



# Appendix B

## GSM 850 & 1900



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## 1. Effective (Isotropic) Radiated Power Output Data

### 1.1. Test Result for Down Ant

Band	Channel	Slot	Conducted Power (dBm)	ERP (dBm)	Limit(dBm)	Verdict
GSM850	128	---	32.48	24.77	38.45	PASS
GSM850	190	---	32.47	24.76	38.45	PASS
GSM850	251	---	32.46	24.75	38.45	PASS
EGPRS850 (GMSK)	128	1	32.43	24.72	38.45	PASS
EGPRS850 (GMSK)	128	2	31.71	24.00	38.45	PASS
EGPRS850 (GMSK)	128	3	30.01	22.30	38.45	PASS
EGPRS850 (GMSK)	128	4	28.90	21.19	38.45	PASS
EGPRS850 (GMSK)	190	1	32.50	24.79	38.45	PASS
EGPRS850 (GMSK)	190	2	31.78	24.07	38.45	PASS
EGPRS850 (GMSK)	190	3	30.01	22.30	38.45	PASS
EGPRS850 (GMSK)	190	4	29.01	21.30	38.45	PASS
EGPRS850 (GMSK)	251	1	32.47	24.76	38.45	PASS
EGPRS850 (GMSK)	251	2	31.81	24.10	38.45	PASS
EGPRS850 (GMSK)	251	3	30.02	22.31	38.45	PASS
EGPRS850 (GMSK)	251	4	28.96	21.25	38.45	PASS
EGPRS850 (8PSK)	128	1	26.69	18.98	38.45	PASS
EGPRS850 (8PSK)	128	2	25.35	17.64	38.45	PASS
EGPRS850 (8PSK)	128	3	22.90	15.19	38.45	PASS
EGPRS850 (8PSK)	128	4	21.96	14.25	38.45	PASS
EGPRS850 (8PSK)	190	1	26.88	19.17	38.45	PASS
EGPRS850 (8PSK)	190	2	25.45	17.74	38.45	PASS
EGPRS850 (8PSK)	190	3	23.13	15.42	38.45	PASS
EGPRS850 (8PSK)	190	4	22.04	14.33	38.45	PASS
EGPRS850 (8PSK)	251	1	27.13	19.42	38.45	PASS
EGPRS850 (8PSK)	251	2	25.72	18.01	38.45	PASS
EGPRS850 (8PSK)	251	3	23.49	15.78	38.45	PASS
EGPRS850 (8PSK)	251	4	22.26	14.55	38.45	PASS



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Band	Channel	Slot	Conducted Power (dBm)	EIRP (dBm)	Limit(dBm)	Verdict
GSM1900	512	---	29.45	28.24	33.00	PASS
GSM1900	661	---	29.49	28.28	33.00	PASS
GSM1900	810	---	29.43	28.22	33.00	PASS
EGPRS1900 (GMSK)	512	1	29.46	28.25	33.00	PASS
EGPRS1900 (GMSK)	512	2	28.75	27.54	33.00	PASS
EGPRS1900 (GMSK)	512	3	27.08	25.87	33.00	PASS
EGPRS1900 (GMSK)	512	4	25.88	24.67	33.00	PASS
EGPRS1900 (GMSK)	661	1	29.49	28.28	33.00	PASS
EGPRS1900 (GMSK)	661	2	28.72	27.51	33.00	PASS
EGPRS1900 (GMSK)	661	3	27.08	25.87	33.00	PASS
EGPRS1900 (GMSK)	661	4	25.99	24.78	33.00	PASS
EGPRS1900 (GMSK)	810	1	29.40	28.19	33.00	PASS
EGPRS1900 (GMSK)	810	2	28.72	27.51	33.00	PASS
EGPRS1900 (GMSK)	810	3	27.07	25.86	33.00	PASS
EGPRS1900 (GMSK)	810	4	26.07	24.86	33.00	PASS
EGPRS1900 (8PSK)	512	1	25.92	24.71	33.00	PASS
EGPRS1900 (8PSK)	512	2	24.53	23.32	33.00	PASS
EGPRS1900 (8PSK)	512	3	22.17	20.96	33.00	PASS
EGPRS1900 (8PSK)	512	4	20.90	19.69	33.00	PASS
EGPRS1900 (8PSK)	661	1	25.98	24.77	33.00	PASS
EGPRS1900 (8PSK)	661	2	24.56	23.35	33.00	PASS
EGPRS1900 (8PSK)	661	3	22.19	20.98	33.00	PASS
EGPRS1900 (8PSK)	661	4	20.89	19.68	33.00	PASS
EGPRS1900 (8PSK)	810	1	26.01	24.80	33.00	PASS
EGPRS1900 (8PSK)	810	2	24.59	23.38	33.00	PASS
EGPRS1900 (8PSK)	810	3	22.19	20.98	33.00	PASS
EGPRS1900 (8PSK)	810	4	20.94	19.73	33.00	PASS



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**1.2. Test Result for Up Ant**

Band	Channel	Slot	Conducted Power (dBm)	ERP (dBm)	Limit(dBm)	Verdict
GSM850	128	---	32.35	25.70	38.45	PASS
GSM850	190	---	32.36	25.71	38.45	PASS
GSM850	251	---	32.32	25.67	38.45	PASS
EGPRS850 (GMSK)	128	1	32.32	25.67	38.45	PASS
EGPRS850 (GMSK)	128	2	31.64	24.99	38.45	PASS
EGPRS850 (GMSK)	128	3	29.90	23.25	38.45	PASS
EGPRS850 (GMSK)	128	4	28.78	22.13	38.45	PASS
EGPRS850 (GMSK)	190	1	32.33	25.68	38.45	PASS
EGPRS850 (GMSK)	190	2	31.66	25.01	38.45	PASS
EGPRS850 (GMSK)	190	3	29.91	23.26	38.45	PASS
EGPRS850 (GMSK)	190	4	28.82	22.17	38.45	PASS
EGPRS850 (GMSK)	251	1	32.00	25.35	38.45	PASS
EGPRS850 (GMSK)	251	2	31.61	24.96	38.45	PASS
EGPRS850 (GMSK)	251	3	29.82	23.17	38.45	PASS
EGPRS850 (GMSK)	251	4	28.77	22.12	38.45	PASS
EGPRS850 (8PSK)	128	1	26.55	19.90	38.45	PASS
EGPRS850 (8PSK)	128	2	25.44	18.79	38.45	PASS
EGPRS850 (8PSK)	128	3	23.24	16.59	38.45	PASS
EGPRS850 (8PSK)	128	4	21.78	15.13	38.45	PASS
EGPRS850 (8PSK)	190	1	26.50	19.85	38.45	PASS
EGPRS850 (8PSK)	190	2	25.35	18.70	38.45	PASS
EGPRS850 (8PSK)	190	3	23.20	16.55	38.45	PASS
EGPRS850 (8PSK)	190	4	21.89	15.24	38.45	PASS
EGPRS850 (8PSK)	251	1	26.71	20.06	38.45	PASS
EGPRS850 (8PSK)	251	2	25.56	18.91	38.45	PASS
EGPRS850 (8PSK)	251	3	23.49	16.84	38.45	PASS
EGPRS850 (8PSK)	251	4	21.98	15.33	38.45	PASS

Remark:

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

$$ERP [dBm] = \text{Conducted Power [dBm]} + \text{Gain [dBi]}$$

$$EIRP [dBm] = \text{Conducted Power [dBm]} + \text{Gain [dBi]}$$



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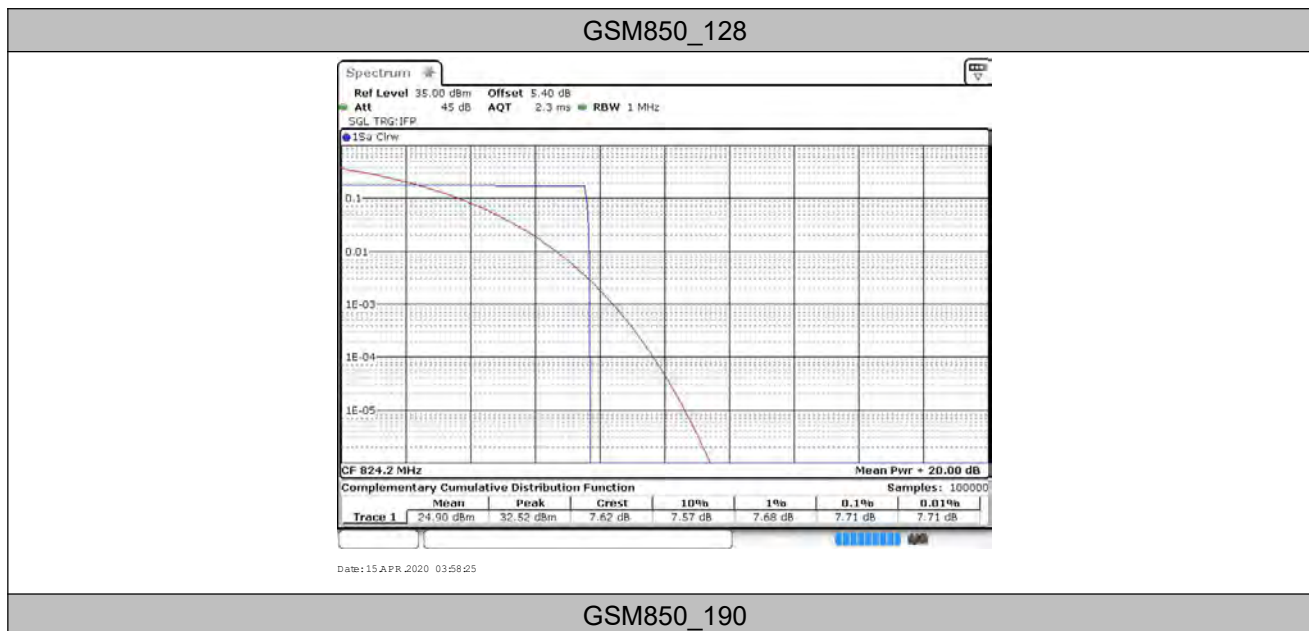


## 2. Peak-to-Average Ratio

### 2.1. Test Result

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
GSM850	128	7.71	13	PASS
GSM850	190	7.65	13	PASS
GSM850	251	7.74	13	PASS
EGPRS850	128	10.55	13	PASS
EGPRS850	190	10.64	13	PASS
EGPRS850	251	10.72	13	PASS
GSM1900	512	7.68	13	PASS
GSM1900	661	7.68	13	PASS
GSM1900	810	7.68	13	PASS
EGPRS1900	512	10.35	13	PASS
EGPRS1900	661	10.12	13	PASS
EGPRS1900	810	10.00	13	PASS

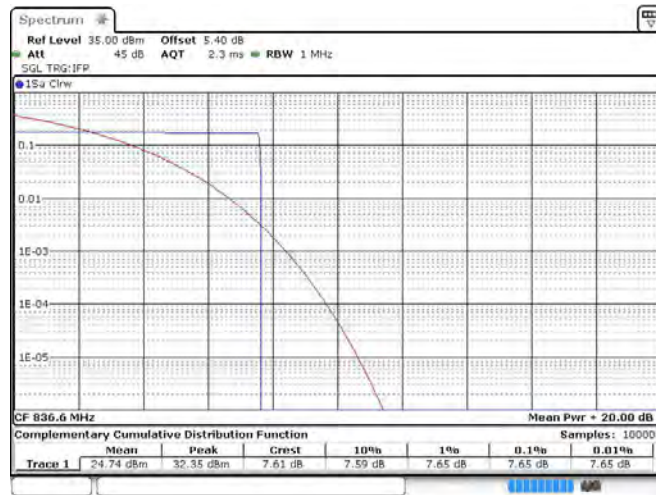
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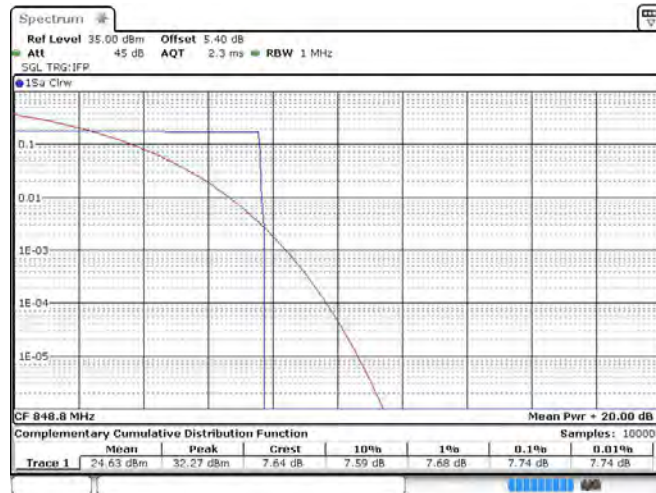
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Date: 15 APR 2020 03:58:53

**GSM850\_251**



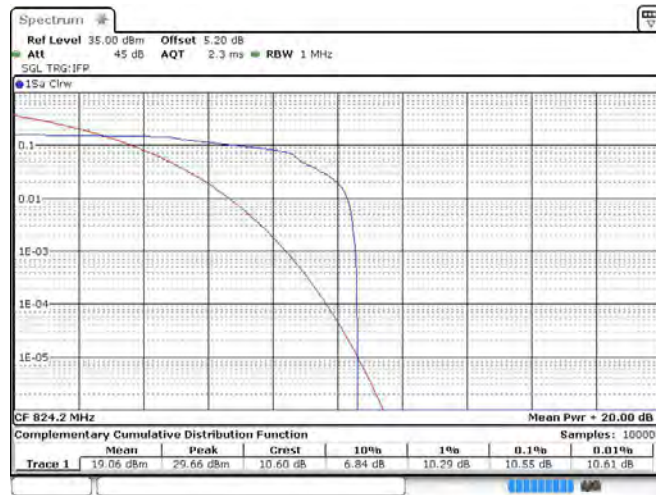
Date: 15 APR 2020 03:59:20

**EGPRS850\_128**



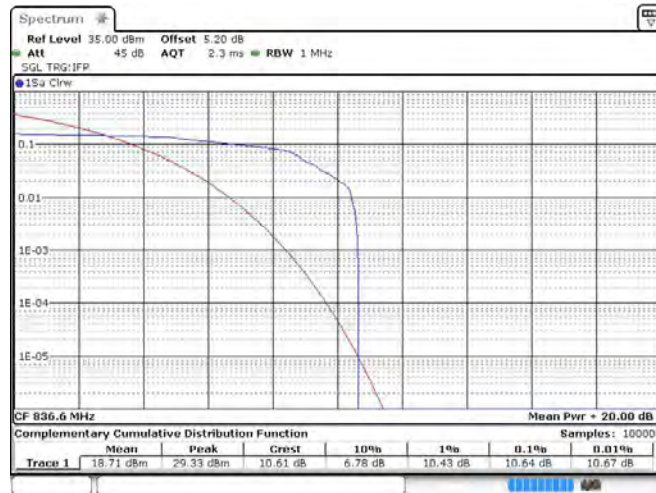
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Date: 15.APR.2020 03:24:12

**EGPRS850\_190**

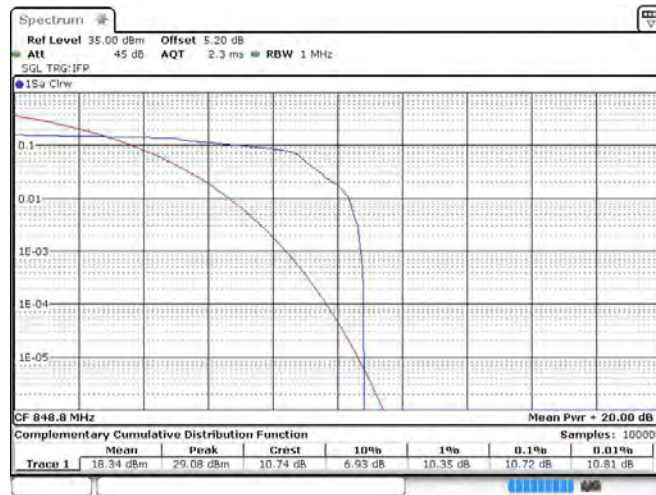


Date: 15.APR.2020 03:24:39

**EGPRS850\_251**

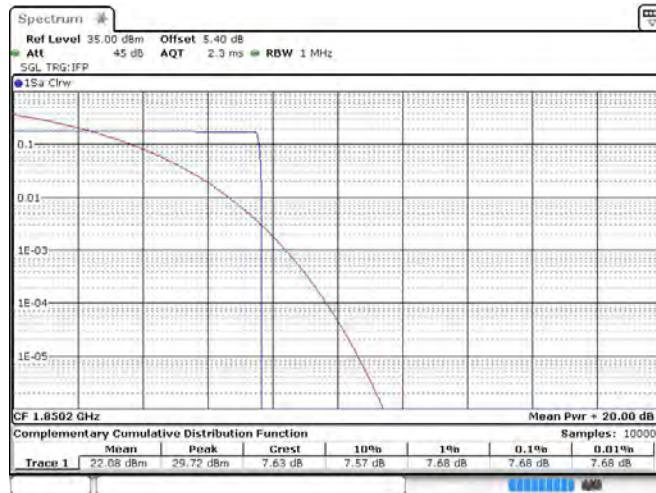


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GSM1900\_512

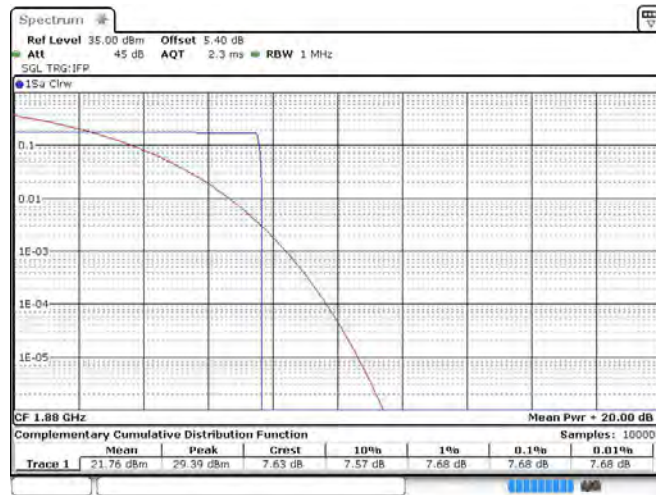


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GSM1900\_661

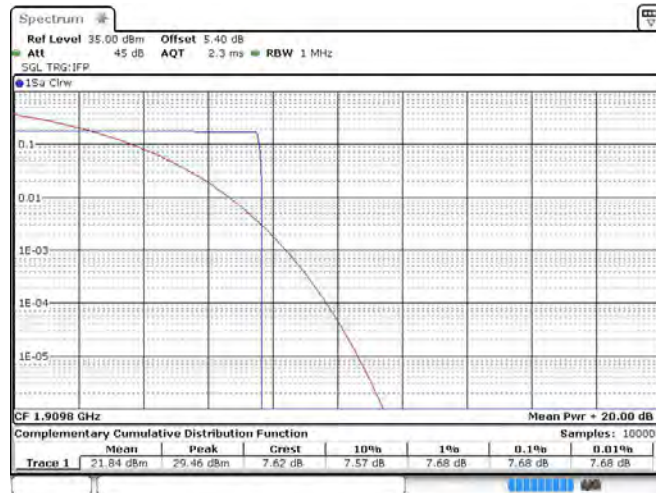


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Date: 15 APR 2020 03:49:33

**GSM1900\_810**

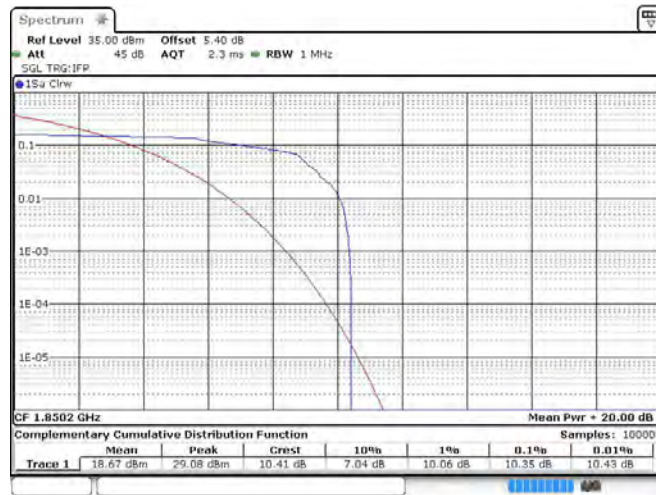


Date: 15 APR 2020 03:50:00

**EGPRS1900\_512**

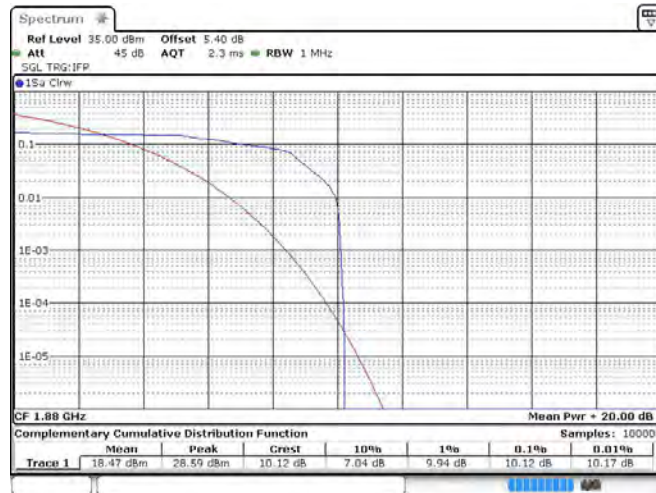


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**EGPRS1900\_661**

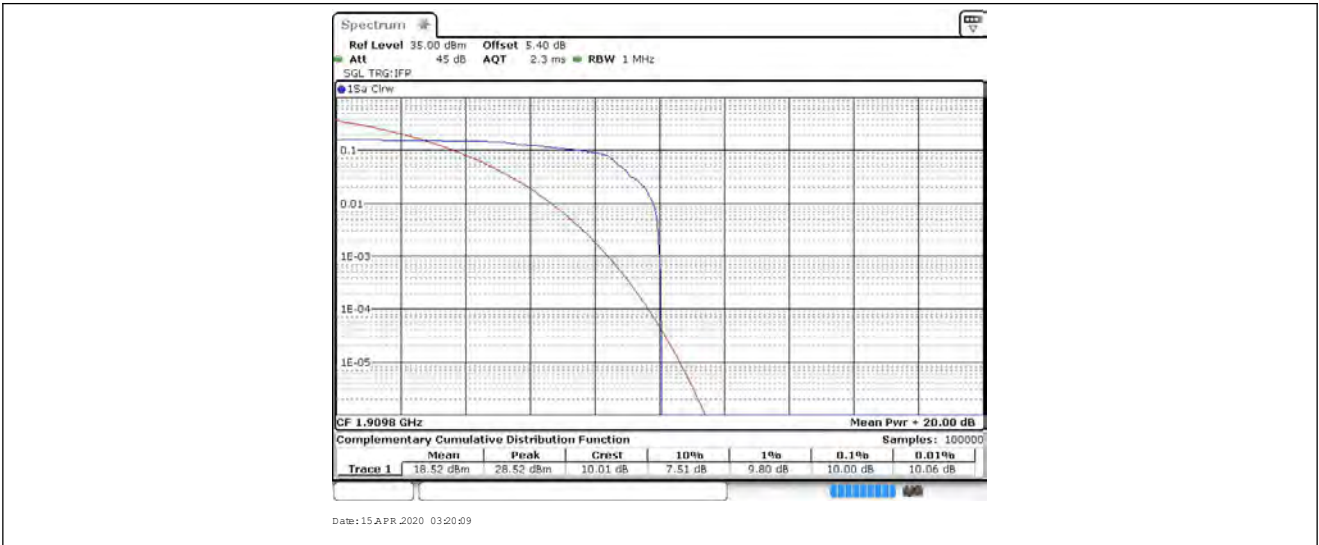


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**EGPRS1900\_810**



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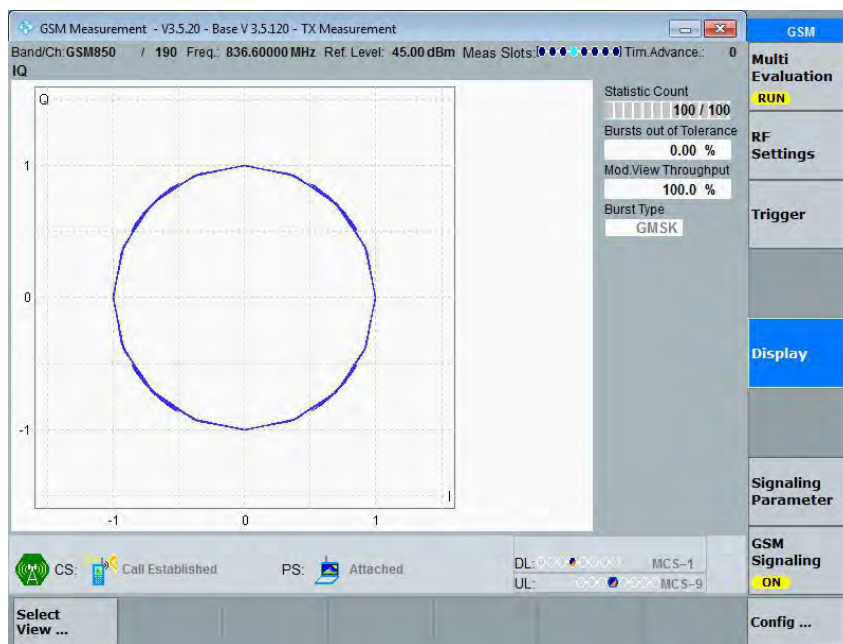
### 3. Modulation Characteristics

#### 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



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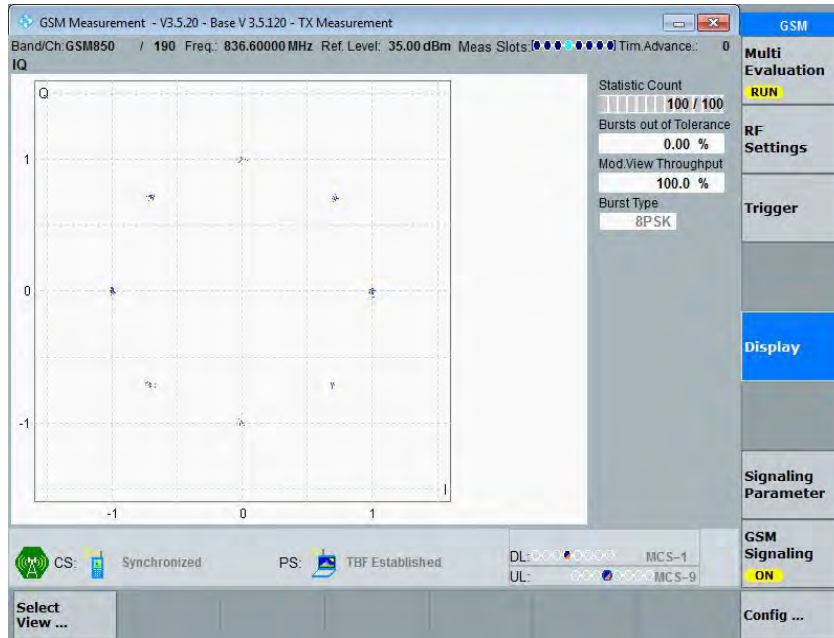
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**3.1.1.2. Test Mode = GSM/TM2**

**3.1.1.2.1. Test Channel = MCH**



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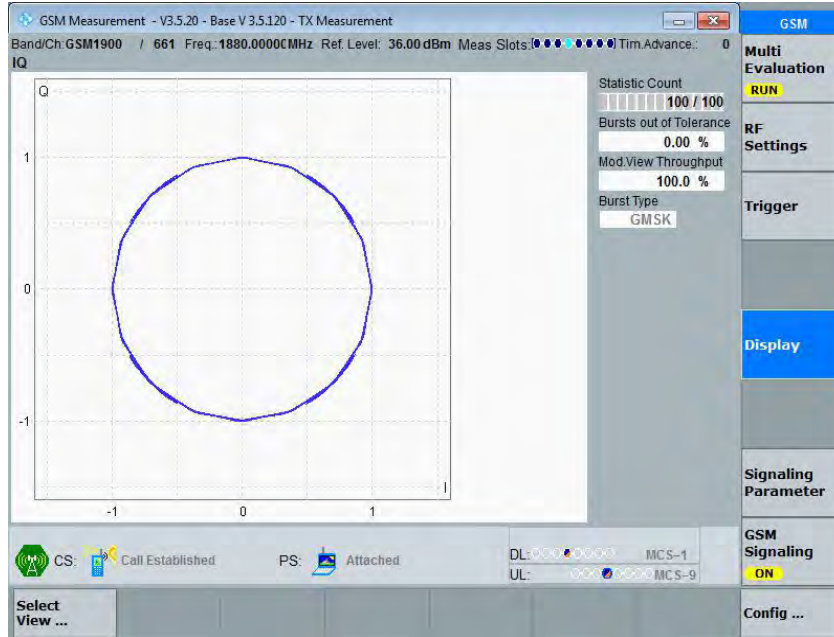
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**3.1.2. Test Band = GSM 1900**

**3.1.2.1. Test Mode = GSM/TM1**

**3.1.2.1.1. Test Channel = MCH**



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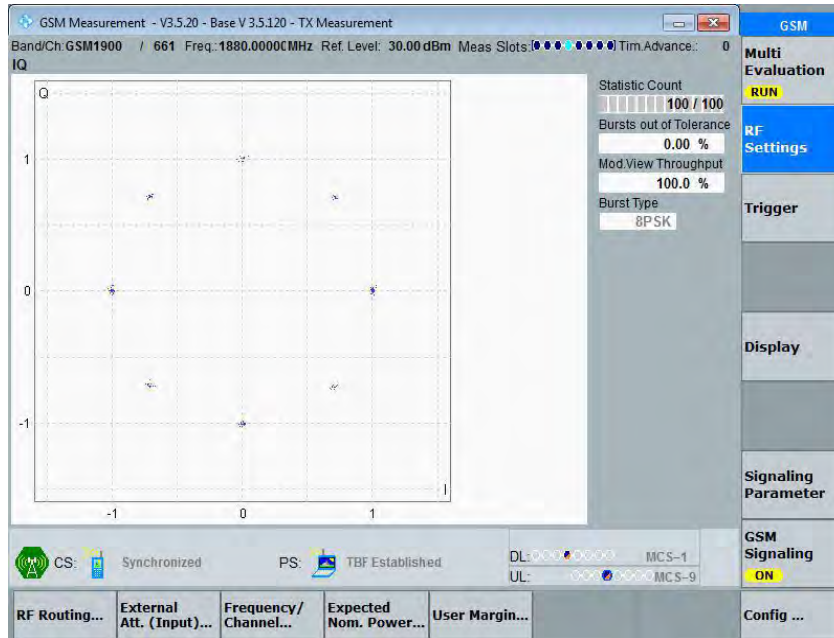
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**3.1.2.2. Test Mode = GSM/TM2**

**3.1.2.2.1. Test Channel = MCH**



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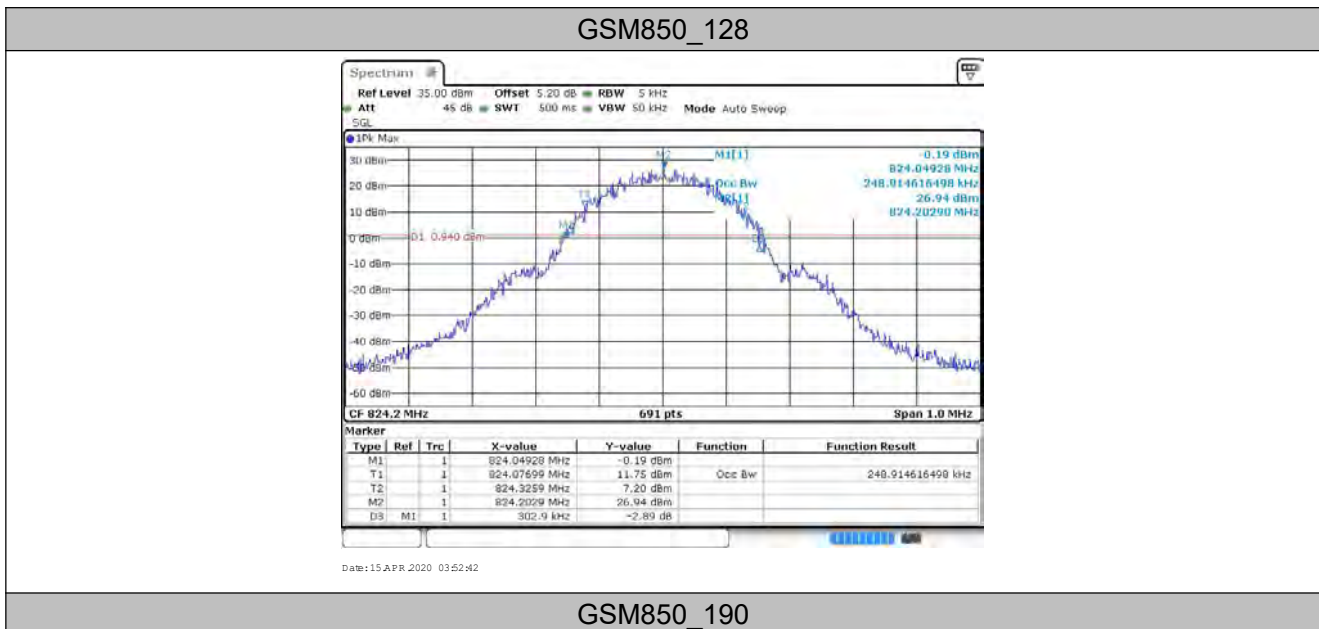


## 4. 26dB Bandwidth and Occupied Bandwidth

### 4.1. Test Result

Band	Channel	Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)	Limit(kHz)	Verdict
GSM850	128	248.91	302.90	---	PASS
GSM850	190	246.02	314.49	---	PASS
GSM850	251	246.02	301.45	---	PASS
EGPRS850	128	246.02	301.45	---	PASS
EGPRS850	190	250.36	305.80	---	PASS
EGPRS850	251	244.57	301.45	---	PASS
GSM1900	512	243.13	305.80	---	PASS
GSM1900	661	247.47	314.49	---	PASS
GSM1900	810	247.47	298.55	---	PASS
EGPRS1900	512	251.81	318.84	---	PASS
EGPRS1900	661	254.70	302.90	---	PASS
EGPRS1900	810	248.91	311.59	---	PASS

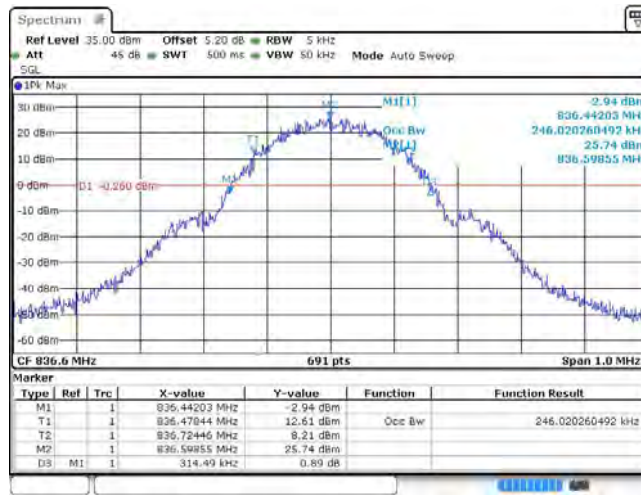
### 4.2. Test Plots



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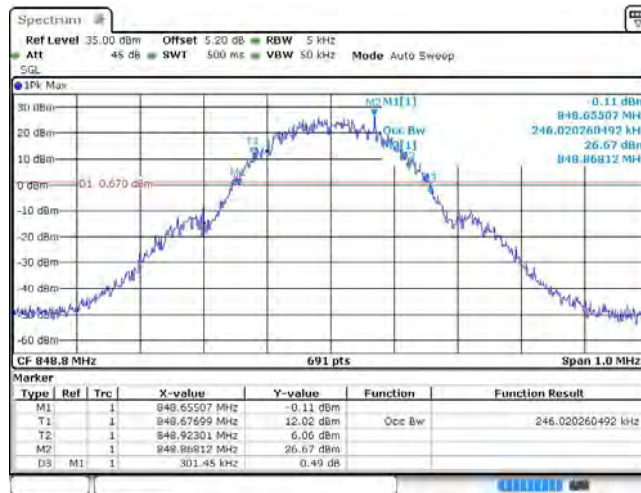
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Date: 15 APR 2020 03:53:07

**GSM850\_251**



Date: 15 APR 2020 03:53:33

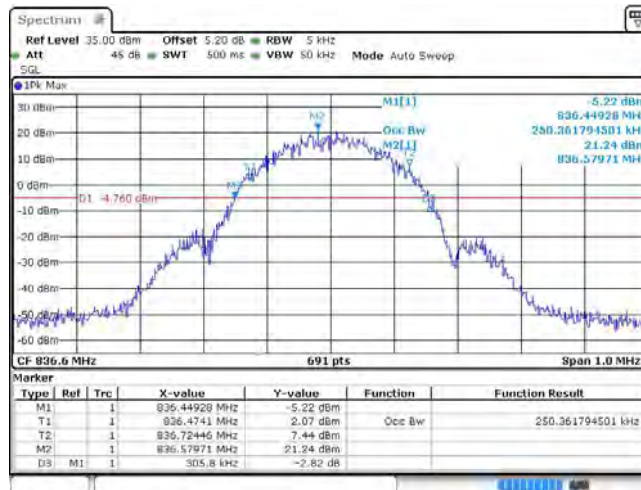
**EGPRS850\_128**



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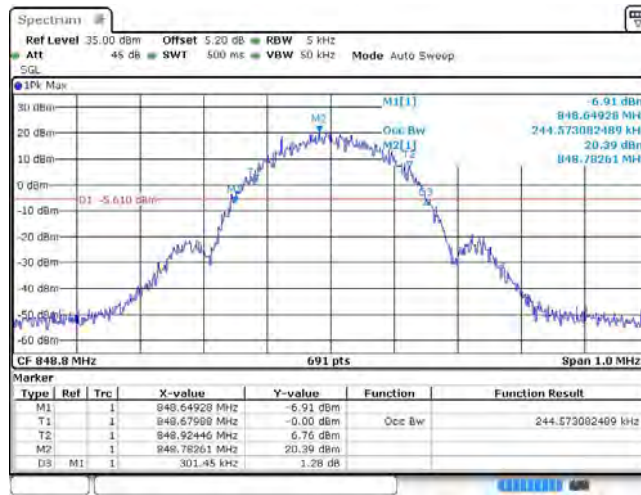
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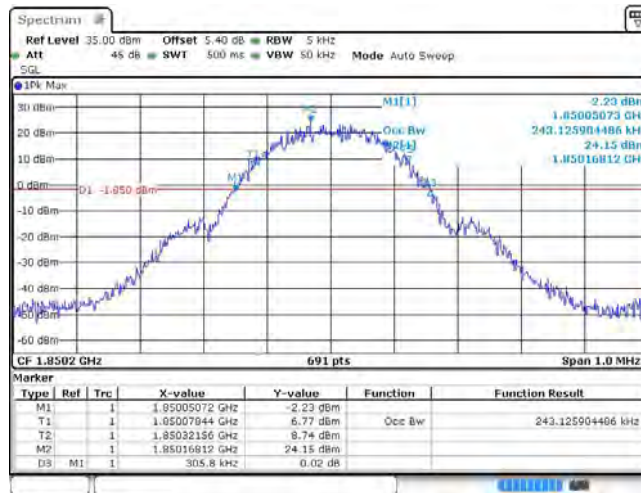
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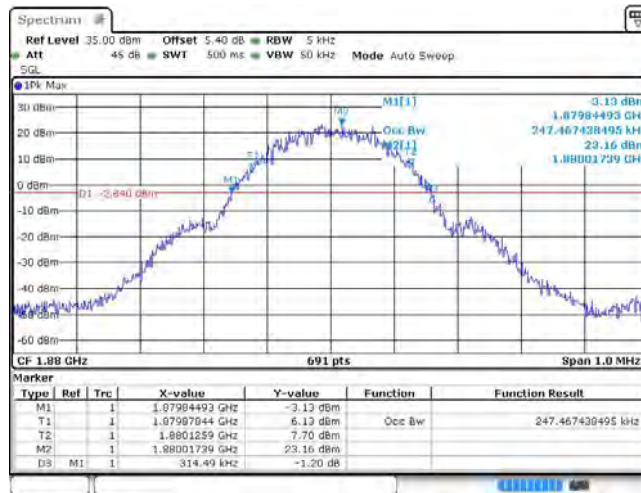
GSM1900\_512



GSM1900\_661



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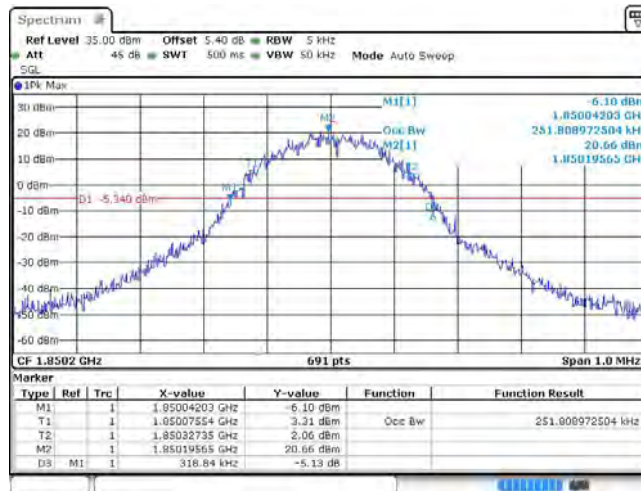
**GSM1900\_810**



**EGPRS1900\_512**

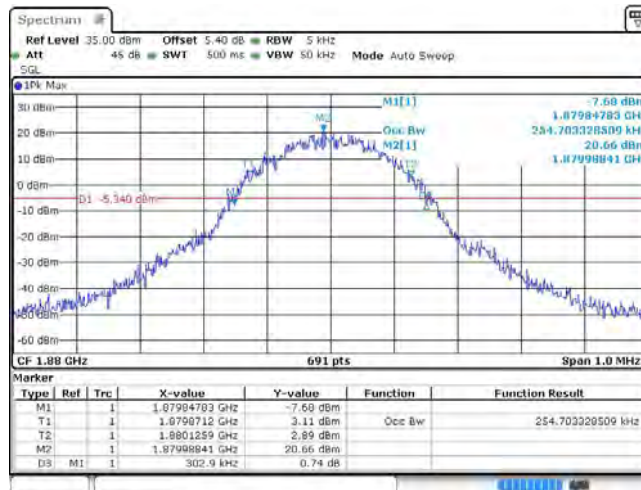


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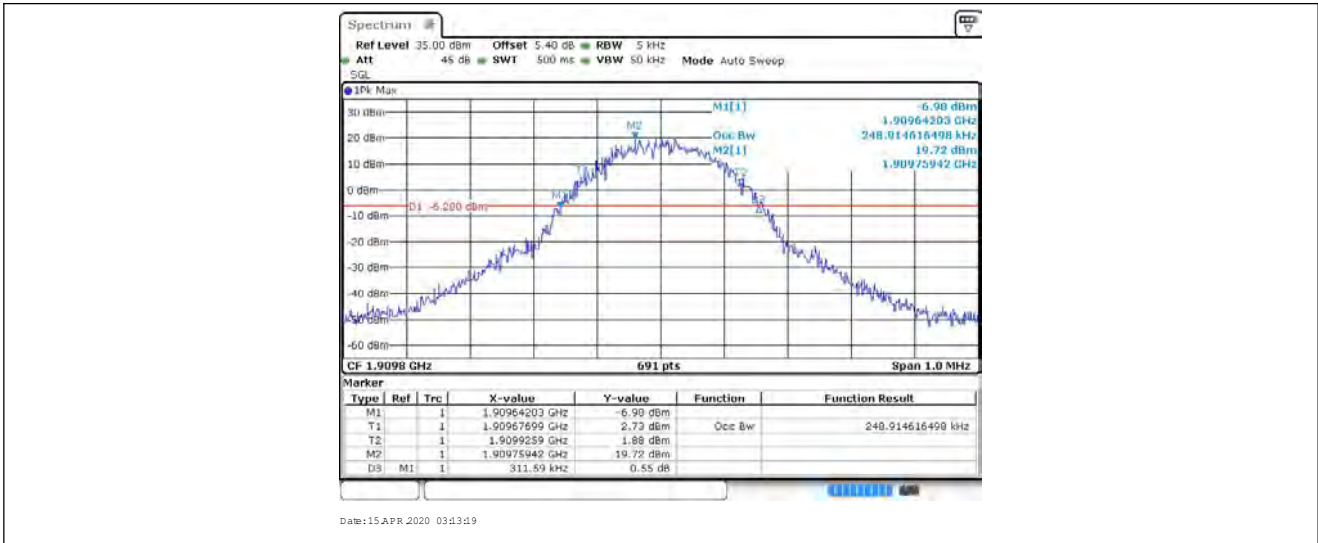


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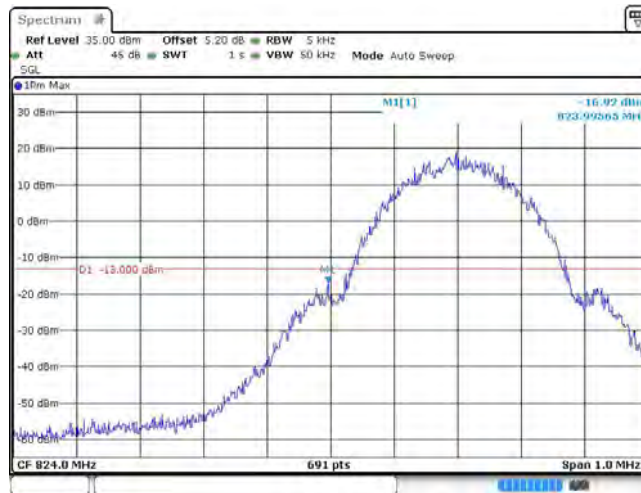
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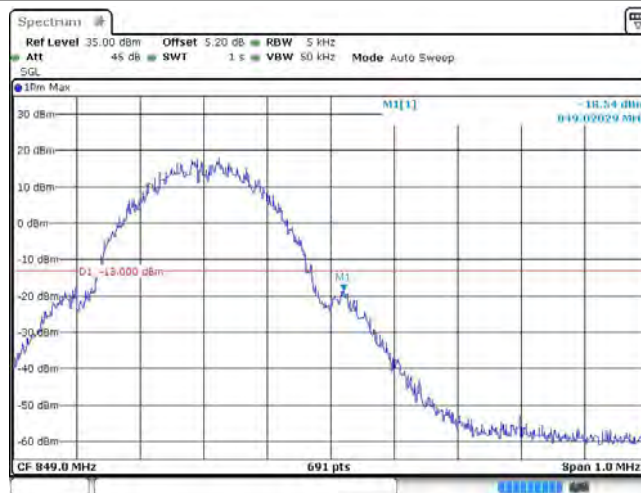
## 5. Band Edge Compliance

### 5.1. Test Plots

**GSM850\_128**



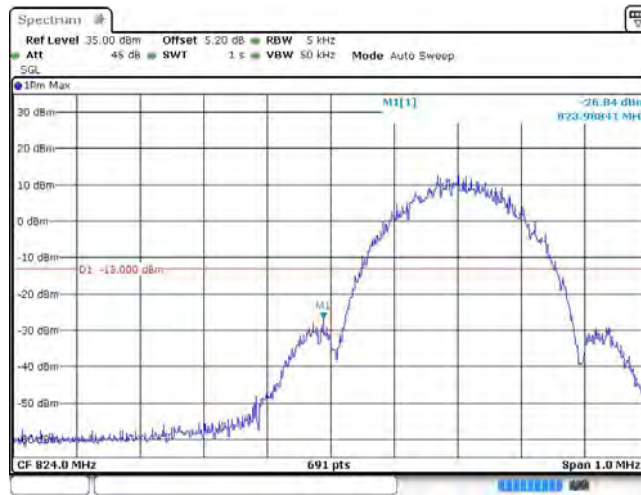
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**EGPRS850\_128**

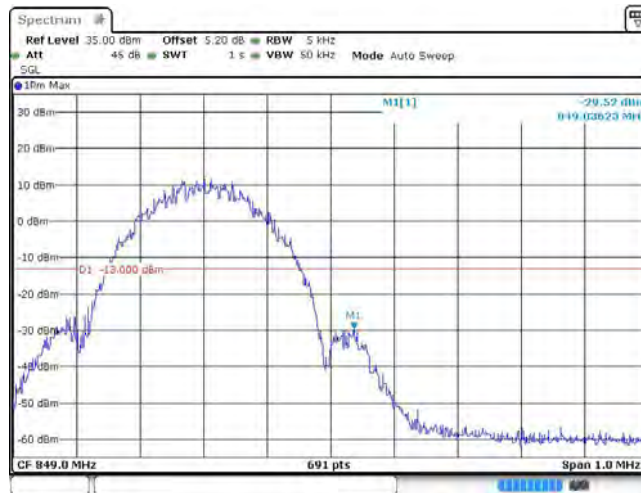


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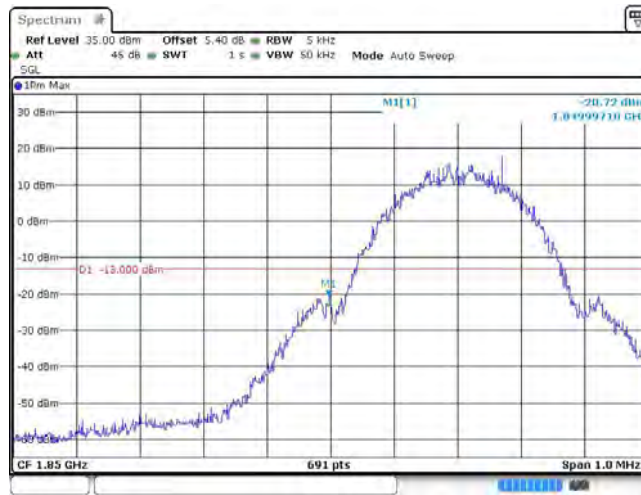


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GSM1900\_512

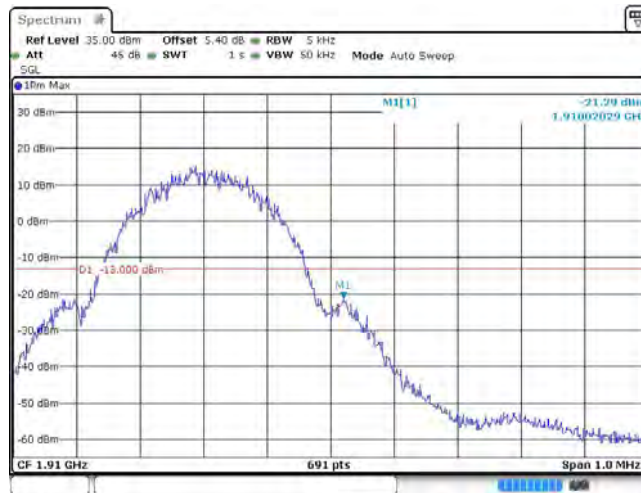


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Date: 15 APR 2020 03:43:39

**GSM1900\_810**

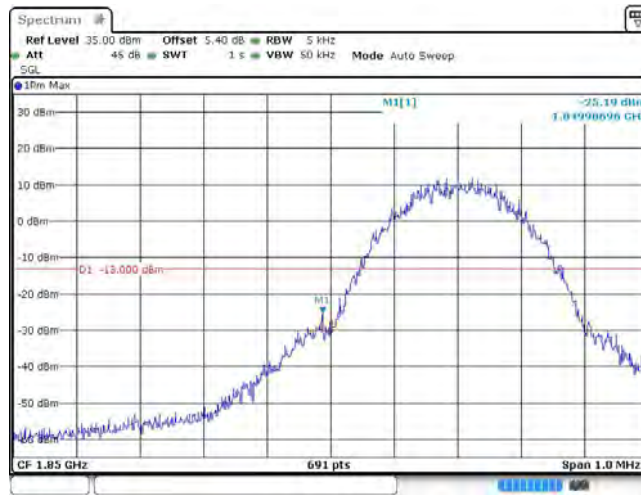


Date: 15 APR 2020 03:44:13

**EGPRS1900\_512**

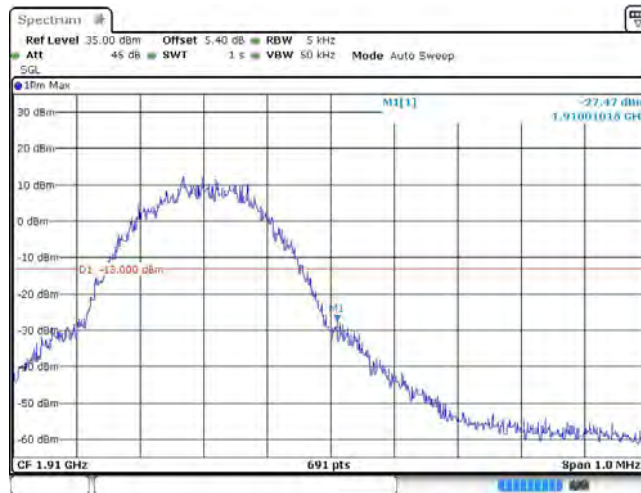


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Date: 15 APR 2020 03:14:00

**EGPRS1900\_810**



Date: 15 APR 2020 03:14:04



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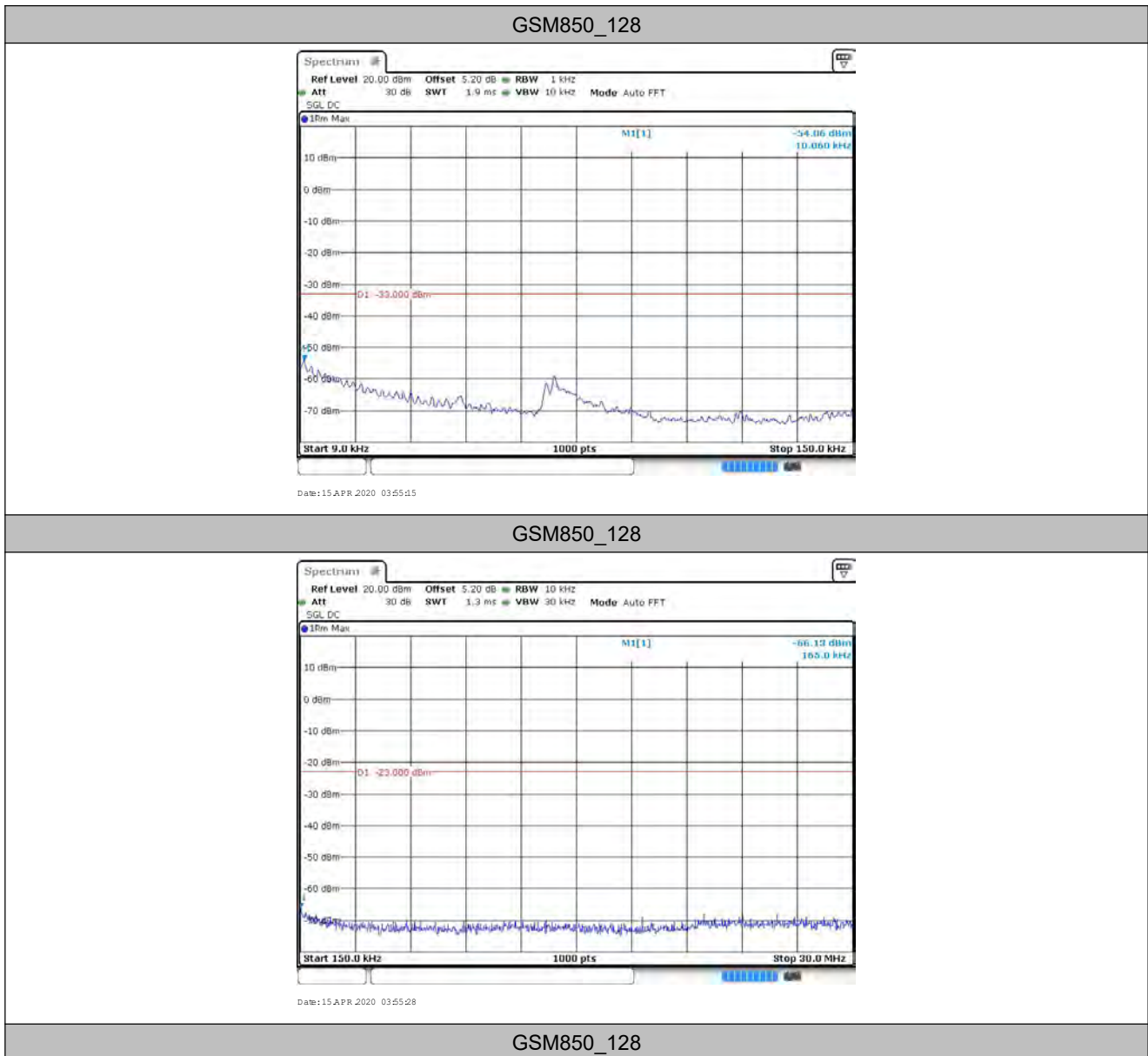


## 6. Spurious Emission at Antenna Terminal

Remark1: 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.

Remark2: only the worst case data displayed in this report.

### 6.1. Test Plots

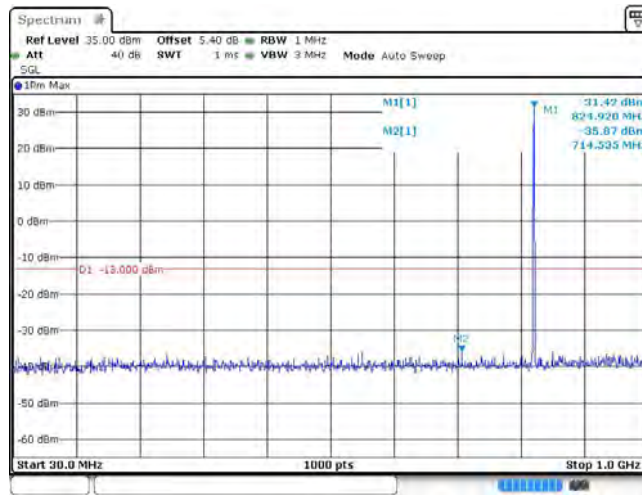


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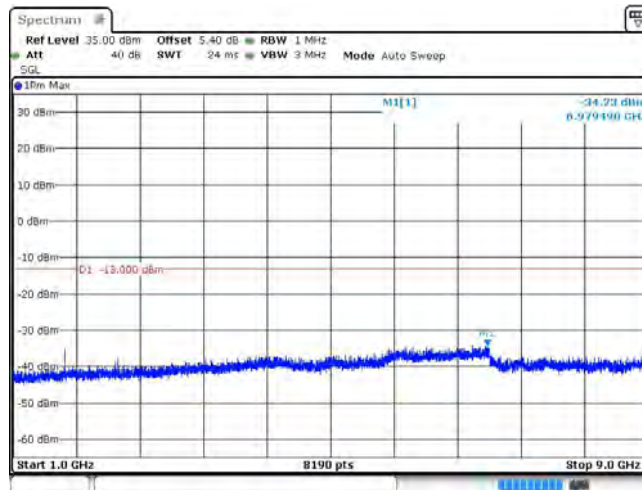
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Shenzhen Branch (China) Testing Laboratory

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Date: 15 APR 2020 03:55:41

GSM850\_128

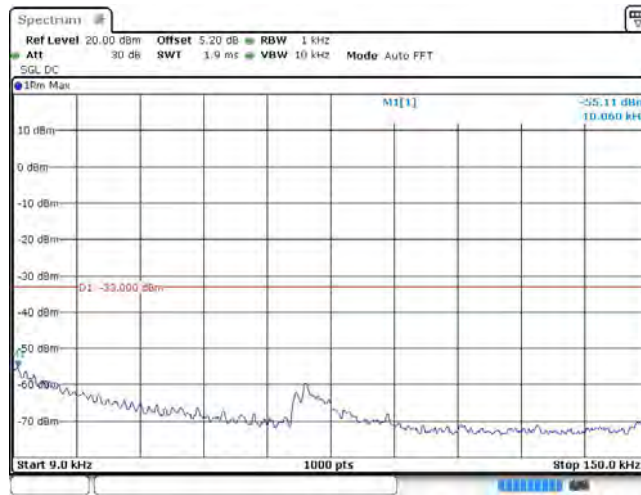


Date: 15 APR 2020 03:55:54

GSM850\_190

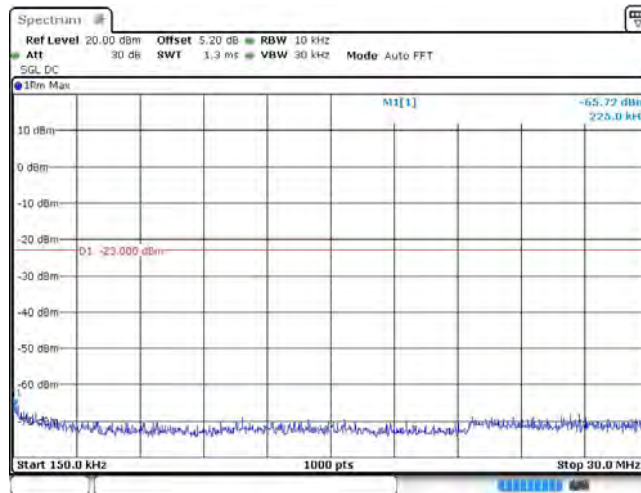


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Date: 15 APR 2020 03:56:13

GSM850\_190

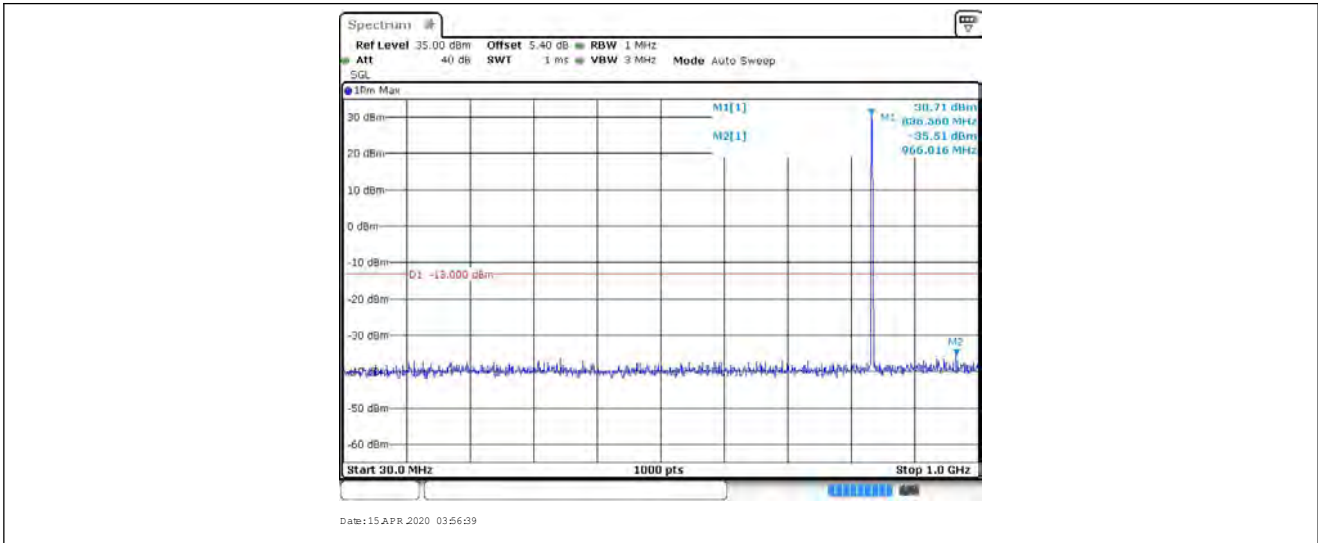


Date: 15 APR 2020 03:56:25

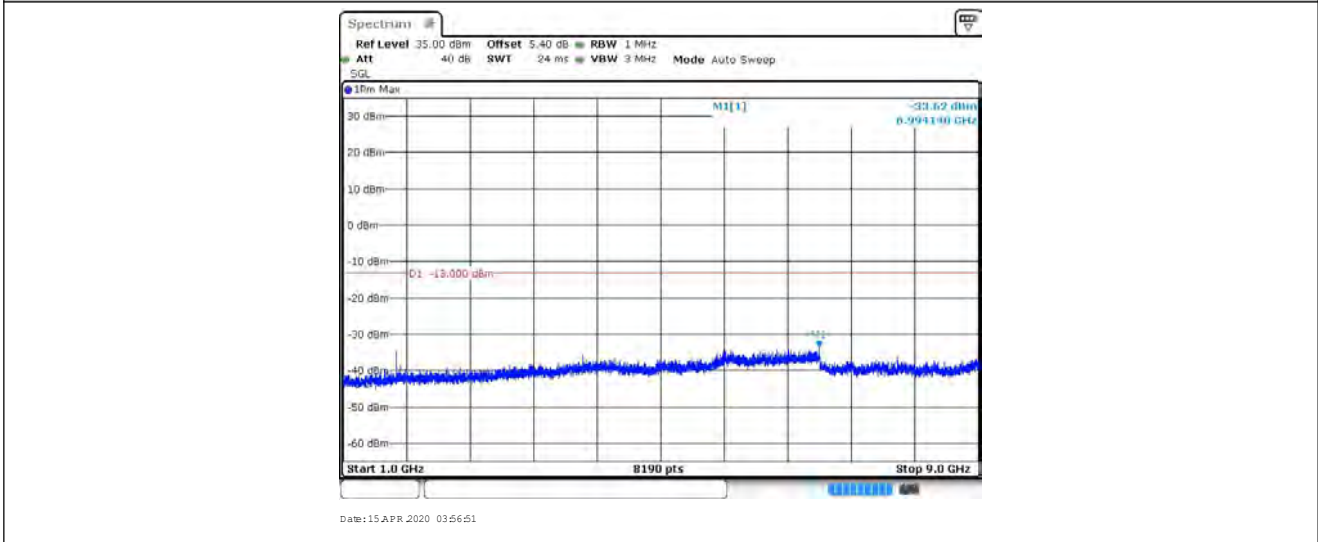
GSM850\_190



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GSM850\_190

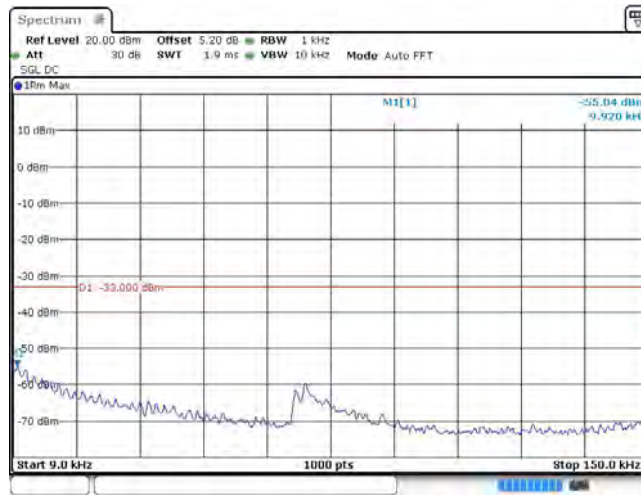


GSM850\_251



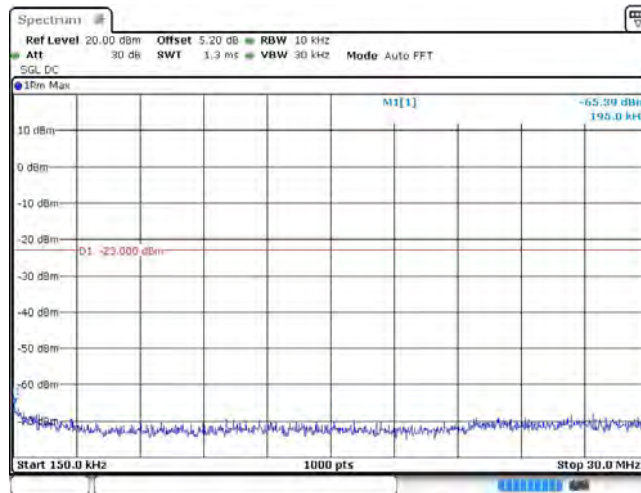
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Date: 15 APR 2020 03:57:11

GSM850\_251

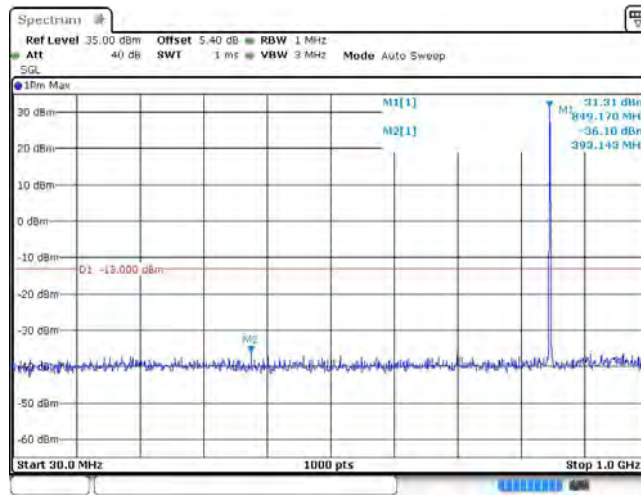


Date: 15 APR 2020 03:57:23

GSM850\_251

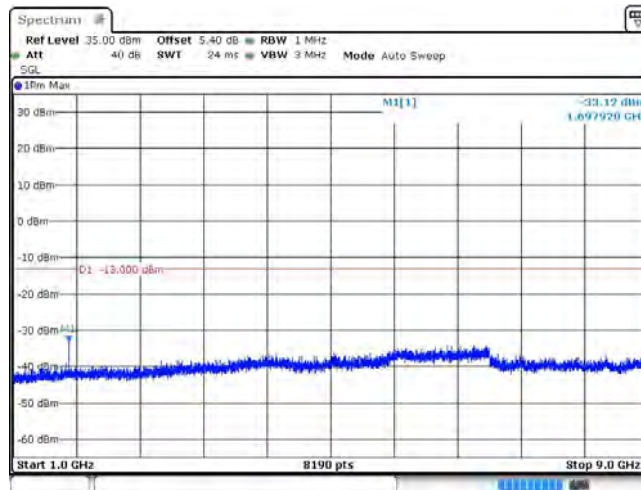


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Date: 15 APR 2020 03:57:37

GSM850\_251

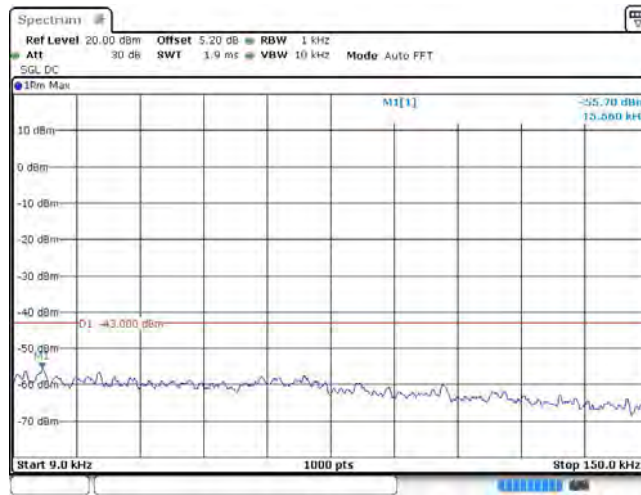


Date: 15 APR 2020 03:57:49

EGPRS850\_128

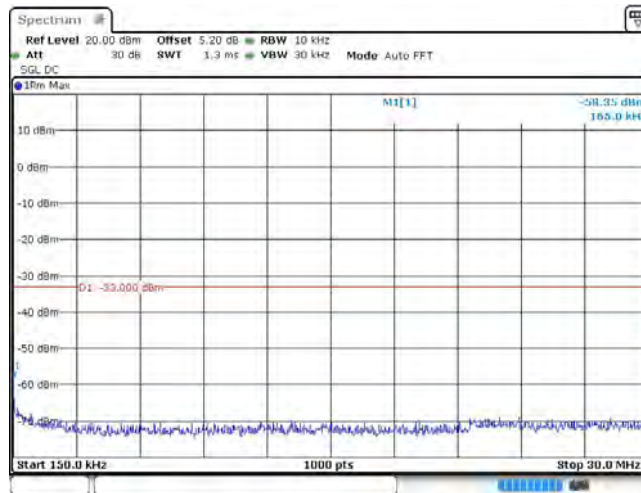


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Date: 15 APR 2020 03:28:21

EGPRS850\_128



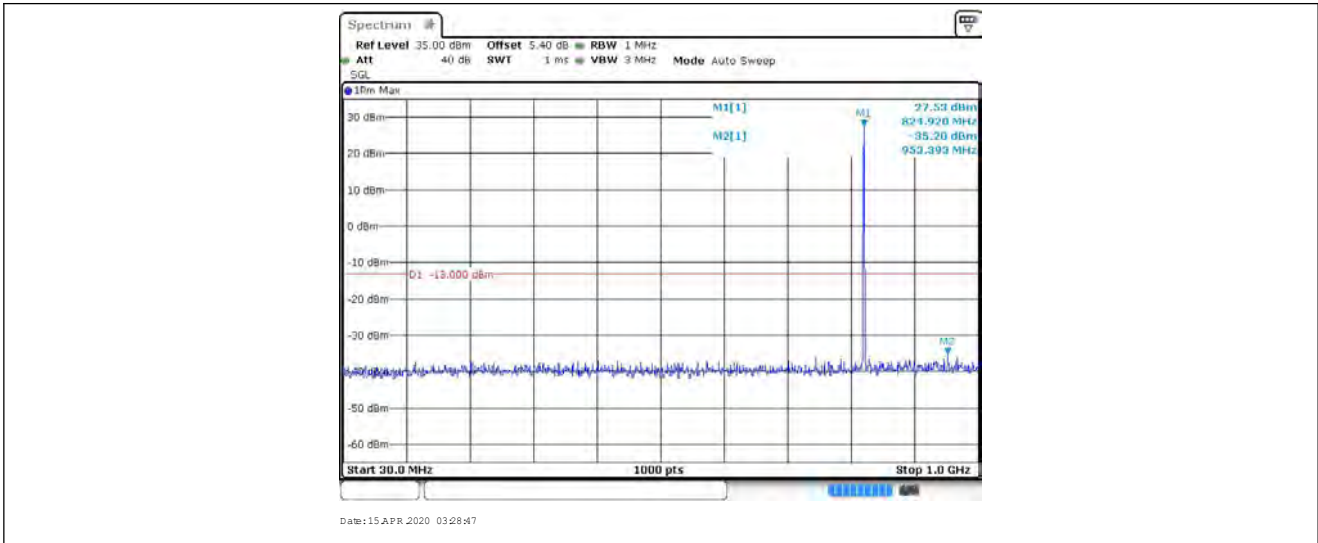
Date: 15 APR 2020 03:28:33

EGPRS850\_128

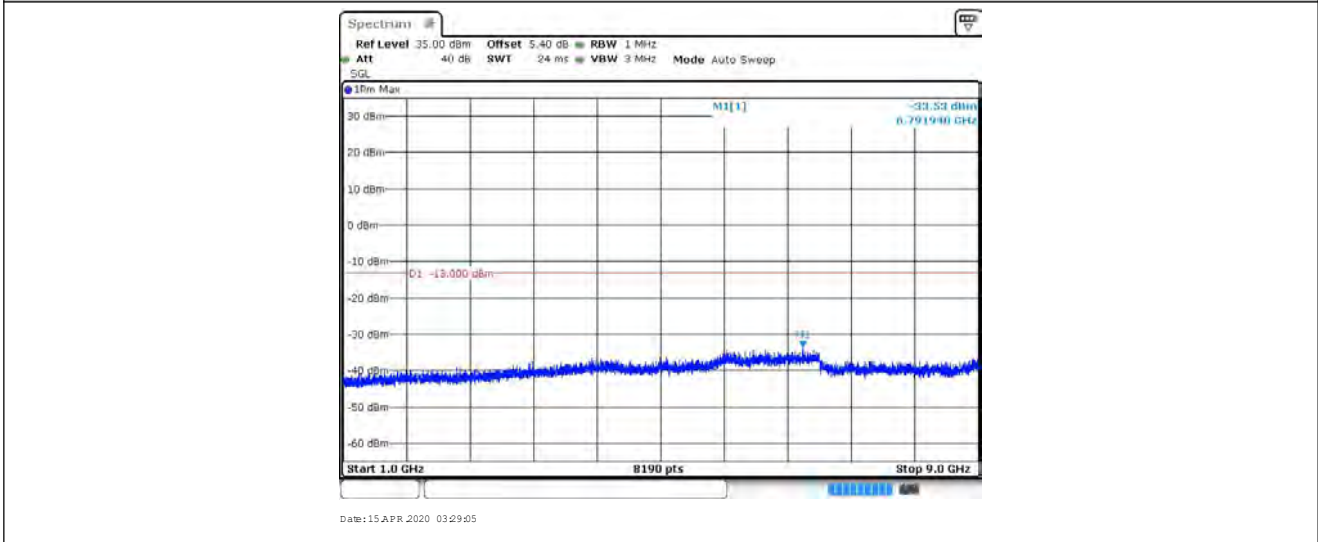


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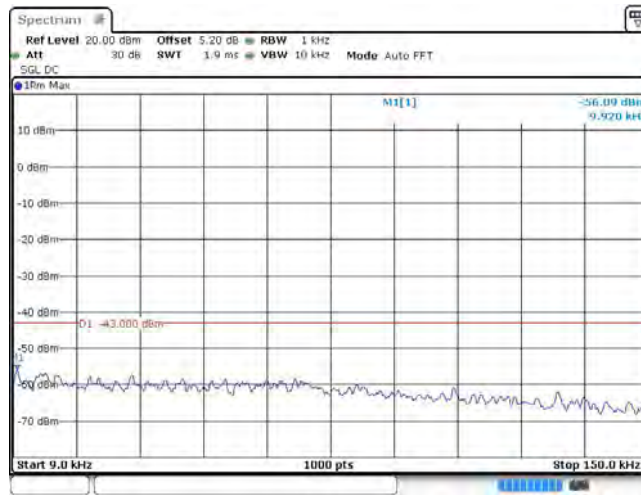
EGPRS850\_128



EGPRS850\_190

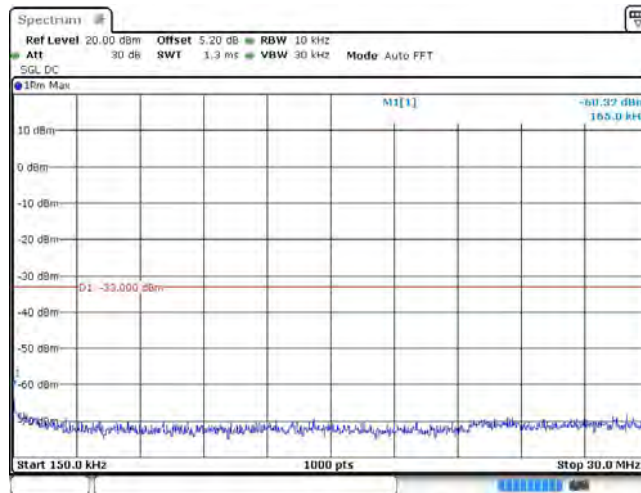


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Date: 15 APR 2020 03:29:23

EGPRS850\_190



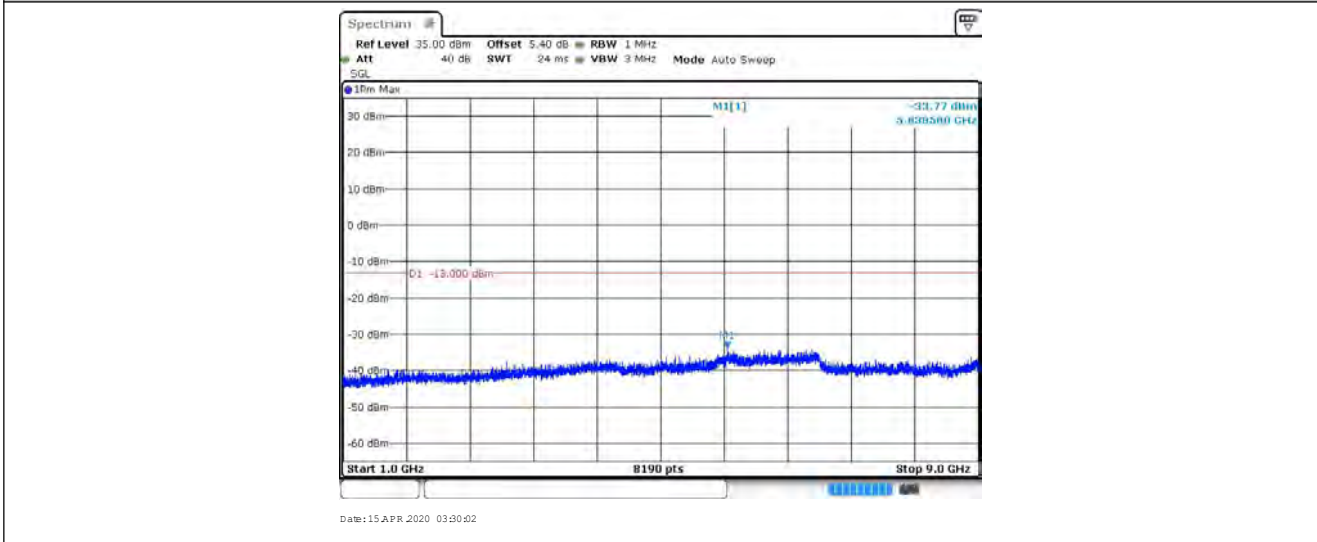
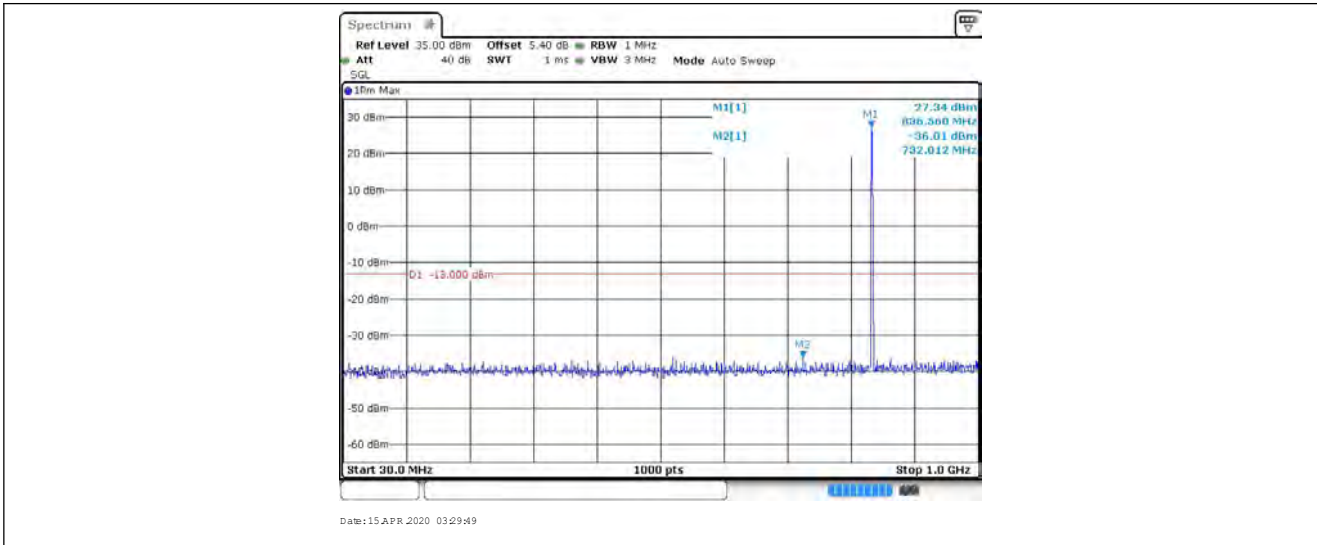
Date: 15 APR 2020 03:29:25

EGPRS850\_190

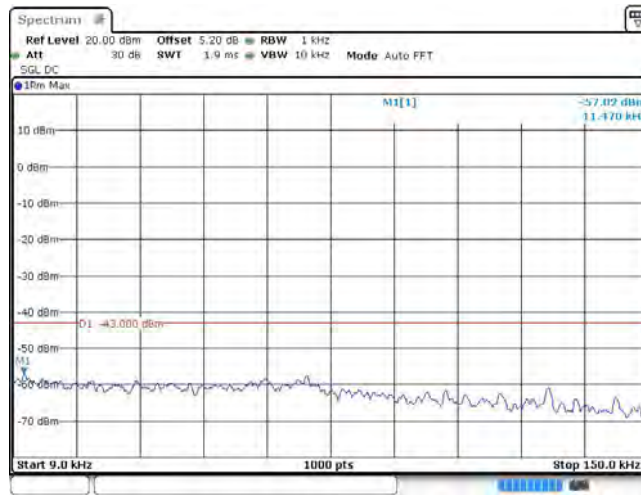


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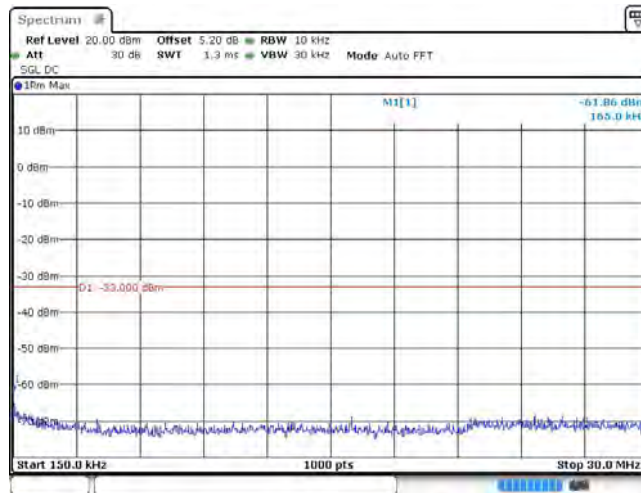


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Date: 15 APR 2020 03:00:23

EGPRS850\_251

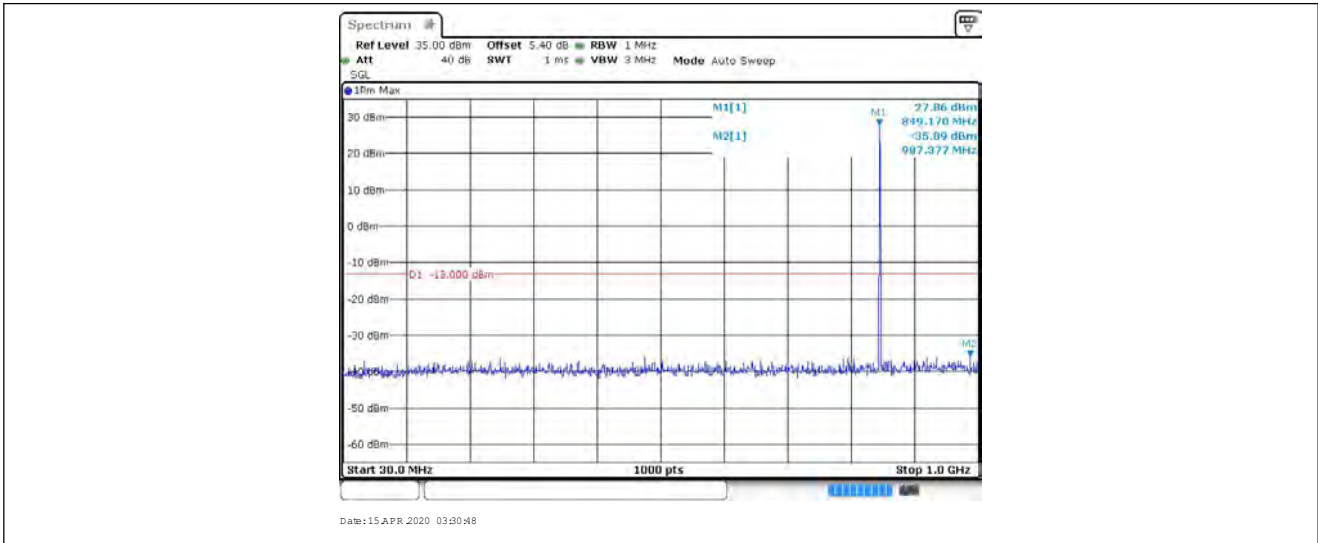


Date: 15 APR 2020 03:00:25

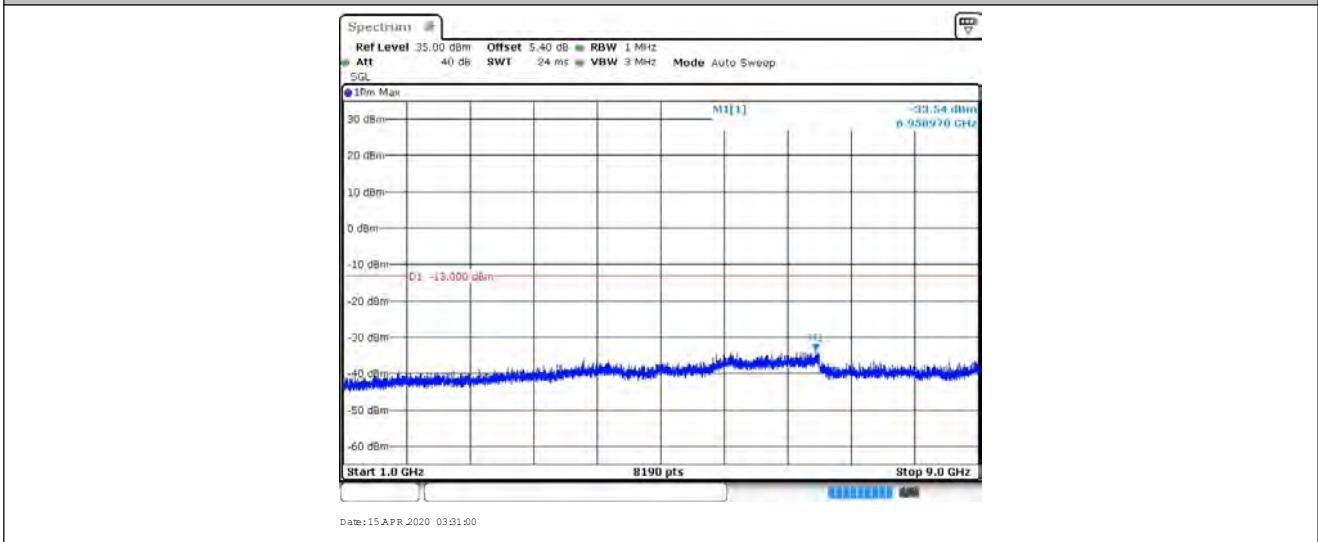
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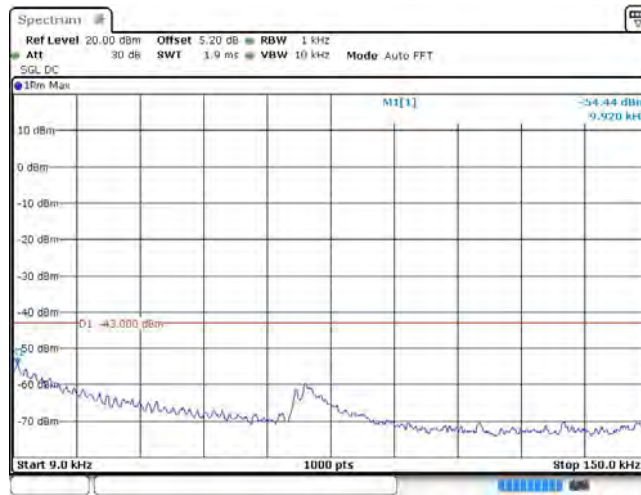


GSM1900\_512



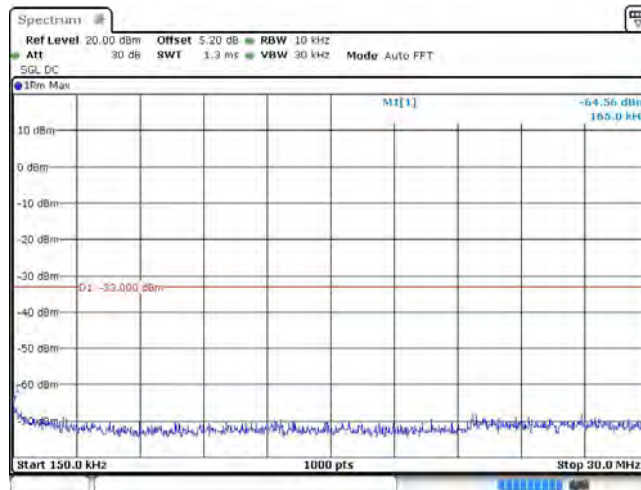
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Date: 15 APR 2020 03:44:41

GSM1900\_512



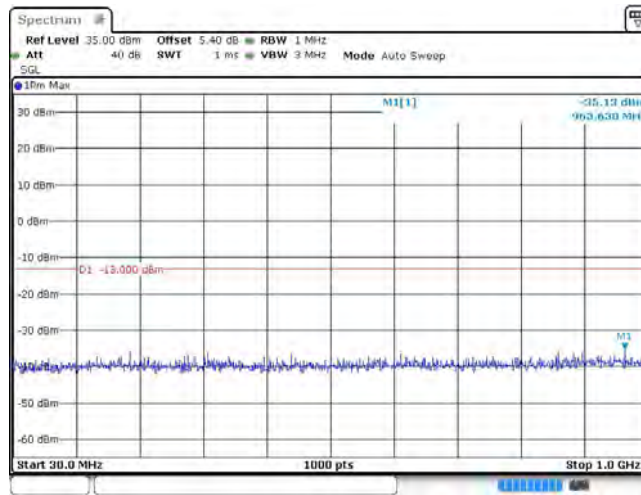
Date: 15 APR 2020 03:44:53

GSM1900\_512



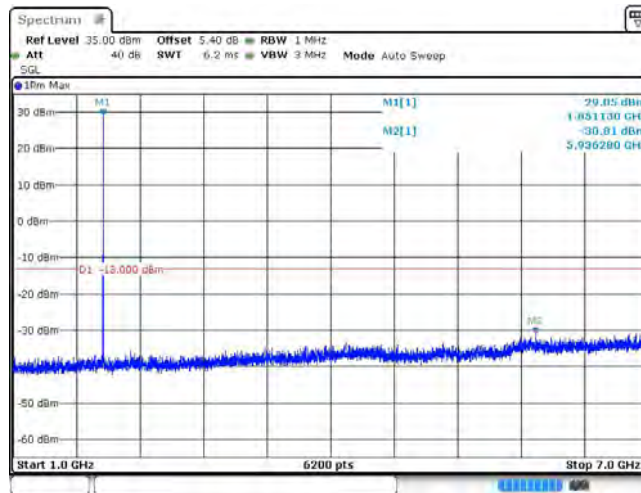
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Date: 15 APR 2020 03:45:06

GSM1900\_512

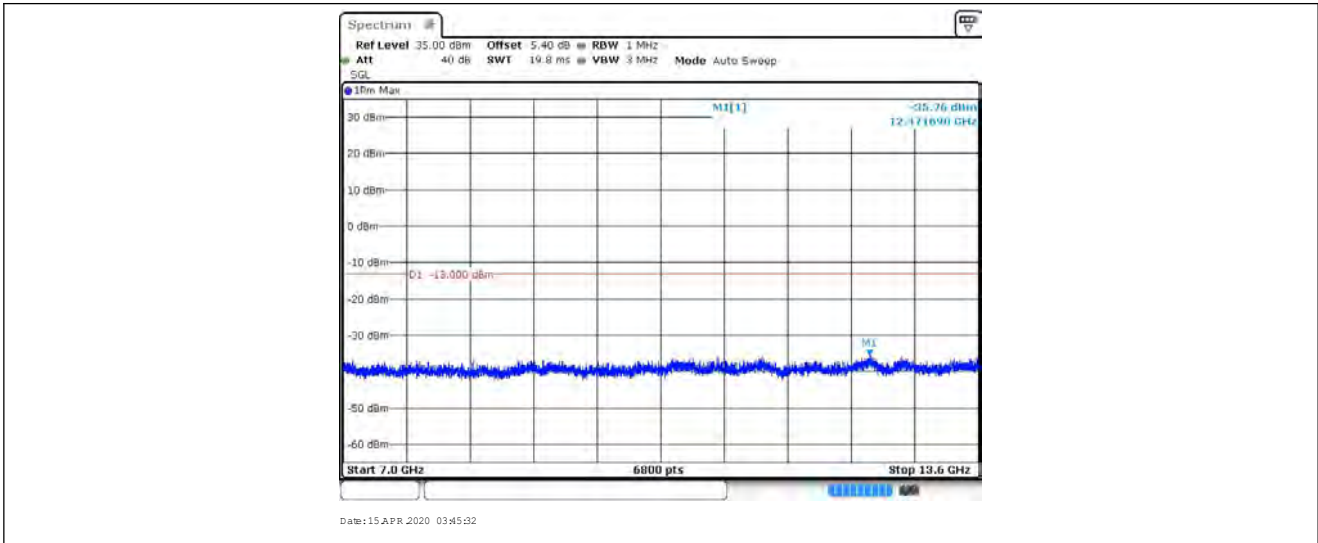


Date: 15 APR 2020 03:45:19

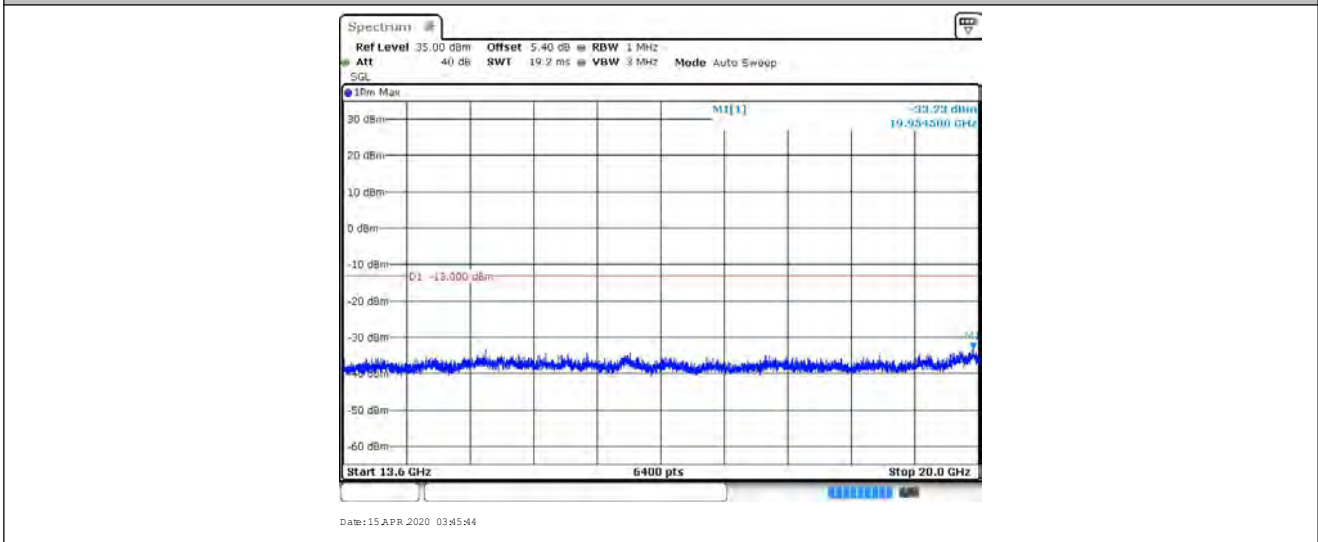
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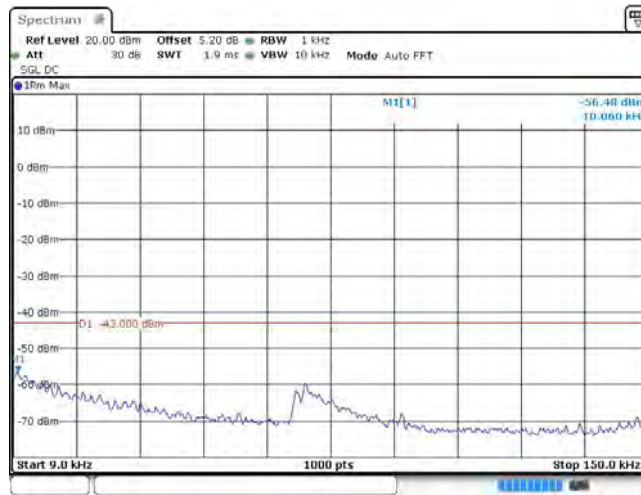
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GSM1900\_661

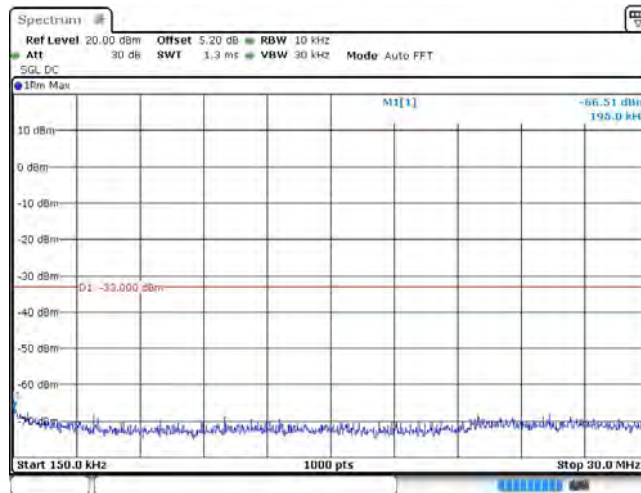


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Date: 15 APR 2020 03:46:04

GSM1900\_661

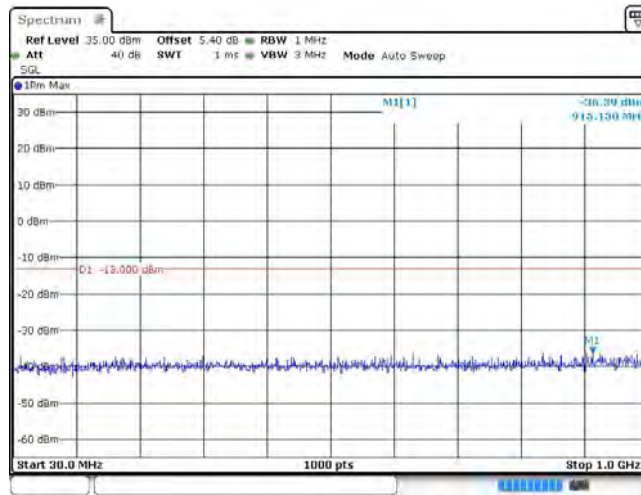


Date: 15 APR 2020 03:46:16

GSM1900\_661

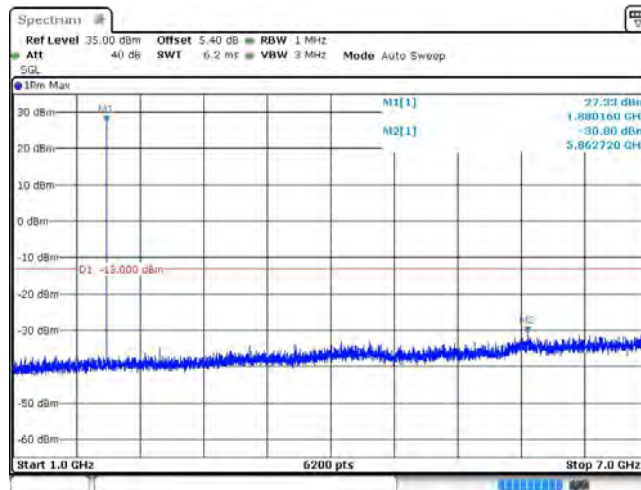


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Date: 15 APR 2020 03:46:28

GSM1900\_661

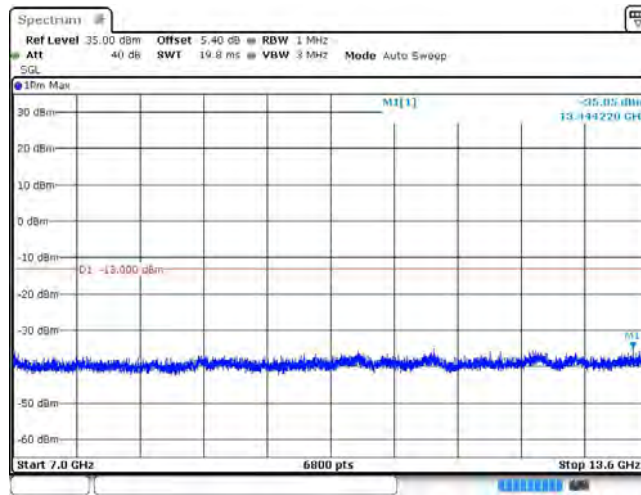


Date: 15 APR 2020 03:46:42

GSM1900\_661

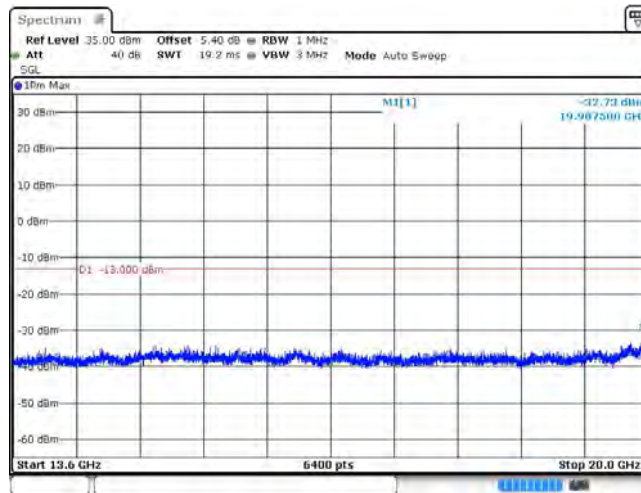


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Date: 15 APR 2020 03:46:54

GSM1900\_661

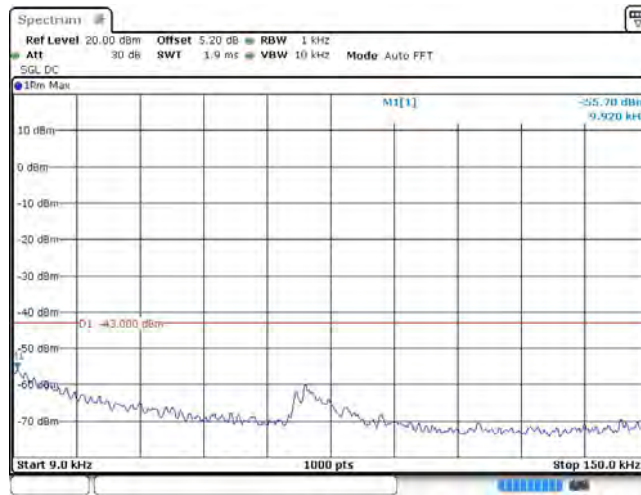


Date: 15 APR 2020 03:47:07

GSM1900\_810

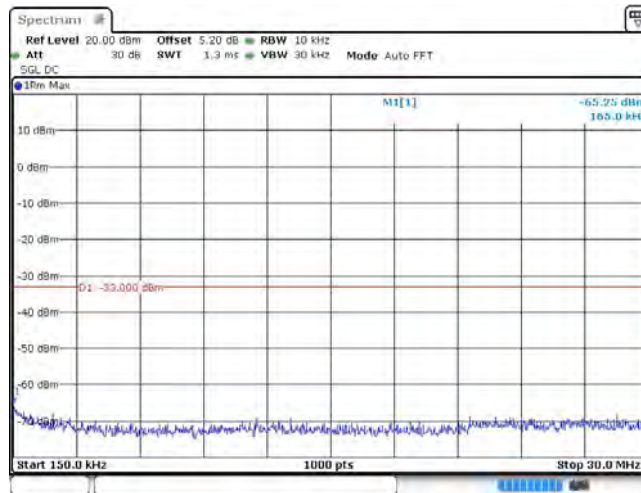


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Date: 15 APR 2020 03:47:26

GSM1900\_810

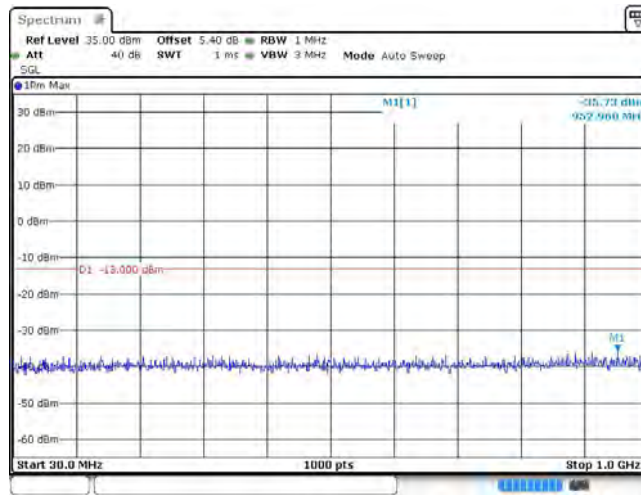


Date: 15 APR 2020 03:47:39

GSM1900\_810

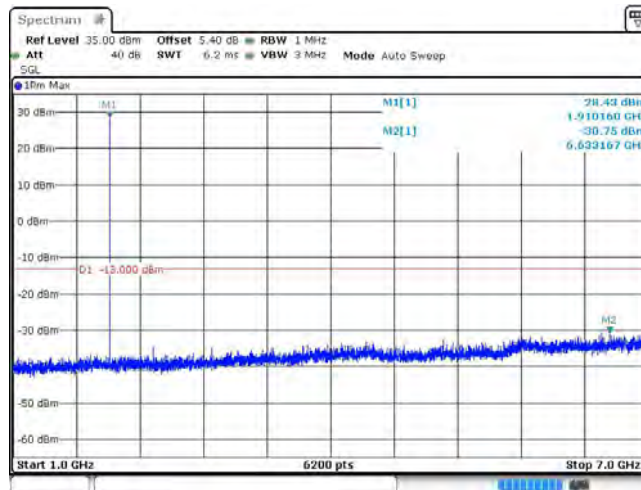


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Date: 15 APR 2020 03:47:51

GSM1900\_810



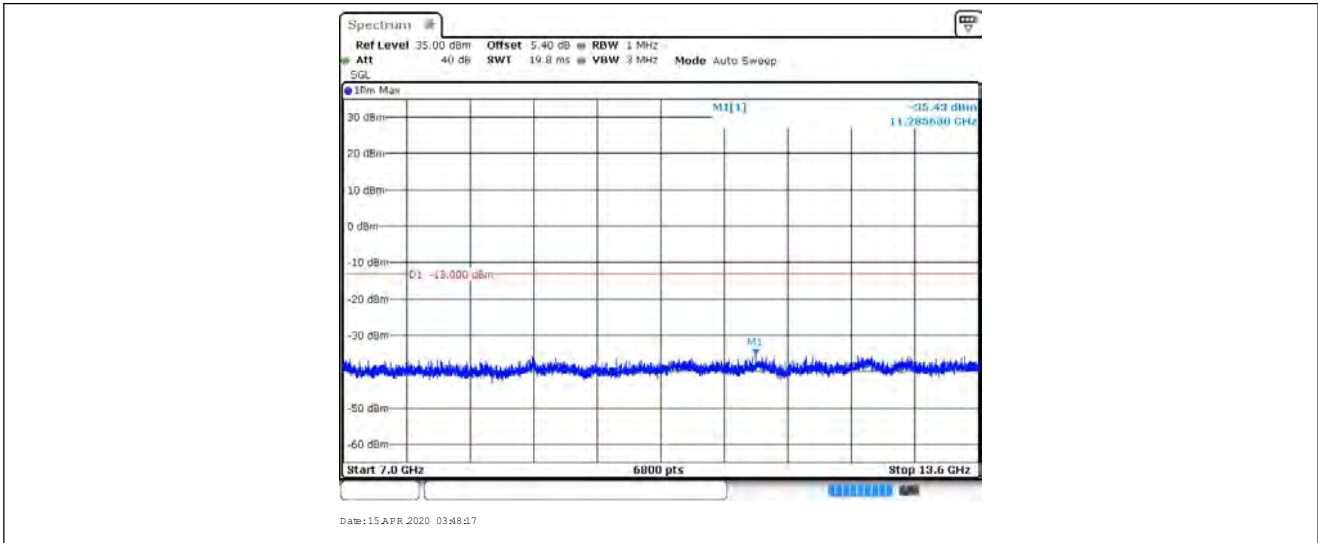
Date: 15 APR 2020 03:48:04

GSM1900\_810

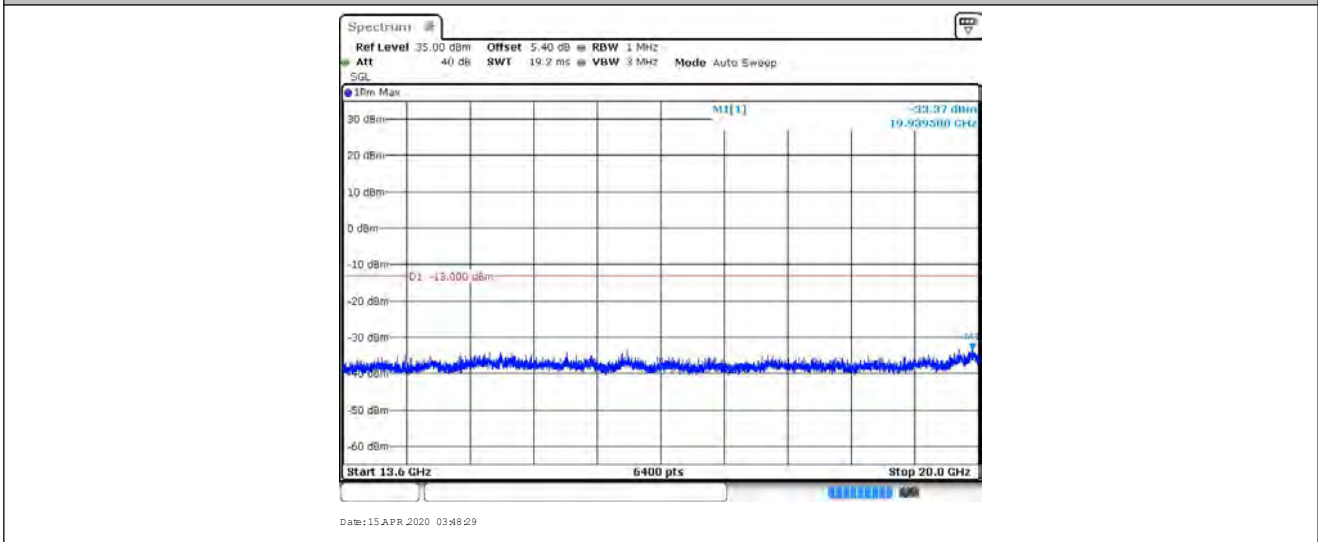


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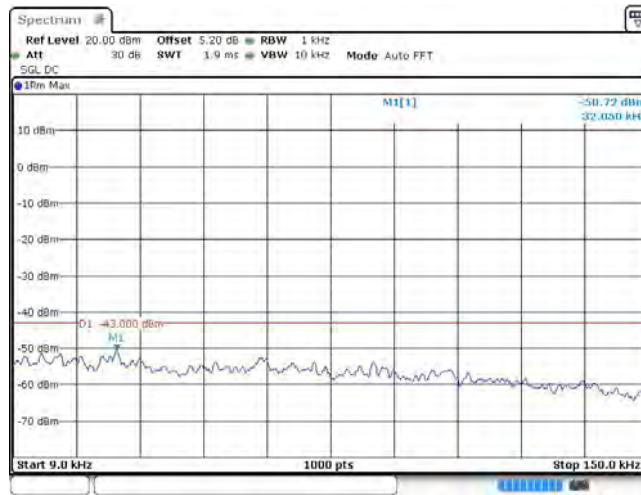
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EGPRS1900\_512

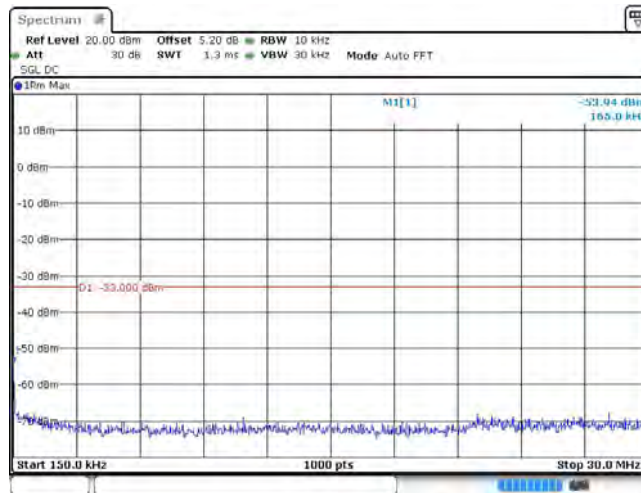


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Date: 15 APR 2020 03:45:01

EGPRS1900\_512



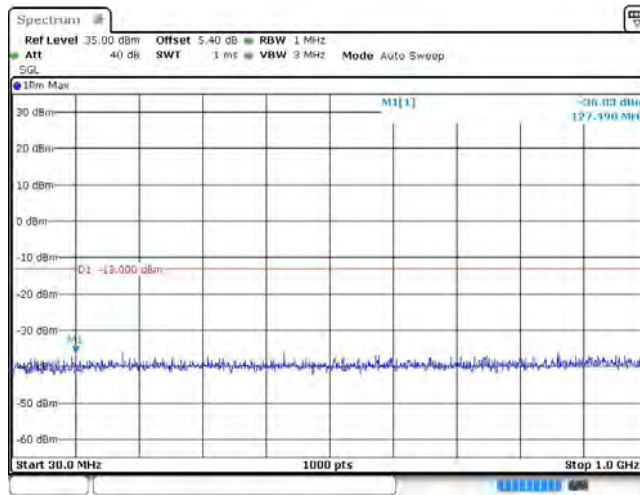
Date: 15 APR 2020 03:45:13

EGPRS1900\_512



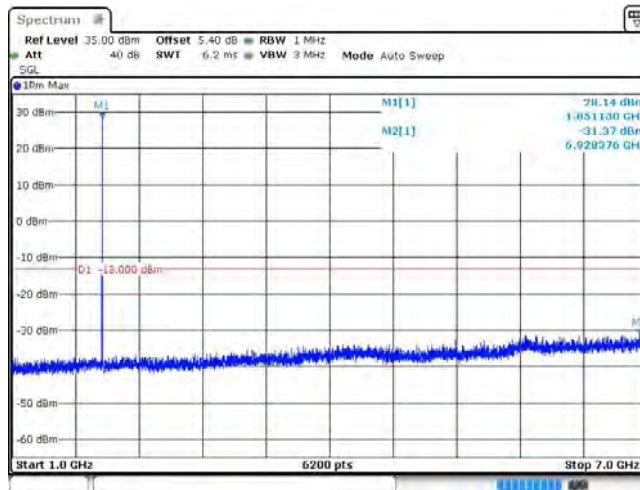
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Date: 15 APR 2020 03:45:25

EGPRS1900\_512

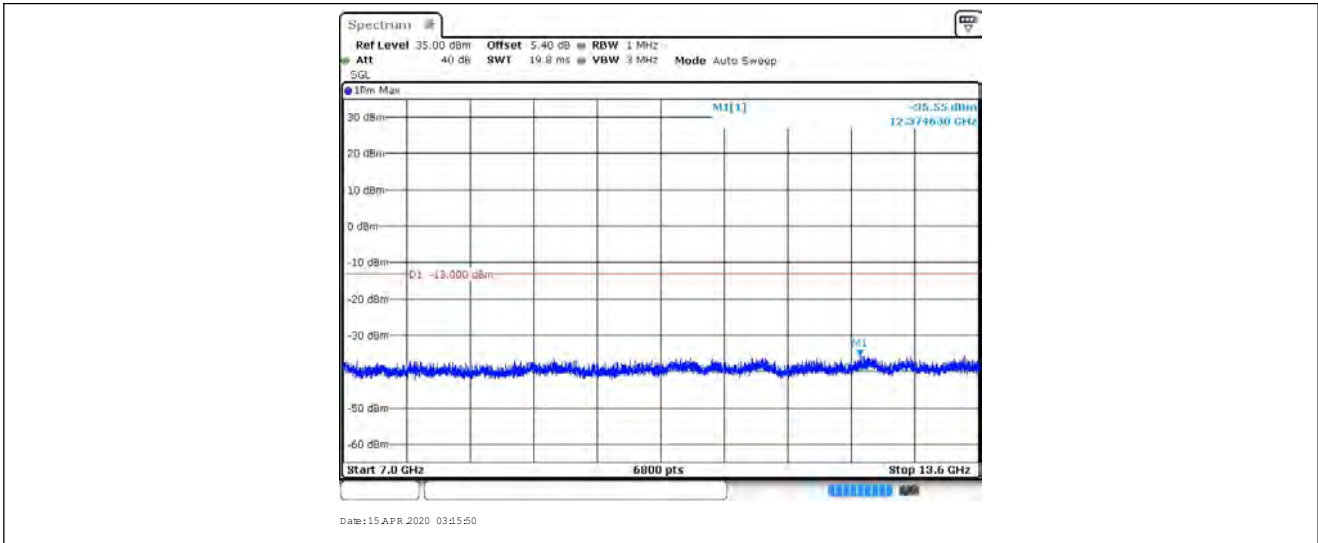


Date: 15 APR 2020 03:45:38

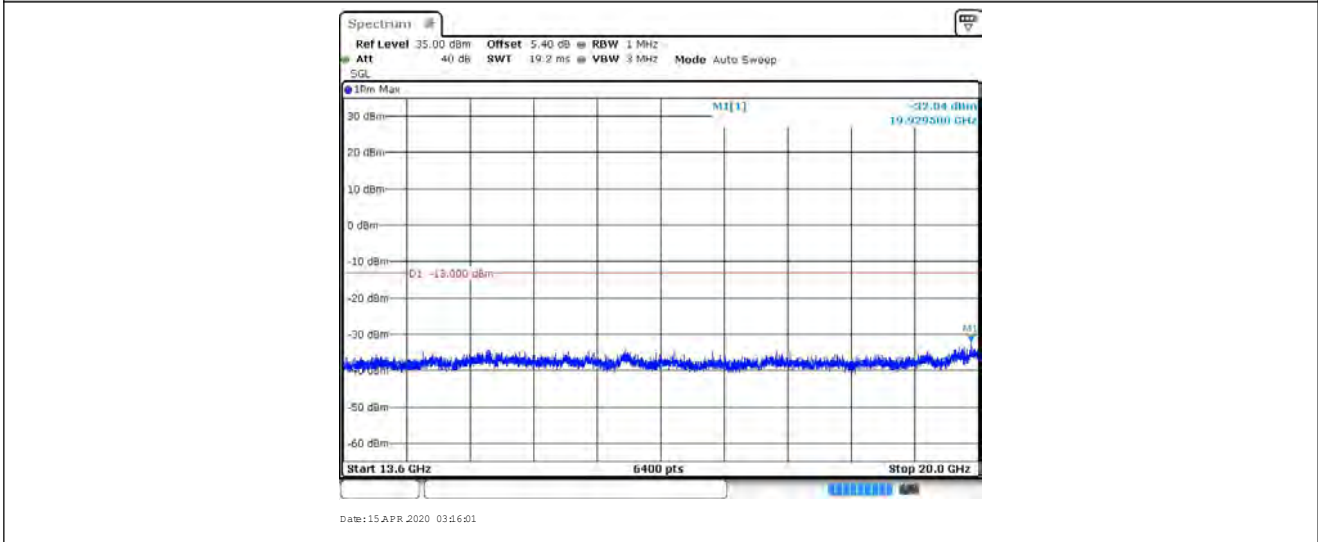
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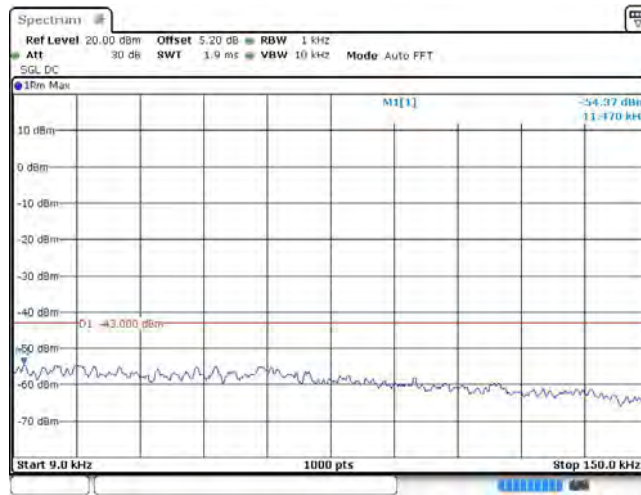
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EGPRS1900\_661

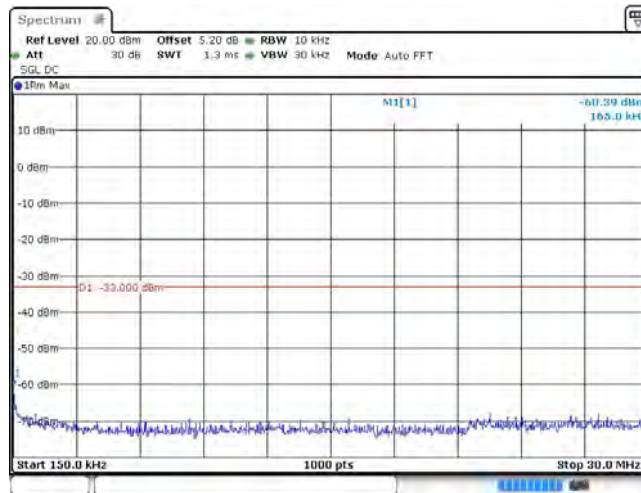


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Date: 15 APR 2020 03:16:20

EGPRS1900\_661



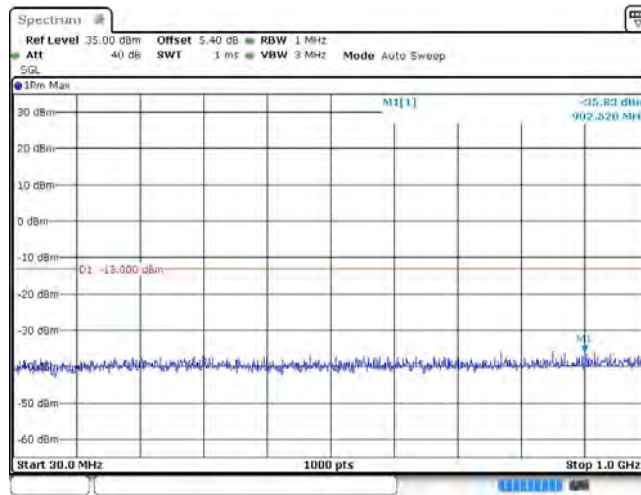
Date: 15 APR 2020 03:16:31

EGPRS1900\_661



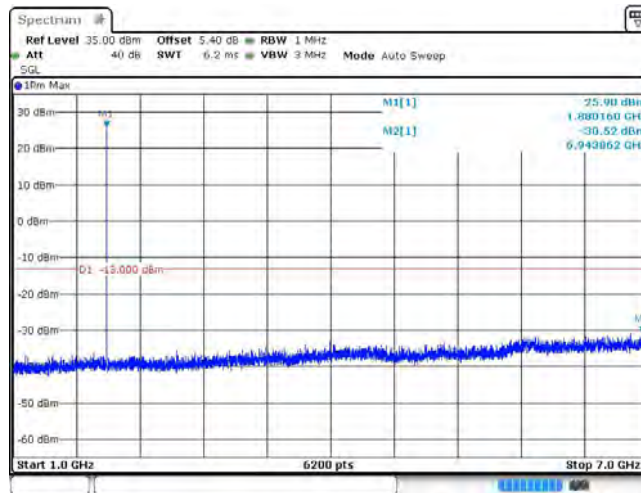
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Date: 15 APR 2020 03:16:43

EGPRS1900\_661

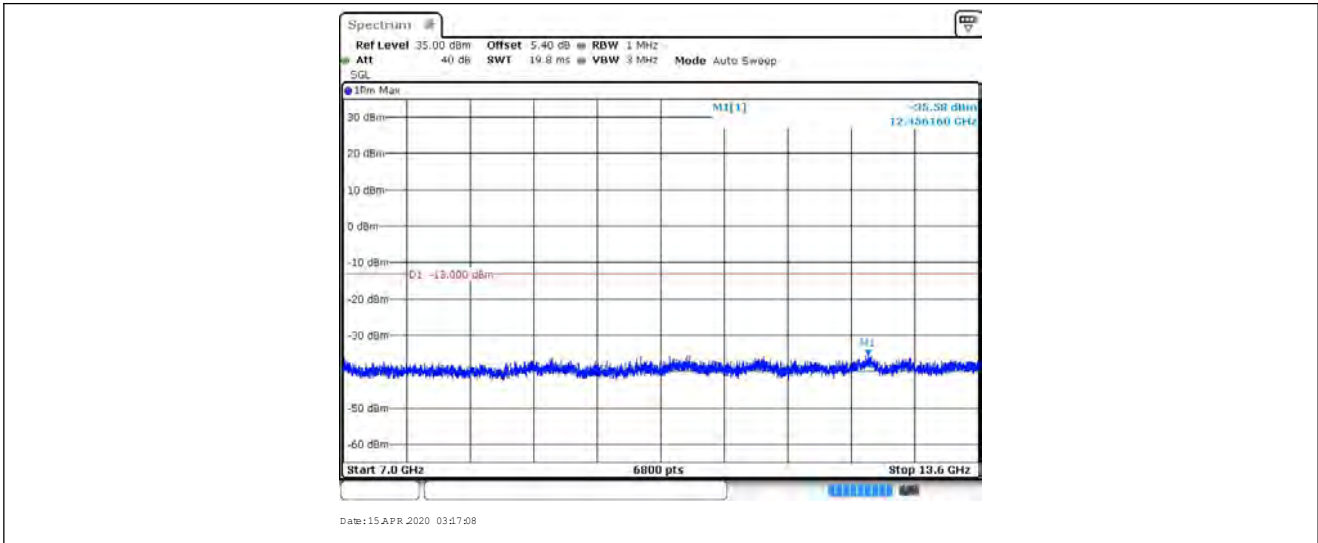


Date: 15 APR 2020 03:16:56

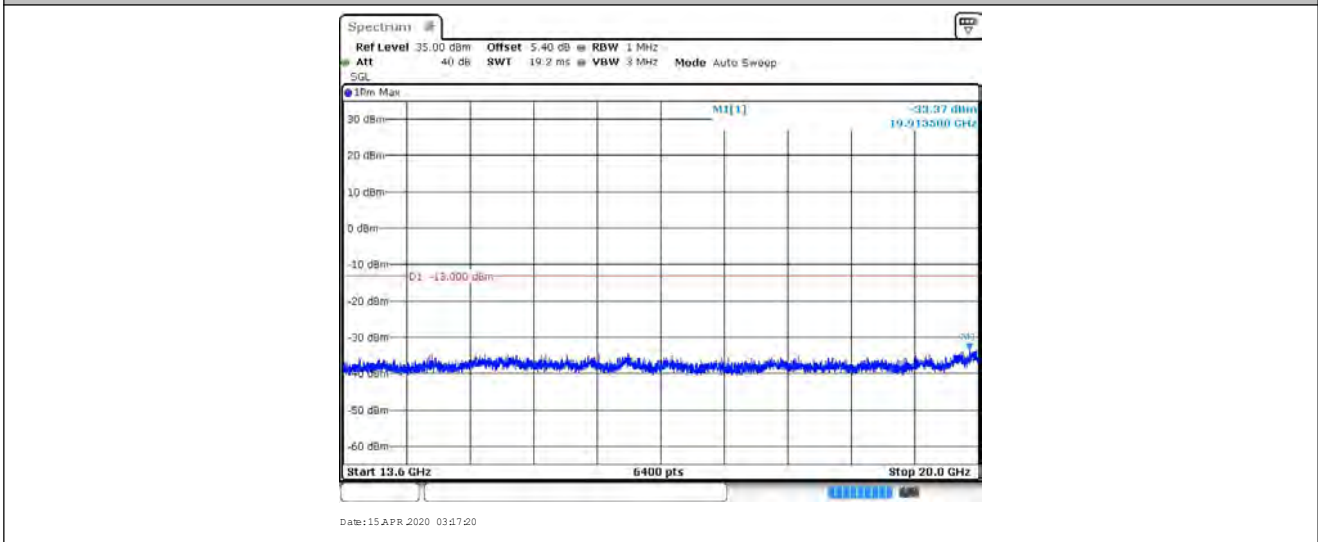
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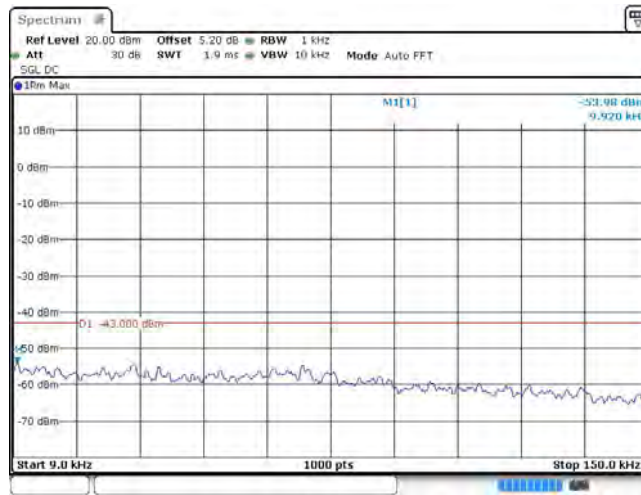
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EGPRS1900\_810

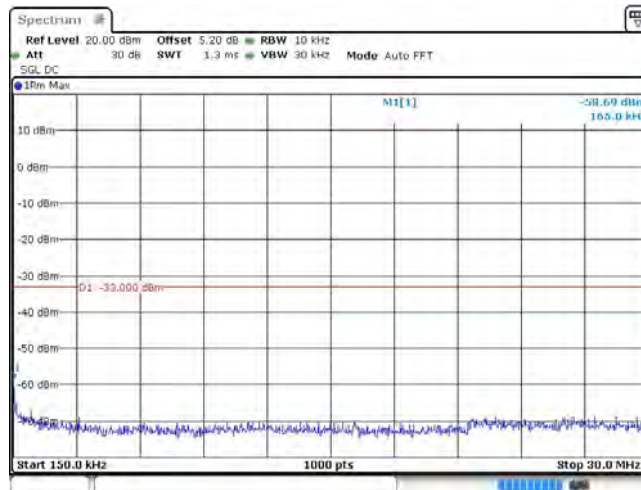


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Date: 15 APR 2020 03:17:38

EGPRS1900\_810



Date: 15 APR 2020 03:17:50

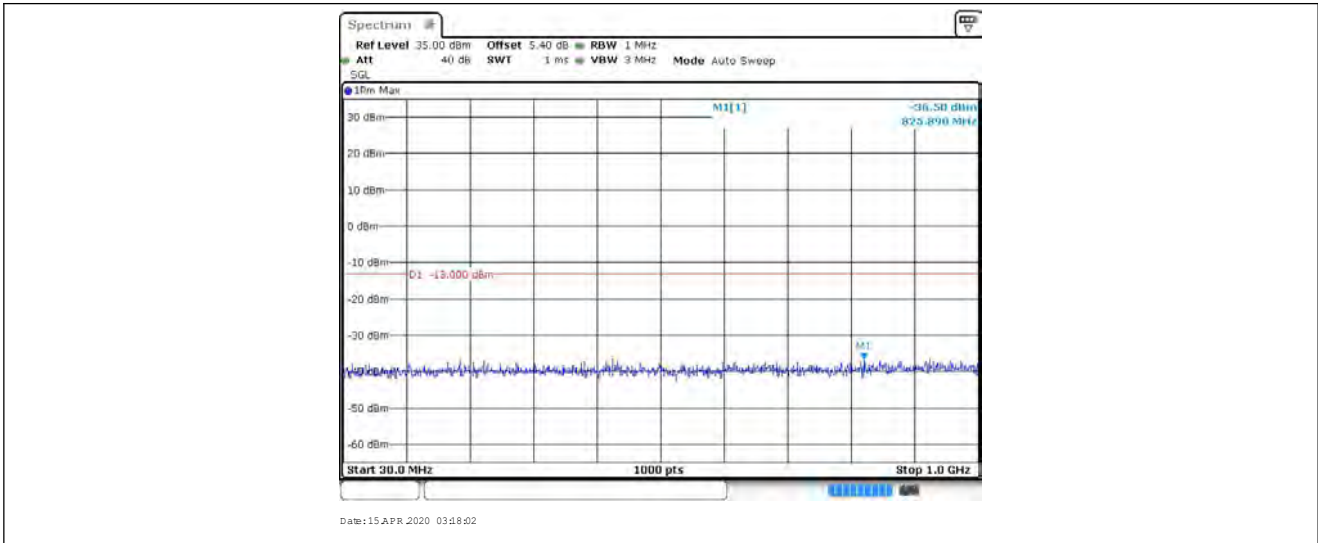
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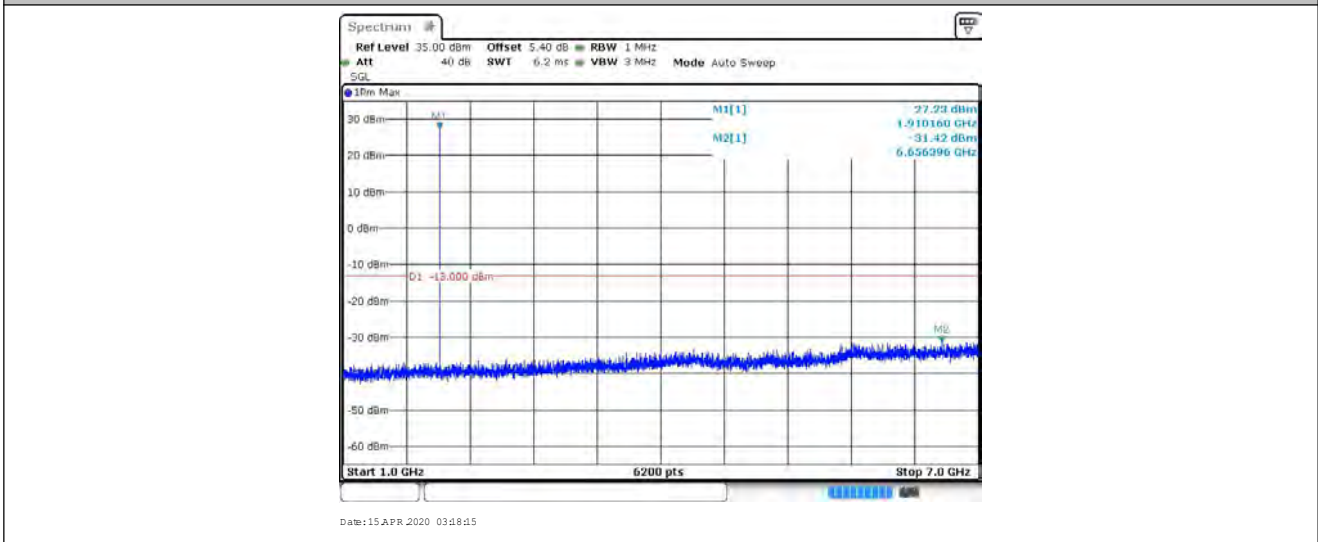
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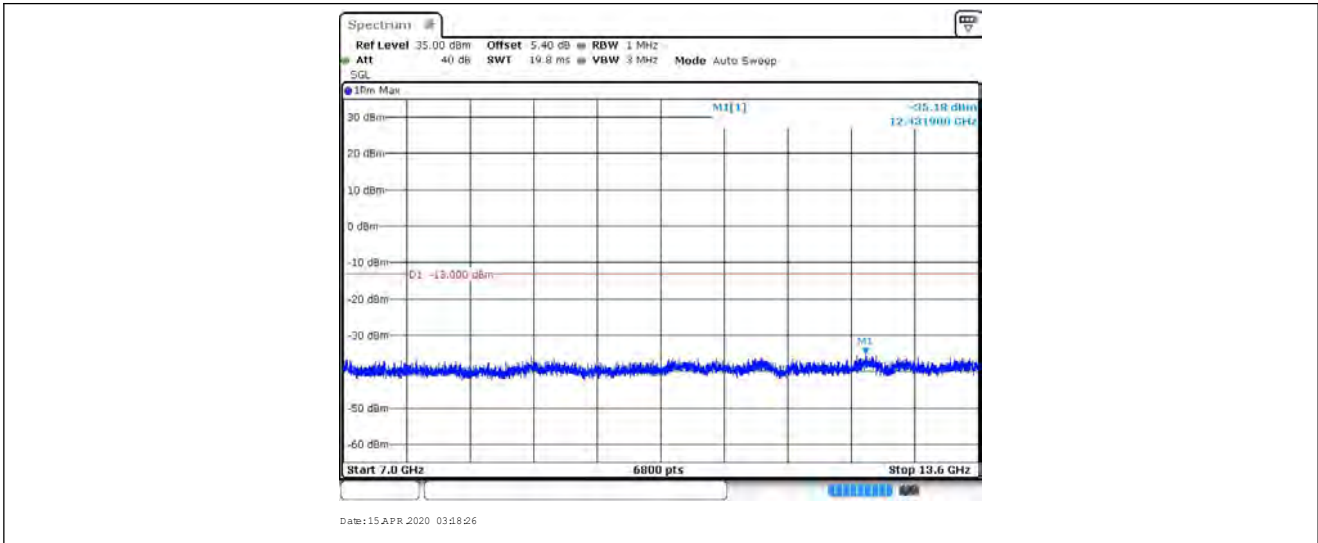
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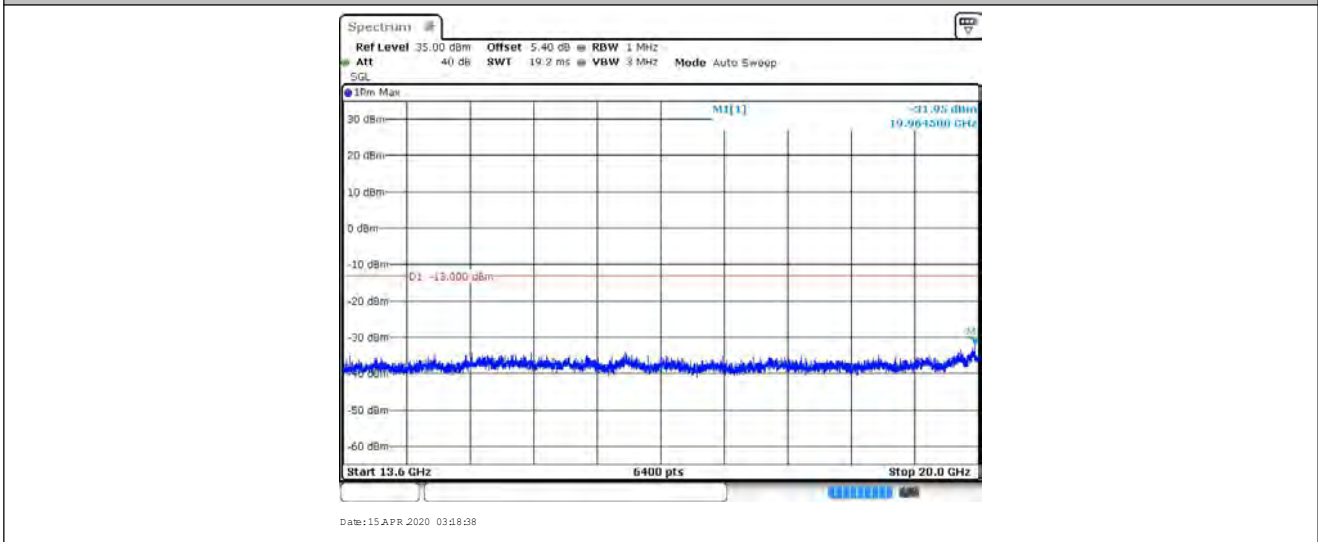
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**EGPRS1900\_810**



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## 7. Field Strength of Spurious Radiation

### 7.1. Test Band = GSM 1900 (Down Ant)

#### 7.1.1. Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
53.2812	-72.10	-13.00	59.10	Vertical
108.8649	-64.04	-13.00	51.04	Vertical
2693.9388	-37.43	-13.00	24.43	Vertical
5550.5850	-55.29	-13.00	42.29	Vertical
11232.2744	-51.47	-13.00	38.47	Vertical
17994.9998	-40.39	-13.00	27.39	Vertical
44.0172	-63.90	-13.00	50.90	Horizontal
231.4791	-67.51	-13.00	54.51	Horizontal
2700.7401	-36.18	-13.00	23.18	Horizontal
3700.5234	-55.49	-13.00	42.49	Horizontal
5550.5850	-50.78	-13.00	37.78	Horizontal
16376.9459	-43.70	-13.00	30.70	Horizontal

#### 7.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
50.9530	-72.24	-13.00	59.24	Vertical
112.9391	-64.97	-13.00	51.97	Vertical
612.9992	-63.74	-13.00	50.74	Vertical
2697.5395	-37.55	-13.00	24.55	Vertical
5640.0880	-55.88	-13.00	42.88	Vertical
17996.9999	-40.59	-13.00	27.59	Vertical
44.6962	-63.38	-13.00	50.38	Horizontal
238.9970	-68.33	-13.00	55.33	Horizontal
2697.1394	-36.33	-13.00	23.33	Horizontal
3760.0253	-58.33	-13.00	45.33	Horizontal
5640.0880	-54.71	-13.00	41.71	Horizontal
16382.4461	-43.93	-13.00	30.93	Horizontal

#### 7.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
46.5878	-73.11	-13.00	60.11	Vertical
110.1260	-64.51	-13.00	51.51	Vertical
589.1845	-62.89	-13.00	49.89	Vertical
2696.7393	-37.45	-13.00	24.45	Vertical



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5729.5910	-57.20	-13.00	44.20	Vertical
17998.5000	-40.28	-13.00	27.28	Vertical
44.5992	-64.06	-13.00	51.06	Horizontal
242.5861	-68.22	-13.00	55.22	Horizontal
607.4214	-63.59	-13.00	50.59	Horizontal
2693.5387	-36.32	-13.00	23.32	Horizontal
5729.0910	-51.61	-13.00	38.61	Horizontal
16391.9464	-43.97	-13.00	30.97	Horizontal

**7.2. Test Band = GSM 850 (Down Ant)**

**7.2.1. Test Channel = LCH**

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
55.1728	-70.60	-13.00	57.60	Vertical
109.6410	-63.80	-13.00	50.80	Vertical
1648.1296	-52.14	-13.00	39.14	Vertical
2473.0946	-35.46	-13.00	22.46	Vertical
7976.6659	-55.51	-13.00	42.51	Vertical
17996.4999	-40.09	-13.00	27.09	Vertical
44.0657	-63.39	-13.00	50.39	Horizontal
236.8628	-67.30	-13.00	54.30	Horizontal
1648.5297	-45.72	-13.00	32.72	Horizontal
2472.6945	-28.03	-13.00	15.03	Horizontal
9319.2106	-52.75	-13.00	39.75	Horizontal
16386.4462	-43.69	-13.00	30.69	Horizontal

**7.2.2. Test Channel = MCH**

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
111.1446	-63.47	-13.00	50.47	Vertical
374.8037	-66.55	-13.00	53.55	Vertical
1673.3347	-52.99	-13.00	39.99	Vertical
2509.9020	-34.85	-13.00	21.85	Vertical
7416.6472	-55.40	-13.00	42.40	Vertical
17997.9999	-40.26	-13.00	27.26	Vertical
43.0957	-63.31	-13.00	50.31	Horizontal
231.3336	-66.95	-13.00	53.95	Horizontal
1673.3347	-49.78	-13.00	36.78	Horizontal
2509.9020	-28.30	-13.00	15.30	Horizontal
9305.2102	-52.45	-13.00	39.45	Horizontal
16388.4463	-43.59	-13.00	30.59	Horizontal



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**7.2.3. Test Channel = HCH**

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
49.4980	-71.45	-13.00	58.45	Vertical
109.1560	-64.45	-13.00	51.45	Vertical
1697.7395	-50.77	-13.00	37.77	Vertical
2546.7093	-34.64	-13.00	21.64	Vertical
8042.6681	-55.75	-13.00	42.75	Vertical
17997.4999	-39.98	-13.00	26.98	Vertical
40.6220	-63.40	-13.00	50.40	Horizontal
249.4250	-66.88	-13.00	53.88	Horizontal
1697.7395	-47.82	-13.00	34.82	Horizontal
2546.3093	-29.36	-13.00	16.36	Horizontal
8809.1936	-54.64	-13.00	41.64	Horizontal
16395.9465	-44.04	-13.00	31.04	Horizontal

**7.3. Test Band = GSM 850 (Up Ant)**

**7.3.1. Test Channel = LCH**

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
55.9003	-71.96	-13.00	58.96	Vertical
106.0518	-63.57	-13.00	50.57	Vertical
431.9396	-66.68	-13.00	53.68	Vertical
1648.5297	-56.41	-13.00	43.41	Vertical
2472.6945	-43.10	-13.00	30.10	Vertical
17999.5000	-39.91	-13.00	26.91	Vertical
44.7447	-63.31	-13.00	50.31	Horizontal
225.8528	-67.26	-13.00	54.26	Horizontal
1648.5297	-50.20	-13.00	37.20	Horizontal
2472.6945	-35.64	-13.00	22.64	Horizontal
7484.1495	-55.96	-13.00	42.96	Horizontal
16383.9461	-44.01	-13.00	31.01	Horizontal

**7.3.2. Test Channel = MCH**

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
111.9691	-64.56	-13.00	51.56	Vertical
457.9854	-64.41	-13.00	51.41	Vertical
1673.7347	-58.92	-13.00	45.92	Vertical
2509.9020	-41.59	-13.00	28.59	Vertical
7470.1490	-55.62	-13.00	42.62	Vertical
17996.4999	-40.13	-13.00	27.13	Vertical
40.6705	-63.59	-13.00	50.59	Horizontal

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237.9784	-66.36	-13.00	53.36	Horizontal
1673.3347	-49.60	-13.00	36.60	Horizontal
2509.5019	-36.62	-13.00	23.62	Horizontal
7483.1494	-56.41	-13.00	43.41	Horizontal
16396.4465	-43.69	-13.00	30.69	Horizontal

**7.3.3. Test Channel = HCH**

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
117.7894	-64.02	-13.00	51.02	Vertical
305.7848	-67.60	-13.00	54.60	Vertical
1697.7395	-53.30	-13.00	40.30	Vertical
2546.7093	-43.49	-13.00	30.49	Vertical
7388.1463	-55.99	-13.00	42.99	Vertical
17998.5000	-40.22	-13.00	27.22	Vertical
42.8531	-64.12	-13.00	51.12	Horizontal
245.4963	-67.30	-13.00	54.30	Horizontal
1697.7395	-48.22	-13.00	35.22	Horizontal
2546.3093	-35.73	-13.00	22.73	Horizontal
7478.6493	-55.80	-13.00	42.80	Horizontal
16388.4463	-43.94	-13.00	30.94	Horizontal

**Remark:**

- 1) According to 971168 D01 Power Meas License Digital Systems, The amplitudes of unwanted emissions that are attenuated more than 20 dB below the applicable limit are not required to be reported.
- 2) 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.



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## 8. Frequency Stability

### 8.1. Frequency Error Vs Voltage

Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GSM850	128	VL	TN	9.98	0.012114	±2.5	PASS
GSM850	128	VN	TN	-9.04	-0.010972	±2.5	PASS
GSM850	128	VH	TN	14.29	0.017340	±2.5	PASS
GSM850	190	VL	TN	-2.74	-0.003276	±2.5	PASS
GSM850	190	VN	TN	-4.02	-0.004802	±2.5	PASS
GSM850	190	VH	TN	-5.39	-0.006440	±2.5	PASS
GSM850	251	VL	TN	11.64	0.013716	±2.5	PASS
GSM850	251	VN	TN	-2.97	-0.003497	±2.5	PASS
GSM850	251	VH	TN	1.02	0.001203	±2.5	PASS
EGPRS850	128	VL	TN	-8.64	-0.010482	±2.5	PASS
EGPRS850	128	VN	TN	14.66	0.017790	±2.5	PASS
EGPRS850	128	VH	TN	-10.60	-0.012865	±2.5	PASS
EGPRS850	190	VL	TN	-1.48	-0.001764	±2.5	PASS
EGPRS850	190	VN	TN	-6.12	-0.007319	±2.5	PASS
EGPRS850	190	VH	TN	12.80	0.015295	±2.5	PASS
EGPRS850	251	VL	TN	8.56	0.010081	±2.5	PASS
EGPRS850	251	VN	TN	0.98	0.001152	±2.5	PASS
EGPRS850	251	VH	TN	5.04	0.005937	±2.5	PASS
GSM1900	512	VL	TN	8.19	0.004425	±2.5	PASS
GSM1900	512	VN	TN	-8.31	-0.004493	±2.5	PASS
GSM1900	512	VH	TN	2.76	0.001492	±2.5	PASS
GSM1900	661	VL	TN	-5.51	-0.002930	±2.5	PASS
GSM1900	661	VN	TN	8.32	0.004424	±2.5	PASS
GSM1900	661	VH	TN	13.35	0.007102	±2.5	PASS
GSM1900	810	VL	TN	-10.58	-0.005538	±2.5	PASS
GSM1900	810	VN	TN	-10.93	-0.005724	±2.5	PASS
GSM1900	810	VH	TN	6.69	0.003505	±2.5	PASS
EGPRS1900	512	VL	TN	-13.66	-0.007385	±2.5	PASS
EGPRS1900	512	VN	TN	8.51	0.004600	±2.5	PASS
EGPRS1900	512	VH	TN	-7.54	-0.004076	±2.5	PASS
EGPRS1900	661	VL	TN	-2.24	-0.001190	±2.5	PASS
EGPRS1900	661	VN	TN	6.16	0.003275	±2.5	PASS
EGPRS1900	661	VH	TN	11.11	0.005912	±2.5	PASS
EGPRS1900	810	VL	TN	-2.88	-0.001508	±2.5	PASS
EGPRS1900	810	VN	TN	5.20	0.002723	±2.5	PASS
EGPRS1900	810	VH	TN	13.83	0.007243	±2.5	PASS



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**8.2.Frequency Error Vs Temperature**

Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GSM850	128	VN	-30	11.36	0.013781	±2.5	PASS
GSM850	128	VN	-20	6.68	0.008106	±2.5	PASS
GSM850	128	VN	-10	-3.29	-0.003987	±2.5	PASS
GSM850	128	VN	0	-13.50	-0.016383	±2.5	PASS
GSM850	128	VN	10	10.57	0.012824	±2.5	PASS
GSM850	128	VN	20	0.12	0.000147	±2.5	PASS
GSM850	128	VN	30	10.52	0.012768	±2.5	PASS
GSM850	128	VN	40	-10.47	-0.012703	±2.5	PASS
GSM850	128	VN	50	5.97	0.007245	±2.5	PASS
GSM850	190	VN	-30	14.31	0.017101	±2.5	PASS
GSM850	190	VN	-20	11.78	0.014078	±2.5	PASS
GSM850	190	VN	-10	9.47	0.011319	±2.5	PASS
GSM850	190	VN	0	2.08	0.002491	±2.5	PASS
GSM850	190	VN	10	11.70	0.013982	±2.5	PASS
GSM850	190	VN	20	0.28	0.000333	±2.5	PASS
GSM850	190	VN	30	14.55	0.017392	±2.5	PASS
GSM850	190	VN	40	11.14	0.013319	±2.5	PASS
GSM850	190	VN	50	10.96	0.013099	±2.5	PASS
GSM850	251	VN	-30	7.36	0.008674	±2.5	PASS
GSM850	251	VN	-20	-10.65	-0.012548	±2.5	PASS
GSM850	251	VN	-10	-0.30	-0.000350	±2.5	PASS
GSM850	251	VN	0	-4.44	-0.005236	±2.5	PASS
GSM850	251	VN	10	11.18	0.013166	±2.5	PASS
GSM850	251	VN	20	5.95	0.007008	±2.5	PASS
GSM850	251	VN	30	-4.21	-0.004958	±2.5	PASS
GSM850	251	VN	40	-13.71	-0.016151	±2.5	PASS
GSM850	251	VN	50	4.62	0.005438	±2.5	PASS
EGPRS850	128	VN	-30	4.08	0.004952	±2.5	PASS
EGPRS850	128	VN	-20	-10.67	-0.012949	±2.5	PASS
EGPRS850	128	VN	-10	4.98	0.006047	±2.5	PASS
EGPRS850	128	VN	0	-1.39	-0.001691	±2.5	PASS
EGPRS850	128	VN	10	-5.86	-0.007106	±2.5	PASS
EGPRS850	128	VN	20	-5.48	-0.006648	±2.5	PASS
EGPRS850	128	VN	30	14.20	0.017230	±2.5	PASS
EGPRS850	128	VN	40	6.98	0.008466	±2.5	PASS
EGPRS850	128	VN	50	-8.93	-0.010841	±2.5	PASS
EGPRS850	190	VN	-30	8.65	0.010335	±2.5	PASS
EGPRS850	190	VN	-20	-4.75	-0.005681	±2.5	PASS
EGPRS850	190	VN	-10	-13.14	-0.015706	±2.5	PASS
EGPRS850	190	VN	0	12.56	0.015010	±2.5	PASS
EGPRS850	190	VN	10	4.41	0.005272	±2.5	PASS
EGPRS850	190	VN	20	-13.22	-0.015796	±2.5	PASS
EGPRS850	190	VN	30	14.02	0.016758	±2.5	PASS



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EGPRS850	190	VN	40	3.67	0.004382	±2.5	PASS
EGPRS850	190	VN	50	2.70	0.003228	±2.5	PASS
EGPRS850	251	VN	-30	-7.13	-0.008404	±2.5	PASS
EGPRS850	251	VN	-20	-12.43	-0.014647	±2.5	PASS
EGPRS850	251	VN	-10	-7.88	-0.009287	±2.5	PASS
EGPRS850	251	VN	0	0.33	0.000389	±2.5	PASS
EGPRS850	251	VN	10	12.50	0.014725	±2.5	PASS
EGPRS850	251	VN	20	-14.60	-0.017197	±2.5	PASS
EGPRS850	251	VN	30	-1.56	-0.001835	±2.5	PASS
EGPRS850	251	VN	40	-8.25	-0.009722	±2.5	PASS
EGPRS850	251	VN	50	-11.91	-0.014026	±2.5	PASS
GSM1900	512	VN	-30	-7.08	-0.003825	±2.5	PASS
GSM1900	512	VN	-20	4.96	0.002680	±2.5	PASS
GSM1900	512	VN	-10	-2.25	-0.001215	±2.5	PASS
GSM1900	512	VN	0	-13.25	-0.007161	±2.5	PASS
GSM1900	512	VN	10	5.23	0.002829	±2.5	PASS
GSM1900	512	VN	20	-9.62	-0.005198	±2.5	PASS
GSM1900	512	VN	30	-13.52	-0.007307	±2.5	PASS
GSM1900	512	VN	40	1.87	0.001009	±2.5	PASS
GSM1900	512	VN	50	8.11	0.004383	±2.5	PASS
GSM1900	661	VN	-30	2.76	0.001468	±2.5	PASS
GSM1900	661	VN	-20	-14.76	-0.007852	±2.5	PASS
GSM1900	661	VN	-10	-9.57	-0.005091	±2.5	PASS
GSM1900	661	VN	0	6.90	0.003669	±2.5	PASS
GSM1900	661	VN	10	1.10	0.000583	±2.5	PASS
GSM1900	661	VN	20	-0.85	-0.000454	±2.5	PASS
GSM1900	661	VN	30	9.23	0.004912	±2.5	PASS
GSM1900	661	VN	40	10.24	0.005444	±2.5	PASS
GSM1900	661	VN	50	8.57	0.004559	±2.5	PASS
GSM1900	810	VN	-30	-1.54	-0.000807	±2.5	PASS
GSM1900	810	VN	-20	7.03	0.003681	±2.5	PASS
GSM1900	810	VN	-10	6.83	0.003578	±2.5	PASS
GSM1900	810	VN	0	0.40	0.000208	±2.5	PASS
GSM1900	810	VN	10	-7.21	-0.003773	±2.5	PASS
GSM1900	810	VN	20	-12.65	-0.006623	±2.5	PASS
GSM1900	810	VN	30	-1.56	-0.000815	±2.5	PASS
GSM1900	810	VN	40	11.69	0.006120	±2.5	PASS
GSM1900	810	VN	50	1.86	0.000973	±2.5	PASS
EGPRS1900	512	VN	-30	14.14	0.007641	±2.5	PASS
EGPRS1900	512	VN	-20	3.43	0.001853	±2.5	PASS
EGPRS1900	512	VN	-10	7.54	0.004073	±2.5	PASS
EGPRS1900	512	VN	0	-4.70	-0.002541	±2.5	PASS
EGPRS1900	512	VN	10	3.27	0.001765	±2.5	PASS
EGPRS1900	512	VN	20	8.48	0.004584	±2.5	PASS
EGPRS1900	512	VN	30	-9.11	-0.004925	±2.5	PASS
EGPRS1900	512	VN	40	3.83	0.002068	±2.5	PASS
EGPRS1900	512	VN	50	3.38	0.001827	±2.5	PASS



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EGPRS1900	661	VN	-30	-0.39	-0.000207	±2.5	PASS
EGPRS1900	661	VN	-20	3.07	0.001632	±2.5	PASS
EGPRS1900	661	VN	-10	9.15	0.004865	±2.5	PASS
EGPRS1900	661	VN	0	13.81	0.007347	±2.5	PASS
EGPRS1900	661	VN	10	12.75	0.006782	±2.5	PASS
EGPRS1900	661	VN	20	2.72	0.001446	±2.5	PASS
EGPRS1900	661	VN	30	4.74	0.002520	±2.5	PASS
EGPRS1900	661	VN	40	6.82	0.003629	±2.5	PASS
EGPRS1900	661	VN	50	-2.35	-0.001249	±2.5	PASS
EGPRS1900	810	VN	-30	5.91	0.003095	±2.5	PASS
EGPRS1900	810	VN	-20	10.79	0.005650	±2.5	PASS
EGPRS1900	810	VN	-10	3.48	0.001820	±2.5	PASS
EGPRS1900	810	VN	0	-12.57	-0.006581	±2.5	PASS
EGPRS1900	810	VN	10	4.02	0.002107	±2.5	PASS
EGPRS1900	810	VN	20	8.06	0.004221	±2.5	PASS
EGPRS1900	810	VN	30	6.19	0.003243	±2.5	PASS
EGPRS1900	810	VN	40	-8.27	-0.004331	±2.5	PASS
EGPRS1900	810	VN	50	10.76	0.005635	±2.5	PASS

The End



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