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	33.61	30.10	38.45	PASS
GSM850	190	5	33.60	30.09	38.45	PASS
GSM850	251	5	33.58	30.07	38.45	PASS
GSM1900	512	0	30.42	30.96	33.00	PASS
GSM1900	661	0	30.55	31.09	33.00	PASS
GSM1900	810	0	30.30	30.84	33.00	PASS

Band	Channel	PCL	Slot	Conducted Power (dBm)	ERP/EIRP (dBm)	ERP/EIRP Limit (dBm)	Verdict
GPRS850	128	5	1	33.64	30.13	38.45	PASS
GPRS850	128	5	2	32.89	29.38	38.45	PASS
GPRS850	128	5	3	31.11	27.60	38.45	PASS
GPRS850	128	5	4	30.02	26.51	38.45	PASS
GPRS850	190	5	1	33.63	30.12	38.45	PASS
GPRS850	190	5	2	32.91	29.40	38.45	PASS
GPRS850	190	5	3	31.13	27.62	38.45	PASS
GPRS850	190	5	4	30.04	26.53	38.45	PASS
GPRS850	251	5	1	33.61	30.10	38.45	PASS
GPRS850	251	5	2	32.90	29.39	38.45	PASS
GPRS850	251	5	3	31.15	27.64	38.45	PASS
GPRS850	251	5	4	30.08	26.57	38.45	PASS
GPRS1900	512	0	1	30.43	30.97	33.00	PASS
GPRS1900	512	0	2	29.70	30.24	33.00	PASS
GPRS1900	512	0	3	27.95	28.49	33.00	PASS
GPRS1900	512	0	4	26.91	27.45	33.00	PASS
GPRS1900	661	0	1	30.54	31.08	33.00	PASS
GPRS1900	661	0	2	29.82	30.36	33.00	PASS
GPRS1900	661	0	3	28.08	28.62	33.00	PASS
GPRS1900	661	0	4	27.03	27.57	33.00	PASS
GPRS1900	810	0	1	30.35	30.89	33.00	PASS
GPRS1900	810	0	2	29.62	30.16	33.00	PASS
GPRS1900	810	0	3	27.92	28.46	33.00	PASS
GPRS1900	810	0	4	26.85	27.39	33.00	PASS

Band	Channel	PCL	Slot	Conducted Power (dBm)	ERP/EIRP (dBm)	ERP/EIRP Limit (dBm)	Verdict
EGPRS850	128	8	1	27.61	24.10	38.45	PASS
EGPRS850	128	8	2	26.51	23.00	38.45	PASS
EGPRS850	128	8	3	24.36	20.85	38.45	PASS
EGPRS850	128	8	4	23.12	19.61	38.45	PASS
EGPRS850	190	8	1	27.81	24.30	38.45	PASS
EGPRS850	190	8	2	26.67	23.16	38.45	PASS
EGPRS850	190	8	3	24.48	20.97	38.45	PASS
EGPRS850	190	8	4	23.19	19.68	38.45	PASS
EGPRS850	251	8	1	27.91	24.40	38.45	PASS
EGPRS850	251	8	2	26.69	23.18	38.45	PASS
EGPRS850	251	8	3	24.55	21.04	38.45	PASS
EGPRS850	251	8	4	23.26	19.75	38.45	PASS
EGPRS1900	512	2	1	26.41	26.95	33.00	PASS
EGPRS1900	512	2	2	25.27	25.81	33.00	PASS
EGPRS1900	512	2	3	23.15	23.69	33.00	PASS
EGPRS1900	512	2	4	21.94	22.48	33.00	PASS
EGPRS1900	661	2	1	26.75	27.29	33.00	PASS
EGPRS1900	661	2	2	25.79	26.33	33.00	PASS
EGPRS1900	661	2	3	23.62	24.16	33.00	PASS
EGPRS1900	661	2	4	22.33	22.87	33.00	PASS
EGPRS1900	810	2	1	26.63	27.17	33.00	PASS
EGPRS1900	810	2	2	25.63	26.17	33.00	PASS
EGPRS1900	810	2	3	23.47	24.01	33.00	PASS
EGPRS1900	810	2	4	22.13	22.67	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)

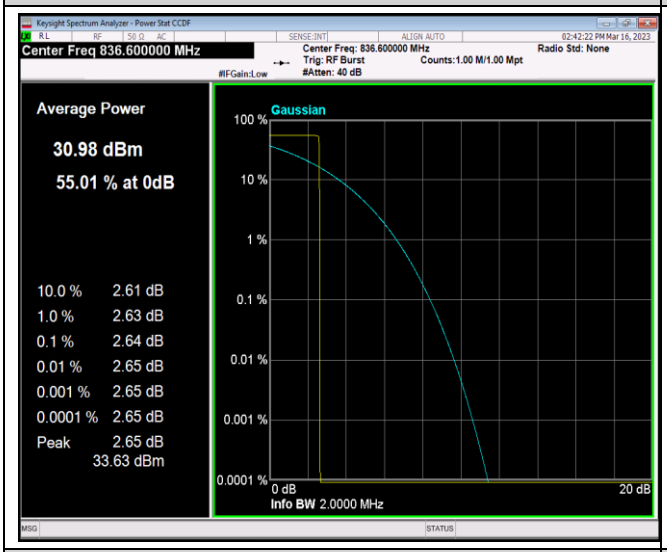
Test Result

Band	Channel	PCL	Result(dB)	Limit(dB)	Verdict
GSM850	190	5	2.64	13	PASS
EGPRS850	190	8	5.65	13	PASS
GSM1900	661	0	2.63	13	PASS
EGPRS1900	661	2	5.21	13	PASS

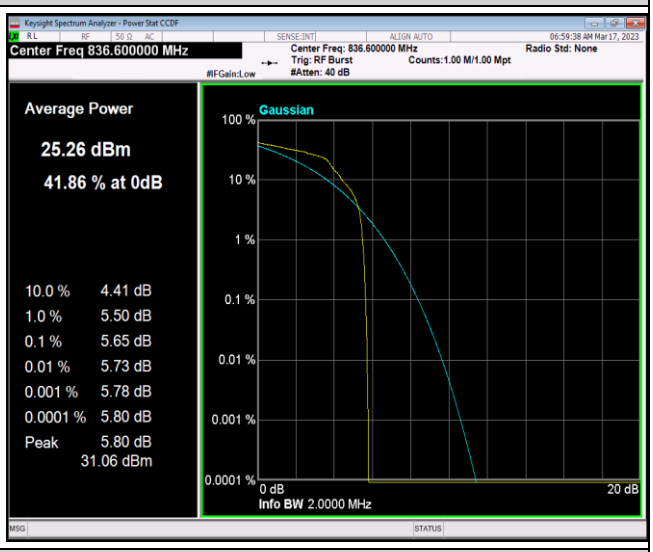
Remark: All channel and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

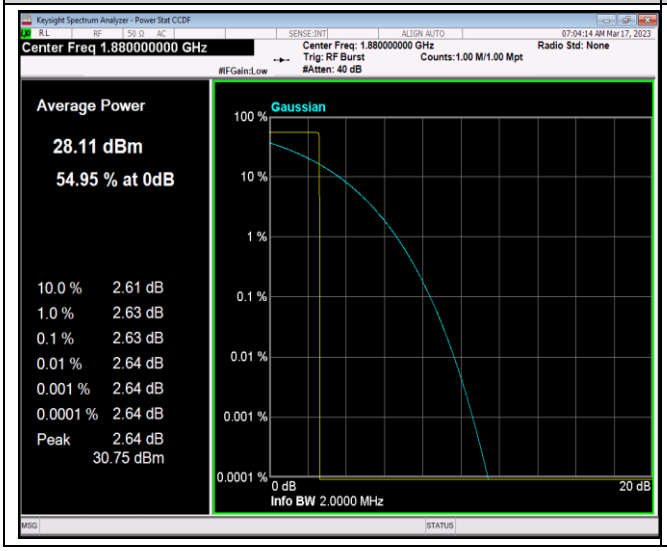
GSM850-190



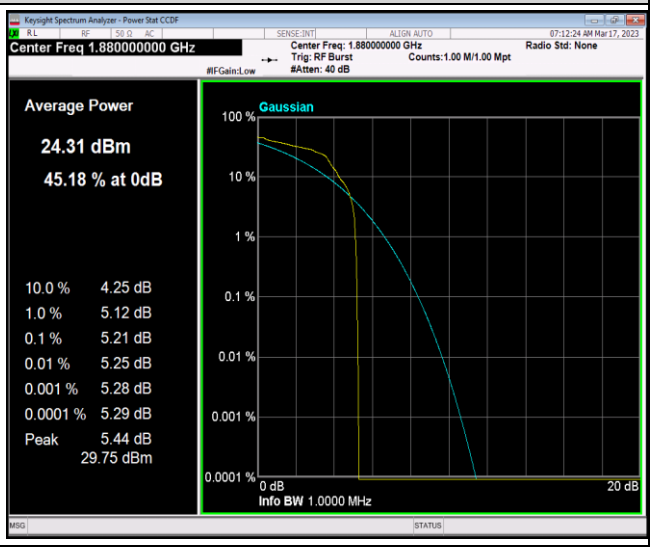
EGPRS850-190



GSM1900-661



EGPRS1900-661



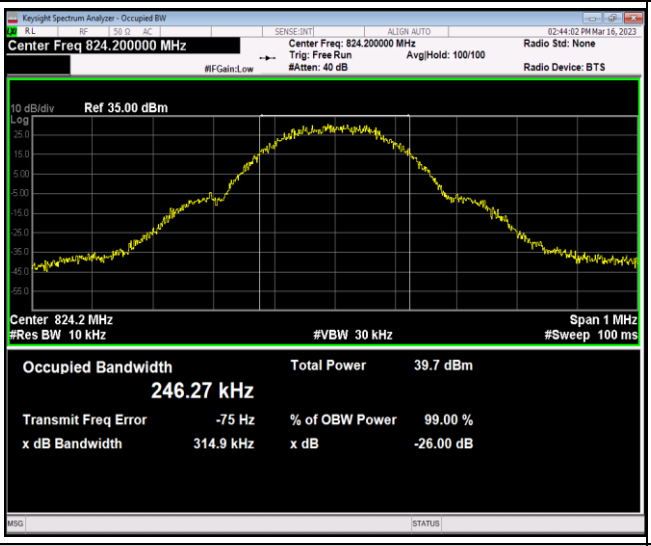
Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

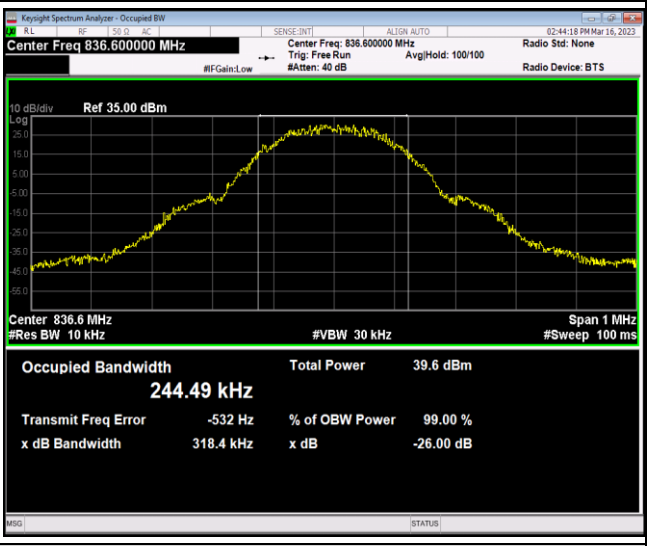
Band	Channel	PCL	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
GSM850	128	5	0.24627	0.3149	---	PASS
GSM850	190	5	0.24449	0.3184	---	PASS
GSM850	251	5	0.24608	0.3148	---	PASS
EGPRS850	128	8	0.24836	0.3140	---	PASS
EGPRS850	190	8	0.24680	0.3075	---	PASS
EGPRS850	251	8	0.24530	0.3122	---	PASS
GSM1900	512	0	0.24425	0.3177	---	PASS
GSM1900	661	0	0.24403	0.3163	---	PASS
GSM1900	810	0	0.24457	0.3163	---	PASS
EGPRS1900	512	2	0.25193	0.3231	---	PASS
EGPRS1900	661	2	0.25452	0.3195	---	PASS
EGPRS1900	810	2	0.25018	0.3210	---	PASS

Test Graphs

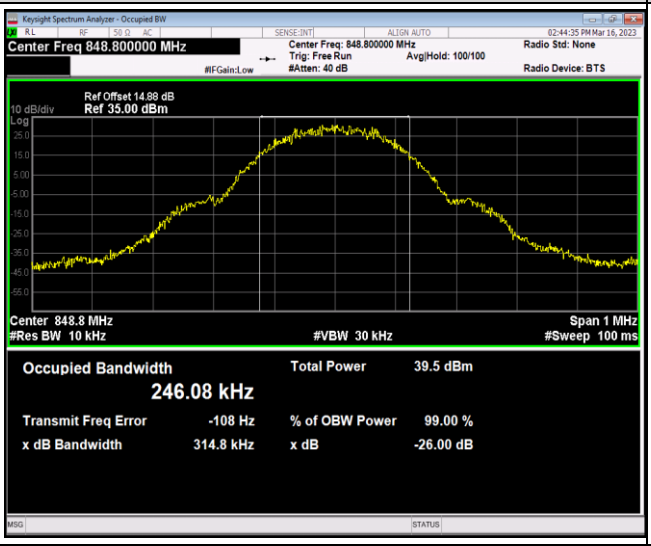
GSM850-128



GSM850-190



GSM850-251



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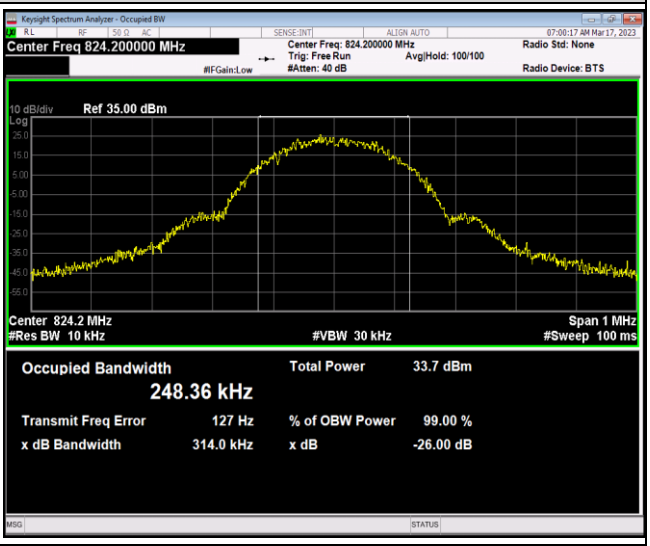
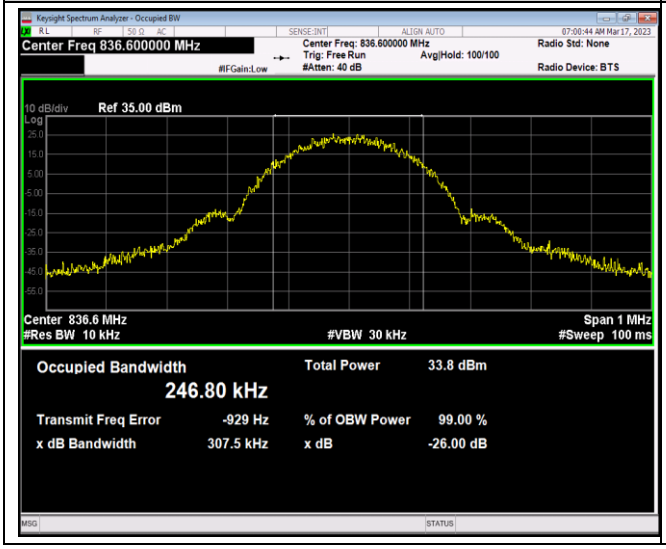
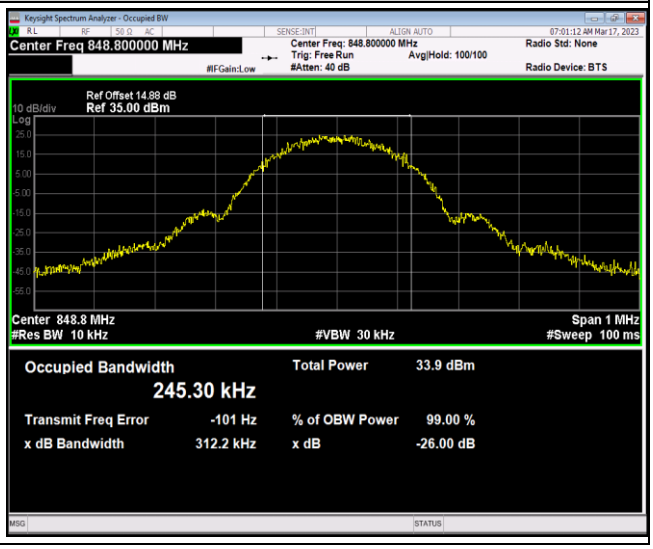


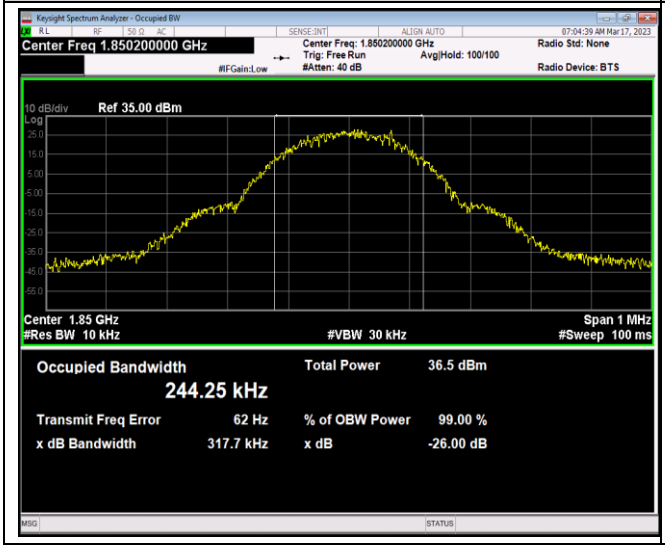
EGPRS850-190



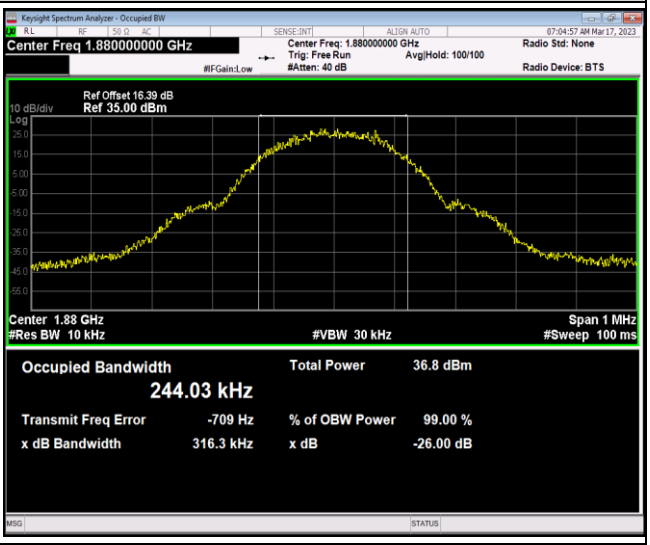
EGPRS850-251



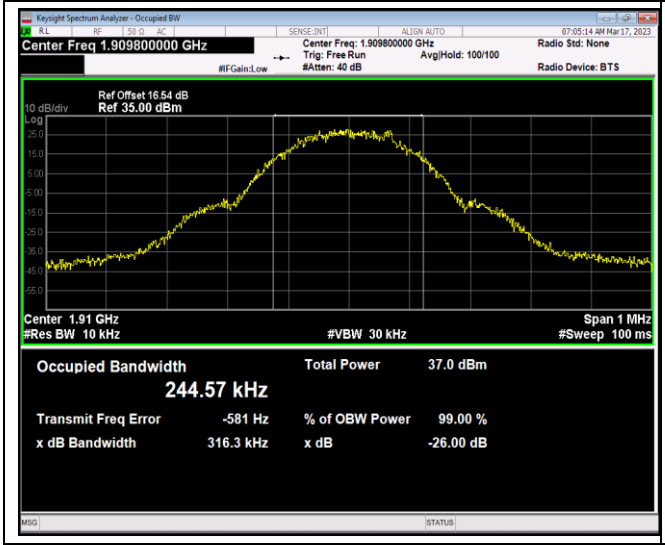
GSM1900-512



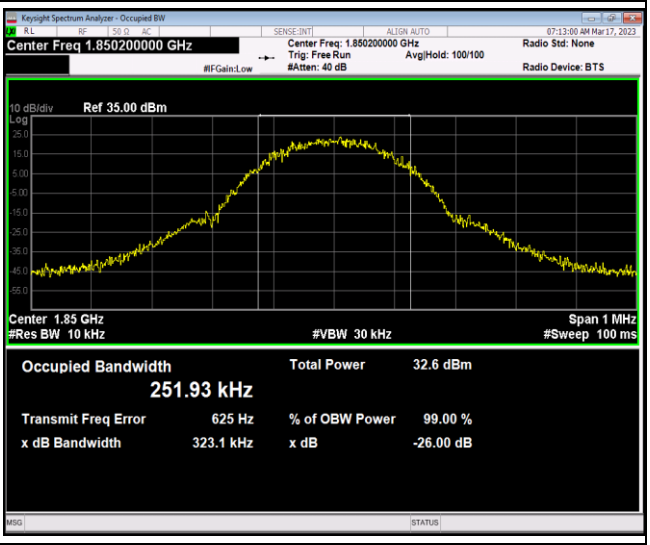
GSM1900-661



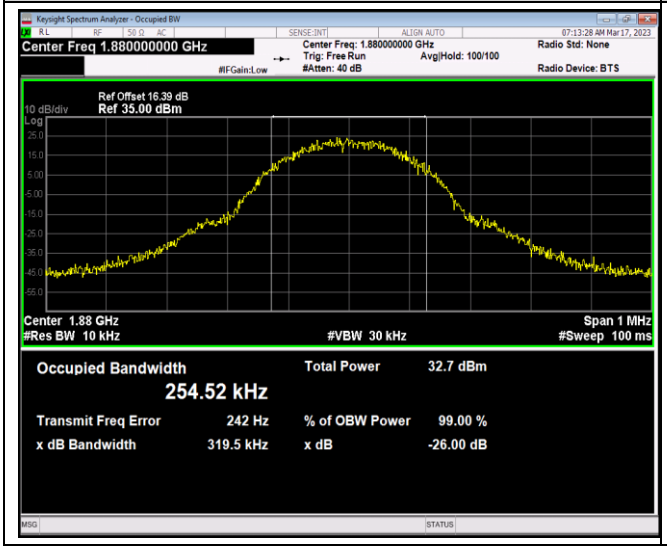
GSM1900-810



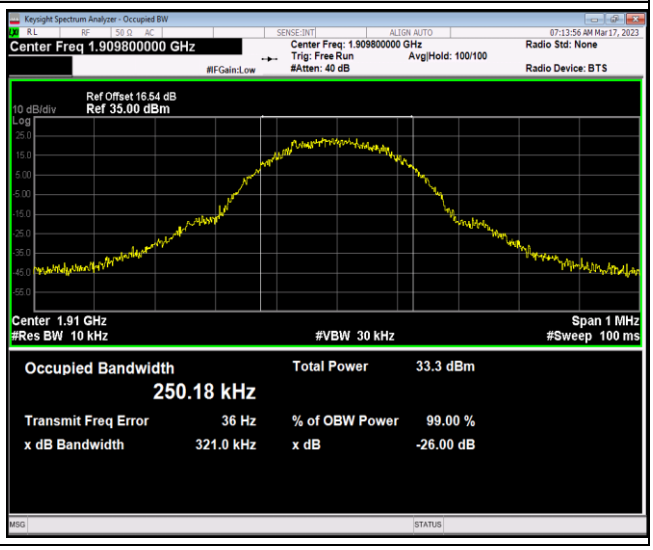
EGPRS1900-512



EGPRS1900-661



EGPRS1900-810



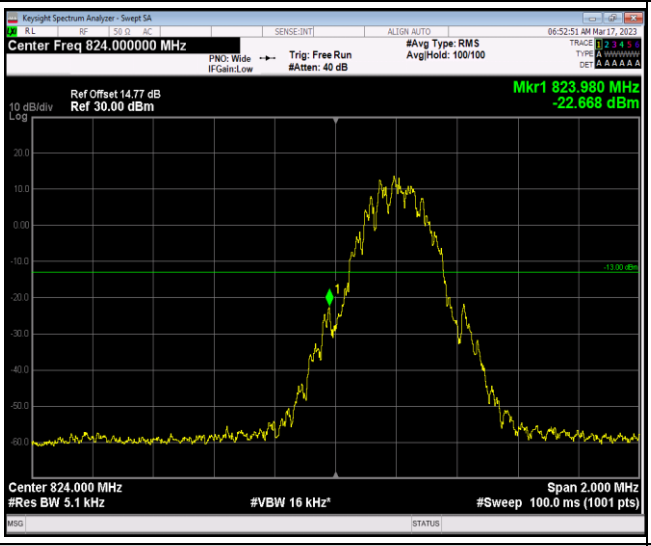
Appendix D: Band Edge

Test Result

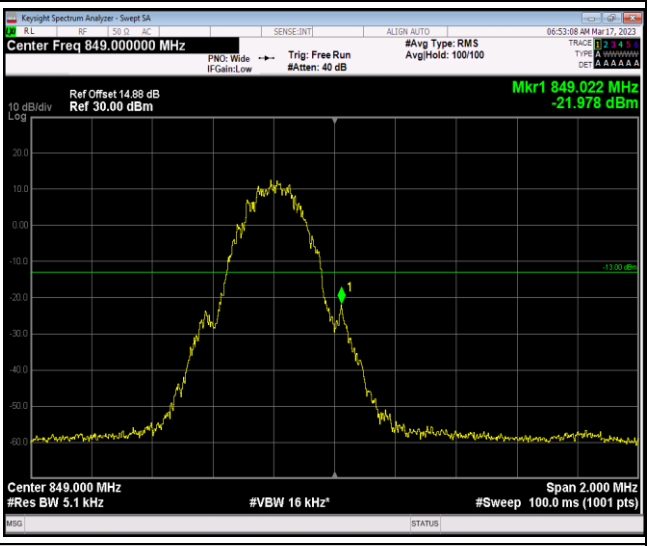
Band	Channel	PCL	Freq (MHz)	Result (dBm)	Limit(dBm)	Verdict
GSM850	128	5	823.98	-22.67	-13	PASS
GSM850	251	5	849.02	-21.98	-13	PASS
EGPRS850	128	8	823.97	-32.39	-13	PASS
EGPRS850	251	8	849.02	-33.07	-13	PASS
GSM1900	512	0	1849.98	-14.47	-13	PASS
GSM1900	810	0	1910.02	-13.77	-13	PASS
EGPRS1900	512	2	1850.00	-21.42	-13	PASS
EGPRS1900	810	2	1910.02	-21.95	-13	PASS

Test Graphs

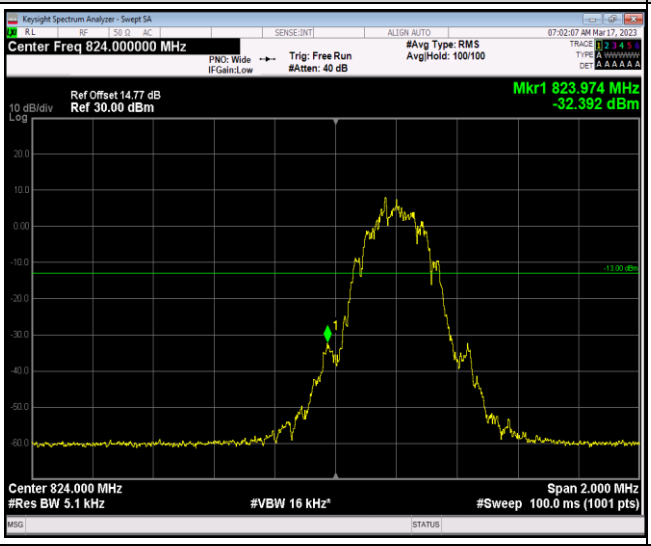
GSM850-128



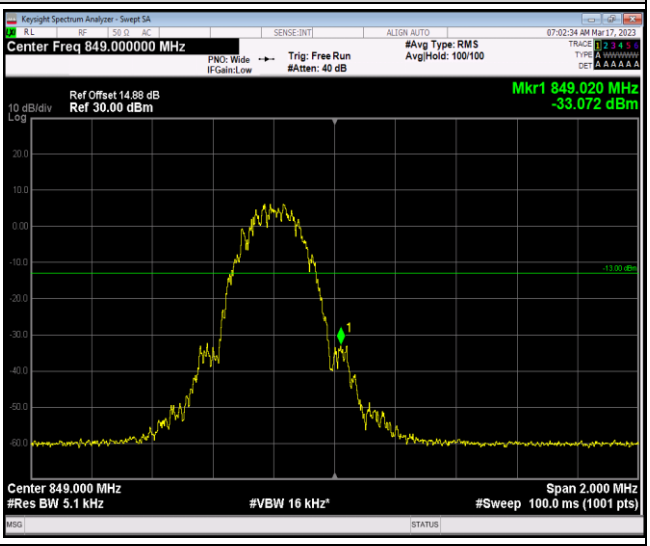
GSM850-251



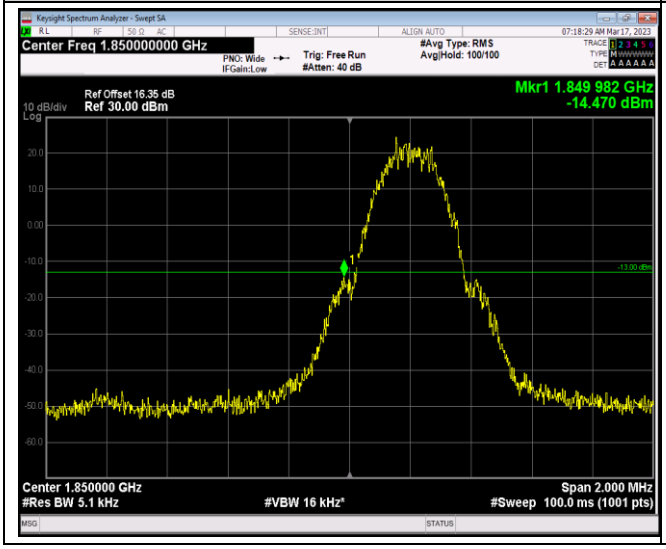
EGPRS850-128



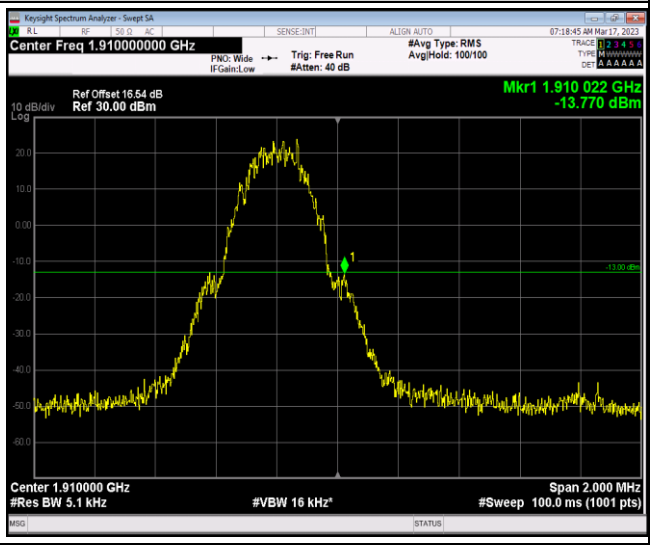
EGPRS850-251

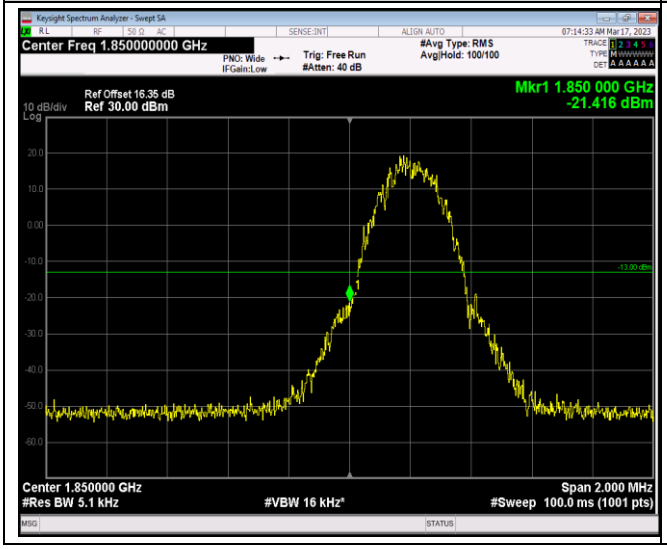
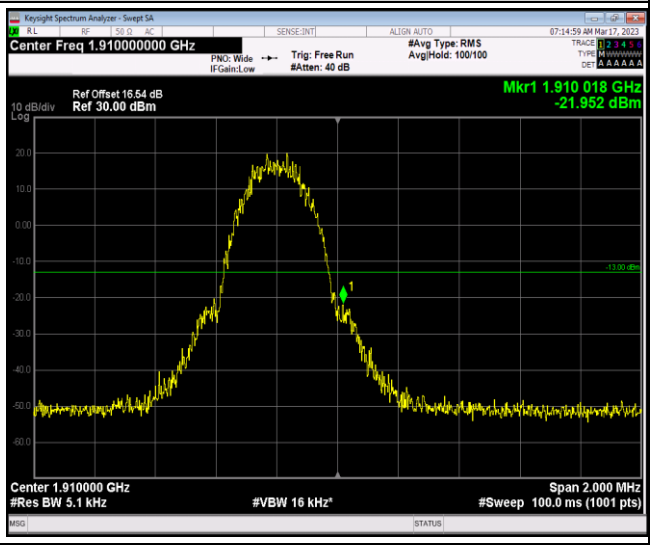


GSM1900-512



GSM1900-810



EGPRS1900-512	EGPRS1900-810
	

Appendix E: Conducted Spurious Emission

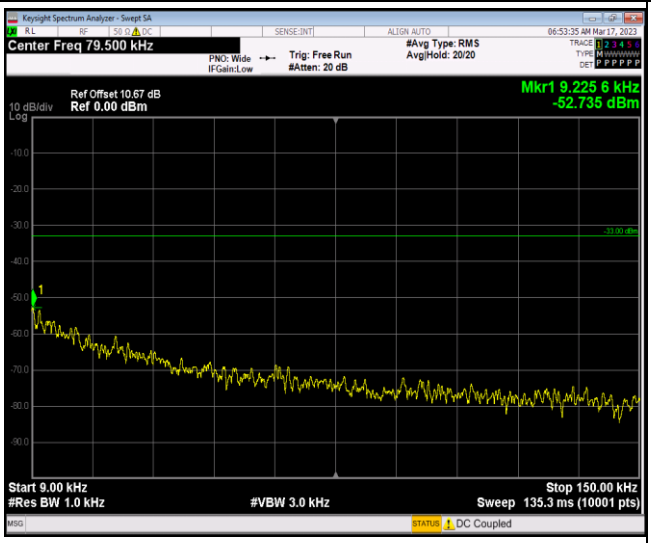
Test Result

Band	Channel	PCL	Frequency Range(MHz)	Max.Freq. (MHz)	Result (dBm)	Limit (dBm)	Verdict
GSM850	128	5	0.009~0.15MHz	0.01	-52.74	-33	PASS
GSM850	128	5	0.15~30MHz	0.15	-40.14	-13	PASS
GSM850	128	5	30~1000MHz	335.84	-39.28	-13	PASS
GSM850	128	5	1000~10000MHz	1648.3	-28.37	-13	PASS
GSM850	190	5	0.009~0.15MHz	0.01	-53.22	-33	PASS
GSM850	190	5	0.15~30MHz	0.15	-38.91	-13	PASS
GSM850	190	5	30~1000MHz	984.12	-38.89	-13	PASS
GSM850	190	5	1000~10000MHz	1673.5	-29.19	-13	PASS
GSM850	251	5	0.009~0.15MHz	0.01	-54.29	-33	PASS
GSM850	251	5	0.15~30MHz	0.15	-40.32	-13	PASS
GSM850	251	5	30~1000MHz	971.58	-39.3	-13	PASS
GSM850	251	5	1000~10000MHz	1697.8	-29.11	-13	PASS
GSM1900	512	0	0.009~0.15MHz	0.01	-52.99	-43	PASS
GSM1900	512	0	0.15~30MHz	0.15	-40.53	-23	PASS
GSM1900	512	0	30~1000MHz	804.38	-40.52	-13	PASS
GSM1900	512	0	1000~18000MHz	16835.5	-16.49	-13	PASS
GSM1900	661	0	0.009~0.15MHz	0.01	-54.27	-43	PASS
GSM1900	661	0	0.15~30MHz	0.16	-40.19	-23	PASS
GSM1900	661	0	30~1000MHz	913.57	-39.77	-13	PASS
GSM1900	661	0	1000~18000MHz	16998.7	-16.4	-13	PASS
GSM1900	810	0	0.009~0.15MHz	0.01	-53.77	-43	PASS
GSM1900	810	0	0.15~30MHz	0.15	-41.21	-23	PASS
GSM1900	810	0	30~1000MHz	866.98	-40.27	-13	PASS
GSM1900	810	0	1000~18000MHz	16498.9	-16.32	-13	PASS

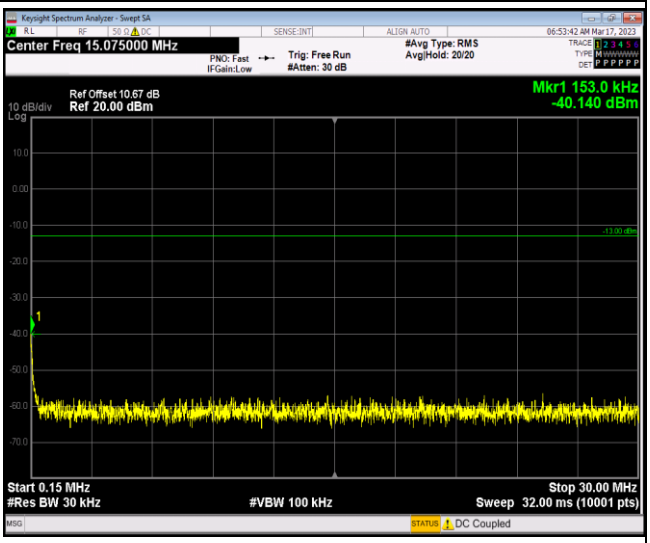
Remark: All channel and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

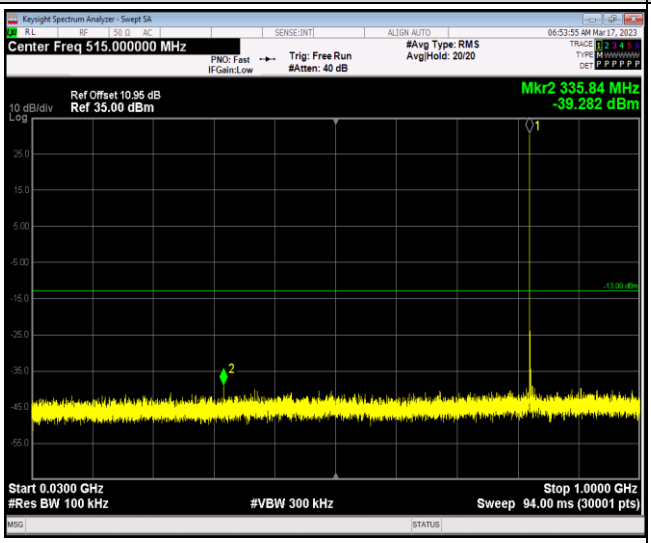
GSM850-128-0.009~0.15MHz



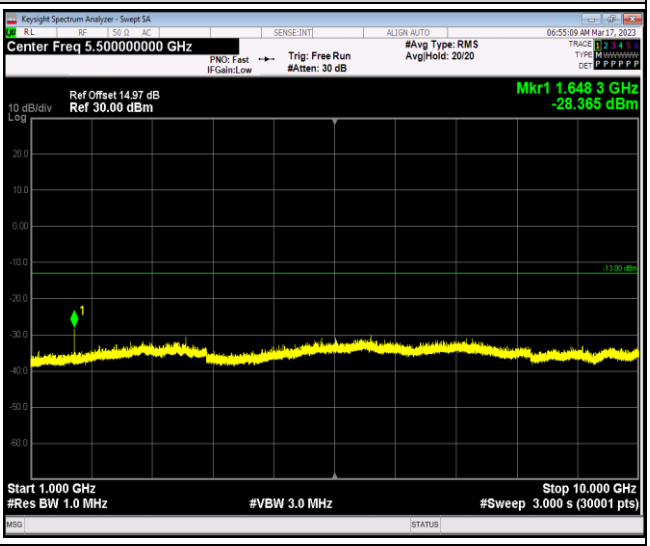
GSM850-128-0.15~30MHz



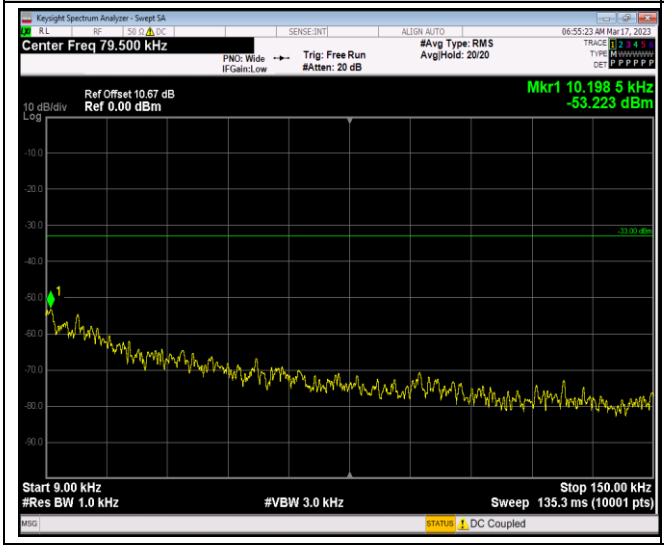
GSM850-128-30~1000MHz



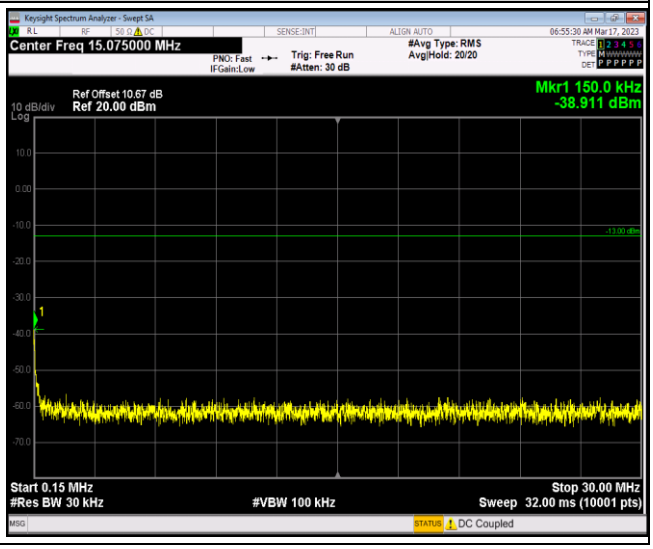
GSM850-128-1000~10000MHz



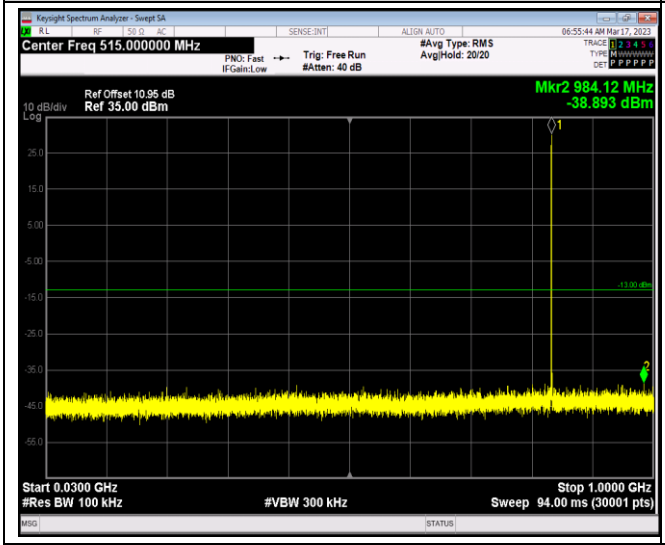
GSM850-190-0.009~0.15MHz



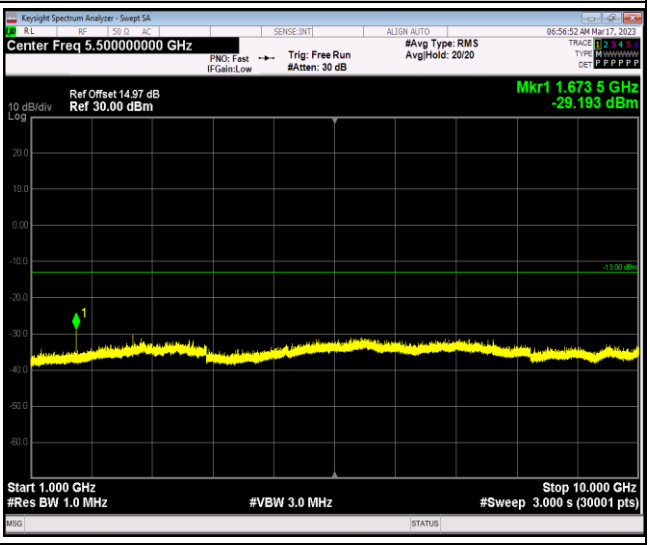
GSM850-190-0.15~30MHz



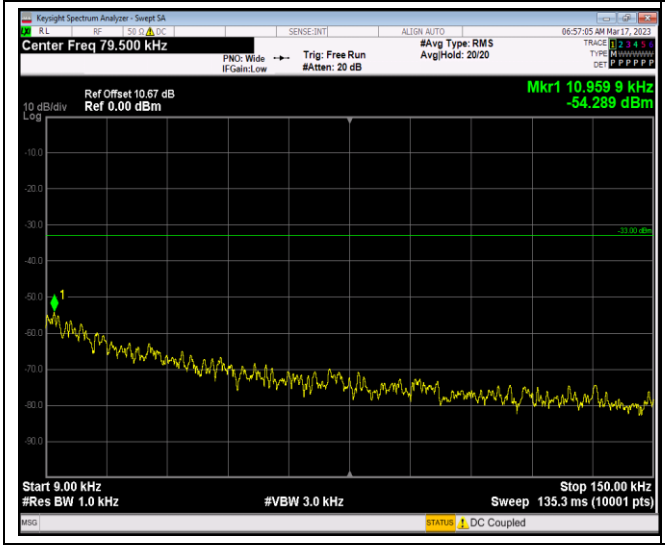
GSM850-190-30~1000MHz



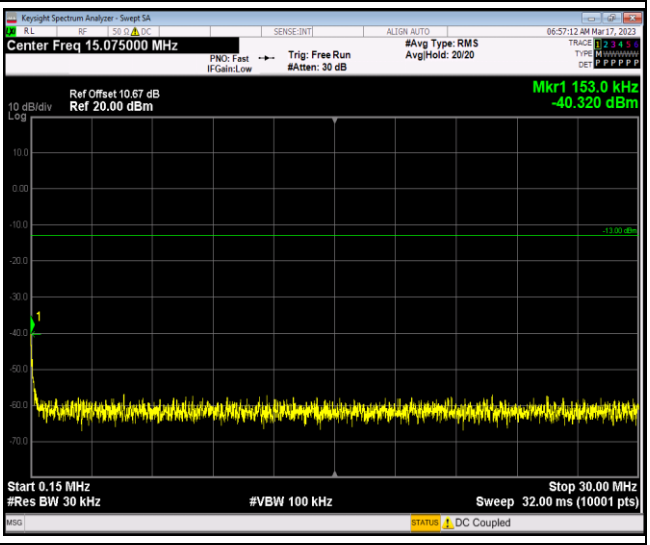
GSM850-190-1000~10000MHz



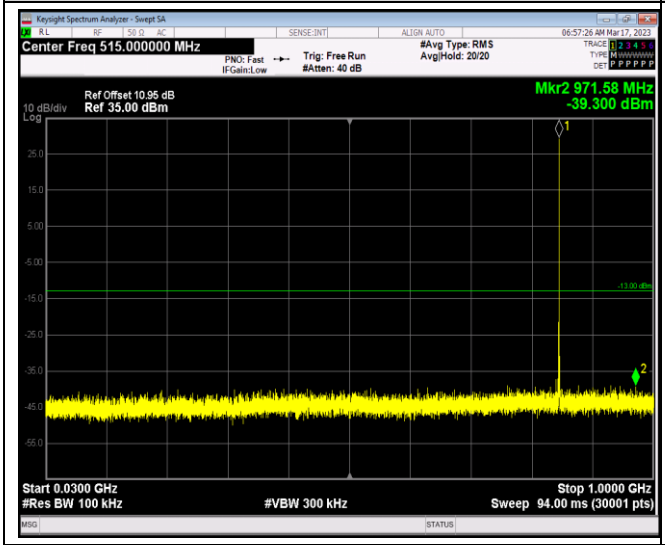
GSM850-251-0.009~0.15MHz



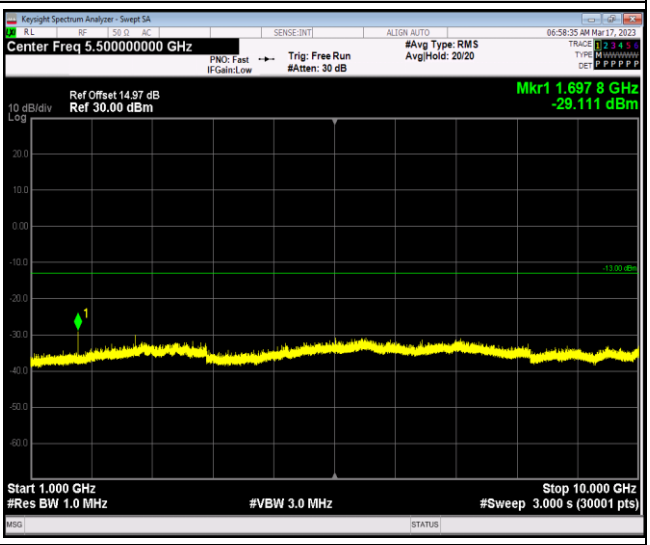
GSM850-251-0.15~30MHz



GSM850-251-30~1000MHz

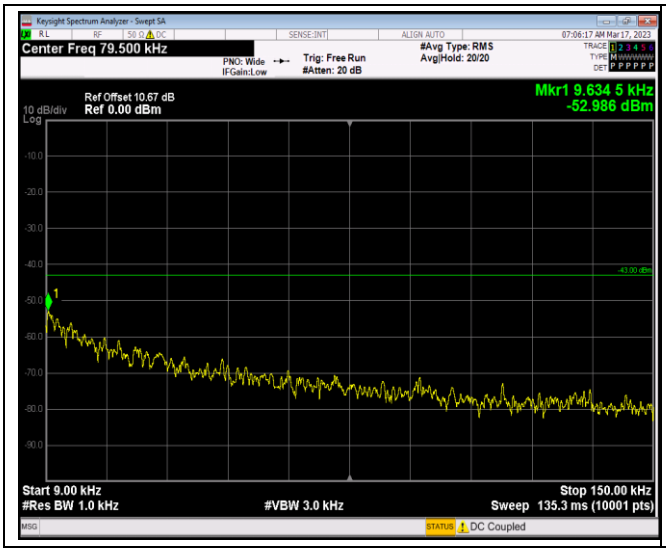


GSM850-251-1000~10000MHz

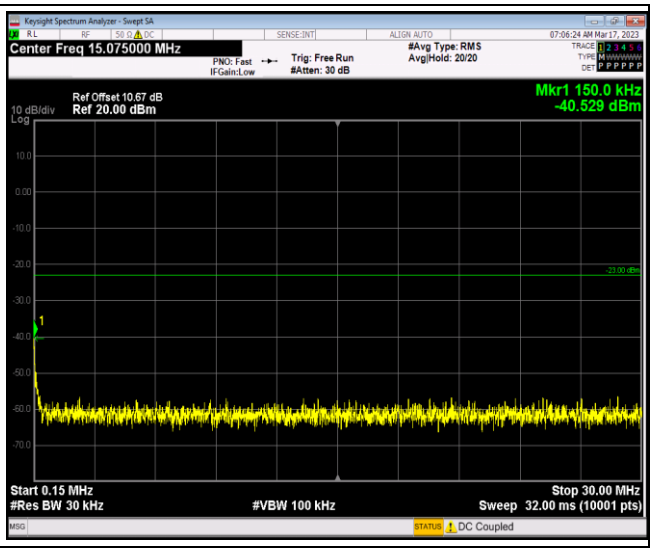


GSM1900-512-0.009~0.15MHz

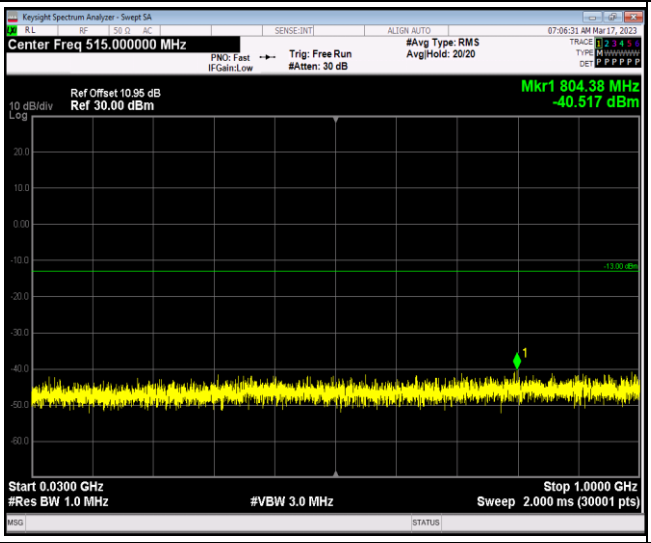
GSM1900-512-0.15~30MHz



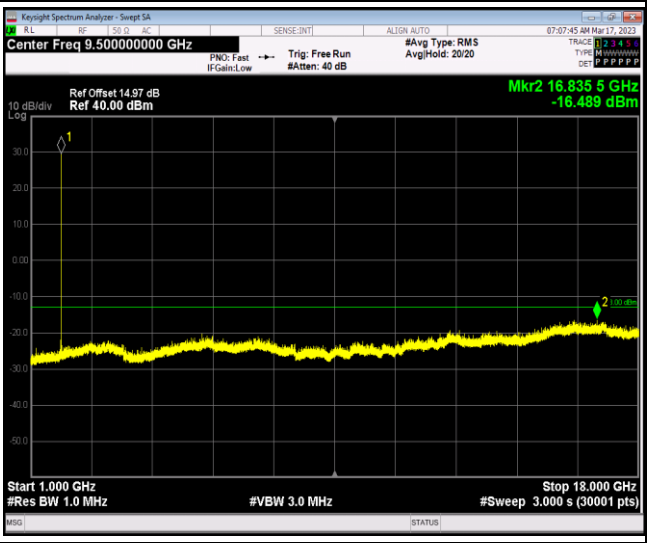
GSM1900-512-30~1000MHz



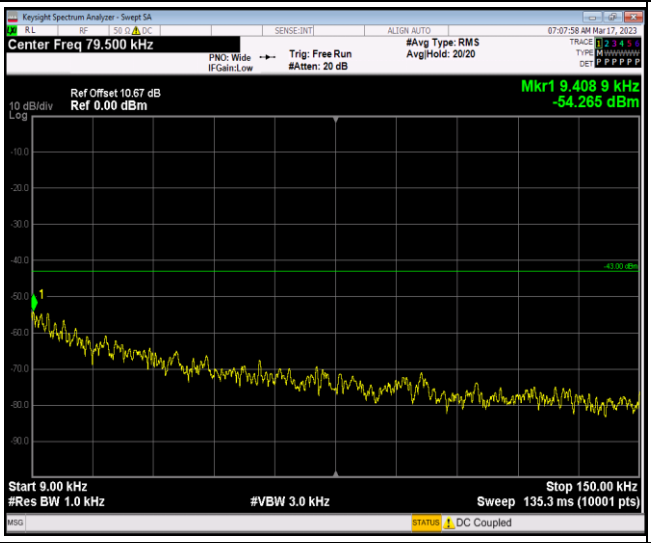
GSM1900-512-1000~18000MHz



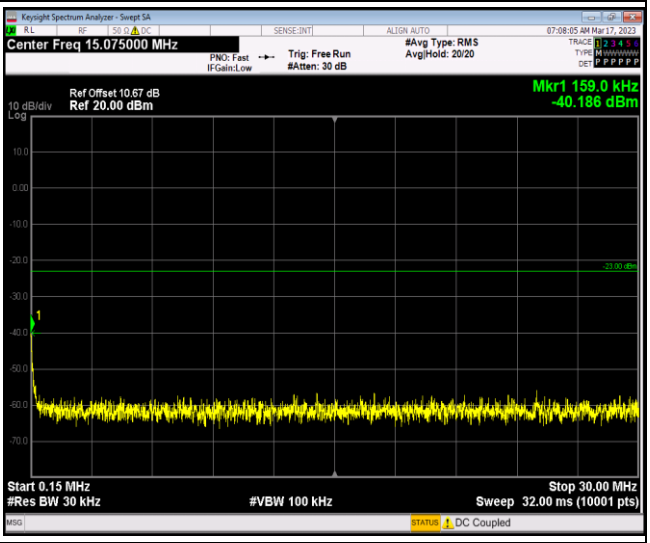
GSM1900-661-0.009~0.15MHz



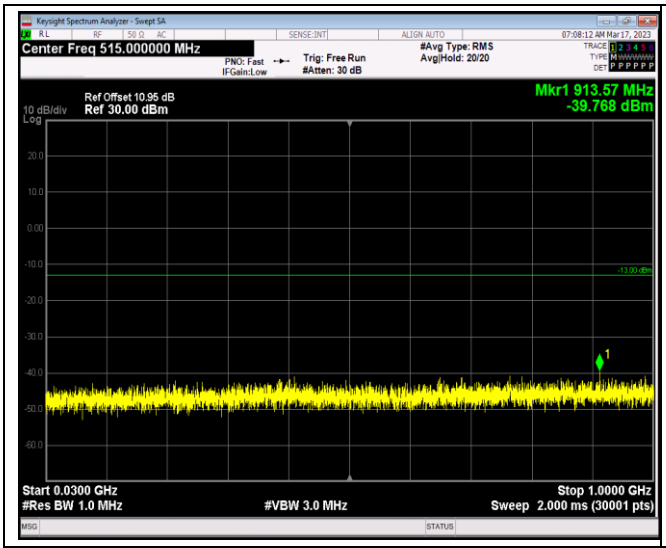
GSM1900-661-0.15~30MHz



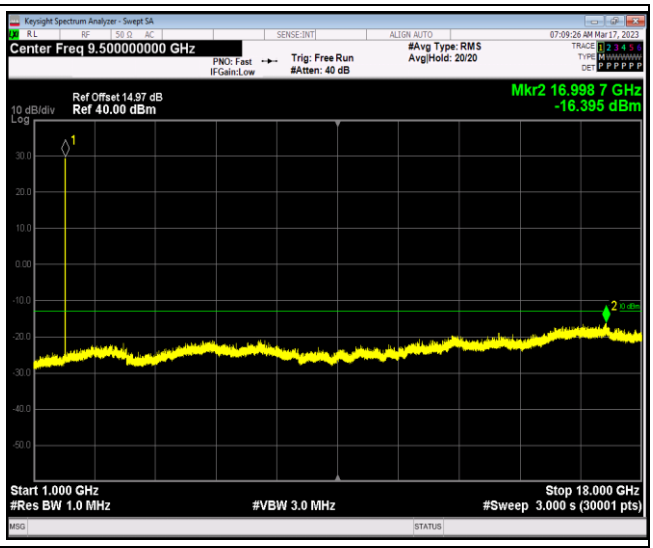
GSM1900-661-30~1000MHz



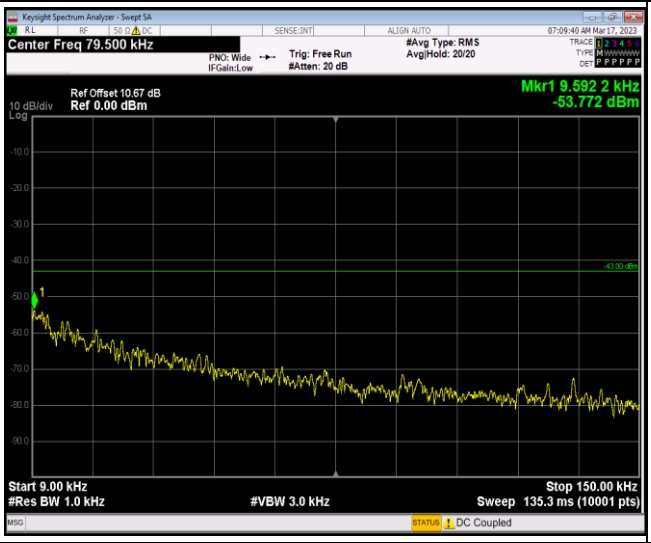
GSM1900-661-1000~18000MHz



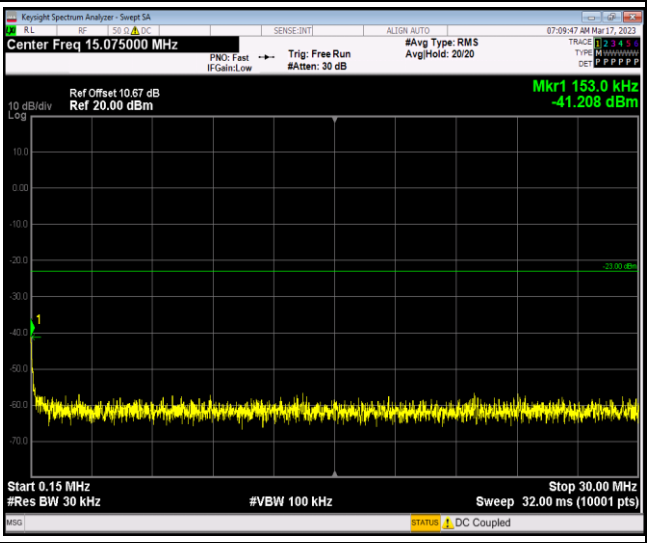
GSM1900-810-0.009~0.15MHz



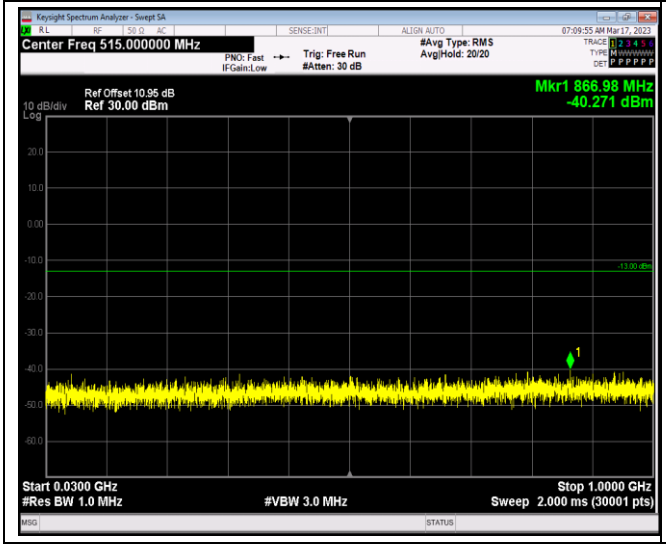
GSM1900-810-0.15~30MHz

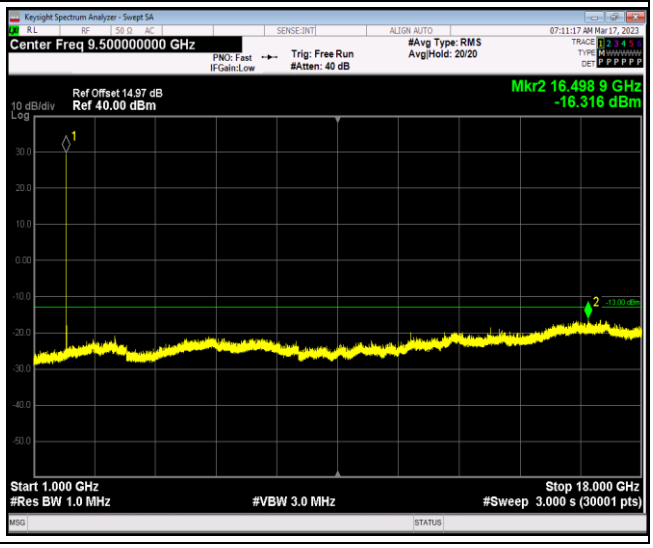


GSM1900-810-30~1000MHz



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	24.41	0.029178	±2.5	Pass
	-20	12.33	0.014738		
	-10	17.31	0.020691		
	0	23.70	0.028329		
	10	18.31	0.021886		
	20	17.37	0.020763		
	30	23.05	0.027552		
	40	19.50	0.023309		
	50	18.60	0.022233		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	23.08	0.027588	±2.5	Pass
	3.85	7.43	0.008881		
	4.40	12.95	0.015479		
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	0.90	0.001076	±2.5	Pass
	-20	-1.68	-0.002008		
	-10	0.19	0.000227		
	0	2.42	0.002893		
	10	1.36	0.001626		
	20	3.03	0.003622		
	30	5.13	0.006132		
	40	4.84	0.005785		
	50	5.42	0.006479		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	1.42	0.001697	±2.5	Pass
	3.85	-0.23	-0.000275		
	4.40	-0.03	-0.000036		
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	53.89	0.028665	±2.5	Pass
	-20	57.47	0.030569		
	-10	54.14	0.028798		
	0	56.05	0.029814		
	10	52.66	0.028011		
	20	45.20	0.024043		
	30	43.17	0.022963		
	40	43.23	0.022995		
	50	38.81	0.020644		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	38.19	0.020314	±2.5	Pass
	3.85	23.83	0.012676		
	4.40	39.52	0.021021		
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	15.85	0.008431	±2.5	Pass
	-20	18.27	0.009718		
	-10	19.15	0.010186		
	0	17.05	0.009069		
	10	31.35	0.016676		
	20	35.71	0.018995		
	30	26.54	0.014117		
	40	29.32	0.015596		
	50	29.19	0.015527		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	17.47	0.009293	±2.5	Pass
	3.85	18.44	0.009809		
	4.40	13.98	0.007436		
Remark: All channel had been tested, but only the worst case data displayed in this report.					

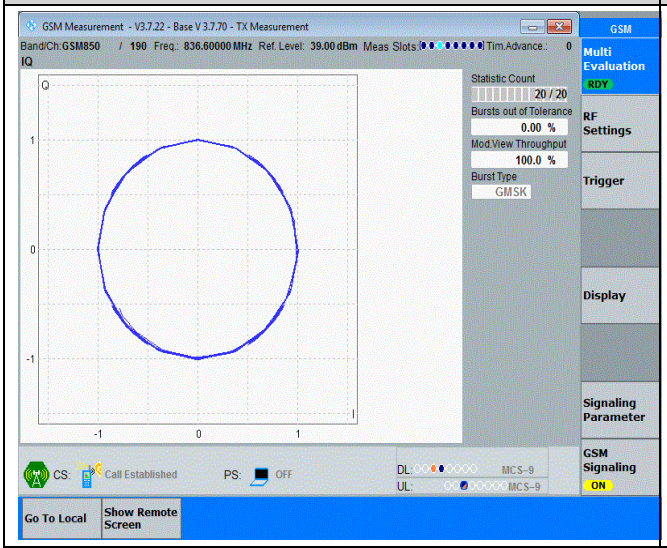
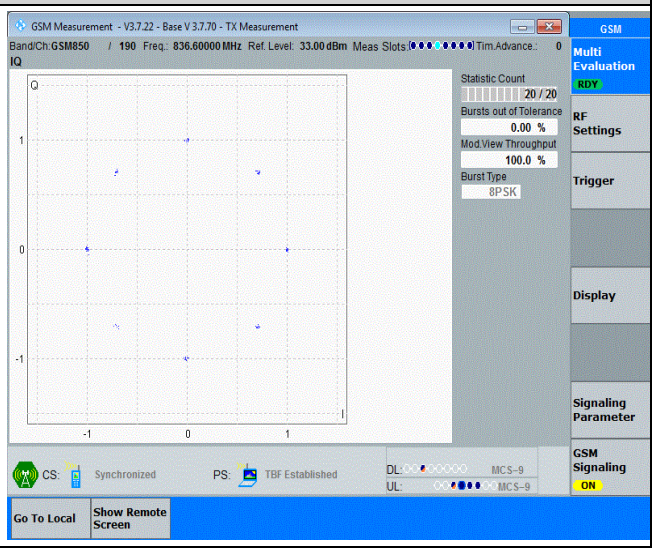
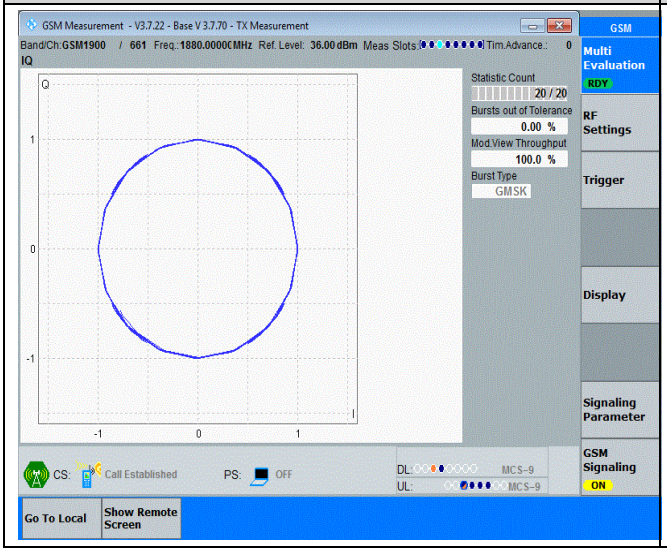
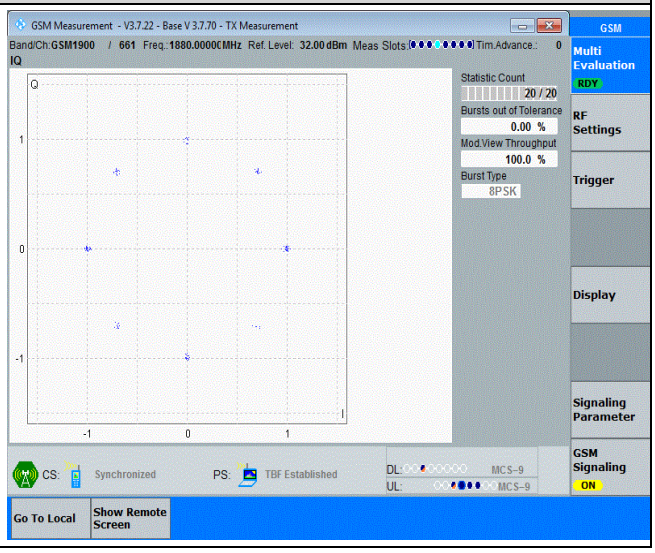
Appendix G: Modulation Characteristics

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**