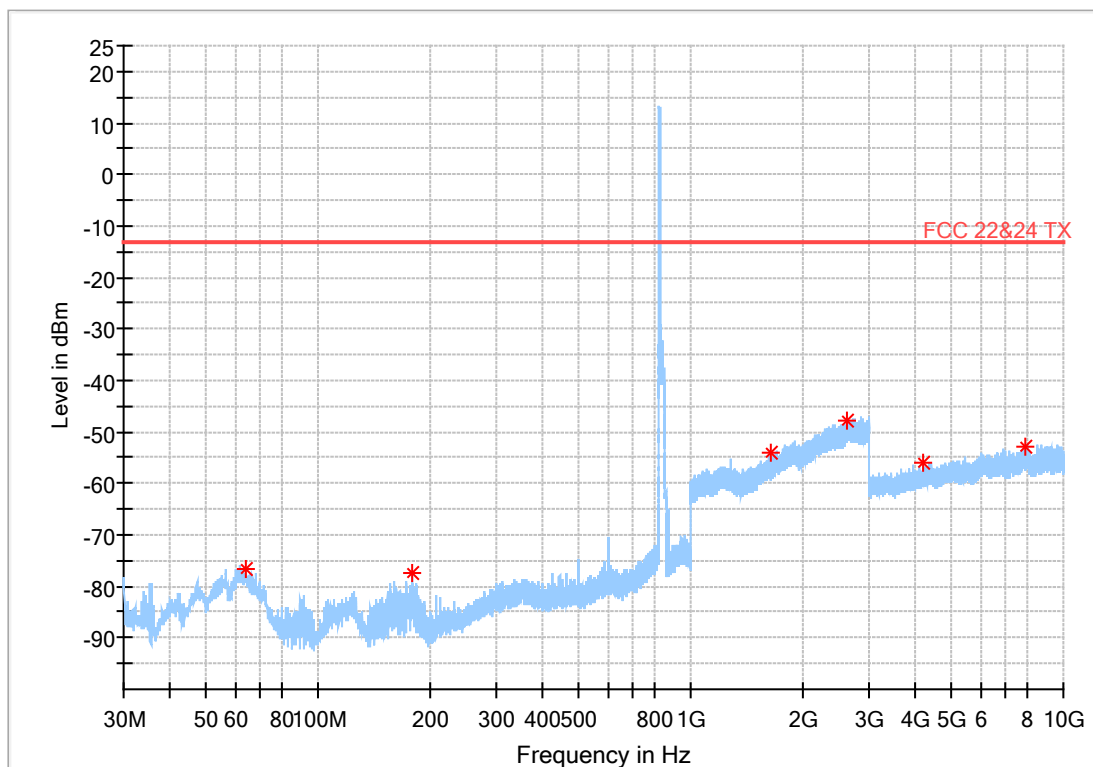
SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch (CSTC Laboratory)

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7.1.1.1.1.2 Vertical

Full Spectrum



Critical_Freqs

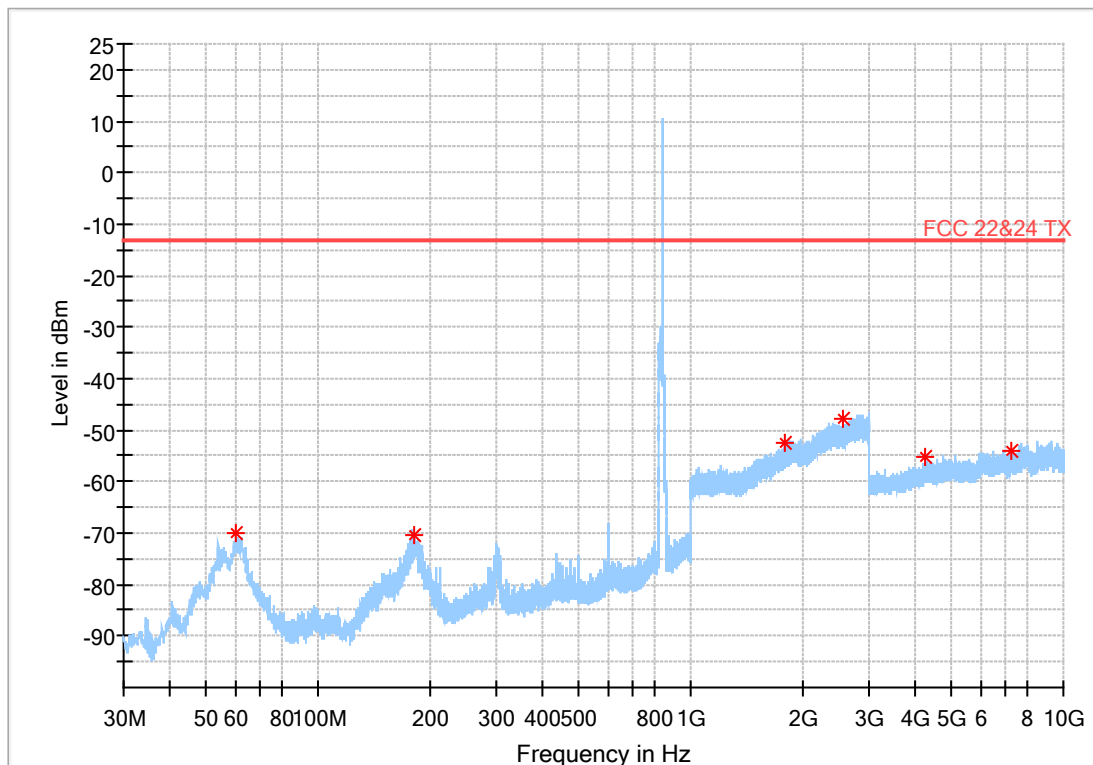
Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
64.192500	-76.64	-13.00	63.64	---	---	200.0	V	209.0	-112.4
177.925000	-77.59	-13.00	64.59	---	---	200.0	V	280.0	-122.0
1648.875000	-54.18	-13.00	41.18	---	---	200.0	V	170.0	-97.8
2627.250000	-47.96	-13.00	34.96	---	---	200.0	V	261.0	-90.9
4199.800000	-56.11	-13.00	43.11	---	---	200.0	V	266.0	-103.2
7870.600000	-52.73	-13.00	39.73	---	---	200.0	V	130.0	-97.9



7.1.1.1.2 Test Channel = MCH

7.1.1.1.2.1 Horizontal

Full Spectrum



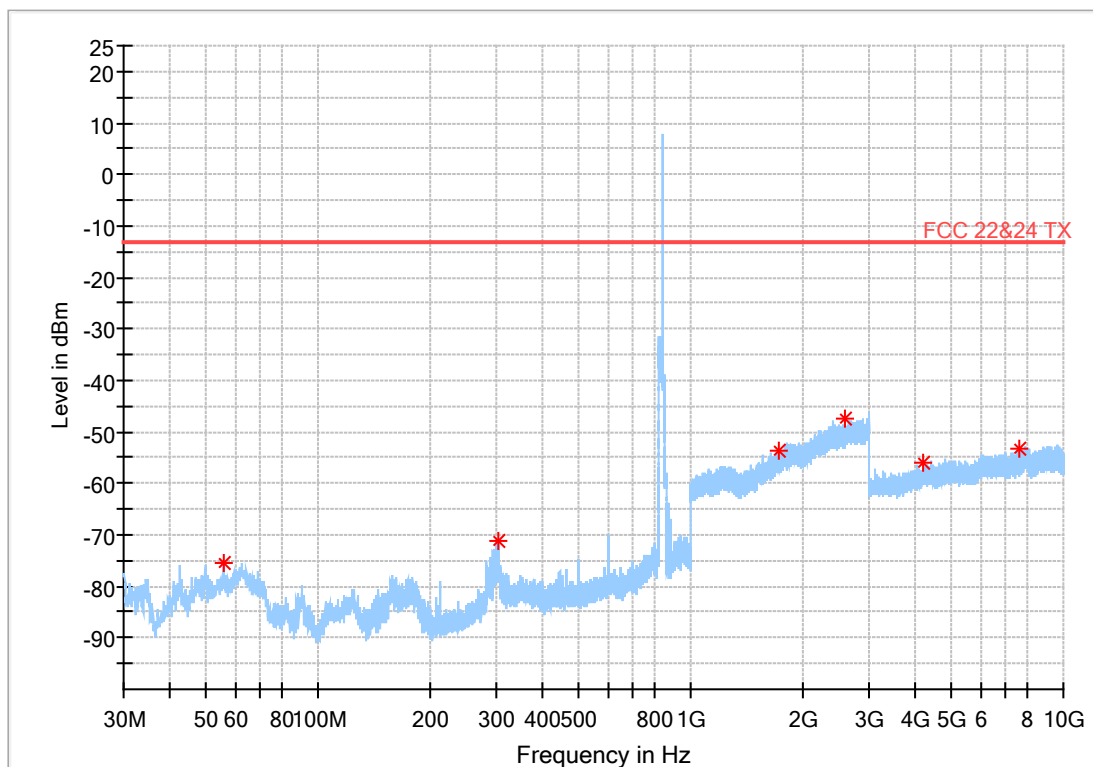
Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
60.070000	-70.12	-13.00	57.12	---	---	200.0	H	9.0	-106.9
181.223000	-70.38	-13.00	57.38	---	---	200.0	H	27.0	-119.9
1782.600000	-52.38	-13.00	39.38	---	---	200.0	H	174.0	-96.2
2553.600000	-47.77	-13.00	34.77	---	---	200.0	H	124.0	-92.0
4264.900000	-55.32	-13.00	42.32	---	---	200.0	H	258.0	-102.8
7221.350000	-53.97	-13.00	40.97	---	---	200.0	H	128.0	-99.5



7.1.1.1.2.2 Vertical

Full Spectrum



Critical_Freqs

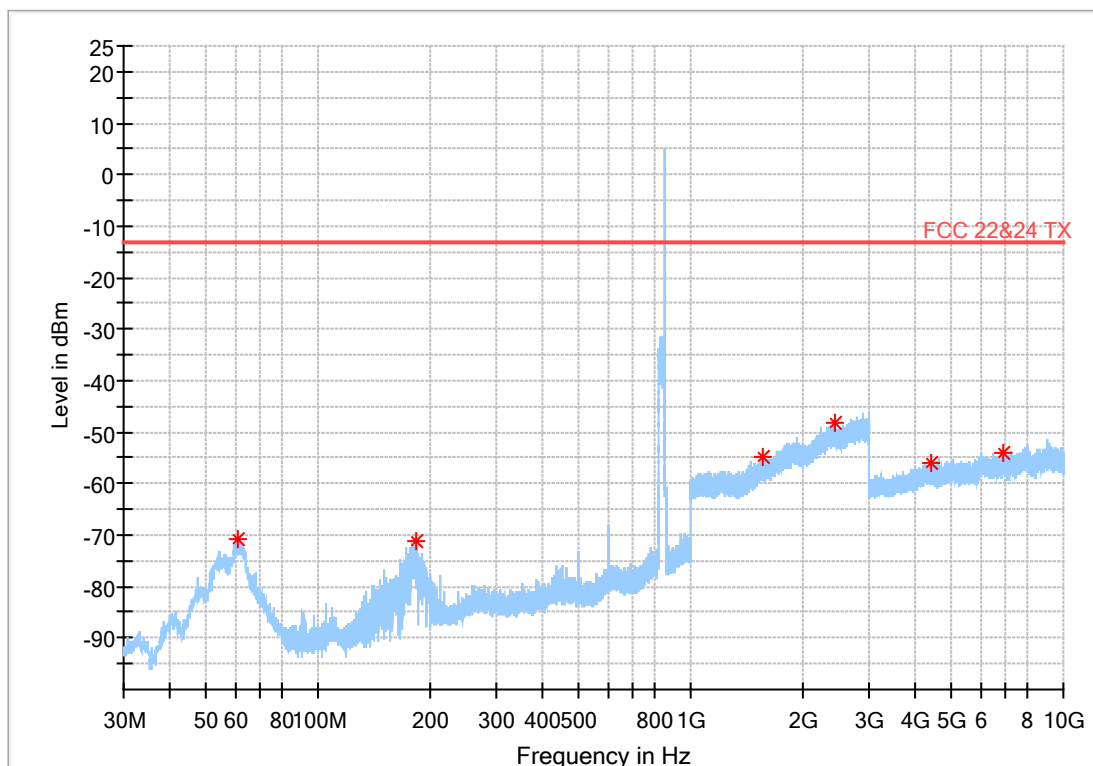
Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
55.753500	-75.32	-13.00	62.32	---	---	200.0	V	297.0	-114.0
303.734000	-71.36	-13.00	58.36	---	---	200.0	V	353.0	-113.3
1719.300000	-53.55	-13.00	40.55	---	---	200.0	V	210.0	-96.9
2608.050000	-47.45	-13.00	34.45	---	---	200.0	V	190.0	-90.9
4199.100000	-55.90	-13.00	42.90	---	---	200.0	V	222.0	-103.2
7616.500000	-53.39	-13.00	40.39	---	---	200.0	V	269.0	-98.5



7.1.1.1.3 Test Channel = HCH

7.1.1.1.3.1 Horizontal

Full Spectrum



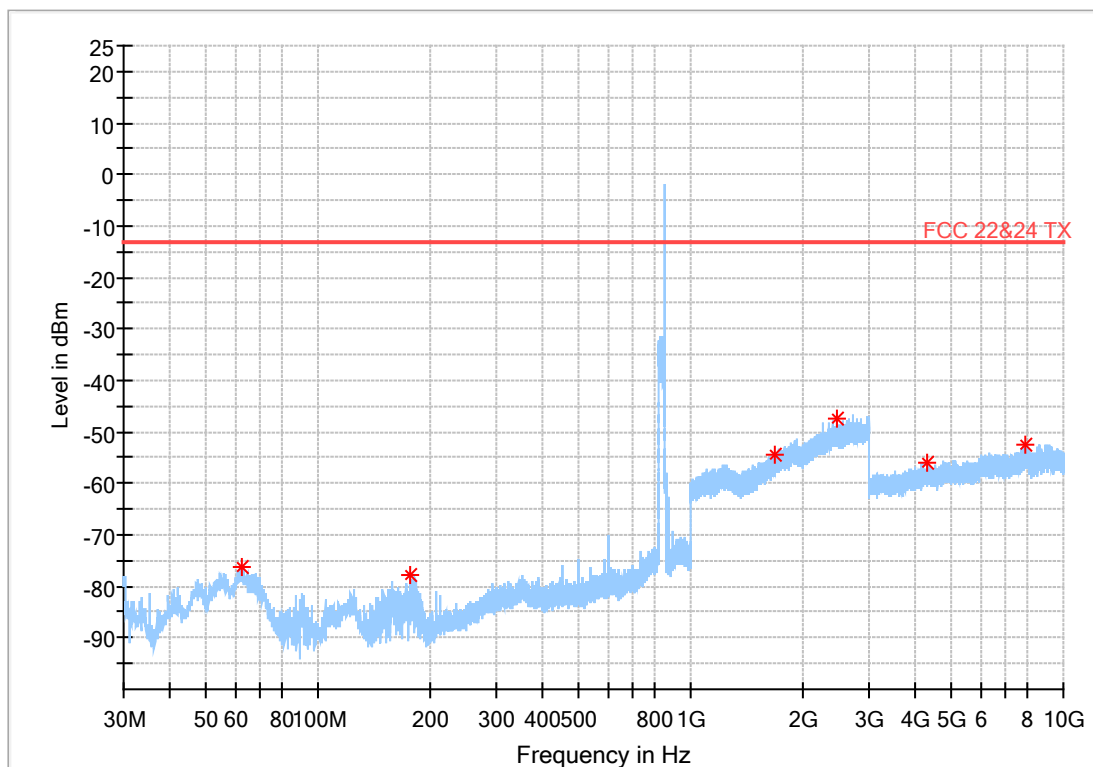
Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
60.846000	-70.86	-13.00	57.86	---	---	200.0	H	259.0	-107.0
183.405500	-71.30	-13.00	58.30	---	---	200.0	H	15.0	-119.7
1565.175000	-54.84	-13.00	41.84	---	---	200.0	H	273.0	-98.3
2443.050000	-48.21	-13.00	35.21	---	---	200.0	H	330.0	-91.4
4405.600000	-55.89	-13.00	42.89	---	---	200.0	H	125.0	-102.7
6938.200000	-53.94	-13.00	40.94	---	---	200.0	H	241.0	-99.3



7.1.1.1.3.2 Vertical

Full Spectrum



Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
62.543500	-76.28	-13.00	63.28	---	---	200.0	V	0.0	-112.6
177.294500	-77.71	-13.00	64.71	---	---	200.0	V	305.0	-122.0
1674.975000	-54.35	-13.00	41.35	---	---	200.0	V	232.0	-97.5
2478.075000	-47.26	-13.00	34.26	---	---	200.0	V	359.0	-91.5
4313.200000	-56.10	-13.00	43.10	---	---	200.0	V	28.0	-102.7
7858.700000	-52.38	-13.00	39.38	---	---	200.0	V	233.0	-97.9

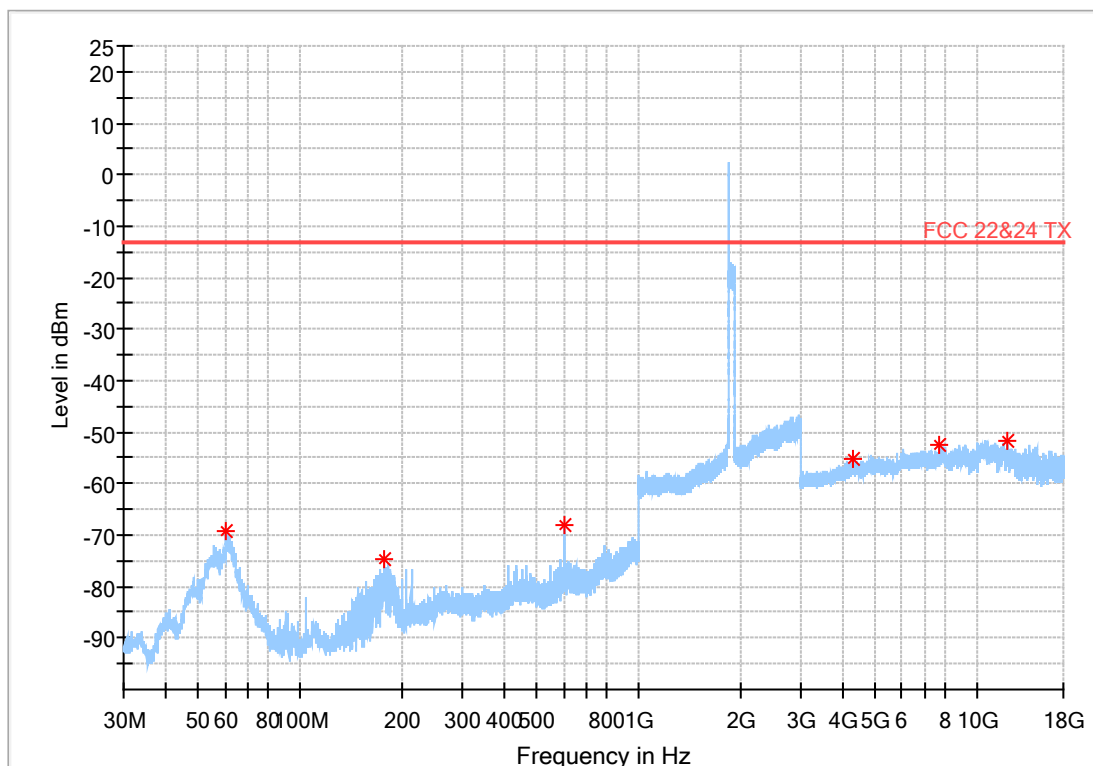


7.1.1.2 Test Band = GSM 1900

7.1.1.2.1 Test Channel = LCH

7.1.1.2.1.1 Horizontal

Full Spectrum



Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
60.555000	-69.15	-13.00	56.15	---	---	200.0	H	136.0	-106.8
176.567000	-74.80	-13.00	61.80	---	---	200.0	H	66.0	-119.7
600.020500	-68.06	-13.00	55.06	---	---	200.0	H	258.0	-109.1
4311.100000	-55.16	-13.00	42.16	---	---	200.0	H	0.0	-102.6
7736.550000	-52.65	-13.00	39.65	---	---	200.0	H	0.0	-97.9
12302.800000	-51.67	-13.00	38.67	---	---	200.0	H	75.0	-95.5



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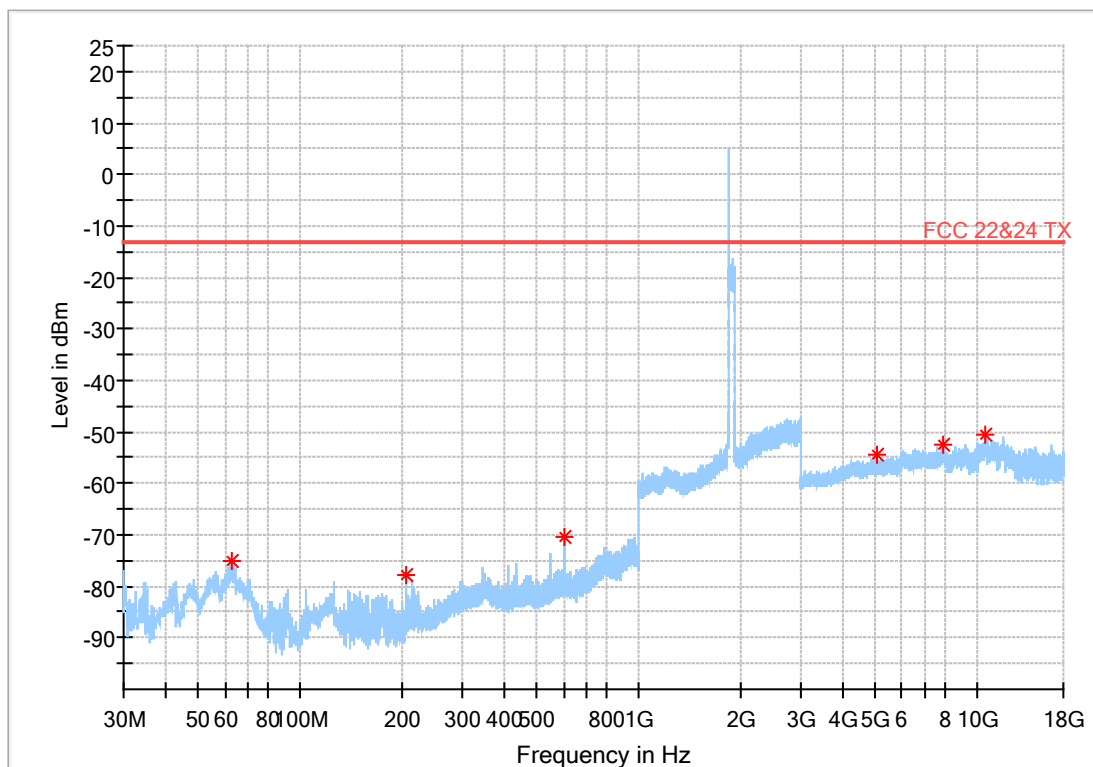
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7.1.1.2.1.2 Vertical

Full Spectrum



Critical_Freqs

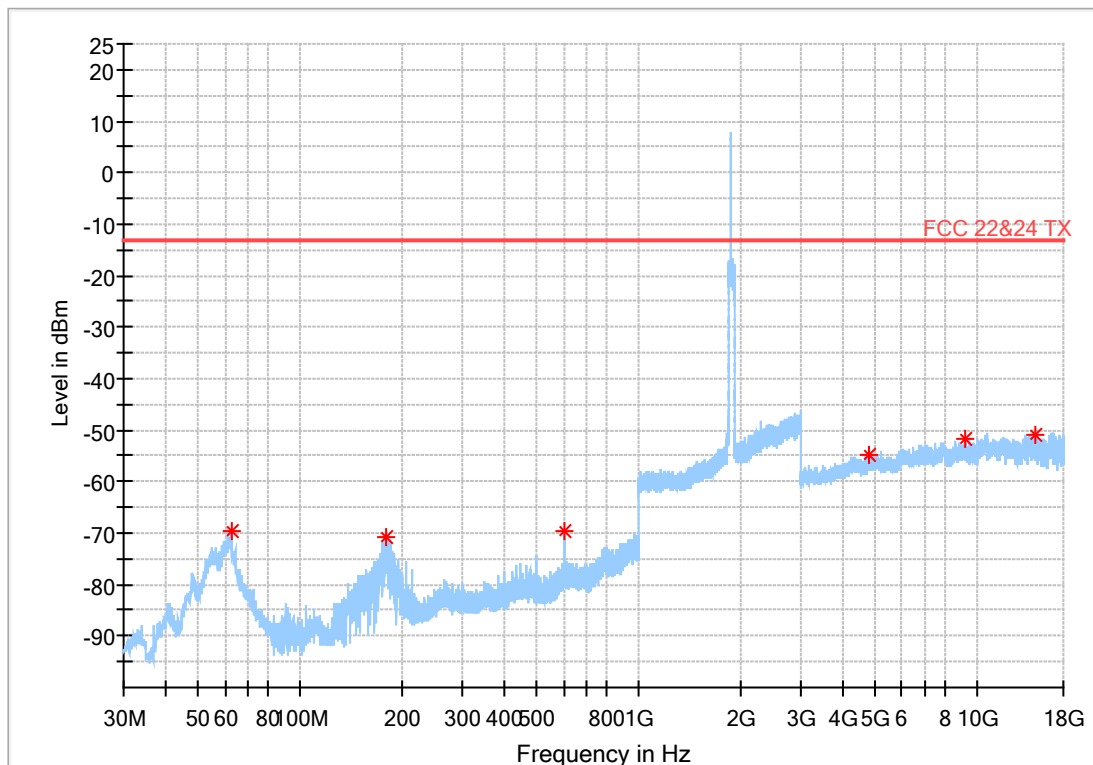
Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
62.301000	-75.18	-13.00	62.18	---	---	200.0	V	321.0	-112.5
206.200500	-77.88	-13.00	64.88	---	---	200.0	V	57.0	-119.9
599.972000	-70.24	-13.00	57.24	---	---	200.0	V	194.0	-109.7
5039.450000	-54.47	-13.00	41.47	---	---	200.0	V	40.0	-101.5
7934.300000	-52.48	-13.00	39.48	---	---	200.0	V	0.0	-98.0
10596.000000	-50.42	-13.00	37.42	---	---	200.0	V	292.0	-96.3



7.1.1.2.2 Test Channel = MCH

7.1.1.2.2.1 Horizontal

Full Spectrum



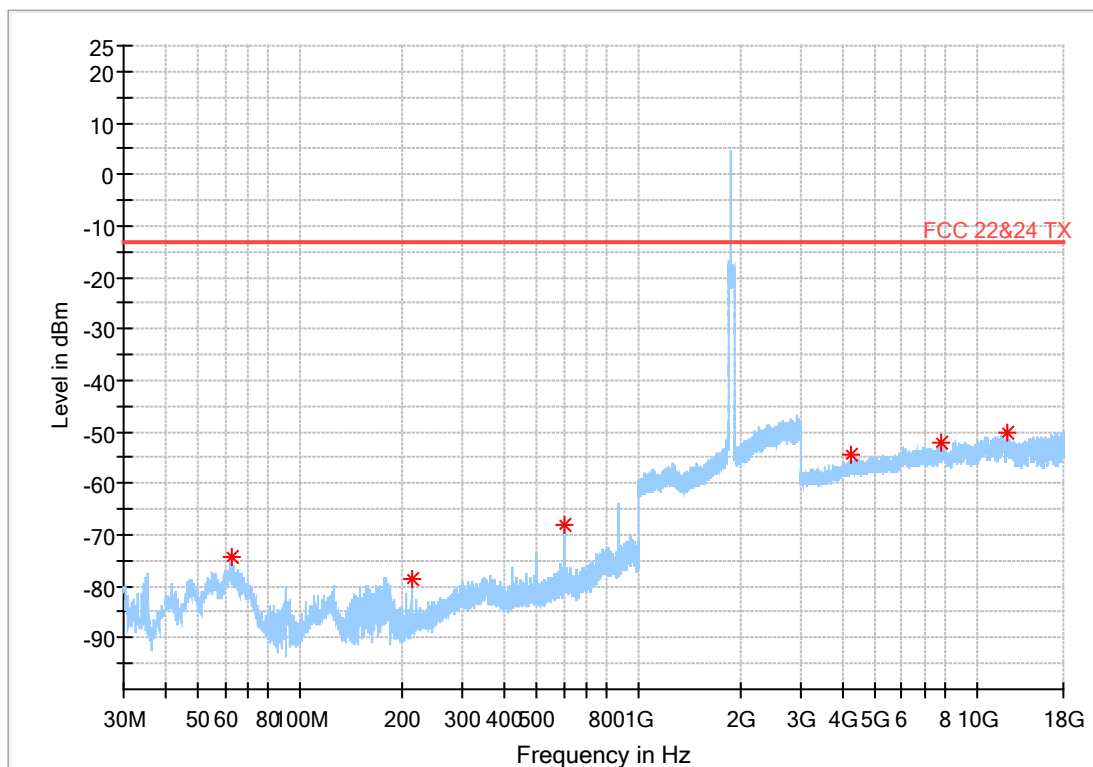
Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
62.252500	-69.71	-13.00	56.71	---	---	200.0	H	42.0	-107.1
178.652500	-70.61	-13.00	57.61	---	---	200.0	H	214.0	-119.6
599.972000	-69.59	-13.00	56.59	---	---	200.0	H	100.0	-109.1
4790.250000	-54.93	-13.00	41.93	---	---	200.0	H	39.0	-102.1
9267.800000	-51.54	-13.00	38.54	---	---	200.0	H	359.0	-96.9
14868.400000	-51.00	-13.00	38.00	---	---	200.0	H	1.0	-93.3



7.1.1.2.2.2 Vertical

Full Spectrum



Critical_Freqs

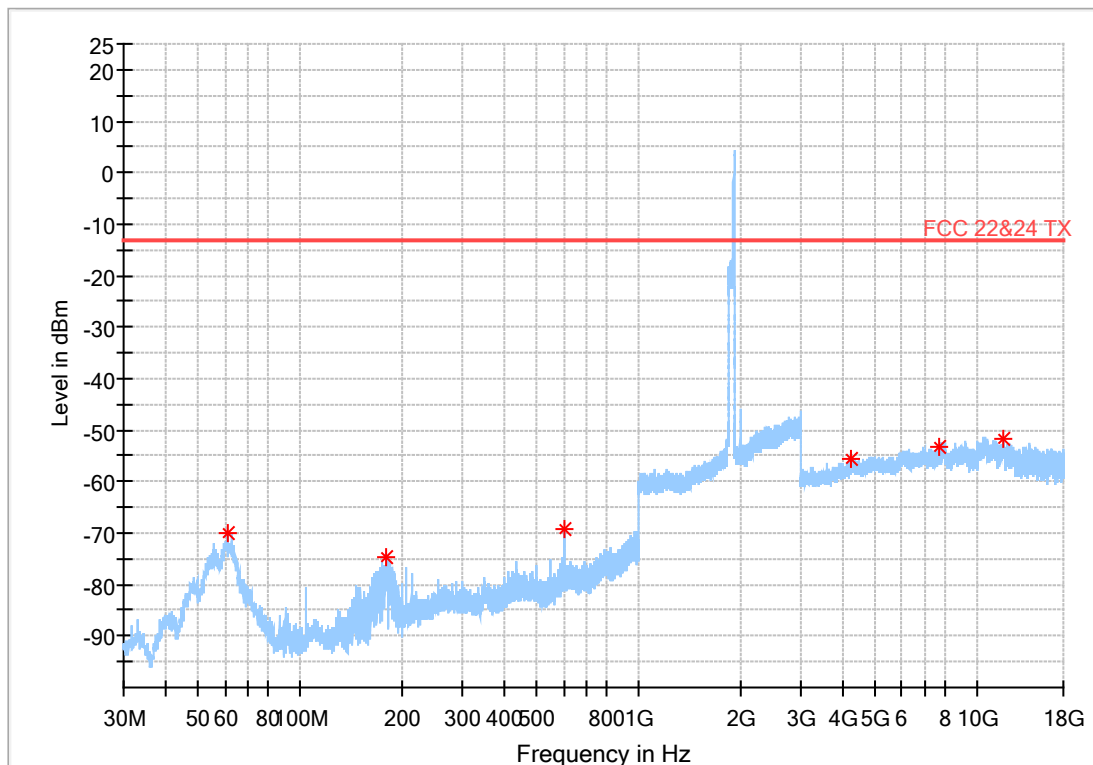
Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
62.446500	-74.27	-13.00	61.27	---	---	200.0	V	223.0	-112.5
212.505500	-78.63	-13.00	65.63	---	---	200.0	V	219.0	-118.9
600.020500	-68.26	-13.00	55.26	---	---	200.0	V	129.0	-109.7
4218.350000	-54.27	-13.00	41.27	---	---	200.0	V	39.0	-103.2
7808.650000	-52.29	-13.00	39.29	---	---	200.0	V	0.0	-97.8
12296.400000	-50.13	-13.00	37.13	---	---	200.0	V	220.0	-95.2



7.1.1.2.3 Test Channel = HCH

7.1.1.2.3.1 Horizontal

Full Spectrum



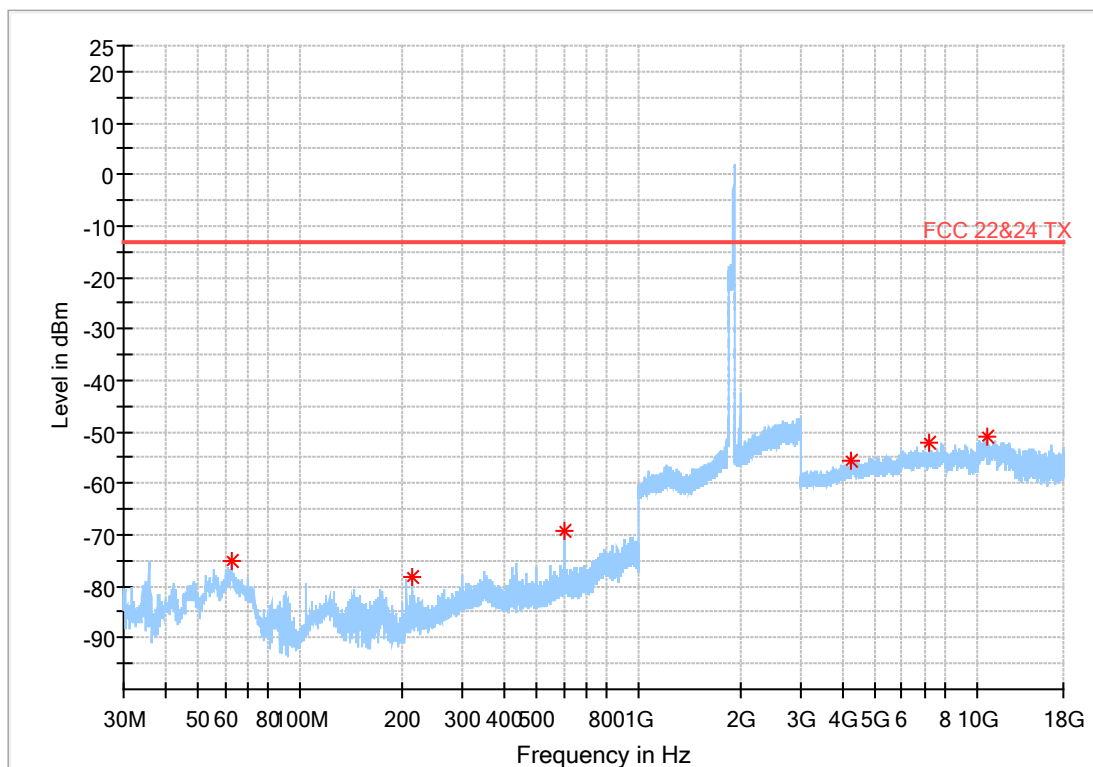
Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
60.943000	-69.84	-13.00	56.84	---	---	200.0	H	12.0	-106.9
178.216000	-74.84	-13.00	61.84	---	---	200.0	H	27.0	-119.7
600.020500	-69.14	-13.00	56.14	---	---	200.0	H	37.0	-109.1
4256.850000	-55.61	-13.00	42.61	---	---	200.0	H	0.0	-102.9
7720.800000	-53.33	-13.00	40.33	---	---	200.0	H	0.0	-98.0
12021.200000	-51.55	-13.00	38.55	---	---	200.0	H	291.0	-95.9



7.1.1.2.3.2 Vertical

Full Spectrum



Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
62.737500	-75.19	-13.00	62.19	---	---	200.0	V	359.0	-112.5
212.505500	-78.16	-13.00	65.16	---	---	200.0	V	101.0	-118.9
600.020500	-69.21	-13.00	56.21	---	---	200.0	V	187.0	-109.7
4211.350000	-55.56	-13.00	42.56	---	---	200.0	V	145.0	-103.2
7265.100000	-52.10	-13.00	39.10	---	---	200.0	V	0.0	-99.3
10656.800000	-50.92	-13.00	37.92	---	---	200.0	V	1.0	-96.2

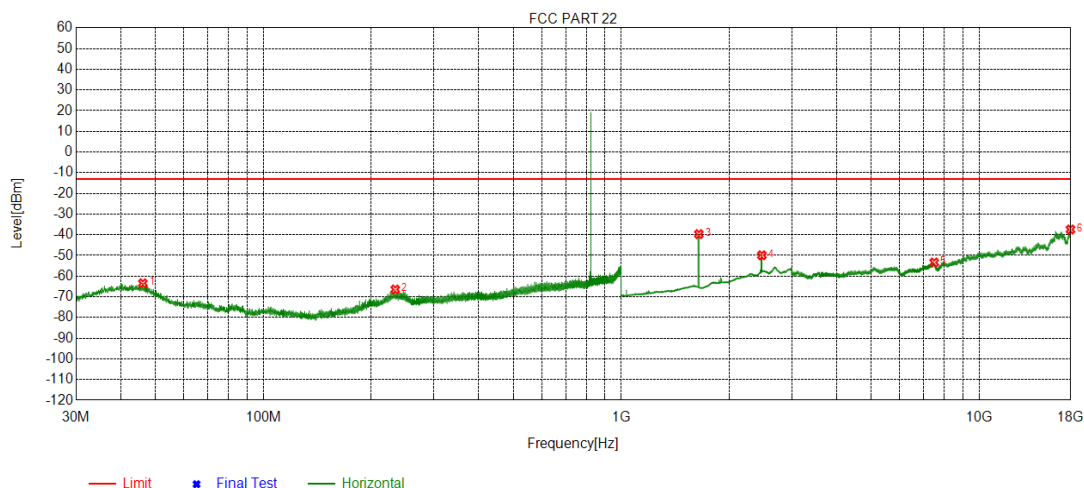


7.1.2 Secondary Antenna

7.1.2.1 Test Band = GSM 850

7.1.2.1.1 Test Channel = LCH

7.1.2.1.1.1 Horizontal

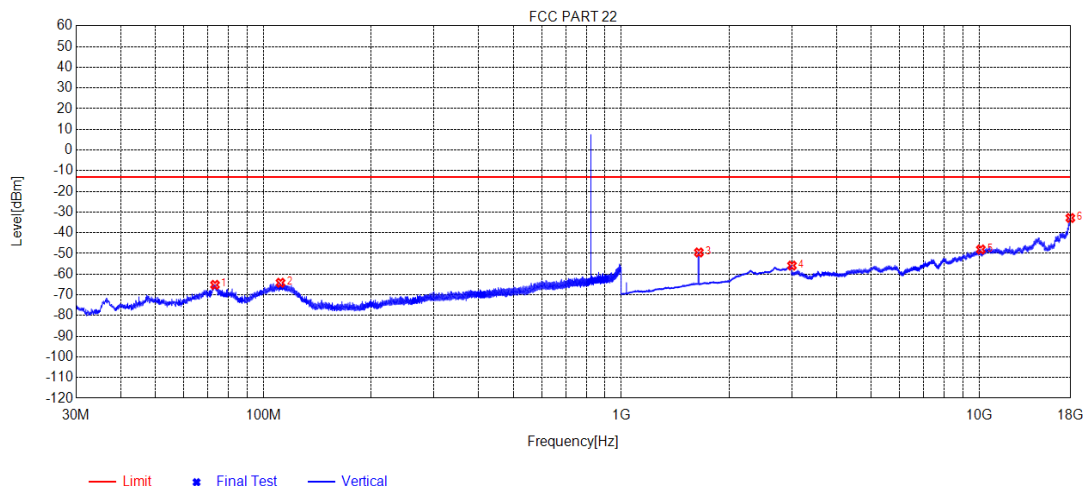


Suspected Data List

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	46.1028	-69.83	-63.44	-13.00	50.44	6.39	Horizontal
2	233.7587	-69.26	-66.45	-13.00	53.45	2.81	Horizontal
3	1648.529	-43.73	-39.68	-13.00	26.68	4.05	Horizontal
4	2472.694	-60.71	-49.90	-13.00	36.90	10.81	Horizontal
5	7488.649	-77.29	-53.40	-13.00	40.40	23.89	Horizontal
6	17997.99	-77.32	-37.45	-13.00	24.45	39.87	Horizontal



7.1.2.1.1.2 Vertical



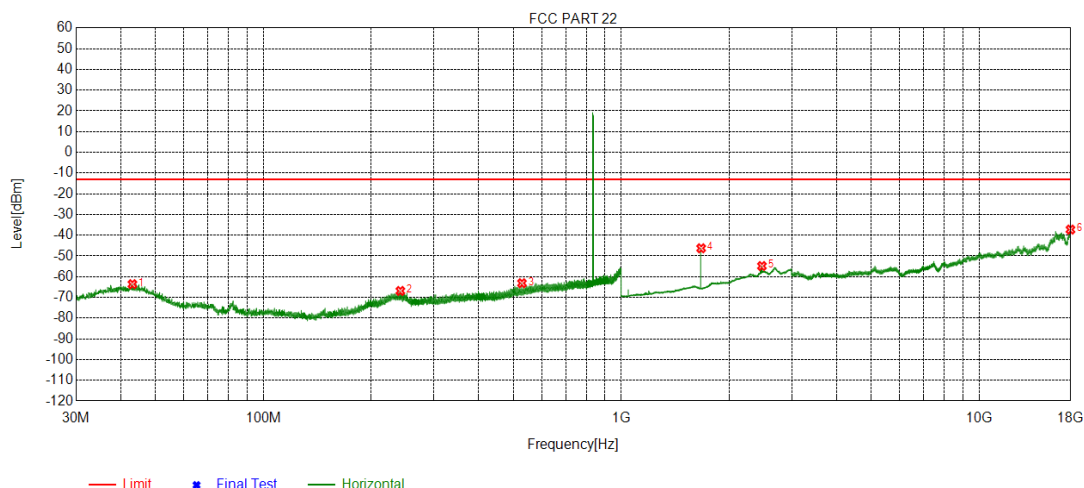
Suspected Data List

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	73.3127	-66.17	-65.15	-13.00	52.15	1.02	Vertical
2	111.7751	-70.41	-64.16	-13.00	51.16	6.25	Vertical
3	1648.529	-54.18	-49.50	-13.00	36.50	4.68	Vertical
4	3000.000	-69.57	-55.85	-13.00	42.85	13.72	Vertical
5	10110.73	-77.80	-48.05	-13.00	35.05	29.75	Vertical
6	17985.49	-77.17	-32.84	-13.00	19.84	44.33	Vertical



7.1.2.1.2 Test Channel = MCH

7.1.2.1.2.1 Horizontal

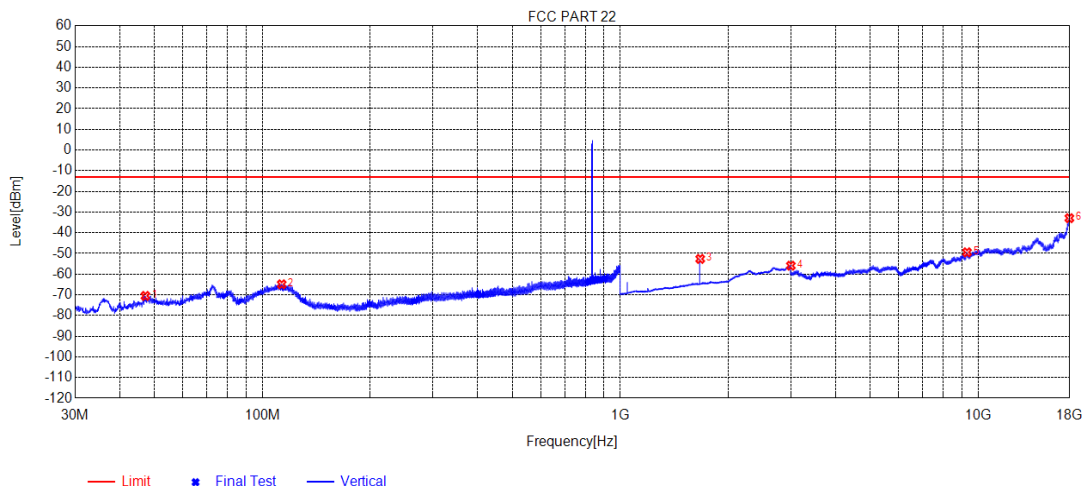


Suspected Data List

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	43.0957	-70.53	-63.61	-13.00	50.61	6.92	Horizontal
2	241.6161	-69.63	-66.88	-13.00	53.88	2.75	Horizontal
3	528.2169	-69.03	-63.13	-13.00	50.13	5.90	Horizontal
4	1672.934	-50.10	-46.28	-13.00	33.28	3.82	Horizontal
5	2473.094	-65.66	-54.84	-13.00	41.84	10.82	Horizontal
6	17998.50	-77.14	-37.26	-13.00	24.26	39.88	Horizontal



7.1.2.1.2.2 Vertical



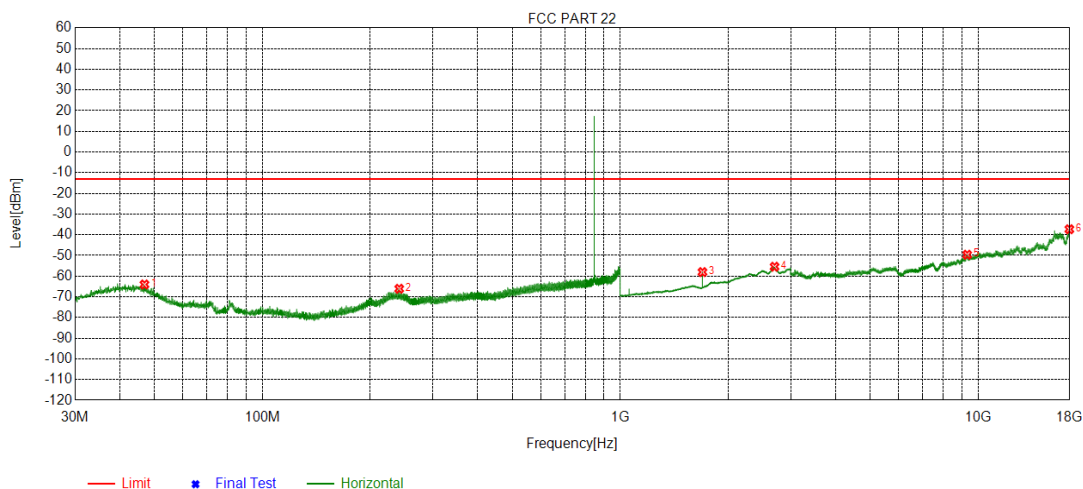
Suspected Data List

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	47.1699	-68.71	-70.52	-13.00	57.52	-1.81	Vertical
2	113.3272	-71.02	-64.90	-13.00	51.90	6.12	Vertical
3	1673.334	-57.38	-52.62	-13.00	39.62	4.76	Vertical
4	2997.999	-69.58	-55.90	-13.00	42.90	13.68	Vertical
5	9311.710	-77.98	-49.43	-13.00	36.43	28.55	Vertical
6	17986.99	-77.28	-32.92	-13.00	19.92	44.36	Vertical



7.1.2.1.3 Test Channel = HCH

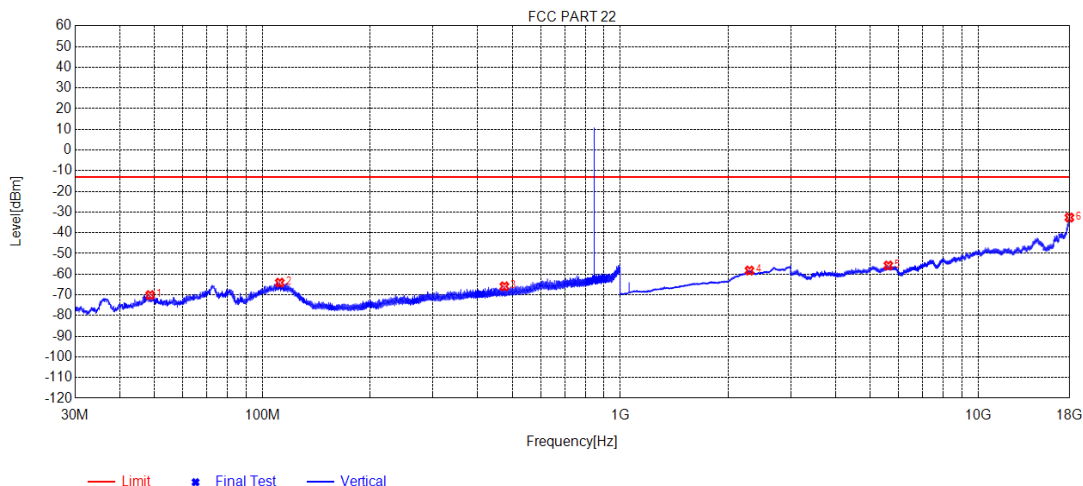
7.1.2.1.3.1 Horizontal



Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	46.8788	-69.98	-64.03	-13.00	51.03	5.95	Horizontal
2	241.3736	-68.85	-66.09	-13.00	53.09	2.76	Horizontal
3	1697.739	-61.60	-58.03	-13.00	45.03	3.57	Horizontal
4	2699.539	-68.35	-55.43	-13.00	42.43	12.92	Horizontal
5	9321.710	-77.94	-49.64	-13.00	36.64	28.30	Horizontal
6	17985.49	-76.91	-37.32	-13.00	24.32	39.59	Horizontal



7.1.2.1.3.2 Vertical



Suspected Data List

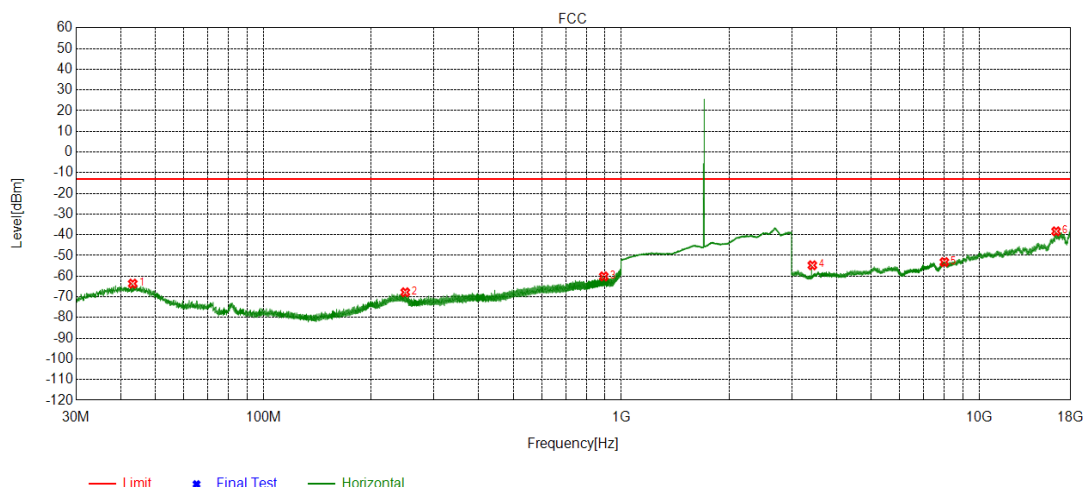
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	48.6249	-68.65	-70.14	-13.00	57.14	-1.49	Vertical
2	111.9691	-70.37	-64.13	-13.00	51.13	6.24	Vertical
3	474.7672	-70.07	-65.90	-13.00	52.90	4.17	Vertical
4	2297.859	-68.49	-58.26	-13.00	45.26	10.23	Vertical
5	5612.087	-77.18	-55.81	-13.00	42.81	21.37	Vertical
6	17987.49	-77.00	-32.63	-13.00	19.63	44.37	Vertical



7.1.2.2 Test Band = GSM 1900

7.1.2.2.1 Test Channel = LCH

7.1.2.2.1.1 Horizontal



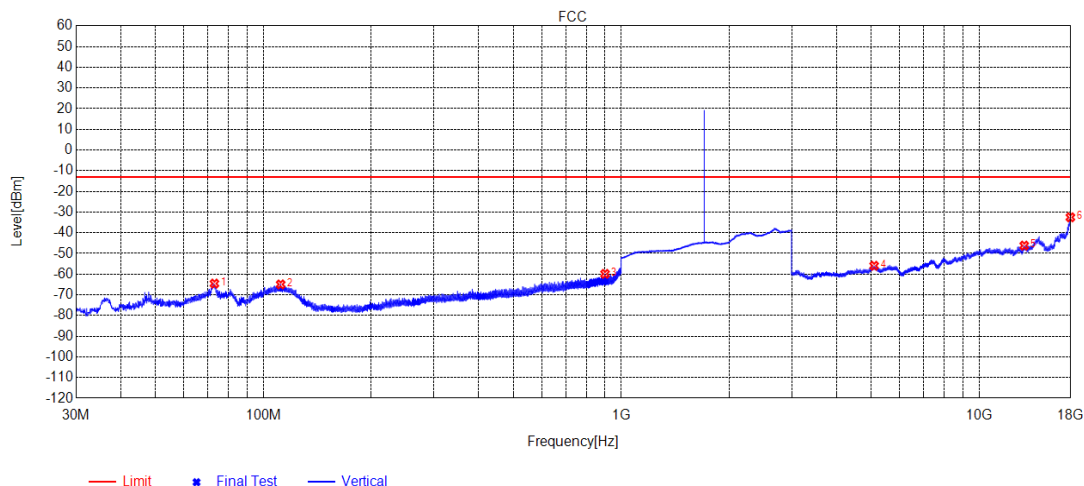
Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	43.1927	-70.55	-63.62	-13.00	50.62	6.93	Horizontal
2	249.3765	-70.38	-67.80	-13.00	54.80	2.58	Horizontal
3	894.2647	-71.93	-60.13	-13.00	47.13	11.80	Horizontal
4	3420.514	-71.83	-54.74	-13.00	41.74	17.09	Horizontal
5	7996.666	-77.81	-53.20	-13.00	40.20	24.61	Horizontal
6	16406.44	-75.74	-38.32	-13.00	25.32	37.42	Horizontal



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7.1.2.2.1.2 Vertical



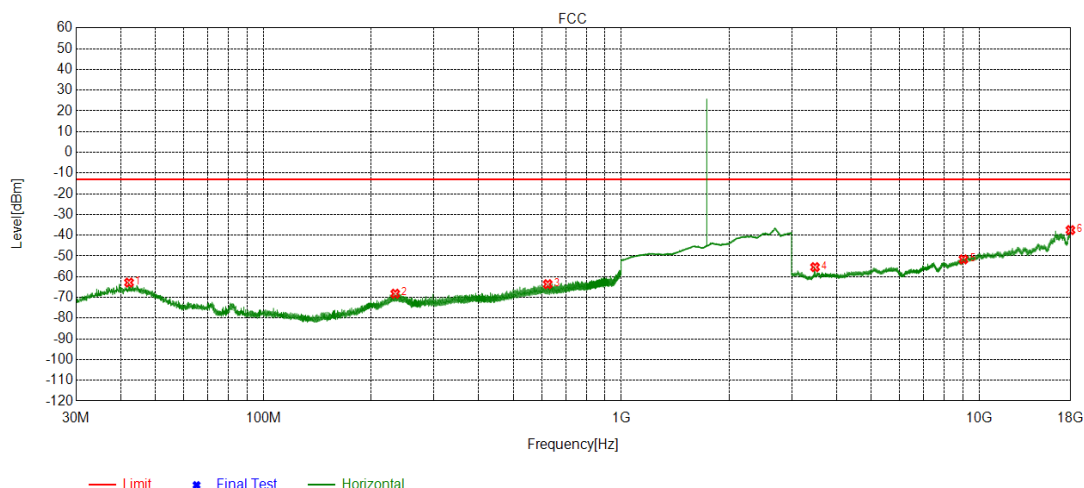
Suspected Data List

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	73.0702	-65.61	-64.55	-13.00	51.55	1.06	Vertical
2	111.8721	-71.21	-64.96	-13.00	51.96	6.25	Vertical
3	901.5401	-71.21	-59.85	-13.00	46.85	11.36	Vertical
4	5089.569	-77.17	-55.94	-13.00	42.94	21.23	Vertical
5	13367.34	-78.35	-46.19	-13.00	33.19	32.16	Vertical
6	17989.49	-76.93	-32.51	-13.00	19.51	44.42	Vertical



7.1.2.2.2 Test Channel = MCH

7.1.2.2.2.1 Horizontal

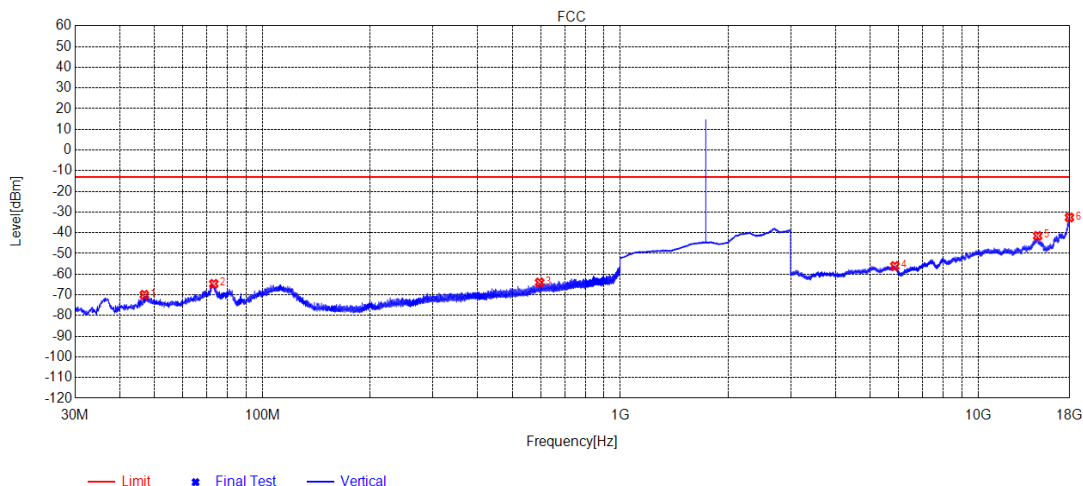


Suspected Data List

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	42.1741	-69.71	-62.84	-13.00	49.84	6.87	Horizontal
2	233.7587	-71.02	-68.21	-13.00	55.21	2.81	Horizontal
3	623.5727	-71.37	-63.62	-13.00	50.62	7.75	Horizontal
4	3480.016	-73.26	-55.38	-13.00	42.38	17.88	Horizontal
5	9041.701	-77.94	-51.64	-13.00	38.64	26.30	Horizontal
6	17996.49	-77.33	-37.50	-13.00	24.50	39.83	Horizontal



7.1.2.2.2.2 Vertical



Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	46.8303	-68.10	-69.98	-13.00	56.98	-1.88	Vertical
2	73.2157	-65.71	-64.68	-13.00	51.68	1.03	Vertical
3	595.6353	-71.45	-64.03	-13.00	51.03	7.42	Vertical
4	5851.095	-77.67	-56.05	-13.00	43.05	21.62	Vertical
5	14667.38	-77.26	-41.52	-13.00	28.52	35.74	Vertical
6	17995.99	-77.14	-32.58	-13.00	19.58	44.56	Vertical

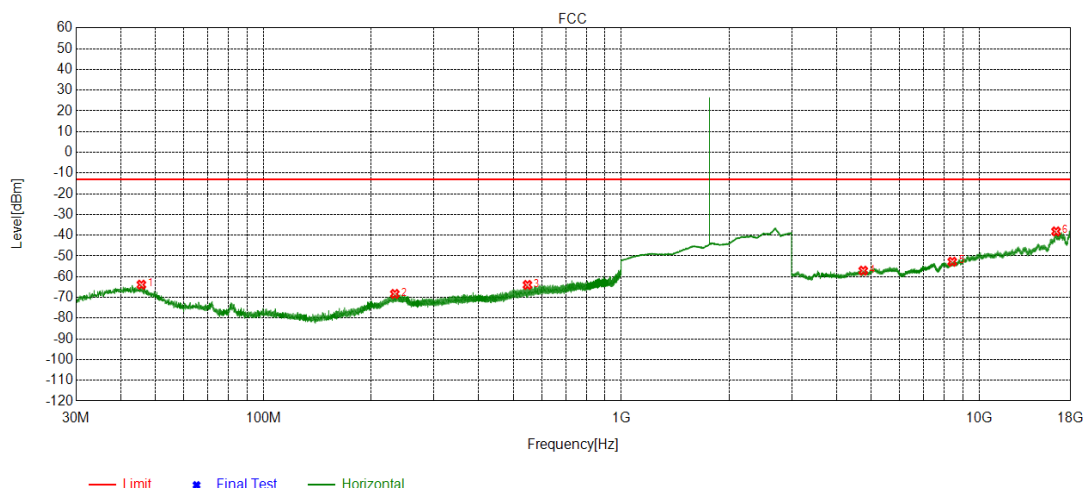


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7.1.2.2.3 Test Channel = HCH

7.1.2.2.3.1 Horizontal

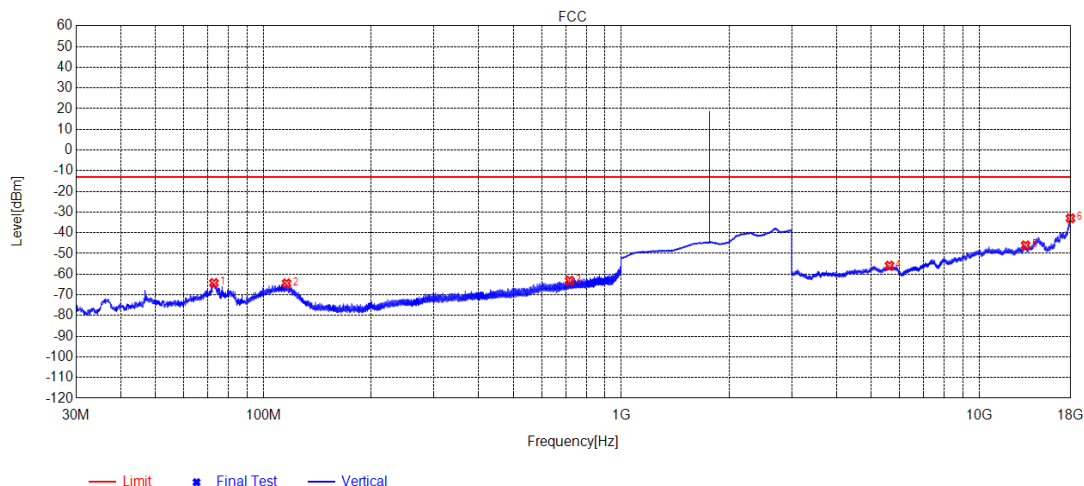


Suspected Data List

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	45.6663	-70.49	-63.85	-13.00	50.85	6.64	Horizontal
2	233.1282	-71.12	-68.30	-13.00	55.30	2.82	Horizontal
3	547.2299	-70.29	-63.96	-13.00	50.96	6.33	Horizontal
4	4745.058	-77.08	-57.09	-13.00	44.09	19.99	Horizontal
5	8413.180	-76.77	-52.75	-13.00	39.75	24.02	Horizontal
6	16404.44	-75.59	-38.14	-13.00	25.14	37.45	Horizontal



7.1.2.2.3.2 Vertical



Suspected Data List

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	72.8276	-65.36	-64.26	-13.00	51.26	1.10	Vertical
2	116.2373	-70.30	-64.44	-13.00	51.44	5.86	Vertical
3	717.8614	-71.89	-63.13	-13.00	50.13	8.76	Vertical
4	5619.087	-77.23	-55.88	-13.00	42.88	21.35	Vertical
5	13490.34	-78.93	-46.07	-13.00	33.07	32.86	Vertical
6	17998.50	-77.60	-32.98	-13.00	19.98	44.62	Vertical

REMARK:

- 1) The disturbance above 12.75GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the worst case data had been displayed.
- 2) We have tested all modulation and all Bandwidth , but only the worst case data presented in this report.



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
GSM 850	GSM/TM1	LCH	TN	VL	-2.78	-0.003369	PASS
				VN	-3.87	-0.004701	PASS
				VH	-2.32	-0.002820	PASS
		MCH	TN	VL	-1.45	-0.001737	PASS
				VN	-2.78	-0.003319	PASS
				VH	-4.00	-0.004785	PASS
		HCH	TN	VL	-2.84	-0.003347	PASS
				VN	-3.49	-0.004108	PASS
				VH	-5.49	-0.006466	PASS
	GSM/TM2	LCH	TN	VL	4.16	0.005053	PASS
				VN	5.71	0.006934	PASS
				VH	5.23	0.006346	PASS
		MCH	TN	VL	3.16	0.003782	PASS
				VN	1.68	0.002007	PASS
				VH	1.87	0.002238	PASS
		HCH	TN	VL	-0.06	-0.000076	PASS
				VN	1.26	0.001483	PASS
				VH	1.32	0.001560	PASS



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	3.78	0.002042	PASS
				VN	5.10	0.002757	PASS
				VH	3.20	0.001728	PASS
		MCH	TN	VL	2.87	0.001528	PASS
				VN	2.65	0.001408	PASS
				VH	6.97	0.003709	PASS
		HCH	TN	VL	-0.16	-0.000085	PASS
				VN	-0.13	-0.000068	PASS
				VH	2.87	0.001505	PASS
	GSM/TM2	LCH	TN	VL	-1.84	-0.000995	PASS
				VN	6.13	0.003315	PASS
				VH	1.19	0.000646	PASS
		MCH	TN	VL	-1.36	-0.000721	PASS
				VN	3.58	0.001906	PASS
				VH	0.68	0.000361	PASS
		HCH	TN	VL	-6.75	-0.003533	PASS
				VN	-8.01	-0.004193	PASS
				VH	-5.36	-0.002806	PASS



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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	GSM/TM1	LCH	VN	-30	-5.97	-0.007247	PASS
				-20	-4.62	-0.005602	PASS
				-10	-3.81	-0.004622	PASS
				0	-4.97	-0.006033	PASS
				10	-2.74	-0.003330	PASS
				20	-1.90	-0.002311	PASS
				30	-2.00	-0.002429	PASS
				40	-4.13	-0.005014	PASS
				50	-3.36	-0.004074	PASS
		MCH	VN	-30	-3.13	-0.003743	PASS
				-20	-0.84	-0.001003	PASS
				-10	1.00	0.001196	PASS
				0	0.06	0.000077	PASS
				10	-4.26	-0.005094	PASS
				20	-3.55	-0.004245	PASS
				30	-2.55	-0.003049	PASS
				40	-2.26	-0.002701	PASS
				50	-3.45	-0.004129	PASS
		HCH	VN	-30	-3.84	-0.004526	PASS
				-20	-0.45	-0.000533	PASS
				-10	-2.62	-0.003081	PASS
				0	-5.23	-0.006162	PASS
				10	-5.62	-0.006618	PASS
				20	-1.81	-0.002130	PASS
				30	1.94	0.002282	PASS
				40	-3.10	-0.003652	PASS
				50	-1.78	-0.002092	PASS



Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM 850	GSM/TM2	LCH	VN	-30	4.33	0.005249	PASS
				-20	3.00	0.003643	PASS
				-10	5.20	0.006307	PASS
				0	4.65	0.005641	PASS
				10	2.74	0.003330	PASS
				20	3.52	0.004270	PASS
				30	5.10	0.006189	PASS
				40	3.16	0.003839	PASS
				50	0.94	0.001136	PASS
		MCH	VN	-30	2.29	0.002740	PASS
				-20	4.55	0.005441	PASS
				-10	0.52	0.000617	PASS
				0	1.49	0.001775	PASS
				10	2.78	0.003319	PASS
				20	4.04	0.004824	PASS
				30	1.16	0.001389	PASS
				40	1.07	0.001274	PASS
				50	1.49	0.001775	PASS
		HCH	VN	-30	1.36	0.001598	PASS
				-20	3.94	0.004641	PASS
				-10	-1.13	-0.001331	PASS
				0	-0.65	-0.000761	PASS
				10	0.29	0.000342	PASS
				20	-0.03	-0.000038	PASS
				30	-0.42	-0.000494	PASS
				40	0.48	0.000571	PASS
				50	1.23	0.001445	PASS



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GSM 1900	GSM/TM1	LCH	VN	-30	3.33	0.001797	PASS
				-20	5.00	0.002705	PASS
				-10	2.16	0.001169	PASS
				0	3.84	0.002077	PASS
				10	0.97	0.000523	PASS
				20	3.68	0.001989	PASS
				30	3.45	0.001867	PASS
				40	3.10	0.001675	PASS
				50	4.46	0.002408	PASS
		MCH	VN	-30	5.36	0.002851	PASS
				-20	2.00	0.001065	PASS
				-10	-0.10	-0.000052	PASS
				0	4.20	0.002233	PASS
				10	2.13	0.001133	PASS
				20	3.13	0.001666	PASS
				30	3.33	0.001769	PASS
				40	2.45	0.001305	PASS
				50	0.58	0.000309	PASS
		HCH	VN	-30	0.10	0.000051	PASS
				-20	-1.10	-0.000575	PASS
				-10	-1.26	-0.000659	PASS
				0	-0.03	-0.000017	PASS
				10	-5.91	-0.003094	PASS
				20	-1.81	-0.000947	PASS
				30	-3.16	-0.001657	PASS
				40	-3.62	-0.001893	PASS
				50	1.61	0.000845	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	GSM/TM2	LCH	VN	-30	0.87	0.000471	PASS
				-20	1.26	0.000681	PASS
				-10	0.90	0.000489	PASS
				0	5.91	0.003193	PASS
				10	-1.19	-0.000646	PASS
				20	-0.84	-0.000454	PASS
				30	-2.03	-0.001099	PASS
				40	-1.23	-0.000663	PASS
				50	1.68	0.000907	PASS
		MCH	VN	-30	2.52	0.001340	PASS
				-20	3.20	0.001700	PASS
				-10	0.61	0.000326	PASS
				0	0.32	0.000172	PASS
				10	2.68	0.001425	PASS
				20	0.42	0.000223	PASS
				30	-1.55	-0.000824	PASS
				40	-3.16	-0.001683	PASS
				50	-2.52	-0.001340	PASS
		HCH	VN	-30	-8.78	-0.004598	PASS
				-20	-13.75	-0.007202	PASS
				-10	-8.52	-0.004463	PASS
				0	-7.55	-0.003956	PASS
				10	-7.30	-0.003821	PASS
				20	-9.75	-0.005105	PASS
				30	-6.62	-0.003466	PASS
				40	-4.42	-0.002316	PASS
				50	-6.17	-0.003229	PASS

The End



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