TEST REPORT

APPLICANT	:	BLU Products, Inc.
PRODUCT NAME	:	Smart Phone
MODEL NAME	:	M6
BRAND NAME	:	BOLD
FCC ID	:	YHLBOLDM6
STANDARD(S)	:	47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E
RECEIPT DATE	:	2020-01-15
TEST DATE	:	2020-02-21 to 2020-03-26
ISSUE DATE	:	2020-03-30

Edited by: He Dekuan (Rapporteur)

Approved by: Peng Huarui (Supervisor)

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Change History		
Version	**Date**	**Reason for change**
1.0	2020-03-30	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	BLU Products, Inc.
Applicant Address:	10814 NW 33rd St # 100 Doral, FL 33172,USA
Manufacturer:	BLU Products, Inc.
ManufacturerAddress:	10814 NW 33rd St # 100 Doral, FL 33172,USA

1.2. Equipment Under Test (EUT) Description

Product Name:	Smart Phone	
Hardware Version:	FS170-MB-V0.3	
Software Version:	BLU_M0030TT_V9.0.05.03_TIGO_4X2_GPS_PLS_1SIM_20200304-1025	
Modulation Type:	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+	
Operating Frequency Range:	**GSM 850MHz:** Tx: 824 - 849MHz Rx: 869 - 894MHz **GSM 1900MHz:** Tx: 1850 - 1910MHz Rx: 1930 - 1990MHz **WCDMA Band V** Tx: 824 - 849MHz Rx: 869 - 894MHz **WCDMA Band II** Tx: 1850 - 1910MHz Rx: 1930 - 1990MHz	
Antenna Type:	Fixed Internal	
Antenna Gain:	GSM 850:	-2.00 dBi

	GSM1900:	-1.20 dBi
	WCDMA Band V:	-2.00 dBi
	WCDMA Band II:	-1.20 dBi
Accessory Information:	Battery	
	Brand Name:	BOLD
	Model No.:	C905803400P
	Capacity:	4000mAh
	Rated Voltage:	3.85V
	Charge Limit:	4.35V
	AC Adapter 1	
	Brand Name:	BOLD
	Model No.:	US-NB-1504
	Rated Input:	100-240V～50/60Hz 0.3A
	Rated Output:	5V⎓1.5A

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<=n<=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<=n<=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<=n<=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<=n<=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: 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;

Note 6: 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 Designato
GSM850	0.830	239KGXW
EDGE850	0.166	250KG7W
GSM1900	0.553	243KGXW
EDGE1900	0.340	246KG7W
WCDMA Band V	0.079	4M17F9W
WCDMA Band II	0.091	4M18F9W

1.4. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2, Part 22, Part 24for 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

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	Feb 22 to 26, 2020	Gao Mingzhou	PASS	No deviation
2	24.232(d)	Peak -Average Ratio	Feb 21 to 26, 2020	Gao Mingzhou	PASS	No deviation
3	2.1049	99% Occupied Bandwidth	Feb 22 to 26, 2020	Gao Mingzhou	PASS	No deviation
4	2.1055,22.355, 24.235,	Frequency Stability	Feb 22, 2020	Gao Mingzhou	PASS	No deviation
5	2.1051,22.917(a),24.238(a),	Conducted Out of Band Emissions	Feb 22 to 29, 2020	Gao Mingzhou	PASS	No deviation
6	2.1051,22.917(a),24.238(a),	Band Edge	Feb 22 to 26, 2020	Gao Mingzhou	PASS	No deviation
7	22.913(a), 24.232(a)	Transmitter Radiated Power (EIPR/ERP)	Mar 03 to 15 , 2020	PengXuewei	PASS	No deviation
8	2.1051,22.917(a),24.238(a)	Radiated Out of Band Emissions	Feb 22 to 26, 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

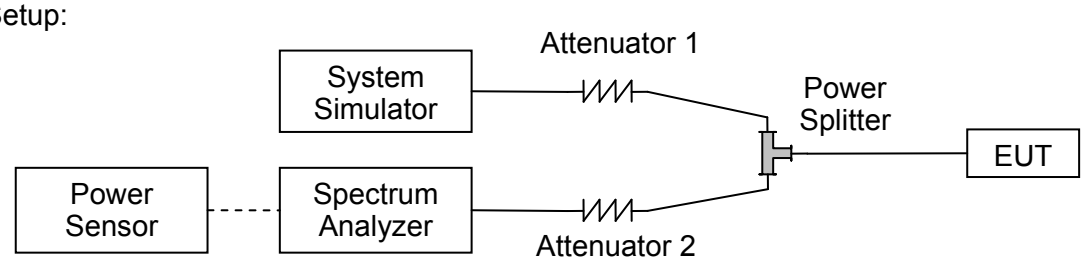
2.1. Conducted RF Output Power

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 EUTis 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	33.34	33.34	33.31
GPRS 1 Tx slot	33.33	33.34	33.31
GPRS 2 Tx slots	31.30	31.39	31.21
GPRS 3 Tx slots	29.43	29.36	29.30
GPRS 4 Tx slots	27.23	27.18	27.12
EDGE 1 Tx slot	26.17	26.34	26.09
EDGE 2 Tx slots	24.61	24.82	24.57
EDGE 3 Tx slots	22.06	22.31	22.15
EDGE 4 Tx slots	19.45	19.52	19.34

GSM1900	Average Power (dBm)		
TX Channel	**512**	**661**	**810**
Frequency (MHz)	**1850.2**	**1880**	**1909.8**
GSM 1 Tx slot	28.55	28.63	28.51
GPRS 1 Tx slot	28.55	28.64	28.52
GPRS 2 Tx slots	26.37	26.31	26.05
GPRS 3 Tx slots	24.55	24.76	24.67
GPRS 4 Tx slots	22.95	22.65	22.29
EDGE 1 Tx slot	26.52	25.83	26.33
EDGE 2 Tx slots	24.68	25.06	24.59
EDGE 3 Tx slots	22.07	22.44	21.66
EDGE 4 Tx slots	20.09	20.53	19.67

WCDMA Band V	Average Power (dBm)		
TX Channel	**4132**	**4182**	**4233**
Frequency (MHz)	**826.4**	**836.4**	**846.6**
RMC 12.2Kbps	23.08	23.12	23.10
HSDPA Subtest-1	22.23	22.13	22.21
HSDPA Subtest-2	21.20	21.11	21.23
HSDPA Subtest-3	20.73	20.64	20.76
HSDPA Subtest-4	20.71	20.63	20.75
HSUPA Subtest-1	19.76	19.71	19.73
HSUPA Subtest-2	19.25	19.2	19.27
HSUPA Subtest-3	20.23	20.18	20.23
HSUPA Subtest-4	18.76	18.66	18.72
HSUPA Subtest-5	21.24	21.17	21.22
HSPA+	20.07	20.13	19.97

WCDMA Band II	Average Power (dBm)		
TX Channel	**9262**	**9400**	**9538**
Frequency (MHz)	**1852.4**	**1880.0**	**1907.6**
RMC 12.2Kbps	20.73	20.80	20.77
HSDPA Subtest-1	20.36	20.26	20.34
HSDPA Subtest-2	20.32	20.23	20.33
HSDPA Subtest-3	19.86	20.75	20.85
HSDPA Subtest-4	19.83	20.57	20.82
HSUPA Subtest-1	19.90	19.76	19.85
HSUPA Subtest-2	19.37	18.75	19.32
HSUPA Subtest-3	20.39	20.20	20.28
HSUPA Subtest-4	18.85	18.75	18.79
HSUPA Subtest-5	20.37	20.20	20.32
HSPA+	20.01	19.93	19.97

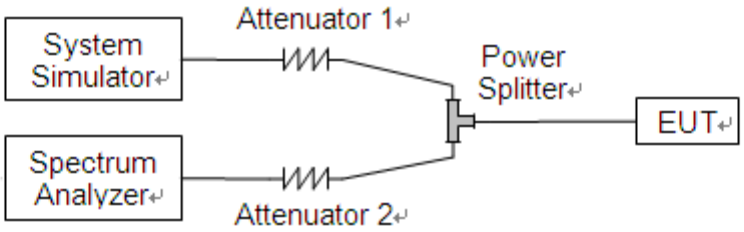
2.2. Peak to Average Ratio

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:



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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

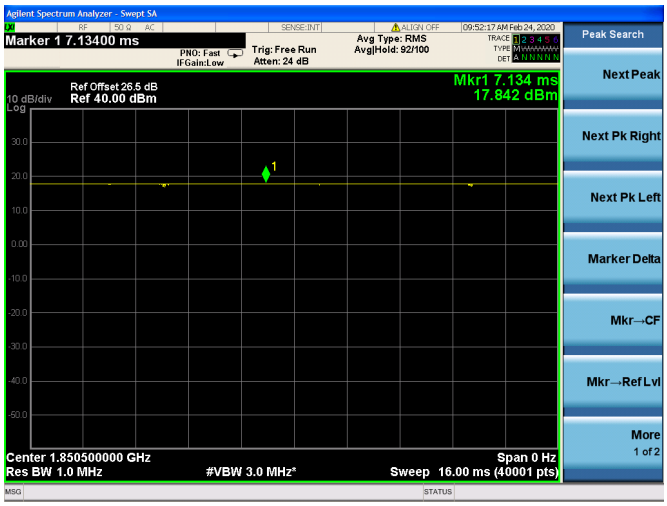
The lowest, middle and highest channels are selected to perform testing to verify the conducted RF output peak power of the Module.

A. Test Verdict:

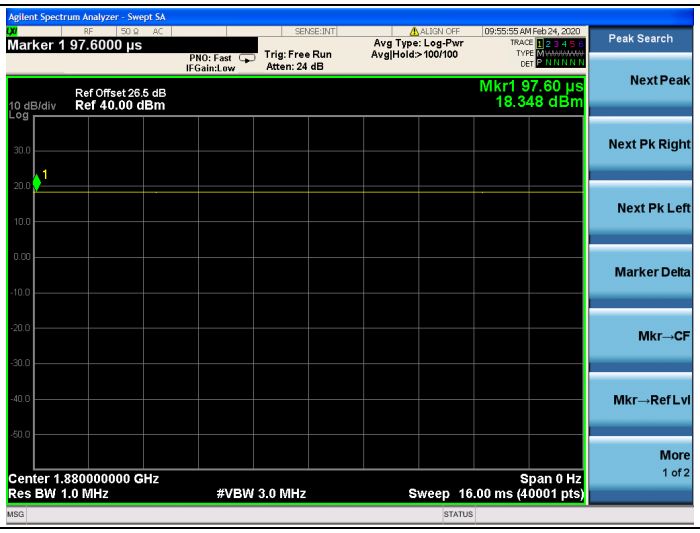
Band	Channel	Frequency (MHz)	Peak to Average ratio dB	Limit dB	Verdict
GSM 1900MHz	512	1850.2	0.006	13	PASS
	661	1880.0	0.005		PASS
	810	1909.8	0.020		PASS
EDGE 1900MHz	512	1850.2	0.013		PASS
	661	1880.0	0.009		PASS
	810	1909.8	0.014		PASS

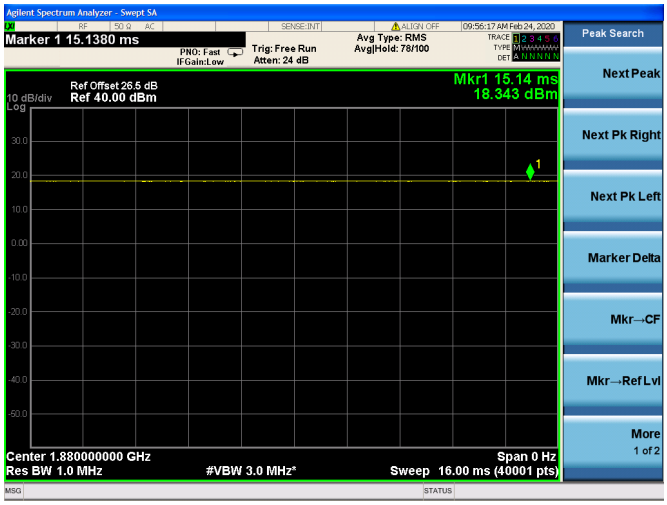
Band	Channel	Frequency (MHz)	Peak to Average ratio dB	Limit dB	Verdict
WCDMA Band II	9262	1852.4	2.82	13	PASS
	9400	1880.0	2.86		PASS
	9538	1907.6	2.84		PASS

GSM 1900MHz CH512 1850.2MHz

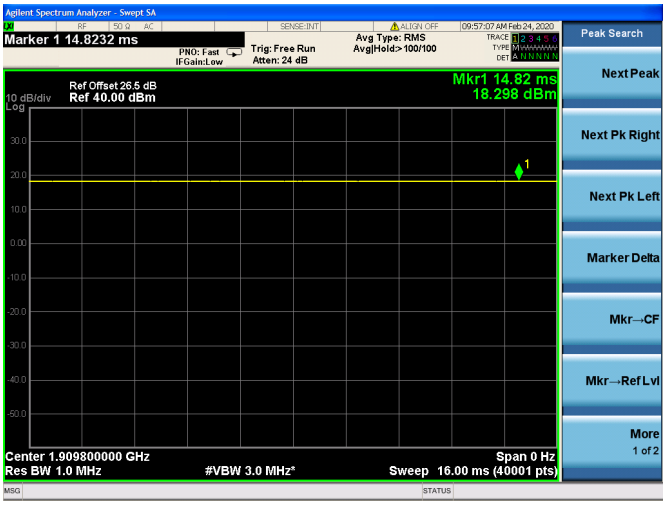


GSM 1900MHz CH661 1880.0MHz

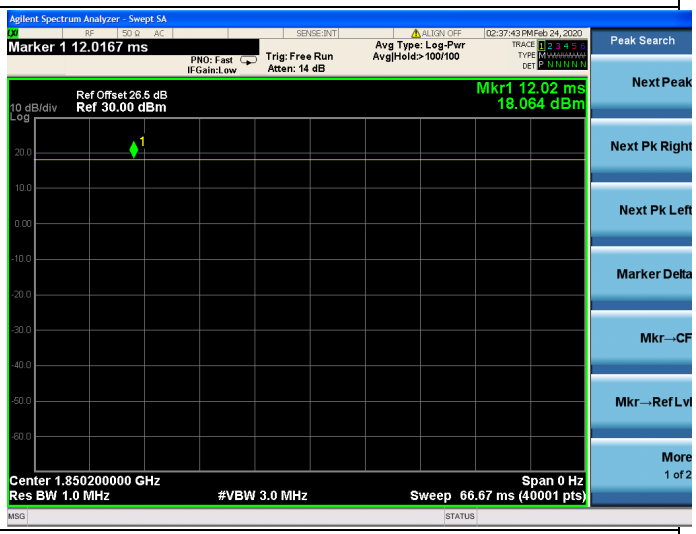




GSM 1900MHz CH810 1909.8MHz

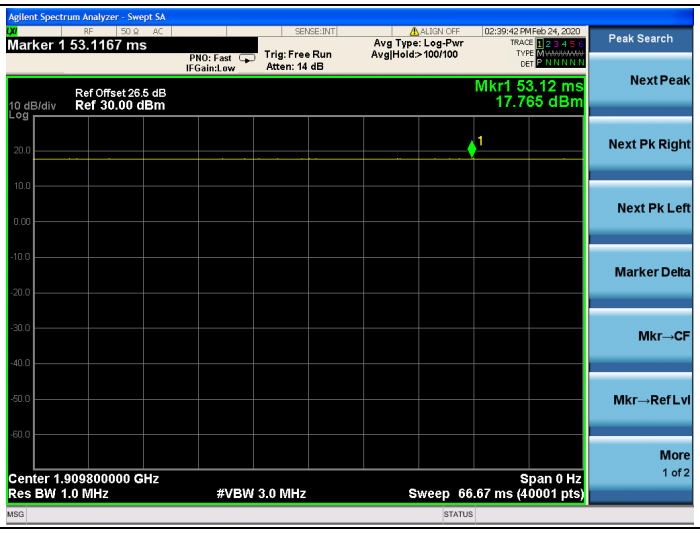


EDGE 1900MHz CH512 1850.2MHz

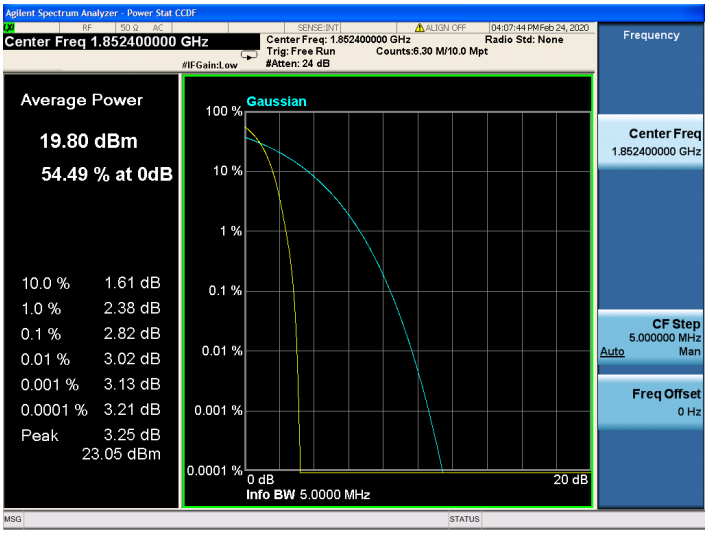


EDGE 1900MHz CH661 1880.0MHz

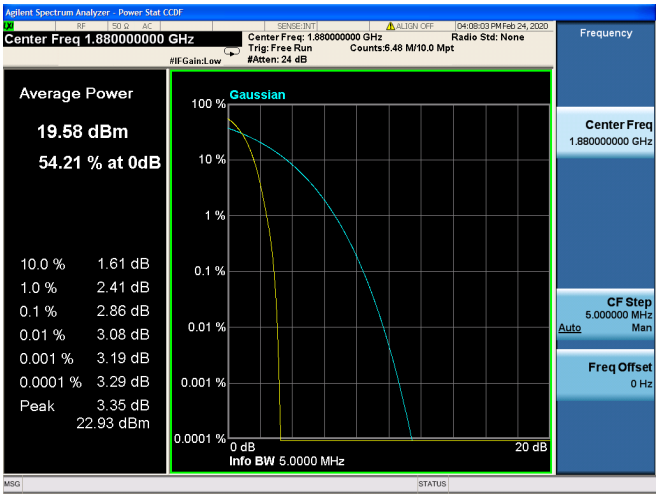
EDGE 1900MHz CH810 1909.8MHz



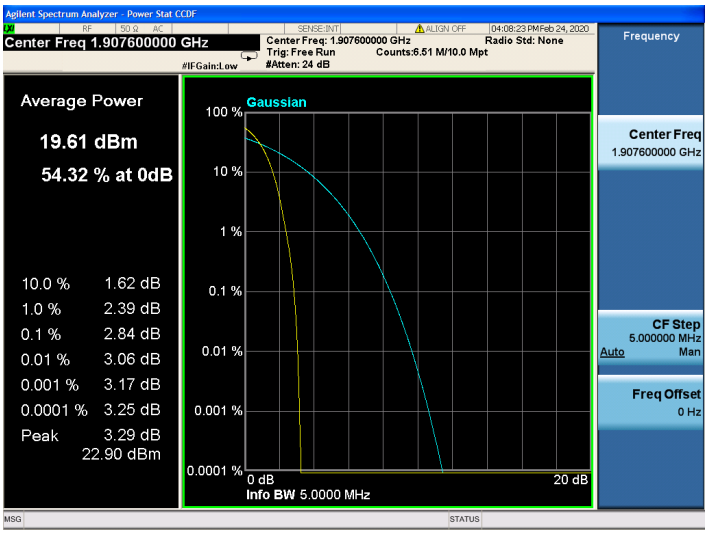
WCDMA Band II CH9262 1852.4MHz



WCDMA Band II CH9400 1880.0MHz



WCDMA Band II CH9538 1907.6MHz



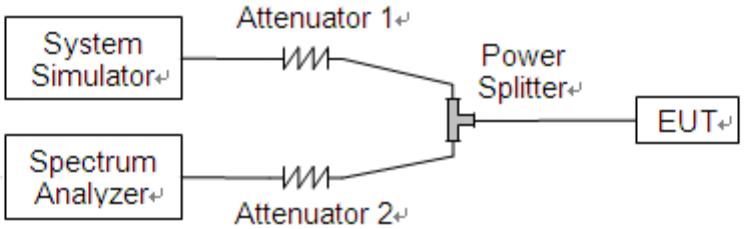
2.3. 99% Occupied Bandwidth

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:



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2.3.3. Test Result

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

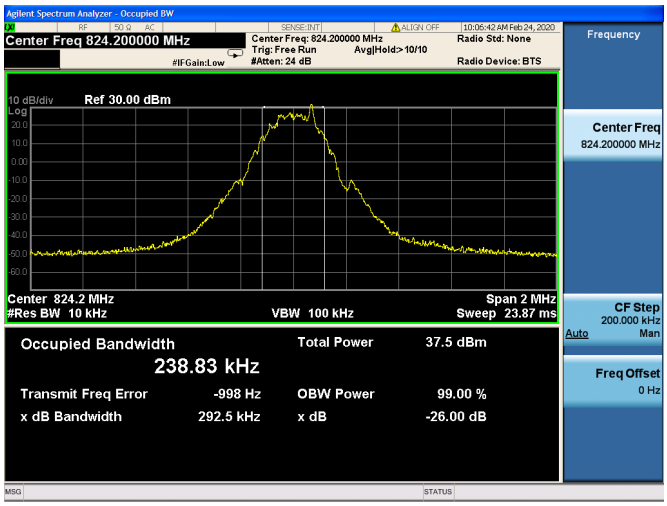
GSM Test Verdict:

Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)
GSM 850MHz	128	824.2	238.83	292.5
	190	836.6	238.01	278.0
	251	848.8	238.73	281.7
GSM 1900MHz	512	1850.2	235.23	278.6
	661	1880.0	238.44	282.5
	810	1909.8	242.83	270.9
EDGE 850MHz	128	824.2	248.35	325.7
	190	836.6	249.31	325.3
	251	848.8	250.17	327.4
EDGE 1900MHz	512	1850.2	242.90	327.3
	661	1880.0	243.39	321.9
	810	1909.8	246.32	323.8

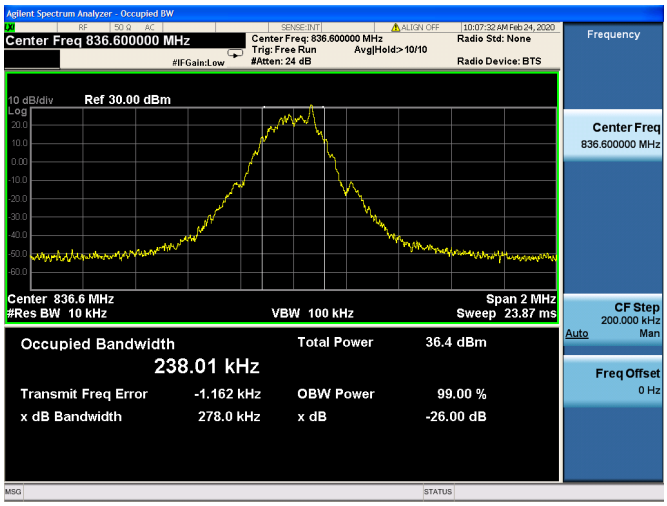
WCDMA Test Verdict:

Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
WCDMA Band V	4132	826.4	4.150	4.666
	4183	836.4	4.169	4.667
	4233	846.6	4.157	4.683
WCDMA Band II	9262	1852.4	4.157	4.683
	9400	1880.0	4.156	4.668
	9538	1907.6	4.177	4.710

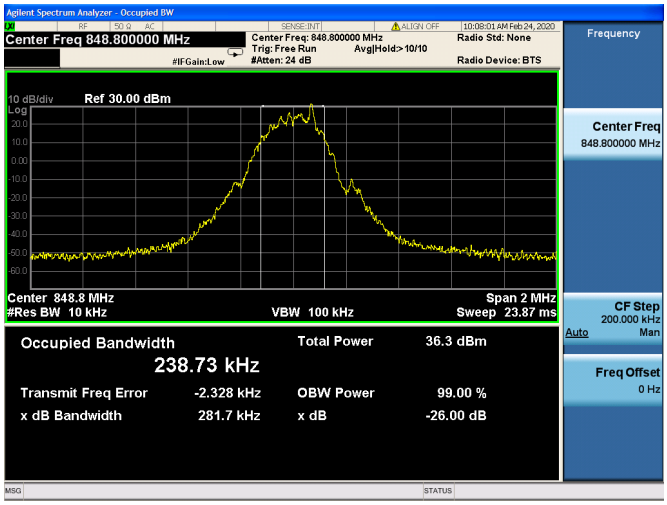
GSM 850MHz CH128 824.2MHz



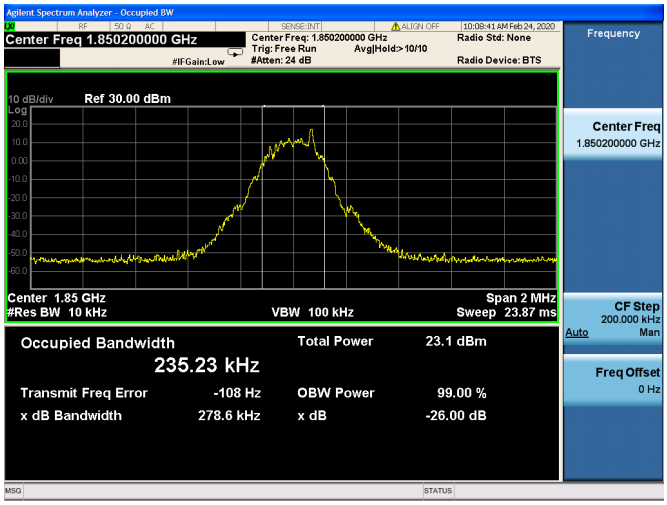
GSM 850MHz CH190 836.6MHz



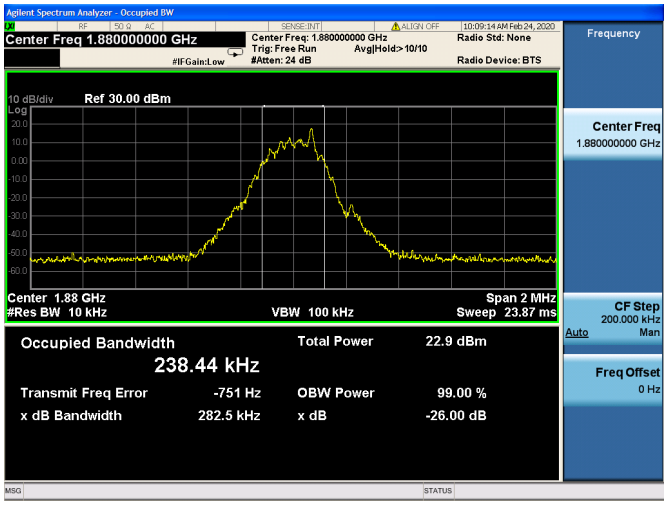
GSM 850MHz CH251 848.8MHz



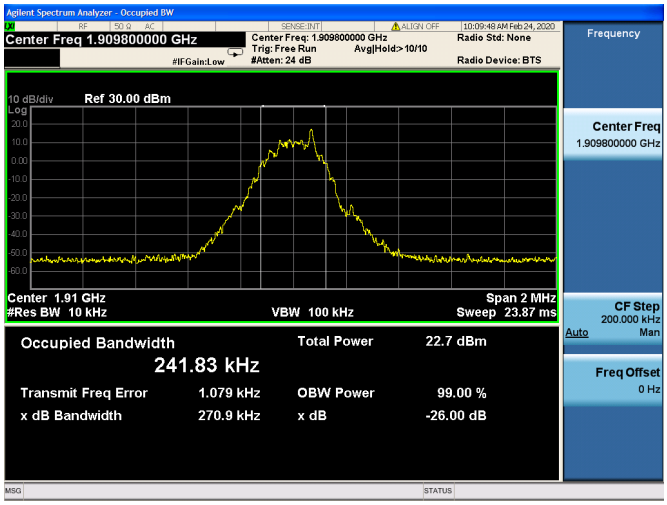
GSM 1900MHz CH512 1850.2MHz



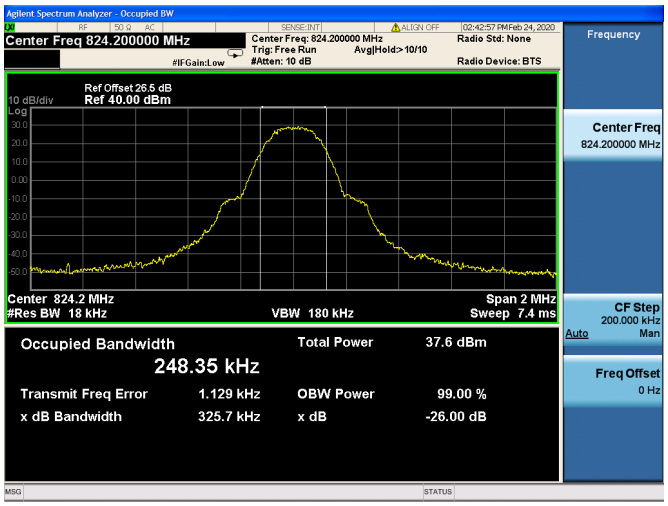
GSM 1900MHz CH661 1880.0MHz



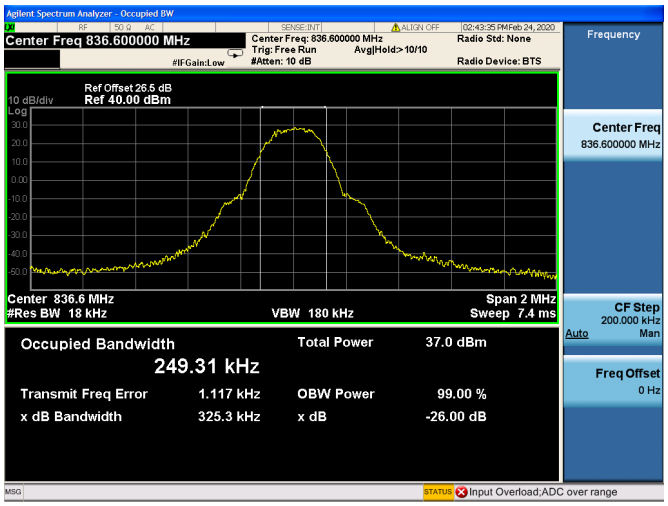
GSM 1900MHz CH810 1909.8MHz



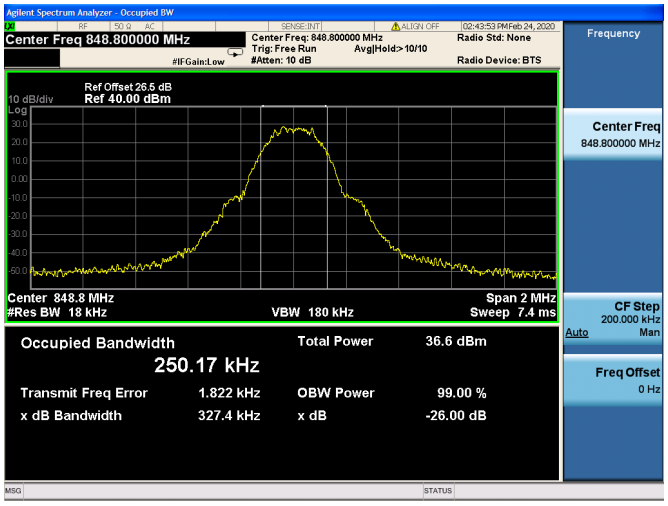
EDGE 850MHz CH128 824.2MHz



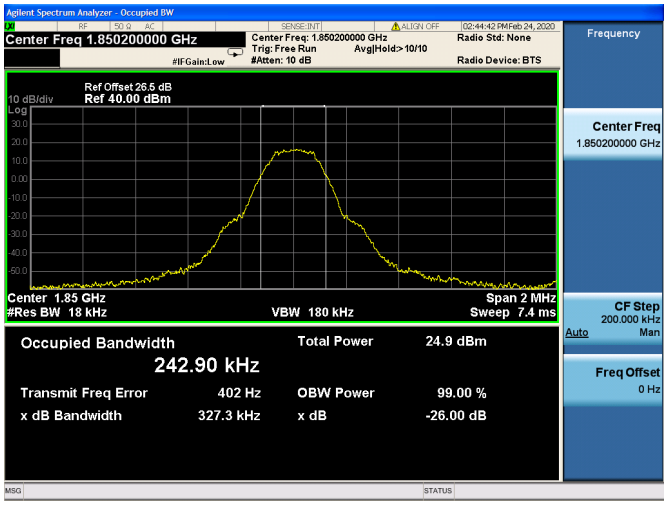
EDGE 850MHz CH190 836.6MHz



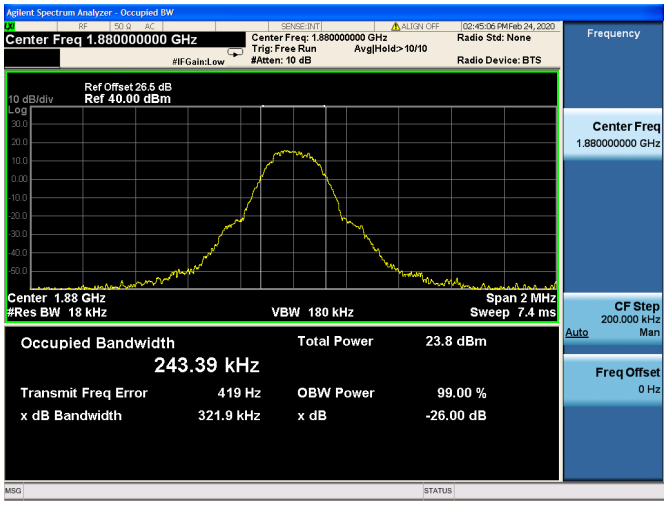
EDGE 850MHz CH251 848.8MHz



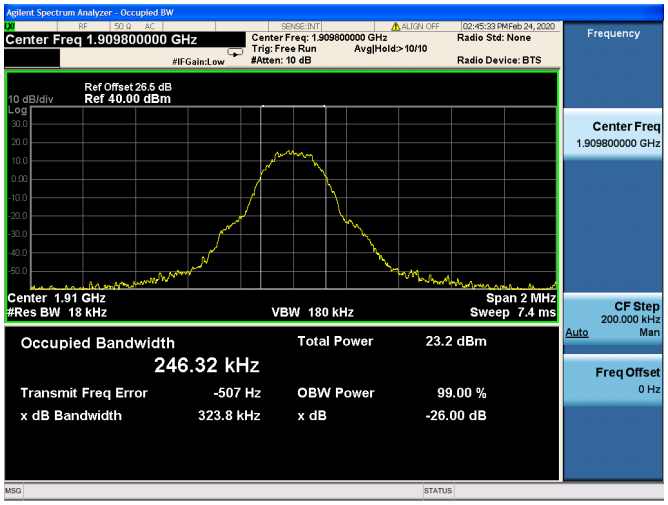
EDGE 1900MHz CH512 1850.2MHz



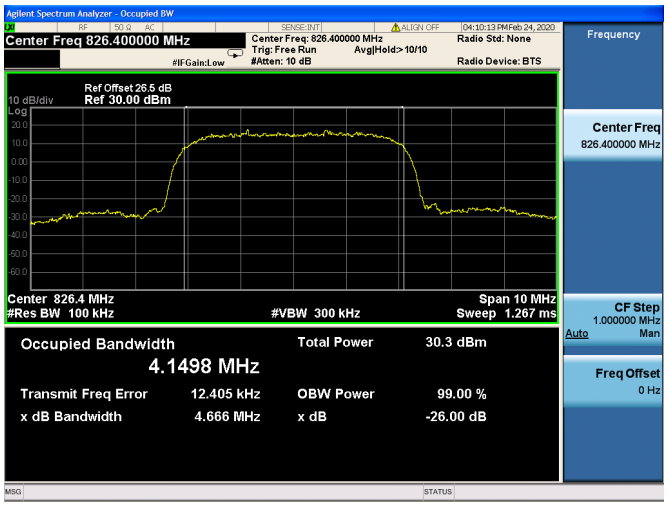
EDGE 1900MHzCH661 1880.0MHz



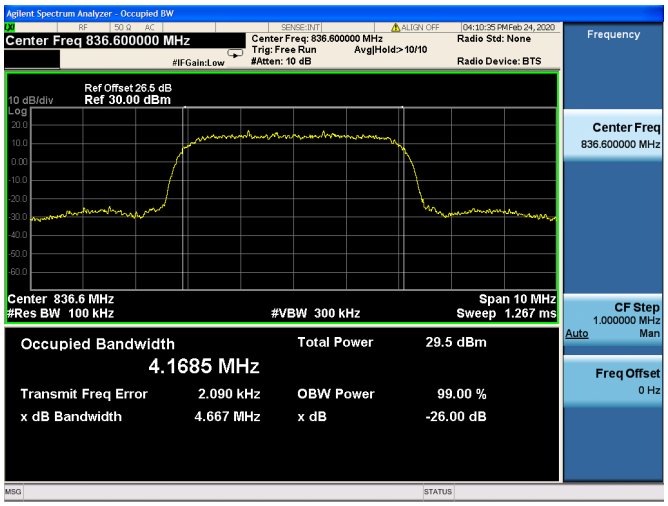
EDGE 1900MHzCH810 1909.8MHz



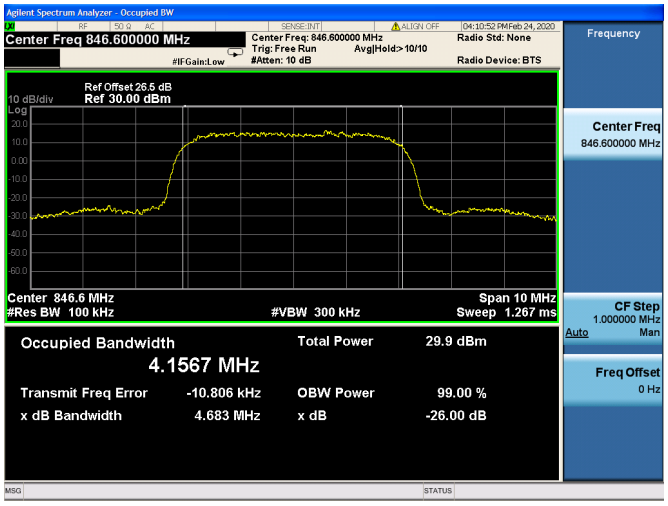
WCDMA Band V CH4132 826.4MHz



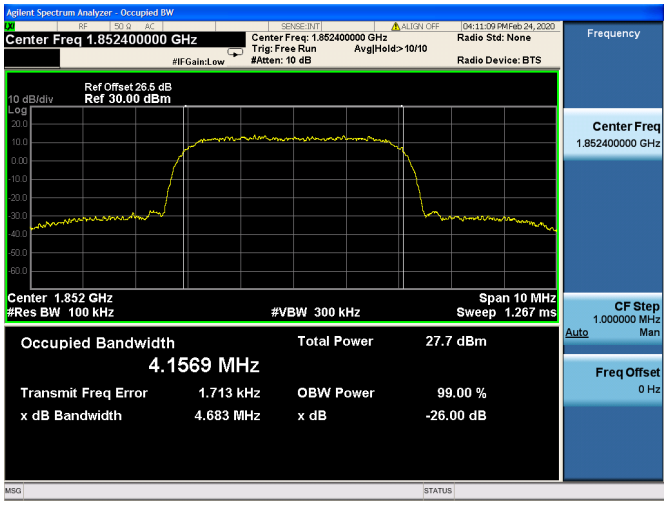
WCDMA Band V CH4183 836.4MHz



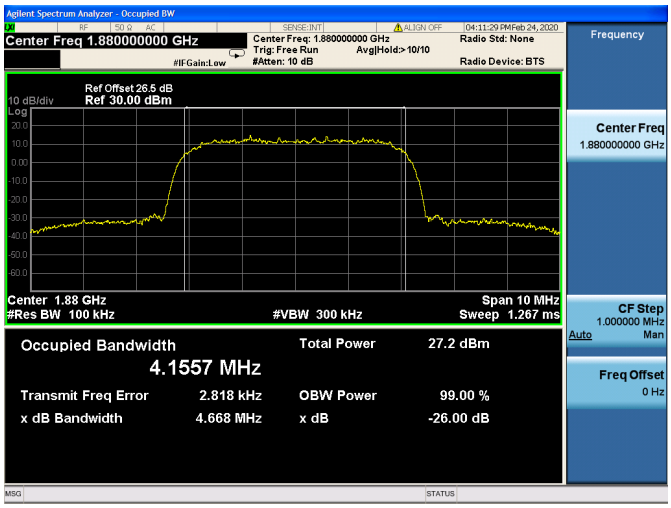
WCDMA Band V CH4233 846.6MHz



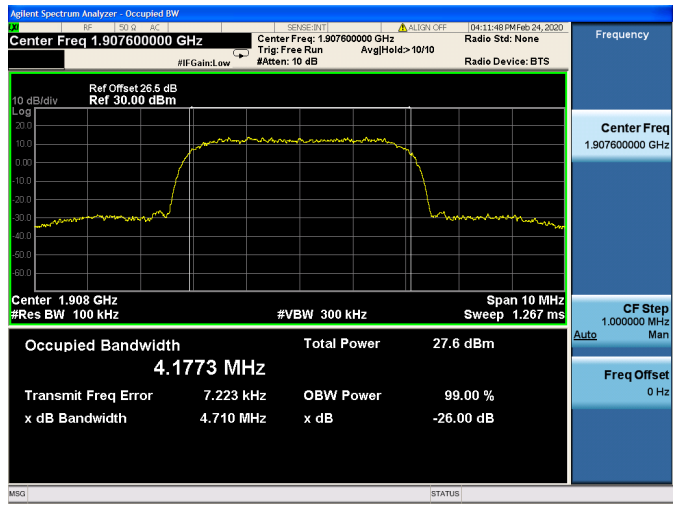
WCDMA Band II CH9262 1852.4MHz



WCDMA Band II CH9400 1880.0MHz



WCDMA Band II CH9538 1907.6MHz



2.4. Frequency Stability

2.4.1. Requirement

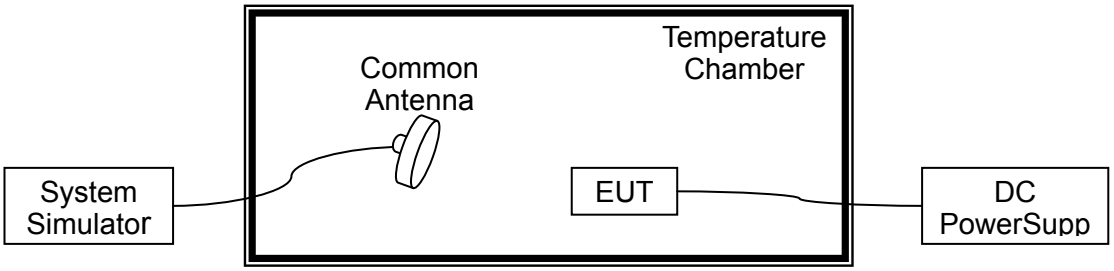
According to FCC section 22.355, 24.235 and 27.54 the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(a) The temperature is varied from 0°C to +55°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

A. Test Verdict:

GSM 850MHz, Channel 190, Frequency 836.6MHz Limit =±2.5ppm					
Voltage(%)	**Power(V DC)**	**Temp(°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.85	+20(Ref)	41	0.049	PASS
100		0	-35	-0.042	
100		+10	-58	-0.069	
100		+20	37	0.044	
100		+30	25	0.030	
100		+40	26	0.031	
100		+50	57	0.068	
100		+55	-35	-0.043	
115	4.35	+20	-48	-0.057	
85	3.80	+20	-16	-0.019	

GSM 1900MHz, Channel 661, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage(%)	**Power(V DC)**	**Temp(°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.85	+20(Ref)	53	0.028	PASS
100		0	34	0.018	
100		+10	-48	-0.026	
100		+20	-73	-0.039	
100		+30	54	0.029	
100		+40	62	0.033	
100		+50	41	0.022	
100		+55	48	0.026	
115	4.35	+20	-17	-0.009	
85	3.80	+20	15	0.008	

EDGE 850MHz, Channel 190, Frequency 836.6MHz Limit =±2.5ppm					
Voltage(%)	**Power(V DC)**	**Temp(°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.85	+20(Ref)	47	0.056	PASS
100		0	-63	-0.075	
100		+10	-43	-0.051	
100		+20	41	0.049	
100		+30	35	0.042	
100		+40	26	0.031	
100		+50	74	0.088	
100		+55	39	0.048	
115	4.35	+20	-76	-0.091	
85	3.80	+20	-33	-0.039	

EDGE 1900MHz, Channel 661, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage(%)	**Power(V DC)**	**Temp(°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.85	+20(Ref)	42	0.022	PASS
100		0	-88	-0.047	
100		+10	63	0.034	
100		+20	-63	-0.034	
100		+30	-73	-0.039	
100		+40	42	0.022	
100		+50	23	0.012	
100		+55	-42	0.022	
115	4.35	+20	15	0.008	
85	3.80	+20	-17	-0.009	

WCDMA Band V, Channel 4182, Frequency 836.4MHz Limit =±2.5ppm					
Voltage(%)	**Power(V DC)**	**Temp(°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.85	+20(Ref)	32	0.038	PASS
100		0	-17	-0.020	
100		+10	-58	-0.069	
100		+20	31	0.037	
100		+30	65	0.078	
100		+40	32	0.038	
100		+50	13	0.016	
100		+55	-31	-0.037	
115	4.35	+20	-76	-0.091	
85	3.80	+20	-59	-0.071	

WCDMA Band II, Channel 9400, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage(%)	**Power(V DC)**	**Temp(°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.85	+20(Ref)	34	0.018	PASS
100		0	15	0.008	
100		+10	-63	-0.034	
100		+20	-58	-0.031	
100		+30	31	0.016	
100		+40	23	0.012	
100		+50	24	0.013	
100		+55	-15	-0.008	
115	4.35	+20	-69	-0.037	
85	3.80	+20	24	0.013	

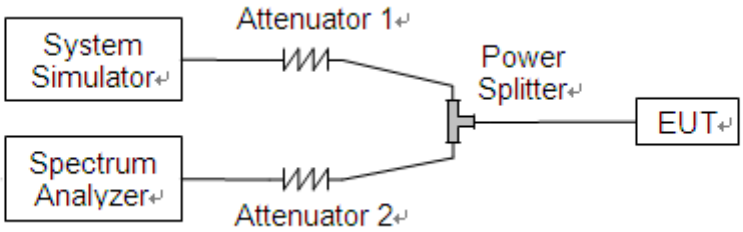
2.5. Conducted Out of Band Emissions

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:

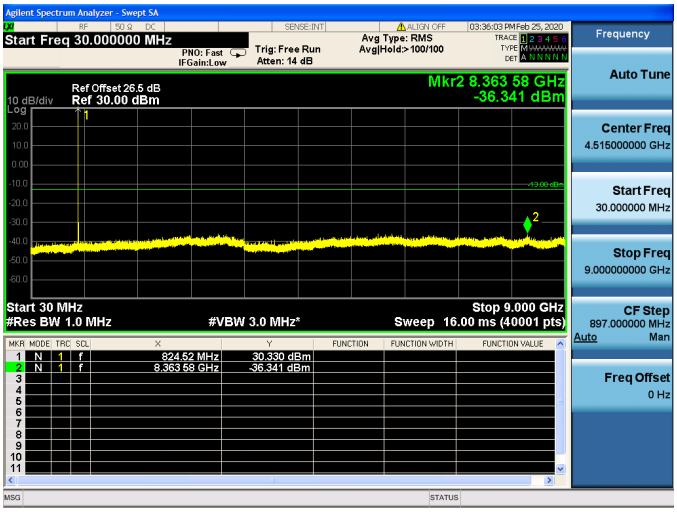


The EUTis coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

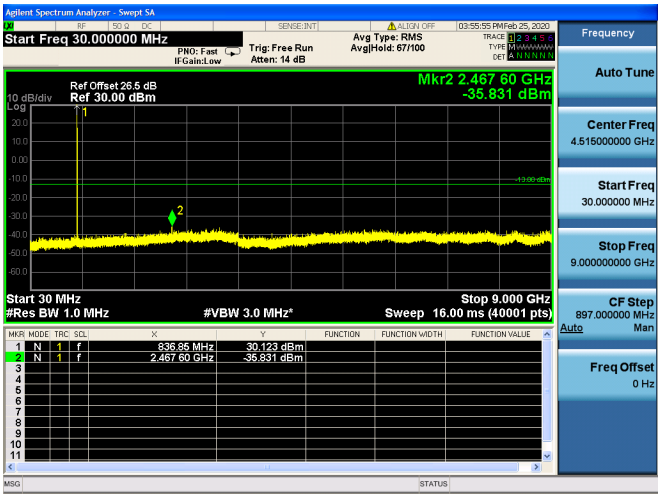
2.5.3. Test Result

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.

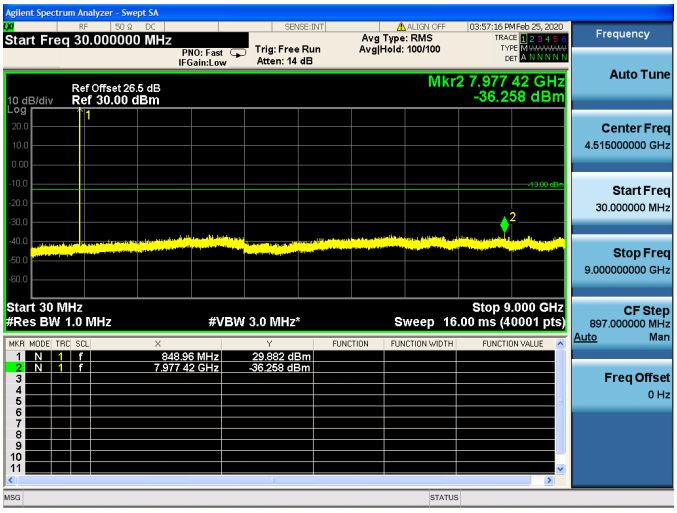
GSM 850MHz CH128 824.2MHz



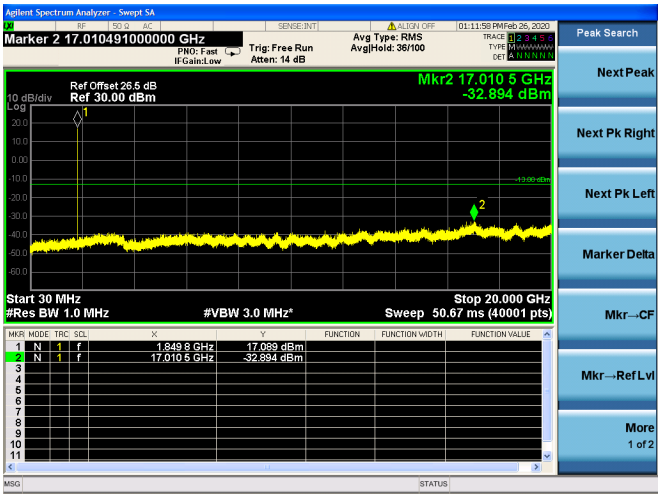
GSM 850MHz CH190 836.6MHz



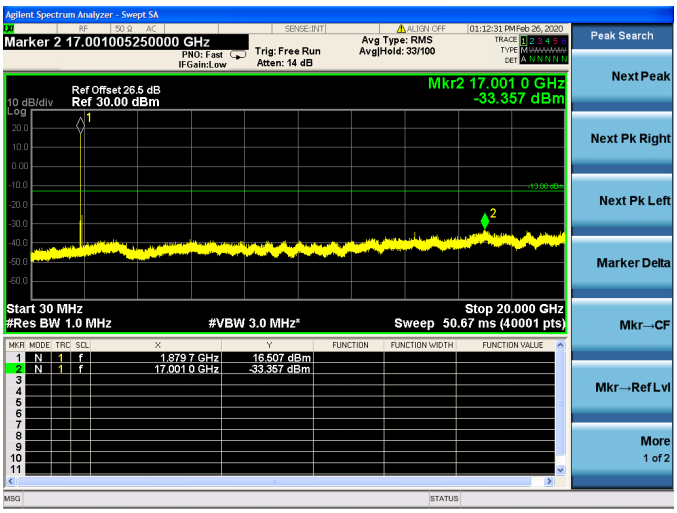
GSM 850MHz CH251 848.8MHz



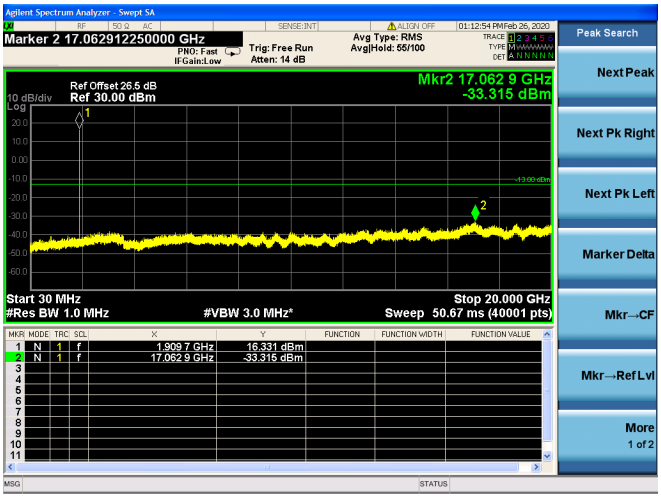
GSM 1900MHz CH521 1850.2MHz



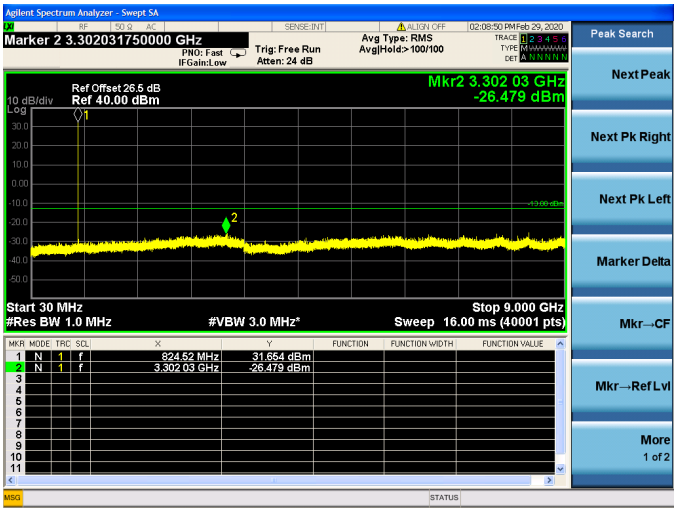
GSM 1900MHz CH661 1880.0MHz



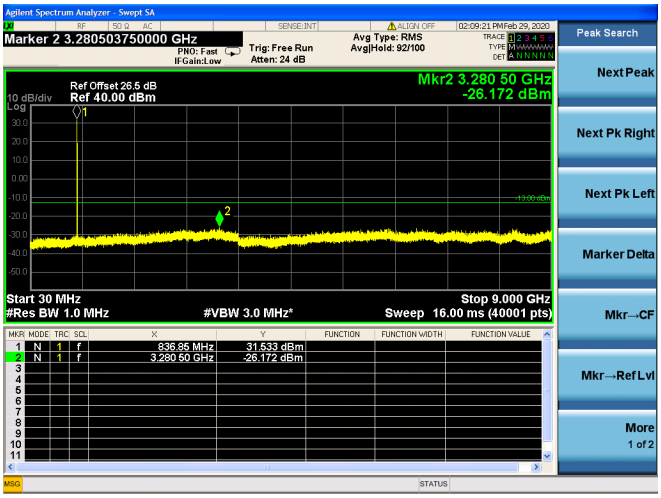
GSM 1900MHz CH810 1909.8MHz



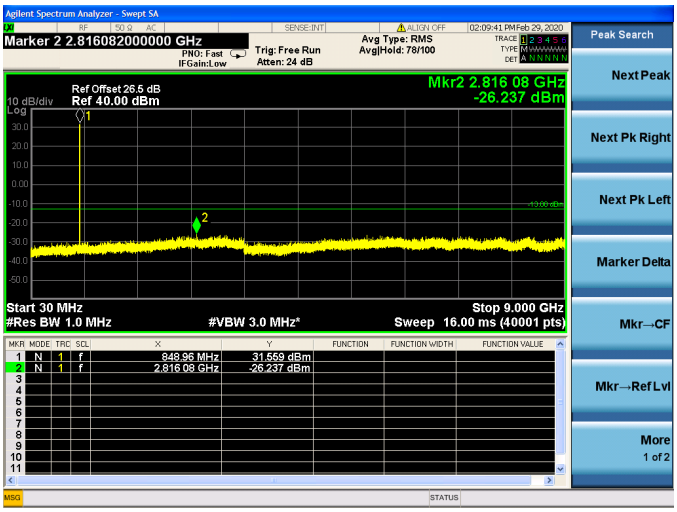
EDGE 850MHz CH128 824.2MHz



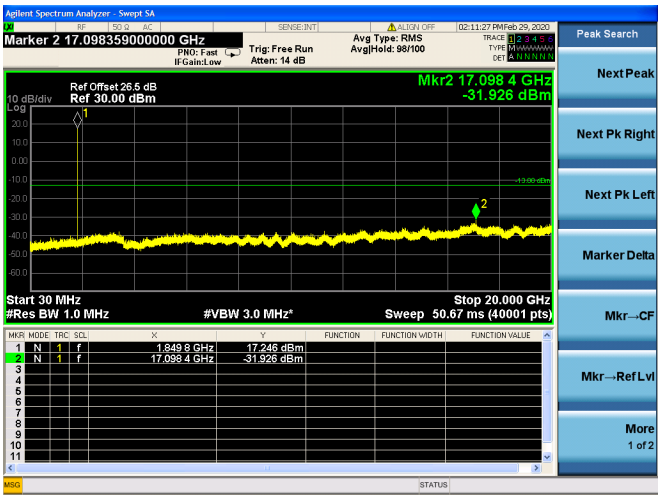
EDGE 850MHz CH190 836.6MHz



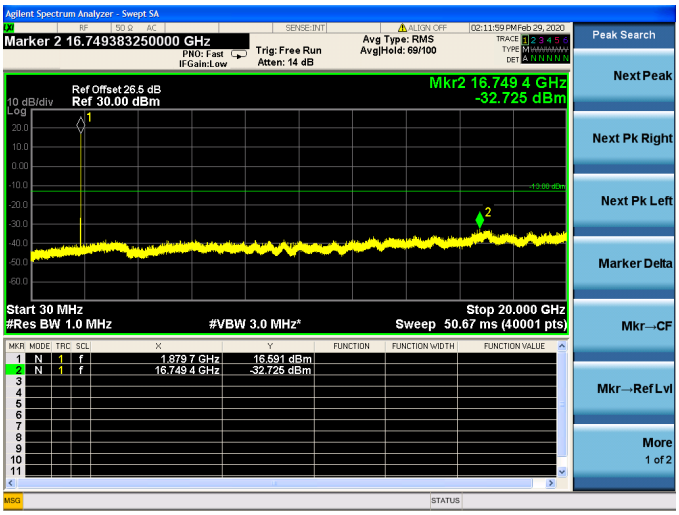
EDGE 850MHz CH251 848.8MHz



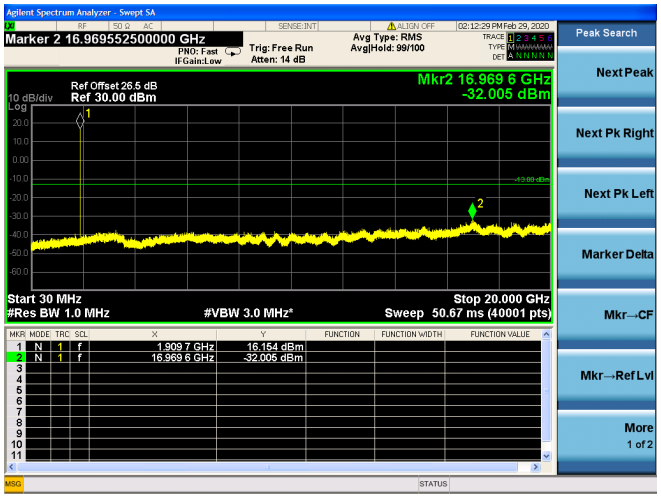
EDGE 1900MHz CH521 1850.2MHz



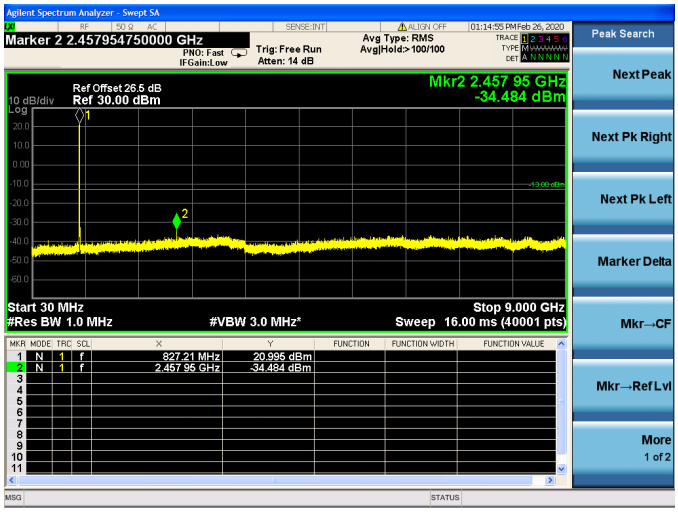
EDGE 1900MHz CH661 1880.0MHz



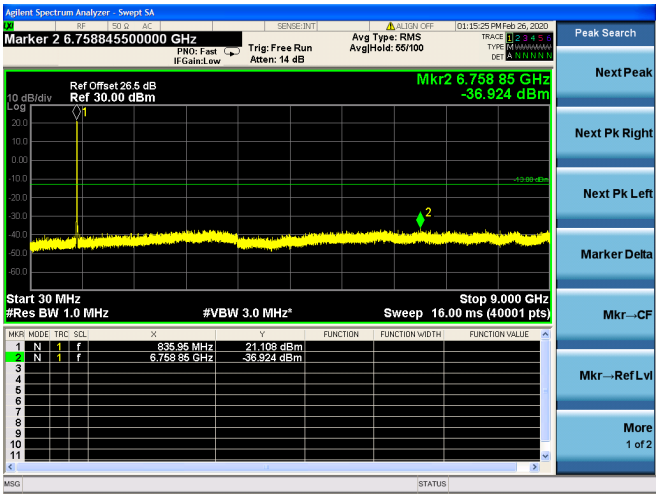
EDGE 1900MHz CH810 1909.8MHz



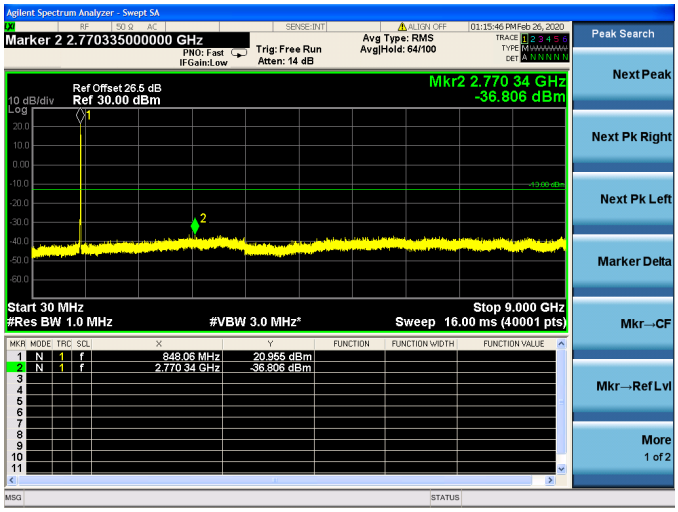
WCDMA Band V CH4132 826.4MHz



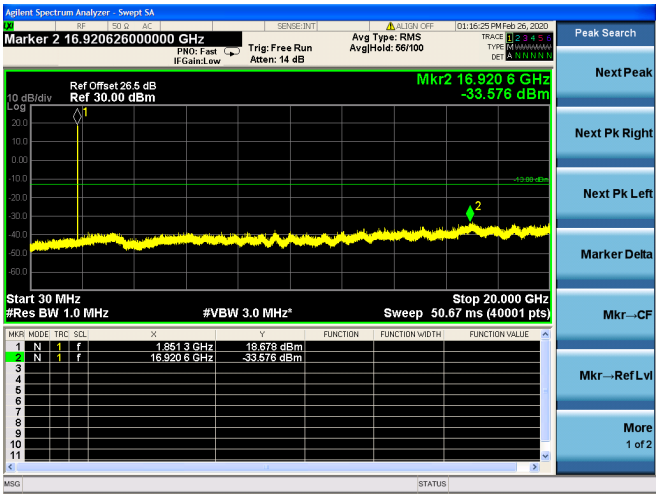
WCDMA Band V CH4183 836.4MHz



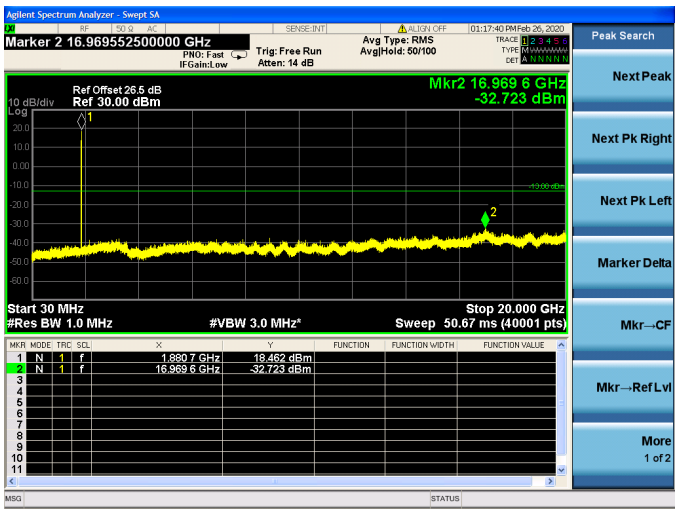
WCDMA Band V CH4233 846.6MHz



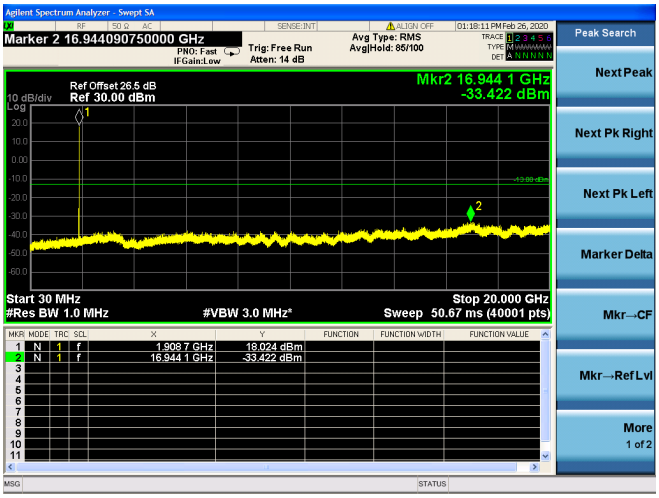
WCDMA Band II CH9262 1852.4MHz



WCDMA Band II CH9400 1880.0MHz



WCDMA Band II CH9538 1907.6MHz



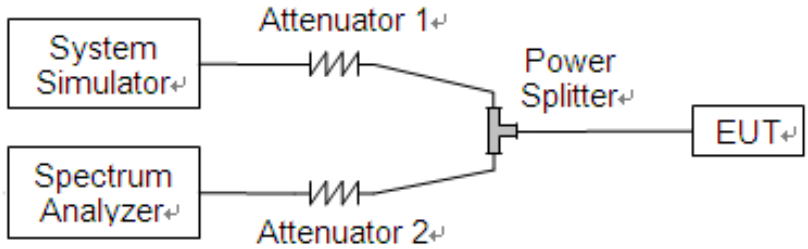
2.6. Band Edge

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:

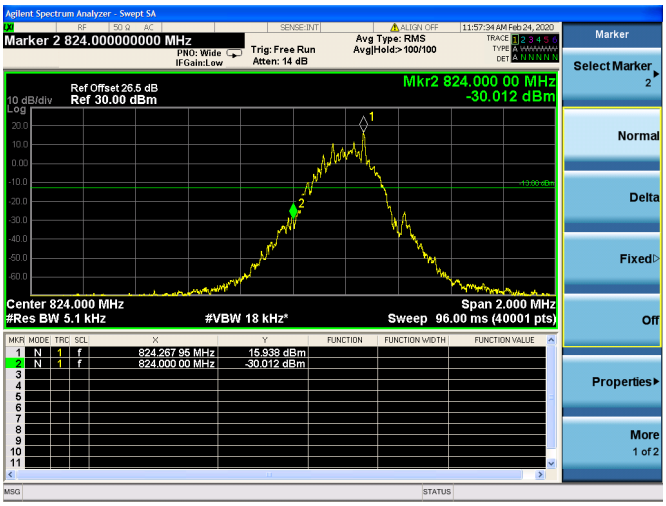


The EUTis coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

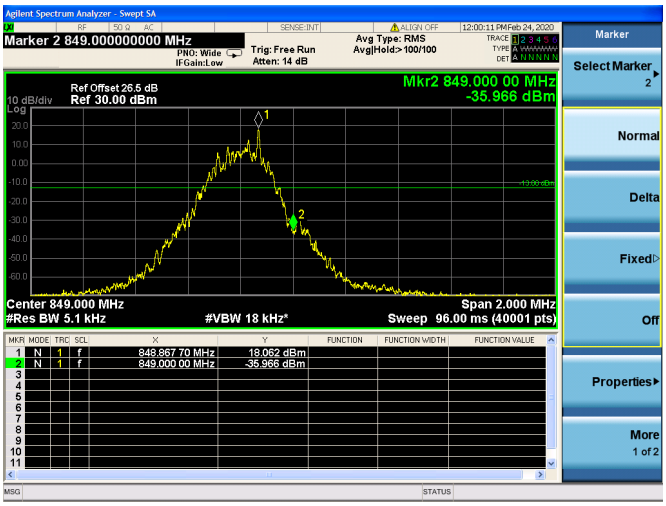
2.6.3. Test Result

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

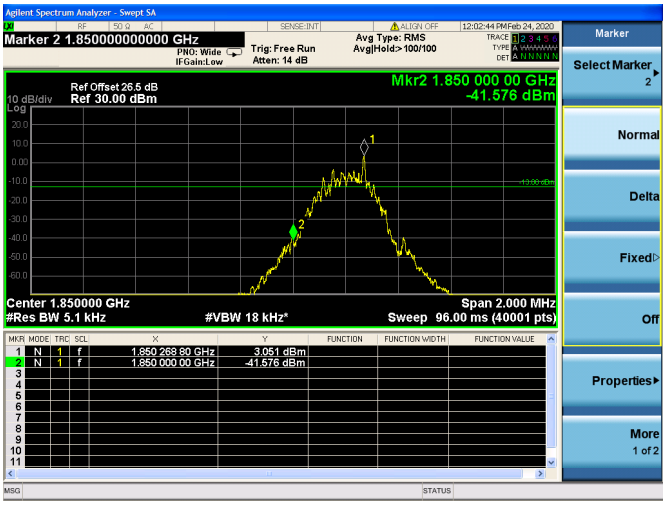
GSM 850MHz CH128 824.2MHz



GSM 850MHz CH251 848.8MHz

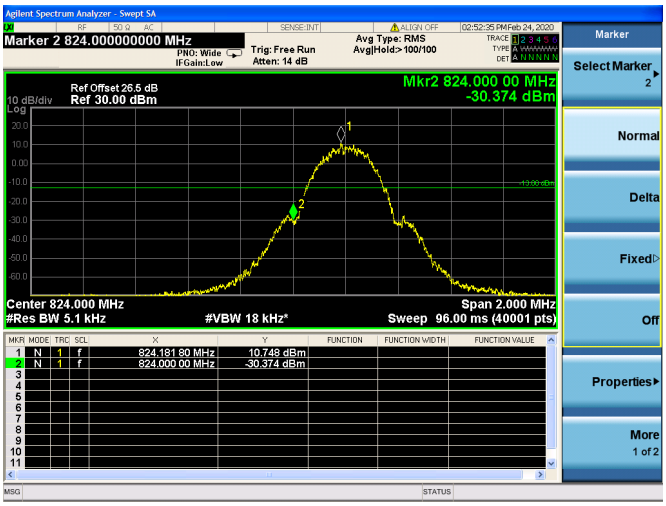


GSM 1900MHz CH512 1850.2MHz

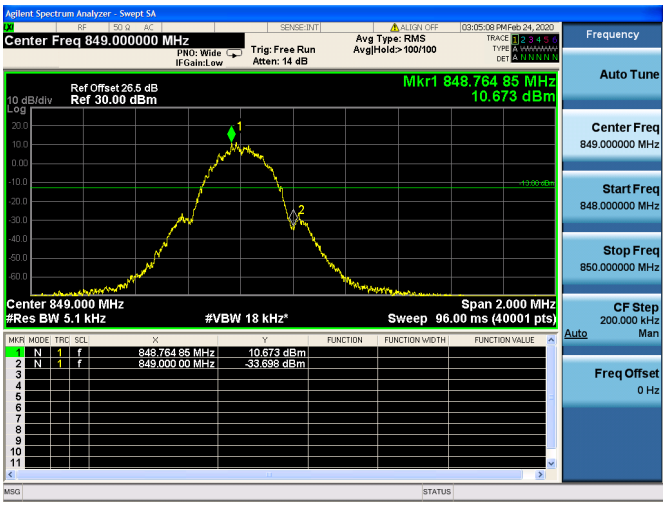


GSM 1900MHz CH810 1909.8MHz

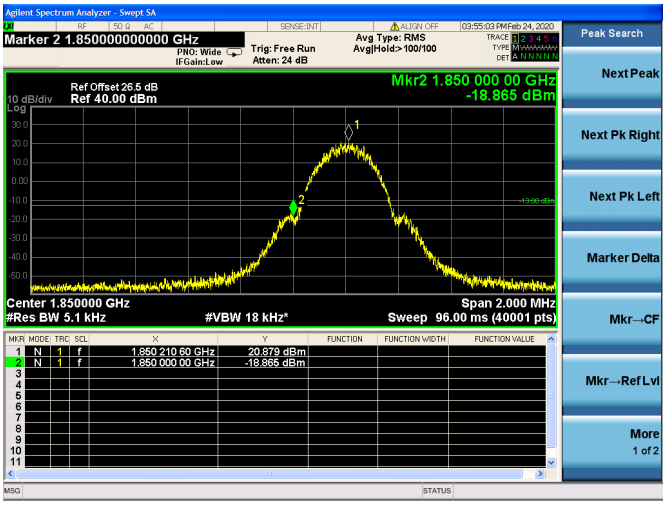
EDGE 850MHz CH128 824.2MHz



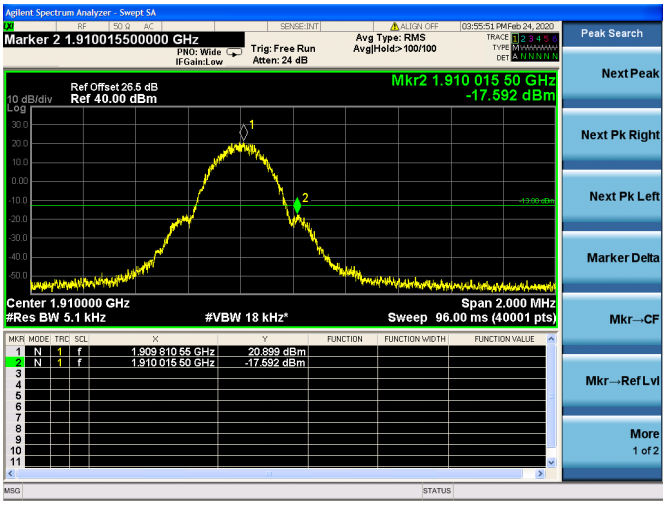
EDGE 850MHz CH251 848.8MHz



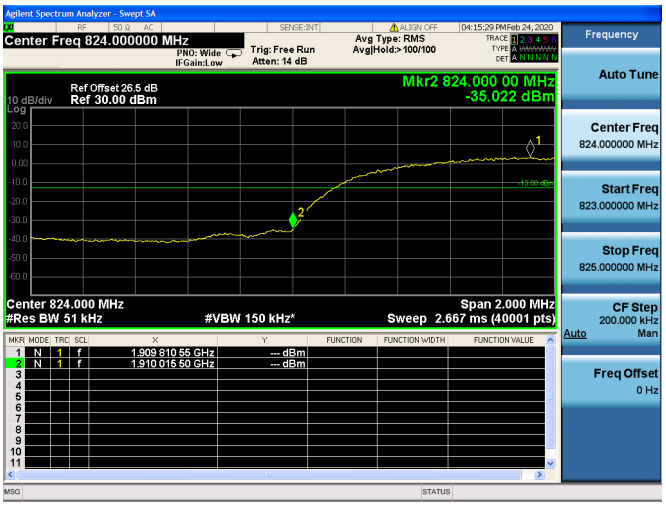
EDGE 1900MHz CH521 1850.2MHz



EDGE 1900MHz CH810 1909.8MHz

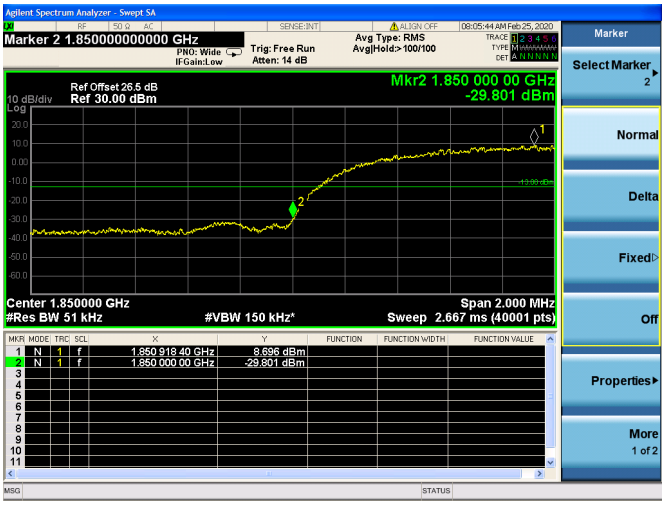


WCDMA Band V CH4132 826.4MHz

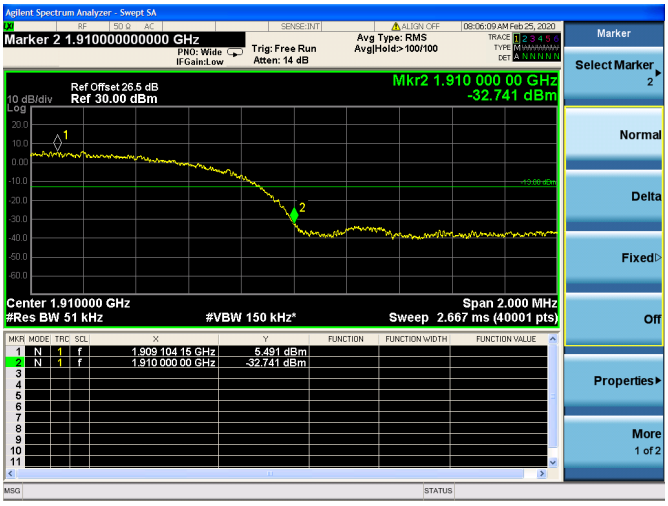


WCDMA Band V CH4233 846.6MHz

WCDMA Band II CH9262 1852.4MHz



WCDMA Band II CH9538 1907.6MHz



2.7. Transmitter Radiated Power (EIRP/ERP)

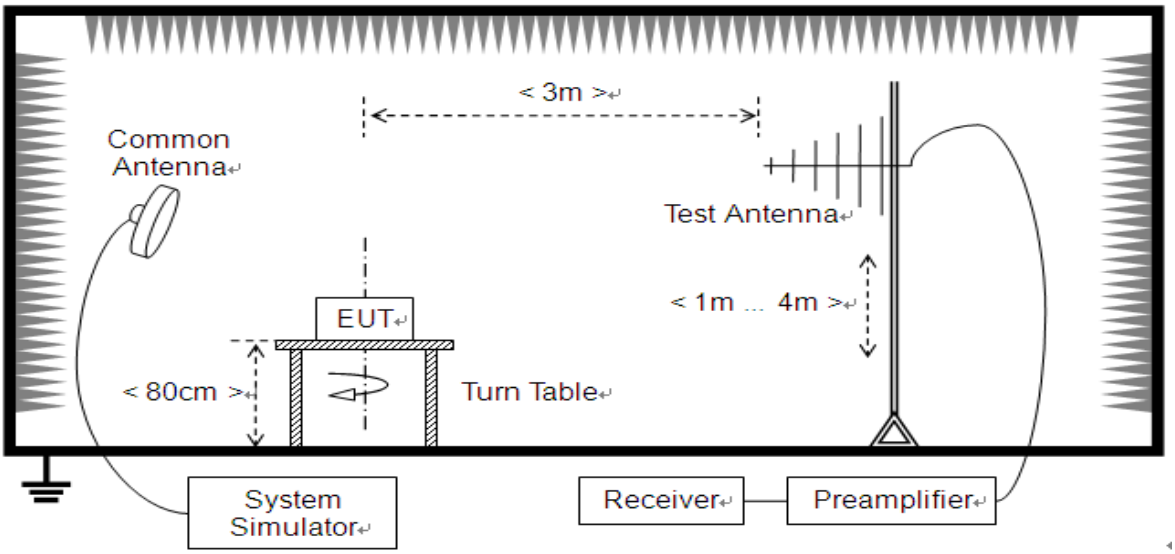
2.7.1. Requirement

According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7Watts.
According to FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power.

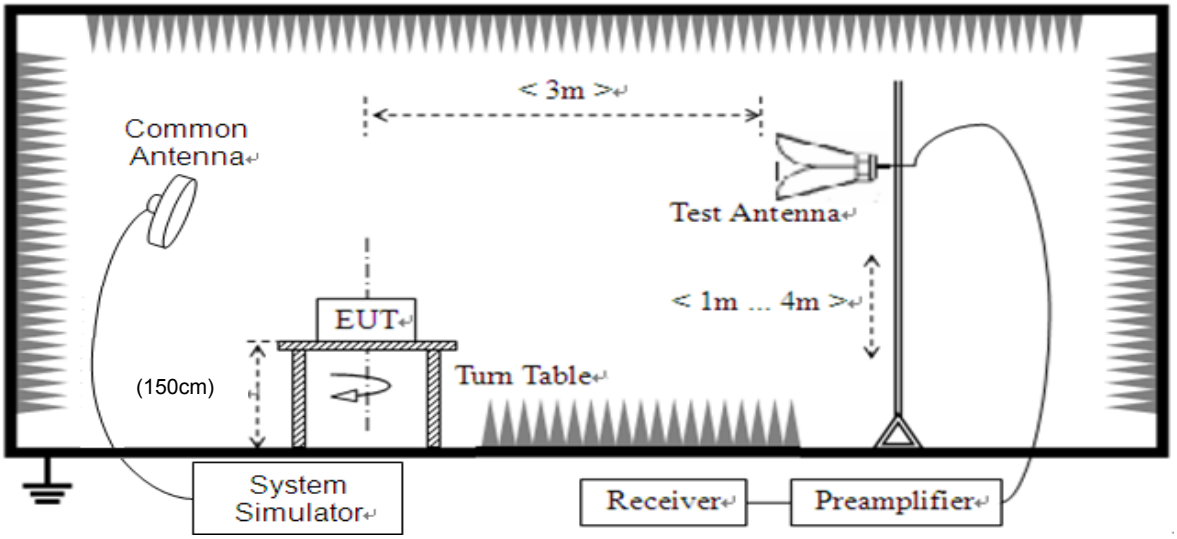
2.7.2. Test Description

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) 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:

$A_{SUBST} = P_{SUBST_TX} - P_{SUBST_RX} - L_{SUBST_CABLES} + G_{SUBST_TX_ANT}$

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

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

P_{SUBST_TX} is signal generator level,

P_{SUBST_RX} is receiver level,

L_{SUBST_CABLES} is cable losses including TX cable,

$G_{SUBST_TX_ANT}$ is substitution antenna gain.

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

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

GSM Test verdict:

Band	Channel	Frequency (MHz)	PCL	Measured ERP		Limit		Verdict
				dBm	W	dBm	W	
GSM 850MHz	128	824.20	5	29.19	0.830	38.5	7	PASS
	190	836.60	5	29.19	0.830			PASS
	251	848.80	5	29.16	0.824			PASS
GPRS 850MHz	128	824.20	5	29.18	0.828	38.5	7	PASS
	190	836.60	5	29.19	0.830			PASS
	251	848.80	5	29.16	0.824			PASS
EDGE 850MHz	128	824.20	5	22.02	0.159	38.5	7	PASS
	190	836.60	5	22.19	0.166			PASS
	251	848.80	5	21.94	0.156			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 evaluatedrespectively, 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	27.35	0.543	33	2	PASS
	661	1880.0	0	27.43	0.553			PASS
	810	1909.8	0	27.31	0.538			PASS
GPRS 1900MHz	512	1850.2	0	27.35	0.543	33	2	PASS
	661	1880.0	0	27.44	0.555			PASS
	810	1909.8	0	27.32	0.540			PASS
EDGE 1900MHz	512	1850.2	0	25.32	0.340	33	2	PASS
	661	1880.0	0	24.63	0.290			PASS
	810	1909.8	0	25.13	0.326			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 evaluatedrespectively, 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	18.93	0.078	38.5	7	PASS
	4182	836.4	18.97	0.079			PASS
	4233	846.6	18.95	0.079			PASS
HSDPA Band V	4132	826.4	18.85	0.077	38.5	7	PASS
	4182	836.4	18.78	0.076			PASS
	4233	846.6	18.70	0.074			PASS
HSUPA Band V	4132	826.4	18.75	0.075	38.5	7	PASS
	4182	836.4	18.69	0.074			PASS
	4233	846.6	18.66	0.073			PASS
Note: Both horizontal and vertical polarizations of the test antenna are evaluatedrespectively, 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	19.53	0.090	33	2	PASS
	9400	1880.0	19.60	0.091			PASS
	9538	1907.6	19.57	0.091			PASS
HSDPA Band II	9262	1852.4	18.99	0.079	33	2	PASS
	9400	1880.0	18.95	0.079			PASS
	9538	1907.6	18.88	0.077			PASS
HSUPA Band II	9262	1852.4	18.85	0.077	33	2	PASS
	9400	1880.0	18.81	0.076			PASS
	9538	1907.6	17.95	0.062			PASS
Note: Both horizontal and vertical polarizations of the test antenna are evaluatedrespectively, only the worst data (horizontal) were recorded in this report.							

2.8. Radiated Out of Band Emissions

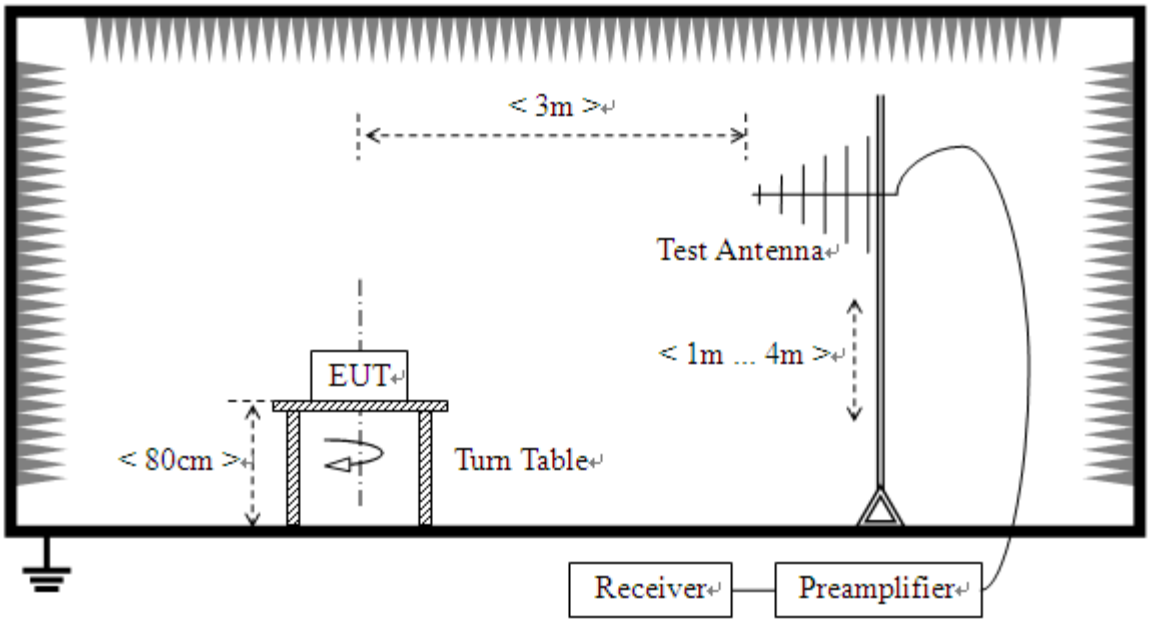
2.8.1. Requirement

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.

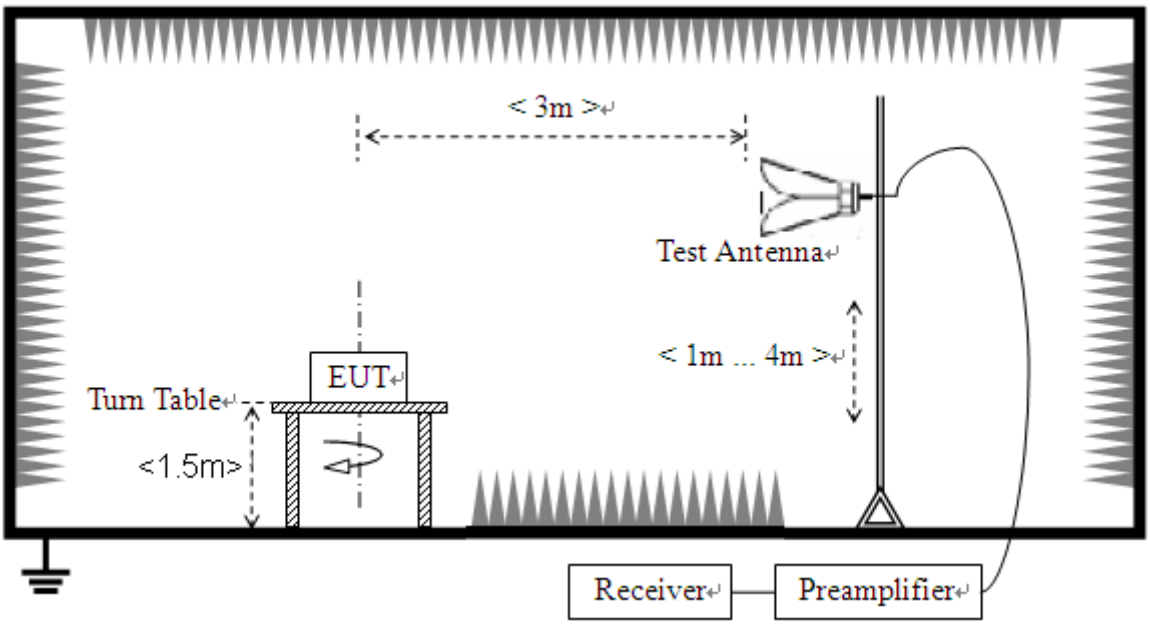
2.8.2. Test Description

Test Setup:

1) Below1GHz



2) Above 1GHz



The EUTis 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 3GHz), it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

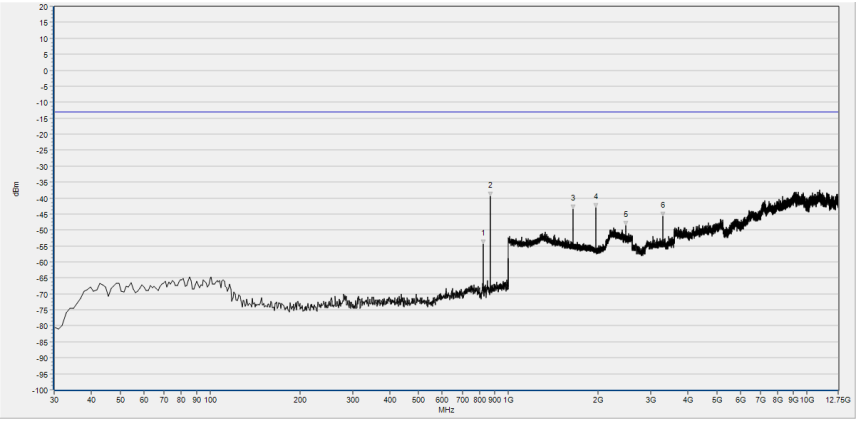
Note: when doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

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.

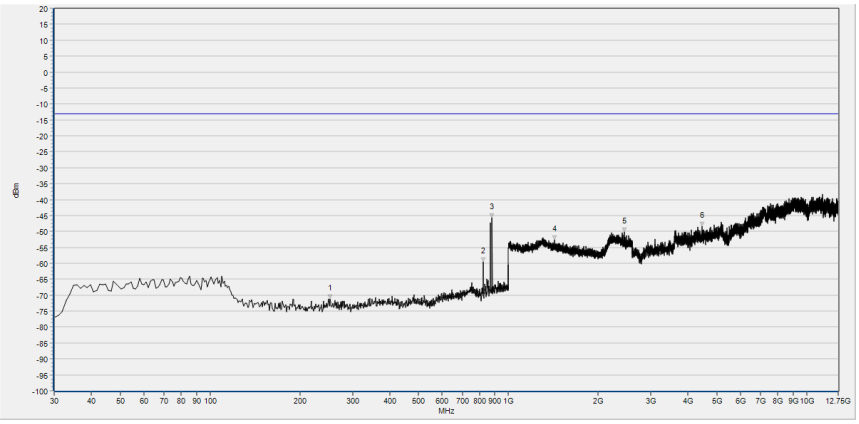
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical		
GSM 850MHz	128	824.2	< -25	< -25	-13	PASS
	190	836.6	< -25	< -25		PASS
	251	848.8	< -25	< -25		PASS
GSM 1900MHz	512	1850.2	< -25	< -25	-13	PASS
	661	1880.0	< -25	< -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

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.



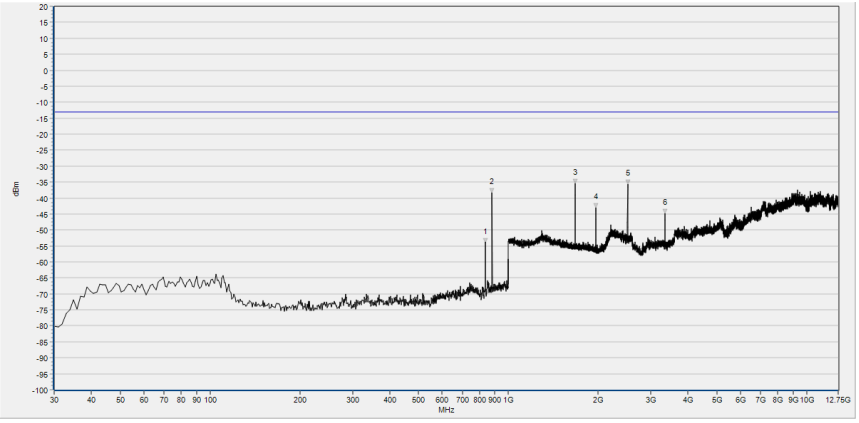
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	824.430	-54.33	-13.00	Horizontal	NA
2	869.050	-39.46	-13.00	Horizontal	NA
3	1647.939	-43.39	-13.00	Horizontal	PASS
4	1959.744	-43.12	-13.00	Horizontal	PASS
5	2472.589	-48.50	-13.00	Horizontal	PASS
6	3297.709	-45.77	-13.00	Horizontal	PASS

(GSM 850MHz, Channel = 128, Horizontal)



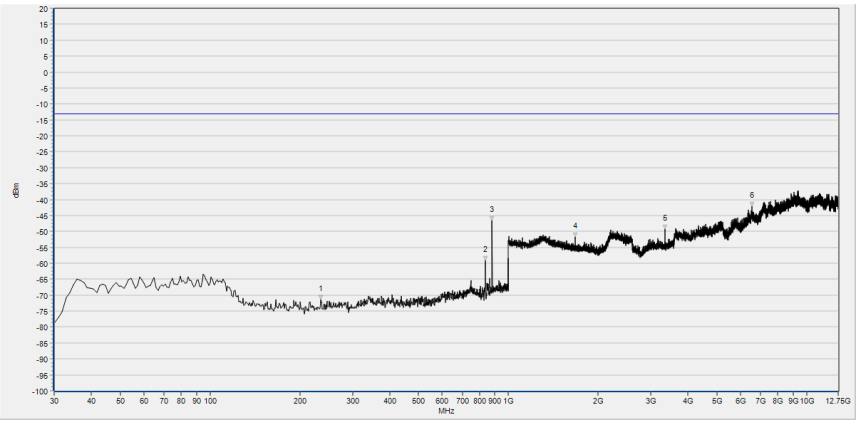
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	252.130	-71.27	-13.00	Vertical	PASS
2	824.430	-59.48	-13.00	Vertical	NA
3	881.660	-45.70	-13.00	Vertical	NA
4	1428.331	-52.65	-13.00	Vertical	PASS
5	2451.461	-50.25	-13.00	Vertical	PASS
6	4451.328	-48.41	-13.00	Vertical	PASS

(GSM 850MHz, Channel = 128, Vertical)



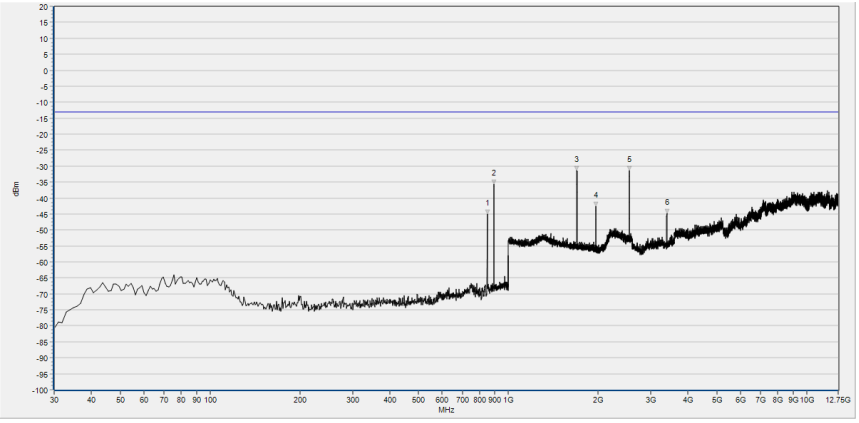
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	836.070	-53.96	-13.00	Horizontal	PASS
2	881.660	-38.37	-13.00	Horizontal	PASS
3	1672.909	-35.31	-13.00	Horizontal	PASS
4	1959.744	-42.97	-13.00	Horizontal	PASS
5	2509.724	-35.63	-13.00	Horizontal	PASS
6	3345.699	-44.89	-13.00	Horizontal	PASS

(GSM850MHz, Channel = 190, Horizontal)



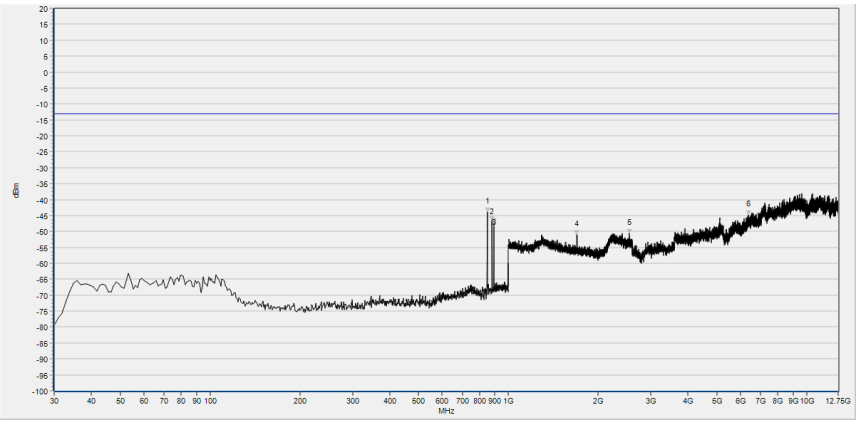
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	234.670	-71.32	-13.00	Vertical	PASS
2	837.040	-59.09	-13.00	Vertical	NA
3	881.660	-46.50	-13.00	Vertical	NA
4	1672.909	-51.68	-13.00	Vertical	PASS
5	3345.699	-49.30	-13.00	Vertical	PASS
6	6538.916	-42.22	-13.00	Vertical	PASS

(GSM 850MHz, Channel = 190, Vertical)



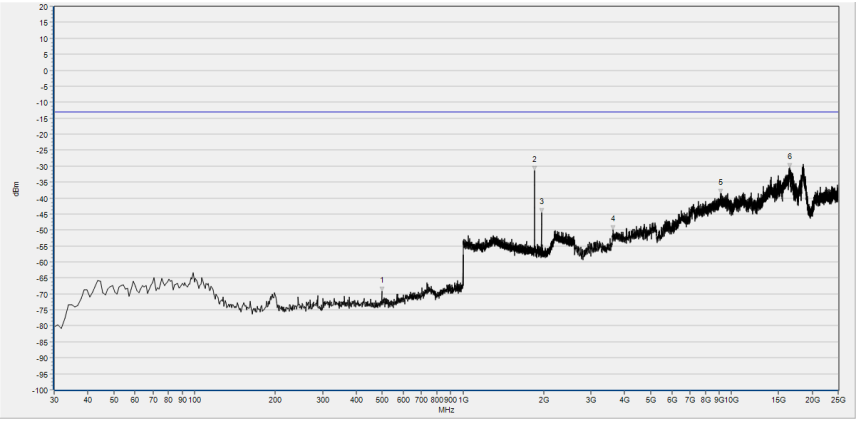
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	848.680	-44.95	-13.00	Horizontal	NA
2	894.270	-35.70	-13.00	Horizontal	NA
3	1697.239	-31.48	-13.00	Horizontal	PASS
4	1959.744	-42.55	-13.00	Horizontal	PASS
5	2546.218	-31.29	-13.00	Horizontal	PASS
6	3395.536	-44.88	-13.00	Horizontal	PASS

(GSM 850MHz, Channel = 251,Horizontal)



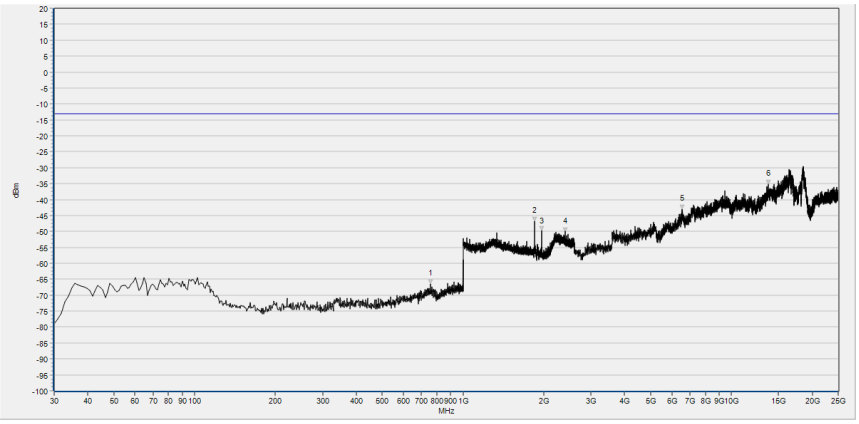
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	848.680	-43.96	-13.00	Vertical	NA
2	881.660	-46.52	-13.00	Vertical	NA
3	894.270	-47.35	-13.00	Vertical	NA
4	1697.239	-50.96	-13.00	Vertical	PASS
5	2546.218	-50.70	-13.00	Vertical	PASS
6	6367.258	-44.70	-13.00	Vertical	PASS

(GSM 850MHz, Channel = 251, Vertical)



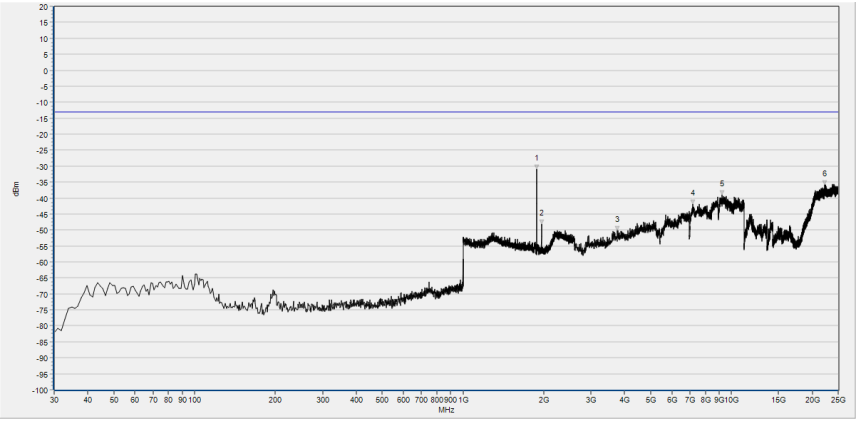
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	498.510	-69.21	-13.00	Horizontal	PASS
2	1850.260	-31.48	-13.00	Horizontal	NA
3	1959.744	-44.48	-13.00	Horizontal	NA
4	3630.587	-50.02	-13.00	Horizontal	PASS
5	9133.843	-38.63	-13.00	Horizontal	PASS
6	16498.672	-30.53	-13.00	Horizontal	PASS

(GSM 1900MHz, Channel = 512, Horizontal)



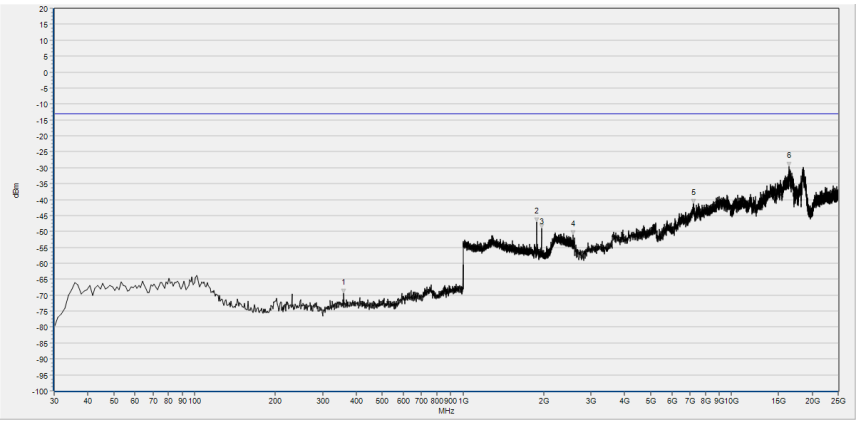
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	756.530	-66.46	-13.00	Vertical	PASS
2	1850.260	-46.81	-13.00	Vertical	NA
3	1959.744	-49.61	-13.00	Vertical	NA
4	2398.960	-50.06	-13.00	Vertical	PASS
5	6534.970	-43.09	-13.00	Vertical	PASS
6	13712.420	-35.19	-13.00	Vertical	PASS

(GSM 1900MHz, Channel = 512, Vertical)



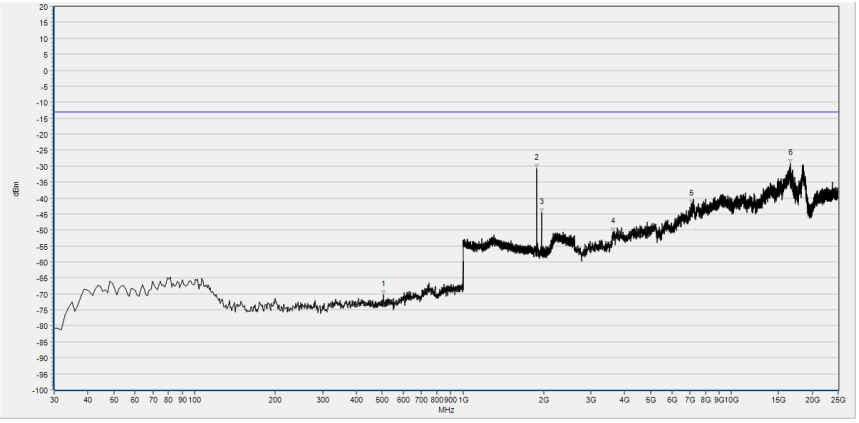
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	1879.712	-31.05	-13.00	Horizontal	NA
2	1959.744	-48.16	-13.00	Horizontal	NA
3	3760.938	-50.27	-13.00	Horizontal	PASS
4	7174.504	-41.95	-13.00	Horizontal	PASS
5	9211.238	-38.94	-13.00	Horizontal	PASS
6	22205.601	-35.83	-13.00	Horizontal	PASS

(GSM 1900MHz, Channel = 661, Horizontal)



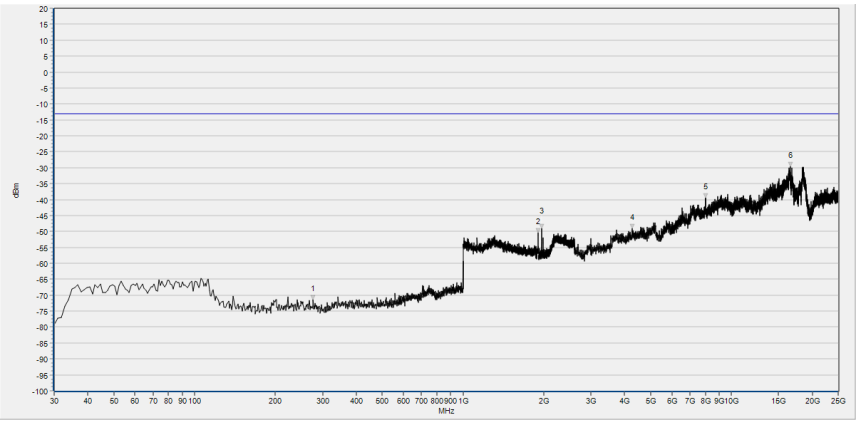
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	359.800	-69.28	-13.00	Vertical	PASS
2	1879.712	-46.99	-13.00	Vertical	NA
3	1959.744	-49.12	-13.00	Vertical	NA
4	2577.591	-51.10	-13.00	Vertical	PASS
5	7231.533	-41.27	-13.00	Vertical	PASS
6	16413.130	-29.64	-13.00	Vertical	PASS

(GSM 1900MHz, Channel = 661, Vertical)



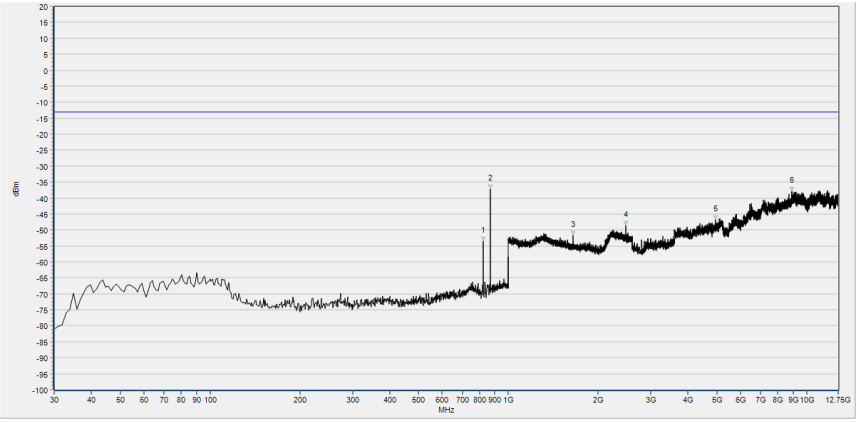
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	505.300	-70.30	-13.00	Horizontal	PASS
2	1879.712	-30.80	-13.00	Horizontal	NA
3	1959.744	-44.69	-13.00	Horizontal	NA
4	3614.294	-50.68	-13.00	Horizontal	PASS
5	7101.182	-41.88	-13.00	Horizontal	PASS
6	16571.995	-29.14	-13.00	Horizontal	PASS

(GSM 1900MHz, Channel = 810, Horizontal)



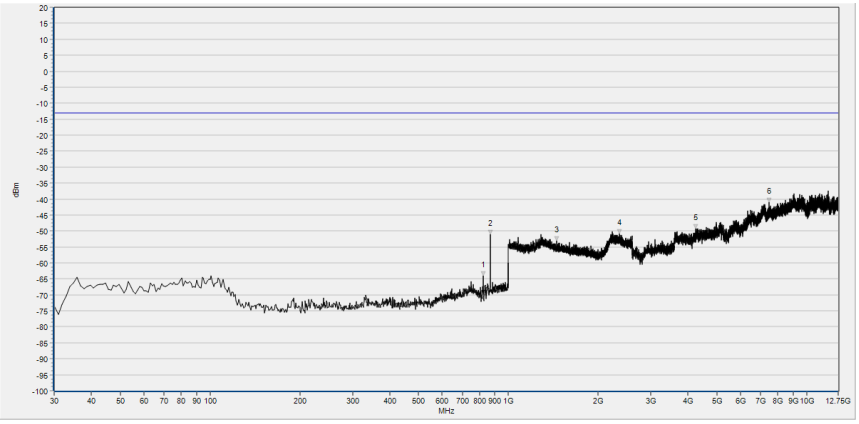
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	276.380	-71.30	-13.00	Vertical	PASS
2	1909.804	-50.40	-13.00	Vertical	NA
3	1959.744	-49.04	-13.00	Vertical	NA
4	4261.975	-49.15	-13.00	Vertical	PASS
5	7997.345	-39.43	-13.00	Vertical	PASS
6	16547.554	-29.64	-13.00	Vertical	PASS

(GSM 1900MHz, Channel = 810, Vertical)



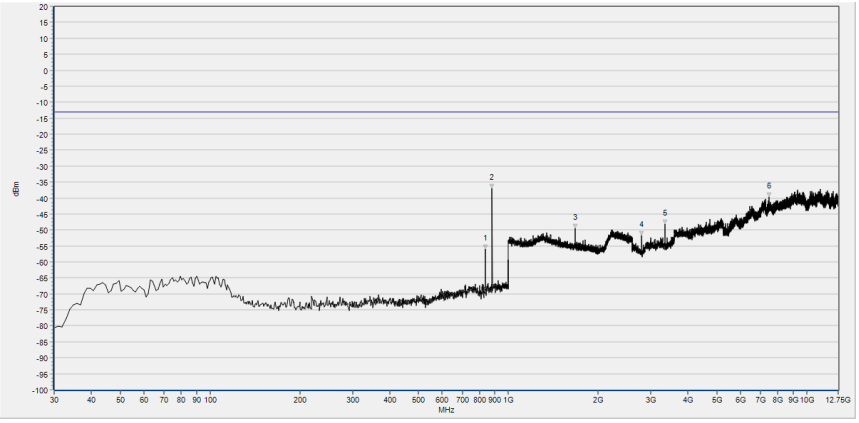
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	824.430	-53.60	-13.00	Horizontal	NA
2	869.050	-37.13	-13.00	Horizontal	NA
3	1647.939	-51.80	-13.00	Horizontal	PASS
4	2471.949	-48.66	-13.00	Horizontal	PASS
5	4936.770	-46.88	-13.00	Horizontal	PASS
6	8919.985	-37.96	-13.00	Horizontal	PASS

(EDGE 850MHz, Channel = 128, Horizontal)



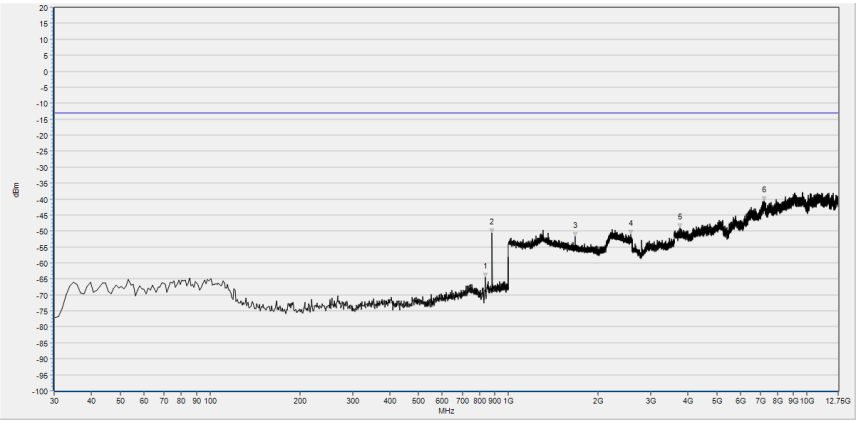
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	824.430	-64.08	-13.00	Vertical	PASS
2	869.050	-51.02	-13.00	Vertical	PASS
3	1448.179	-53.02	-13.00	Vertical	PASS
4	2359.904	-50.89	-13.00	Vertical	PASS
5	4242.753	-49.38	-13.00	Vertical	PASS
6	7495.035	-41.03	-13.00	Vertical	PASS

(EDGE 850MHz, Channel = 128, Vertical)



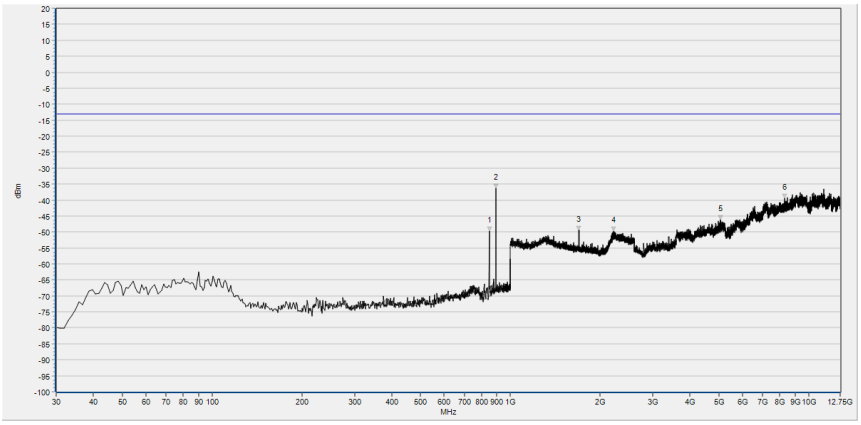
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	836.070	-56.05	-13.00	Horizontal	NA
2	881.660	-36.92	-13.00	Horizontal	NA
3	1672.909	-49.41	-13.00	Horizontal	PASS
4	2799.345	-51.80	-13.00	Horizontal	PASS
5	3345.699	-48.25	-13.00	Horizontal	PASS
6	7471.040	-39.72	-13.00	Horizontal	PASS

(EDGE 850MHz, Channel = 190, Horizontal)



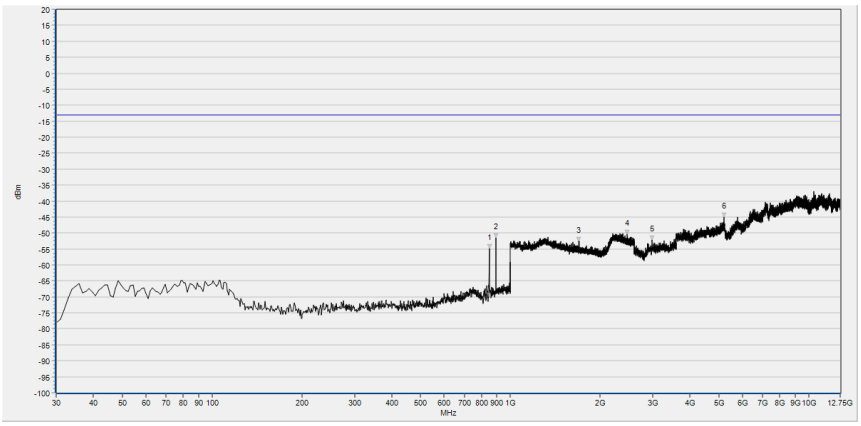
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	836.070	-64.47	-13.00	Vertical	NA
2	881.660	-50.65	-13.00	Vertical	NA
3	1672.909	-51.72	-13.00	Vertical	PASS
4	2567.987	-51.16	-13.00	Vertical	PASS
5	3761.002	-49.12	-13.00	Vertical	PASS
6	7201.555	-40.66	-13.00	Vertical	PASS

(EDGE 850MHz, Channel = 190, Vertical)



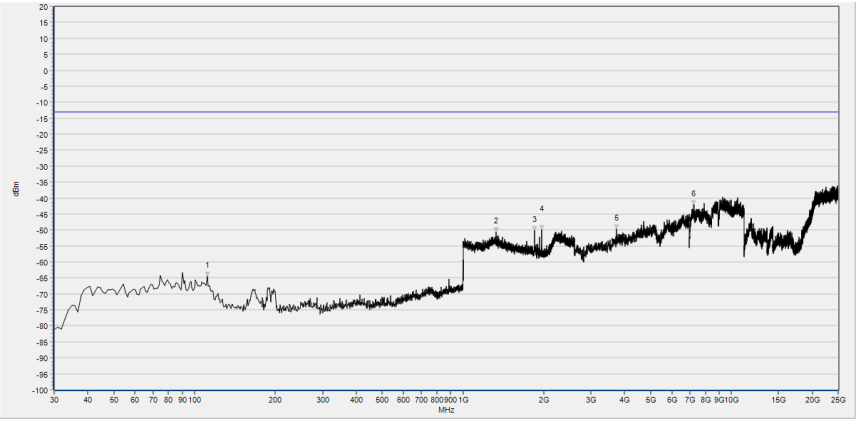
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	848.680	-49.68	-13.00	Horizontal	NA
2	893.300	-36.34	-13.00	Horizontal	NA
3	1697.239	-49.48	-13.00	Horizontal	PASS
4	2212.005	-49.79	-13.00	Horizontal	PASS
5	5067.821	-46.18	-13.00	Horizontal	PASS
6	8309.029	-39.50	-13.00	Horizontal	PASS

(EDGE 850MHz, Channel = 251, Horizontal)



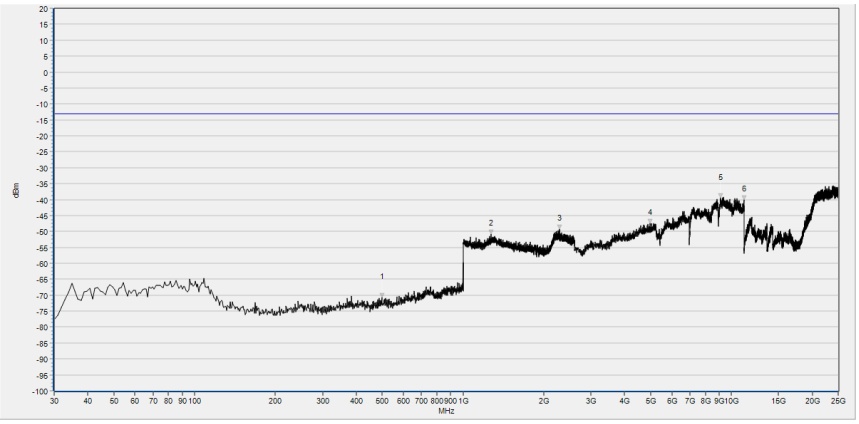
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	848.680	-54.85	-13.00	Vertical	NA
2	894.270	-51.52	-13.00	Vertical	NA
3	1697.239	-52.73	-13.00	Vertical	PASS
4	2467.467	-50.43	-13.00	Vertical	PASS
5	2980.233	-52.18	-13.00	Vertical	PASS
6	5206.256	-45.00	-13.00	Vertical	PASS

(EDGE 850MHz, Channel = 251, Vertical)



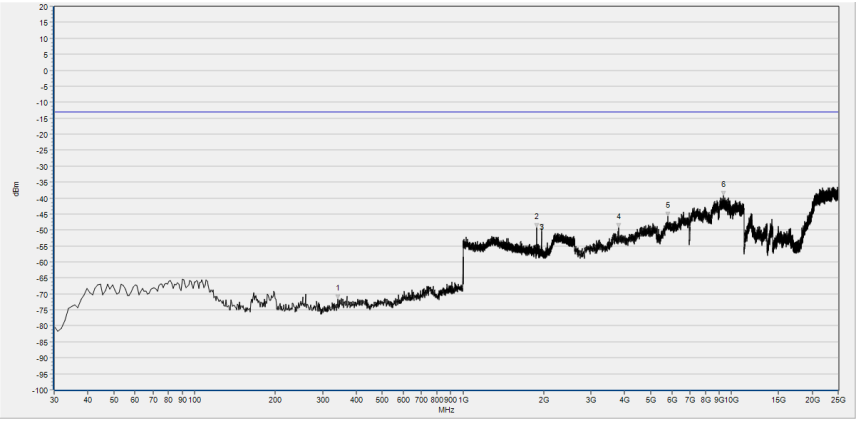
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	111.480	-64.47	-13.00	Horizontal	PASS
2	1327.171	-50.52	-13.00	Horizontal	PASS
3	1850.260	-50.15	-13.00	Horizontal	NA
4	1959.744	-49.86	-13.00	Horizontal	NA
5	3728.351	-49.82	-13.00	Horizontal	PASS
6	7247.827	-42.21	-13.00	Horizontal	PASS

(EDGE 1900MHz, Channel = 512, Horizontal)



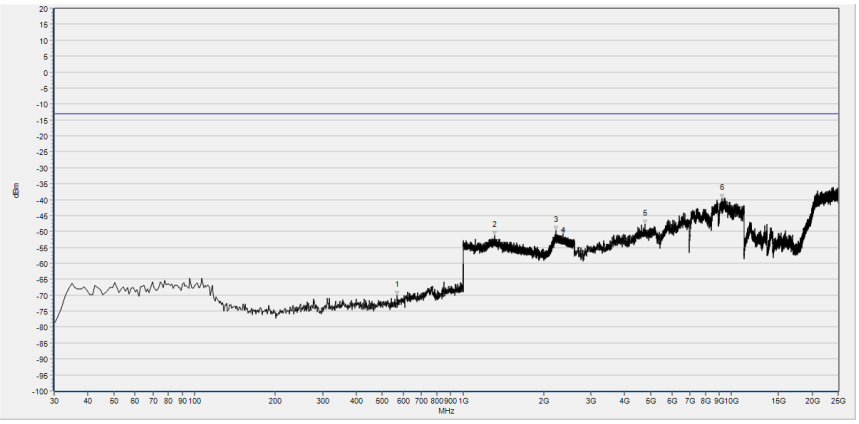
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	498.510	-70.75	-13.00	Vertical	PASS
2	1270.828	-50.87	-13.00	Vertical	PASS
3	2295.238	-49.25	-13.00	Vertical	PASS
4	4982.979	-47.44	-13.00	Vertical	PASS
5	9129.769	-39.51	-13.00	Vertical	PASS
6	11121.695	-40.13	-13.00	Vertical	PASS

(EDGE 1900MHz, Channel = 512, Vertical)



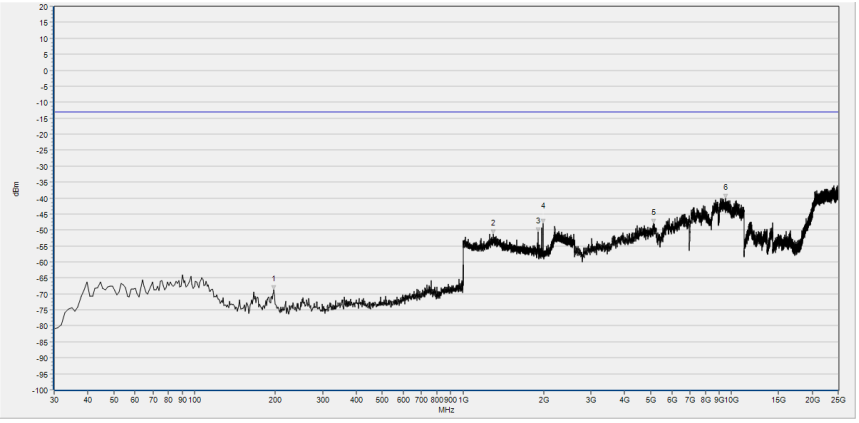
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	341.370	-71.72	-13.00	Horizontal	PASS
2	1879.712	-49.20	-13.00	Horizontal	NA
3	1959.744	-49.54	-13.00	Horizontal	NA
4	3797.600	-49.38	-13.00	Horizontal	PASS
5	5805.819	-45.75	-13.00	Horizontal	PASS
6	9329.369	-39.13	-13.00	Horizontal	PASS

(EDGE 1900MHz, Channel = 661, Horizontal)



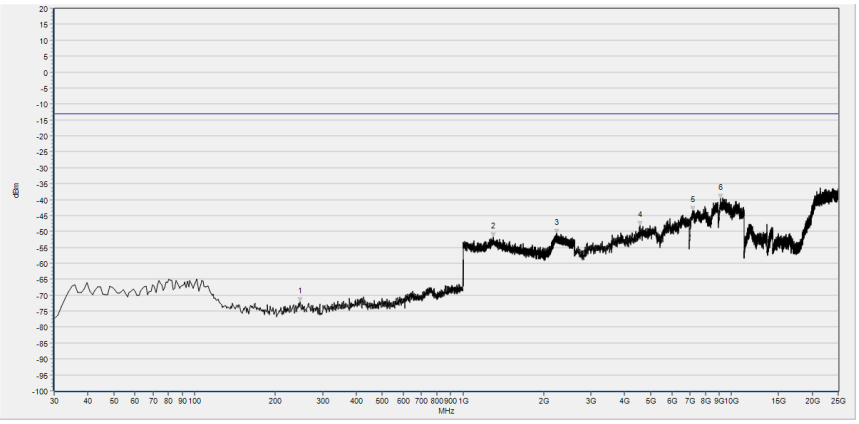
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	567.380	-70.11	-13.00	Vertical	PASS
2	1309.884	-51.33	-13.00	Vertical	PASS
3	2220.968	-49.80	-13.00	Vertical	PASS
4	2359.904	-50.61	-13.00	Vertical	PASS
5	4758.938	-47.71	-13.00	Vertical	PASS
6	9231.606	-39.77	-13.00	Vertical	PASS

(EDGE 1900MHz, Channel = 661, Vertical)



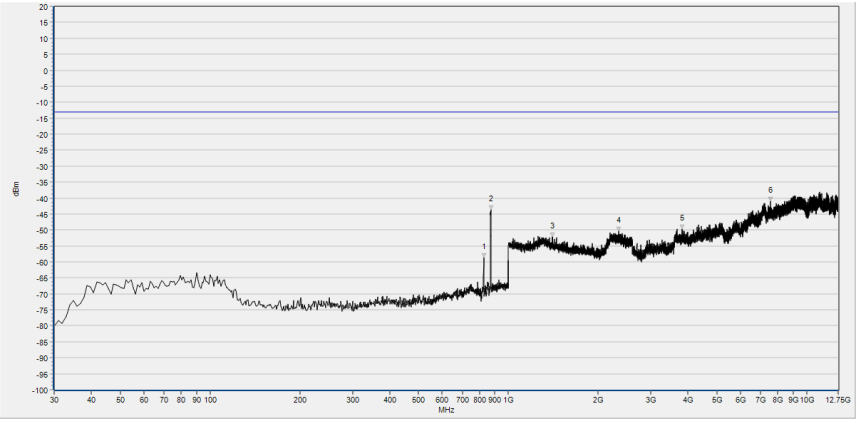
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	197.810	-68.70	-13.00	Horizontal	PASS
2	1300.280	-51.38	-13.00	Horizontal	PASS
3	1909.804	-50.70	-13.00	Horizontal	NA
4	1989.836	-47.87	-13.00	Horizontal	NA
5	5133.697	-47.95	-13.00	Horizontal	PASS
6	9488.234	-40.18	-13.00	Horizontal	PASS

(EDGE 1900MHz, Channel = 810, Horizontal)



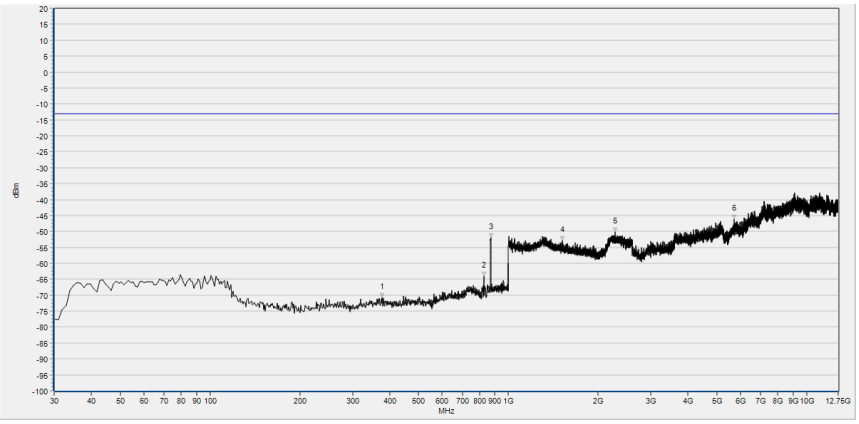
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	247.280	-72.16	-13.00	Vertical	PASS
2	1300.280	-51.68	-13.00	Vertical	PASS
3	2229.292	-50.51	-13.00	Vertical	PASS
4	4575.632	-48.16	-13.00	Vertical	PASS
5	7162.284	-43.48	-13.00	Vertical	PASS
6	9133.843	-39.62	-13.00	Vertical	PASS

(EDGE 1900MHz, Channel = 810, Vertical)



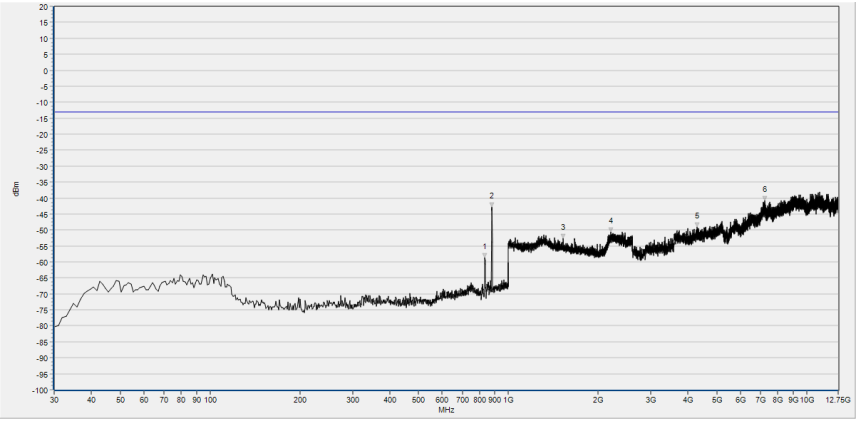
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	827.340	-58.67	-13.00	Horizontal	NA
2	872.930	-43.73	-13.00	Horizontal	NA
3	1404.642	-52.24	-13.00	Horizontal	PASS
4	2341.337	-50.48	-13.00	Horizontal	PASS
5	3812.684	-49.76	-13.00	Horizontal	PASS
6	7552.255	-40.96	-13.00	Horizontal	PASS

(WCDMA Band V, Channel = 4132, Horizontal)



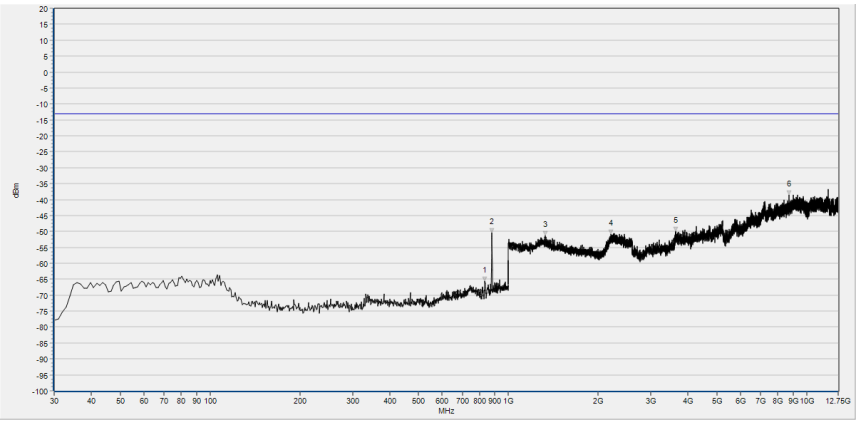
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	377.260	-70.65	-13.00	Vertical	PASS
2	827.340	-64.06	-13.00	Vertical	NA
3	872.930	-51.95	-13.00	Vertical	NA
4	1517.327	-52.95	-13.00	Vertical	PASS
5	2276.671	-50.09	-13.00	Vertical	PASS
6	5706.465	-46.06	-13.00	Vertical	PASS

(WCDMA Band V, Channel = 4132, Vertical)



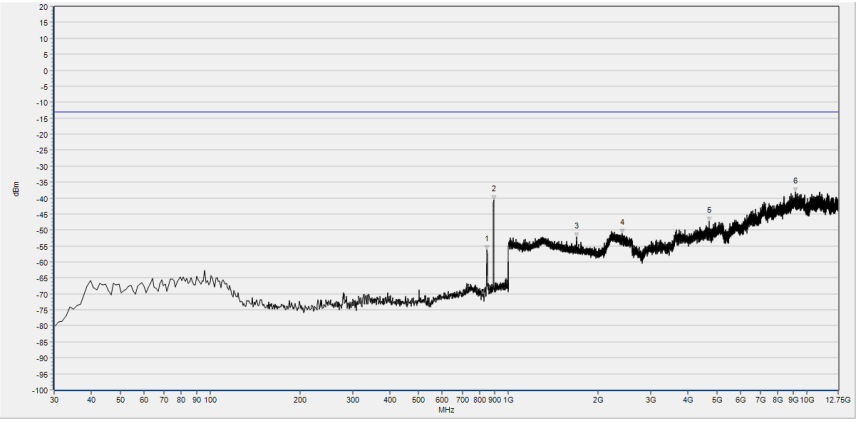
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	834.130	-58.55	-13.00	Horizontal	NA
2	881.660	-42.85	-13.00	Horizontal	NA
3	1528.852	-52.58	-13.00	Horizontal	PASS
4	2208.163	-50.67	-13.00	Horizontal	PASS
5	4296.281	-49.16	-13.00	Horizontal	PASS
6	7234.779	-40.82	-13.00	Horizontal	PASS

(WCDMA Band V, Channel = 4183, Horizontal)



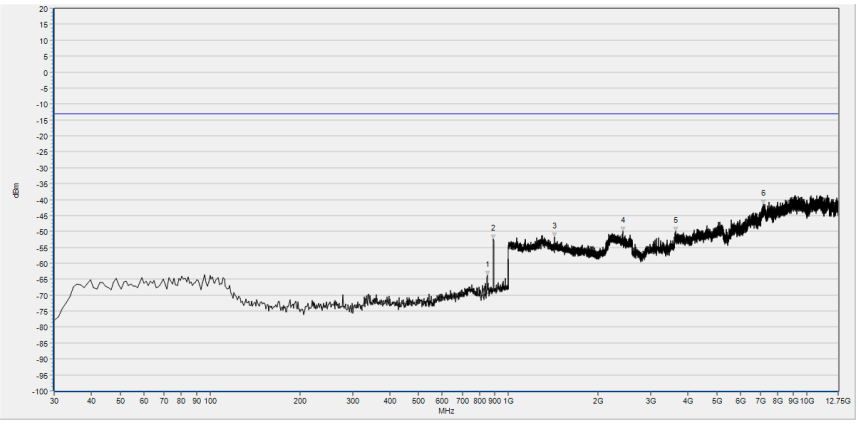
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	834.130	-65.56	-13.00	Vertical	NA
2	879.720	-50.36	-13.00	Vertical	NA
3	1325.890	-51.36	-13.00	Vertical	PASS
4	2210.084	-50.85	-13.00	Vertical	PASS
5	3631.797	-50.02	-13.00	Vertical	PASS
6	8720.640	-38.61	-13.00	Vertical	PASS

(WCDMA Band V, Channel = 4183, Vertical)



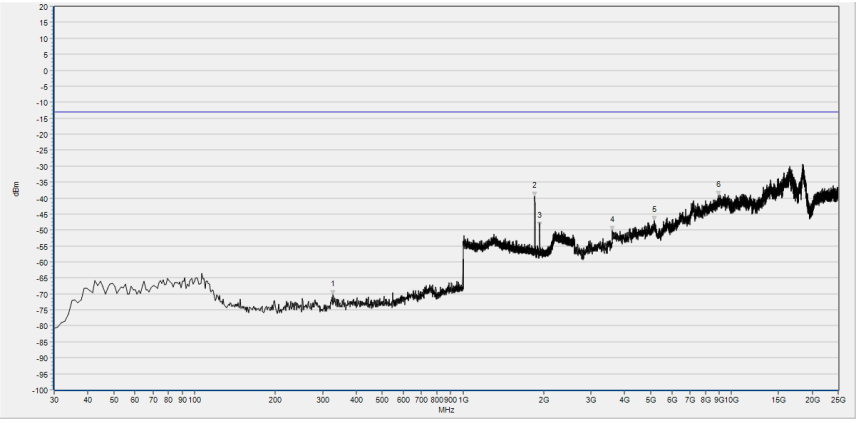
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	847.710	-56.10	-13.00	Horizontal	NA
2	892.330	-40.63	-13.00	Horizontal	NA
3	1694.038	-52.20	-13.00	Horizontal	PASS
4	2411.124	-50.99	-13.00	Horizontal	PASS
5	4720.813	-47.36	-13.00	Horizontal	PASS
6	9148.863	-38.06	-13.00	Horizontal	PASS

(WCDMA Band V, Channel = 4233, Horizontal)



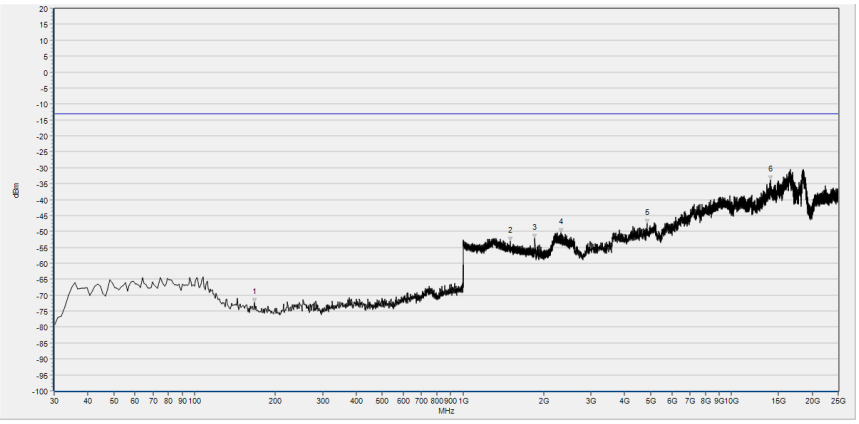
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	848.680	-63.88	-13.00	Vertical	NA
2	890.390	-52.40	-13.00	Vertical	NA
3	1428.331	-51.77	-13.00	Vertical	PASS
4	2414.326	-49.94	-13.00	Vertical	PASS
5	3641.026	-49.90	-13.00	Vertical	PASS
6	7173.868	-41.53	-13.00	Vertical	PASS

(WCDMA Band V, Channel = 4233, Vertical)



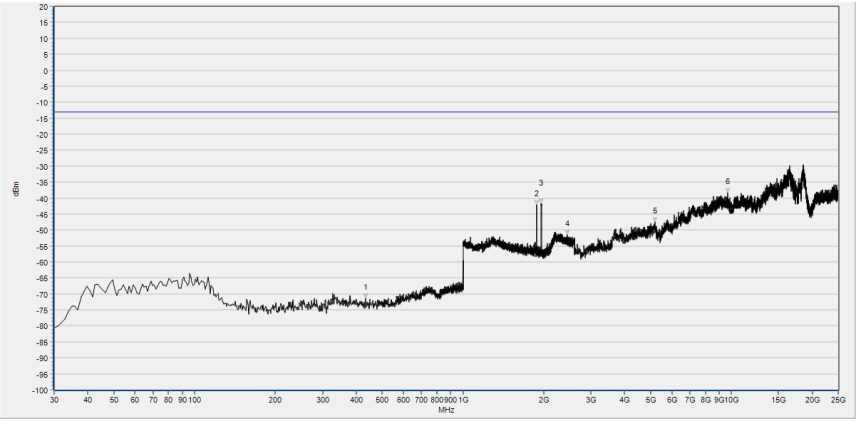
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	327.790	-70.32	-13.00	Horizontal	PASS
2	1850.900	-39.52	-13.00	Horizontal	NA
3	1932.853	-48.84	-13.00	Horizontal	NA
4	3606.147	-50.11	-13.00	Horizontal	PASS
5	5166.285	-47.03	-13.00	Horizontal	PASS
6	8930.169	-39.32	-13.00	Horizontal	PASS

(WCDMA Band II, Channel = 9262, Horizontal)



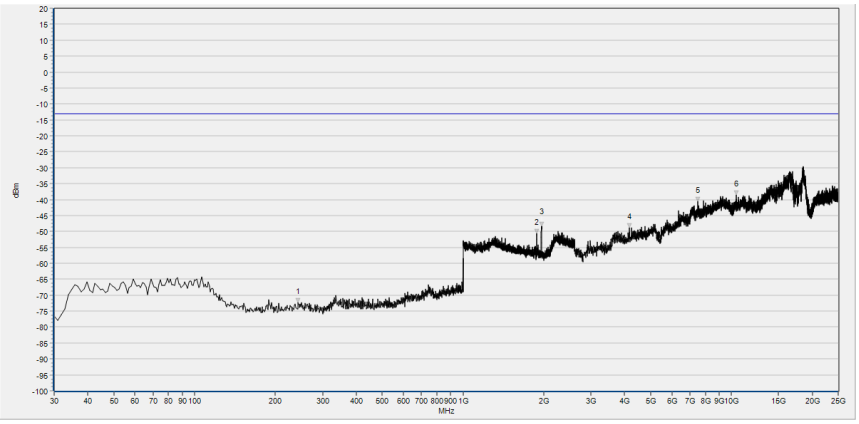
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	166.770	-72.27	-13.00	Vertical	PASS
2	1498.760	-53.10	-13.00	Vertical	PASS
3	1850.900	-52.15	-13.00	Vertical	NA
4	2313.165	-50.32	-13.00	Vertical	PASS
5	4844.481	-47.53	-13.00	Vertical	PASS
6	14026.077	-33.86	-13.00	Vertical	PASS

(WCDMA Band II, Channel = 9262, Vertical)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	433.520	-71.36	-13.00	Horizontal	PASS
2	1879.072	-42.15	-13.00	Horizontal	NA
3	1958.463	-41.79	-13.00	Horizontal	NA
4	2449.540	-51.45	-13.00	Horizontal	PASS
5	5194.799	-47.50	-13.00	Horizontal	PASS
6	9716.348	-38.35	-13.00	Horizontal	PASS

(WCDMA Band II, Channel = 9400, Horizontal)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	243.400	-72.29	-13.00	Vertical	PASS
2	1879.072	-50.60	-13.00	Vertical	NA
3	1959.744	-48.33	-13.00	Vertical	NA
4	4172.359	-48.89	-13.00	Vertical	PASS
5	7492.235	-40.48	-13.00	Vertical	PASS
6	10421.058	-38.58	-13.00	Vertical	PASS

(WCDMA Band II, Channel = 9400, Vertical)

Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test items	Uncertainty
Output Power	±2.22dB
Bandwidth	±5%
Conducted Spurious Emission	±2.77 dB
Radiated Emission	±2.95dB

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2

Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.

4. Test Equipments Utilized

4.1 Conducted Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Power Splitter	NW521	1506A	Weinschel	2019.04.17	2020.04.16
Attenuator 1	(N/A.)	10dB	Resnet	2019.04.17	2020.04.16
Attenuator 2	(N/A.)	3dB	Resnet	2019.04.17	2020.04.16
MXA Signal Analzyer	MY51511149	N9010A	Agilent	2019.07.29	2020.07.28
Wireless synthesizer	MY48364176	8960 -E5515C	Agilent	2019.04.17	2020.04.16
RF cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial cable	CB02	RF02	Morlab	N/A	N/A
SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
Temperature Chamber	(N/A)	HUT705P	CHONGQING HANBA EXPERIMENTAL EQUIPMENT CO.,LTD	2019.04.17	2020.04.16
Computer	T430i	Think Pad	Lenovo	N/A	N/A

4.2 Radiated Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal.Due
System Simulator	152038	CMW500	R&S	2019.08.04	2020.08.03
Receiver	MY54130016	N9038A	Agilent	2019.05.18	2020.05.17
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2020.03.03	2021.03.02
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2019.08.06	2020.08.05
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2019.08.02	2020.08.01
Coaxial cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial cable(N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
1-18GHz pre-Amplifier	MA02	TS-PR18	Rohde& Schwarz	2019.05.08	2020.05.07
18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2019.05.08	2020.05.07
Notch Filter	N/A	WRCG-GSM 850	Wainwright	2019.12.01	2020.11.30
Notch Filter	N/A	WRCG-GSM 1900	Wainwright	2019.12.01	2020.11.30
Notch Filter	N/A	WRCGV-W Band V	Wainwright	2019.12.01	2020.11.30
Notch Filter	N/A	WRCGV-W Band II	Wainwright	2019.12.01	2020.11.30
Notch Filter	N/A	WRCGV-W Band IV	Wainwright	2019.12.01	2020.11.30
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

END OF REPORT