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	33.20	29.25	38.45	PASS
GSM850	190	5	33.19	29.24	38.45	PASS
GSM850	251	5	33.02	29.07	38.45	PASS
GSM1900	512	0	30.12	28.42	33.00	PASS
GSM1900	661	0	30.28	28.58	33.00	PASS
GSM1900	810	0	29.97	28.27	33.00	PASS

Band	Channel	PCL	Slot	Conducted Power (dBm)	ERP/EIRP (dBm)	ERP/EIRP Limit (dBm)	Verdict
GPRS850	128	5	1	33.18	29.23	38.45	PASS
GPRS850	128	5	2	31.15	27.2	38.45	PASS
GPRS850	128	5	3	29.19	25.24	38.45	PASS
GPRS850	128	5	4	27.00	23.05	38.45	PASS
GPRS850	190	5	1	33.14	29.19	38.45	PASS
GPRS850	190	5	2	31.12	27.17	38.45	PASS
GPRS850	190	5	3	29.17	25.22	38.45	PASS
GPRS850	190	5	4	27.00	23.05	38.45	PASS
GPRS850	251	5	1	32.99	29.04	38.45	PASS
GPRS850	251	5	2	30.99	27.04	38.45	PASS
GPRS850	251	5	3	29.05	25.1	38.45	PASS
GPRS850	251	5	4	26.91	22.96	38.45	PASS
GPRS1900	512	0	1	30.12	28.42	33.00	PASS
GPRS1900	512	0	2	28.05	26.35	33.00	PASS
GPRS1900	512	0	3	26.29	24.59	33.00	PASS
GPRS1900	512	0	4	24.08	22.38	33.00	PASS
GPRS1900	661	0	1	30.26	28.56	33.00	PASS
GPRS1900	661	0	2	27.89	26.19	33.00	PASS
GPRS1900	661	0	3	26.13	24.43	33.00	PASS
GPRS1900	661	0	4	23.96	22.26	33.00	PASS
GPRS1900	810	0	1	30.02	28.32	33.00	PASS
GPRS1900	810	0	2	27.61	25.91	33.00	PASS
GPRS1900	810	0	3	25.85	24.15	33.00	PASS
GPRS1900	810	0	4	23.70	22	33.00	PASS

Band	Channel	PCL	Slot	Conducted Power (dBm)	ERP/EIRP (dBm)	ERP/EIRP Limit (dBm)	Verdict
EGPRS850	128	8	1	25.76	21.81	38.45	PASS
EGPRS850	128	8	2	24.61	20.66	38.45	PASS
EGPRS850	128	8	3	22.46	18.51	38.45	PASS
EGPRS850	128	8	4	20.13	16.18	38.45	PASS
EGPRS850	190	8	1	26.05	22.1	38.45	PASS
EGPRS850	190	8	2	24.96	21.01	38.45	PASS
EGPRS850	190	8	3	22.82	18.87	38.45	PASS
EGPRS850	190	8	4	20.52	16.57	38.45	PASS
EGPRS850	251	8	1	25.89	21.94	38.45	PASS
EGPRS850	251	8	2	24.76	20.81	38.45	PASS
EGPRS850	251	8	3	22.56	18.61	38.45	PASS
EGPRS850	251	8	4	20.38	16.43	38.45	PASS
EGPRS1900	512	2	1	25.80	24.1	33.00	PASS
EGPRS1900	512	2	2	24.06	22.36	33.00	PASS
EGPRS1900	512	2	3	22.08	20.38	33.00	PASS
EGPRS1900	512	2	4	20.31	18.61	33.00	PASS
EGPRS1900	661	2	1	26.12	24.42	33.00	PASS
EGPRS1900	661	2	2	24.49	22.79	33.00	PASS
EGPRS1900	661	2	3	22.60	20.9	33.00	PASS
EGPRS1900	661	2	4	20.78	19.08	33.00	PASS
EGPRS1900	810	2	1	26.11	24.41	33.00	PASS
EGPRS1900	810	2	2	24.62	22.92	33.00	PASS
EGPRS1900	810	2	3	22.68	20.98	33.00	PASS
EGPRS1900	810	2	4	20.88	19.18	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)

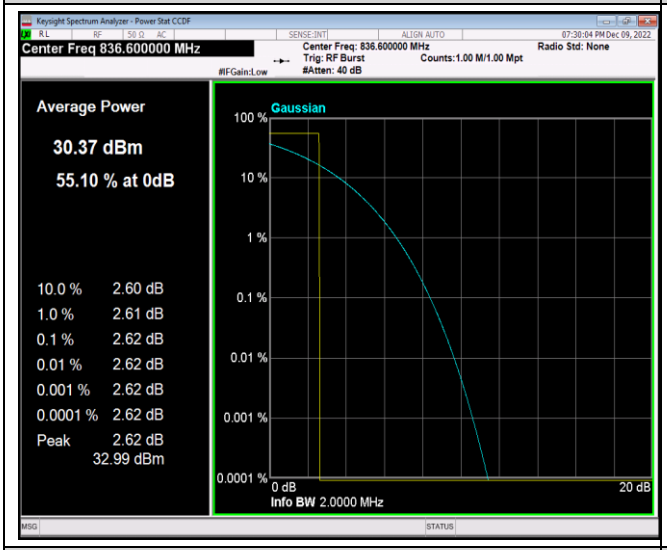
Test Result

Band	Channel	PCL	Result(dB)	Limit(dB)	Verdict
GSM850	190	5	2.62	13	PASS
EGPRS850	190	8	5.49	13	PASS
GSM1900	661	0	2.62	13	PASS
EGPRS1900	661	2	5.23	13	PASS

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

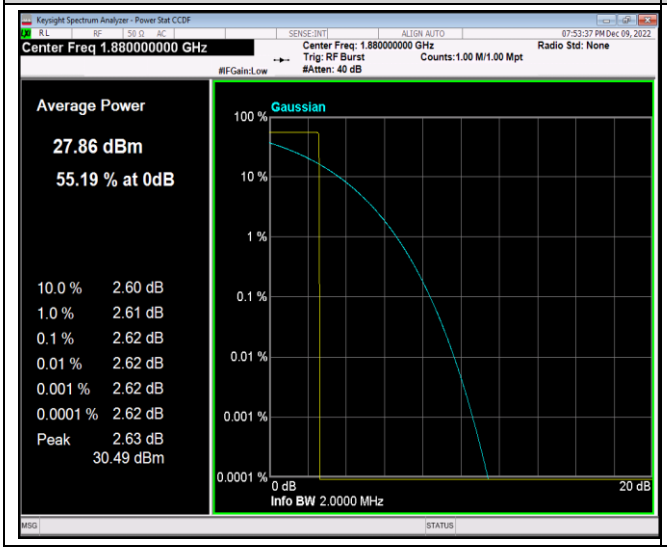
Test Graphs

GSM850-190



EGPRS850-190

GSM1900-661



EGPRS1900-661

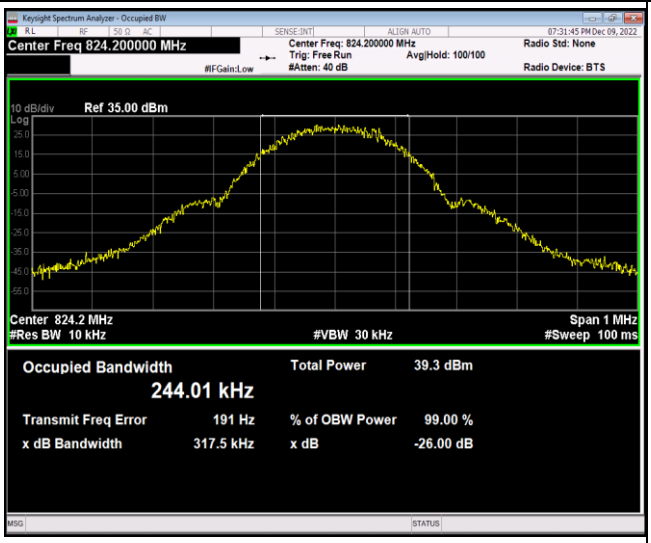
Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

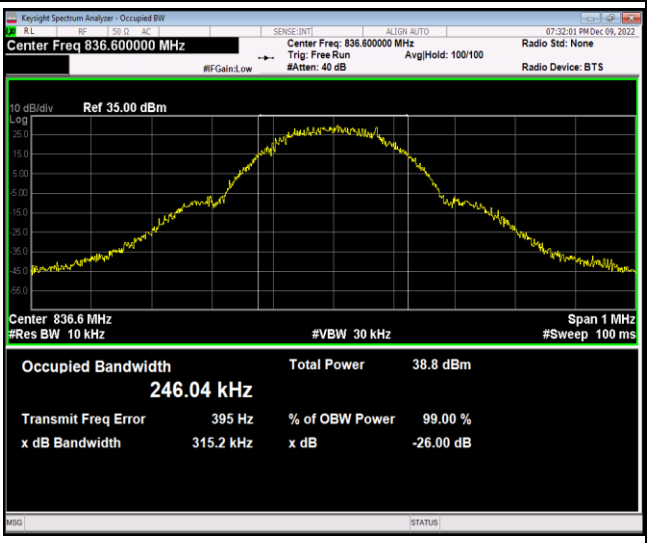
Band	Channel	PCL	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
GSM850	128	5	0.24401	0.3175	---	PASS
GSM850	190	5	0.24604	0.3152	---	PASS
GSM850	251	5	0.24722	0.3131	---	PASS
EGPRS850	128	8	0.24388	0.3056	---	PASS
EGPRS850	190	8	0.24142	0.3148	---	PASS
EGPRS850	251	8	0.24324	0.3071	---	PASS
GSM1900	512	0	0.24462	0.3160	---	PASS
GSM1900	661	0	0.24430	0.3143	---	PASS
GSM1900	810	0	0.24459	0.3088	---	PASS
EGPRS1900	512	2	0.24637	0.3063	---	PASS
EGPRS1900	661	2	0.24744	0.3208	---	PASS
EGPRS1900	810	2	0.24901	0.3231	---	PASS

Test Graphs

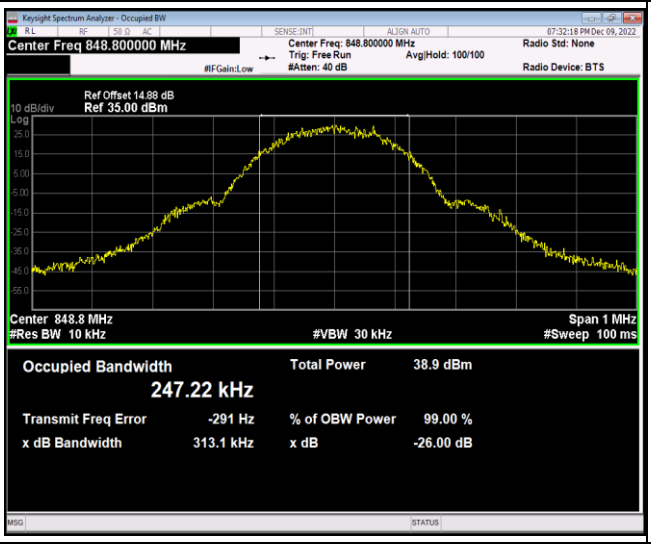
GSM850-128



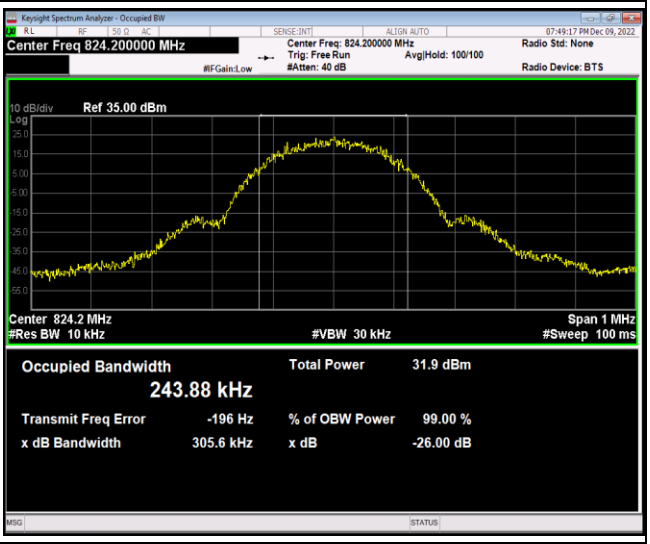
GSM850-190



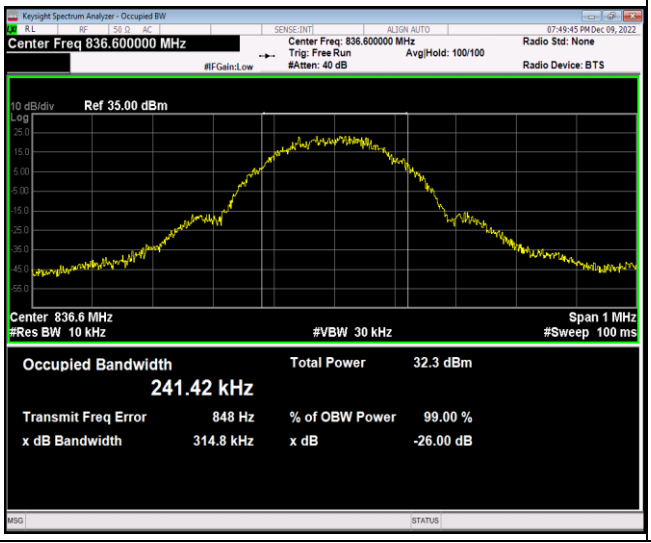
GSM850-251



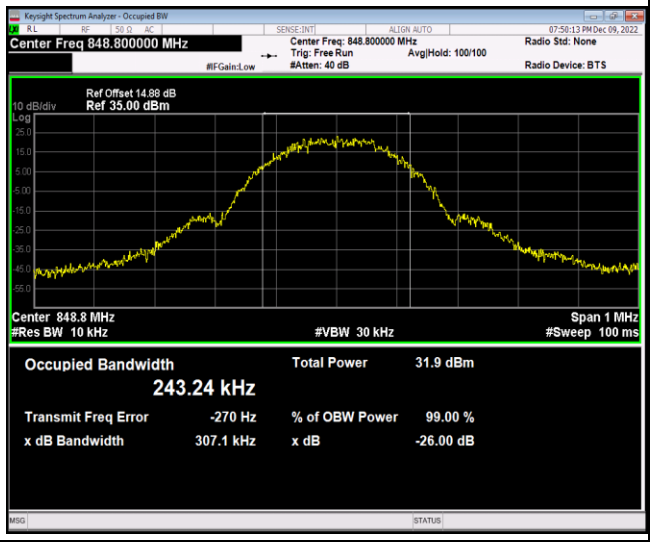
EGPRS850-128



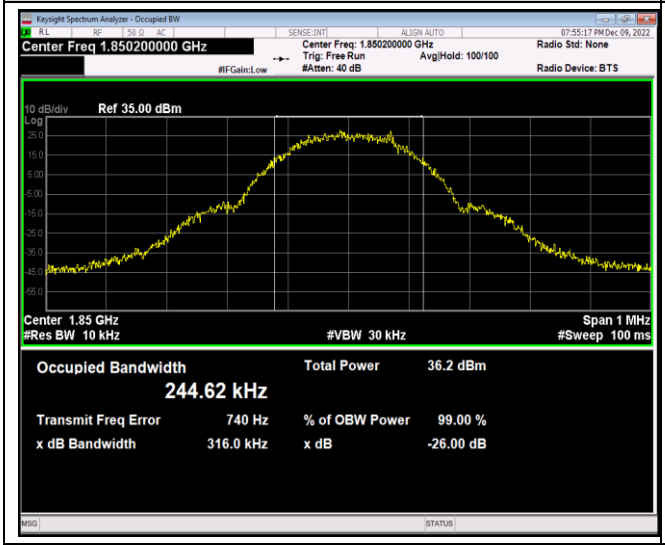
EGPRS850-190



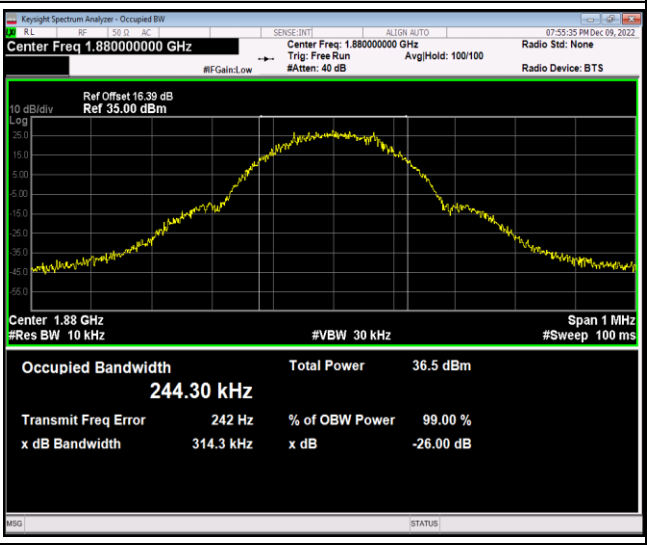
EGPRS850-251



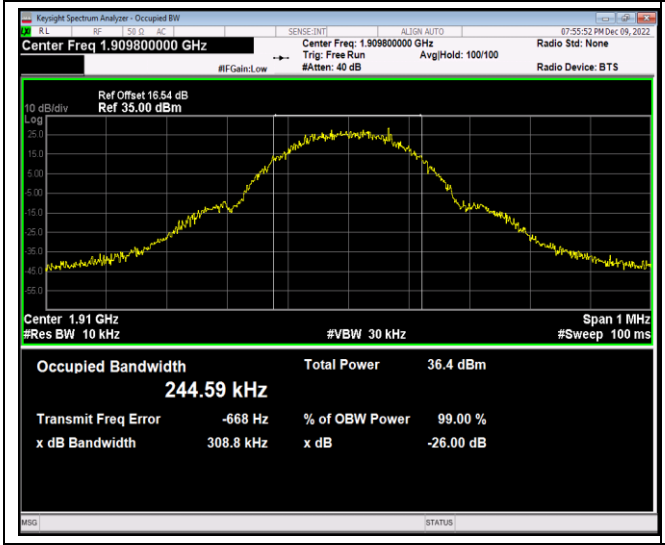
GSM1900-512



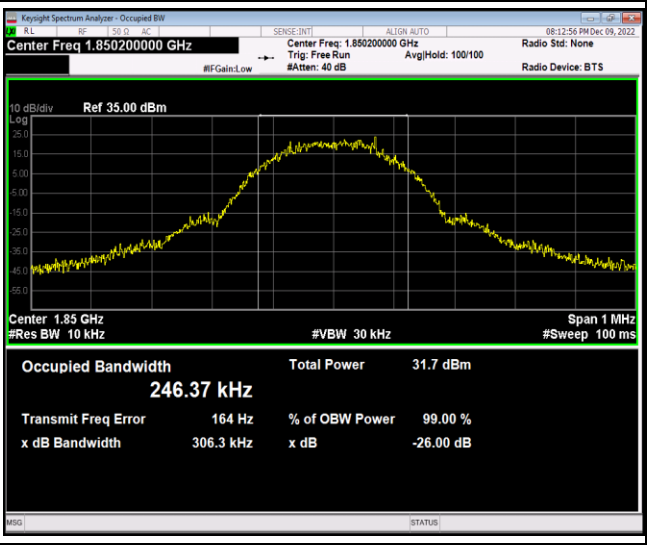
GSM1900-661



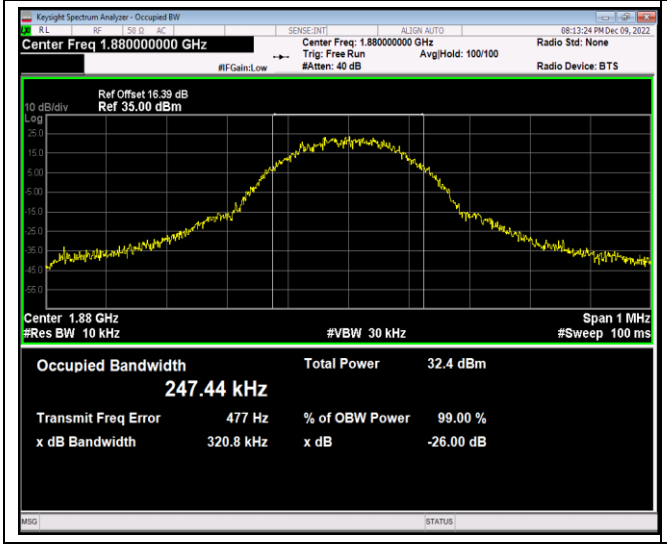
GSM1900-810



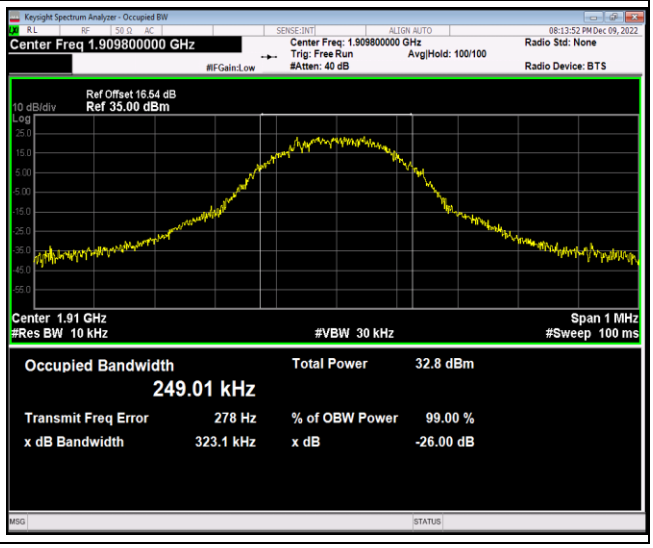
EGPRS1900-512



EGPRS1900-661



EGPRS1900-810



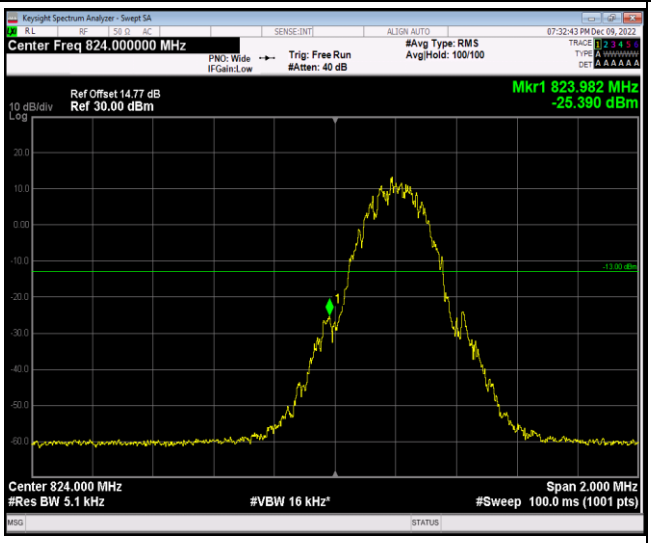
Appendix D: Band Edge

Test Result

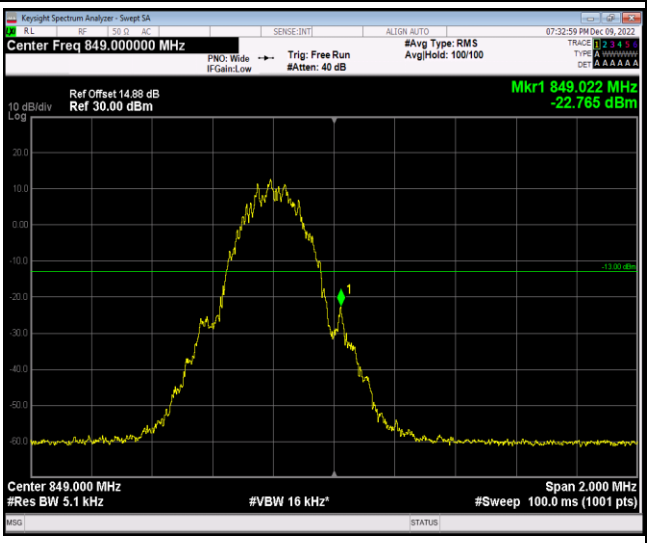
Band	Channel	PCL	Freq (MHz)	Result (dBm)	Limit(dBm)	Verdict
GSM850	128	5	823.98	-25.39	-13	PASS
GSM850	251	5	849.02	-22.76	-13	PASS
EGPRS850	128	8	823.98	-34.07	-13	PASS
EGPRS850	251	8	849.02	-35.12	-13	PASS
GSM1900	512	0	1850.00	-14.83	-13	PASS
GSM1900	810	0	1910.02	-13.34	-13	PASS
EGPRS1900	512	2	1850.00	-22.57	-13	PASS
EGPRS1900	810	2	1910.00	-18.07	-13	PASS

Test Graphs

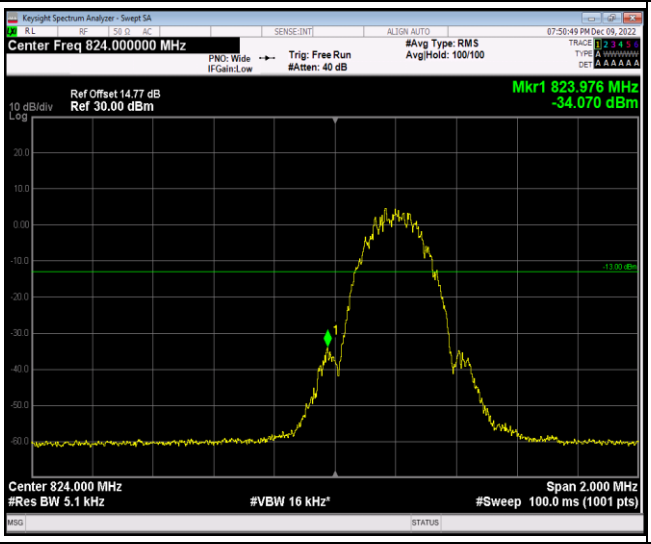
GSM850-128



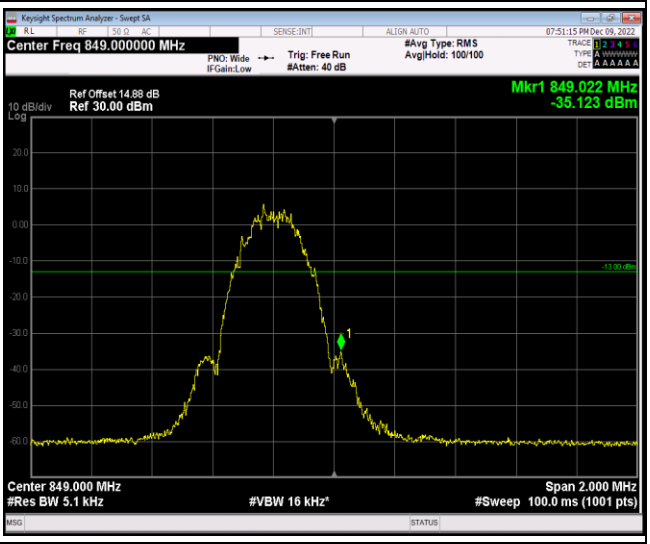
GSM850-251



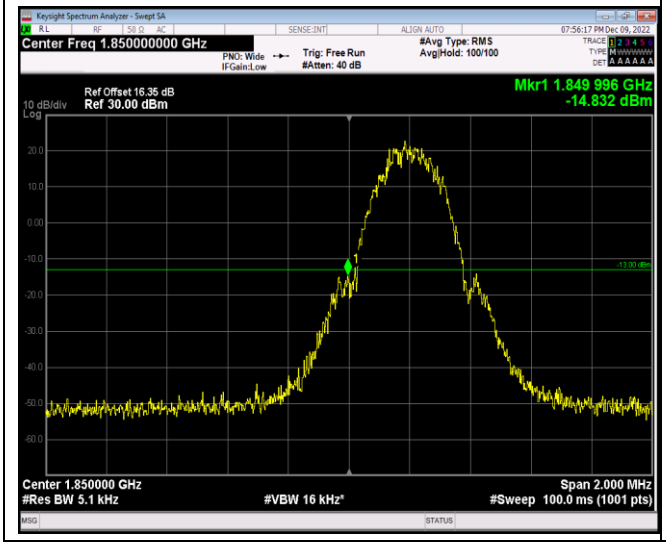
EGPRS850-128



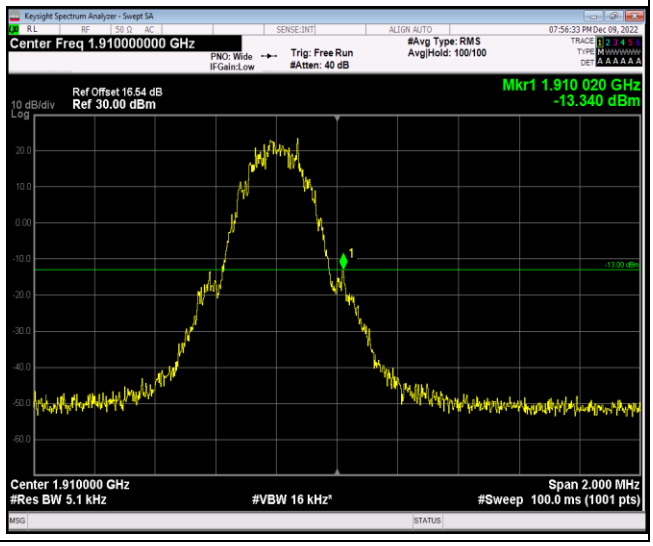
EGPRS850-251

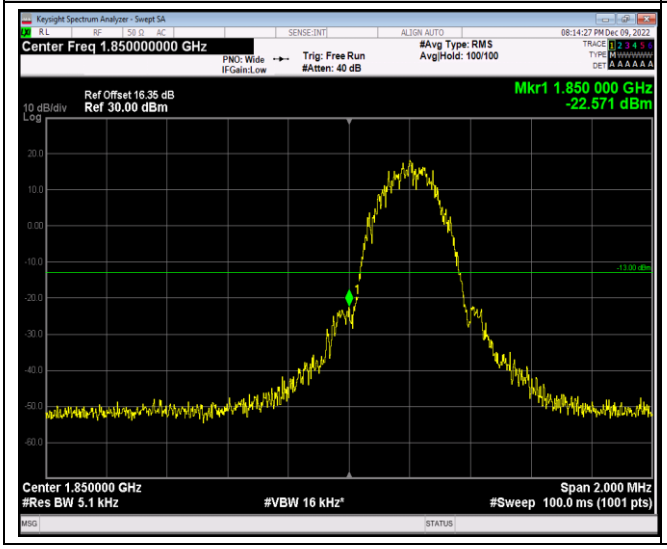
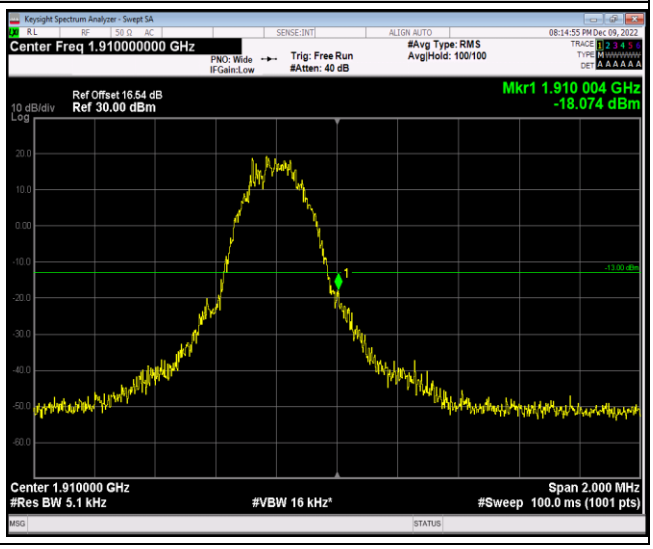


GSM1900-512



GSM1900-810



EGPRS1900-512	EGPRS1900-810
	

Appendix E: Conducted Spurious Emission

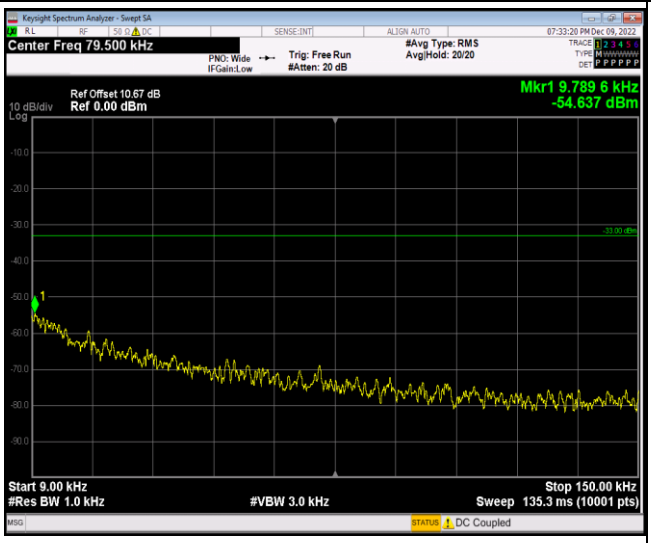
Test Result

Band	Channel	PCL	Frequency Range(MHz)	Max.Freq. (MHz)	Result (dBm)	Limit (dBm)	Verdict
GSM850	128	5	0.009~0.15MHz	0.01	-54.64	-33	PASS
GSM850	128	5	0.15~30MHz	0.17	-40.11	-13	PASS
GSM850	128	5	30~1000MHz	600.2	-39.89	-13	PASS
GSM850	128	5	1000~10000MHz	1648.3	-30.68	-13	PASS
GSM850	190	5	0.009~0.15MHz	0.01	-54.14	-33	PASS
GSM850	190	5	0.15~30MHz	0.15	-41.11	-13	PASS
GSM850	190	5	30~1000MHz	941.74	-39.51	-13	PASS
GSM850	190	5	1000~10000MHz	1673.5	-31.35	-13	PASS
GSM850	251	5	0.009~0.15MHz	0.01	-52.28	-33	PASS
GSM850	251	5	0.15~30MHz	0.15	-40.5	-13	PASS
GSM850	251	5	30~1000MHz	503.39	-40	-13	PASS
GSM850	251	5	1000~10000MHz	5909.2	-30.94	-13	PASS
GSM1900	512	0	0.009~0.15MHz	0.01	-53.7	-43	PASS
GSM1900	512	0	0.15~30MHz	0.15	-39.79	-23	PASS
GSM1900	512	0	30~1000MHz	959.55	-40.58	-13	PASS
GSM1900	512	0	1000~18000MHz	16133.97	-26.37	-13	PASS
GSM1900	661	0	0.009~0.15MHz	0.01	-54.59	-43	PASS
GSM1900	661	0	0.15~30MHz	0.15	-40.82	-23	PASS
GSM1900	661	0	30~1000MHz	818.45	-40.51	-13	PASS
GSM1900	661	0	1000~18000MHz	16383.87	-26.38	-13	PASS
GSM1900	810	0	0.009~0.15MHz	0.01	-54.69	-43	PASS
GSM1900	810	0	0.15~30MHz	0.15	-40.56	-23	PASS
GSM1900	810	0	30~1000MHz	510.25	-40.36	-13	PASS
GSM1900	810	0	1000~18000MHz	16293.2	-25.56	-13	PASS

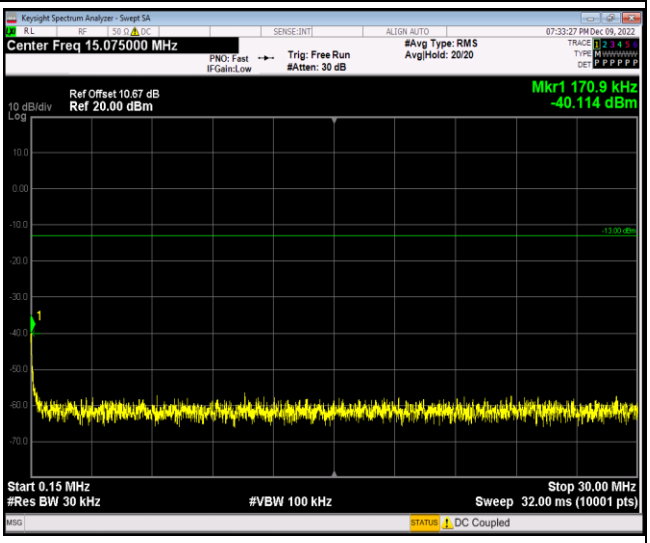
Remark: All channel and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

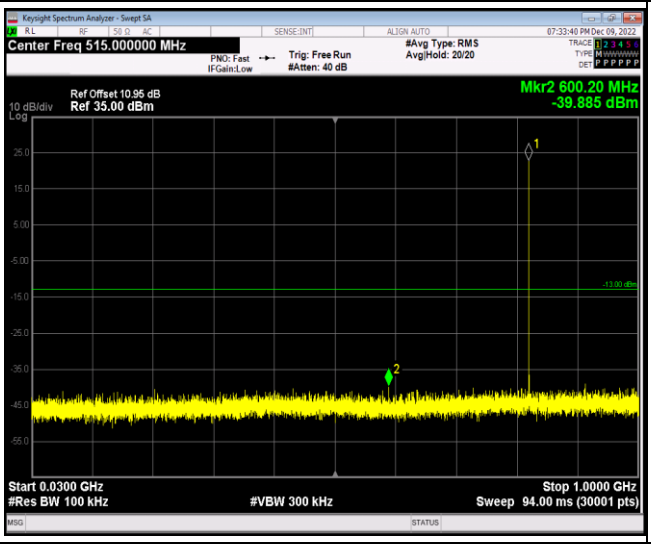
GSM850-128-0.009~0.15MHz



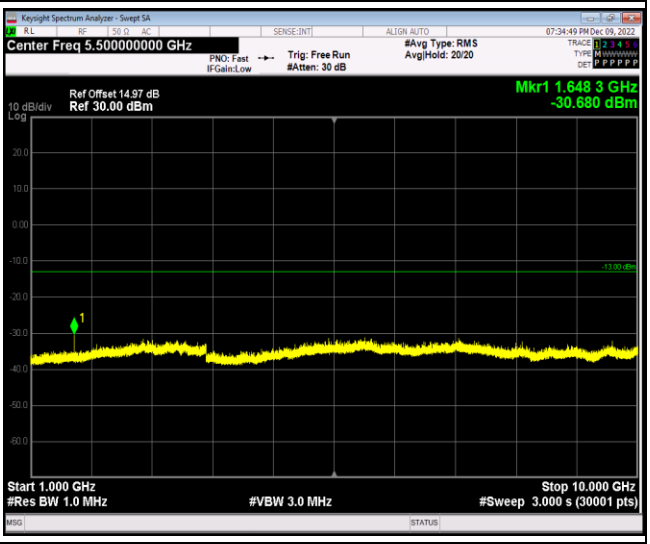
GSM850-128-0.15~30MHz



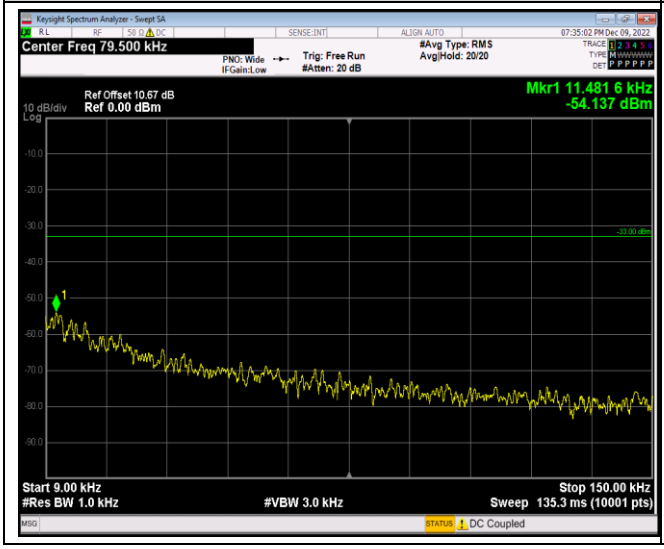
GSM850-128-30~1000MHz



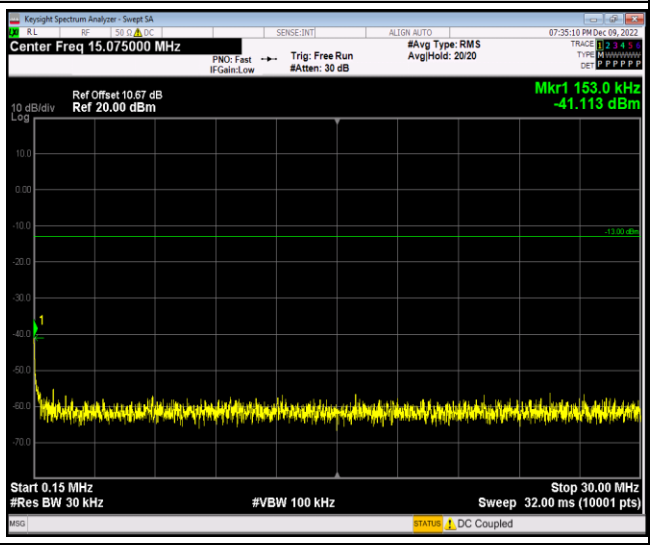
GSM850-128-1000~10000MHz



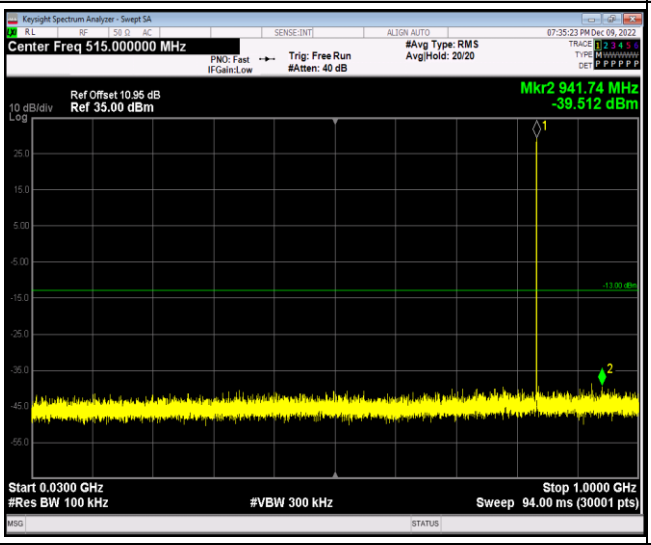
GSM850-190-0.009~0.15MHz



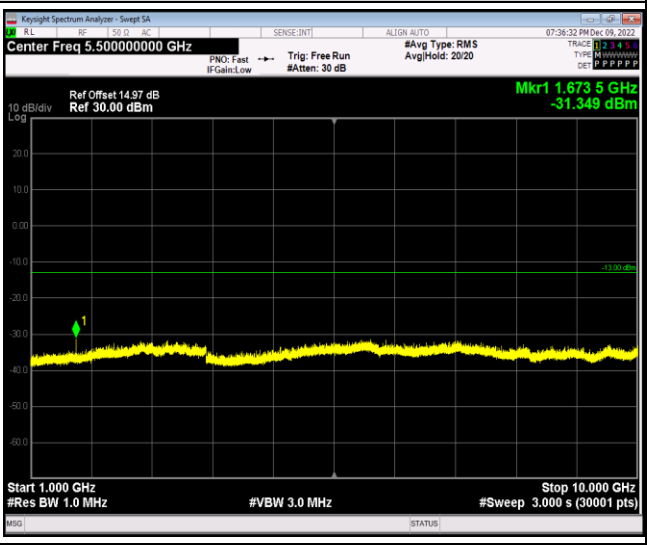
GSM850-190-0.15~30MHz



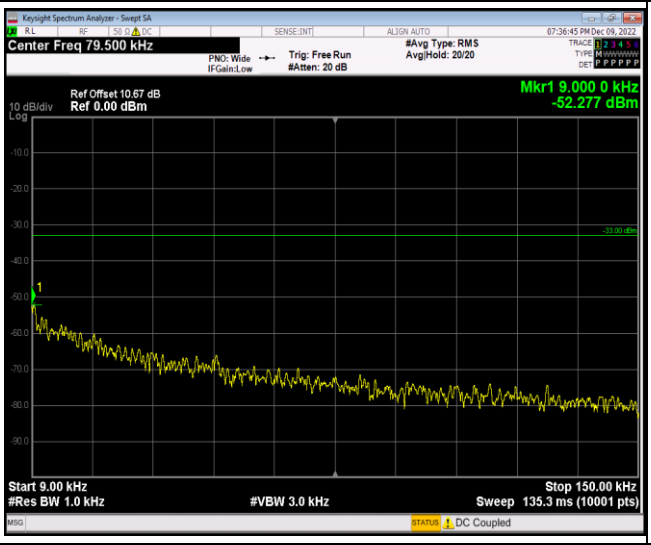
GSM850-190-30~1000MHz



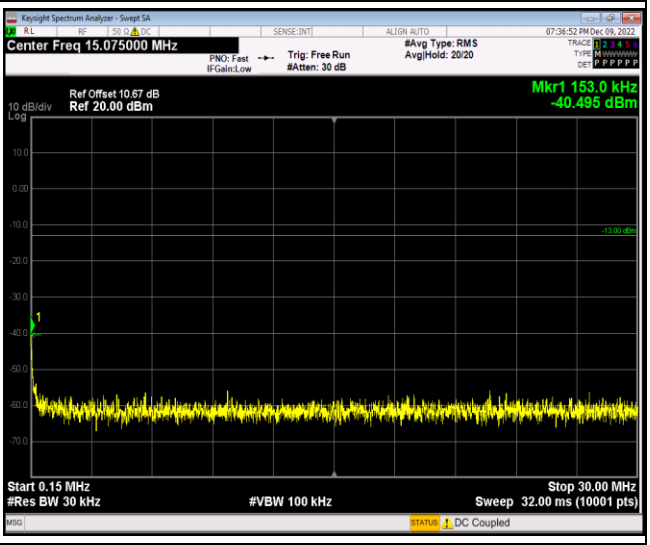
GSM850-190-1000~10000MHz



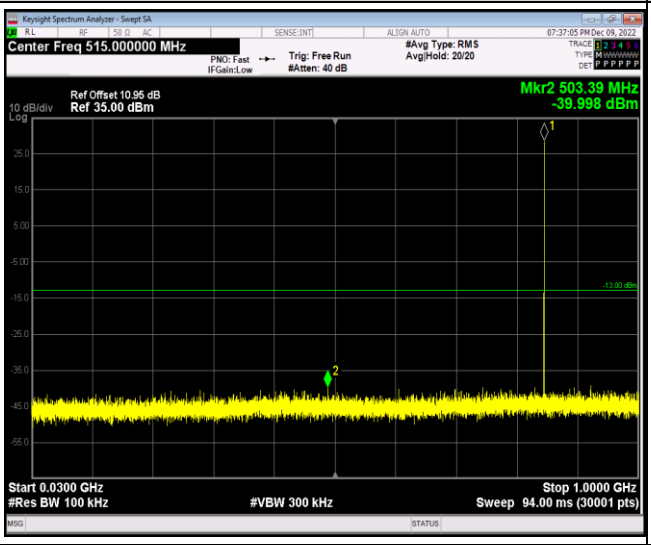
GSM850-251-0.009~0.15MHz



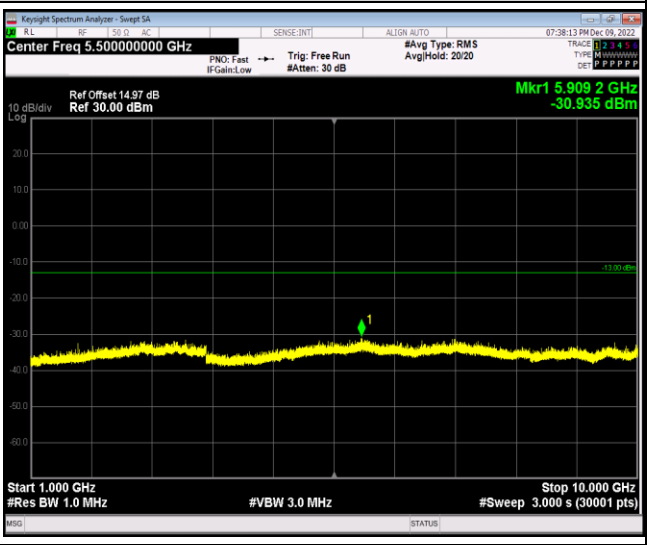
GSM850-251-0.15~30MHz



GSM850-251-30~1000MHz

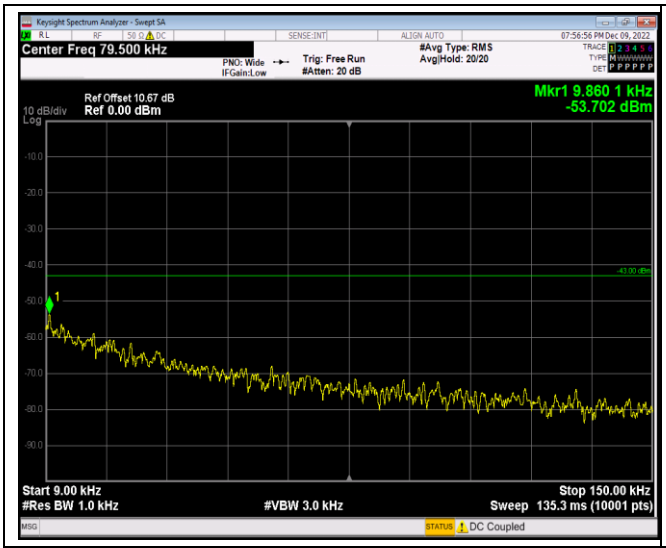


GSM850-251-1000~10000MHz

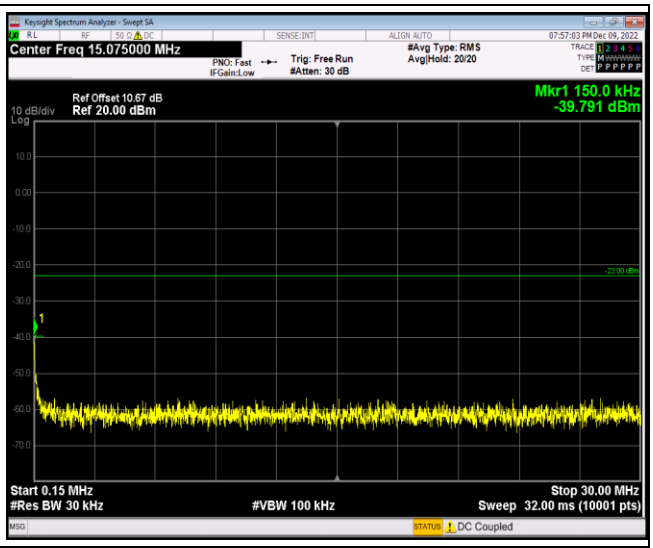


GSM1900-512-0.009~0.15MHz

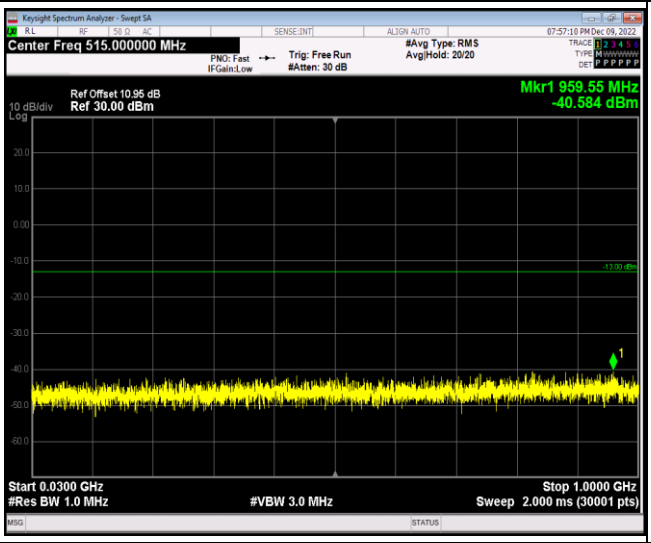
GSM1900-512-0.15~30MHz



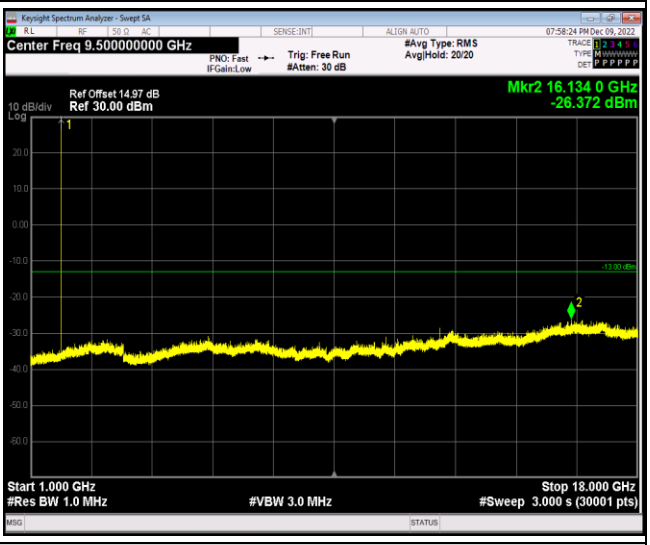
GSM1900-512-30~1000MHz



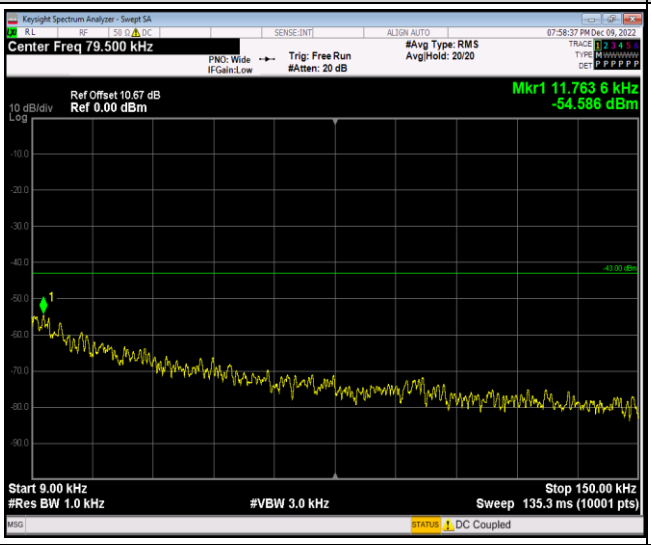
GSM1900-512-1000~18000MHz



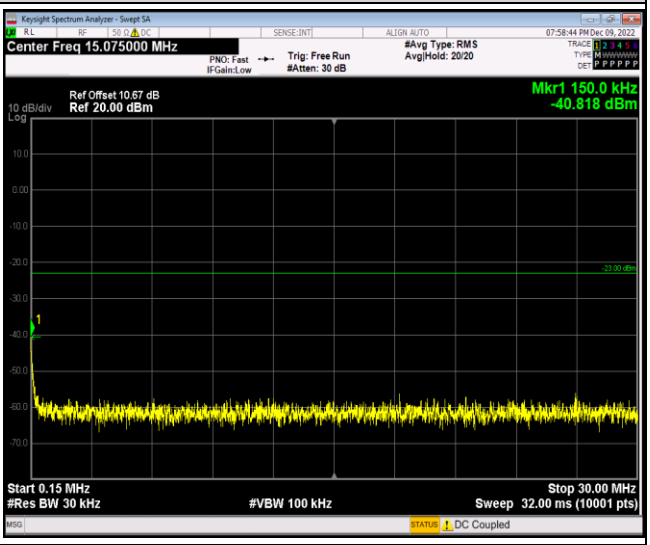
GSM1900-661-0.009~0.15MHz



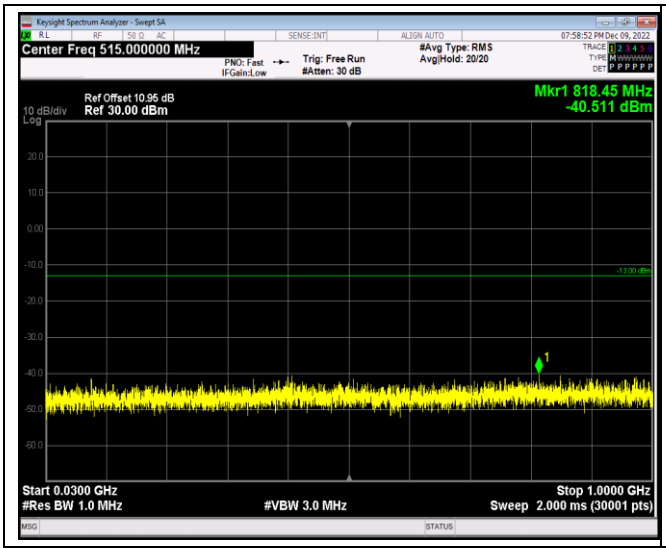
GSM1900-661-0.15~30MHz



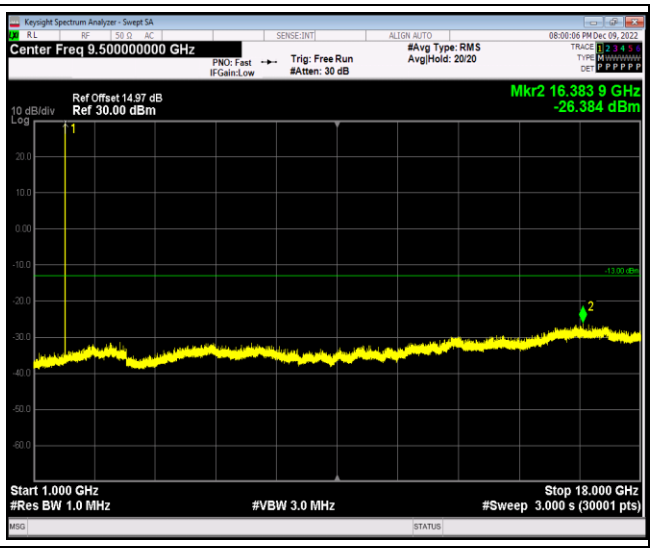
GSM1900-661-30~1000MHz



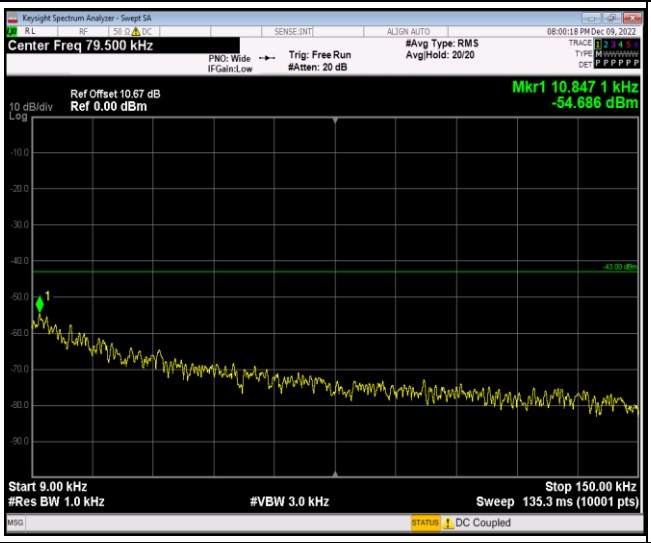
GSM1900-661-1000~18000MHz



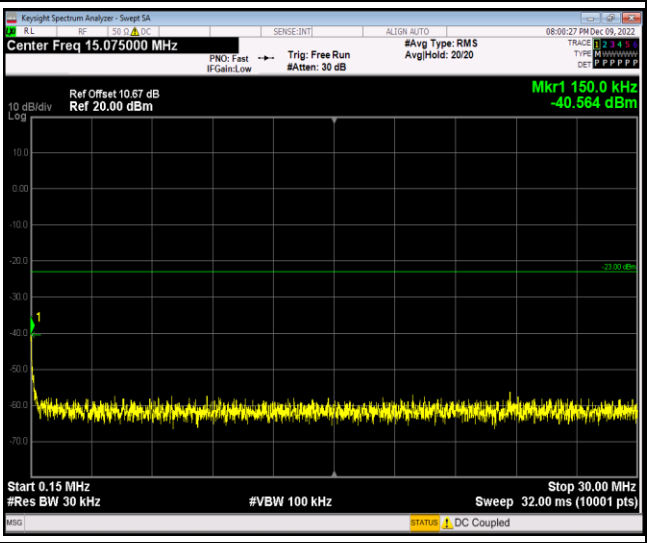
GSM1900-810-0.009~0.15MHz



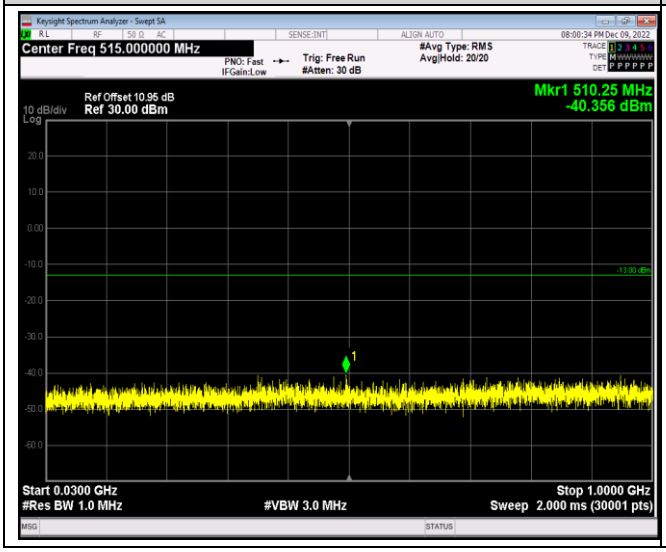
GSM1900-810-0.15~30MHz

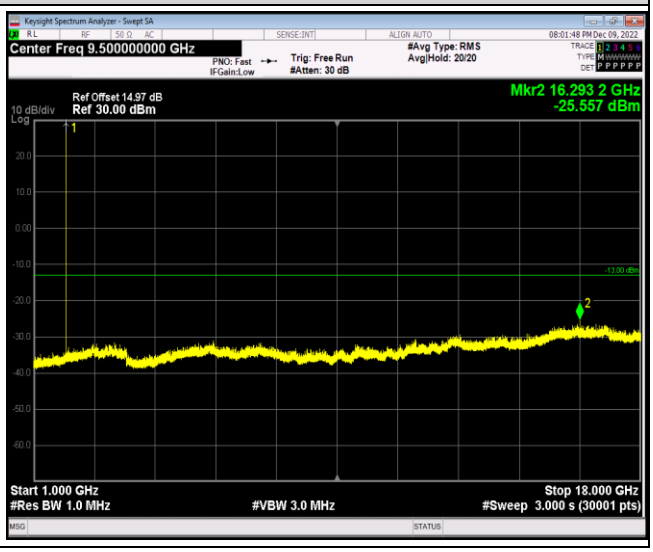


GSM1900-810-30~1000MHz



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		
3.85	-30	2.52	0.003012	Within authorized band for GSM 850	Pass
	-20	0.26	0.000311		
	-10	0.03	0.000036		
	0	0.84	0.001004		
	10	1.74	0.002080		
	20	-2.52	-0.003012		
	30	-2.49	-0.002976		
	40	3.45	0.004124		
	50	0.39	0.000466		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	-3.23	-0.003861	Within authorized band for GSM 850	Pass
	3.85	3.55	0.004243		
	4.20	2.32	0.002773		
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		
3.85	-30	11.43	0.013662	Within authorized band for GSM 850	Pass
	-20	9.07	0.010842		
	-10	10.72	0.012814		
	0	8.65	0.010339		
	10	11.62	0.013890		
	20	9.72	0.011618		
	30	9.01	0.010770		
	40	10.78	0.012885		
	50	5.62	0.006718		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	10.01	0.011965	Within authorized band for GSM 850	Pass
	3.85	5.20	0.006216		
	4.20	6.46	0.007722		
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		
3.85	-30	9.94	0.005287	Within authorized band for PCS 1900	Pass
	-20	5.84	0.003106		
	-10	10.78	0.005734		
	0	9.91	0.005271		
	10	10.27	0.005463		
	20	6.88	0.003660		
	30	4.84	0.002574		
	40	10.27	0.005463		
	50	9.40	0.005000		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	12.66	0.006734	Within authorized band for PCS 1900	Pass
	3.85	5.88	0.003128		
	4.20	4.36	0.002319		
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		
3.85	-30	1.74	0.000926	Within authorized band for PCS 1900	Pass
	-20	7.46	0.003968		
	-10	18.40	0.009787		
	0	15.37	0.008176		
	10	17.92	0.009532		
	20	14.11	0.007505		
	30	9.91	0.005271		
	40	14.14	0.007521		
	50	1.74	0.000926		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	5.26	0.002798	Within authorized band for PCS 1900	Pass
	3.85	1.07	0.000569		
	4.20	2.55	0.001356		
Remark: All channel had been tested, but only the worst case data displayed in this report.					

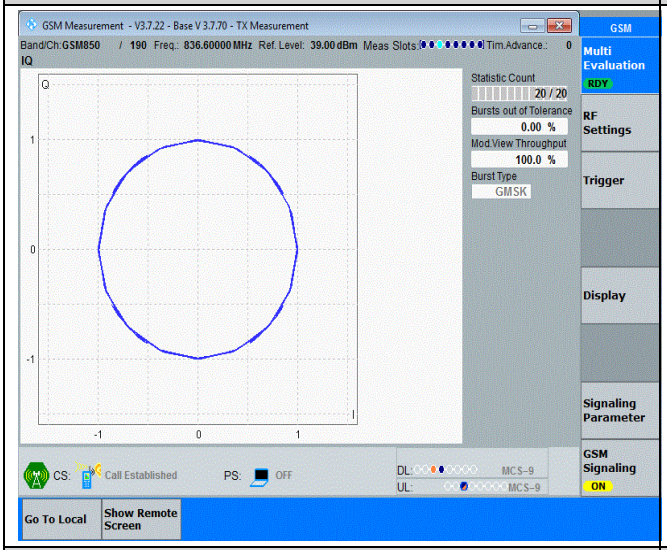
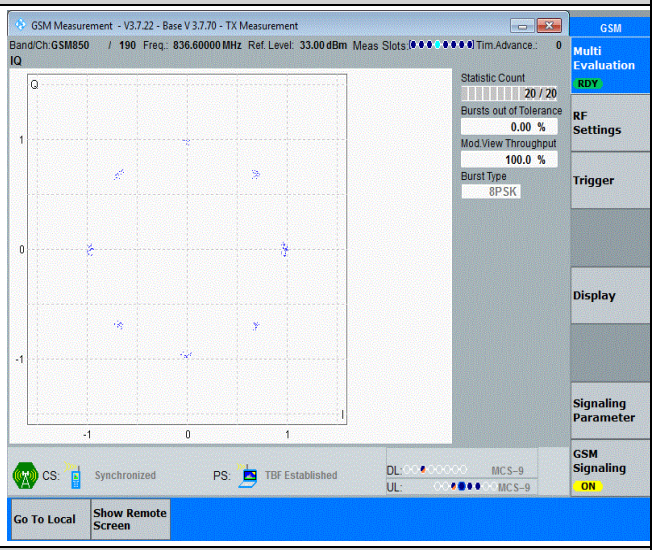
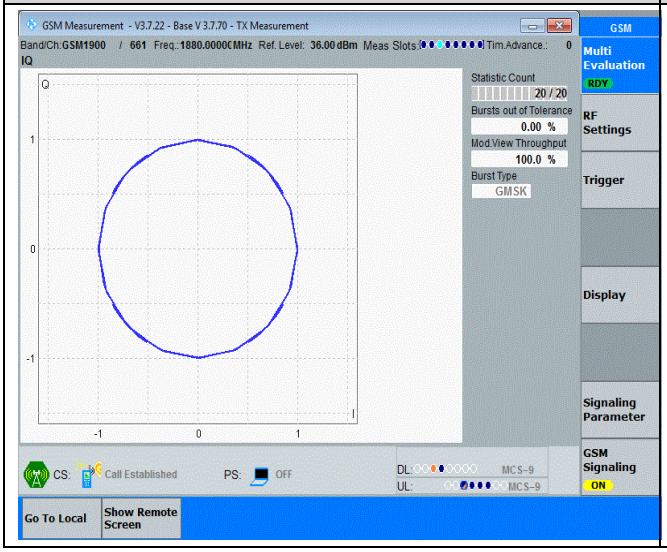
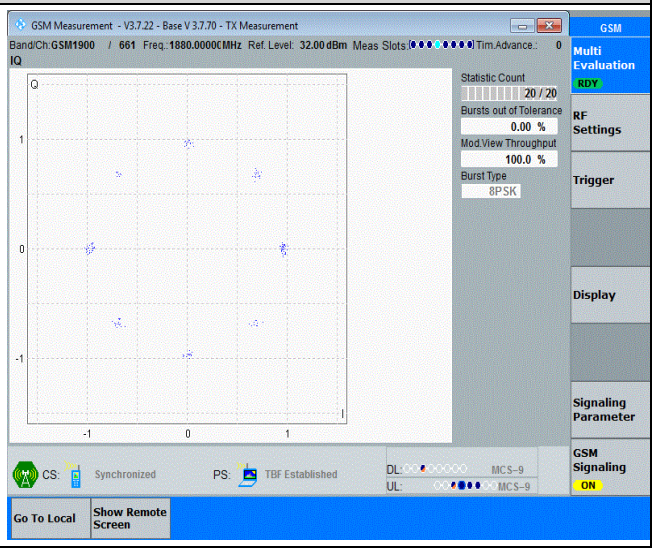
AppendixG:Modulation Characteristics

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**