



Appendix for test report



1 Appendix_A: Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dBm]	ERP/EIRP [dBm]	Limit [dBm]	Verdict
GSM1900	GSM/TM1	LCH	29.51	24.51	33	PASS
		MCH	29.47	24.47	33	PASS
		HCH	29.08	24.08	33	PASS

Note1:

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,

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

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

b, SGP=Signal Generator Level

Note2:

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

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

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

SET Sweep time=auto-couple.

Detector:RMS



2Appendix_B: Peak-to-Average Ratio

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
GSM1900	GSM/TM1	LCH	0.16	13	PASS
		MCH	0.12	13	PASS
		HCH	0.13	13	PASS

3Appendix_C: Modulation Characteristics

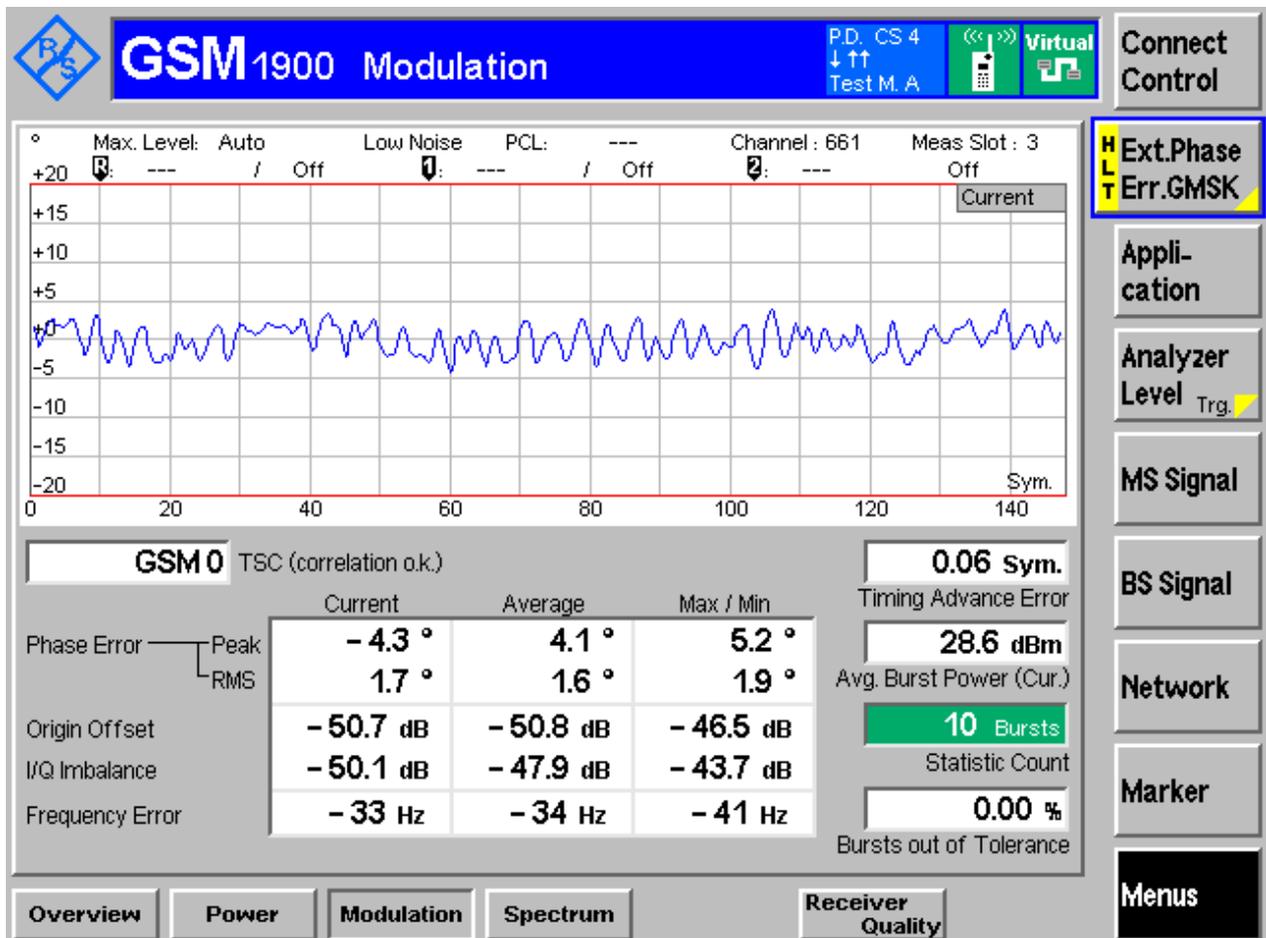
Part I - Test Plots

3.1 For GSM

3.1.1 Test Band = GSM1900

3.1.1.1 Test Mode = GSM/TM1

3.1.1.1.1 Test Channel = MCH





4Appendix_D: Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [kHz]	Emission Bandwidth [kHz]	Verdict
GSM1900	GSM/TM1	LCH	244.41	319.28	Pass
		MCH	245.42	311.81	Pass
		HCH	245.70	313.72	Pass



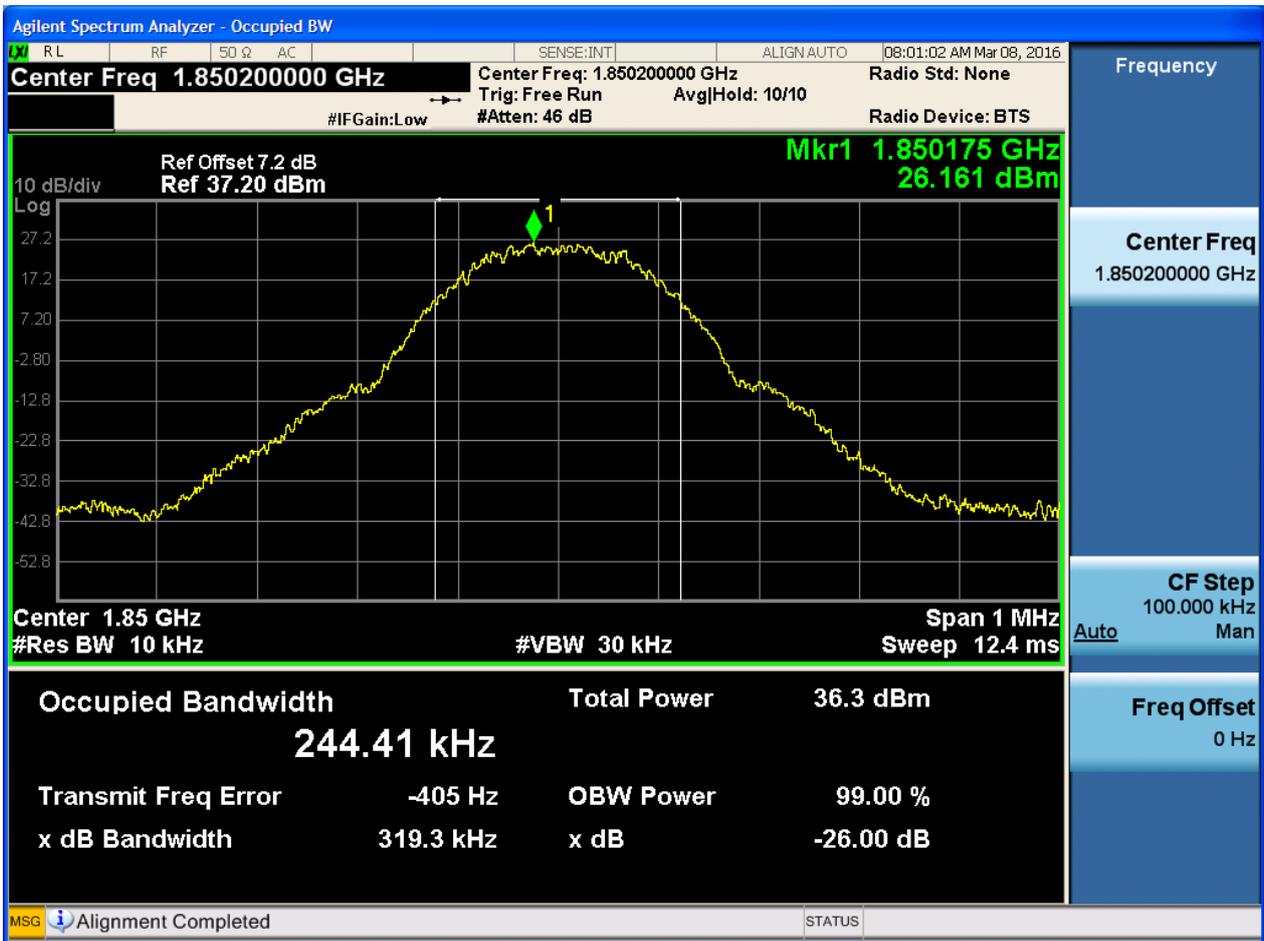
Part II - Test Plots

4.1 For GSM

4.1.1 Test Band = GSM1900

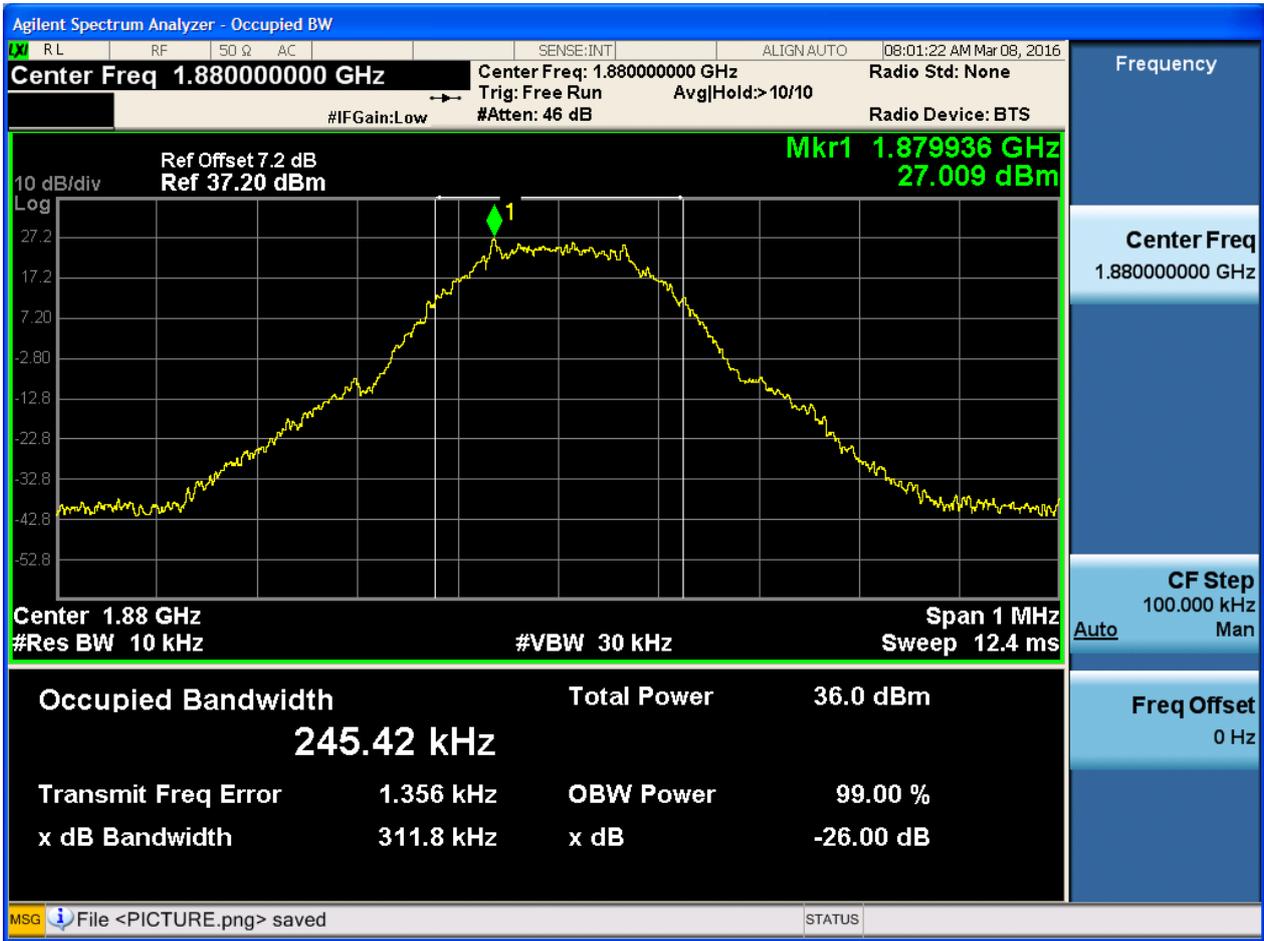
4.1.1.1 Test Mode = GSM/TM1

4.1.1.1.1 Test Channel = LCH



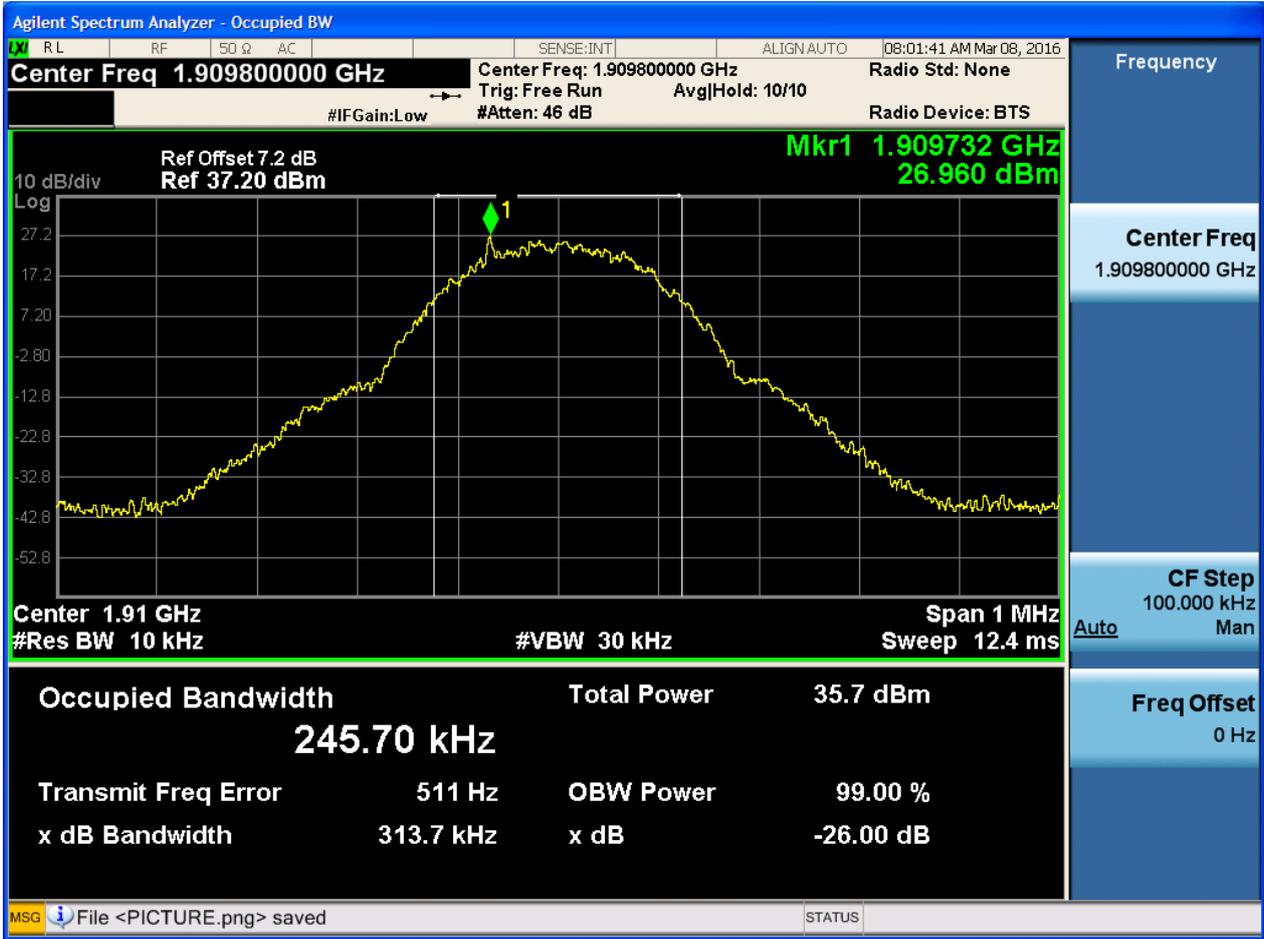


4.1.1.1.2 Test Channel = MCH





4.1.1.1.3 Test Channel = HCH





5Appendix_E: Band Edges Compliance

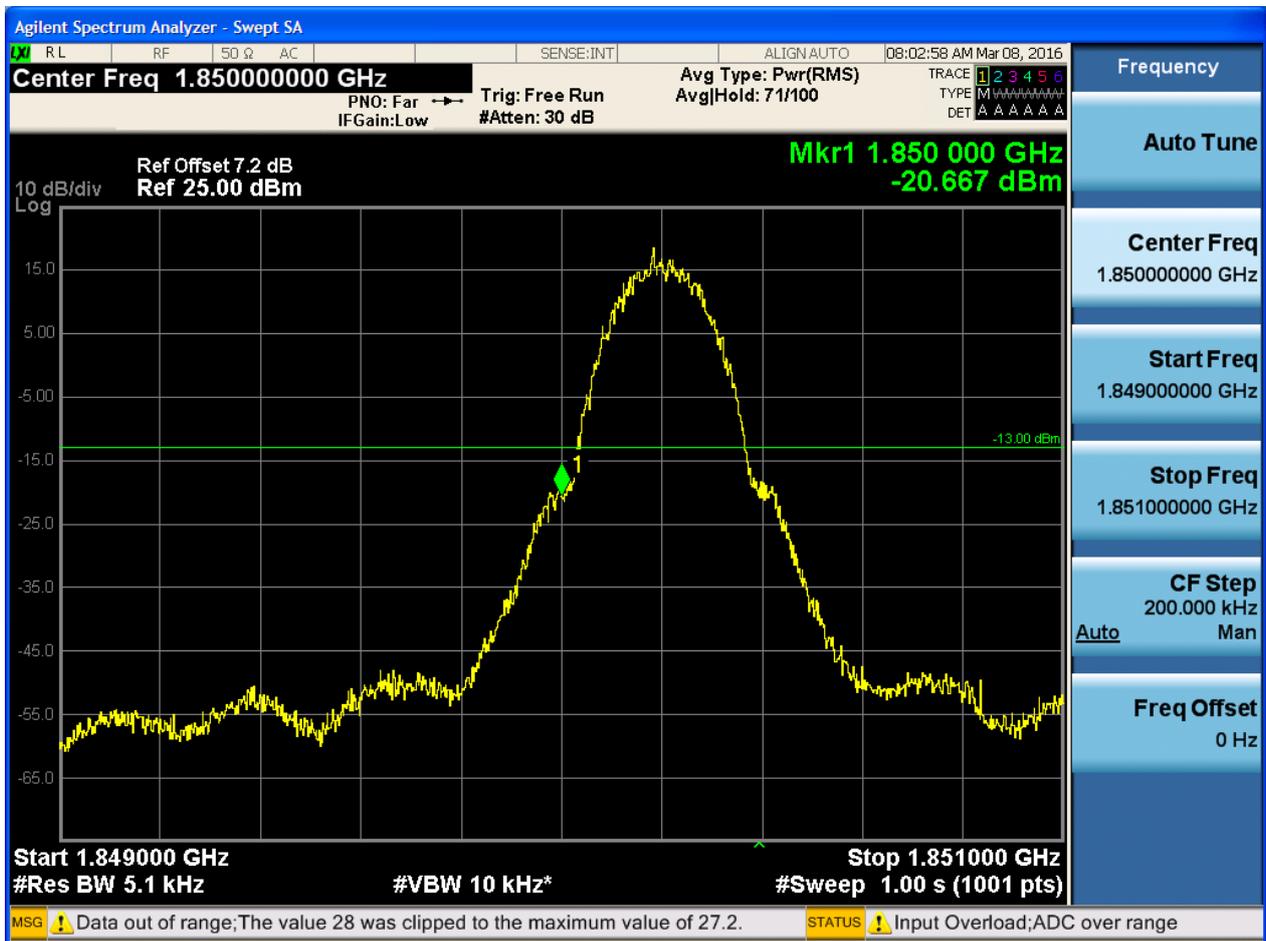
Part I - Test Plots

5.1 For GSM

5.1.1 Test Band = GSM1900

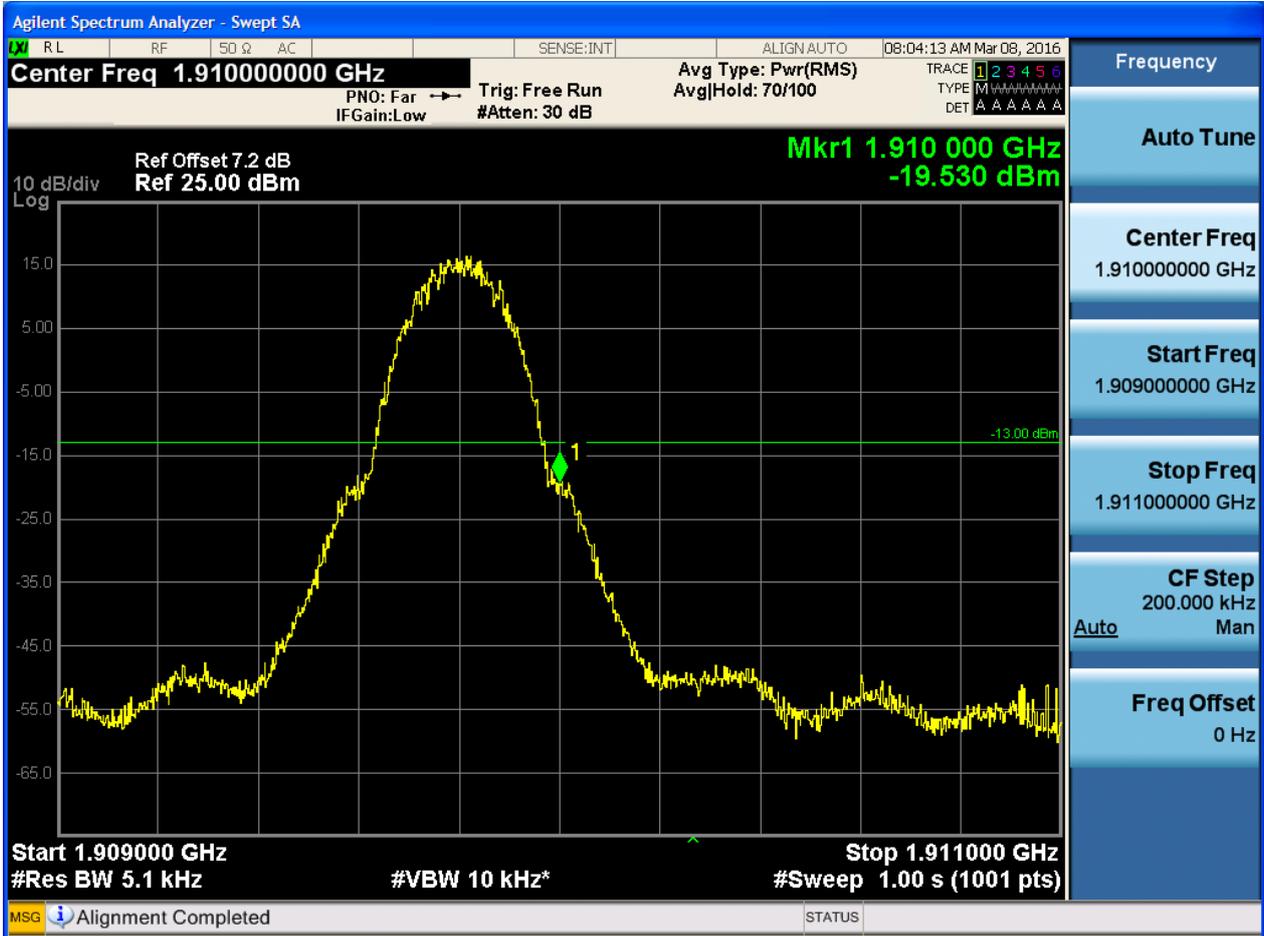
5.1.1.1 Test Mode = GSM/TM1

5.1.1.1.1 Test Channel = LCH





5.1.1.1.2 Test Channel = HCH





6Appendix_F: Spurious Emission at Antenna Terminal

NOTE: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k * (Span / RBW)$ " with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.



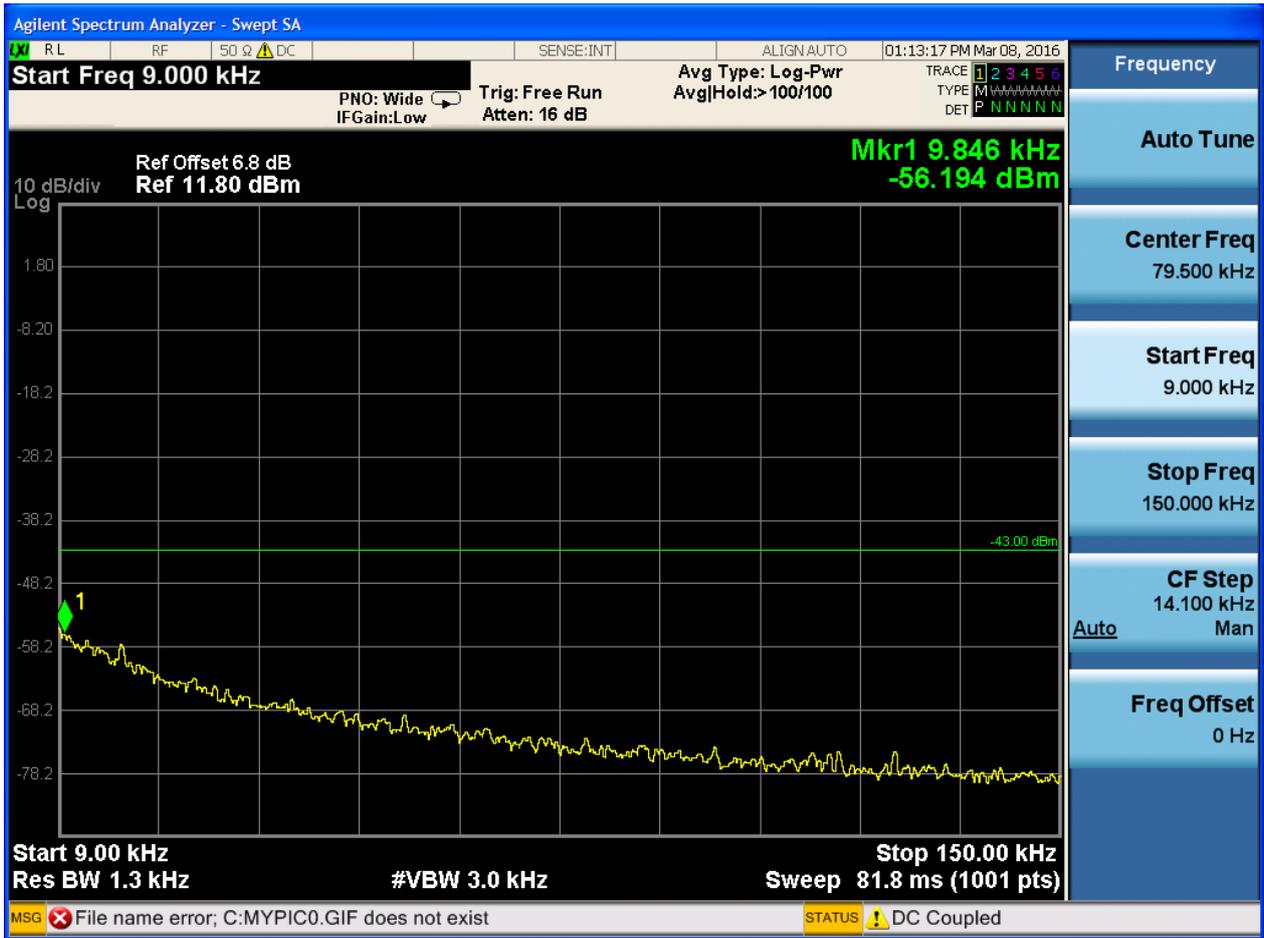
Part I - Test Plots

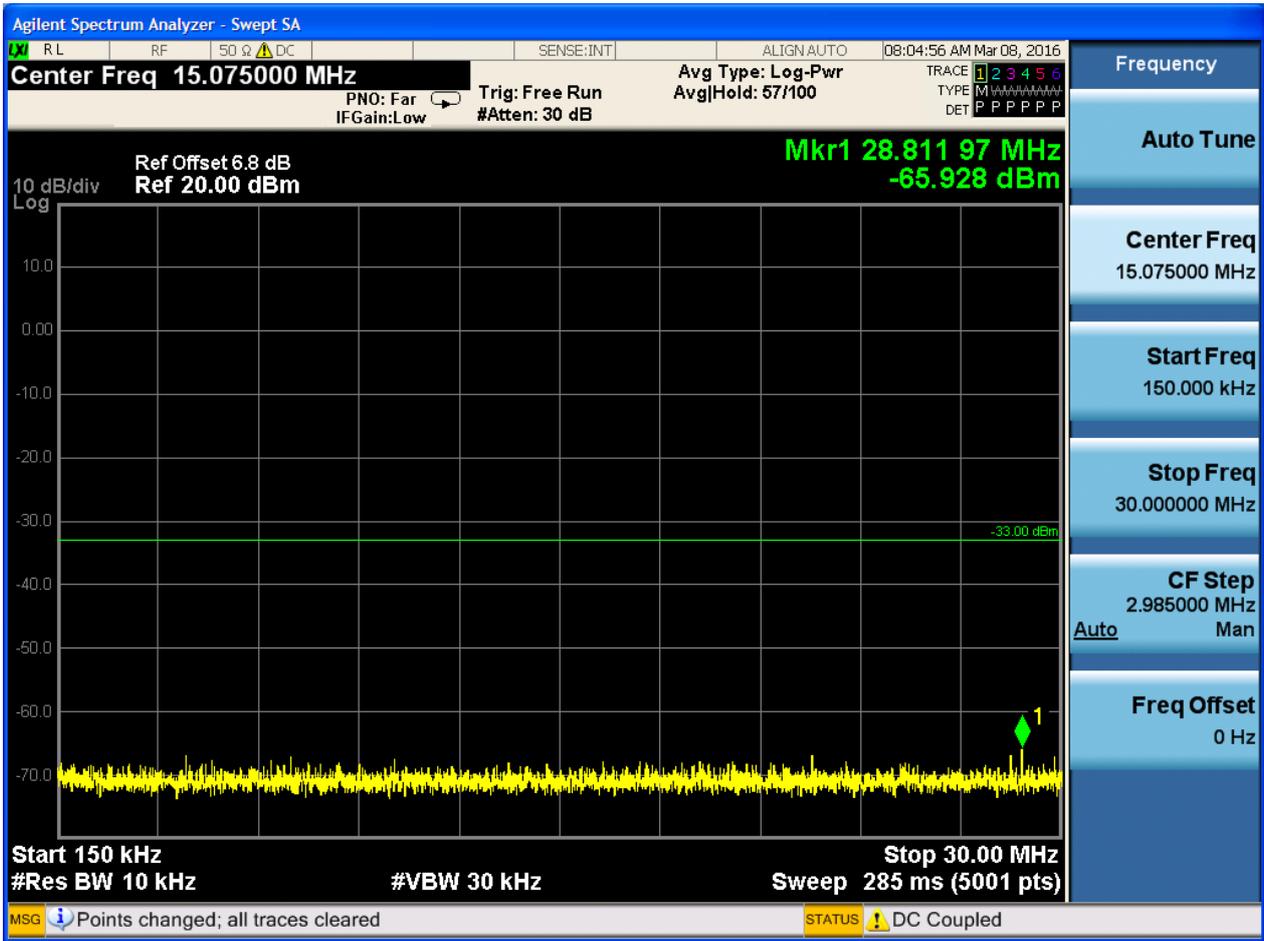
6.1 For GSM

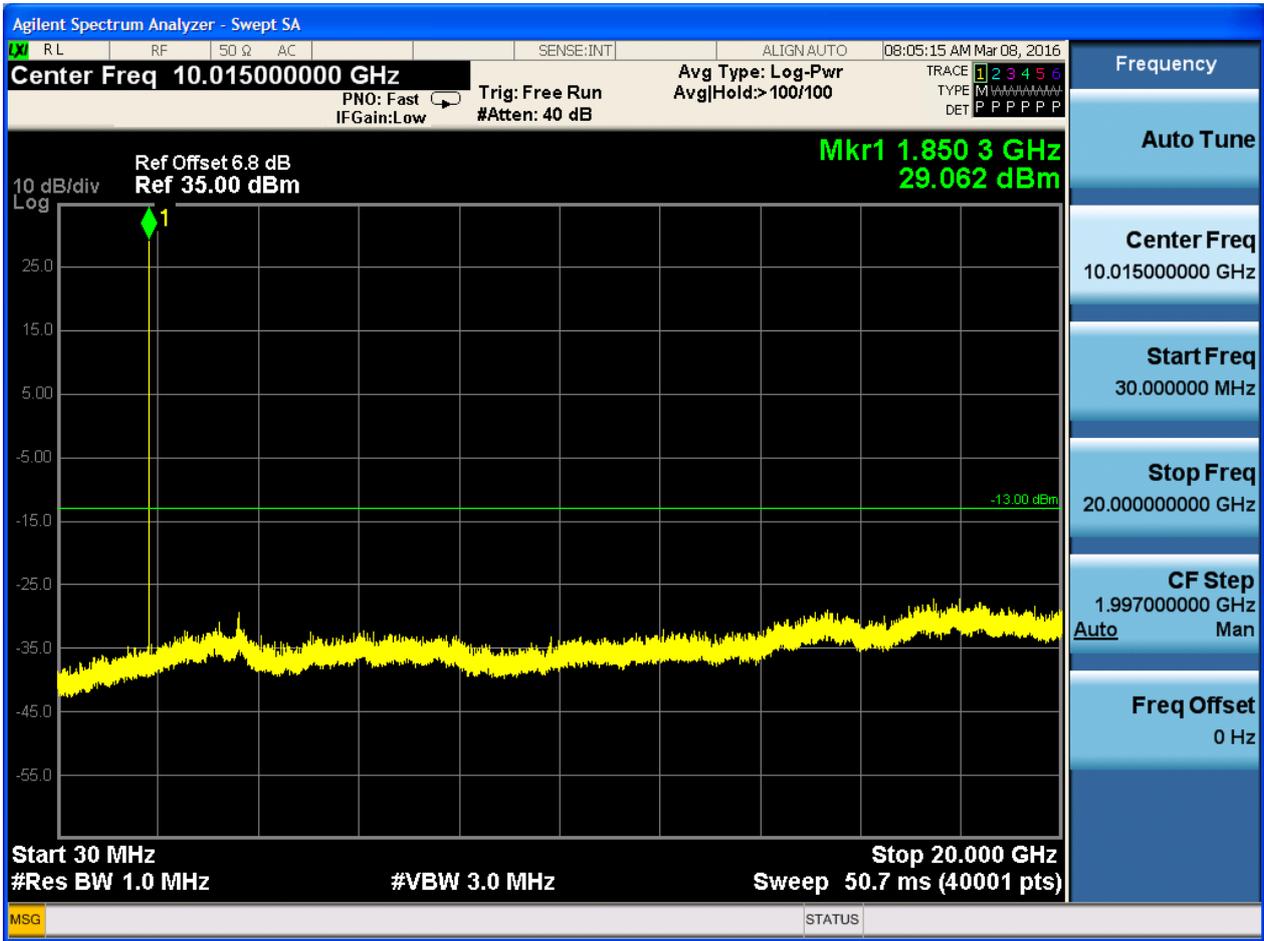
6.1.1 Test Band = GSM1900

6.1.1.1 Test Mode = GSM/TM1

6.1.1.1.1 Test Channel = LCH

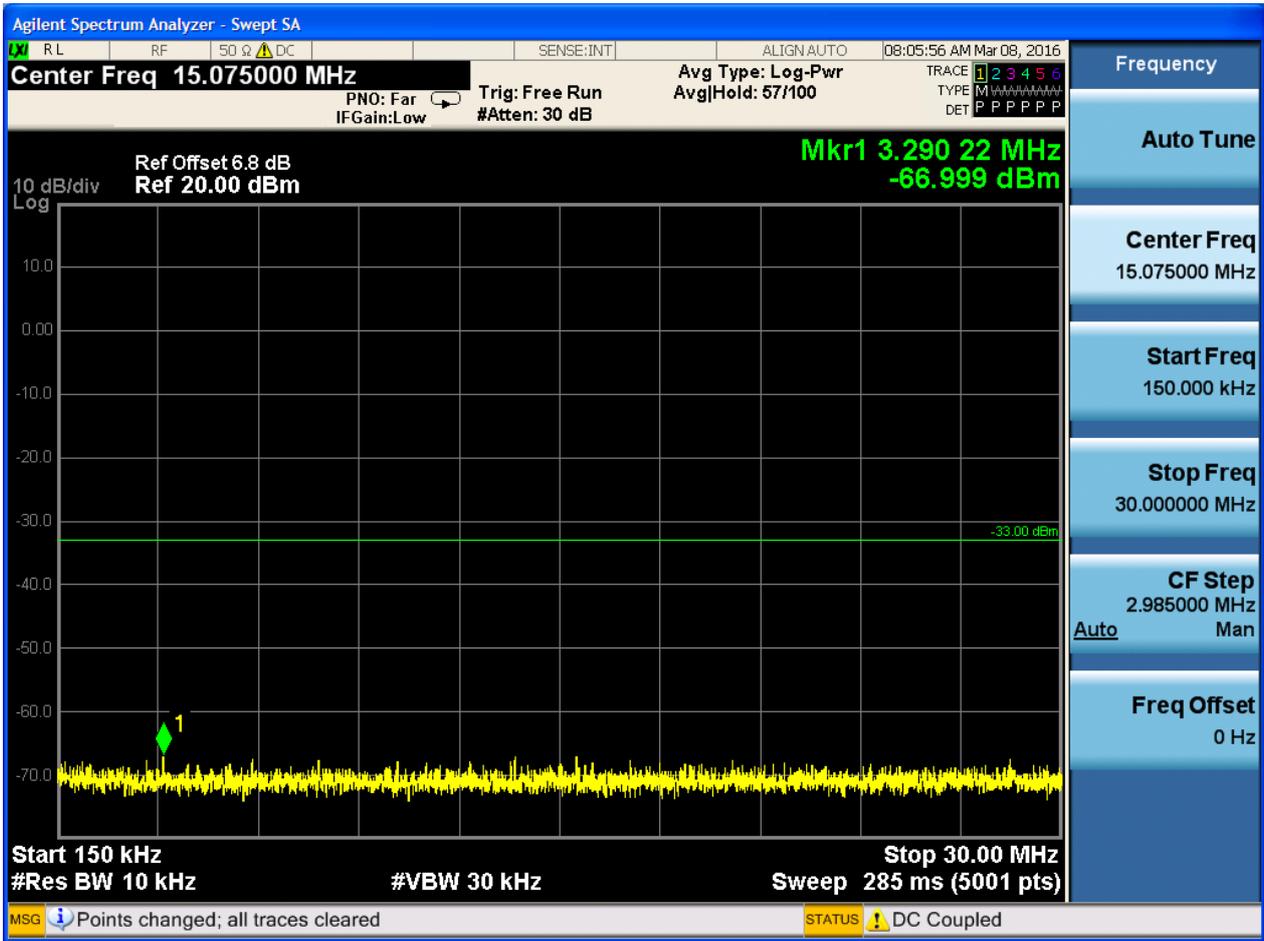


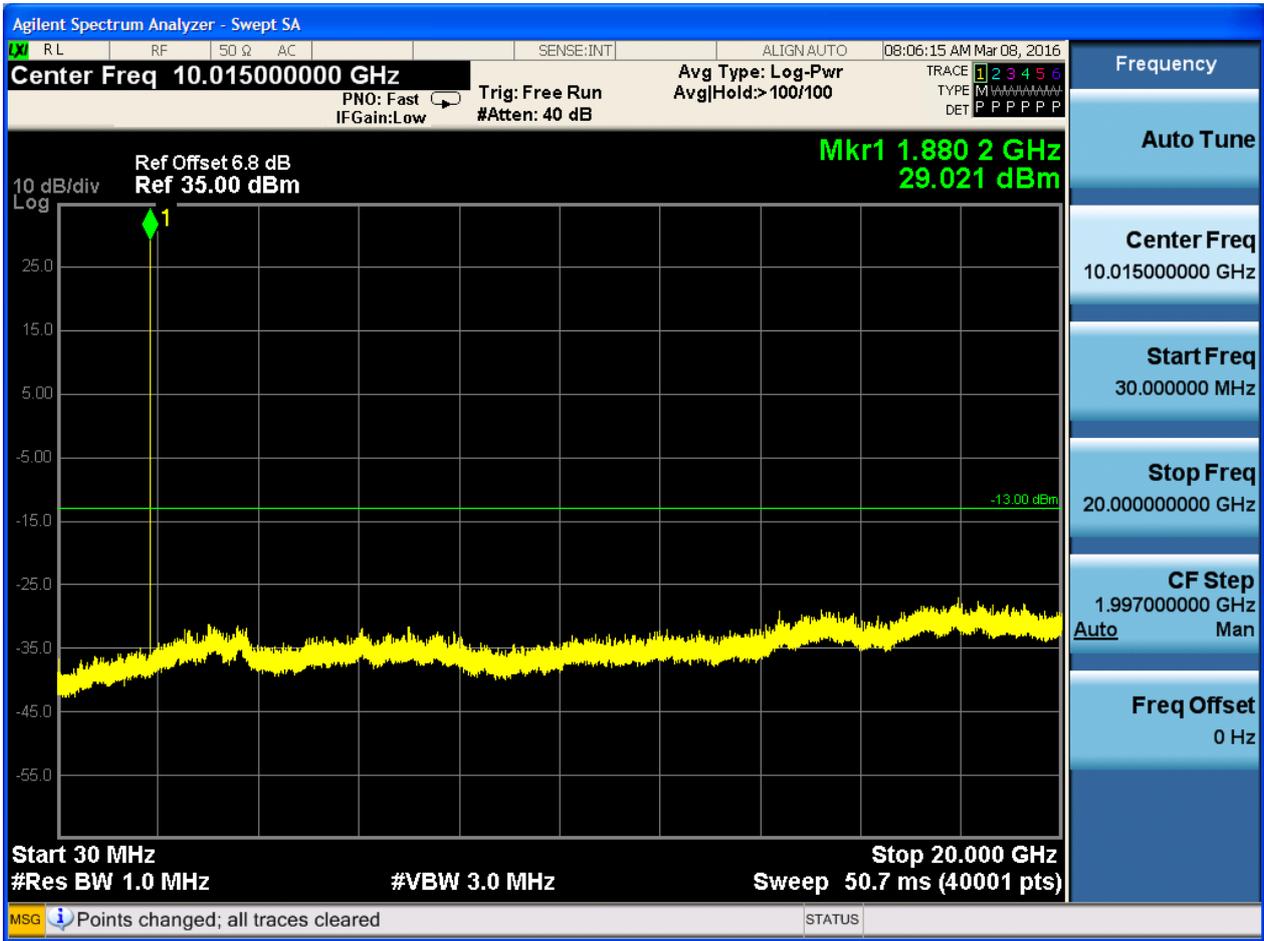




6.1.1.1.2 Test Channel = MCH

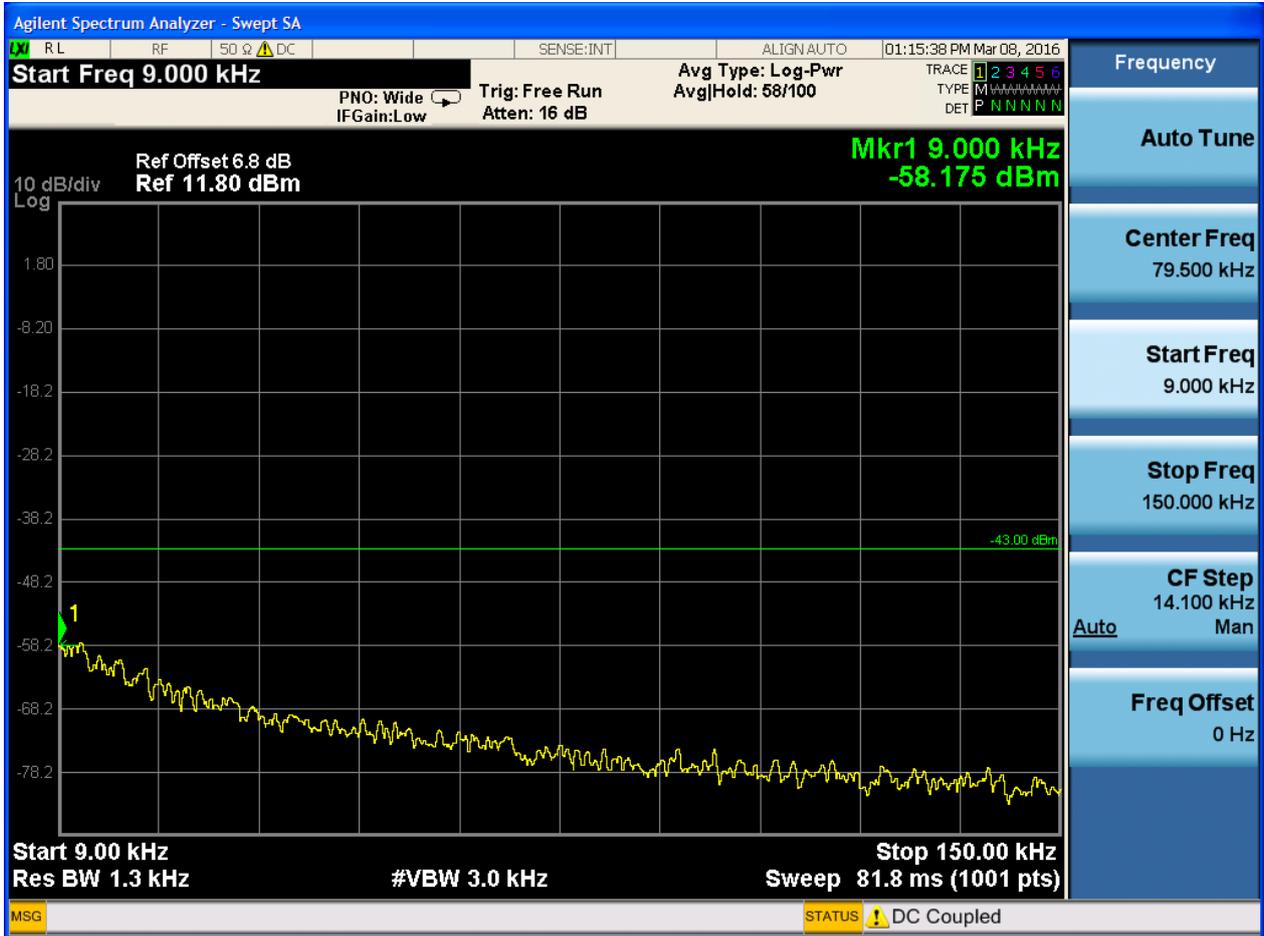


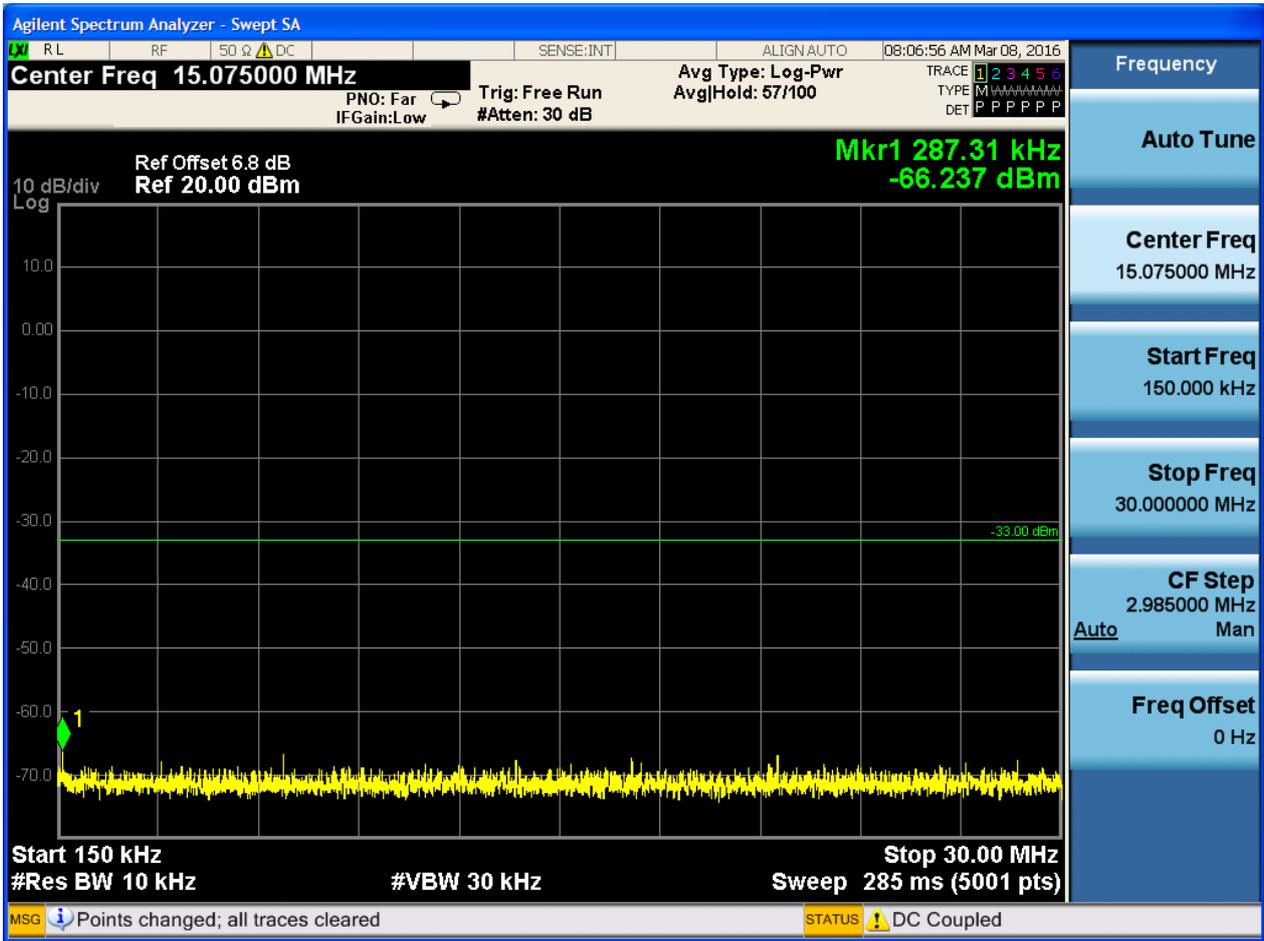


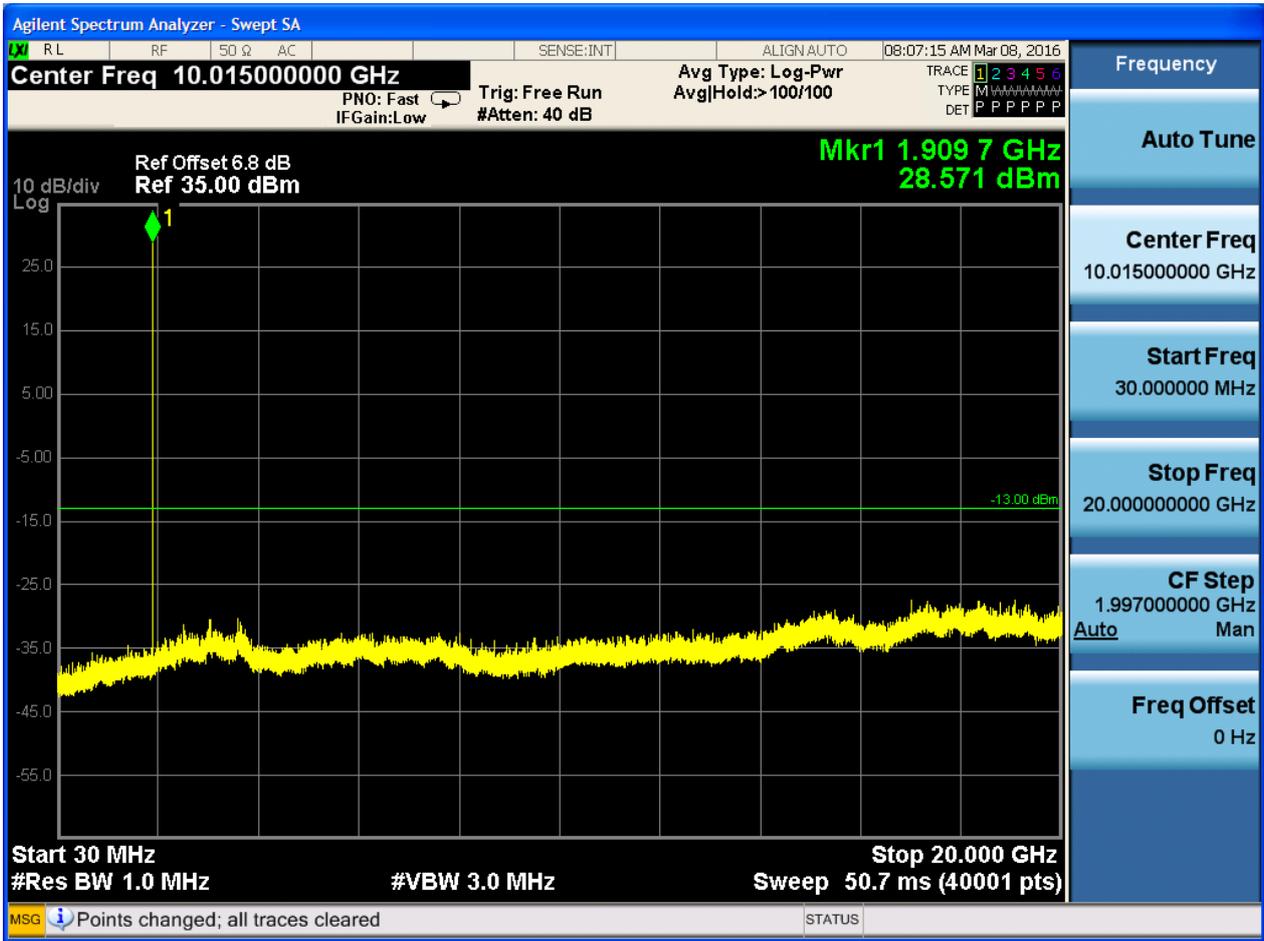




6.1.1.1.3 Test Channel = HCH







7Appendix_G: Field Strength of Spurious Radiation

Note:

9kHz~150kHz, VBW = 200Hz, VBW = 600 Hz, Detector: PK

150kHz~30MHz, VBW = 9kHz, VBW = 30k Hz, Detector: PK

30MHz~1GHz, RBW = 100 kHz, VBW = 300 kHz. Detector: PK

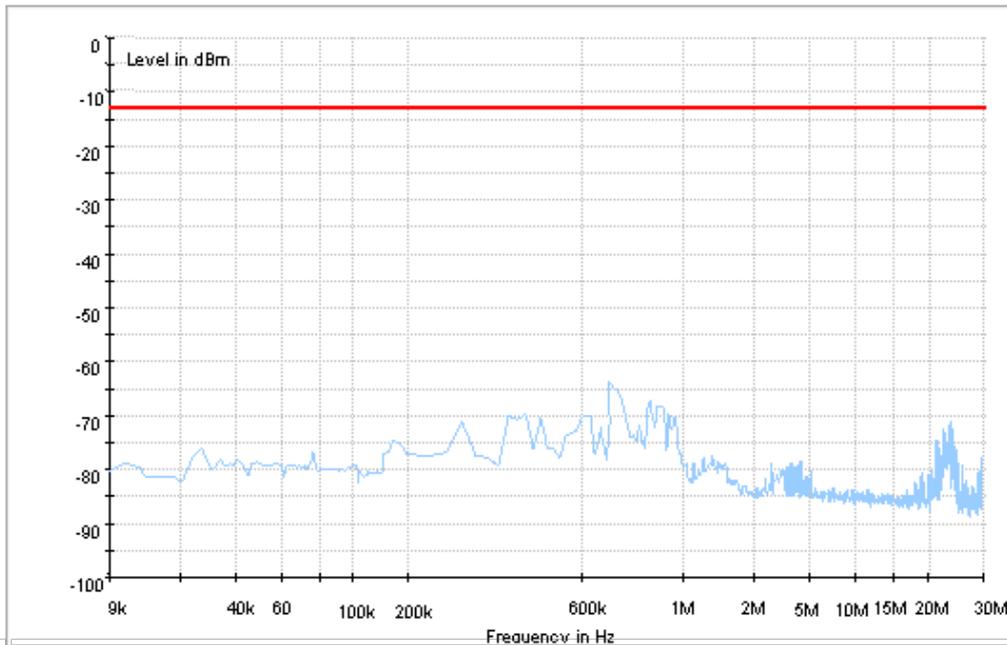
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

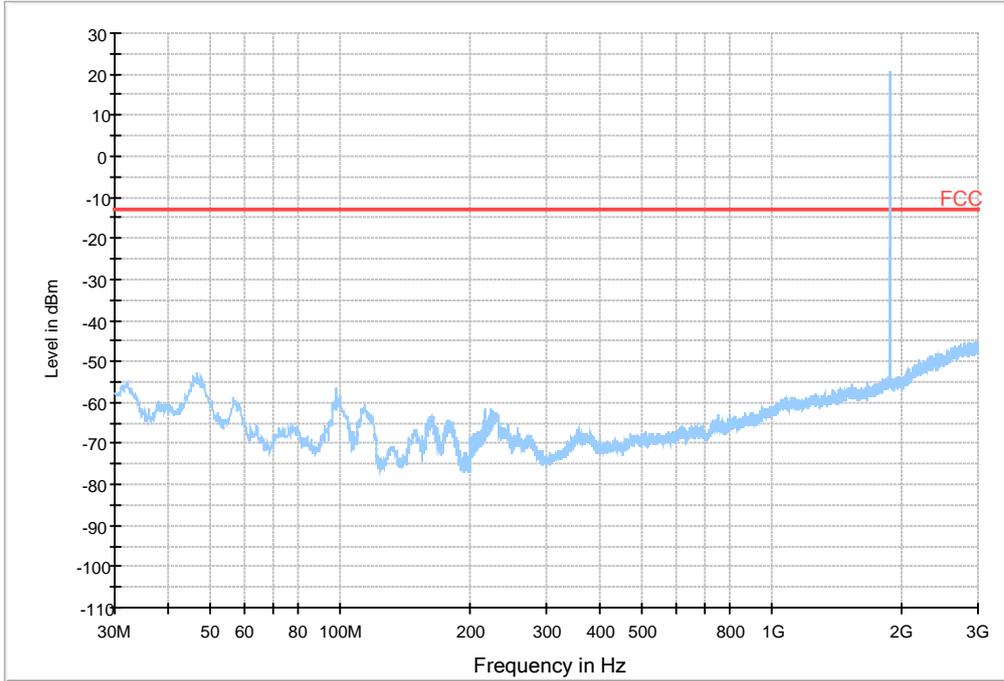
7.1 For GSM

7.1.1 Test Band = GSM1900

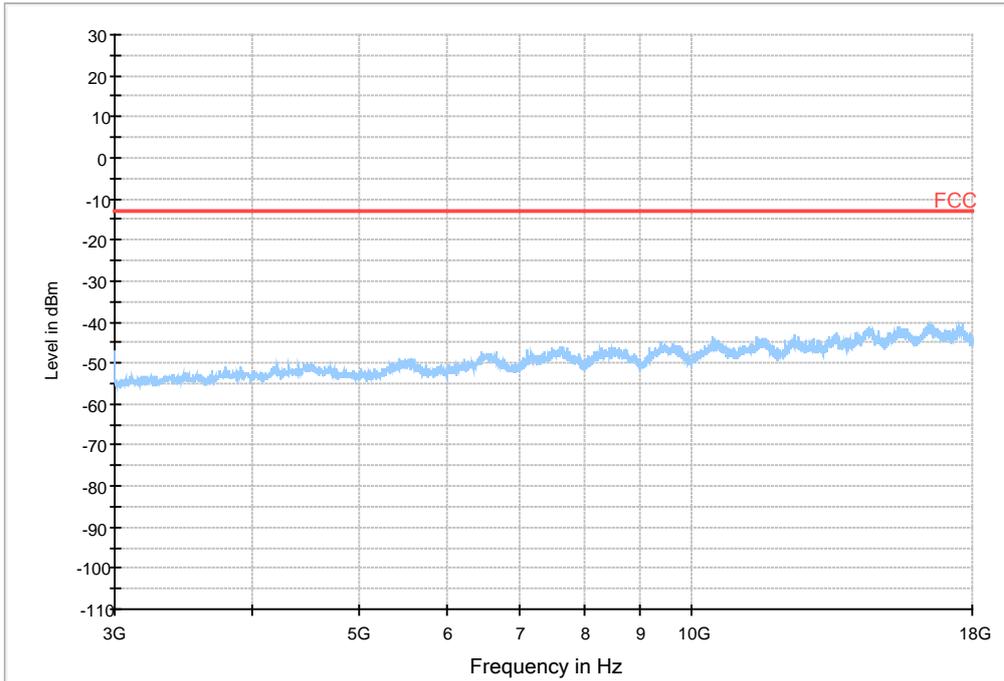
7.1.1.1 Test Mode = GSM/TM1

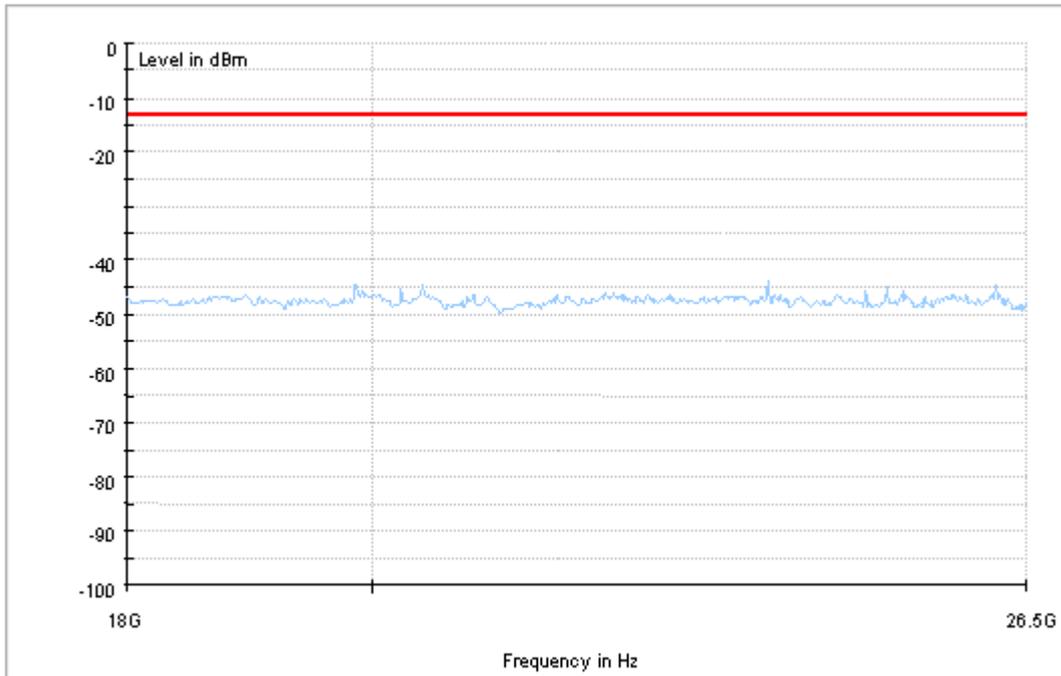


Copy of FCC PART24 GSM1900_L



Copy of FCC PART24 GSM1900_H





8Appendix_H: Frequency Stability

8.1 For GSM

8.1.1Frequency Error vs. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM1900	GSM/TM1	LCH	TN	VL	-17.76	-0.0096	PASS
				VN	-2.00	-0.00108	PASS
				VH	-4.07	-0.0022	PASS
		MCH	TN	VL	-15.11	-0.00804	PASS
				VN	-19.82	-0.01054	PASS
				VH	-14.33	-0.00762	PASS
		HCH	TN	VL	-11.43	-0.00598	PASS
				VN	-10.07	-0.00527	PASS
				VH	-19.37	-0.01014	PASS

8.1.2Frequency Error vs. Temperature:

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM1900	GSM/TM1	LCH	VN	-30	-6.39	-0.00345	PASS
				-20	-22.28	-0.01204	PASS
				-10	-20.92	-0.01131	PASS
				0	-25.38	-0.01372	PASS
				10	-11.04	-0.00597	PASS
				20	-14.85	-0.00803	PASS
				30	-31.38	-0.01696	PASS
				40	-8.01	-0.00433	PASS
				50	-18.66	-0.01009	PASS
		MCH	VN	-30	-20.15	-0.01072	PASS
				-20	-27.18	-0.01446	PASS
				-10	-21.31	-0.01134	PASS
				0	-16.01	-0.00852	PASS
				10	-30.41	-0.01618	PASS
				20	-7.36	-0.00391	PASS
				30	-26.28	-0.01398	PASS
				40	-22.86	-0.01216	PASS
				50	-23.50	-0.0125	PASS



Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
		HCH	VN	-30	-19.95	-0.01045	PASS
				-20	-12.20	-0.00639	PASS
				-10	-18.27	-0.00957	PASS
				0	-17.43	-0.00913	PASS
				10	-17.31	-0.00906	PASS
				20	-14.40	-0.00754	PASS
				30	-14.46	-0.00757	PASS
				40	-21.11	-0.01105	PASS
				50	-19.31	-0.01011	PASS

END