TEST REPORT

APPLICANT	:	Shenzhen Jimi IOT Co., Ltd
PRODUCT NAME	:	GPS VEHICLE TERMINAL
MODEL NAME	:	JM-VG01U, VG01U
BRAND NAME	:	JIMI
FCC ID	:	2AMLFJM-VG01U
STANDARD(S)	:	47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E
RECEIPT DATE	:	2020-08-18
TEST DATE	:	2020-09-04 to 2020-09-10
ISSUE DATE	:	2020-09-10

Edited by: Zeng Xiaoying (Rapporteur)

Approved by: Peng Huarui (Supervisor)

DIRECTORY

Change History		
Version	Date	Reason for change
1.0	2020-09-10	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Shenzhen Jimi IOT Co., Ltd
Applicant Address:	Floor 4th, Building C, Gaoxinqi Industrial Park, Liuxian 1st Road, District 67, Bao'an, ShenZhen, China
Manufacturer:	Huizhou Jimi Zhizao Technology Co. Ltd
Manufacturer Address:	No.12 Songyang Road, ZhongKai Development Zone, Huizhou, Guangdong, China

1.2. Equipment Under Test (EUT) Description

Product Name:	GPS VEHICLE TERMINAL	
Serial No.:	(N/A, marked #1 by test site)	
Hardware Version:	NF6132-V2.0	
Software Version:	NF6132_10_61DA1R1_D23_R0_V02_WM_20200323_1739	
Modulation Type:	GPRS Mode with GMSK Modulation	
Operating Frequency Range:	GSM 850MHz	Tx: 824MHz-849MHz
		Rx: 869MHz-894MHz
	GSM 1900MHz	Tx: 1850MHz-1910MHz
		Rx: 1930MHz-1990MHz
Antenna Type:	Stents Antenna	
Antenna Gain:	GSM 850:	-2.2dBi
	GSM1900:	-1.4dBi
Accessory Information:	Battery	
	Brand Name:	N/A
	Model No.:	423040
	Capacity:	450.00mAh
	Rated Voltage:	3.70V
	Charge Limit:	4.20V
	Manufacturer:	Huizhou city of KM-Chi Technology Co., Ltd

Note 1: According to the certificate holder, they declared that the models JM-VG01U and VG01U have the same hardware and software, only differ in model name, all RF parameters are the same. The main measuring model is JM-VG01U, only the results for JM-VG01U were recorded in this report.

Note 2: 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 3: 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 4: 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

Test Mode	Maximum ERP/EIRP (W)	Emission Designator
GSM850(GPRS)	0.625	244KGXW
GSM1900(GPRS)	0.624	237KGXW

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	Sep 07, 2020	Zhou Xiaolong	PASS	No deviation
2	24.232(d)	Peak -Average Ratio	Sep 09, 2020	Zhou Xiaolong	PASS	No deviation
3	2.1049	99% Occupied Bandwidth	Sep 04, 2020	Zhou Xiaolong	PASS	No deviation
4	2.1055, 22.355, 24.235,	Frequency Stability	Sep 10, 2020	Zhou Xiaolong	PASS	No deviation
5	2.1051, 22.917(a), 24.238(a),	Conducted Out of Band Emissions	Sep 04&09, 2020	Zhou Xiaolong	PASS	No deviation
6	2.1051, 22.917(a), 24.238(a),	Band Edge	Sep 09, 2020	Zhou Xiaolong	PASS	No deviation
7	22.913(a), 24.232(c)	Transmitter Radiated Power (EIPR/ERP)	Sep 07, 2020	Gao Jianrou	PASS	No deviation
8	2.1051, 22.917(a), 24.238(a)	Radiated Out of Band Emissions	Sep 10, 2020	Gao Jianrou	PASS	No deviation
Note 1: The tests were performed according to the method of measurements prescribed in						

KDB971168 D01 v03r01 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 23.5dB contains two parts that cable loss 13.5dB and Attenuator 10dB.

Note 3: Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

Note 4: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% risk level.

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

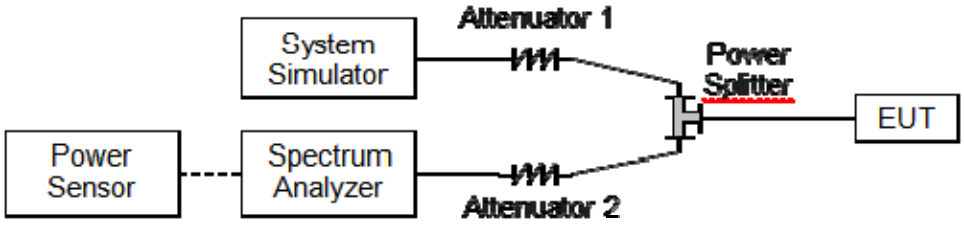
2.1. Conducted RF Output Power

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**
GPRS 1 Tx slot	32.28	32.23	32.31
GPRS 2 Tx slots	31.42	31.51	31.54
GPRS 3 Tx slots	29.79	29.93	29.89
GPRS 4 Tx slots	28.72	28.76	28.78

GSM1900	Average Power (dBm)		
Tx Channel	**512**	**661**	**810**
Frequency (MHz)	**1850.2**	**1880**	**1909.8**
GPRS 1 Tx slot	29.35	29.26	29.00
GPRS 2 Tx slots	28.82	28.74	28.46
GPRS 3 Tx slots	27.45	27.37	27.04
GPRS 4 Tx slots	26.59	26.52	26.20

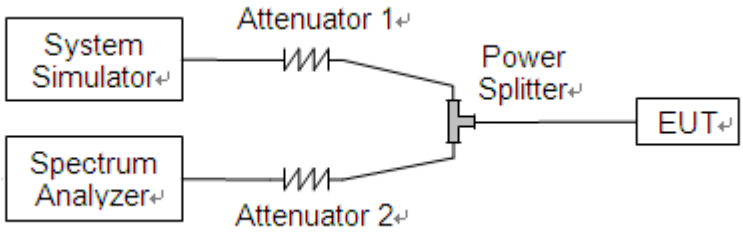
2.2. Peak to Average Ratio

2.2.1.Requirement

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

2.2.2.Test Description

Test Setup:



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

2.2.3.Test procedure

1 .For GSM/EDGE operating mode:

a. Set RBW=1MHz, VBW=3MHz, peak detector in spectrum analyzer.
b. Set EUT in maximum output power, and triggered the bust signal.
c. Measured respectively the peak level and mean level, and the deviation was recorded as Peak to Average ratio.

2. For UMTS operating mode:

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

2.2.4.Test Result

GSM1900					
Mode	**Channel**	**Frequency (MHz)**	**Peak to Average ratio (dB)**	**Limit (dB)**	**Verdict**
GPRS	512	1850.2	0.027	13	PASS
	661	1880.0	0.037		PASS
	810	1909.8	0.039		PASS

GSM1900(GPRS), CH512, 1850.2MHz

GSM1900(GPRS), CH661, 1880.0MHz

GSM1900(GPRS), CH810, 1909.8MHz

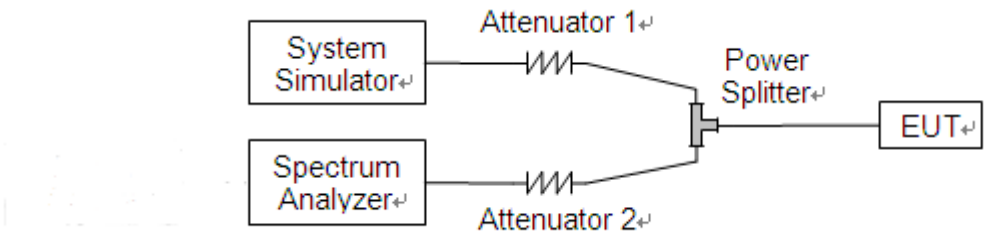
2.3. 99% Occupied Bandwidth

2.3.1.Requirement

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

2.3.2.Test Description

Test Setup:

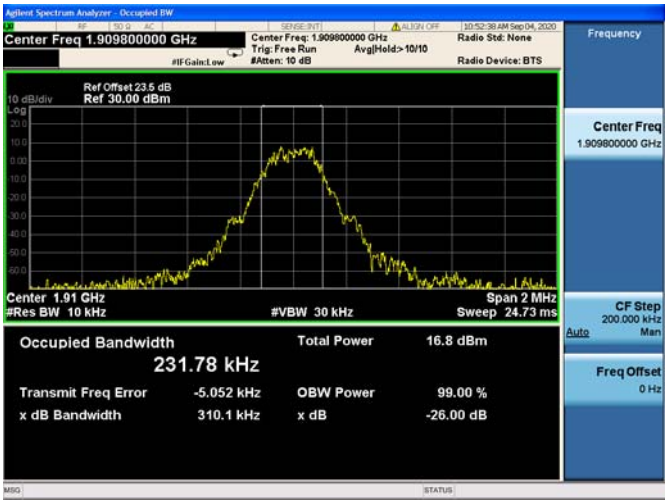


The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

2.3.3.Test Result

GSM850				
Mode	**Channel**	**Frequency (MHz)**	**99% Occupied Bandwidth (kHz)**	**26dB Bandwidth (kHz)**
GPRS	128	824.2	240.36	322.00
	190	836.6	243.88	317.50
	251	848.8	244.21	320.10
GSM1900				
Mode	**Channel**	**Frequency (MHz)**	**99% Occupied Bandwidth (kHz)**	**26dB Bandwidth (kHz)**
GPRS	512	1850.2	234.47	312.30
	661	1880.0	237.43	304.30
	810	1909.8	231.78	310.10

GSM850(GPRS), CH128, 824.2MHz	GSM850(GPRS), CH190, 836.6MHz
	
GSM850(GPRS), CH251, 848.8MHz	
	

GSM1900(GPRS), CH512, 1850.2MHz	GSM1900(GPRS), CH661, 1880.0MHz
	
GSM1900(GPRS), CH810, 1909.8MHz	
	

2.4. Frequency Stability

2.4.1.Requirement

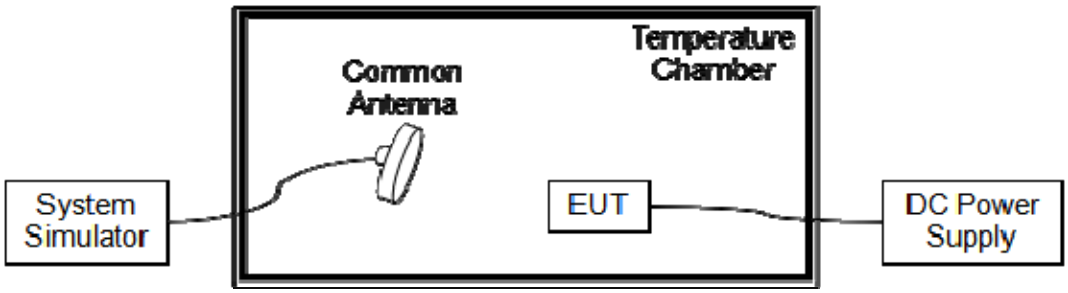
According to FCC section 22.355 and 24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(a) The temperature is varied from-20°C to +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

The nominal, highest and lowest extreme voltages are separately12.00VDC, 13.80VDC and 10.20VDC, which are specified by the applicant; the normal temperature here used is 20°C.

GSM850(GPRS), CH190, 836.6MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	12.00	+20(Ref)	21	-0.025	PASS
100		-20	38	-0.045	
100		-10	-72	0.086	
100		0	22	-0.026	
100		+10	-41	0.049	
100		+20	69	-0.082	
100		+30	29	-0.035	
100		+40	46	-0.055	
100		+50	38	-0.045	
115	13.80	+20	-29	0.035	
85	10.20	+20	-31	0.037	

GSM1900(GPRS), CH661, 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	12.00	+20(Ref)	51	-0.027	PASS
100		-20	-23	0.012	
100		-10	49	-0.026	
100		0	-22	0.012	
100		+10	-52	0.028	
100		+20	45	-0.024	
100		+30	-68	0.036	
100		+40	39	-0.021	
100		+50	29	-0.015	
115	13.80	+20	33	-0.018	
85	10.20	+20	-52	0.028	

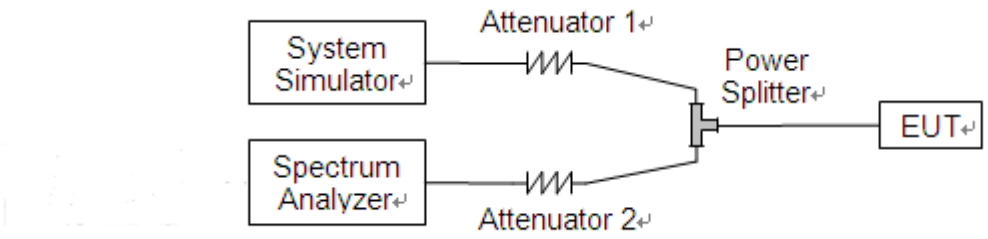
2.5. Conducted Out of Band Emissions

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. The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency.

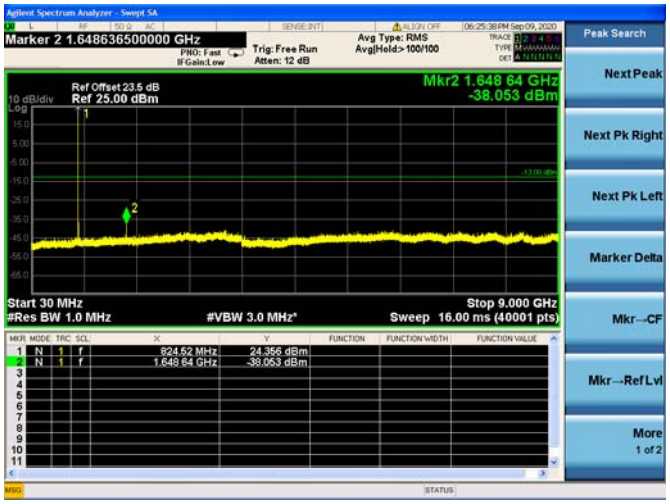
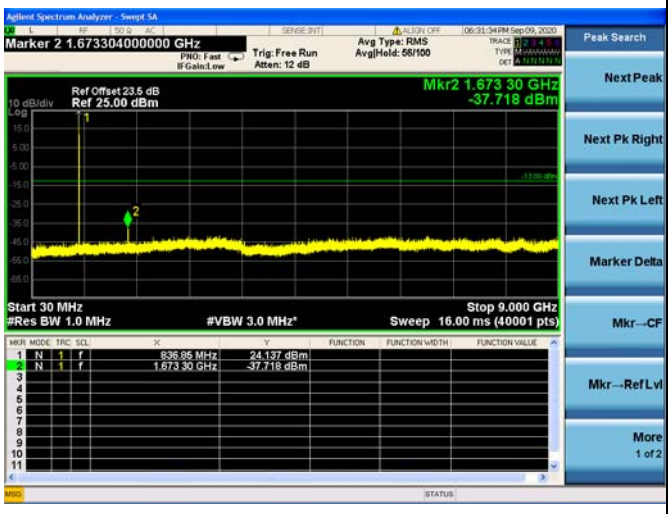
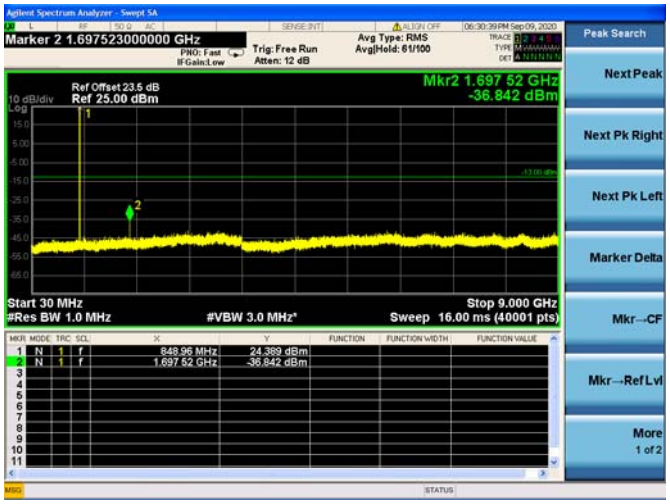
2.5.2.Test Description

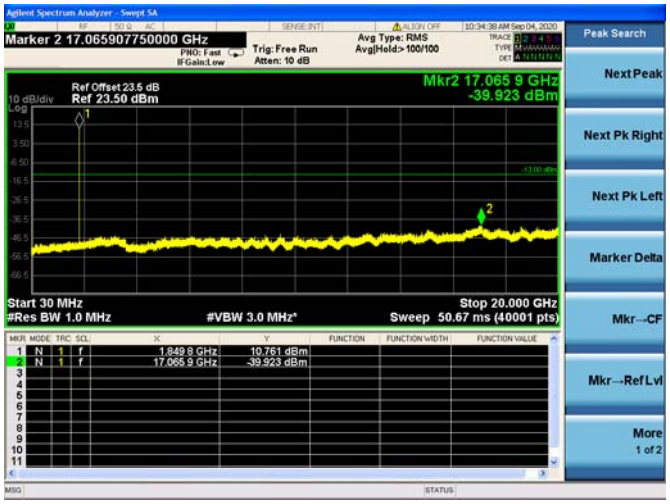
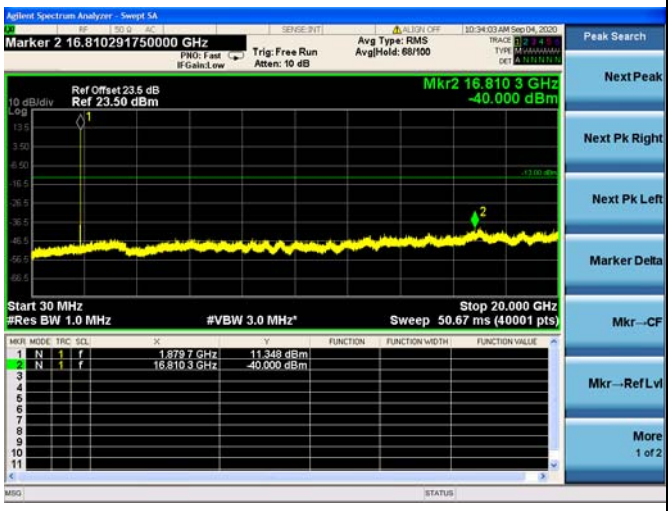
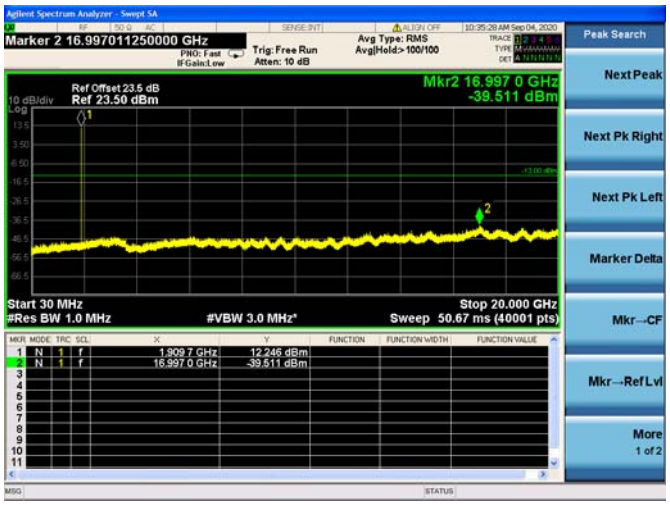
Test Setup:



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

GSM850(GPRS), CH128, 824.2MHz	GSM850(GPRS), CH190, 836.6MHz
	
GSM850(GPRS), CH251, 848.8MHz	
	

GSM1900(GPRS), CH512, 1850.2MHz	GSM1900(GPRS), CH661, 1880.0MHz
	
GSM1900(GPRS), CH810, 1909.8MHz	
	

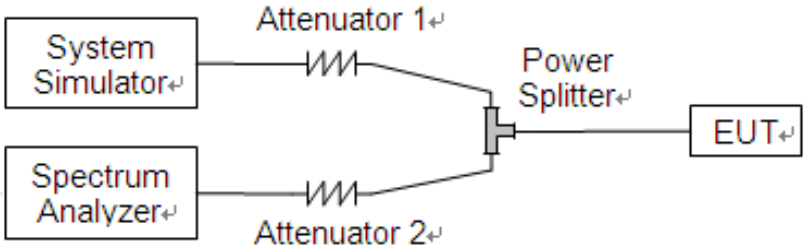
2.6. Band Edge

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.

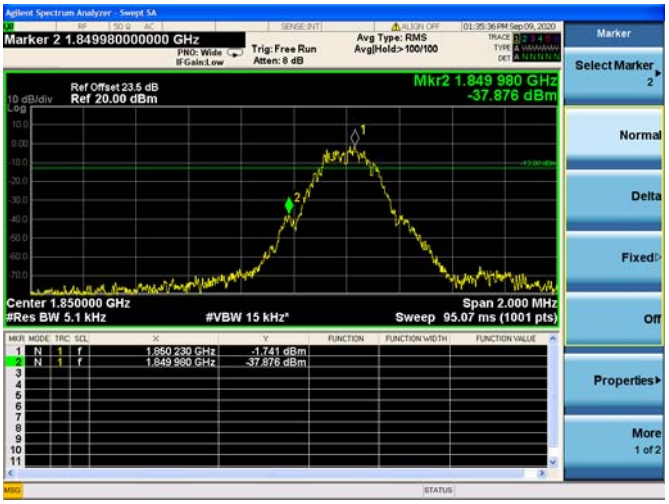
2.6.2.Test Description

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

GSM850(GPRS), CH128, 824.2MHz	GSM850(GPRS), CH251, 848.8MHz
	
GSM1900(GPRS), CH512, 1850.2MHz	**GSM1900(GPRS), CH810, 1909.8MHz**
	

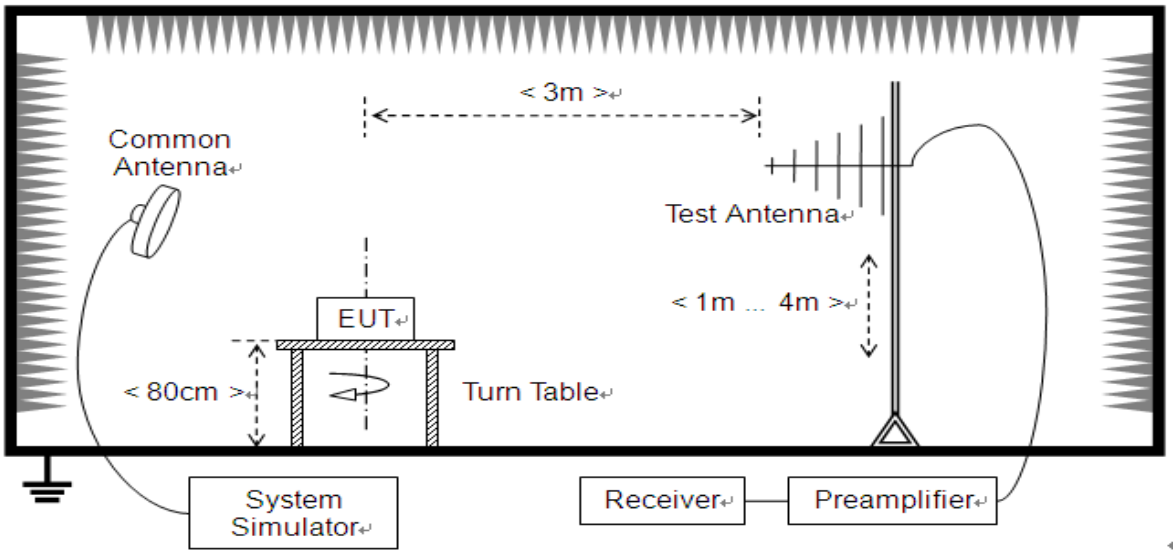
2.7. Transmitter Radiated Power (EIRP/ERP)

2.7.1.Requirement

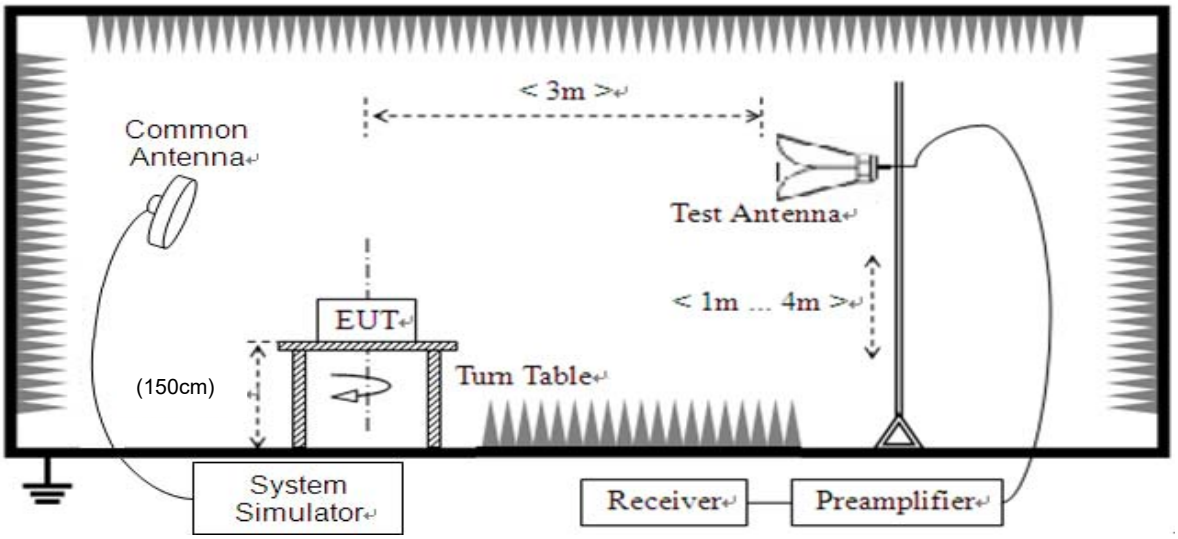
According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
According to FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power.

2.7.2.Test Description

Test Setup:
1) Below 1GHz



2) Above 1GHz



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

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

- Step size (dB): 3dB

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

2.7.3.Test Result

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

The substitution corrections are obtained as described below:

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

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

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}.

GSM850								
Mode	Channel	Frequency (MHz)	PCL	Measured ERP		Limit		Verdict
				dBm	W	dBm	W	
GPRS	128	824.20	5	27.93	0.621	38.5	7	PASS
	190	836.60	5	27.88	0.614			PASS
	251	848.80	5	27.96	0.625			PASS
GSM1900								
Mode	Channel	Frequency (MHz)	PCL	Measured EIRP		Limit		Verdict
				dBm	W	dBm	W	
GPRS	512	1850.2	0	27.95	0.624	33	2	PASS
	661	1880.0	0	27.86	0.611			PASS
	810	1909.8	0	27.60	0.575			PASS

Note 1: For the GPRS mode, 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.

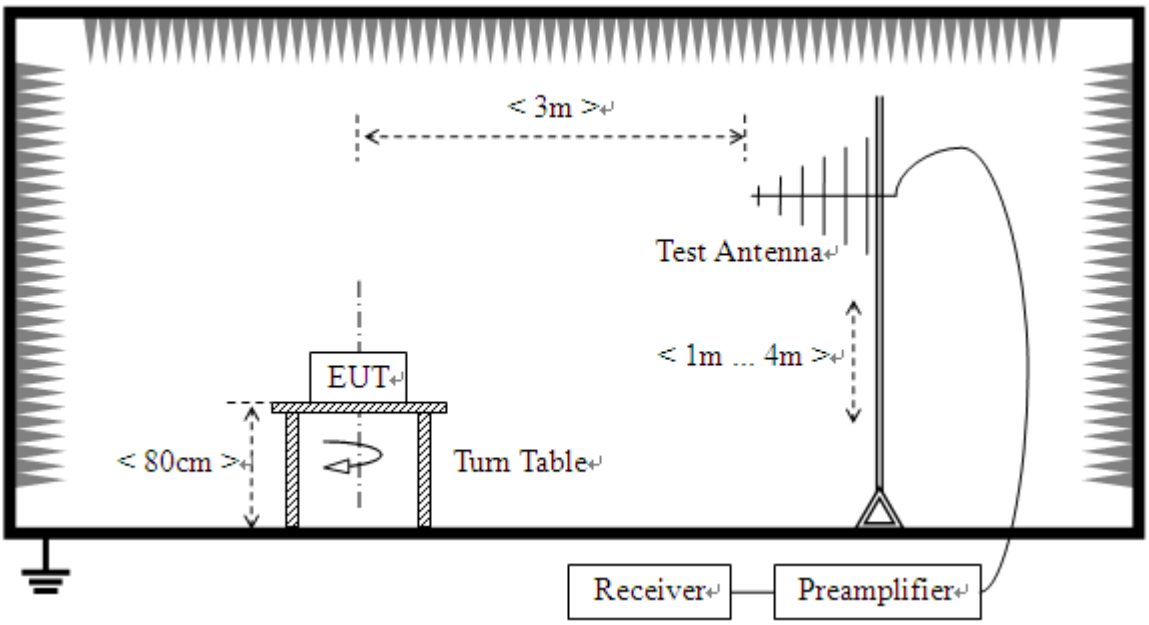
2.8. Radiated Out of Band Emissions

2.8.1.Requirement

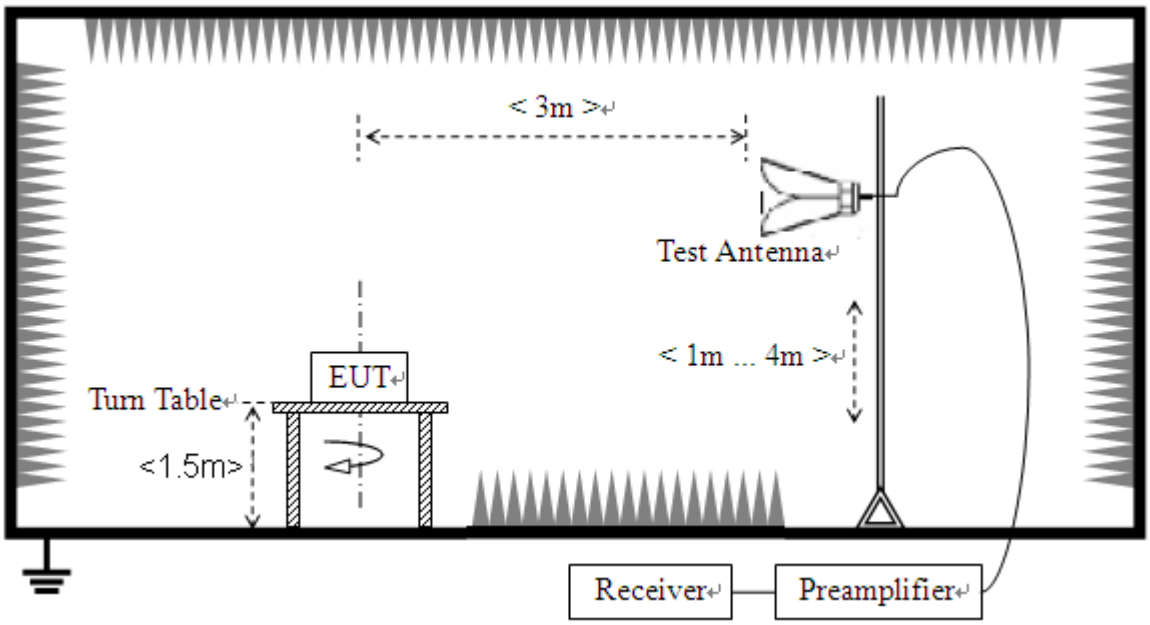
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm. The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency.

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 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.

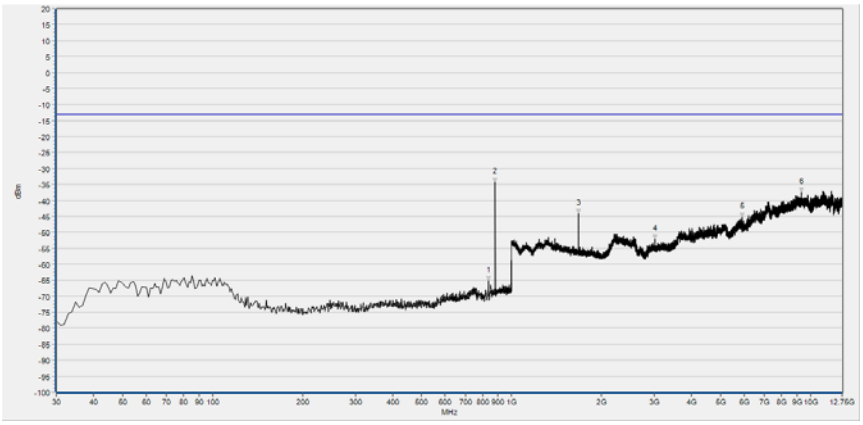
A_{TOT} is total correction factor including cable loss and substitution correction

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}.

Note1: The power of the EUT transmitting frequency should be ignored.

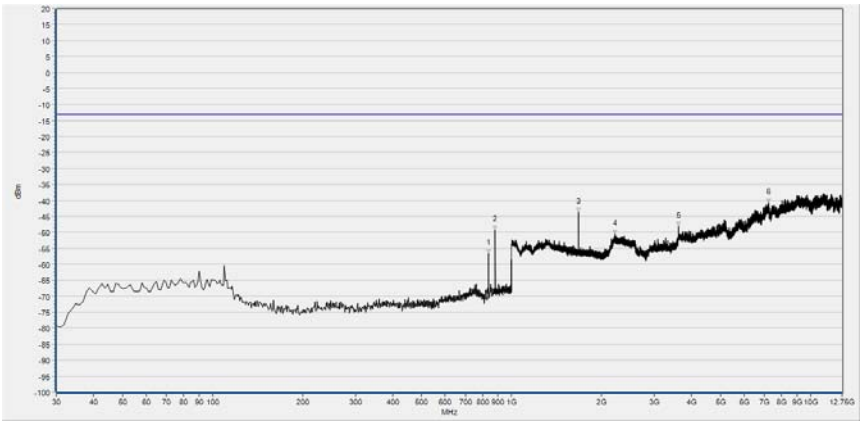
Note2: All test mode and condition mentioned were considered and evaluated respectively by performing full test, only the worst data were recorded and reported.

Note3: 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.



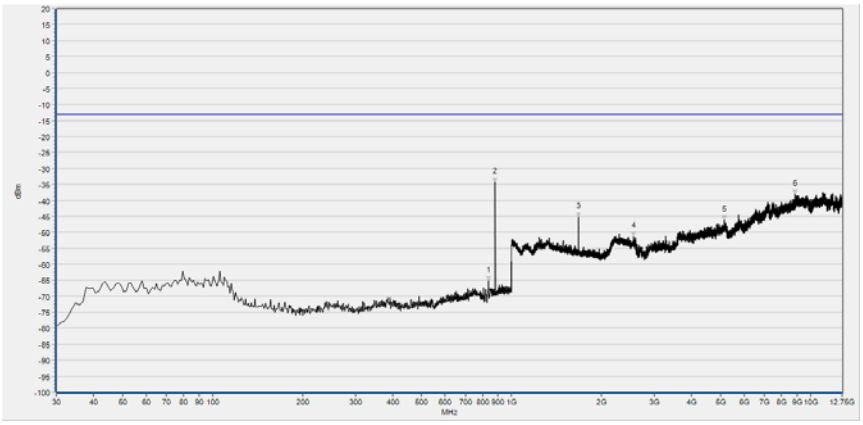
No.	Fre.(MHz)	PK (dBm)	Limit PK (dBm)	Antenna	Verdict
1	837.040	-65.24	-13.00	Horizontal	PASS
2	881.660	-34.27	-13.00	Horizontal	PASS
3	1672.909	-44.19	-13.00	Horizontal	PASS
4	3022.686	-52.22	-13.00	Horizontal	PASS
5	5887.352	-45.22	-13.00	Horizontal	PASS
6	9331.597	-37.38	-13.00	Horizontal	PASS

(GSM850(GPRS), CH128, Antenna Horizontal)



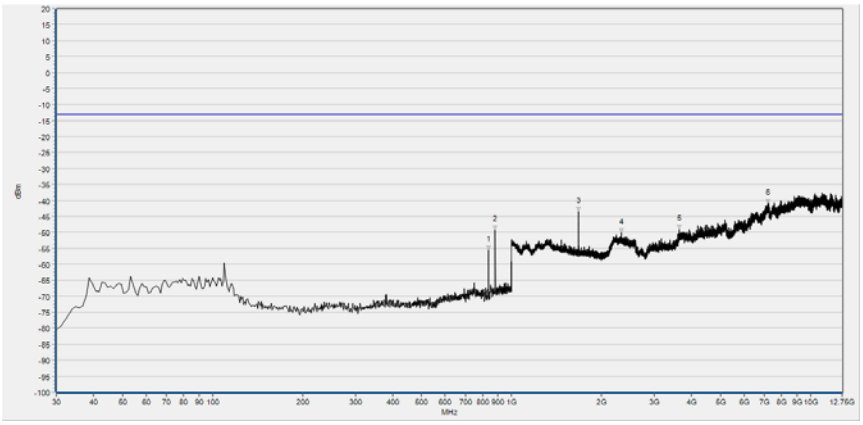
No.	Fre.(MHz)	PK (dBm)	Limit PK (dBm)	Antenna	Verdict
1	836.070	-56.73	-13.00	Vertical	PASS
2	881.660	-49.31	-13.00	Vertical	PASS
3	1672.909	-43.65	-13.00	Vertical	PASS
4	2214.566	-50.54	-13.00	Vertical	PASS
5	3611.493	-48.12	-13.00	Vertical	PASS
6	7223.704	-40.68	-13.00	Vertical	PASS

(GSM850(GPRS), CH128, Antenna Vertical)



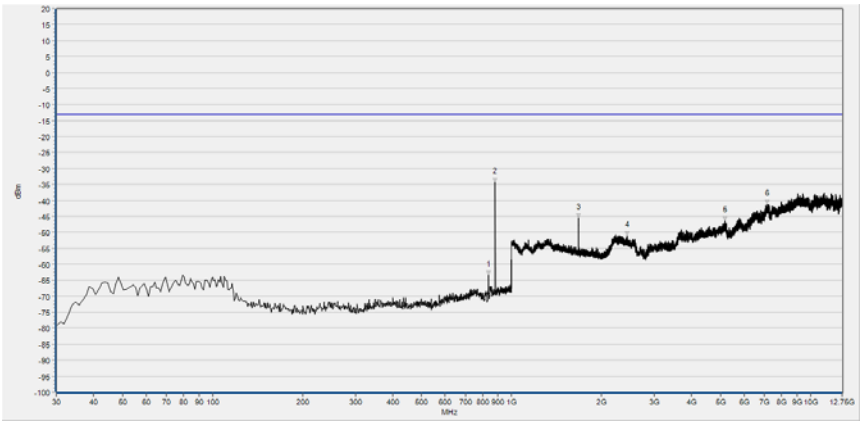
No.	Fre.(MHz)	PK (dBm)	Limit PK (dBm)	Antenna	Verdict
1	836.070	-65.25	-13.00	Horizontal	PASS
2	881.660	-34.23	-13.00	Horizontal	PASS
3	1672.909	-45.17	-13.00	Horizontal	PASS
4	2551.341	-51.36	-13.00	Horizontal	PASS
5	5143.499	-46.11	-13.00	Horizontal	PASS
6	8873.841	-38.20	-13.00	Horizontal	PASS

(GSM850(GPRS), CH190, Antenna Horizontal)



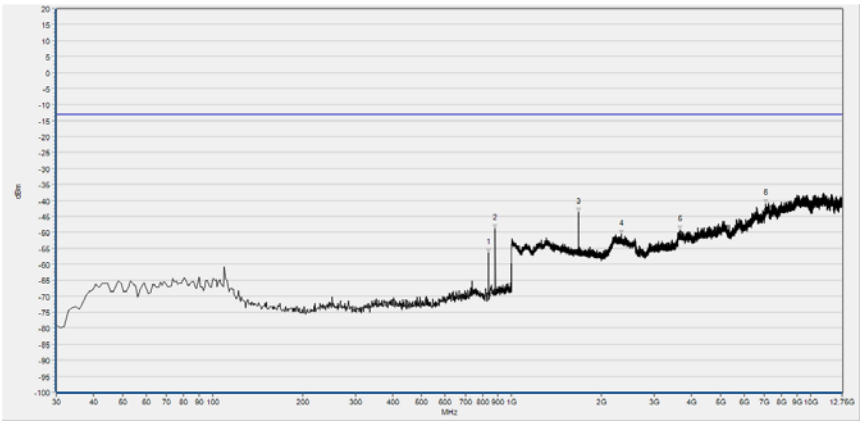
No.	Fre.(MHz)	PK (dBm)	Limit PK (dBm)	Antenna	Verdict
1	837.040	-55.49	-13.00	Vertical	PASS
2	881.660	-49.36	-13.00	Vertical	PASS
3	1672.909	-43.56	-13.00	Vertical	PASS
4	2324.690	-50.27	-13.00	Vertical	PASS
5	3633.642	-49.15	-13.00	Vertical	PASS
6	7179.405	-41.09	-13.00	Vertical	PASS

(GSM850(GPRS), CH190, Antenna Vertical)



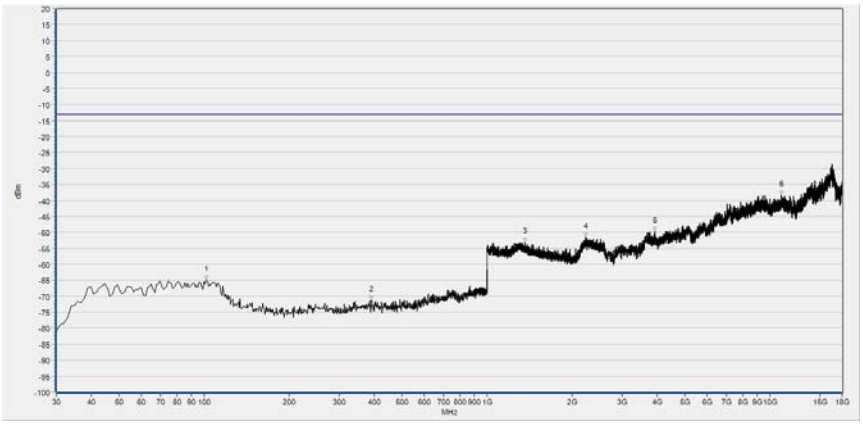
No.	Fre.(MHz)	PK (dBm)	Limit PK (dBm)	Antenna	Verdict
1	836.070	-63.25	-13.00	Horizontal	PASS
2	881.660	-34.28	-13.00	Horizontal	PASS
3	1672.909	-45.40	-13.00	Horizontal	PASS
4	2438.015	-51.01	-13.00	Horizontal	PASS
5	5174.877	-46.45	-13.00	Horizontal	PASS
6	7168.331	-41.32	-13.00	Horizontal	PASS

(GSM850(GPRS), CH251, Antenna Horizontal)



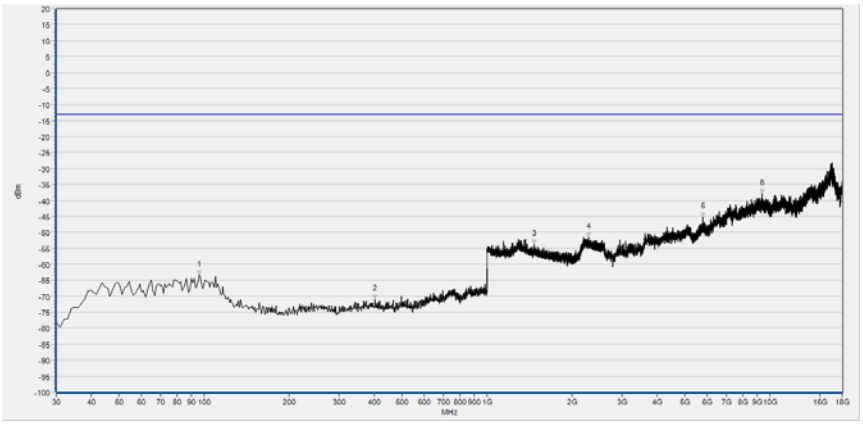
No.	Fre.(MHz)	PK (dBm)	Limit PK (dBm)	Antenna	Verdict
1	837.040	-56.40	-13.00	Vertical	PASS
2	881.660	-48.91	-13.00	Vertical	PASS
3	1672.909	-43.73	-13.00	Vertical	PASS
4	2334.934	-50.69	-13.00	Vertical	PASS
5	3661.329	-49.33	-13.00	Vertical	PASS
6	7085.270	-41.08	-13.00	Vertical	PASS

(GSM850(GPRS), CH251, Antenna Vertical)



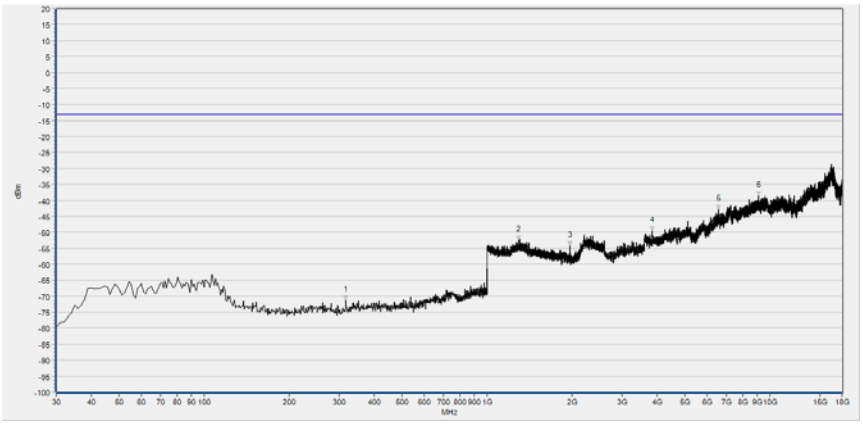
No.	Fre.(MHz)	PK (dBm)	Limit PK (dBm)	Antenna	Verdict
1	101.780	-64.87	-13.00	Horizontal	PASS
2	390.840	-71.21	-13.00	Horizontal	PASS
3	1363.665	-53.07	-13.00	Horizontal	PASS
4	2235.054	-51.42	-13.00	Horizontal	PASS
5	3930.242	-49.66	-13.00	Horizontal	PASS
6	10962.320	-38.42	-13.00	Horizontal	PASS

(GSM1900(GPRS), CH512, Antenna Horizontal)



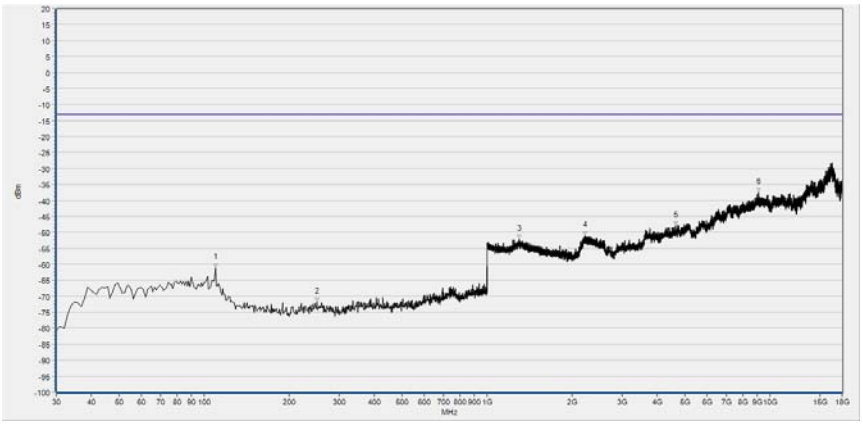
No.	Fre.(MHz)	PK (dBm)	Limit PK (dBm)	Antenna	Verdict
1	95.960	-63.42	-13.00	Vertical	PASS
2	402.480	-71.02	-13.00	Vertical	PASS
3	1467.387	-53.65	-13.00	Vertical	PASS
4	2279.232	-51.51	-13.00	Vertical	PASS
5	5778.578	-45.36	-13.00	Vertical	PASS
6	9377.232	-37.90	-13.00	Vertical	PASS

(GSM1900(GPRS), CH512, Antenna Vertical)



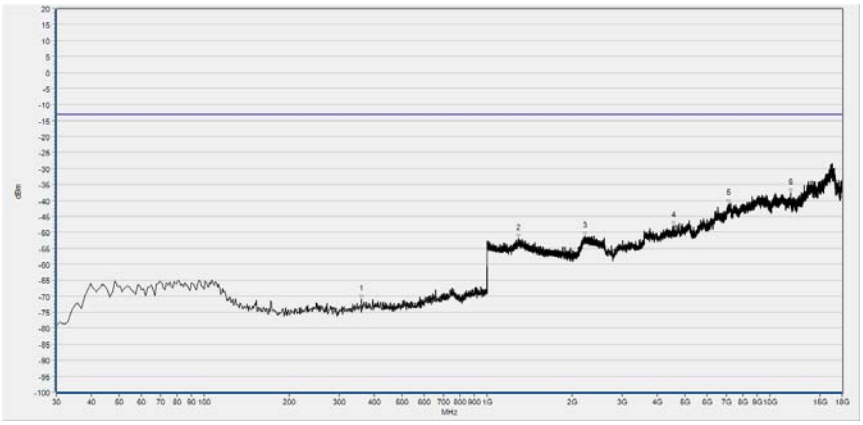
No.	Fre.(MHz)	PK (dBm)	Limit PK (dBm)	Antenna	Verdict
1	317.120	-71.28	-13.00	Horizontal	PASS
2	1295.158	-52.36	-13.00	Horizontal	PASS
3	1959.744	-54.22	-13.00	Horizontal	PASS
4	3835.025	-49.39	-13.00	Horizontal	PASS
5	6573.923	-42.80	-13.00	Horizontal	PASS
6	9125.186	-38.55	-13.00	Horizontal	PASS

(GSM1900(GPRS), CH661, Antenna Horizontal)



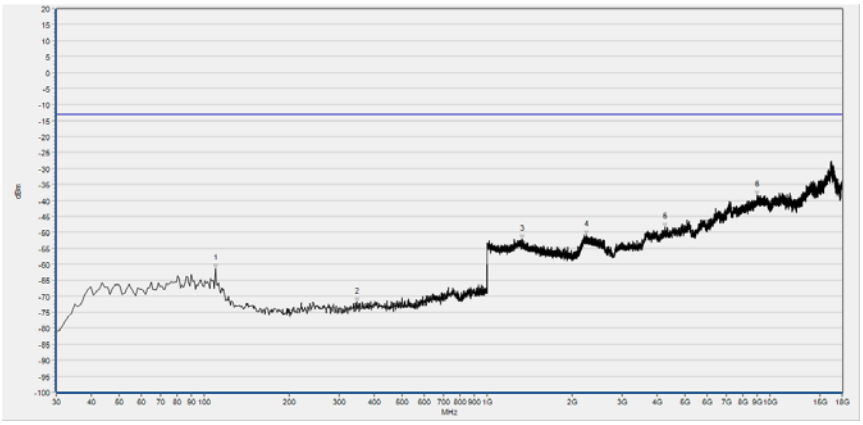
No.	Fre.(MHz)	PK (dBm)	Limit PK (dBm)	Antenna	Verdict
1	109.540	-61.02	-13.00	Vertical	PASS
2	250.190	-71.85	-13.00	Vertical	PASS
3	1295.798	-52.22	-13.00	Vertical	PASS
4	2221.609	-51.01	-13.00	Vertical	PASS
5	4652.773	-47.89	-13.00	Vertical	PASS
6	9139.189	-37.48	-13.00	Vertical	PASS

(GSM1900(GPRS), CH661, Antenna Vertical)



No.	Fre.(MHz)	PK (dBm)	Limit PK (dBm)	Antenna	Verdict
1	359.800	-70.96	-13.00	Horizontal	PASS
2	1291.957	-51.92	-13.00	Horizontal	PASS
3	2215.206	-51.24	-13.00	Horizontal	PASS
4	4571.558	-48.02	-13.00	Horizontal	PASS
5	7136.825	-41.00	-13.00	Horizontal	PASS
6	11861.284	-37.67	-13.00	Horizontal	PASS

(GSM1900(GPRS), CH810, Antenna Horizontal)



No.	Fre.(MHz)	PK (dBm)	Limit PK (dBm)	Antenna	Verdict
1	109.540	-61.42	-13.00	Vertical	PASS
2	346.220	-71.83	-13.00	Vertical	PASS
3	1326.531	-52.16	-13.00	Vertical	PASS
4	2239.536	-50.79	-13.00	Vertical	PASS
5	4260.702	-48.36	-13.00	Vertical	PASS
6	9004.765	-38.35	-13.00	Vertical	PASS

(GSM1900(GPRS), CH810, Antenna 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.)	20dB	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	2020.07.27	2021.07.26
Wireless synthesizer	620095016	MT8820C	Anritsu	2020.01.13	2021.01.12
RF cable (30MHz-26GHz)	CB01	RF01	Morlab	2020.01.13	2021.01.12
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	N/A	N/A
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	2020.07.21	2021.07.20
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2019.05.24	2022.05.23
Test Antenna - Horn	BBHA9170 #774	BBHA 9170	Schwarzbeck	2019.07.26	2022.07.25
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2019.07.26	2022.07.25
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	2020.07.28	2021.07.27
18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2020.07.28	2021.07.27
Notch Filter	N/A	WRCG-GSM 850	Wainwright	2020.07.28	2021.07.27
Notch Filter	N/A	WRCG-GSM 1900	Wainwright	2020.07.28	2021.07.27
Anechoic Chamber	N/A	9m*6m*6m	CRT	2020.01.06	2023.01.05

END OF REPORT