



TEST REPORT

APPLICANT : Realme Chongqing Mobile
Telecommunications Corp., Ltd.

PRODUCT NAME : Mobile Phone

MODEL NAME : RMX2103

BRAND NAME : realme

FCC ID : 2AUYFRMX2103

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

RECEIPT DATE : 2020-08-03

TEST DATE : 2020-08-04 to 2020-08-25

ISSUE DATE : 2020-08-29

Edited by: Zhou Xiaolong
Zhou Xiaolong (Rapporteur)

Approved by: Peng Huarui
Peng Huarui (Supervisor)

NOTE: This document is issued by MORLAB, the test report shall not be reproduced except in full without prior written permission of the company. The test results apply only to the particular sample(s) tested and to the specific tests carried out which is available on request for validation and information confirmed at our website.





DIRECTORY

1. Technical Information	4
1.1. Applicant and Manufacturer Information	4
1.2. Equipment Under Test (EUT) Description	4
1.3. Maximum ERP/EIRP and Emission Designator	8
1.4. Test Standards and Results	9
1.5. Environmental Conditions	11
2. 47 CFR Part 2, Part 22H , 24E&27L Requirements	12
2.1. Conducted RF Output Power	12
2.2. Peak to Average Ratio	16
2.3. 99% Occupied Bandwidth	22
2.4. Frequency Stability	28
2.5. Conducted Out of Band Emissions	33
2.6. Band Edge	39
2.7. Transmitter Radiated Power (EIRP/ERP)	44
2.8. Radiated Out of Band Emissions	50
Annex A Test Uncertainty	95
Annex B Testing Laboratory Information	96



Change History		
Version	Date	Reason for change
1.0	2020-08-29	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Realme Chongqing Mobile Telecommunications Corp., Ltd.
Applicant Address:	No.178 Yulong Avenue, Yufengshan, Yubei District, Chongqing,China
Manufacturer:	Realme Chongqing Mobile Telecommunications Corp., Ltd.
Manufacturer Address:	No.178 Yulong Avenue, Yufengshan, Yubei District, Chongqing,China

1.2. Equipment Under Test (EUT) Description

Product Name:	Mobile Phone	
Hardware Version:	11	
Software Version:	realme UI V1.0	
Modulation Type:	QPSK,16QAM,64QAM	
Operation Band:	Band 2 / 4 / 5 / 7 / 38 / 40 / 41	
Carrier Aggregation:	B2C, B7C, B38C, B41C(only downlink carrier Aggregation)	
Frequency Range:	LTE Band 2	Tx: 1850MHz – 1910MHz
		Rx: 1930MHz – 1990MHz
	LTE Band 4	Tx: 1710MHz – 1755MHz
		Rx: 2110MHz – 2155MHz
	LTE Band 5	Tx:824MHz - 849MHz
		Rx:869MHz - 894MHz
	LTE Band 7	Tx:2500MHz – 2570MHz
		Rx:2620MHz – 2690MHz
	LTE Band 38	Tx:2570MHz - 2620MHz
		Rx:2570MHz - 2620MHz
	LTE Band 40	Tx: 2305MHz– 2315MHz
		Rx:2305MHz– 2315MHz
		Tx: 2350MHz– 2360MHz
		Rx: 2350MHz– 2360MHz
LTE Band 41	Tx:2535MHz-2655MHz	
	Rx:2535MHz-2655MHz	



Channel Bandwidth	LTE Band 2	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 4	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 5	1.4MHz, 3MHz, 5MHz, 10MHz
	LTE Band 7	5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 38	5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 40	5MHz, 10MHz
	LTE Band 41	5MHz, 10MHz, 15MHz, 20MHz
Antenna Type:	PIFA Antenna	
Antenna Gain:	LTE Band 2	1.10 dBi
	LTE Band 4	1.10 dBi
	LTE Band 5	0.50 dBi
	LTE Band 7	1.10 dBi
	LTE Band 38	1.10 dBi
	LTE Band 40	1.10 dBi
	LTE Band 41	1.10 dBi
Accessory Information:	Battery 1	
	Brand Name:	realme
	Model No.:	BLP803
	Capacity:	4890.00mAh
	Rated Voltage:	3.87V
	Charge Limit:	4.45V
	Manufacturer	SUNWODA Electronic Co., Ltd.
	Battery 2	
	Brand Name:	realme
	Model No.:	BLP803
	Capacity:	4890.00mAh
	Rated Voltage:	3.87V
	Charge Limit:	4.45V
	Manufacturer	Huizhou Desay Battery Co., Ltd.
	Battery 3	
	Brand Name:	realme
	Model No.:	BLP803
	Capacity:	4890.00mAh
	Rated Voltage:	3.87V
	Charge Limit:	4.45V
	Manufacturer	TWS TECHNOLOGY (GUANGZHOU) LIMITED



	AC Adapter1	
	Brand Name:	realme
	Model No.:	OP92KAUH
	Rated Input:	100-240V ~ 50/60Hz 0.5A
	Rated Output:	9V=2.0A or 5V=2.0A
	Manufacturer	ShenZhen KunXing Technology Co., Ltd
	AC Adapter2	
	Brand Name:	realme
	Model No.:	OP92KAUH
	Rated Input:	100-240V ~ 50/60Hz 0.5A
	Rated Output:	9V=2.0A or 5V=2.0A
	Manufacturer	Huizhou Golden Lake Industrial Co.,Ltd



- 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
GSM850	1.026	253KG3W
EDGE850	0.256	249KG7W
GSM1900	1.086	251KG2W
EDGE1900	0.423	249KG8W
WCDMA Band V	0.142	4M14F9W
WCDMA Band II	0.251	4M15F9W
WCDMA Band IV	0.231	4M14F9W



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	Aug 4 to 6, 2020	Zhou Xiaolong	PASS	No deviation
2	24.232(d)	Peak -Average Ratio	Aug 6 to 8, 2020	Zhou Xiaolong	PASS	No deviation
3	2.1049	99% Occupied Bandwidth	Aug 8 to 10, 2020	Zhou Xiaolong	PASS	No deviation
4	2.1055, 22.355, 24.235, 27.54	Frequency Stability	Aug 13 to 15, 2020	Zhou Xiaolong	PASS	No deviation
5	2.1051, 22.917(a), 24.238(a)	Conducted Out of Band Emissions	Aug 16 to 21, 2020	Zhou Xiaolong	PASS	No deviation
6	2.1051, 22.917(a), 24.238(a)	Band Edge	Aug 22 to 25 2020	Zhou Xiaolong	PASS	No deviation
7	22.913(a), 24.232(a)	Transmitter Radiated Power (EIPR/ERP)	Aug 4, to 8, 2020	Peng Xuewei	PASS	No deviation
8	2.1051, 22.917(a), 24.238(a)	Radiated Out of Band Emissions	Aug 7	Peng Xuewei	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

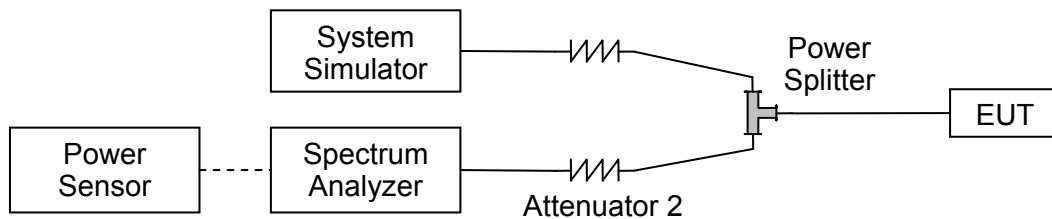
2.1. Conducted RF Output Power

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**

GSM850	Average Power (dBm)		
TX Channel	128	190	251
Frequency (MHz)	824.2	836.6	848.8
GSM 1 Tx slot	31.49	31.65	31.76
GPRS 1 Tx slot	31.52	31.69	31.82
GPRS 2 Tx slots	31.01	31.15	31.51
GPRS 3 Tx slots	30.70	30.82	31.12
GPRS 4 Tx slots	30.40	30.54	30.80
EDGE 1 Tx slot	25.74	25.67	25.57
EDGE 2 Tx slots	23.71	23.75	23.72
EDGE 3 Tx slots	22.54	22.43	22.60
EDGE 4 Tx slots	21.95	21.89	22.02

GSM1900	Average Power (dBm)		
TX Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
GSM 1 Tx slot	29.26	29.14	29.19
GPRS 1 Tx slot	29.30	29.05	29.14
GPRS 2 Tx slots	29.14	28.84	29.03
GPRS 3 Tx slots	29.01	28.70	28.93
GPRS 4 Tx slots	28.78	28.61	28.71
EDGE 1 Tx slot	25.16	24.94	24.99
EDGE 2 Tx slots	25.06	24.75	24.90
EDGE 3 Tx slots	24.90	24.63	24.75
EDGE 4 Tx slots	24.78	24.53	24.60



WCDMA Band V	Average Power (dBm)		
	TX Channel	4132	4182
Frequency (MHz)	826.4	836.4	846.6
RMC 12.2Kbps	23.17	22.98	23.09
HSDPA Subtest-1	22.12	21.99	22.25
HSDPA Subtest-2	21.15	21.02	21.24
HSDPA Subtest-3	20.32	20.23	20.51
HSDPA Subtest-4	20.19	20.12	20.37
HSUPA Subtest-1	21.14	21.01	21.27
HSUPA Subtest-2	21.12	21.00	21.23
HSUPA Subtest-3	20.80	20.74	20.95
HSUPA Subtest-4	22.15	21.99	22.21
HSUPA Subtest-5	21.03	20.89	21.14
HSPA+ (16QAM) Subtest-1	20.19	20.04	20.27
DC-HSDPA Subtest-1	21.88	21.8	21.78
DC-HSDPA Subtest-2	21.9	21.73	21.76
DC-HSDPA Subtest-3	21.38	21.24	21.25
DC-HSDPA Subtest-4	21.42	21.27	21.26

WCDMA Band II	Average Power (dBm)		
	TX Channel	9262	9400
Frequency (MHz)	1852.4	1880.0	1907.6
RMC 12.2Kbps	22.85	22.88	22.89
HSDPA Subtest-1	21.35	21.39	21.34
HSDPA Subtest-2	20.43	20.38	20.44
HSDPA Subtest-3	19.70	19.56	19.71
HSDPA Subtest-4	19.59	19.50	19.53
HSUPA Subtest-1	20.59	20.41	20.40
HSUPA Subtest-2	20.54	20.37	20.31
HSUPA Subtest-3	20.28	20.08	20.03
HSUPA Subtest-4	21.51	21.36	21.29
HSUPA Subtest-5	20.45	20.28	20.30
HSPA+ (16QAM) Subtest-1	19.61	19.47	19.44
DC-HSDPA Subtest-1	21.71	21.66	21.62
DC-HSDPA Subtest-2	21.74	21.72	21.61
DC-HSDPA Subtest-3	21.21	21.13	21.15
DC-HSDPA Subtest-4	21.22	21.18	21.13



WCDMA Band IV	Average Power (dBm)		
	1312	1413	1513
TX Channel	1312	1413	1513
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2Kbps	22.48	22.47	22.52
HSDPA Subtest-1	21.47	21.43	21.38
HSDPA Subtest-2	20.50	20.43	20.41
HSDPA Subtest-3	19.66	19.71	19.65
HSDPA Subtest-4	19.57	19.62	19.58
HSUPA Subtest-1	20.51	20.43	20.41
HSUPA Subtest-2	20.49	20.40	20.37
HSUPA Subtest-3	20.18	20.09	20.11
HSUPA Subtest-4	21.45	21.38	21.39
HSUPA Subtest-5	20.39	20.33	20.30
HSPA+ (16QAM) Subtest-1	19.25	19.17	19.24
DC-HSDPA Subtest-1	21.58	21.52	21.59
DC-HSDPA Subtest-2	21.49	21.47	21.54
DC-HSDPA Subtest-3	20.96	20.98	21.04
DC-HSDPA Subtest-4	21.02	21.00	21.05

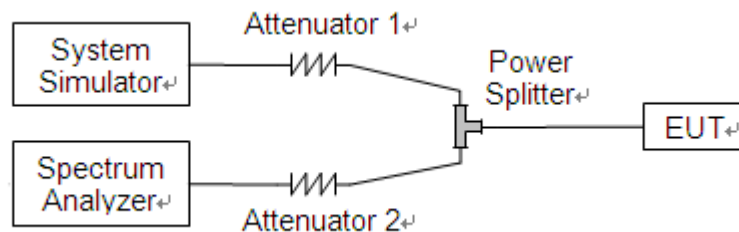
2.2. Peak to Average Ratio

2.2.1. Requirement

According to FCC 24.232(d) and 27.50(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	0.038	13	PASS
	661	1880.0	0.024		PASS
	810	1909.8	0.028		PASS
EDGE 1900MHz	512	1850.2	0.022		PASS
	661	1880.0	0.025		PASS
	810	1909.8	0.019		PASS

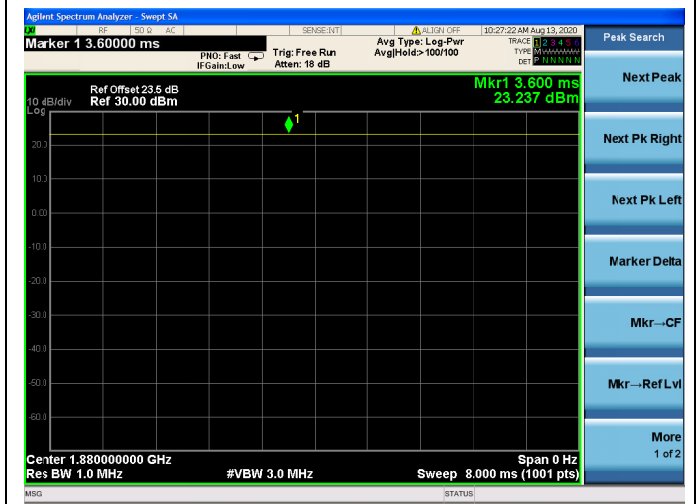
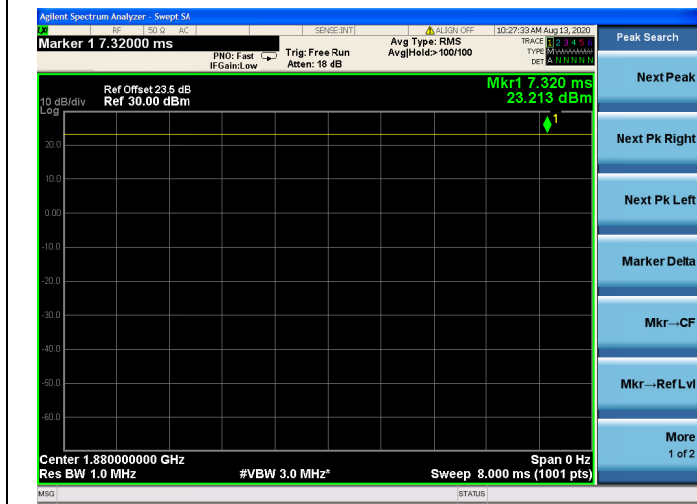
Band	Channel	Frequency (MHz)	Peak to Average ratio	Limit	Verdict
			dB	dB	
WCDMA Band II	9262	1852.4	2.930	13	PASS
	9400	1880.0	3.020		PASS
	9538	1907.6	3.040		PASS
WCDMA Band IV	1312	1712.4	3.030		PASS
	1413	1732.6	3.000		PASS
	1513	1752.6	2.970		PASS



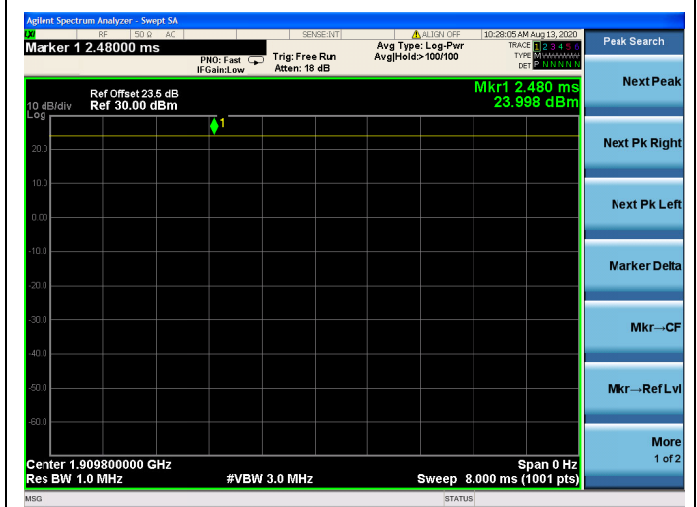
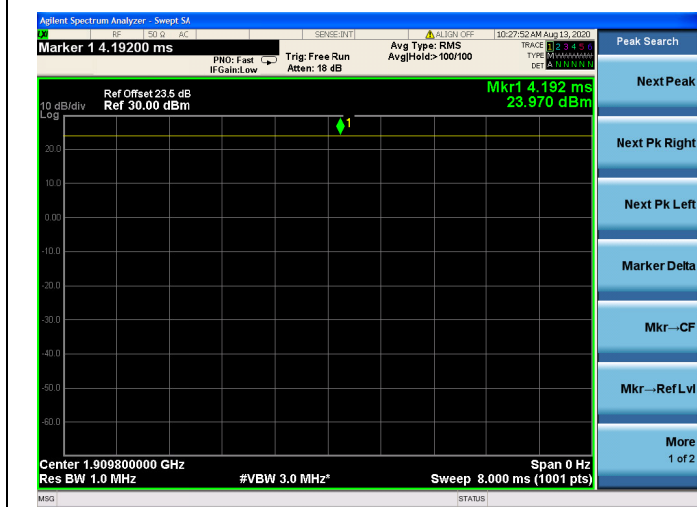
GSM 1900MHz CH512 1850.2MHz



GSM 1900MHz CH661 1880.0MHz



GSM 1900MHz CH810 1909.8MHz

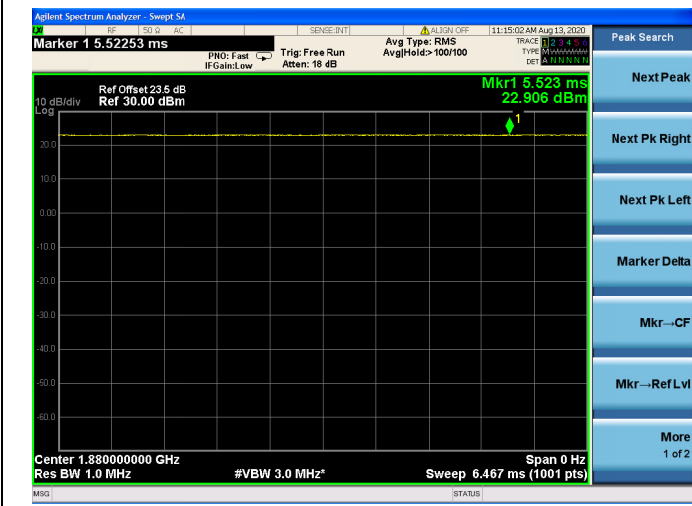




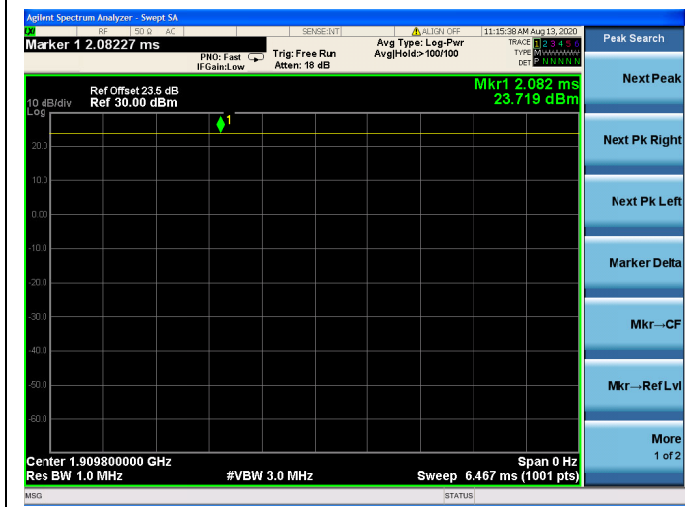
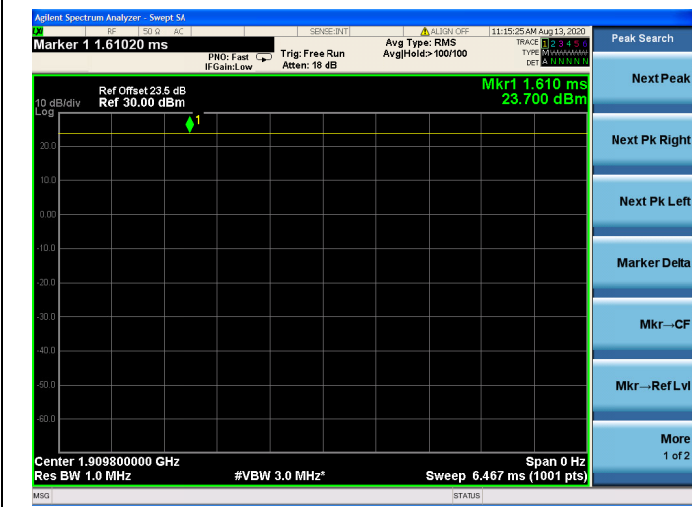
EDGE 1900MHz CH512 1850.2MHz

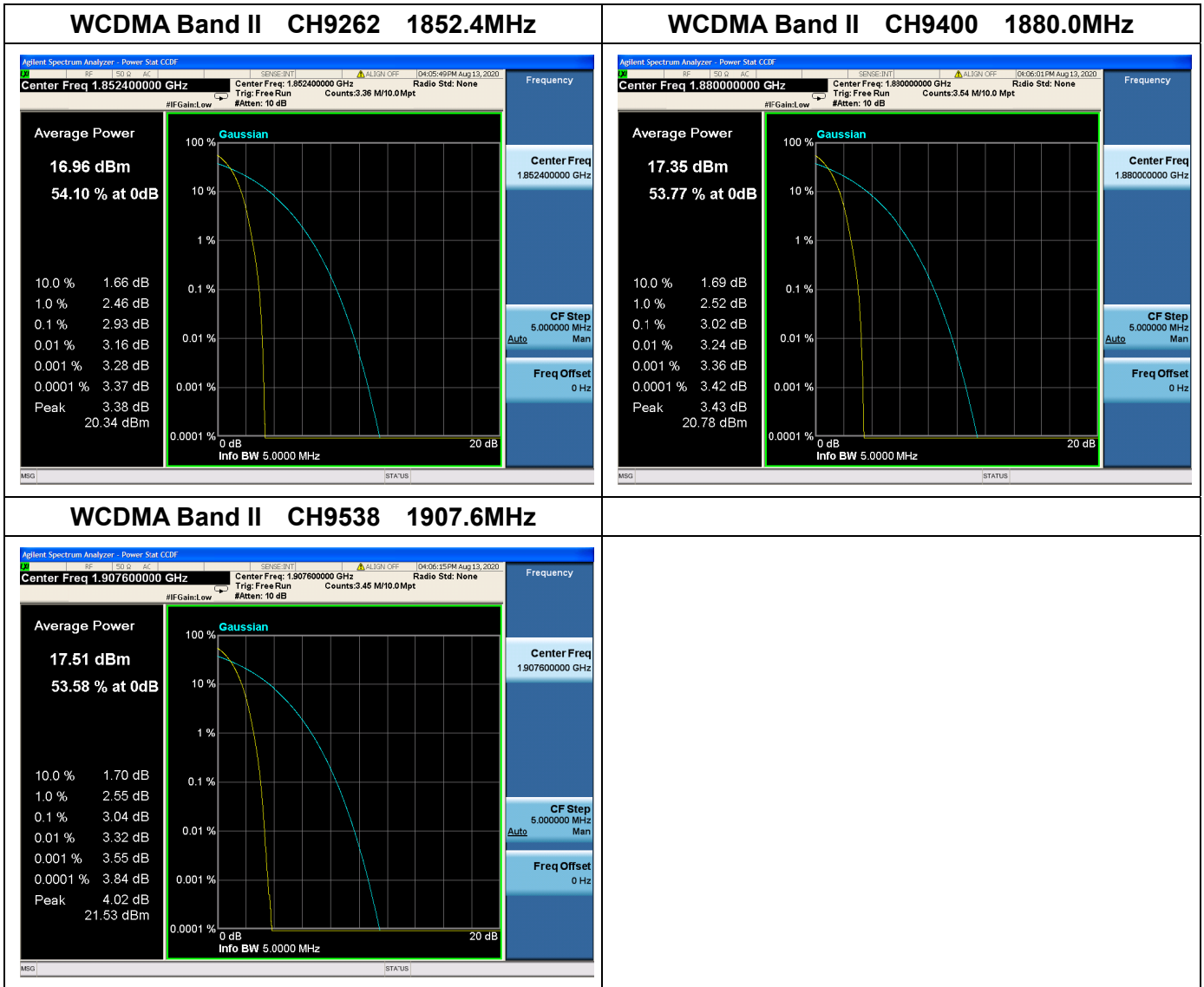


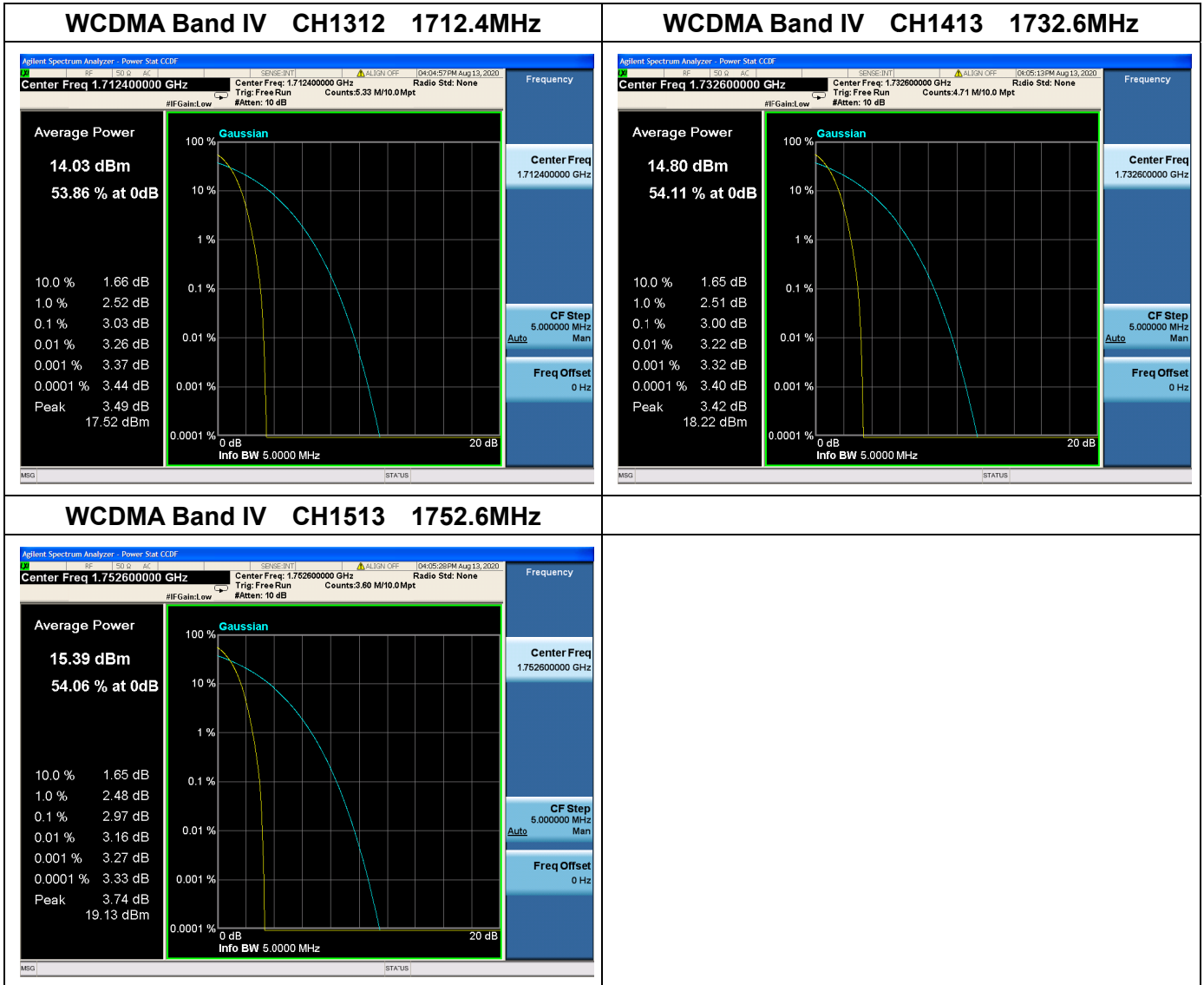
EDGE 1900MHz CH661 1880.0MHz



EDGE 1900MHz CH810 1909.8MHz







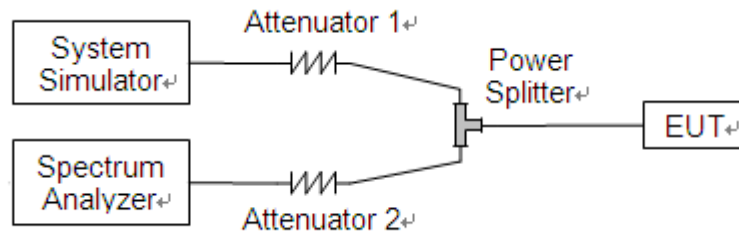
2.3.99% Occupied Bandwidth

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

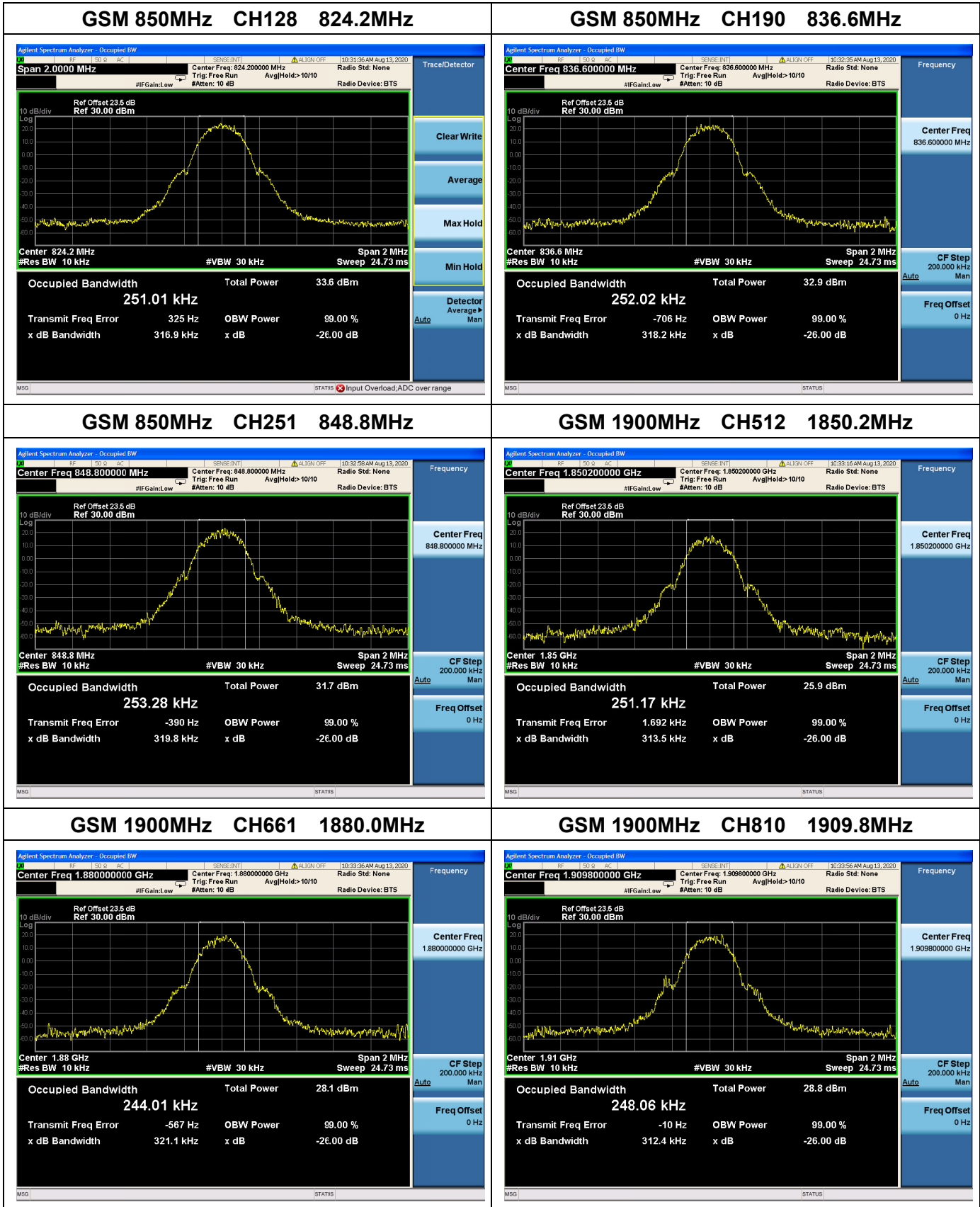
The lowest, middle and highest channels are selected to perform testing to record the 99% occupied bandwidth.

GSM Test Verdict:

Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)
GSM 850MHz	128	824.2	251.01	316.90
	190	836.6	252.02	318.20
	251	848.8	253.28	319.80
GSM 1900MHz	512	1850.2	251.17	313.50
	661	1880.0	244.01	321.10
	810	1909.8	248.06	312.40
EDGE 850MHz	128	824.2	248.07	318.20
	190	836.6	249.67	320.90
	251	848.8	248.92	319.70
EDGE 1900MHz	512	1850.2	241.64	317.60
	661	1880.0	240.73	309.50
	810	1909.8	249.82	321.30

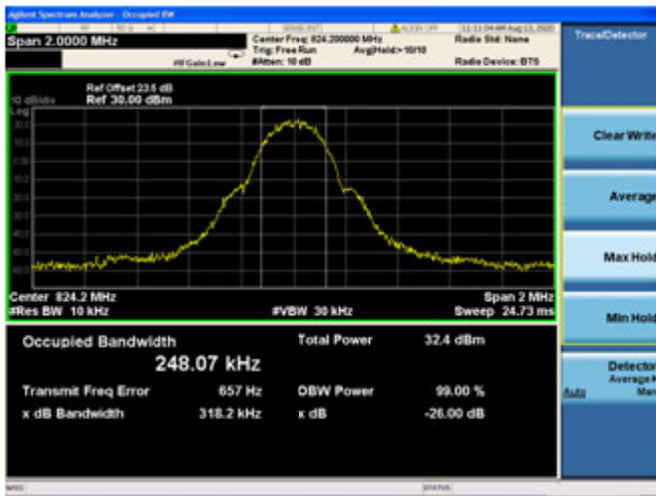
WCDMA Test Verdict:

Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
WCDMA Band V	4132	826.4	4.119	4.700
	4182	836.4	4.128	4.720
	4233	846.6	4.139	4.715
WCDMA Band II	9262	1852.4	4.148	4.714
	9400	1880.0	4.140	4.727
	9538	1907.6	4.144	4.698
WCDMA Band IV	1312	1712.4	4.139	4.716
	1413	1732.6	4.131	4.713
	1513	1752.6	4.129	4.716

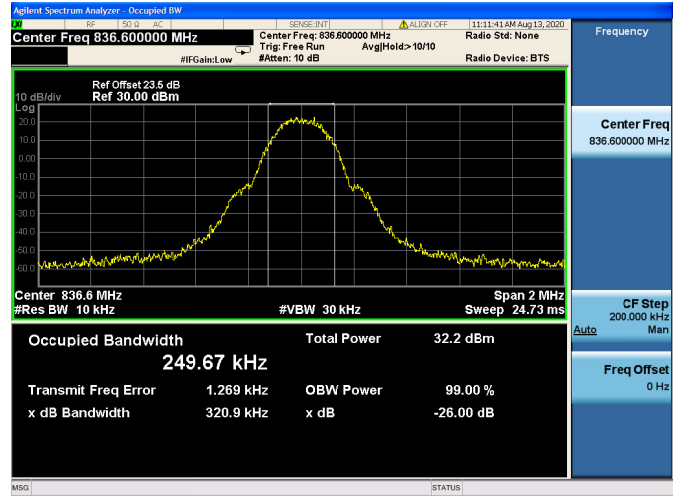




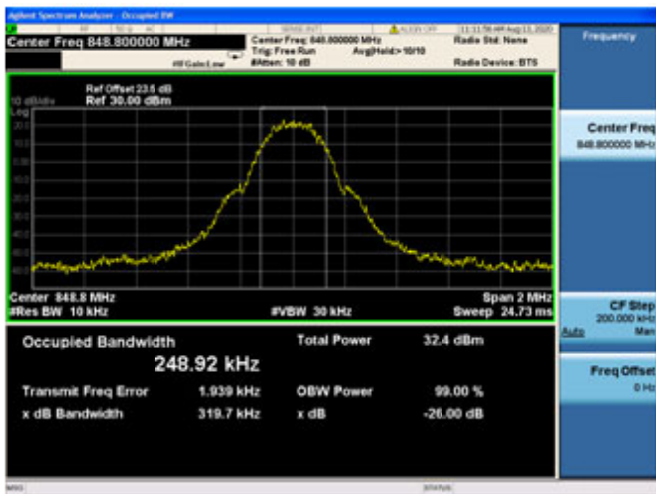
EDGE 850MHz CH128 824.2MHz



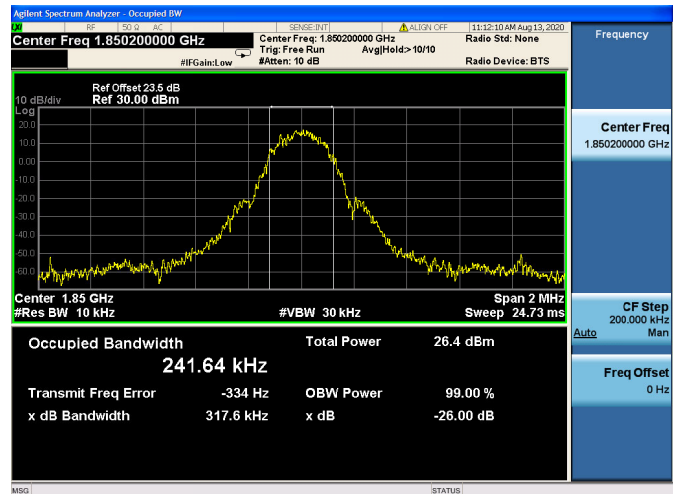
EDGE 850MHz CH190 836.6MHz



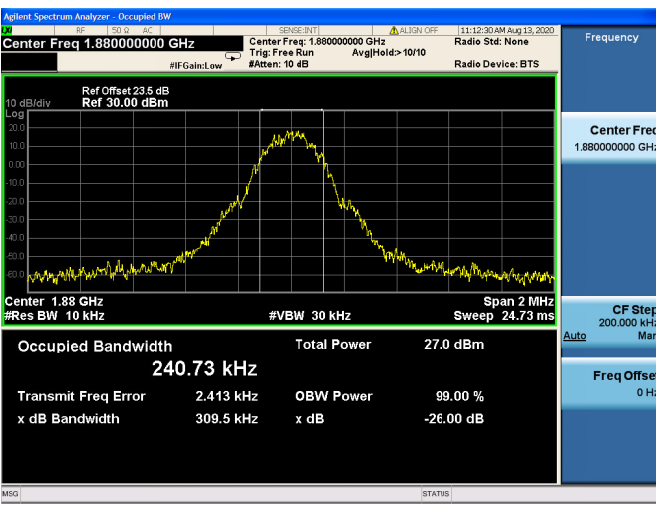
EDGE 850MHz CH251 848.8MHz



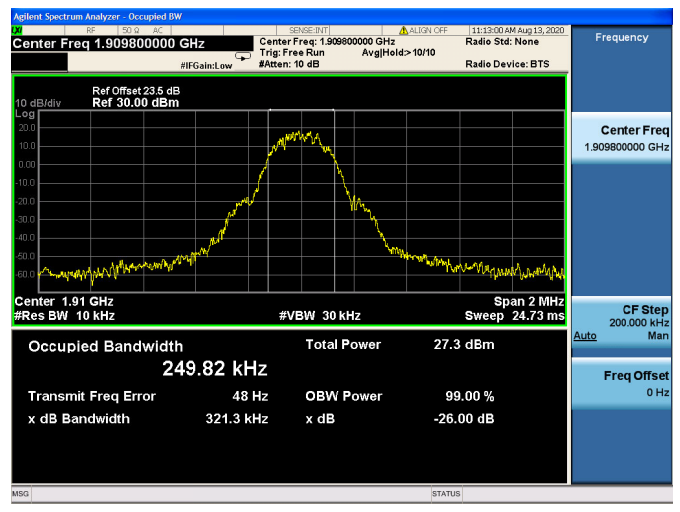
EDGE 1900MHz CH512 1850.2MHz

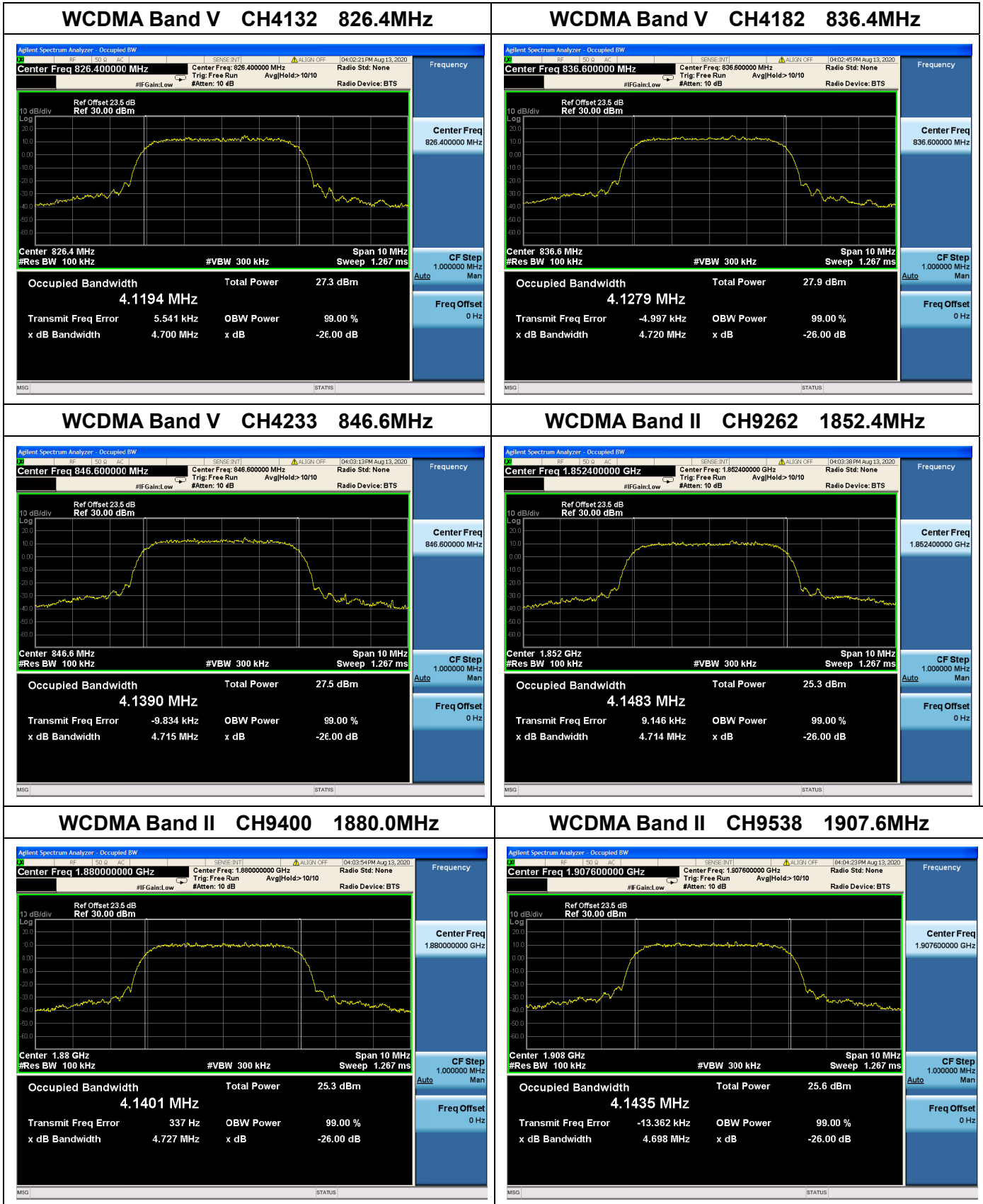


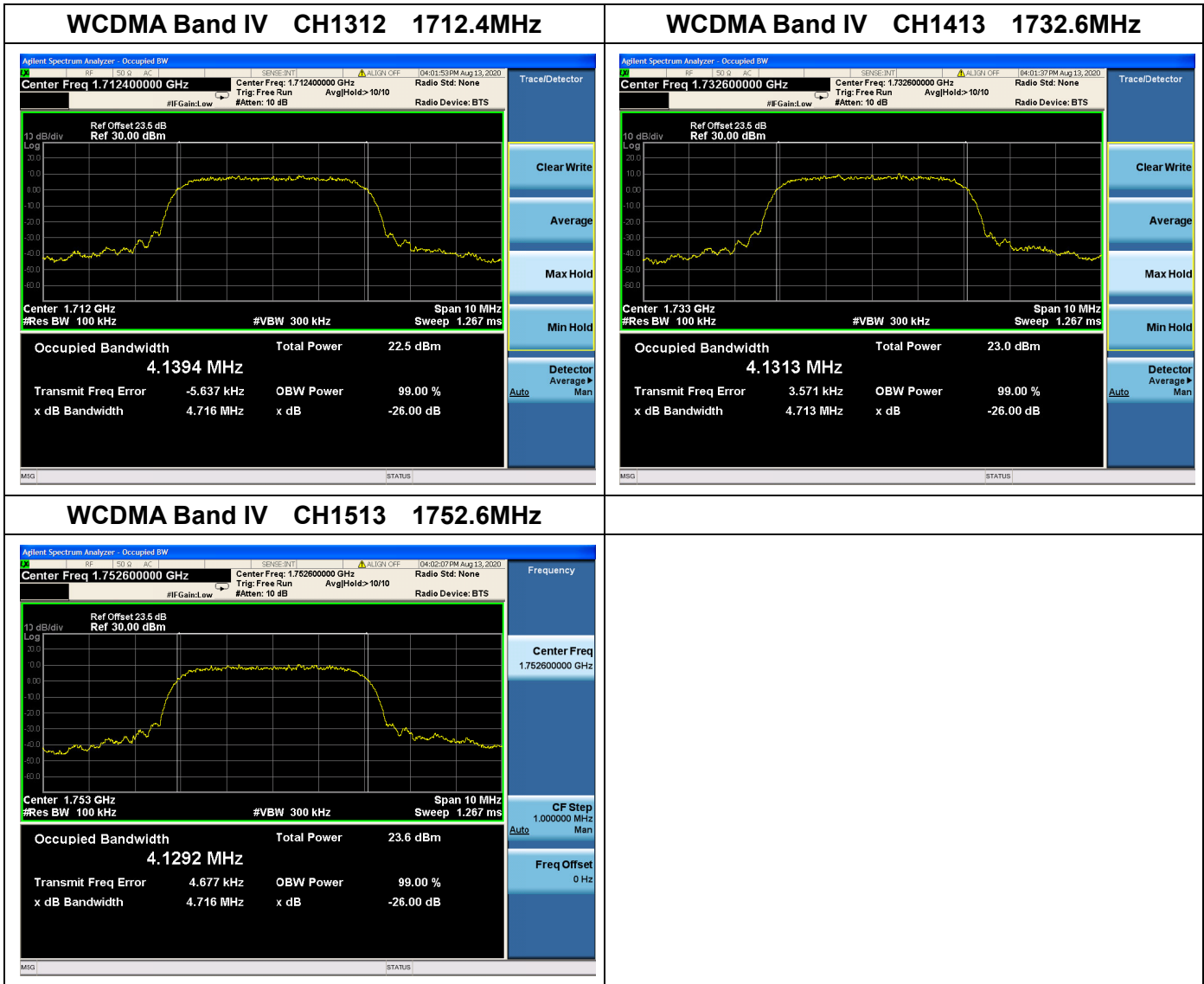
EDGE 1900MHz CH661 1880.0MHz



EDGE 1900MHz CH810 1909.8MHz







2.4. Frequency Stability

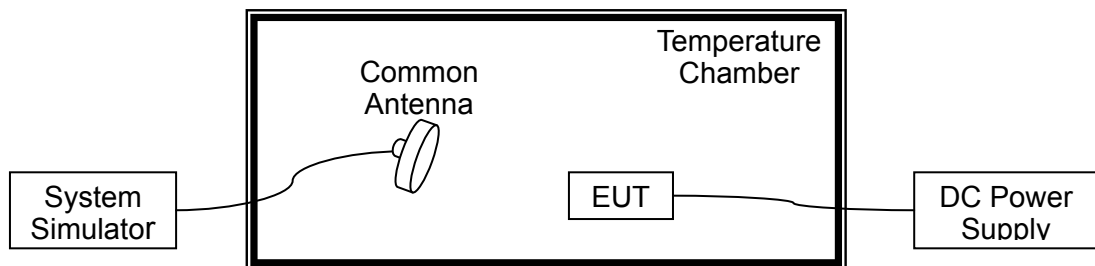
2.4.1. Requirement

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°C to $+50^{\circ}\text{C}$ at intervals of not more than 10°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 3.85VDC, 4.40VDC and 3.70VDC, which are specified by the applicant; the normal temperature here used is 20°C.

A. Test Verdict:

GSM 850MHz, Channel 190, Frequency 836.6MHz					
Limit =±2.5ppm					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.85	+20(Ref)	22	0.025	PASS
100		-30	28	0.031	
100		-20	-36	-0.025	
100		-10	44	0.031	
100		0	27	0.031	
100		+10	15	0.017	
100		+20	22	0.031	
100		+30	74	0.091	
100		+40	62	0.077	
100		+50	52	0.051	
115	4.40	+20	-7	-0.007	
85	3.70	+20	-70	-0.084	

GSM 1900MHz, Channel 661, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.85	+20(Ref)	97	0.051	PASS
c		-30	38	0.031	
100		-20	21	0.036	
100		-10	-37	-0.027	
100		0	-29	-0.016	
100		+10	-52	-0.029	
100		+20	41	0.023	
100		+30	-73	-0.038	
100		+40	29	0.015	
100		+50	30	0.041	
115	4.40	+20	18	0.010	
85	3.70	+20	-57	-0.032	



EDGE 850MHz, Channel 190, Frequency 836.6MHz					
Limit =±2.5ppm					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.85	+20(Ref)	25	0.030	PASS
100		-30	20	0.028	
100		-20	-18	-0.031	
100		-10	28	0.029	
100		0	-26	-0.030	
100		+10	55	0.063	
100		+20	15	0.018	
100		+30	28	0.035	
100		+40	25	0.031	
100		+50	34	0.025	
115	4.40	+20	-35	-0.042	
85	3.70	+20	-46	-0.053	

EDGE 1900MHz, Channel 661, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.85	+20(Ref)	42	0.022	PASS
100		-30	23	0.026	
100		-20	-15	-0.037	
100		-10	29	0.023	
100		0	-84	-0.045	
100		+10	-83	-0.042	
100		+20	27	0.014	
100		+30	82	0.044	
100		+40	16	0.009	
100		+50	30	0.017	
115	4.40	+20	18	0.012	
85	3.70	+20	-24	-0.014	



WCDMA Band V, Channel 4182, Frequency 836.4MHz					
Limit =±2.5ppm					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.85	+20(Ref)	31	0.037	PASS
100		-30	25	0.025	
100		-20	-17	-0.033	
100		-10	24	0.027	
100		0	25	0.022	
100		+10	32	0.033	
100		+20	16	0.017	
100		+30	25	0.031	
100		+40	43	0.057	
100		+50	29	0.038	
115	4.40	+20	-65	-0.076	
85	3.70	+20	-32	-0.043	

WCDMA Band II, Channel 9400, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.85	+20(Ref)	25	0.014	PASS
100		-30	21	0.028	
100		-20	-13	-0.038	
100		-10	29	0.023	
100		0	24	0.028	
100		+10	-26	-0.015	
100		+20	87	0.046	
100		+30	82	0.042	
100		+40	51	0.028	
100		+50	38	0.021	
115	4.40	+20	44	0.024	
85	3.70	+20	-84	-0.043	



WCDMA Band IV, Channel 1413, Frequency 1732.6MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.85	+20(Ref)	-54	-0.033	PASS
100		-30	29	0.042	
100		-20	18	0.039	
100		-10	39	0.0028	
100		0	-52	-0.031	
100		+10	-38	-0.025	
100		+20	-63	-0.037	
100		+30	-36	-0.022	
100		+40	66	0.038	
100		+50	37	0.029	
115		4.40	+20	13	
85	3.70	+20	-54	-0.033	

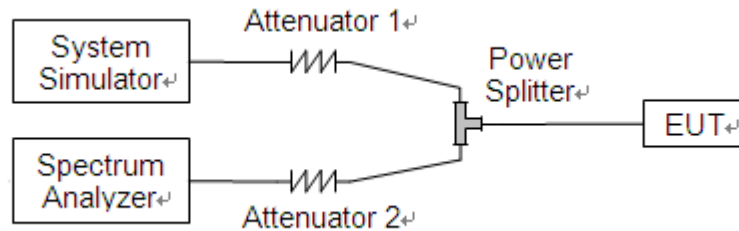
2.5. Conducted Out of Band Emissions

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:



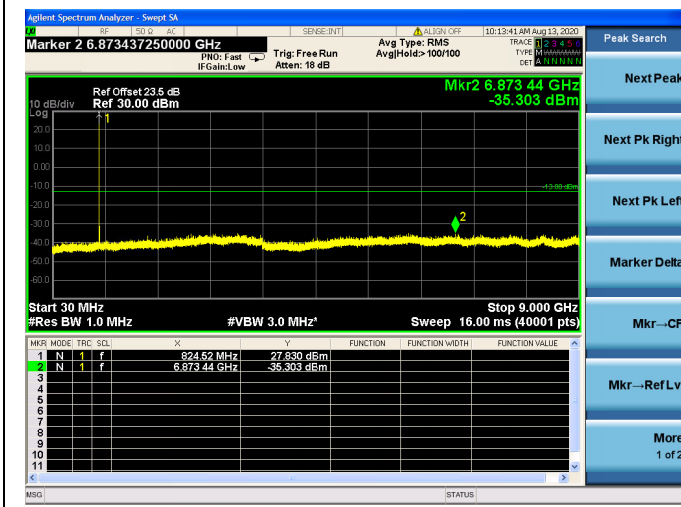
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum 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

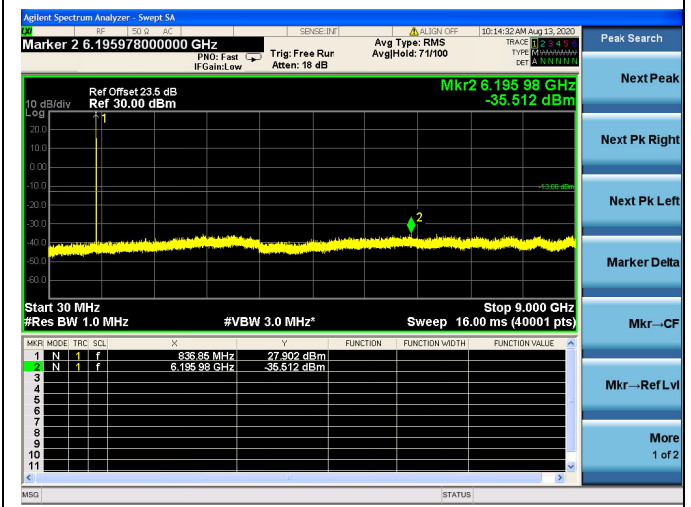
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.



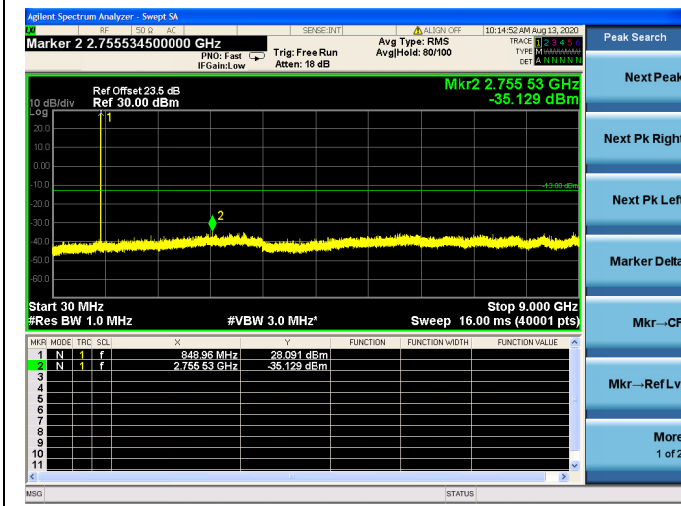
GSM 850MHz CH128 824.2MHz



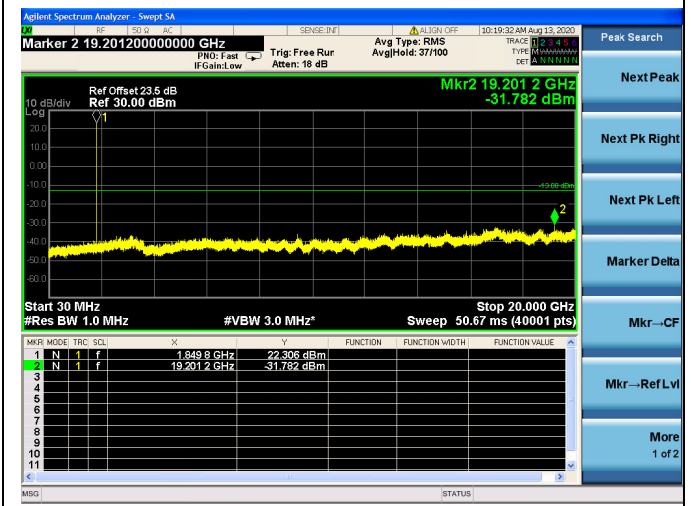
GSM 850MHz CH190 836.6MHz



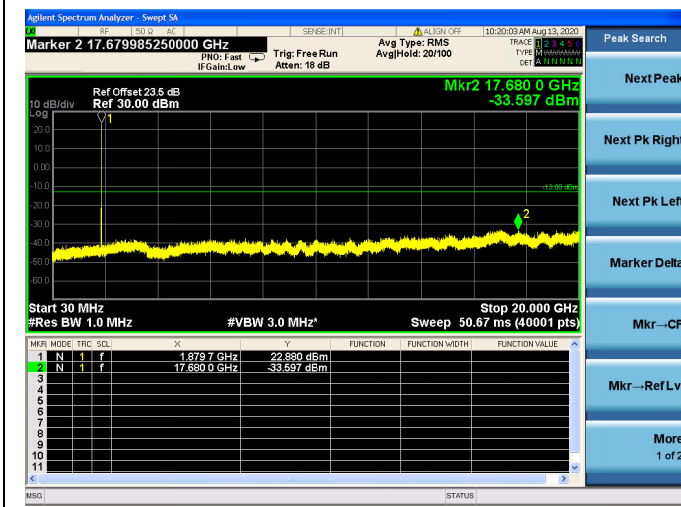
GSM 850MHz CH251 848.8MHz



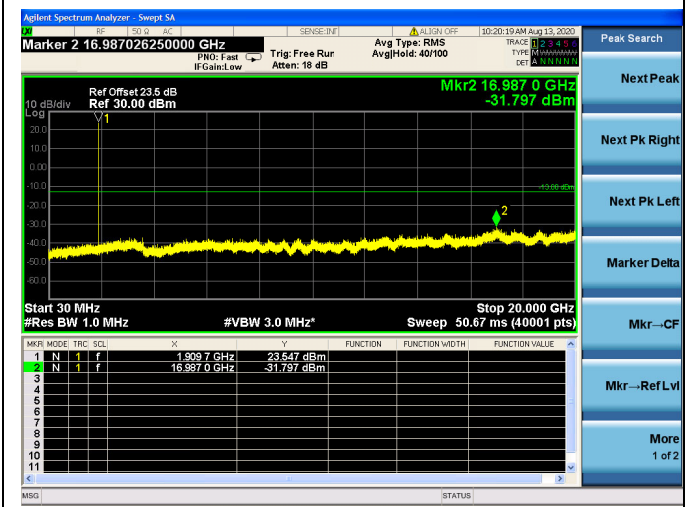
GSM 1900MHz CH512 1850.2MHz

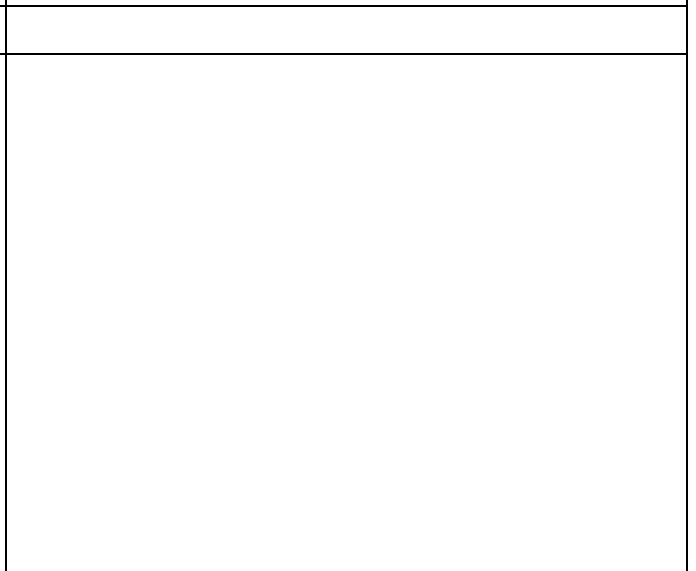
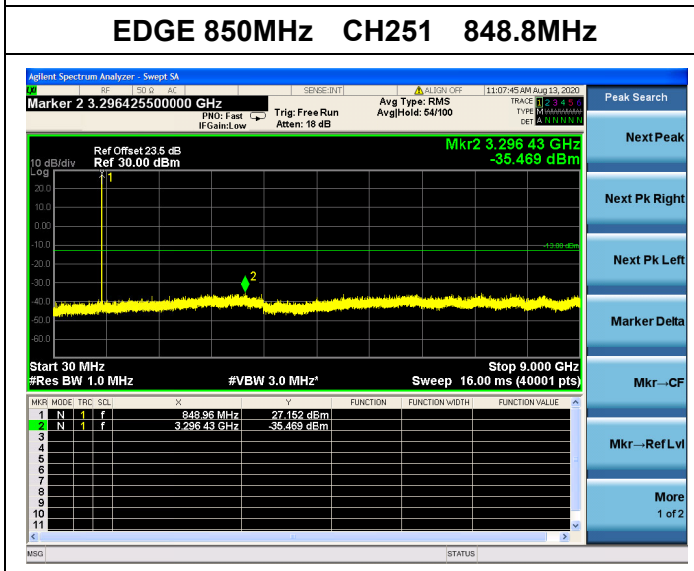
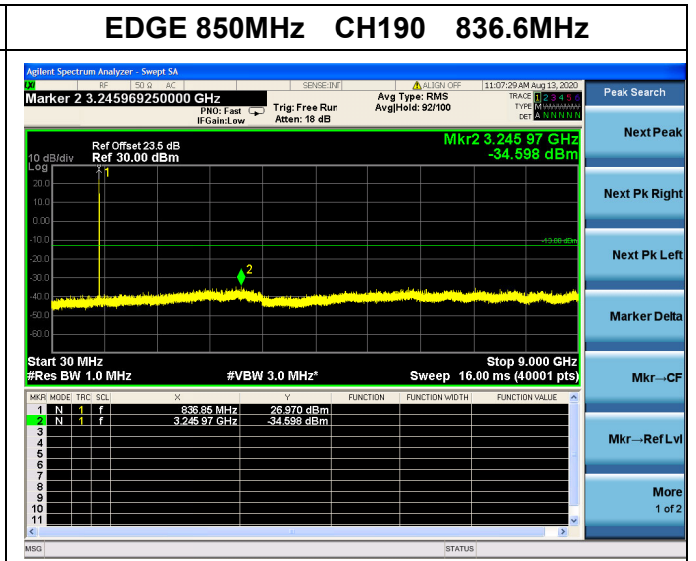
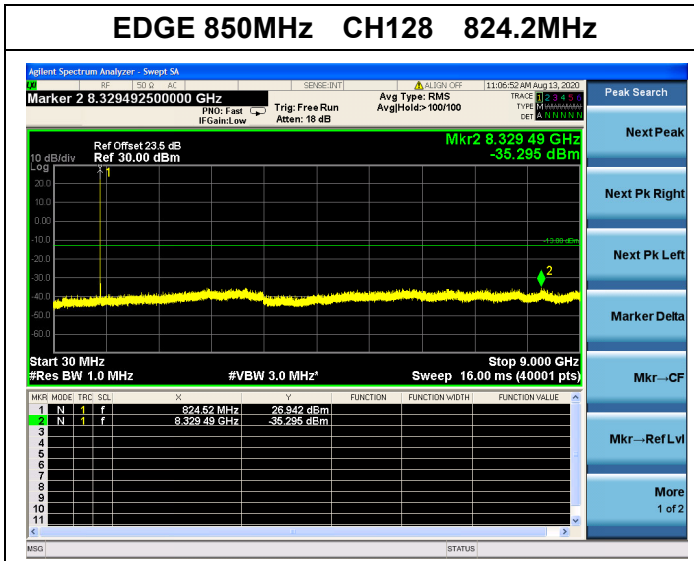


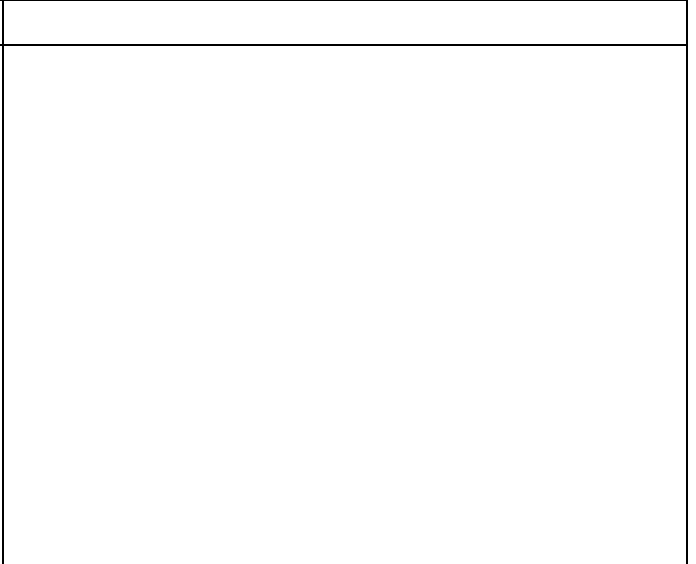
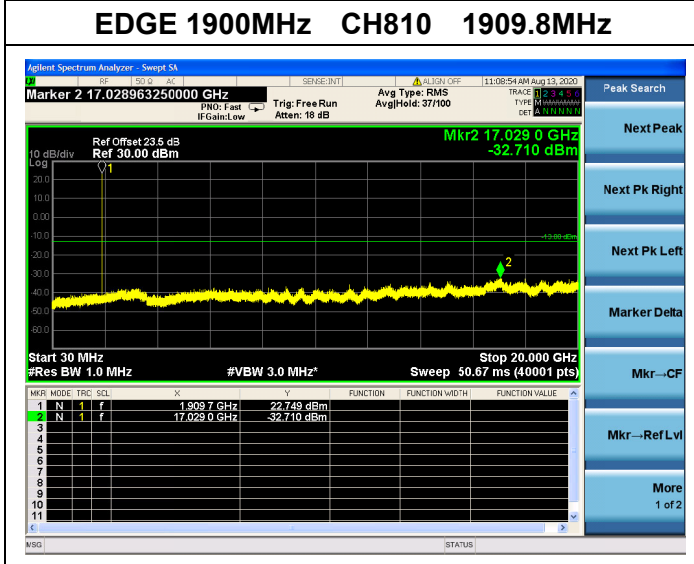
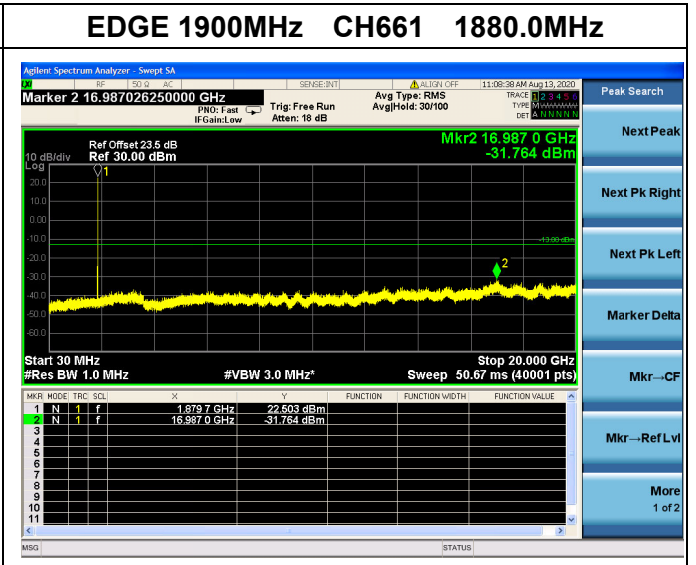
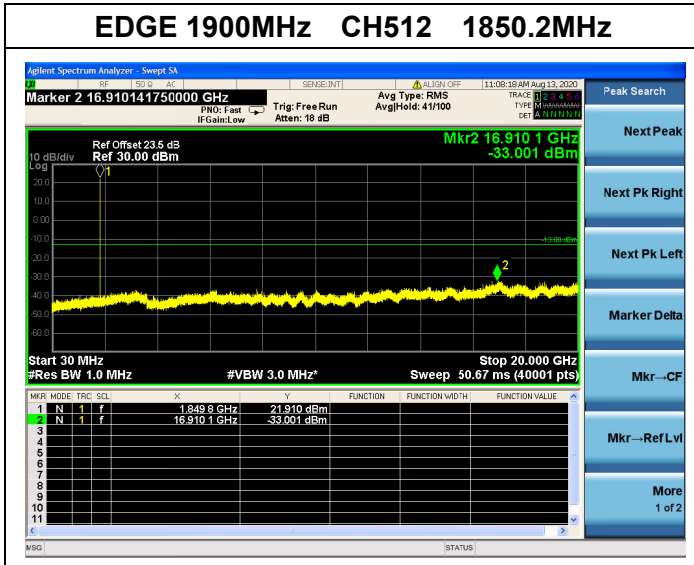
GSM 1900MHz CH661 1880.0MHz



GSM 1900MHz CH810 1909.8MHz

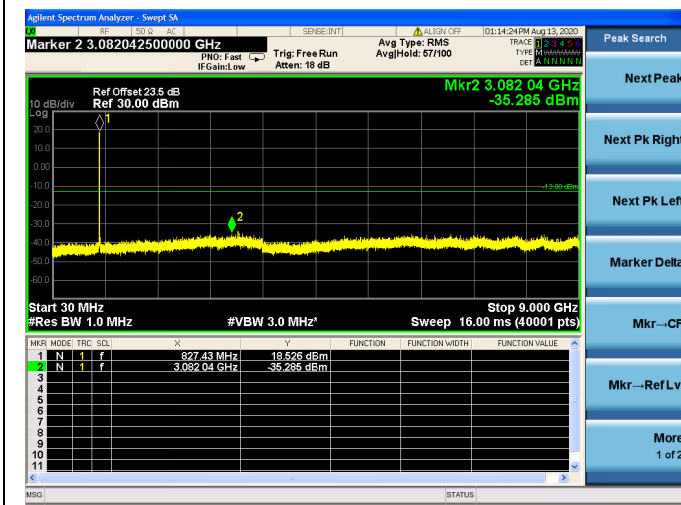




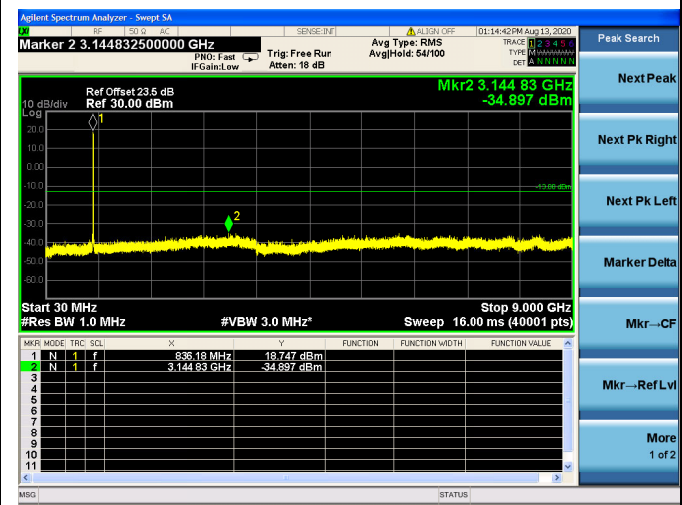




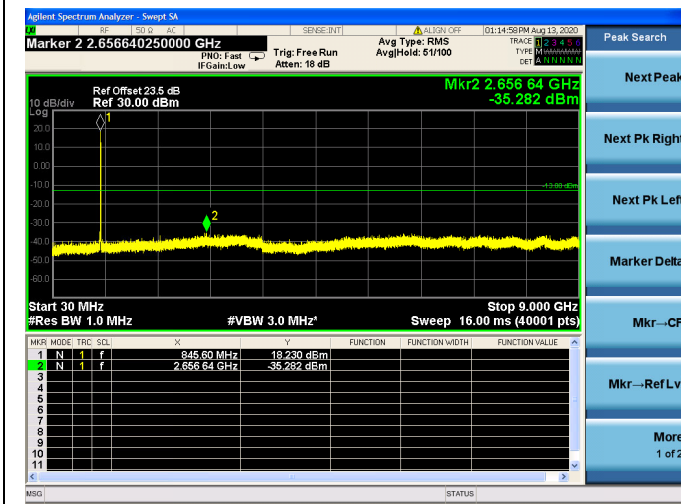
WCDMA Band V CH4132 826.4MHz



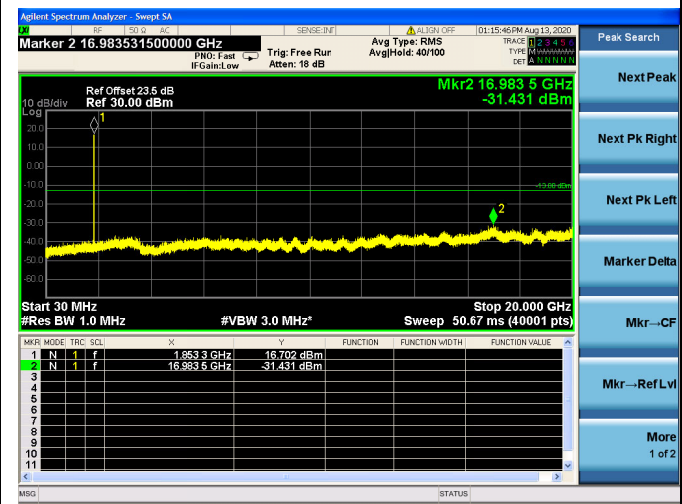
WCDMA Band V CH4182 836.4MHz



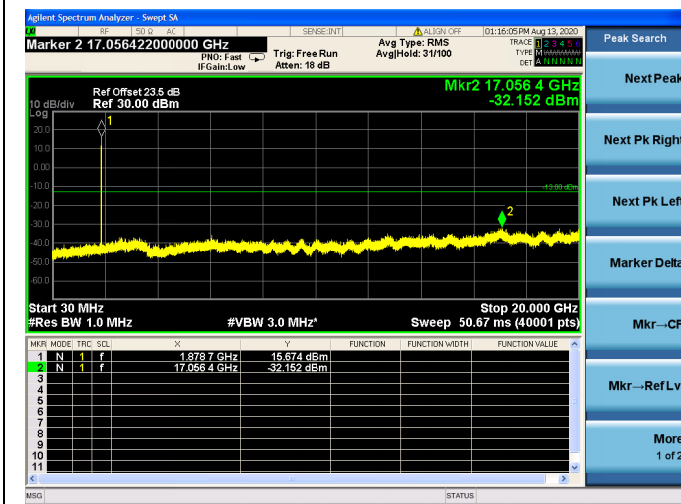
WCDMA Band V CH4233 846.6MHz



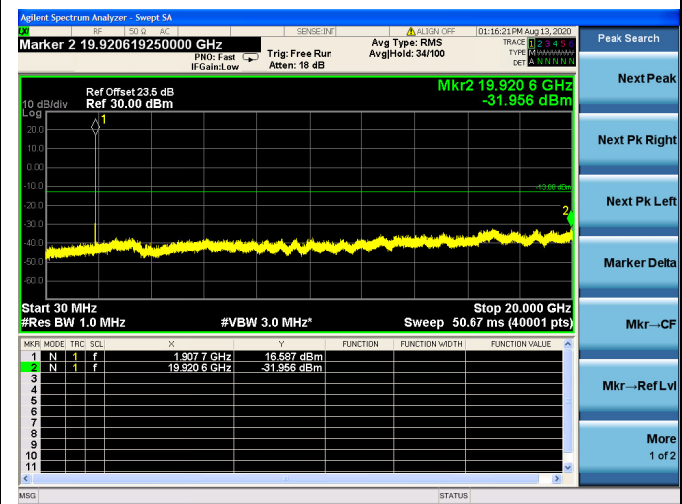
WCDMA Band II CH9262 1852.4MHz

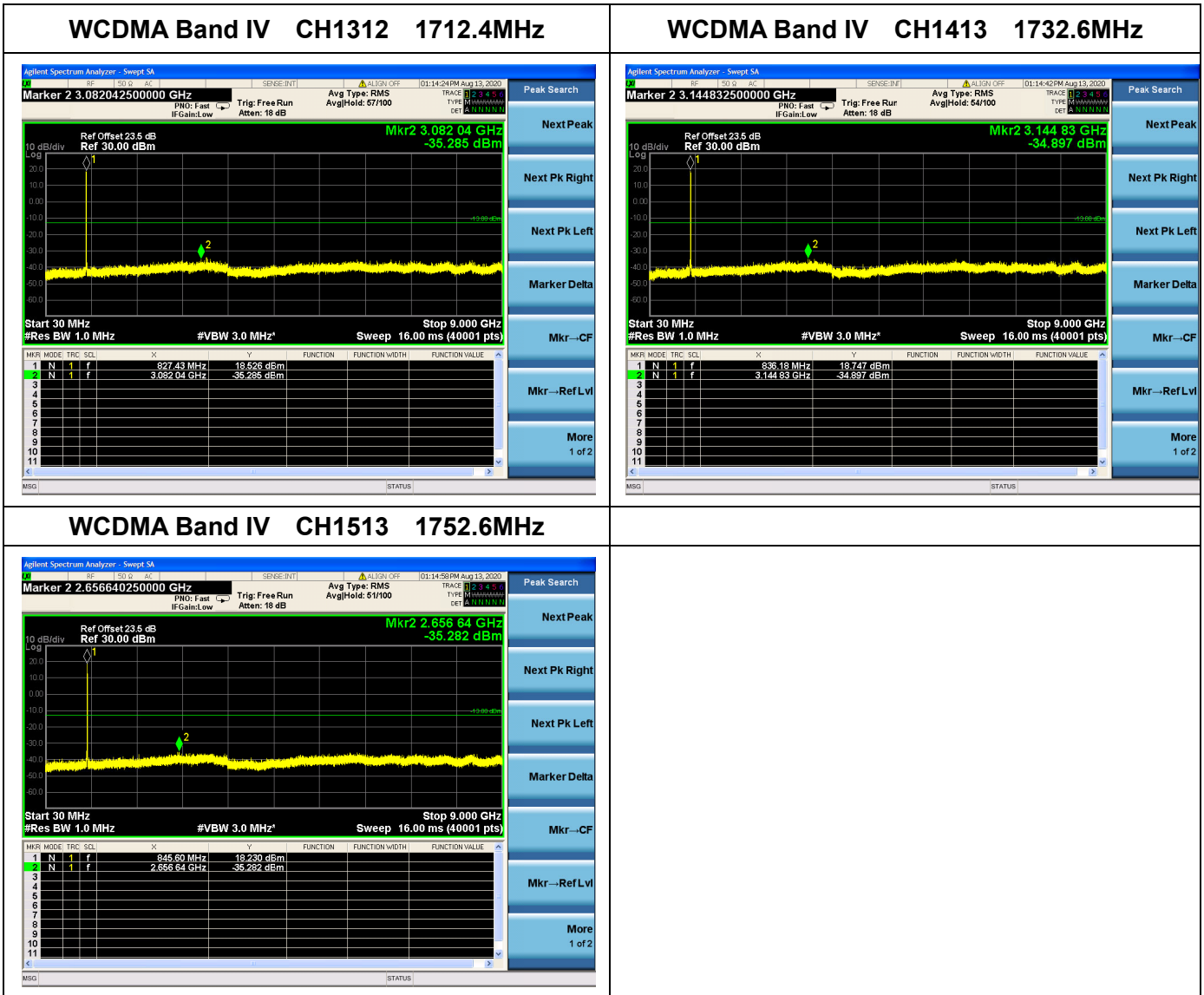


WCDMA Band II CH9400 1880.0MHz



WCDMA Band II CH9538 1907.6MHz





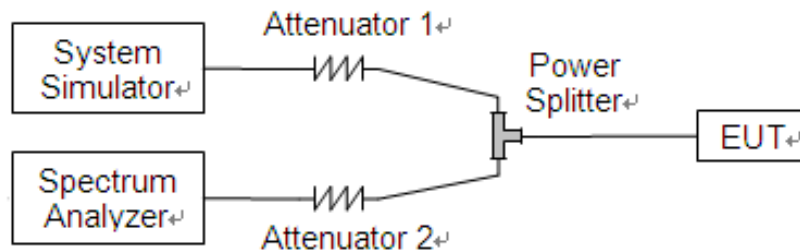
2.6. Band Edge

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.