



# Appendix for WCDMA

## 1 Appendix\_A: Effective (Isotropic) Radiated Power Output Data

### Part I - Test Results

Test Band	Test Mode	Test Channel	Conducted Power [dBm]	ERP Power [dBm]	Limit [dBm]	Verdict
WCDMA850	UMTS/TM1	LCH	23.41	21.66	38.5	PASS
		MCH	23.4	21.65	38.5	PASS
		HCH	23.28	21.53	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,

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

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

b, SGP=Signal Generator Level

Note2: 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
WCDMA850	UMTS/TM1	LCH	4.05	13	PASS
		MCH	3.87	13	PASS
		HCH	4.11	13	PASS

### 3Appendix\_C: Modulation Characteristics

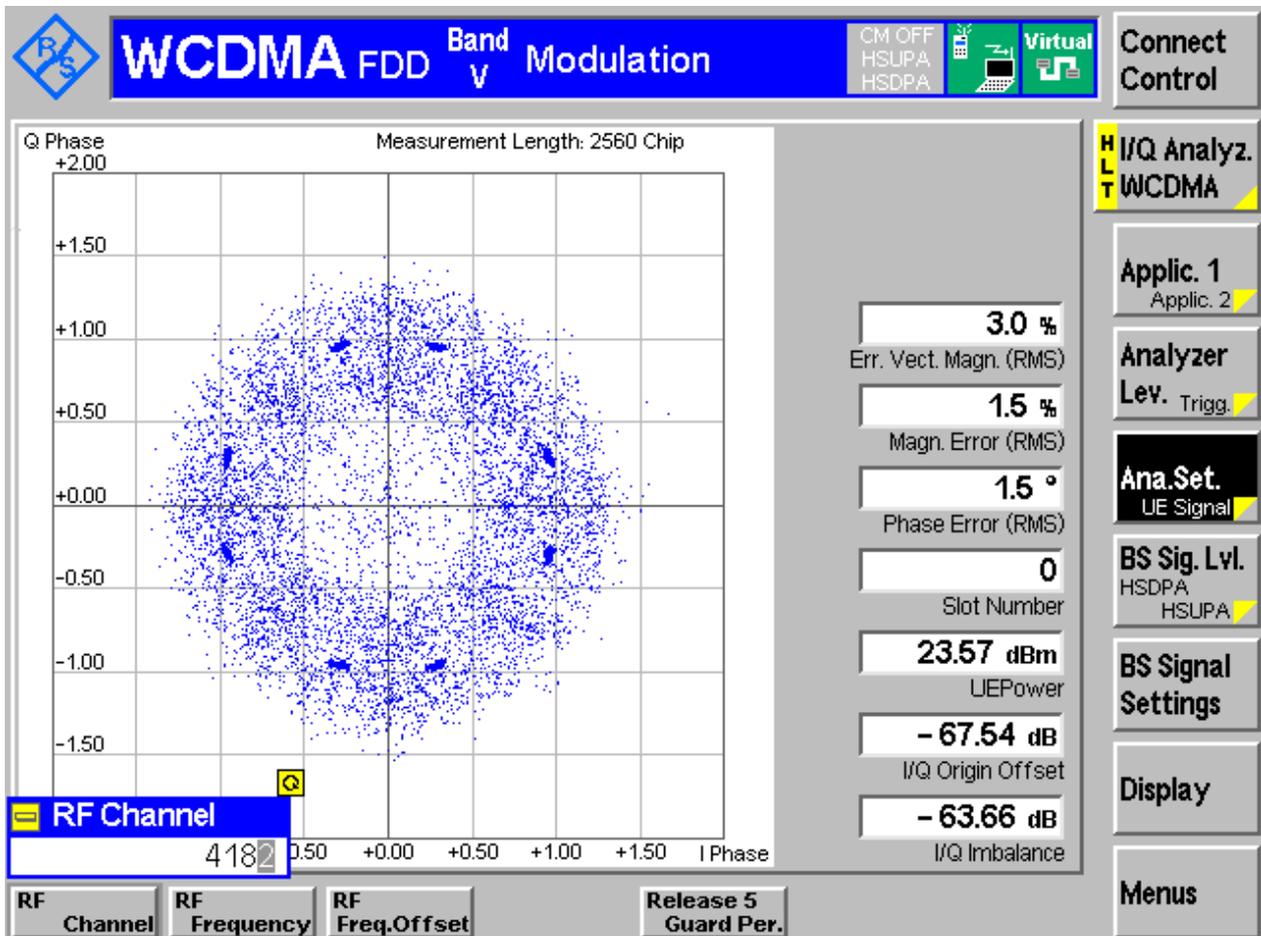
#### Part I - Test Plots

##### 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



## 4Appendix\_D: Bandwidth

### Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
WCDMA850	UMTS/TM1	LCH	4.14	4.70	Pass
		MCH	4.14	4.71	Pass
		HCH	4.13	4.70	Pass



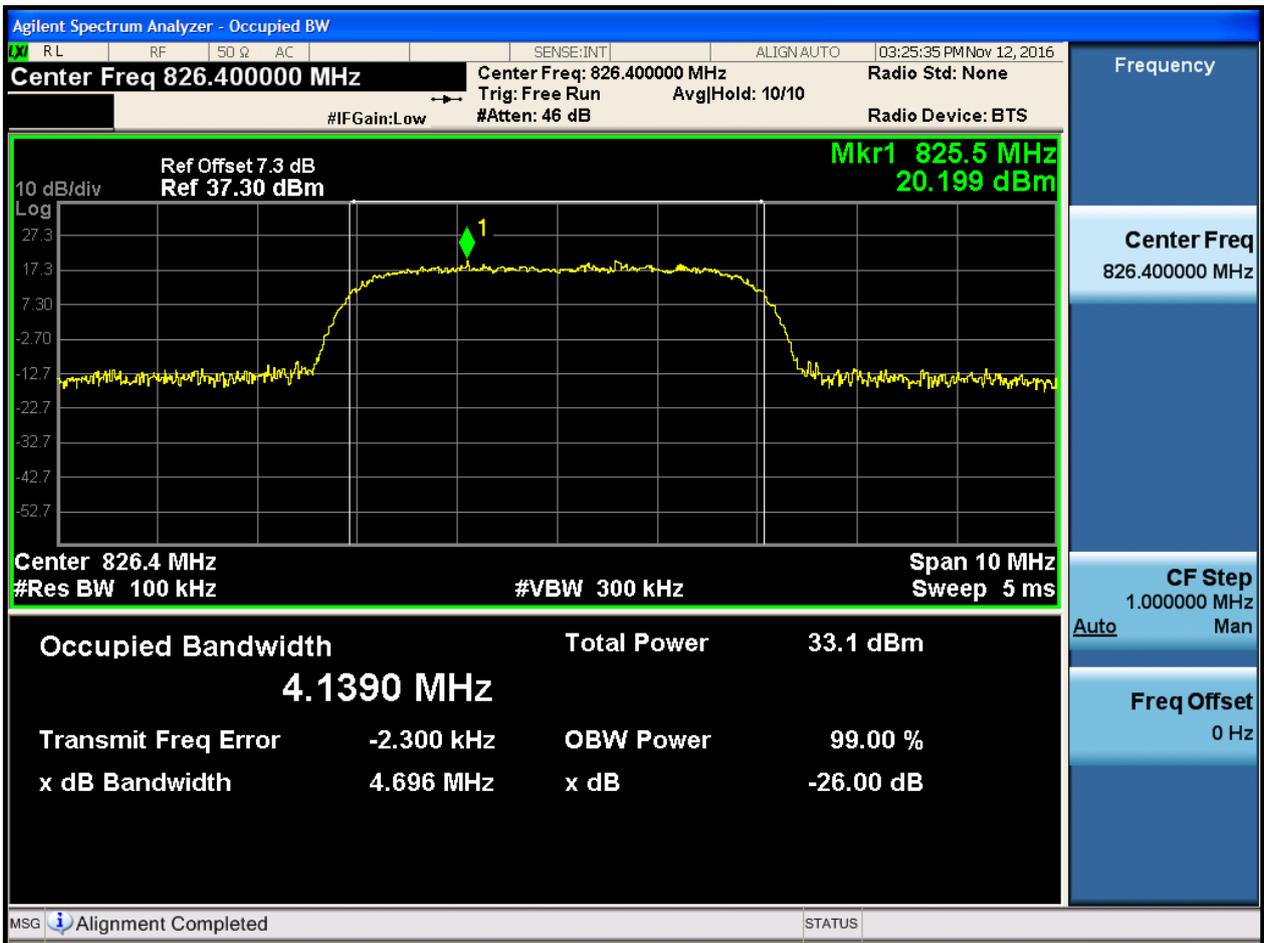
Part II - Test Plots

4.1 For UMTS

4.1.1 Test Band = WCDMA850

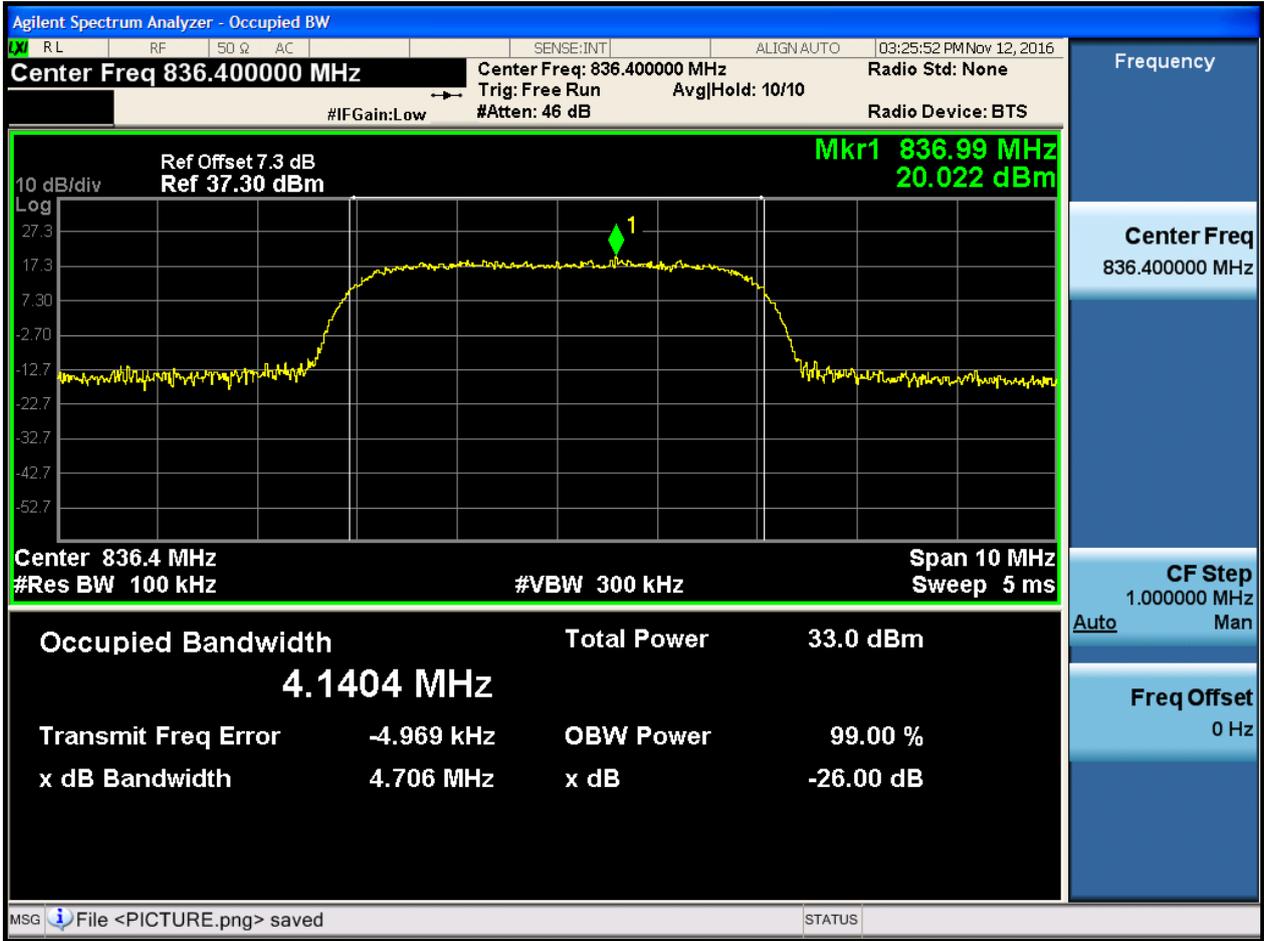
4.1.1.1 Test Mode = UMTS/TM1

4.1.1.1.1 Test Channel = LCH



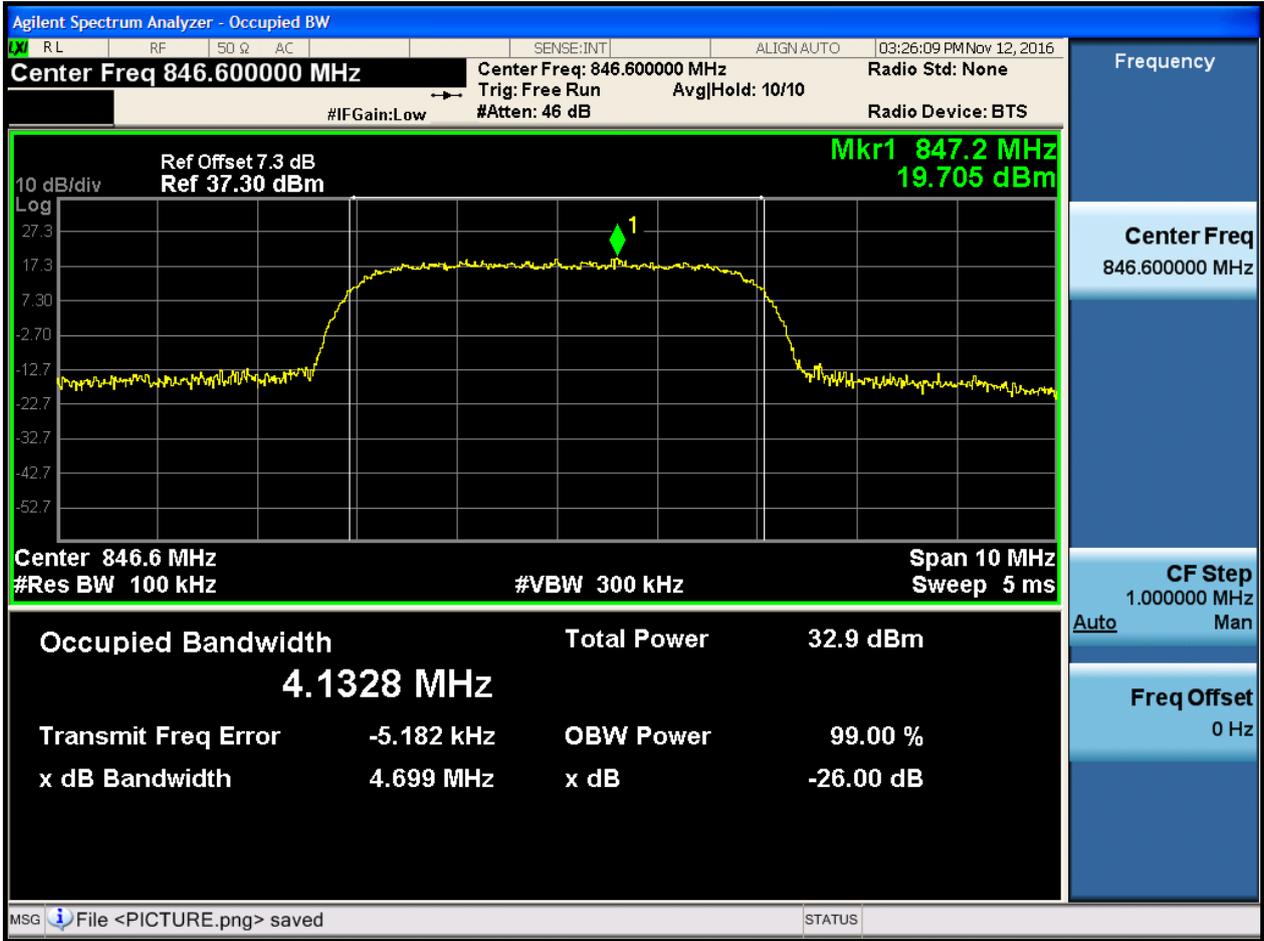


4.1.1.1.2 Test Channel = MCH





4.1.1.1.3 Test Channel = HCH





# 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





## 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.

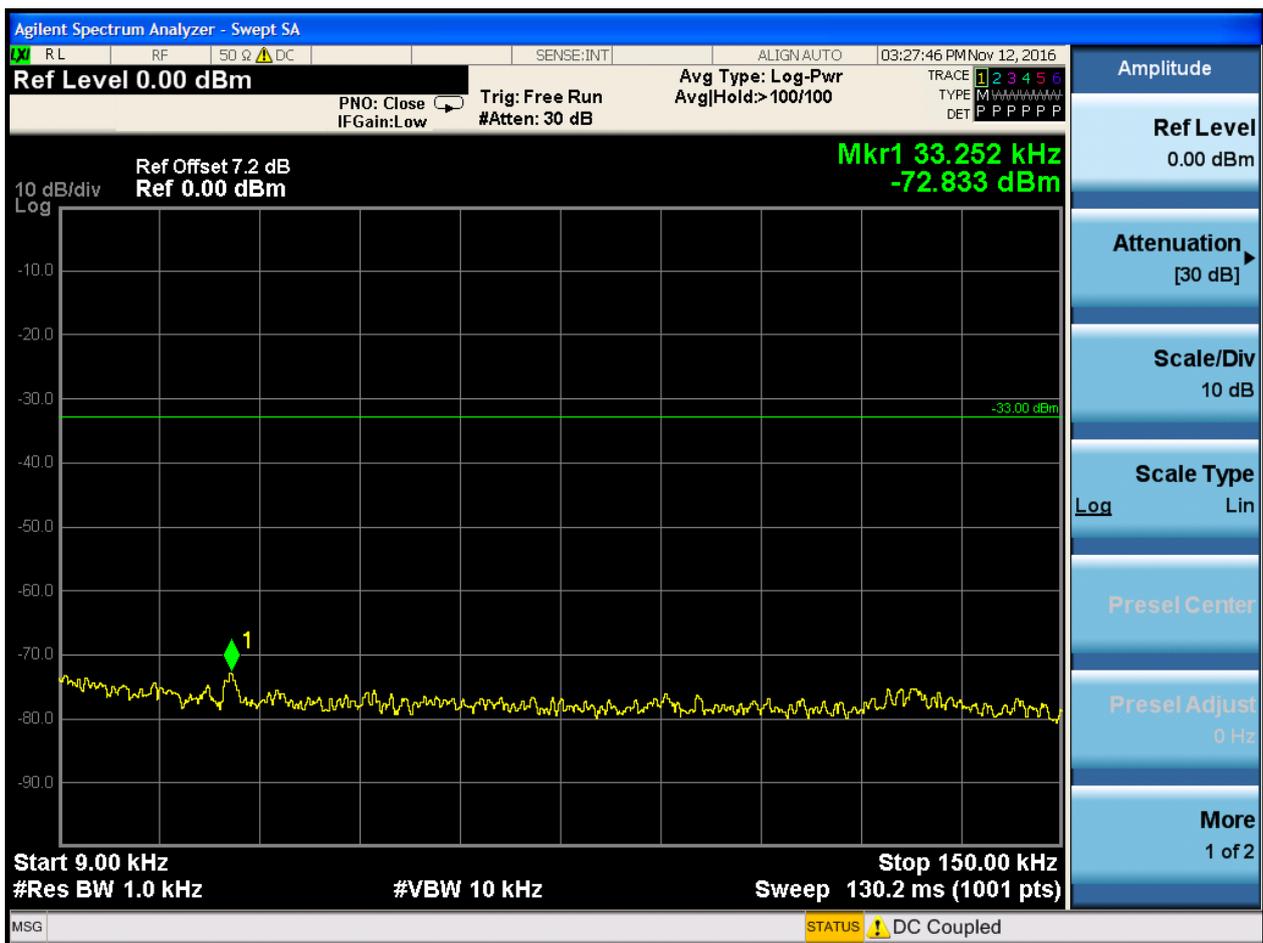
### Part I - Test Plots

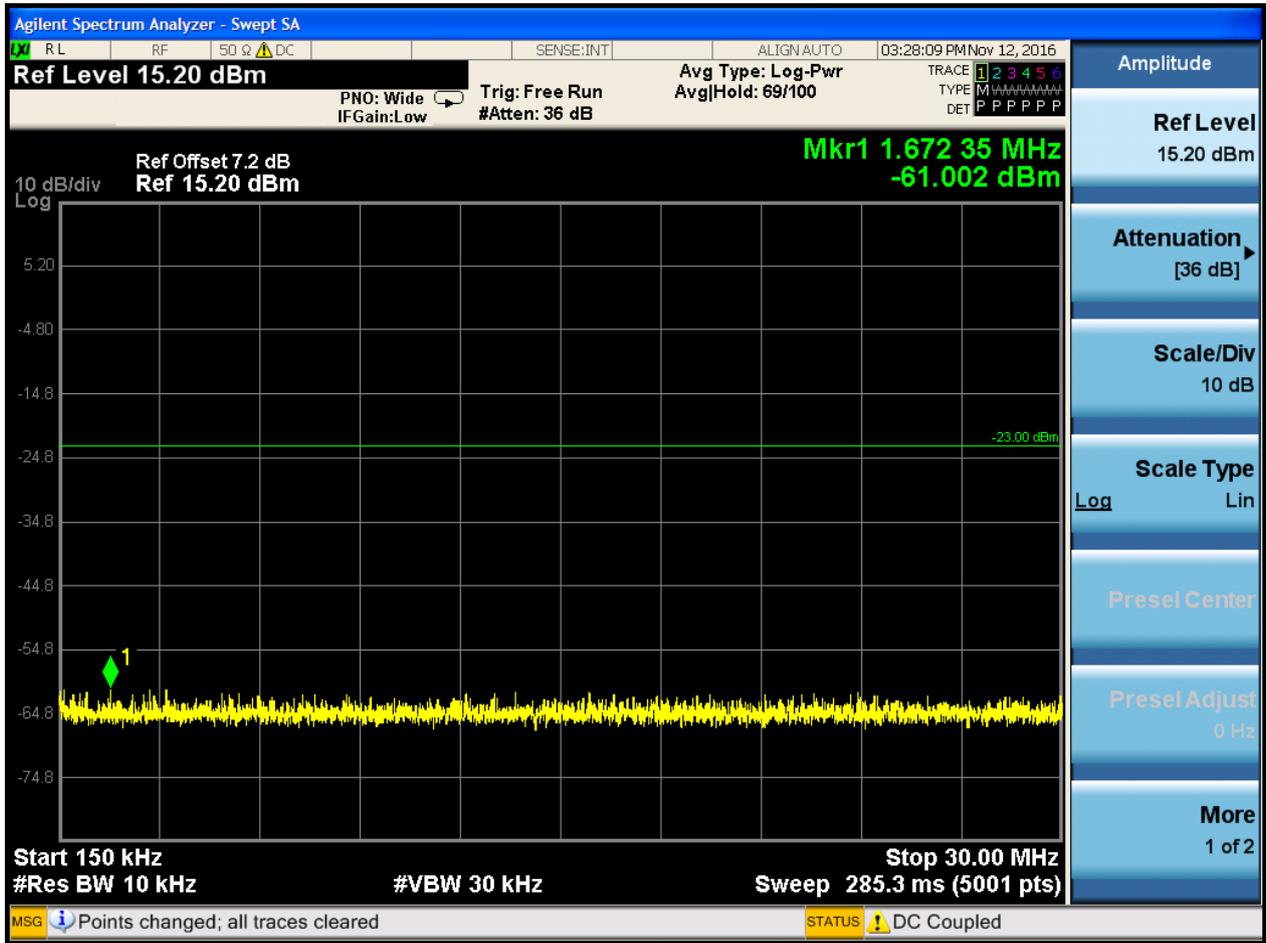
#### 6.1 For UMTS

##### 6.1.1 Test Band = WCDMA850

##### 6.1.1.1 Test Mode = UMTS/TM1

##### 6.1.1.1.1 Test Channel = LCH



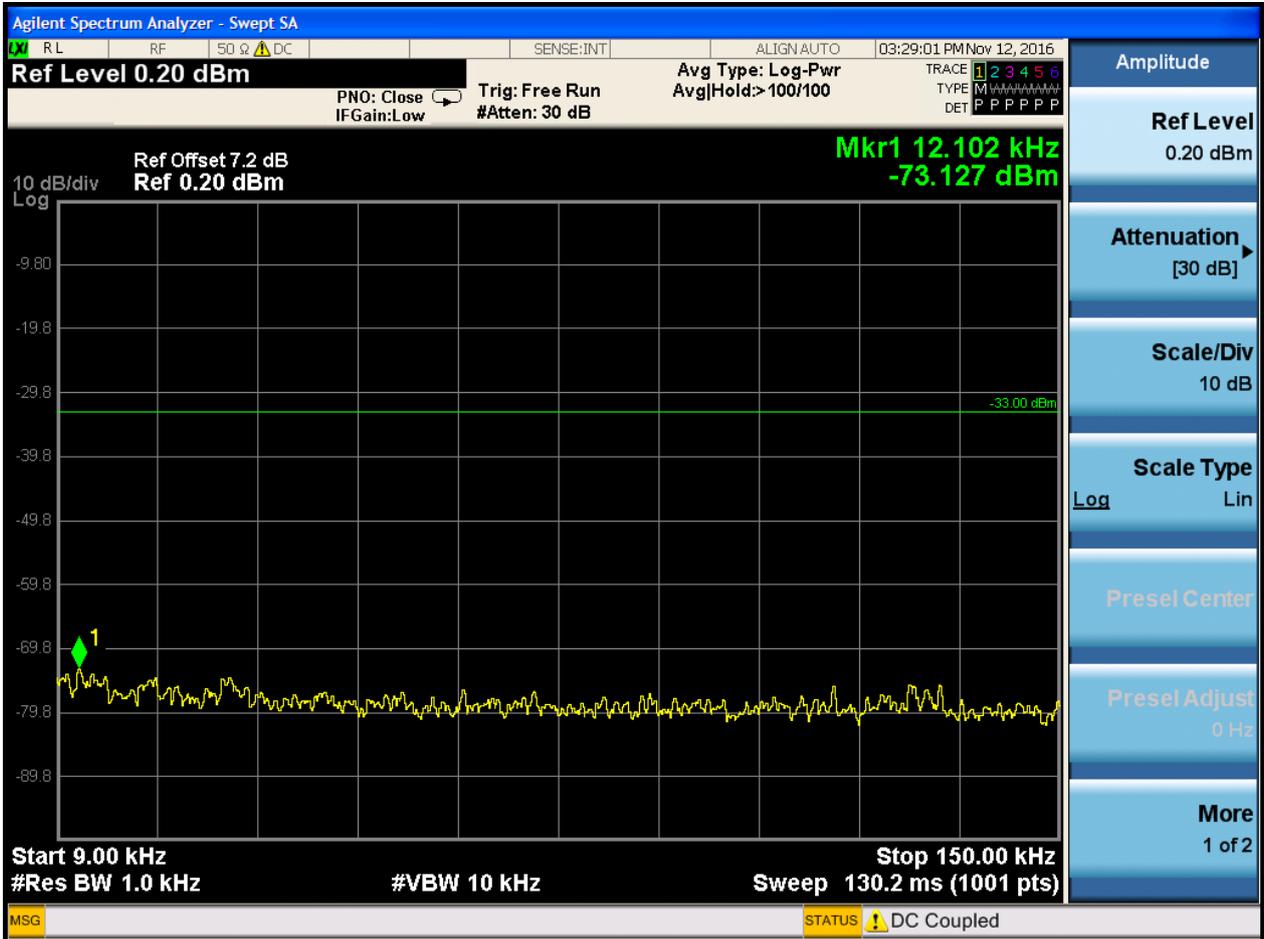








### 6.1.1.1.2 Test Channel = MCH



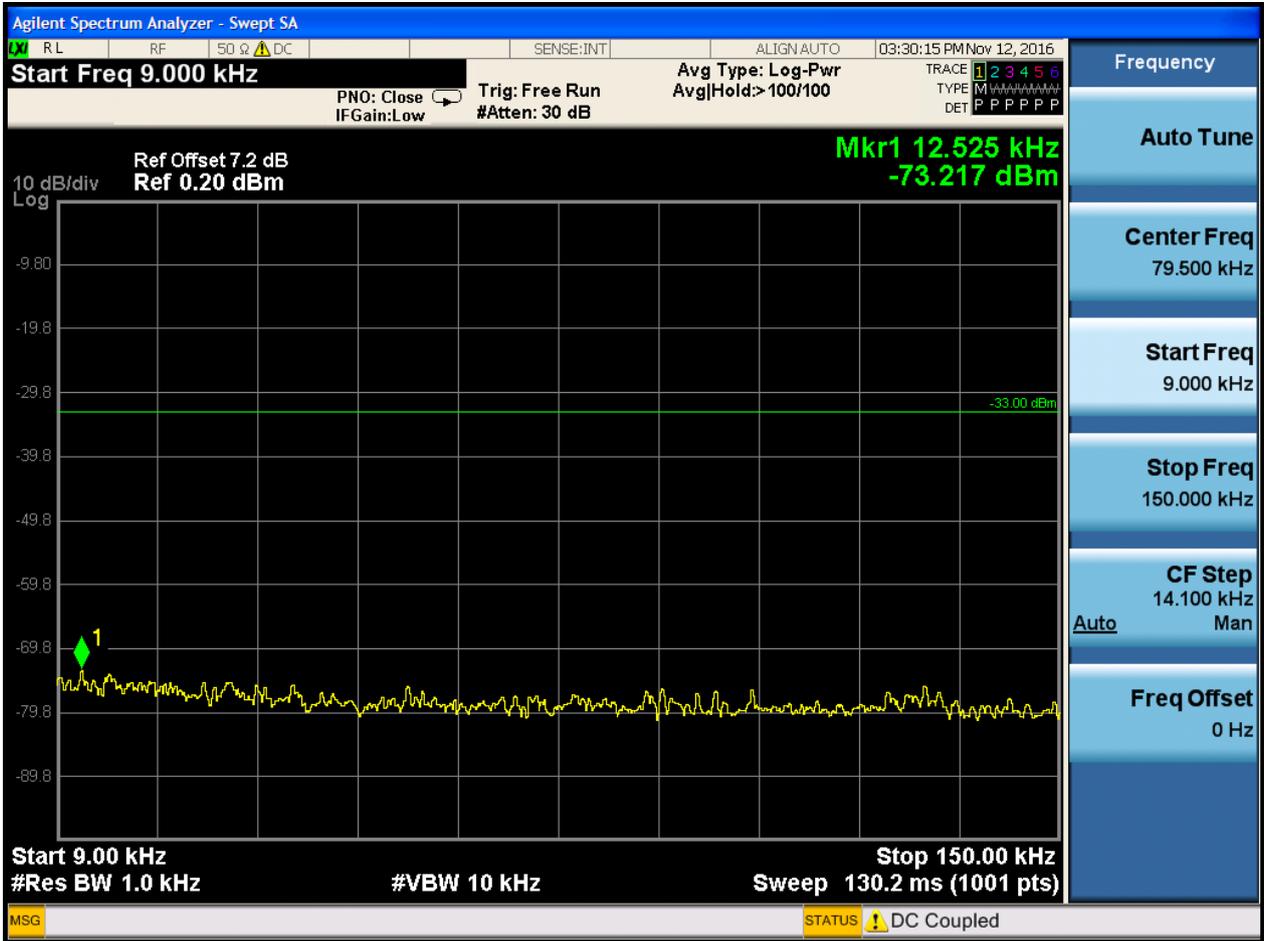


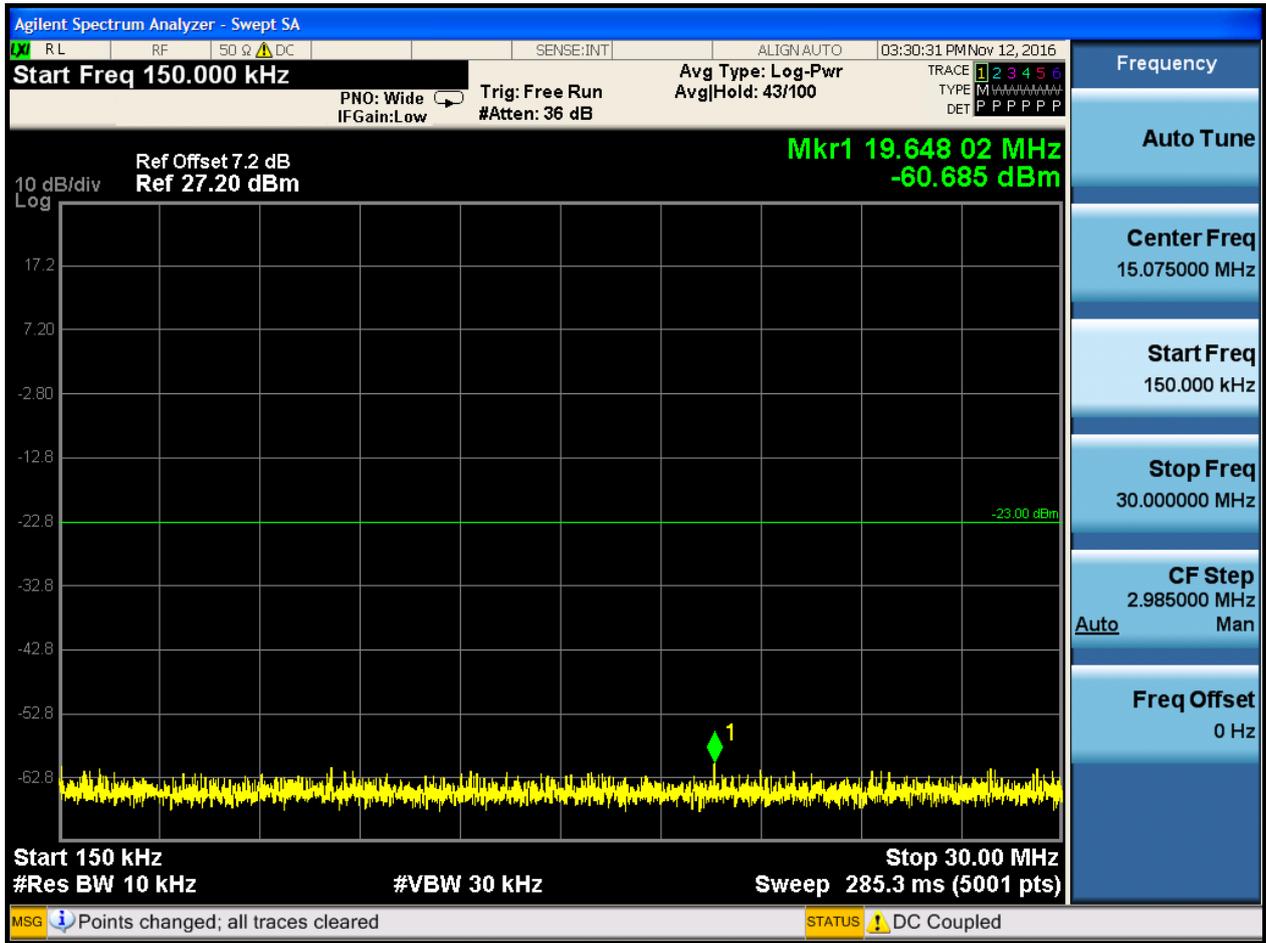


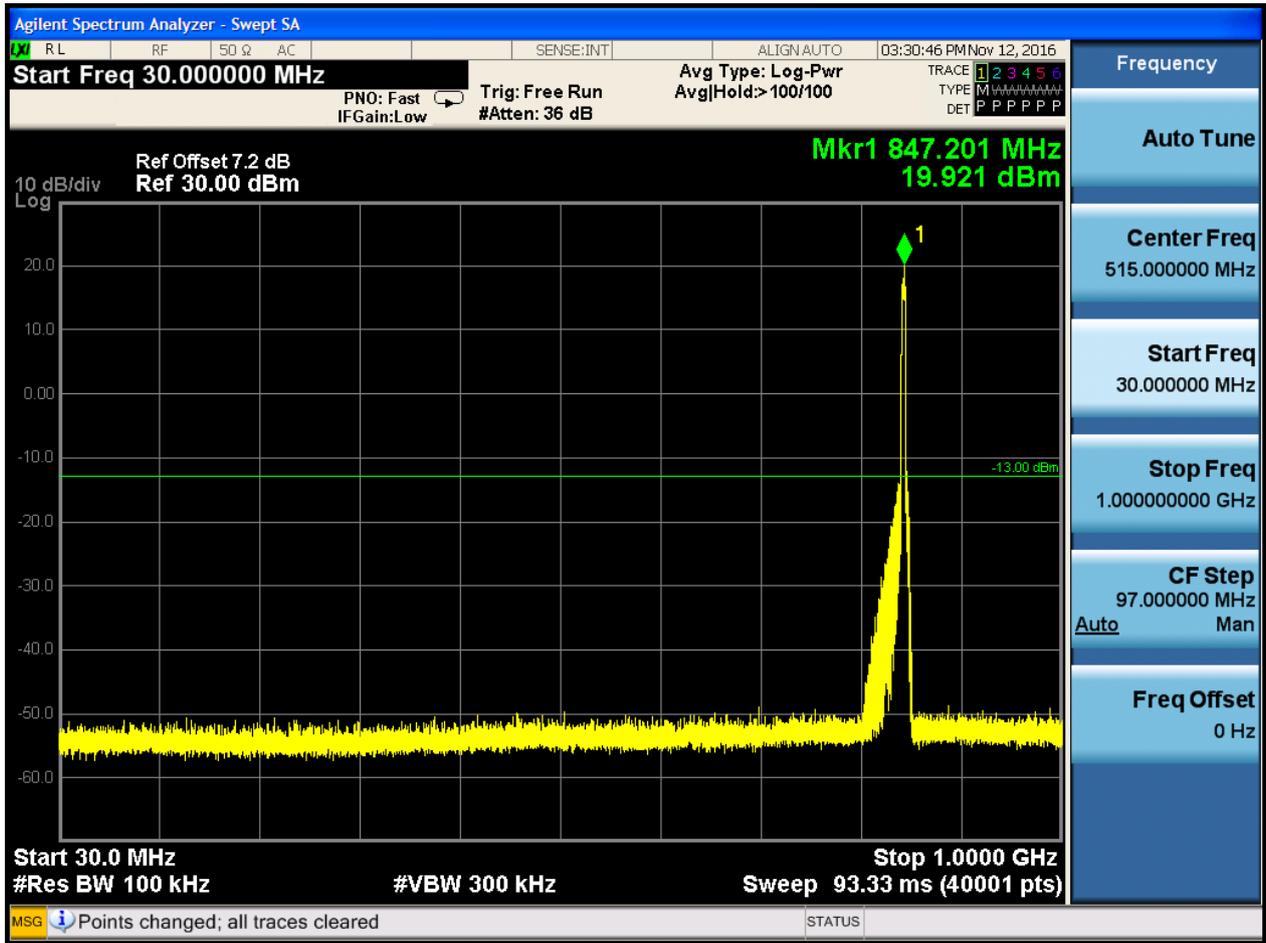




### 6.1.1.1.3 Test Channel = HCH









## 7Appendix\_G: Field Strength of Spurious Radiation

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

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

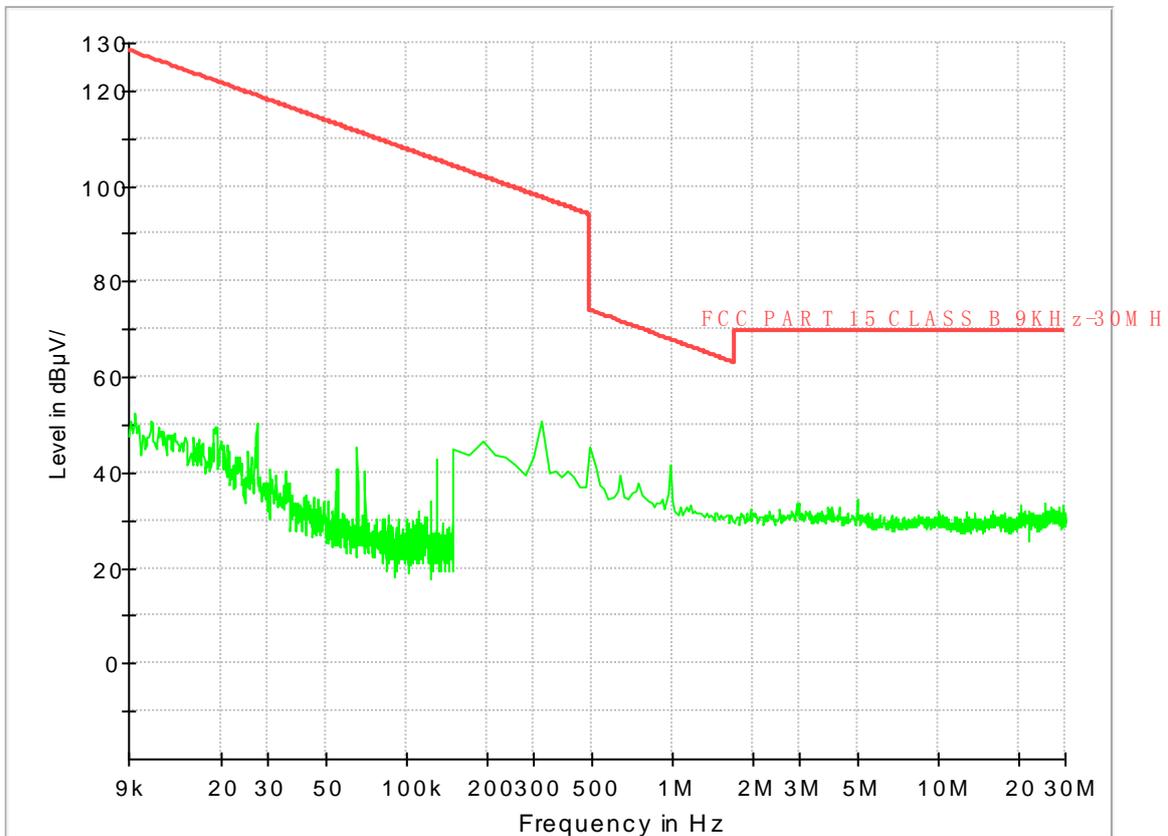
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

### Part I - Test Plots

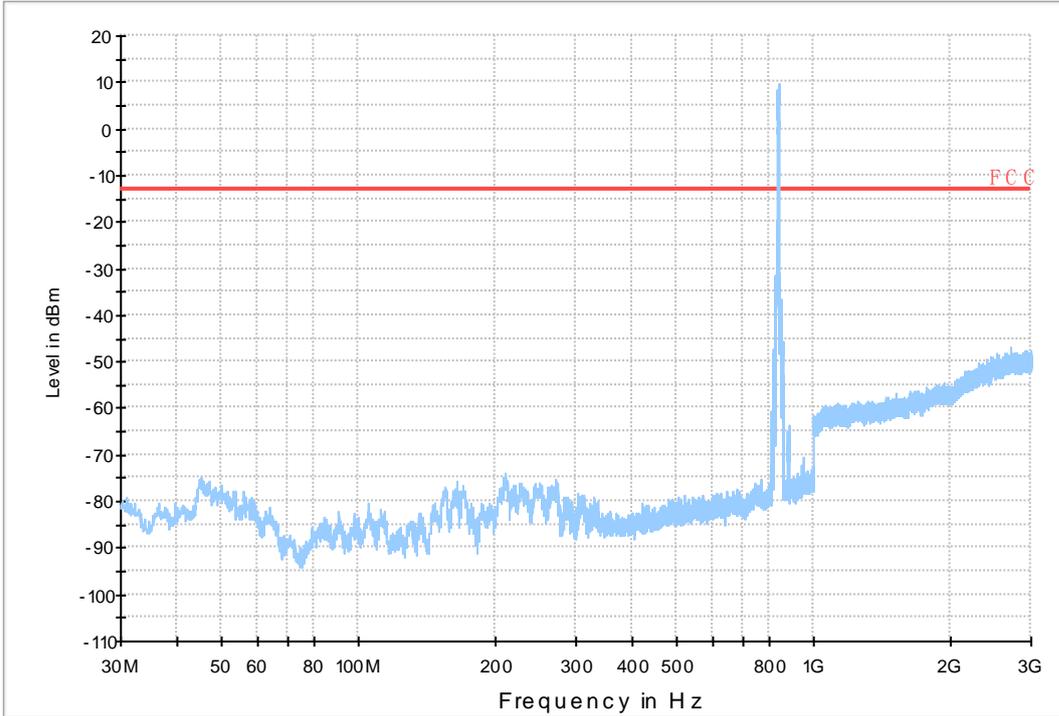
#### 7.1 For UMTS

##### 7.1.1 Test Band = WCDMA850

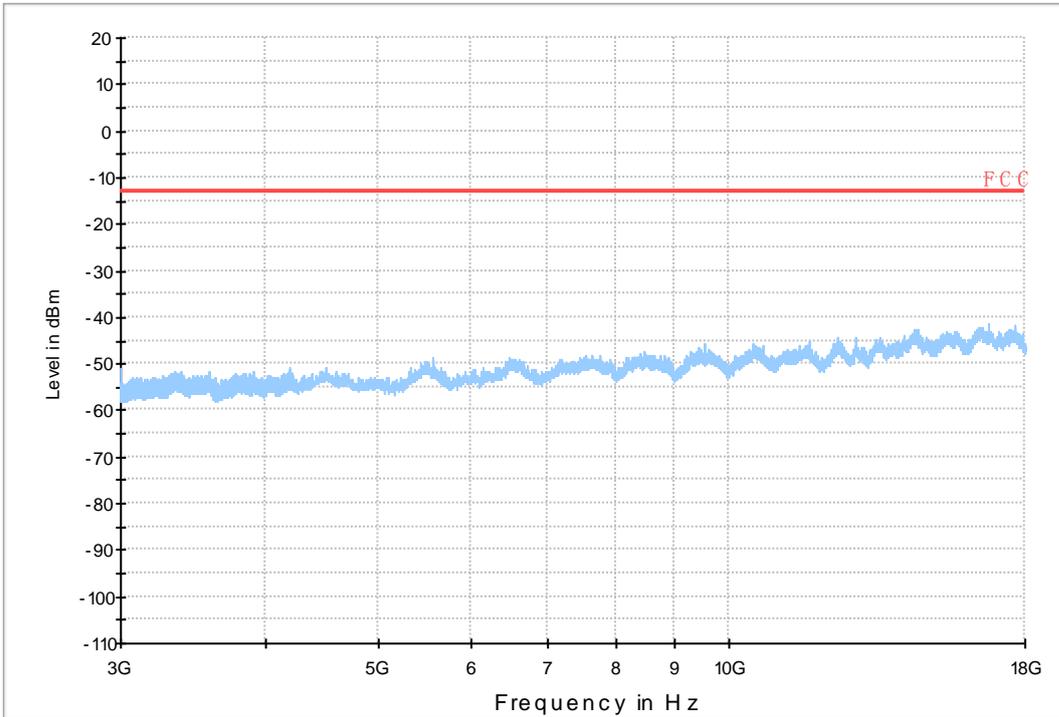
##### 7.1.1.1 Test Mode = UMTS/TM1



Copy of FCC PART22 W CDMA850\_L



Copy of FCC PART22 W CDMA850\_H



## 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	-2.38	-0.00288	PASS
				VN	-0.69	-0.00083	PASS
				VH	0.23	0.00028	PASS
		MCH	TN	VL	-2.03	-0.00243	PASS
				VN	0.76	0.00091	PASS
				VH	-1.14	-0.00136	PASS
		HCH	TN	VL	-2.00	-0.00236	PASS
				VN	-1.10	-0.0013	PASS
				VH	1.36	0.00161	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	-1.91	-0.00231	PASS
				-20	-2.29	-0.00277	PASS
				-10	-1.39	-0.00168	PASS
				0	1.07	0.00129	PASS
				10	0.23	0.00028	PASS
				20	0.23	0.00028	PASS
				30	-0.69	-0.00083	PASS
				40	0.12	0.00015	PASS
		MCH	VN	50	-0.41	-0.0005	PASS
				-30	0.23	0.00027	PASS
				-20	-2.12	-0.00253	PASS
				-10	0.64	0.00077	PASS
				0	-0.55	-0.00066	PASS
				10	-0.81	-0.00097	PASS
				20	-0.81	-0.00097	PASS
				30	-0.76	-0.00091	PASS
40	-0.66	-0.00079	PASS				
50	-0.50	-0.0006	PASS				



---

---

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
		HCH	VN	-30	2.38	0.00281	PASS
				-20	3.36	0.00397	PASS
				-10	2.44	0.00288	PASS
				0	1.31	0.00155	PASS
				10	1.22	0.00144	PASS
				20	2.09	0.00247	PASS
				30	2.15	0.00254	PASS
				40	1.92	0.00227	PASS
				50	-0.75	-0.00089	PASS

---

END