

Appendix for GSM850/1900 test report

Appendix A: Effective (Isotropic) Radiated Power Output Data

Test Results

Test Band	Test Mode	Test Channel	Conducted Power[dBm]	ERP[dBm]	Limit[dBm]	Verdict
GSM850	GSM/TM1	LCH	29.66	31.55	38.5	PASS
		MCH	29.79	31.68	38.5	PASS
		HCH	29.87	31.76	38.5	PASS
	GSM/TM2	LCH	26.38	28.27	38.5	PASS
		MCH	26.16	28.05	38.5	PASS
		HCH	26.05	27.94	38.5	PASS

Test Band	Test Mode	Test Channel	Conducted Power[dBm]	EIRP[dBm]	Limit[dBm]	Verdict
GSM1900	GSM/TM1	LCH	29.01	32.15	33	PASS
		MCH	29.46	32.6	33	PASS
		HCH	29.77	32.91	33	PASS
	GSM/TM2	LCH	25.75	28.89	33	PASS
		MCH	26.15	29.29	33	PASS
		HCH	26.66	29.8	33	PASS

Note 1:

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

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

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

b, SGP=Signal Generator Level

c, Antenna gain of GSM 850 is 4.04dBi; Antenna gain of GSM 1900 is 3.14dBi;

Note 2:

$$\text{SET Span} = 1.5 * \text{OBW}$$

$$\text{SET RBW} = 1\% \text{ of the OBW, not to exceed 1MHz}$$

$$\text{SET VBW} \geq 3 * \text{RBW}$$

$$\text{SET SWEEP time} = \text{auto couple}$$

Detector: RMS

Appendix B: Peak-to-Average Ratio(CCDF)

Test Band	Test Mode	Test Channel	Measured[dBm]	Limit[dBm]	Verdict
GSM850	GSM/TM1	LCH	2.82	13	PASS
		MCH	2.82	13	PASS
		HCH	2.82	13	PASS
	GSM/TM2	LCH	5.62	13	PASS
		MCH	5.62	13	PASS
		HCH	5.62	13	PASS
GSM1900	GSM/TM1	LCH	3.16	13	PASS
		MCH	3.2	13	PASS
		HCH	3.12	13	PASS
	GSM/TM2	LCH	6.04	13	PASS
		MCH	6.1	13	PASS
		HCH	6.07	13	PASS

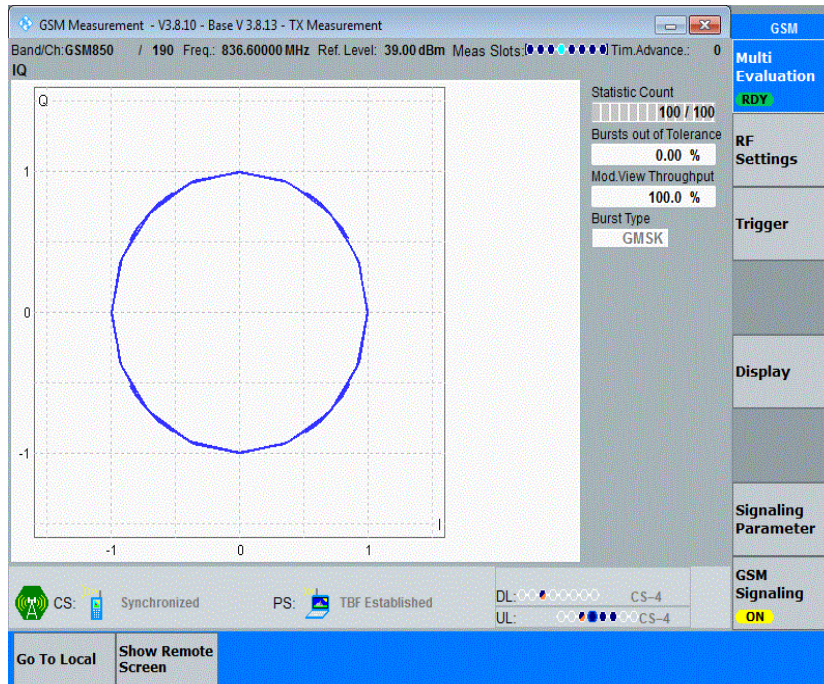
Appendix C: Modulation Characteristics

Test Plots

Test Band = GSM850

Test Mode = GSM/TM1

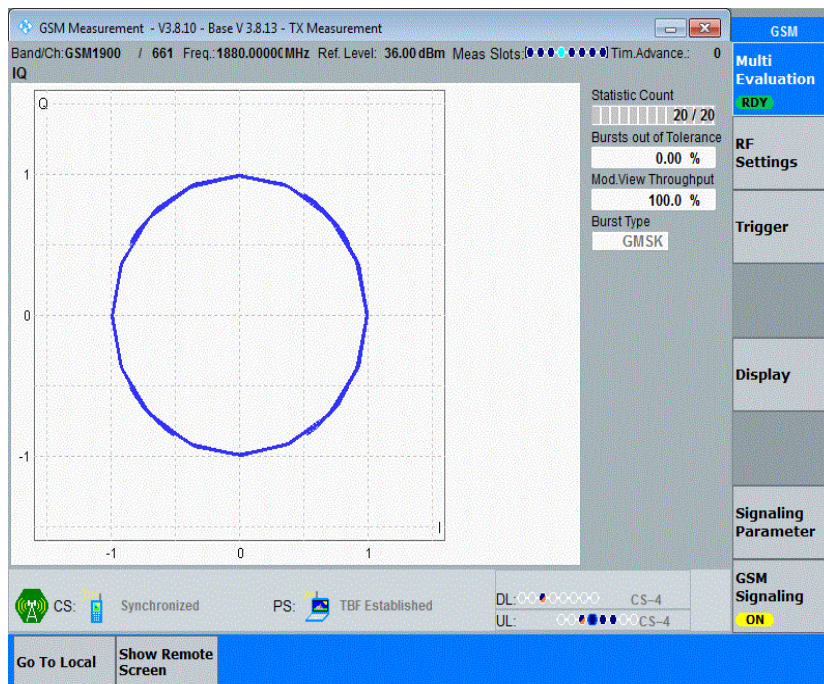
Test Channel = MCH



Test Band = GSM1900

Test Mode = GSM/TM1

Test Channel = MCH

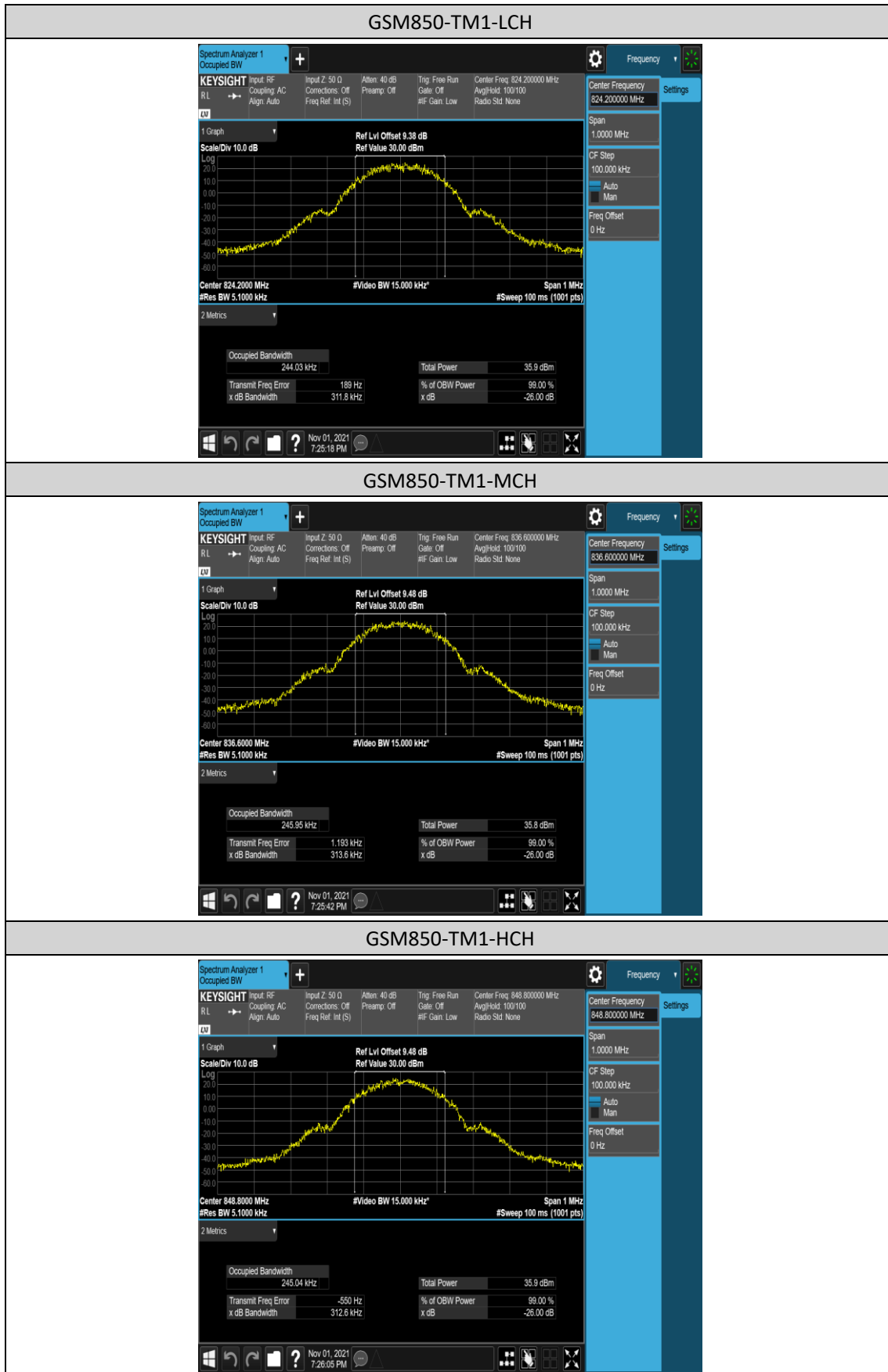


Appendix D: Bandwidth

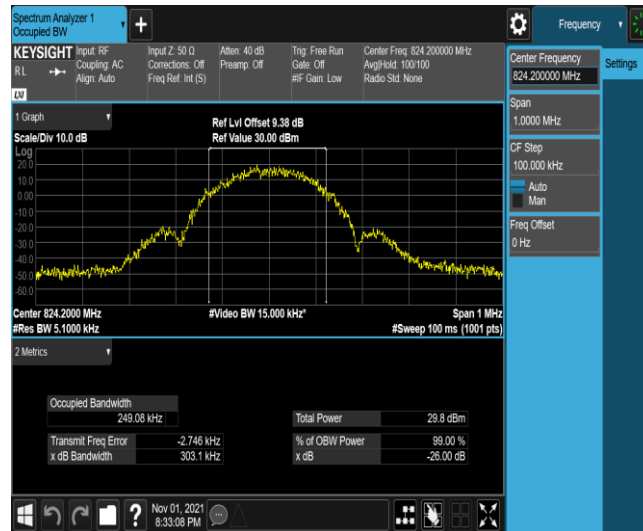
Test Result

Test Band	Test Mode	Test Channel	Occupied Bandwidth[MHz]	Emission Bandwidth[MHz]	Verdict
GSM850	GSM/TM1	LCH	0.24403	0.3118	PASS
		MCH	0.24595	0.3136	PASS
		HCH	0.24504	0.3126	PASS
	GSM/TM2	LCH	0.24908	0.3031	PASS
		MCH	0.24761	0.3112	PASS
		HCH	0.24571	0.3098	PASS
GSM1900	GSM/TM1	LCH	0.24364	0.3153	PASS
		MCH	0.24135	0.3169	PASS
		HCH	0.24403	0.3109	PASS
	GSM/TM2	LCH	0.24155	0.3056	PASS
		MCH	0.24462	0.3001	PASS
		HCH	0.23795	0.2992	PASS

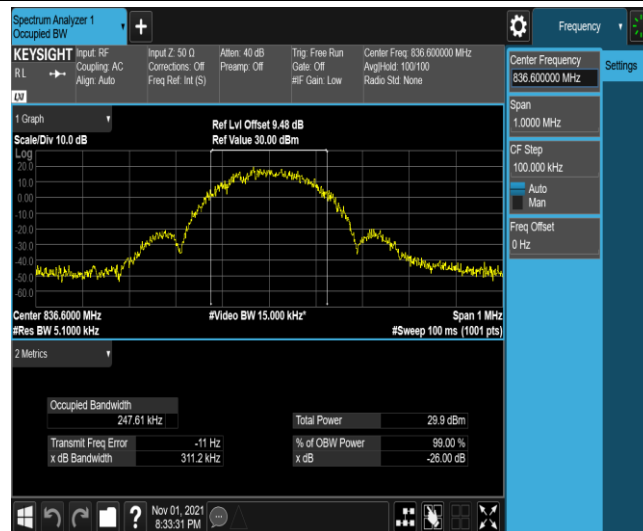
Test Graphs



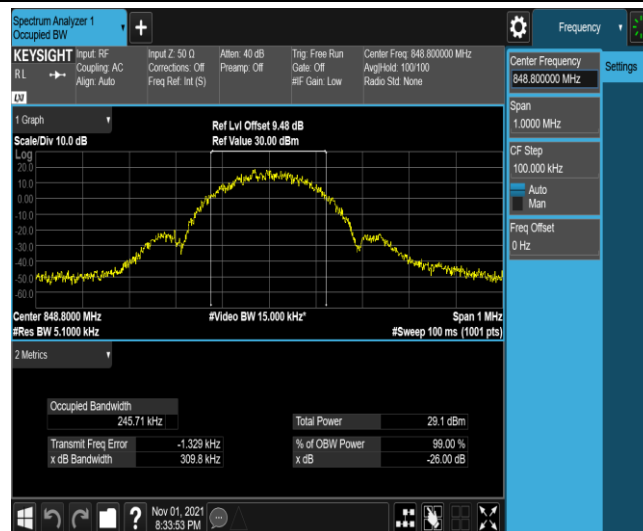
GSM850-TM2-LCH



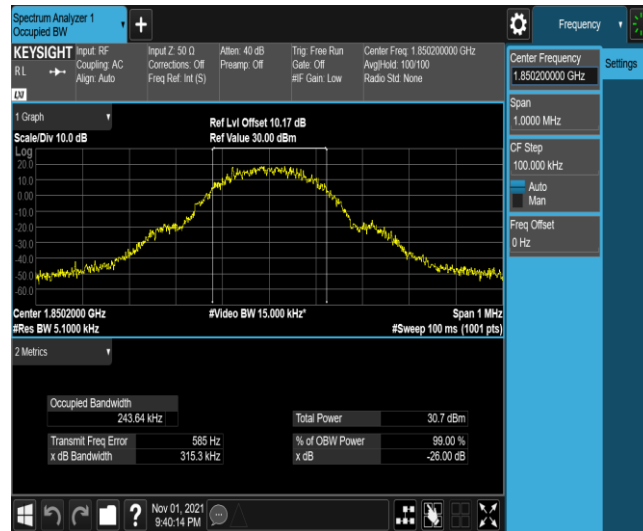
GSM850-TM2-MCH



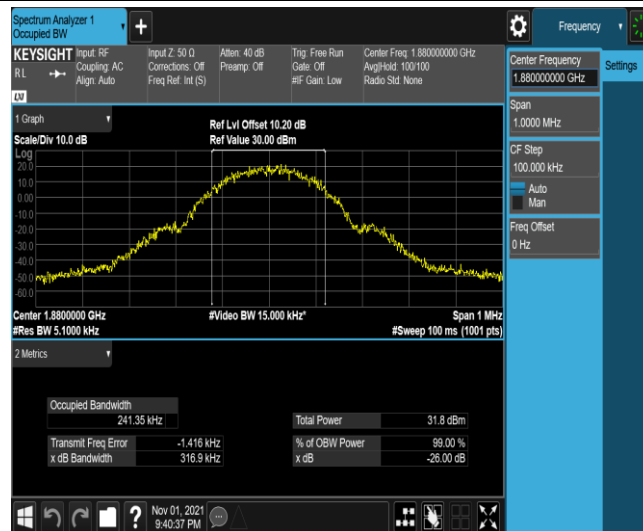
GSM850-TM2-HCH



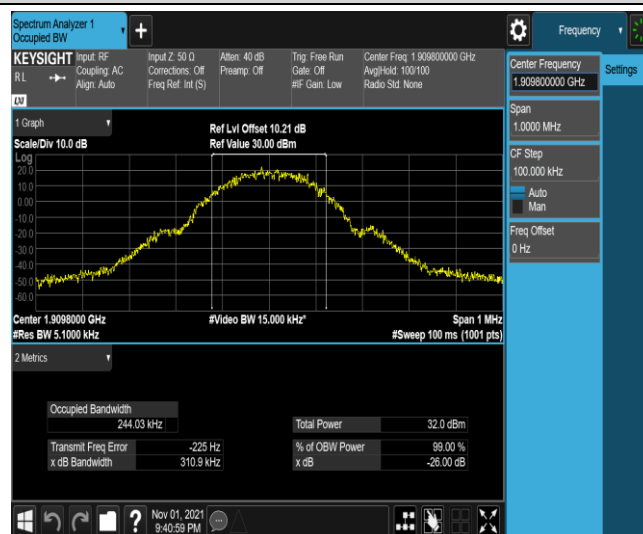
GSM1900-TM1-LCH



GSM1900- TM1-MCH



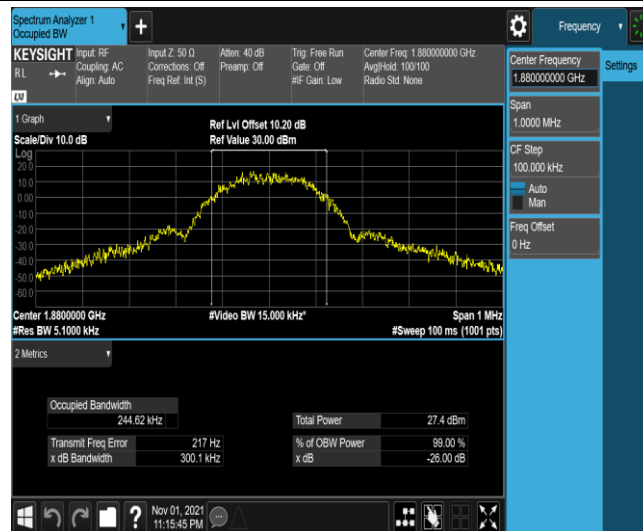
GSM1900- TM1-HCH



GSM1900-TM2-LCH



GSM1900-TM2-MCH



GSM1900-TM2-HCH



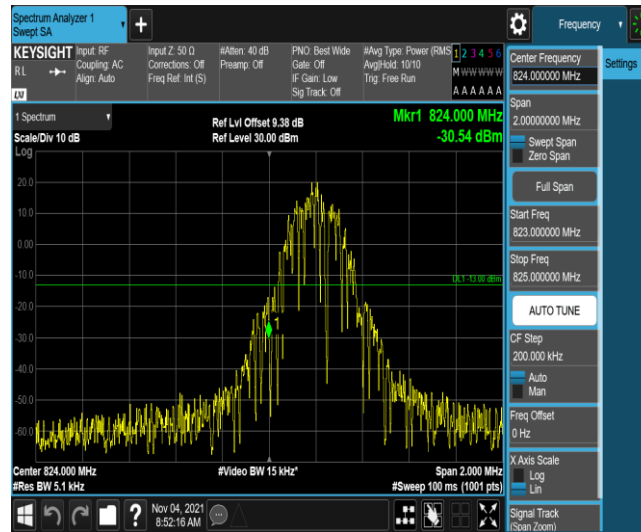
Appendix E: Band Edge

Test Result

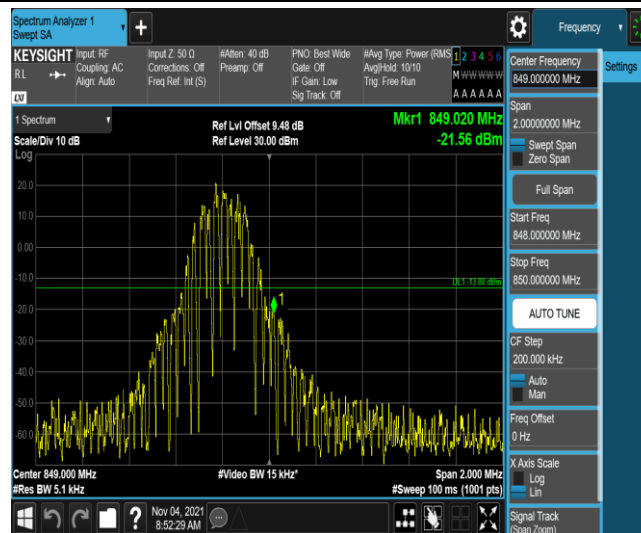
Test Band	Test Mode	Test Channel	Result (dBm)	Limit(dBm)	Verdict
GSM850	GSM/TM1	LCH	-17.00	-13	PASS
		HCH	-17.56	-13	PASS
	GSM/TM2	LCH	-22.07	-13	PASS
		HCH	-22.27	-13	PASS
GSM1900	GSM/TM1	LCH	-21.31	-13	PASS
		HCH	-15.50	-13	PASS
	GSM/TM2	LCH	-21.78	-13	PASS
		HCH	-20.84	-13	PASS

Test Graphs

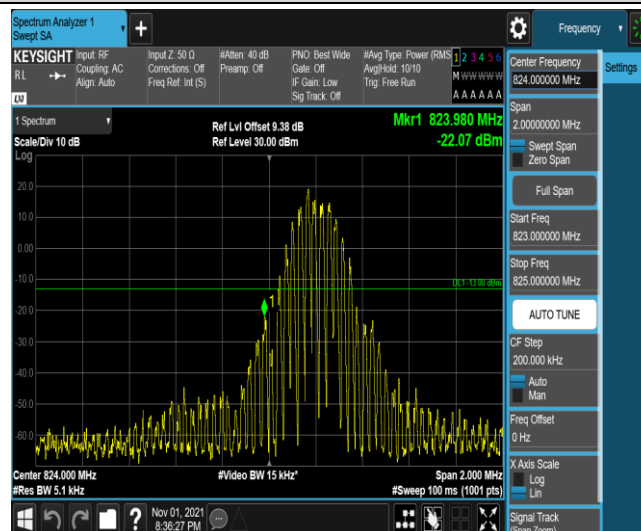
GPRS850-TM1-LCH-824



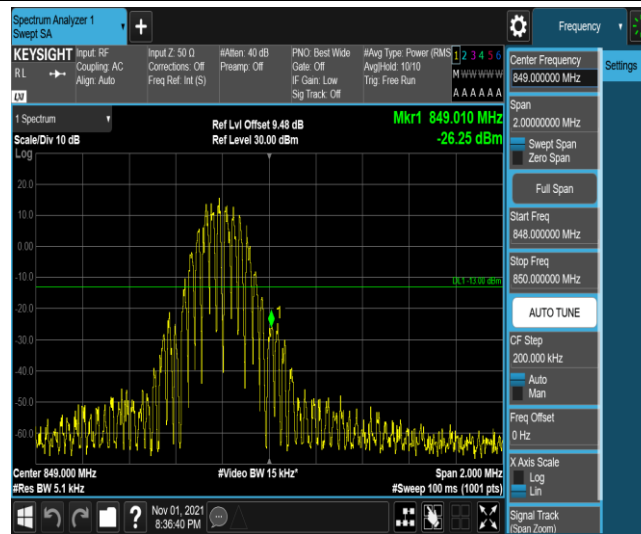
GPRS850- TM1-LCH-849.00



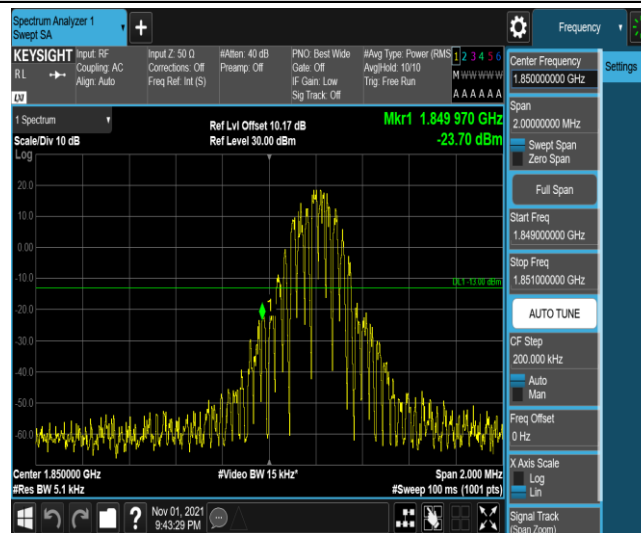
EDGE850-TM2-LCH-824.00



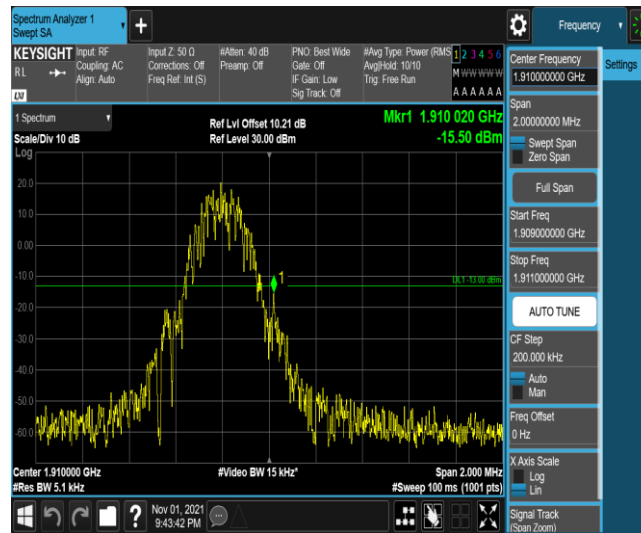
EDGE850-TM2-HCH-849.01



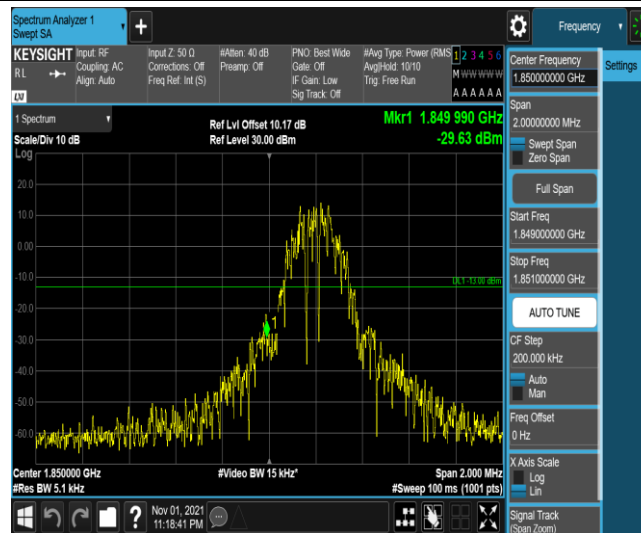
GPRS1900-TM1-LCH-1849.98



GPRS1900-TM1-HCH-1910.02



EGPRS1900-TM2-LCH-1849.98



EGPRS1900-TM2-HCH-1910.02



Appendix F: Spurious Emission at Antenna Terminals

Test Result

Band	Channel	Frequency Range (MHz)	Max.Freq. (MHz)	Result (dBm)	Limit (dBm)	Verdict
GPRS850	LCH	0.009~0.15MHz	0.01	-66.8	-33	PASS
GPRS850	LCH	0.15~30MHz	0.16	-56.86	-13	PASS
GPRS850	LCH	30~1000MHz	979.89	-53.05	-13	PASS
GPRS850	LCH	1000~10000MHz	3687.4	-46.06	-13	PASS
GPRS850	MCH	0.009~0.15MHz	0.01	-66.45	-33	PASS
GPRS850	MCH	0.15~30MHz	0.17	-57.38	-13	PASS
GPRS850	MCH	30~1000MHz	937.73	-52.78	-13	PASS
GPRS850	MCH	1000~10000MHz	3686.2	-46.1	-13	PASS
GPRS850	HCH	0.009~0.15MHz	0.01	-65.76	-33	PASS
GPRS850	HCH	0.15~30MHz	0.15	-54.53	-13	PASS
GPRS850	HCH	30~1000MHz	676.93	-52.69	-13	PASS
GPRS850	HCH	1000~10000MHz	3683.2	-45.99	-13	PASS
EGPRS850	LCH	0.009~0.15MHz	0.04	-71.83	-33	PASS
EGPRS850	LCH	0.15~30MHz	0.19	-57.7	-13	PASS
EGPRS850	LCH	30~1000MHz	994.34	-53.29	-13	PASS
EGPRS850	LCH	1000~10000MHz	3682	-46.11	-13	PASS
EGPRS850	MCH	0.009~0.15MHz	0.02	-71.77	-33	PASS
EGPRS850	MCH	0.15~30MHz	0.16	-54.91	-13	PASS
EGPRS850	MCH	30~1000MHz	995.89	-52.93	-13	PASS
EGPRS850	MCH	1000~10000MHz	3691.3	-46.11	-13	PASS
EGPRS850	HCH	0.009~0.15MHz	0.02	-73.12	-33	PASS
EGPRS850	HCH	0.15~30MHz	0.16	-55.26	-13	PASS
EGPRS850	HCH	30~1000MHz	983.25	-53.19	-13	PASS
EGPRS850	HCH	1000~10000MHz	3690.4	-46.13	-13	PASS
GPRS1900	LCH	0.009~0.15MHz	0.11	-76.11	-43	PASS
GPRS1900	LCH	0.15~30MHz	0.19	-57.52	-23	PASS
GPRS1900	LCH	30~1000MHz	917.23	-52.56	-13	PASS
GPRS1900	LCH	1000~3000MHz	2667.2	-50.43	-13	PASS
GPRS1900	LCH	3000~20000MHz	17315.13	-39.16	-13	PASS
GPRS1900	MCH	0.009~0.15MHz	0.1	-76.91	-43	PASS
GPRS1900	MCH	0.15~30MHz	0.18	-58.03	-23	PASS
GPRS1900	MCH	30~1000MHz	974.46	-52.33	-13	PASS
GPRS1900	MCH	1000~3000MHz	2674.53	-50.49	-13	PASS
GPRS1900	MCH	3000~20000MHz	18262.6	-39.04	-13	PASS
GPRS1900	HCH	0.009~0.15MHz	0.01	-76.96	-43	PASS
GPRS1900	HCH	0.15~30MHz	0.15	-56.01	-23	PASS

GPRS1900	HCH	30~1000MHz	891.23	-52.56	-13	PASS
GPRS1900	HCH	1000~3000MHz	2672.07	-50.47	-13	PASS
GPRS1900	HCH	3000~20000MHz	18315.3	-39.13	-13	PASS
EGPRS1900	LCH	0.009~0.15MHz	0.04	-74.7	-43	PASS
EGPRS1900	LCH	0.15~30MHz	0.15	-55.49	-23	PASS
EGPRS1900	LCH	30~1000MHz	795.78	-52.69	-13	PASS
EGPRS1900	LCH	1000~3000MHz	2668.73	-50.44	-13	PASS
EGPRS1900	LCH	3000~20000MHz	17315.7	-39.12	-13	PASS
EGPRS1900	MCH	0.009~0.15MHz	0.04	-75.8	-43	PASS
EGPRS1900	MCH	0.15~30MHz	0.15	-55.64	-23	PASS
EGPRS1900	MCH	30~1000MHz	874.45	-52.53	-13	PASS
EGPRS1900	MCH	1000~3000MHz	2675.47	-50.42	-13	PASS
EGPRS1900	MCH	3000~20000MHz	18321.53	-39.16	-13	PASS
EGPRS1900	HCH	0.009~0.15MHz	0.02	-74.62	-43	PASS
EGPRS1900	HCH	0.15~30MHz	0.15	-56.9	-23	PASS
EGPRS1900	HCH	30~1000MHz	781.39	-52.59	-13	PASS
EGPRS1900	HCH	1000~3000MHz	2677.27	-50.48	-13	PASS
EGPRS1900	HCH	3000~20000MHz	18309.63	-39.12	-13	PASS

Test Graphs



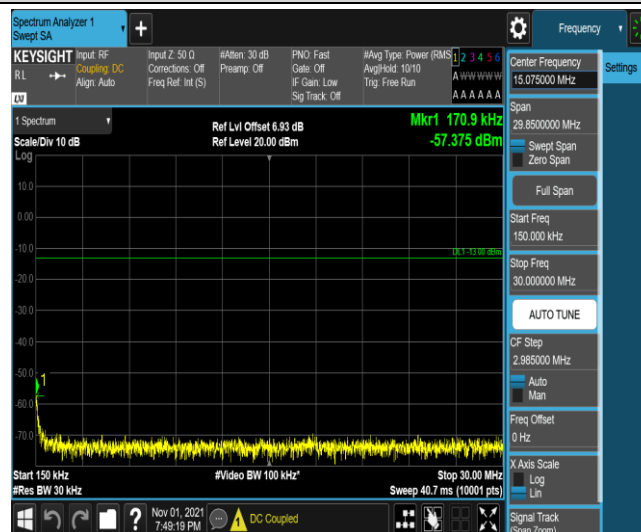
GPRS850-LCH-3-1000~10000MHz



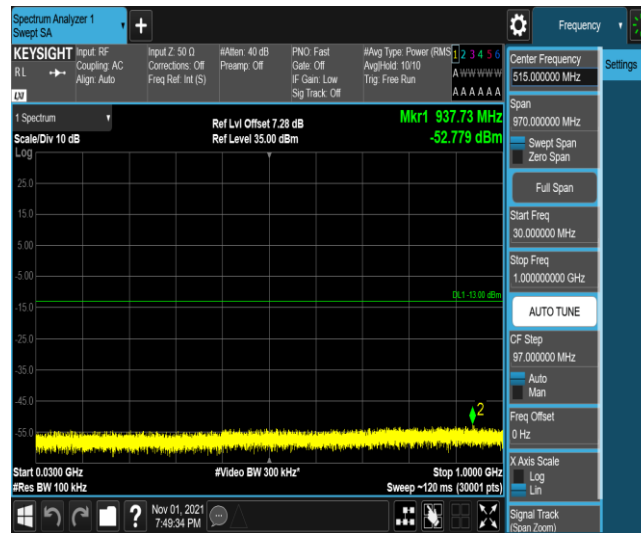
GPRS850-MCH-3-0.009~0.15MHz



GPRS850-MCH-3-0.15~30MHz



GPRS850-MCH-3-30~1000MHz



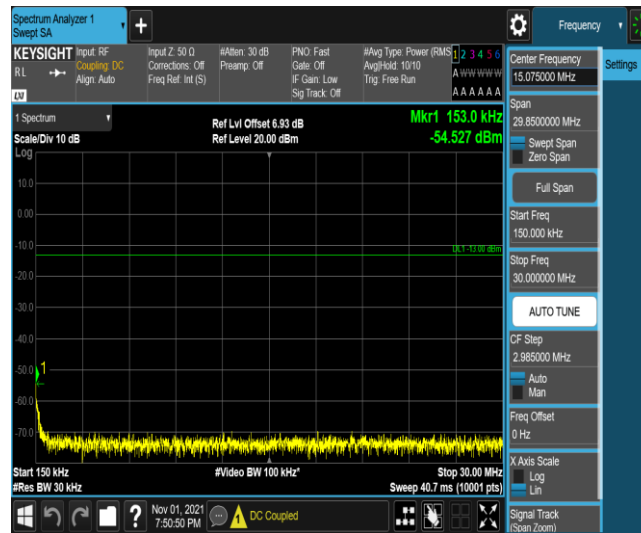
GPRS850-MCH-3-1000~10000MHz



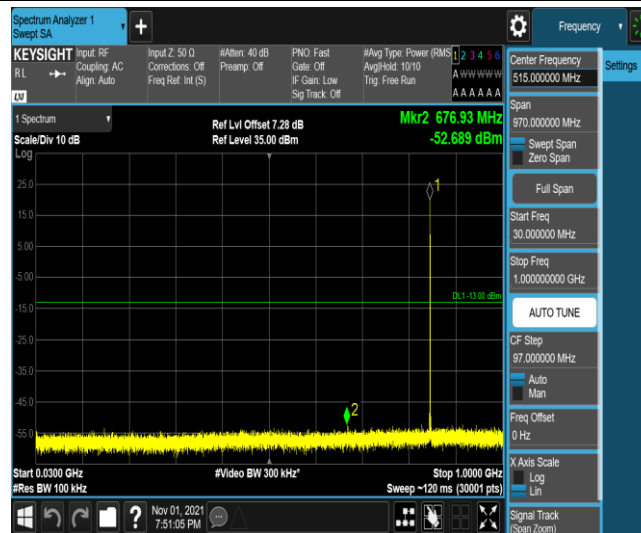
GPRS850-HCH-3-0.009~0.15MHz



GPRS850-HCH-3-0.15~30MHz



GPRS850-HCH-3-30~1000MHz



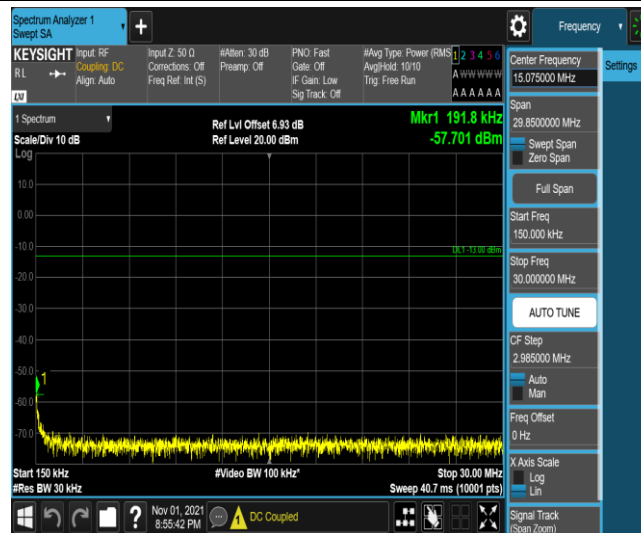
GPRS850-HCH-3-1000~10000MHz



EGPRS850-LCH-8-0.009~0.15MHz



EGPRS850-LCH-8-0.15~30MHz



EGPRS850-LCH-8-30~1000MHz



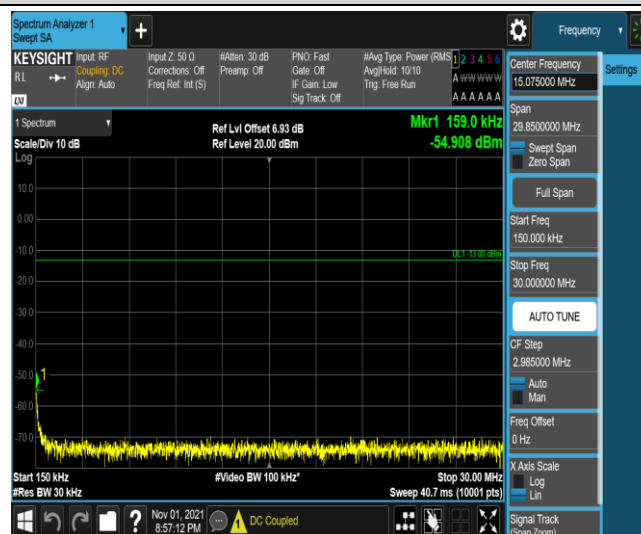
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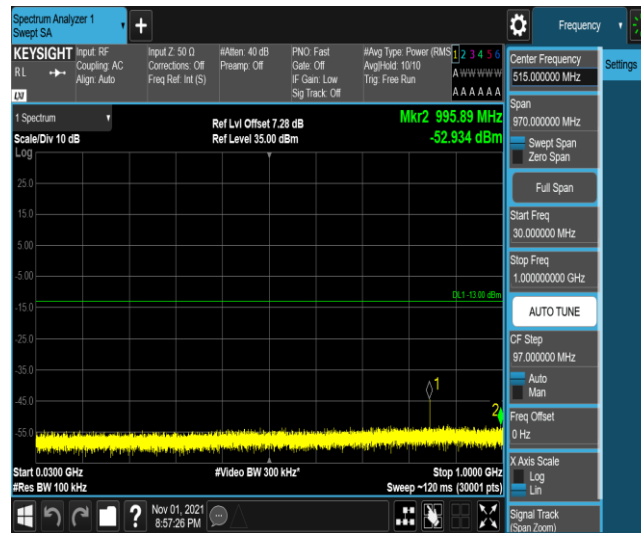
EGPRS850-MCH-8-0.009~0.15MHz



EGPRS850-MCH-8-0.15~30MHz



EGPRS850-MCH-8-30~1000MHz



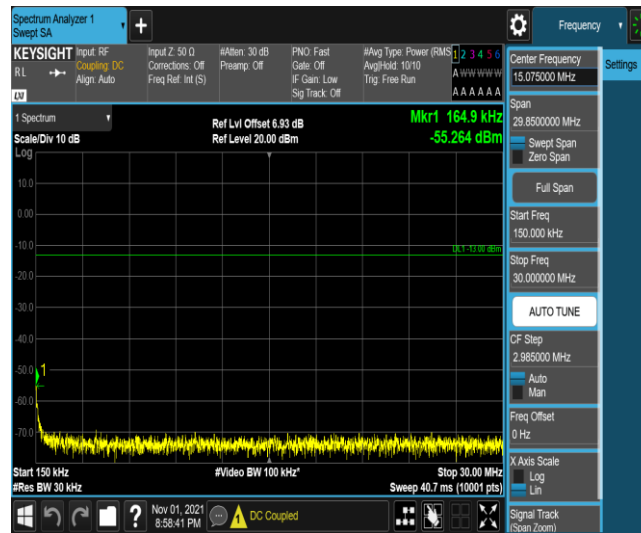
EGPRS850-MCH-8-1000~10000MHz



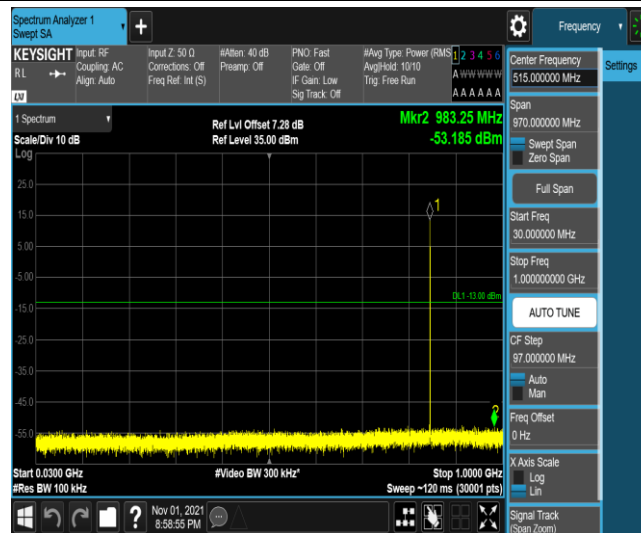
EGPRS850-HCH-8-0.009~0.15MHz



EGPRS850-HCH-8-0.15~30MHz



EGPRS850-HCH-8-30~1000MHz



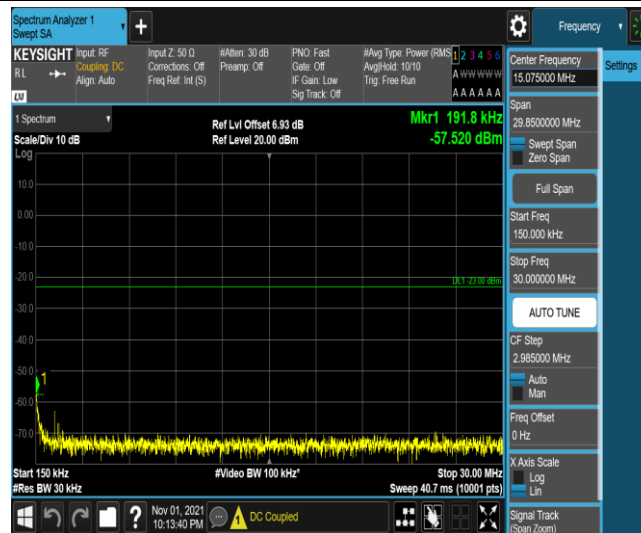
EGPRS850-HCH-8-1000~10000MHz



GPRS1900-LCH-0-0.009~0.15MHz



GPRS1900-LCH-0-0.15~30MHz



GPRS1900-LCH-0-30~1000MHz



GPRS1900-LCH-0-1000~3000MHz



GPRS1900-LCH-0-3000~20000MHz



GPRS1900-MCH-0-0.009~0.15MHz



GPRS1900-MCH-0-0.15~30MHz