Test Report

FCC ID: 2AT7I-T1

Date of issue: Aug. 01, 2019

Report Number:	MTi19053019-3B011-2E
Sample Description:	GSM Wireless Data Terminal
Model(s):	T1
Applicant:	iFREE GROUP (HK) Ltd.
Address:	Suite 06, 19/F, Mira Place Tower A, 132 Nathan Road, Tsim Sha Tsui, Kowloon, Hong Kong.
Date of Test:	June 18, 2019 to July 30, 2019

Shenzhen Microtest Co., Ltd.
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Address: No.102A & 302A, East Block, Hengfang Industrial Park, Xingye Road, Xixiang, Bao'an District, Shenzhen, Guangdong, China

Table of Contents

Test Result Certification

Applicant's name:	iFREE GROUP (HK) Ltd.
Address:	Suite 06, 19/F, Mira Place Tower A, 132 Nathan Road, Tsim Sha Tsui, Kowloon, Hong Kong.
Manufacture's Name:	iFREE GROUP (HK) Ltd.
Address:	Suite 06, 19/F, Mira Place Tower A, 132 Nathan Road, Tsim Sha Tsui, Kowloon, Hong Kong.
Product name:	GSM Wireless Data Terminal
Trademark:	MOGO
Model name:	T1
Standards:	FCC Part 22 Subpart H FCC Part 24 Subpart E
Test Procedure:	FCC Part 2 ANSI TIA-603-D: 2010 KDB 971168 D01 v02r02

This device described above has been tested by Shenzhen Microtest Co., Ltd. and the test results show that the equipment under test (EUT) compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

Tested by: Demi Mu July 30,2019

Reviewed by: Blue Zheng Aug. 01, 2019

Approved by: Smith Chen Aug. 01, 2019

1 General description

1.1 Feature of equipment under test (EUT)

Product name:	GSM Wireless Data Terminal
Trade Name	MOGO
Model Name:	T1
Model Difference	N/A
Frequency range:	GSM/GPRS 850: TX824.2MHz~848.8MHz,RX869.2MHz~893.8MHz GSM/GPRS 1900: TX1850.2MHz~1909.8MHzRX1930.2MHz~1989.8MHz
Modulation type:	GSM/GPRS 850/1900:GMSK for GPRS
Multislot Class	GPRS: 12
Antenna Type	FPC Antenna
Antenna Gain	-0.5dBi
Hardware Version	T1M1_VER.B
Software Version	T1V01R005S
Power Supply:	DC 3.85V from Battery or DC 5V from adapter
Battery:	DC 3.85V 780mAh
Adapter information:	N/A
Contains FCC ID:	XMR201609MC60

1.2 Test frequency channel

Frequency Band	Frequency	Channel	Frequency(MHz)
GSM 850	Low	128	824.2
	Middle	190	836.6
	High	251	848.8
GSM 1900	Low	512	1850.2
	Middle	661	1880
	High	810	1909.8

GPRS 850	Low	128	824.2
	Middle	190	836.6
	High	251	848.8
GPRS 1900	Low	512	1850.2
	Middle	661	1880
	High	810	1909.8

1.3 EUT operation mode

During testing, RF test program provided by the manufacture to control the Tx operation followed the test requirement. The EUT is configured to transmit continuously (duty cycle > 98 %) at the maximum power control level.

1.4 Test conditions

During the measurement the environmental conditions were within the listed ranges:
- Temperature: 15ºC~35ºC
- Humidity: 20%~75%
- Atmospheric pressure: 98kPa~101kPa

1.5 Testing site

Test Site	Shenzhen Microtest Co., Ltd.
Test Site Location	No.102A & 302A, East Block, Hengfang Industrial Park, Xingye Road, Xixiang, Bao'an District, Shenzhen, Guangdong, China
FCC Registration No.:	448573

1.6 Ancillary equipment list

Equipment	Model	S/N	Manufacturer	Certificate type
Adapter	/	/	/	/

1.7 Measurement uncertainty

Measurement Uncertainty for a Level of Confidence of 95 %, U=2xUc(y)

RF frequency	1 x 10-7
RF power, conducted	± 1 dB
Conducted emission(150kHz~30MHz)	± 2.5 dB
Radiated emission(30MHz~1GHz)	± 4.2 dB
Radiated emission (above 1GHz)	± 4.3 dB
Temperature	±1 degree
Humidity	± 5 %

2 Summary of Test Result

Item	FCC Part No.	Description of Test	Result
1	2.1046, 22.913(a); 24.232(c)	Maximum output power	Pass
2	2.1046, 22.913(a); 24.232(c)	Peak to average power radio(PAPR)	Pass
3	2.1046, 22.913(a); 24.232(c)	Transmitter Radiated Power (EIRP/ERP)	Pass
4	2.1049; 22.917(b); 24.238(b)	Occupied Bandwidth	Pass
5	2.1051; 22.917(a); 24.238(a)	Conducted spurious emissions	Pass
6	2.1051; 22.917(b); 24.238(b)	Spurious emissions at band edge	Pass
7	2.1053; 22.917(a); 24.238(a)	Radiated spurious emissions	Pass
8	2.1055; 22.355; 24.235	Frequency Stability	Pass

Note 1: The RF module of the EUT in this test report is the same as the report number issued by SIEMIC: 16050024-FCC-R1, which was released on September 22, 2016. Therefore, this report only evaluates test items for radiated spurious emissions, peak output power, and conducted emissions. For other test items, please refer to the test report of 16050024-FCC-R1

3 Test facilities and accreditations

3.1 Test laboratory

Test Laboratory	Shenzhen Microtest Co., Ltd
Location	No.102A & 302A, East Block, Hengfang Industrial Park, Xingye Road, Xixiang, Bao'an District, Shenzhen, Guangdong, China
FCC Registration No.:	448573

3.2 Environmental conditions

Temperature:	15ºC~35ºC
Humidity	20%~75%
Atmospheric pressure	98kPa~101kPa

3.3 Measurement uncertainty

Measurement Uncertainty for a Level of Confidence of 95 %, U=2xUc(y)

RF frequency	1 x 10-7
RF power, conducted	± 1 dB
Conducted emission(150kHz~30MHz)	± 2.5 dB
Radiated emission(30MHz~1GHz)	± 4.2 dB
Radiated emission (above 1GHz)	± 4.3 dB
Temperature	±1 degree
Humidity	± 5 %

3.4 Test software

Software Name	Manufacturer	Model	Version
Bluetooth and WiFi Test System	Shenzhen JS tonscend co., ltd	JS1120-3	2.5.77.0418

4 List of test equipment

Equipment No.	Equipment Name	Manufacturer	Model	Serial No.	Calibration date	Due date
MTI-E001	Spectrum Analyzer	Agilent	E4407B	MY41441082	2018/09/18	2019/09/17
MTI-E004	EMI Test Receiver	Rohde&schwarz	ESPI	1000314	2018/09/18	2019/09/17
MTI-E006	Broadband antenna	schwarabeck	VULB9163	872	2018/09/18	2019/09/17
MTI-E007	Horn antenna	schwarabeck	BBHA9120D	1201	2018/09/18	2019/09/17
MTI-E014	amplifier	America	8447D	3113A06150	2018/09/18	2019/09/17
MTI-E015	Conduction Immunity Signal Generator	Schloder	CDG6000	126A1343/2015	2018/09/18	2019/09/17
MTI-E016	Coupled decoupling network	Schloder	CND M2/M3	A2210332/2015	2018/09/18	2019/09/17
MTI-E034	amplifier	Agilent	8449B	3008A02400	2018/09/18	2019/09/17
MTI-E040	Spectrum analyzer	Agilent	N9020A	MY49100060	2018/09/18	2019/09/17
MTI-E041	Signal generator	Agilent	N5182A	MY49060455	2018/09/18	2019/09/17
MTI-E042	Analog signal generator	Agilent	E4421B	GB40051240	2018/09/18	2019/09/17
MTI-E043	Power probe	Dare Instruments	RPR3006W	16I00054SNO16	2018/09/18	2019/09/17
MTI-E047	10dB attenuator	Mini-Circuits	UNAT-10+	15542	2018/09/18	2019/09/17
MTI-E049	spectrum analyzer	Rohde&schwarzss	FSP-38	100019	2018/09/18	2019/09/17
MTI-E050	PSG Signal generator	Agilent	E8257D	MY46520873	2018/09/18	2019/09/17
MTI-E061	Active Loop Antenna 9kHz - 30MHz	Schwarzbeek	FMZB 1519 B	00044	2018/09/18	2019/09/17
MTI-E052	18-40GHz amplifier	Chengdu step Micro Technology	ZLNA-18-40G-21	1608001	2018/09/18	2019/09/17
MTI-E053	15-40G Antenna	Schwarzbeek	BBHA9170	BBHA9170582	2018/09/18	2019/09/17
MTI-B046	DC power supply	QJE	QJ3020E	015170	2018/09/18	2019/09/17

Note: the calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

5 Test Result

5.1 Maximum output power and peak to average ratio

5.1.1 Limit

For FCC 22.913: The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

For FCC 24.234: Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

5.1.2 Test method

For Conducted output power:

1.Use a universal radio communication tester, the output power of EUT was measured at the antenna terminal. The path loss was calibrated and entered as an offset into the test equipment.

2. The EUT was configured to transmit on maximum power by the radio communication tester.

3. Measured the peak and average powers.

For EIRP & ERP:

1.In many cases, the RF output power limits for licensed digital transmission devices is specified in terms of effective radiated power (ERP) or equivalent isotropic radiated power (EIRP). Typically, ERP is specified when the operating frequency is less than or equal to 1 GHz and EIRP is specified when the operating frequency is greater than 1 GHz. Both are determined by adding the transmit antenna gain to the conducted RF output power with the primary difference between the two being that when determining the ERP, the transmit antenna gain is referenced to a dipole antenna (i.e., dBd) whereas when determining the EIRP, the transmit antenna gain is referenced to an isotropic antenna (dBi).

2.The relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$ERP/EIRP = P_{Meas} + GT - LC$

where:

ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as P_{Meas}, typically dBW or dBm);

PMeas = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

dBd (ERP)=dBi (EIRP) -2.15 dB

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

5.1.3 Test Result

Please refer to section 6.2 of the test report No.16050024-FCC-R1 issued by SIEMIC. On September 22, 2016.

For EIRP & ERP:

For GSM 850

Frequency	Polarization	SG Level	Cable Loss	Antenna Gain	Correction	ERP	ERP
(MHz)		(dBm)	(dB)	(dB)	(dB)	(dBm)	(W)
824.2	H	32.44	0.39	1	2.15	30.90	1.2293
836.6	H	31.74	0.35	1.1	2.15	30.34	1.0810
848.8	H	32.13	0.32	1.2	2.15	30.86	1.2183
824.2	V	32.37	0.39	1	2.15	30.83	1.2119
836.6	V	31.93	0.35	1.1	2.15	30.53	1.1297
848.8	V	32.69	0.32	1.2	2.15	31.42	1.3869

For GPRS 850

Frequency	Polarization	SG Level	Cable Loss	Antenna Gain	Correction	ERP	ERP
(MHz)		(dBm)	(dB)	(dB)	(dB)	(dBm)	(W)
824.2	H	31.84	0.39	1	2.15	30.30	1.0713
836.6	H	31.56	0.35	1.1	2.15	30.16	1.0364
848.8	H	31.84	0.32	1.2	2.15	30.57	1.1407
824.2	V	32.44	0.39	1	2.15	30.90	1.2295
836.6	V	31.69	0.35	1.1	2.15	30.29	1.0686
848.8	V	31.59	0.32	1.2	2.15	30.32	1.0770

For GSM 1900

Frequency (MHz)	Polarization	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)	EIRP (dBm)	EIRP (W)
1850.2	H	30.10	0.47	1.58	31.21	1.3217
1880	H	30.65	0.47	1.72	31.90	1.5483
1909.8	H	30.23	0.46	1.85	31.62	1.4515
1850.2	V	29.95	0.47	1.58	31.06	1.2753
1880	V	30.39	0.47	1.72	31.64	1.4604
1909.8	V	29.75	0.46	1.85	31.14	1.2996

For GPRS 1900

Frequency (MHz)	Polarization	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)	EIRP (dBm)	EIRP (W)
1850.2	H	29.98	0.47	1.58	31.09	1.2856
1880	H	29.55	0.47	1.72	30.80	1.2020
1909.8	H	29.97	0.46	1.85	31.36	1.3664
1850.2	V	29.72	0.47	1.58	30.83	1.2097
1880	V	30.51	0.47	1.72	30.04	1.0091
1909.8	V	30.78	0.46	1.85	30.32	1.0774

5.2 Peak to average power ratio(PAPR)

5.2.1 Limit

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

5.2.2 Test method

The EUT was connected to Spectrum Analyzer and Base Station via power divider.
The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
Set the number of counts to a value that stabilizes the measured CCDF curve.
Set the measurement interval to 1 ms.
Record the maximum PAPR level associated with a probability of 0.1%.
a) Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
b) Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
c) Set the number of counts to a value that stabilizes the measured CCDF curve;
d) Set the measurement interval as follows:
1) for continuous transmissions, set to 1 ms,
2) for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
e) Record the maximum PAPR level associated with a probability of 0.1%.

5.2.3 Test Result

Please refer to section 6.3 of the test report No.16050024-FCC-R1 issued by SIEMIC. On September 22, 2016.

5.3 Occupied bandwidth

5.3.1 Test method

1. The EUT was directly connected to the spectrum analyzer and Base station via power splitter as show in the block diagram above.
2. The resolution bandwidth of the Spectrum Analyzer is set to at least 1% of the occupied bandwidth.
3. The low, middle and the high channels are selected to perform tests respectively.
4. Set the frequency range of the Spectrum Analyzer suitably to capture the waveform; search peak; make a line whose value is 26dB lower than the peak; mark two points which the line intersected the waveform at; finally record the delta of the two points as the occupied bandwidth and the plot.
5. Set the Spectrum Analyzer Occupied bandwidth function to measure the 99% occupied bandwidth.

5.3.2 Test result

Please refer to section 6.4 of the test report No.16050024-FCC-R1 issued by SIEMIC. On September 22, 2016.

5.4 Conducted spurious emissions

5.4.1 Limits

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+10log (P) dB

5.4.2 Test method

1, The EUT was directly connected to the spectrum analyzer and Base station via power splitter as show in the block diagram above.

2, Spectrum Setting:

Frequency bellow 1 GHz: RBW=100 kHz, VBW=300 kHz.

Frequency above 1 GHz: RBW=1 MHz, VBW=3 MHz.

3, The low, middle and high channels of each band and mode's spurious emissions for 30 MHz to 10th Harmonic were measured by Spectrum analyzer.

5.4.3 Test result

Please refer to section 6.5 of the test report No.16050024-FCC-R1 issued by SIEMIC. On September 22, 2016.

5.5 Band edge

5.5.1 Limits

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+10log (P) dB, for all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm

5.5.2 Test method

The testing follows FCC KDB 971168 v03 Section 6.0.

The EUT was connected to Spectrum Analyzer and Base Station via power divider.

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

The band edges of low and high channels for the highest RF powers were measured.

The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

= P(W) - [43 + 10log(P)] (dB)

= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)

= -13dBm.

5.5.3 Test result

Please refer to section 6.7 of the test report No.16050024-FCC-R1 issued by SIEMIC. On September 22, 2016.

5.6 Radiated spurious emission

5.6.1 Limit

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+10log (P) dB

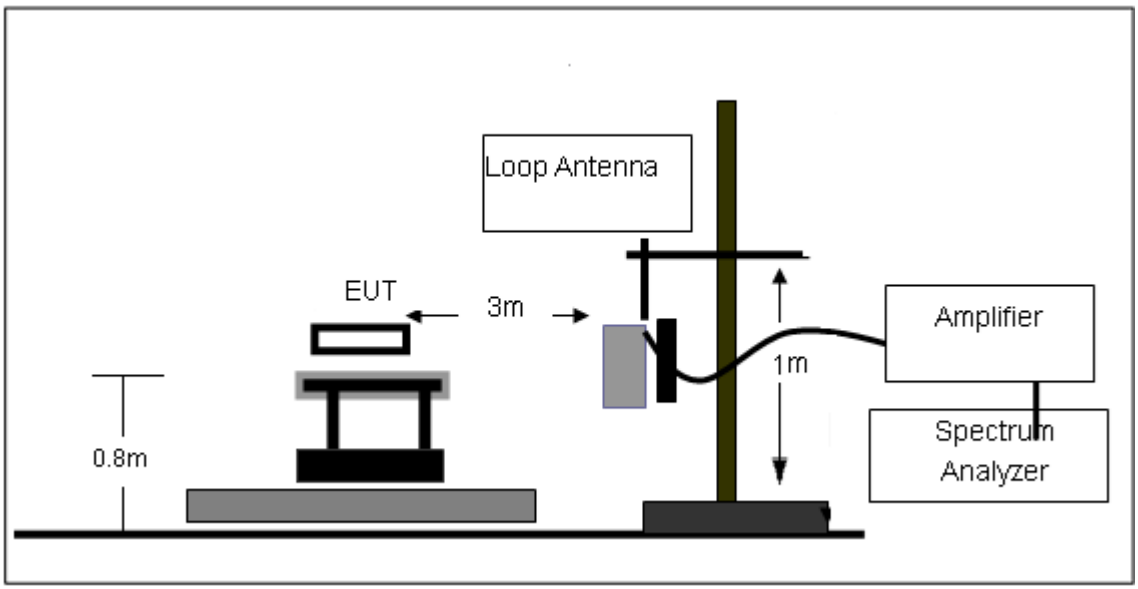
5.6.2 Test method

1. The test system setup as show in the block diagram above.
2. The EUT was placed on an non-conductive rotating platform in an anechoic chamber. The radiated spurious emissions from 30MHz to 10th harmonious of fundamental frequency were measured at 3 m with a test antenna and a spectrum analyzer with RBW=1 MHz, VBW=1 MHz, peak detector settings.
3. During the measurement, the EUT was enforced in maximum power and linked with a base station. All the spurious emissions at 3m were measured by rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
4. When found the maximum level of emissions from the EUT. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

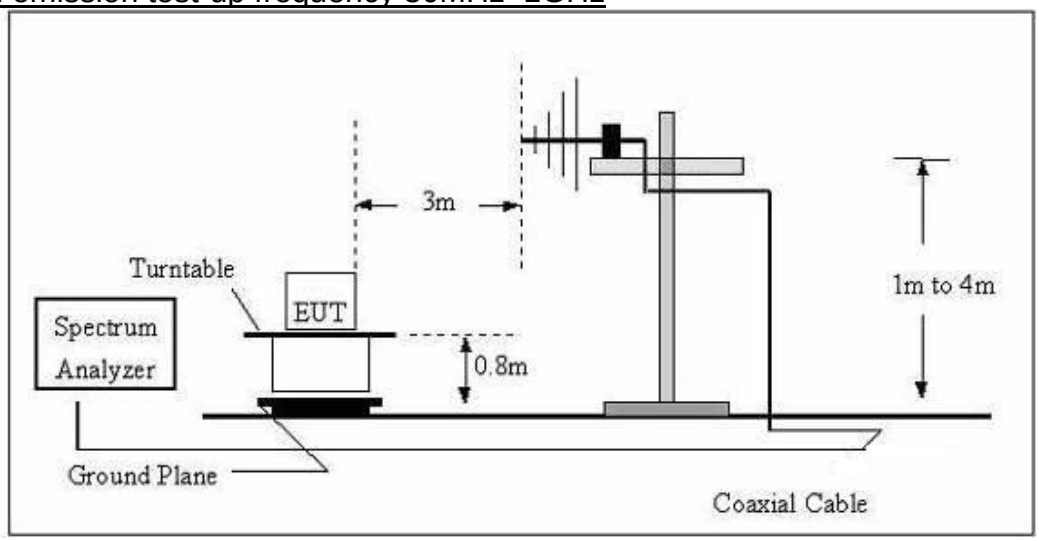
Spurious emissions in dB=10 log(TX power in Watts/0.001)-the absolute level
Spurious attenuation limit in dB=43+10 log(power out in Watts).

5.6.3 Test setup

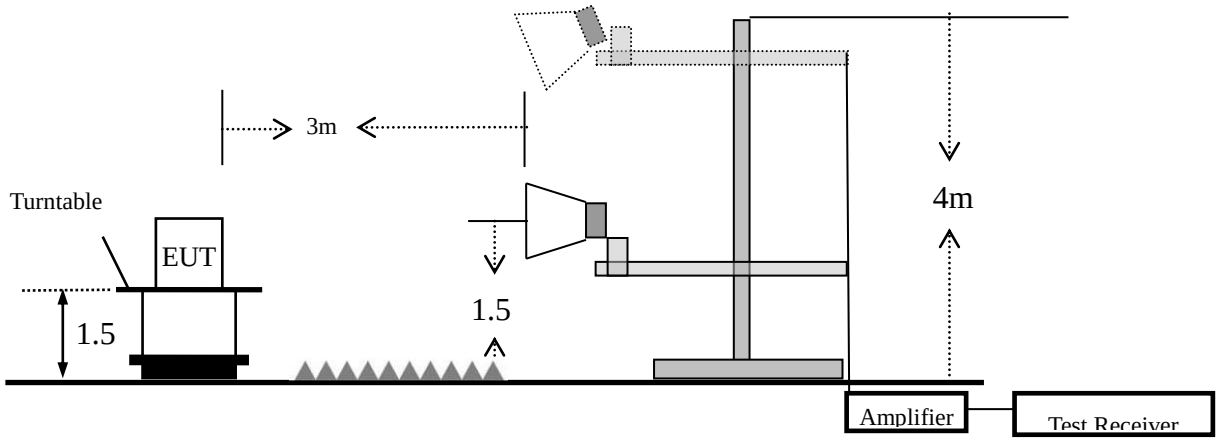
Radiated emission test-up frequency below 30MHz



Radiated emission test-up frequency 30MHz~1GHz



Radiated emission test-up frequency above 1GHz



5.6.4 Test Result

Note: All the configuration was tested and only the worse case was reported

For GSM850(30MHz – 9GHz)

Low Channel

No.	Frequency (MHz)	Meter Reading (dBuV)	Factor dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Polar (H)
1	76.4482	-67.65	20.34	-47.31	-13	-34.31	Horizontal
2	116.2143	-67.51	22.89	-44.62	-13	-31.62	Horizontal
3	261.1689	-68.24	24.80	-43.44	-13	-30.44	Horizontal
4	4175.5108	-49.76	8.56	-41.20	-13	-28.20	Horizontal
5	5818.0581	-51.74	4.55	-47.19	-13	-34.19	Horizontal
6	72167.7870	-51.37	10.08	-41.29	-13	-28.29	Horizontal
1	74.0919	-69.44	22.04	-47.40	-13	-34.40	Vertical
2	221.5594	-68.62	24.50	-44.12	-13	-31.12	Vertical
3	358.3713	-68.64	27.90	-40.74	-13	-27.74	Vertical
4	6014.8786	-48.56	3.30	-45.26	-13	-32.26	Vertical
5	7494.9565	-48.50	8.71	-39.79	-13	-26.79	Vertical
6	8017.5393	-49.86	9.93	-39.93	-13	-26.93	Vertical

Middle Channel

No.	Frequency (MHz)	Meter Reading (dBuV)	Factor dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Polar (H)
1	145.4627	-69.11	19.85	-49.26	-13	-36.26	Horizontal
2	222.7346	-69.29	23.83	-45.46	-13	-32.46	Horizontal
3	249.1505	-65.96	24.71	-41.25	-13	-28.25	Horizontal
4	6069.633	-49.31	5.4	-43.91	-13	-30.91	Horizontal
5	7422.626	-50.07	10.16	-39.91	-13	-26.91	Horizontal
6	8793.253	-51.36	10.05	-41.31	-13	-28.31	Horizontal
1	137.9576	-70.57	21.36	-49.21	-13	-36.21	Vertical
2	194.0193	-71.84	24.05	-47.79	-13	-34.79	Vertical
3	277.0258	-71.99	26.34	-45.65	-13	-32.65	Vertical
4	6429.656	-48.06	5.36	-42.70	-13	-29.70	Vertical
5	7403.501	-47.91	8.51	-39.40	-13	-26.40	Vertical
6	8106.285	-47.75	9.79	-37.96	-13	-24.96	Vertical

Hihg Channel

No.	Frequency (MHz)	Meter Reading (dBuV)	Factor dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Polar (H)
1	67.7339	-69.34	22.52	-46.82	-13	-33.82	Horizontal
2	136.5856	-69.55	19.76	-49.79	-13	-36.79	Horizontal
3	167.6642	-68.41	20.41	-48.00	-13	-35.00	Horizontal
4	5906.222	-50.50	4.83	-45.67	-13	-32.67	Horizontal
5	6682.572	-49.74	8.01	-41.73	-13	-28.73	Horizontal
6	8162.309	-50.28	11.26	-39.02	-13	-26.02	Horizontal
1	179.3074	-74.08	22.81	-51.27	-13	-38.27	Vertical
2	213.8968	-70.62	24.24	-46.38	-13	-33.38	Vertical
3	264.2487	-69.08	24.54	-44.54	-13	-31.54	Vertical
4	6088.197	-48.05	3.66	-44.39	-13	-31.39	Vertical
5	7386.891	-47.67	8.48	-39.19	-13	-26.19	Vertical
6	7836.132	-48.47	9.53	-38.94	-13	-25.94	Vertical

For GSM1900(30MHz – 20GHz)

Low Channel

No.	Frequency (MHz)	Meter Reading (dBuV)	Factor dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Polar (H)
1	128.8337	-65.95	11.76	-54.19	-13	-41.19	Horizontal
2	278.1066	-62.52	16.13	-46.39	-13	-33.39	Horizontal
3	410.8839	-63.74	19.5	-44.24	-13	-31.24	Horizontal
4	12504.024	-62.08	21.6	-40.48	-13	-27.48	Horizontal
5	15179.624	-50.41	4.26	-46.15	-13	-33.15	Horizontal
6	17055.365	-59.76	8.17	-51.59	-13	-38.59	Horizontal
1	101.3550	-63.09	14.67	-48.42	-13	-35.42	Vertical
2	149.6548	-64.12	12.37	-51.75	-13	-38.75	Vertical
3	479.5294	-61.45	20.86	-40.59	-13	-27.59	Vertical
4	14955.056	-57.21	16.17	-41.04	-13	-28.04	Vertical
5	16510.869	-59.14	6.49	-52.65	-13	-39.65	Vertical
6	17777.431	-57.10	12.85	-44.25	-13	-31.25	Vertical

Middle Channel

No.	Frequency (MHz)	Meter Reading (dBuV)	Factor dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Polar (H)
1	53.4392	-61.81	16.15	-45.66	-13	-32.66	Horizontal
2	106.5761	-61.58	14.64	-46.94	-13	-33.94	Horizontal
3	122.1255	-64.03	13.91	-50.12	-13	-37.12	Horizontal
4	13623.371	-58.22	16.01	-42.21	-13	-29.21	Horizontal
5	14170.075	-56.40	17.22	-39.18	-13	-26.18	Horizontal
6	14474.212	-56.17	16.66	-39.51	-13	-26.51	Horizontal
1	37.3308	-63.56	16.01	-47.55	-13	-34.55	Vertical
2	55.0287	-64.05	16.12	-47.93	-13	-34.93	Vertical
3	117.5564	-64.89	13.62	-51.27	-13	-38.27	Vertical
4	12102.443	-61.48	14.34	-47.14	-13	-34.14	Vertical
5	15002.034	-46.24	4.71	-41.53	-13	-28.53	Vertical
6	17248.286	-60.04	9.63	-50.41	-13	-37.41	Vertical

Hihg Channel

No.	Frequency (MHz)	Meter Reading (dBuV)	Factor dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Polar (H)
1	39.0529	-63.90	15.78	-48.12	-13	-35.12	Horizontal
2	90.2444	-64.07	12.93	-51.14	-13	-38.14	Horizontal
3	136.4074	-62.42	11.28	-51.14	-13	-38.14	Horizontal
4	14970.137	-57.27	16.62	-40.65	-13	-27.65	Horizontal
5	15837.555	-57.75	2.66	-55.09	-13	-42.09	Horizontal
6	16605.905	-57.74	5.41	-52.33	-13	-39.33	Horizontal
1	90.7632	-62.43	12.77	-49.66	-13	-36.66	Vertical
2	126.6338	-64.05	13.03	-51.02	-13	-38.02	Vertical
3	211.7785	-64.62	15.3	-49.32	-13	-36.32	Vertical
4	13447.716	-58.29	15.32	-42.97	-13	-29.97	Vertical
5	14234.592	-57.29	17.11	-40.18	-13	-27.18	Vertical
6	14907.246	-57.66	16.21	-41.45	-13	-28.45	Vertical

5.7 Frequency stability

5.7.1 Limit

For FCC part 22.355: the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances 2.5ppm for mobile ≤ 3W condition.

For FCC part 24.235: The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

5.7.2 Test method

Test Procedures for Temperature Variation:

1, The EUT was set up in the thermal chamber and connected with the base station.
2, With power off, the temperature was decreased to -30℃ and the EUT was stabilized for three hours. Power was applied and the maximum change in frequency was recorded within one minute.
3, With power off, the temperature was raised in 10℃ set up to 50℃ and the EUT was stabilized for three hours. Power was applied and the maximum change in frequency was recorded within one minute.
4, measure the carrier frequency error.

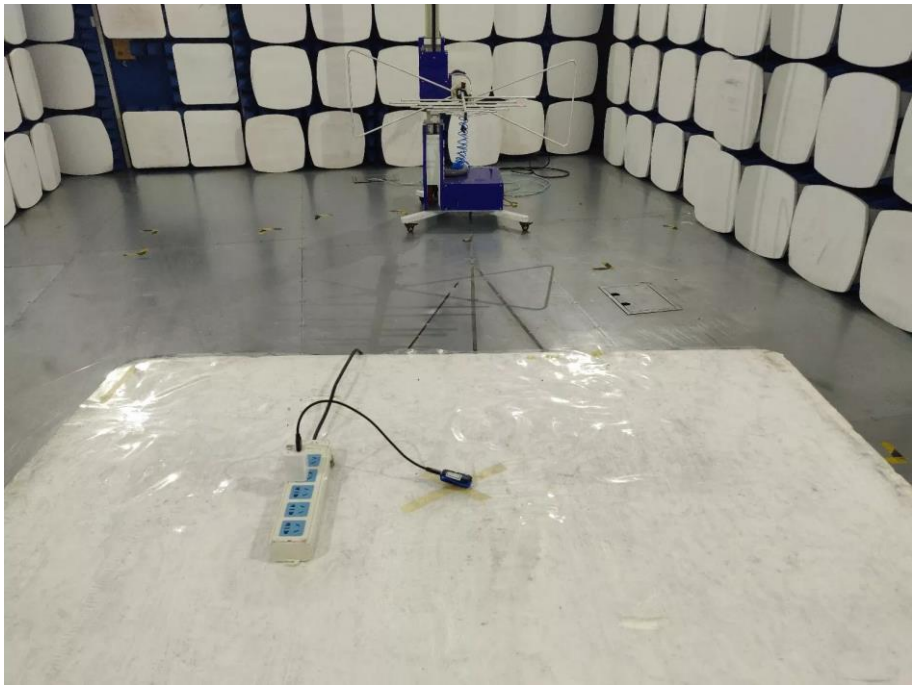
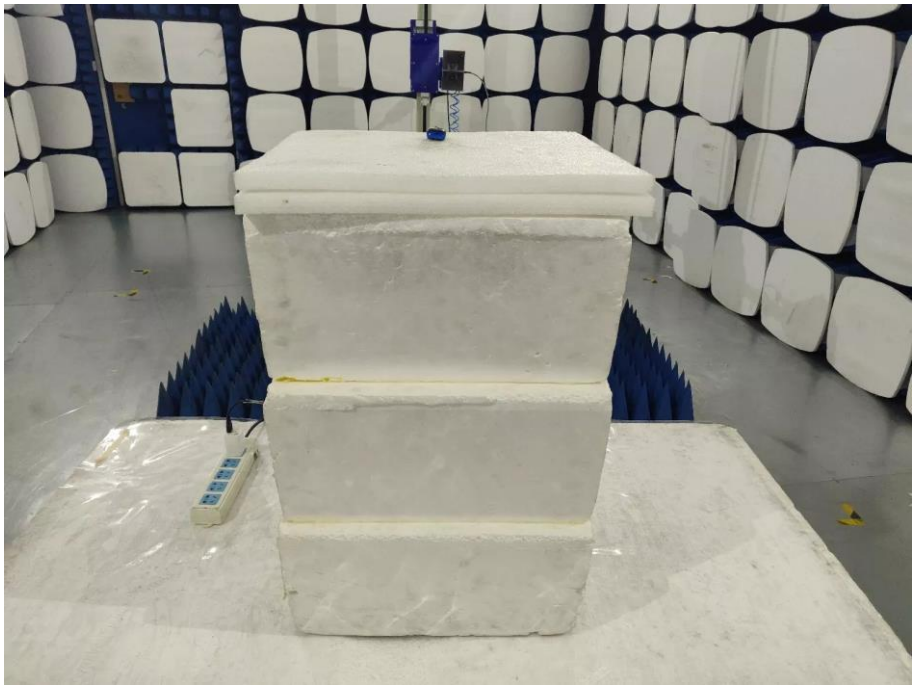
Test Procedures for Voltage Variation:

1, The EUT was placed in a temperature chamber at 25±5℃ and connected with the base station.
2, Reduce the primary supply voltage to the battery operating end point.
3, measure the carrier frequency error.

5.7.3 Test Result

Please refer to section 6.8 of the test report No.16050024-FCC-R1 issued by SIEMIC. On September 22, 2016.

Photographs of the Test Setup

Radiated emission



Photographs of the EUT

See the APPENDIX 1: EUT PHOTO in the report No.: MTi19053019-3B011-1E-1.

----END OF REPORT----