



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]	ERP [dBm]	Limit [dBm]	Verdict
WCDMA850	UMTS/TM1	LCH	23.93	21.68	38.5	PASS
		MCH	23.97	21.72	38.5	PASS
		HCH	23.92	21.67	38.5	PASS
Test Band	Test Mode	Test Channel	Conducted Power [dBm]	EIRP [dBm]	Limit [dBm]	Verdict
WCDMA1900	UMTS/TM1	LCH	23.08	21.18	33	PASS
		MCH	23.14	21.18	33	PASS
		HCH	23.04	21.28	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,

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

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

b, SGP = Signal Generator Level

Note2:

$$SET Span = 1.5 * OBW$$

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

$$SET VBW \geq 3 * RBW$$

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
WCDMA850	UMTS/TM1	LCH	2.46	13	PASS
		MCH	2.32	13	PASS
		HCH	2.76	13	PASS
WCDMA1900	UMTS/TM1	LCH	2.80	13	PASS
		MCH	2.86	13	PASS
		HCH	2.95	13	PASS

3Appendix_C: Modulation Characteristics

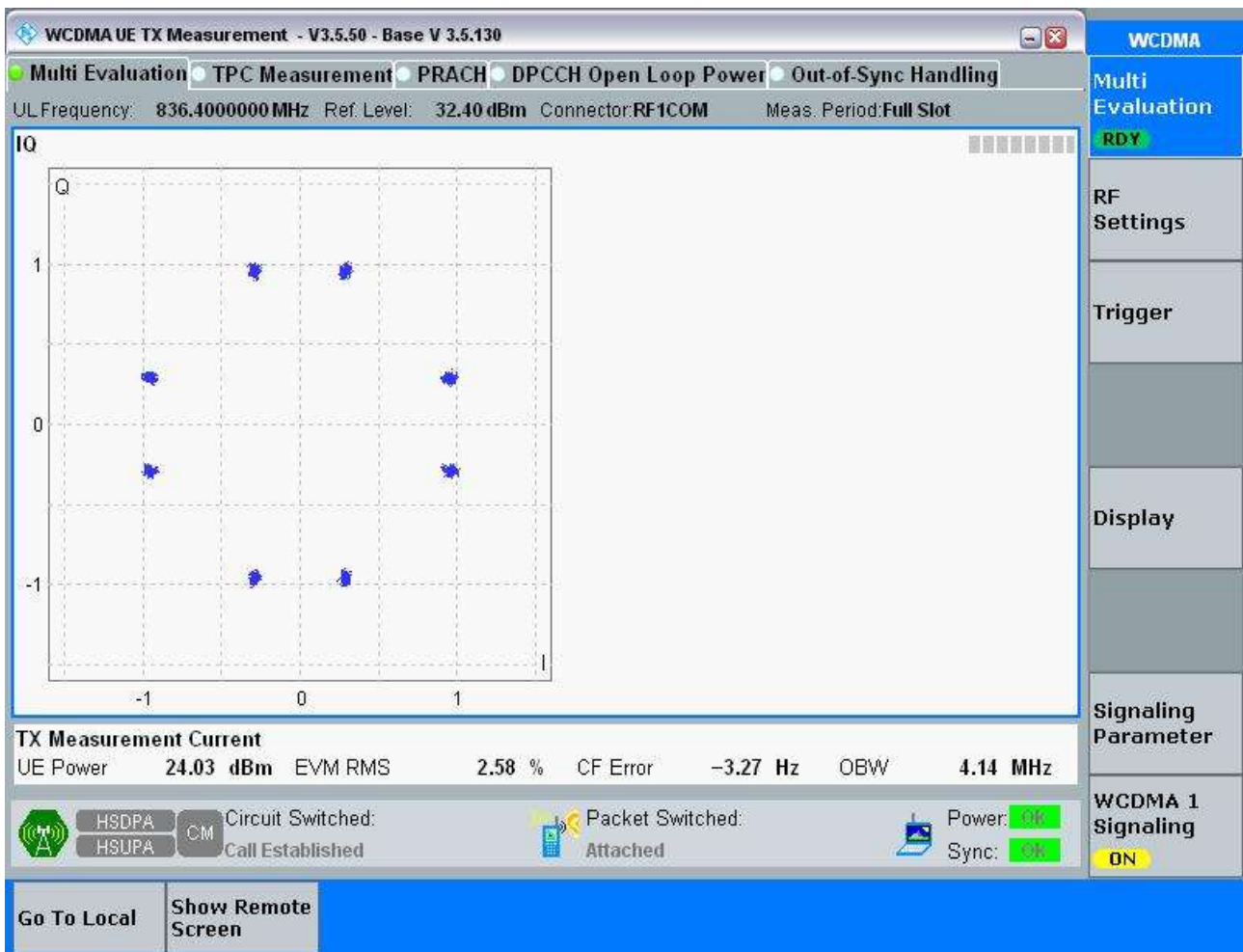
Part I - Test Plots

3.1 For UMTS

3.1.1 Test Band = WCDMA850

3.1.1.1 Test Mode = UMTS/TM1

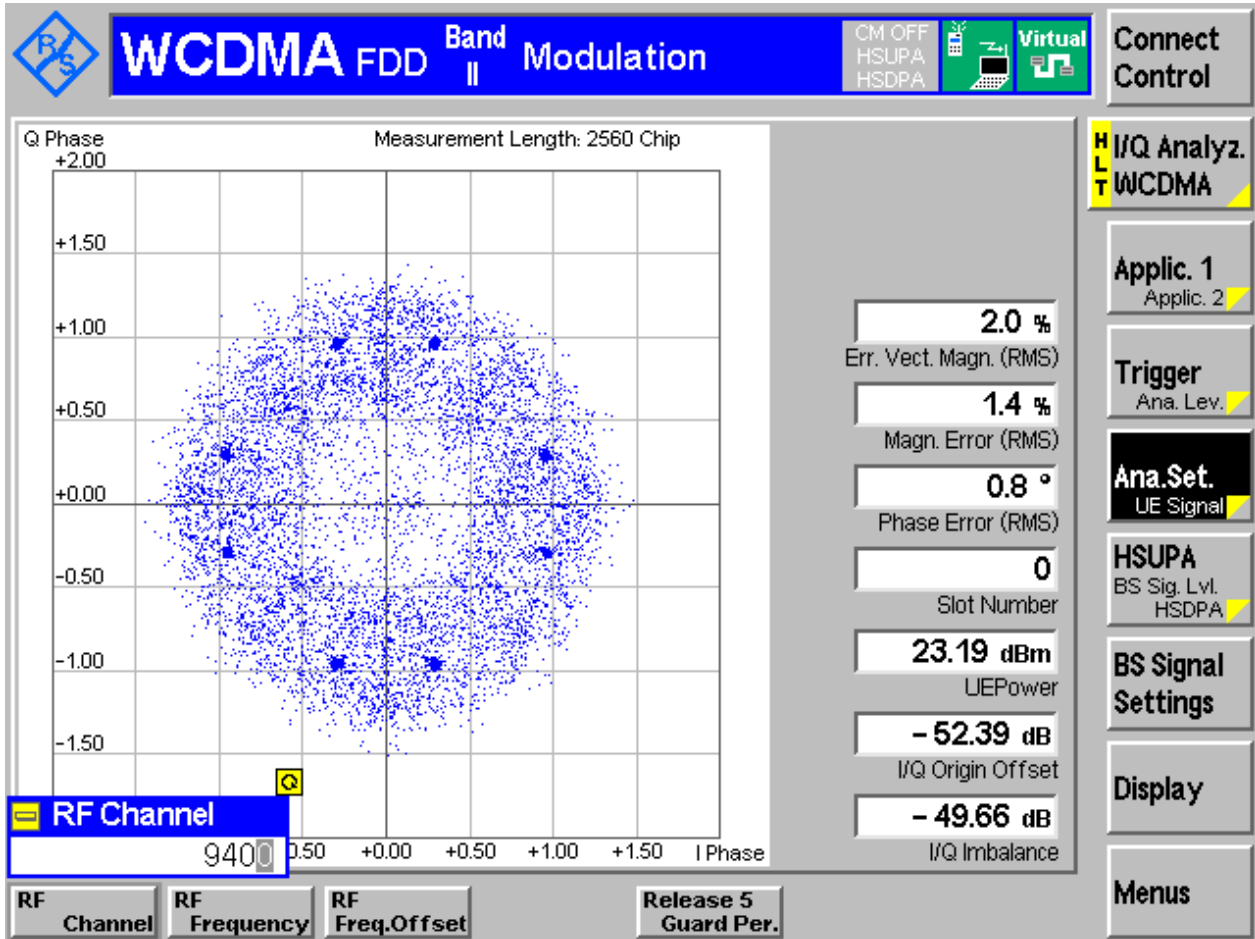
3.1.1.1.1 Test Channel = MCH



3.1.2 Test Band = WCDMA1900

3.1.2.1 Test Mode = UMTS/TM1

3.1.2.1.1 Test Channel = MCH





4Appendix_D: Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
WCDMA850	UMTS/TM1	LCH	4.19	4.70	Pass
		MCH	4.19	4.72	Pass
		HCH	4.17	4.70	Pass
WCDMA1900	UMTS/TM1	LCH	4.17	4.72	Pass
		MCH	4.16	4.72	Pass
		HCH	4.16	4.72	Pass

Part II - Test Plots

4.1 For UMTS

4.1.1 Test Band = WCDMA850

4.1.1.1 Test Mode = UMTS/TM1

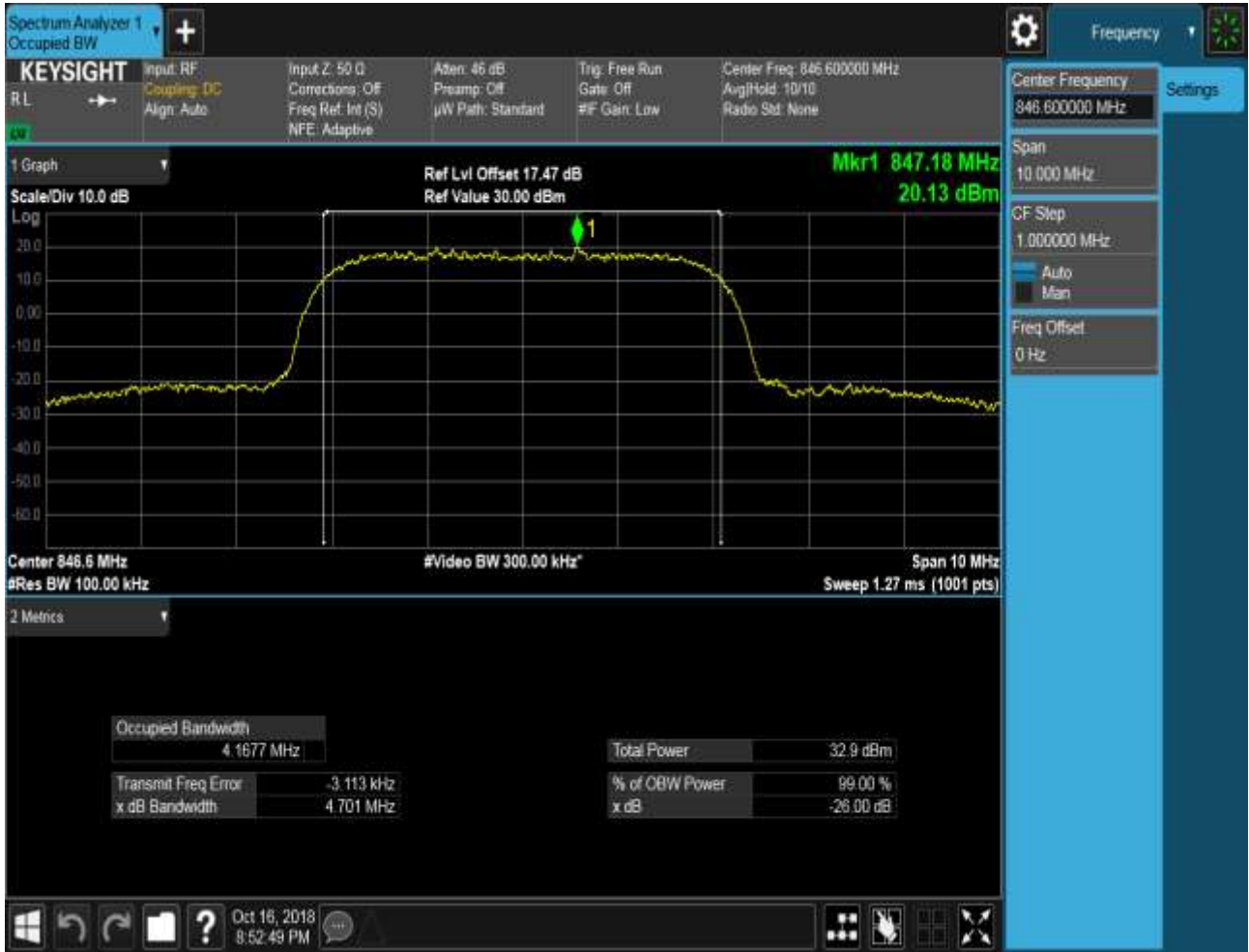
4.1.1.1.1 Test Channel = LCH



4.1.1.1.2 Test Channel = MCH



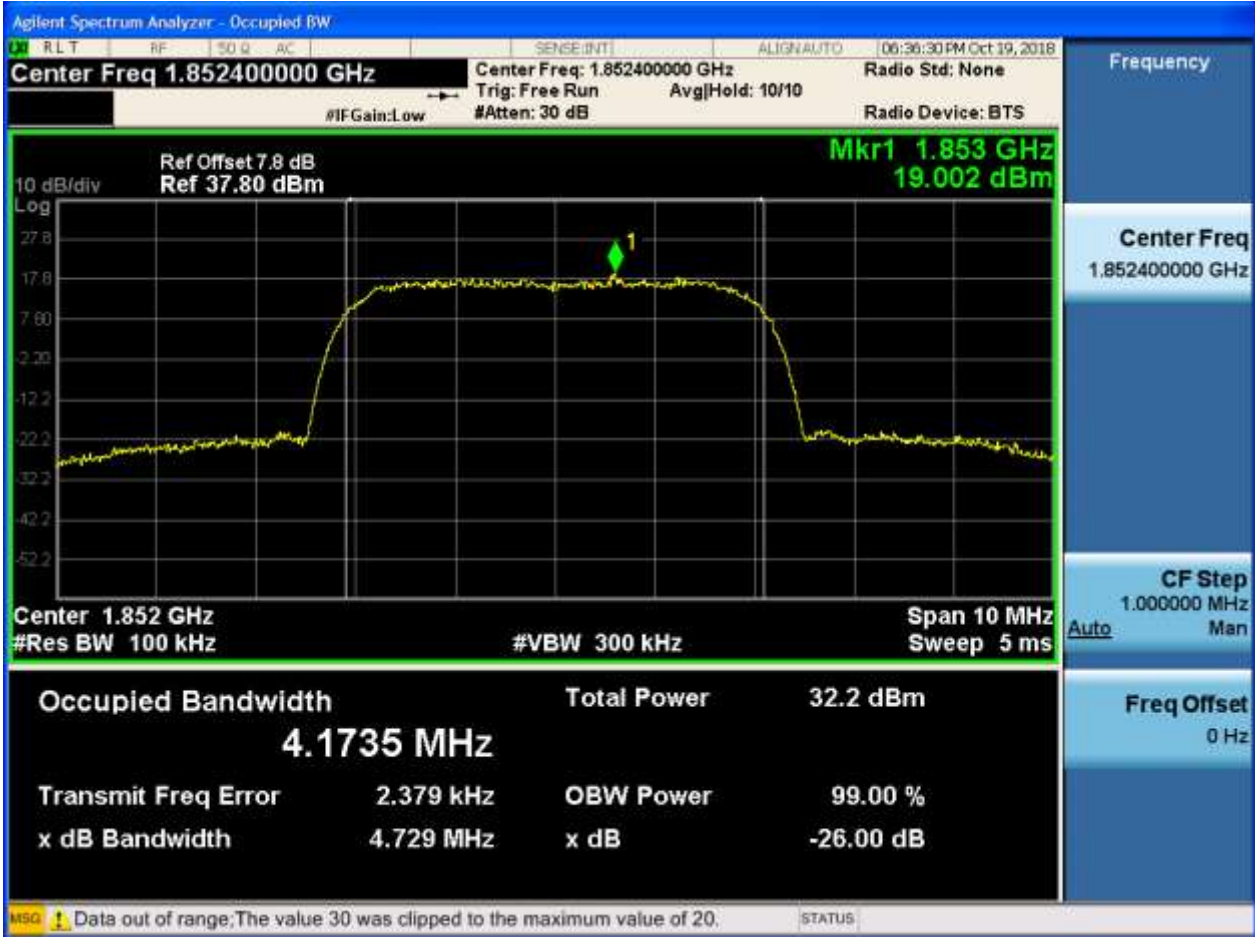
4.1.1.1.3 Test Channel = HCH



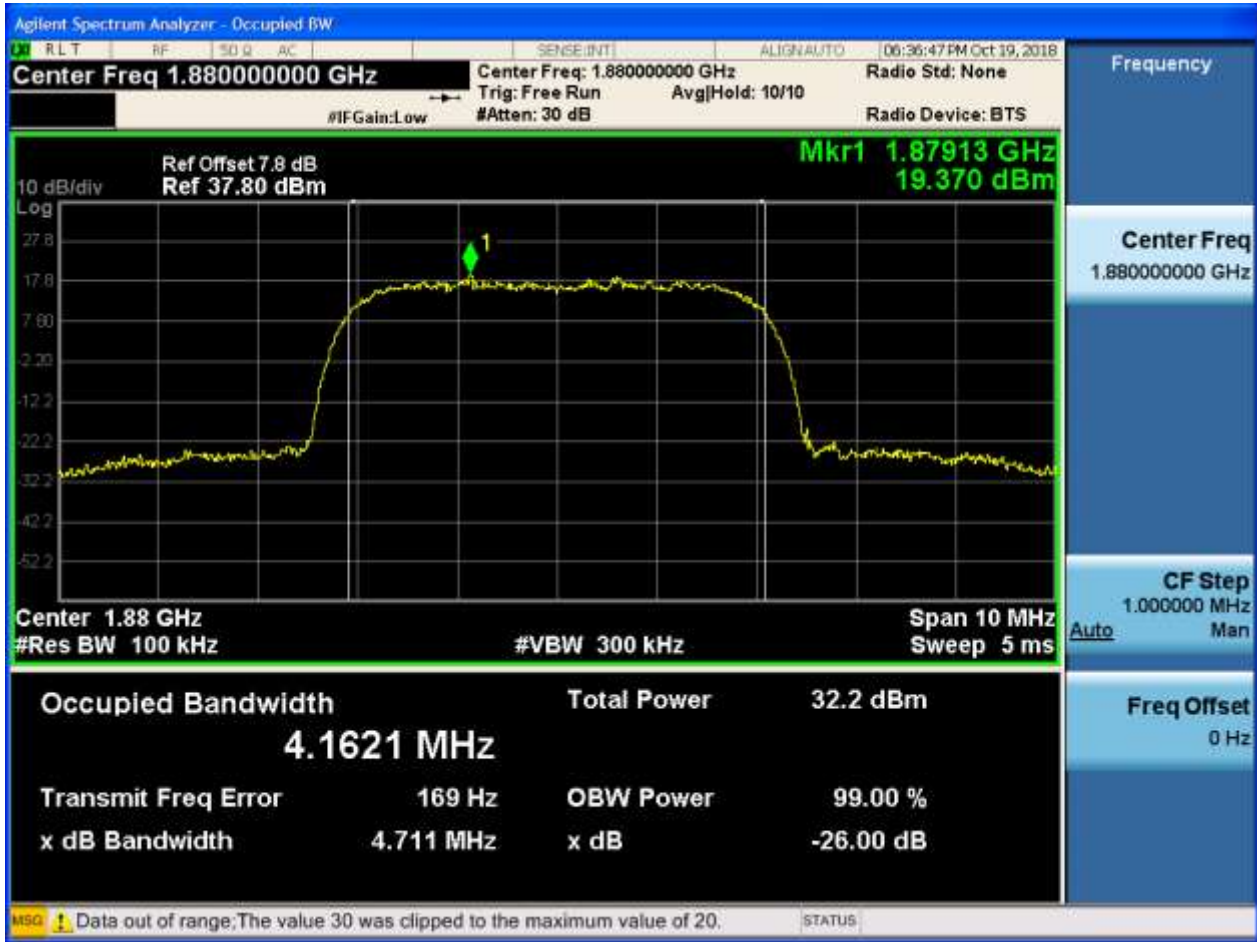
4.1.2 Test Band = WCDMA1900

4.1.2.1 Test Mode = UMTS/TM1

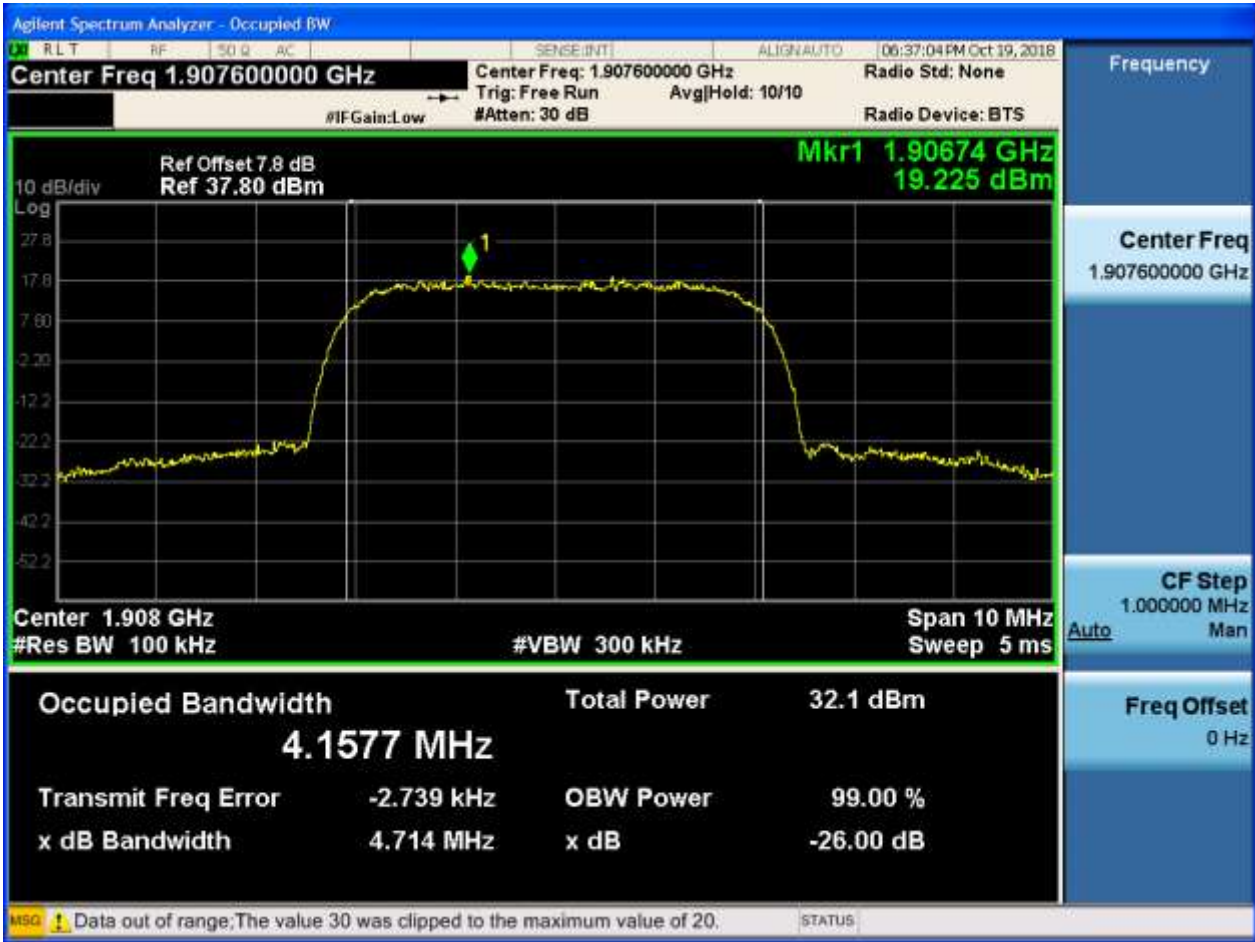
4.1.2.1.1 Test Channel = LCH



4.1.2.1.2 Test Channel = MCH



4.1.2.1.3 Test Channel = HCH



5Appendix_E: Band Edges Compliance

Part I - Test Plots

5.1 For UMTS

5.1.1 Test Band = WCDMA850

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 = WCDMA1900

5.1.2.1 Test Mode = UMTS/TM1

5.1.2.1.1 Test Channel = LCH



5.1.2.1.2 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.

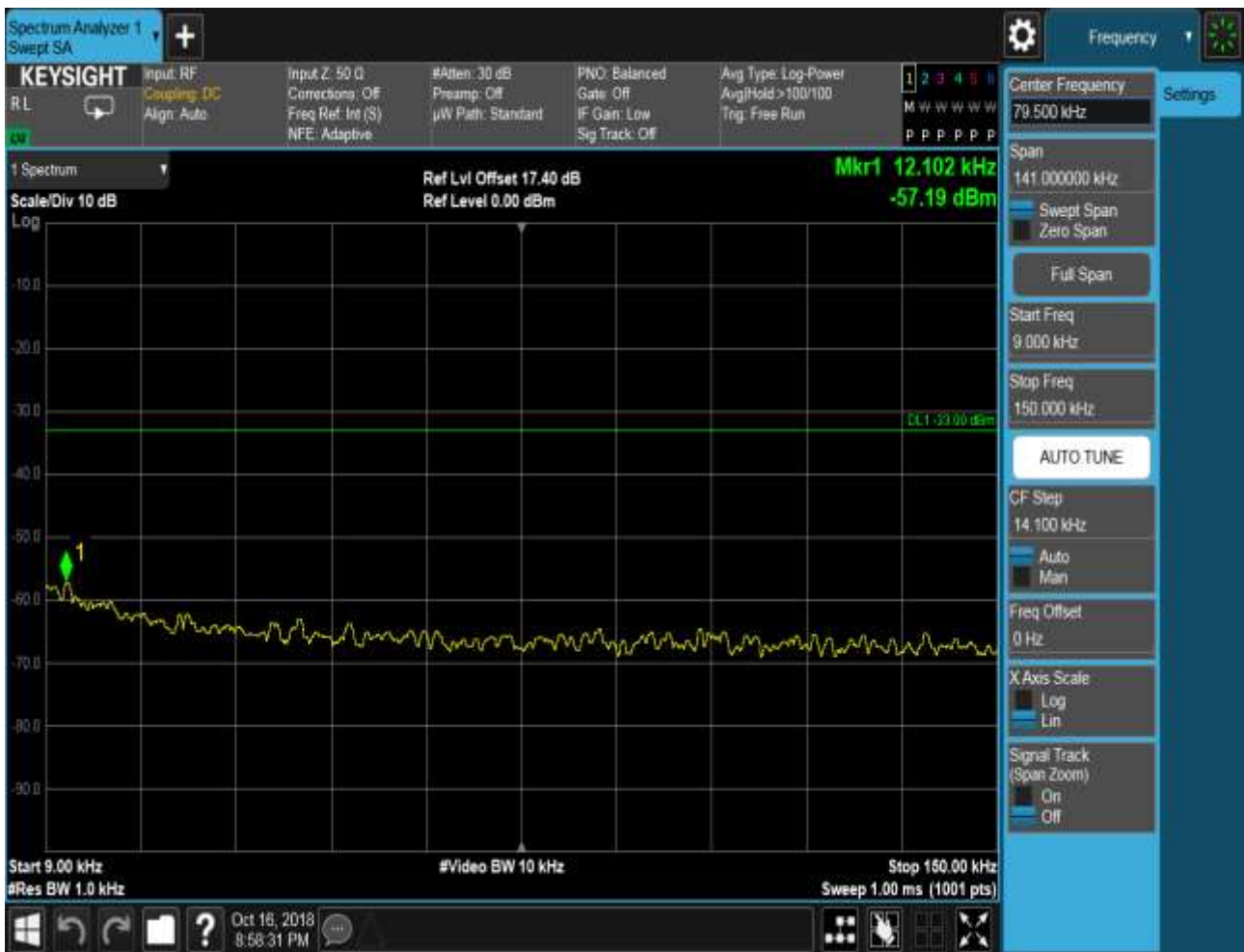
Part I - Test Plots

6.1 For UMTS

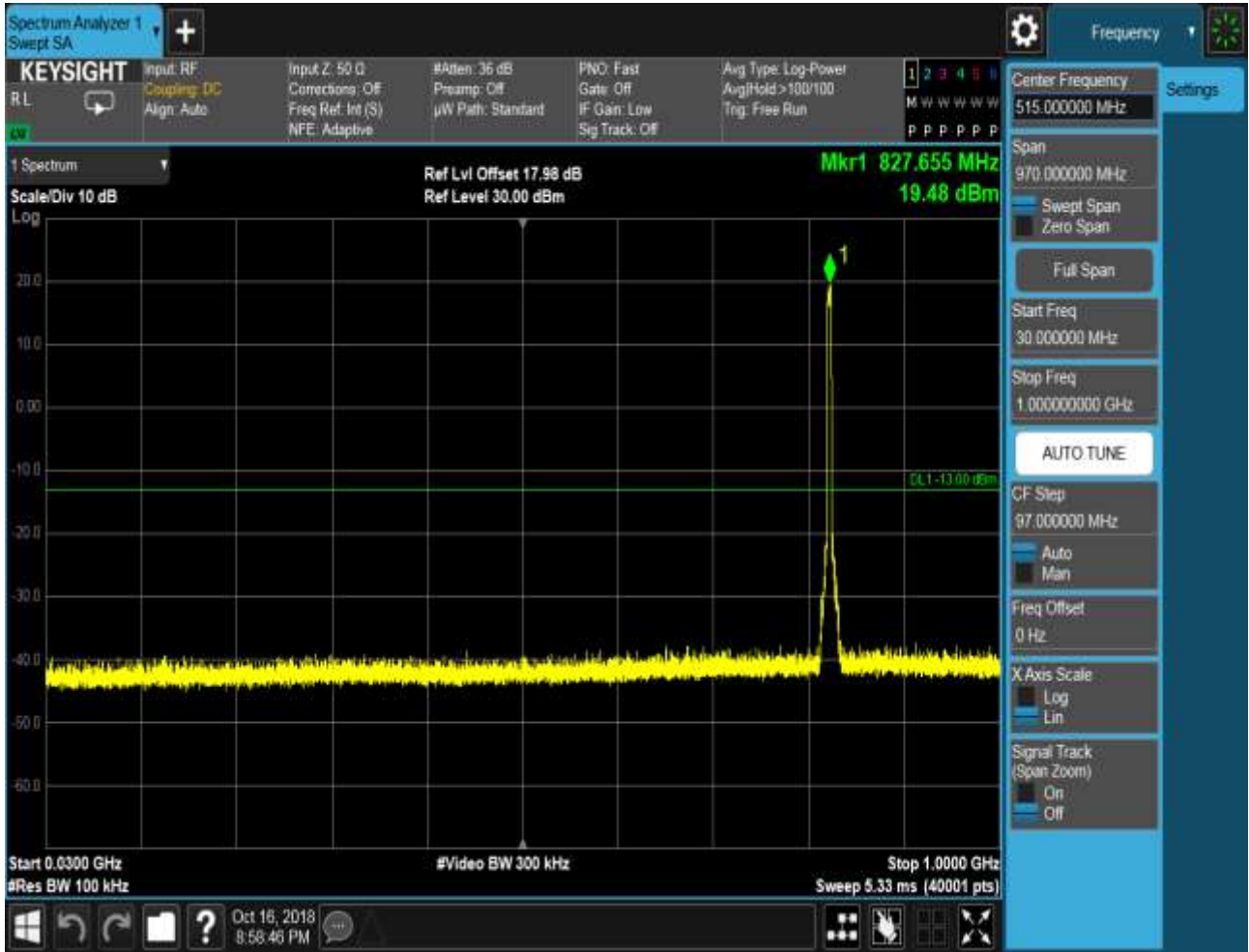
6.1.1 Test Band = WCDMA850

6.1.1.1 Test Mode = UMTS/TM1

6.1.1.1.1 Test Channel = LCH





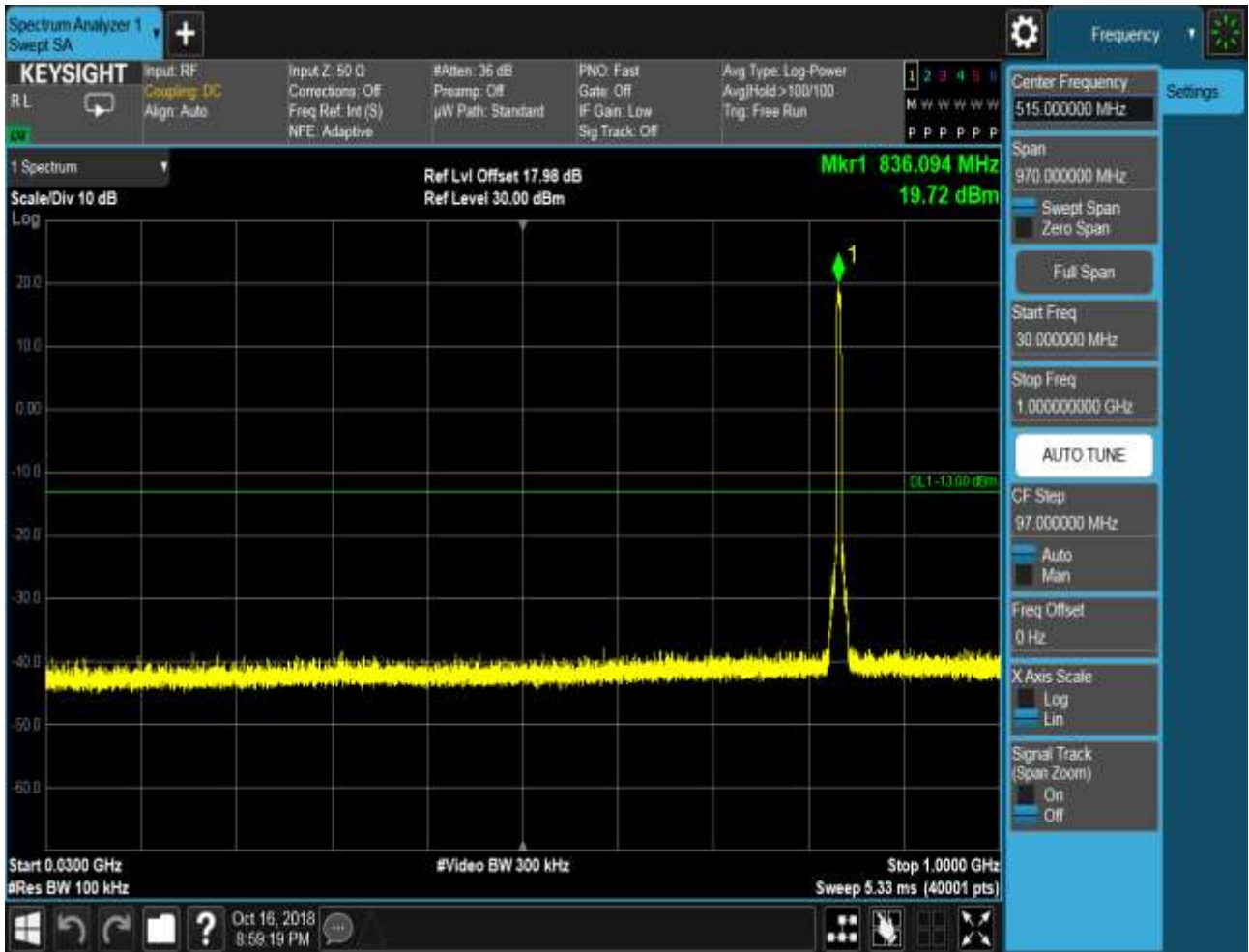


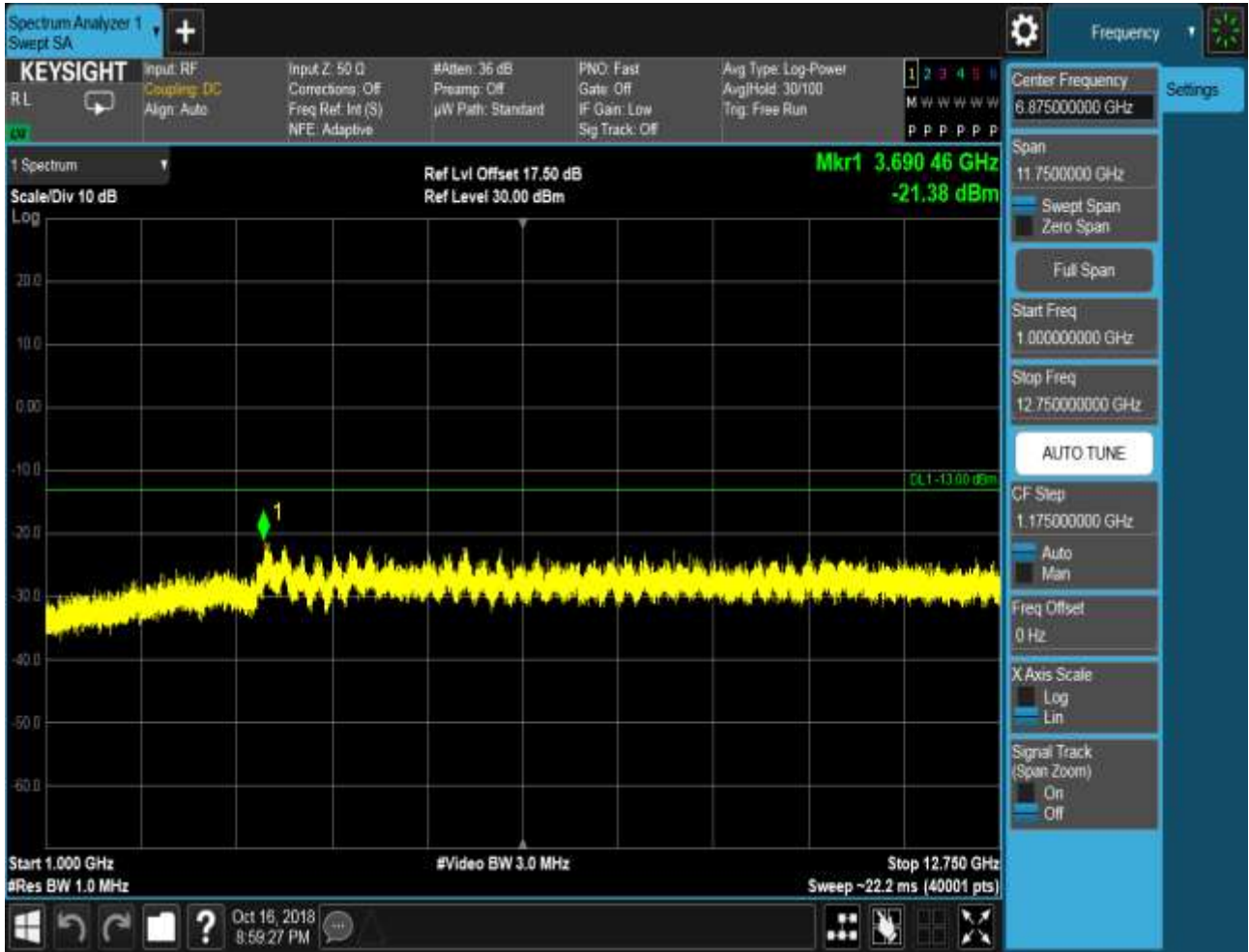


6.1.1.1.2 Test Channel = MCH





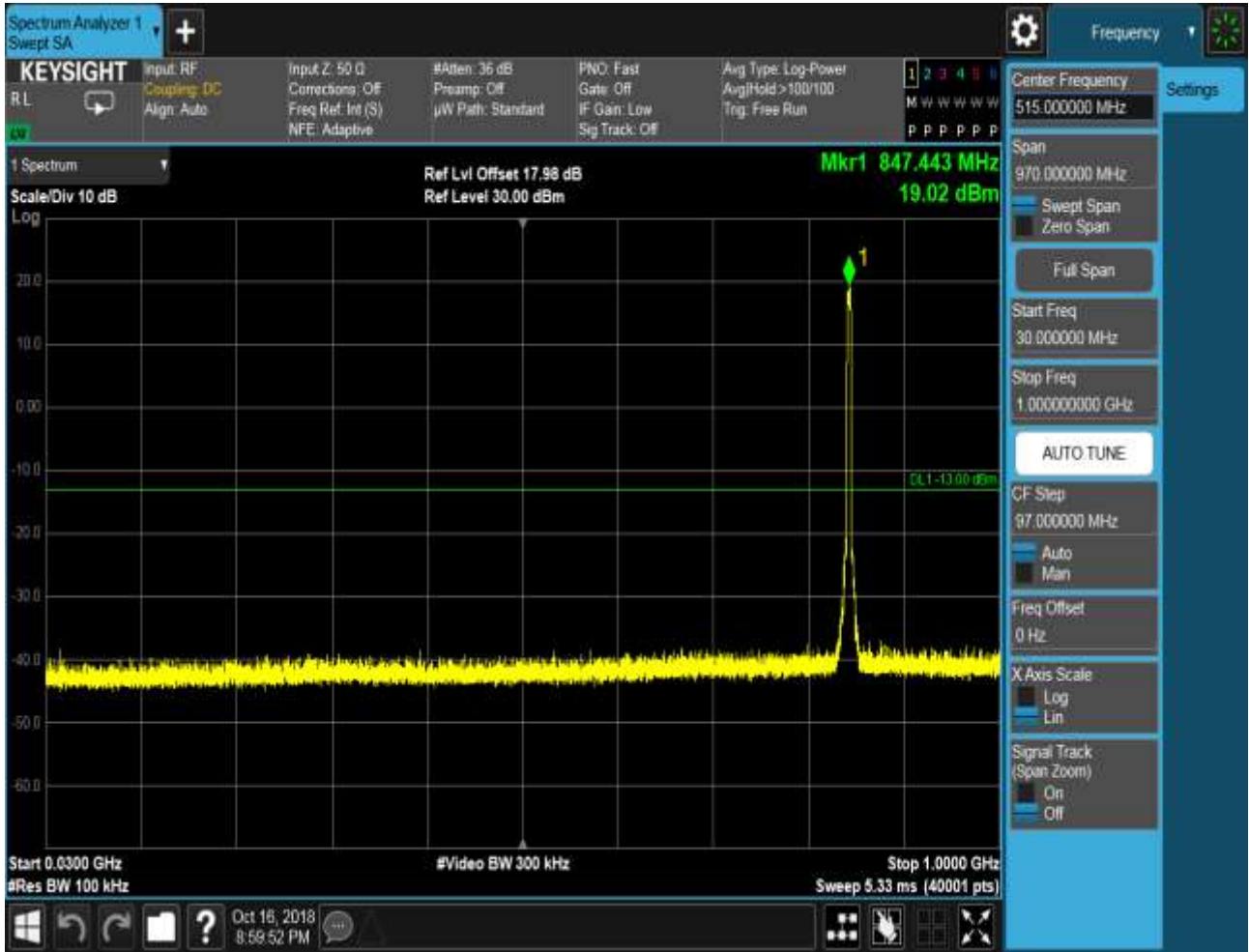


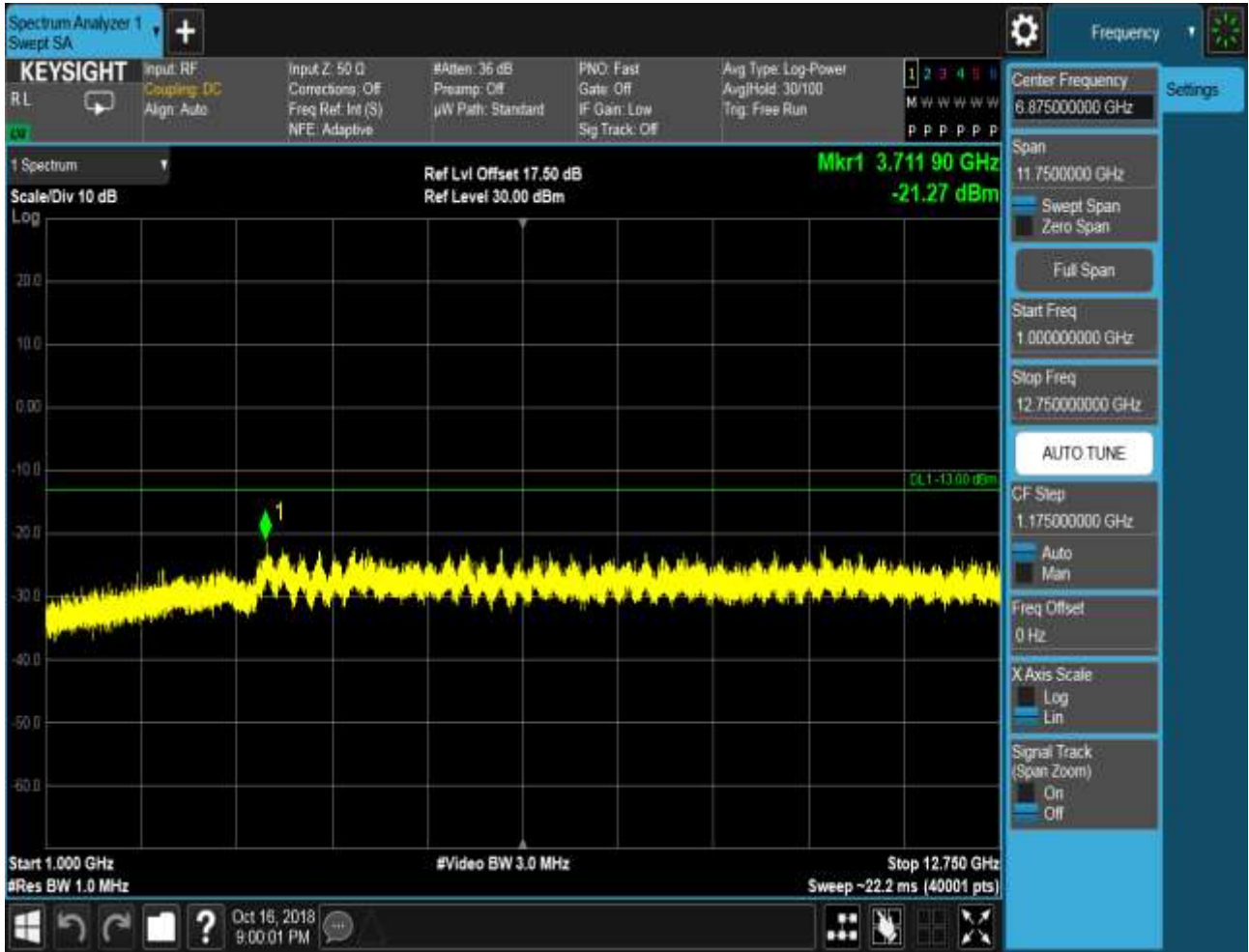


6.1.1.1.3 Test Channel = HCH







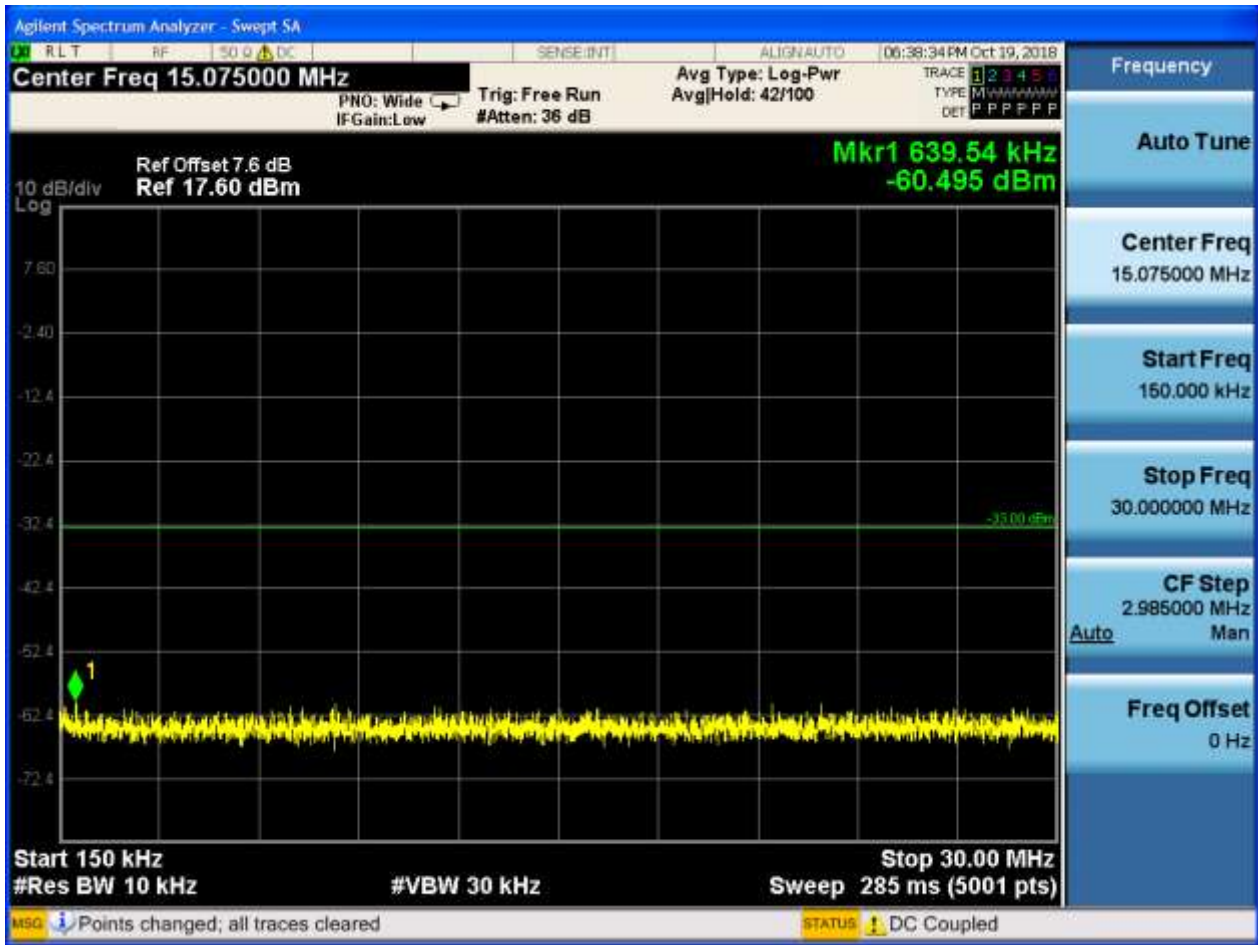


6.1.2 Test Band = WCDMA1900

6.1.2.1 Test Mode = UMTS/TM1

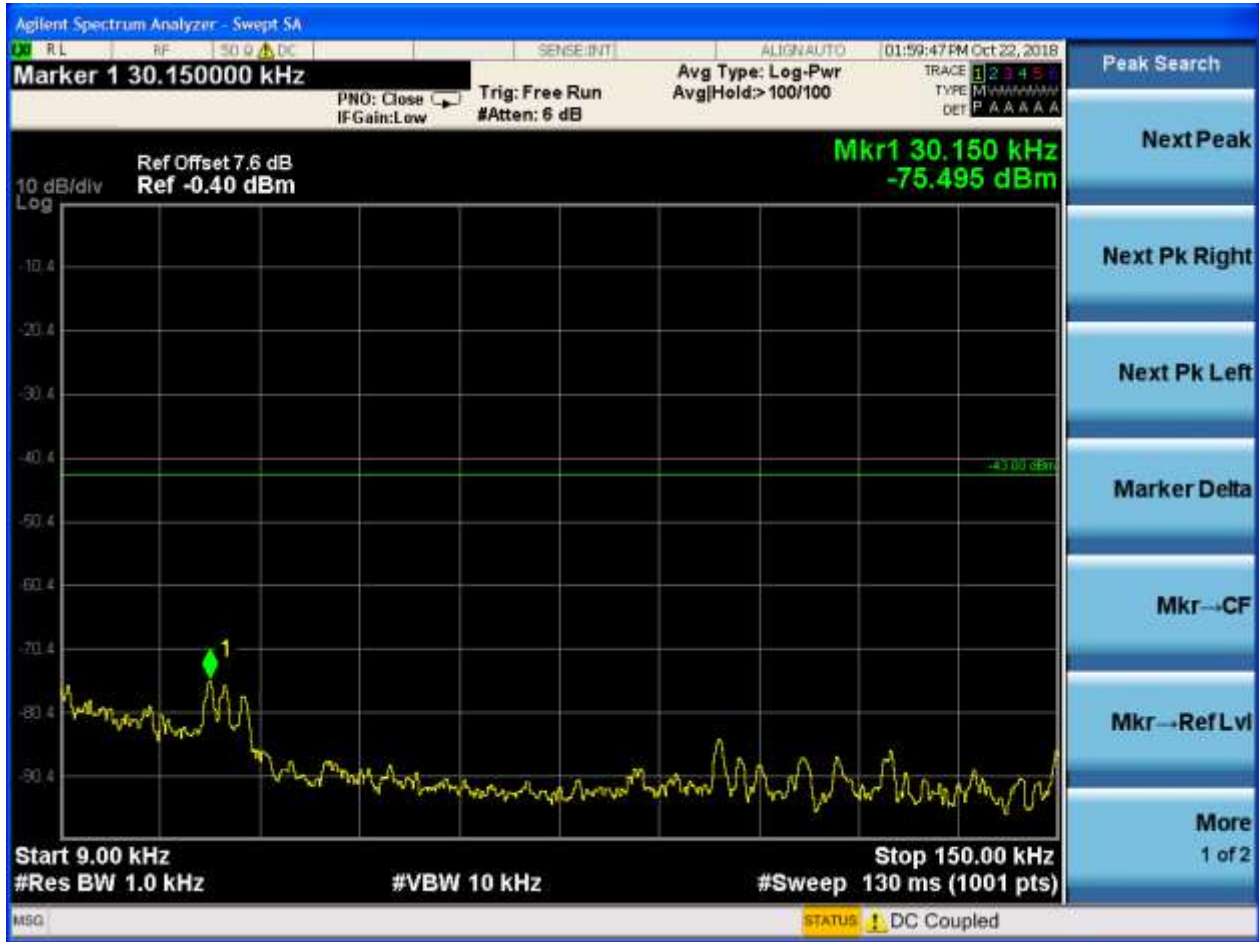
6.1.2.1.1 Test Channel = LCH

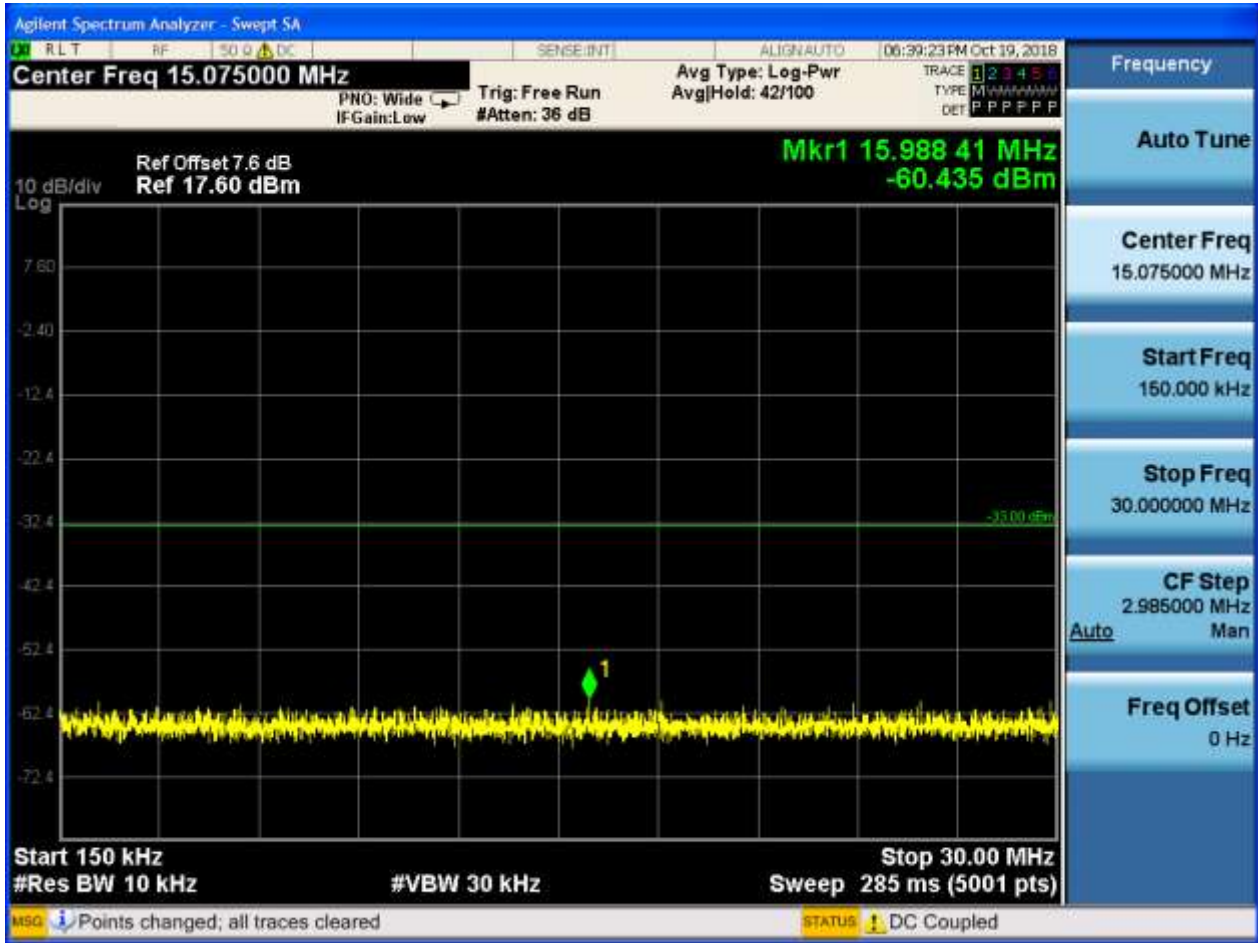






6.1.2.1.2 Test Channel = MCH

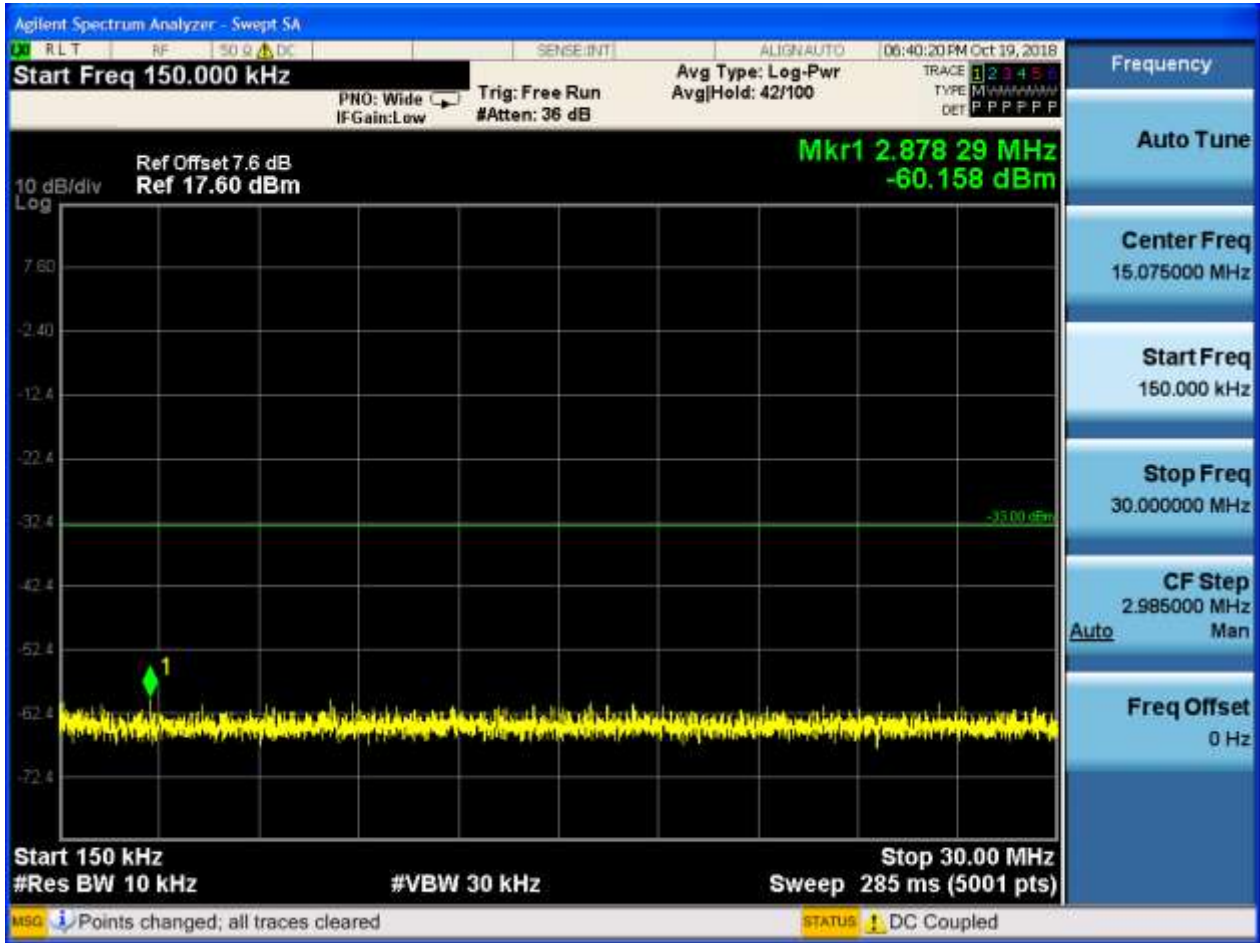


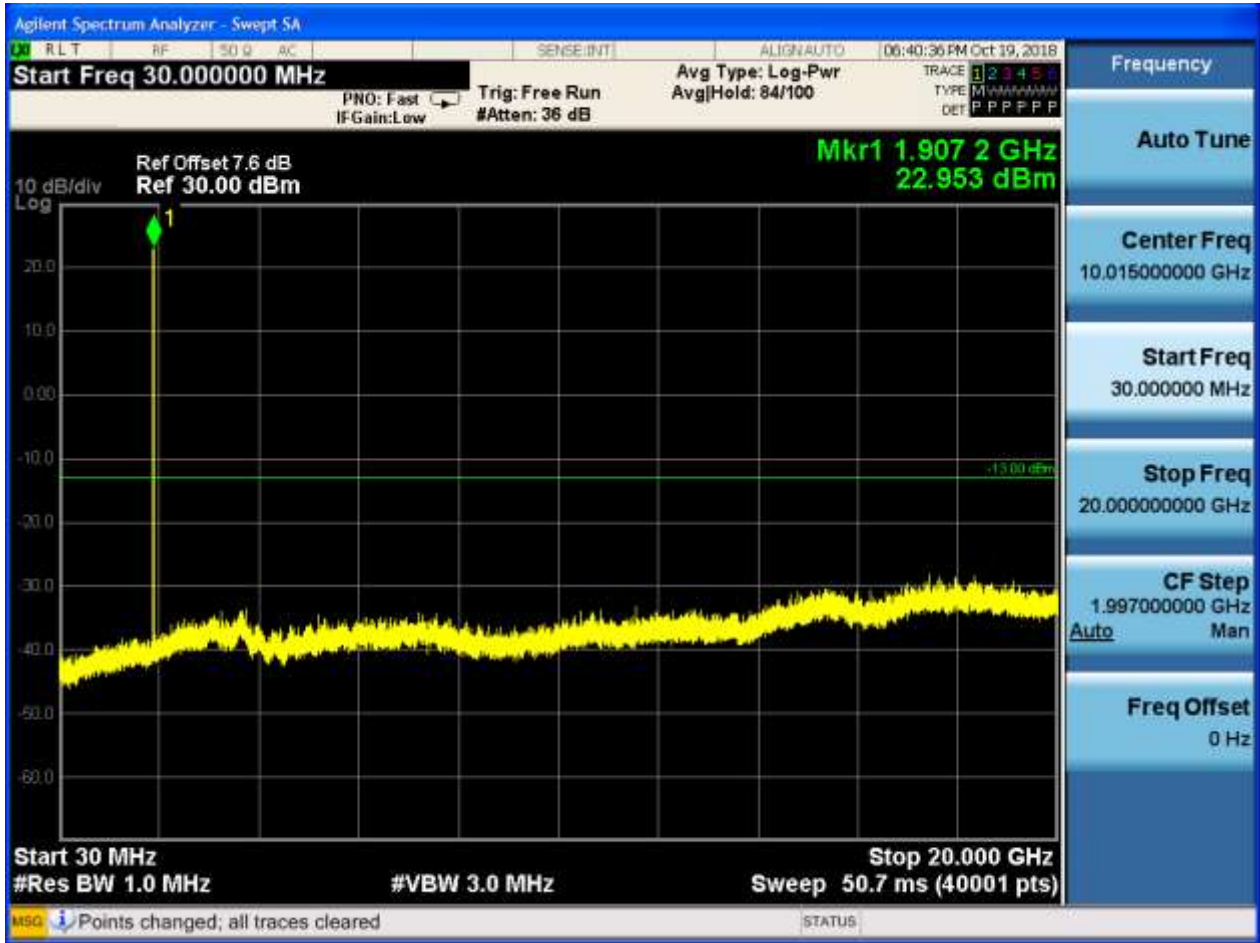




6.1.2.1.3 Test Channel = HCH







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

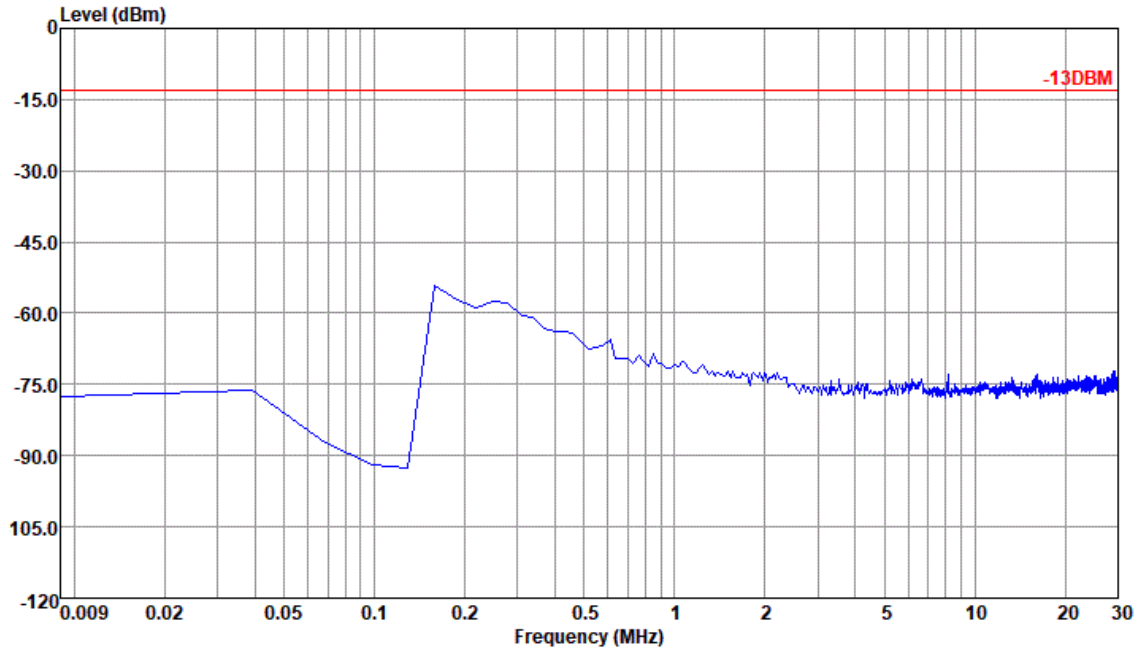
7.1 For UMTS

7.1.1 Test Band = WCDMA850_ANT1

7.1.1.1 Test Mode = UMTS/TM1

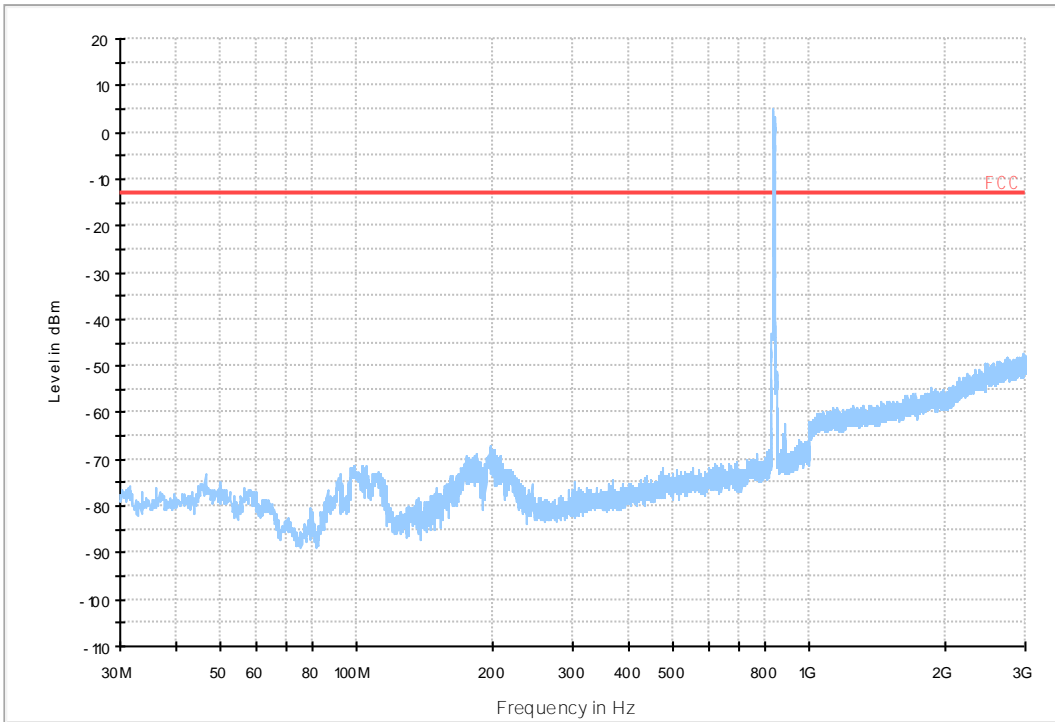


Data: 27

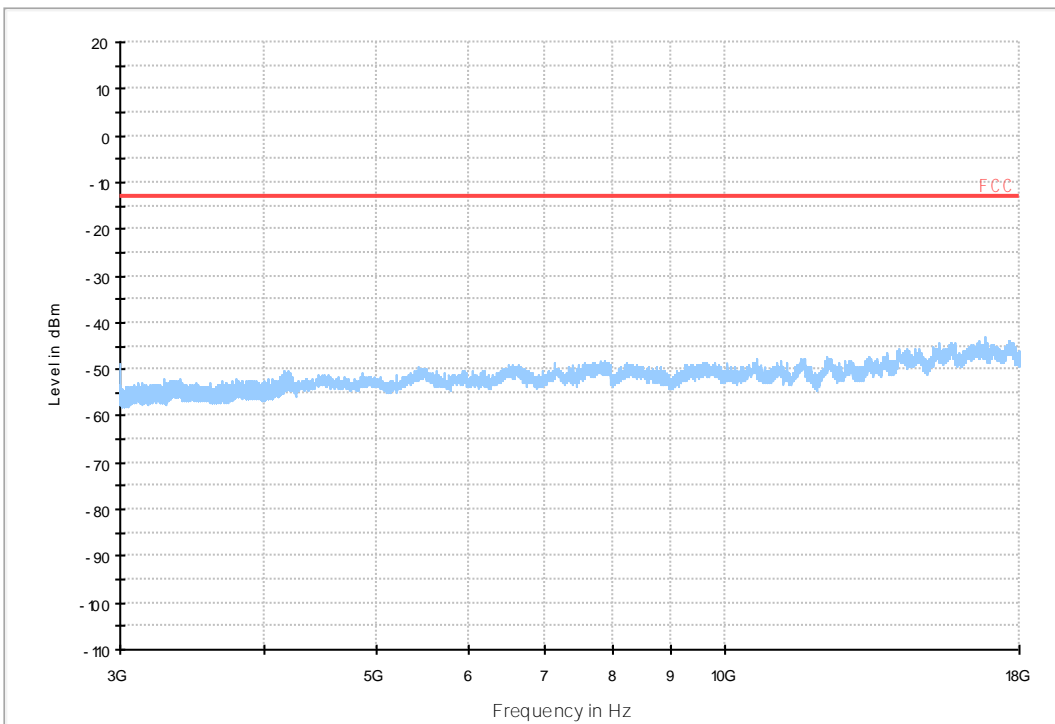


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06 FCC PART 22 WCDMA850_L



05 FCC PART 22 WCDMA850_H

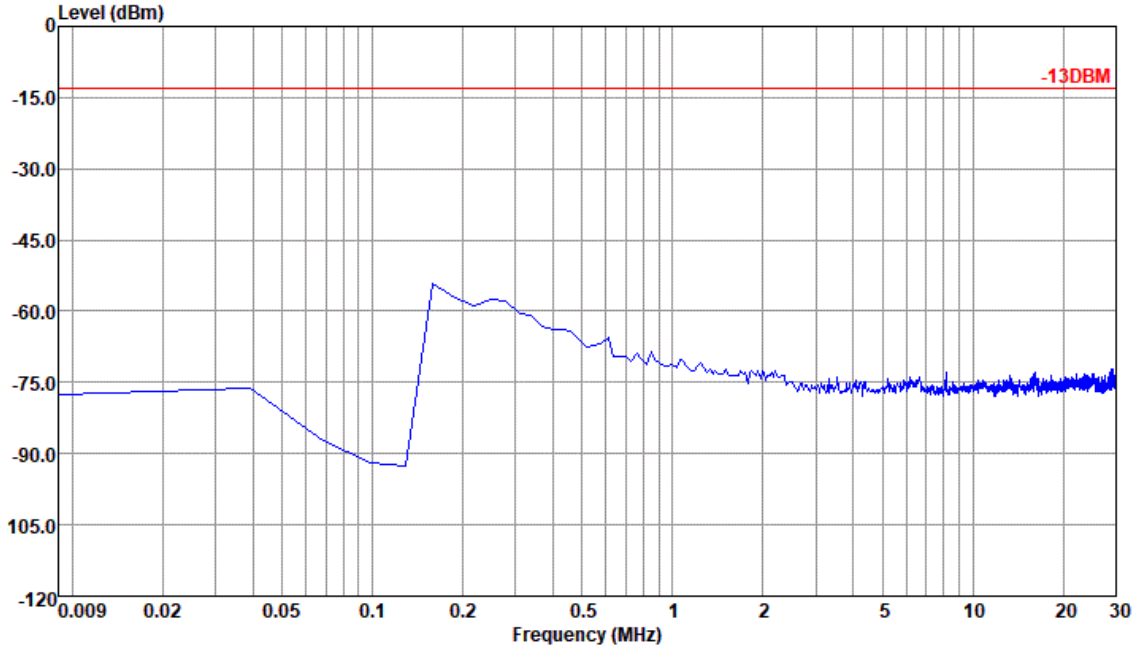


7.1.2 Test Band = WCDMA850_ANT2

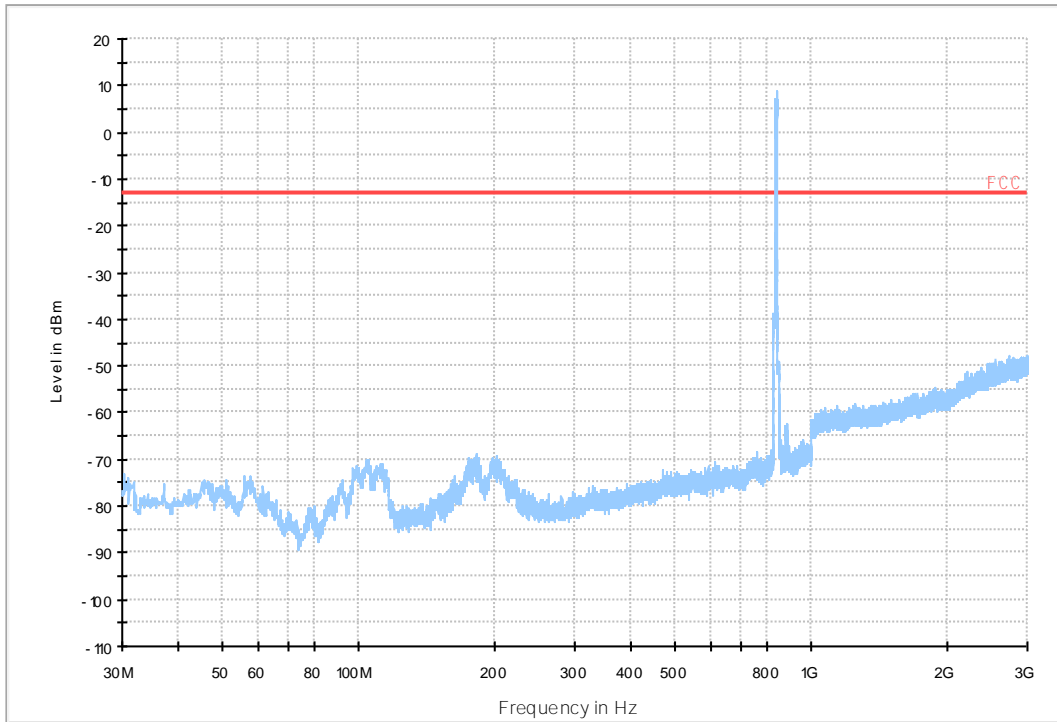
7.1.2.1 Test Mode = UMTS/TM1



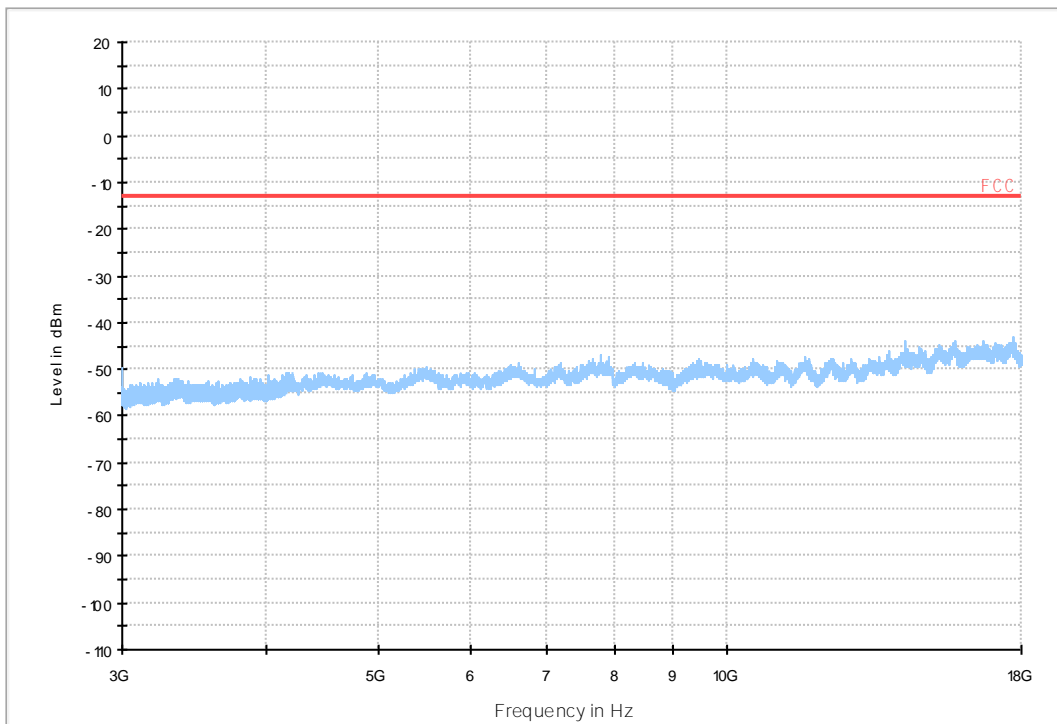
Data: 28



06 FCC PART 22 WCDMA850_L



05 FCC PART 22 WCDMA850_H

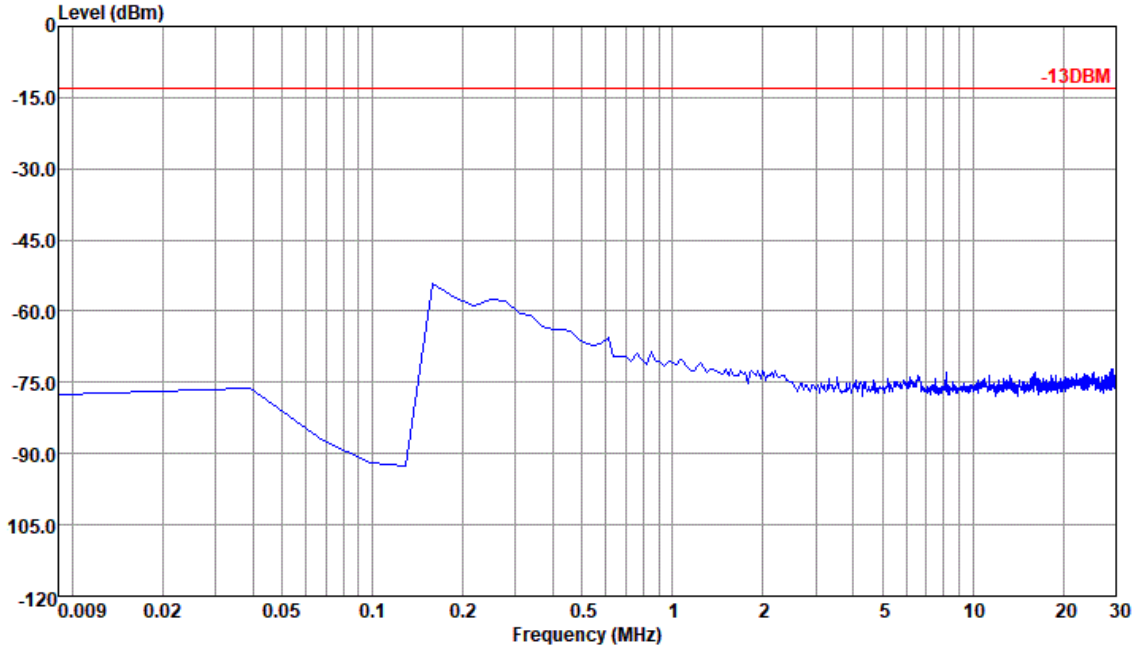


7.1.3 Test Band = WCDMA1900_ANT1

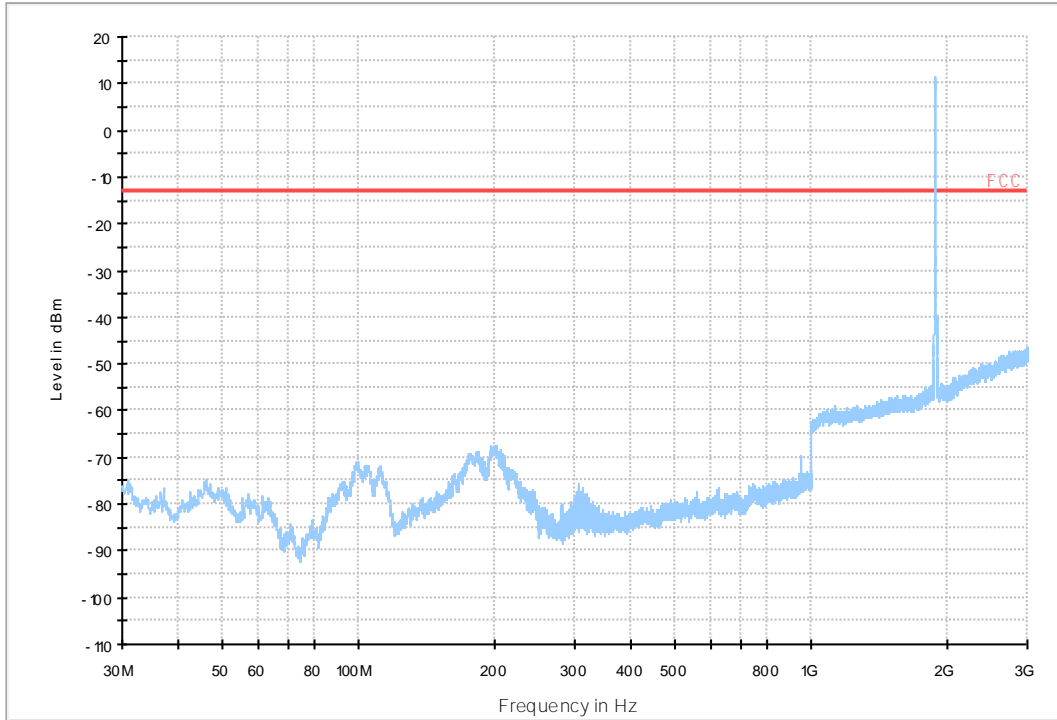
7.1.3.1 Test Mode = UMTS/TM1



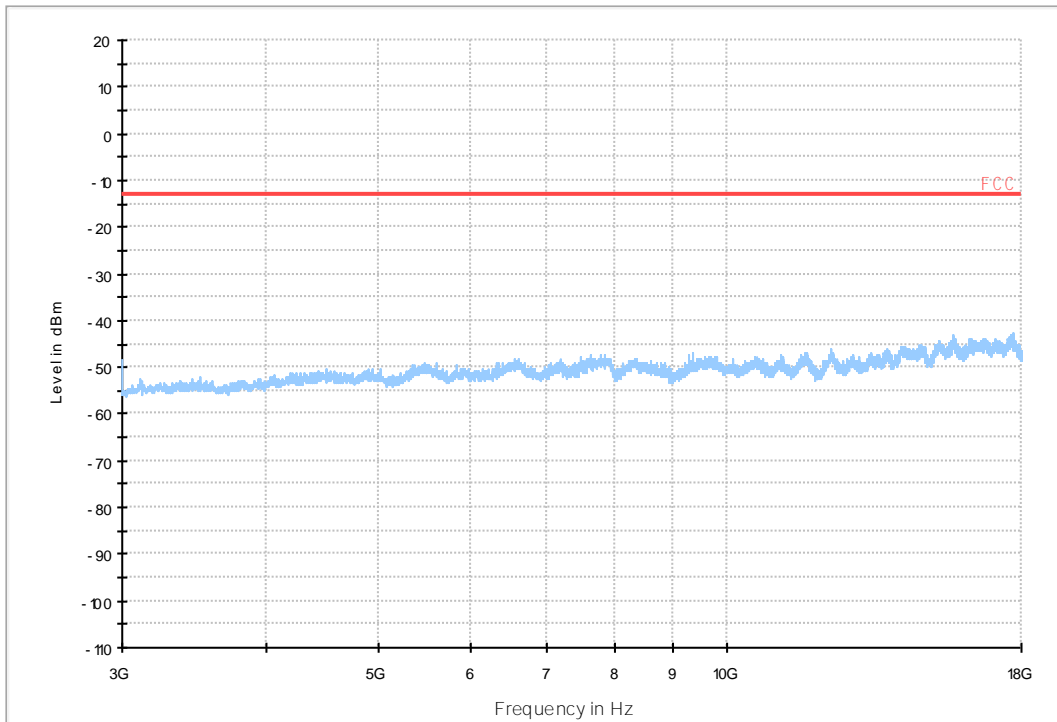
Data: 25



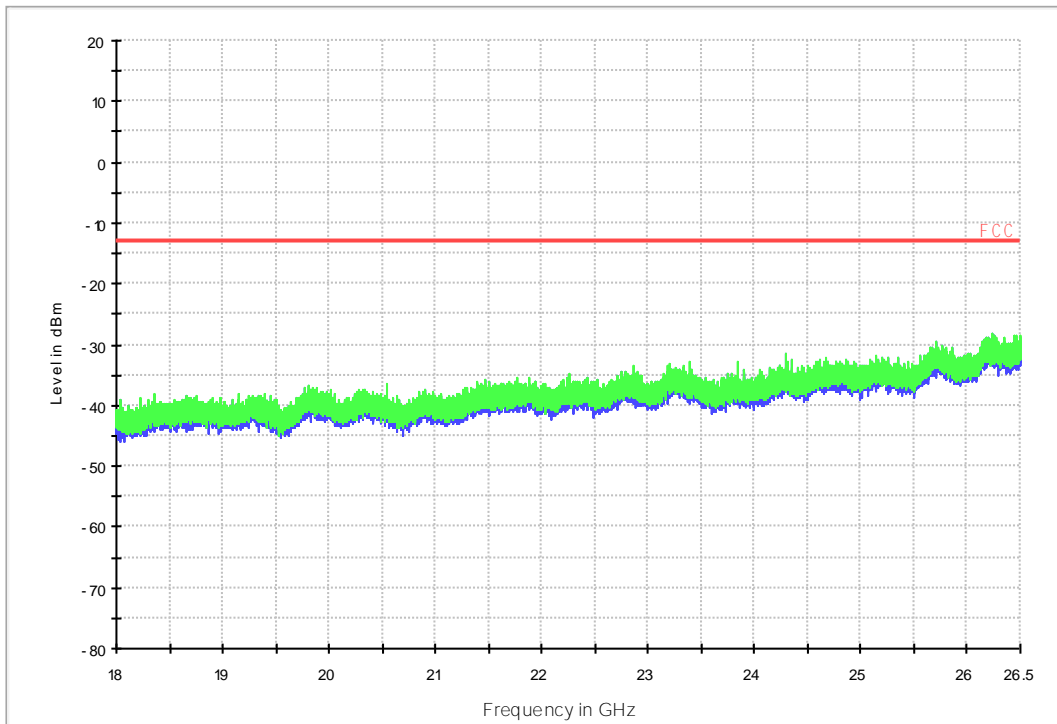
12 FCC PART 24 WCDMA1900_L



11 FCC PART 24 WCDMA1900_H



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

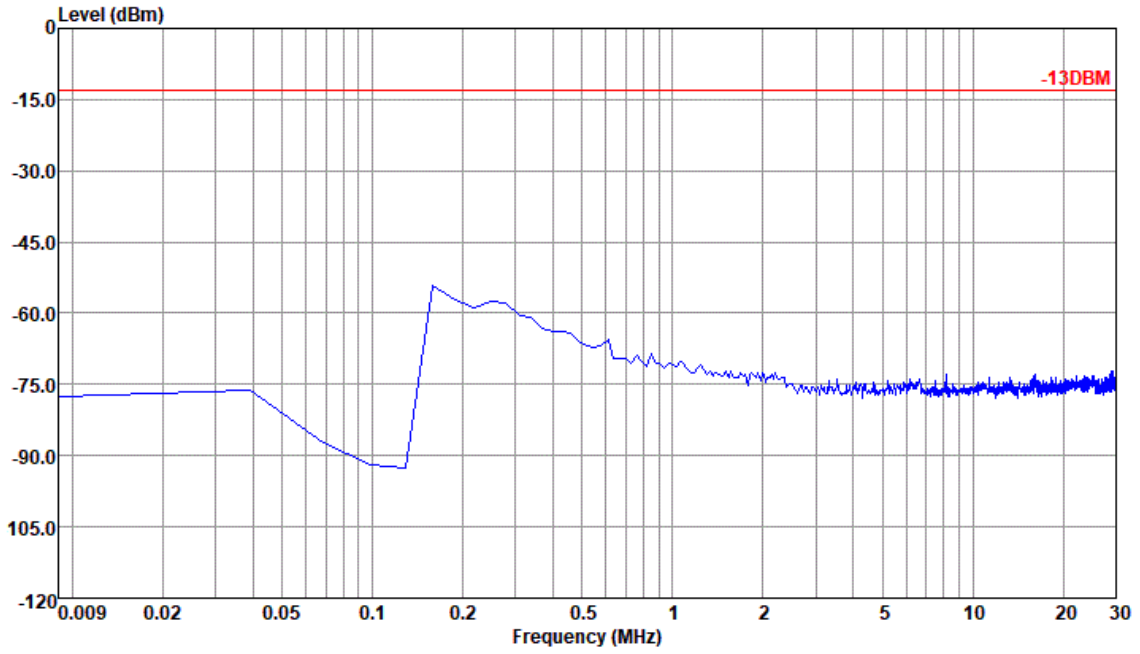


7.1.4 Test Band = WCDMA1900_ANT2

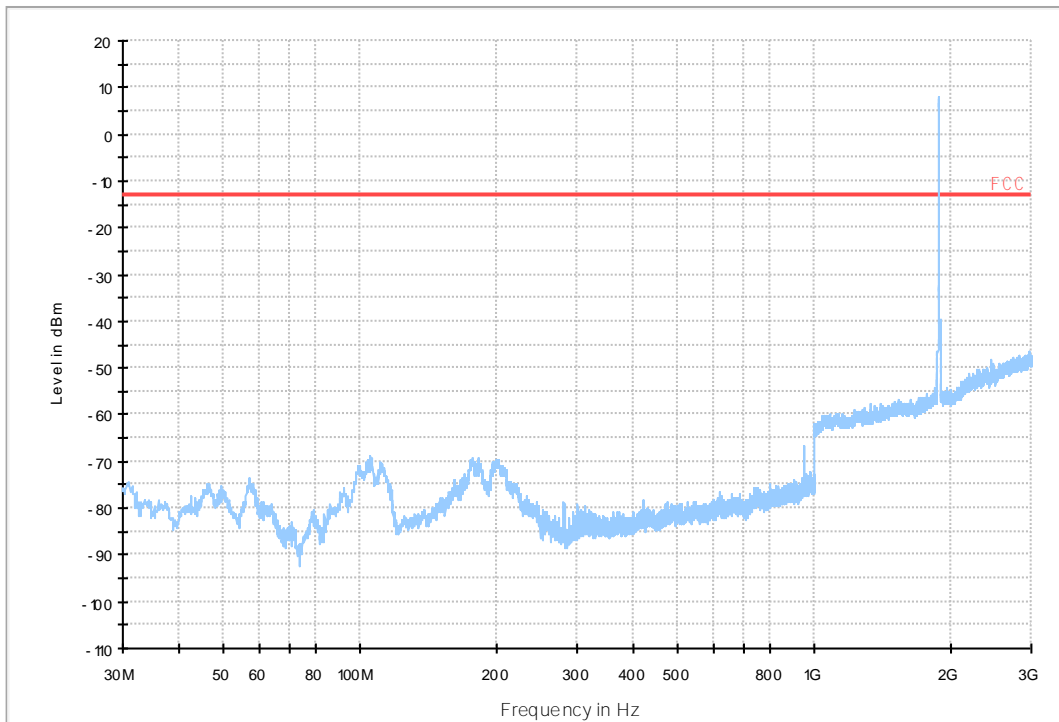
7.1.4.1 Test Mode = UMTS/TM1



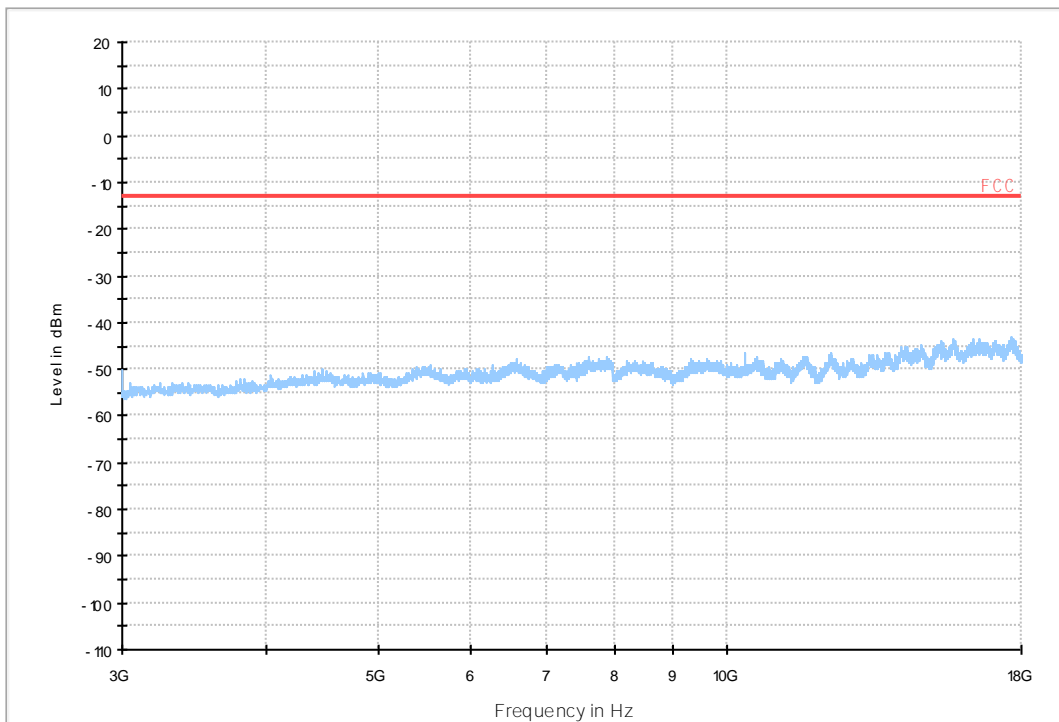
Data: 26



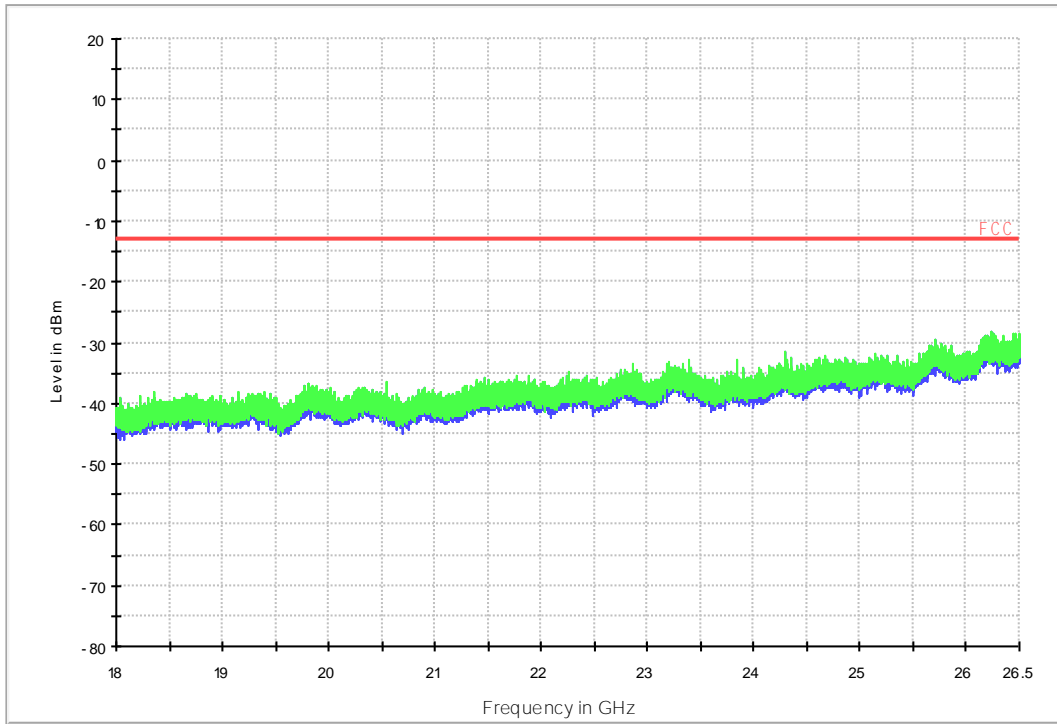
12 FCC PART 24 WCDMA1900_L



11 FCC PART 24 WCDMA1900_H



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



8Appendix_H: Frequency Stability

8.1 For UMTS

8.1.1 Frequency Error vs. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA850	UMTS/TM1	LCH	TN	VL	-1.59502	-0.00193	PASS
				VN	2.41041	0.00292	PASS
				VH	-7.22408	-0.00874	PASS
		MCH	TN	VL	-1.20878	-0.00145	PASS
				VN	-6.05822	-0.00724	PASS
				VH	-2.38895	-0.00286	PASS
		HCH	TN	VL	2.17438	0.00257	PASS
				VN	-2.08855	-0.00247	PASS
				VH	-2.04563	-0.00242	PASS
WCDMA1900	UMTS/TM1	LCH	TN	VL	1.78814	0.00097	PASS
				VN	-0.05007	-0.00003	PASS
				VH	5.75066	0.00310	PASS
		MCH	TN	VL	4.11987	0.00219	PASS
				VN	-3.90530	-0.00208	PASS
				VH	0.05722	0.00003	PASS
		HCH	TN	VL	2.57492	0.00097	PASS
				VN	6.93798	-0.00003	PASS
				VH	3.64065	0.00310	PASS

8.1.2 Frequency Error vs. Temperature:

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA850	UMTS/TM1	LCH	VN	-30	-0.76532	-0.00093	PASS
				-20	-1.75953	-0.00213	PASS
				-10	-2.17438	-0.00263	PASS
				0	-4.04120	-0.00489	PASS
				10	-2.01702	-0.00244	PASS
				20	2.41041	0.00292	PASS
				30	-2.98262	-0.00361	PASS
				40	3.21150	0.00389	PASS
				50	-1.11580	-0.00135	PASS
		MCH	VN	-30	-0.79393	-0.00095	PASS
				-20	-5.25713	-0.00629	PASS
				-10	2.93970	0.00351	PASS
				0	-1.68085	-0.00201	PASS
				10	2.09570	0.00251	PASS
				20	-6.05822	-0.00724	PASS
				30	6.37293	0.00762	PASS
				40	-5.30004	-0.00634	PASS
				50	-5.90086	-0.00706	PASS
		HCH	VN	-30	-0.71526	-0.00084	PASS
				-20	-5.04971	-0.00596	PASS
				-10	3.42607	0.00405	PASS
				0	-2.54631	-0.00301	PASS
				10	0.22888	0.00027	PASS
				20	-2.08855	-0.00247	PASS
				30	3.61204	0.00427	PASS
				40	-4.98533	-0.00589	PASS
				50	-4.89235	-0.00578	PASS
WCDMA1900	UMTS/TM1	LCH	VN	-30	1.11580	0.00060	PASS
				-20	4.63486	0.00250	PASS
				-10	3.41177	0.00184	PASS
				0	-0.80109	-0.00043	PASS
				10	0.42200	0.00023	PASS
				20	-0.05007	-0.00003	PASS
				30	1.10149	0.00059	PASS
				40	1.47343	0.00080	PASS
				50	-0.50068	-0.00027	PASS
		MCH	VN	-30	-2.73228	-0.00145	PASS
				-20	2.83956	0.00151	PASS



Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-10	-1.48773	-0.00079	PASS
				0	4.57764	0.00243	PASS
				10	3.59774	0.00191	PASS
				20	-3.90530	-0.00208	PASS
				30	2.96831	0.00158	PASS
				40	1.51634	0.00081	PASS
				50	5.31435	0.00283	PASS
		HCH	VN	-30	-1.56641	-0.00082	PASS
		HCH	VN	-20	6.22272	0.00326	PASS
		HCH	VN	-10	2.56777	0.00135	PASS
		HCH	VN	0	4.55618	0.00239	PASS
		HCH	VN	10	1.58072	0.00083	PASS
		HCH	VN	20	6.93798	0.00364	PASS
		HCH	VN	30	0.93698	0.00049	PASS
		HCH	VN	40	3.44753	0.00181	PASS
		HCH	VN	50	6.22272	0.00326	PASS

END