



# TEST REPORT

**APPLICANT** : Nubia Technology Co.,Ltd.

**PRODUCT NAME** : 5G Digital Mobile Phone

**MODEL NAME** : NX659J

**BRAND NAME** : REDMAGIC

**FCC ID** : 2AHJO-NX659J

**STANDARD(S)** : 47 CFR Part 22 Subpart H  
47 CFR Part 24 Subpart E  
47 CFR Part 27 Subpart L

**RECEIPT DATE** : 2020-01-15

**TEST DATE** : 2020-02-21 to 2020-03-31

**ISSUE DATE** : 2020-04-03

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<b>Change History</b>		
<b>Version</b>	<b>Date</b>	<b>Reason for change</b>
1.0	2020-04-03	First edition



# 1. Technical Information

Note: Provide by applicant.

## 1.1. Applicant and Manufacturer Information

<b>Applicant:</b>	Nubia Technology Co.,Ltd.
<b>Applicant Address:</b>	16/F,Building 2,chongwen Park,Nanshan zhiyuan,3370 Liuxian Road,Nanshan District,Shenzhen,China.
<b>Manufacturer:</b>	Nubia Technology Co.,Ltd.
<b>Manufacturer Address:</b>	16/F,Building 2,chongwen Park,Nanshan zhiyuan,3370 Liuxian Road,Nanshan District,Shenzhen,China.

## 1.2. Equipment Under Test (EUT) Description

<b>Product Name:</b>	5G Digital Mobile Phone	
<b>Hardware Version:</b>	NX659J_V1AMB	
<b>Software Version:</b>	NX659J_ENCommon_V1.22	
<b>Modulation Type:</b>	GSM/GPRS Mode with GMSK Modulation EDGE Mode with 8PSK Modulation WCDMA Mode with QPSK Modulation HSDPA Mode with QPSK Modulation HSUPA Mode with QPSK Modulation HSPA+ Mode with QPSK Modulation	
<b>Operating Frequency Range:</b>	<b>GSM 850MHz:</b> Tx: 824MHz - 849MHz Rx: 869MHz - 894MHz  <b>GSM 1900MHz:</b> Tx: 1850MHz - 1910MHz Rx: 1930MHz - 1990MHz	<b>WCDMA Band V</b> Tx: 824MHz - 849MHz Rx: 869MHz - 894MHz  <b>WCDMA Band II</b> Tx: 1850MHz - 1910MHz Rx: 1930MHz - 1990MHz  <b>WCDMA Band IV</b> Tx: 1710MHz - 1755MHz Rx: 2110MHz - 2155MHz



<b>Antenna Type:</b>	Fixed Internal	
<b>Antenna Gain:</b>	Top Antenna	
	GSM 850:	1.50 dBi
	GSM1900:	1.23 dBi
	WCDMA Band V:	1.50 dBi
	WCDMA Band II:	1.23 dBi
	WCDMA Band IV:	1.23 dBi
	Bottom Antenna	
	GSM 850:	1.50 dBi
	GSM1900:	1.23 dBi
	WCDMA Band V:	1.50 dBi
	WCDMA Band II:	1.23 dBi
	WCDMA Band IV:	1.23 dBi
<b>Accessory Information:</b>	Battery	
	Brand Name:	ATL
	Model No.:	Li3945T44P8h526391
	Capacity:	4400mAh
	Rated Voltage:	3.87V
	Charge Limit:	4.45V
	AC Adapter 1	
	Brand Name:	N/A
	Model No.:	CYNBY090200-A00
	Rated Input:	100-240V ~ 50/60Hz 0.5A
	Rated Output:	12V=1.5A or 9V=2.0A or 5V=3.0A



- Note 1:** The transmitter (Tx) frequency arrangement of the Cellular 850MHz band used by the EUT can be represented with the formula  $F(n)=824.2+0.2*(n-128)$ ,  $128 \leq n \leq 251$ ; the lowest, middle, highest channel numbers (ARFCHs) used and tested in this report are separately 128 (824.2MHz), 190 (836.6MHz) and 251 (848.8MHz).
- Note 2:** The transmitter (Tx) frequency arrangement of the PCS 1900MHz band used by the EUT can be represented with the formula  $F(n)=1850.2+0.2*(n-512)$ ,  $512 \leq n \leq 810$ ; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 512 (1850.2MHz), 661 (1880.0MHz) and 810 (1909.8MHz).
- Note 3:** The transmitter (Tx) frequency arrangement of the WCDMA Band V used by the EUT can be represented with the formula  $F(n)=826.4+0.2*(n-4132)$ ,  $4132 \leq n \leq 4233$ ; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 4132 (826.4MHz), 4182(836.4MHz) and 4233 (846.6MHz).
- Note 4:** The transmitter (Tx) frequency arrangement of the WCDMA Band II used by the EUT can be represented with the formula  $F(n)=1852.4+0.2*(n-9262)$ ,  $9262 \leq n \leq 9538$ ; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 9262 (1852.4MHz), 9400 (1880MHz) and 9538 (1907.6MHz).
- Note 5:** The transmitter (Tx) frequency arrangement of the WCDMA 1700MHz band used by the EUT can be represented with the formula  $F(n)=1712.4+0.2*(n-1312)$ ,  $1312 \leq n \leq 1513$ ; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 1312 (1712.4MHz), 1413 (1732.6MHz) and 1513 (1752.6MHz).
- Note 6:** All modes and data rates were considered and evaluated respectively by performing full test. Test modes are chosen to be reported as the worst case below:  
GPRS mode and EDGE mode for GSM 850;  
GPRS mode and EDGE mode for GSM 1900;  
WCDMA mode for WCDMA band V;  
WCDMA mode for WCDMA band II;  
WCDMA mode for WCDMA band IV;
- Note 7:** For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



### 1.3. Maximum ERP/EIRP and Emission Designator

System	Maximum ERP/EIRP (W)		Emission Designator
	Top Antenna	Bottom Antenna	
GSM850	0.429	1.514	241KGXW
EDGE850	0.220	0.366	248KG7W
GSM1900	0.395	1.403	237KGXW
EDGE1900	0.397	0.481	247KG7W
WCDMA Band V	0.082	0.196	4M16F9W
WCDMA Band II	0.097	0.307	4M15F9W
WCDMA Band IV	0.061	0.301	4M15F9W



## 1.4. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2, Part 22, Part 24 and Part 27 for the EUT FCC ID Certification:

No	Identity	Document Title
1	47 CFR Part 2 (10-1-12 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-12 Edition)	Public Mobile Services
3	47 CFR Part 24 (10-1-12 Edition)	Personal Communications Services
4	47 CFR Part 27 (10-1-12 Edition)	Miscellaneous Wireless Communications Services





Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result	Method determination/ Remark
1	2.1046	Conducted RF Output Power	Mar 26 to 31, 2020	Gao Mingzhou	PASS	No deviation
2	24.232(d)	Peak -Average Ratio	Feb 22, to Mar 7, 2020	Gao Mingzhou	PASS	No deviation
3	2.1049	99% Occupied Bandwidth	Feb 22 to 28, 2020	Gao Mingzhou	PASS	No deviation
4	2.1055, 22.355, 24.235, 27.54	Frequency Stability	Feb 22, to Mar 7, 2020	Gao Mingzhou	PASS	No deviation
5	2.1051, 22.917(a), 24.238(a),	Conducted Out of Band Emissions	Feb 22, to Mar 14, 2020	Gao Mingzhou	PASS	No deviation
6	2.1051, 22.917(a), 24.238(a),	Band Edge	Feb 22, to Mar 14, 2020	Gao Mingzhou	PASS	No deviation
7	22.913(a), 24.232(a)	Transmitter Radiated Power (EIPR/ERP)	Feb 22, to Mar 31, 2020	PengXuewei	PASS	No deviation
8	2.1051, 22.917(a), 24.238(a)	Radiated Out of Band Emissions	Mar 26 to 31, 2020	PengXuewei	PASS	No deviation

**Note 1:** The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 and ANSI/TIA-603-E-2016.

**Note 2:** The path loss during the RF test is calibrated to correct the results by the offset setting in the test equipments. The ref offset 26.5dB contains two parts that cable loss 16.5dB and Attenuator 10dB.



## 1.5. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106

## 2.47 CFR Part 2, Part 22H , 24E&27L Requirements

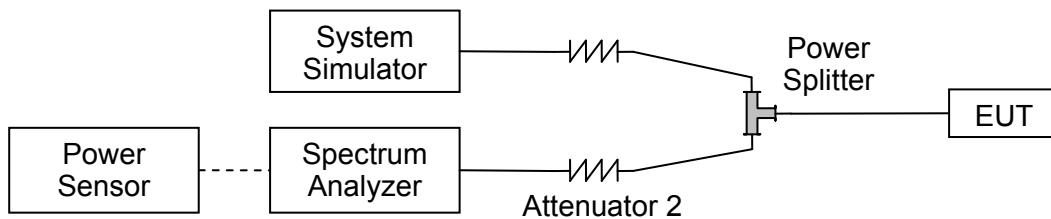
### 2.1. Conducted RF Output Power

#### 2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

#### 2.1.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.



### 2.1.3. Test Results

#### Top Antenna:

<b>GSM850</b>	<b>Average Power (dBm)</b>		
<b>TX Channel</b>	<b>128</b>	<b>190</b>	<b>251</b>
<b>Frequency (MHz)</b>	<b>824.2</b>	<b>836.6</b>	<b>848.8</b>
GSM 1 Tx slot	26.87	26.97	26.93
GPRS 1 Tx slot	26.88	26.93	26.92
GPRS 2 Tx slots	26.61	26.64	26.59
GPRS 3 Tx slots	24.12	24.15	23.93
GPRS 4 Tx slots	23.02	23.13	22.89
EDGE 1 Tx slot	23.86	24.08	23.91
EDGE 2 Tx slots	23.75	23.95	23.75
EDGE 3 Tx slots	23.64	23.83	23.62
EDGE 4 Tx slots	22.87	22.86	22.91

<b>GSM1900</b>	<b>Average Power (dBm)</b>		
<b>TX Channel</b>	<b>512</b>	<b>661</b>	<b>810</b>
<b>Frequency (MHz)</b>	<b>1850.2</b>	<b>1880</b>	<b>1909.8</b>
GSM 1 Tx slot	24.63	24.74	24.62
GPRS 1 Tx slot	24.63	24.81	24.62
GPRS 2 Tx slots	24.73	24.61	24.68
GPRS 3 Tx slots	21.77	22.04	21.57
GPRS 4 Tx slots	20.85	20.84	20.59
EDGE 1 Tx slot	24.66	24.76	24.67
EDGE 2 Tx slots	24.39	24.56	24.08
EDGE 3 Tx slots	21.81	21.89	21.57
EDGE 4 Tx slots	20.87	20.92	20.61



<b>WCDMA Band V</b>	<b>Average Power (dBm)</b>		
<b>TX Channel</b>	<b>4132</b>	<b>4182</b>	<b>4233</b>
<b>Frequency (MHz)</b>	<b>826.4</b>	<b>836.4</b>	<b>846.6</b>
AMR 12.2Kbps	19.87	19.91	19.82
RMC 12.2Kbps	19.73	19.77	19.69
HSDPA Subtest-1	18.69	18.62	18.17
HSDPA Subtest-2	18.67	18.62	18.13
HSDPA Subtest-3	18.65	18.19	18.12
HSDPA Subtest-4	18.64	18.19	17.72
HSUPA Subtest-1	17.99	17.97	17.95
HSUPA Subtest-2	17.51	17.69	17.47
HSUPA Subtest-3	16.89	16.57	16.85
HSUPA Subtest-4	16.78	16.46	16.74
HSUPA Subtest-5	16.01	15.99	15.97
HSPA+ (16QAM) Subtest-1	15.97	15.95	15.93

<b>WCDMA Band II</b>	<b>Average Power (dBm)</b>		
<b>TX Channel</b>	<b>9262</b>	<b>9400</b>	<b>9538</b>
<b>Frequency (MHz)</b>	<b>1852.4</b>	<b>1880.0</b>	<b>1907.6</b>
AMR 12.2Kbps	18.81	18.76	18.69
RMC 12.2Kbps	18.64	18.61	18.54
HSDPA Subtest-1	17.79	17.81	17.92
HSDPA Subtest-2	17.30	17.34	17.41
HSDPA Subtest-3	17.29	17.35	17.43
HSDPA Subtest-4	16.78	16.75	16.72
HSUPA Subtest-1	15.99	15.96	15.93
HSUPA Subtest-2	15.76	15.83	15.70
HSUPA Subtest-3	15.54	15.71	15.48
HSUPA Subtest-4	15.31	15.28	15.25
HSUPA Subtest-5	15.01	14.98	14.95
HSPA+ (16QAM) Subtest-1	14.93	14.90	14.87



WCDMA Band IV	Average Power (dBm)		
	1312	1413	1513
<b>TX Channel</b>	<b>1312</b>	<b>1413</b>	<b>1513</b>
<b>Frequency (MHz)</b>	<b>1712.4</b>	<b>1732.6</b>	<b>1752.6</b>
AMR 12.2Kbps	17.12	17.31	17.23
RMC 12.2Kbps	16.62	16.57	16.55
HSDPA Subtest-1	16.50	16.52	16.59
HSDPA Subtest-2	16.06	16.07	16.05
HSDPA Subtest-3	15.16	15.99	16.04
HSDPA Subtest-4	15.09	15.10	15.11
HSUPA Subtest-1	14.96	14.97	14.98
HSUPA Subtest-2	14.83	14.84	14.75
HSUPA Subtest-3	14.75	14.76	14.67
HSUPA Subtest-4	14.41	14.62	14.43
HSUPA Subtest-5	14.01	14.02	14.03
HSPA+ (16QAM) Subtest-1	13.78	13.80	13.83

**Bottom Antenna:**

<b>GSM850</b>	<b>Average Power (dBm)</b>		
<b>TX Channel</b>	<b>128</b>	<b>190</b>	<b>251</b>
<b>Frequency (MHz)</b>	<b>824.2</b>	<b>836.6</b>	<b>848.8</b>
GSM 1 Tx slot	32.19	32.16	32.45
GPRS 1 Tx slot	32.29	32.25	32.54
GPRS 2 Tx slots	30.32	30.48	30.21
GPRS 3 Tx slots	27.35	27.56	27.38
GPRS 4 Tx slots	24.23	24.57	24.38
EDGE 1 Tx slot	26.39	26.46	26.29
EDGE 2 Tx slots	24.57	24.63	24.72
EDGE 3 Tx slots	21.83	22.24	21.96
EDGE 4 Tx slots	18.64	19.12	18.63

<b>GSM1900</b>	<b>Average Power (dBm)</b>		
<b>TX Channel</b>	<b>512</b>	<b>661</b>	<b>810</b>
<b>Frequency (MHz)</b>	<b>1850.2</b>	<b>1880</b>	<b>1909.8</b>
GSM 1 Tx slot	30.24	30.18	29.98
GPRS 1 Tx slot	30.23	30.18	29.98
GPRS 2 Tx slots	27.58	27.39	27.18
GPRS 3 Tx slots	24.99	25.17	24.85
GPRS 4 Tx slots	21.99	21.88	21.66
EDGE 1 Tx slot	25.38	25.59	25.17
EDGE 2 Tx slots	24.38	24.01	24.18
EDGE 3 Tx slots	21.38	21.72	21.26
EDGE 4 Tx slots	18.38	18.55	18.14



<b>WCDMA Band V</b>	<b>Average Power (dBm)</b>		
<b>TX Channel</b>	<b>4132</b>	<b>4182</b>	<b>4233</b>
<b>Frequency (MHz)</b>	<b>826.4</b>	<b>836.4</b>	<b>846.6</b>
AMR 12.2Kbps	23.73	23.69	23.71
RMC 12.2Kbps	23.52	23.57	23.55
HSDPA Subtest-1	22.69	22.62	22.17
HSDPA Subtest-2	22.67	22.62	22.13
HSDPA Subtest-3	22.65	22.19	22.12
HSDPA Subtest-4	22.64	22.19	21.72
HSUPA Subtest-1	21.99	21.97	21.95
HSUPA Subtest-2	21.51	21.69	21.47
HSUPA Subtest-3	20.89	20.57	20.85
HSUPA Subtest-4	20.78	20.46	20.74
HSUPA Subtest-5	20.01	19.99	19.97
HSPA+ (16QAM) Subtest-1	19.97	19.95	19.93

<b>WCDMA Band II</b>	<b>Average Power (dBm)</b>		
<b>TX Channel</b>	<b>9262</b>	<b>9400</b>	<b>9538</b>
<b>Frequency (MHz)</b>	<b>1852.4</b>	<b>1880.0</b>	<b>1907.6</b>
AMR 12.2Kbps	23.71	23.73	23.64
RMC 12.2Kbps	23.64	23.61	23.58
HSDPA Subtest-1	22.79	22.81	22.92
HSDPA Subtest-2	22.30	22.34	22.41
HSDPA Subtest-3	22.29	22.35	22.43
HSDPA Subtest-4	21.78	21.75	21.72
HSUPA Subtest-1	20.99	20.96	20.93
HSUPA Subtest-2	20.76	20.83	20.70
HSUPA Subtest-3	20.54	20.71	20.48
HSUPA Subtest-4	20.31	20.28	20.25
HSUPA Subtest-5	20.01	19.98	19.95
HSPA+ (16QAM) Subtest-1	19.93	19.90	19.87





WCDMA Band IV	Average Power (dBm)		
	1312	1413	1513
<b>TX Channel</b>	<b>1712.4</b>	<b>1732.6</b>	<b>1752.6</b>
<b>Frequency (MHz)</b>	<b>1712.4</b>	<b>1732.6</b>	<b>1752.6</b>
AMR 12.2Kbps	23.63	23.62	23.53
RMC 12.2Kbps	23.57	23.54	23.44
HSDPA Subtest-1	22.50	22.72	22.59
HSDPA Subtest-2	22.06	22.07	22.05
HSDPA Subtest-3	21.16	21.99	22.04
HSDPA Subtest-4	21.09	21.10	21.11
HSUPA Subtest-1	20.96	20.97	20.98
HSUPA Subtest-2	20.83	20.84	20.75
HSUPA Subtest-3	20.75	20.76	20.67
HSUPA Subtest-4	20.41	20.62	20.43
HSUPA Subtest-5	20.01	20.02	20.03
HSPA+ (16QAM) Subtest-1	19.78	19.80	19.83

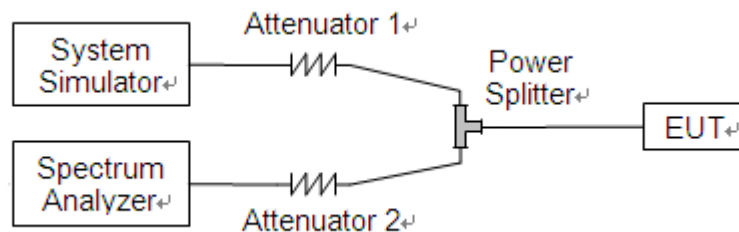
## 2.2. Peak to Average Ratio

### 2.2.1. Requirement

According to FCC 24.232(d) the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

### 2.2.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

### 2.2.3. Test procedure

1. For GSM/EDGE operating mode:
  - a. Set RBW=1MHz, VBW=3MHz, peak detector in spectrum analyzer.
  - b. Set EUT in maximum output power, and triggered the bust signal.
  - c. Measured respectively the peak level and mean level, and the deviation was recorded as Peak to Average ratio.
2. For UMTS operating mode:
  - a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
  - b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1%.

**2.2.4. Test Result**

The lowest, middle and highest channels are selected to perform testing to verify the conducted RF output peak power of the Module.

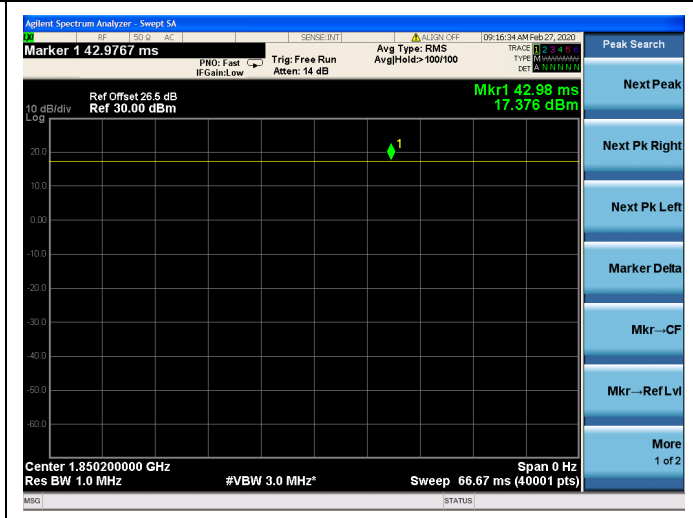
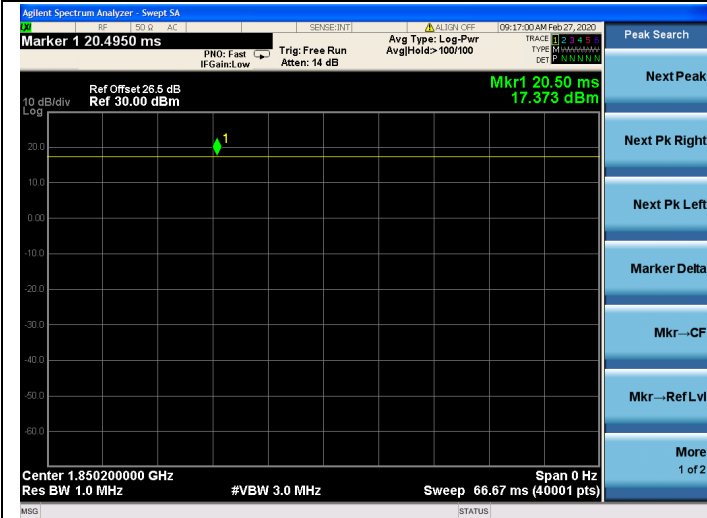
**A. Test Verdict:**

Band	Channel	Frequency (MHz)	Peak to Average ratio	Limit	Verdict
			dB	dB	
GSM 1900MHz	512	1850.2	0.003	13	PASS
	661	1880.0	0.005		PASS
	810	1909.8	0.002		PASS
EDGE 1900MHz	512	1850.2	0.008		PASS
	661	1880.0	0.017		PASS
	810	1909.8	0.004		PASS

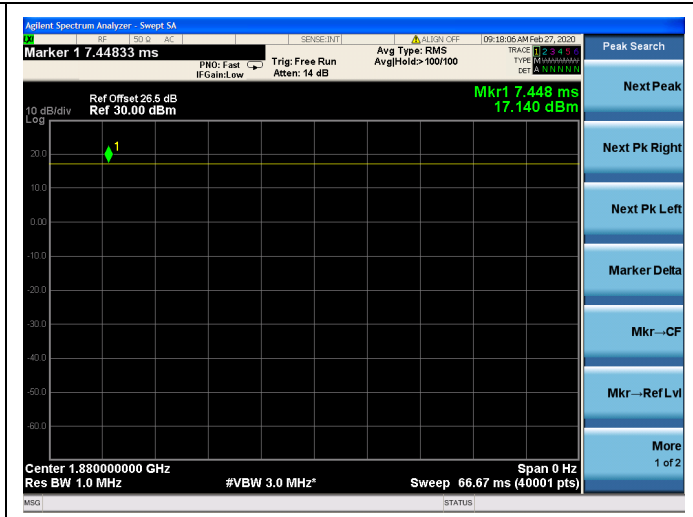
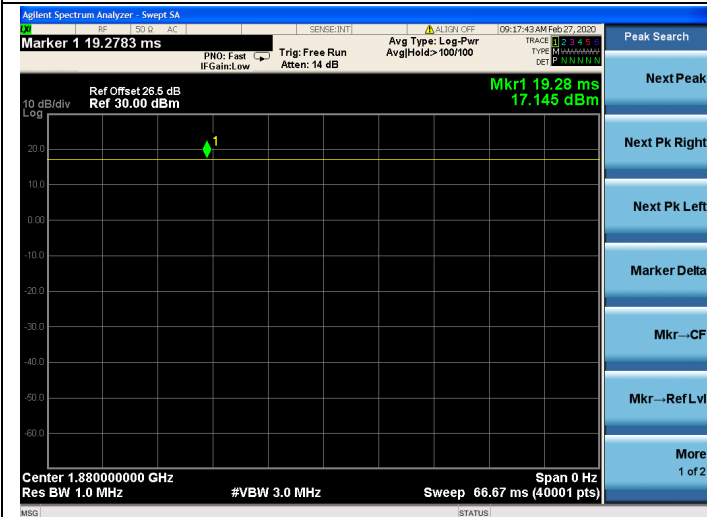
Band	Channel	Frequency (MHz)	Peak to Average ratio	Limit	Verdict
			dB	dB	
WCDMA Band II	9262	1852.4	2.82	13	PASS
	9400	1880.0	2.84		PASS
	9538	1907.6	2.81		PASS
WCDMA Band IV	1312	1712.4	2.90		PASS
	1413	1732.6	2.88		PASS
	1513	1752.6	2.88		PASS



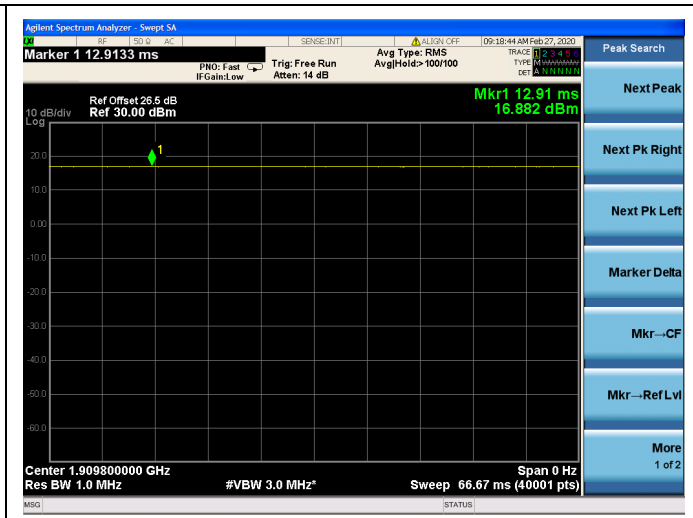
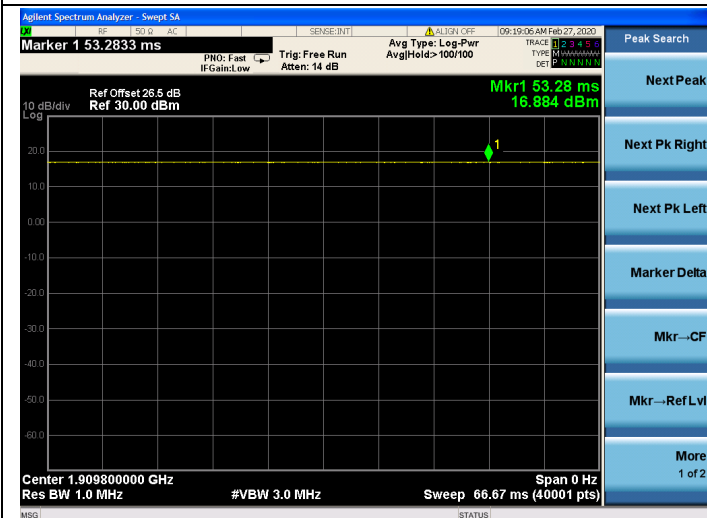
### GSM 1900MHz CH512 1850.2MHz



### GSM 1900MHz CH661 1880.0MHz

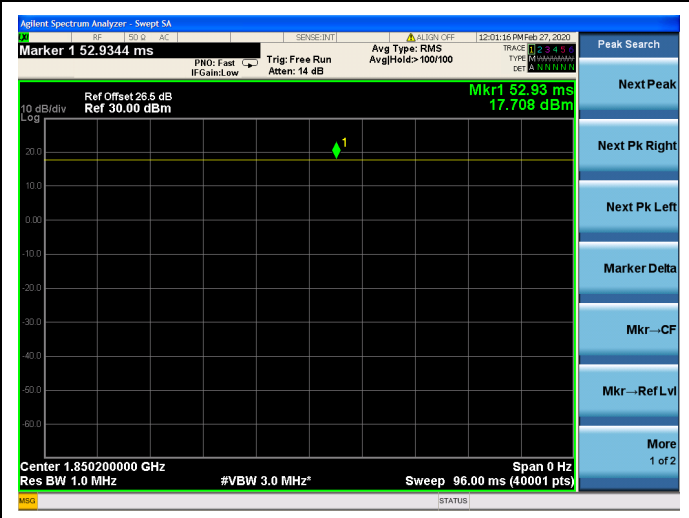
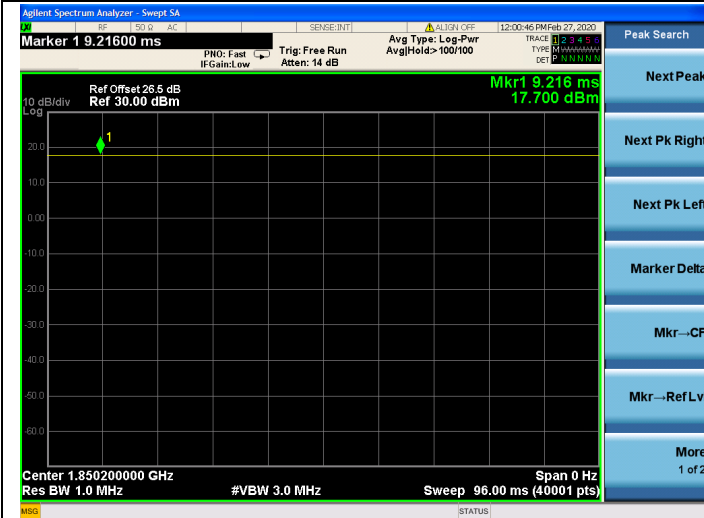


### GSM 1900MHz CH810 1909.8MHz

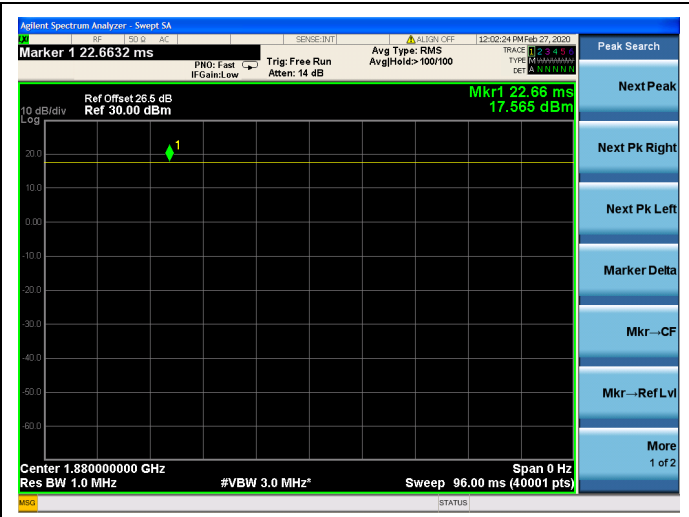
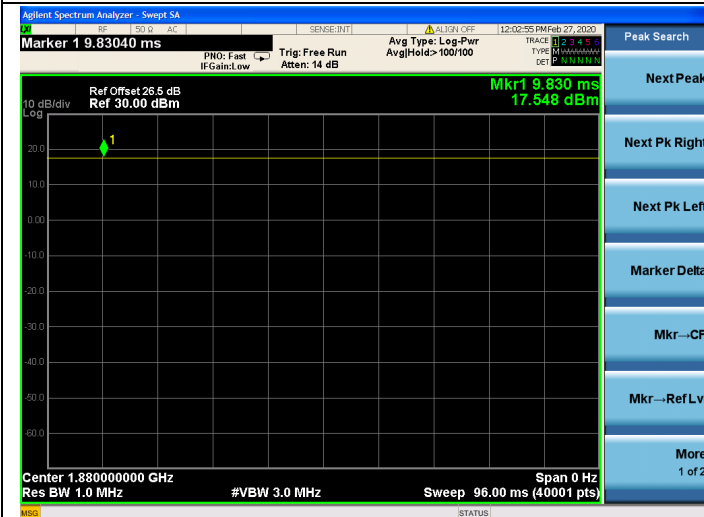




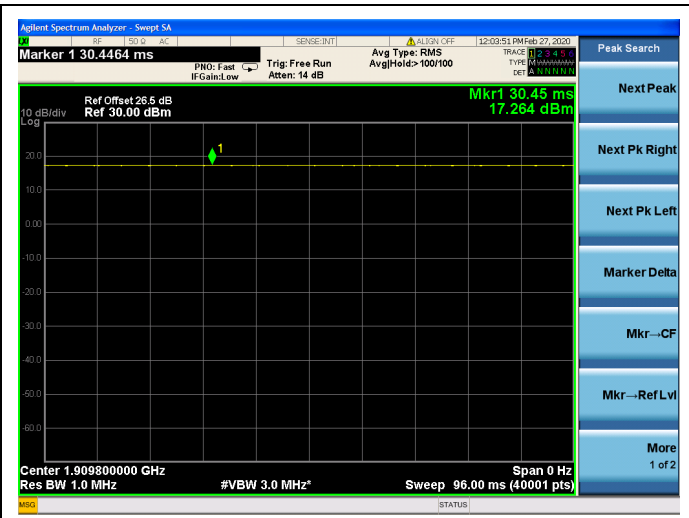
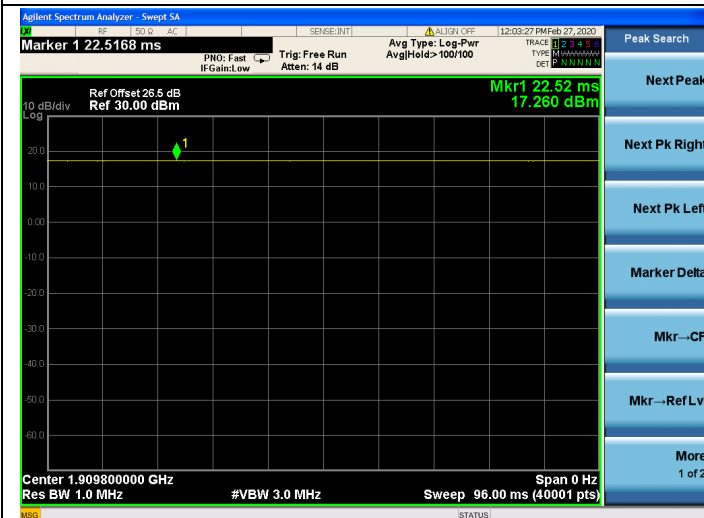
EDGE 1900MHz CH512 1850.2MHz

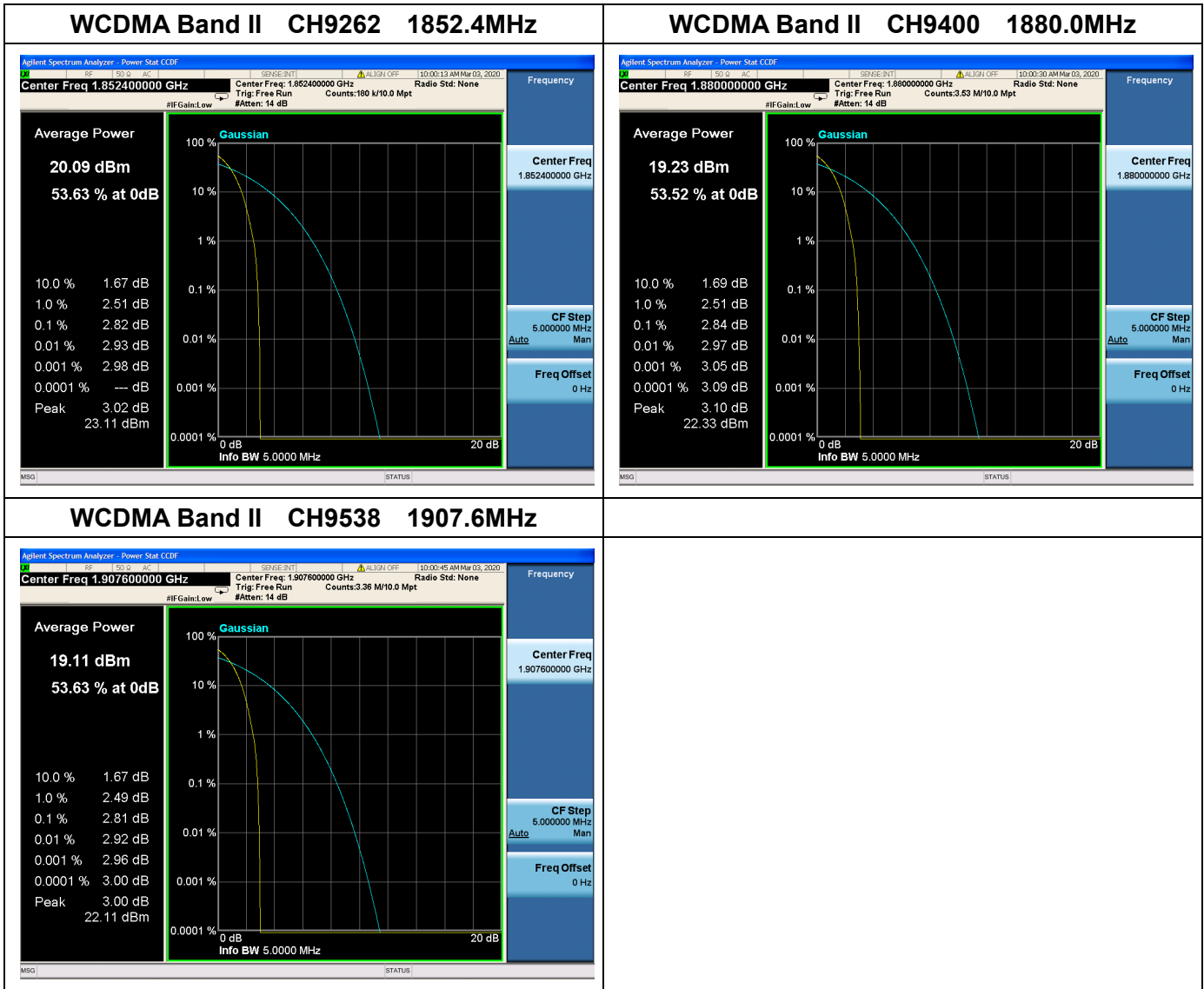


EDGE 1900MHz CH661 1880.0MHz



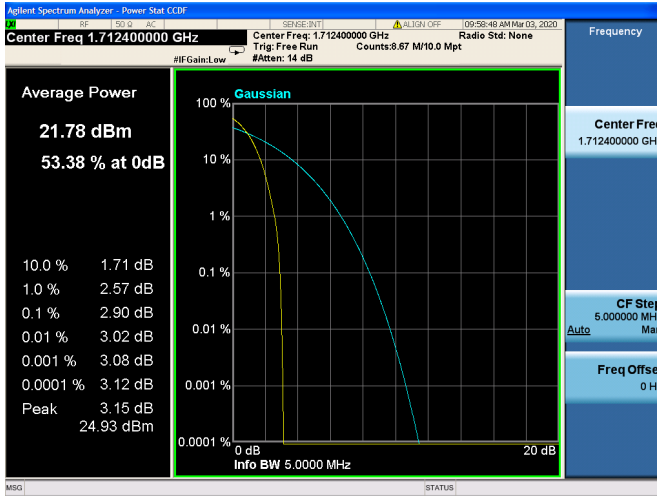
EDGE 1900MHz CH810 1909.8MHz



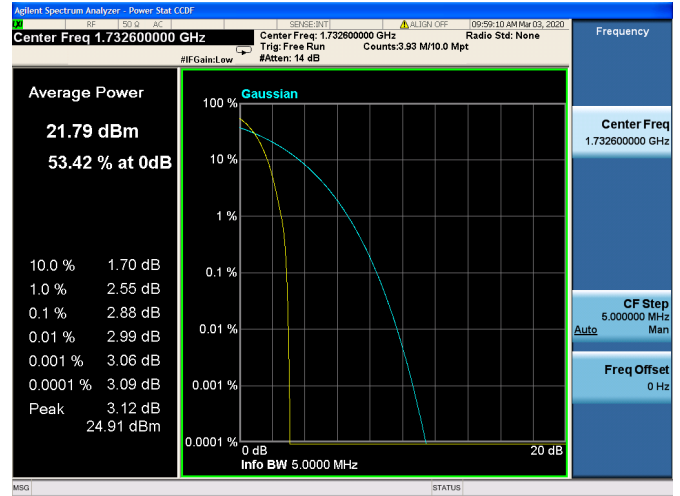




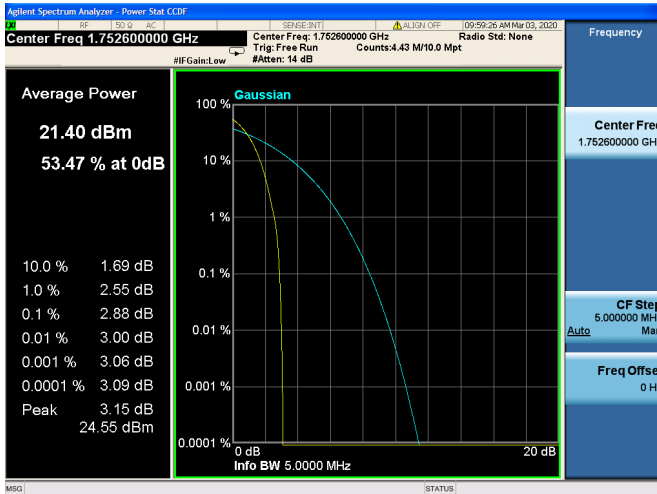
WCDMA Band IV CH1312 1712.4MHz



WCDMA Band IV CH1413 1732.6MHz



WCDMA Band IV CH1513 1752.6MHz



## 2.3.99% Occupied Bandwidth

### 2.3.1. Requirement

According to FCC section 2.1049, the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission. Occupied bandwidth is also known as the 99% emission bandwidth.

### 2.3.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.





### 2.3.3. Test Result

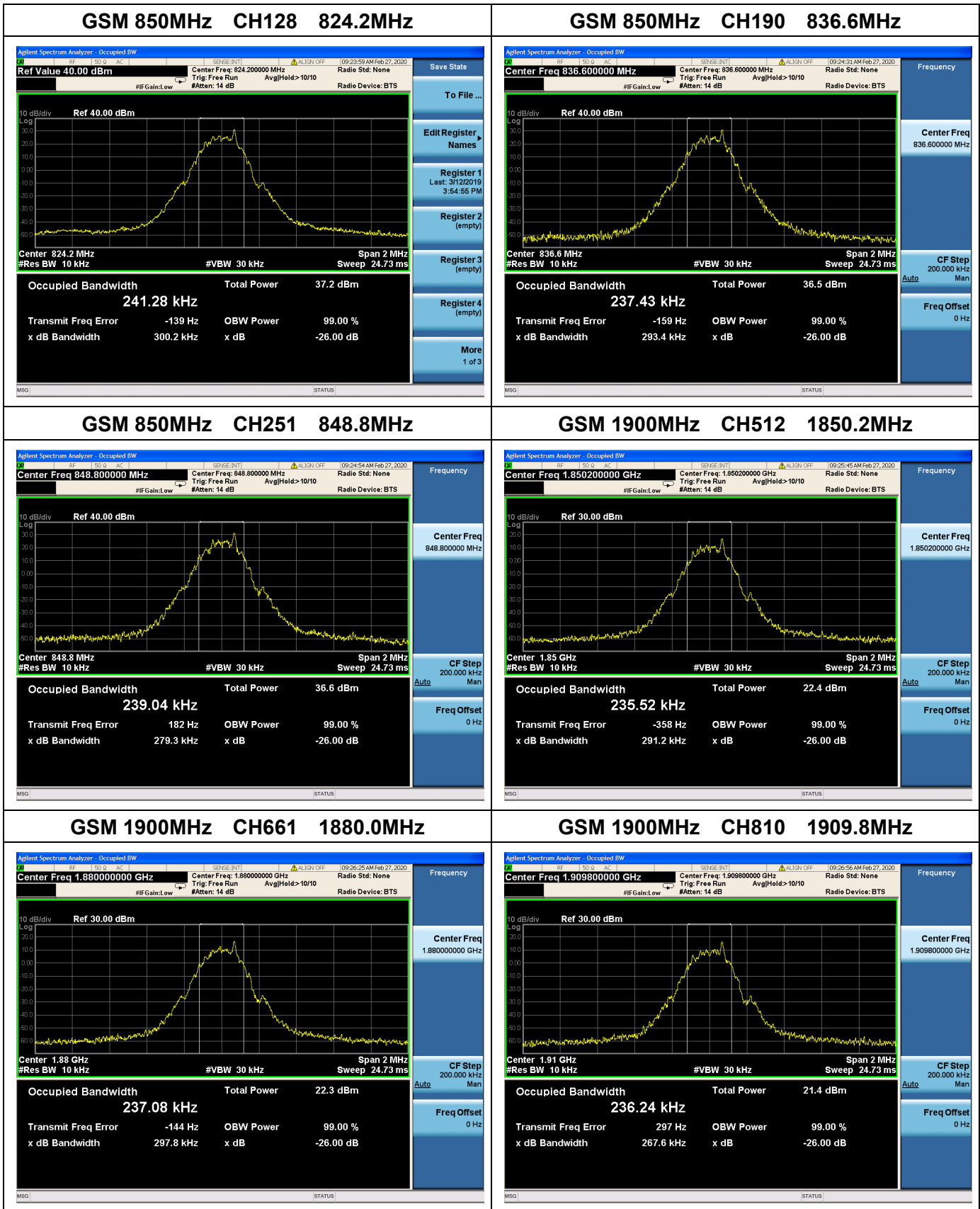
The lowest, middle and highest channels are selected to perform testing to record the 99% occupied bandwidth.

#### GSM Test Verdict:

Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)
GSM 850MHz	128	824.2	241.28	300.2
	190	836.6	237.43	293.4
	251	848.8	239.04	279.3
GSM 1900MHz	512	1850.2	235.52	291.2
	661	1880.0	237.08	297.8
	810	1909.8	236.24	267.6
EDGE 850MHz	128	824.2	247.86	315.3
	190	836.6	245.79	307.9
	251	848.8	244.78	309.9
EDGE 1900MHz	512	1850.2	246.87	311.8
	661	1880.0	244.56	310.2
	810	1909.8	240.44	301.8

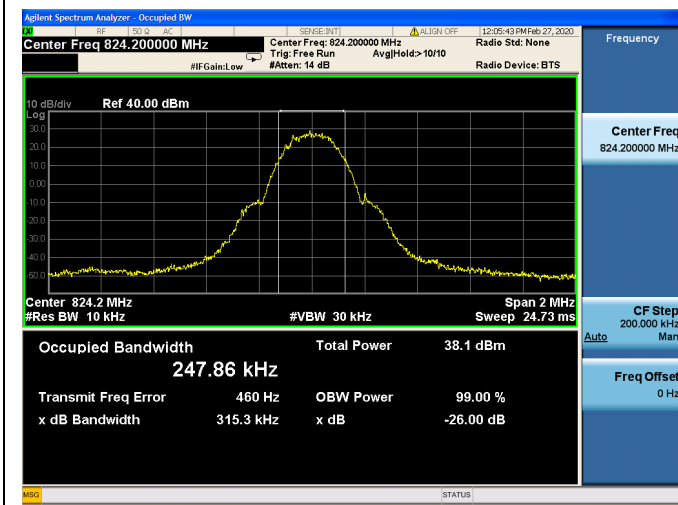
#### WCDMA Test Verdict:

Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
WCDMA Band V	4132	826.4	4.140	4.740
	4183	836.4	4.145	4.715
	4233	846.6	4.164	4.725
WCDMA Band II	9262	1852.4	4.143	4.738
	9400	1880.0	4.152	4.712
	9538	1907.6	4.148	4.749
WCDMA Band IV	1312	1712.4	4.139	4.720
	1413	1732.6	4.137	4.711
	1513	1752.6	4.152	4.697

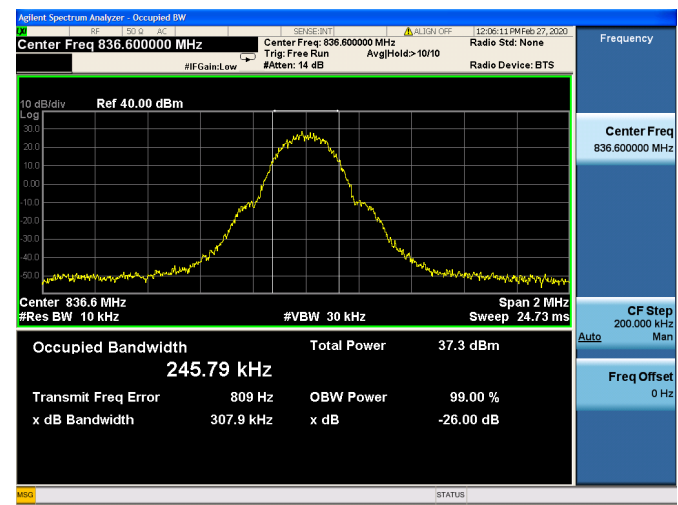




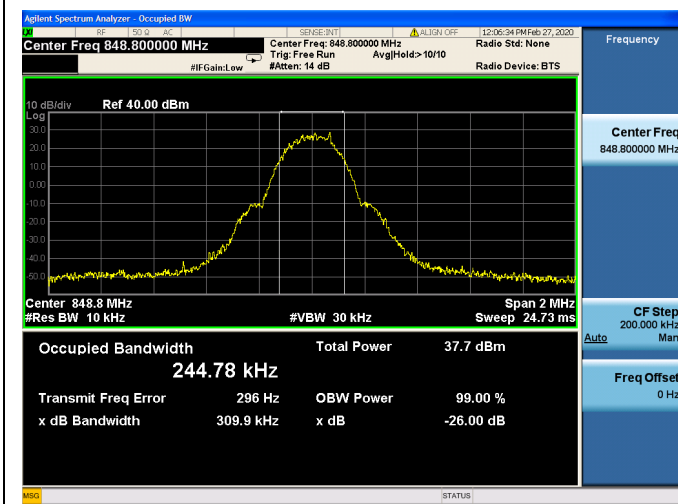
**EDGE 850MHz CH128 824.2MHz**



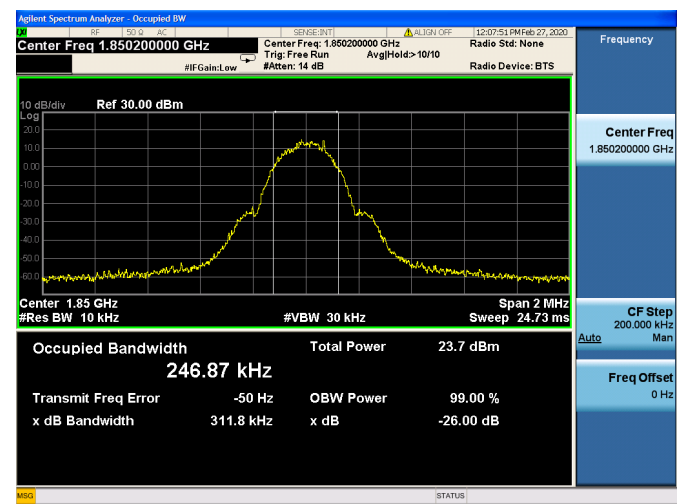
**EDGE 850MHz CH190 836.6MHz**



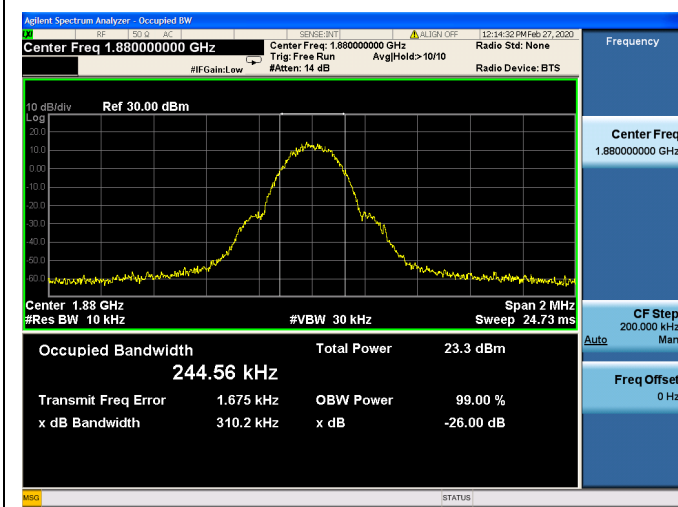
**EDGE 850MHz CH251 848.8MHz**



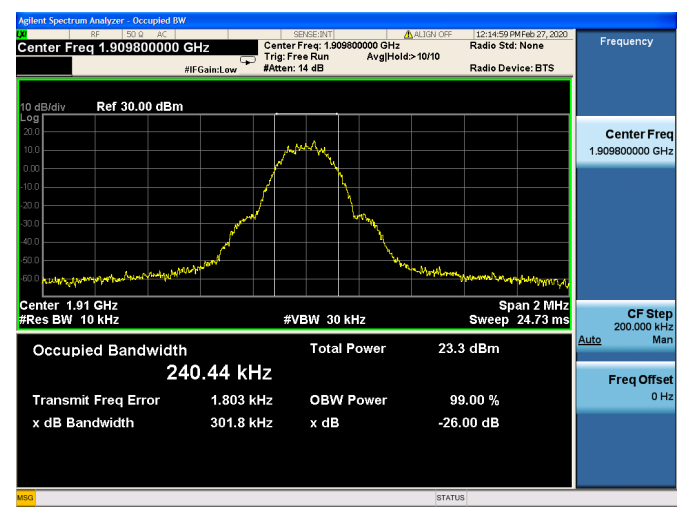
**EDGE 1900MHz CH512 1850.2MHz**



**EDGE 1900MHz CH661 1880.0MHz**

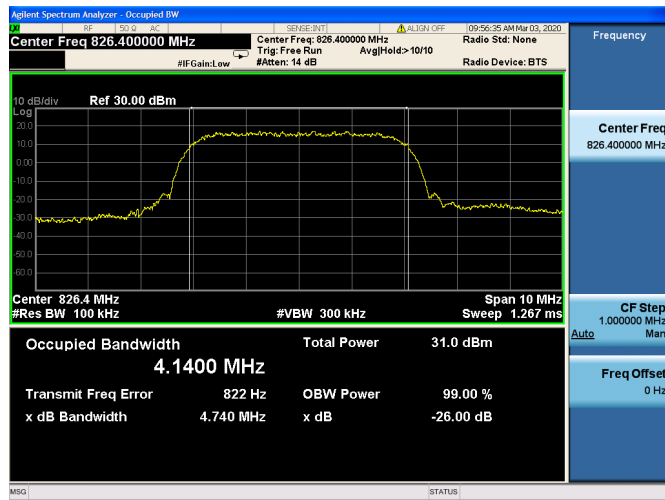


**EDGE 1900MHz CH810 1909.8MHz**

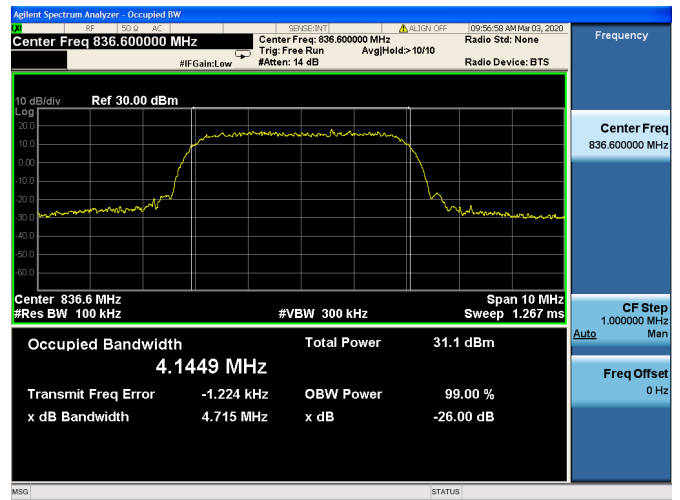




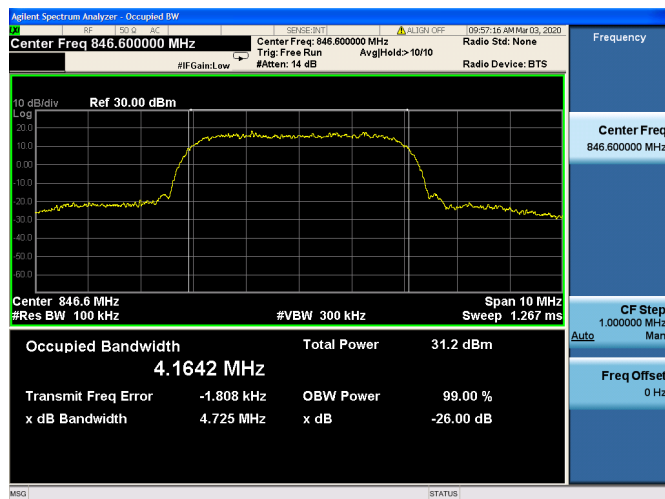
**WCDMA Band V CH4132 826.4MHz**



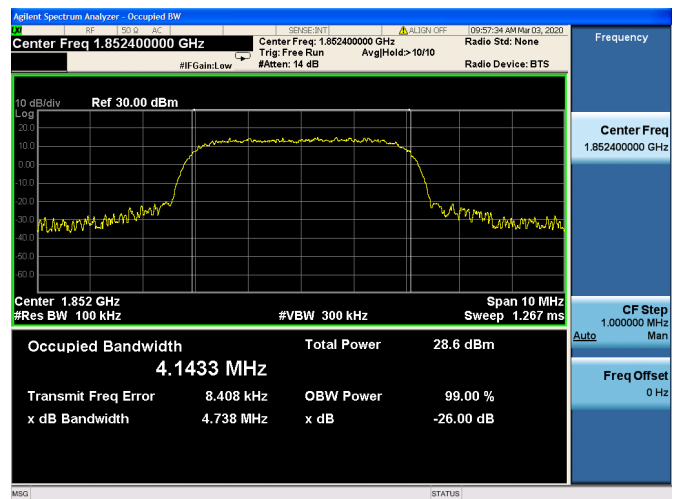
**WCDMA Band V CH4183 836.4MHz**



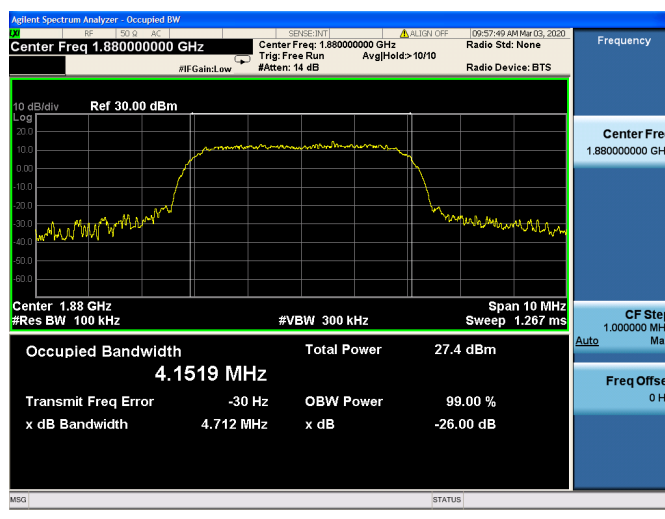
**WCDMA Band V CH4233 846.6MHz**



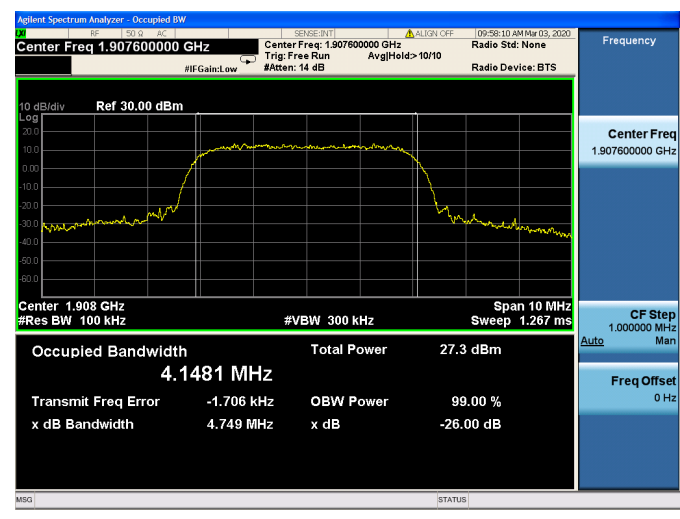
**WCDMA Band II CH9262 1852.4MHz**

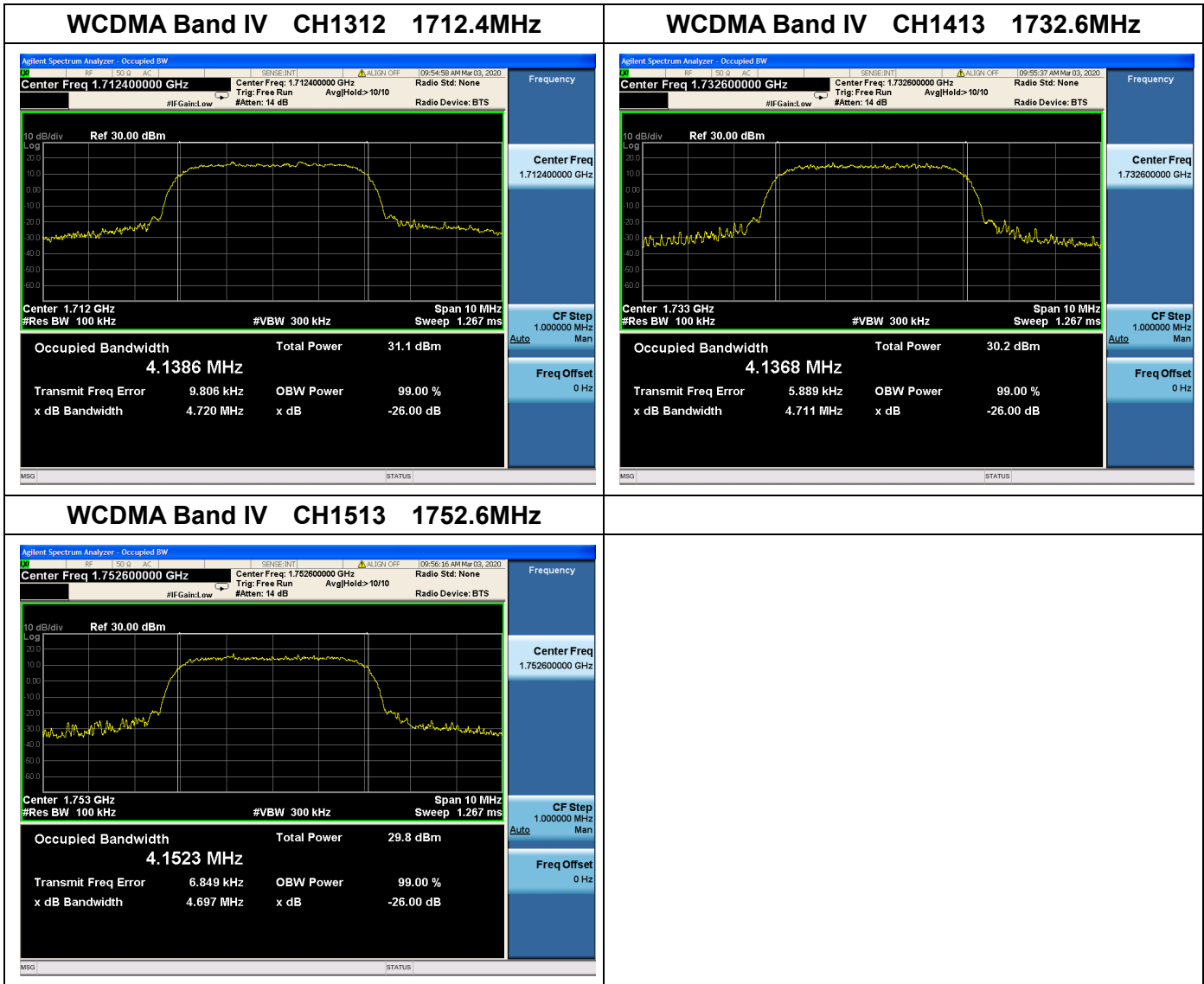


**WCDMA Band II CH9400 1880.0MHz**



**WCDMA Band II CH9538 1907.6MHz**





## 2.4. Frequency Stability

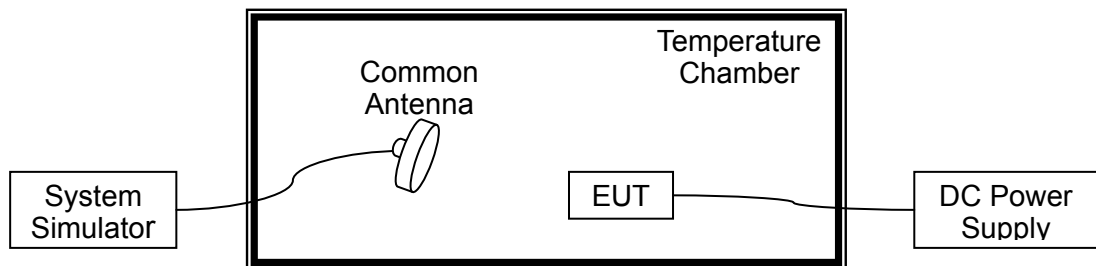
### 2.4.1. Requirement

According to FCC section 22.355, 24.235 and 27.54 the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  at intervals of not more than  $10^{\circ}\text{C}$ .
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

### 2.4.2. Test Description

Test Setup:



The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS via a Common Antenna.



**2.4.3. Test Result**

The nominal, highest and lowest extreme voltages are separately 3.87VDC, 4.45VDC and 3.3VDC, which are specified by the applicant; the normal temperature here used is 20°C.

**A. Test Verdict:**

<b>GSM 850MHz, Channel 190, Frequency 836.6MHz</b>					
<b>Limit =±2.5ppm</b>					
<b>Voltage (%)</b>	<b>Power (VDC)</b>	<b>Temp (°C)</b>	<b>Fre. Dev. (Hz)</b>	<b>Deviation (ppm)</b>	<b>Result</b>
100	3.87	+20(Ref)	23	0.027	PASS
100		-10	-49	-0.059	
100		0	-27	-0.032	
100		+10	15	0.018	
100		+20	25	0.030	
100		+30	75	0.090	
100		+40	64	0.077	
115	4.45	+20	-6	-0.007	
85	3.30	+20	-71	-0.085	

<b>GSM 1900MHz, Channel 661, Frequency 1880.0MHz</b>					
<b>Limit =Within Authorized Band</b>					
<b>Voltage (%)</b>	<b>Power (VDC)</b>	<b>Temp (°C)</b>	<b>Fre. Dev. (Hz)</b>	<b>Deviation (ppm)</b>	<b>Result</b>
100	3.87	+20(Ref)	97	0.052	PASS
100		-10	-26	-0.014	
100		0	-29	-0.015	
100		+10	-53	-0.028	
100		+20	42	0.022	
100		+30	73	0.039	
100		+40	31	0.016	
115	4.45	+20	16	0.009	
85	3.30	+20	-58	-0.031	



EDGE 850MHz, Channel 190, Frequency 836.6MHz					
Limit =±2.5ppm					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.87	+20(Ref)	25	0.030	PASS
100		-10	-74	-0.088	
100		0	-25	-0.030	
100		+10	54	0.065	
100		+20	15	0.018	
100		+30	26	0.031	
100		+40	25	0.030	
115	4.45	+20	-36	-0.043	
85	3.30	+20	-47	-0.056	

EDGE 1900MHz, Channel 661, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.87	+20(Ref)	42	0.022	PASS
100		-10	-26	-0.014	
100		0	-85	-0.045	
100		+10	-84	-0.045	
100		+20	27	0.014	
100		+30	84	0.045	
100		+40	16	0.009	
115	4.45	+20	16	0.009	
85	3.30	+20	-25	-0.013	





WCDMA Band V, Channel 4182, Frequency 836.4MHz					
Limit = $\pm$ 2.5ppm					
Voltage (%)	Power (VDC)	Temp ( $^{\circ}$ C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.87	+20(Ref)	31	0.037	PASS
100		-10	-28	-0.034	
100		0	-35	-0.042	
100		+10	32	0.038	
100		+20	16	0.019	
100		+30	26	0.031	
100		+40	47	0.056	
115	4.45	+20	-65	-0.078	
85	3.30	+20	-35	-0.042	

WCDMA Band II, Channel 9400, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp ( $^{\circ}$ C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.87	+20(Ref)	25	0.013	PASS
100		-10	-85	-0.045	
100		0	-37	-0.020	
100		+10	-26	-0.014	
100		+20	86	0.046	
100		+30	83	0.044	
100		+40	52	0.028	
115	4.45	+20	43	0.023	
85	3.30	+20	-86	-0.046	



<b>WCDMA Band IV, Channel 1413, Frequency 1732.6MHz</b>					
<b>Limit =Within Authorized Band</b>					
<b>Voltage (%)</b>	<b>Power (VDC)</b>	<b>Temp (°C)</b>	<b>Fre. Dev. (Hz)</b>	<b>Deviation (ppm)</b>	<b>Result</b>
100	3.87	+20(Ref)	-54	-0.031	PASS
100		-10	-68	-0.039	
100		0	-53	-0.031	
100		+10	-39	-0.023	
100		+20	-64	-0.037	
100		+30	-37	-0.021	
100		+40	67	0.039	
115	4.45	+20	15	0.009	
85	3.30	+20	-54	-0.031	

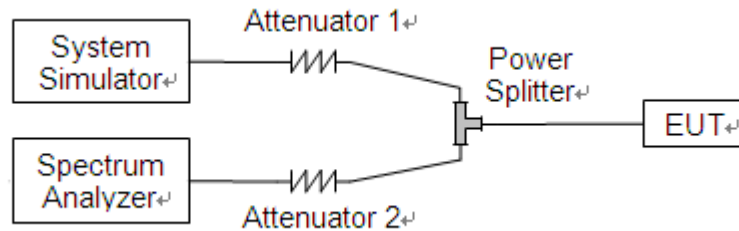
## 2.5. Conducted Out of Band Emissions

### 2.5.1. Requirement

According to FCC section 22.917(a), 24.238(a) and 27.53(h) the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43+10*\log(P)$ dB. This calculated to be -13dBm.

### 2.5.2. Test Description

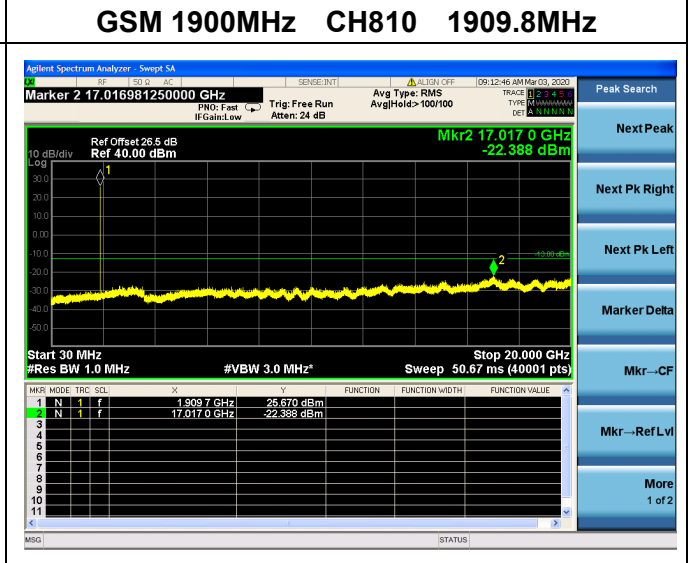
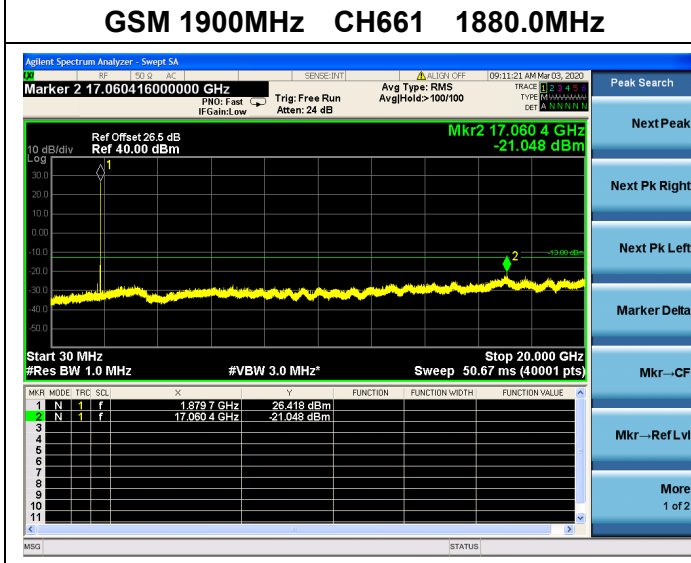
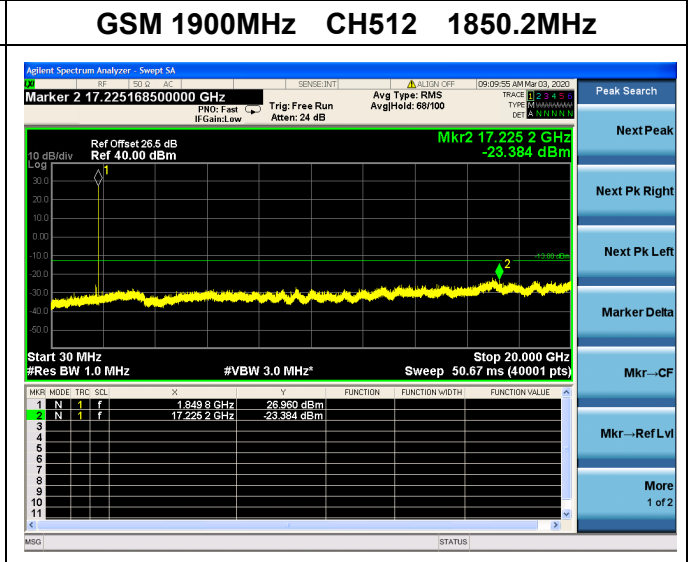
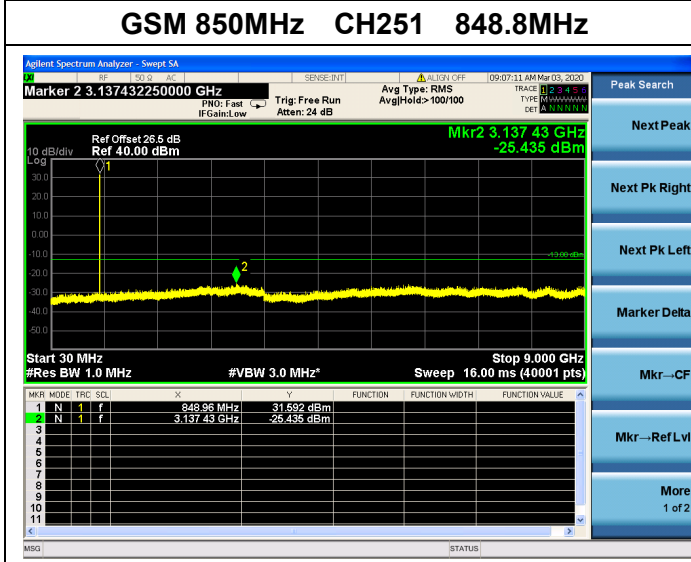
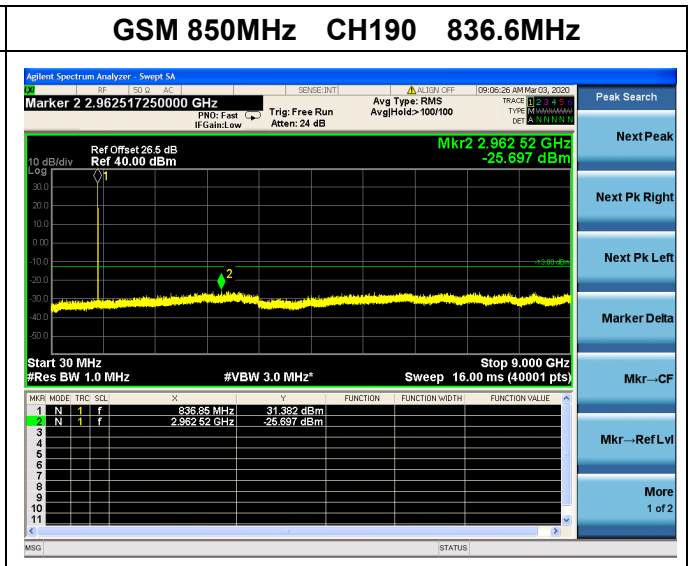
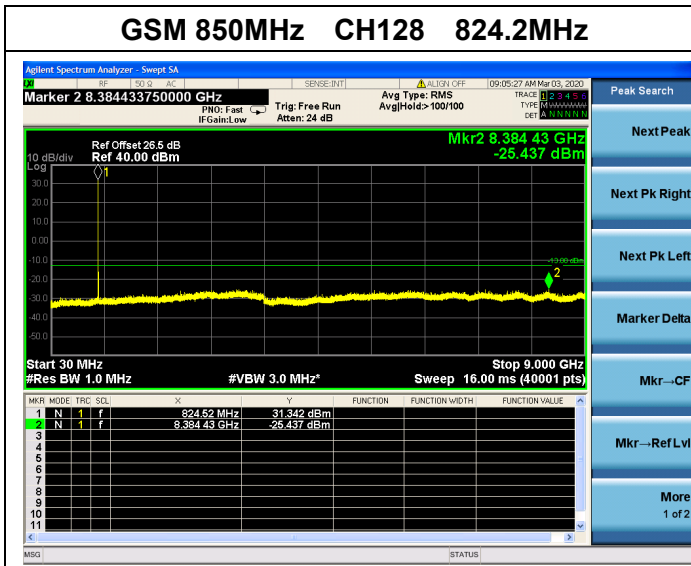
Test Setup:

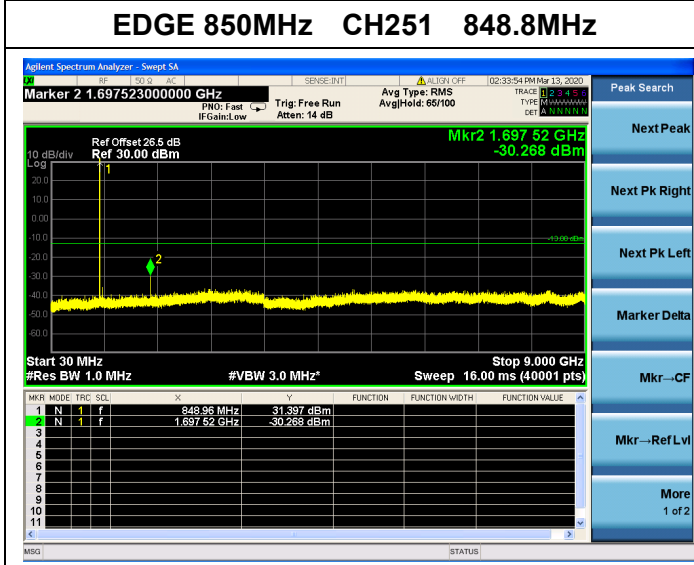
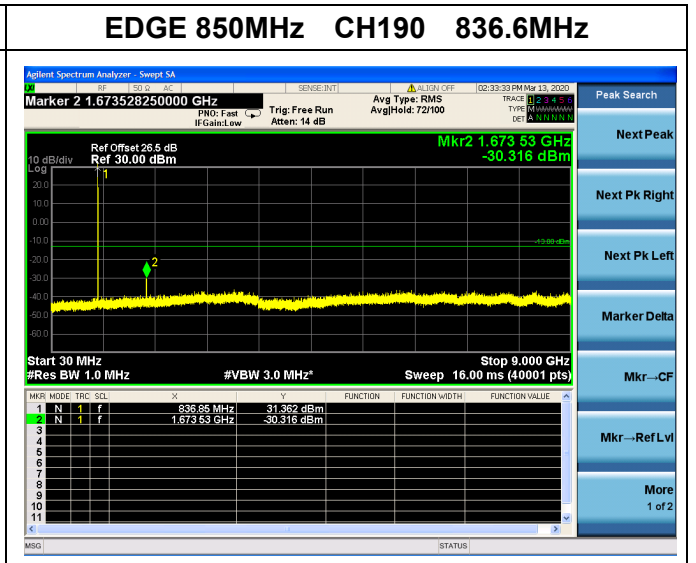
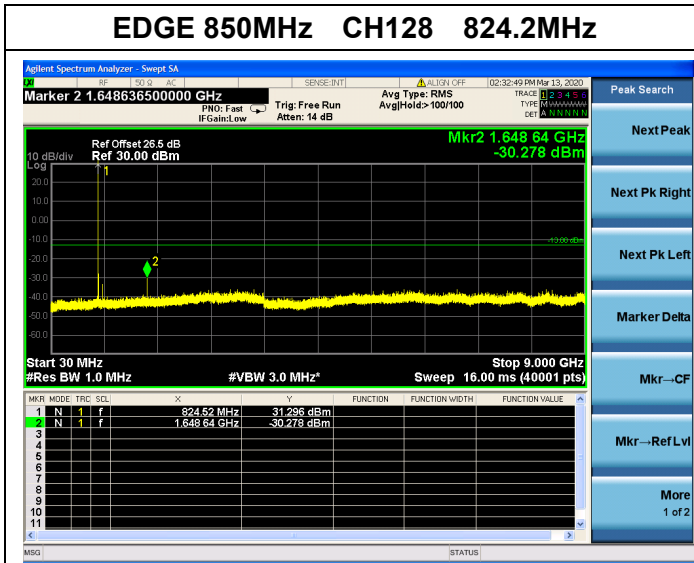


The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

### 2.5.3. Test Result

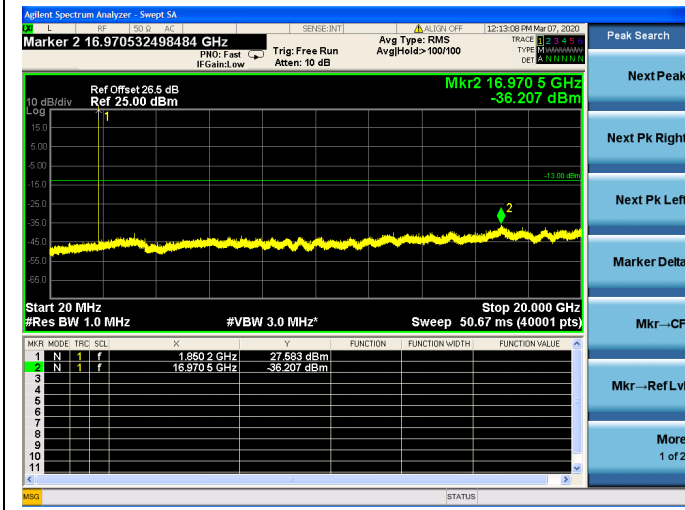
The measurement frequency range is from 30MHz to the 10<sup>th</sup> harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.



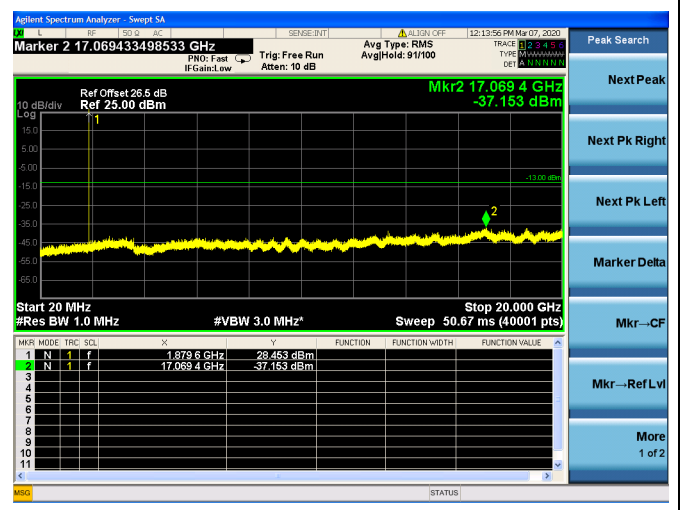




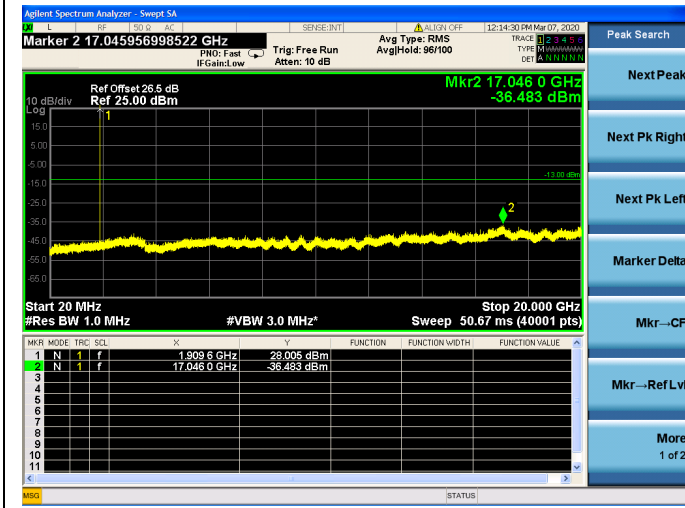
**EDGE 1900MHz CH512 1850.2MHz**



**EDGE 1900MHz CH661 1880.0MHz**

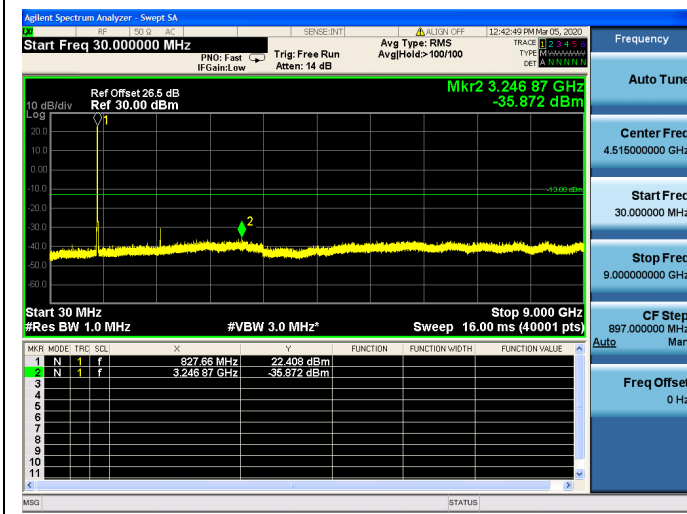


**EDGE 1900MHz CH810 1909.8MHz**

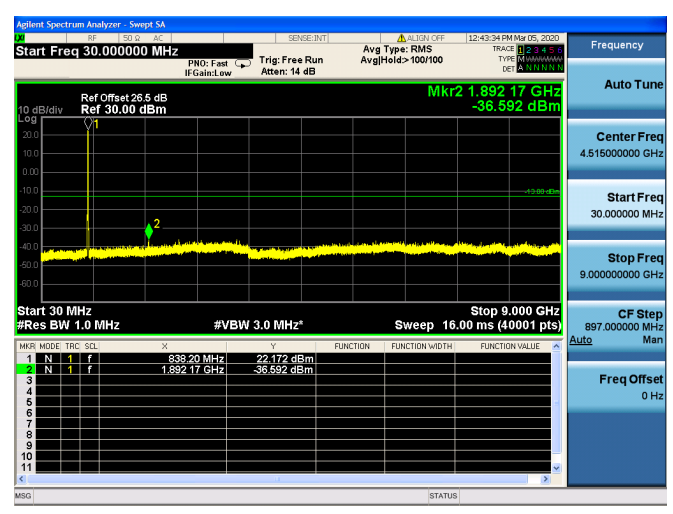




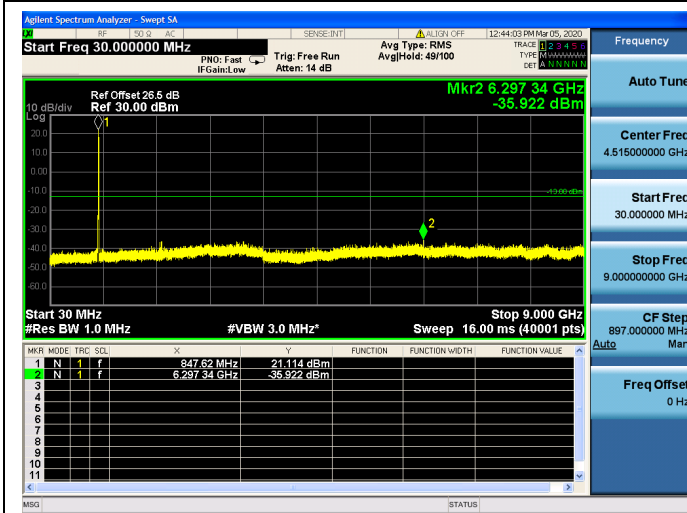
**WCDMA Band V CH4132 826.4MHz**



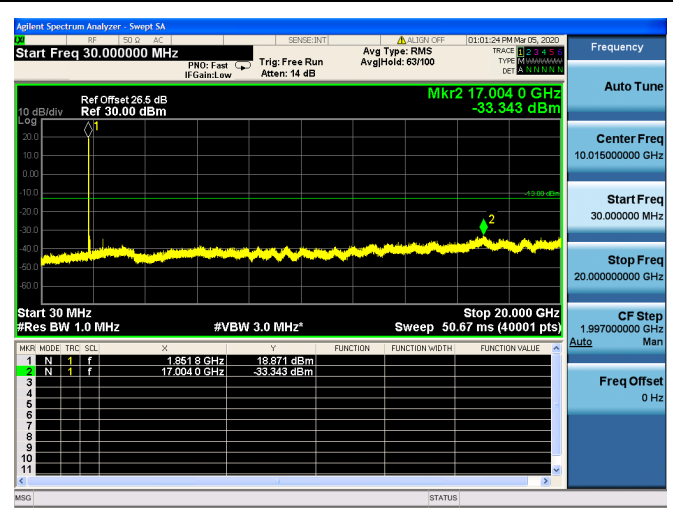
**WCDMA Band V CH4183 836.4MHz**



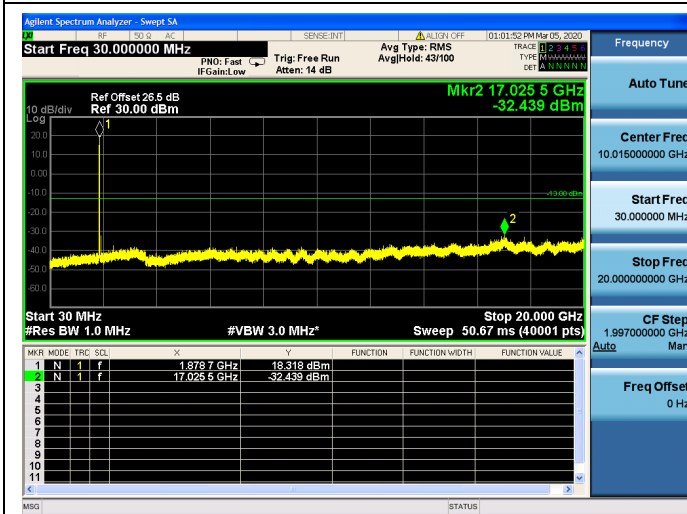
**WCDMA Band V CH4233 846.6MHz**



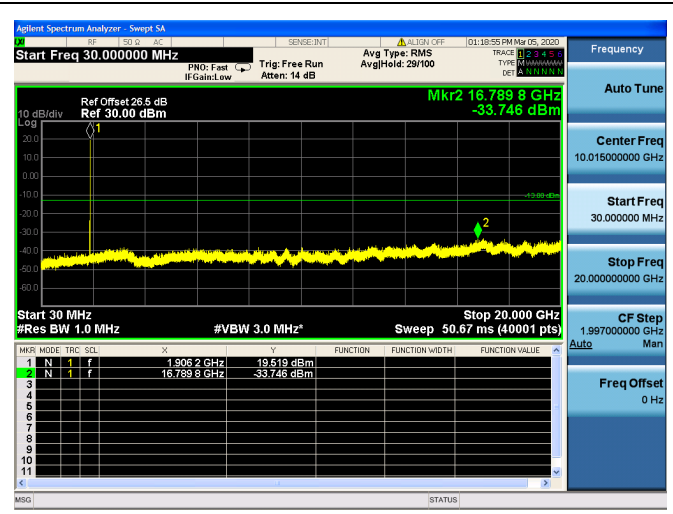
**WCDMA Band II CH9262 1852.4MHz**



**WCDMA Band II CH9400 1880.0MHz**



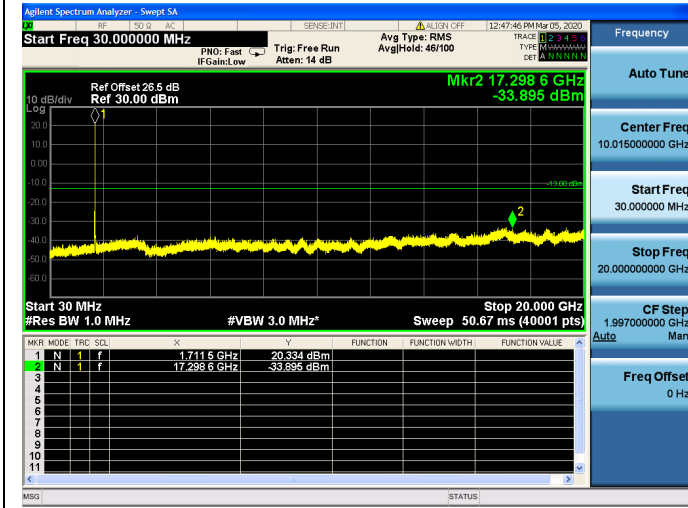
**WCDMA Band II CH9538 1907.6MHz**



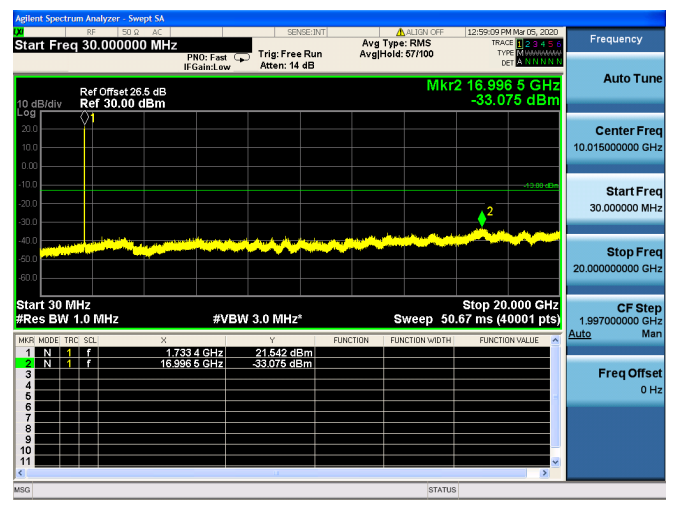




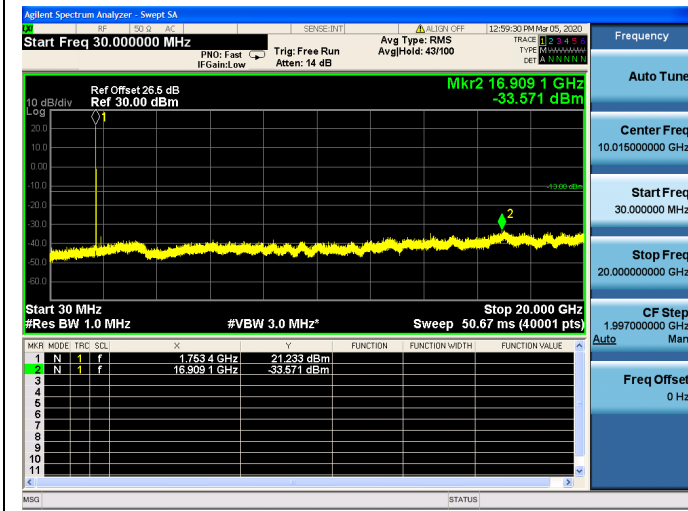
**WCDMA Band IV CH1312 1712.4MHz**



**WCDMA Band IV CH1413 1732.6MHz**



**WCDMA Band IV CH1513 1752.6MHz**





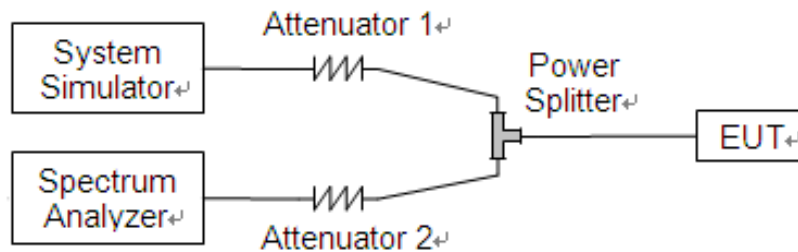
## 2.6. Band Edge

### 2.6.1. Requirement

According to FCC section 22.917(b), 24.238(b) and 27.53(h) in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth (26dB emission bandwidth) of the fundamental emission of the transmitter may be employed.

### 2.6.2. Test Description

Test Setup:

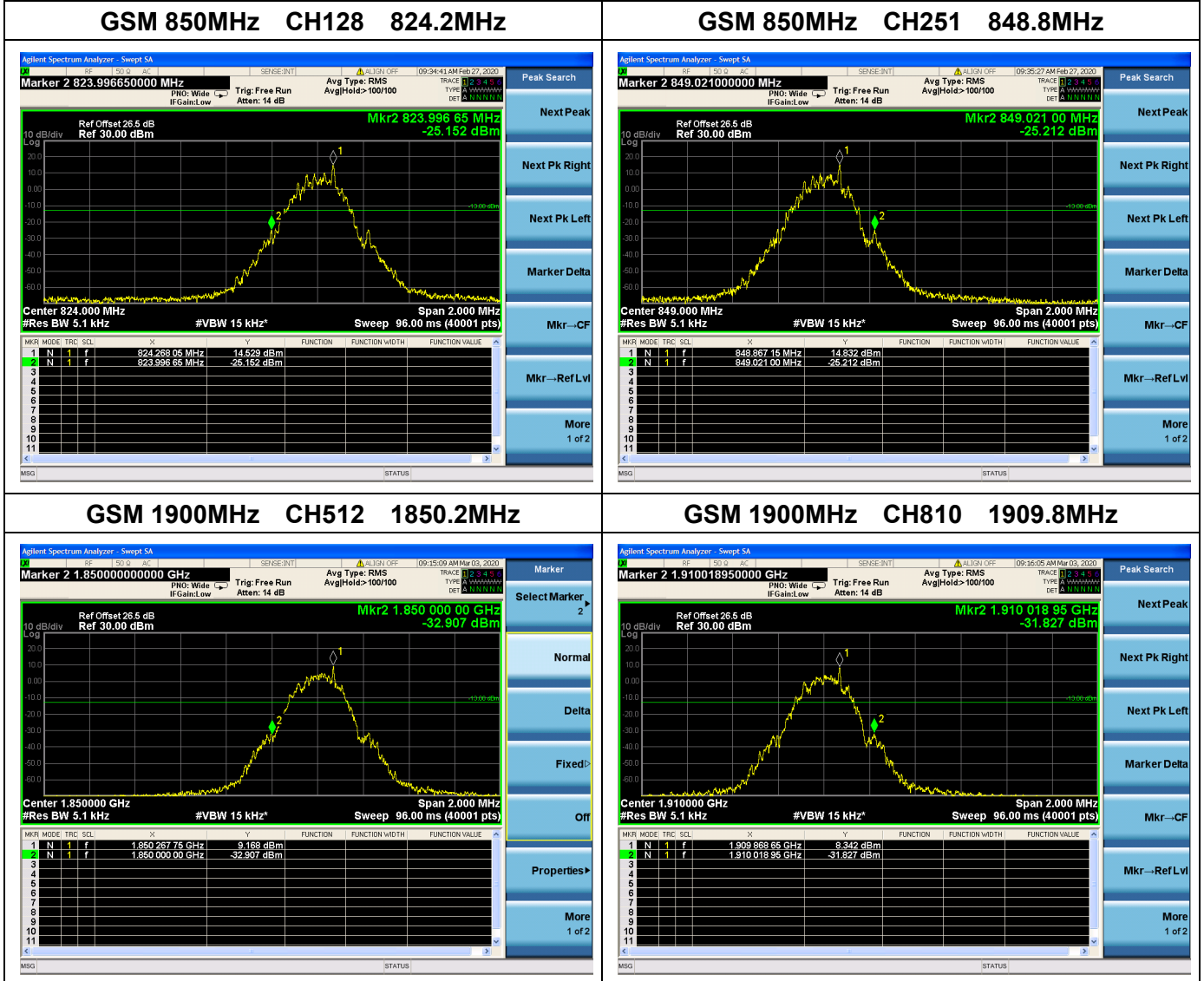


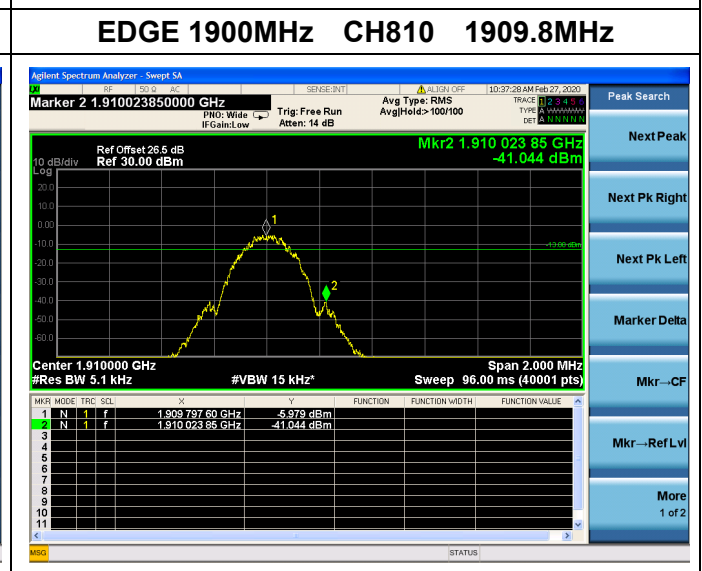
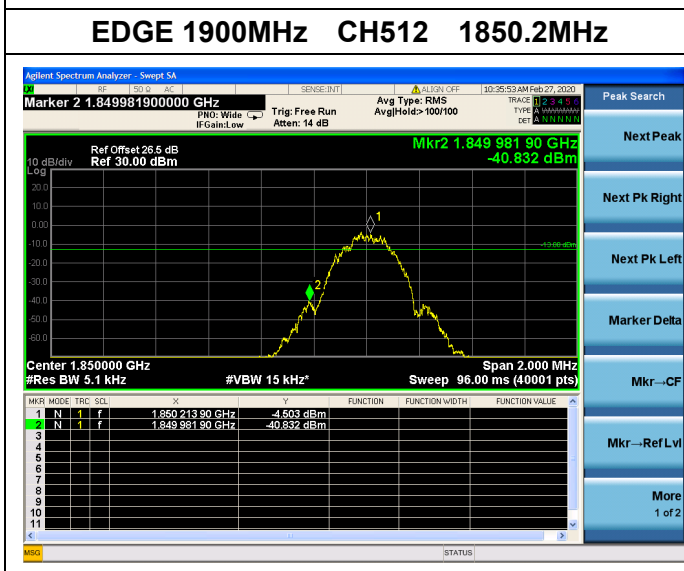
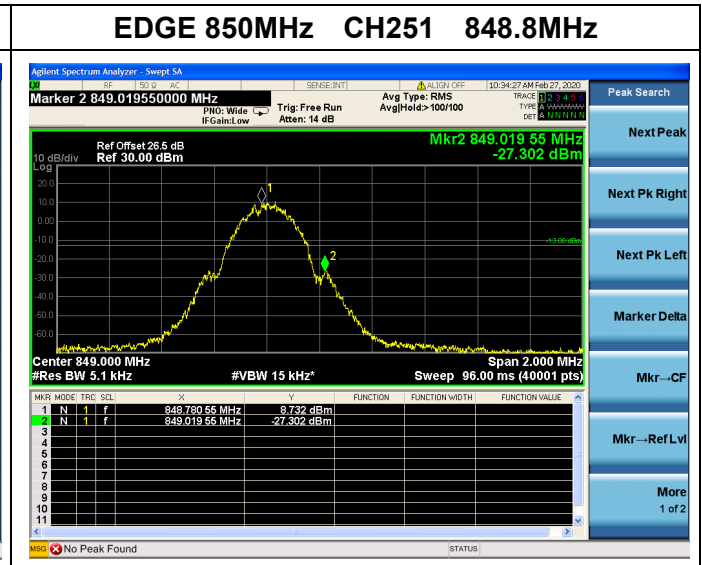
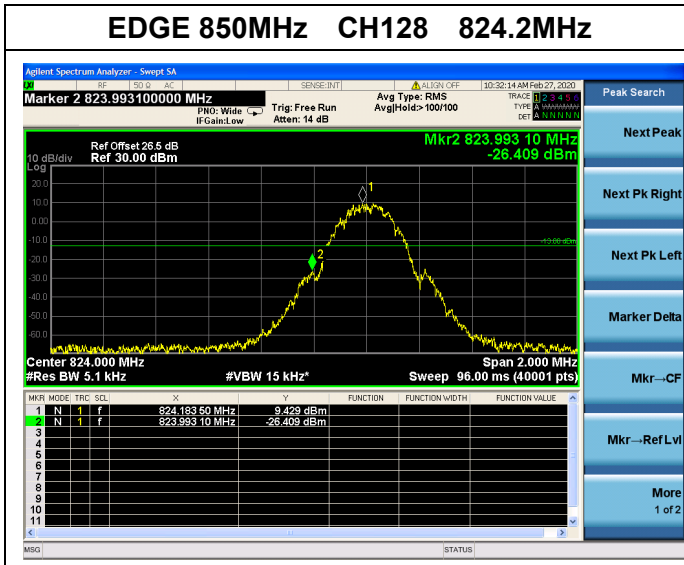
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

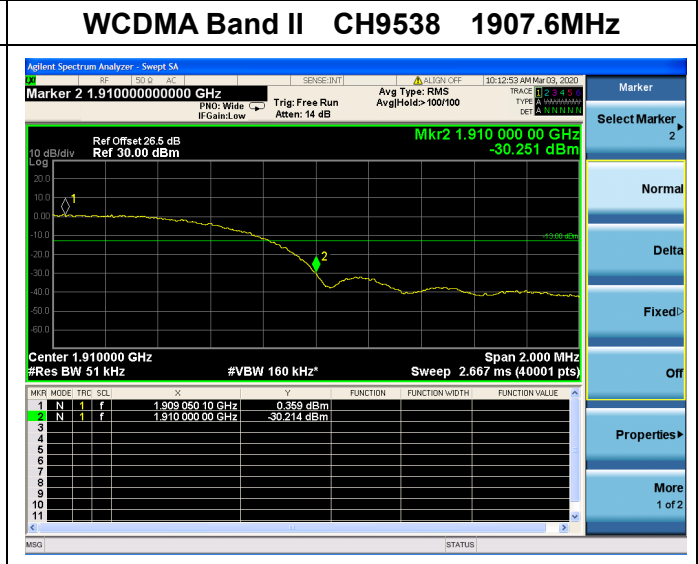
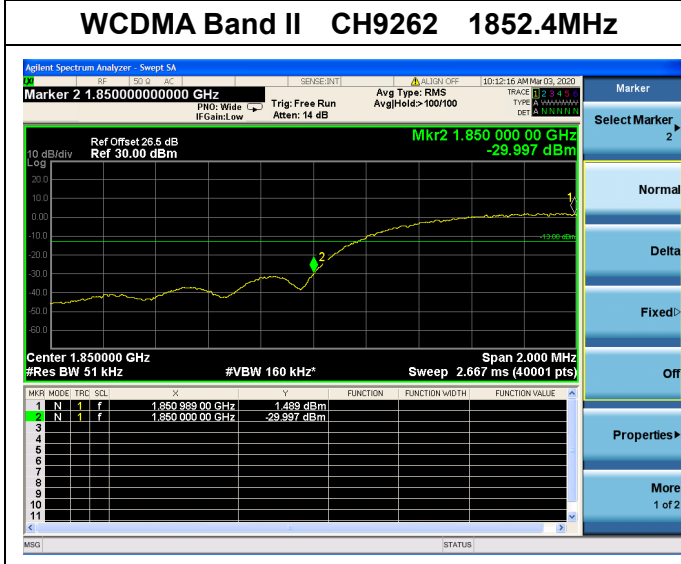
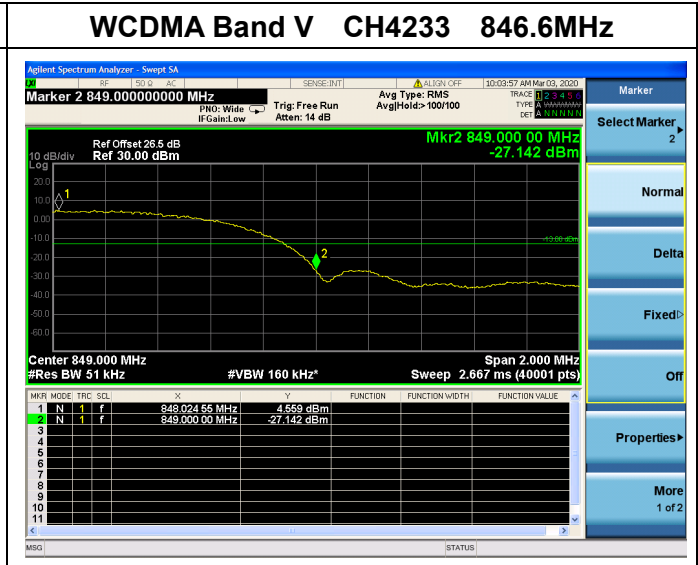
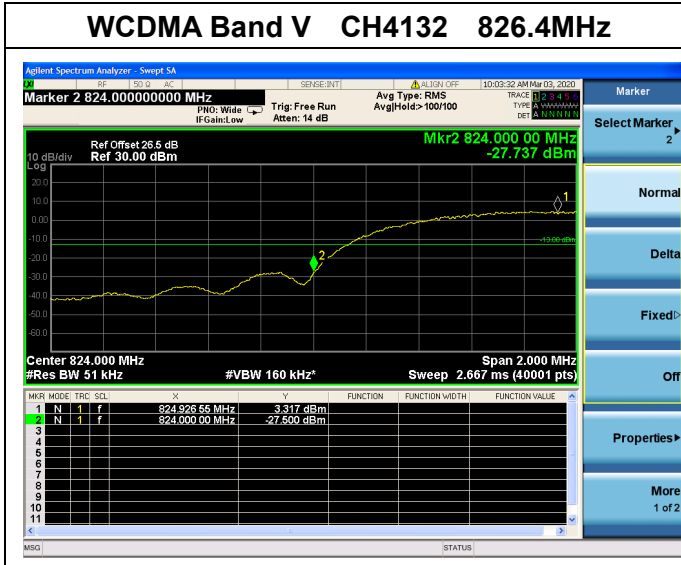


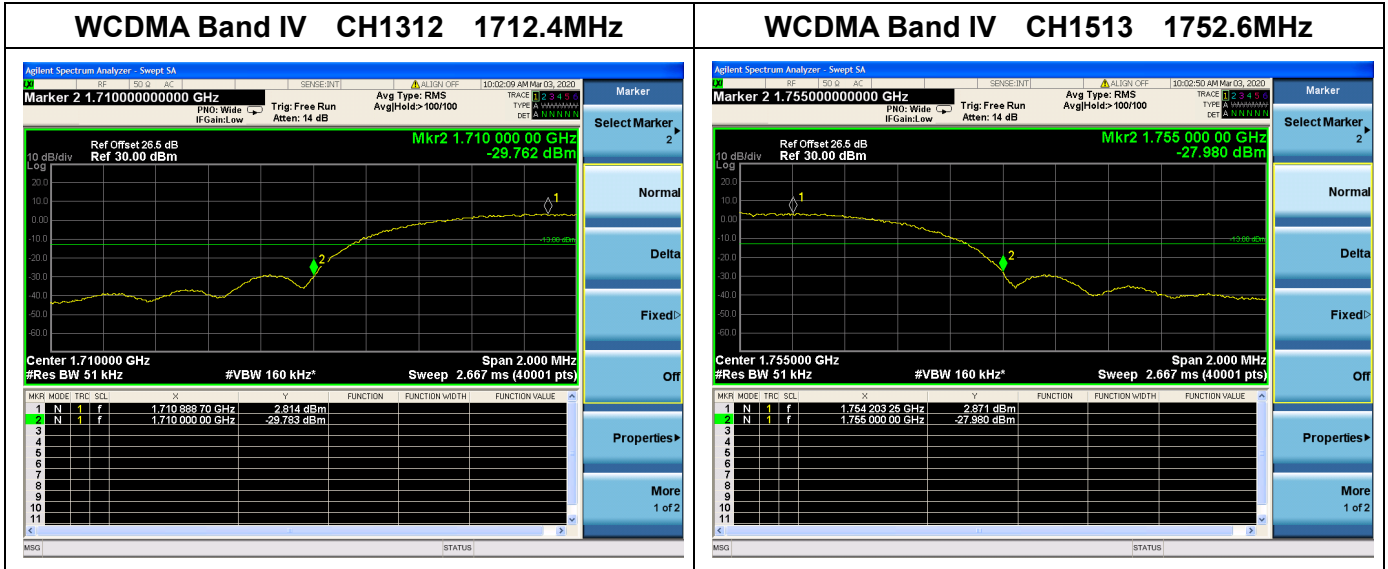
2.6.3. Test Result

The lowest and highest channels are tested to verify the band edge emissions.









## 2.7. Transmitter Radiated Power (EIRP/ERP)

### 2.7.1. Requirement

According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

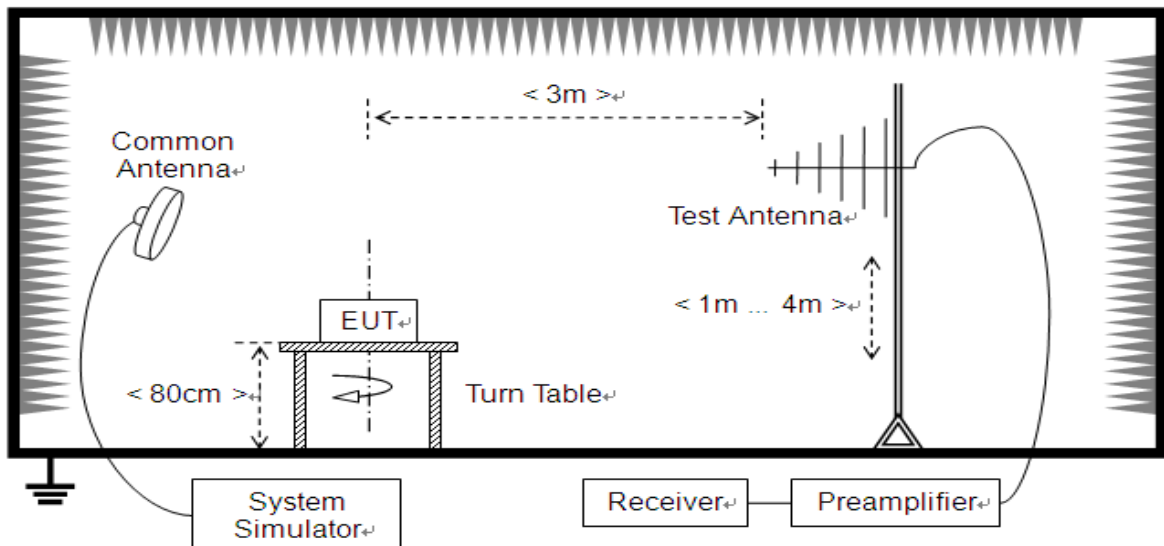
According to FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power.

According to FCC section 27.50, mobile, and portable (hand-held) stations is limited to 1 Watts e.i.r.p. peak power.

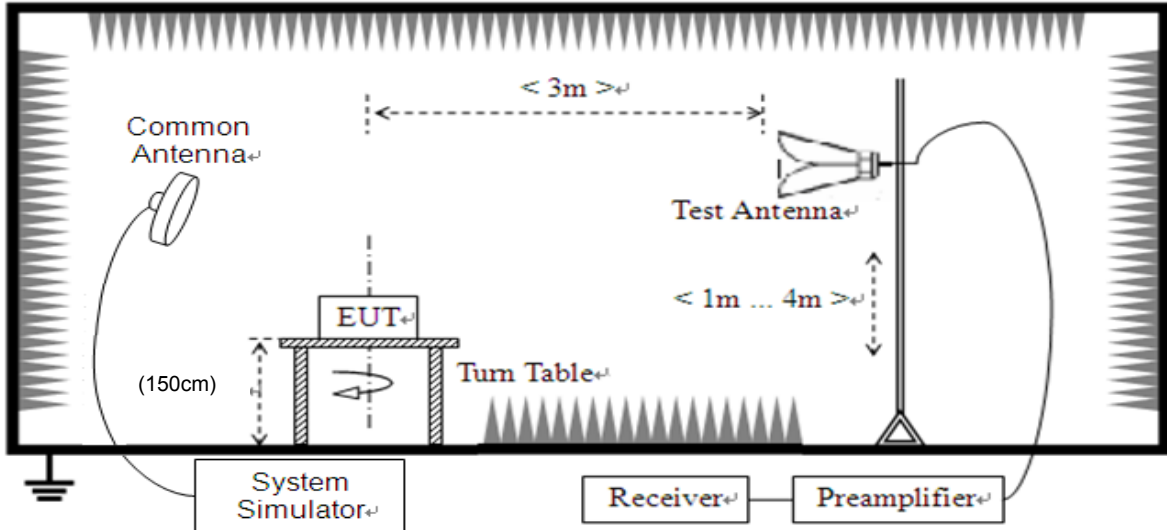
### 2.7.2. Test Description

Test Setup:

1) Below 1GHz



2) Above 1GHz



The EUT is located in a 3m Full-Anechoic Chamber; the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading. A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power (i.e. GSM850MHz band Power Control Level (PCL) = 5/19 and Power Class = 4, GSM1900MHz band Power Control Level (PCL) = 0/15 and Power Class = 1), and only the test result of the maximum output power was recorded. Please refer to section 2.1.3 of this report.

- Step size (dB): 3dB

The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) or a Horn one (used for above 3GHz), it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.



### 2.7.3. Test Result

The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested.

The substitution corrections are obtained as described below:

$$A_{\text{SUBST}} = P_{\text{SUBST\_TX}} - P_{\text{SUBST\_RX}} - L_{\text{SUBST\_CABLES}} + G_{\text{SUBST\_TX\_ANT}}$$

$$A_{\text{TOT}} = L_{\text{CABLES}} + A_{\text{SUBST}}$$

Where  $A_{\text{SUBST}}$  is the final substitution correction including receive antenna gain.

$P_{\text{SUBST\_TX}}$  is signal generator level,

$P_{\text{SUBST\_RX}}$  is receiver level,

$L_{\text{SUBST\_CABLES}}$  is cable losses including TX cable,

$G_{\text{SUBST\_TX\_ANT}}$  is substitution antenna gain.

$A_{\text{TOT}}$  is total correction factor including cable loss and substitution correction

During the test, the data of  $A_{\text{TOT}}$  was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of  $A_{\text{TOT}}$ .





**Top Antenna:**

**GSM Test verdict:**

Band	Channel	Frequency (MHz)	PCL	Measured ERP		Limit		Verdict
				dBm	W	dBm	W	
GSM 850MHz	128	824.20	5	26.22	0.419	38.5	7	PASS
	190	836.60	5	26.32	0.429			PASS
	251	848.80	5	26.28	0.425			PASS
GPRS 850MHz	128	824.20	5	26.23	0.420	38.5	7	PASS
	190	836.60	5	26.28	0.425			PASS
	251	848.80	5	26.27	0.424			PASS
EDGE 850MHz	128	824.20	5	23.21	0.209	38.5	7	PASS
	190	836.60	5	23.43	0.220			PASS
	251	848.80	5	23.26	0.212			PASS

**Note 1:** For the GPRS and EDGE model, all the slots were tested and just the worst data were recorded in this report.

**Note 2:** Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.

Band	Channel	Frequency (MHz)	PCL	Measured EIRP		Limit		Verdict
				dBm	W	dBm	W	
GSM 1900MHz	512	1850.2	0	25.86	0.385	33	2	PASS
	661	1880.0	0	25.97	0.395			PASS
	810	1909.8	0	25.85	0.385			PASS
GPRS 1900MHz	512	1850.2	0	25.86	0.385	33	2	PASS
	661	1880.0	0	26.04	0.402			PASS
	810	1909.8	0	25.85	0.385			PASS
EDGE 1900MHz	512	1850.2	0	25.89	0.388	33	2	PASS
	661	1880.0	0	25.99	0.397			PASS
	810	1909.8	0	25.90	0.389			PASS

**Note 1:** For the GPRS and EDGE model, all the slots were tested and just the worst data were recorded in this report.

**Note 2:** Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.



**WCDMA Test verdict:**

Band	Channel	Frequency (MHz)	Measured ERP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band V	4132	826.4	19.08	0.081	38.5	7	PASS
	4182	836.4	19.12	0.082			PASS
	4233	846.6	19.04	0.080			PASS
HSDPA Band V	4132	826.4	18.04	0.064	38.5	7	PASS
	4182	836.4	17.97	0.063			PASS
	4233	846.6	17.52	0.056			PASS
HSUPA Band V	4132	826.4	17.34	0.054	38.5	7	PASS
	4182	836.4	17.32	0.054			PASS
	4233	846.6	17.30	0.054			PASS
HSPA+ Band V	4132	826.4	15.32	0.034	38.5	7	PASS
	4182	836.4	15.30	0.034			PASS
	4233	846.6	15.28	0.034			PASS

**Note:** Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.

Band	Channel	Frequency (MHz)	Measured EIRP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band II	9262	1852.4	19.87	0.097	33	2	PASS
	9400	1880.0	19.84	0.096			PASS
	9538	1907.6	19.77	0.095			PASS
HSDPA Band II	9262	1852.4	19.02	0.080	33	2	PASS
	9400	1880.0	19.04	0.080			PASS
	9538	1907.6	19.15	0.082			PASS
HSUPA Band II	9262	1852.4	17.22	0.053	33	2	PASS
	9400	1880.0	17.19	0.052			PASS
	9538	1907.6	17.16	0.052			PASS
HSPA+ Band II	4132	826.4	16.16	0.041	33	2	PASS
	4182	836.4	16.13	0.041			PASS
	4233	846.6	16.10	0.041			PASS

**Note:** Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.



Band	Channel	Frequency (MHz)	Measured EIRP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band IV	1312	1712.4	17.84	0.061	30	1	PASS
	1413	1732.6	17.79	0.060			PASS
	1513	1752.6	17.77	0.060			PASS
HSDPA Band IV	1312	1712.4	17.72	0.059	30	1	PASS
	1413	1732.6	17.74	0.059			PASS
	1513	1752.6	17.81	0.060			PASS
HSUPA Band IV	1312	1712.4	16.18	0.041	30	1	PASS
	1413	1732.6	16.19	0.042			PASS
	1513	1752.6	16.20	0.042			PASS
HSPA+ Band IV	4132	826.4	15.00	0.032	30	1	PASS
	4182	836.4	15.02	0.032			PASS
	4233	846.6	15.05	0.032			PASS

**Note:** Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.



**Bottom Antenna:**

**GSM Test verdict:**

Band	Channel	Frequency (MHz)	PCL	Measured ERP		Limit		Verdict
				dBm	W	dBm	W	
GSM 850MHz	128	824.20	5	31.54	1.426	38.5	7	PASS
	190	836.60	5	31.51	1.416			PASS
	251	848.80	5	31.80	1.514			PASS
GPRS 850MHz	128	824.20	5	31.64	1.459	38.5	7	PASS
	190	836.60	5	31.60	1.445			PASS
	251	848.80	5	31.89	1.545			PASS
EDGE 850MHz	128	824.20	5	25.74	0.375	38.5	7	PASS
	190	836.60	5	25.81	0.381			PASS
	251	848.80	5	25.64	0.366			PASS

**Note 1:** For the GPRS and EDGE model, all the slots were tested and just the worst data were recorded in this report.

**Note 2:** Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.

Band	Channel	Frequency (MHz)	PCL	Measured EIRP		Limit		Verdict
				dBm	W	dBm	W	
GSM 1900MHz	512	1850.2	0	31.47	1.403	33	2	PASS
	661	1880.0	0	31.41	1.384			PASS
	810	1909.8	0	31.21	1.321			PASS
GPRS 1900MHz	512	1850.2	0	31.46	1.400	33	2	PASS
	661	1880.0	0	31.41	1.384			PASS
	810	1909.8	0	31.21	1.321			PASS
EDGE 1900MHz	512	1850.2	0	26.61	0.458	33	2	PASS
	661	1880.0	0	26.82	0.481			PASS
	810	1909.8	0	26.40	0.437			PASS

**Note 1:** For the GPRS and EDGE model, all the slots were tested and just the worst data were recorded in this report.

**Note 2:** Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.



**WCDMA Test verdict:**

Band	Channel	Frequency (MHz)	Measured ERP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band V	4132	826.4	22.87	0.194	38.5	7	PASS
	4182	836.4	22.92	0.196			PASS
	4233	846.6	22.90	0.195			PASS
HSDPA Band V	4132	826.4	22.04	0.160	38.5	7	PASS
	4182	836.4	21.97	0.157			PASS
	4233	846.6	21.52	0.142			PASS
HSUPA Band V	4132	826.4	21.34	0.136	38.5	7	PASS
	4182	836.4	21.32	0.136			PASS
	4233	846.6	21.30	0.135			PASS
HSPA+ Band V	4132	826.4	19.32	0.086	38.5	7	PASS
	4182	836.4	19.30	0.085			PASS
	4233	846.6	19.28	0.085			PASS

**Note:** Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.

Band	Channel	Frequency (MHz)	Measured EIRP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band II	9262	1852.4	24.87	0.307	33	2	PASS
	9400	1880.0	24.84	0.305			PASS
	9538	1907.6	24.81	0.303			PASS
HSDPA Band II	9262	1852.4	24.02	0.252	33	2	PASS
	9400	1880.0	24.04	0.254			PASS
	9538	1907.6	24.15	0.260			PASS
HSUPA Band II	9262	1852.4	22.22	0.167	33	2	PASS
	9400	1880.0	22.19	0.166			PASS
	9538	1907.6	22.16	0.164			PASS
HSPA+ Band II	4132	826.4	21.16	0.131	33	2	PASS
	4182	836.4	21.13	0.130			PASS
	4233	846.6	21.10	0.129			PASS

**Note:** Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.



Band	Channel	Frequency (MHz)	Measured EIRP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band IV	1312	1712.4	24.79	0.301	30	1	PASS
	1413	1732.6	24.76	0.299			PASS
	1513	1752.6	24.66	0.292			PASS
HSDPA Band IV	1312	1712.4	23.62	0.230	30	1	PASS
	1413	1732.6	23.84	0.242			PASS
	1513	1752.6	23.71	0.235			PASS
HSUPA Band IV	1312	1712.4	22.08	0.161	30	1	PASS
	1413	1732.6	22.09	0.162			PASS
	1513	1752.6	22.10	0.162			PASS
HSPA+ Band IV	4132	826.4	20.90	0.123	30	1	PASS
	4182	836.4	20.92	0.124			PASS
	4233	846.6	20.95	0.124			PASS

**Note:** Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.

## 2.8. Radiated Out of Band Emissions

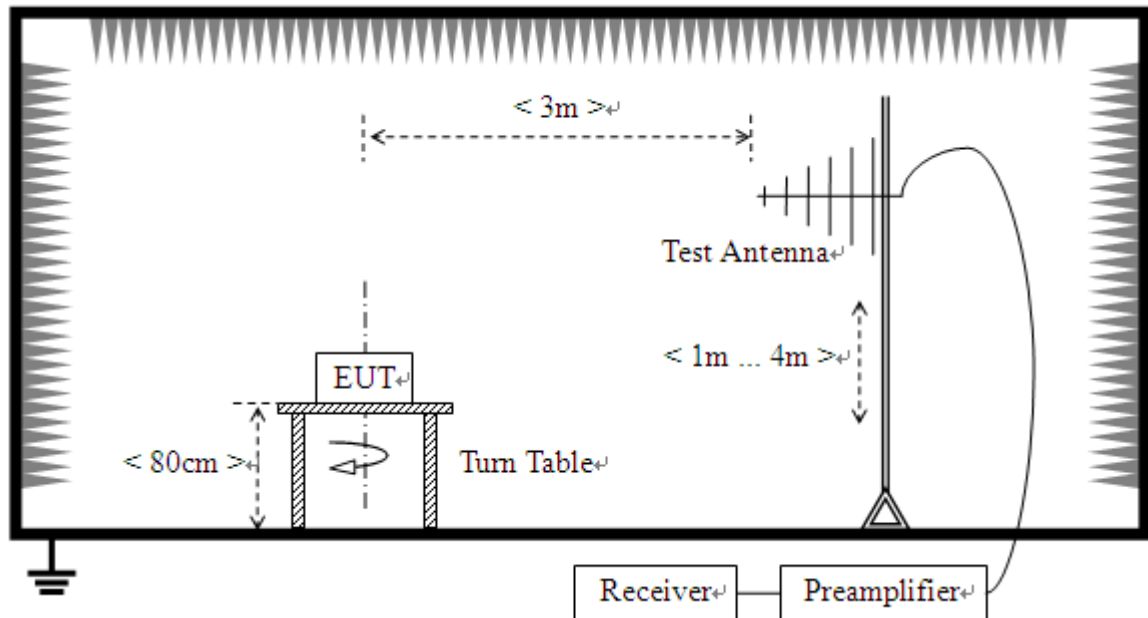
### 2.8.1. Requirement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43+10*\log(P)$ dB. This calculated to be -13dBm.

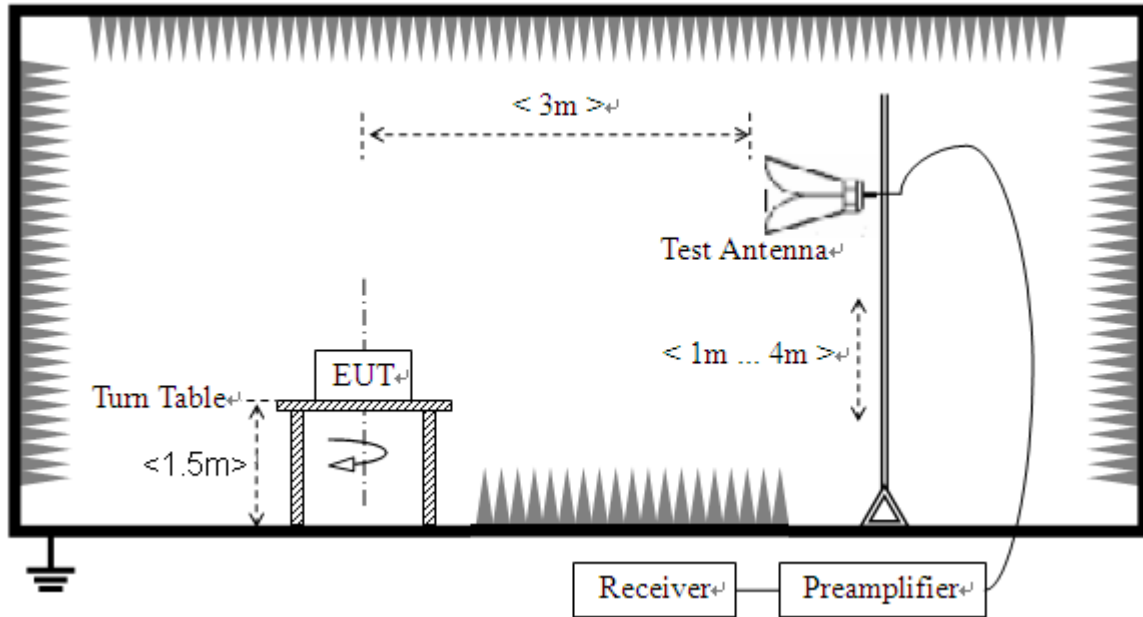
### 2.8.2. Test Description

Test Setup:

- 1) Below1GHz



## 2) Above 1GHz



The EUT is located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power (i.e. GSM850MHz band Power Control Level (PCL) = 5/19 and Power Class = 4, GSM1900MHz band Power Control Level (PCL) = 0/15 and Power Class = 1), and only the test result of the maximum output power was recorded. Please refer to section 2.1.3 of this report.

- Step size (dB): 3dB

The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) and a Horn one (used for above 3 GHz), it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

Note: when doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.





**2.8.3. Test Result**

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested to verify the out of band emissions. The power of the EUT transmitting frequency should be ignored.

**Top Antenna**

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical		
GSM 850MHz	128	824.2	< -25	< -25	-13	PASS
	190	836.6	< -25	< -25		PASS
	251	848.8	< -25	< -25		PASS
GSM 1900MHz	512	1850.2	< -25	< -25	-13	PASS
	661	1880.0	< -25	< -25		PASS
	810	1909.8	< -25	< -25		PASS
EDGE 850MHz	128	824.2	< -25	< -25	-13	PASS
	190	836.6	< -25	< -25		PASS
	251	848.8	< -25	< -25		PASS
EDGE 1900MHz	512	1850.2	< -25	< -25	-13	PASS
	661	1880.0	< -25	< -25		PASS
	810	1909.8	< -25	< -25		PASS
WCDMA Band V	4132	826.4	< -25	< -25	-13	PASS
	4183	836.4	< -25	< -25		PASS
	4233	846.6	< -25	< -25		PASS
WCDMA Band II	9262	1852.4	< -25	< -25	-13	PASS
	9400	1880.0	< -25	< -25		PASS
	9538	1907.6	< -25	< -25		PASS
WCDMA Band IV	1312	1712.4	< -25	< -25	-13	PASS
	1413	1732.6	< -25	< -25		PASS
	1513	1752.6	< -25	< -25		PASS

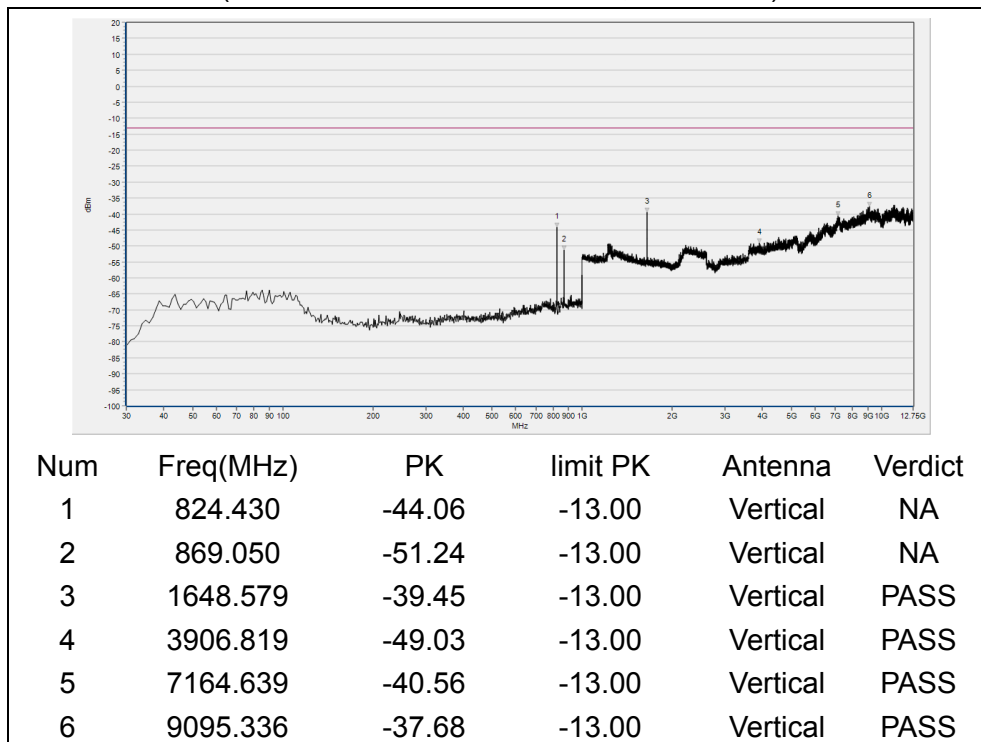
**Note 1:** All test mode and condition mentioned were considered and evaluated respectively by performing full test, only the worst data were recorded and reported.

**Note 2:** All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

**Top Antenna:**



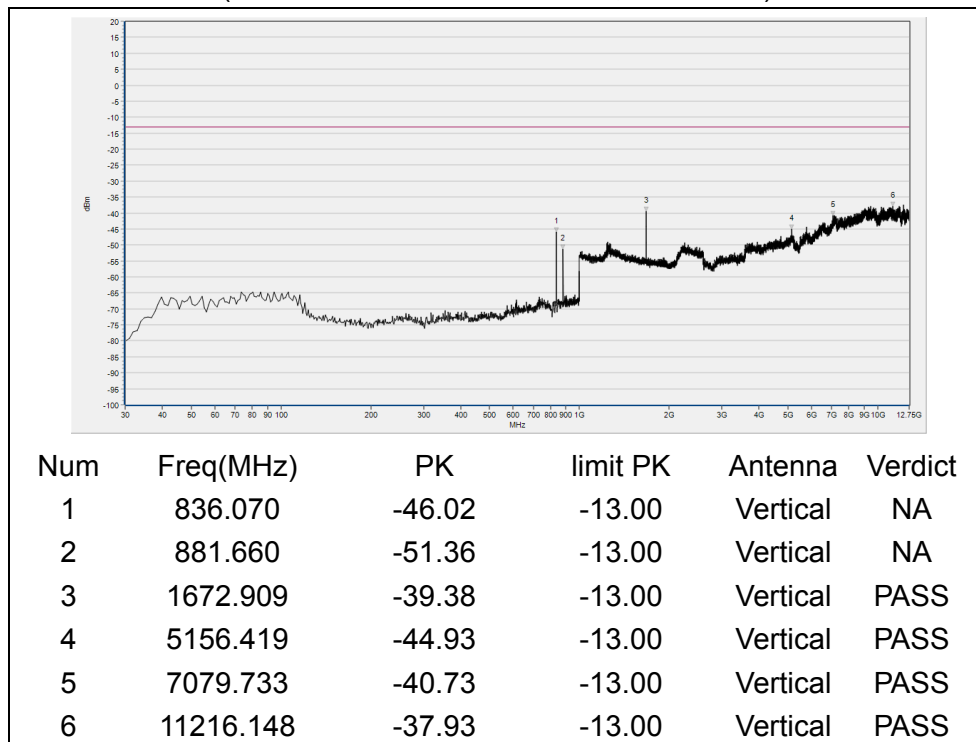
(GSM 850MHz, Channel = 128, Horizontal)



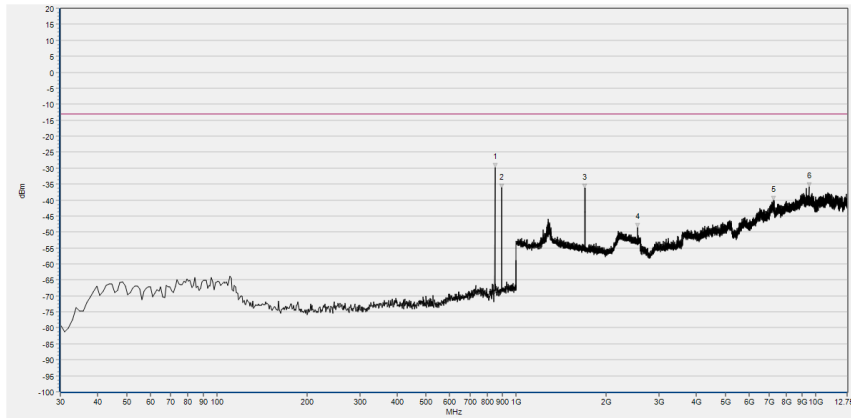
(GSM 850MHz, Channel = 128, Vertical)



(GSM850MHz, Channel = 190, Horizontal)

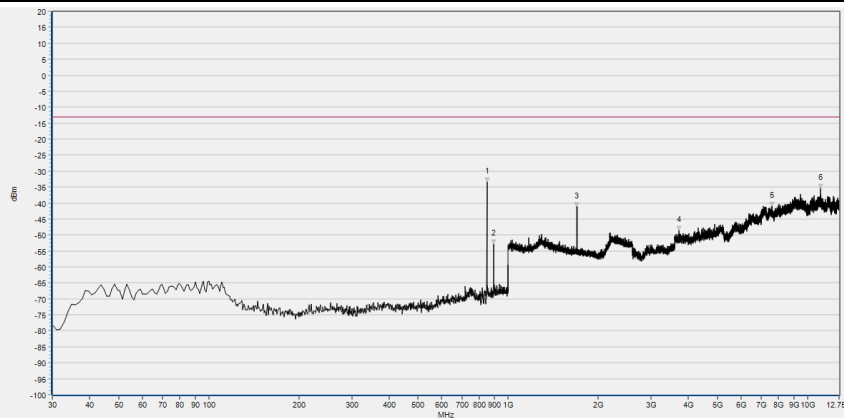


(GSM 850MHz, Channel = 190, Vertical)



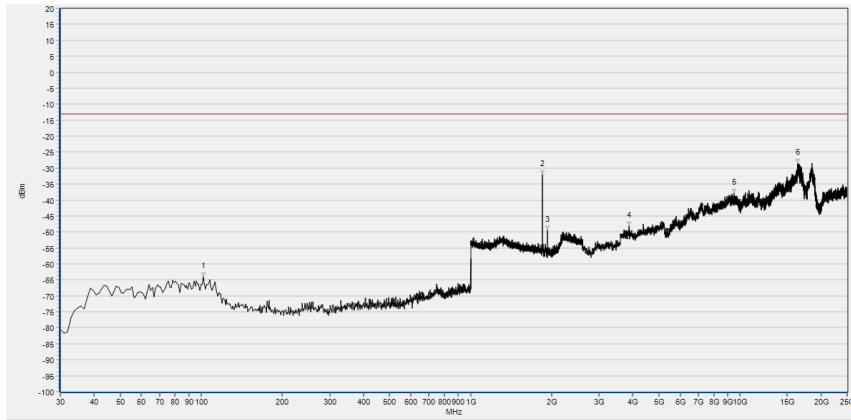
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	848.680	-29.79	-13.00	Horizontal	NA
2	893.300	-36.25	-13.00	Horizontal	NA
3	1697.239	-36.38	-13.00	Horizontal	PASS
4	2546.218	-48.57	-13.00	Horizontal	PASS
5	7251.391	-40.05	-13.00	Horizontal	PASS
6	9499.564	-35.86	-13.00	Horizontal	PASS

(GSM 850MHz, Channel = 251, Horizontal)



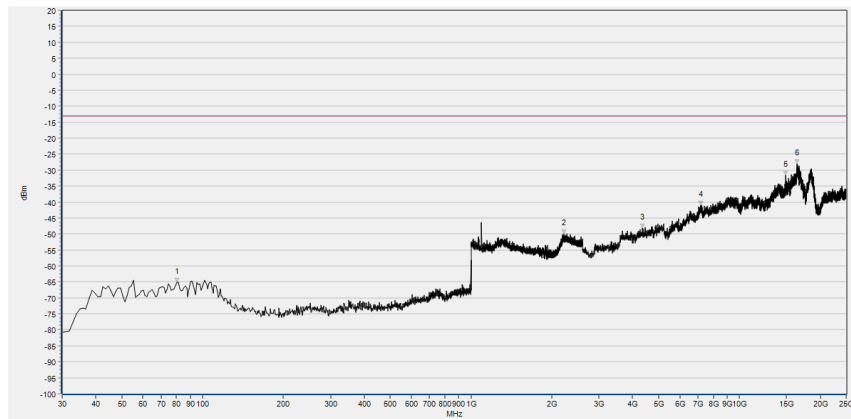
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	848.680	-33.43	-13.00	Vertical	NA
2	894.270	-52.89	-13.00	Vertical	NA
3	1697.239	-41.26	-13.00	Vertical	PASS
4	3727.778	-48.69	-13.00	Vertical	PASS
5	7605.783	-41.12	-13.00	Vertical	PASS
6	11062.948	-35.53	-13.00	Vertical	PASS

(GSM 850MHz, Channel = 251, Vertical)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	101.780	-64.01	-13.00	Horizontal	PASS
2	1850.260	-32.02	-13.00	Horizontal	NA
3	1930.292	-49.58	-13.00	Horizontal	NA
4	3883.142	-48.18	-13.00	Horizontal	PASS
5	9500.455	-37.92	-13.00	Horizontal	PASS
6	16404.983	-28.44	-13.00	Horizontal	PASS

(GSM 1900MHz, Channel = 512, Horizontal)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	80.440	-65.10	-13.00	Vertical	PASS
2	2223.529	-49.92	-13.00	Vertical	PASS
3	4359.738	-48.23	-13.00	Vertical	PASS
4	7174.504	-41.10	-13.00	Vertical	PASS
5	14852.991	-31.72	-13.00	Vertical	PASS
6	16392.762	-28.00	-13.00	Vertical	PASS

(GSM 1900MHz, Channel = 512, Vertical)