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Appendix B

GSM 850 & 1900



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1. Effective (Isotropic) Radiated Power Output Data

Down Antenna:

Band	Channel	Slot	Power(dBm)	ERP (dBm)	Limit(dBm)	Verdict
GSM850	128		33.11	25.01	38.45	PASS
GSM850	190		33.06	24.96	38.45	PASS
GSM850	251		33.11	25.01	38.45	PASS
EGPRS850	128	1	33.16	25.06	38.45	PASS
EGPRS850	128	2	31.16	23.06	38.45	PASS
EGPRS850	128	3	29.08	20.98	38.45	PASS
EGPRS850	128	4	27.52	19.42	38.45	PASS
EGPRS850	190	1	33.12	25.02	38.45	PASS
EGPRS850	190	2	31.17	23.07	38.45	PASS
EGPRS850	190	3	28.93	20.83	38.45	PASS
EGPRS850	190	4	27.28	19.18	38.45	PASS
EGPRS850	251	1	33.13	25.03	38.45	PASS
EGPRS850	251	2	31.16	23.06	38.45	PASS
EGPRS850	251	3	28.88	20.78	38.45	PASS
EGPRS850	251	4	27.27	19.17	38.45	PASS



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Up Antenna:

Band	Channel	Slot	Conducted Power	EIRP (dBm)	Limit(dBm)	Verdict
Darid	Charline	5101	(dBm)		Lillit(GBIII)	verdict
GSM1900	512		29.54	27.02	33.00	PASS
GSM1900	661		29.93	27.41	33.00	PASS
GSM1900	810		29.92	27.40	33.00	PASS
EGPRS1900	512	1	29.53	27.01	33.00	PASS
EGPRS1900	512	2	27.73	25.21	33.00	PASS
EGPRS1900	512	3	26.00	23.48	33.00	PASS
EGPRS1900	512	4	24.11	21.59	33.00	PASS
EGPRS1900	661	1	29.91	27.39	33.00	PASS
EGPRS1900	661	2	27.57	25.05	33.00	PASS
EGPRS1900	661	3	25.52	23.00	33.00	PASS
EGPRS1900	661	4	24.02	21.50	33.00	PASS
EGPRS1900	810	1	29.89	27.37	33.00	PASS
EGPRS1900	810	2	27.66	25.14	33.00	PASS
EGPRS1900	810	3	25.51	22.99	33.00	PASS
EGPRS1900	810	4	24.01	21.49	33.00	PASS

Remark:

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

ERP [dBm] = Conducted Power [dBm] + Gain [dBd]

EIRP [dBm] = Conducted Power [dBm] + Gain [dBi]



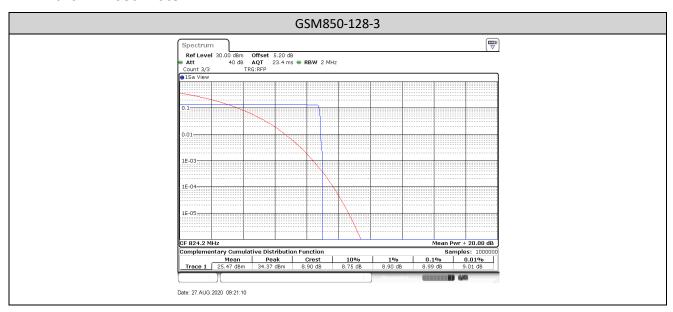
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2. Peak-to-Average Ratio

2.1. Test Result

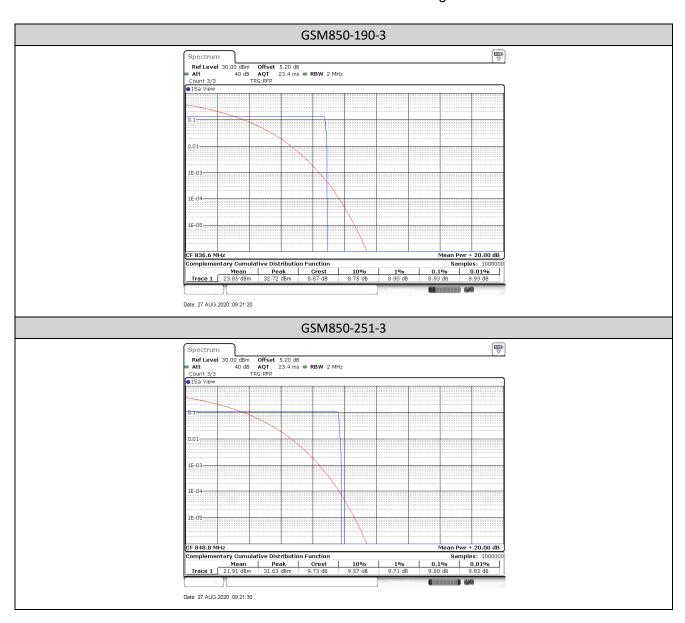
Band	Channel	PCL	Result(dB)	Limit(dB)	Verdict
GSM850	128	3	8.99	13	PASS
GSM850	190	3	8.93	13	PASS
GSM850	251	3	9.8	13	PASS
EGPRS850	128	8	11.88	13	PASS
EGPRS850	190	8	12.38	13	PASS
EGPRS850	251	8	11.39	13	PASS
GSM1900	512	0	9.01	13	PASS
GSM1900	661	0	9.04	13	PASS
GSM1900	810	0	9.01	13	PASS
EGPRS1900	512	2	11.65	13	PASS
EGPRS1900	661	2	12.72	13	PASS
EGPRS1900	810	2	12.43	13	PASS

2.2. Part II - Test Plots



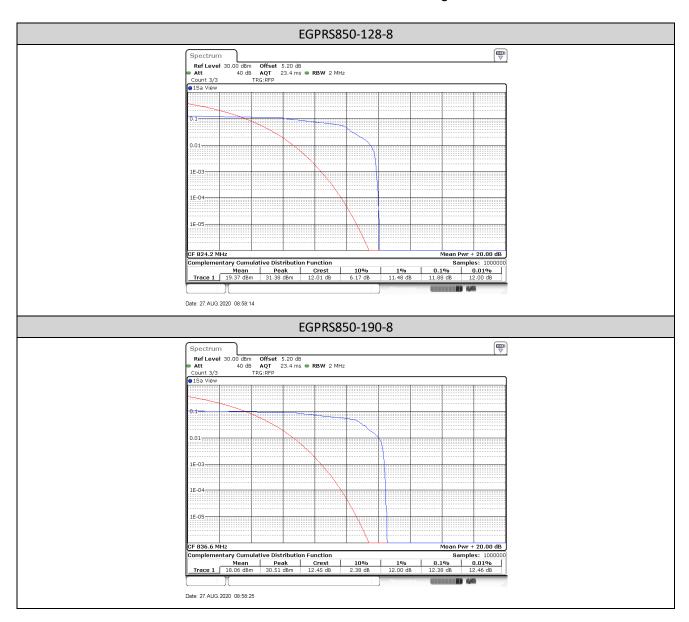


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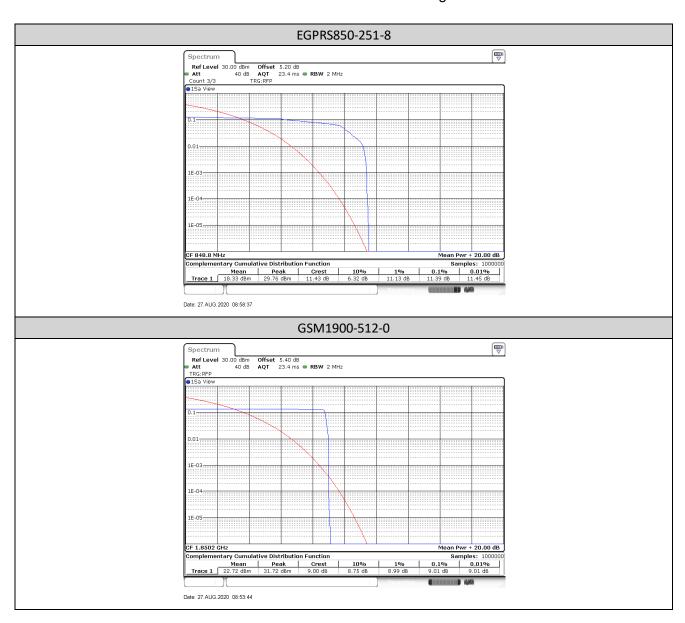


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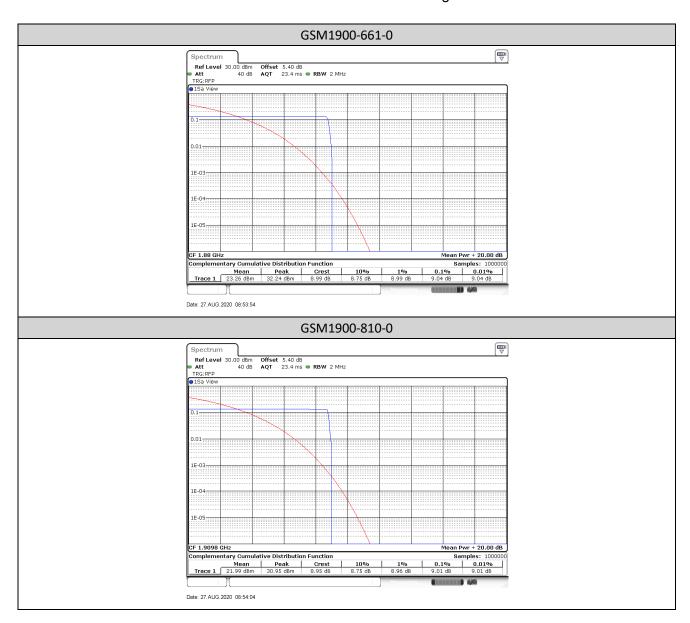


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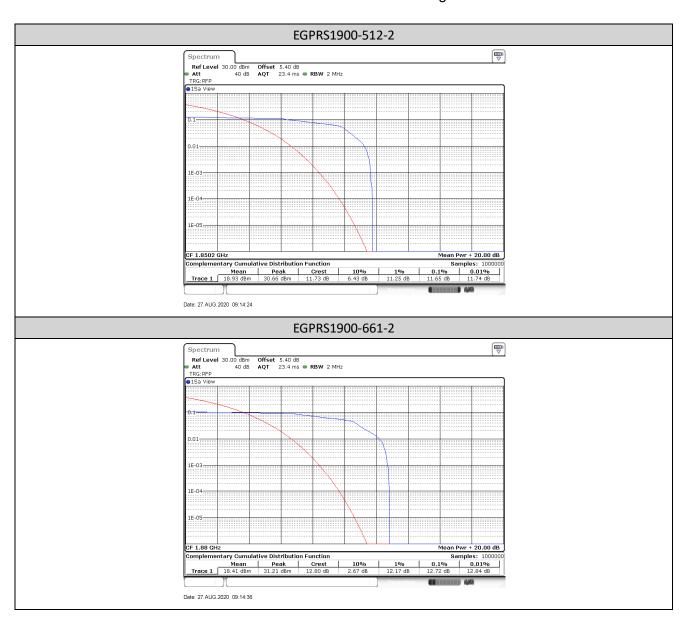


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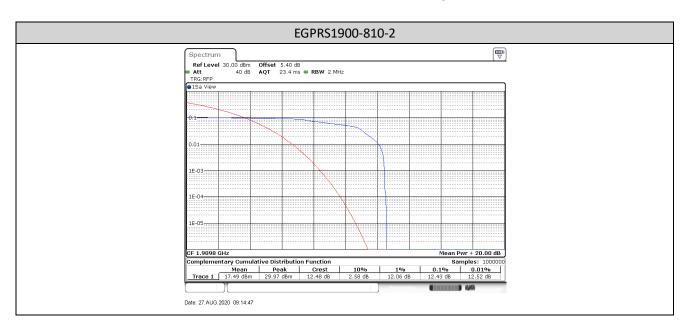


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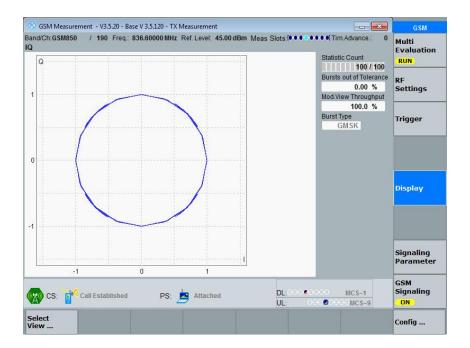
3. Modulation Characteristics

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

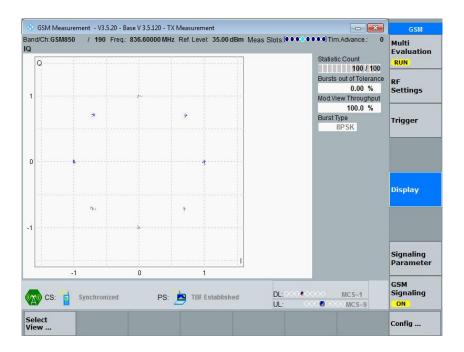




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3.1.1.2. Test Mode = GSM/TM2

3.1.1.2.1. Test Channel = MCH



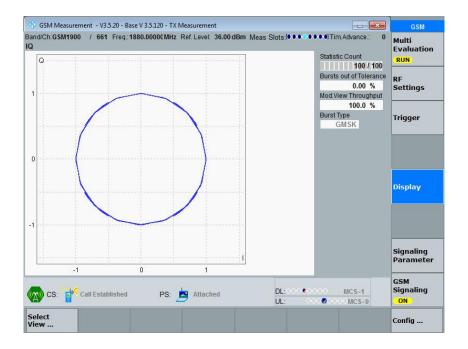


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3.1.2. Test Band = GSM 1900

3.1.2.1. Test Mode = GSM/TM1

3.1.2.1.1. Test Channel = MCH

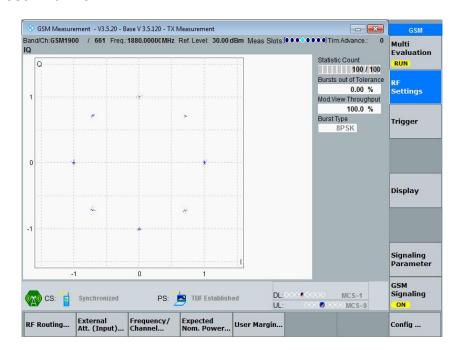




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3.1.2.2. Test Mode = GSM/TM2

3.1.2.2.1. Test Channel = MCH





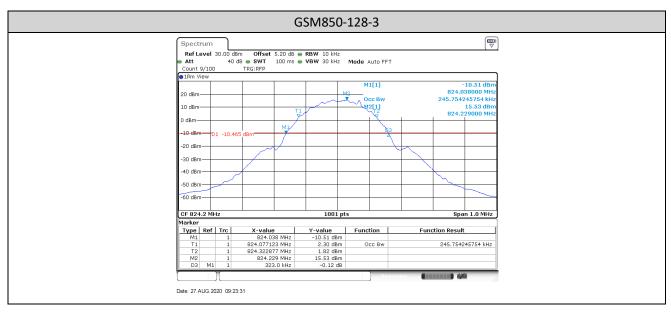
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4. 26dB Bandwidth and Occupied Bandwidth

4.1. Test Result

Donal	Chamal	DCI	Occupied	26dB Bandwidth	Limit	\/andiat
Band	Channel	PCL	Bandwidth (MHz)	(MHz)	(MHz)	Verdict
GSM850	128	3	0.246	0.323		PASS
GSM850	190	3	0.247	0.323		PASS
GSM850	251	3	0.247	0.323		PASS
EGPRS850	128	8	0.244	0.319		PASS
EGPRS850	190 8		0.246	0.319		PASS
EGPRS850	251	8	0.247	0.322		PASS
GSM1900	512	0	0.246	0.325		PASS
GSM1900	661	0	0.246	0.323		PASS
GSM1900	810	0	0.246	0.324		PASS
EGPRS1900	512	2	0.248	0.322		PASS
EGPRS1900	661	2	0.246	0.317		PASS
EGPRS1900	810	2	0.249	0.325		PASS

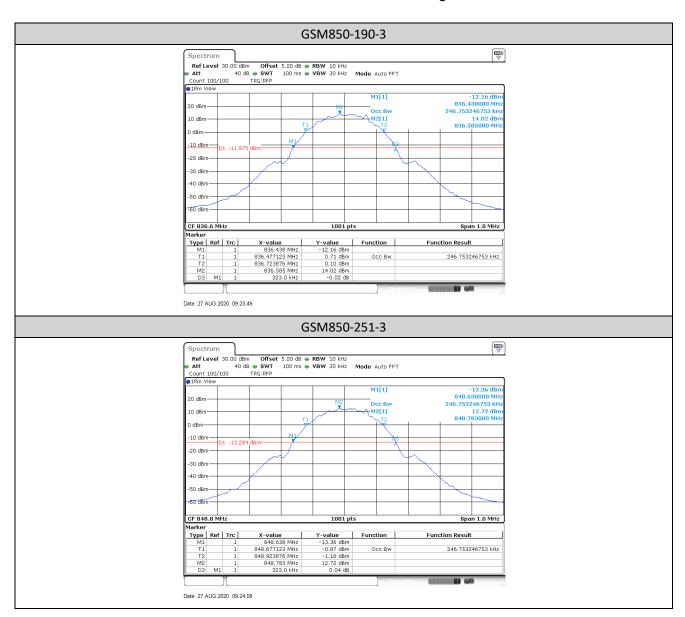
4.2. Test Plots





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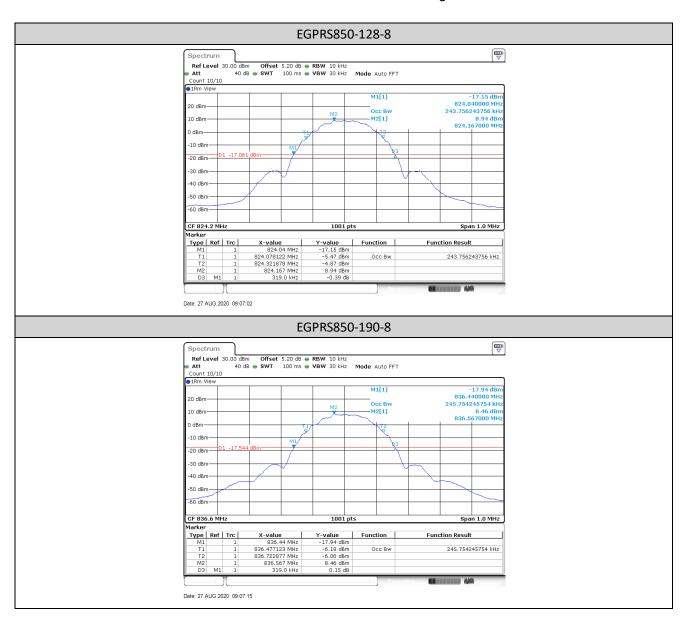
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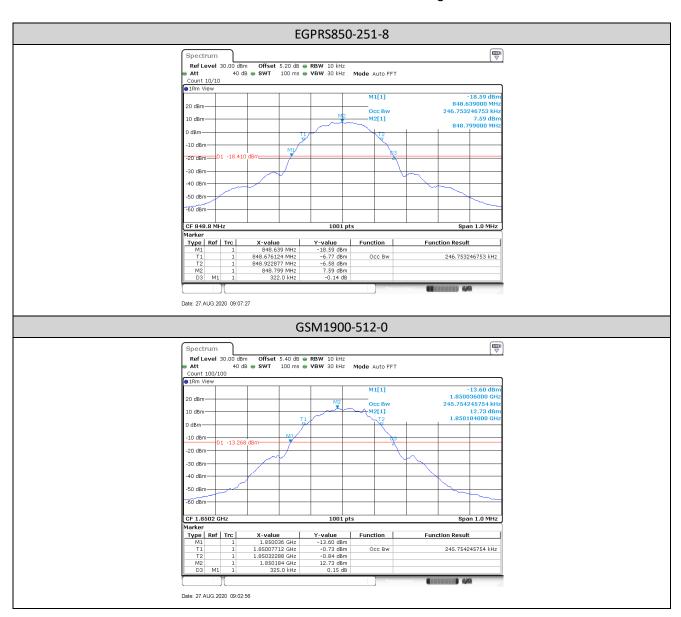
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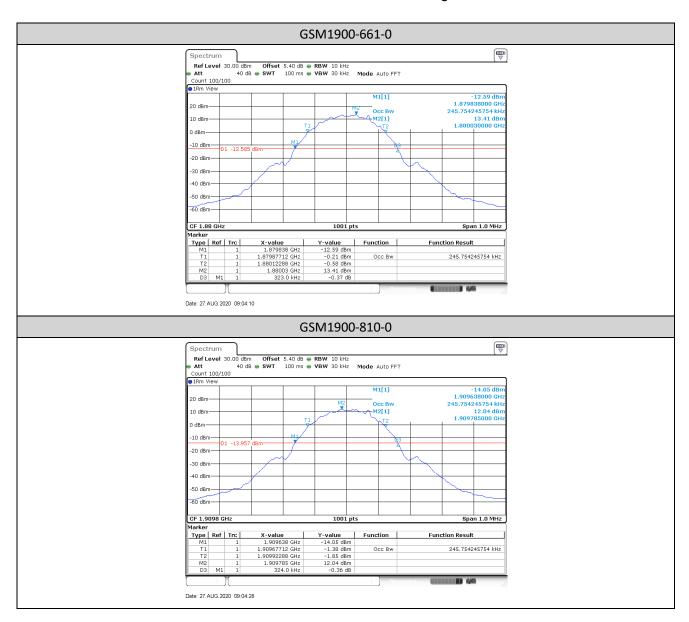
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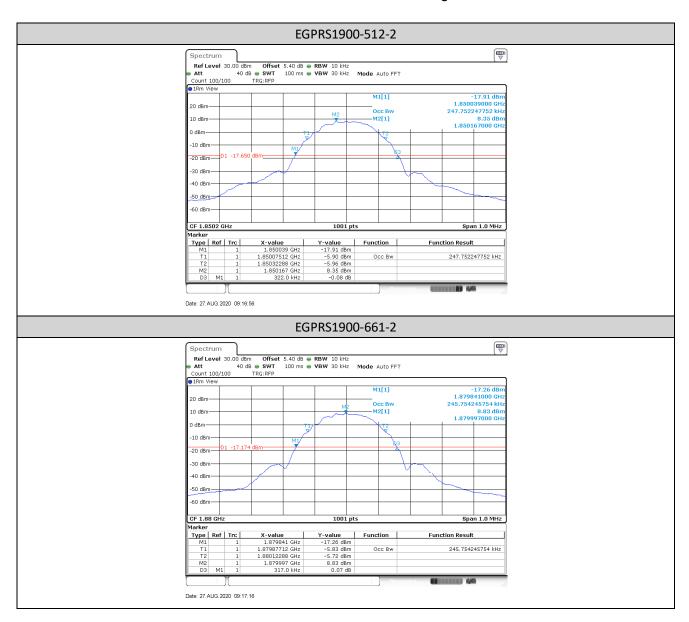
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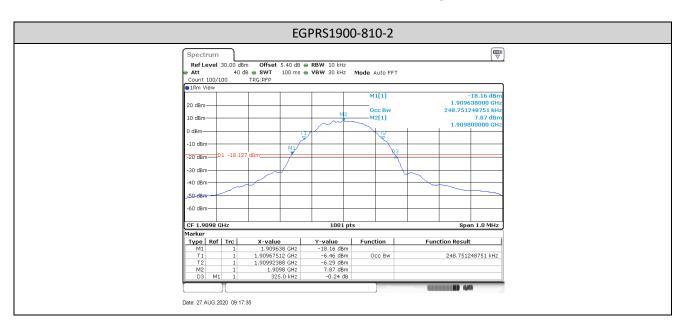
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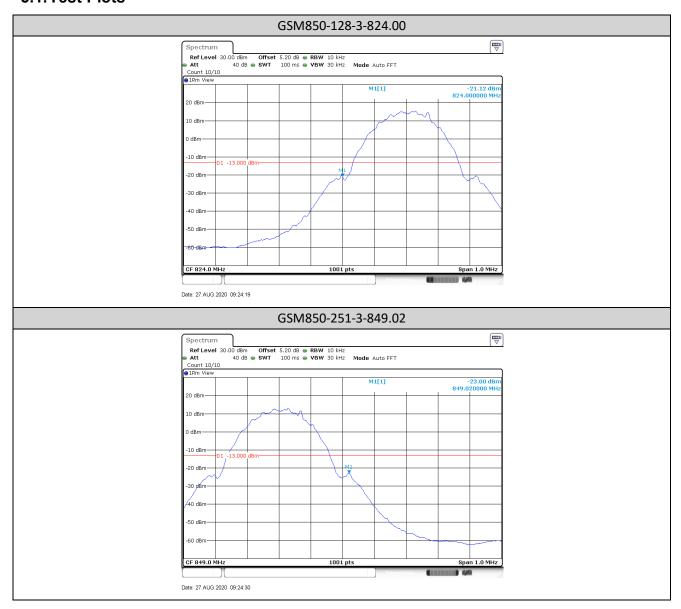




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5. Band Edge Compliance

5.1. Test Plots



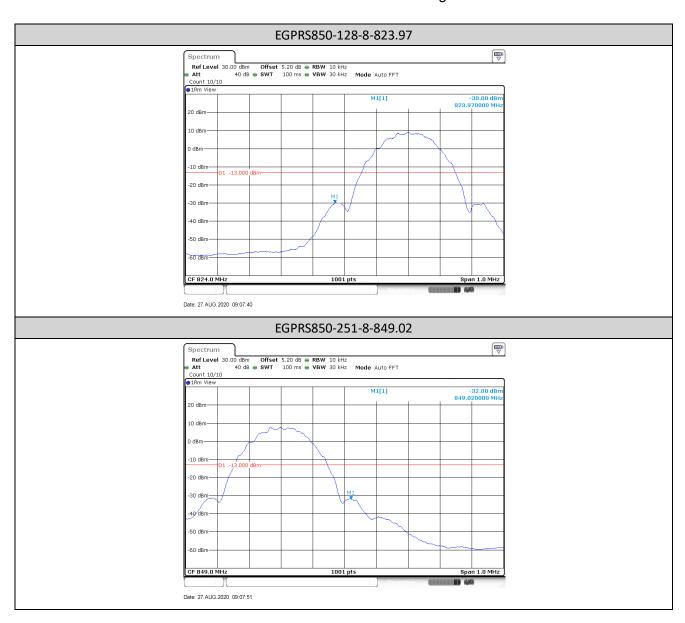


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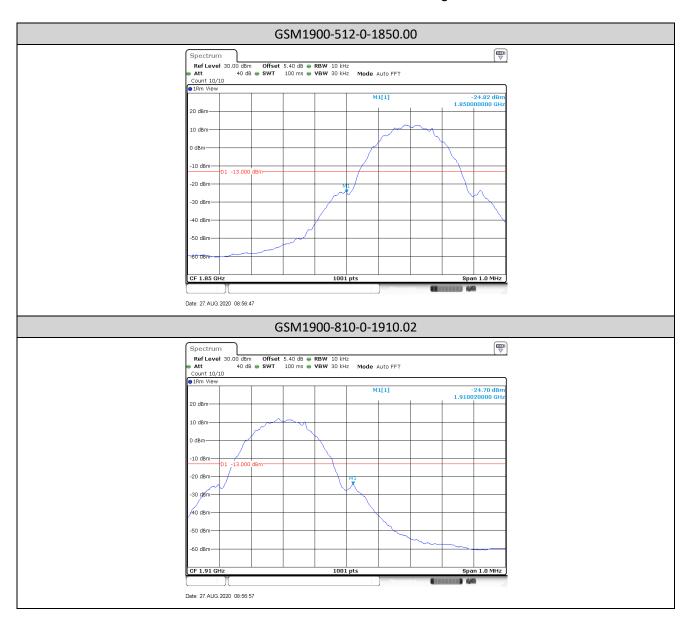
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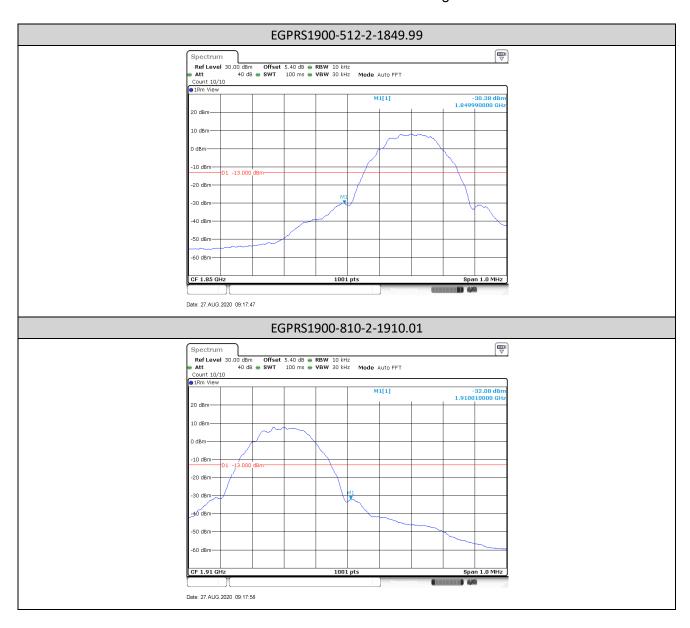
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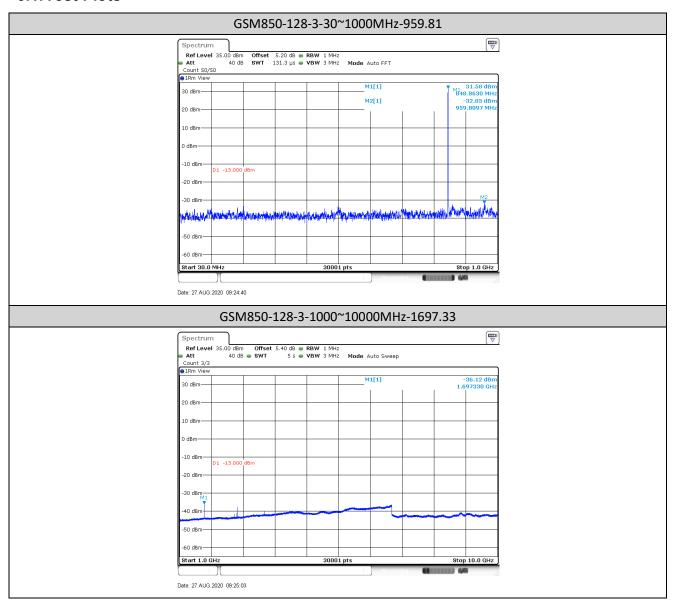
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6. Spurious Emission at Antenna Terminal

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.

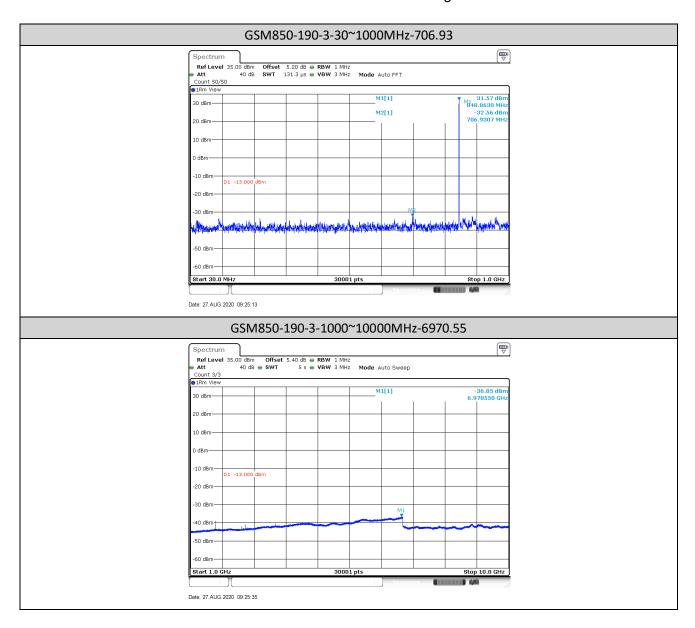
6.1. Test Plots







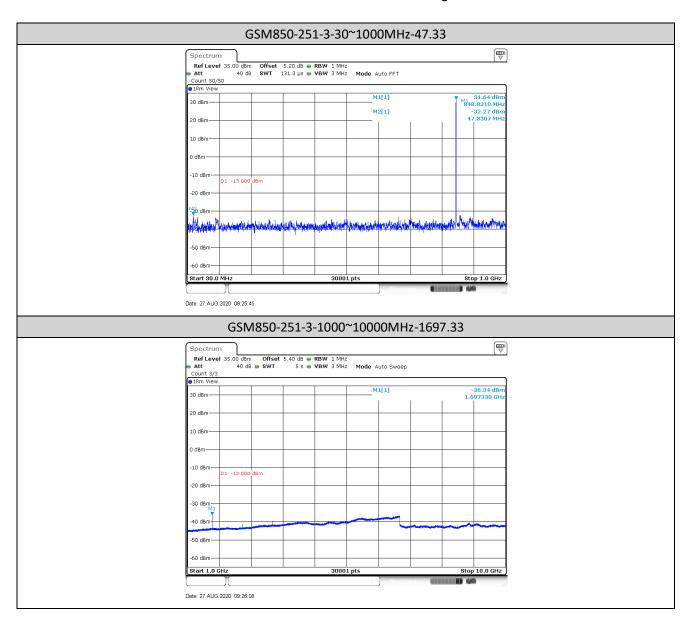
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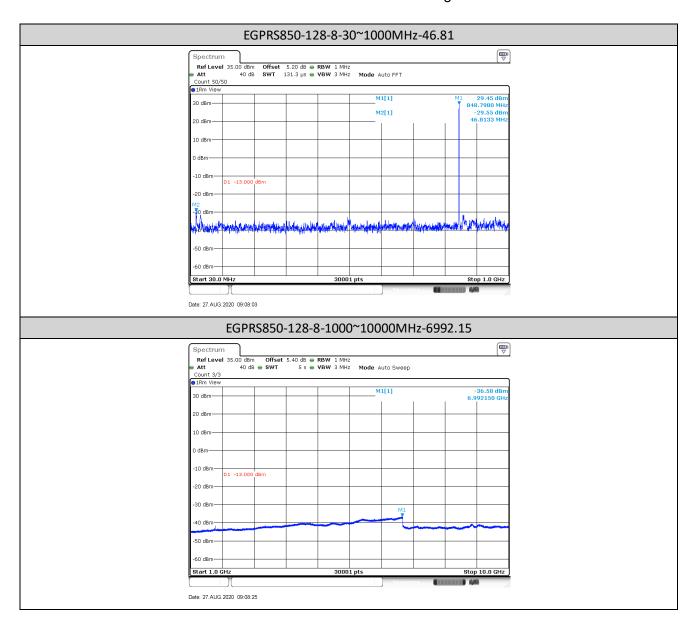
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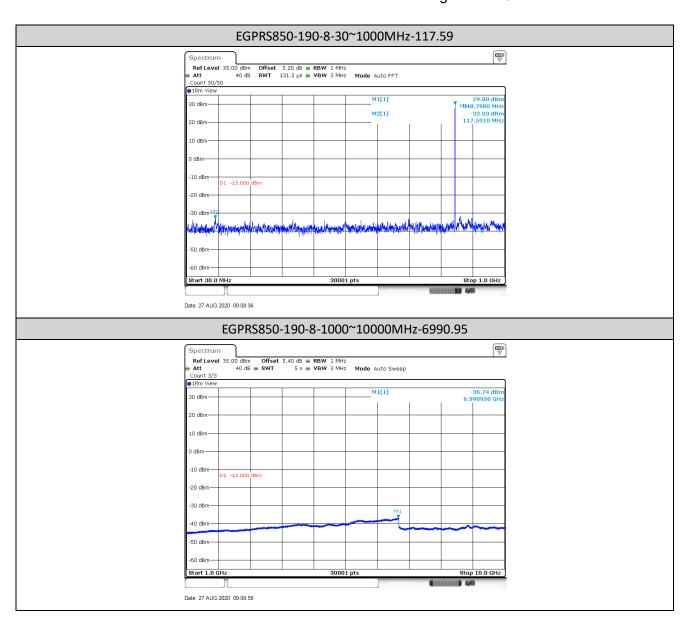
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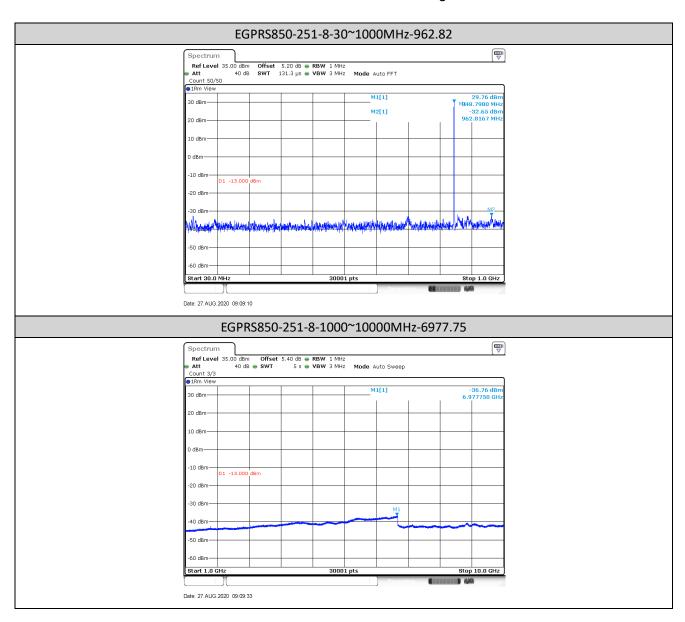
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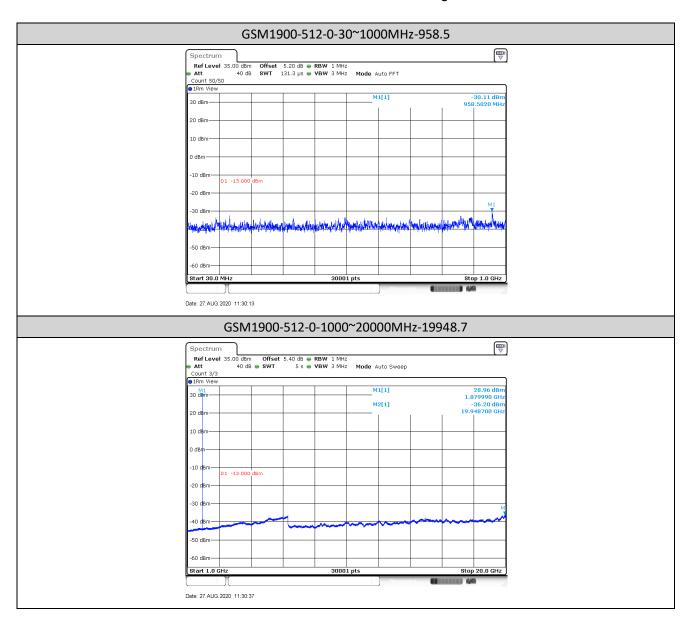
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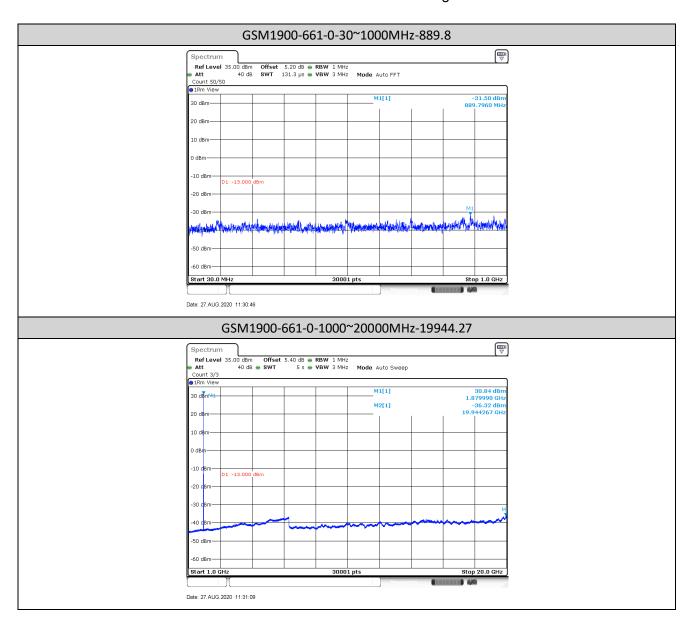
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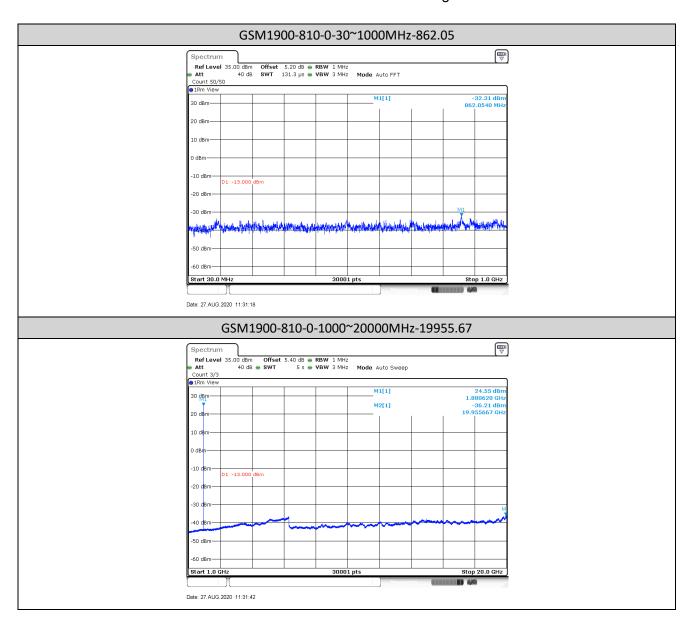
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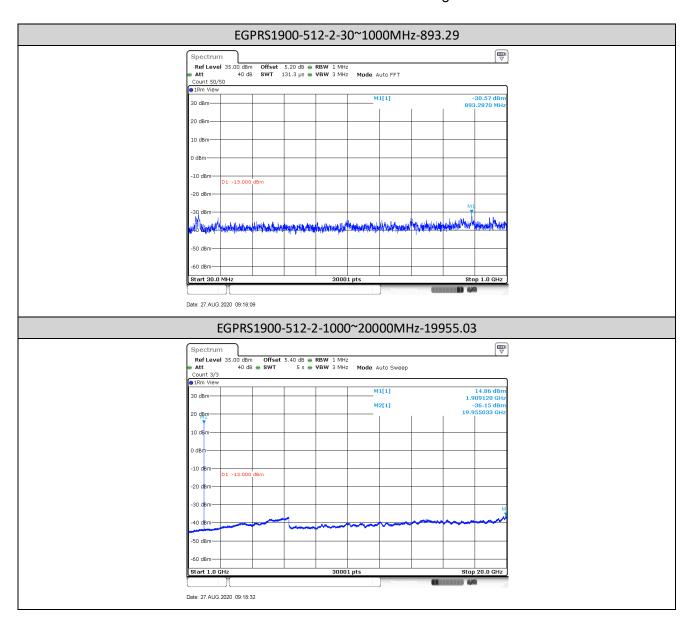


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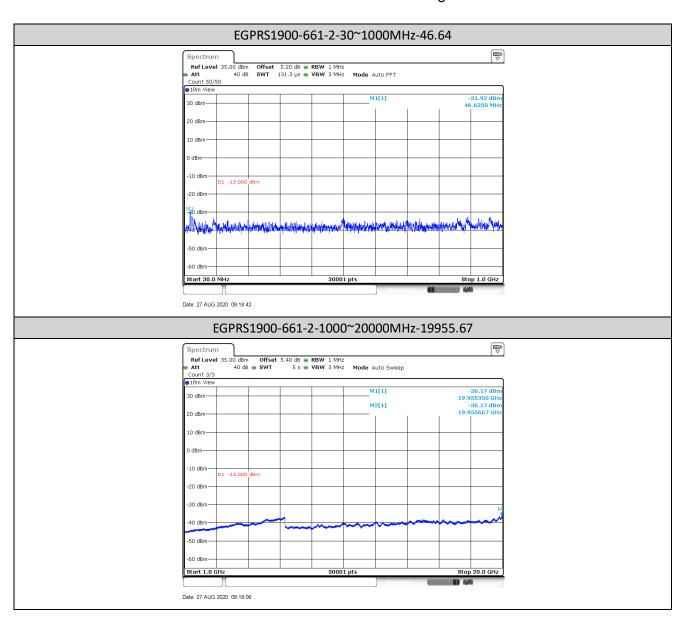
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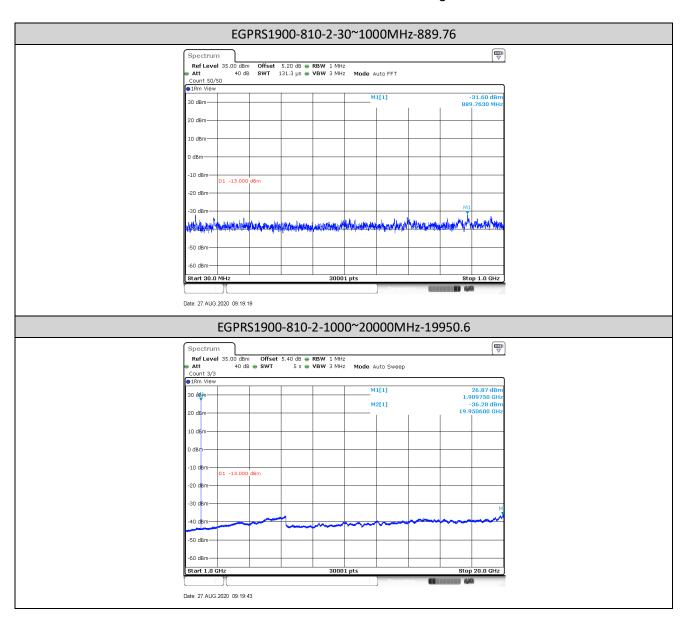
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7. Field Strength of Spurious Radiation

7.1. Test Band = GSM 850(Up Antenna)

7.1.1. Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
112.3086	-62.84	-13.00	49.84	Vertical
584.2372	-63.66	-13.00	50.66	Vertical
1648.5297	-59.31	-13.00	46.31	Vertical
2583.9168	-45.34	-13.00	32.34	Vertical
7454.9485	-55.86	-13.00	42.86	Vertical
9900.1300	-52.31	-13.00	39.31	Vertical
39.6520	-64.13	-13.00	51.13	Horizontal
234.4862	-68.00	-13.00	55.00	Horizontal
1648.5297	-51.47	-13.00	38.47	Horizontal
2589.9180	-48.80	-13.00	35.80	Horizontal
3296.8099	-49.09	-13.00	36.09	Horizontal
8772.3924	-54.96	-13.00	41.96	Horizontal

7.2. Test Band = GSM 850(Down Antenna)

7.2.1. Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
107.7009	-65.36	-13.00	52.36	Vertical
556.2028	-65.26	-13.00	52.26	Vertical
1648.5297	-59.76	-13.00	46.76	Vertical
2582.7165	-52.02	-13.00	39.02	Vertical
7108.2036	-57.86	-13.00	44.86	Vertical
9882.1627	-52.19	-13.00	39.19	Vertical
42.5136	-64.14	-13.00	51.14	Horizontal
228.9084	-67.84	-13.00	54.84	Horizontal
1648.5297	-52.12	-13.00	39.12	Horizontal
2464.2929	-42.70	-13.00	29.70	Horizontal
3296.8099	-50.63	-13.00	37.63	Horizontal
7458.9153	-55.70	-13.00	42.70	Horizontal

- 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

Voltage										
Band	Channel	PCL	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict		
GSM850	128	3	VL	NT	0.23	0.000279	±2.5	PASS		
GSM850	128	3	VN	NT	6.36	0.007717	±2.5	PASS		
GSM850	128	3	VH	NT	5.78	0.007013	±2.5	PASS		
GSM850	190	3	VL	NT	9.14	0.010925	±2.5	PASS		
GSM850	190	3	VN	NT	7.01	0.008379	±2.5	PASS		
GSM850	190	3	VH	NT	-0.48	-0.000574	±2.5	PASS		
GSM850	251	3	VL	NT	-4.07	-0.004795	±2.5	PASS		
GSM850	251	3	VN	NT	-0.39	-0.000459	±2.5	PASS		
GSM850	251	3	VH	NT	2.74	0.003228	±2.5	PASS		
EGPRS850	128	8	VL	NT	28.64	0.034749	±2.5	PASS		
EGPRS850	128	8	VN	NT	29.22	0.035453	±2.5	PASS		
EGPRS850	128	8	VH	NT	31.09	0.037721	±2.5	PASS		
EGPRS850	190	8	VL	NT	30.70	0.036696	±2.5	PASS		
EGPRS850	190	8	VN	NT	32.45	0.038788	±2.5	PASS		
EGPRS850	190	8	VH	NT	32.71	0.039099	±2.5	PASS		
EGPRS850	251	8	VL	NT	22.99	0.027085	±2.5	PASS		
EGPRS850	251	8	VN	NT	27.38	0.032257	±2.5	PASS		
EGPRS850	251	8	VH	NT	25.18	0.029665	±2.5	PASS		
GSM1900	512	0	VL	NT	5.00	0.002702	±2.5	PASS		
GSM1900	512	0	VN	NT	5.75	0.003108	±2.5	PASS		
GSM1900	512	0	VH	NT	3.00	0.001621	±2.5	PASS		
GSM1900	661	0	VL	NT	10.14	0.005394	±2.5	PASS		
GSM1900	661	0	VN	NT	4.97	0.002644	±2.5	PASS		
GSM1900	661	0	VH	NT	-2.29	-0.001218	±2.5	PASS		
GSM1900	810	0	VL	NT	-0.10	-0.000052	±2.5	PASS		
GSM1900	810	0	VN	NT	9.01	0.004718	±2.5	PASS		
GSM1900	810	0	VH	NT	2.00	0.001047	±2.5	PASS		
EGPRS1900	512	2	VL	NT	25.54	0.013804	±2.5	PASS		
EGPRS1900	512	2	VN	NT	26.09	0.014101	±2.5	PASS		
EGPRS1900	512	2	VH	NT	26.86	0.014517	±2.5	PASS		
EGPRS1900	661	2	VL	NT	29.22	0.015543	±2.5	PASS		



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EGPRS1900	661	2	VN	NT	25.47	0.013548	±2.5	PASS
EGPRS1900	661	2	VH	NT	23.79	0.012654	±2.5	PASS
EGPRS1900	810	2	VL	NT	27.51	0.014405	±2.5	PASS
EGPRS1900	810	2	VN	NT	25.70	0.013457	±2.5	PASS
EGPRS1900	810	2	VH	NT	23.86	0.012493	±2.5	PASS

8.2. Frequency Error Vs Temperature

Temperature											
Band	Channel	PCL	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict			
GSM850	128	3	NV	-30	0.48	0.000582	±2.5	PASS			
GSM850	128	3	NV	-20	1.29	0.001565	±2.5	PASS			
GSM850	128	3	NV	-10	-5.39	-0.006540	±2.5	PASS			
GSM850	128	3	NV	0	6.88	0.008347	±2.5	PASS			
GSM850	128	3	NV	10	-3.84	-0.004659	±2.5	PASS			
GSM850	128	3	NV	20	8.94	0.010847	±2.5	PASS			
GSM850	128	3	NV	30	6.68	0.008105	±2.5	PASS			
GSM850	128	3	NV	40	5.20	0.006309	±2.5	PASS			
GSM850	128	3	NV	50	1.49	0.001808	±2.5	PASS			
GSM850	190	3	NV	-30	13.01	0.015551	±2.5	PASS			
GSM850	190	3	NV	-20	-0.58	-0.000693	±2.5	PASS			
GSM850	190	3	NV	-10	14.40	0.017213	±2.5	PASS			
GSM850	190	3	NV	0	4.49	0.005367	±2.5	PASS			
GSM850	190	3	NV	10	4.91	0.005869	±2.5	PASS			
GSM850	190	3	NV	20	15.14	0.018097	±2.5	PASS			
GSM850	190	3	NV	30	5.49	0.006562	±2.5	PASS			
GSM850	190	3	NV	40	9.30	0.011116	±2.5	PASS			
GSM850	190	3	NV	50	8.78	0.010495	±2.5	PASS			
GSM850	251	3	NV	-30	-2.94	-0.003464	±2.5	PASS			
GSM850	251	3	NV	-20	-5.17	-0.006091	±2.5	PASS			
GSM850	251	3	NV	-10	-1.71	-0.002015	±2.5	PASS			
GSM850	251	3	NV	0	-2.84	-0.003346	±2.5	PASS			
GSM850	251	3	NV	10	-2.45	-0.002886	±2.5	PASS			
GSM850	251	3	NV	20	3.91	0.004607	±2.5	PASS			
GSM850	251	3	NV	30	3.68	0.004336	±2.5	PASS			
GSM850	251	3	NV	40	-0.45	-0.000530	±2.5	PASS			
GSM850	251	3	NV	50	2.58	0.003040	±2.5	PASS			



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						7		•
EGPRS850	128	8	NV	-30	27.12	0.032905	±2.5	PASS
EGPRS850	128	8	NV	-20	19.53	0.023696	±2.5	PASS
EGPRS850	128	8	NV	-10	24.12	0.029265	±2.5	PASS
EGPRS850	128	8	NV	0	24.18	0.029338	±2.5	PASS
EGPRS850	128	8	NV	10	26.96	0.032711	±2.5	PASS
EGPRS850	128	8	NV	20	21.31	0.025855	±2.5	PASS
EGPRS850	128	8	NV	30	26.86	0.032589	±2.5	PASS
EGPRS850	128	8	NV	40	24.60	0.029847	±2.5	PASS
EGPRS850	128	8	NV	50	25.34	0.030745	±2.5	PASS
EGPRS850	190	8	NV	-30	35.06	0.041908	±2.5	PASS
EGPRS850	190	8	NV	-20	29.86	0.035692	±2.5	PASS
EGPRS850	190	8	NV	-10	30.19	0.036087	±2.5	PASS
EGPRS850	190	8	NV	0	34.68	0.041454	±2.5	PASS
EGPRS850	190	8	NV	10	29.64	0.035429	±2.5	PASS
EGPRS850	190	8	NV	20	28.51	0.034078	±2.5	PASS
EGPRS850	190	8	NV	30	30.41	0.036350	±2.5	PASS
EGPRS850	190	8	NV	40	26.64	0.031843	±2.5	PASS
EGPRS850	190	8	NV	50	30.70	0.036696	±2.5	PASS
EGPRS850	251	8	NV	-30	24.12	0.028417	±2.5	PASS
EGPRS850	251	8	NV	-20	24.41	0.028758	±2.5	PASS
EGPRS850	251	8	NV	-10	25.34	0.029854	±2.5	PASS
EGPRS850	251	8	NV	0	25.93	0.030549	±2.5	PASS
EGPRS850	251	8	NV	10	26.02	0.030655	±2.5	PASS
EGPRS850	251	8	NV	20	25.60	0.030160	±2.5	PASS
EGPRS850	251	8	NV	30	25.93	0.030549	±2.5	PASS
EGPRS850	251	8	NV	40	22.31	0.026284	±2.5	PASS
EGPRS850	251	8	NV	50	27.44	0.032328	±2.5	PASS
GSM1900	512	0	NV	-30	3.23	0.001746	±2.5	PASS
GSM1900	512	0	NV	-20	0.77	0.000416	±2.5	PASS
GSM1900	512	0	NV	-10	6.23	0.003367	±2.5	PASS
GSM1900	512	0	NV	0	2.39	0.001292	±2.5	PASS
GSM1900	512	0	NV	10	12.72	0.006875	±2.5	PASS
GSM1900	512	0	NV	20	7.49	0.004048	±2.5	PASS
GSM1900	512	0	NV	30	11.85	0.006405	±2.5	PASS
GSM1900	512	0	NV	40	5.59	0.003021	±2.5	PASS
GSM1900	512	0	NV	50	11.14	0.006021	±2.5	PASS
GSM1900	661	0	NV	-30	3.87	0.002059	±2.5	PASS



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		T				1	<u> </u>	1
GSM1900	661	0	NV	-20	4.20	0.002234	±2.5	PASS
GSM1900	661	0	NV	-10	-0.06	-0.000032	±2.5	PASS
GSM1900	661	0	NV	0	9.23	0.004910	±2.5	PASS
GSM1900	661	0	NV	10	2.58	0.001372	±2.5	PASS
GSM1900	661	0	NV	20	5.84	0.003106	±2.5	PASS
GSM1900	661	0	NV	30	6.30	0.003351	±2.5	PASS
GSM1900	661	0	NV	40	4.10	0.002181	±2.5	PASS
GSM1900	661	0	NV	50	8.75	0.004654	±2.5	PASS
GSM1900	810	0	NV	-30	-0.10	-0.000052	±2.5	PASS
GSM1900	810	0	NV	-20	0.58	0.000304	±2.5	PASS
GSM1900	810	0	NV	-10	3.55	0.001859	±2.5	PASS
GSM1900	810	0	NV	0	2.29	0.001199	±2.5	PASS
GSM1900	810	0	NV	10	1.87	0.000979	±2.5	PASS
GSM1900	810	0	NV	20	0.71	0.000372	±2.5	PASS
GSM1900	810	0	NV	30	2.39	0.001251	±2.5	PASS
GSM1900	810	0	NV	40	4.26	0.002231	±2.5	PASS
GSM1900	810	0	NV	50	6.07	0.003178	±2.5	PASS
EGPRS1900	512	2	NV	-30	26.64	0.014398	±2.5	PASS
EGPRS1900	512	2	NV	-20	26.28	0.014204	±2.5	PASS
EGPRS1900	512	2	NV	-10	27.93	0.015096	±2.5	PASS
EGPRS1900	512	2	NV	0	28.28	0.015285	±2.5	PASS
EGPRS1900	512	2	NV	10	28.77	0.015550	±2.5	PASS
EGPRS1900	512	2	NV	20	25.57	0.013820	±2.5	PASS
EGPRS1900	512	2	NV	30	24.15	0.013053	±2.5	PASS
EGPRS1900	512	2	NV	40	25.05	0.013539	±2.5	PASS
EGPRS1900	512	2	NV	50	28.15	0.015215	±2.5	PASS
EGPRS1900	661	2	NV	-30	21.28	0.011319	±2.5	PASS
EGPRS1900	661	2	NV	-20	31.67	0.016846	±2.5	PASS
EGPRS1900	661	2	NV	-10	31.38	0.016691	±2.5	PASS
EGPRS1900	661	2	NV	0	27.64	0.014702	±2.5	PASS
EGPRS1900	661	2	NV	10	29.44	0.015660	±2.5	PASS
EGPRS1900	661	2	NV	20	27.41	0.014580	±2.5	PASS
EGPRS1900	661	2	NV	30	31.64	0.016830	±2.5	PASS
EGPRS1900	661	2	NV	40	30.38	0.016160	±2.5	PASS
EGPRS1900	661	2	NV	50	29.15	0.015505	±2.5	PASS
EGPRS1900	810	2	NV	-30	23.60	0.012357	±2.5	PASS
EGPRS1900	810	2	NV	-20	25.05	0.013117	±2.5	PASS



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EGPRS1900	810	2	NV	-10	27.15	0.014216	±2.5	PASS
EGPRS1900	810	2	NV	0	28.31	0.014824	±2.5	PASS
EGPRS1900	810	2	NV	10	25.80	0.013509	±2.5	PASS
EGPRS1900	810	2	NV	20	27.57	0.014436	±2.5	PASS
EGPRS1900	810	2	NV	30	22.70	0.011886	±2.5	PASS
EGPRS1900	810	2	NV	40	25.31	0.013253	±2.5	PASS
EGPRS1900	810	2	NV	50	26.25	0.013745	±2.5	PASS

The End

