

Appendix A: Effective (Isotropic) Radiated Power Output Data

Test Result

Band	Channel	Average Power (dBm)	Antenna Gain (dBi)	ERP/EIRP (dBm)	ERP/EIRP Limit (dBm)	Verdict
GSM850	128	33.05	0.36	31.26	38.45	PASS
GSM850	190	33.38	0.36	31.59	38.45	PASS
GSM850	251	33.15	0.36	31.36	38.45	PASS
GSM1900	512	29.67	0.78	30.45	33.00	PASS
GSM1900	661	29.64	0.78	30.42	33.00	PASS
GSM1900	810	29.75	0.78	30.53	33.00	PASS
Remark: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi). (For GSM1900) ERP (dBm) = EIRP (dBm) - 2.15 (dB). (For GSM850)						

Band	Channel	Slot	Average Power (dBm)	Antenna Gain (dBi)	ERP/EIRP Limit (dBm)	ERP/EIRP Limit (dBm)	Verdict
GPRS850	128	1	33.06	0.36	31.27	38.45	PASS
GPRS850	128	2	32.17	0.36	30.38	38.45	PASS
GPRS850	128	3	30.35	0.36	28.56	38.45	PASS
GPRS850	128	4	29.38	0.36	27.59	38.45	PASS
GPRS850	190	1	33.52	0.36	31.73	38.45	PASS
GPRS850	190	2	32.68	0.36	30.89	38.45	PASS
GPRS850	190	3	30.75	0.36	28.96	38.45	PASS
GPRS850	190	4	29.63	0.36	27.84	38.45	PASS
GPRS850	251	1	33.28	0.36	31.49	38.45	PASS
GPRS850	251	2	32.42	0.36	30.63	38.45	PASS
GPRS850	251	3	30.50	0.36	28.71	38.45	PASS
GPRS850	251	4	29.39	0.36	27.60	38.45	PASS
EGPRS850	128	1	27.30	0.36	25.51	38.45	PASS
EGPRS850	128	2	26.20	0.36	24.41	38.45	PASS
EGPRS850	128	3	24.18	0.36	22.39	38.45	PASS
EGPRS850	128	4	22.84	0.36	21.05	38.45	PASS
EGPRS850	190	1	27.46	0.36	25.67	38.45	PASS
EGPRS850	190	2	26.36	0.36	24.57	38.45	PASS
EGPRS850	190	3	24.36	0.36	22.57	38.45	PASS
EGPRS850	190	4	23.03	0.36	21.24	38.45	PASS
EGPRS850	251	1	27.34	0.36	25.55	38.45	PASS
EGPRS850	251	2	26.36	0.36	24.57	38.45	PASS
EGPRS850	251	3	24.30	0.36	22.51	38.45	PASS

EGPRS850	251	4	23.07	0.36	21.28	38.45	PASS
GPRS1900	512	1	29.63	1.00	30.63	33.00	PASS
GPRS1900	512	2	29.61	1.00	30.61	33.00	PASS
GPRS1900	512	3	27.59	1.00	28.59	33.00	PASS
GPRS1900	512	4	26.49	1.00	27.49	33.00	PASS
GPRS1900	661	1	29.61	1.00	30.61	33.00	PASS
GPRS1900	661	2	29.60	1.00	30.60	33.00	PASS
GPRS1900	661	3	27.70	1.00	28.70	33.00	PASS
GPRS1900	661	4	26.58	1.00	27.58	33.00	PASS
GPRS1900	810	1	29.71	1.00	30.71	33.00	PASS
GPRS1900	810	2	29.69	1.00	30.69	33.00	PASS
GPRS1900	810	3	27.54	1.00	28.54	33.00	PASS
GPRS1900	810	4	26.45	1.00	27.45	33.00	PASS
EGPRS1900	512	1	26.07	1.00	27.07	33.00	PASS
EGPRS1900	512	2	24.94	1.00	25.94	33.00	PASS
EGPRS1900	512	3	22.89	1.00	23.89	33.00	PASS
EGPRS1900	512	4	21.40	1.00	22.40	33.00	PASS
EGPRS1900	661	1	25.99	1.00	26.99	33.00	PASS
EGPRS1900	661	2	24.78	1.00	25.78	33.00	PASS
EGPRS1900	661	3	22.66	1.00	23.66	33.00	PASS
EGPRS1900	661	4	21.27	1.00	22.27	33.00	PASS
EGPRS1900	810	1	25.79	1.00	26.79	33.00	PASS
EGPRS1900	810	2	24.60	1.00	25.60	33.00	PASS
EGPRS1900	810	3	22.50	1.00	23.50	33.00	PASS
EGPRS1900	810	4	21.09	1.00	22.09	33.00	PASS

Remark: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi). (For GSM1900)

ERP (dBm) = EIRP (dBm) - 2.15 (dB). (For GSM850)

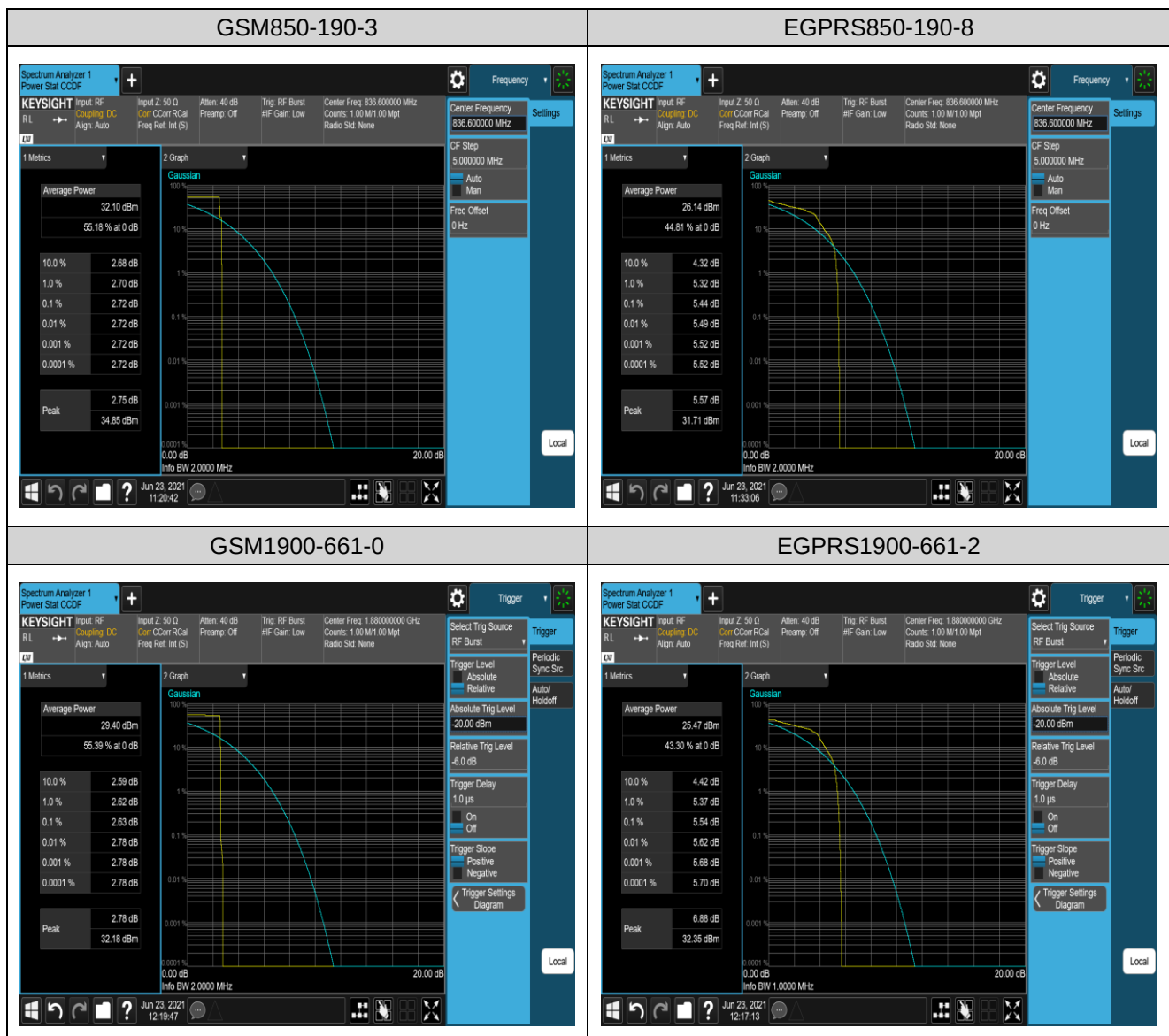
Appendix B: Peak-to-Average Ratio(CCDF)

Test Result

Band	Channel	PCL	Result(dB)	Limit(dB)	Verdict
GSM850	190	3	2.72	13	PASS
EGPRS850	190	8	5.44	13	PASS
GSM1900	661	0	2.63	13	PASS
EGPRS1900	661	2	5.54	13	PASS

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

Test Graphs

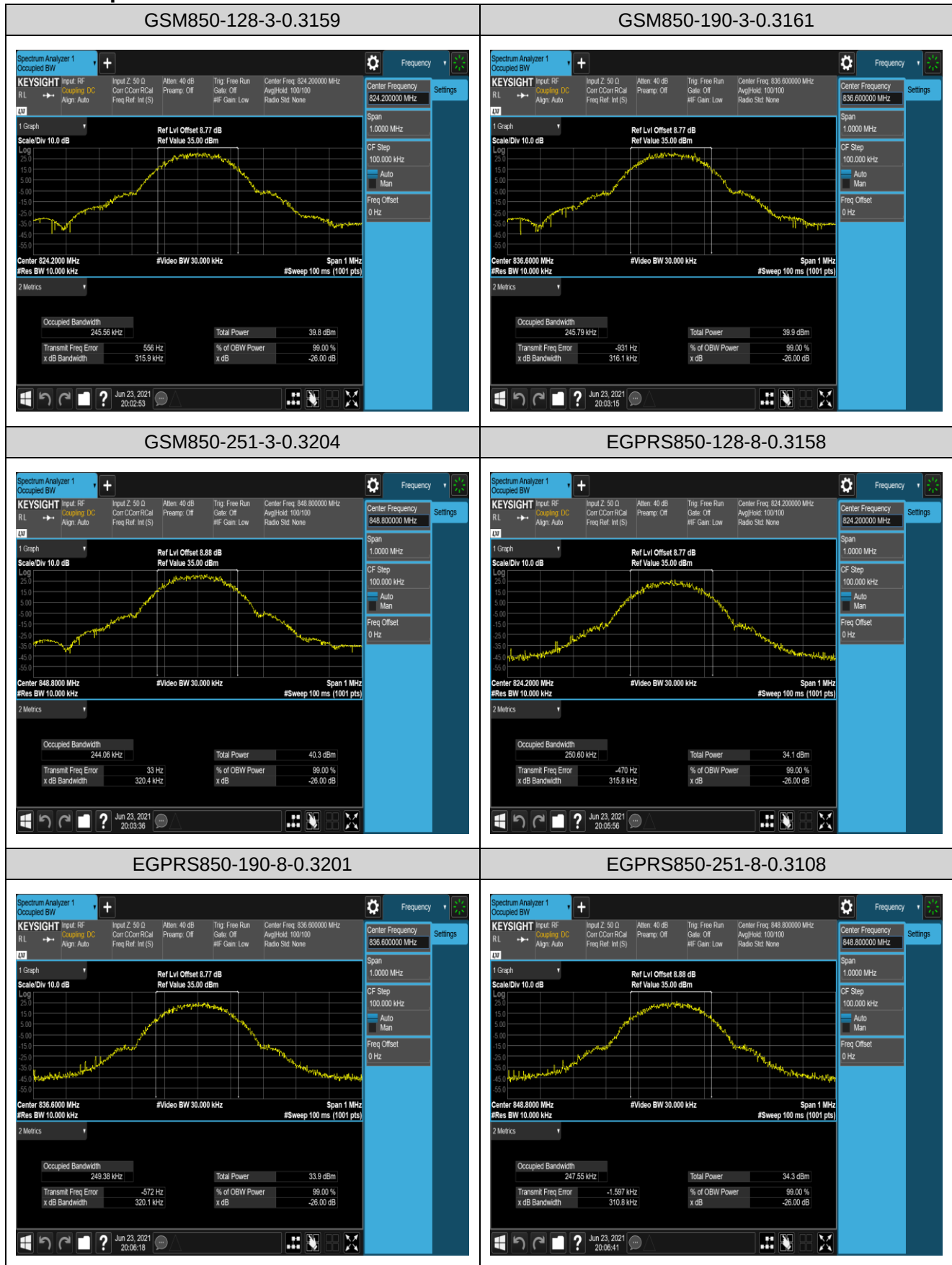


Appendix C: 26dB Bandwidth and Occupied Bandwidth

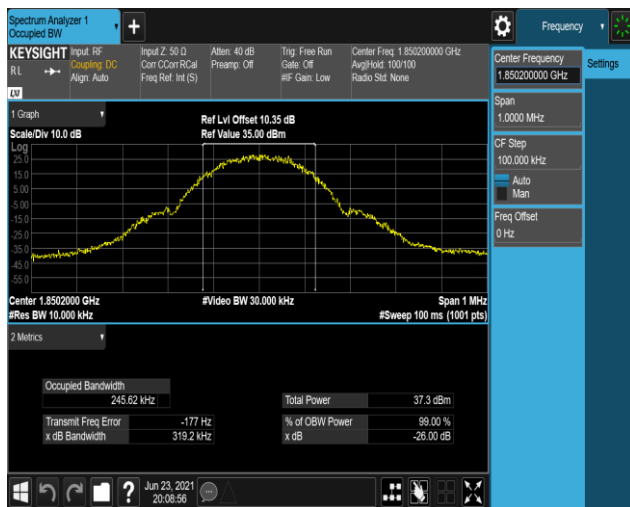
Test Result

Band	Channel	PCL	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
GSM850	128	3	0.24556	0.3159	---	PASS
GSM850	190	3	0.24579	0.3161	---	PASS
GSM850	251	3	0.24406	0.3204	---	PASS
EGPRS850	128	8	0.25060	0.3158	---	PASS
EGPRS850	190	8	0.24938	0.3201	---	PASS
EGPRS850	251	8	0.24755	0.3108	---	PASS
GSM1900	512	0	0.24562	0.3192	---	PASS
GSM1900	661	0	0.24544	0.3129	---	PASS
GSM1900	810	0	0.24514	0.3148	---	PASS
EGPRS1900	512	2	0.25337	0.3270	---	PASS
EGPRS1900	661	2	0.25082	0.3198	---	PASS
EGPRS1900	810	2	0.25023	0.3188	---	PASS

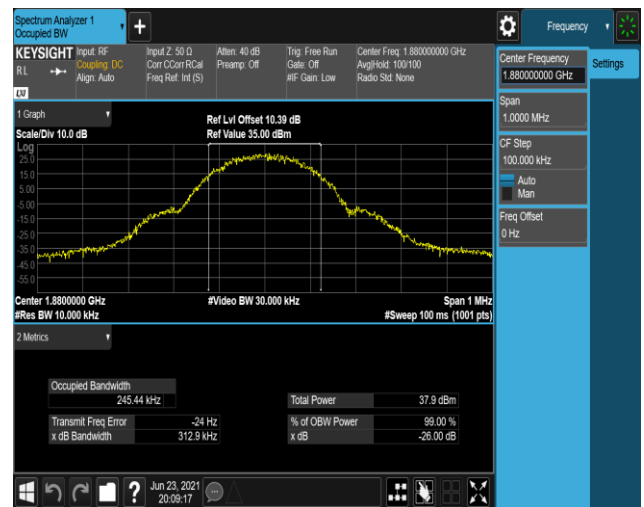
Test Graphs



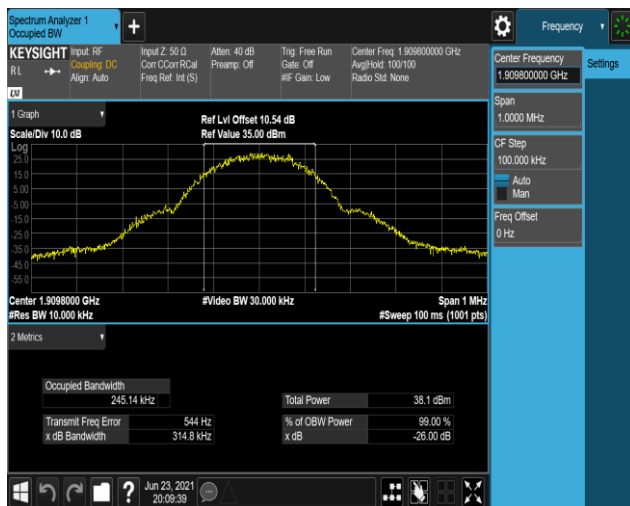
GSM1900-512-0-0.3192



GSM1900-661-0-0.3129



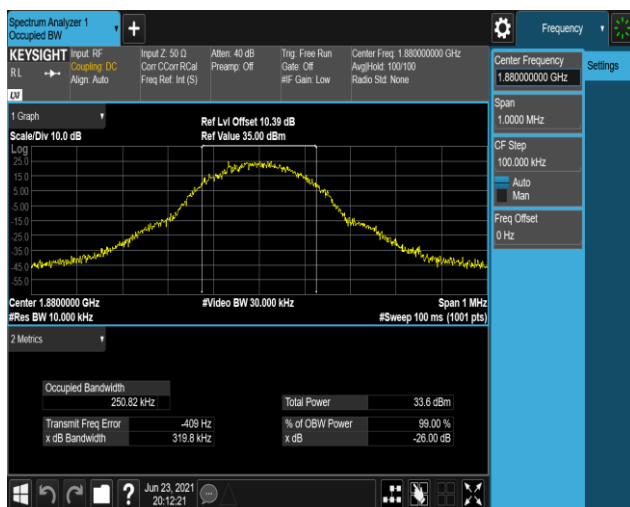
GSM1900-810-0-0.3148



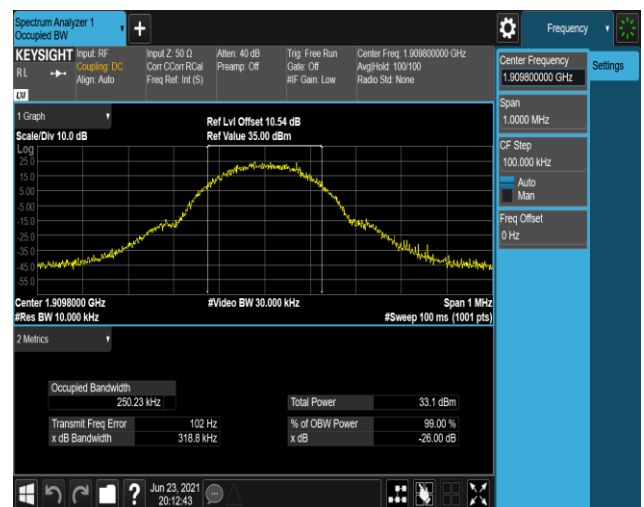
EGPRS1900-512-2-0.3270



EGPRS1900-661-2-0.3198



EGPRS1900-810-2-0.3188



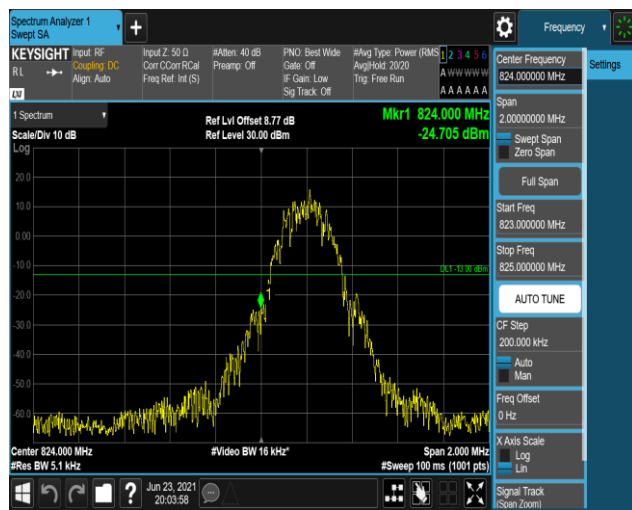
Appendix D: Band Edge

Test Result

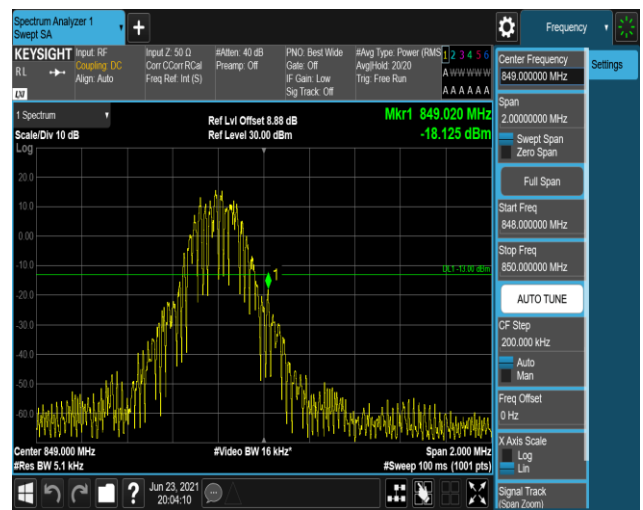
Band	Channel	PCL	Freq (MHz)	Result (dBm)	Limit(dBm)	Verdict
GSM850	128	3	824.00	-24.71	-13	PASS
GSM850	251	3	849.02	-18.13	-13	PASS
EGPRS850	128	8	823.99	-32.94	-13	PASS
EGPRS850	251	8	849.01	-34.20	-13	PASS
GSM1900	512	0	1850.00	-14.58	-13	PASS
GSM1900	810	0	1910.01	-14.47	-13	PASS
EGPRS1900	512	2	1849.99	-18.66	-13	PASS
EGPRS1900	810	2	1910.00	-20.71	-13	PASS

Test Graphs

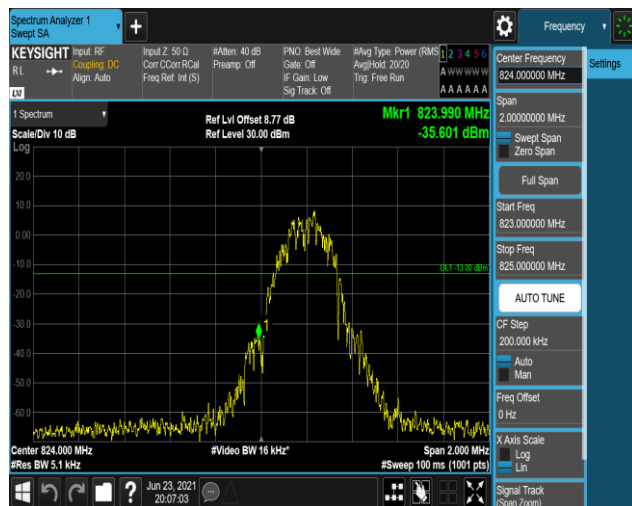
GSM850-128-3



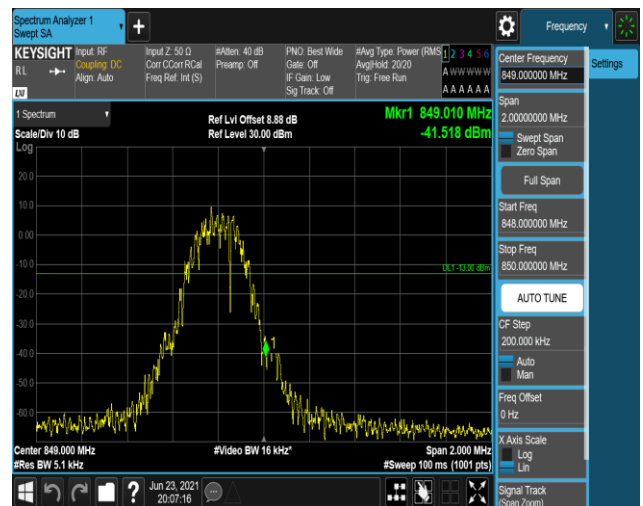
GSM850-251-3



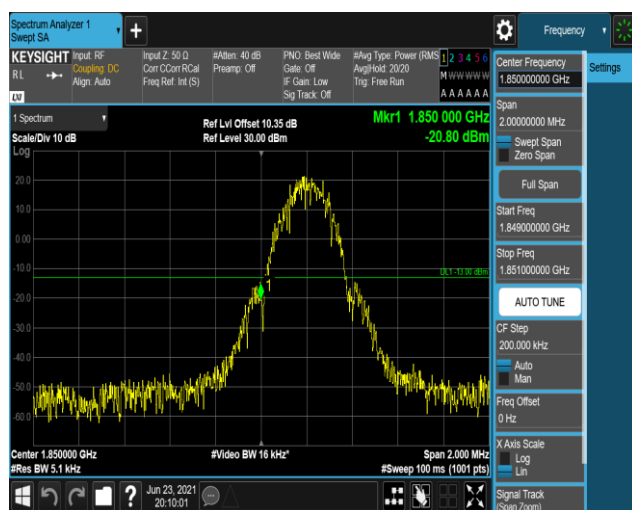
EGPRS850-128-8



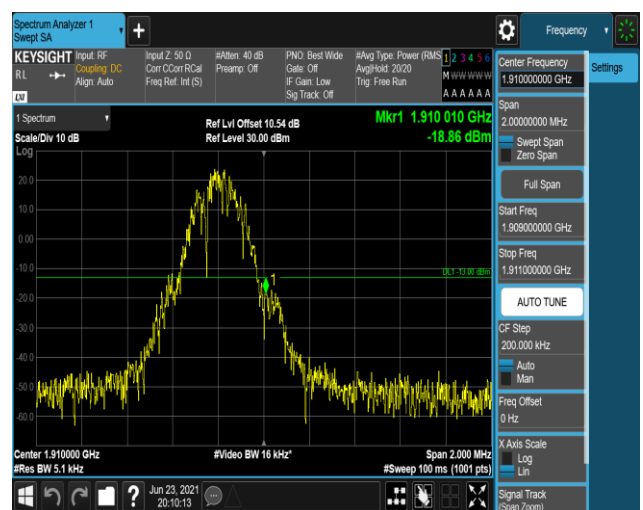
EGPRS850-251-8

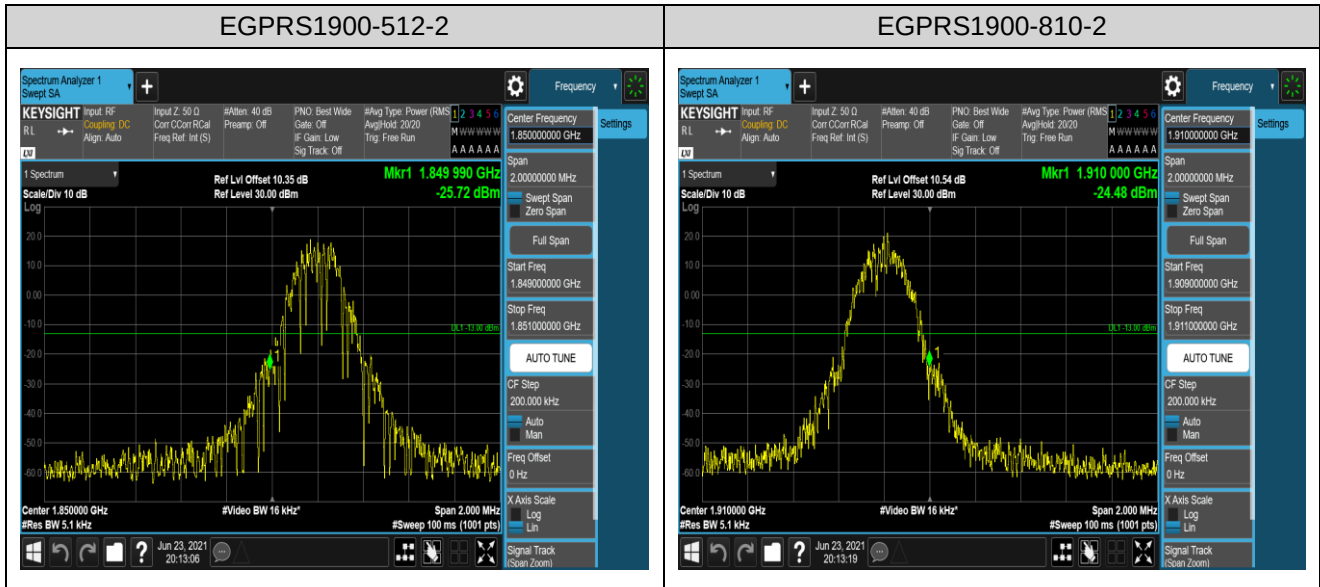


GSM1900-512-0



GSM1900-810-0





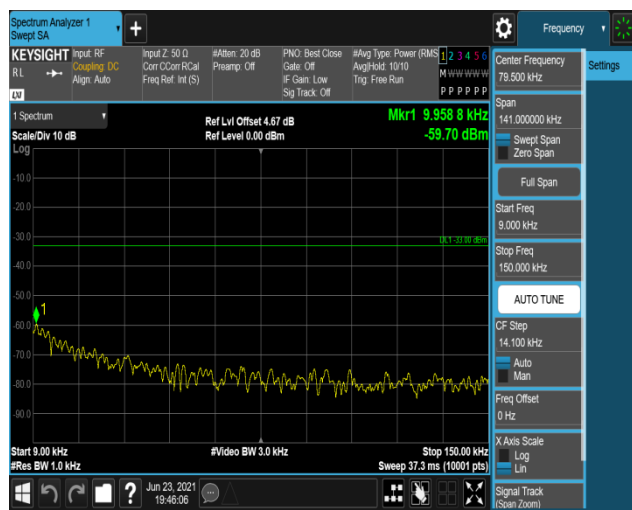
Appendix E: Conducted Spurious Emission

Test Result

Band	Channel	PCL	Frequency Range(MHz)	Max.Freq. (MHz)	Result (dBm)	Limit (dBm)	Verdict
GSM850	128	3	0.009~0.15MHz	0.01	-59.7	-33	PASS
GSM850	128	3	0.15~30MHz	0.3	-55.65	-13	PASS
GSM850	128	3	30~1000MHz	460.03	-47.23	-13	PASS
GSM850	128	3	1000~10000MHz	2511.1	-23.12	-13	PASS
GSM850	190	3	0.009~0.15MHz	0.01	-59.08	-33	PASS
GSM850	190	3	0.15~30MHz	0.31	-56.34	-13	PASS
GSM850	190	3	30~1000MHz	716.47	-47.24	-13	PASS
GSM850	190	3	1000~10000MHz	2510.5	-24.07	-13	PASS
GSM850	251	3	0.009~0.15MHz	0.01	-60.08	-33	PASS
GSM850	251	3	0.15~30MHz	0.29	-57.64	-13	PASS
GSM850	251	3	30~1000MHz	673.89	-47.3	-13	PASS
GSM850	251	3	1000~10000MHz	2511.7	-26.43	-13	PASS
GSM1900	512	0	0.009~0.15MHz	0.01	-68.31	-43	PASS
GSM1900	512	0	0.15~30MHz	0.29	-57.93	-23	PASS
GSM1900	512	0	30~1000MHz	933.17	-41.95	-13	PASS
GSM1900	512	0	1000~18000MHz	13692.2	-34.07	-13	PASS
GSM1900	661	0	0.009~0.15MHz	0.01	-67.8	-43	PASS
GSM1900	661	0	0.15~30MHz	0.29	-55.54	-23	PASS
GSM1900	661	0	30~1000MHz	889.78	-42.2	-13	PASS
GSM1900	661	0	1000~18000MHz	14321.77	-33.55	-13	PASS
GSM1900	810	0	0.009~0.15MHz	0.01	-68.37	-43	PASS
GSM1900	810	0	0.15~30MHz	0.29	-59.1	-23	PASS
GSM1900	810	0	30~1000MHz	875.19	-42.32	-13	PASS
GSM1900	810	0	1000~18000MHz	17225.93	-33.57	-13	PASS
Remark: All channel and all modulation had been tested, but only the worst case data displayed in this report.							

Test Graphs

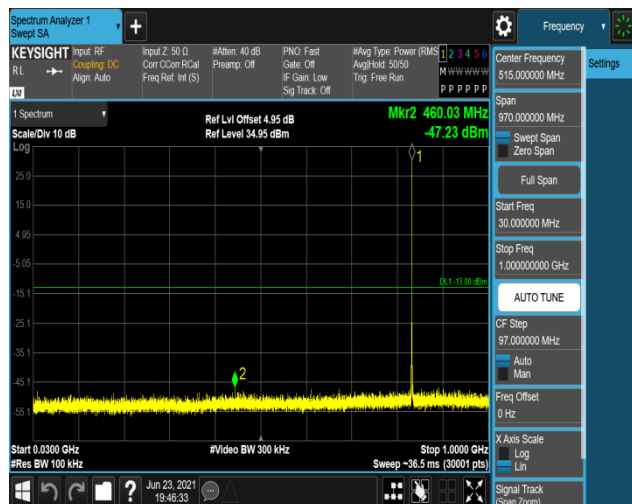
GSM850-128-3-0.009~0.15MHz



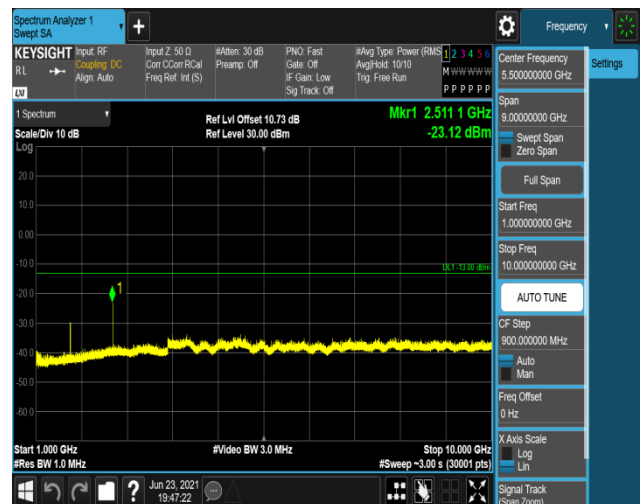
GSM850-128-3-0.15~30MHz



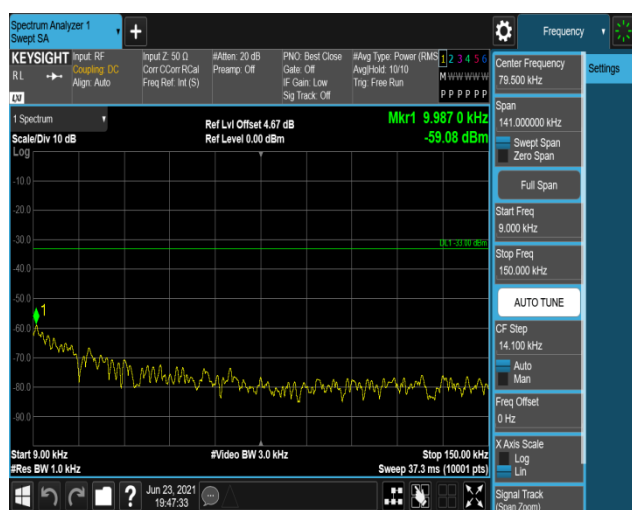
GSM850-128-3-30~1000MHz



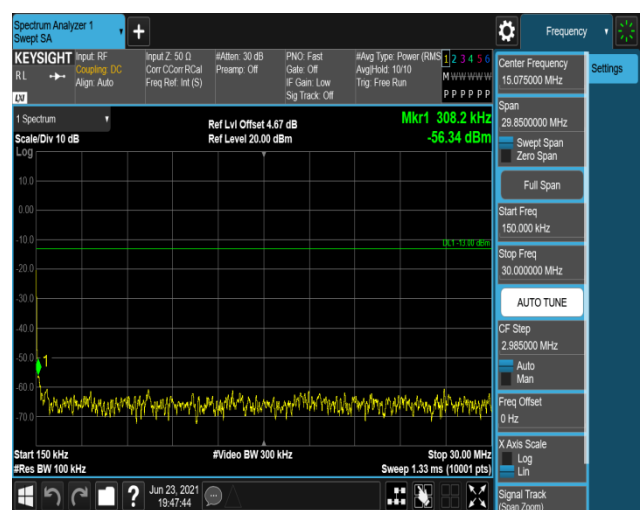
GSM850-128-3-1000~10000MHz



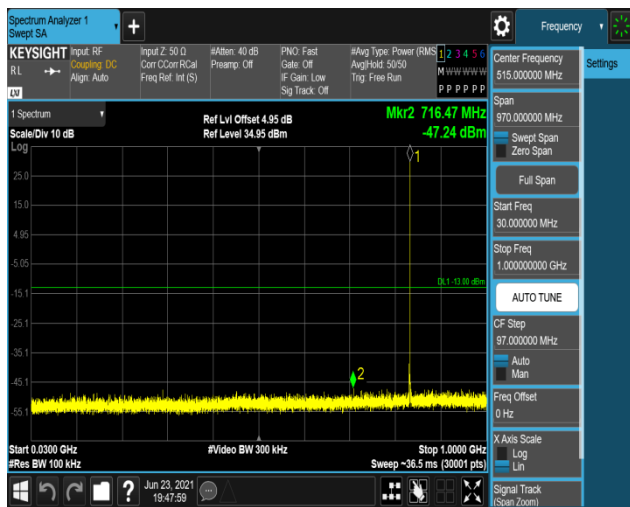
GSM850-190-3-0.009~0.15MHz



GSM850-190-3-0.15~30MHz



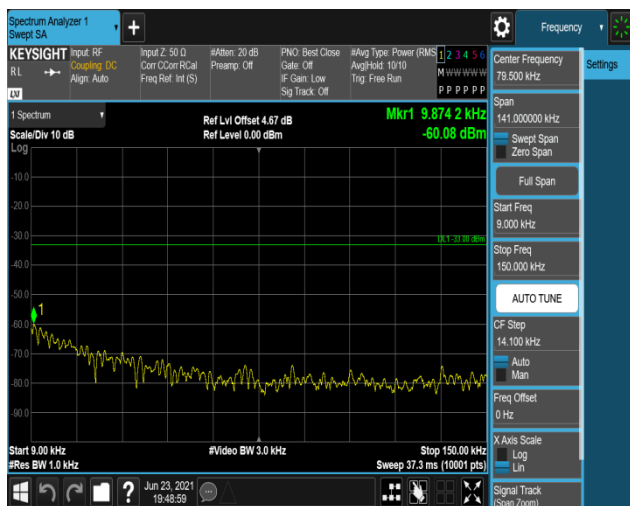
GSM850-190-3-30~1000MHz



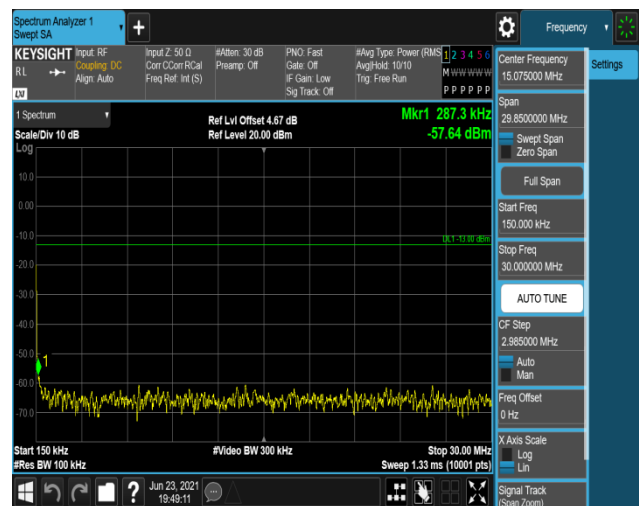
GSM850-190-3-1000~10000MHz



GSM850-251-3-0.009~0.15MHz



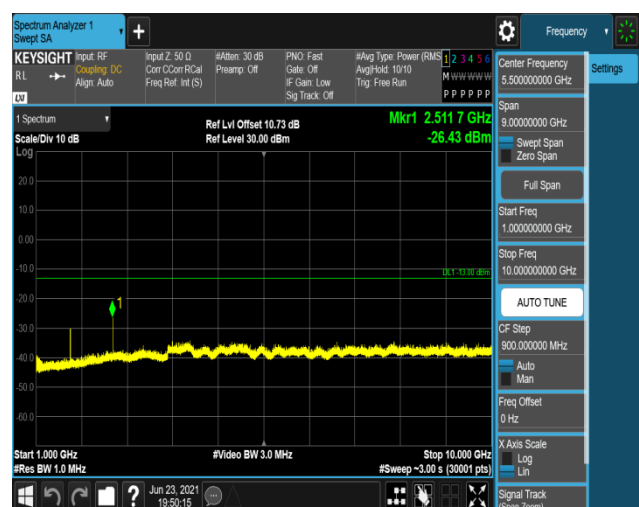
GSM850-251-3-0.15~30MHz



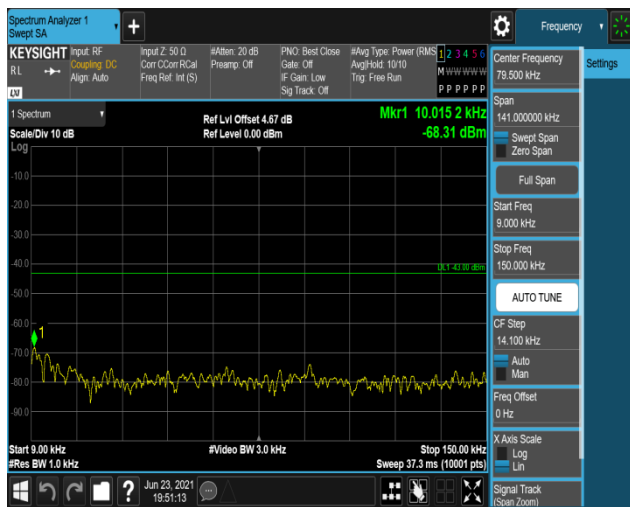
GSM850-251-3-30~1000MHz



GSM850-251-3-1000~10000MHz



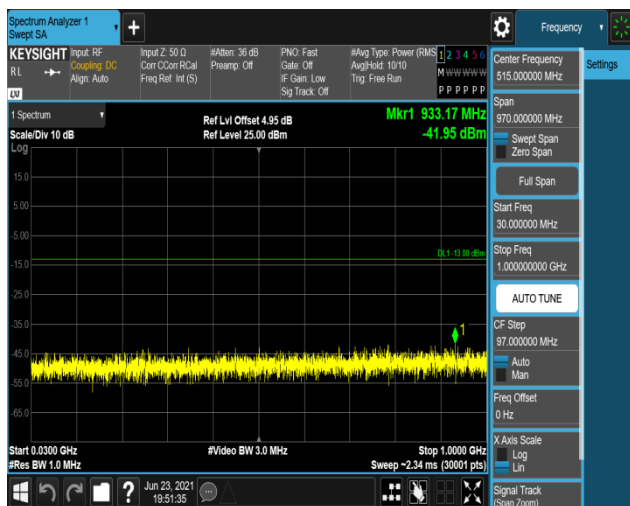
GSM1900-512-0-0.009~0.15MHz



GSM1900-512-0-0.15~30MHz



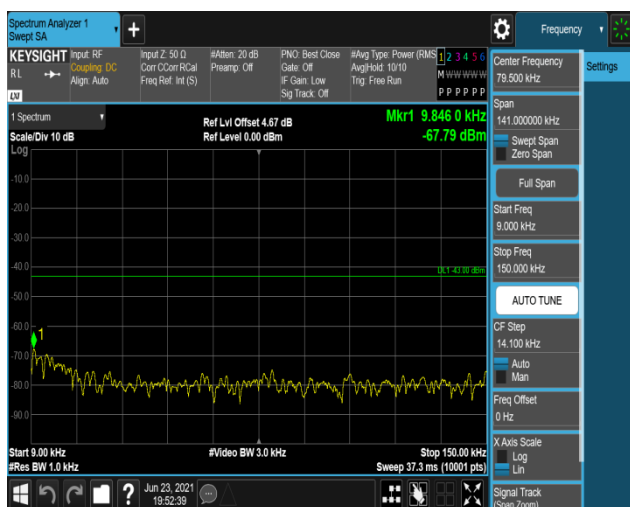
GSM1900-512-0-30~1000MHz



GSM1900-512-0-1000~18000MHz



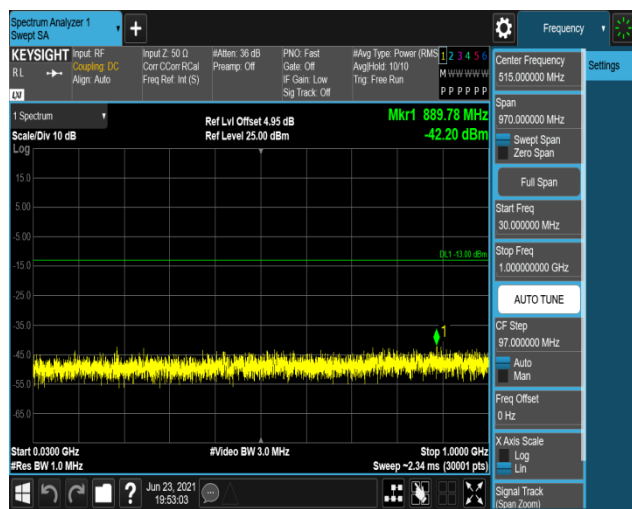
GSM1900-661-0-0.009~0.15MHz



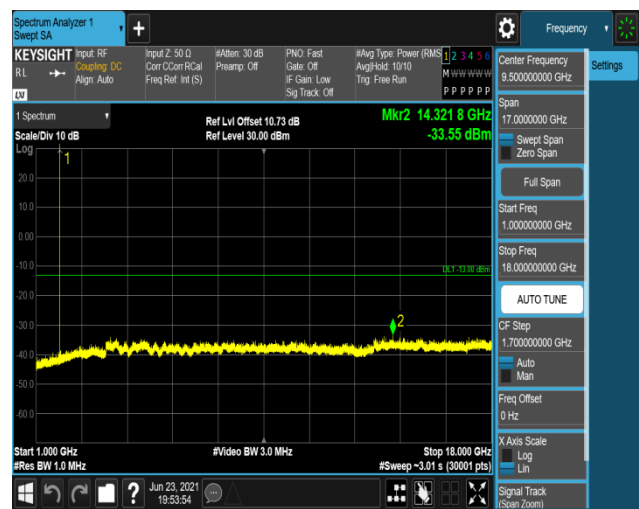
GSM1900-661-0-0.15~30MHz



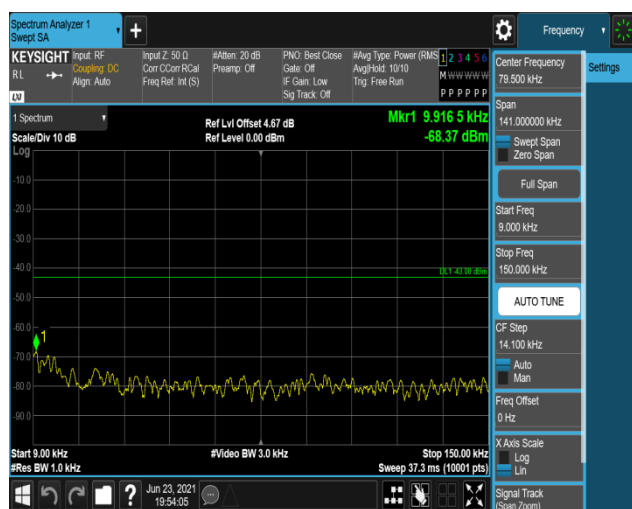
GSM1900-661-0-30~1000MHz



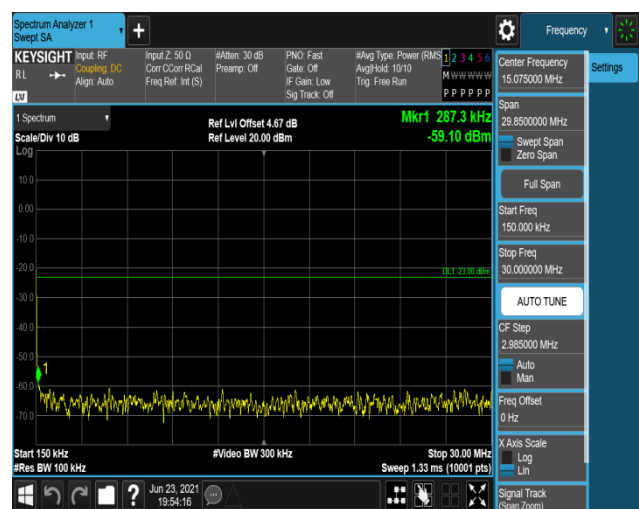
GSM1900-661-0-1000~18000MHz



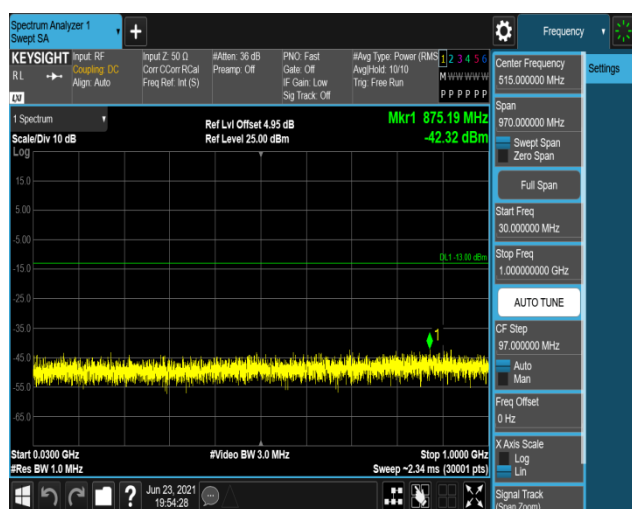
GSM1900-810-0-0.009~0.15MHz



GSM1900-810-0-0.15~30MHz



GSM1900-810-0-30~1000MHz



GSM1900-810-0-1000~18000MHz



Appendix F: Frequency Stability

Test Result

Reference Frequency: GSM850 Middle channel=190 Frequency=836.6MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.85	-30	-3.52	-0.004208	±2.5	Pass
	-20	-2.87	-0.003431		
	-10	-3.00	-0.003586		
	0	-2.00	-0.002391		
	10	-3.87	-0.004626		
	20	-1.03	-0.001231		
	30	-3.26	-0.003897		
	40	-6.17	-0.007375		
	50	-2.71	-0.003239		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	-3.87	-0.004626	±2.5	Pass
	3.85	-2.23	-0.002666		
	4.40	-6.88	-0.008224		
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	-4.13	-0.004937	±2.5	Pass
	-20	1.84	0.002199		
	-10	-1.29	-0.001542		
	0	0.06	0.000072		
	10	1.65	0.001972		
	20	-0.03	-0.000036		
	30	0.45	0.000538		
	40	1.36	0.001626		
	50	-1.84	-0.002199		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	-5.07	-0.006060	±2.5	Pass
	3.85	-8.43	-0.010077		
	4.40	-6.97	-0.008331		
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	-28.96	-0.015404	Within authorized band for PCS 1900	Pass
	-20	-25.15	-0.013378		
	-10	-27.96	-0.014872		
	0	-27.83	-0.014803		
	10	-27.02	-0.014372		
	20	-25.99	-0.013824		
	30	-28.64	-0.015234		
	40	-27.64	-0.014702		
	50	-29.41	-0.015644		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	-25.67	-0.013654	Within authorized band for PCS 1900	Pass
	3.85	-3.13	-0.001665		
	4.40	-29.09	-0.015473		
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	-15.30	-0.008138	Within authorized band for PCS 1900	Pass
	-20	-9.43	-0.005016		
	-10	-1.32	-0.000702		
	0	4.78	0.002543		
	10	3.52	0.001872		
	20	1.19	0.000633		
	30	2.94	0.001564		
	40	8.49	0.004516		
	50	1.52	0.000809		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.50	-11.49	-0.006112	Within authorized band for PCS 1900	Pass
	3.85	-10.33	-0.005495		
	4.40	-10.75	-0.005718		
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

