Appendix A: Effective (Isotropic) Radiated Power Output Data

Test Result

Band	Channel	PCL	Conducted Power (dBm)	ERP/EIRP (dBm)	ERP/EIRP Limit (dBm)	Verdict
GSM850	128	5	33.18	28.13	38.45	PASS
GSM850	190	5	33.11	28.06	38.45	PASS
GSM850	251	5	32.90	27.85	38.45	PASS
GSM1900	512	0	30.04	31.74	33.00	PASS
GSM1900	661	0	30.09	31.79	33.00	PASS
GSM1900	810	0	29.97	31.67	33.00	PASS

Band	Channel	PCL	Slot	Conducted Power (dBm)	ERP/EIRP (dBm)	ERP/EIRP Limit (dBm)	Verdict
GPRS850	128	5	1	33.18	28.13	38.45	PASS
GPRS850	128	5	2	31.03	25.98	38.45	PASS
GPRS850	128	5	3	29.18	24.13	38.45	PASS
GPRS850	128	5	4	27.03	21.98	38.45	PASS
GPRS850	190	5	1	33.08	28.03	38.45	PASS
GPRS850	190	5	2	30.97	25.92	38.45	PASS
GPRS850	190	5	3	29.13	24.08	38.45	PASS
GPRS850	190	5	4	26.98	21.93	38.45	PASS
GPRS850	251	5	1	32.88	27.83	38.45	PASS
GPRS850	251	5	2	30.81	25.76	38.45	PASS
GPRS850	251	5	3	29.00	23.95	38.45	PASS
GPRS850	251	5	4	26.86	21.81	38.45	PASS
GPRS1900	512	0	1	30.04	31.74	33.00	PASS
GPRS1900	512	0	2	27.87	29.57	33.00	PASS
GPRS1900	512	0	3	26.14	27.84	33.00	PASS
GPRS1900	512	0	4	24.01	25.71	33.00	PASS
GPRS1900	661	0	1	30.07	31.77	33.00	PASS
GPRS1900	661	0	2	27.66	29.36	33.00	PASS
GPRS1900	661	0	3	25.93	27.63	33.00	PASS
GPRS1900	661	0	4	23.82	25.52	33.00	PASS
GPRS1900	810	0	1	30.01	31.71	33.00	PASS
GPRS1900	810	0	2	27.40	29.1	33.00	PASS
GPRS1900	810	0	3	25.68	27.38	33.00	PASS
GPRS1900	810	0	4	23.54	25.24	33.00	PASS

Band	Channel	PCL	Slot	Conducted Power (dBm)	ERP/EIRP (dBm)	ERP/EIRP Limit (dBm)	Verdict
EGPRS850	128	8	1	25.62	20.57	38.45	PASS
EGPRS850	128	8	2	24.65	19.6	38.45	PASS
EGPRS850	128	8	3	22.52	17.47	38.45	PASS
EGPRS850	128	8	4	20.07	15.02	38.45	PASS
EGPRS850	190	8	1	25.86	20.81	38.45	PASS
EGPRS850	190	8	2	24.90	19.85	38.45	PASS
EGPRS850	190	8	3	22.67	17.62	38.45	PASS
EGPRS850	190	8	4	20.36	15.31	38.45	PASS
EGPRS850	251	8	1	25.69	20.64	38.45	PASS
EGPRS850	251	8	2	24.69	19.64	38.45	PASS
EGPRS850	251	8	3	22.48	17.43	38.45	PASS
EGPRS850	251	8	4	20.12	15.07	38.45	PASS
EGPRS1900	512	2	1	26.00	27.7	33.00	PASS
EGPRS1900	512	2	2	24.38	26.08	33.00	PASS
EGPRS1900	512	2	3	22.32	24.02	33.00	PASS
EGPRS1900	512	2	4	20.47	22.17	33.00	PASS
EGPRS1900	661	2	1	26.22	27.92	33.00	PASS
EGPRS1900	661	2	2	24.69	26.39	33.00	PASS
EGPRS1900	661	2	3	22.69	24.39	33.00	PASS
EGPRS1900	661	2	4	20.82	22.52	33.00	PASS
EGPRS1900	810	2	1	25.98	27.68	33.00	PASS
EGPRS1900	810	2	2	24.46	26.16	33.00	PASS
EGPRS1900	810	2	3	22.61	24.31	33.00	PASS
EGPRS1900	810	2	4	20.67	22.37	33.00	PASS

Remark: EIRP (dBm) = Conducted power (dBm) + Antenna Gain (dBi). (For GSM1900)
ERP (dBm) = EIRP (dBm) - 2.15 (dB). (For GSM850)

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

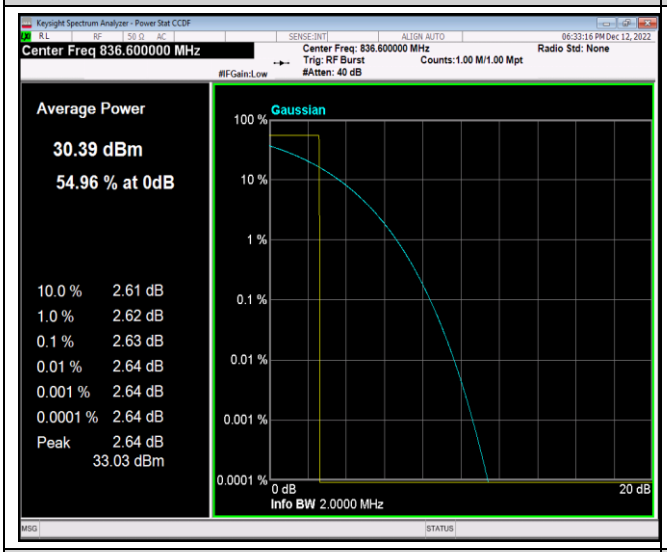
Test Result

Band	Channel	PCL	Result(dB)	Limit(dB)	Verdict
GSM850	190	5	2.63	13	PASS
EGPRS850	190	8	5.52	13	PASS
GSM1900	661	0	2.61	13	PASS
EGPRS1900	661	2	5.17	13	PASS

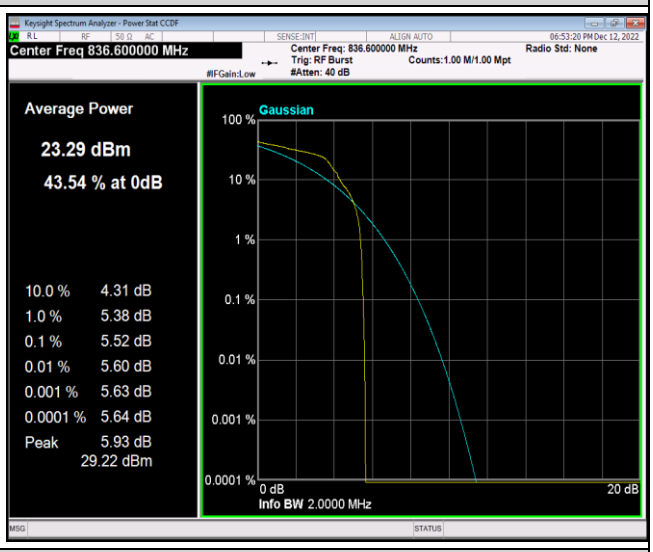
Remark: All channel and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

GSM850-190



EGPRS850-190



GSM1900-661

EGPRS1900-661

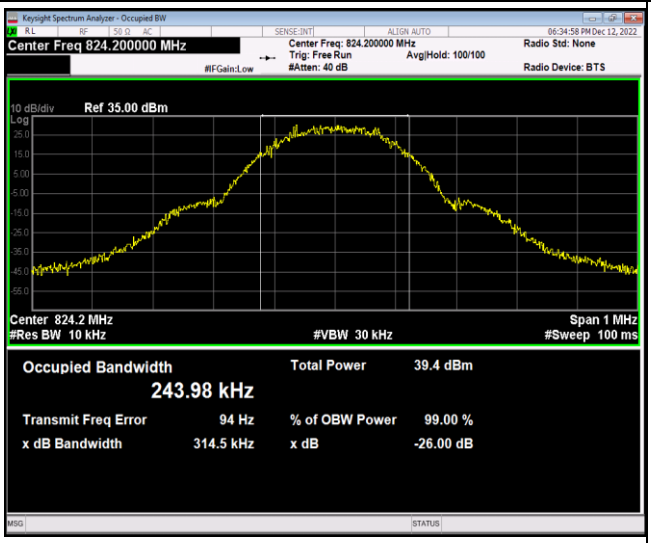
Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

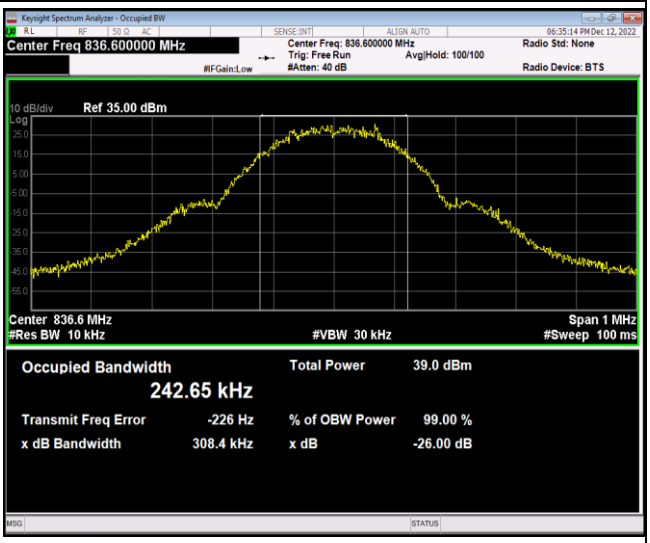
Band	Channel	PCL	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
GSM850	128	5	0.24398	0.3145	---	PASS
GSM850	190	5	0.24265	0.3084	---	PASS
GSM850	251	5	0.24559	0.3145	---	PASS
EGPRS850	128	8	0.24719	0.3044	---	PASS
EGPRS850	190	8	0.24538	0.3111	---	PASS
EGPRS850	251	8	0.24378	0.3105	---	PASS
GSM1900	512	0	0.24369	0.3157	---	PASS
GSM1900	661	0	0.24109	0.3191	---	PASS
GSM1900	810	0	0.24286	0.3116	---	PASS
EGPRS1900	512	2	0.25031	0.3135	---	PASS
EGPRS1900	661	2	0.25061	0.3142	---	PASS
EGPRS1900	810	2	0.25151	0.3260	---	PASS

Test Graphs

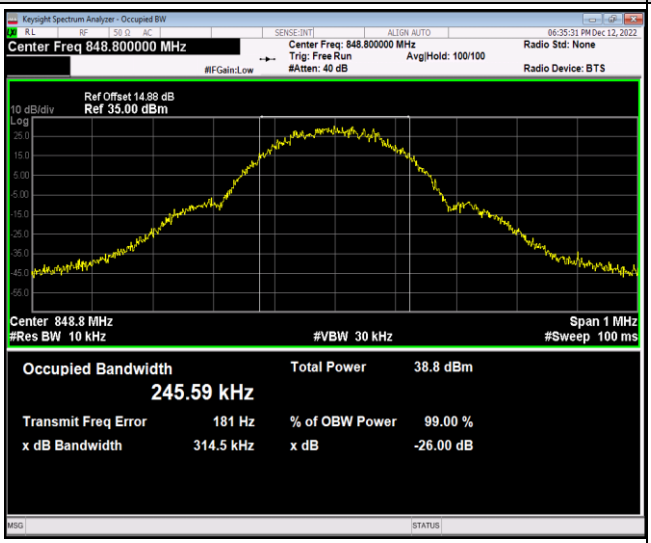
GSM850-128



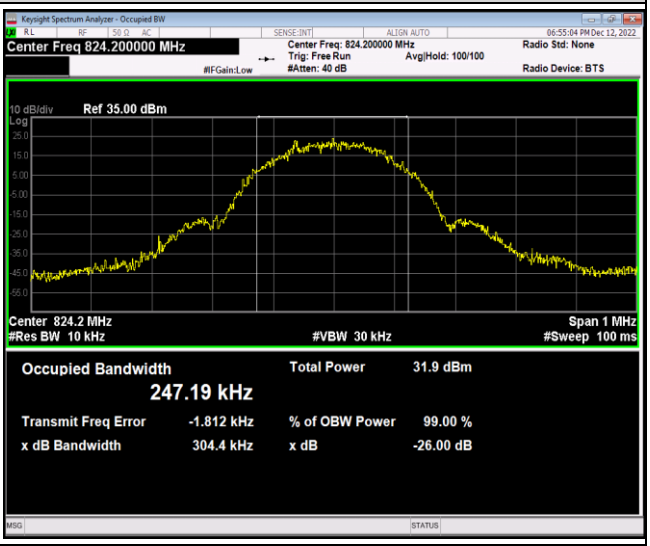
GSM850-190



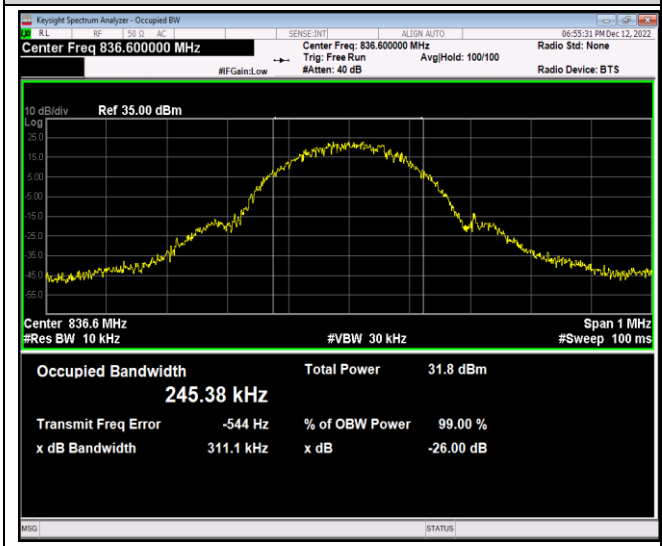
GSM850-251



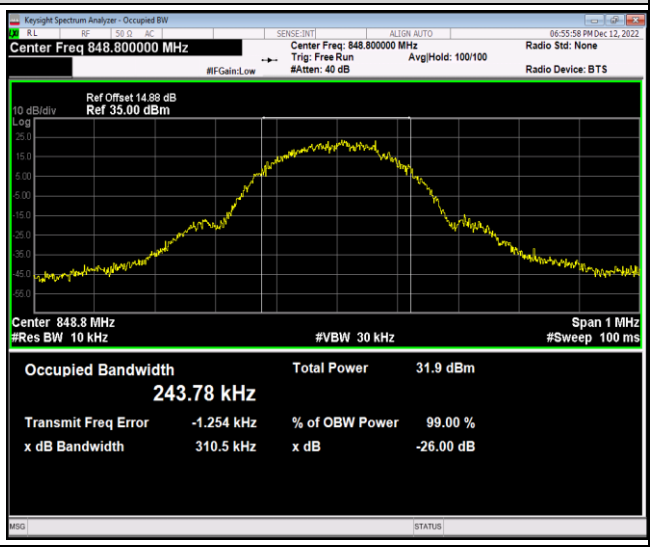
EGPRS850-128



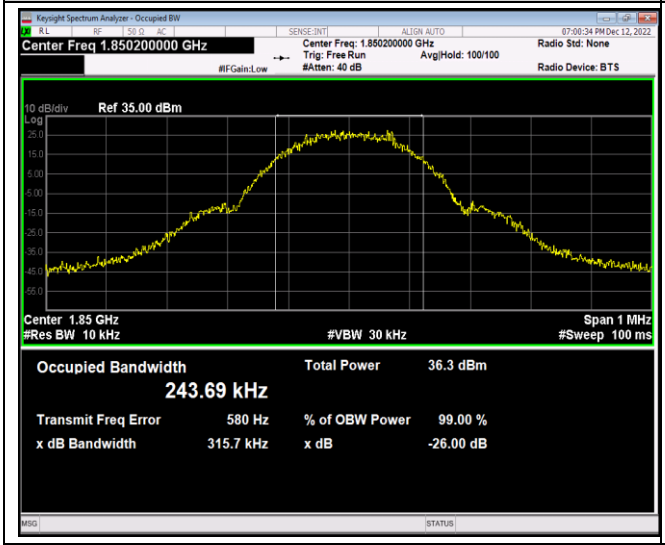
EGPRS850-190



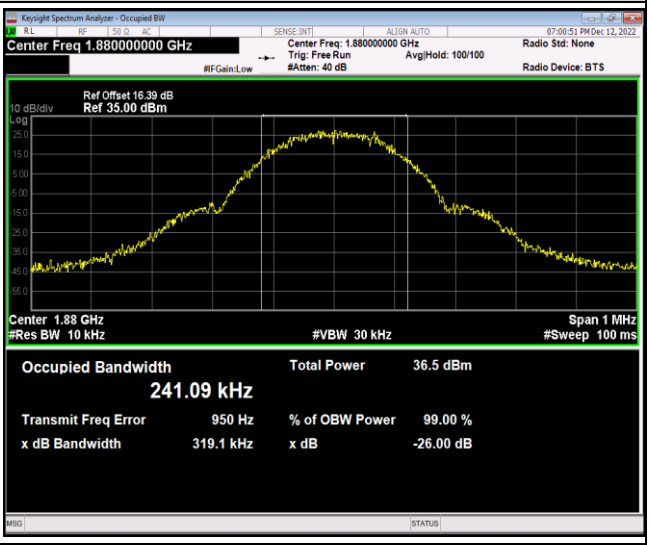
EGPRS850-251



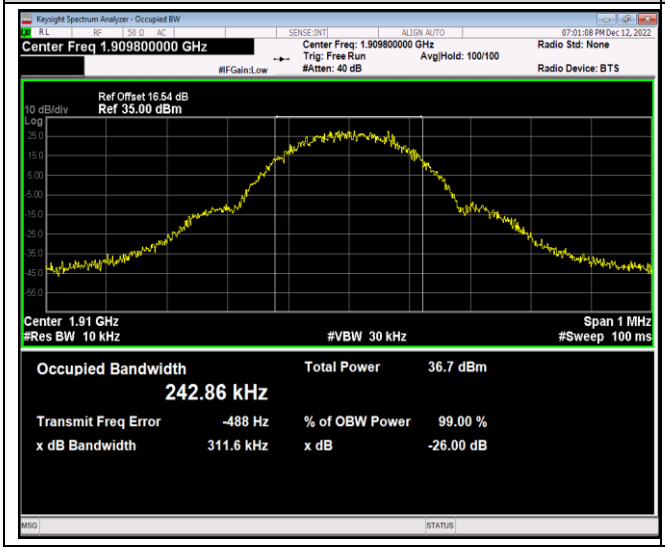
GSM1900-512



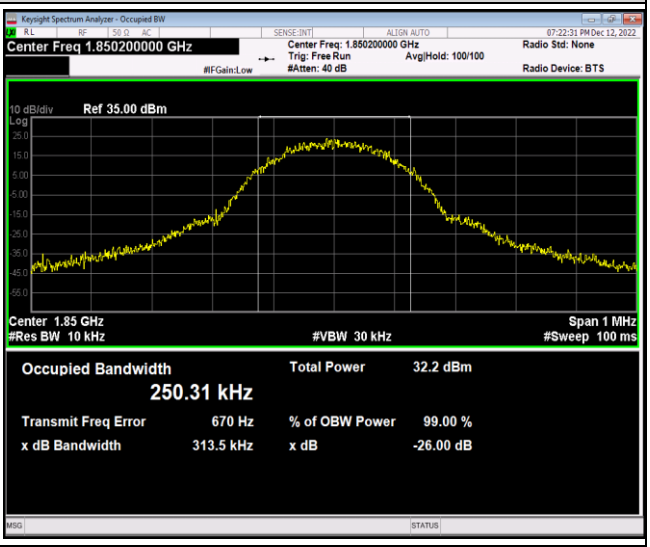
GSM1900-661



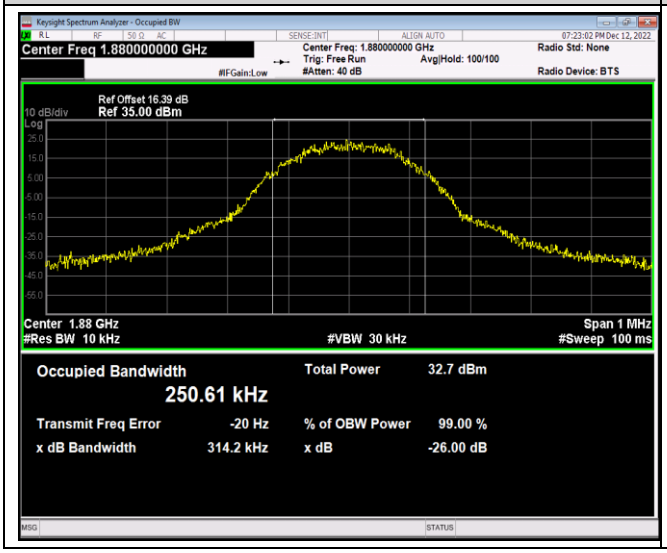
GSM1900-810



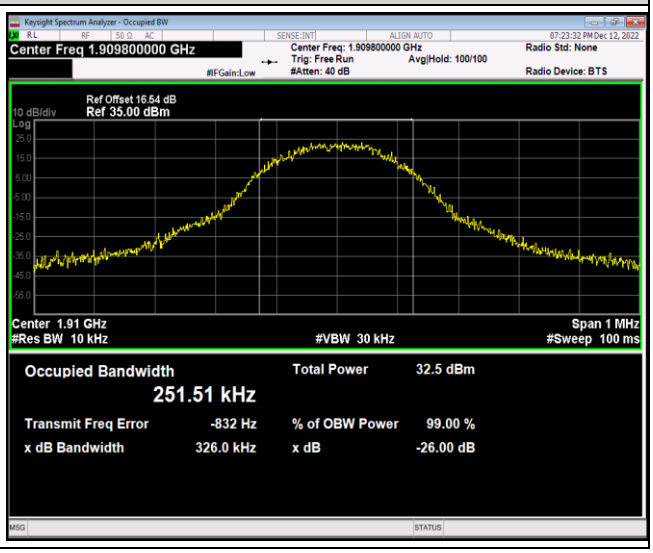
EGPRS1900-512



EGPRS1900-661



EGPRS1900-810



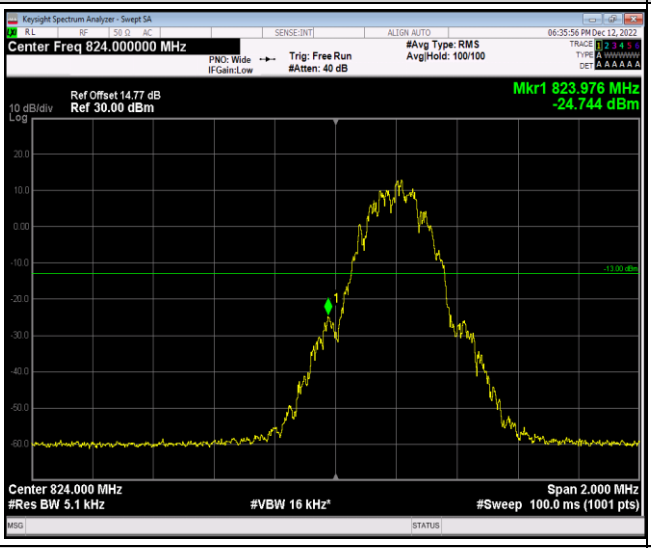
Appendix D: Band Edge

Test Result

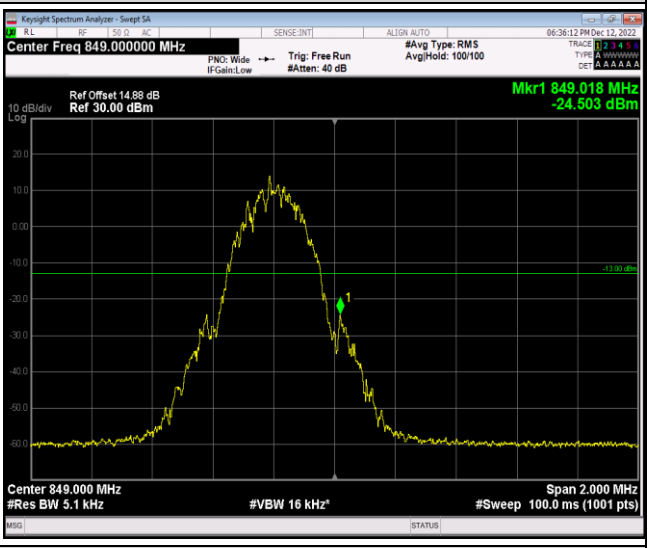
Band	Channel	PCL	Freq (MHz)	Result (dBm)	Limit(dBm)	Verdict
GSM850	128	5	823.98	-24.74	-13	PASS
GSM850	251	5	849.02	-24.50	-13	PASS
EGPRS850	128	8	823.98	-34.39	-13	PASS
EGPRS850	251	8	849.02	-34.74	-13	PASS
GSM1900	512	0	1849.99	-15.66	-13	PASS
GSM1900	810	0	1910.02	-13.73	-13	PASS
EGPRS1900	512	2	1849.99	-21.85	-13	PASS
EGPRS1900	810	2	1910.00	-18.23	-13	PASS

Test Graphs

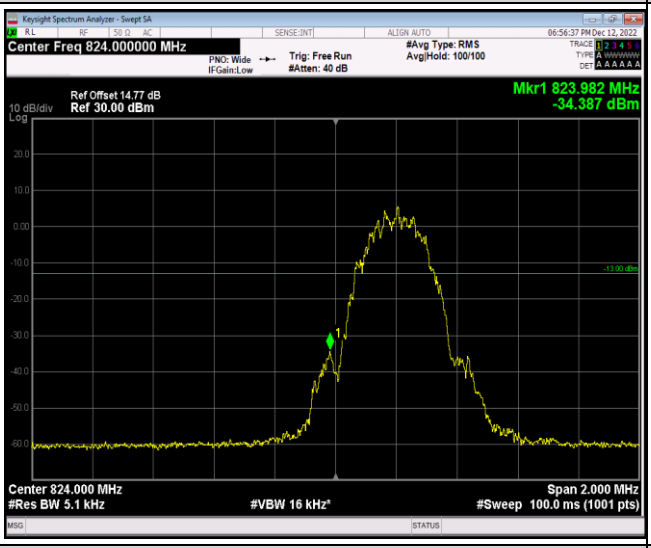
GSM850-128



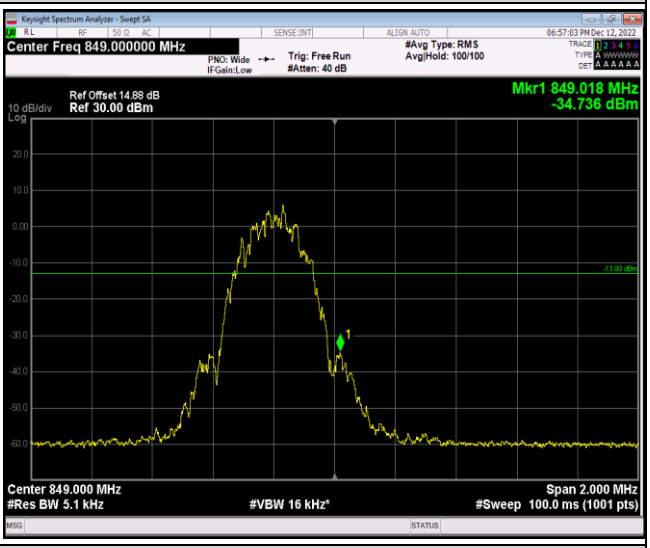
GSM850-251



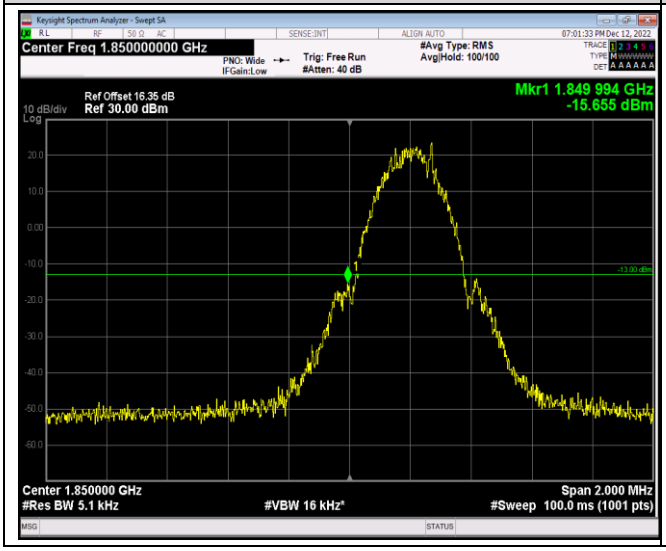
EGPRS850-128



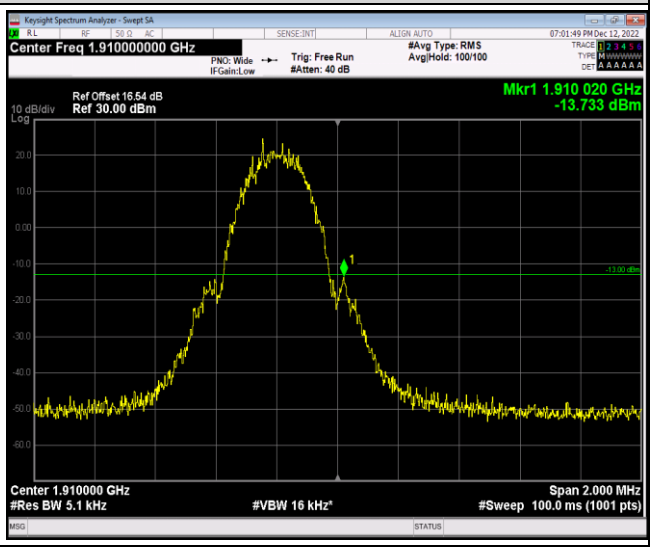
EGPRS850-251

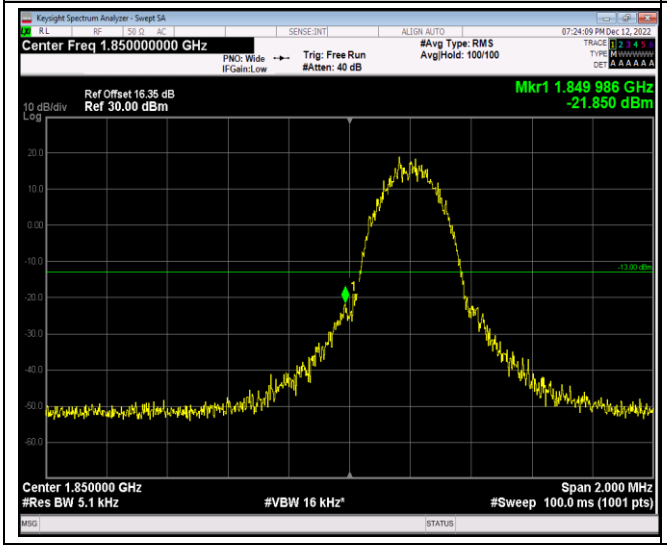
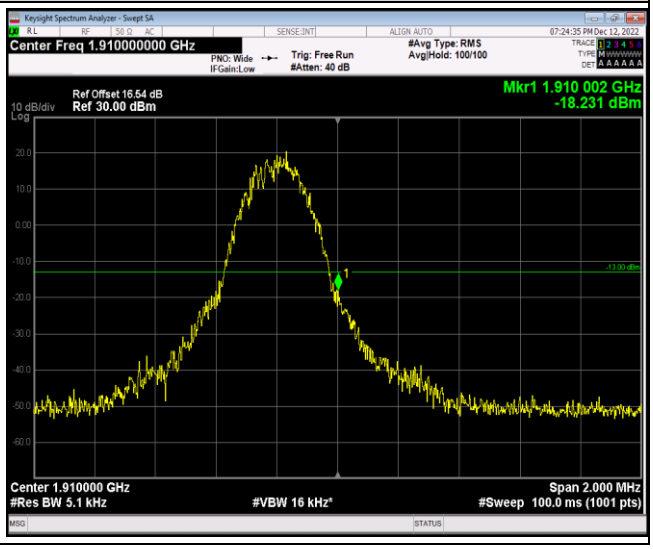


GSM1900-512



GSM1900-810



EGPRS1900-512	EGPRS1900-810
	

Appendix E: Conducted Spurious Emission

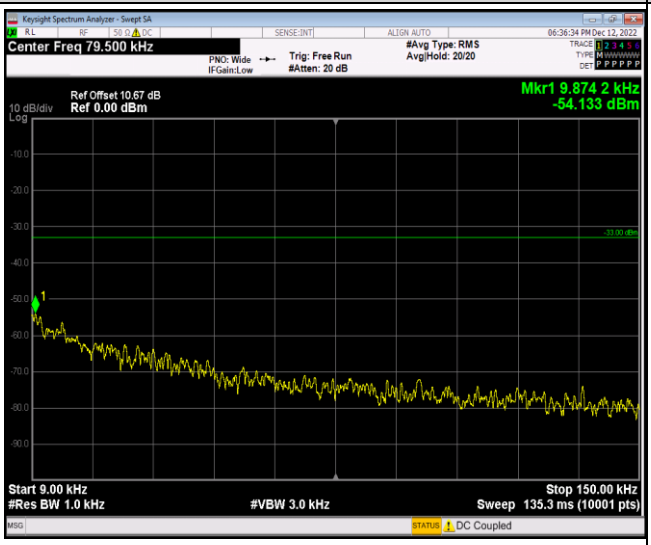
Test Result

Band	Channel	PCL	Frequency Range(MHz)	Max.Freq. (MHz)	Result (dBm)	Limit (dBm)	Verdict
GSM850	128	5	0.009~0.15MHz	0.01	-54.13	-33	PASS
GSM850	128	5	0.15~30MHz	0.15	-40.89	-13	PASS
GSM850	128	5	30~1000MHz	533.59	-40.21	-13	PASS
GSM850	128	5	1000~10000MHz	1648.6	-30.46	-13	PASS
GSM850	190	5	0.009~0.15MHz	0.01	-54.15	-33	PASS
GSM850	190	5	0.15~30MHz	0.16	-43.19	-13	PASS
GSM850	190	5	30~1000MHz	662.6	-40.02	-13	PASS
GSM850	190	5	1000~10000MHz	5691.1	-30.22	-13	PASS
GSM850	251	5	0.009~0.15MHz	0.01	-54.2	-33	PASS
GSM850	251	5	0.15~30MHz	0.15	-39.7	-13	PASS
GSM850	251	5	30~1000MHz	987.58	-39.9	-13	PASS
GSM850	251	5	1000~10000MHz	5944.9	-30.42	-13	PASS
GSM1900	512	0	0.009~0.15MHz	0.01	-52.91	-43	PASS
GSM1900	512	0	0.15~30MHz	0.15	-41.31	-23	PASS
GSM1900	512	0	30~1000MHz	950.98	-40.71	-13	PASS
GSM1900	512	0	1000~18000MHz	16286.4	-26.51	-13	PASS
GSM1900	661	0	0.009~0.15MHz	0.01	-54.95	-43	PASS
GSM1900	661	0	0.15~30MHz	0.15	-40.64	-23	PASS
GSM1900	661	0	30~1000MHz	983.64	-39.07	-13	PASS
GSM1900	661	0	1000~18000MHz	16204.23	-25.67	-13	PASS
GSM1900	810	0	0.009~0.15MHz	0.01	-53.53	-43	PASS
GSM1900	810	0	0.15~30MHz	0.15	-41.24	-23	PASS
GSM1900	810	0	30~1000MHz	273.5	-40.9	-13	PASS
GSM1900	810	0	1000~18000MHz	17036.1	-26.21	-13	PASS

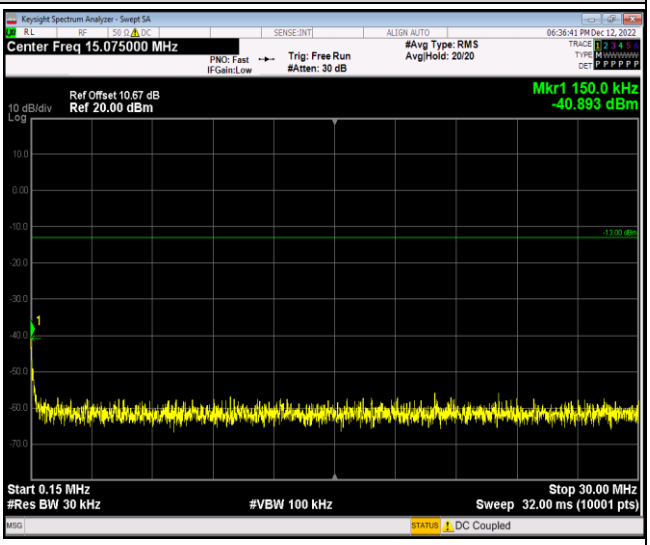
Remark: All channel and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

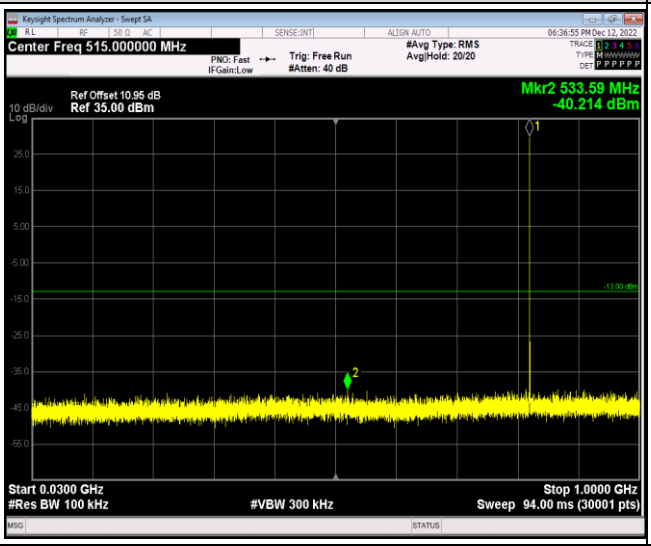
GSM850-128-0.009~0.15MHz



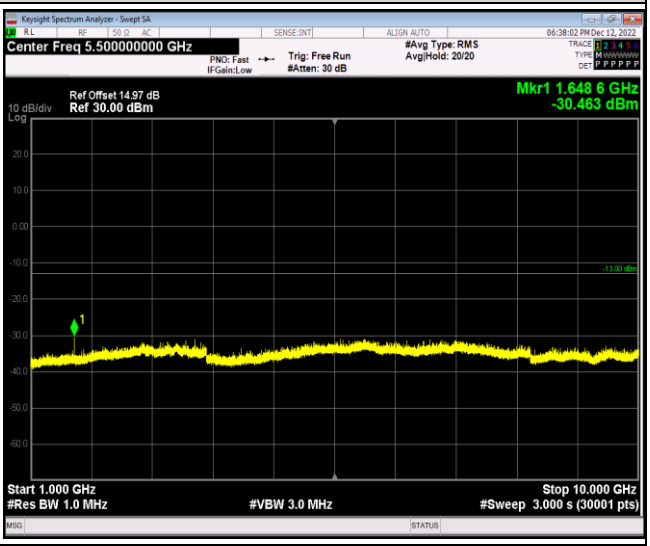
GSM850-128-0.15~30MHz



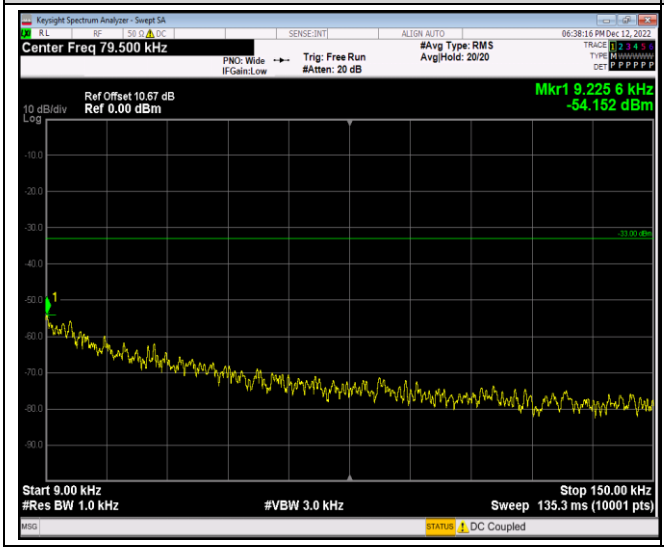
GSM850-128-30~1000MHz



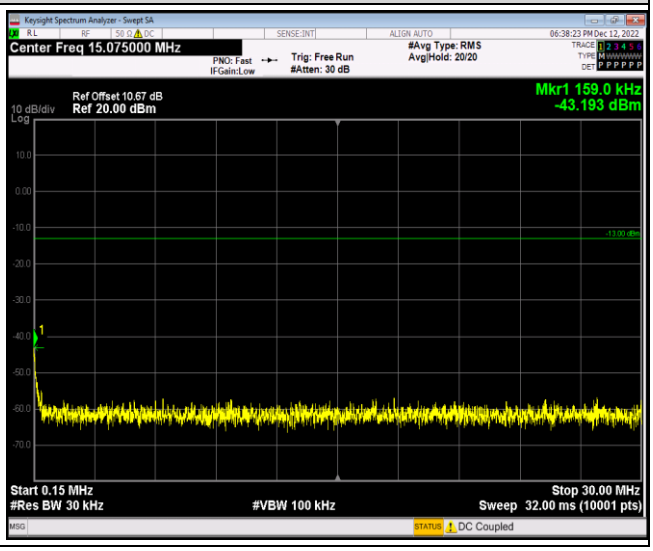
GSM850-128-1000~10000MHz



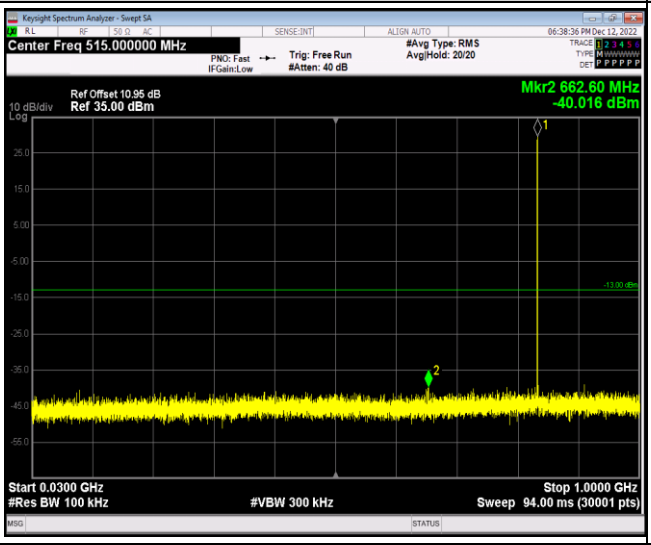
GSM850-190-0.009~0.15MHz



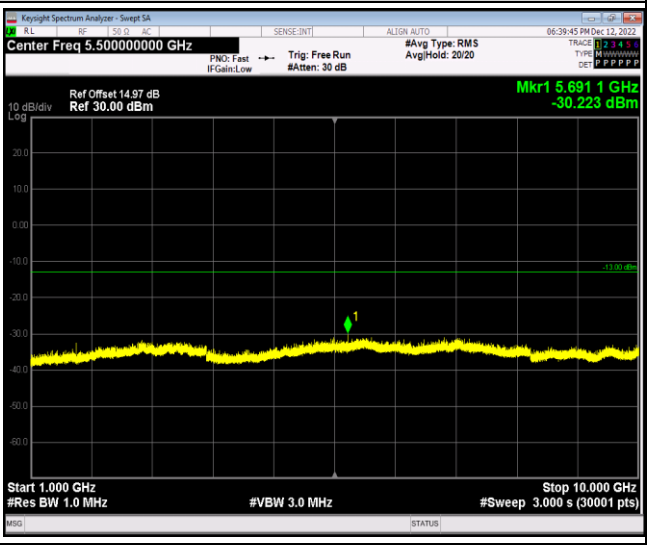
GSM850-190-0.15~30MHz



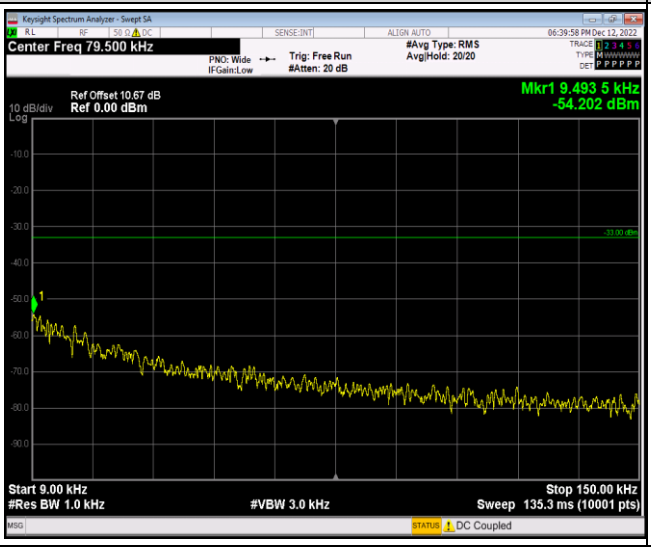
GSM850-190-30~1000MHz



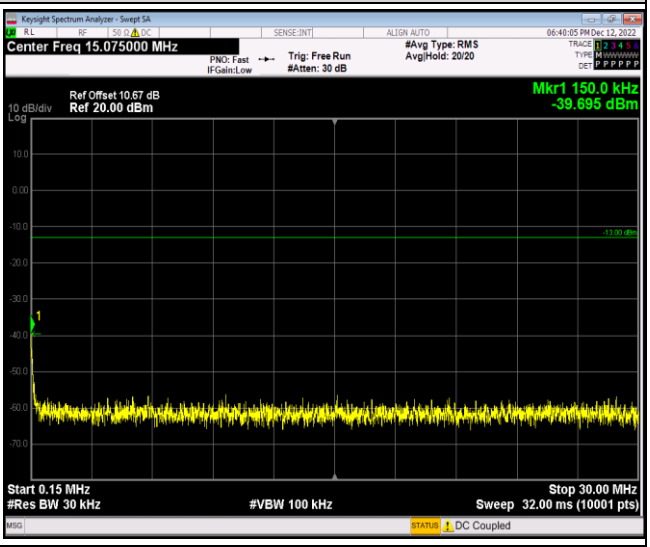
GSM850-190-1000~10000MHz



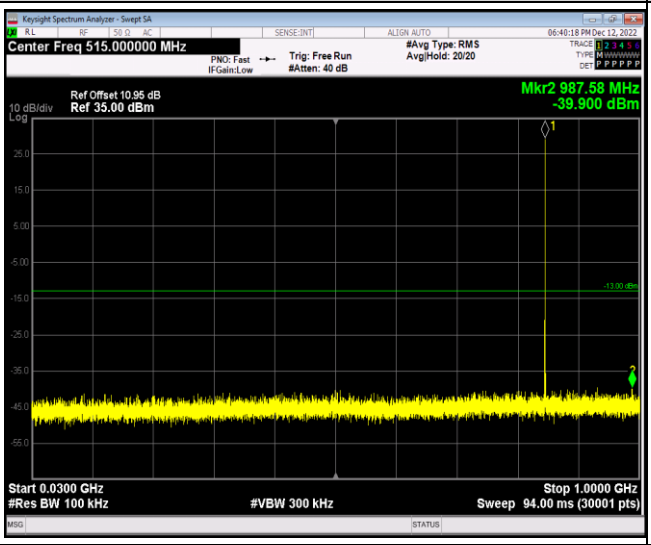
GSM850-251-0.009~0.15MHz



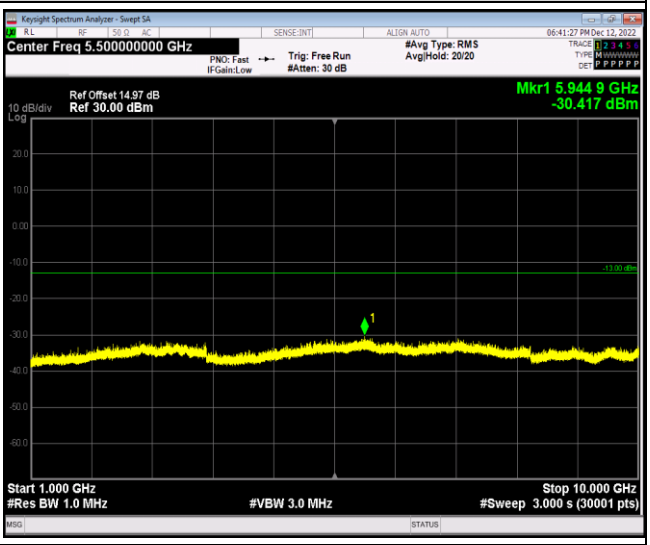
GSM850-251-0.15~30MHz



GSM850-251-30~1000MHz

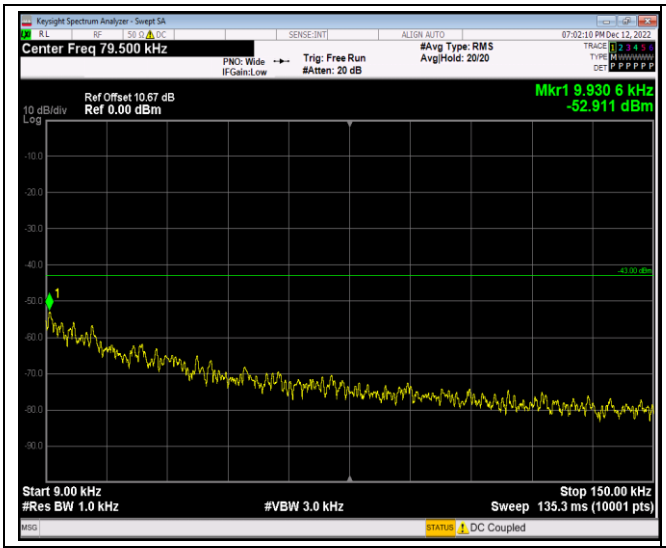


GSM850-251-1000~10000MHz

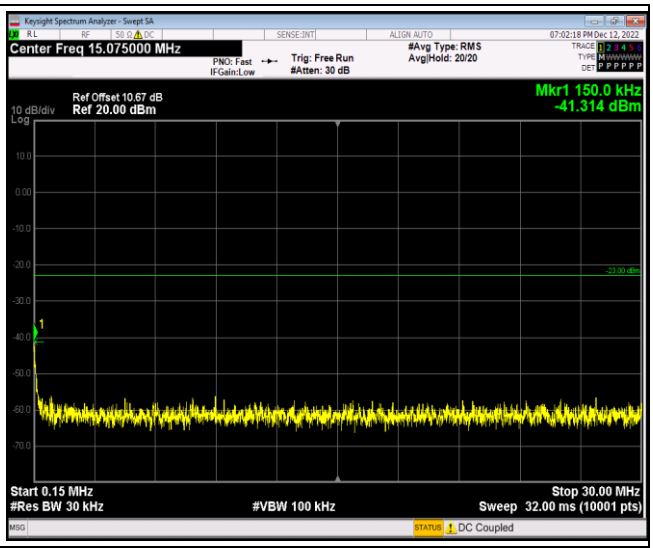


GSM1900-512-0.009~0.15MHz

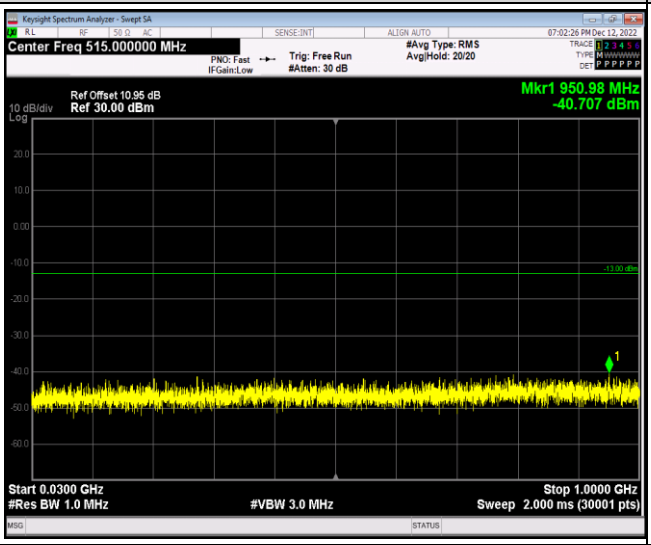
GSM1900-512-0.15~30MHz



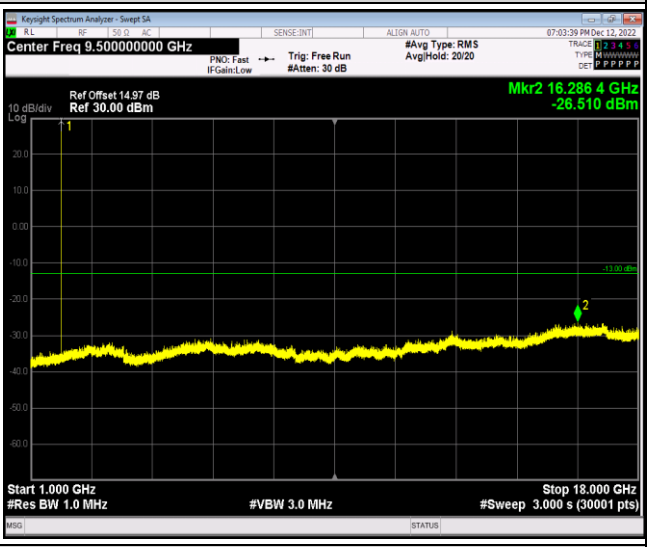
GSM1900-512-30~1000MHz



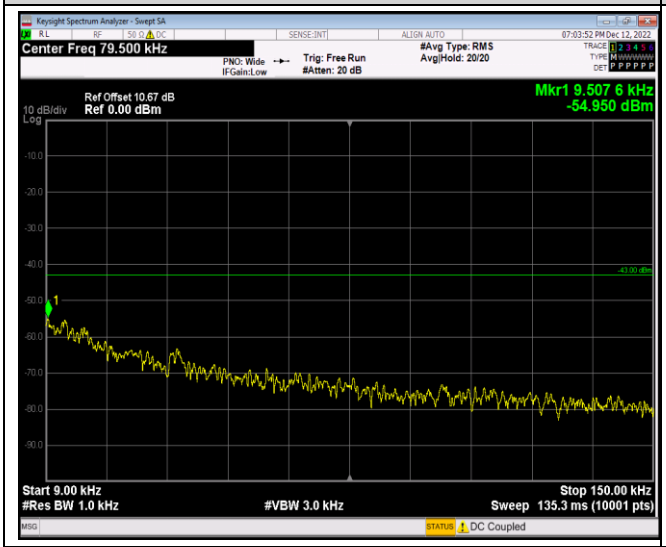
GSM1900-512-1000~18000MHz



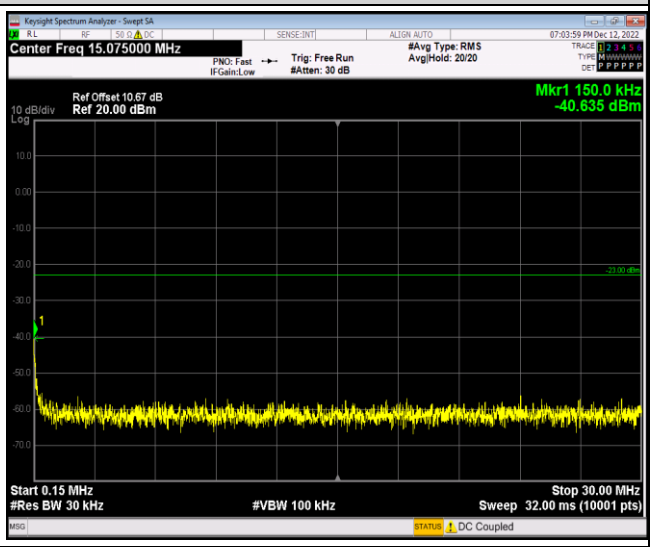
GSM1900-661-0.009~0.15MHz



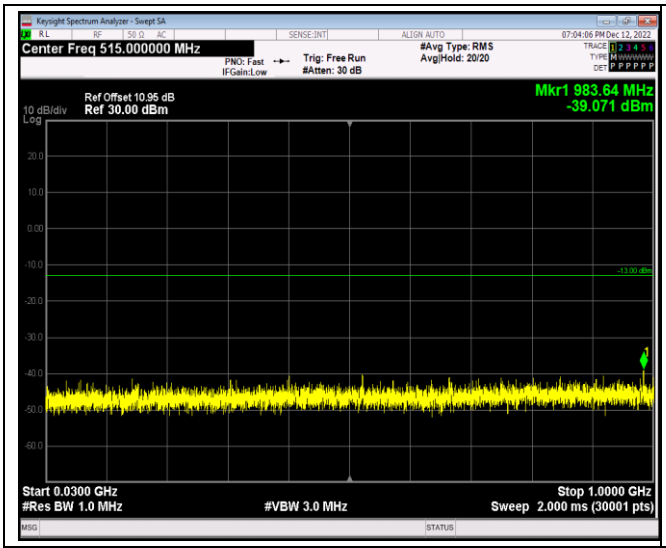
GSM1900-661-0.15~30MHz



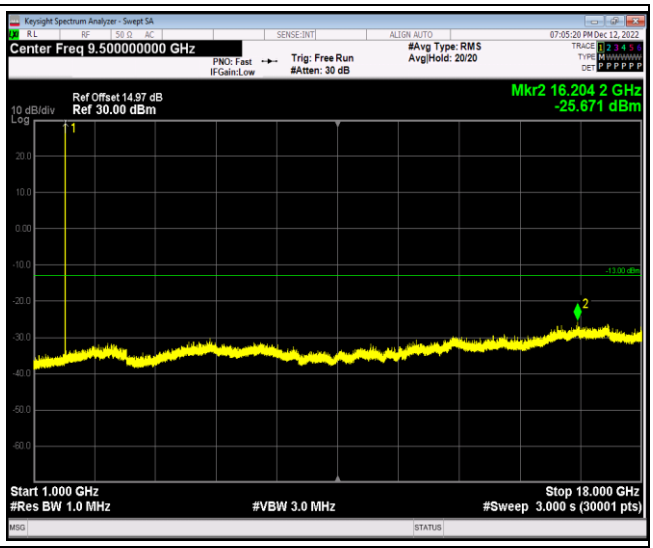
GSM1900-661-30~1000MHz



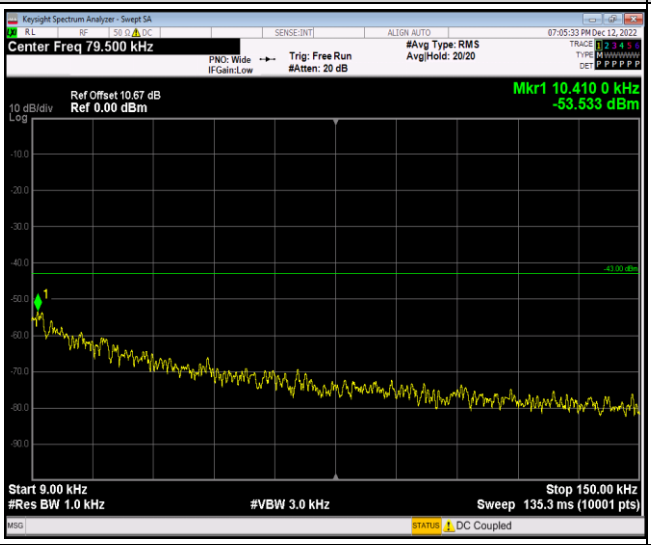
GSM1900-661-1000~18000MHz



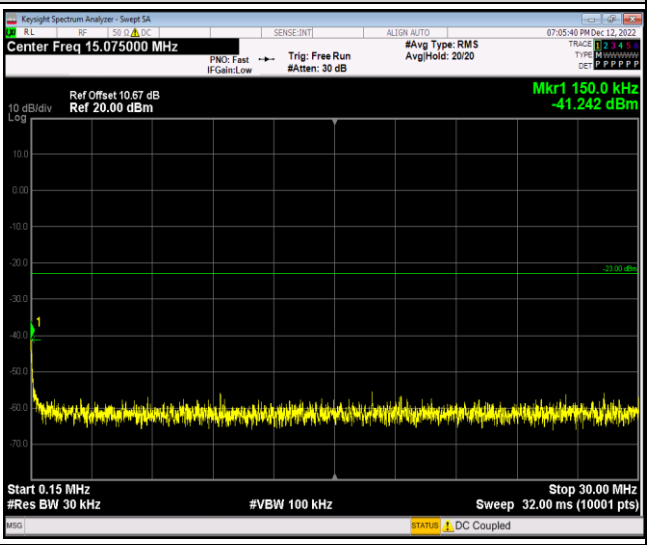
GSM1900-810-0.009~0.15MHz



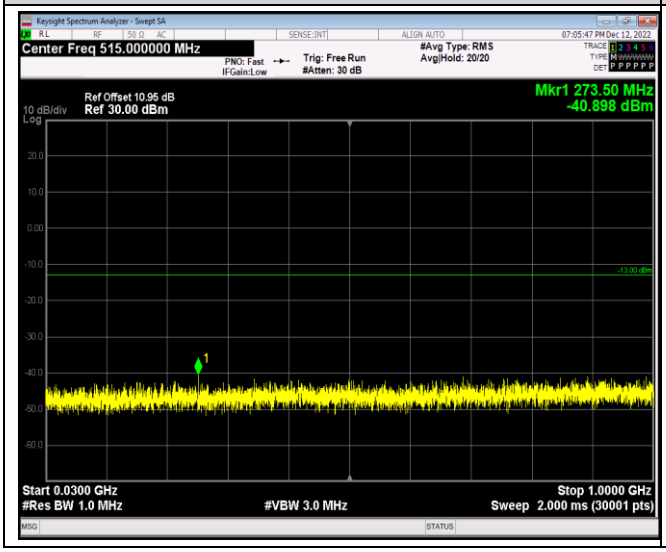
GSM1900-810-0.15~30MHz

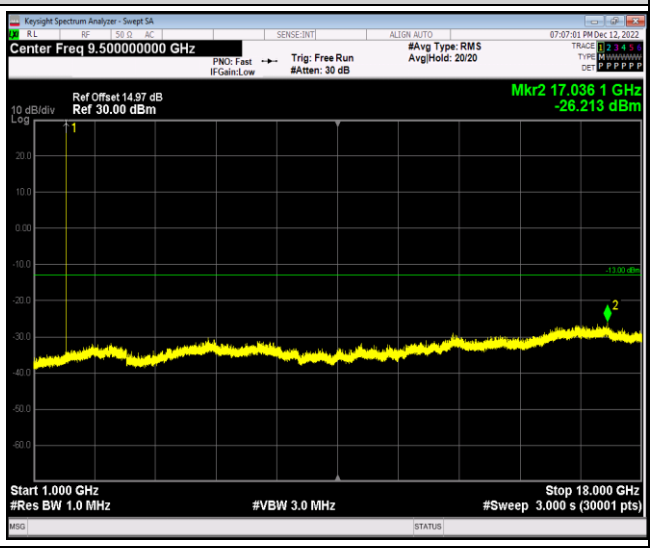


GSM1900-810-30~1000MHz



GSM1900-810-1000~18000MHz





Appendix F: Frequency Stability

Test Result

Reference Frequency: GSM850 Middle channel=190 Frequency=836.6MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	-30	4.94	0.005905	Within authorized band for GSM 850	Pass
	-20	2.32	0.002773		
	-10	1.94	0.002319		
	0	5.10	0.006096		
	10	2.07	0.002474		
	20	5.62	0.006718		
	30	3.75	0.004482		
	40	-5.10	-0.006096		
	50	13.11	0.015671		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	3.33	0.003980	Within authorized band for GSM 850	Pass
	3.70	2.71	0.003239		
	4.20	1.10	0.001315		
Remark: All channel had been tested, but only the worst case data displayed in this report.					

Reference Frequency: EGPRS850 Middle channel=190 Frequency=836.6MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	-30	11.85	0.014164	Within authorized band for GSM 850	Pass
	-20	12.11	0.014475		
	-10	8.94	0.010686		
	0	13.01	0.015551		
	10	12.49	0.014929		
	20	12.49	0.014929		
	30	9.04	0.010806		
	40	14.72	0.017595		
	50	14.56	0.017404		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	7.33	0.008762	Within authorized band for GSM 850	Pass
	3.70	13.59	0.016244		
	4.20	15.43	0.018444		
Remark: All channel had been tested, but only the worst case data displayed in this report.					

Reference Frequency: PCS1900 Middle channel=661 Frequency=1880MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	-30	5.91	0.003144	Within authorized band for PCS 1900	Pass
	-20	5.52	0.002936		
	-10	4.49	0.002388		
	0	-0.06	-0.000032		
	10	7.07	0.003761		
	20	3.42	0.001819		
	30	3.20	0.001702		
	40	3.52	0.001872		
	50	3.42	0.001819		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	0.13	0.000069	Within authorized band for PCS 1900	Pass
	3.70	5.49	0.002920		
	4.20	5.36	0.002851		
Remark: All channel had been tested, but only the worst case data displayed in this report.					

Reference Frequency: EGPRS1900 Middle channel=661 Frequency=1880MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	-30	6.46	0.003436	Within authorized band for PCS 1900	Pass
	-20	3.84	0.002043		
	-10	-0.68	-0.000362		
	0	1.55	0.000824		
	10	9.59	0.005101		
	20	9.14	0.004862		
	30	6.01	0.003197		
	40	7.46	0.003968		
	50	-4.46	-0.002372		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	-6.52	-0.003468	Within authorized band for PCS 1900	Pass
	3.70	8.98	0.004777		
	4.20	3.75	0.001995		
Remark: All channel had been tested, but only the worst case data displayed in this report.					

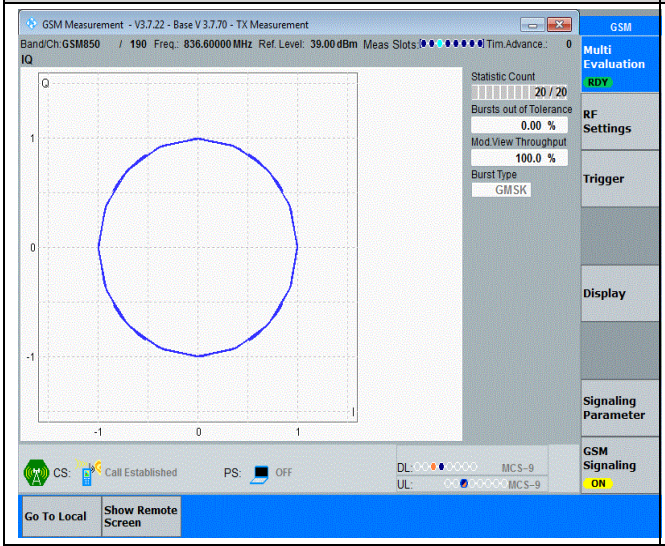
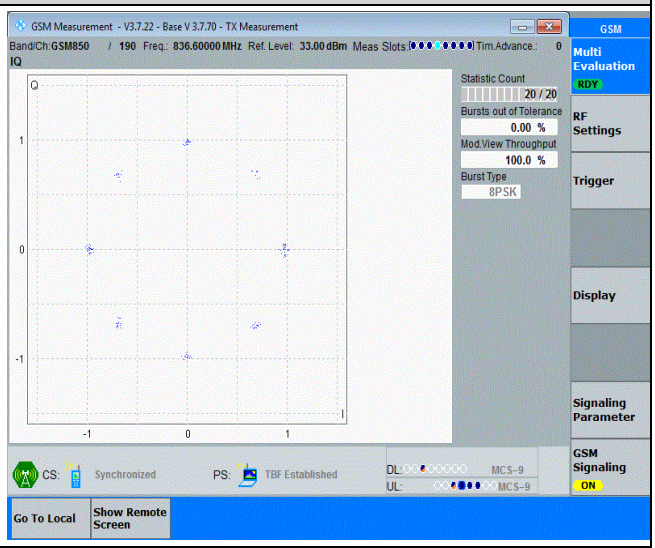
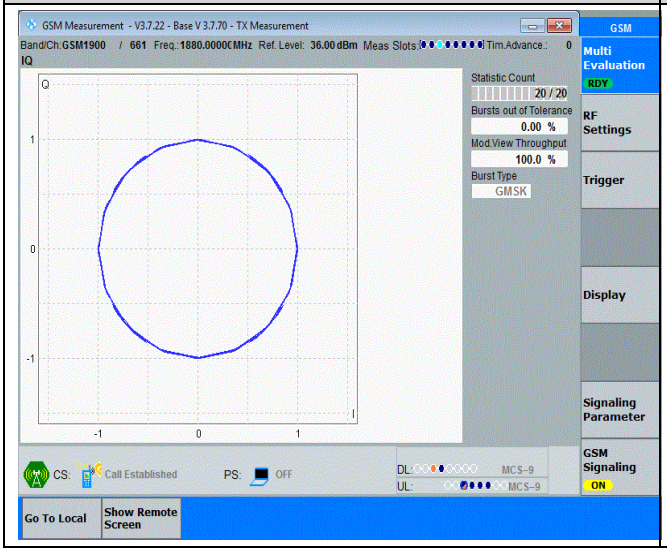
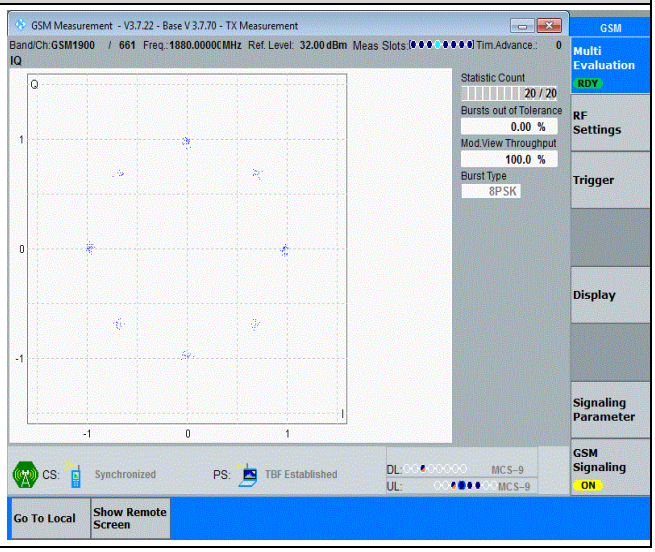
Appendix G: Modulation Characteristics

Test Result

Band	Channel	Result	Verdict
GSM850	190	PASS	PASS
EGPRS850	190	PASS	PASS
GSM1900	661	PASS	PASS
EGPRS1900	661	PASS	PASS

Remark: All channel had been tested, but only the worst case data displayed in this report.

Test Graphs

GSM850-190	EGPRS850-190
	
GSM1900-661	**EGPRS1900-661**