Appendix for test report

1Appendix_A: Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Test Band	Test Mode	Test Channel	Conducted Power [dBm]	EIRP [dBm]	Limit [dBm]	Verdict
WCDMA1900	UMTS/TM1	LCH	23.66	25.07	33	PASS
		MCH	23.62	24.90	33	PASS
		HCH	23.69	25.10	33	PASS
WCDMA1700	UMTS/TM1	LCH	23.63	23.61	30	PASS
		MCH	23.73	23.63	30	PASS
		HCH	23.65	23.65	30	PASS
Test Band	**Test Mode**	**Test Channel**	**Conducted Power [dBm]**	**ERP [dBm]**	**Limit [dBm]**	**Verdict**
WCDMA850	UMTS/TM1	LCH	23.66	18.45	38.5	PASS
		MCH	23.7	18.28	38.5	PASS
		HCH	23.58	18.21	38.5	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,

ERP [dBm] = SGP [dBm] - Cable Loss [dB] + Gain [dBd]

EIRP [dBm] = SGP [dBm] - Cable Loss [dB] + Gain [dBi]

b, SGP = Signal Generator Level

Note2:

SET Span = 1.5 * OBW

SET RBW = 1% of the OBW,not to exceed 1MHz

SET VBW >= 3 * 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
WCDMA1900	UMTS/TM1	LCH	2.77	13	PASS
		MCH	2.8	13	PASS
		HCH	2.79	13	PASS
WCDMA1700	UMTS/TM1	LCH	2.81	13	PASS
		MCH	2.85	13	PASS
		HCH	2.91	13	PASS
WCDMA850	UMTS/TM1	LCH	3.03	13	PASS
		MCH	2.81	13	PASS
		HCH	2.85	13	PASS

3Appendix_C: Modulation Characteristics

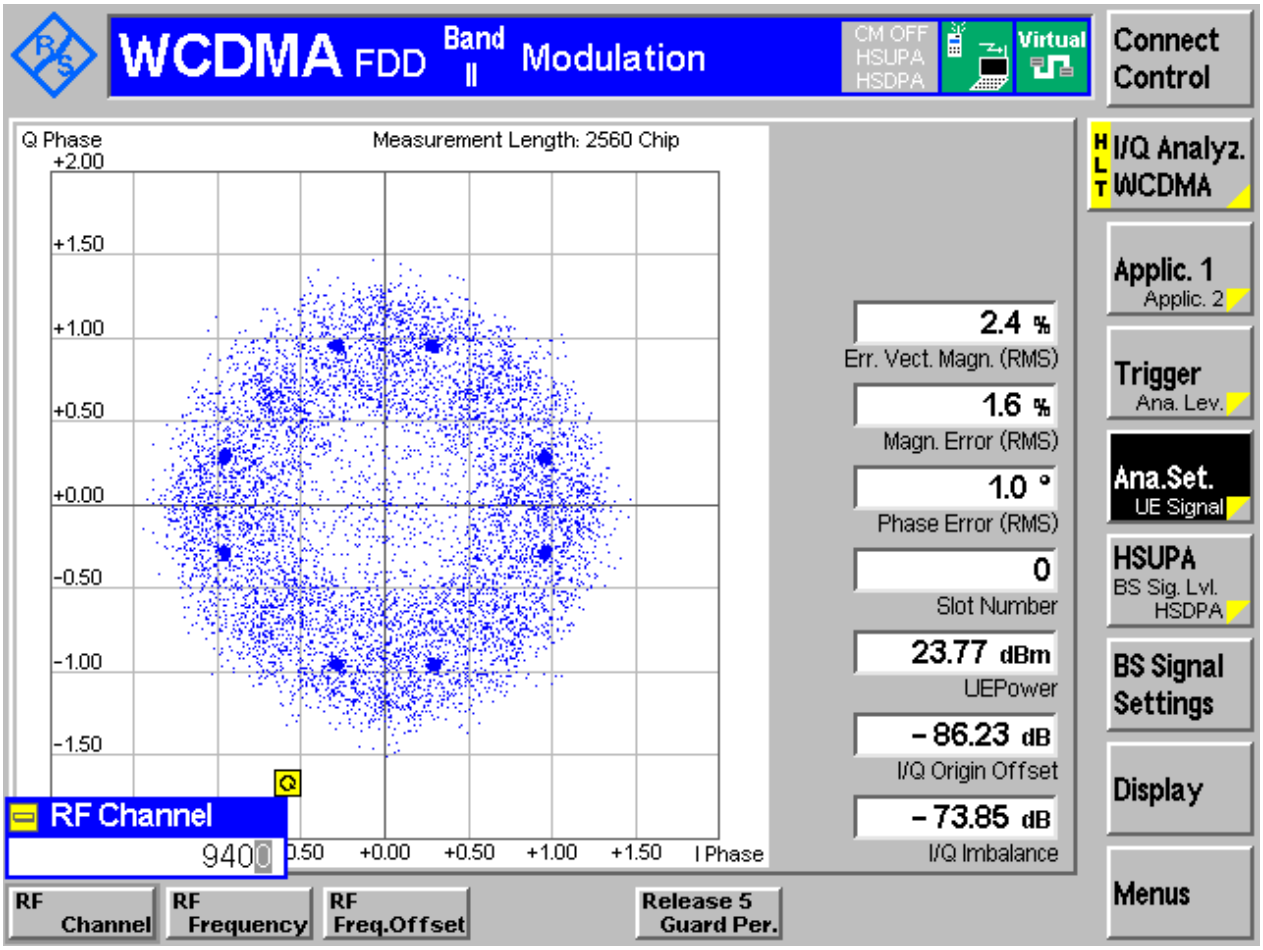
Part I - Test Plots

3.1 For UMTS

3.1.1 Test Band = WCDMA1900

3.1.1.1 Test Mode = UMTS/TM1

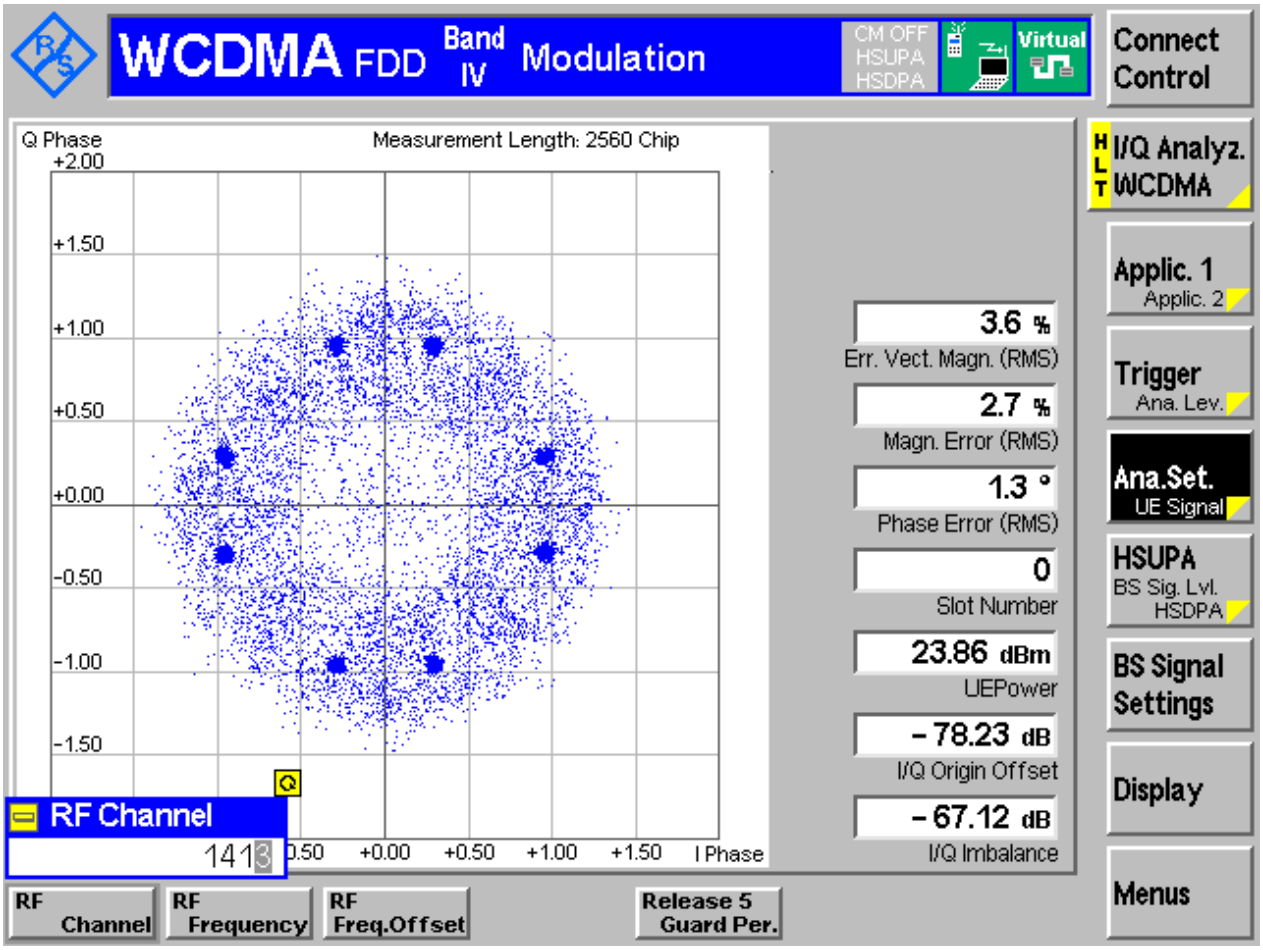
3.1.1.1.1 Test Channel = MCH



3.1.2 Test Band = WCDMA1700

3.1.2.1 Test Mode = UMTS/TM1

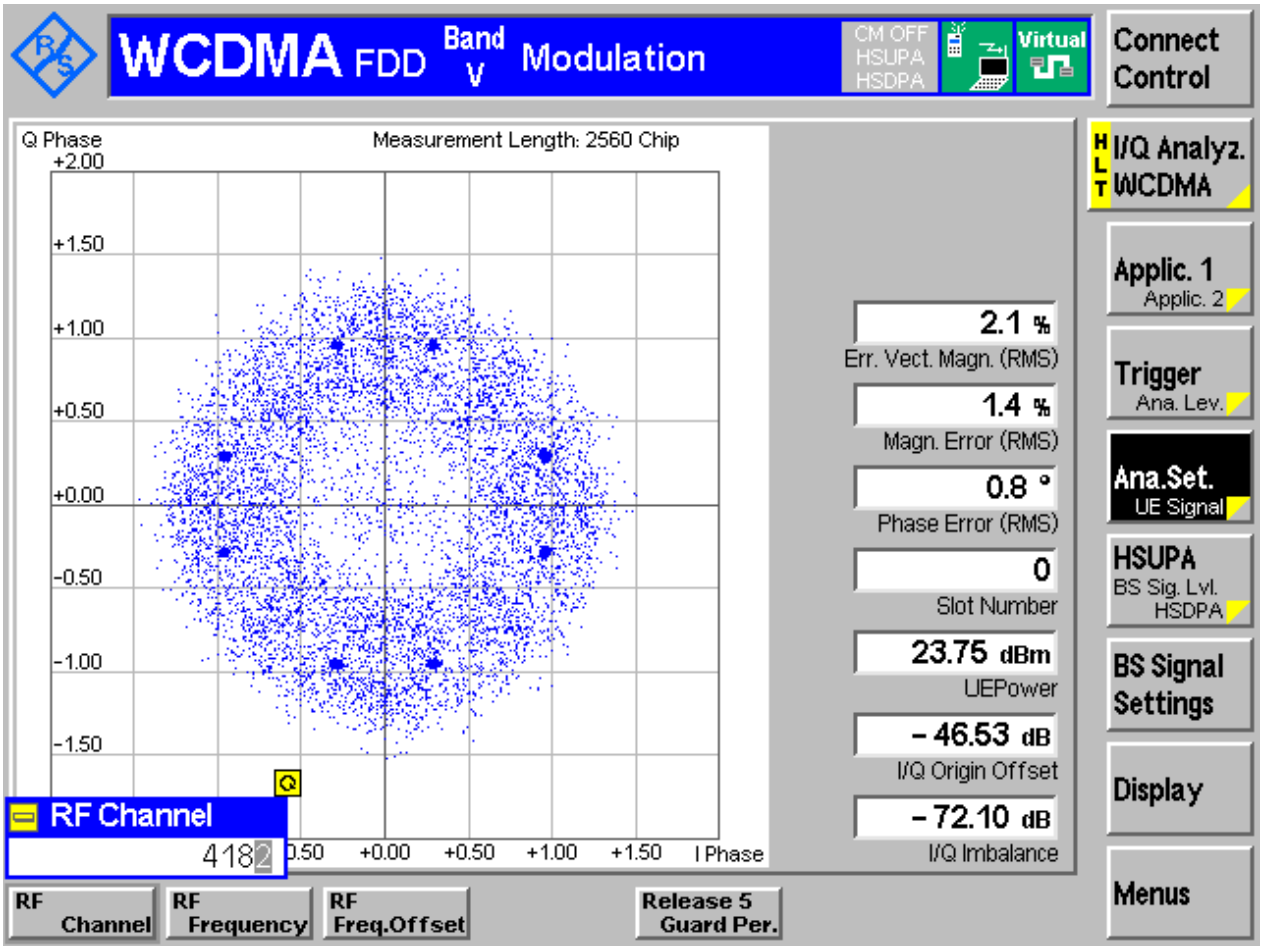
3.1.2.1.1 Test Channel = MCH



3.1.3 Test Band = WCDMA850

3.1.3.1 Test Mode = UMTS/TM1

3.1.3.1.1 Test Channel = MCH



4Appendix_D: Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
WCDMA1900	UMTS/TM1	LCH	4.17	4.74	Pass
		MCH	4.16	4.73	Pass
		HCH	4.15	4.73	Pass
WCDMA1700	UMTS/TM1	LCH	4.17	4.71	Pass
		MCH	4.16	4.73	Pass
		HCH	4.16	4.71	Pass
WCDMA850	UMTS/TM1	LCH	4.16	4.70	Pass
		MCH	4.17	4.71	Pass
		HCH	4.18	4.74	Pass

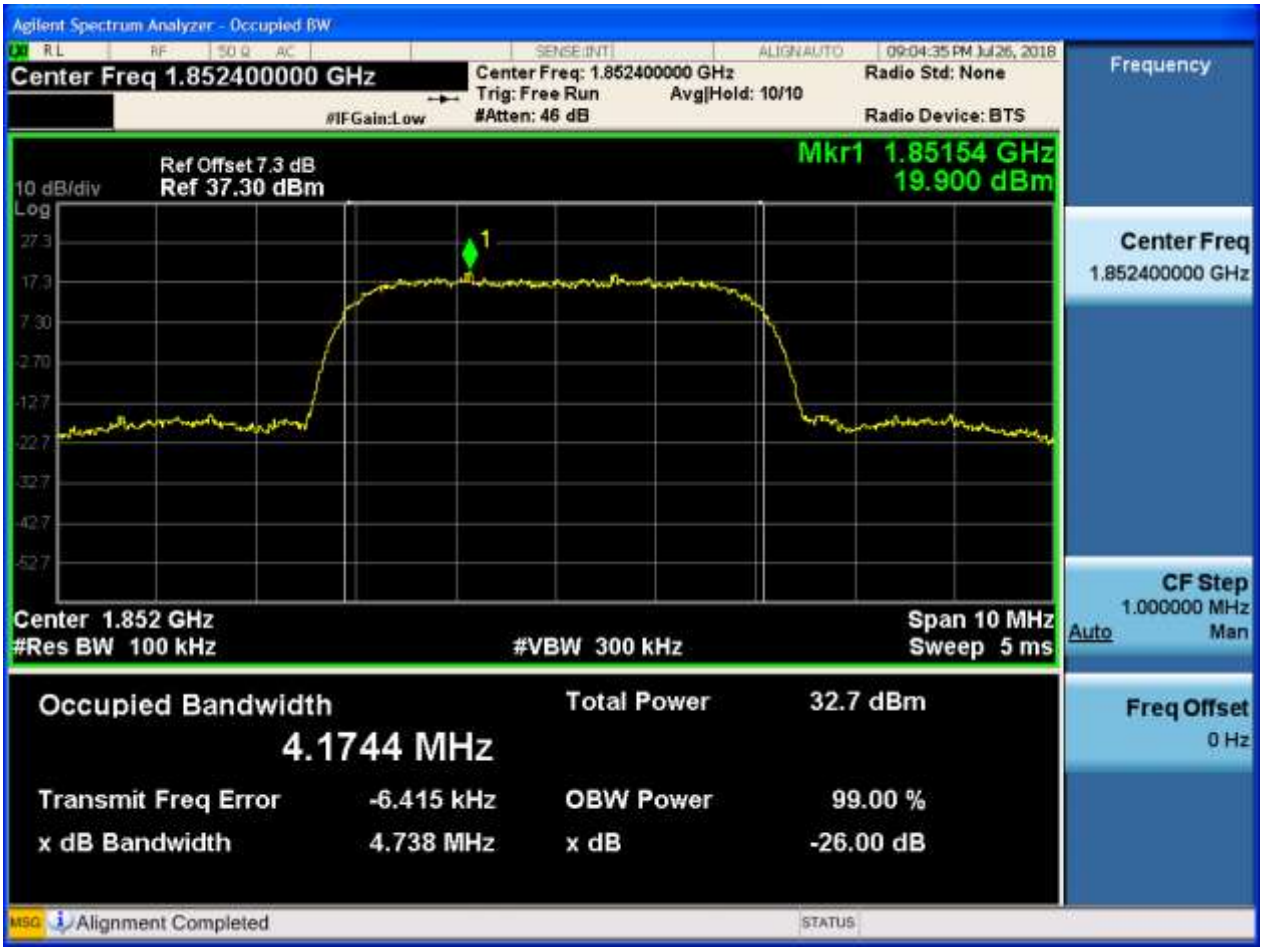
Part II - Test Plots

4.1 For UMTS

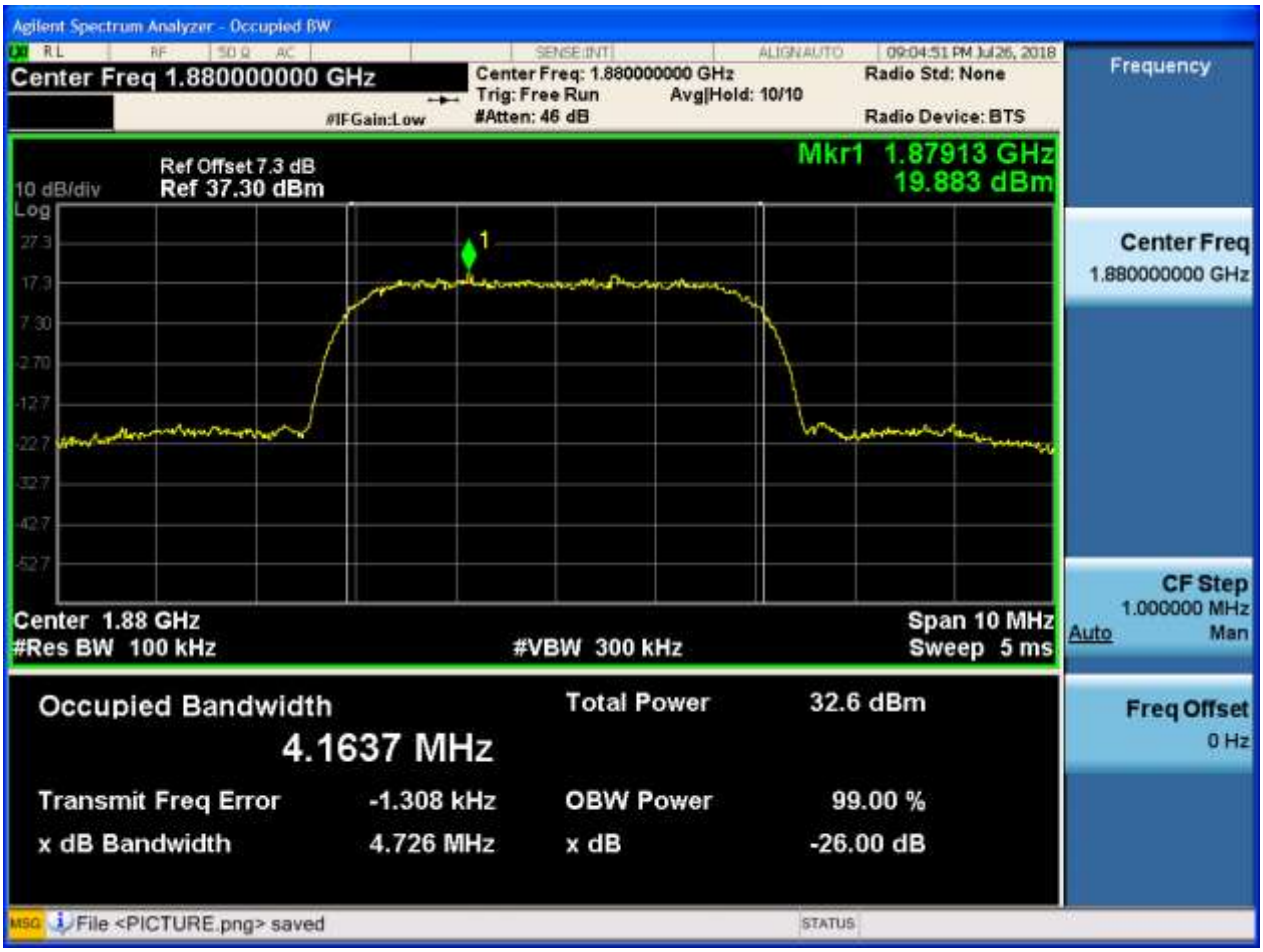
4.1.1 Test Band = WCDMA1900

4.1.1.1 Test Mode = UMTS/TM1

4.1.1.1.1 Test Channel = LCH



4.1.1.1.2 Test Channel = MCH

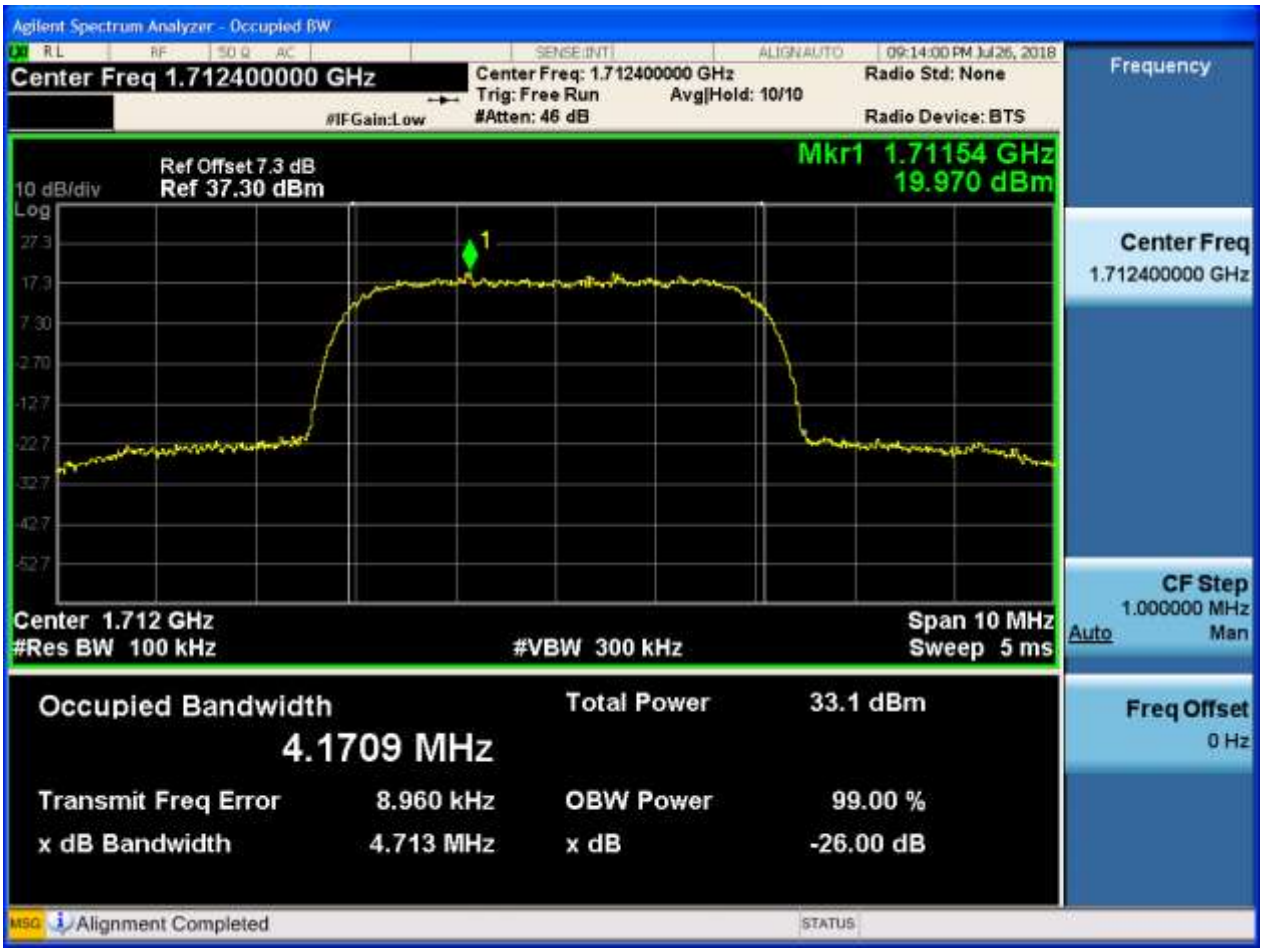


4.1.1.1.3 Test Channel = HCH

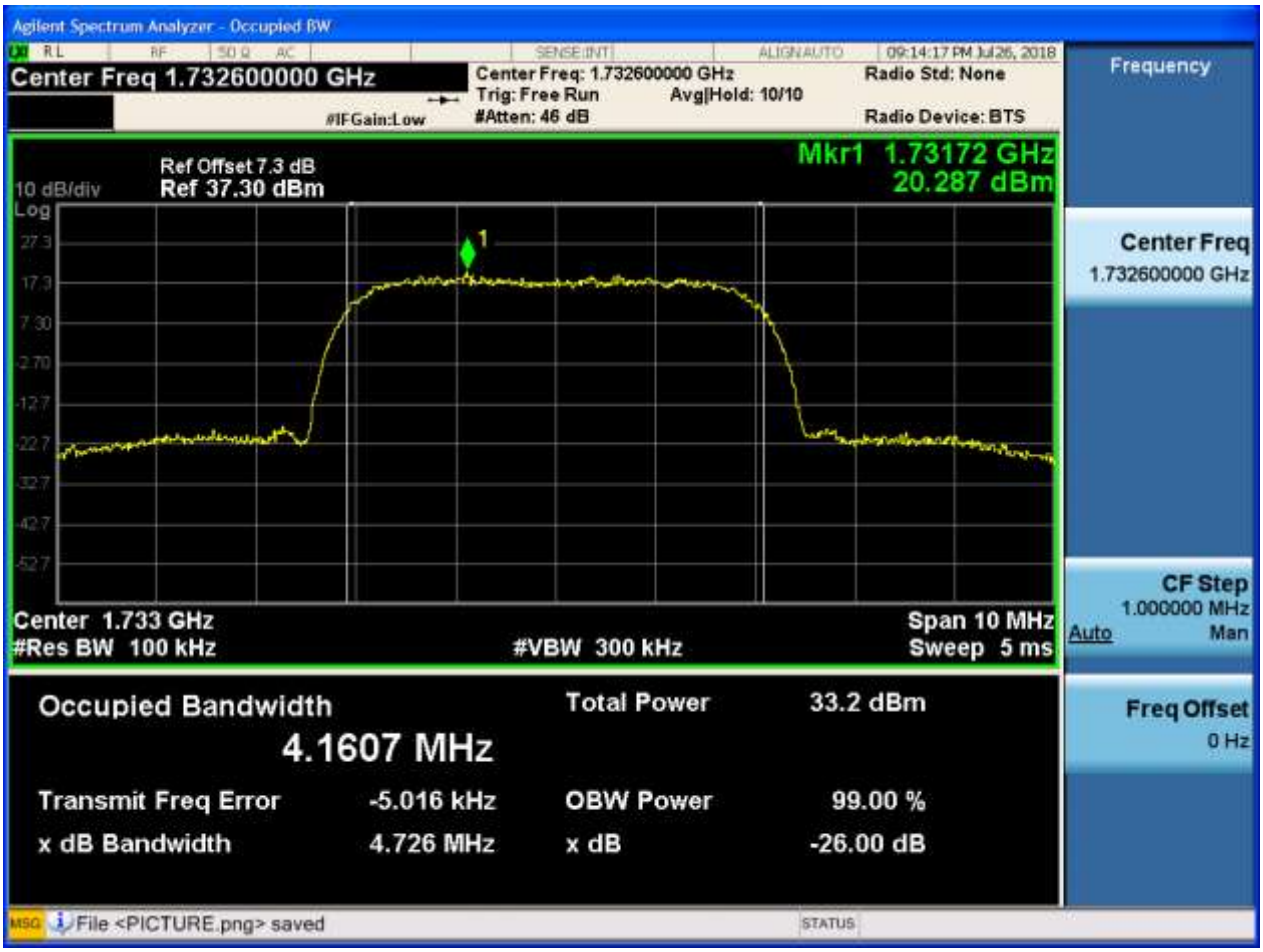
4.1.2 Test Band = WCDMA1700

4.1.2.1 Test Mode = UMTS/TM1

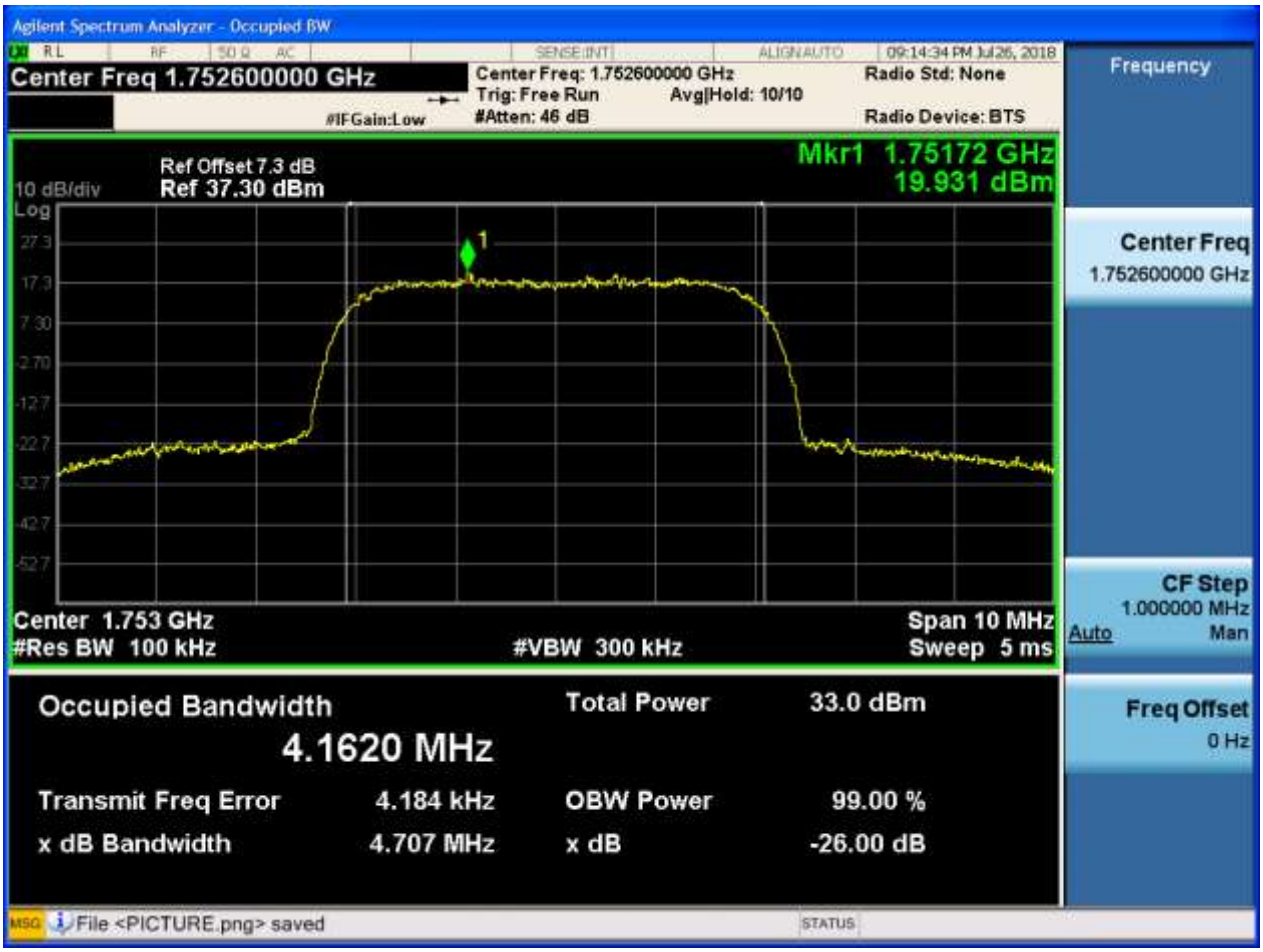
4.1.2.1.1 Test Channel = LCH



4.1.2.1.2 Test Channel = MCH



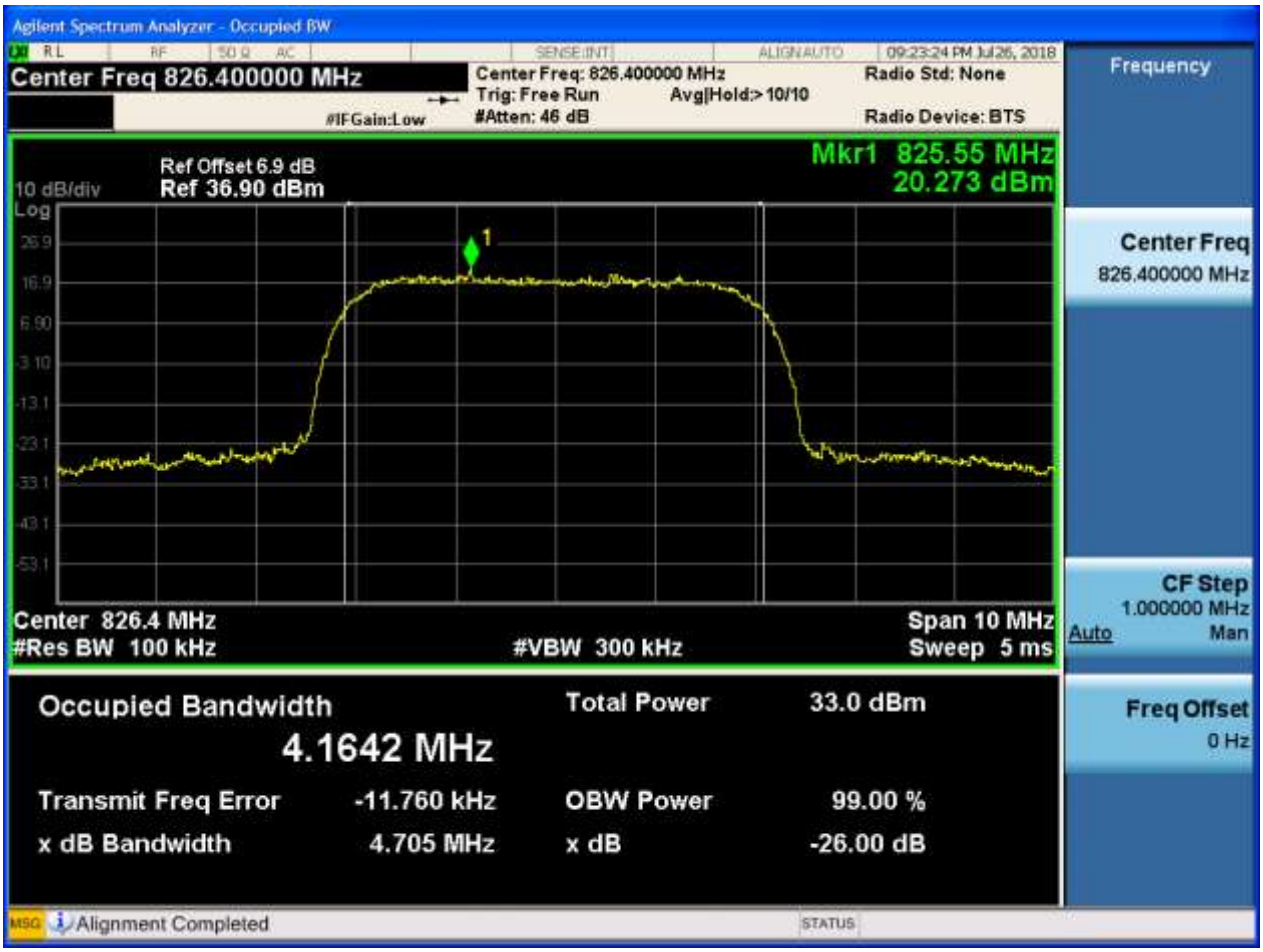
4.1.2.1.3 Test Channel = HCH



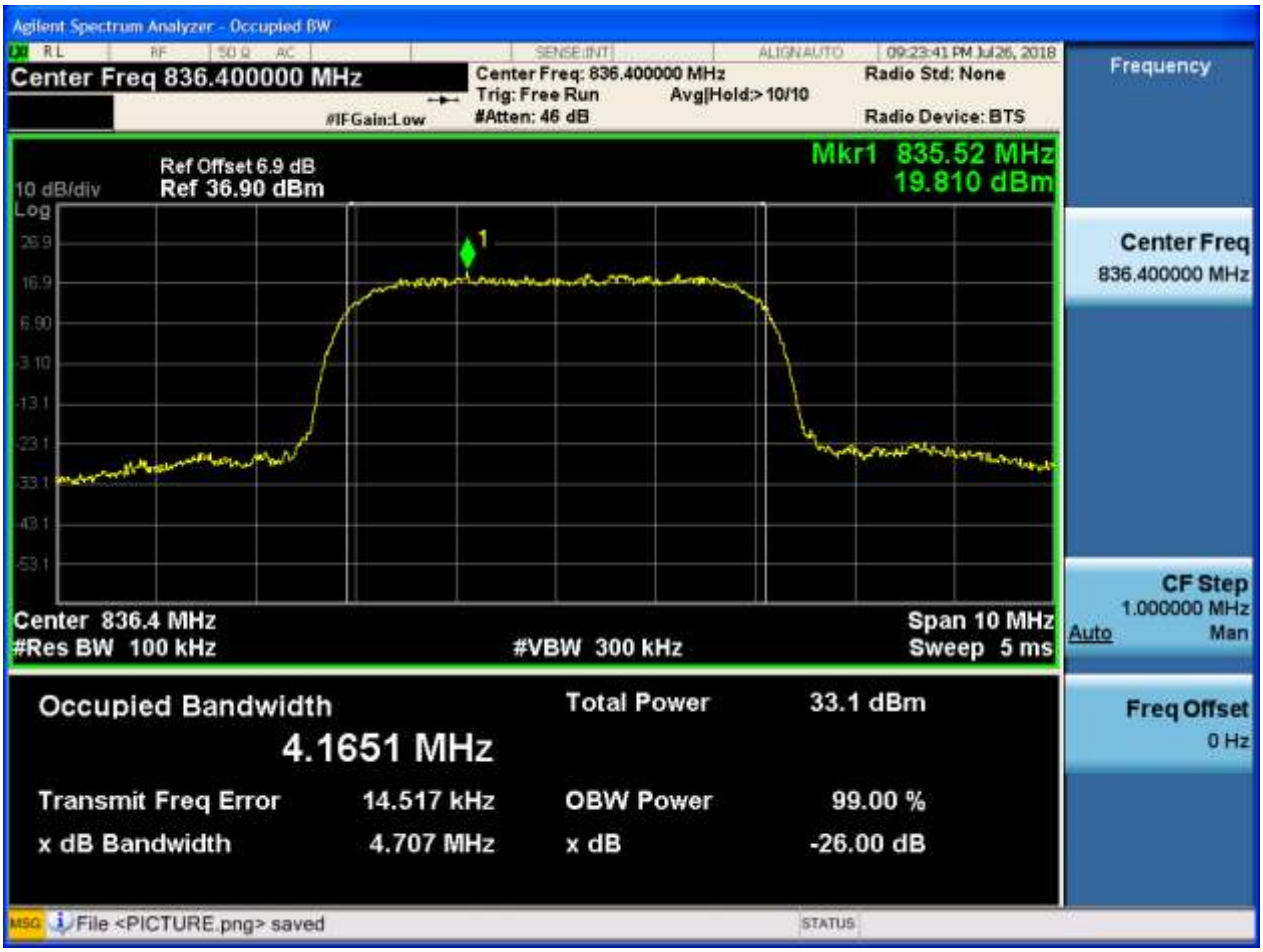
4.1.3 Test Band = WCDMA850

4.1.3.1 Test Mode = UMTS/TM1

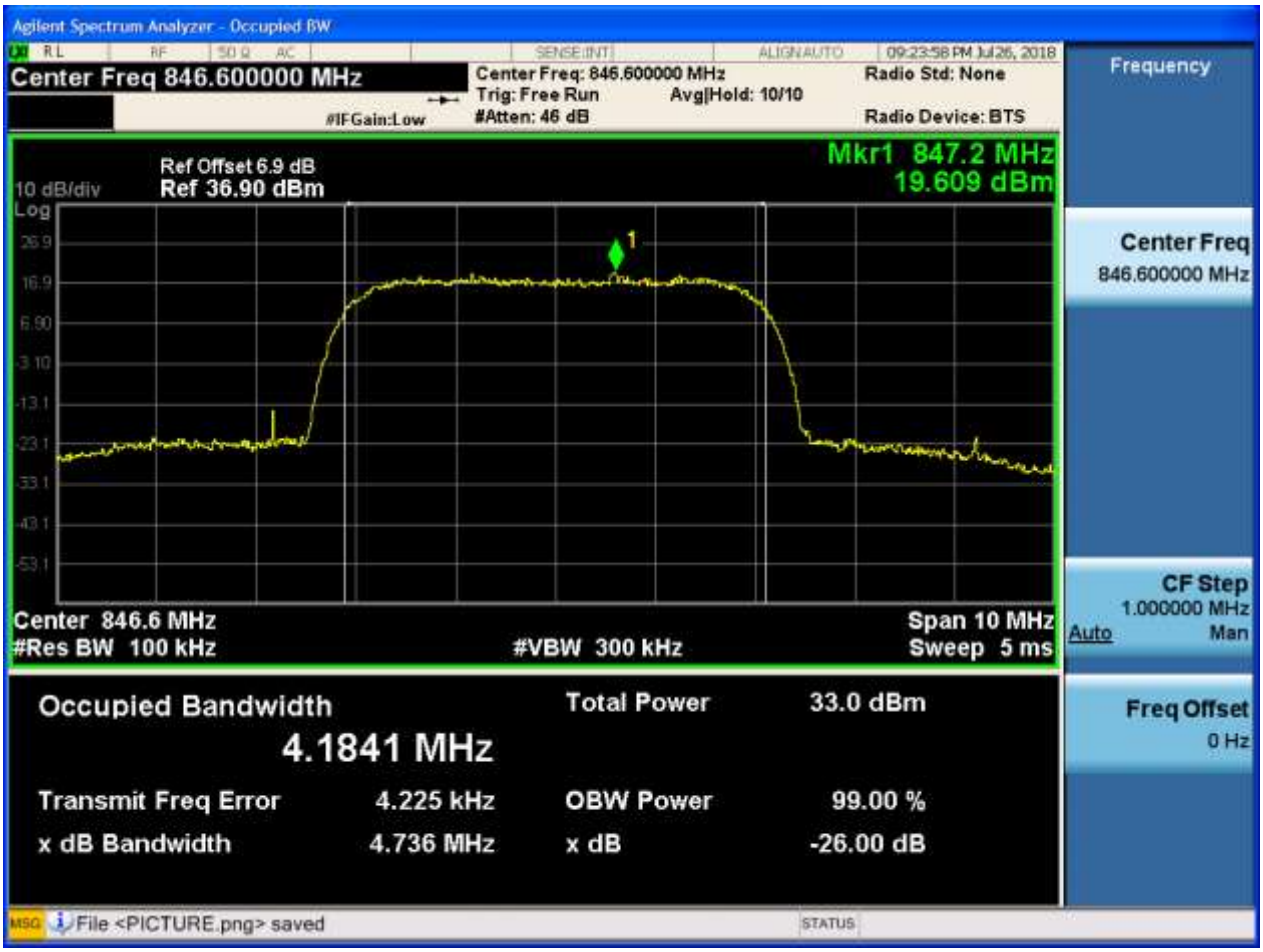
4.1.3.1.1 Test Channel = LCH



4.1.3.1.2 Test Channel = MCH



4.1.3.1.3 Test Channel = HCH



5Appendix_E: Band Edges Compliance

Part I - Test Plots

5.1 For UMTS

5.1.1 Test Band = WCDMA1900

5.1.1.1 Test Mode = UMTS/TM1

5.1.1.1.1 Test Channel = LCH

5.1.1.1.2 Test Channel = HCH

5.1.2 Test Band = WCDMA1700

5.1.2.1 Test Mode = UMTS/TM1

5.1.2.1.1 Test Channel = LCH

5.1.2.1.2 Test Channel = HCH

5.1.3 Test Band = WCDMA850

5.1.3.1 Test Mode = UMTS/TM1

5.1.3.1.1 Test Channel = LCH

5.1.3.1.2 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.

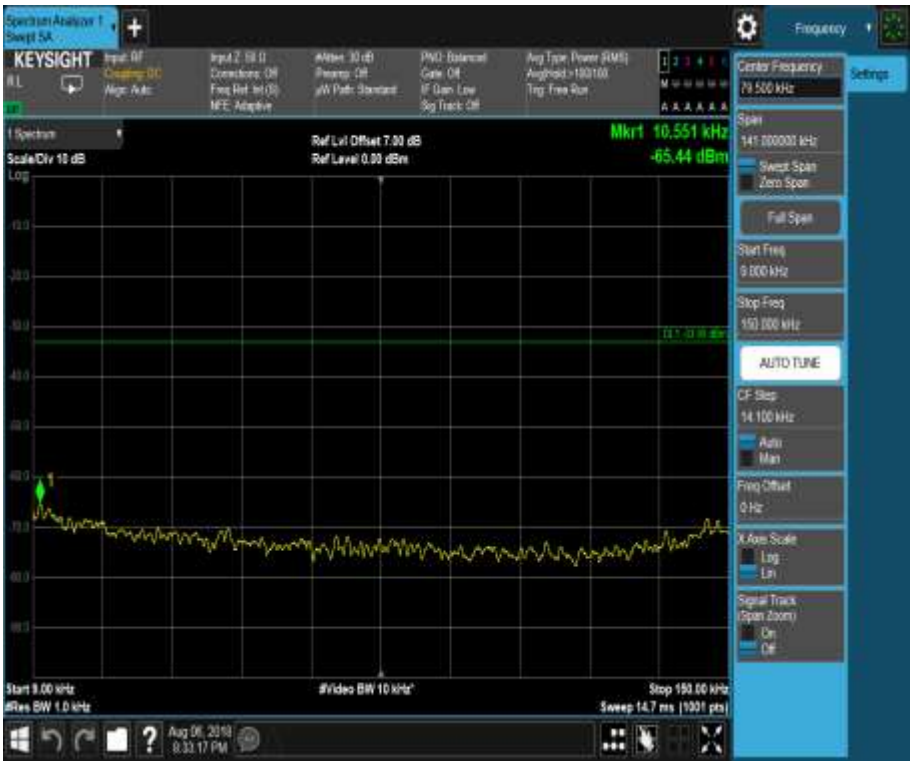
Part I - Test Plots

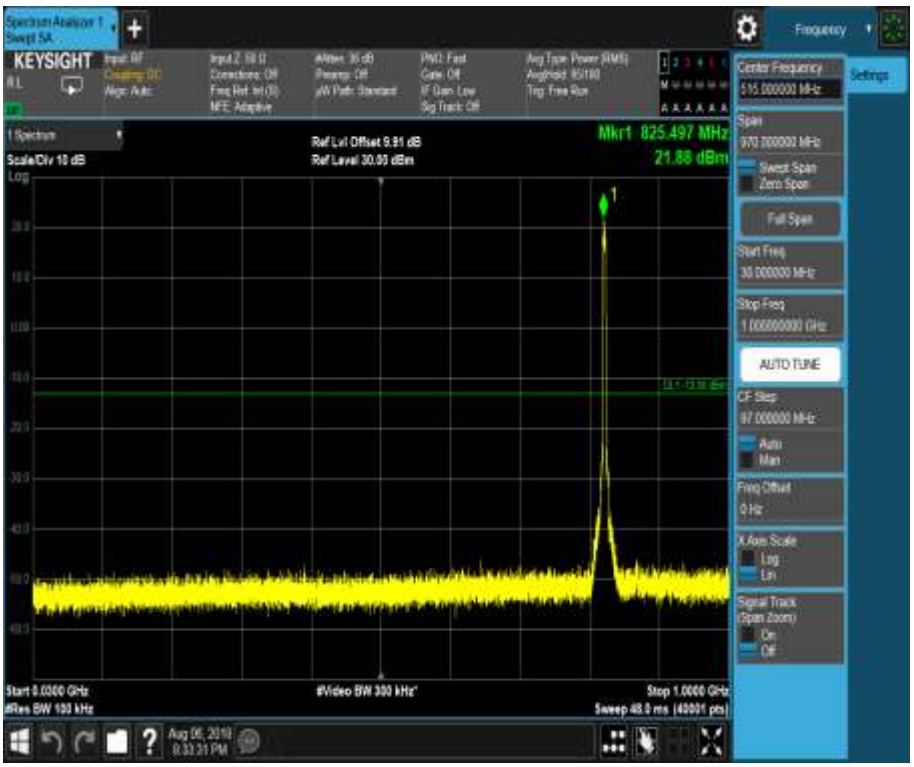
6.1 For UMTS

6.1.1 Test Band = WCDMA850

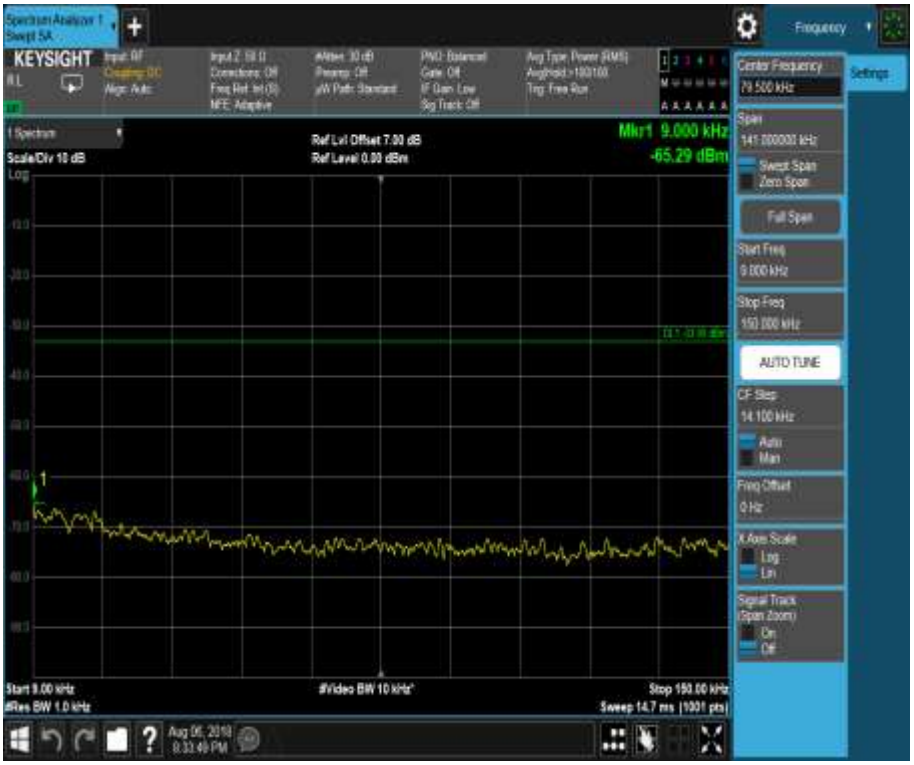
6.1.1.1 Test Mode = UMTS/TM1

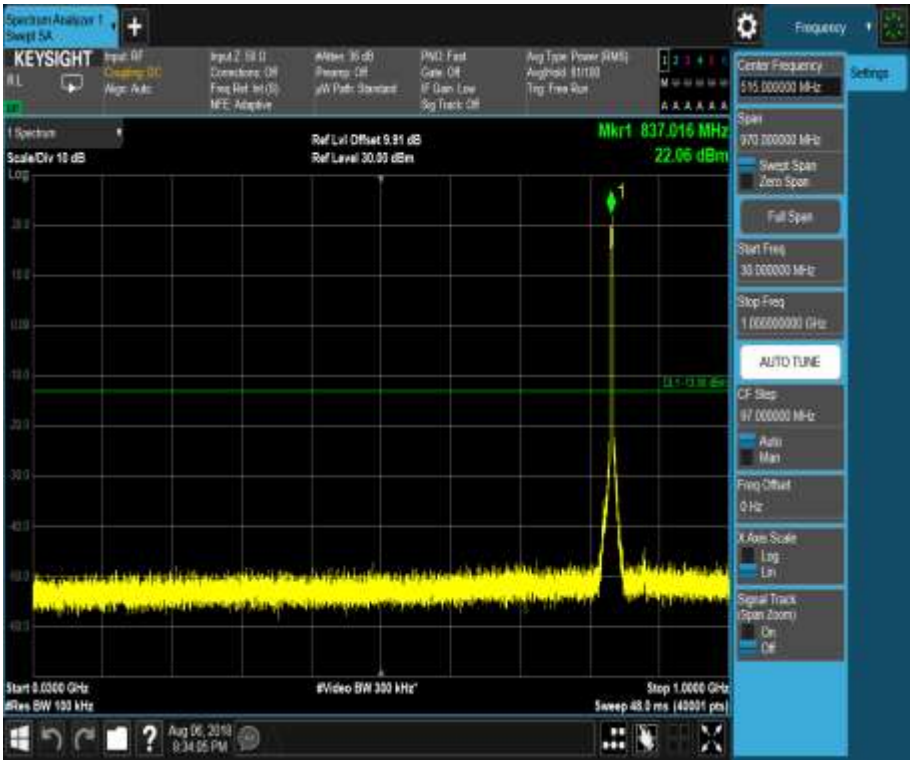
6.1.1.1.1 Test Channel = LCH



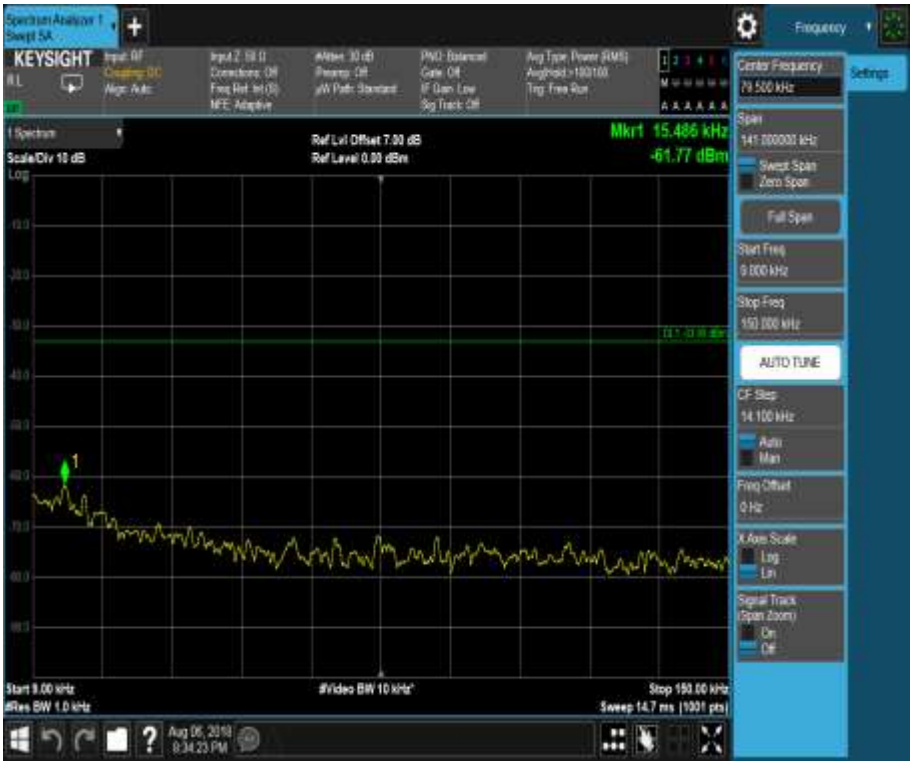


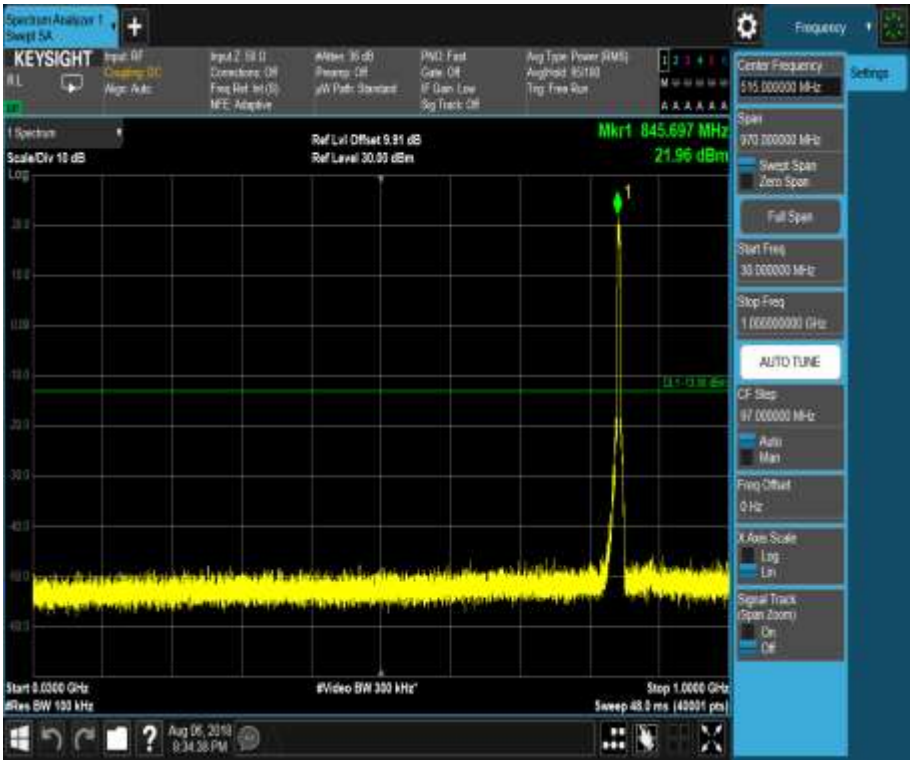
6.1.1.1.2 Test Channel = MCH





6.1.1.1.3 Test Channel = HCH

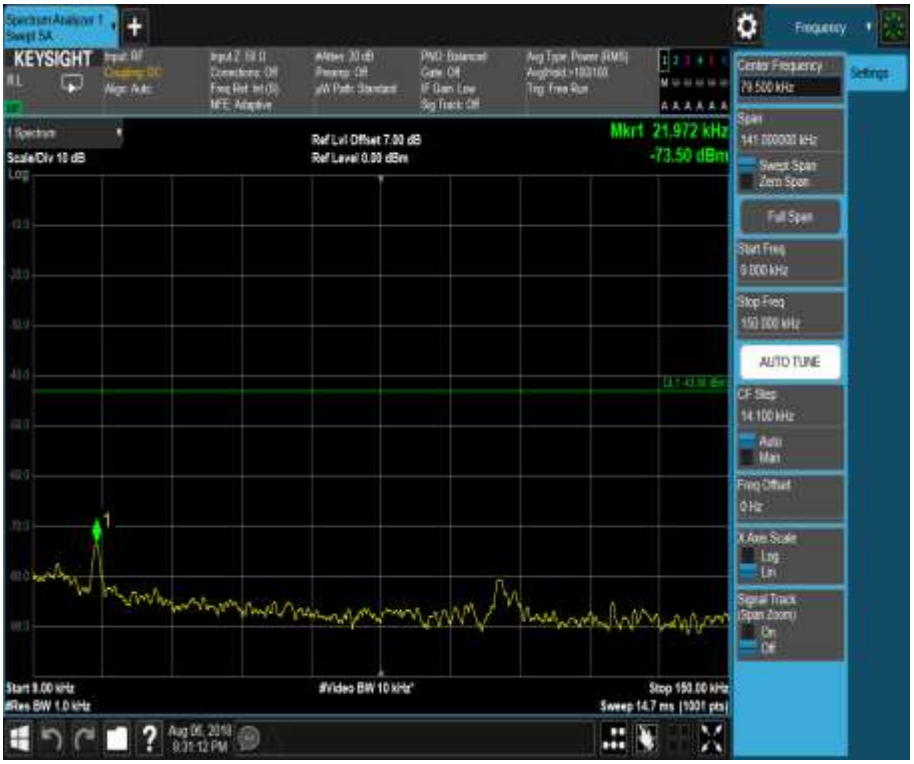




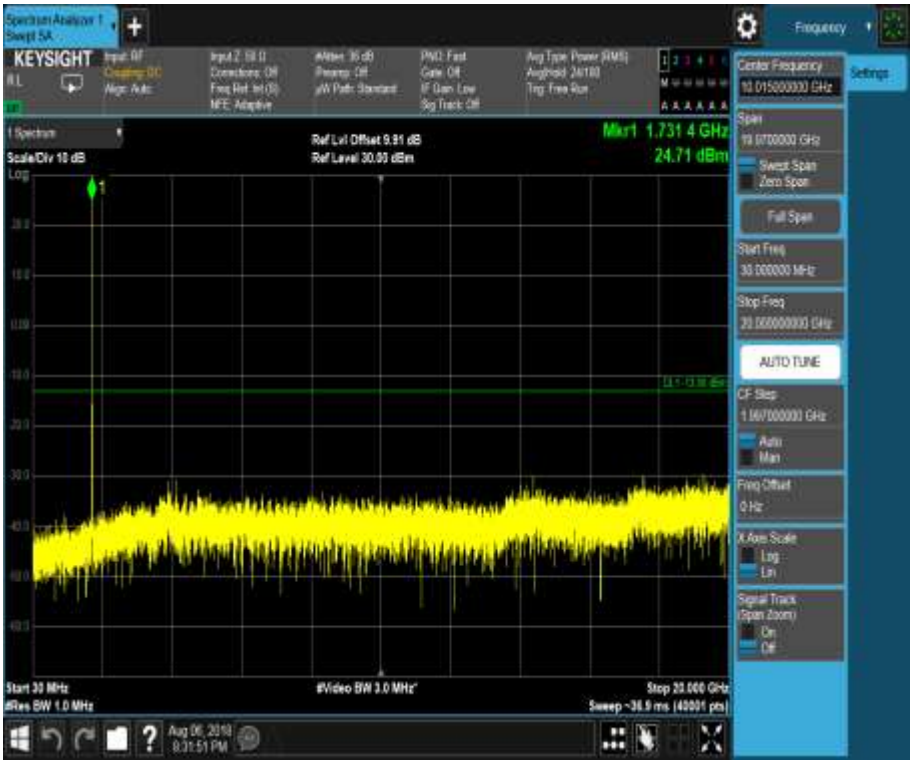
6.1.2 Test Band = WCDMA1700

6.1.2.1 Test Mode = UMTS/TM1

6.1.2.1.1 Test Channel = LCH



6.1.2.1.2 Test Channel = MCH

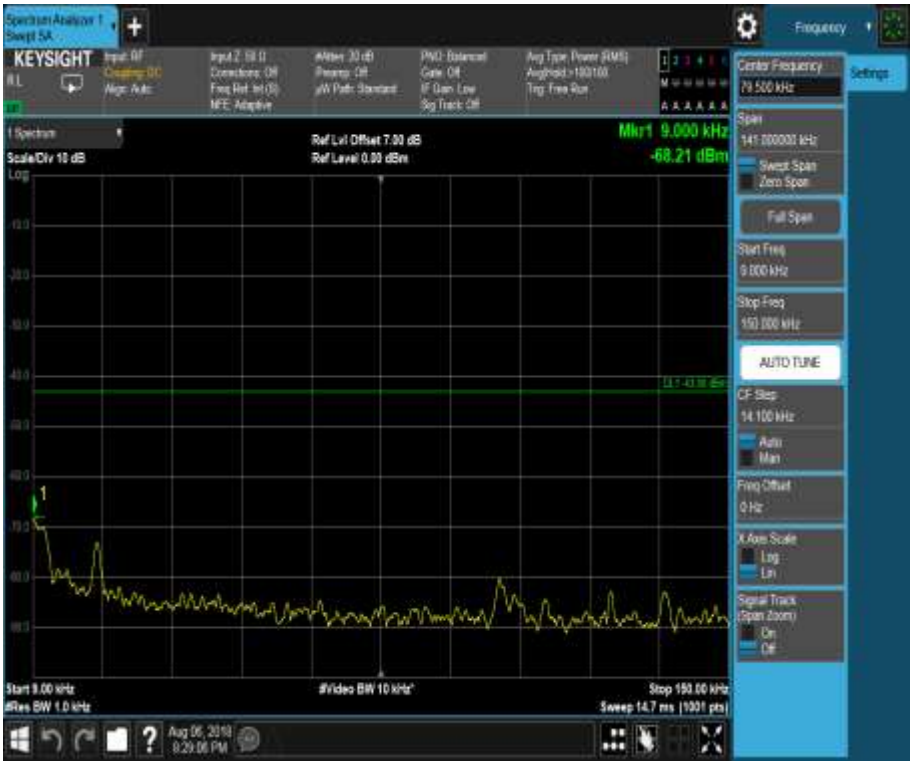


6.1.2.1.3 Test Channel = HCH

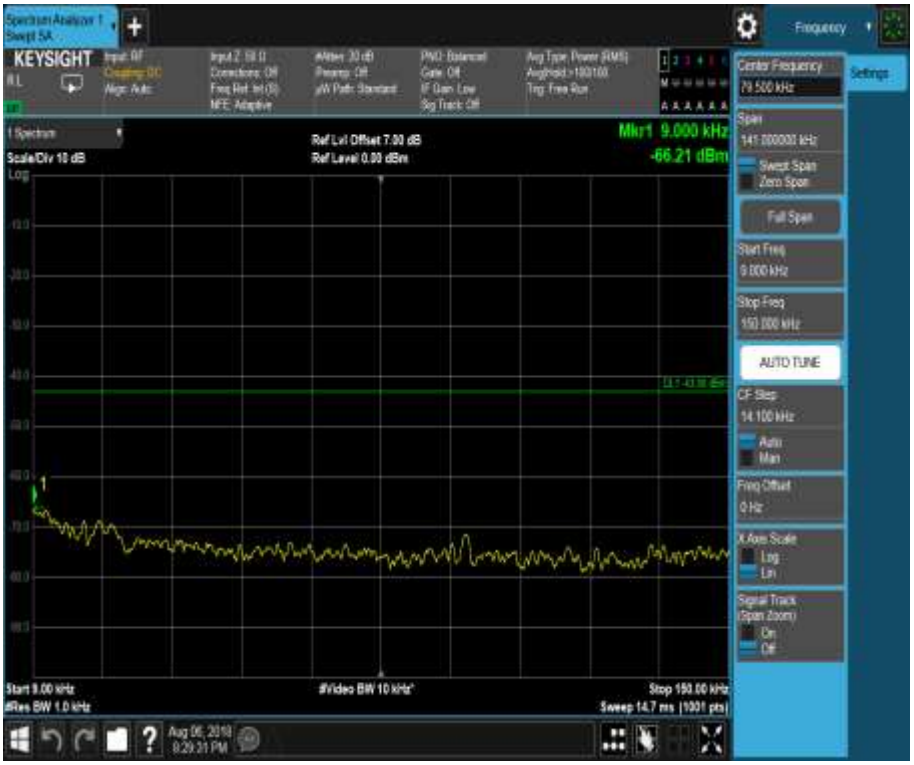
6.1.3 Test Band = WCDMA1900

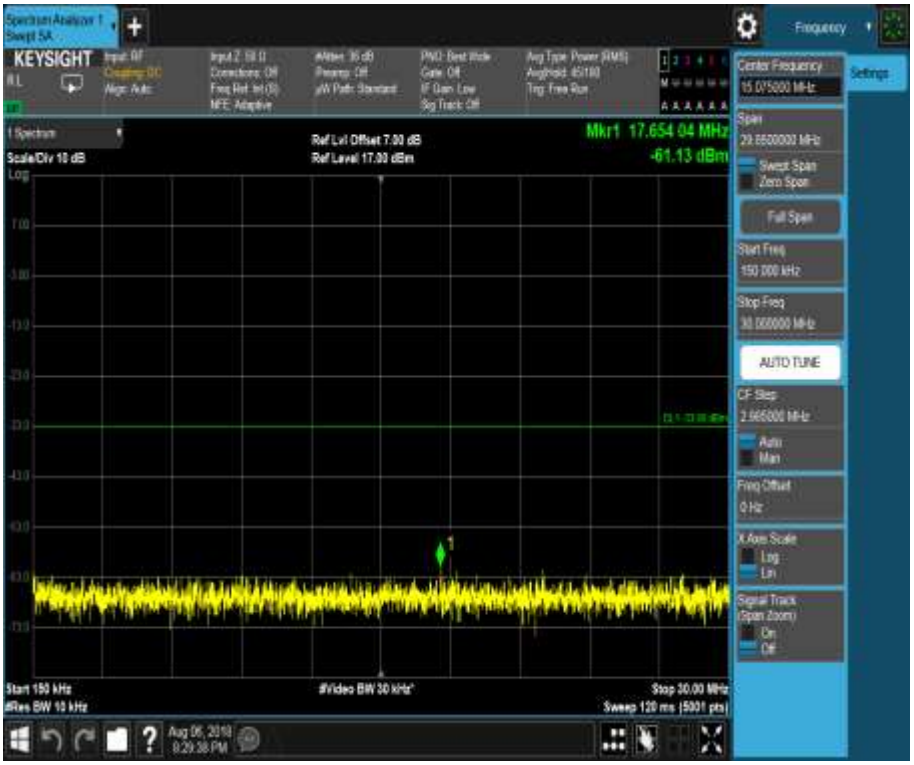
6.1.3.1 Test Mode = UMTS/TM1

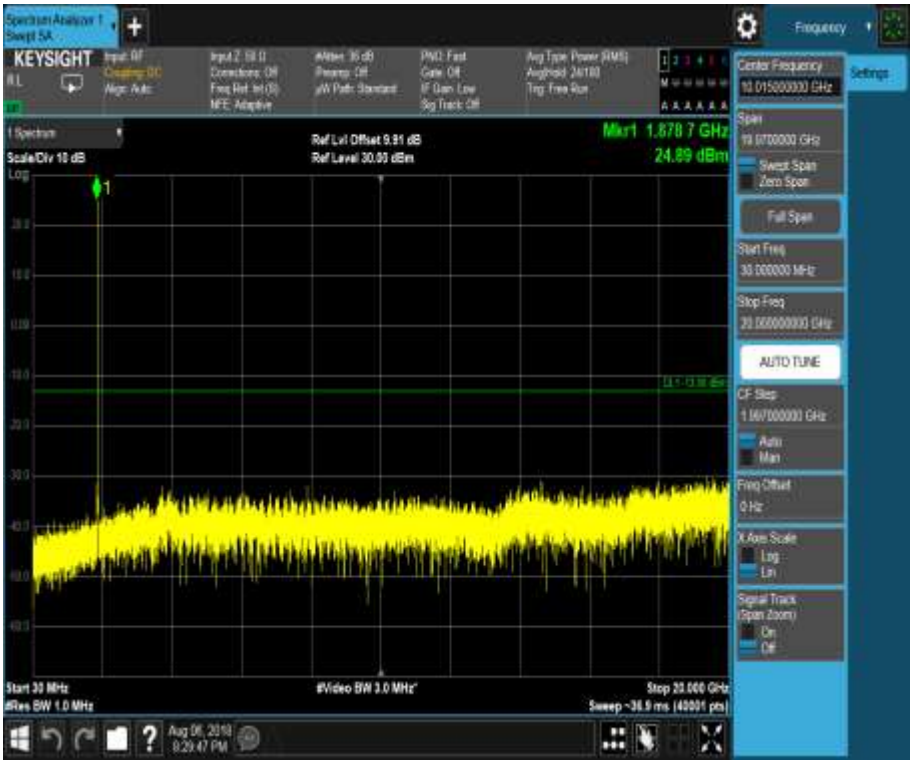
6.1.3.1.1 Test Channel = LCH



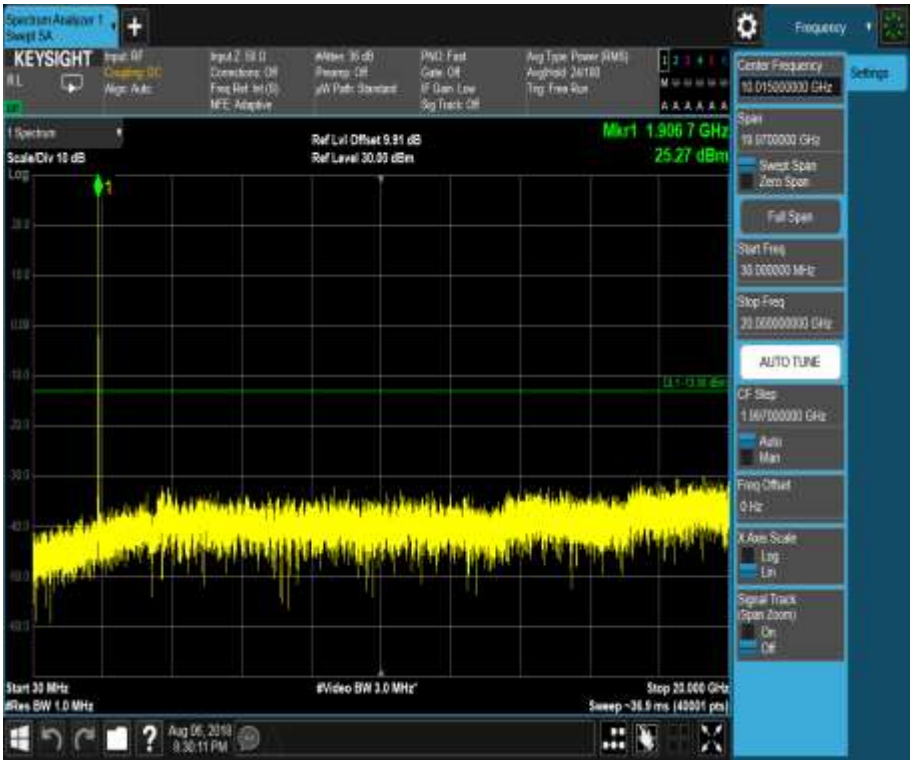
6.1.3.1.2 Test Channel = MCH







6.1.3.1.3 Test Channel = HCH



7Appendix_G: Field Strength of Spurious Radiation

Note:We tested all modes, but the data presented below is the worst case.

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

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

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

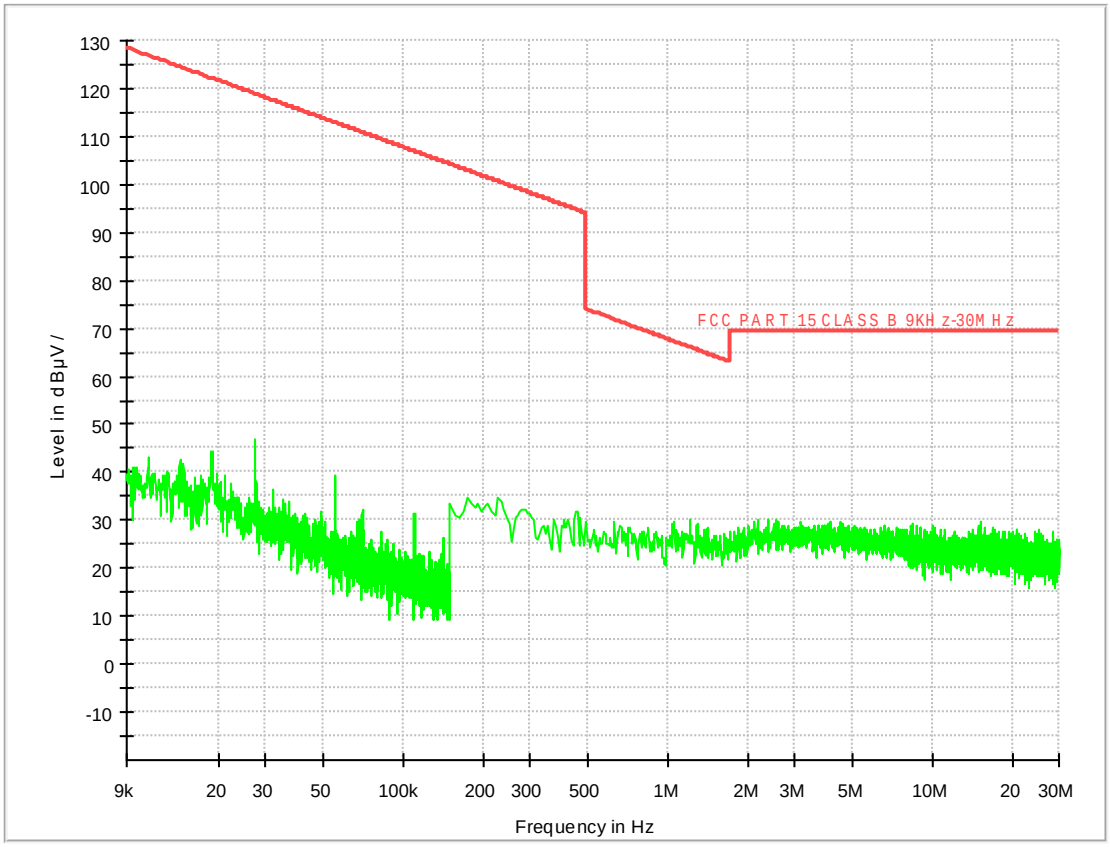
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

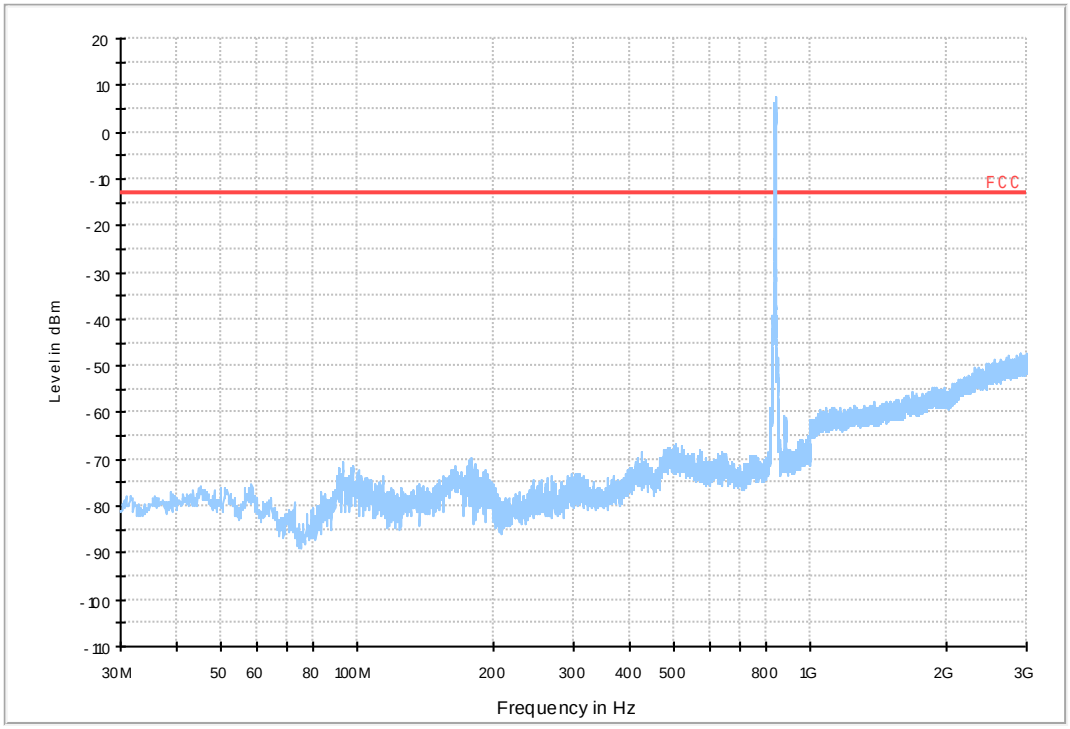
7.1 For UMTS

7.1.1 Test Band = WCDMA850_ANT1

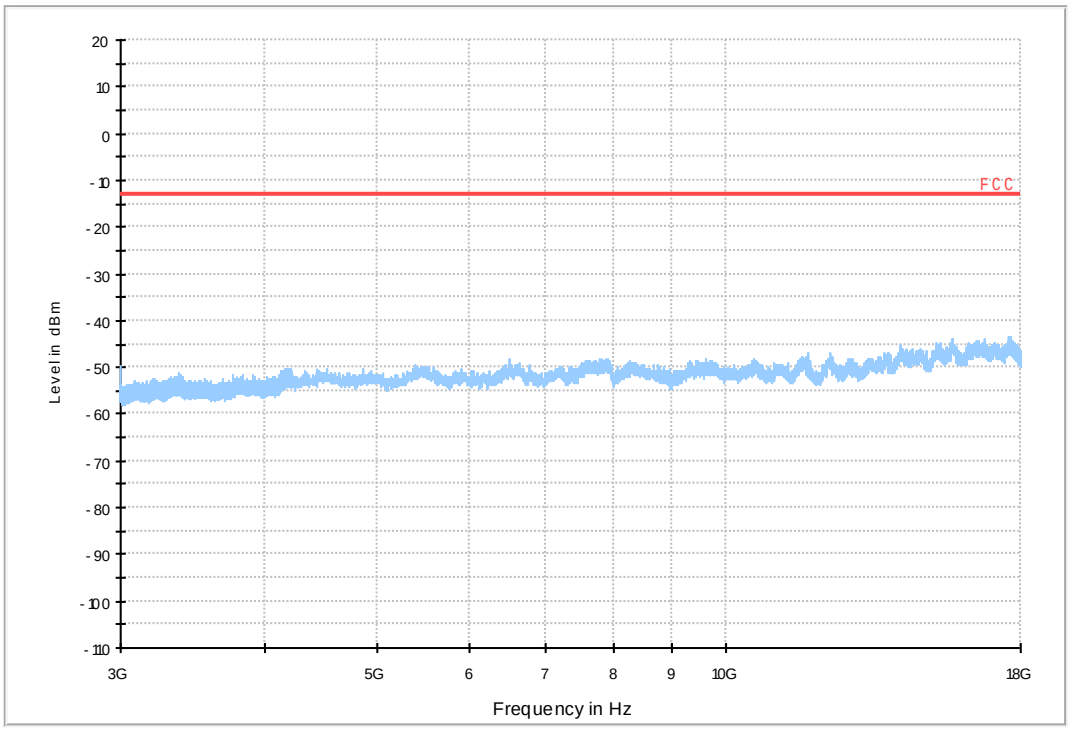
7.1.1.1 Test Mode = UMTS/TM1



06 FCC PART 22 WCDMA850_L

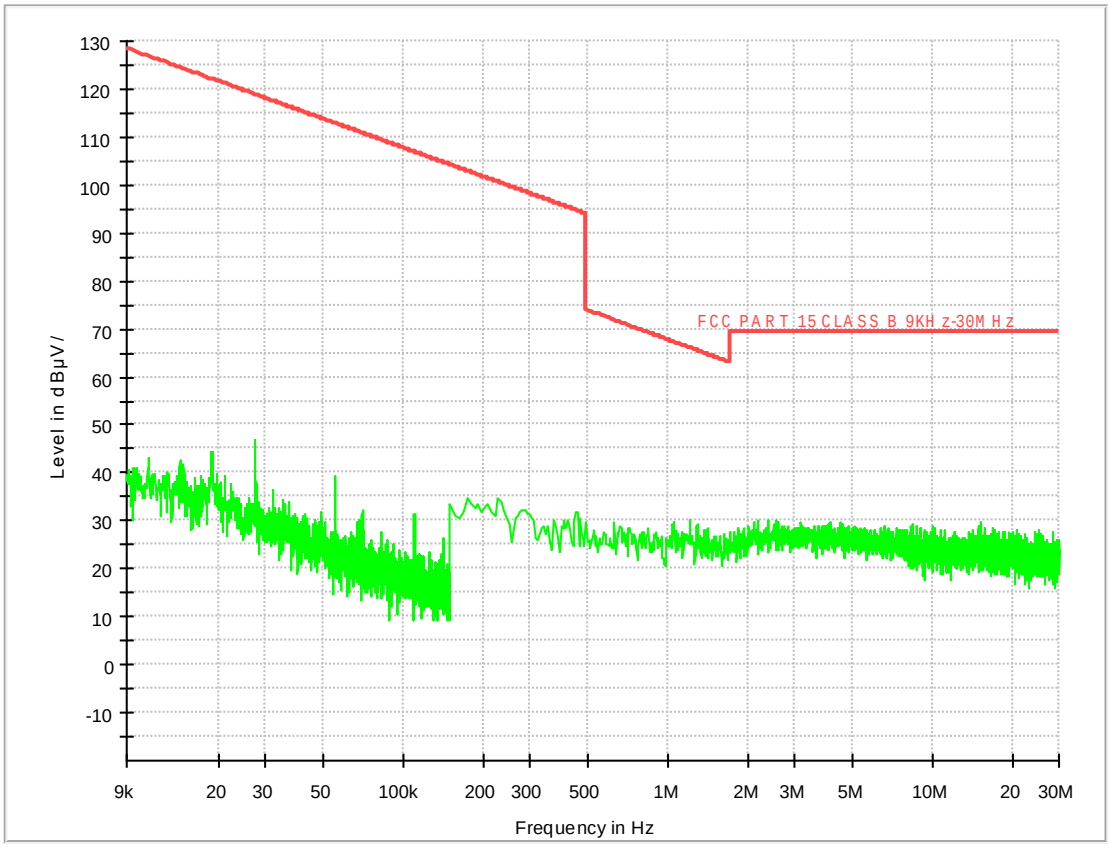


05 FCC PART 22 WCDMA850_H

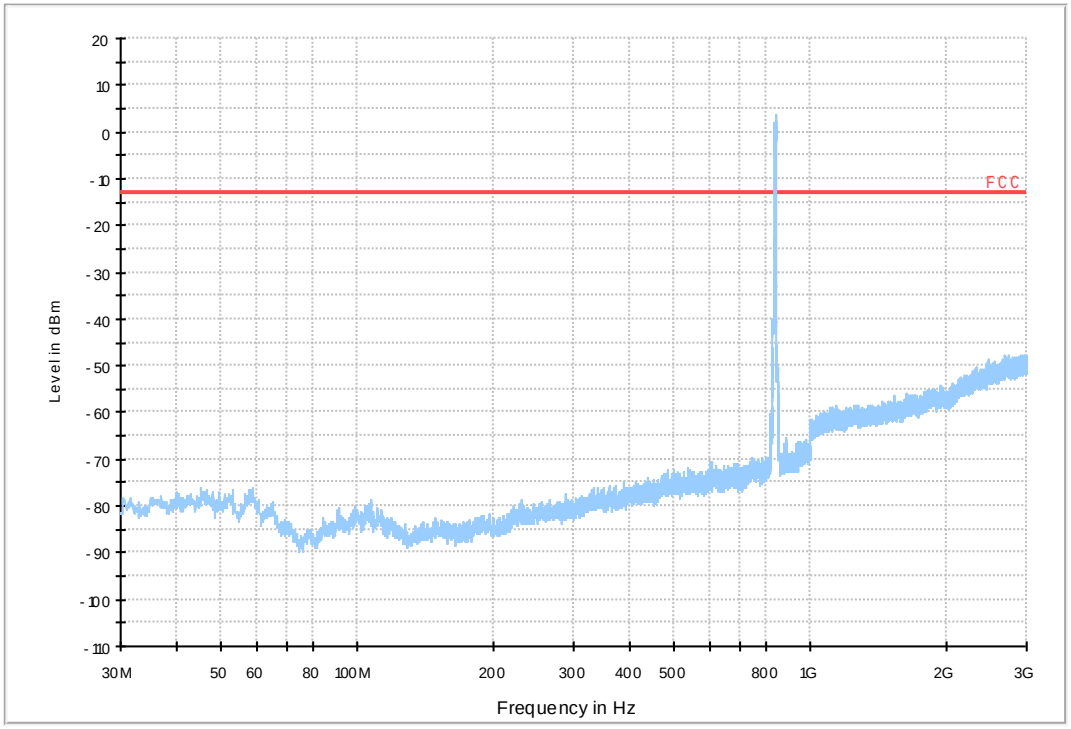


7.1.2 Test Band = WCDMA850_ANT2

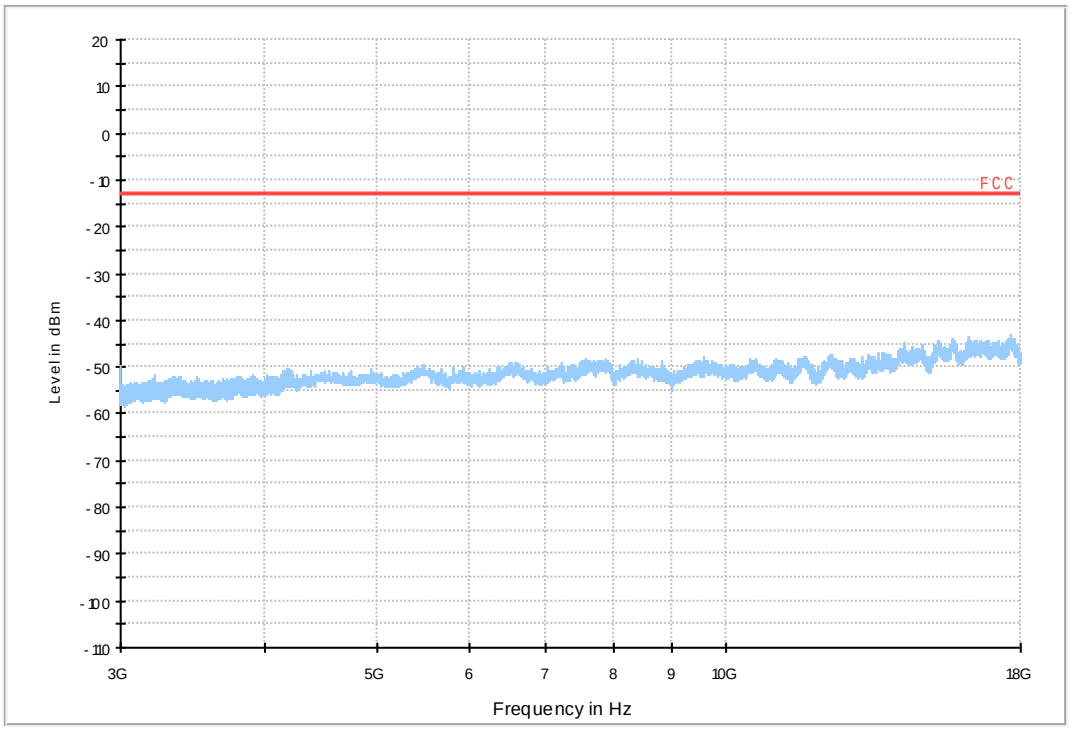
7.1.2.1 Test Mode = UMTS/TM1



06 FCC PART 22 WCDMA850_L

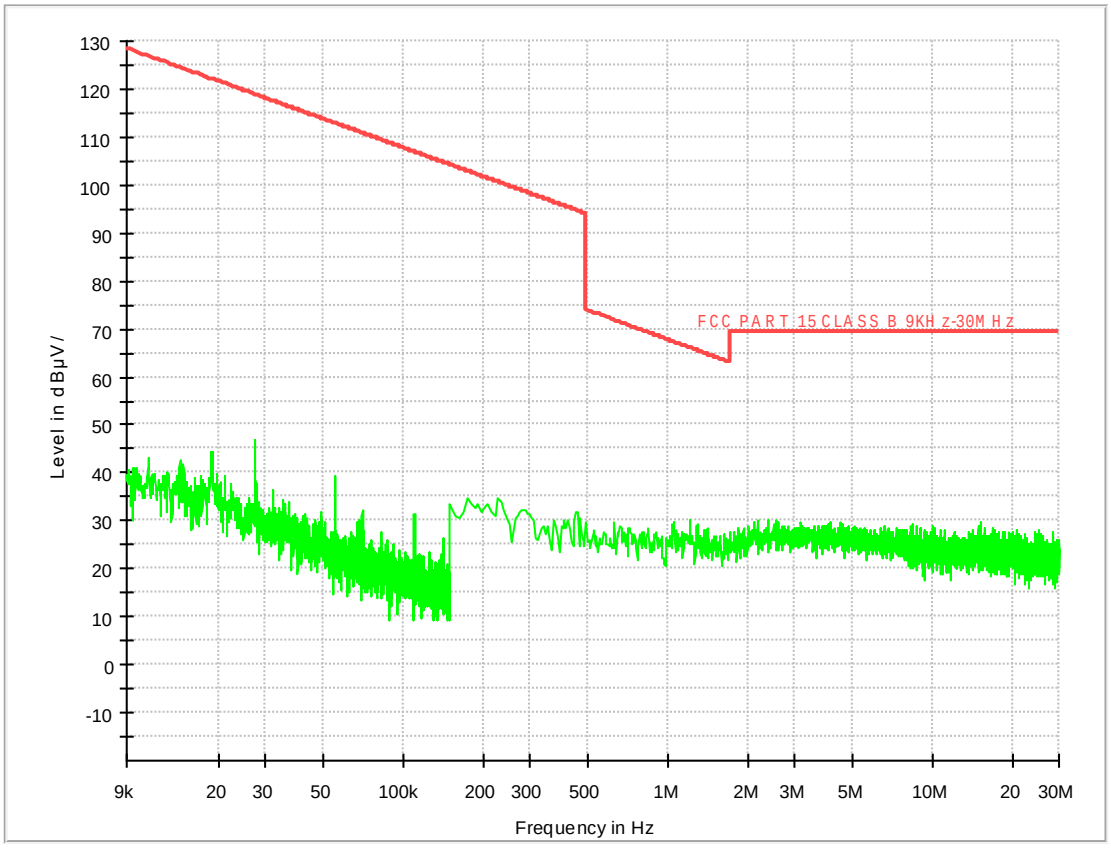


05 FCC PART 22 WCDMA850_H

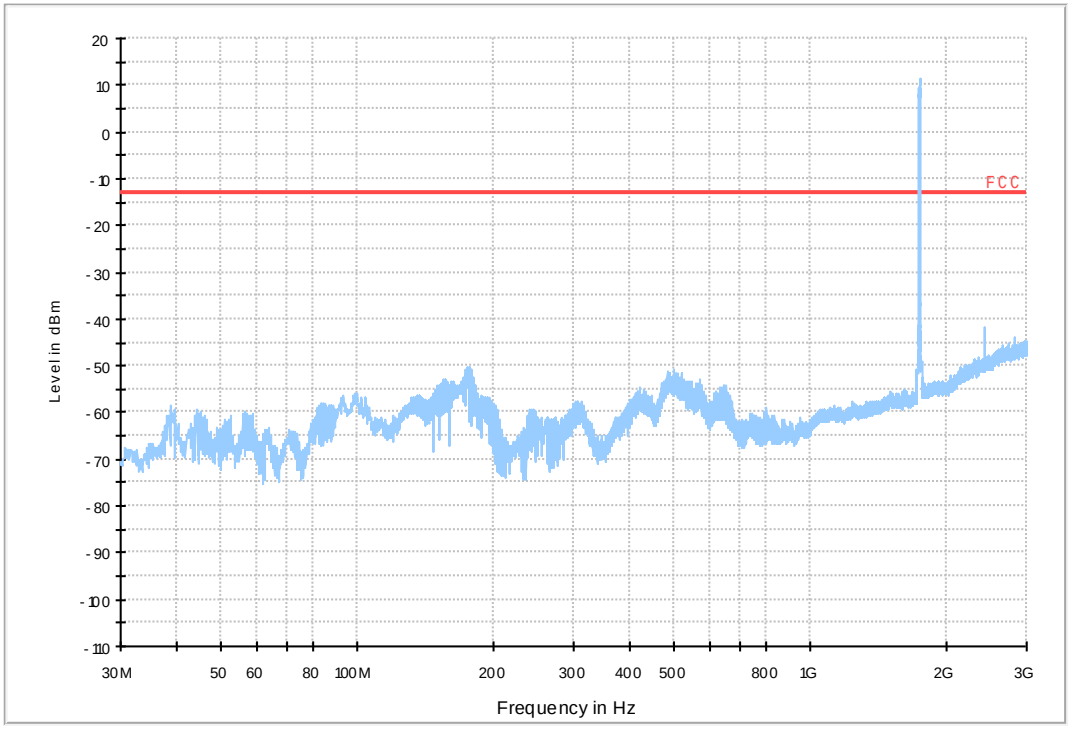


7.1.3 Test Band = WCDMA1700_ANT1

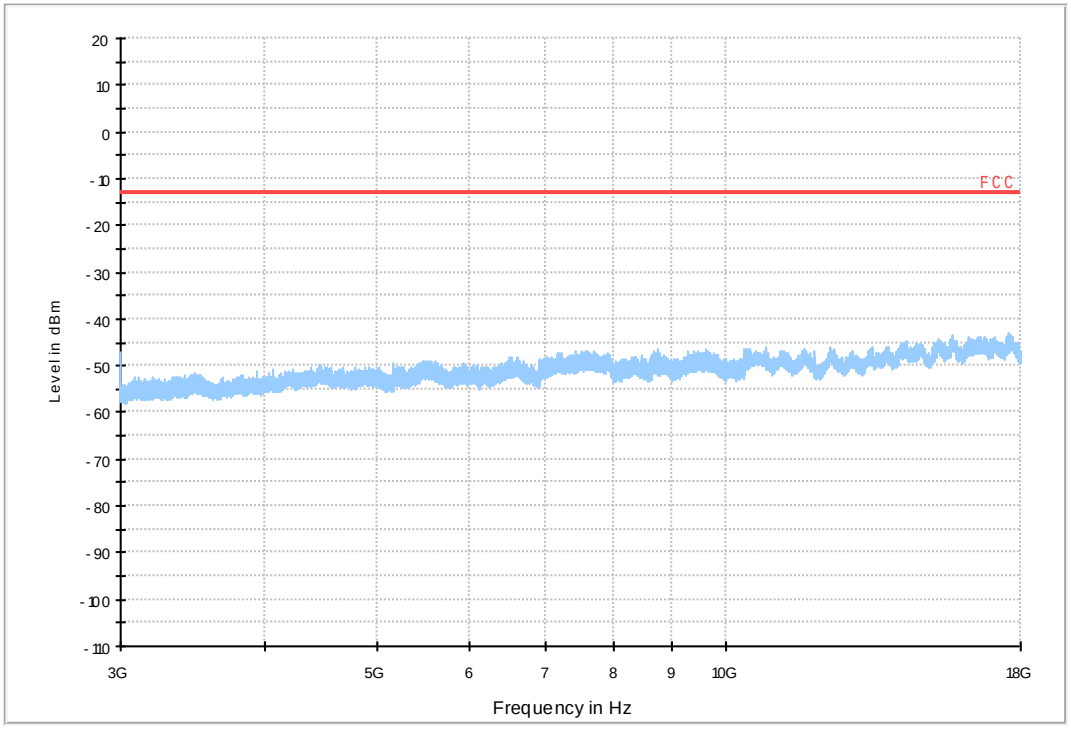
7.1.3.1 Test Mode = UMTS/TM1



18 FCC PART 27 WCDMA1700_L

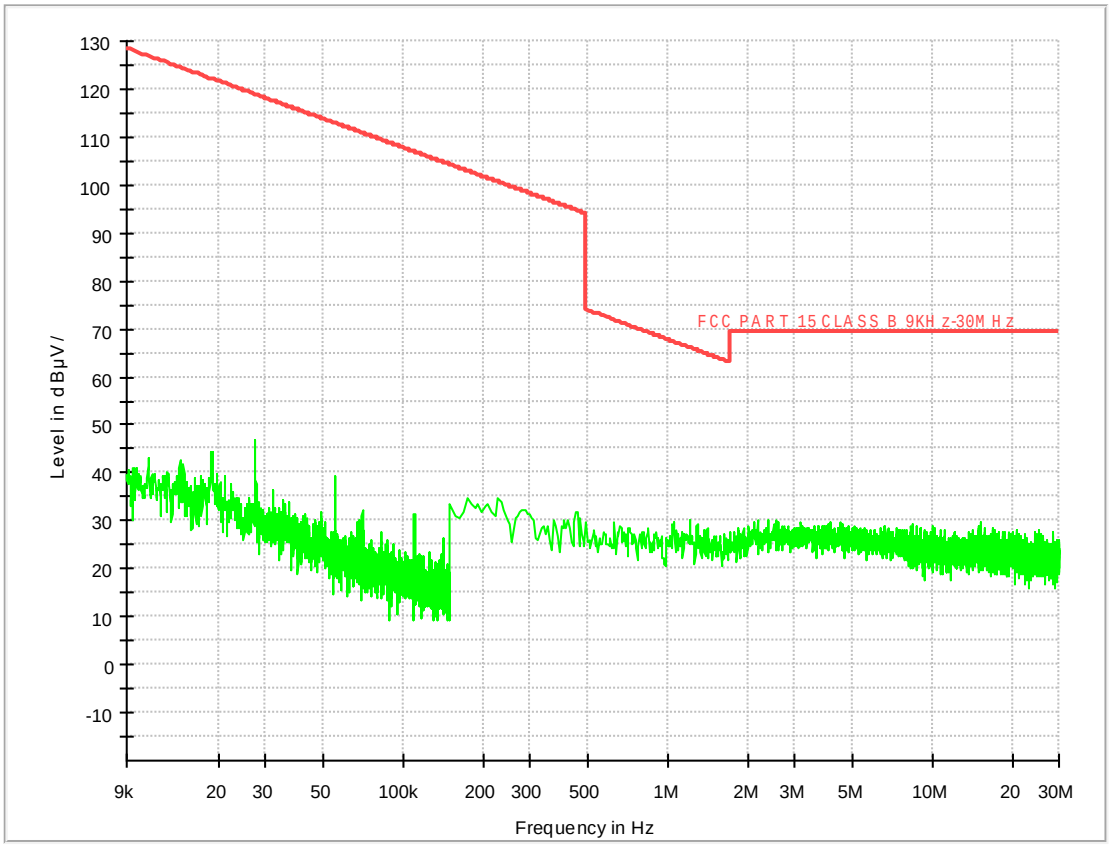


17 FCC PART 27 WCDMA1700_H

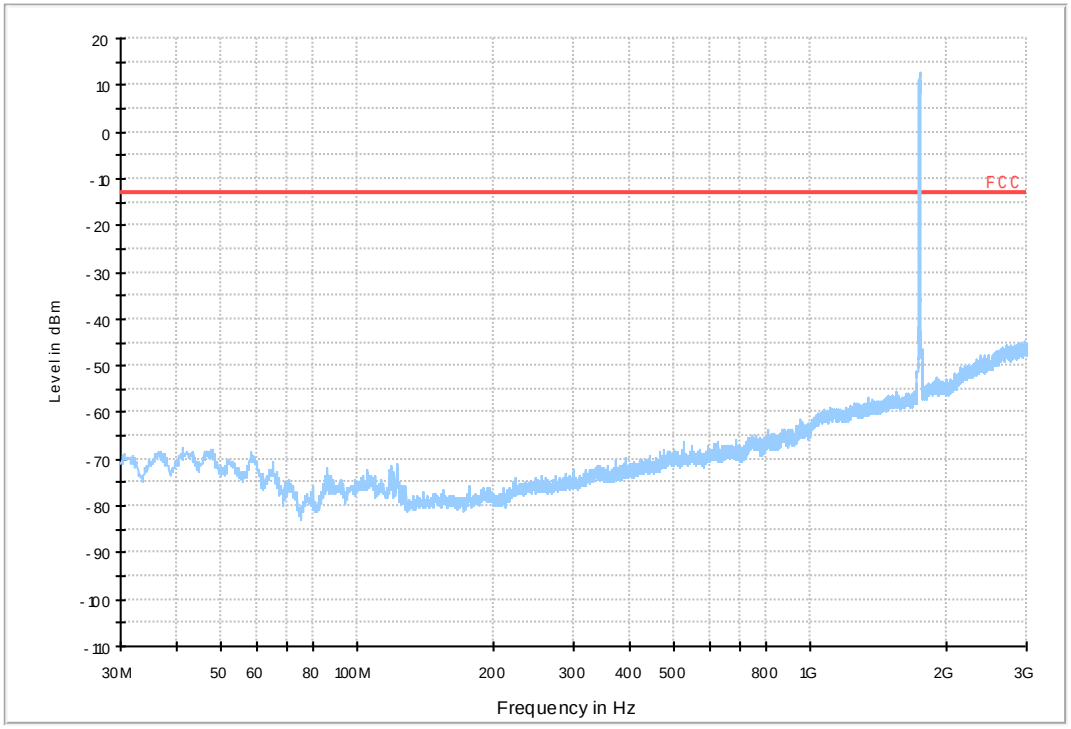


7.1.4 Test Band = WCDMA1700_ANT2

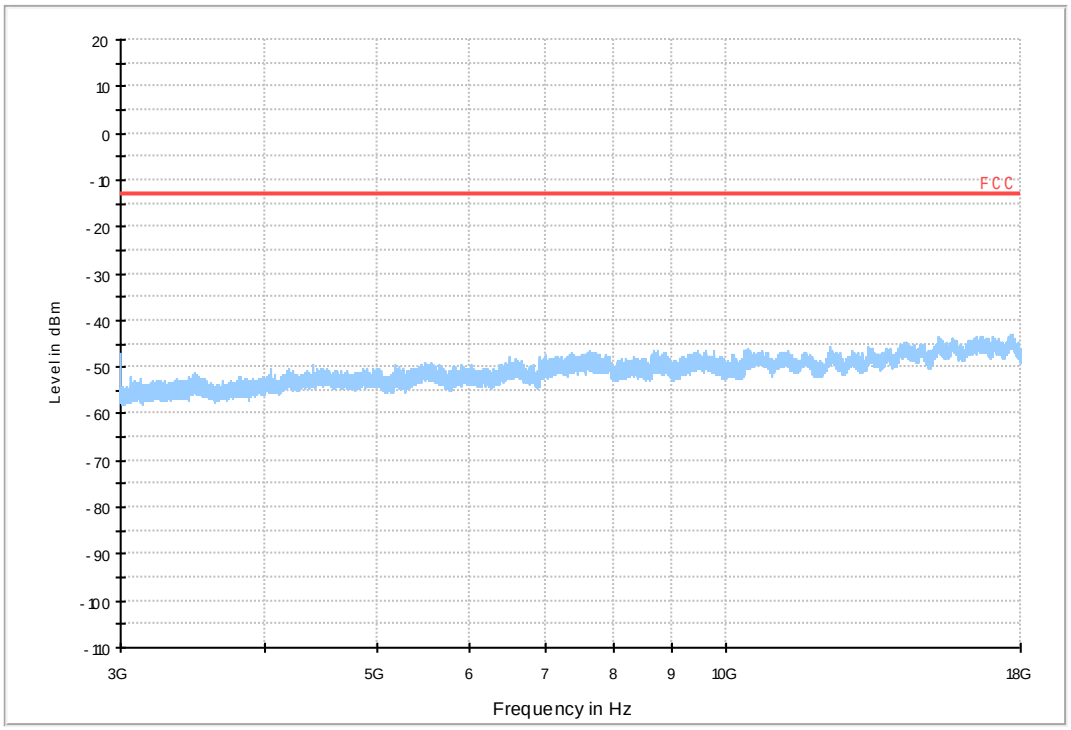
7.1.4.1 Test Mode = UMTS/TM1



18 FCC PART 27 WCDMA1700_L

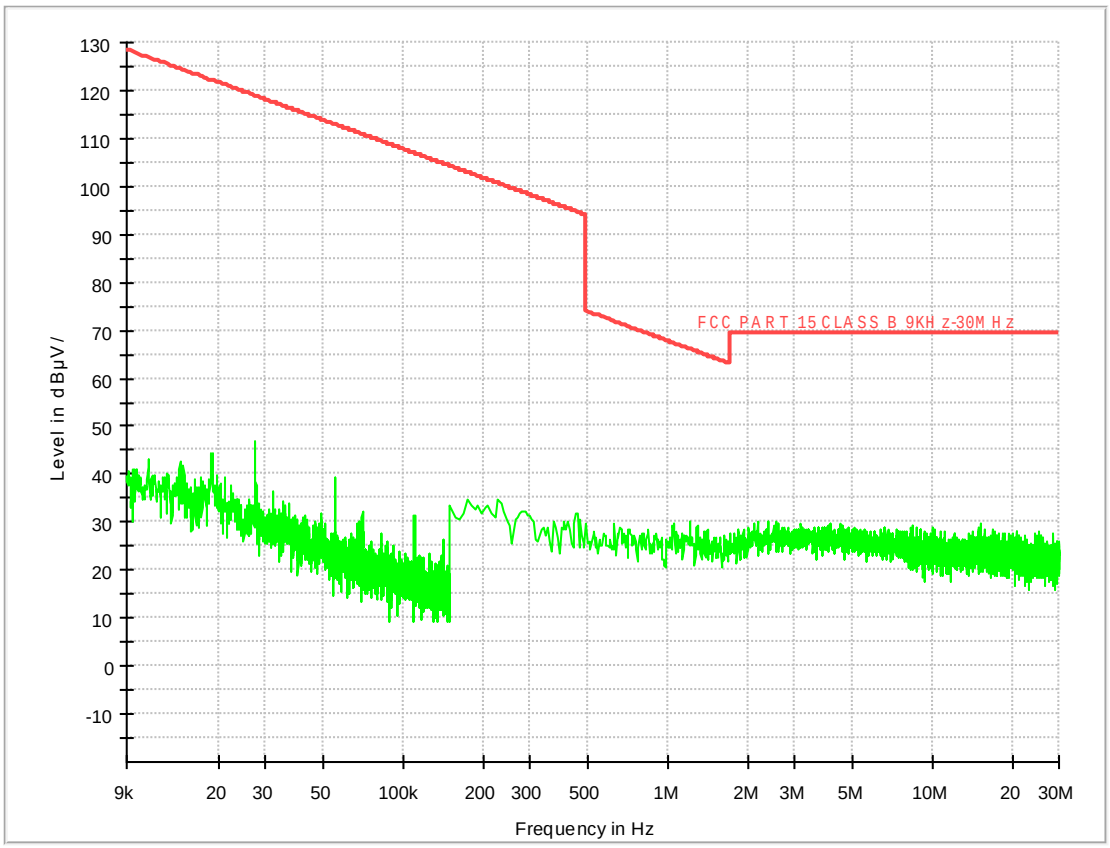


17 FCC PART 27 WCDMA1700_H

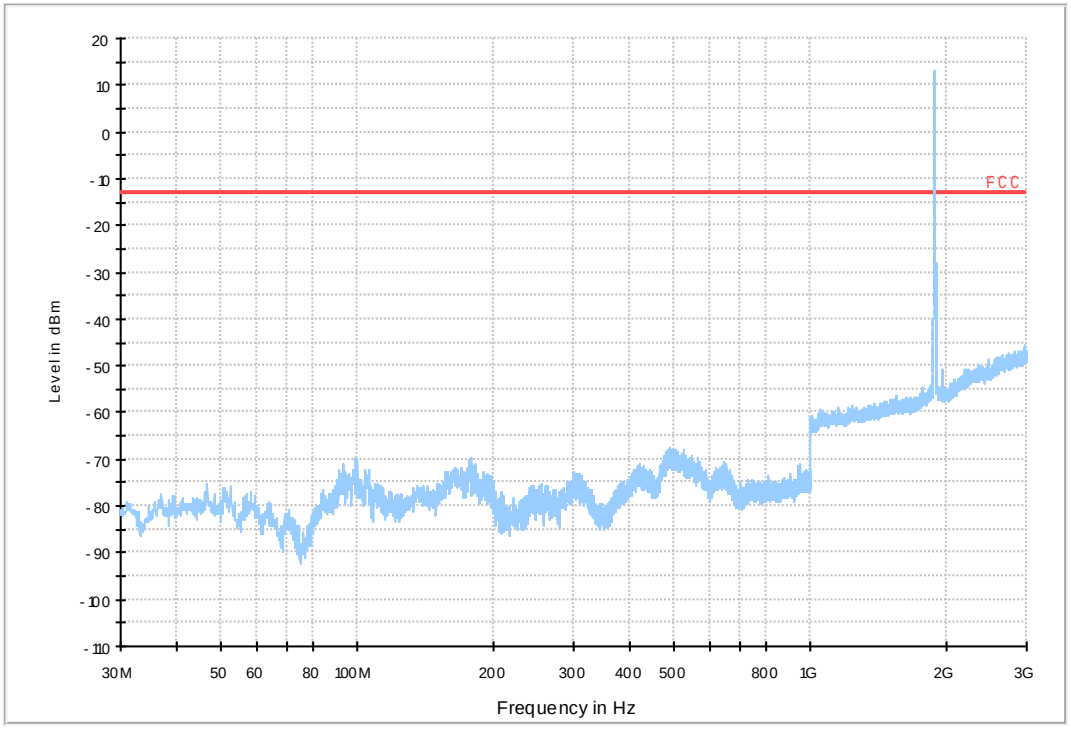


7.1.5 Test Band = WCDMA1900_ANT1

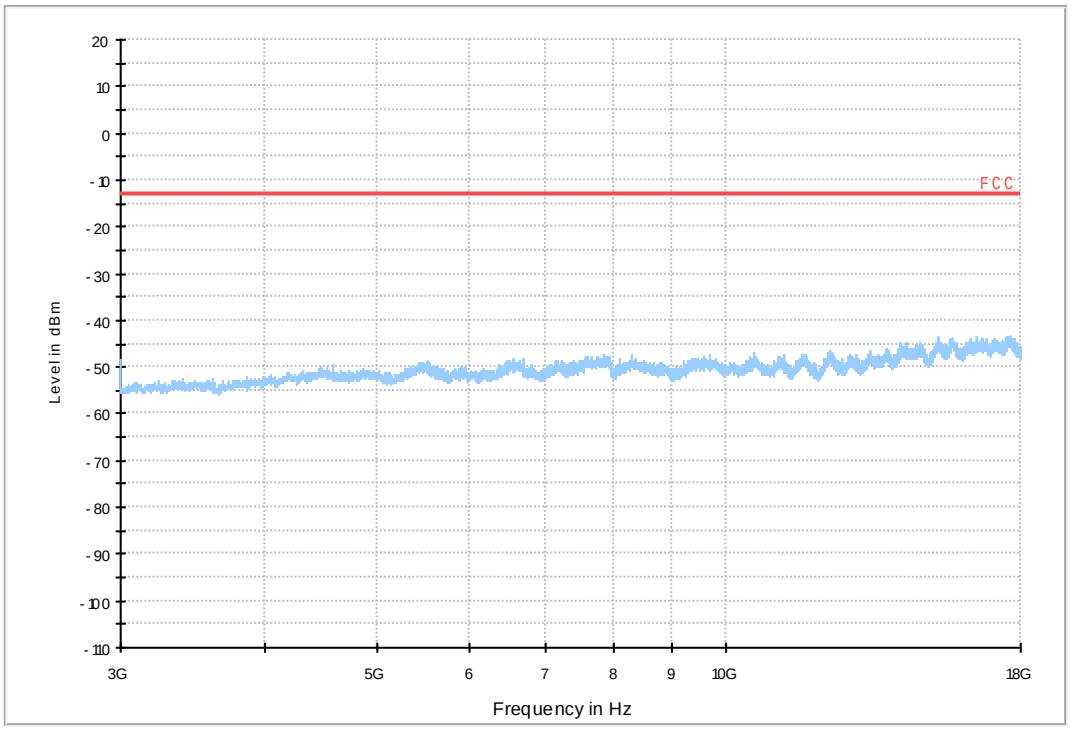
7.1.5.1 Test Mode = UMTS/TM1



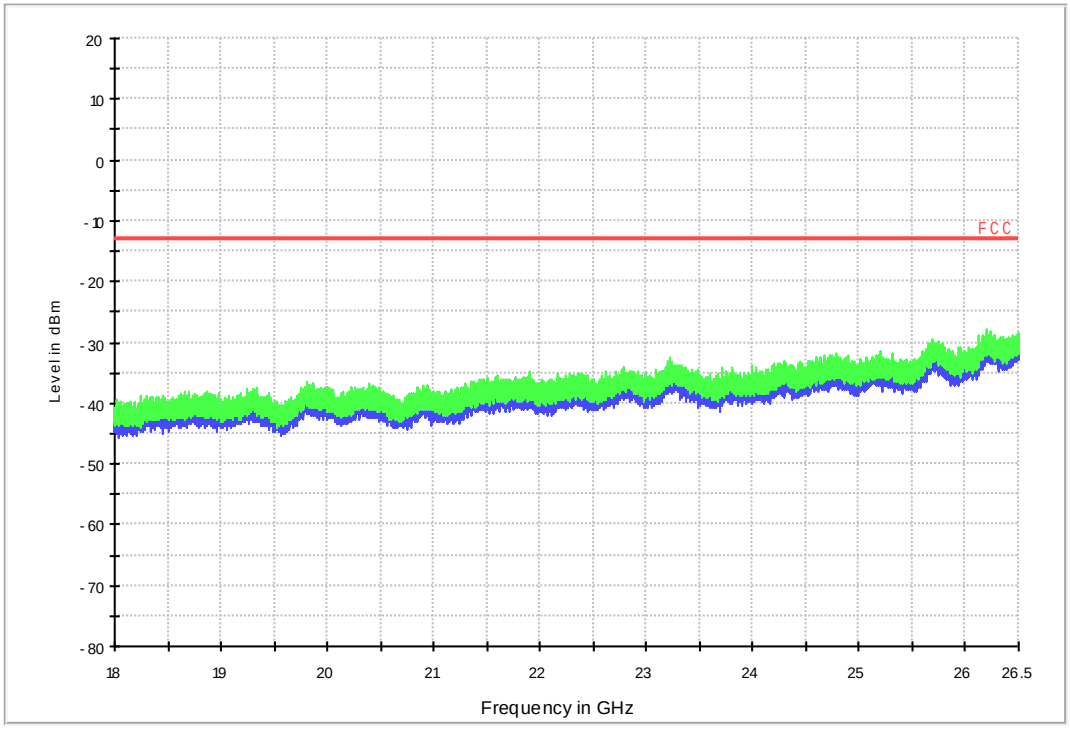
12 FCC PART 24 WCDMA1900_L



11 FCC PART 24 WCDMA1900_H

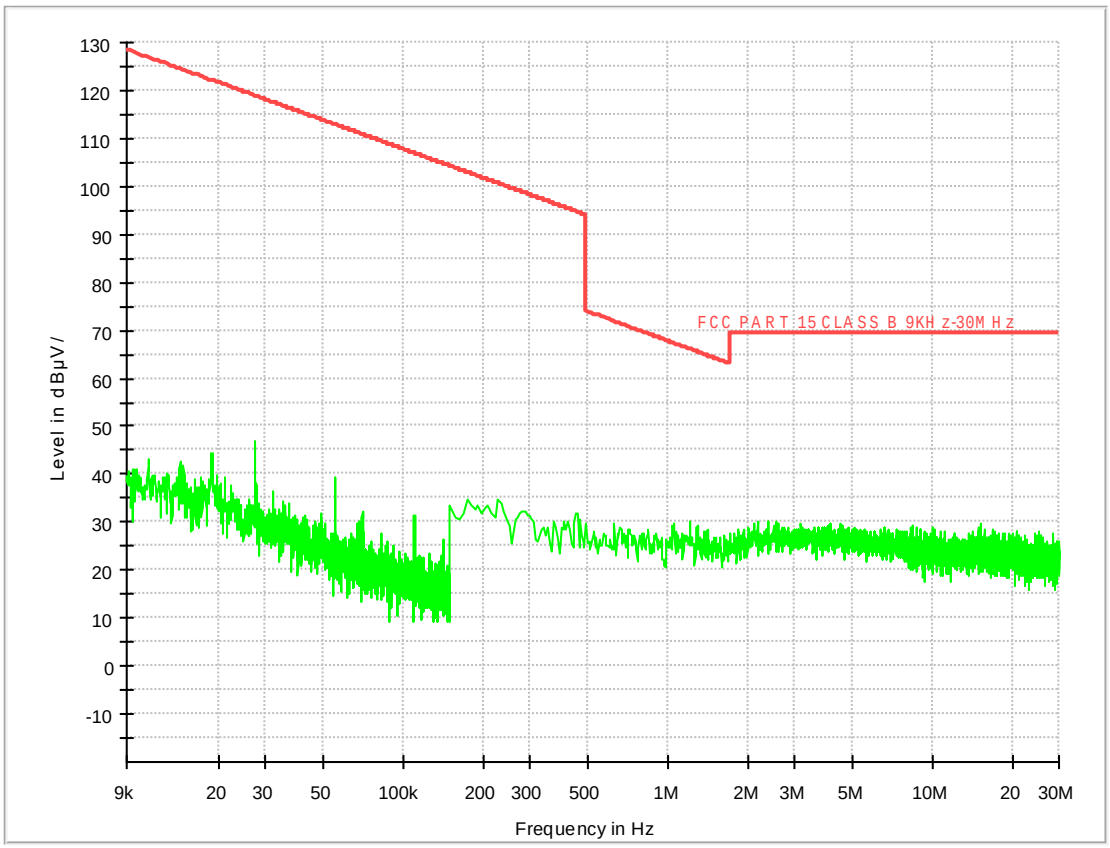


18G~ 26.5G RSE-TX-DIRECTOR ABOVE 1.5G PK

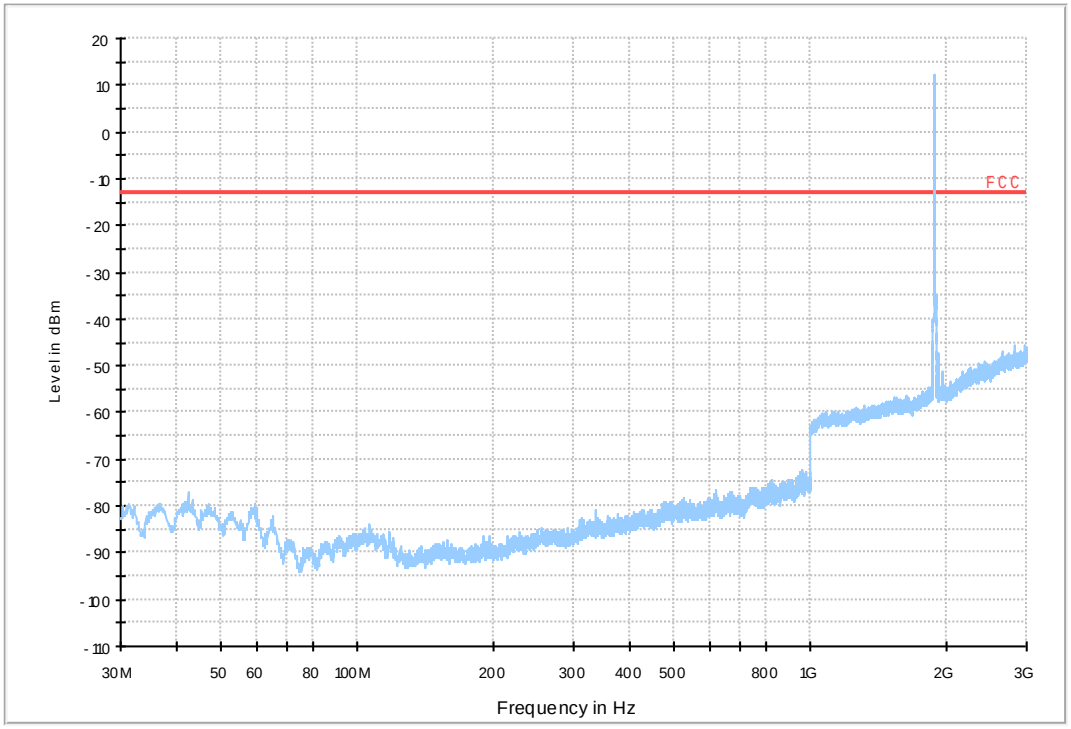


7.1.6 Test Band = WCDMA1900_ANT2

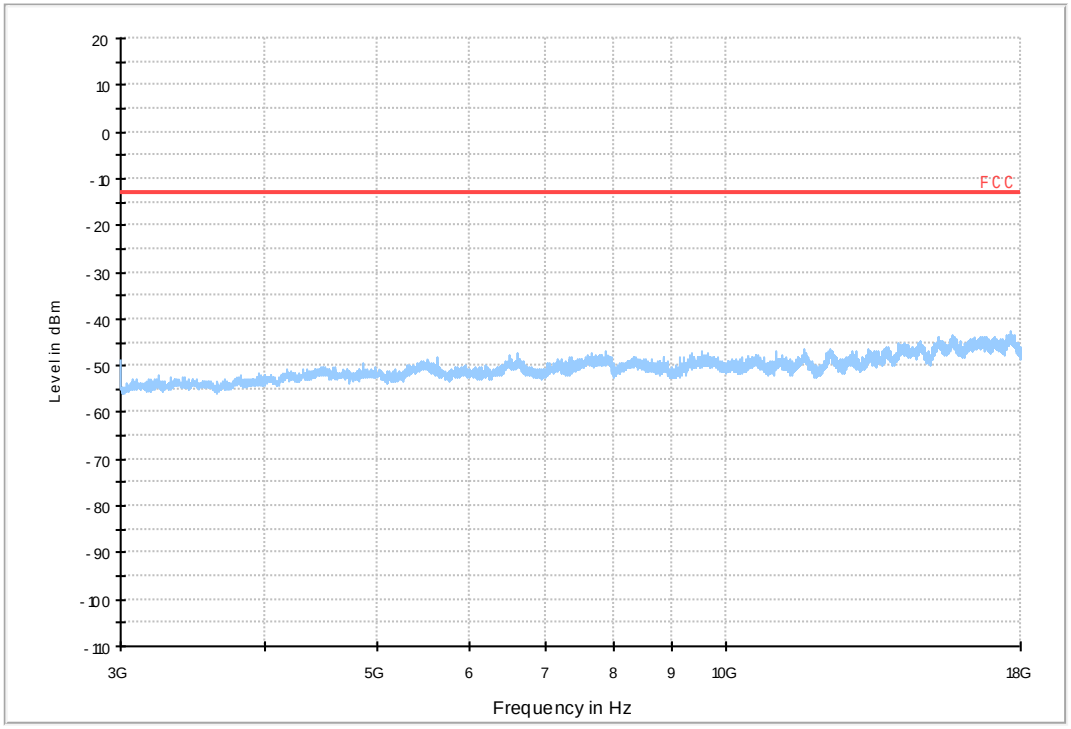
7.1.6.1 Test Mode = UMTS/TM1



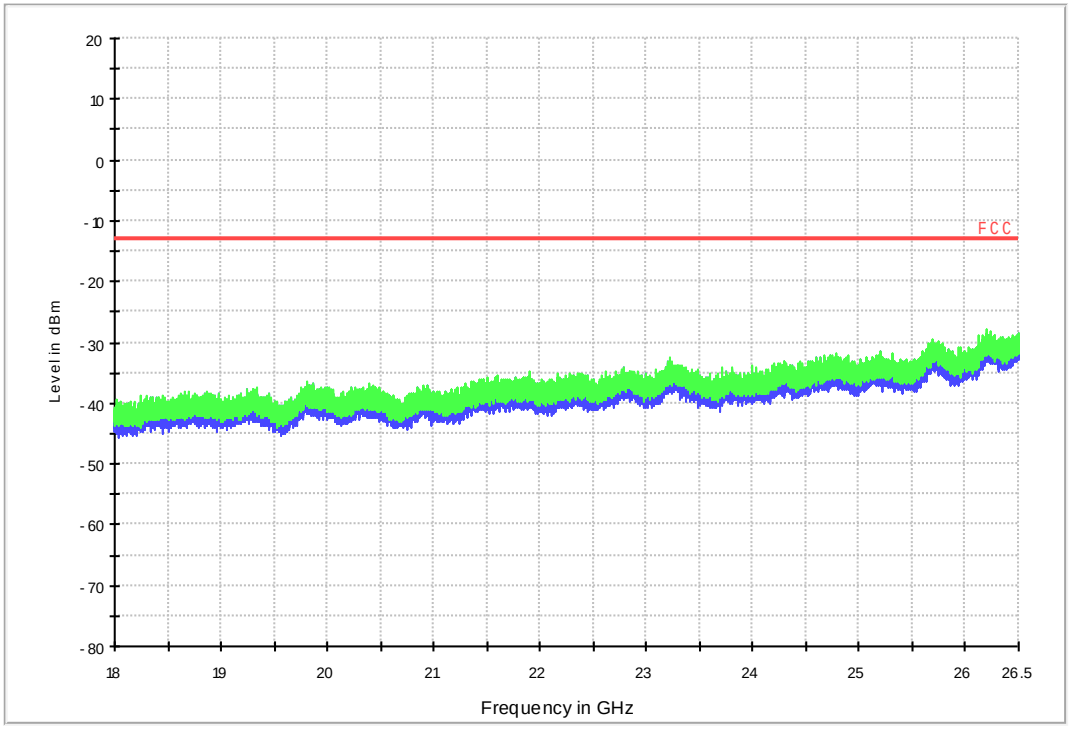
12 FCC PART 24 WCDMA1900_L



11 FCC PART 24 WCDMA1900_H



18G~ 26.5G RSE-TX-DIRECTOR ABOVE 1.5G PK



8Appendix_H: Frequency Stability

8.1 For UMTS

8.1.1Frequency Error vs. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA1900	UMTS/TM1	LCH	TN	VL	-0.24	-0.00013	PASS
				VN	-1.92	-0.00104	PASS
				VH	-0.73	-0.00039	PASS
		MCH	TN	VL	2.53	0.00135	PASS
				VN	3.83	0.00204	PASS
				VH	4.06	0.00216	PASS
		HCH	TN	VL	5.62	0.00295	PASS
				VN	2.47	0.00129	PASS
				VH	6.82	0.00358	PASS
WCDMA1700	UMTS/TM1	LCH	TN	VL	3.07	0.00179	PASS
				VN	2.87	0.00168	PASS
				VH	5.43	0.00317	PASS
		MCH	TN	VL	8.83	0.0051	PASS
				VN	-2.21	-0.00128	PASS
				VH	6.33	0.00365	PASS
		HCH	TN	VL	8.06	0.0046	PASS
				VN	4.97	0.00284	PASS
				VH	9.26	0.00528	PASS
WCDMA850	UMTS/TM1	LCH	TN	VL	7.66	0.00927	PASS
				VN	2.09	0.00253	PASS
				VH	8.13	0.00984	PASS
		MCH	TN	VL	11.23	0.01343	PASS
				VN	6.26	0.00748	PASS
				VH	1.31	0.00157	PASS
		HCH	TN	VL	2.20	0.0026	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VN	5.31	0.00627	PASS
				VH	2.87	0.00339	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
WCDMA1900	UMTS/TM1	LCH	VN	-30	-0.60	-0.00032	PASS
				-20	1.83	0.00099	PASS
				-10	1.98	0.00107	PASS
				0	1.39	0.00075	PASS
				10	4.32	0.00233	PASS
				20	2.82	0.00152	PASS
				30	7.35	0.00397	PASS
				40	-4.81	-0.0026	PASS
				50	3.31	0.00179	PASS
		MCH	VN	-30	6.88	0.00366	PASS
				-20	1.17	0.00062	PASS
				-10	8.39	0.00446	PASS
				0	4.14	0.0022	PASS
				10	0.44	0.00023	PASS
				20	2.58	0.00137	PASS
				30	3.10	0.00165	PASS
				40	3.88	0.00206	PASS
				50	5.66	0.00301	PASS
		HCH	VN	-30	2.75	0.00144	PASS
				-20	-0.03	-0.00002	PASS
				-10	0.85	0.00045	PASS
				0	3.92	0.00205	PASS
				10	2.33	0.00122	PASS
				20	4.62	0.00242	PASS
				30	4.93	0.00258	PASS
				40	-0.85	-0.00045	PASS
				50	2.33	0.00122	PASS
WCDMA1700	UMTS/TM1	LCH	VN	-30	3.27	0.00191	PASS
				-20	11.40	0.00666	PASS
				-10	8.32	0.00486	PASS
				0	5.28	0.00308	PASS
				10	0.81	0.00047	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				20	0.40	0.00023	PASS
				30	2.99	0.00175	PASS
				40	6.90	0.00403	PASS
				50	4.91	0.00287	PASS
		MCH	VN	-30	9.87	0.0057	PASS
				-20	8.85	0.00511	PASS
				-10	7.20	0.00416	PASS
				0	9.29	0.00536	PASS
				10	9.26	0.00534	PASS
				20	6.41	0.0037	PASS
				30	10.22	0.0059	PASS
				40	10.53	0.00608	PASS
				50	11.31	0.00653	PASS
		HCH	VN	-30	-0.20	-0.00011	PASS
				-20	2.47	0.00141	PASS
				-10	4.97	0.00284	PASS
				0	9.31	0.00531	PASS
				10	10.18	0.00581	PASS
				20	12.30	0.00702	PASS
				30	10.86	0.0062	PASS
				40	7.72	0.0044	PASS
				50	3.54	0.00202	PASS
WCDMA850	UMTS/TM1	LCH	VN	-30	8.91	0.01078	PASS
				-20	6.79	0.00822	PASS
				-10	0.21	0.00025	PASS
				0	8.10	0.0098	PASS
				10	11.63	0.01407	PASS
				20	8.18	0.0099	PASS
				30	6.58	0.00796	PASS
				40	7.00	0.00847	PASS
				50	6.30	0.00762	PASS
		MCH	VN	-30	10.28	0.01229	PASS
				-20	9.09	0.01087	PASS
				-10	5.51	0.00659	PASS
				0	6.52	0.0078	PASS
				10	7.06	0.00844	PASS
				20	8.47	0.01013	PASS
				30	2.70	0.00323	PASS
				40	10.59	0.01266	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				50	10.91	0.01304	PASS
		HCH	VN	-30	11.29	0.01334	PASS
				-20	8.38	0.0099	PASS
				-10	6.41	0.00757	PASS
				0	7.52	0.00888	PASS
				10	5.87	0.00693	PASS
				20	3.05	0.0036	PASS
				30	12.86	0.01519	PASS
				40	9.93	0.01173	PASS
				50	12.18	0.01439	PASS

END