TEST REPORT

APPLICANT	:	Borqs BeiJing Ltd.
PRODUCT NAME	:	Lively Mobile 2
MODEL NAME	:	GCR4
BRAND NAME	:	GreatCall
FCC ID	:	2ABDK-GCR4
STANDARD(S)	:	47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E
RECEIPT DATE	:	2018-09-29
TEST DATE	:	2018-10-30 to 2019-01-24
ISSUE DATE	:	2019-01-25

Edited by: Zeng Xiaoying (Rapporteur)

Approved by: 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	2019-01-25	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Borqs BeiJing Ltd.
Applicant Address:	Tower A, Building B23, Universal Business Park, No. 10 Jiuxianqiao Road, Chaoyang District Beijing, 100015 China
Manufacturer:	Borqs BeiJing Ltd.
Manufacturer Address:	Tower A, Building B23, Universal Business Park, No. 10 Jiuxianqiao Road, Chaoyang District Beijing, 100015 China

1.2. Equipment Under Test (EUT) Description

Product Name:	Lively Mobile 2	
Serial No:	(N/A, marked #1 by test site)	
Hardware Version:	DVT3	
Software Version:	054	
Modulation Type:	CDMA 1X	
Operating Frequency Range:	CDMA 2000: (BC 0) Tx: 824.70 – 848.31 MHz; Rx: 869.70-- 893.31MHz CDMA 2000: (BC 1) Tx: 1851.25 MHz -1908.75 MHz; Rx: 1931.25 MHz-1988.75 MHz	
Emission Designators:	CDMA BC0	1M27F9W
	CDMA BC1	1M28F9W
Maximum ERP/EIRP:	CDMA BC0	0.133W
	CDMA BC1	0.456W
Antenna Type:	FPC Antenna	
Antenna Gain:	CDMA BC0	0.3 dBi
	CDMA BC1	-0.2 dBi

Accessory Information:	Battery	
	Brand Name:	N/A
	Model No.:	ZWD553634V
	Serial No.:	(N/A, marked #1 by test site)
	Capacity:	930mAh
	Rated Voltage:	3.8V
	Charge Limit:	4.35V

Note 1: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.3. 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
1	2.1046	Conducted RF Output Power	Oct 30, 2018	Tu Ya'nan	PASS
2	24.232(d)	Peak - Average Ratio	Oct 30, 2018 Jan 24, 2019	Tu Ya'nan	PASS
3	2.1049	99% Occupied Bandwidth	Oct 30, 2018	Tu Ya'nan	PASS
4	2.1055,22.355, 24.235	Frequency Stability	Oct 30, 2018	Tu Ya'nan	PASS
5	2.1051, 22.917(a), 24.238(a)	Conducted Out of Band Emissions	Jan 24, 2019	Tu Ya'nan	PASS
6	2.1051, 22.917(a), 24.238(a)	Band Edge	Jan 24, 2019	Tu Ya'nan	PASS
7	2.1046, 22.913(a), 24.232(a)	Transmitter Radiated Power (EIPR/ERP)	Jan 18, 2019	Wang Dalong	PASS
8	2.1053, 22.917(a), 24.238(a)	Radiated Out of Band Emissions	Jan 17, 2019	Wang Dalong	PASS

Note 1: The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 (Oct 27, 2017) and ANSI C63.26 2015.

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 17dB contains three parts that cable loss 3dB, power splitter 4dB and Attenuator 10dB.

1.4. 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

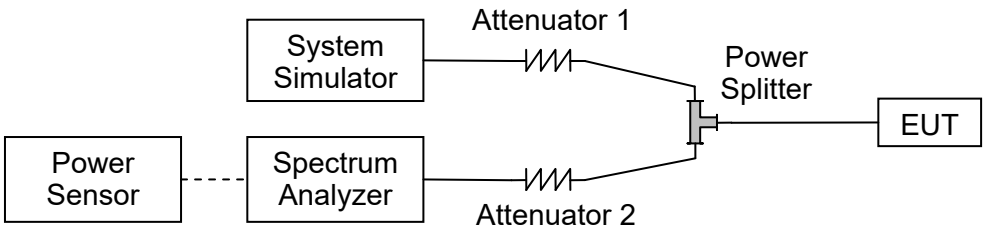
2.1. Conducted RF Output Power

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

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

Band	CDMA2000 BC0			CDMA2000 BC1		
TX Channel	**1013**	**384**	**777**	**25**	**600**	**1175**
Frequency (MHz)	**824.7**	**836.52**	**848.31**	**1851.25**	**1880**	**1908.75**
RC1 SO32	21.97	22.07	22.15	21.06	21.07	21.03
RC3 SO55	22.05	22.09	22.17	21.13	21.20	21.13
RC3 SO32 (F+SCH)	21.62	21.78	21.83	21.02	21.10	20.90
RC3 SO32 (+SCH)	21.59	21.66	21.74	20.96	21.06	20.89

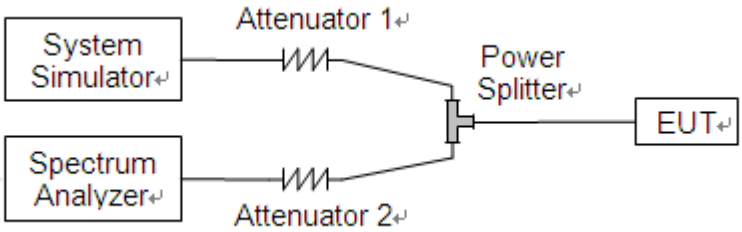
2.2. Peak to Average Ratio

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

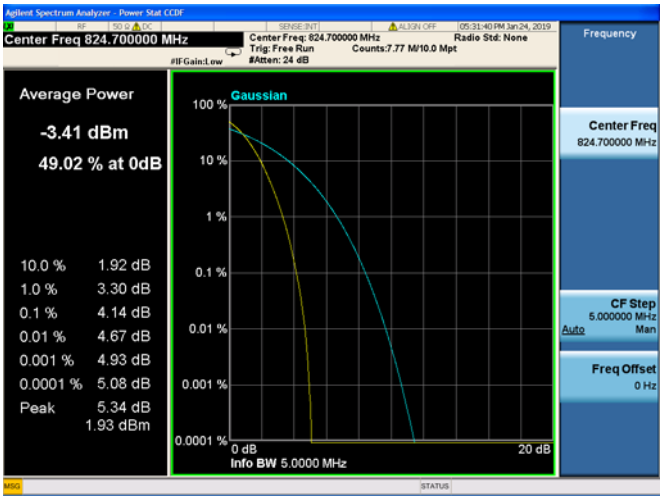
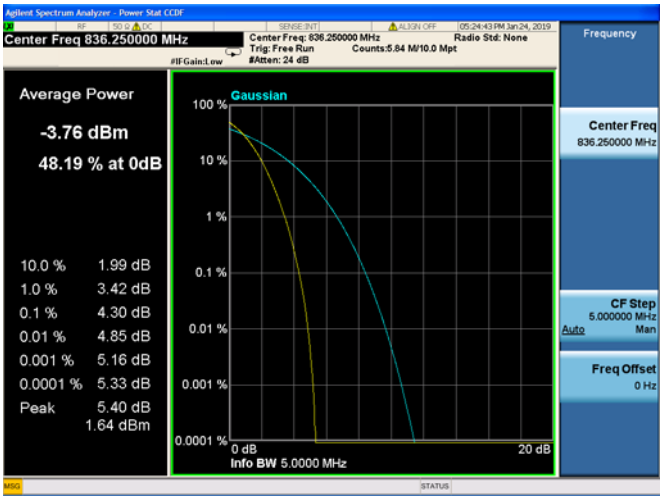
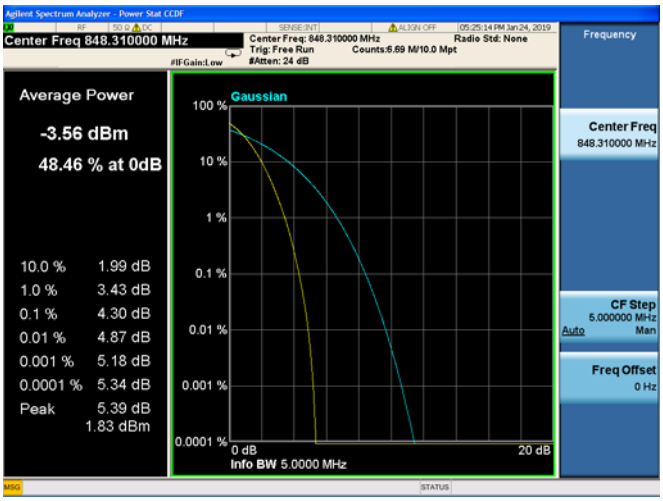
For CDMA operating mode:

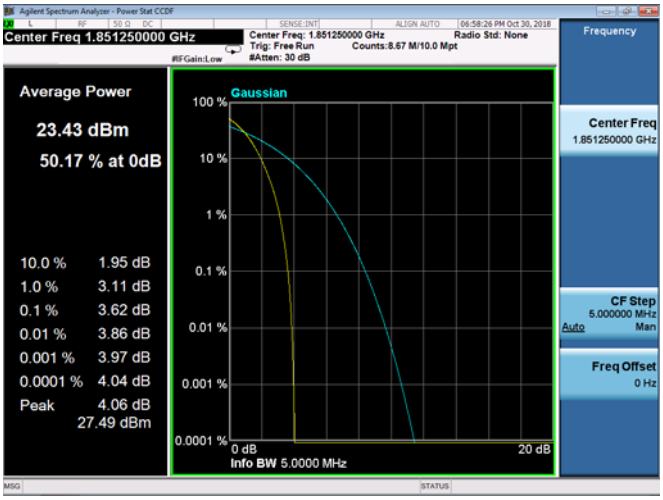
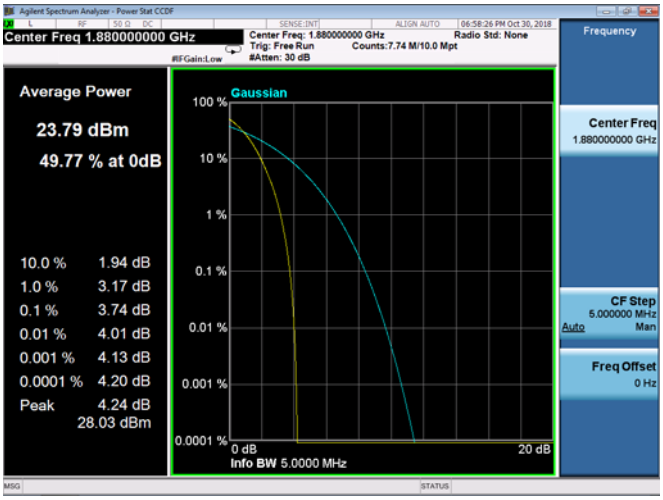
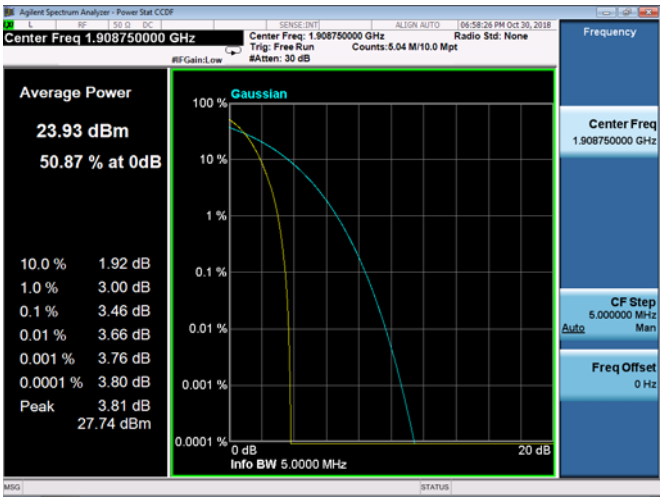
a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1%.

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.

Band	Channel	Frequency (MHz)	Peak to Average ratio dB	Limit dB	Verdict
CDMA (BC0)	1013	824.70	4.14	13	PASS
	384	836.52	4.30		PASS
	777	848.31	4.30		PASS
CDMA (BC1)	25	1851.25	3.62	13	PASS
	600	1880.00	3.74		PASS
	1175	1908.75	3.46		PASS

CDMA BC0 CH1013 824.70MHz	CDMA BC0 CH384 836.52MHz
	
CDMA BC0 CH777 848.31MHz	
	

CDMA BC1 CH25 1851.25MHz	CDMA BC1 CH600 1880.0MHz
	
CDMA BC1 CH1175 1908.75MHz	
	

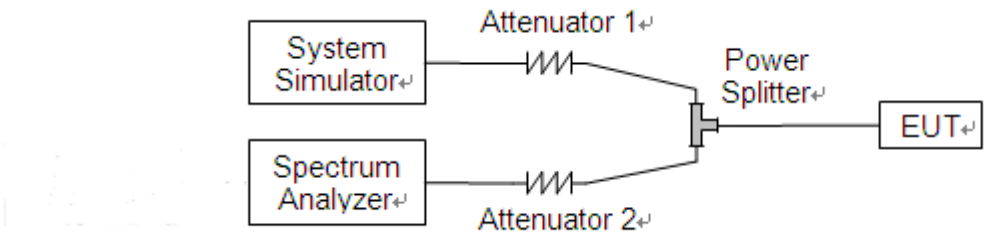
2.3. 99% Occupied Bandwidth

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:

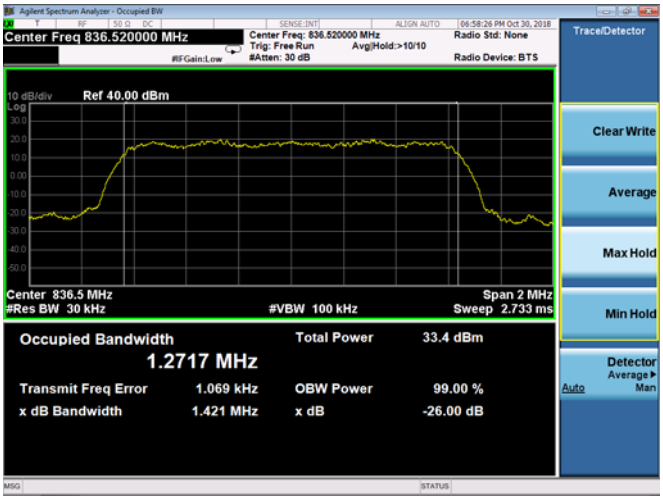


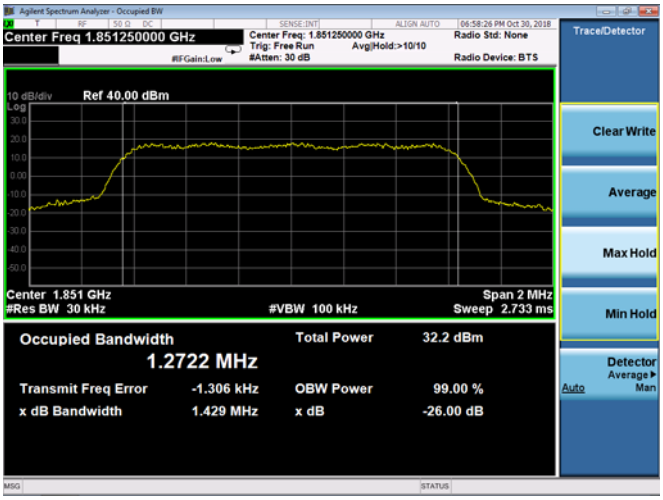
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)
CDMA BC0	1013	824.70	1.273	1.431
	384	836.52	1.272	1.421
	777	848.31	1.271	1.424
CDMA BC1	25	1851.25	1.272	1.429
	600	1880.00	1.273	1.432
	1175	1908.75	1.280	1.489

CDMA BC0 CH1013 824.7MHz	CDMA BC0 CH384 836.52MHz
	
CDMA BC0 CH777 848.31MHz	
	

CDMA BC1 CH25 1851.25MHz	CDMA BC1 CH600 1880.00MHz
	
CDMA BC1 CH1175 1908.75MHz	
	

2.4. Frequency Stability

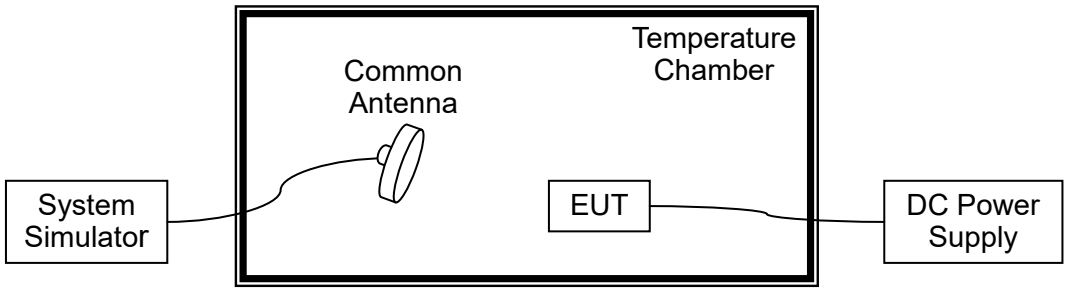
2.4.1. Requirement

According to FCC section 22.355, 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 -30°C to +50°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

CDMA BC0, Channel 384, Frequency 836.52MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	+20(Ref)	35	0.042	PASS
100		-30	29	0.035	
100		-20	42	0.050	
100		-10	-22	-0.026	
100		0	-17	-0.020	
100		+10	23	0.027	
100		+20	26	0.031	
100		+30	37	0.044	
100		+40	41	0.049	
100		+50	-31	-0.037	
115	4.37	+20	-27	-0.032	
85	3.23	+20	35	0.042	

CDMA BC1, Channel 600, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	+20(Ref)	-29	-0.035	PASS
100		-30	-36	-0.043	
100		-20	15	0.018	
100		-10	14	0.017	
100		0	-24	-0.029	
100		+10	-21	-0.025	
100		+20	27	0.032	
100		+30	19	0.023	
100		+40	-36	-0.043	
100		+50	16	0.019	
115	4.37	+20	16	0.019	
85	3.23	+20	-29	-0.035	

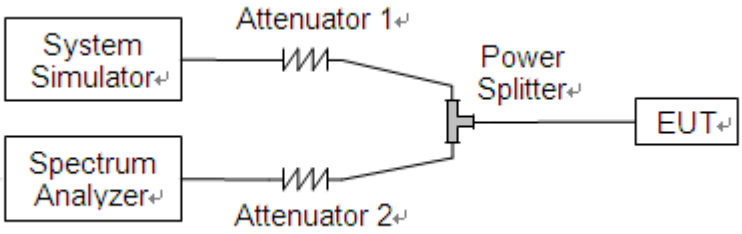
2.5. Conducted Out of Band Emissions

2.5.1. Requirement

According to FCC section 2.1051, 22.917(a), 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:



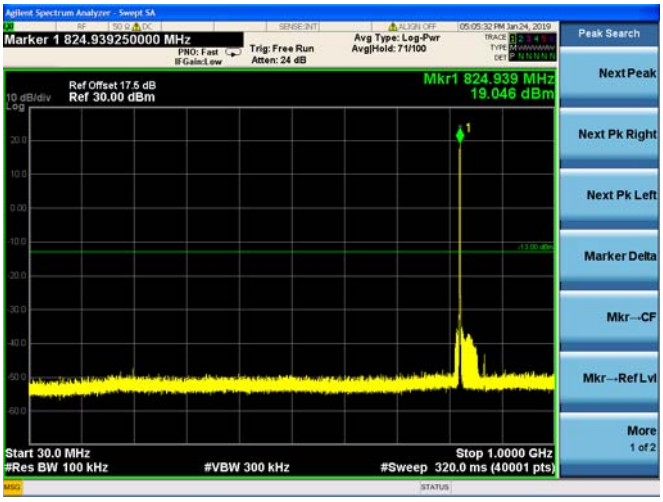
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

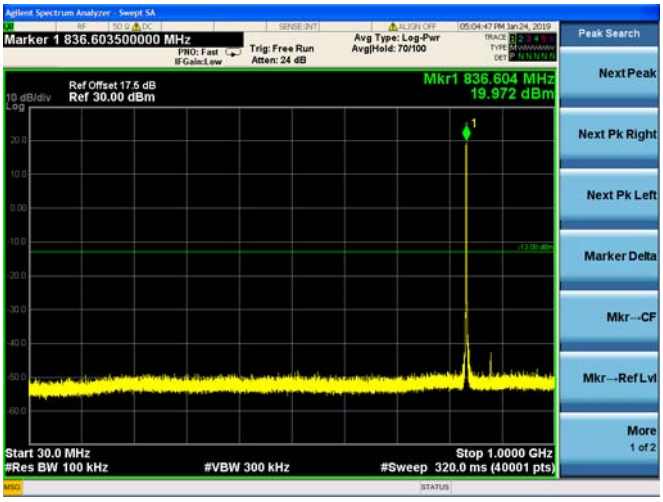
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

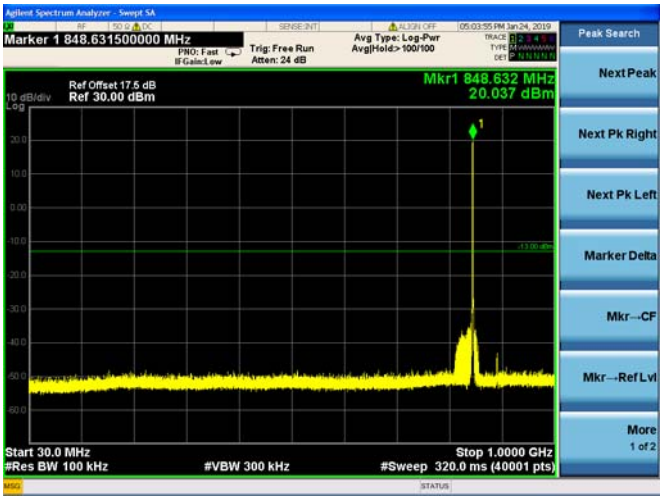
Note: The power of the EUT transmitting frequency should be ignored.

CDMA BC0, Channel=1013

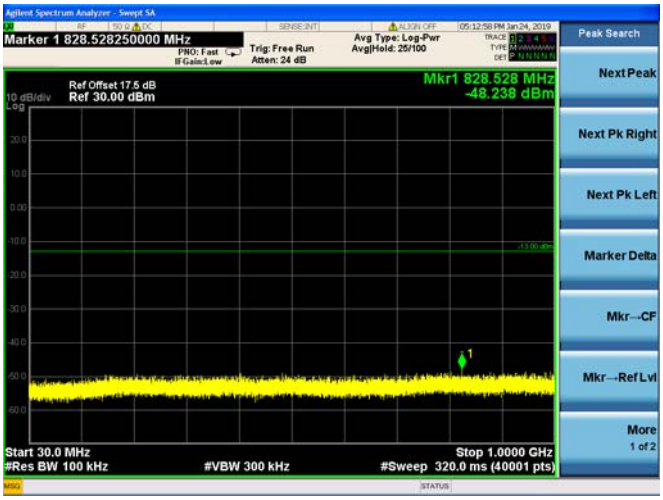


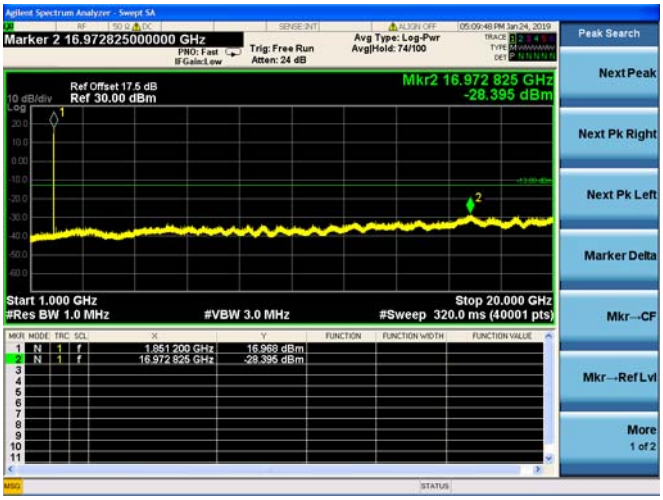
CDMA BC0, Channel=384



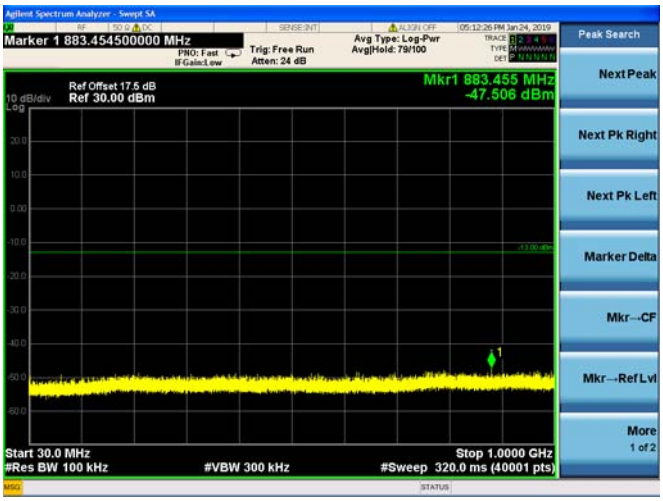
CDMA BC0, Channel=777	
	

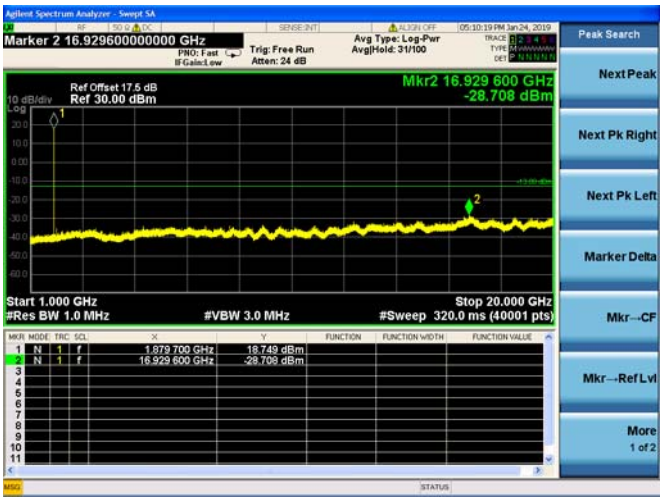
CDMA BC1, Channel=25



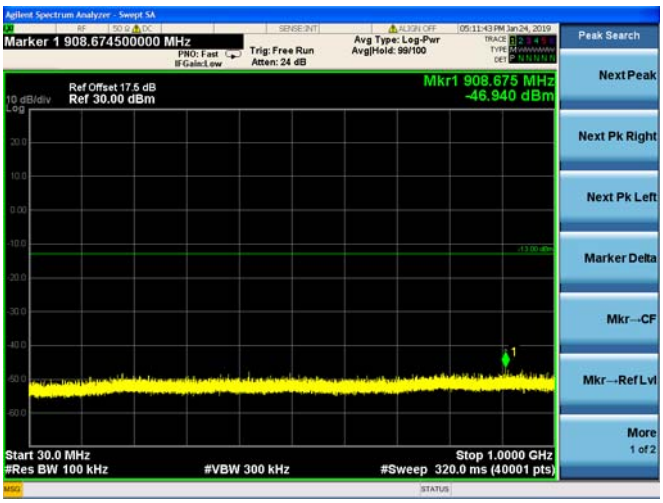


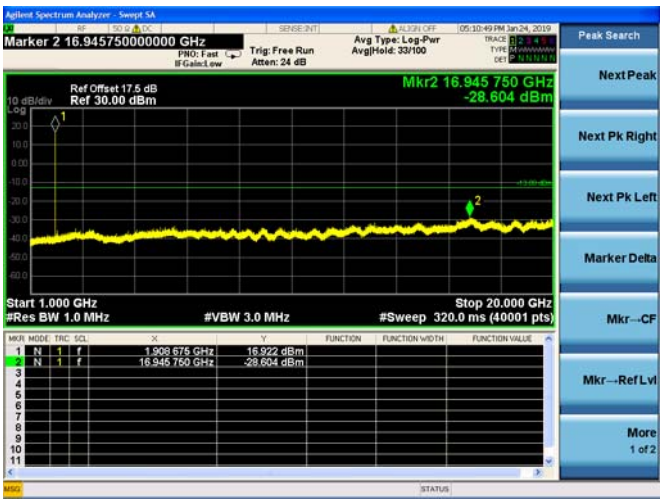
CDMA BC1, Channel=600





CDMA BC1, Channel=1175





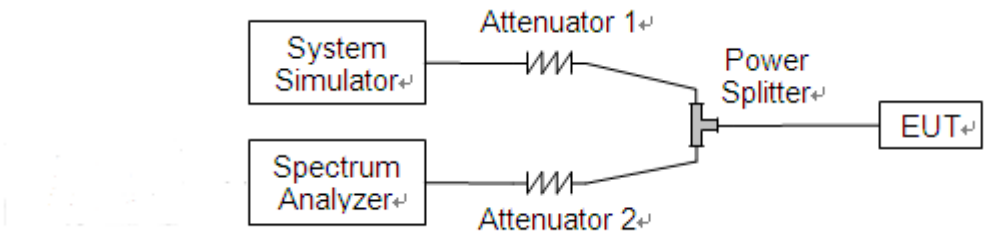
2.6. Band Edge

2.6.1. Requirement

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

2.6.2. Test Description

Test Setup:



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

2.6.3. Test Result

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

CDMA BC0, Channel=1013	CDMA BC0, Channel=777
	
CDMA BC1, Channel=25	**CDMA BC1, Channel=1175**
	

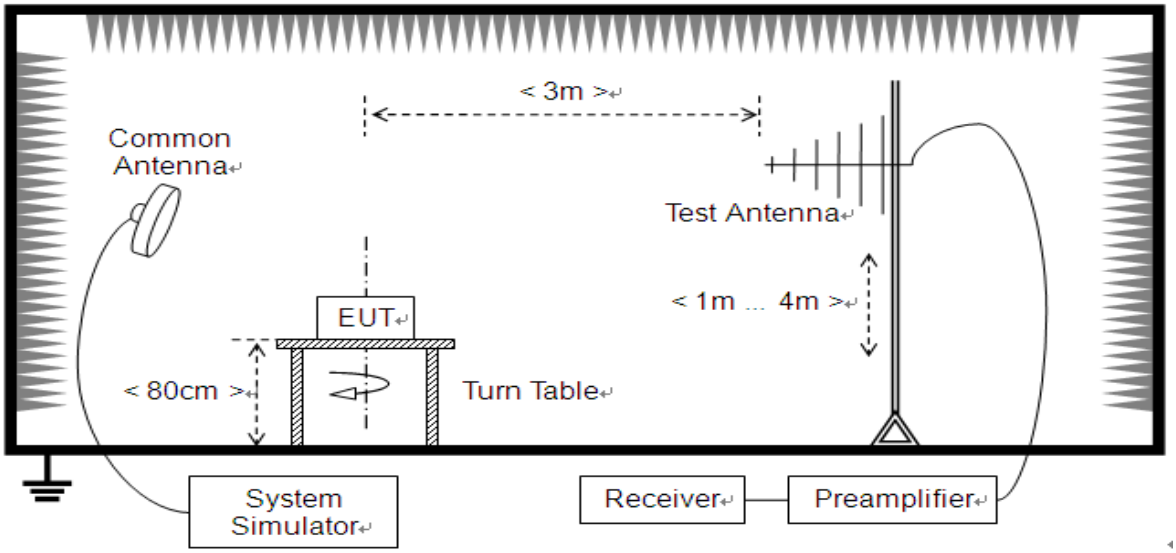
2.7. Transmitter Radiated Power (EIRP/ERP)

2.7.1. Requirement

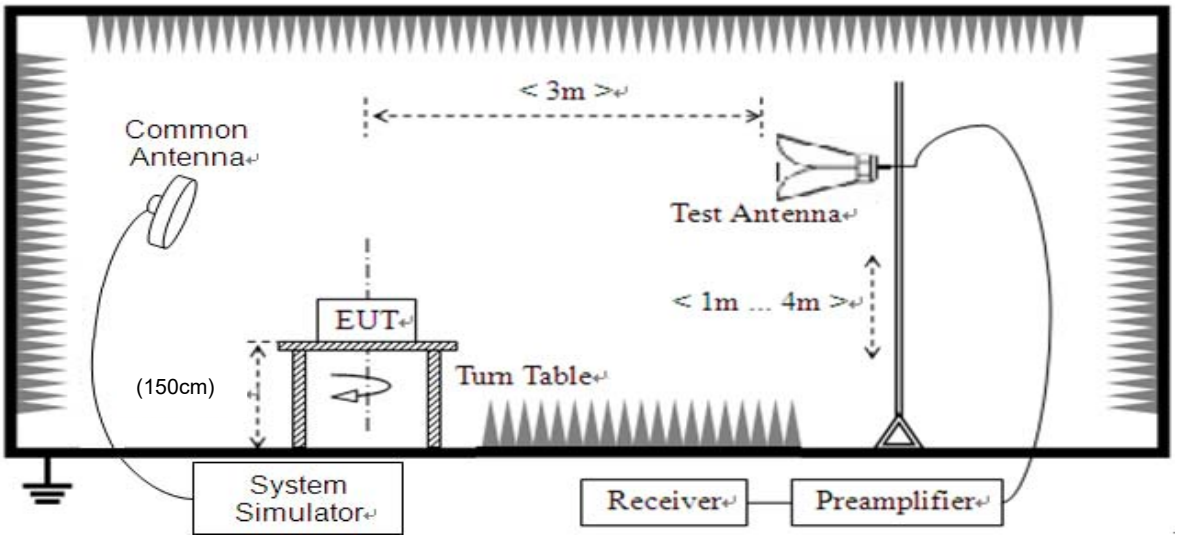
According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
According to FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power.
According to FCC section 27.50, mobile, and portable (hand-held) stations is limited to 1 Watts e.i.r.p. peak power.

2.7.2. Test Description

Test Setup:
1) 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.

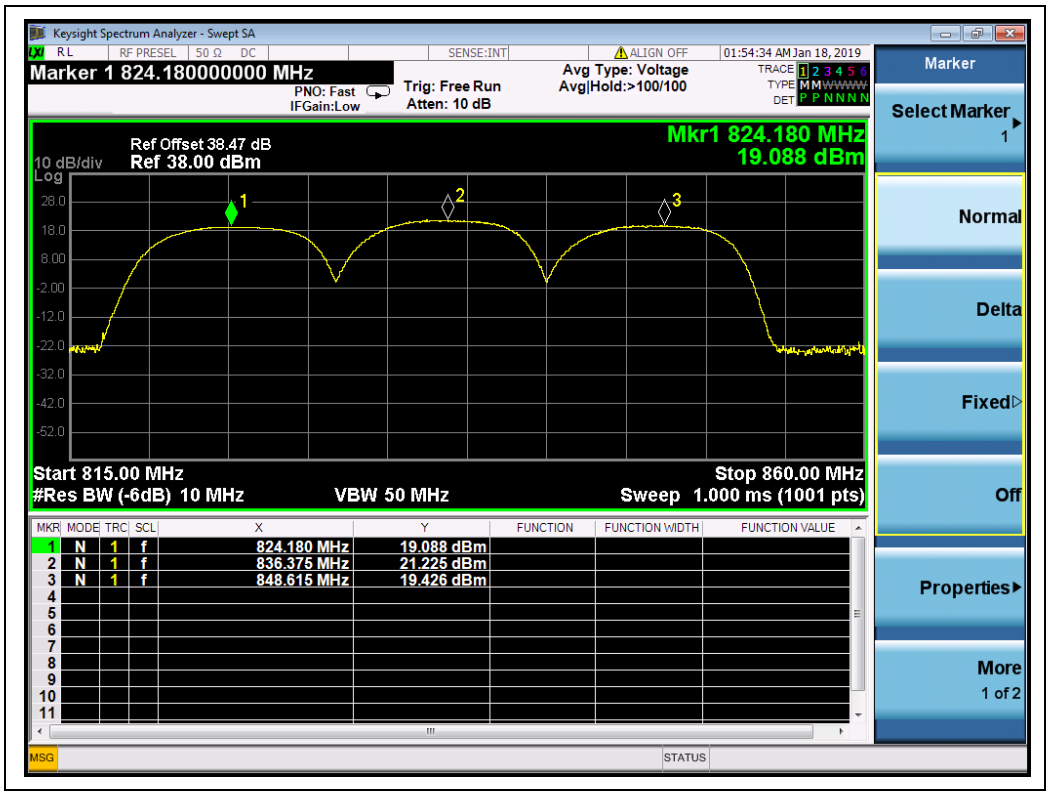
A_{TOT} is total correction factor including cable loss and substitution correction

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}.

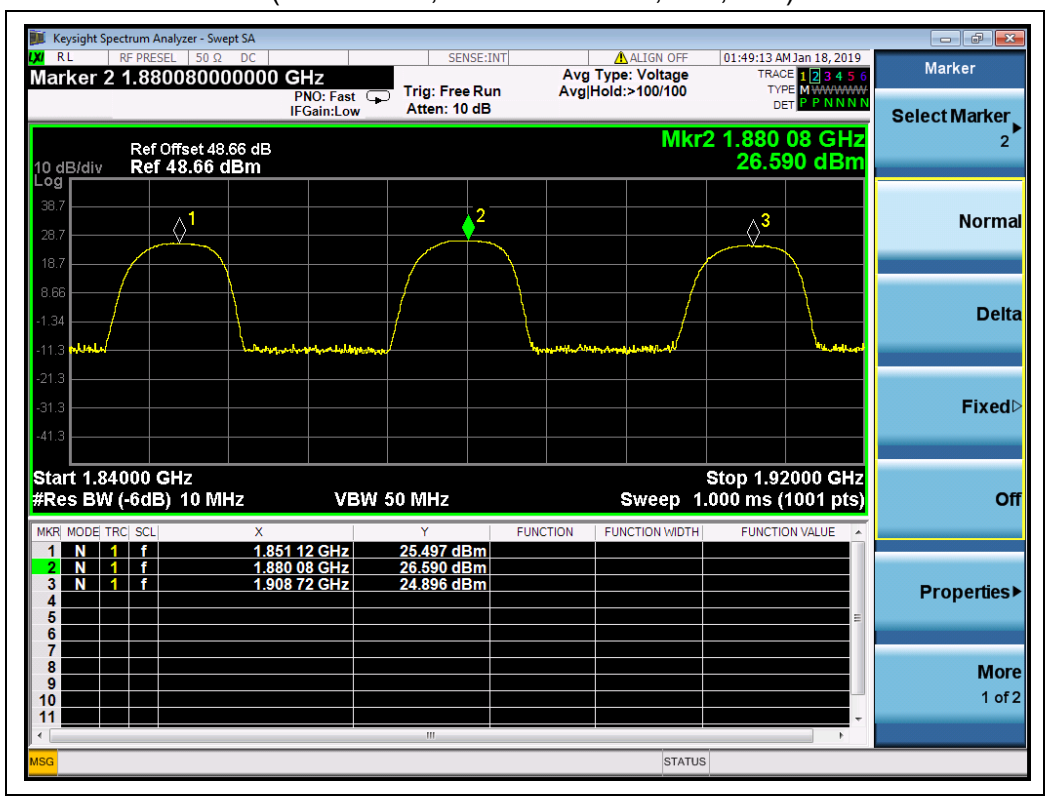
Test verdict:

Band	Channel	Frequency (MHz)	PCL	Measured ERP		Limit		Verdict
				dBm	W	dBm	W	
CDMA BC0	1013	824.70	5	19.09	0.081	38.5	7	PASS
	384	836.52	5	21.23	0.133			PASS
	777	848.31	5	19.43	0.088			PASS
Band	Channel	Frequency (MHz)	PCL	Measured EIRP		Limit		Verdict
				dBm	W	dBm	W	
CDMA BC1	25	1851.25	0	25.50	0.355	33	2	PASS
	600	1880.00	0	26.59	0.456			PASS
	1175	1908.75	0	24.90	0.309			PASS

Note 1: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.



(CDMA BC0, Channel = 1013, 384, 777)



(CDMA BC1, Channel = 25, 600, 1175)

2.8. Radiated Out of Band Emissions

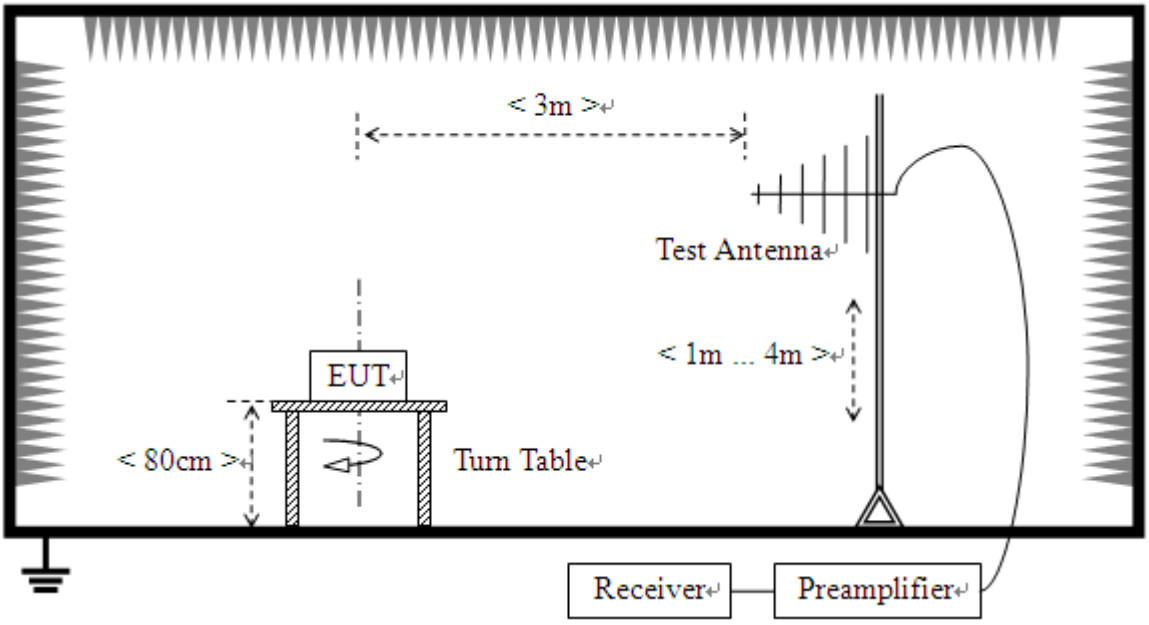
2.8.1. Requirement

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.

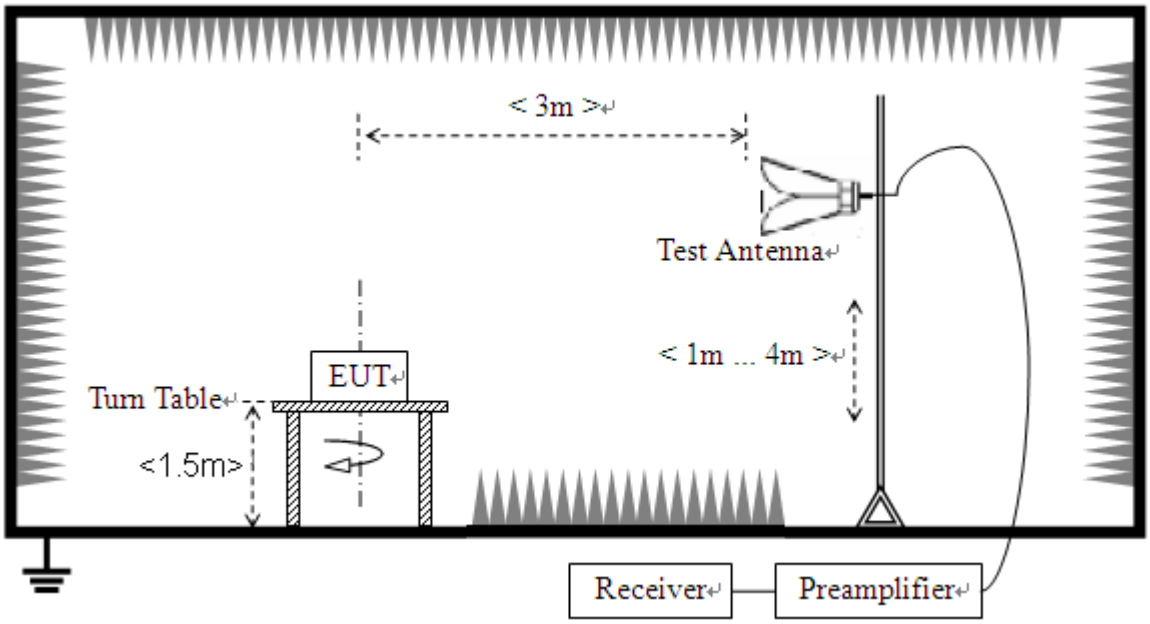
2.8.2. Test Description

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

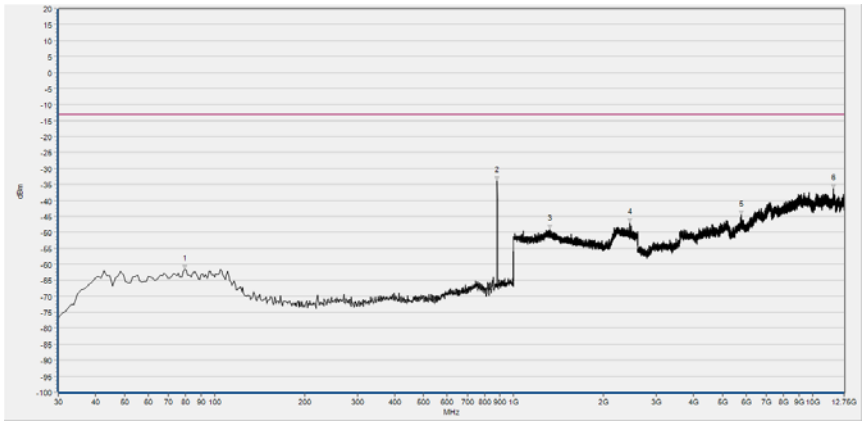
The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) and a Horn one (used for above 3 GHz), it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

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

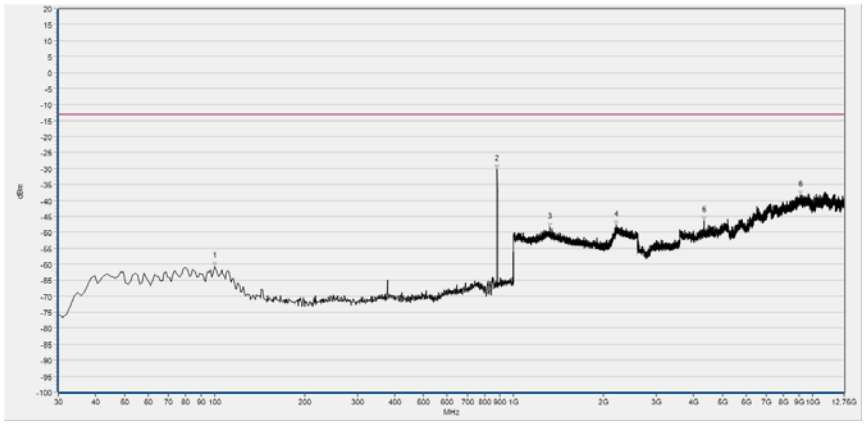
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels 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		
CDMA BC0	1013	824.7	< -25	< -25	-13	PASS
	384	836.52	< -25	< -25		PASS
	777	848.31	< -25	< -25		PASS
CDMA （BC1）	25	1851.25	< -25	< -25	-13	PASS
	600	1880.00	< -25	< -25		PASS
	1175	1908.75	< -25	< -25		PASS
Note 1: 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.						



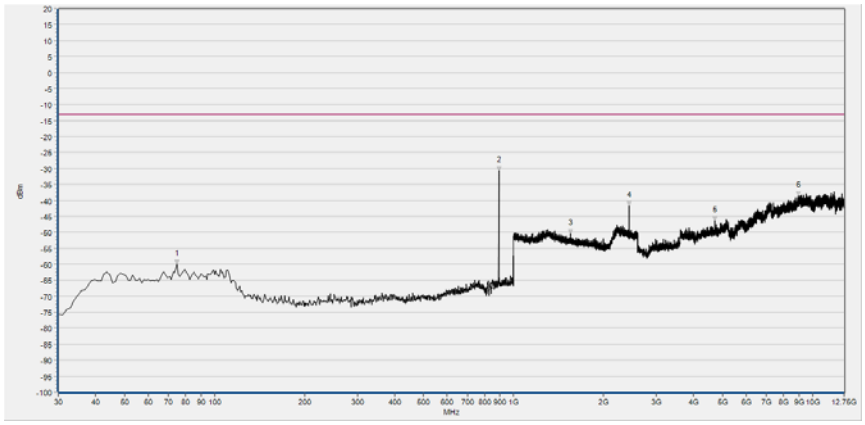
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	79.470	-61.57	-13.00	Horizontal	PASS
2	881.660	-33.78	-13.00	Horizontal	N/A
3	1323.329	-48.97	-13.00	Horizontal	PASS
4	2443.137	-47.04	-13.00	Horizontal	PASS
5	5782.142	-44.62	-13.00	Horizontal	PASS
6	11718.203	-36.28	-13.00	Horizontal	PASS

(CDMA BC0, Channel = 1013, Horizontal)



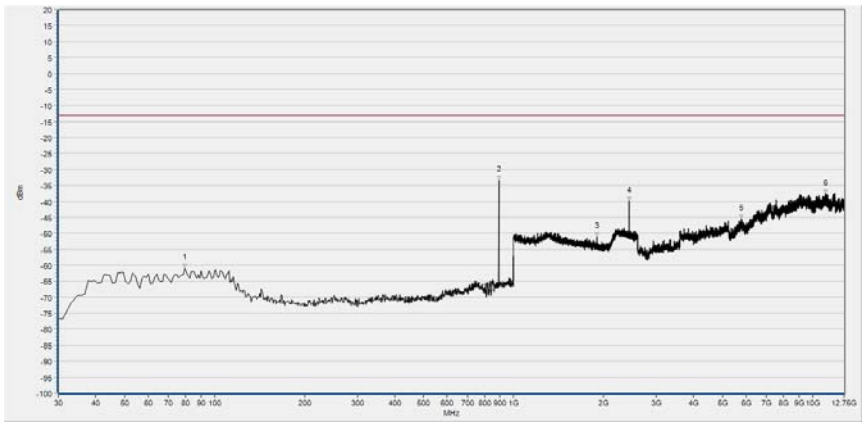
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	99.840	-60.74	-13.00	Vertical	PASS
2	880.690	-30.24	-13.00	Vertical	N/A
3	1323.970	-48.40	-13.00	Vertical	PASS
4	2202.401	-47.82	-13.00	Vertical	PASS
5	4333.197	-46.33	-13.00	Vertical	PASS
6	9111.948	-38.34	-13.00	Vertical	PASS

(CDMA BC0, Channel = 1013, Vertical)



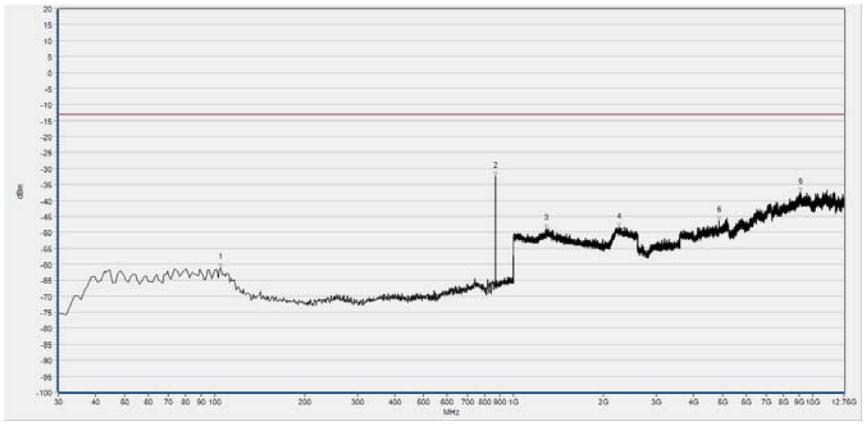
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	74.620	-60.06	-13.00	Horizontal	PASS
2	893.300	-30.73	-13.00	Horizontal	N/A
3	1551.901	-50.47	-13.00	Horizontal	PASS
4	2431.613	-41.65	-13.00	Horizontal	PASS
5	4720.813	-46.35	-13.00	Horizontal	PASS
6	8979.051	-38.61	-13.00	Horizontal	PASS

(CDMA BC0, Channel = 384, Horizontal)



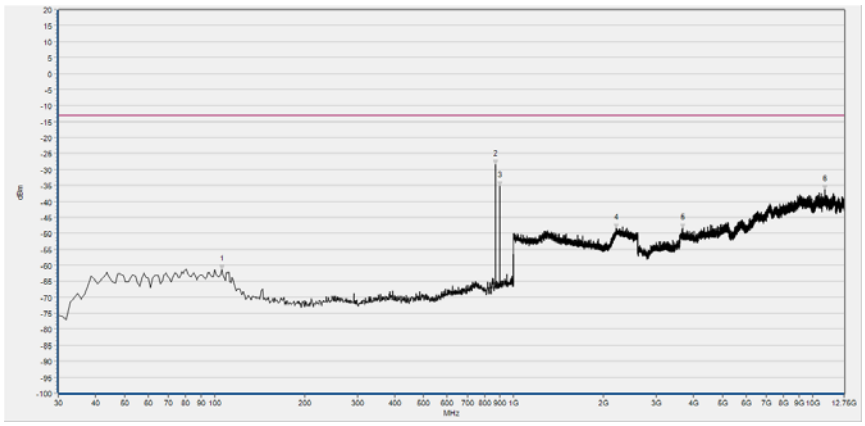
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	79.470	-60.99	-13.00	Vertical	PASS
2	892.330	-33.49	-13.00	Vertical	N/A
3	1898.920	-51.17	-13.00	Vertical	PASS
4	2438.655	-39.79	-13.00	Vertical	PASS
5	5769.222	-45.37	-13.00	Vertical	PASS
6	11061.102	-37.72	-13.00	Vertical	PASS

(CDMA BC0, Channel = 384, Vertical)



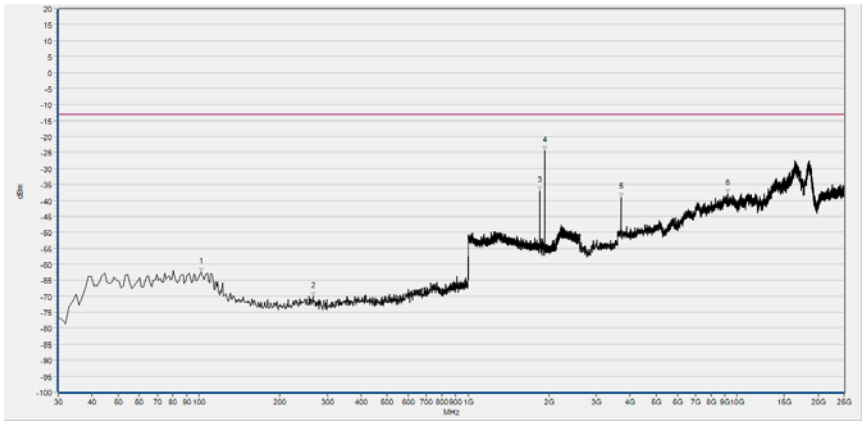
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	104.690	-61.07	-13.00	Horizontal	PASS
2	870.020	-32.58	-13.00	Horizontal	N/A
3	1287.475	-48.85	-13.00	Horizontal	PASS
4	2250.420	-48.36	-13.00	Horizontal	PASS
5	4868.476	-46.30	-13.00	Horizontal	PASS
6	9091.644	-37.53	-13.00	Horizontal	PASS

(CDMA BC0, Channel = 777, Horizontal)



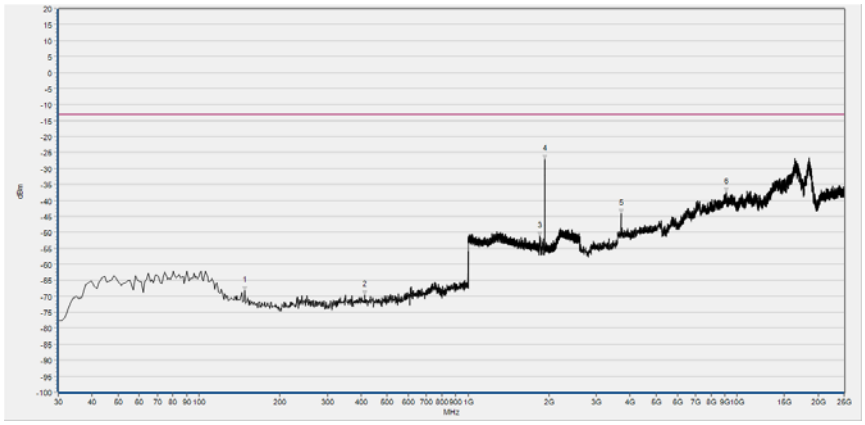
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	105.660	-61.40	-13.00	Vertical	PASS
2	870.020	-28.56	-13.00	Vertical	N/A
3	900.090	-35.28	-13.00	Vertical	N/A
4	2207.523	-48.42	-13.00	Vertical	PASS
5	3679.787	-48.33	-13.00	Vertical	PASS
6	11009.420	-36.41	-13.00	Vertical	PASS

(CDMA BC0, Channel = 777, Vertical)



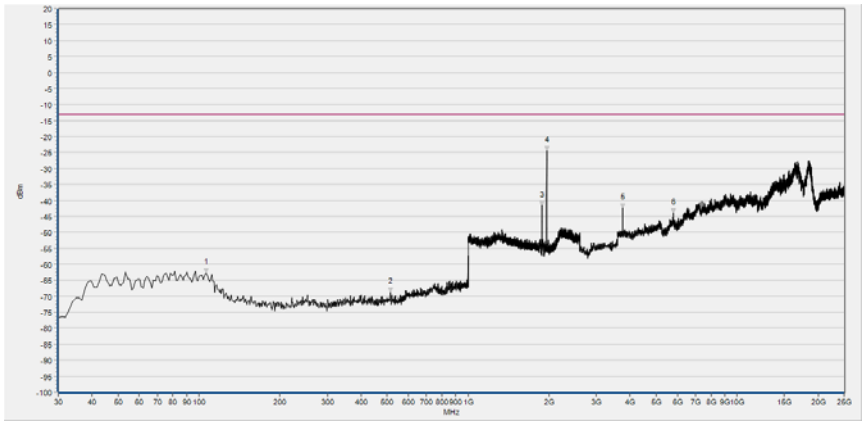
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	101.780	-62.53	-13.00	Horizontal	PASS
2	265.710	-70.11	-13.00	Horizontal	PASS
3	1851.541	-36.89	-13.00	Horizontal	N/A
4	1931.573	-24.44	-13.00	Horizontal	N/A
5	3699.836	-39.05	-13.00	Horizontal	PASS
6	9207.165	-37.97	-13.00	Horizontal	PASS

(CDMA BC1, Channel = 25, Horizontal)



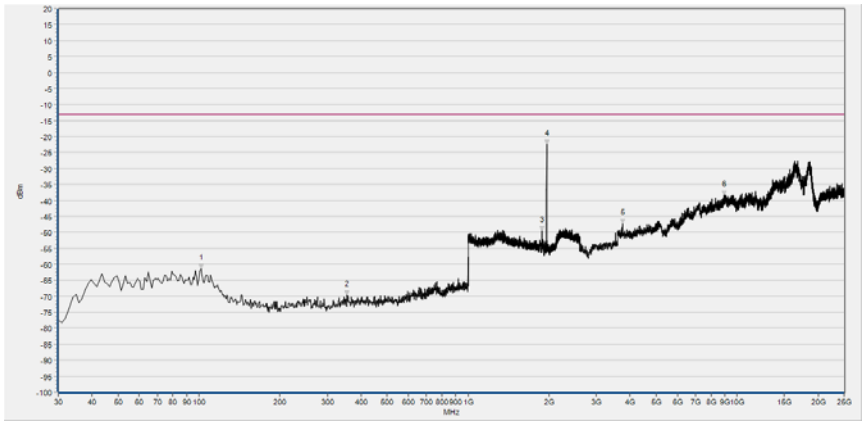
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	148.340	-68.28	-13.00	Vertical	PASS
2	413.150	-69.54	-13.00	Vertical	PASS
3	1850.260	-51.19	-13.00	Vertical	N/A
4	1930.932	-27.21	-13.00	Vertical	N/A
5	3699.836	-44.24	-13.00	Vertical	PASS
6	9141.989	-37.35	-13.00	Vertical	PASS

(CDMA BC1, Channel = 25, Vertical)



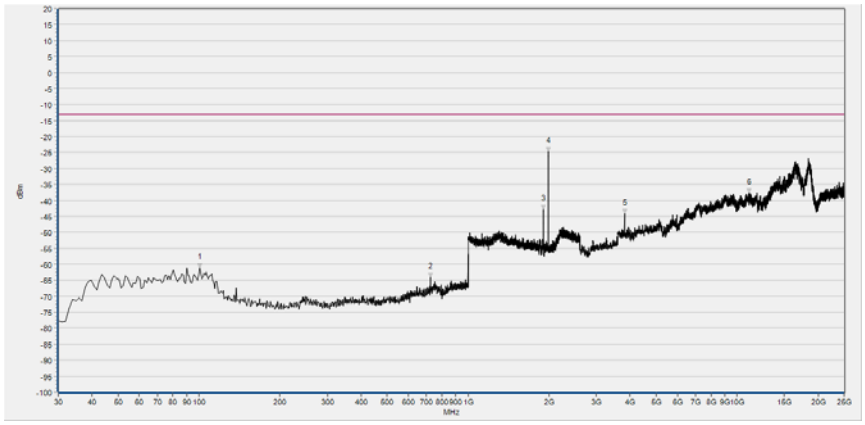
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	106.630	-62.74	-13.00	Horizontal	PASS
2	514.030	-68.67	-13.00	Horizontal	PASS
3	1879.072	-41.74	-13.00	Horizontal	N/A
4	1959.744	-24.54	-13.00	Horizontal	N/A
5	3760.938	-42.42	-13.00	Horizontal	PASS
6	5809.893	-43.96	-13.00	Horizontal	PASS

(CDMA BC1, Channel = 600, Horizontal)



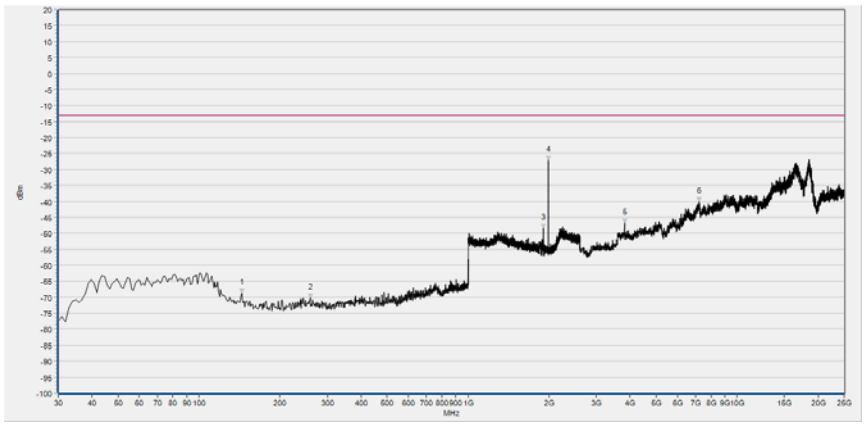
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	101.780	-61.33	-13.00	Vertical	PASS
2	354.950	-69.68	-13.00	Vertical	PASS
3	1879.712	-49.51	-13.00	Vertical	N/A
4	1959.744	-22.51	-13.00	Vertical	N/A
5	3760.938	-47.22	-13.00	Vertical	PASS
6	8942.390	-38.42	-13.00	Vertical	PASS

(CDMA BC1, Channel = 600, Vertical)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	100.810	-61.06	-13.00	Horizontal	PASS
2	725.490	-64.02	-13.00	Horizontal	PASS
3	1908.523	-42.84	-13.00	Horizontal	N/A
4	1988.555	-24.76	-13.00	Horizontal	N/A
5	3817.967	-44.17	-13.00	Horizontal	PASS
6	11068.740	-37.58	-13.00	Horizontal	PASS

(CDMA BC1, Channel = 1175, Horizontal)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	144.460	-68.76	-13.00	Vertical	PASS
2	258.920	-70.35	-13.00	Vertical	PASS
3	1908.523	-48.41	-13.00	Vertical	N/A
4	1988.555	-27.05	-13.00	Vertical	N/A
5	3817.967	-46.86	-13.00	Vertical	PASS
6	7223.386	-40.21	-13.00	Vertical	PASS

(CDMA BC1, Channel = 1175, 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	2018.04.17	2019.04.16
Attenuator 1	(N/A.)	10dB	Resnet	2018.04.17	2019.04.16
Attenuator 2	(N/A.)	3dB	Resnet	2018.04.17	2019.04.16
EXA Signal Analzyer	MY53470836	N9010A	Agilent	2018.11.06	2019.11.05
Wireless synthesizer	MY48364176	8960 -E5515C	Agilent	2018.04.17	2019.04.16
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	2018.04.17	2019.04.16
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	2018.08.04	2019.08.03
Receiver	MY54130016	N9038A	Agilent	2018.05.18	2019.05.17
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2018.03.03	2019.03.02
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2018.08.06	2019.08.05
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2018.08.02	2019.08.01
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	2018.05.08	2019.05.07
18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2018.05.08	2019.05.07
Notch Filter	N/A	WRCGV-C BC0	Wainwright	2018.12.01	2019.11.30
Notch Filter	N/A	WRCGV-C BC1	Wainwright	2018.12.01	2019.11.30
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

END OF REPORT