Aibo Standard Technology (Shenzhen) Co., Ltd.
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FCC TEST REPORT

Report No.....:	AB25070067FW01
FCC ID.....:	**2BQV5-M65**
Applicant.....:	Guangdong Xiaolangxing IoT Co., Ltd.
Address..... :	Room 1301, No. 666, East Section of Renmin Road, Dahe Community, Guanhu Subdistrict, Longhua District, Shenzhen
Manufacturer.....:	Guangdong Xiaolangxing IoT Co., Ltd.
Address.....:	Room 1301, No. 666, East Section of Renmin Road, Dahe Community, Guanhu Subdistrict, Longhua District, Shenzhen
Product Name.....:	positioner
Trade Mark.....:	xiaolangxing
Test Model.....:	M65
Additional Model(s).....:	See section 1.1(page 5)
Standard.....:	FCC 47 CFR Part 22 ;FCC 47 CFR Part 24; FCC 47 CFR Part 27
Date of Receipt..... :	2025.07.18
Date of Test Date..... :	2025.07.19-2025.08.01
Date of Issue..... :	2025.08.01
Test Result..... :	Pass

Compiled by: (Printed Name + Signature)	Huaijie Li	Huaijie Li
Supervised by: (Printed Name + Signature)	Jay Liu	Jay Liu
Approved by: (Printed Name + Signature)	Mic Cheng	Mic Cheng

Testing Laboratory Name..... :	Aibo Standard Technology (Shenzhen) Co., Ltd.
Address..... :	101, Building B, Tuori New Energy Industrial Park, High-tech Park, Tianliao Community, Yutang Street, Guangming District, Shenzhen City, Guangdong Province, China

FCC TEST REPORT

Test Report No.: AB25070067FW01	2025 08.01 Date of issue

EUT.....	:	positioner
Test Model.....	:	M65
Applicant.....	:	**Guangdong Xiaolangxing IoT Co., Ltd.**
Address.....	:	Room 1301, No. 666, East Section of Renmin Road, Dahe Community, Guanhu Subdistrict, Longhua District, Shenzhen
Manufacturer.....	:	**Guangdong Xiaolangxing IoT Co., Ltd.**
Address.....	:	Room 1301, No. 666, East Section of Renmin Road, Dahe Community, Guanhu Subdistrict, Longhua District, Shenzhen

Test Result	Positive

REPORT VERSION

Version No.	Issue Date	Description
01	2025 08.01	Initial Issue

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1. GENERAL INFORMATION

1.1. GENERAL DESCRIPTION OF EUT

Product Name:	positioner	
Trade Mark:	xiaolangxing	
Test Model:	M65	
Additional Model(s):	M65A,M65B,M65C,M65D,M66A,M66B,M66C,M66D,M67A,M67B,M67C, M67D, M68A ,M68B, M68C, M68D, M69A, M69B, M69C, M69D	
Model Difference:	All models are the same circuit and RF module, except the model name.	
Hardware Version:	M65A-V01	
Software Version:	/	
Power Supply:	DC 3.7V Supplied by Battery	
Battery	3.7V 2600mAh	
EUT Supports Function: (Provided by the customer)	E-UTRA Bands:	LTE Band 2/4/5/7/12/13/25/38/40/41/66
Radio Specification Subject to this Report		
Support Networks:	Band 2 / 4 / 5 / 7 / 12 / 13 / 25 / 38 / 40 / 41 / 66	
Frequency Range:	Band 2	1850MHz–1910MHz
	Band 4	1710MHz–1755MHz
	Band 5	824MHz–849MHz
	Band 7	2500MHz–2570MHz
	Band 12	699MHz–716MHz
	Band 13	777MHz–787MHz
	Band 25	1850MHz–1915MHz
	Band 38	2570MHz–2620MHz
	Band 40-1	2305MHz–2315MHz
	Band 40-2	2350MHz–2360MHz
	Band 41	2496MHz–2690MHz
	Band 66	1710MHz –1780MHz
Modulation Type:	QPSK	

Channel Bandwidth:	Band 2	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	Band 4	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	Band 5	1.4MHz, 3MHz, 5MHz, 10MHz
	Band 7	5MHz, 10MHz, 15MHz, 20MHz
	Band 12	1.4MHz, 3 MHz, 5MHz, 10MHz
	Band 13	5MHz, 10MHz
	Band 25	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	Band 38	5MHz, 10MHz, 15MHz, 20MHz
	Band 40-1	5MHz, 10MHz
	Band 40-2	5MHz, 10MHz
	Band 41	5MHz, 10MHz, 15MHz, 20MHz
	Band 66	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
Antenna Type:	PIFA Antenna	
Antenna Gain:	Band 2	2.64dBi
	Band 4	0.13 dBi
	Band 5	0.17dBi
	Band 7	3.06 dBi
	Band 12	-3.27 dBi
	Band 13	0.19 dBi
	Band 25	2.85 dBi
	Band 38	3.40 dBi
	Band 40-1	2.63 dBi
	Band 40-2	1.68dBi
	Band 41	3.54dBi
	Band 66	0.88 dBi

1.2. DESCRIPTION OF SUPPORT EQUIPMENT

Description	Manufacturer	Model	Serial Number	Supplied by
AC/DC Adapter	Xiaomi	MDY-11-EX	SA62212LA04358J	Applicant

1.3. DESCRIPTION OF EXTERNAL I/O

I/O Port Description	Quantity	Cable
USB Type-C Interface	1	0.8m, unshielded
Earphone Jack	1	N/A

1.4. GENERAL DESCRIPTION OF APPLIED STANDARDS

The tests were performed according to following standards:

FCC 47 CFR Part 22 - Public Mobile Services

FCC 47 CFR Part 24 - Personal Communications Services

FCC 47 CFR Part 27 -Miscellaneous Wireless Communications Services

FCC 47 CFR Part 2 - Frequency Allocations and Radio Treaty Matters; General Rules and Regulations

ANSI C63.26-2015 - American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

KDB 971168 D01 - KDB 971168 D01 Power Meas License Digital Systems v03r01

KDB 412172 D01 Determining ERP and EIRP v01r01 - Guidelines for determining the effective radiated power (ERP) and isotropically radiated power (EIRP) of an RF transmitting system

1.5. DESCRIPTION OF TEST FACILITY

Test Lab: Aibo Standard Technology (Shenzhen) Co., Ltd.

Address: 101, Building B, Tuori New Energy Industrial Park, High-tech Park, Tianliao Community, Yutang Street, Guangming District, Shenzhen City, Guangdong Province, China

Tel.: +(86) 0755 85250797

E-mail: Aibonorm@aibonorm.com

Website: www.Aibonorm.com

The test facility is recognized, certified, or accredited by the following organizations:

A2LA-Lab Certificate No.: 7514.01

Aibo Standard Technology (Shenzhen) Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC Accredited Lab.

Designation Number: CN1411

Test Firm Registration Number: 567066

ISED Wireless Device Testing Laboratories

CAB identifier: CN0185

1.6. MEASUREMENT UNCERTAINTY

The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Items	Measurement Uncertainty
Radiated Spurious Emissions(9KHz~30MHz)	±2.70dB
Radiated Spurious Emissions(25MHz~1000MHz)	±1.60dB
Radiated Spurious Emissions(1GHz~20GHz)	±2.29dB
Radiated Spurious Emissions(20GHz~40GHz)	±5.32dB
RF Conducted Power	±0.57dB
Conducted Spurious Emissions	±1.60dB
RF Frequency	±6.0 x 10^{-7}
Occupied Bandwidth	±57.74 kHz

Note: All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95 % level of confidence.

1.7. ENVIRONMENTAL CONDITIONS

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	+15°C ~ +35°C
Lative Humidity	20 % ~ 75 %
Air Pressure	98KPa ~ 101KPa

Normal or Extreme Test Conditions

Environment Parameter	Selected Values During Tests		
Test Condition	Ambient		
	Temperature (°C)	Voltage (V)	Relative Humidity (%)
NVNT	+15 to +35	3.70	20 to 75
NVLT	-30	3.70	20 to 75
NVHT	+50	3.70	20 to 75
LVLT	-30	3.15	20 to 75
HVHT	+50	4.26	20 to 75

Remark:
1) The EUT just work in such extreme temperature of -30 °C to +50 °C, so here the EUT is tested in the temperature of -30 °C to +50 °C.
2) NV: Normal Voltage; NT: Normal Temperature
LV: Low Extreme Test Voltage; HV: High Extreme Test Voltage.
3) LT: Low Extreme Test Temperature; HT: High Extreme Test Temperature.

1.8. DESCRIPTION OF TEST MODES

System Test Configuration:

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, radiated emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario. It was powered by a 3.85Vdc battery. Only the worst case data were recorded in this test report.

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, X/Y/Z axis, and antenna ports.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000MHz. The resolution is 1 MHz or greater for frequencies above 1000MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

2. SUMMARY OF TEST RESULT

B2 & B25			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §24.232(c)	EIRP ≤ 2 W	PASS
Peak-Average Ratio	§24.232(d)	Limit≤13 dB	PASS
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §24.238(a)(b)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §24.238(a)(b)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §24.238(a)	≤ -13 dBm/1MHz	PASS
Frequency Stability	§2.1055, §24.235	No limit	N/A

B4 & B66			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(d)(4)	EIRP ≤1 W	PASS
Peak-Average Ratio	§27.50(d) (5)	Limit≤13 dB	PASS
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	PASS
Band Edges Compliance	§2.1051, §27.53(h)(1) §27.53(h)(3)(i)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53(h)(1)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53(h)(1)	≤ -13 dBm/1MHz.	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

B5			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §22.913(a)(5)	ERP ≤ 7W	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §22.917(a)(b)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §22.917(a)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §22.355	≤ -13 dBm/1MHz	PASS
Frequency Stability	§2.1055, §22.355	≤ ±2.5ppm	PASS

B7 & B38 & B41			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(h)(2)	EIRP ≤2W	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §27.53(m)(4)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53(m)(4)	≤ -25 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53(m)(4)	≤ -25 dBm/1MHz	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

B12			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(c)(10)	ERP ≤3W	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §27.53(g)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53(g)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53(g)	≤ -13 dBm/1MHz	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

B13			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(b)(10)	ERP ≤3W	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §27.53(c)(2)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53(c)(2)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53(c)(2)	≤ -13 dBm/1MHz	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

B40			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(a)(3)	ERP ≤250mW	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §27.53(a)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53	≤ -40 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53	≤ -40 dBm/1MHz	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

3. MEASUREMENT INSTRUMENTS LIST

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
1	Loop Antenna	Schwarzbeck	FMZB 1519	1519-025	02/19/2025	02/18/2026
2	Power Amplifier	HZEMC	HPA-9K0133	HYPA23029	02/19/2025	02/18/2026
3	Broadband Antenna	Schwarzbeck	VULB 9168	01763	02/19/2025	02/18/2026
4	Attenuator	PRM	ATT50-6-3	ATT50-6-3	01/20/2025	01/19/2026
5	Spectrum Analyzer	R&S	FSV40-N	101365	01/20/2025	01/19/2026
6	Horn Antenna	Schwarzbeck	BBHA 9120 D	02786	02/19/2025	02/18/2026
7	Horn Antenna	Schwarzbeck	ZLB7-18-40G-77	072410839	02/19/2025	02/18/2026
8	Power Amplifier	HZEMC	PA0118-43	HYPA23030	02/19/2025	02/18/2026
9	Power Amplifier	HZEMC	PA01840-45	HYPA23031	02/19/2025	02/18/2026
10	EMI Test Receiver	R&S	ESCI	101196	01/20/2025	01/19/2026
11	LISN	R&S	ENV216	102374	01/20/2025	01/19/2026
12	Pulse Limiter	Schwarzbeck	ESH3-Z2	0357.8810.54	01/20/2025	01/19/2026
13	MXA Signal Analyzer	Keysight	N9020A	MY52091389	01/20/2025	01/19/2026
14	Power Sensor	Agilent	U2021XA	MY54110007	01/31/2025	01/30/2026
15	Power Sensor	Agilent	U2021XA	MY54110009	01/31/2025	01/30/2026
16	MXG Vector Signal Generator	Agilent	N5182A	MY47070153	01/20/2025	01/19/2026
17	Analog Signal Source	Keysight	N5173B	MY60403029	01/20/2025	01/19/2026
18	Vector Signal Generator	R&S	SMCV100B	106103	01/20/2025	01/19/2026
19	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW500	118780	01/20/2025	01/19/2026
20	DC POWER SUPPLY	MAISHENG	MT-305DS	2021040016	02/28/2025	02/27/2026
21	Const Temp. & Humidity Chamber	GRT	GR-HWX-150L	GR25010601	01/20/2025	01/19/2026

Test Software		
Software name	Model	Version
Radiated Emission Measurement Software	FASLAB	V4.1
RF Conducted Measurement Software(2G/3G/4G)	MTS 8200	V2.0.0.0

4. CONDUCTED OUTPUT POWER AND MAXIMUM ERP/EIRP

4.1. LIMIT

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).

According to FCC section 24.232 (c) for LTE Band 2/25,Mobile and portable stations are limited to 2 watts E.I.R.P. and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to FCC section 27.50 (d)(4) for LTE Band 4/66, Fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat E.I.R.P.

According to FCC section22.913 (a)(2) for LTE Band 5, the E.R.P. of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

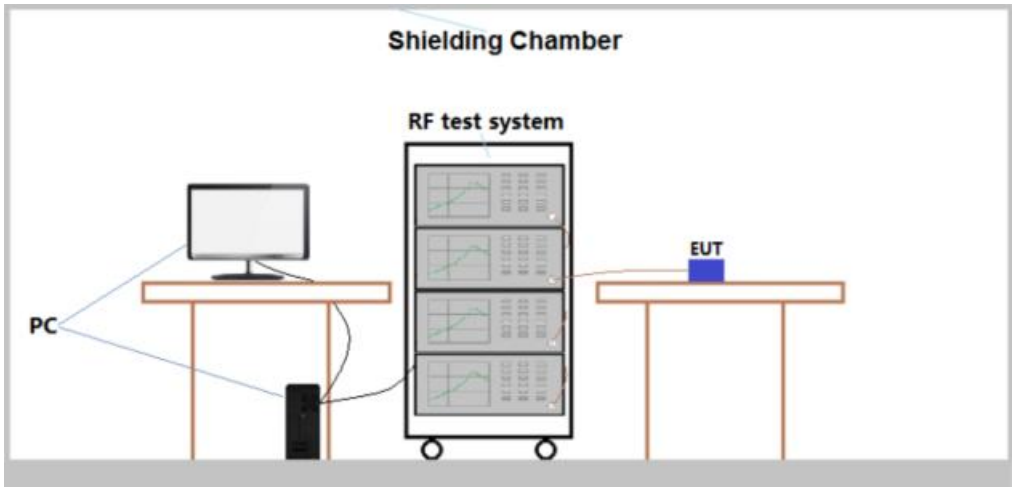
According to FCC section 27.50 (h)(2) for LTE Band 7/41, Mobile and other user stations. Mobile stations are limited to 2 watts E.I.R.P. All user stations are limited to 2 watts transmitter output power.

According to FCC section 27.50 (b)(10)for LTE Band 13, Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts E.R.P.

According to FCC section 27.50 (c)(10)for LTE Band 12,Portable stations (hand-held devices) operating in the 704-716MHz band are limited to 3watts E.R.P.

According to FCC section 27.50 (a)(3)for LTE Band 40, Mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average E.I.R.P. must not exceed 50 mill watts within any 1 megahertz of authorized bandwidth.

4.2. TEST SETUP



4.3. TEST PROCEDURE

For Conducted Output Power Measurement:

Refer to KDB 971168 D01v03r01 & ANSI C63.26-2015 for test method.

The EUT was set up for the maximum power with LTE and link up with simulator (CMW500). Set the EUT to transmit under low, middle and high channel and record the power level.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

For ERP/EIRP:

According to KDB 412172 D01 Power Approach,

- ERP or EIRP = PT + GT – LC
- ERP = EIRP -2.15

where

- PT = transmitter output power, expressed in dBW, dBm, or PSD;
- GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
- LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

4.4. TEST RESULT

Pass.

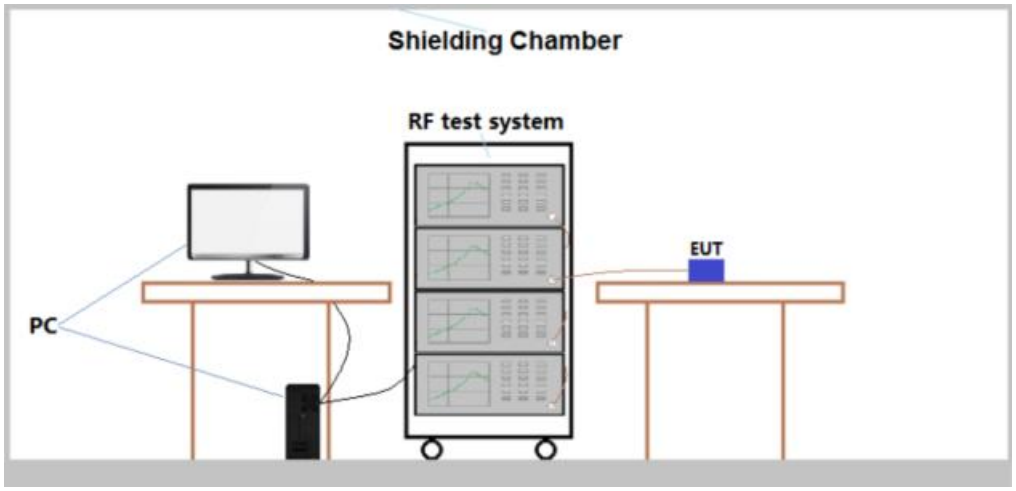
Please refer to the Appendix for LTE Test Data.

5. PEAK-AVERAGE RATIO

5.1. LIMIT

In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

5.2. TEST SETUP



5.3. TEST PROCEDURE

Refer to KDB 971168 D01v03r01 Section 5.7 for test method.
The transmitter output was connected to the RF test system.
a) Set resolution/measurement bandwidth ≥ signal's occupied bandwidth
b) Set the number of counts to a value that stabilizes the measured CCDF curve
c) Record the maximum PAPR level associated with a probability of 0.1 %
Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

5.4. TEST RESULT

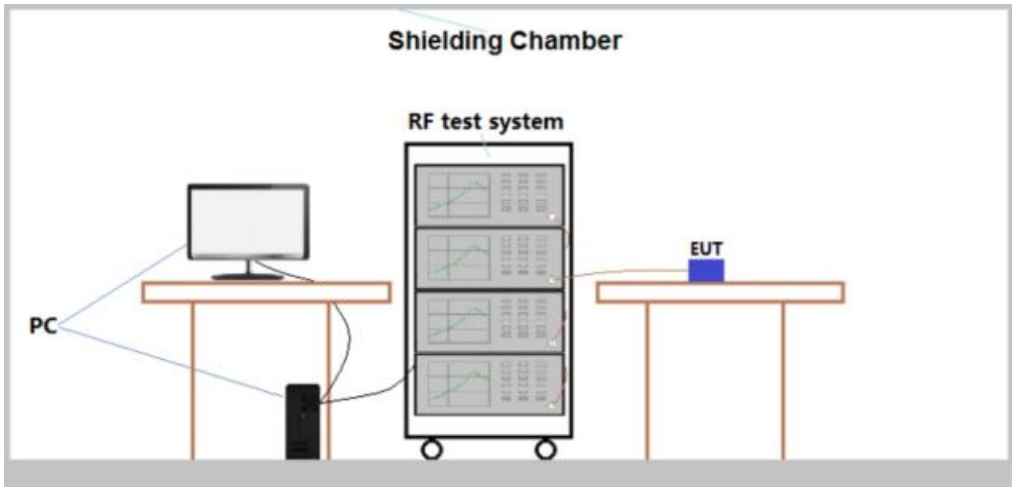
Pass.
Please refer to the Appendix for LTE Test Data.

6. 26DB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

6.1. LIMIT

No Limit, for reporting purposes only.

6.2. TEST SETUP



6.3. TEST PROCEDURE

Refer to ANSI C63.26-2015 & KDB 971168 D01v03r01 Section 4 for test method.
The transmitter output was connected to the RF test system. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The 99% and -26dB bandwidths was also measured and recorded.

6.4. TEST RESULT

Pass.
Please refer to the Appendix for LTE Test Data.

7. BAND EDGE AT ANTENNA TERMINALS

7.1. LIMIT

Band 2, 25
According to FCC section 24.238(a), for operations in the 1850–1910MHz bands, 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) dBm a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

Band 4, 66
According to FCC section 27.53(h),for operations in the 1710–1755MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dBm 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

Band 5
According to FCC section 22.917(a),for operations in the 824–849MHz bands, 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) dBm a 100kHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

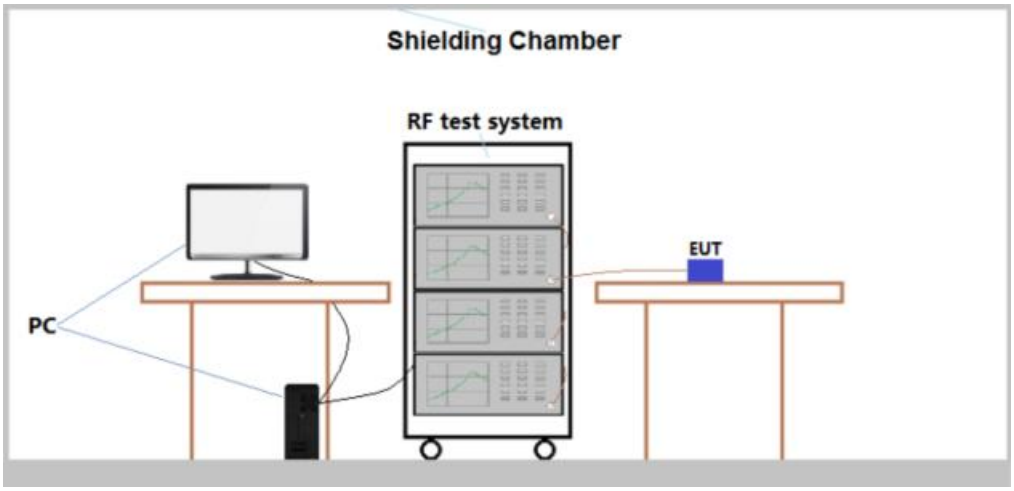
Band 7, 38, 41

According to FCC section 27.53(m) (4), for mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.
Band 12
According to FCC section 27.53(g), for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

Band 13
According to FCC section 27.53(c)(2), any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB in a 100kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed.

Band 40
According to FCC section 27.53(a) (4), for mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:
(i) By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz;
(ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz;
(iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

7.2. TEST SETUP



7.3. TEST PROCEDURE

Refer to ANSI C63.26-2015 & KDB 971168 D01v03r01 for test method.
The transmitter output was connected to the RF test system.
For each band edge measurement:
1) Set the spectrum analyzer span to include the block edge frequency.
2) Set a marker to point the corresponding band edge frequency in each test case.
3) Set display line at -13 dBm
4) Set resolution bandwidth to at least 1% of emission bandwidth.
5) Set spectrum analyzer with RMS detector.
6) Record the max trace plot into the test report
Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

7.4. TEST RESULT

Pass.
Please refer to the Appendix for LTE Test Data.

8. SPURIOUS EMISSIONS AT ANTENNA TERMINALS

8.1. LIMIT

According to FCC section 2.1051, 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.

Additional requirement for LTE Band 2/25:
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.

Additional requirement for LTE Band 4/66:
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB. This calculated to be -13dBm.

Additional requirement for LTE Band 5:
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.

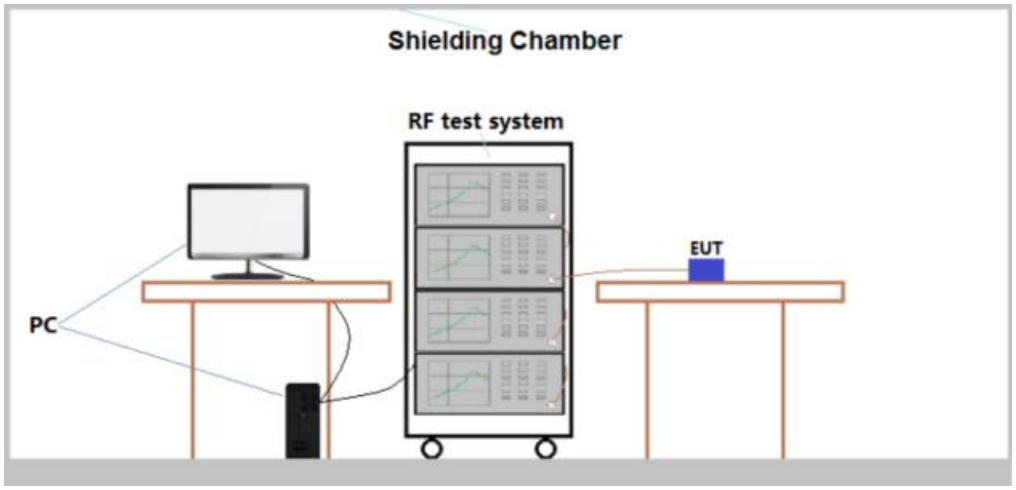
Additional requirement for LTE Band 7/38/41:
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 55 + 10 log(P) dB. This calculated to be -25dBm.

Additional requirement for LTE Band 12:
For operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. This calculated to be -13dBm.

Additional requirement for LTE Band 13
According to FCC section 27.53(c)(2), any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB in a 100kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. This calculated to be -13dBm.

Additional requirement for LTE Band 40:
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 70 + 10 log (P) dB. This calculated to be -40dBm.

8.2. TEST SETUP



8.3. TEST PROCEDURE

Refer to ANSI C63.26-2015 & KDB 971168 D01v03r01 for test method.
The EUT was connect to the communication simulator. All measurements were done at low, middle and high operational frequency range. Measuring frequency range is from 30 MHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

8.4. TEST RESULT

Pass.

Please refer to the Appendix for LTE Test Data.

9. FIELD STRENGTH OF SPURIOUS RADIATION

9.1. LIMIT

According to FCC section 2.1051, 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.

Additional requirement for LTE Band 2/25:
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.

Additional requirement for LTE Band 4/66:
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB. This calculated to be -13dBm.

Additional requirement for LTE Band 5:
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.

Additional requirement for LTE Band 7/38/41:
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 55 + 10 log(P) dB. This calculated to be -25dBm.

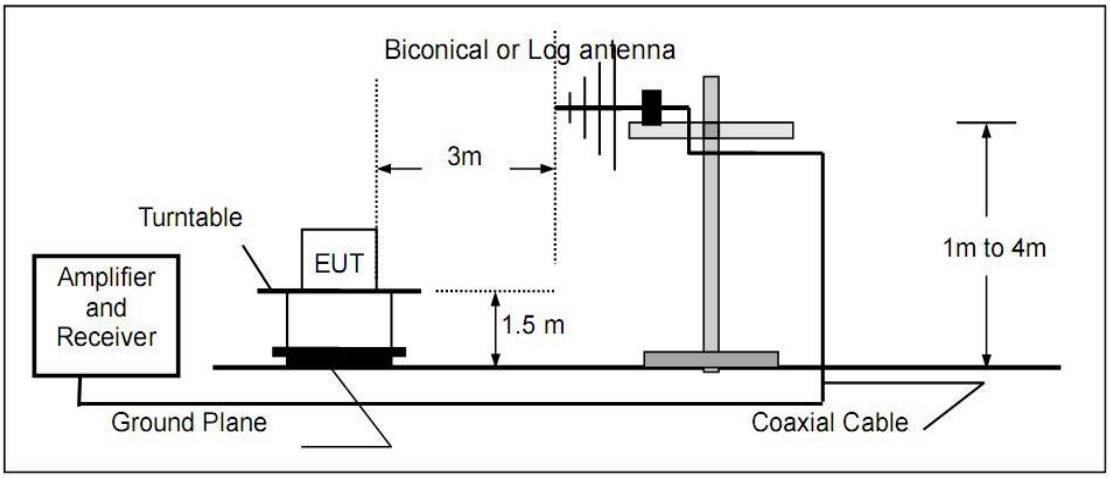
Additional requirement for LTE Band 12:
For operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. This calculated to be -13dBm.

Additional requirement for LTE Band 13
According to FCC section 27.53(c)(2), any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB in a 100kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. This calculated to be -13dBm.

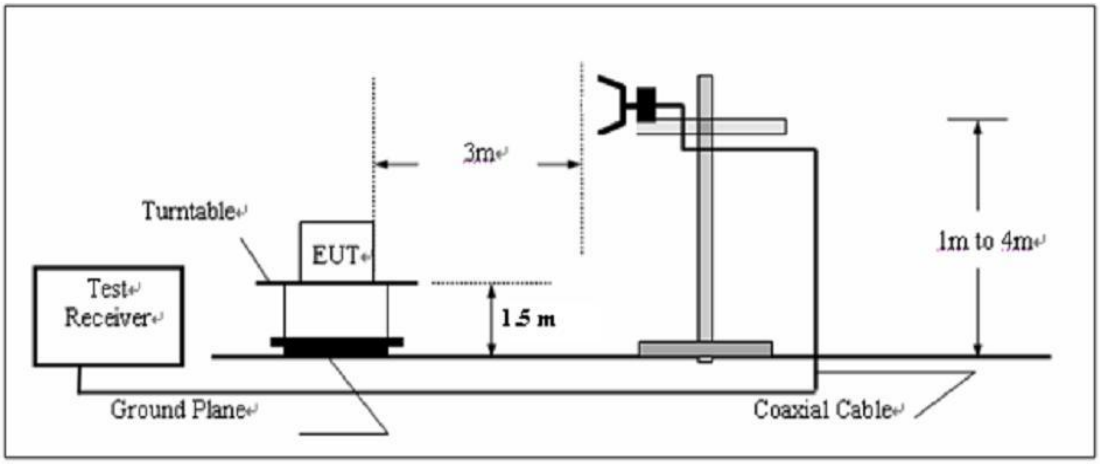
Additional requirement for LTE Band 40:
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 70 + 10 log (P) dB. This calculated to be -40dBm.

9.2. TEST SETUP

Radiated Below 1GHz

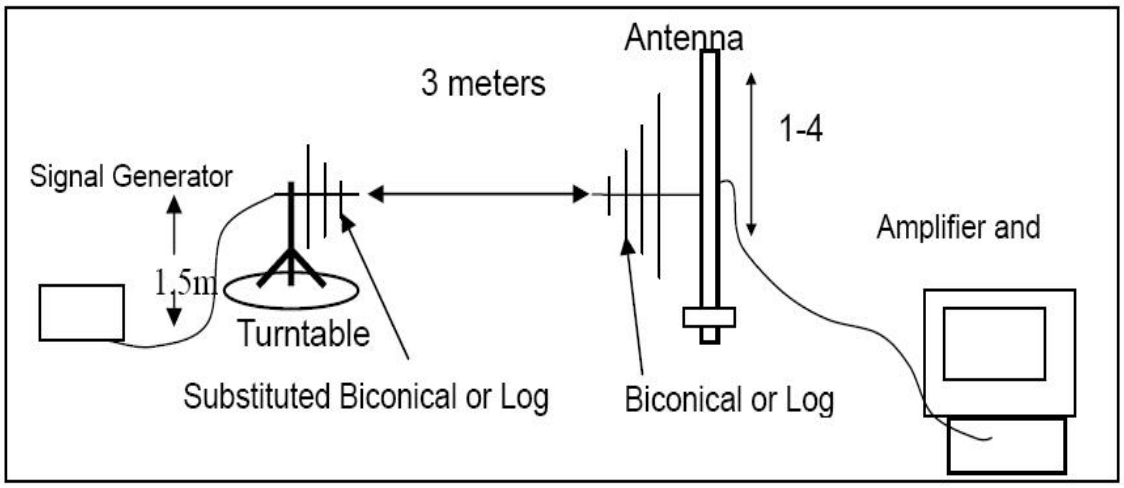


Radiated Above 1GHz

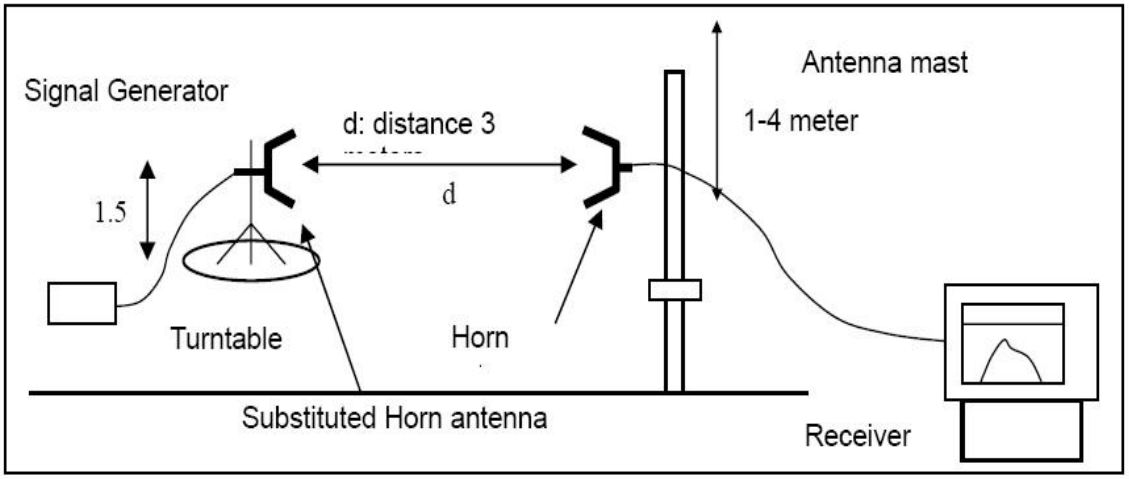


Substitution Method

Radiated Below 1GHz



Radiated Above 1 GHz



9.3. TEST PROCEDURE

Refer to KDB 971168 D01 v03r01 Section 7 for test method.

(1) EUT was placed on a 1.50 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.50m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.

(2) A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.

(3) The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz, and the maximum value of the receiver should be recorded as (P_r).

(4) The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency

band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

(5) An amplifier should be connected to the Signal Source output port. And the cable should be connecting between the Amplifier and the Substitution Antenna. The cable loss (P_{cl}), the Substitution Antenna Gain (G_a) and the Amplifier Gain (P_{Ag}) should be recorded after test.

(6) The measurement results are obtained as described below:
Power(EIRP)=P_{Mea}- P_{Ag} - P_{cl} + G_a
We used signal generator which signal level can up to 33dBm,so we not used power Amplifier for substitution test;
The measurement results are amend as described below:
Power(EIRP)=P_{Mea}- P_{cl} + G_a

(7) This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

(8) Test frequency range should extend to 10th harmonic of highest fundamental frequency.

9.4. TEST RESULT

Pass.

Remark:

a) By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “Y axis” position was the worst, and test data recorded in this report.

b) Pre-scan all modes and recorded the worst case in this report.

c) Radiated spurious emission test from 9KHz to 10th harmonic of fundamental was verified, and the emission levels from 9kHz to 30MHz are attenuated 20dB below the limit and not recorded in report.

The worst measurement data as follows:

LTE Band2_20M_Low Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3719.7	-37.72	3.98	3	8.35	-33.35	-13	-20.35	H
5583.8	-52.13	4.03	3	7.6	-48.56	-13	-35.56	H
3719.7	-42.66	3.98	3	8.35	-38.29	-13	-25.29	V
5583.8	-38.68	4.03	3	7.6	-35.11	-13	-22.11	V
LTE Band2_20M_Middle Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.1	-40.89	3.74	3	7.78	-36.85	-13	-23.85	H
5639.2	-47.09	4.57	3	7.46	-44.2	-13	-31.2	H
3760.1	-35.44	3.74	3	7.78	-31.4	-13	-18.4	V
5639.2	-45.42	4.57	3	7.46	-42.53	-13	-29.53	V
LTE Band2_20M_High Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3800.6	-35	3.47	3	9.38	-29.09	-13	-16.09	H
5705.0	-51.87	5.24	3	7.29	-49.82	-13	-36.82	H
3800.6	-32.53	3.47	3	9.38	-26.62	-13	-13.62	V
5705.0	-39.02	5.24	3	7.29	-36.97	-13	-23.97	V

LTE Band4_20M_Low Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3439.6	-41.61	3.45	3	7.77	-37.29	-13	-24.29	H
5156.4	-44.28	3.84	3	7.76	-40.36	-13	-27.36	H
3439.6	-49.33	3.45	3	7.77	-45.01	-13	-32.01	V
5156.4	-43.51	3.84	3	7.76	-39.59	-13	-26.59	V
LTE Band4_20M_Middle Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.1	-47.08	3.73	3	7.87	-42.94	-13	-29.94	H
5197.3	-44.73	3.93	3	7.53	-41.13	-13	-28.13	H
3465.1	-35.11	3.73	3	7.87	-30.97	-13	-17.97	V
5197.3	-47.22	3.93	3	7.53	-43.62	-13	-30.62	V

LTE Band4_20M_High Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.3	-40.74	4.49	3	9.51	-35.72	-13	-22.72	H
5238.8	-53.14	3.31	3	7	-49.45	-13	-36.45	H
3490.3	-43.67	4.49	3	9.51	-38.65	-13	-25.65	V
5238.8	-37.19	3.31	3	7	-33.5	-13	-20.5	V

LTE Band5_10M_Low Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1657.7	-33.28	3.69	3	8.21	-28.76	-13	-15.76	H
2485.7	-35.1	3.94	3	7.51	-31.53	-13	-18.53	H
1657.7	-45.99	3.69	3	8.21	-41.47	-13	-28.47	V
2485.7	-37.76	3.94	3	7.51	-34.19	-13	-21.19	V
LTE Band5_10M_Middle Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1668.7	-39.8	3.45	3	8.1	-35.15	-13	-22.15	H
2502.2	-35.36	4.4	3	6.02	-33.74	-13	-20.74	H
1668.7	-45.84	3.45	3	8.1	-41.19	-13	-28.19	V
2502.2	-48.53	4.4	3	6.02	-46.91	-13	-33.91	V
LTE Band5_10M_High Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1680.2	-38.06	4.66	3	8.19	-34.53	-13	-21.53	H
2515.6	-42.5	3.55	3	7.18	-38.87	-13	-25.87	H
1680.2	-47.1	4.66	3	8.19	-43.57	-13	-30.57	V
2515.6	-35.21	3.55	3	7.18	-31.58	-13	-18.58	V

LTE Band7_20M_Low Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5020.6	-33.95	4.15	3	7.84	-30.26	-25	-5.26	H
7531.6	-39.25	3.62	3	6.2	-36.67	-25	-11.67	H
5020.6	-48.06	4.15	3	7.84	-44.37	-25	-19.37	V
7531.6	-46.43	3.62	3	6.2	-43.85	-25	-18.85	V

LTE Band7_20M_Middle Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5069.6	-40.05	4.66	3	8.65	-36.06	-25	-11.06	H
7600.8	-51.56	4.72	3	7.85	-48.43	-25	-23.43	H
5069.6	-42.76	4.66	3	8.65	-38.77	-25	-13.77	V
7600.8	-38.01	4.72	3	7.85	-34.88	-25	-9.88	V
LTE Band7_20M_High Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5120.4	-44.03	3.8	3	9.12	-38.71	-25	-13.71	H
7682.1	-47.69	4.15	3	6.28	-45.56	-25	-20.56	H
5120.4	-43.83	3.8	3	9.12	-38.51	-25	-13.51	V
7682.1	-44.51	4.15	3	6.28	-42.38	-25	-17.38	V

LTE Band12_10M_Low Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1407.7	-42.56	4.72	3	8.57	-38.71	-13	-25.71	H
2107.7	-47.01	4.18	3	6.09	-45.1	-13	-32.1	H
1407.7	-45.02	4.72	3	8.57	-41.17	-13	-28.17	V
2107.7	-32.35	4.18	3	6.09	-30.44	-13	-17.44	V
LTE Band12_10M_Middle Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1414.8	-48	3.65	3	8.58	-43.07	-13	-30.07	H
2120.2	-51.76	3.43	3	6.28	-48.91	-13	-35.91	H
1414.8	-47.75	3.65	3	8.58	-42.82	-13	-29.82	V
2120.2	-35.28	3.43	3	6.28	-32.43	-13	-19.43	V
LTE Band12_10M_High Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1422.0	-40.48	3.84	3	9.3	-35.02	-13	-22.02	H
2128.4	-34.55	3.6	3	6.78	-31.37	-13	-18.37	H
1422.0	-42.1	3.84	3	9.3	-36.64	-13	-23.64	V
2128.4	-48.8	3.6	3	6.78	-45.62	-13	-32.62	V

LTE Band13_5M_Low Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1558.7	-38.17	3.38	3	8.62	-32.93	-13	-19.93	H
2342.3	-38.75	3.87	3	6.05	-36.57	-13	-23.57	H
1558.7	-41.43	3.38	3	8.62	-36.19	-13	-23.19	V
2342.3	-36.22	3.87	3	6.05	-34.04	-13	-21.04	V
LTE Band13_5M_Middle Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1564.5	-35.43	3.45	3	7.65	-31.23	-13	-18.23	H
2343.3	-38.39	4.17	3	7.56	-35	-13	-22	H
1564.5	-47.99	3.45	3	7.65	-43.79	-13	-30.79	V
2343.3	-48.41	4.17	3	7.56	-45.02	-13	-32.02	V
LTE Band13_5M_High Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1569.0	-33.36	4.6	3	7.93	-30.03	-13	-17.03	H
2352.0	-46.21	3.56	3	6.05	-43.72	-13	-30.72	H
1569.0	-36.6	4.6	3	7.93	-33.27	-13	-20.27	V
2352.0	-33.96	3.56	3	6.05	-31.47	-13	-18.47	V

LTE Band25_20M_Low Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3719.7	-46.64	4.6	3	8.44	-42.8	-13	-29.8	H
5581.8	-36.05	3.79	3	6.51	-33.33	-13	-20.33	H
3719.7	-33.1	4.6	3	8.44	-29.26	-13	-16.26	V
5581.8	-41.8	3.79	3	6.51	-39.08	-13	-26.08	V
LTE Band25_20M_Middle Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3765.2	-45.6	3.06	3	7.95	-40.71	-13	-27.71	H
5643.3	-36.24	4.11	3	6.61	-33.74	-13	-20.74	H
3765.2	-29.98	3.06	3	7.95	-25.09	-13	-12.09	V
5643.3	-41.86	4.11	3	6.61	-39.36	-13	-26.36	V

LTE Band25_20M_High Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3809.9	-44.97	4.01	3	9.47	-39.51	-13	-26.51	H
5718.4	-48.76	3.97	3	6.61	-46.12	-13	-33.12	H
3809.9	-36.73	4.01	3	9.47	-31.27	-13	-18.27	V
5718.4	-50.65	3.97	3	6.61	-48.01	-13	-35.01	V

LTE Band38_20M_Low Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5160.8	-34.46	4.41	3	8.56	-30.31	-25	-5.31	H
7741.8	-35.1	4.11	3	7.58	-31.63	-25	-6.63	H
5160.8	-38.87	4.41	3	8.56	-34.72	-25	-9.72	V
7741.8	-42.21	4.11	3	7.58	-38.74	-25	-13.74	V
LTE Band38_20M_Middle Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5190.4	-46.34	4.64	3	8.77	-42.21	-25	-17.21	H
7790.0	-41.82	3.67	3	7.85	-37.64	-25	-12.64	H
5190.4	-45.67	4.64	3	8.77	-41.54	-25	-16.54	V
7790.0	-50.84	3.67	3	7.85	-46.66	-25	-21.66	V
LTE Band38_20M_High Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5220.5	-36.85	4.22	3	8.85	-32.22	-25	-7.22	H
7829.0	-45.31	3.37	3	6.6	-42.08	-25	-17.08	H
5220.5	-43.62	4.22	3	8.85	-38.99	-25	-13.99	V
7829.0	-45.16	3.37	3	6.6	-41.93	-25	-16.93	V

LTE Band40-1_5M_Low Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
4615.1	-62.86	4.46	3	8.16	-59.16	-40	-19.16	H
6923.4	-59.19	4.48	3	7.16	-56.51	-40	-16.51	H
4615.1	-61.37	4.46	3	8.16	-57.67	-40	-17.67	V
6923.4	-51.31	4.48	3	7.16	-48.63	-40	-8.63	V

LTE Band40-1_5M_Middle Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
4621.0	-64.21	3.48	3	7.57	-60.12	-40	-20.12	H
6928.5	-70.19	4.97	3	6.15	-69.01	-40	-29.01	H
4621.0	-53.08	3.48	3	7.57	-48.99	-40	-8.99	V
6928.5	-63.97	4.97	3	6.15	-62.79	-40	-22.79	V
LTE Band40-1_5M_High Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
4625.2	-58.43	4.7	3	7.59	-55.54	-40	-15.54	H
6934.7	-63.58	4.62	3	6.2	-62	-40	-22	H
4625.2	-64.51	4.7	3	7.59	-61.62	-40	-21.62	V
6934.7	-50.72	4.62	3	6.2	-49.14	-40	-9.14	V

LTE Band40-2_5M_Low Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
4705	-61.25	3.86	3	8.56	-38.55	-40	-25.55	H
7057.5	-62.25	4.29	3	6.98	-41.56	-40	-28.56	H
4705	-57.52	3.86	3	8.56	-34.82	-40	-21.82	V
7057.5	-60	4.29	3	6.98	-39.31	-40	-26.31	V
LTE Band40-2_5M_Middle Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
4709.7	-53.94	4.06	3	8.56	-49.44	-40	-9.44	H
7063.6	-53.29	4.88	3	7.84	-50.33	-40	-10.33	H
4709.7	-63.23	4.06	3	8.56	-58.73	-40	-18.73	V
7063.6	-53.06	4.88	3	7.84	-50.1	-40	-10.1	V
LTE Band40-2_5M_High Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
4715.2	-60.53	3.8	3	7.77	-56.56	-40	-16.56	H
7074.9	-58.77	3.68	3	6.53	-55.92	-40	-15.92	H
4715.2	-53.89	3.8	3	7.77	-49.92	-40	-9.92	V
7074.9	-51.12	3.68	3	6.53	-48.27	-40	-8.27	V

LTE Band41_20M_Low Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5012.0	-33.88	4.37	3	7.85	-30.4	-25	-5.4	H
7522.8	-43.96	5.18	3	6.12	-43.02	-25	-18.02	H
5012.0	-52.81	4.37	3	7.85	-49.33	-25	-24.33	V
7522.8	-32.4	5.18	3	6.12	-31.46	-25	-6.46	V
LTE Band41_20M_Middle Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5185.6	-46.4	4.19	3	7.9	-42.69	-25	-17.69	H
7774.6	-50.18	3.39	3	7.35	-46.22	-25	-21.22	H
5185.6	-42.47	4.19	3	7.9	-38.76	-25	-13.76	V
7774.6	-33.29	3.39	3	7.35	-29.33	-25	-4.33	V
LTE Band41_20M_High Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5360.8	-41.02	4.01	3	8.07	-36.96	-25	-11.96	H
8040.4	-40.4	4.95	3	7.55	-37.8	-25	-12.8	H
5360.8	-39.47	4.01	3	8.07	-35.41	-25	-10.41	V
8040.4	-52	4.95	3	7.55	-49.4	-25	-24.4	V

LTE Band66_20M_Low Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3440.4	-37.12	2.94	3	7.59	-32.47	-13	-19.47	H
5159.2	-49.04	3.42	3	7.08	-45.38	-13	-32.38	H
3440.4	-44.55	2.94	3	7.59	-39.9	-13	-26.9	V
5159.2	-43.28	3.42	3	7.08	-39.62	-13	-26.62	V
LTE Band66_20M_Middle Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.3	-36.33	4.56	3	8.45	-32.44	-13	-19.44	H
5230.5	-42.93	3.39	3	7.05	-39.27	-13	-26.27	H
3490.3	-39.04	4.56	3	8.45	-35.15	-13	-22.15	V
5230.5	-35.75	3.39	3	7.05	-32.09	-13	-19.09	V

LTE Band66_20M_High Channel								
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	Distance (m)	G_a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3540.8	-44.78	3.5	3	8.19	-40.09	-13	-27.09	H
5306.6	-36.33	3.65	3	6.94	-33.04	-13	-20.04	H
3540.8	-35.04	3.5	3	8.19	-30.35	-13	-17.35	V
5306.6	-35.52	3.65	3	6.94	-32.23	-13	-19.23	V

10. FREQUENCY STABILITY

10.1. LIMIT

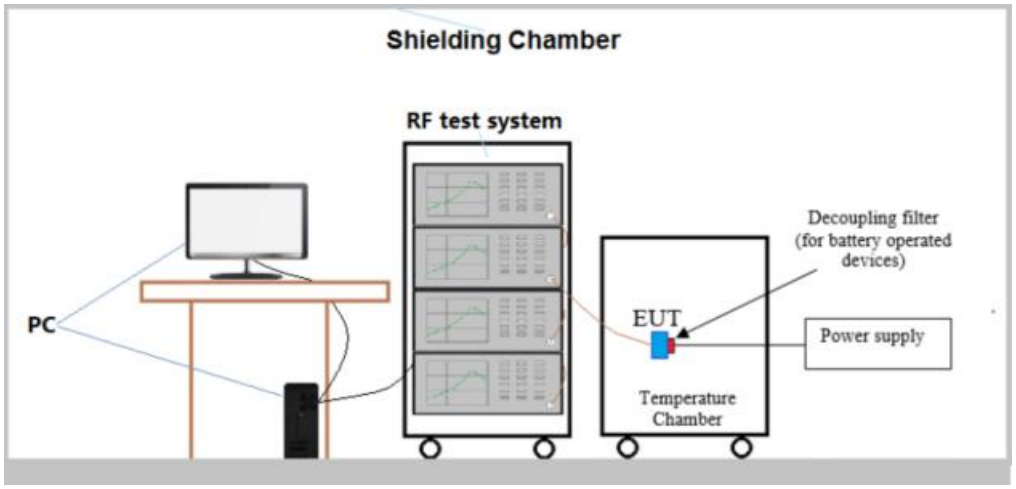
FCC 47 CFR Part 22.355,

The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

FCC 47 CFR Part 24.235, FCC 47 CFR Part 27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

10.2. TEST SETUP



10.3. TEST PROCEDURE

Refer to ANSI C63.26-2015 & KDB 971168 D01v03r01 for test method.

1) The transmitter output was connected to the RF test system.

a) Temp. = −30° to + 50°C

b) Voltage =low voltage, Normal voltage and High voltage.

2) Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to 20ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached.

3) Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

10.4. TEST RESULT

Pass.

Please refer to the Appendix for LTE Test Data.

11. PHOTOGRAPHS OF TEST SETUP

Please refer to separated files for Test Setup Photos of the EUT.

12. EXTERNAL PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

13. INTERNAL PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.

**********THE END**********