REPORT No. : SZ20030044W01

TEST REPORT

APPLICANT	:	BLU Products, Inc.
PRODUCT NAME	:	Smart Phone
MODEL NAME	:	STUDIO X10
BRAND NAME	:	BLU
FCC ID	:	YHLBLUSTX10
STANDARD(S)	:	47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E
RECEIPT DATE	:	2020-03-11
TEST DATE	:	2020-04-05 to 2020-04-16
ISSUE DATE	:	2020-05-11

Edited by: He Dekuan

He Dekuan (Rapporteur)

Approved by: Peng Huarui

Peng Huarui (Supervisor)

MORLAB

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.
FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road,
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

Tel: 86-755-36698555 Fax: 86-755-36698525
Http://www.morlab.cn E-mail: service@morlab.cn

DIRECTORY

Change History		
Version	**Date**	**Reason for change**
1.0	2020-05-11	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.
Manufacturer Address:	10814 NW 33rd St # 100 Doral, FL 33172,USA

1.2. Equipment Under Test (EUT) Description

Product Name:	Smart Phone	
Hardware Version:	K130AG V0.10	
Software Version:	BLU_S970EQ_V10.0.G.02.00_GENERIC	
Modulation Type:	GSM/GPRS Mode with GMSK Modulation EDGE Mode with 8PSK Modulation (Not support uplink) WCDMA Mode with QPSK Modulation HSDPA Mode with QPSK Modulation HSUPA Mode with QPSK Modulation	
Operating Frequency Range:	**GSM 850MHz:** Tx: 824MHz - 849MHz Rx: 869MHz - 894MHz **GSM 1900MHz:** Tx: 1850MHz - 1910MHz Rx: 1930MHz - 1990MHz	**WCDMA Band V** Tx: 824MHz - 849MHz Rx: 869MHz - 894MHz **WCDMA Band II** Tx: 1850MHz - 1910MHz Rx: 1930MHz - 1990MHz
Antenna Type:	Fixed Internal	
Antenna Gain:	GSM 850:	-1.00 dBi
	GSM1900:	-0.50 dBi
	WCDMA Band V:	-1.00 dBi
	WCDMA Band II:	-0.50 dBi

Accessory Information:	Battery	
	Brand Name:	BLU
	Model No.:	C775044200L
	Capacity:	2000mAh
	Rated Voltage:	3.8V
	Charge Limit:	4.35V
	AC Adapter 1	
	Brand Name:	BLU
	Model No.:	US-BM-1005
	Rated Input:	100-240V ～ 50/60Hz 0.15A
	Rated Output:	5V⎓1000mA

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 Designator
GSM850	0.445	249KGXW
GPRS850	0.340	248KG7W
GSM1900	0.339	247KGXW
GPRS1900	0.320	249KG7W
WCDMA Band V	0.197	4M17F9W
WCDMA Band II	0.110	4M17F9W

1.4. Test Standards and Results

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

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	Apr 16	Chen Hao	PASS	No deviation
2	24.232(d)	Peak -Average Ratio	Apr 16	He Dekuan	PASS	No deviation
3	2.1049	99% Occupied Bandwidth	Apr 16	He Dekuan	PASS	No deviation
4	2.1055, 22.355, 24.235,	Frequency Stability	Apr 9 to16	He Dekuan	PASS	No deviation
5	2.1051, 22.917(a), 24.238(a),	Conducted Out of Band Emissions	Apr 16	He Dekuan	PASS	No deviation
6	2.1051, 22.917(a), 24.238(a),	Band Edge	Apr 16	He Dekuan	PASS	No deviation
7	22.913(a), 24.232(a)	Transmitter Radiated Power (EIPR/ERP)	Apr 9 to16	Li Zihao	PASS	No deviation
8	2.1051, 22.917(a), 24.238(a)	Radiated Out of Band Emissions	Apr 5	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 Requirements

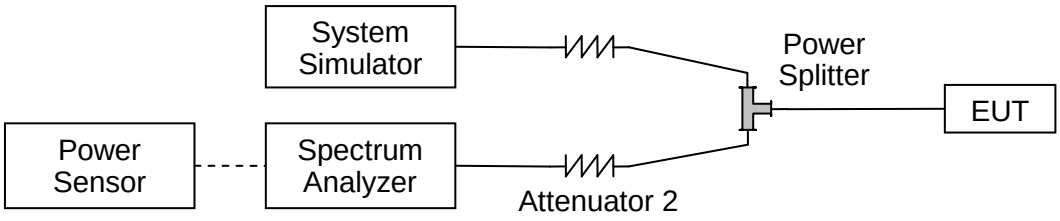
2.1. Conducted RF Output Power

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	29.63	29.59	29.59
GPRS 1 Tx slot	29.52	29.48	29.42
GPRS 2 Tx slots	27.85	27.76	27.62
GPRS 3 Tx slots	26.31	26.17	26.04
GPRS 4 Tx slots	24.77	24.59	24.45

GSM1900	Average Power (dBm)		
TX Channel	**512**	**661**	**810**
Frequency (MHz)	**1850.2**	**1880**	**1909.8**
GSM 1 Tx slot	25.72	25.67	25.80
GPRS 1 Tx slot	25.69	25.51	25.55
GPRS 2 Tx slots	24.09	23.62	23.33
GPRS 3 Tx slots	22.87	22.32	21.91
GPRS 4 Tx slots	21.08	20.51	20.11

WCDMA Band V	Average Power (dBm)		
TX Channel	**4132**	**4182**	**4233**
Frequency (MHz)	**826.4**	**836.4**	**846.6**
AMR 12.2Kbps	23.57	22.86	23.55
RMC 12.2Kbps	22.14	22.18	22.17
HSDPA Subtest-1	21.87	21.62	21.76
HSDPA Subtest-2	21.65	21.63	21.59
HSDPA Subtest-3	21.44	21.59	21.52
HSDPA Subtest-4	22.04	22.04	22.04
HSUPA Subtest-1	21.51	21.69	21.47
HSUPA Subtest-2	20.89	20.57	20.85
HSUPA Subtest-3	20.78	20.46	20.74
HSUPA Subtest-4	20.01	20.32	19.97
HSUPA Subtest-5	23.57	22.86	23.55

WCDMA Band II	Average Power (dBm)		
TX Channel	**9262**	**9400**	**9538**
Frequency (MHz)	**1852.4**	**1880.0**	**1907.6**
AMR 12.2Kbps	23.18	23.45	23.35
RMC 12.2Kbps	22.79	22.78	22.72
HSDPA Subtest-1	21.80	22.34	22.41
HSDPA Subtest-2	21.29	22.35	22.43
HSDPA Subtest-3	21.78	21.75	21.72
HSDPA Subtest-4	22.04	22.04	22.04
HSUPA Subtest-1	21.76	21.83	21.71
HSUPA Subtest-2	21.54	20.71	20.88
HSUPA Subtest-3	20.61	20.48	20.55
HSUPA Subtest-4	20.21	19.98	19.89
HSUPA Subtest-5	23.18	23.45	23.35

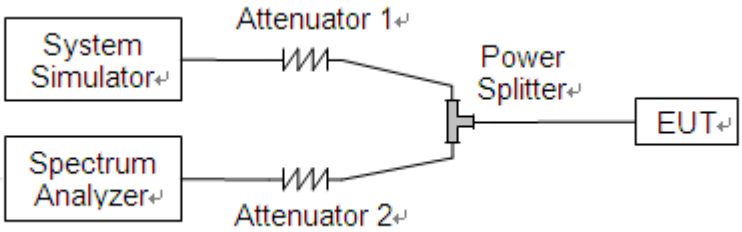
2.2. Peak to Average Ratio

2.2.1. Requirement

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

2.2.2. Test Description

Test Setup:



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

2.2.3. Test procedure

1 .For GSM/GPRS 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	0.028	13	PASS
	661	1880.0	0.020		PASS
	810	1909.8	0.019		PASS
GPRS 1900MHz	512	1850.2	0.052		PASS
	661	1880.0	0.054		PASS
	810	1909.8	0.051		PASS

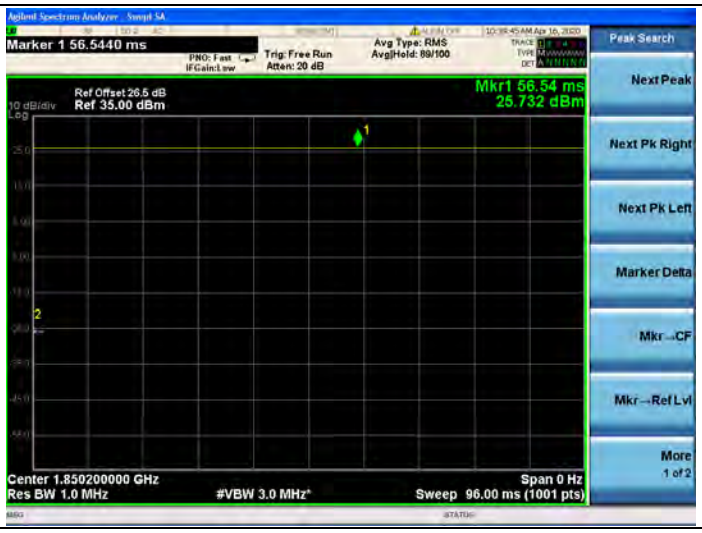
Band	Channel	Frequency (MHz)	Peak to Average ratio	Limit	Verdict
			dB	dB	
WCDMA Band II	9262	1852.4	2.29	13	PASS
	9400	1880.0	2.27		PASS
	9538	1907.6	2.34		PASS

GSM 1900MHz CH512 1850.2MHz

GSM 1900MHz CH661 1880.0MHz

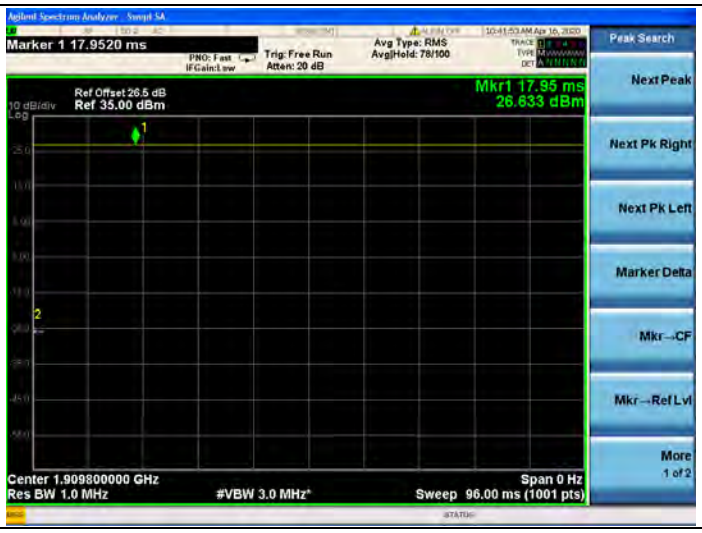
GSM 1900MHz CH810 1909.8MHz

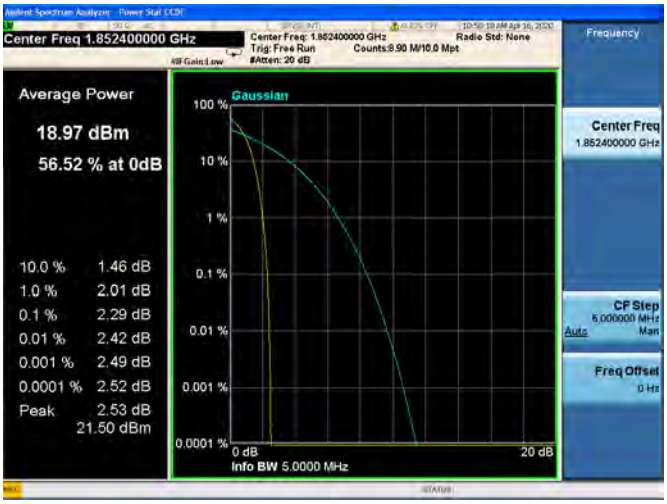
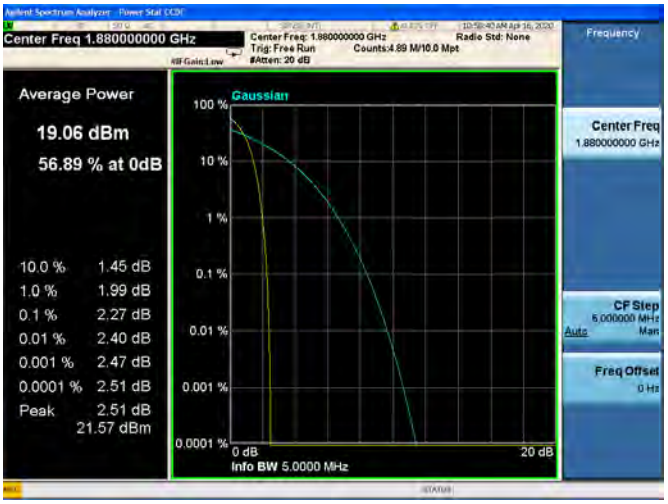
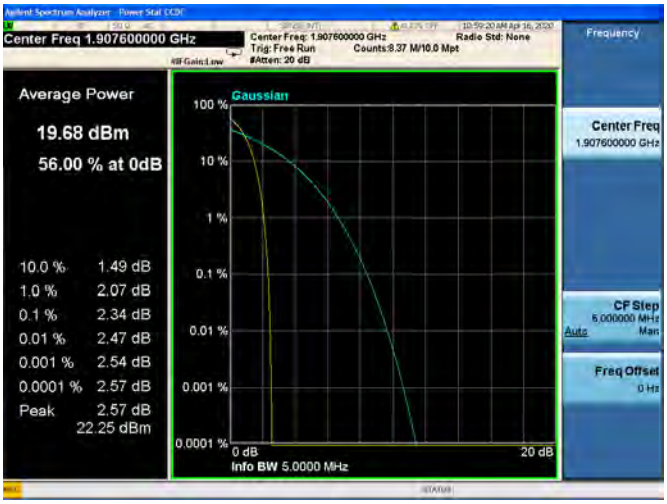
GPRS 1900MHz CH512 1850.2MHz



GPRS 1900MHz CH661 1880.0MHz

GPRS 1900MHz CH810 1909.8MHz



WCDMA Band II CH9262 1852.4MHz	WCDMA Band II CH9400 1880.0MHz
	
WCDMA Band II CH9538 1907.6MHz	
	

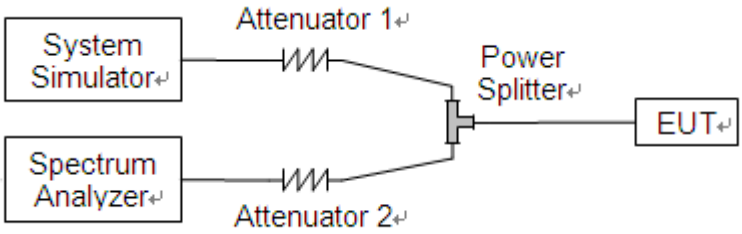
2.3. 99% Occupied Bandwidth

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:



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

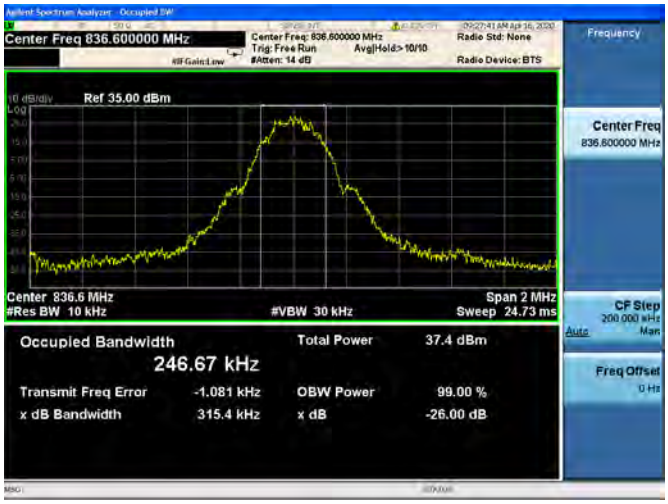
The lowest, middle and highest channels are selected to perform testing to record the 99% occupied bandwidth.

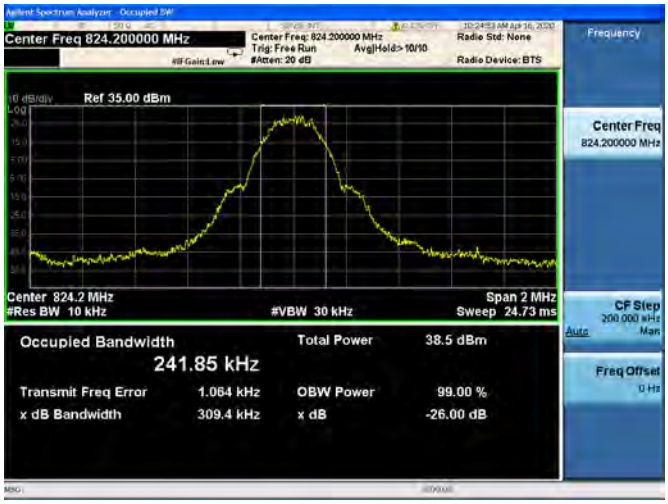
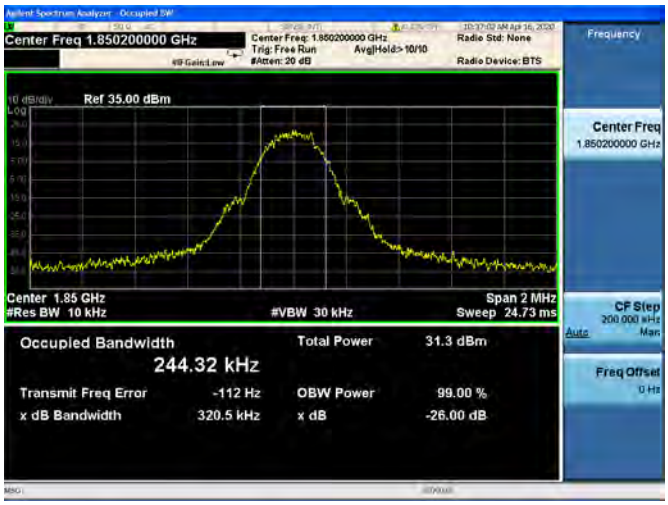
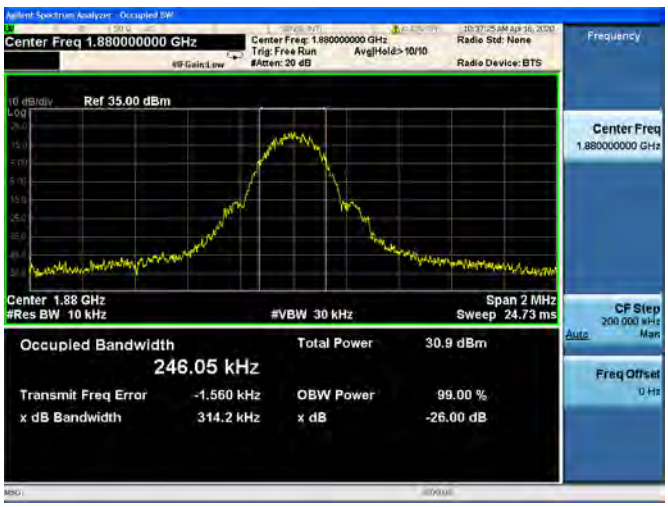
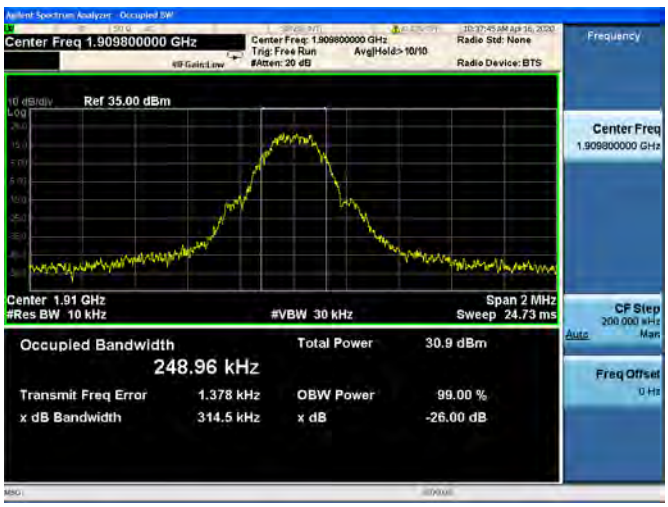
GSM Test Verdict:

Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)
GSM 850MHz	128	824.2	248.98	316.7
	190	836.6	246.67	315.4
	251	848.8	246.24	321.6
GSM 1900MHz	512	1850.2	245.01	317.8
	661	1880.0	250.48	311.7
	810	1909.8	247.30	314.3
GPRS 850MHz	128	824.2	241.85	309.4
	190	836.6	248.47	318.3
	251	848.8	248.09	313.0
GPRS 1900MHz	512	1850.2	244.32	320.5
	661	1880.0	246.05	314.2
	810	1909.8	248.96	314.5

WCDMA Test Verdict:

Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
WCDMA Band V	4132	826.4	4.163	4.654
	4183	836.4	4.168	4.711
	4233	846.6	4.152	4.652
WCDMA Band II	9262	1852.4	4.174	4.690
	9400	1880.0	4.172	4.674
	9538	1907.6	4.159	4.707

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**
	

GPRS 850MHz CH128 824.2MHz	GPRS 850MHz CH190 836.6MHz
	
GPRS 850MHz CH251 848.8MHz	**GPRS 1900MHz CH512 1850.2MHz**
	
GPRS 1900MHz CH661 1880.0MHz	**GPRS 1900MHz CH810 1909.8MHz**
	

WCDMA Band V CH4132 826.4MHz	WCDMA Band V CH4183 836.4MHz
	
WCDMA Band V CH4233 846.6MHz	**WCDMA Band II CH9262 1852.4MHz**
	
WCDMA Band II CH9400 1880.0MHz	**WCDMA Band II CH9538 1907.6MHz**
	

2.4. Frequency Stability

2.4.1. Requirement

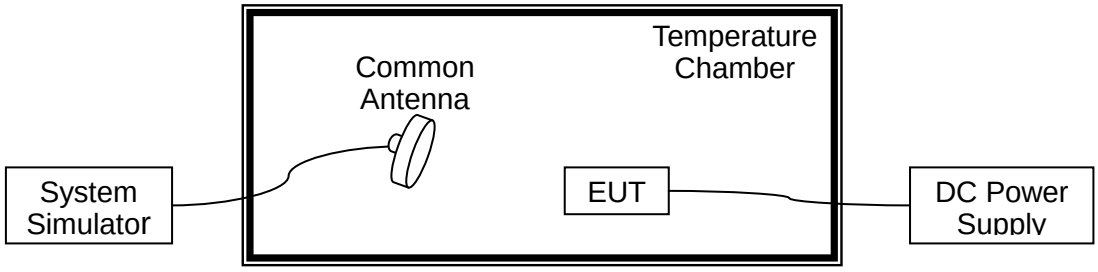
According to FCC section 22.355 and 24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(a) The temperature is varied from -20°C to +60°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 3.8VDC, 4.35VDC and 3.6VDC, 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	3.80	+20(Ref)	23	0.027	PASS
100		-20	-26	-0.014	
100		-10	-49	-0.059	
100		0	-27	-0.032	
100		+10	15	0.018	
100		+20	25	0.030	
100		+30	75	0.090	
100		+40	64	0.077	
100		+50	31	0.016	
100		+60	-74	-0.088	
115	4.35	+20	-6	-0.007	
85	3.60	+20	-71	-0.085	

GSM 1900MHz, Channel 661, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.80	+20(Ref)	97	0.052	PASS
100		-20	15	0.018	
100		-10	-26	-0.014	
100		0	-29	-0.015	
100		+10	-53	-0.028	
100		+20	42	0.022	
100		+30	73	0.039	
100		+40	31	0.016	
100		+50	-36	-0.043	
100		+60	26	0.031	
115	4.35	+20	16	0.009	
85	3.60	+20	-58	-0.031	

GPRS 850MHz, Channel 190, Frequency 836.6MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.80	+20(Ref)	25	0.030	PASS
100		-20	-25	-0.013	
100		-10	-74	-0.088	
100		0	-25	-0.030	
100		+10	54	0.065	
100		+20	15	0.018	
100		+30	26	0.031	
100		+40	25	0.030	
100		+50	-25	-0.013	
100		+60	-28	-0.034	
115	4.35	+20	-36	-0.043	
85	3.60	+20	-47	-0.056	

GPRS 1900MHz, Channel 661, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.80	+20(Ref)	42	0.022	PASS
100		-20	31	0.037	
100		-10	-26	-0.014	
100		0	-85	-0.045	
100		+10	-84	-0.045	
100		+20	27	0.014	
100		+30	84	0.045	
100		+40	16	0.009	
100		+50	-85	-0.045	
100		+60	83	0.044	
115	4.35	+20	16	0.009	
85	3.60	+20	-25	-0.013	

WCDMA Band V, Channel 4182, Frequency 836.4MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.80	+20(Ref)	31	0.037	PASS
100		-20	52	0.028	
100		-10	-28	-0.034	
100		0	-35	-0.042	
100		+10	32	0.038	
100		+20	16	0.019	
100		+30	26	0.031	
100		+40	47	0.056	
100		+50	43	0.023	
100		+60	52	0.028	
115	4.35	+20	-65	-0.078	
85	3.60	+20	-35	-0.042	

WCDMA Band II, Channel 9400, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.80	+20(Ref)	25	0.013	PASS
100		-20	16	0.019	
100		-10	-85	-0.045	
100		0	-37	-0.020	
100		+10	-26	-0.014	
100		+20	86	0.046	
100		+30	83	0.044	
100		+40	52	0.028	
100		+50	47	0.056	
100		+60	-85	-0.045	
115	4.35	+20	43	0.023	
85	3.60	+20	-86	-0.046	

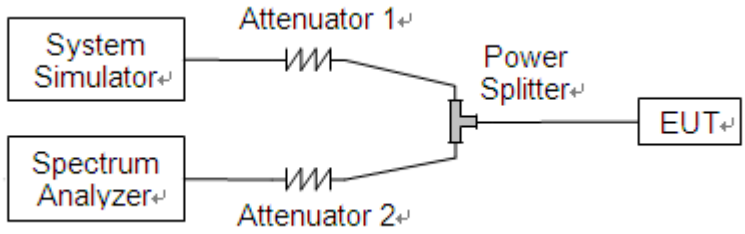
2.5. Conducted Out of Band Emissions

2.5.1. Requirement

According to FCC section 22.917(a) and 24.238(a), 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

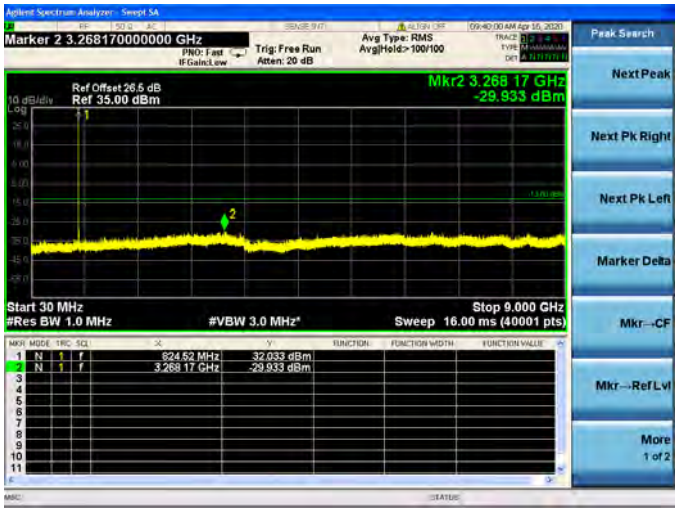
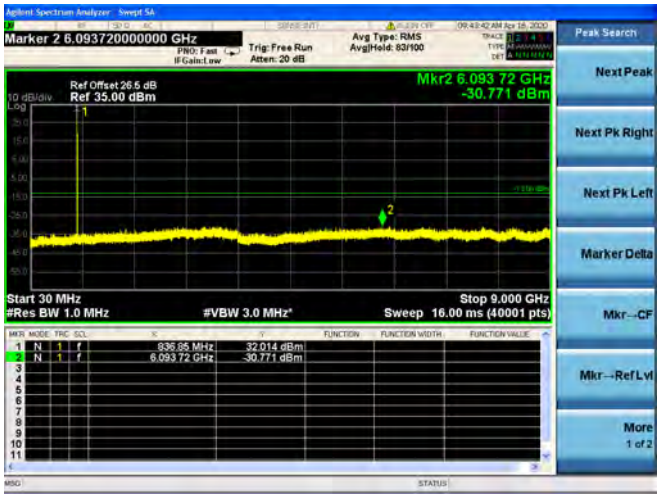
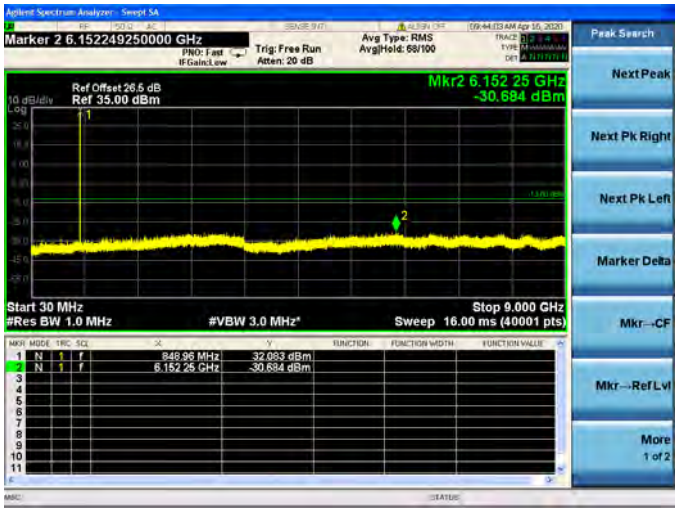
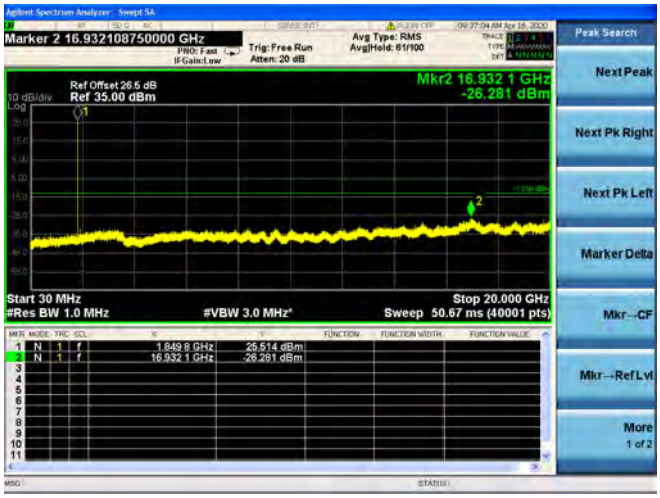
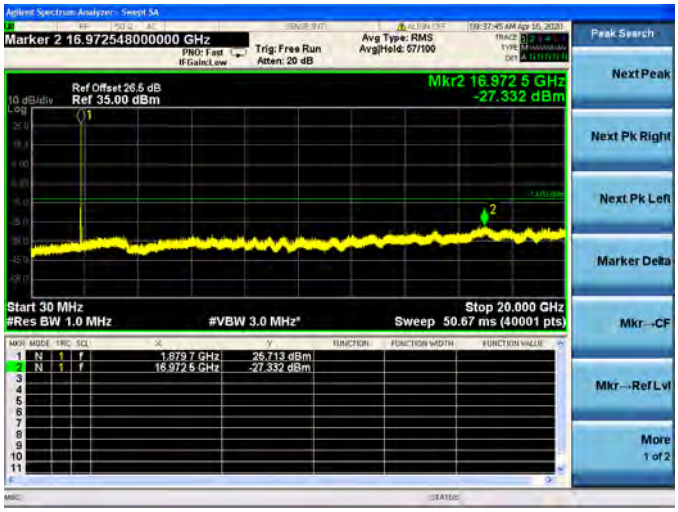
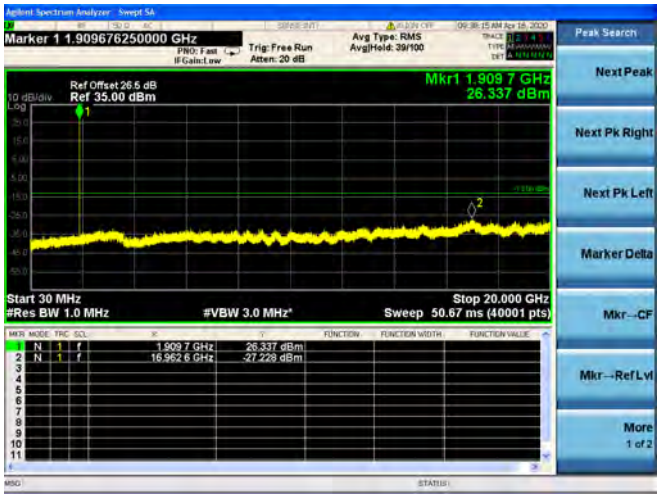
Test Setup:

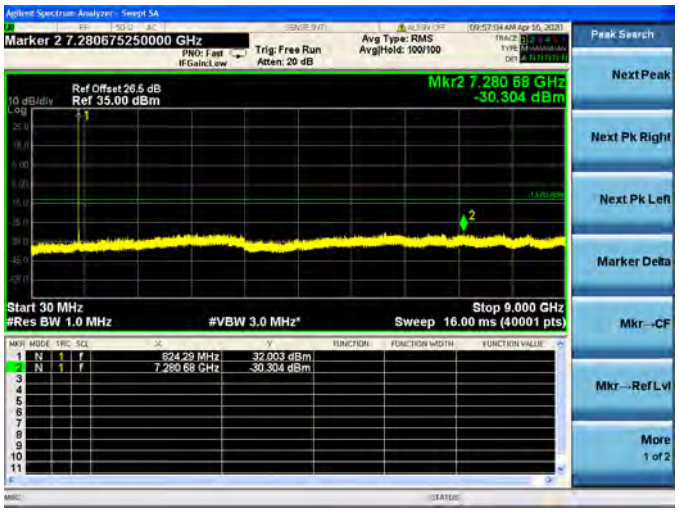
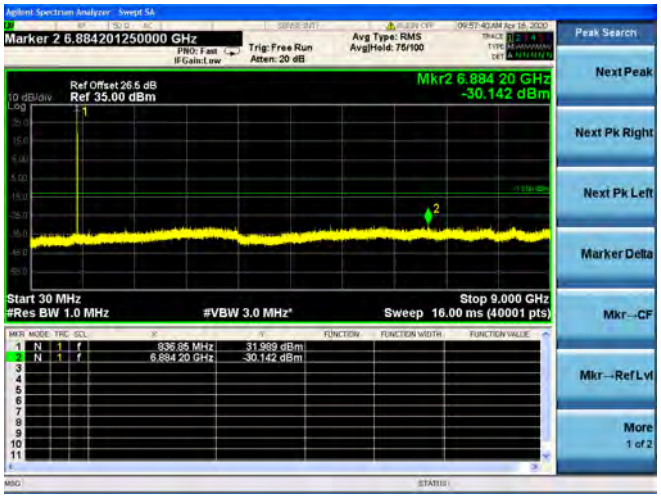
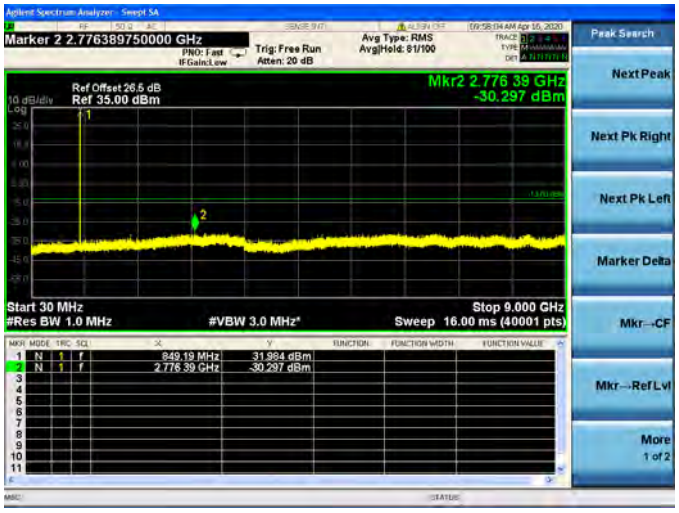


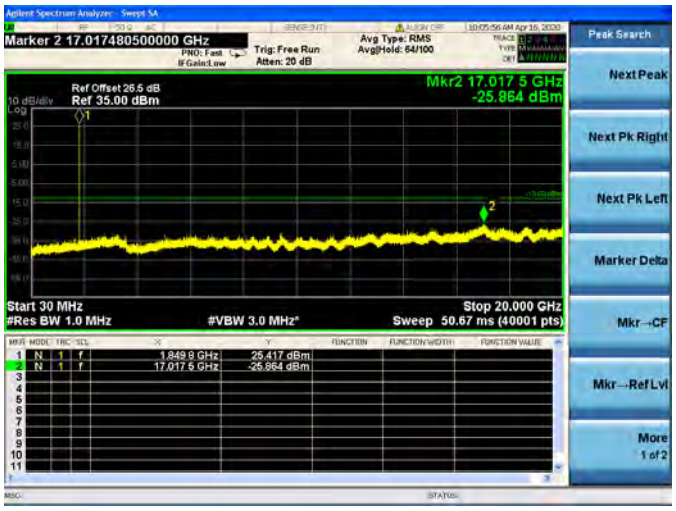
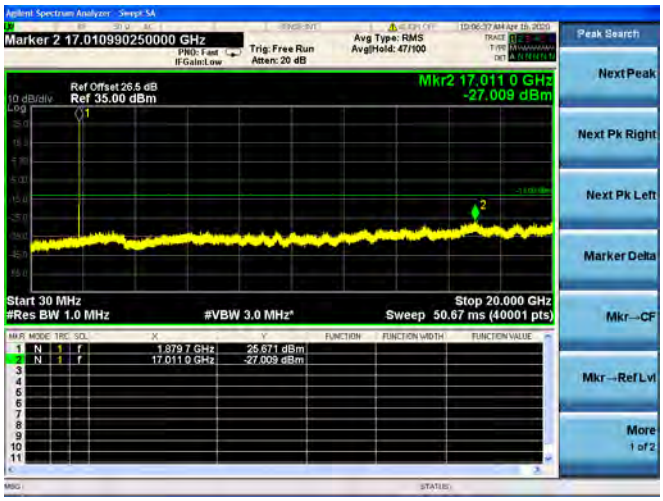
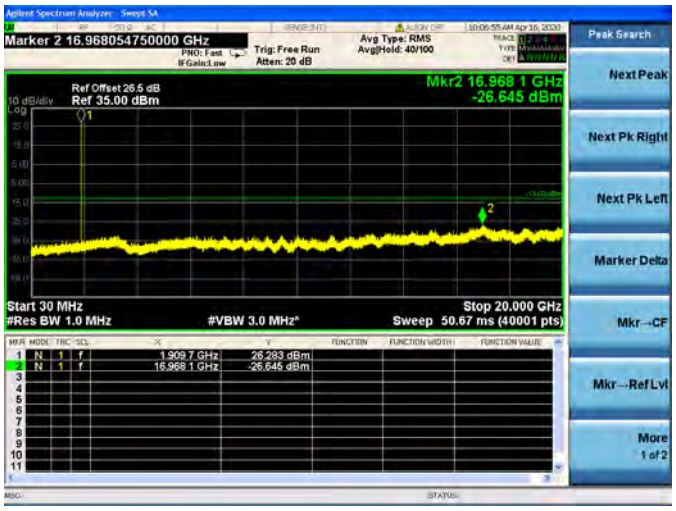
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

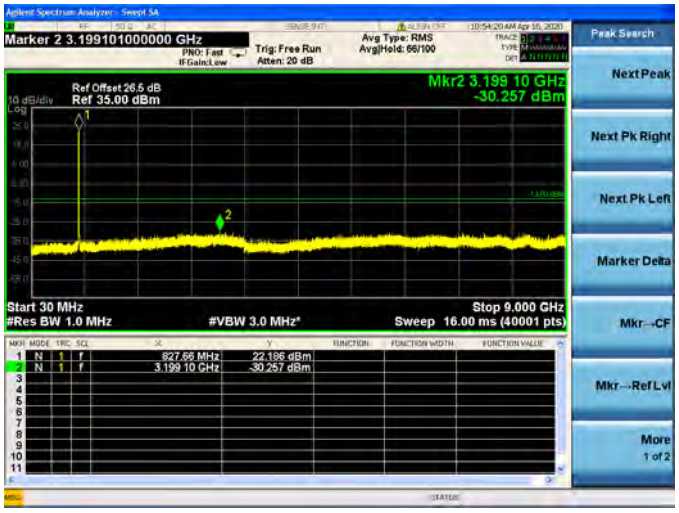
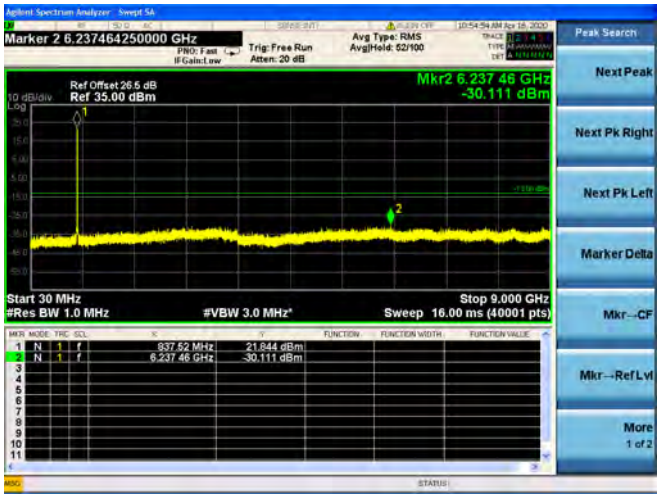
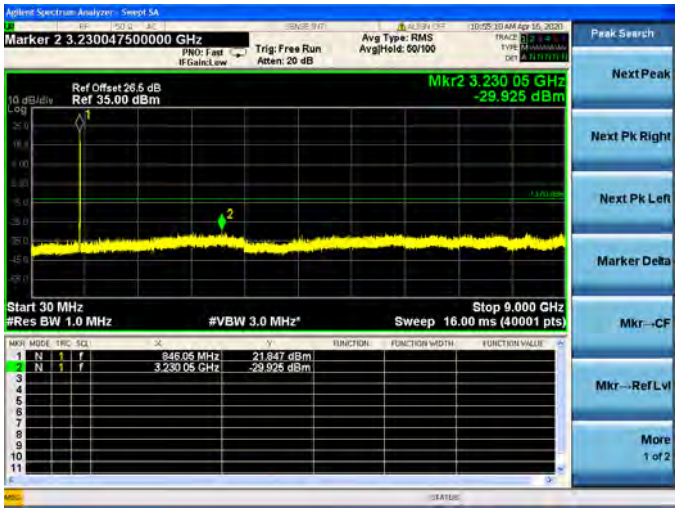
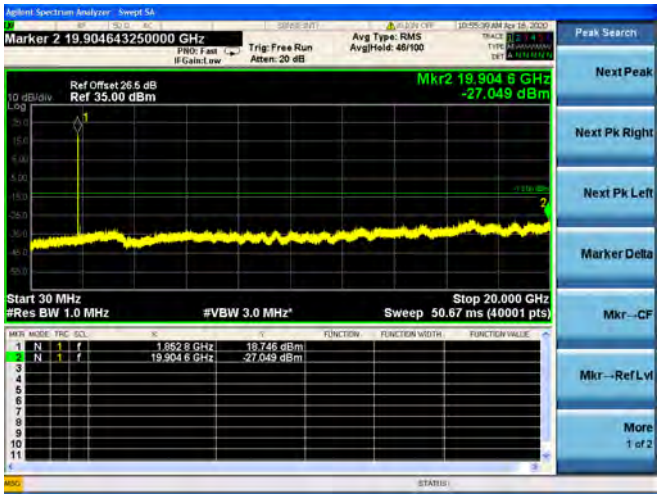
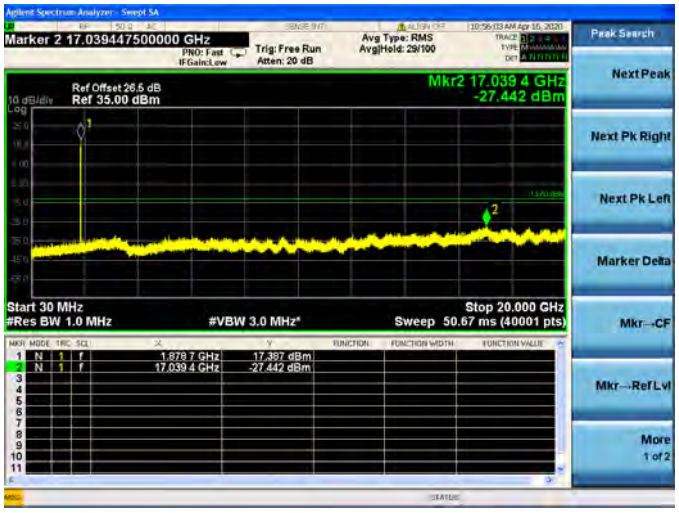
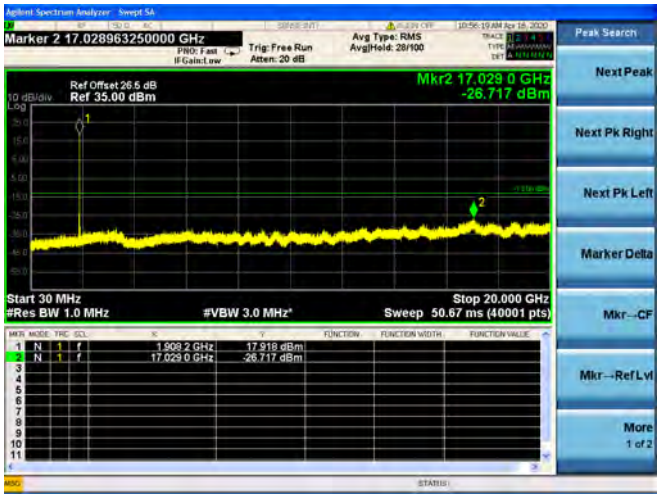
2.5.3. Test Result

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**
	

GPRS 850MHz CH128 824.2MHz	GPRS 850MHz CH190 836.6MHz
	
GPRS 850MHz CH251 848.8MHz	
	

GPRS 1900MHz CH512 1850.2MHz	GPRS 1900MHz CH661 1880.0MHz
	
GPRS 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**
	

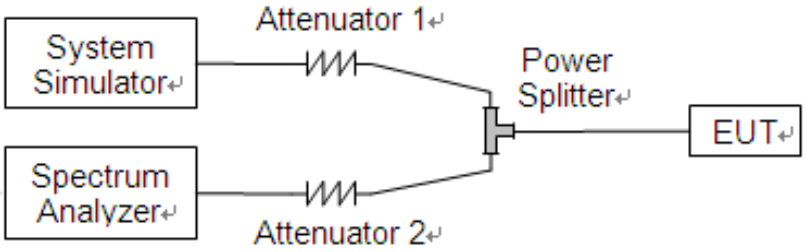
2.6. Band Edge

2.6.1. Requirement

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

2.6.2. Test Description

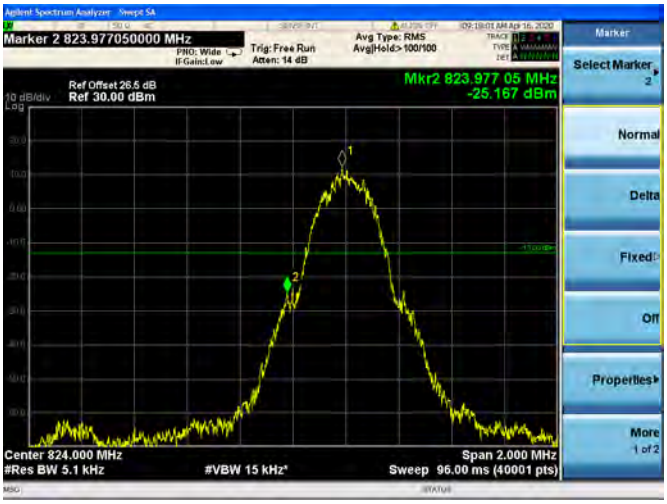
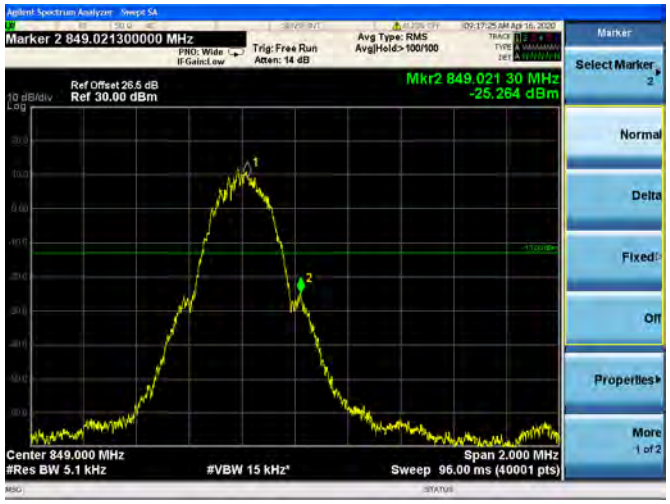
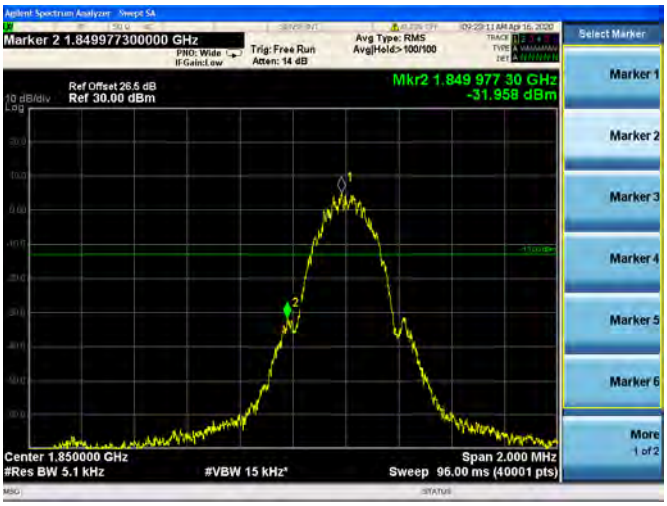
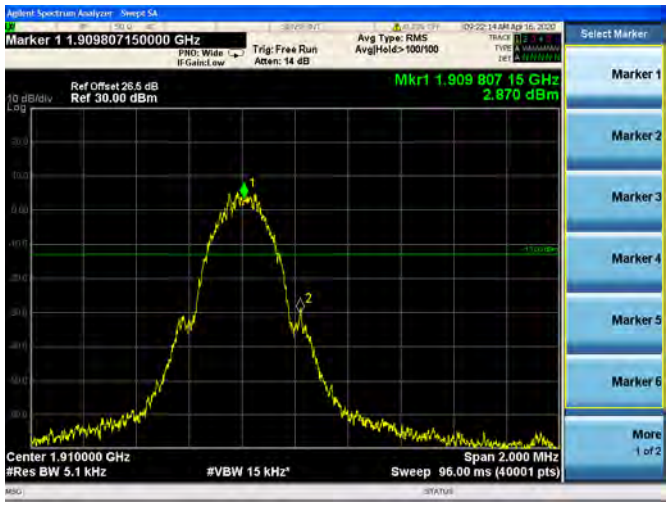
Test Setup:

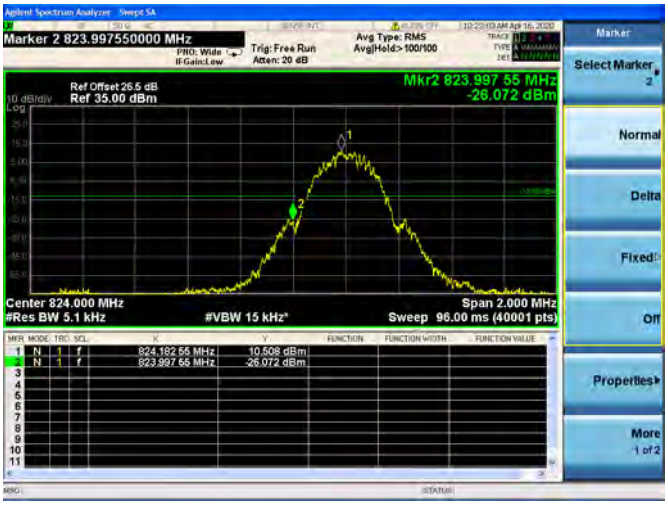
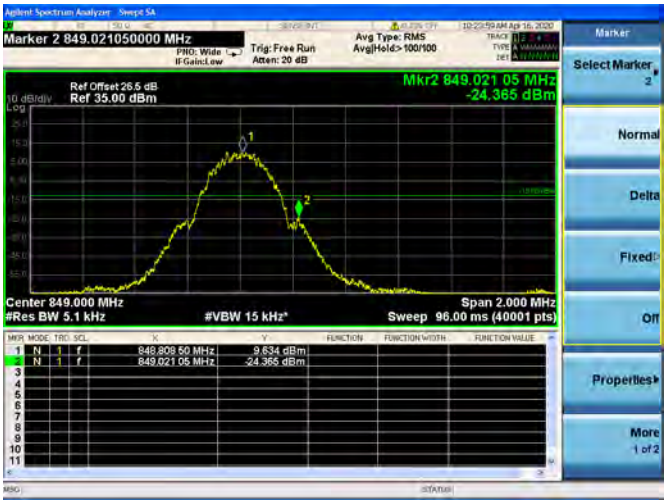


The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

2.6.3. Test Result

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

GSM 850MHz CH128 824.2MHz	GSM 850MHz CH251 848.8MHz
	
GSM 1900MHz CH512 1850.2MHz	**GSM 1900MHz CH810 1909.8MHz**
	

GPRS 850MHz CH128 824.2MHz	GPRS 850MHz CH251 848.8MHz
	
GPRS 1900MHz CH512 1850.2MHz	**GPRS 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)

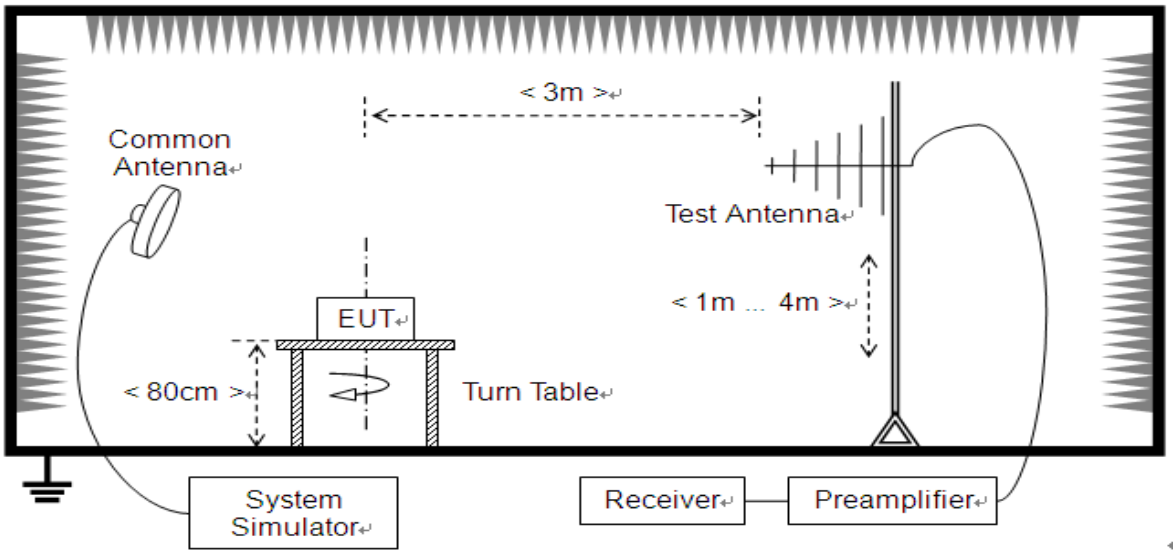
2.7.1. Requirement

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

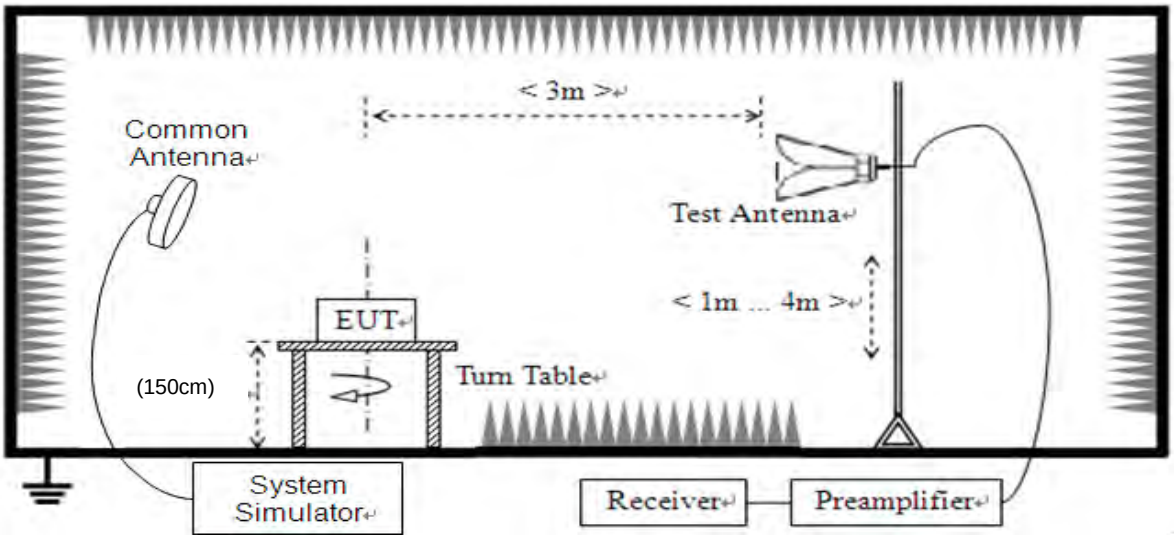
2.7.2. Test Description

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	26.48	0.445	38.5	7	PASS
	190	836.60	5	26.44	0.441			PASS
	251	848.80	5	26.44	0.441			PASS
GPRS 850MHz	128	824.20	5	26.37	0.434	38.5	7	PASS
	190	836.60	5	26.33	0.430			PASS
	251	848.80	5	26.27	0.424			PASS

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

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

Band	Channel	Frequency (MHz)	PCL	Measured EIRP		Limit		Verdict
				dBm	W	dBm	W	
GSM 1900MHz	512	1850.2	0	25.22	0.333	33	2	PASS
	661	1880.0	0	25.17	0.329			PASS
	810	1909.8	0	25.30	0.339			PASS
GPRS 1900MHz	512	1850.2	0	25.19	0.330	33	2	PASS
	661	1880.0	0	25.01	0.317			PASS
	810	1909.8	0	25.05	0.320			PASS

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

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

WCDMA Test verdict:

Band	Channel	Frequency (MHz)	Measured ERP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band V	4132	826.4	22.68	0.185	38.5	7	PASS
	4182	836.4	22.95	0.197			PASS
	4233	846.6	22.85	0.193			PASS
HSDPA Band V	4132	826.4	22.29	0.169	38.5	7	PASS
	4182	836.4	22.28	0.169			PASS
	4233	846.6	22.22	0.167			PASS
HSUPA Band V	4132	826.4	21.54	0.143	38.5	7	PASS
	4182	836.4	21.54	0.143			PASS
	4233	846.6	21.54	0.143			PASS
Note: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.							

Band	Channel	Frequency (MHz)	Measured EIRP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band II	9262	1852.4	20.42	0.110	33	2	PASS
	9400	1880.0	19.71	0.094			PASS
	9538	1907.6	20.40	0.110			PASS
HSDPA Band II	9262	1852.4	18.99	0.079	33	2	PASS
	9400	1880.0	19.03	0.080			PASS
	9538	1907.6	19.02	0.080			PASS
HSUPA Band II	9262	1852.4	18.89	0.077	33	2	PASS
	9400	1880.0	18.89	0.077			PASS
	9538	1907.6	18.89	0.077			PASS
Note: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.							

2.8. Radiated Out of Band Emissions

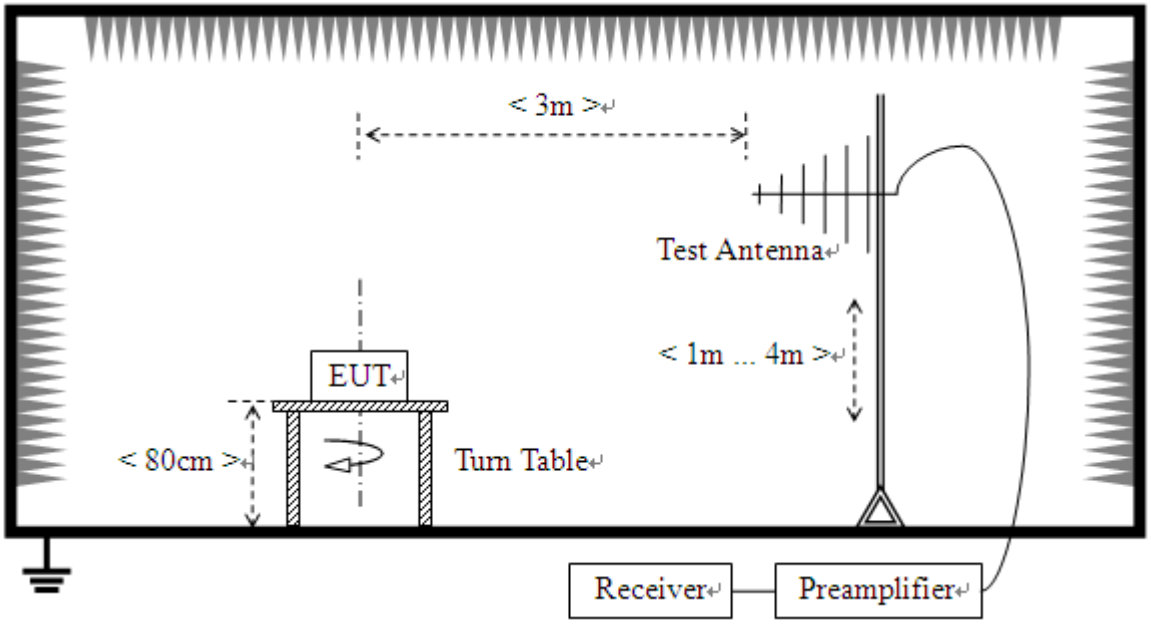
2.8.1. Requirement

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

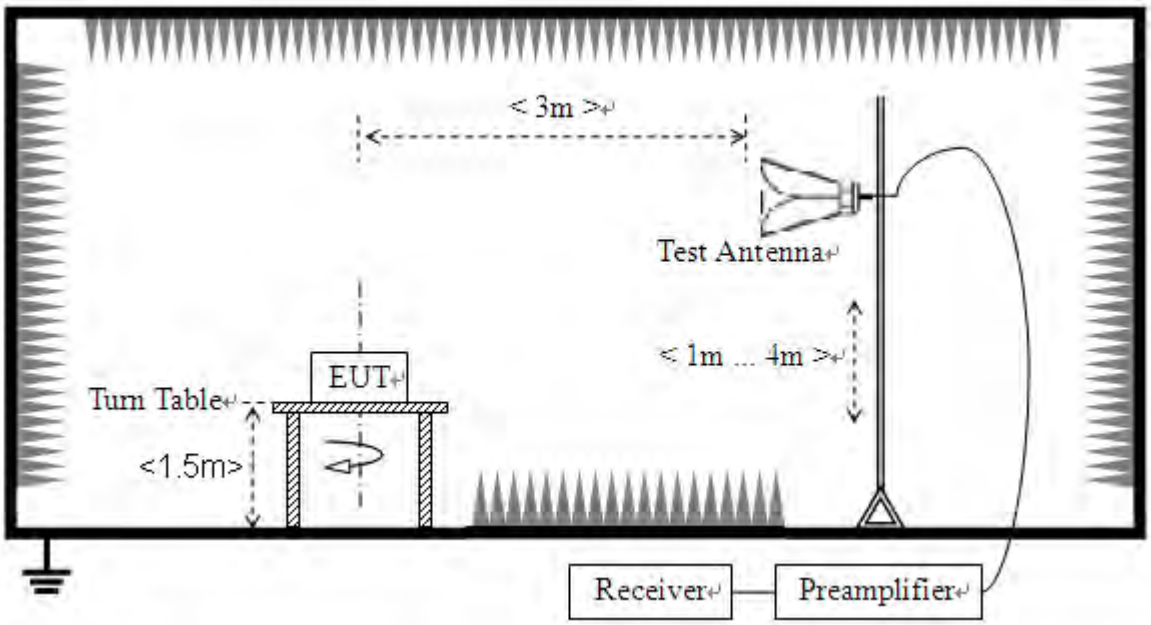
2.8.2. Test Description

Test Setup:

1) Below1GHz



2) Above 1GHz



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

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

- Step size (dB): 3dB

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

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

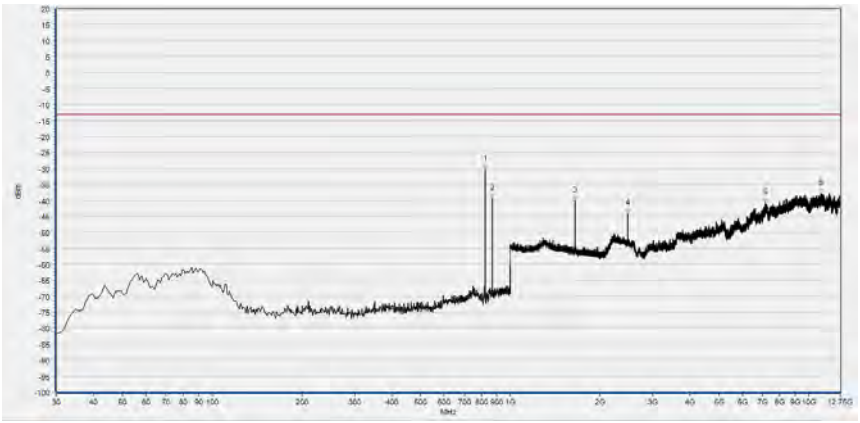
2.8.3. Test Result

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

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
GPRS 850MHz	128	824.2	< -25	< -25	-13	PASS
	190	836.6	< -25	< -25		PASS
	251	848.8	< -25	< -25		PASS
GPRS 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

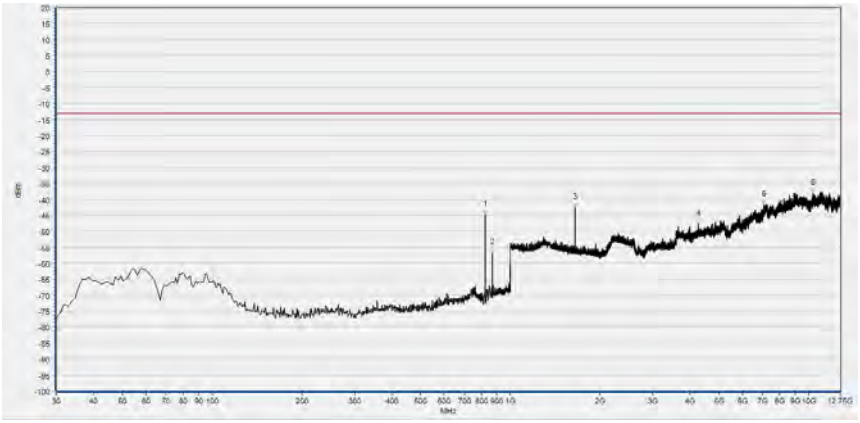
Note 1: All test mode and condition mentioned were considered and evaluated respectively by performing full test, only the worst data were recorded and reported.

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.



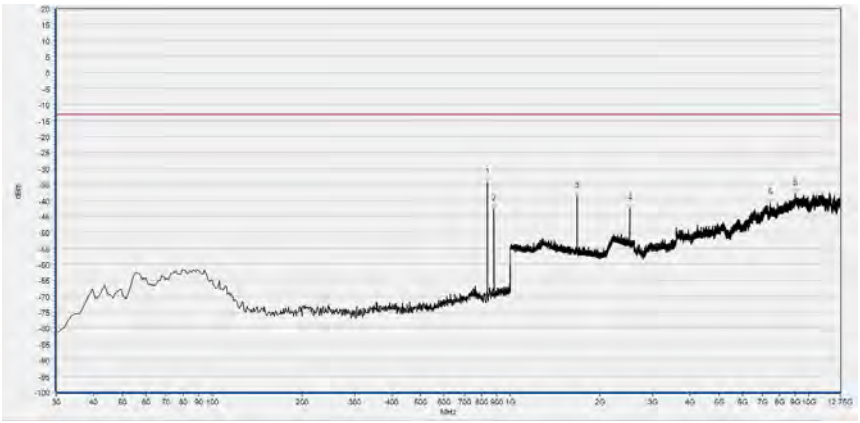
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	824.430	-30.38	-13.00	Horizontal	NA
2	869.050	-39.37	-13.00	Horizontal	NA
3	1647.939	-40.15	-13.00	Horizontal	PASS
4	2472.589	-44.15	-13.00	Horizontal	PASS
5	7157.256	-40.88	-13.00	Horizontal	PASS
6	10972.504	-37.79	-13.00	Horizontal	PASS

(GSM 850MHz, Channel = 128, Horizontal)



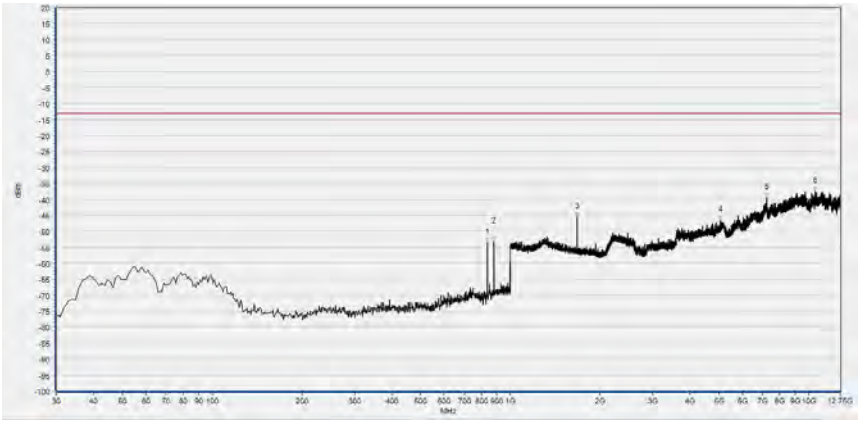
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	824.430	-44.72	-13.00	Vertical	NA
2	869.050	-56.78	-13.00	Vertical	NA
3	1648.579	-42.68	-13.00	Vertical	PASS
4	4270.440	-47.77	-13.00	Vertical	PASS
5	7087.116	-41.64	-13.00	Vertical	PASS
6	10367.085	-38.19	-13.00	Vertical	PASS

(GSM 850MHz, Channel = 128, Vertical)



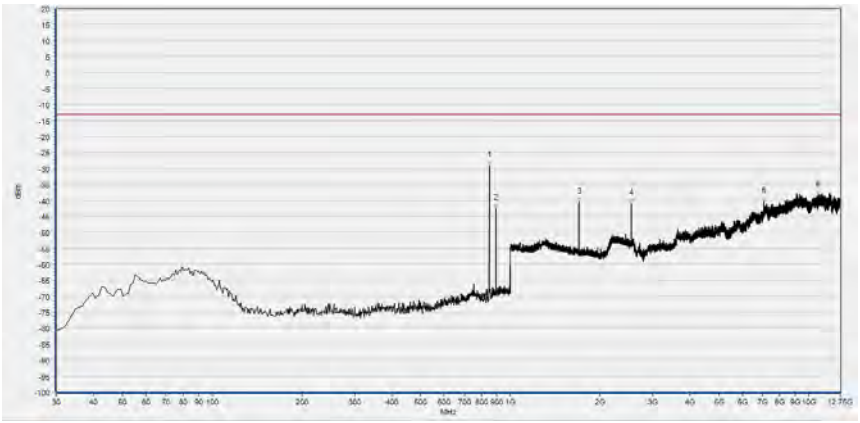
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	837.040	-34.35	-13.00	Horizontal	NA
2	881.660	-42.70	-13.00	Horizontal	NA
3	1672.909	-38.81	-13.00	Horizontal	PASS
4	2509.724	-42.58	-13.00	Horizontal	PASS
5	7448.891	-40.85	-13.00	Horizontal	PASS
6	9028.887	-37.80	-13.00	Horizontal	PASS

(GSM850MHz, Channel = 190, Horizontal)



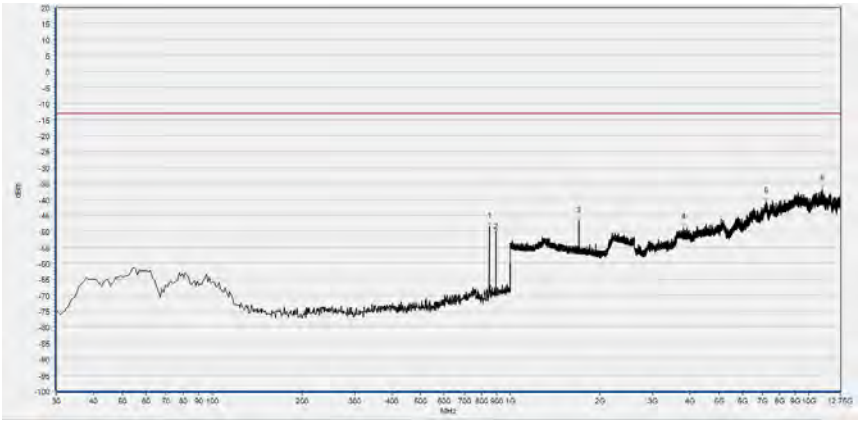
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	837.040	-53.47	-13.00	Vertical	NA
2	881.660	-53.03	-13.00	Vertical	NA
3	1672.909	-45.44	-13.00	Vertical	PASS
4	5060.438	-46.48	-13.00	Vertical	PASS
5	7234.779	-39.42	-13.00	Vertical	PASS
6	10507.365	-37.43	-13.00	Vertical	PASS

(GSM 850MHz, Channel = 190, Vertical)



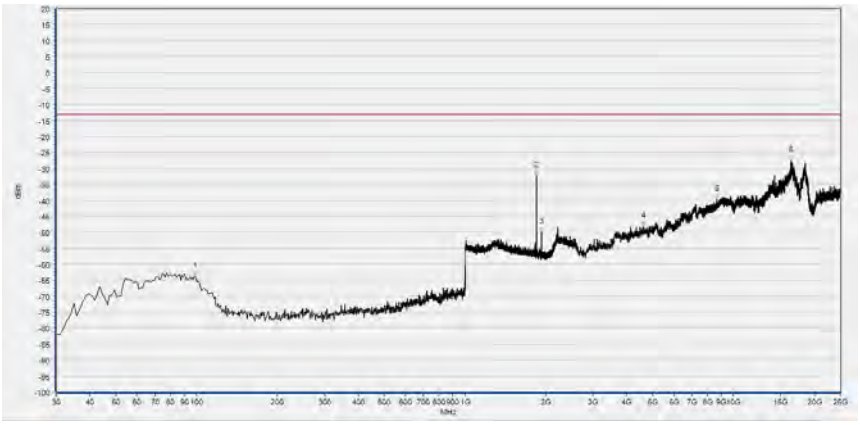
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	848.680	-29.12	-13.00	Horizontal	NA
2	894.270	-42.49	-13.00	Horizontal	NA
3	1697.879	-40.64	-13.00	Horizontal	PASS
4	2546.218	-40.94	-13.00	Horizontal	PASS
5	7090.807	-40.26	-13.00	Horizontal	PASS
6	10739.935	-38.22	-13.00	Horizontal	PASS

(GSM 850MHz, Channel = 251, Horizontal)



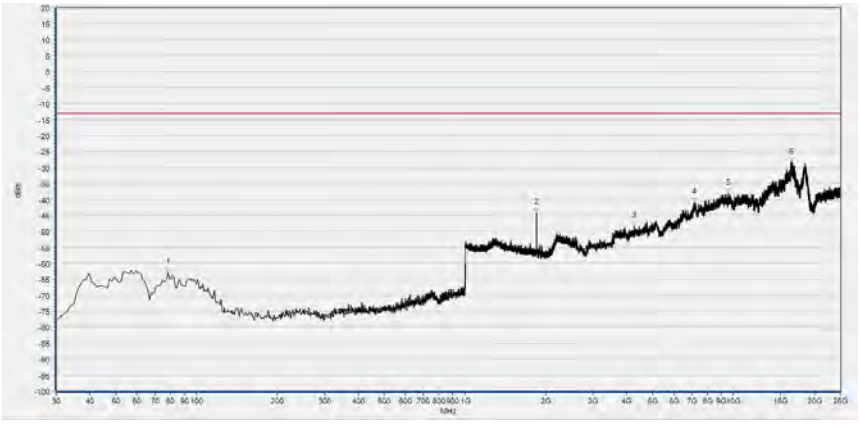
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	848.680	-48.61	-13.00	Vertical	NA
2	893.300	-50.09	-13.00	Vertical	NA
3	1697.239	-46.79	-13.00	Vertical	PASS
4	3794.226	-48.82	-13.00	Vertical	PASS
5	7205.246	-40.85	-13.00	Vertical	PASS
6	11116.476	-36.85	-13.00	Vertical	PASS

(GSM 850MHz, Channel = 251, Vertical)



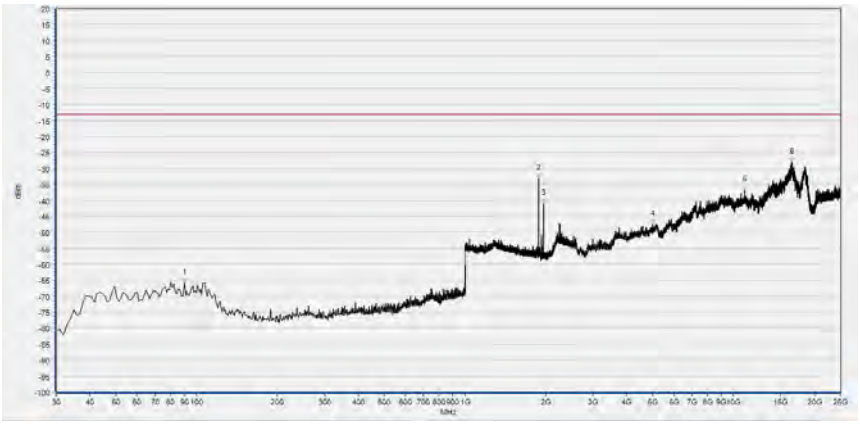
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	98.870	-63.79	-13.00	Horizontal	PASS
2	1850.260	-32.33	-13.00	Horizontal	NA
3	1929.652	-49.96	-13.00	Horizontal	NA
4	4624.514	-48.20	-13.00	Horizontal	PASS
5	8669.467	-39.77	-13.00	Horizontal	PASS
6	16413.130	-27.53	-13.00	Horizontal	PASS

(GSM 1900MHz, Channel = 512, Horizontal)



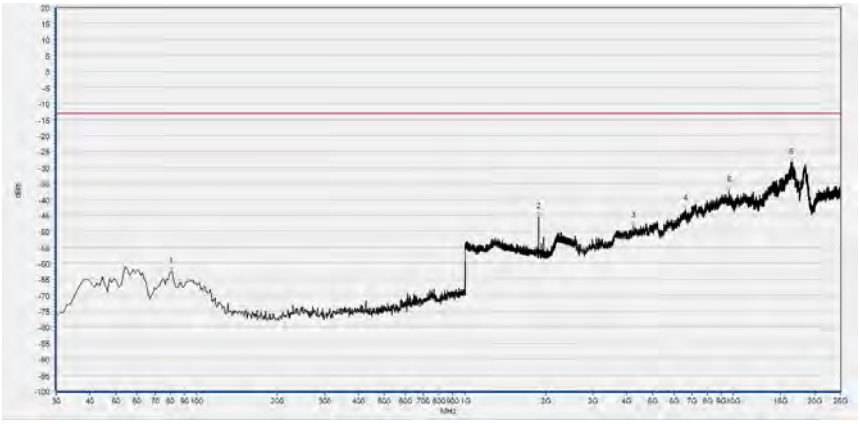
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	78.500	-62.86	-13.00	Vertical	PASS
2	1850.260	-44.14	-13.00	Vertical	NA
3	4261.975	-48.48	-13.00	Vertical	PASS
4	7145.990	-41.00	-13.00	Vertical	PASS
5	9585.997	-38.13	-13.00	Vertical	PASS
6	16396.836	-28.42	-13.00	Vertical	PASS

(GSM 1900MHz, Channel = 512, Vertical)



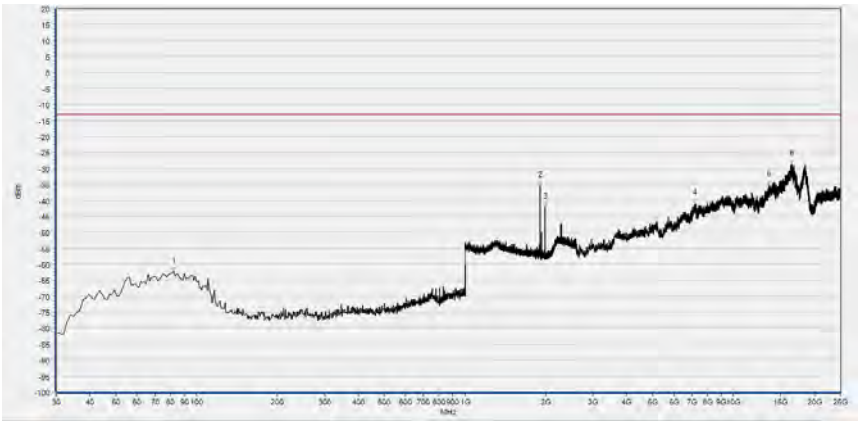
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	90.140	-65.79	-13.00	Horizontal	PASS
2	1879.712	-33.14	-13.00	Horizontal	NA
3	1959.744	-41.02	-13.00	Horizontal	NA
4	5007.420	-47.59	-13.00	Horizontal	PASS
5	11019.858	-36.86	-13.00	Horizontal	PASS
6	16531.260	-28.12	-13.00	Horizontal	PASS

(GSM 1900MHz, Channel = 661, Horizontal)



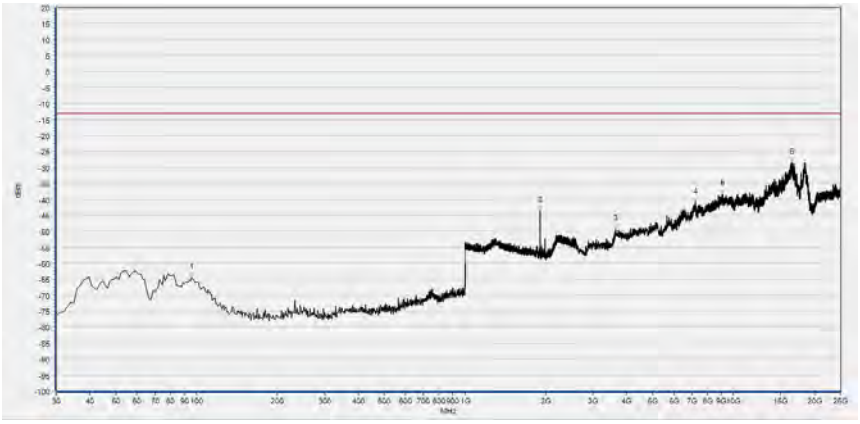
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	80.440	-62.59	-13.00	Vertical	PASS
2	1879.712	-45.54	-13.00	Vertical	NA
3	4241.608	-48.47	-13.00	Vertical	PASS
4	6620.513	-42.98	-13.00	Vertical	PASS
5	9638.953	-37.15	-13.00	Vertical	PASS
6	16376.468	-28.59	-13.00	Vertical	PASS

(GSM 1900MHz, Channel = 661, Vertical)



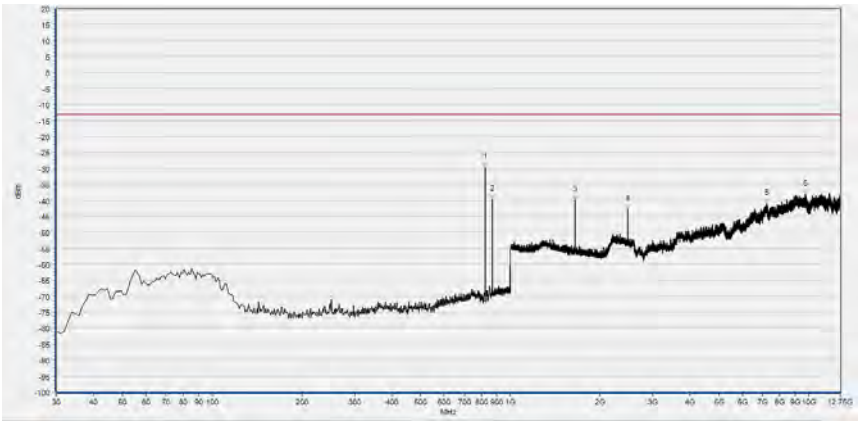
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	82.380	-62.24	-13.00	Horizontal	PASS
2	1909.804	-35.36	-13.00	Horizontal	NA
3	1989.836	-42.10	-13.00	Horizontal	NA
4	7194.872	-40.94	-13.00	Horizontal	PASS
5	13586.143	-35.24	-13.00	Horizontal	PASS
6	16466.085	-28.71	-13.00	Horizontal	PASS

(GSM 1900MHz, Channel = 810, Horizontal)



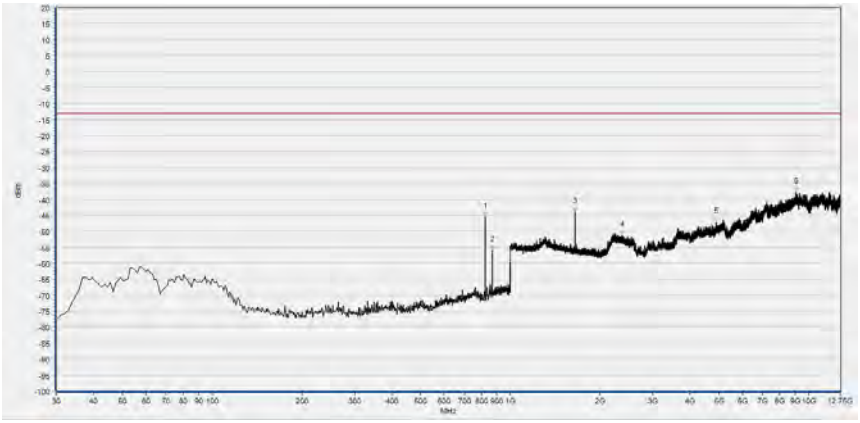
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	95.960	-64.36	-13.00	Vertical	PASS
2	1909.804	-43.44	-13.00	Vertical	NA
3	3650.955	-49.29	-13.00	Vertical	PASS
4	7231.533	-41.03	-13.00	Vertical	PASS
5	9101.255	-38.39	-13.00	Vertical	PASS
6	16523.113	-28.56	-13.00	Vertical	PASS

(GSM 1900MHz, Channel = 810, Vertical)



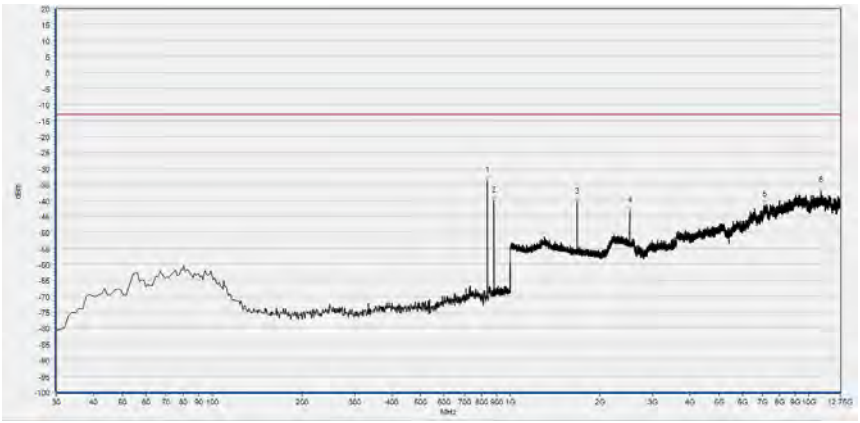
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	824.430	-29.71	-13.00	Horizontal	NA
2	869.050	-39.64	-13.00	Horizontal	NA
3	1647.939	-39.85	-13.00	Horizontal	PASS
4	2472.589	-42.90	-13.00	Horizontal	PASS
5	7236.625	-41.09	-13.00	Horizontal	PASS
6	9748.745	-38.20	-13.00	Horizontal	PASS

(GPRS 850MHz, Channel = 128, Horizontal)



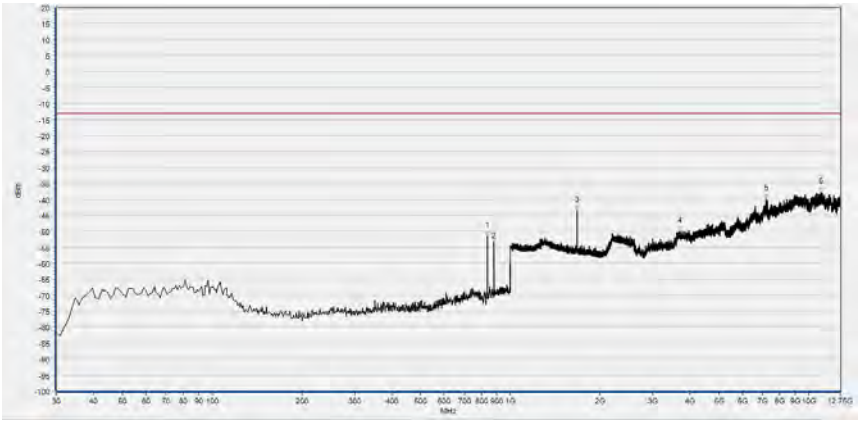
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	824.430	-45.51	-13.00	Vertical	NA
2	869.050	-55.90	-13.00	Vertical	NA
3	1648.579	-43.85	-13.00	Vertical	PASS
4	2365.666	-51.28	-13.00	Vertical	PASS
5	4903.546	-47.09	-13.00	Vertical	PASS
6	9084.261	-37.73	-13.00	Vertical	PASS

(GPRS 850MHz, Channel = 128, Vertical)



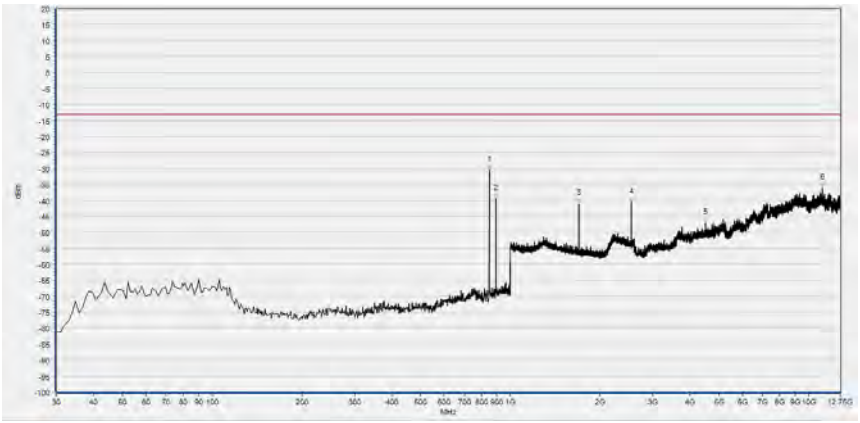
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	837.040	-33.85	-13.00	Horizontal	NA
2	881.660	-40.01	-13.00	Horizontal	NA
3	1672.909	-40.50	-13.00	Horizontal	PASS
4	2509.724	-43.21	-13.00	Horizontal	PASS
5	7127.723	-41.51	-13.00	Horizontal	PASS
6	10965.121	-36.97	-13.00	Horizontal	PASS

(GPRS 850MHz, Channel = 190, Horizontal)



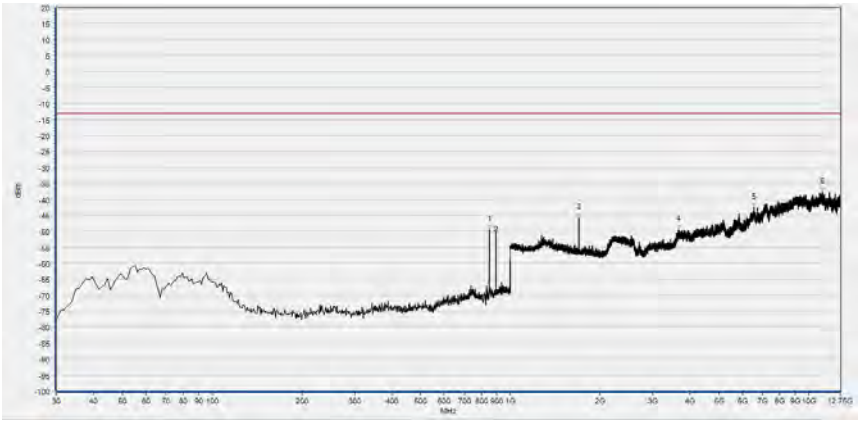
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	836.070	-51.53	-13.00	Vertical	NA
2	881.660	-53.25	-13.00	Vertical	NA
3	1672.909	-43.48	-13.00	Vertical	PASS
4	3687.170	-49.97	-13.00	Vertical	PASS
5	7194.172	-39.91	-13.00	Vertical	PASS
6	11009.420	-37.74	-13.00	Vertical	PASS

(GPRS 850MHz, Channel = 190, Vertical)



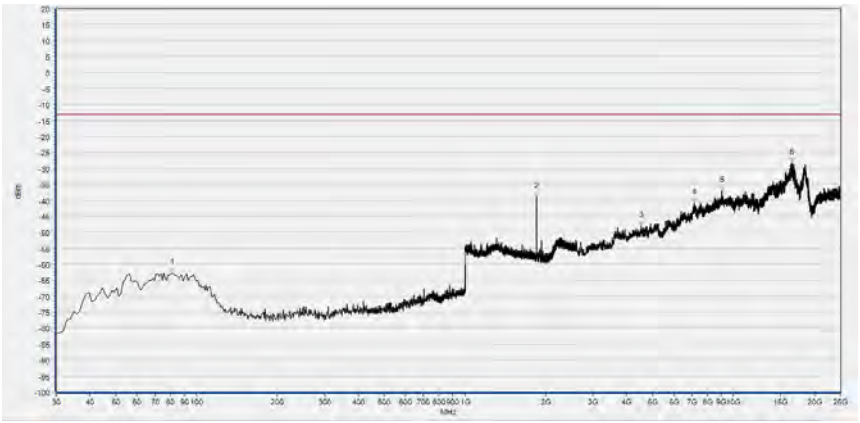
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	848.680	-30.59	-13.00	Horizontal	NA
2	893.300	-39.42	-13.00	Horizontal	NA
3	1697.239	-40.97	-13.00	Horizontal	PASS
4	2546.218	-40.51	-13.00	Horizontal	PASS
5	4515.930	-47.12	-13.00	Horizontal	PASS
6	11123.859	-36.14	-13.00	Horizontal	PASS

(GPRS 850MHz, Channel = 251, Horizontal)



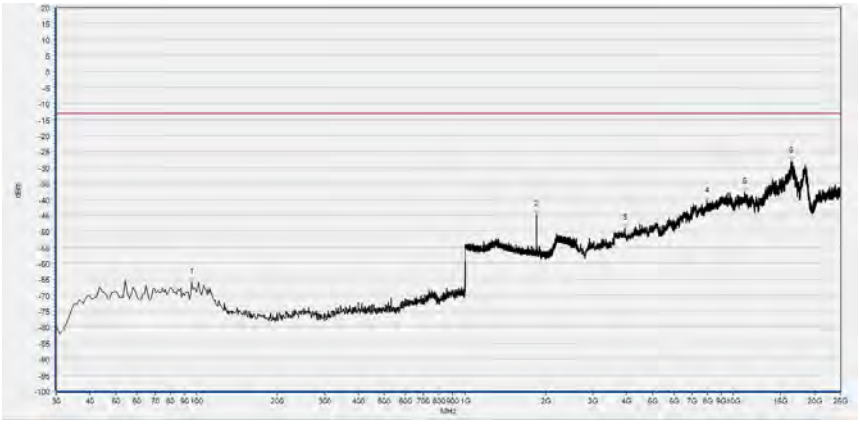
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	848.680	-49.56	-13.00	Vertical	NA
2	893.300	-50.17	-13.00	Vertical	NA
3	1697.239	-45.76	-13.00	Vertical	PASS
4	3665.021	-49.43	-13.00	Vertical	PASS
5	6568.449	-42.63	-13.00	Vertical	PASS
6	11112.784	-37.58	-13.00	Vertical	PASS

(GPRS 850MHz, Channel = 251, Vertical)



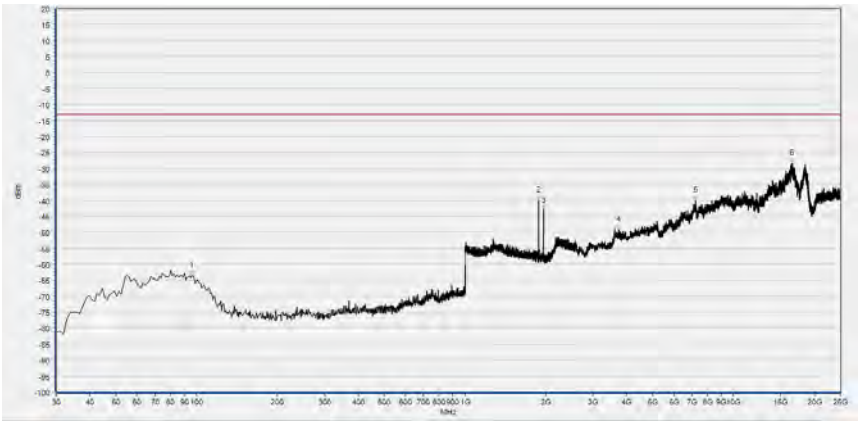
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	81.410	-62.72	-13.00	Horizontal	PASS
2	1850.260	-38.82	-13.00	Horizontal	NA
3	4547.118	-47.90	-13.00	Horizontal	PASS
4	7154.137	-40.86	-13.00	Horizontal	PASS
5	9036.079	-37.08	-13.00	Horizontal	PASS
6	16510.893	-28.28	-13.00	Horizontal	PASS

(GPRS 1900MHz, Channel = 512, Horizontal)



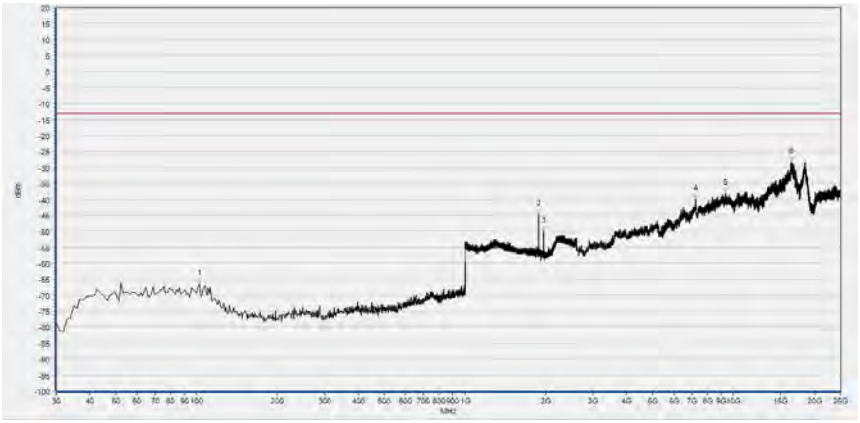
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	95.960	-66.07	-13.00	Vertical	PASS
2	1850.260	-44.80	-13.00	Vertical	NA
3	3944.244	-49.05	-13.00	Vertical	PASS
4	7964.757	-40.50	-13.00	Vertical	PASS
5	11040.225	-37.68	-13.00	Vertical	PASS
6	16429.424	-27.99	-13.00	Vertical	PASS

(GPRS 1900MHz, Channel = 512, Vertical)



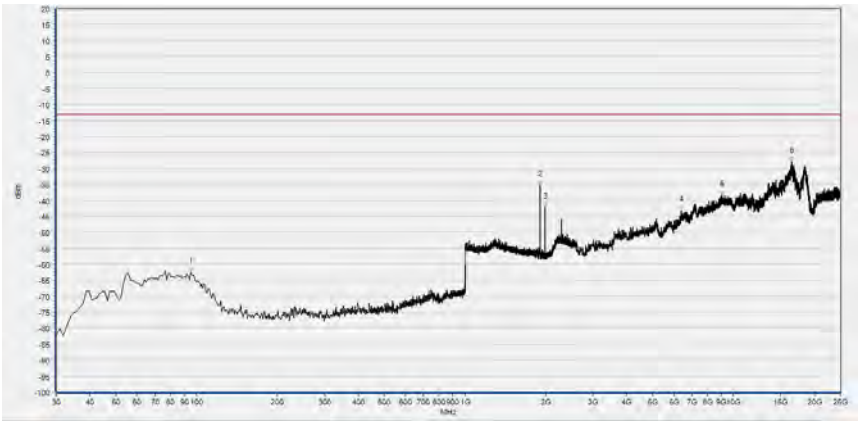
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	95.960	-63.54	-13.00	Horizontal	PASS
2	1879.712	-40.14	-13.00	Horizontal	NA
3	1959.744	-42.73	-13.00	Horizontal	NA
4	3744.644	-49.31	-13.00	Horizontal	PASS
5	7247.827	-40.02	-13.00	Horizontal	PASS
6	16523.113	-28.55	-13.00	Horizontal	PASS

(GPRS 1900MHz, Channel = 661, Horizontal)



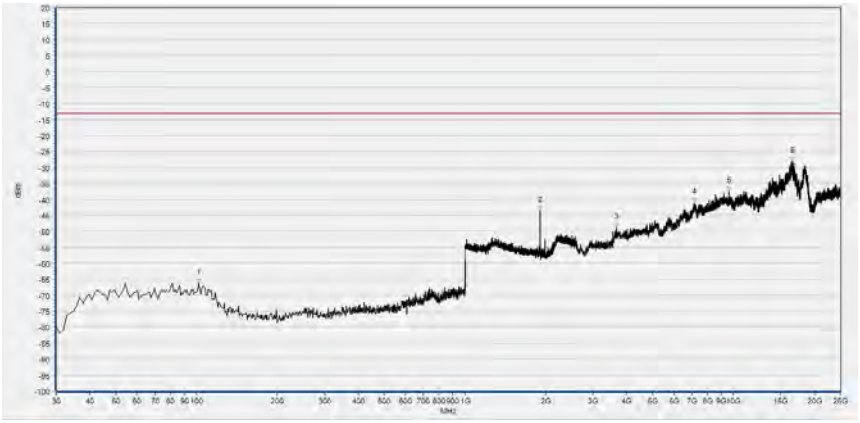
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	102.750	-66.48	-13.00	Vertical	PASS
2	1879.712	-44.90	-13.00	Vertical	NA
3	1959.744	-49.90	-13.00	Vertical	NA
4	7247.827	-39.99	-13.00	Vertical	PASS
5	9361.957	-38.05	-13.00	Vertical	PASS
6	16441.644	-28.24	-13.00	Vertical	PASS

(GPRS 1900MHz, Channel = 661, Vertical)



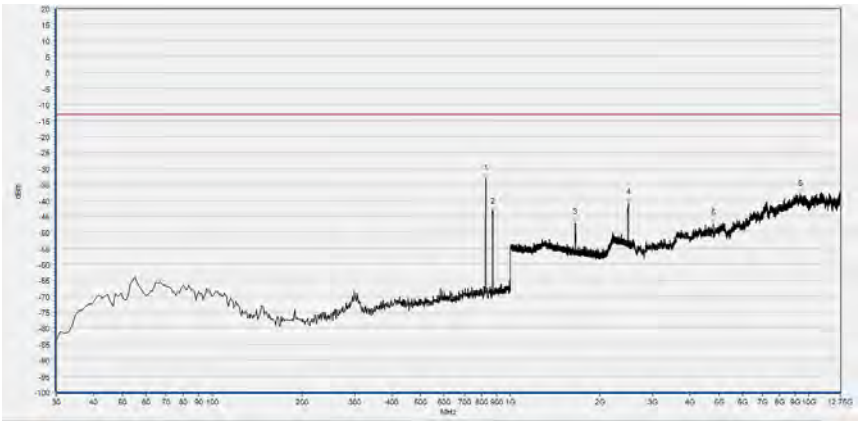
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	94.990	-62.54	-13.00	Horizontal	PASS
2	1909.804	-35.10	-13.00	Horizontal	NA
3	1989.836	-42.06	-13.00	Horizontal	NA
4	6384.252	-43.01	-13.00	Horizontal	PASS
5	9076.814	-38.23	-13.00	Horizontal	PASS
6	16449.791	-27.90	-13.00	Horizontal	PASS

(GPRS 1900MHz, Channel = 810, Horizontal)



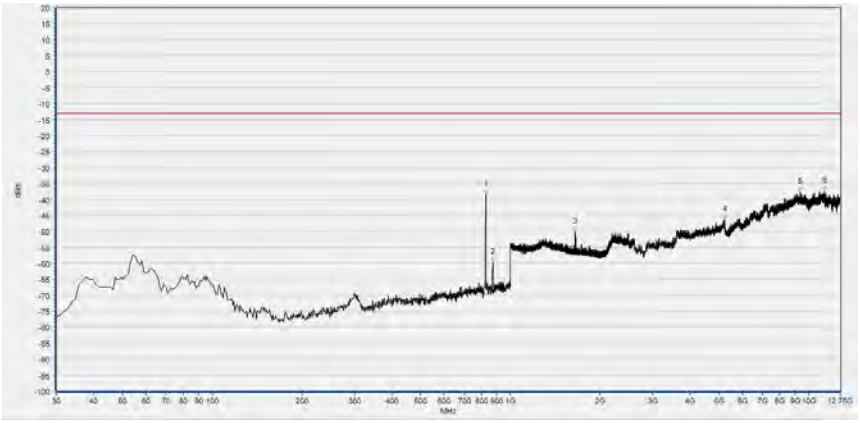
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	101.780	-66.18	-13.00	Vertical	PASS
2	1909.804	-43.54	-13.00	Vertical	NA
3	3671.322	-48.81	-13.00	Vertical	PASS
4	7154.137	-40.92	-13.00	Vertical	PASS
5	9626.732	-37.45	-13.00	Vertical	PASS
6	16559.775	-28.02	-13.00	Vertical	PASS

(GPRS 1900MHz, Channel = 810, Vertical)



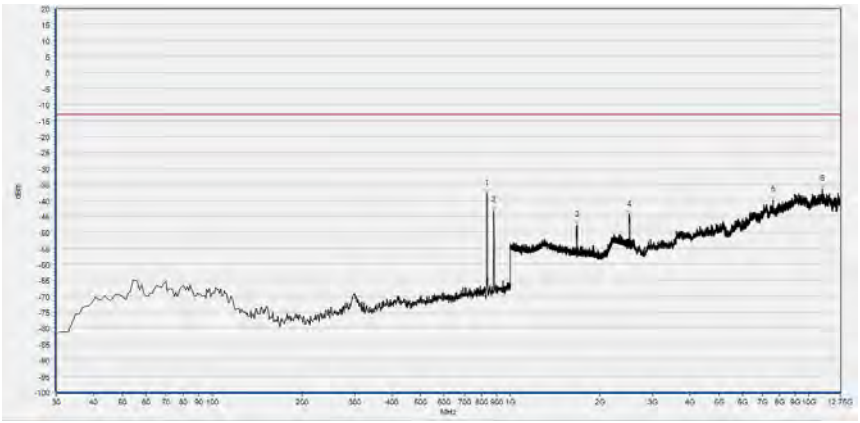
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	827.167	-33.15	-13.00	Horizontal	NA
2	872.803	-43.59	-13.00	Horizontal	NA
3	1650.350	-47.01	-13.00	Horizontal	PASS
4	2482.628	-40.75	-13.00	Horizontal	PASS
5	4782.978	-47.31	-13.00	Horizontal	PASS
6	9375.692	-38.16	-13.00	Horizontal	PASS

(WCDMA Band V, Channel = 4132, Horizontal)



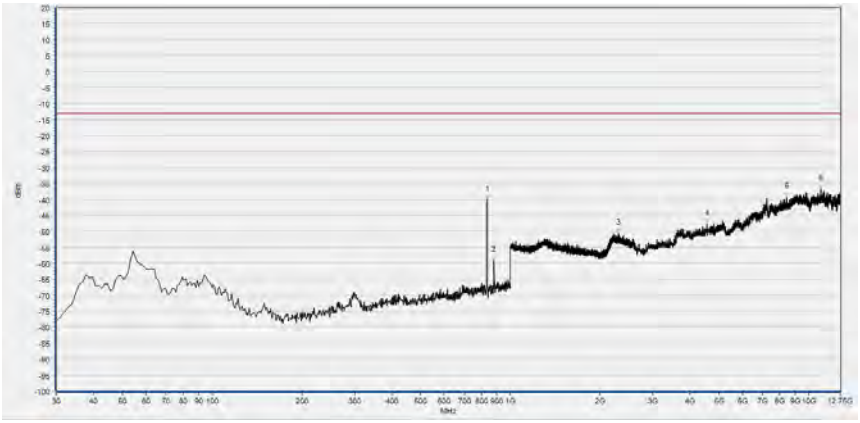
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	828.138	-38.44	-13.00	Vertical	NA
2	872.803	-59.73	-13.00	Vertical	NA
3	1650.884	-50.26	-13.00	Vertical	PASS
4	5233.111	-46.42	-13.00	Vertical	PASS
5	9385.845	-37.74	-13.00	Vertical	PASS
6	11298.066	-37.47	-13.00	Vertical	PASS

(WCDMA Band V, Channel = 4132, Vertical)



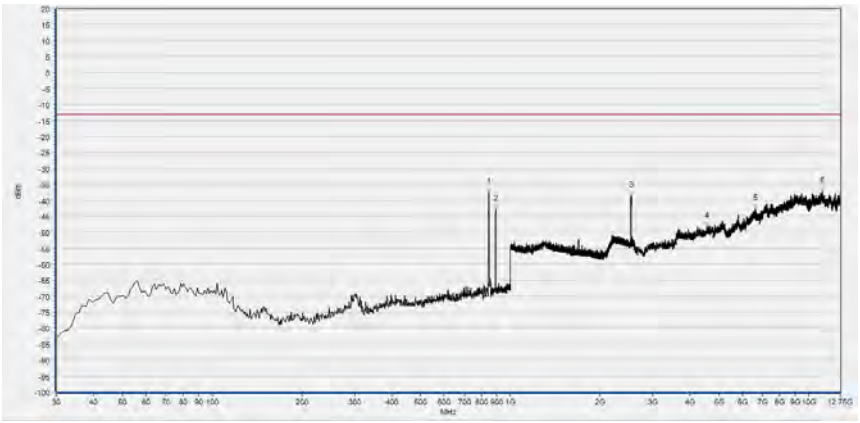
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	833.964	-37.86	-13.00	Horizontal	NA
2	879.600	-43.26	-13.00	Horizontal	NA
3	1671.691	-47.68	-13.00	Horizontal	PASS
4	2501.300	-44.50	-13.00	Horizontal	PASS
5	7602.234	-39.91	-13.00	Horizontal	PASS
6	11135.612	-36.54	-13.00	Horizontal	PASS

(WCDMA Band V, Channel = 4183, Horizontal)



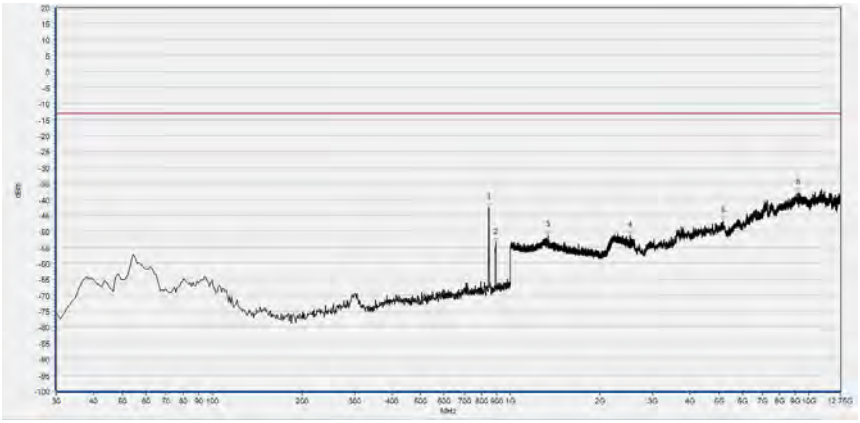
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	834.935	-40.12	-13.00	Vertical	NA
2	880.571	-59.00	-13.00	Vertical	NA
3	2305.502	-50.55	-13.00	Vertical	PASS
4	4549.450	-47.82	-13.00	Vertical	PASS
5	8455.118	-39.22	-13.00	Vertical	PASS
6	10979.927	-36.85	-13.00	Vertical	PASS

(WCDMA Band V, Channel = 4183, Vertical)



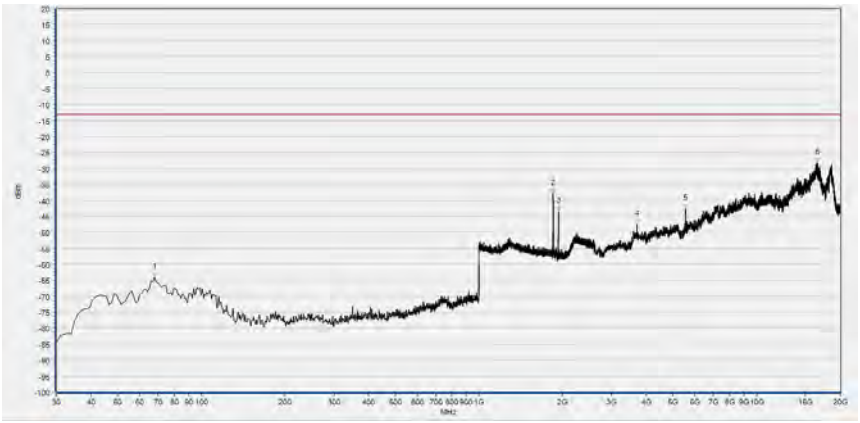
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	847.558	-37.36	-13.00	Horizontal	NA
2	892.222	-42.78	-13.00	Horizontal	NA
3	2536.512	-38.51	-13.00	Horizontal	PASS
4	4556.219	-48.05	-13.00	Horizontal	PASS
5	6620.740	-42.66	-13.00	Horizontal	PASS
6	11111.921	-37.25	-13.00	Horizontal	PASS

(WCDMA Band V, Channel = 4233, Horizontal)



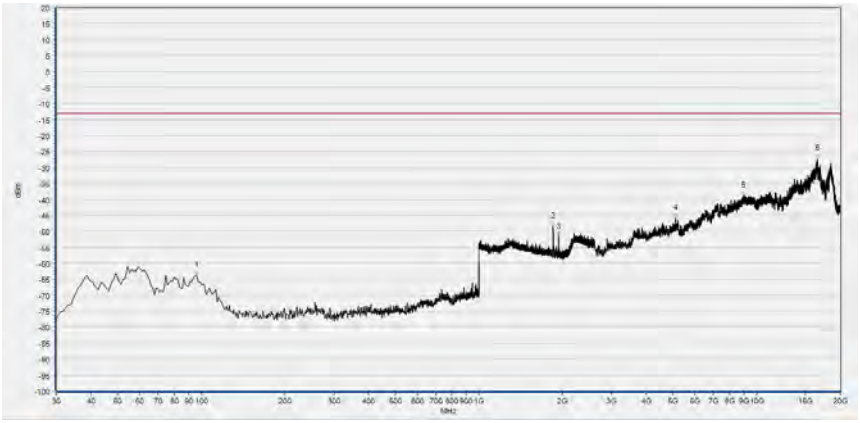
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	848.529	-42.48	-13.00	Vertical	NA
2	892.222	-53.59	-13.00	Vertical	NA
3	1337.713	-51.28	-13.00	Vertical	PASS
4	2514.105	-51.37	-13.00	Vertical	PASS
5	5182.344	-46.83	-13.00	Vertical	PASS
6	9233.545	-37.98	-13.00	Vertical	PASS

(WCDMA Band V, Channel = 4233, Vertical)



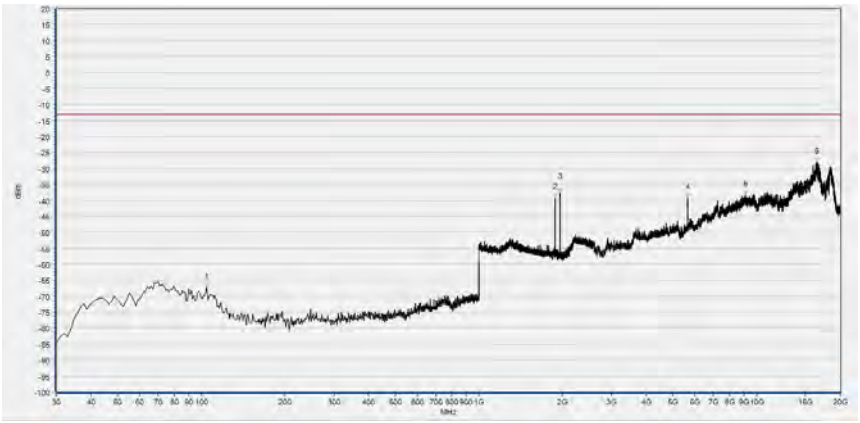
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	67.830	-64.06	-13.00	Horizontal	PASS
2	1851.200	-37.96	-13.00	Horizontal	NA
3	1933.867	-43.49	-13.00	Horizontal	NA
4	3706.640	-47.56	-13.00	Horizontal	PASS
5	5554.520	-42.49	-13.00	Horizontal	PASS
6	16509.560	-28.21	-13.00	Horizontal	PASS

(WCDMA Band II, Channel = 9262, Horizontal)



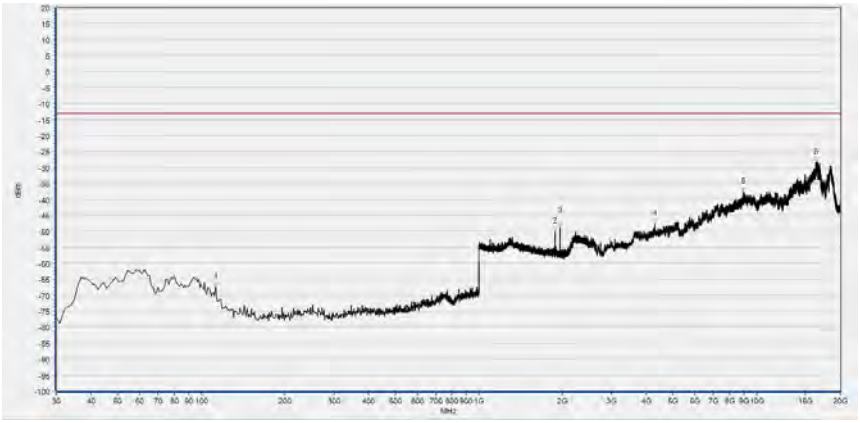
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	95.960	-63.70	-13.00	Vertical	PASS
2	1851.733	-48.64	-13.00	Vertical	NA
3	1933.333	-51.43	-13.00	Vertical	NA
4	5091.680	-45.89	-13.00	Vertical	PASS
5	8930.120	-39.07	-13.00	Vertical	PASS
6	16551.320	-27.36	-13.00	Vertical	PASS

(WCDMA Band II, Channel = 9262, Vertical)



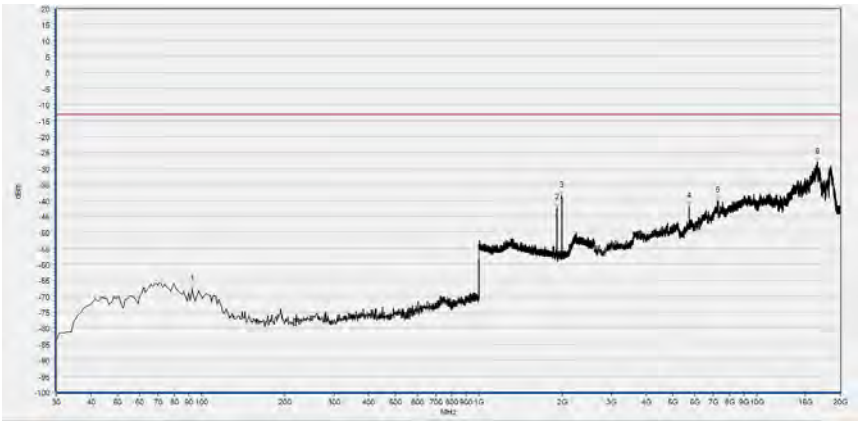
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	104.690	-67.22	-13.00	Horizontal	PASS
2	1878.400	-39.22	-13.00	Horizontal	NA
3	1959.467	-37.65	-13.00	Horizontal	NA
4	5638.040	-39.17	-13.00	Horizontal	PASS
5	9097.160	-38.24	-13.00	Horizontal	PASS
6	16426.040	-27.95	-13.00	Horizontal	PASS

(WCDMA Band II, Channel = 9400, Horizontal)



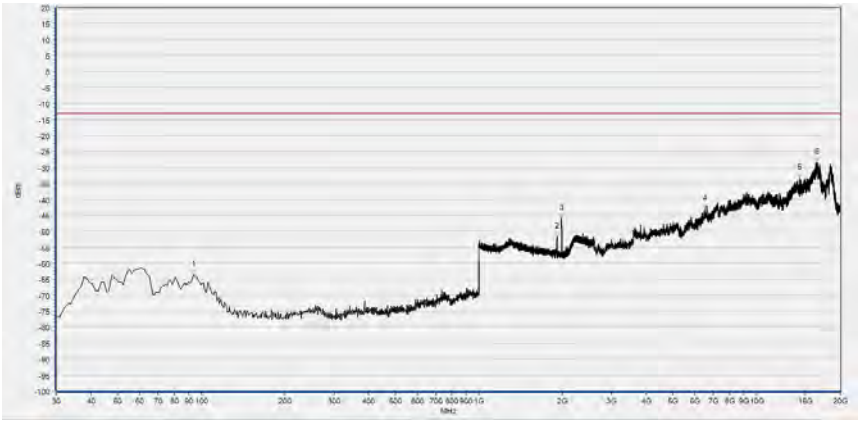
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	112.450	-67.38	-13.00	Vertical	PASS
2	1878.400	-50.19	-13.00	Vertical	NA
3	1959.467	-48.79	-13.00	Vertical	NA
4	4298.240	-47.69	-13.00	Vertical	PASS
5	8957.960	-37.66	-13.00	Vertical	PASS
6	16394.720	-28.60	-13.00	Vertical	PASS

(WCDMA Band II, Channel = 9400, Vertical)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	93.050	-67.72	-13.00	Horizontal	PASS
2	1908.267	-42.43	-13.00	Horizontal	NA
3	1986.133	-38.64	-13.00	Horizontal	NA
4	5721.560	-41.98	-13.00	Horizontal	PASS
5	7231.880	-40.15	-13.00	Horizontal	PASS
6	16530.440	-28.06	-13.00	Horizontal	PASS

(WCDMA Band II, Channel = 9538, Horizontal)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	94.020	-63.47	-13.00	Vertical	PASS
2	1908.267	-51.71	-13.00	Vertical	NA
3	1986.667	-45.99	-13.00	Vertical	NA
4	6508.040	-43.10	-13.00	Vertical	PASS
5	14264.960	-33.32	-13.00	Vertical	PASS
6	16419.080	-28.60	-13.00	Vertical	PASS

(WCDMA Band II, Channel = 9538, 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 C63.10-2013 and 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	2020.04.15	2021.04.14
Attenuator 1	(N/A.)	10dB	Resnet	2020.04.15	2021.04.14
Attenuator 2	(N/A.)	3dB	Resnet	2020.04.15	2021.04.14
EXA Signal Analzyer	MY51511149	N9020A	Agilent	2019.07.29	2020.07.28
Wireless synthesizer	MY48364176	8960 -E5515C	Agilent	2020.04.16	2021.04.15
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	2020.03.25	2021.03.24
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	2020.01.13	2021.01.12
Receiver	MY54130016	N9038A	Agilent	2019.07.29	2020.07.28
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2019.05.24	2022.05.23
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2019.07.26	2022.07.25
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2019.05.24	2022.05.23
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	S020180L3203	N/A	Dongsheng	2019.07.29	2020.07.28
18-26.5GHz pre-Amplifier	S10M100L3802	N/A	Dongsheng	2019.07.29	2020.07.28
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	2019.07.13	2022.07.12

END OF REPORT