FCC RF Test Report

APPLICANT	:	**Trackunit Aps**
EQUIPMENT	:	**M7 4G LTE Vehicle Telematics Unit**
MODEL NAME	:	**M7MG**
FCC ID	:	**ZMF-M7MG**
STANDARD	:	**47 CFR Part 2, 22(H), 24(E), 27(L), 27(H), 27(F)**
CLASSIFICATION	:	**PCS Licensed Transmitter (PCB)**
TEST DATE(S)	:	**Jan. 07, 2022**

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

This product installed a RF module (Brand Name: Telit, Model Name: ME910G1-WW, FCC ID: RI7ME910G1WW) during the test, only ERP/EIRP and RSE test items are tested in this report, all the other test results are quoted on module RF report.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Reviewed by: Jason Jia / Supervisor

Alex Wang

Approved by: Alex Wang / Manager

Sporton International Inc. (Kunshan)

No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG1N2320B	Rev. 01	Initial issue of report	Feb. 11, 2022

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.2	§2.1046	Conducted Output Power	-	Report Only	-
	§22.913(a)(5)	Effective Radiated Power (Band 5) (Band 26)	ERP < 7 Watt	PASS	-
	§27.50(b)(10) §27.50(c)(10)	Effective Radiated Power (Band 12) (Band 13) (Band 85)	ERP < 3 Watt		-
	§24.232(c)	Equivalent Isotropic Radiated Power (Band 2) (Band 25)	EIRP < 2Watt		-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4) (Band 66)	EIRP < 1Watt		-
-	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	1
-	§2.1049	Occupied Bandwidth	-	Report Only	1
-	§2.1051 §22.917(a) §24.238(a) §27.53(c)(2)(4) §27.53(g) §27.53(h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 25) (Band 26) (Band 66) (Band 85)	< 43+10log10(P[Watts])	PASS	1
-	§2.1051 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(g) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 25) (Band 26) (Band 66) (Band 85)	< 43+10log10(P[Watts])	PASS	1
-	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22	PASS	1
	§2.1055 §24.235 §27.54		Within Authorized Band		

Report Section	FCC Rule	Description	Limit	Result	Remark
4.4	§2.1053 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(f) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 25) (Band 26) (Band 66) (Band 85)	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 19.84 dB at 1560.000 MHz

Remark 1:
All test results were leveraged from module RF report which can refer to Report No. STS1912245W01.

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Applicant

Trackunit Aps
Gasvaerksvej 24,4 sal.Aalborg Denmark

1.2 Manufacturer

Positioning Universal.
4660 La Jolla Village Drive, Suite 1100, San Diego, CA92122

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	M7 4G LTE Vehicle Telematics Unit
Model Name	M7MG
FCC ID	ZMF-M7MG
HW Version	P7
SW Version	M7PUI MAIN MCU V3.10
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 4 : 1710 MHz ~ 1755 MHz LTE Band 5 : 824 MHz ~ 849 MHz LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 25 : 1850 MHz ~ 1915 MHz LTE Band 26 : 824 MHz ~ 849 MHz LTE Band 66 : 1710 MHz ~ 1780 MHz LTE Band 85: 698 MHz ~ 716 MHz
Rx Frequency	LTE Band 2 : 1930 MHz ~ 1990 MHz LTE Band 4 : 2110 MHz ~ 2155 MHz LTE Band 5 : 869 MHz ~ 894 MHz LTE Band 12 : 729 MHz ~ 746 MHz LTE Band 13 : 746 MHz ~ 756 MHz LTE Band 25 : 1930 MHz ~ 1995 MHz LTE Band 26 : 869 MHz ~ 894 MHz LTE Band 66 : 2110 MHz~ 2180 MHz LTE Band 85: 728 MHz ~ 746 MHz
LTE Category	M1
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 5 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz

	LTE Band 13 : 5MHz / 10MHz LTE Band 25 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 26 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz LTE Band 66 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 85 : 5MHz / 10MHz
Maximum Output Power to Antenna	LTE Band 2 : 23.69 dBm LTE Band 4 : 23.86 dBm LTE Band 5 : 23.51 dBm LTE Band 12 : 23.46 dBm LTE Band 13 : 23.04 dBm LTE Band 25 : 23.75 dBm LTE Band 26 : 23.87 dBm LTE Band 66 : 23.81 dBm LTE Band 85 : 23.24 dBm
Antenna Gain	LTE Band 2 : 1 dBi LTE Band 4 : 1 dBi LTE Band 5 : 0 dBi LTE Band 12 : 0 dBi LTE Band 13 : 0 dBi LTE Band 25 : 1 dBi LTE Band 26 : 0 dBi LTE Band 66 : 1 dBi LTE Band 85 : 0 dBi
Type of Modulation	QPSK / 16QAM

Remark: Verify that the power is less than the module power, so the module power is used when calculating ERP/EIRP in this report.

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Maximum ERP/EIRP

LTE Band 2		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
1.4	1850.7 ~ 1909.3	0.2649	0.2158
3	1851.5 ~ 1908.5	0.2831	0.2254
5	1852.5 ~ 1907.5	0.2838	0.2799
10	1855.0 ~ 1905.0	0.2767	0.2710
15	1857.5 ~ 1902.5	0.2780	0.2944
20	1860.0 ~ 1900.0	0.2904	0.2825
LTE Band 25		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
1.4	1850.7 ~ 1914.3	0.2818	0.2148
3	1851.5 ~ 1913.5	0.2831	0.2218
5	1852.5 ~ 1912.5	0.2818	0.2729
10	1855.0 ~ 1910.0	0.2844	0.2871
15	1857.5 ~ 1907.5	0.2864	0.2979
20	1860.0 ~ 1905.0	0.2838	0.2985
LTE Band 4		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
1.4	1710.7 ~ 1754.3	0.2825	0.2198
3	1711.5 ~ 1753.5	0.3062	0.2339
5	1712.5 ~ 1752.5	0.2871	0.2742
10	1715.0 ~ 1750.0	0.2773	0.2761
15	1717.5 ~ 1747.5	0.2944	0.2838
20	1720.0 ~ 1745.0	0.2831	0.2877
LTE Band 5		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)
1.4	824.7 ~ 848.3	0.1346	0.1127
3	825.5 ~ 847.5	0.1365	0.1064
5	826.5 ~ 846.5	0.1330	0.1368
10	829.0 ~ 844.0	0.1352	0.1315

LTE Band 12		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)
1.4	699.7 ~ 715.3	0.1194	0.1059
3	700.5 ~ 714.5	0.1327	0.1079
5	701.5 ~ 713.5	0.1318	0.1178
10	704.0 ~ 711.0	0.1352	0.1211
LTE Band 13		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)
5	779.5 ~ 784.5	0.1227	0.1109
10	782.0	0.1213	0.1199
LTE Band 26		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)
1.4	824.7 ~ 848.3	0.1321	0.1102
3	825.5 ~ 847.5	0.1346	0.1146
5	826.5 ~ 846.5	0.1400	0.1380
10	829.0 ~ 844.0	0.1368	0.1387
15	831.5 ~ 841.5	0.1327	0.1486
LTE Band 66		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
1.4	1710.7 ~ 1779.3	0.2729	0.2178
3	1711.5 ~ 1778.5	0.3027	0.2203
5	1712.5 ~ 1777.5	0.2999	0.2805
10	1715.0 ~ 1775.0	0.2985	0.2630
15	1717.5 ~ 1772.5	0.2805	0.2884
20	1720.0 ~ 1770.0	0.2965	0.2897
LTE Band 85		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)
5	700.5 ~ 713.5	0.1274	0.1199
10	703.0 ~ 711.0	0.1205	0.1285

Note: The power/EIRP details refer to Appendix A

1.7 Testing Location

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS	CN1257	314309

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH04-KS	AUDIX	E3	6.2009-8-24a

1.9 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 22(H), 24(E), 27(L), 27(H), 27(F)
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

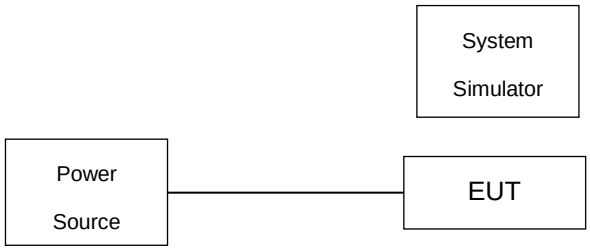
2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
E.R.P / E.I.R.P	2	v	v	v	v	v	v	v	v	-	v		v	v	v	v
	4	v	v	v	v	v	v	v	v	-	v		v	v	v	v
	5	v	v	v	v	-	-	v	v	-	v		v	v	v	v
	12	v	v	v	v	-	-	v	v	-	v		v	v	v	v
	13	-	-	v	v	-	-	v	v	-	v		v	v	v	v
	17	-	-	v	v	-	-	v	v	-	v		v	v	v	v
	25	v	v	v	v	v	v	v	v	-	v		v	v	v	v
	26	v	v	v	v	v	-	v	v	-	v		v	v	v	v
	66	v	v	v	v	v	v	v	v	-	v		v	v	v	v
	85	-	-	v	v	-	-	v	v	-	v		v	v	v	v
Radiated Spurious Emission	13	Worst Case													v	
	25	Worst Case													v	
	26	Worst Case													v	
	66	Worst Case													v	
	85	Worst Case													v	
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. 4. LTE Band 26 overlaps the entire frequency range of LTE Band 5. Therefore, the test results provided in this report covers Band 5 and the portion of Band 26 subject to Part 22. 5. LTE Band 66 overlaps the entire frequency range of LTE Band 4. Therefore, the test results provided in this report covers Band 66 as well as Band 4. 6. LTE Band 25 overlaps the entire frequency range of LTE Band 2. Therefore, the test results provided in this report covers Band 25 as well as Band 2. 7. LTE Band 85 overlaps the entire frequency range of LTE Band 12. Therefore, the test results provided in this report covers Band 85 as well as Band 12. 8. The RSE margin is better than 10dB, so only the middle channel is selected for radiated testing.															

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

. For detail, please refer to test mode configuration and setup photographs for each test item.

2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m

2.4 Frequency List of Low/Middle/High Channels

LTE Band 2 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	18700	18900	19100
	Frequency	1860	1880	1900
15	Channel	18675	18900	19125
	Frequency	1857.5	1880	1902.5
10	Channel	18650	18900	19150
	Frequency	1855	1880	1905
5	Channel	18625	18900	19175
	Frequency	1852.5	1880	1907.5
3	Channel	18615	18900	19185
	Frequency	1851.5	1880	1908.5
1.4	Channel	18607	18900	19193
	Frequency	1850.7	1880	1909.3

LTE Band 4 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	20050	20175	20300
	Frequency	1720	1732.5	1745
15	Channel	20025	20175	20325
	Frequency	1717.5	1732.5	1747.5
10	Channel	20000	20175	20350
	Frequency	1715	1732.5	1750
5	Channel	19975	20175	20375
	Frequency	1712.5	1732.5	1752.5
3	Channel	19965	20175	20385
	Frequency	1711.5	1732.5	1753.5
1.4	Channel	19957	20175	20393
	Frequency	1710.7	1732.5	1754.3

LTE Band 5 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	20450	20525	20600
	Frequency	829	836.5	844
5	Channel	20425	20525	20625
	Frequency	826.5	836.5	846.5
3	Channel	20415	20525	20635
	Frequency	825.5	836.5	847.5
1.4	Channel	20407	20525	20643
	Frequency	824.7	836.5	848.3

LTE Band 12 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	23060	23095	23130
	Frequency	704	707.5	711
5	Channel	23035	23095	23155
	Frequency	701.5	707.5	713.5
3	Channel	23025	23095	23165
	Frequency	700.5	707.5	714.5
1.4	Channel	23017	23095	23173
	Frequency	699.7	707.5	715.3

LTE Band 13 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	-	23230	-
	Frequency	-	782	-
5	Channel	23205	23230	23255
	Frequency	779.5	782	784.5

LTE Band 25 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	26140	26340	26590
	Frequency	1860	1880	1905
15	Channel	26115	26340	26615
	Frequency	1857.5	1880	1907.5
10	Channel	26090	26340	26640
	Frequency	1855	1880	1910
5	Channel	26065	26340	26665
	Frequency	1852.5	1880	1912.5
3	Channel	26055	26340	26675
	Frequency	1851.5	1880	1913.5
1.4	Channel	26047	26340	26683
	Frequency	1850.7	1880	1914.3

LTE Band 26 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
15	Channel	26865	26915	26965
	Frequency	831.5	836.5	841.5
10	Channel	26840	26915	26990
	Frequency	829	836.5	844
5	Channel	26815	26915	27015
	Frequency	826.5	836.5	846.5
3	Channel	26805	26915	27025
	Frequency	825.5	836.5	847.5
1.4	Channel	26797	26915	27033
	Frequency	824.7	836.5	848.3

LTE Band 66 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	132072	132322	132572
	Frequency	1720	1745	1770
15	Channel	132047	132322	132597
	Frequency	1717.5	1745	1772.5
10	Channel	132022	132322	132622
	Frequency	1715	1745	1775
5	Channel	131997	132322	132647
	Frequency	1712.5	1745	1777.5
3	Channel	131987	132322	132657
	Frequency	1711.5	1745	1778.5
1.4	Channel	131979	132322	132665
	Frequency	1710.7	1745	1779.3

LTE Band 85 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
10	Channel	134052	134092	134132
	Frequency	703	707	711
5	Channel	134027	134092	134157
	Frequency	700.5	707	713.5

3 Conducted Test Items

3.1 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power and ERP/EIRP

3.2.1 Description of the Conducted Output Power Measurement and ERP/EIRP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 5 and Band 26.

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 12, Band 13 and Band 85.

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2 and Band 25.

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4 and Band 66.

According to KDB 412172 D01 Power Approach,

EIRP = $P_T + G_T – L_C$, ERP = EIRP -2.15, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.2.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.

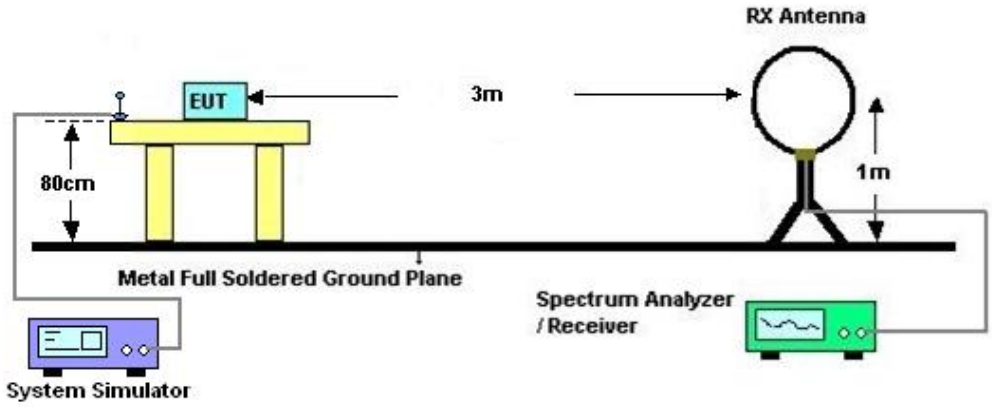
4 Radiated Test Items

4.1 Measuring Instruments

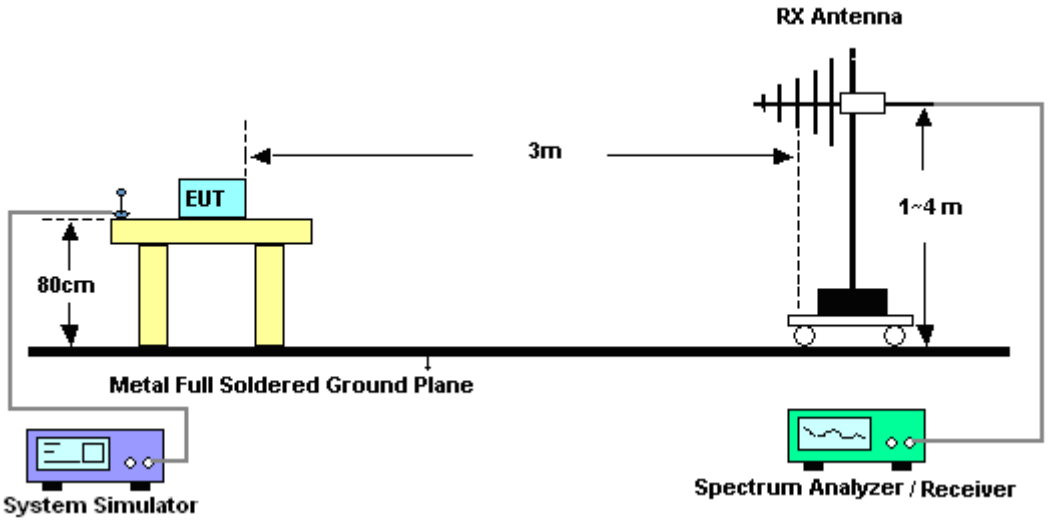
See list of measuring instruments of this test report.

4.2 Test Setup

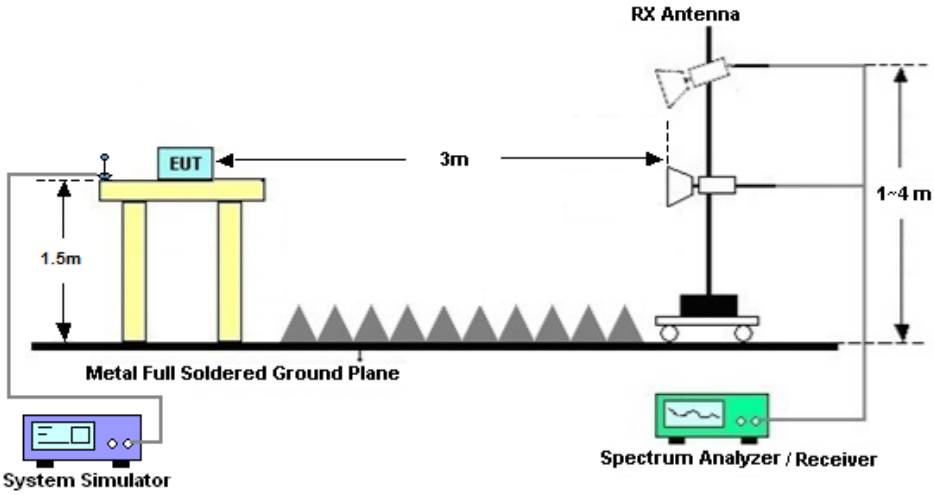
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. 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 43 + 10 log (P) dB.

For LTE Band 13

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. 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 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz-44G,MAX 30dB	Apr. 13, 2021	Jan. 07, 2022	Apr. 12, 2022	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Jan. 07, 2022	Oct. 29, 2022	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 30, 2021	Jan. 07, 2022	May 29, 2022	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1356	1GHz~18GHz	Apr. 18, 2021	Jan. 07, 2022	Apr. 17, 2022	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Jan. 07, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 05, 2022	Jan. 07, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 07, 2021	Jan. 07, 2022	Jan. 06, 2022	Radiation (03CH04-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2025788	1Ghz-18Ghz	Jan. 05, 2022	Jan. 07, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5GHz	Oct. 13, 2021	Jan. 07, 2022	Oct. 12, 2022	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jan. 07, 2022	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jan. 07, 2022	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jan. 07, 2022	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. 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.

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.3dB**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.8dB**

Appendix A. Test Results of Conducted Test

Test Engineer :	Simle Wang	Temperature :	22~23℃
		Relative Humidity :	40~42%

Conducted Output Power(Average power) & ERP/EIRP

LTE Band 2

Band	BW	Modulation	Channel	RB	RB	Result	EIRP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band2	1.4	QPSK	Low	1	0	23.23	24.23	0.2649
Band2	1.4		Low	6	0	21.45	22.45	0.1758
Band2	3		Low	1	0	23.32	24.32	0.2704
Band2	3		Low	6	0	21.07	22.07	0.1611
Band2	5		Low	1	0	23.48	24.48	0.2805
Band2	5		Low	6	0	22.64	23.64	0.2312
Band2	10		Low	1	0	23.36	24.36	0.2729
Band2	10		Low	6	0	22.23	23.23	0.2104
Band2	15		Low	1	0	23.23	24.23	0.2649
Band2	15		Low	6	0	23.28	24.28	0.2679
Band2	20		Low	1	0	23.41	24.41	0.2761
Band2	20		Low	6	0	23.63	24.63	0.2904
Band2	1.4	16-QAM	Low	1	0	22.28	23.28	0.2128
Band2	1.4		Low	5	0	21.29	22.29	0.1694
Band2	3		Low	1	0	22.53	23.53	0.2254
Band2	3		Low	5	0	21.12	22.12	0.1629
Band2	5		Low	1	0	23.36	24.36	0.2729
Band2	5		Low	5	0	21.36	22.36	0.1722
Band2	10		Low	1	0	23.24	24.24	0.2655
Band2	10		Low	5	0	22.49	23.49	0.2234
Band2	15		Low	1	0	22.96	23.96	0.2489
Band2	15		Low	5	0	23.69	24.69	0.2944
Band2	20		Low	1	0	23.45	24.45	0.2786
Band2	20		Low	5	0	23.34	24.34	0.2716
Band2	1.4	QPSK	Middle	1	0	23.21	24.21	0.2636
Band2	1.4		Middle	6	0	21.3	22.3	0.1698
Band2	3		Middle	1	0	23.52	24.52	0.2831
Band2	3		Middle	6	0	21.29	22.29	0.1694
Band2	5		Middle	1	0	23.53	24.53	0.2838
Band2	5		Middle	6	0	22.4	23.4	0.2188
Band2	10		Middle	1	0	23.41	24.41	0.2761
Band2	10		Middle	6	0	22.35	23.35	0.2163
Band2	15		Middle	1	0	23.32	24.32	0.2704

Band2	15		Middle	6	0	23.35	24.35	0.2723
Band2	20		Middle	1	0	23.3	24.3	0.2692
Band2	20		Middle	6	0	23.34	24.34	0.2716
Band2	1.4	16-QAM	Middle	1	0	22.32	23.32	0.2148
Band2	1.4		Middle	5	0	21.23	22.23	0.1671
Band2	3		Middle	1	0	22.35	23.35	0.2163
Band2	3		Middle	5	0	21.23	22.23	0.1671
Band2	5		Middle	1	0	23.47	24.47	0.2799
Band2	5		Middle	5	0	21.55	22.55	0.1799
Band2	10		Middle	1	0	23.33	24.33	0.2710
Band2	10		Middle	5	0	22.55	23.55	0.2265
Band2	15		Middle	1	0	23.21	24.21	0.2636
Band2	15		Middle	5	0	23.58	24.58	0.2871
Band2	20		Middle	1	0	23.4	24.4	0.2754
Band2	20		Middle	5	0	23.51	24.51	0.2825
Band2	1.4	QPSK	High	1	5	23.17	24.17	0.2612
Band2	1.4		High	6	0	21.5	22.5	0.1778
Band2	3		High	1	5	23.4	24.4	0.2754
Band2	3		High	6	0	21.06	22.06	0.1607
Band2	5		High	1	5	23.31	24.31	0.2698
Band2	5		High	3	3	22.53	23.53	0.2254
Band2	10		High	1	5	23.42	24.42	0.2767
Band2	10		High	6	0	22.27	23.27	0.2123
Band2	15		High	1	5	23.24	24.24	0.2655
Band2	15		High	6	0	23.44	24.44	0.2780
Band2	20		High	1	5	23.27	24.27	0.2673
Band2	20		High	6	0	23.33	24.33	0.2710
Band2	1.4	16-QAM	High	1	5	22.34	23.34	0.2158
Band2	1.4		High	5	1	21	22	0.1585
Band2	3		High	1	5	22.31	23.31	0.2143
Band2	3		High	5	1	21.68	22.68	0.1854
Band2	5		High	1	5	23.16	24.16	0.2606
Band2	5		High	3	3	21.09	22.09	0.1618
Band2	10		High	1	5	23.29	24.29	0.2685
Band2	10		High	5	1	22.5	23.5	0.2239
Band2	15		High	1	5	23.46	24.46	0.2793
Band2	15		High	5	1	23.44	24.44	0.2780
Band2	20		High	1	5	23.37	24.37	0.2735
Band2	20		High	5	1	23.45	24.45	0.2786

LTE Band 4

Band	BW	Modulation	Channel	RB	RB	Result	EIRP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band4	1.4	QPSK	Low	1	0	23.47	24.47	0.2799
Band4	1.4		Low	6	0	21.48	22.48	0.1770
Band4	3		Low	1	0	23.86	24.86	0.3062
Band4	3		Low	6	0	21.26	22.26	0.1683
Band4	5		Low	1	0	23.31	24.31	0.2698
Band4	5		Low	6	0	22.51	23.51	0.2244
Band4	10		Low	1	0	23.19	24.19	0.2624
Band4	10		Low	6	0	22.47	23.47	0.2223
Band4	15		Low	1	0	23.52	24.52	0.2831
Band4	15		Low	6	0	23.12	24.12	0.2582
Band4	20		Low	1	0	23.48	24.48	0.2805
Band4	20		Low	6	0	23.19	24.19	0.2624
Band4	1.4	16-QAM	Low	1	0	22.25	23.25	0.2113
Band4	1.4		Low	5	0	21.38	22.38	0.1730
Band4	3		Low	1	0	22.69	23.69	0.2339
Band4	3		Low	5	0	21.34	22.34	0.1714
Band4	5		Low	1	0	23.03	24.03	0.2529
Band4	5		Low	5	0	21.84	22.84	0.1923
Band4	10		Low	1	0	23.27	24.27	0.2673
Band4	10		Low	5	0	22.45	23.45	0.2213
Band4	15		Low	1	0	23.53	24.53	0.2838
Band4	15		Low	5	0	23.41	24.41	0.2761
Band4	20		Low	1	0	23.3	24.3	0.2692
Band4	20		Low	5	0	23.59	24.59	0.2877
Band4	1.4	QPSK	Middle	1	0	23.49	24.49	0.2812
Band4	1.4		Middle	6	0	21.37	22.37	0.1726
Band4	3		Middle	1	0	23.48	24.48	0.2805
Band4	3		Middle	6	0	21.36	22.36	0.1722
Band4	5		Middle	1	0	23.33	24.33	0.2710
Band4	5		Middle	6	0	22.44	23.44	0.2208
Band4	10		Middle	1	0	23.43	24.43	0.2773
Band4	10		Middle	6	0	22.46	23.46	0.2218
Band4	15		Middle	1	0	23.46	24.46	0.2793
Band4	15		Middle	6	0	23.38	24.38	0.2742
Band4	20		Middle	1	0	23.52	24.52	0.2831
Band4	20		Middle	6	0	23.43	24.43	0.2773

Band	BW	Modulation	Channel	RB	RB	Result	EIRP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band4	1.4	16-QAM	Middle	1	0	22.42	23.42	0.2198
Band4	1.4		Middle	5	0	21.35	22.35	0.1718
Band4	3		Middle	1	0	22.42	23.42	0.2198
Band4	3		Middle	5	0	21.39	22.39	0.1734
Band4	5		Middle	1	0	23.38	24.38	0.2742
Band4	5		Middle	5	0	21.49	22.49	0.1774
Band4	10		Middle	1	0	23.41	24.41	0.2761
Band4	10		Middle	5	0	22.53	23.53	0.2254
Band4	15		Middle	1	0	23.49	24.49	0.2812
Band4	15		Middle	5	0	23.51	24.51	0.2825
Band4	20		Middle	1	0	23.33	24.33	0.2710
Band4	20		Middle	5	0	23.32	24.32	0.2704
Band4	1.4	QPSK	High	1	5	23.51	24.51	0.2825
Band4	1.4		High	6	0	21.73	22.73	0.1875
Band4	3		High	1	5	23.63	24.63	0.2904
Band4	3		High	6	0	21.42	22.42	0.1746
Band4	5		High	1	5	23.58	24.58	0.2871
Band4	5		High	3	3	22.5	23.5	0.2239
Band4	10		High	1	5	23.36	24.36	0.2729
Band4	10		High	6	0	22.88	23.88	0.2443
Band4	15		High	1	5	23.69	24.69	0.2944
Band4	15		High	6	0	23.4	24.4	0.2754
Band4	20		High	1	5	23.13	24.13	0.2588
Band4	20		High	6	0	23.16	24.16	0.2606
Band4	1.4	16-QAM	High	1	5	22.25	23.25	0.2113
Band4	1.4		High	5	1	21.26	22.26	0.1683
Band4	3		High	1	5	22.17	23.17	0.2075
Band4	3		High	5	1	21.83	22.83	0.1919
Band4	5		High	1	5	23.3	24.3	0.2692
Band4	5		High	3	3	21.77	22.77	0.1892
Band4	10		High	1	5	23.17	24.17	0.2612
Band4	10		High	5	1	22.68	23.68	0.2333
Band4	15		High	1	5	23.48	24.48	0.2805
Band4	15		High	5	1	23.47	24.47	0.2799
Band4	20		High	1	5	23.46	24.46	0.2793
Band4	20		High	5	1	23.32	24.32	0.2704

LTE Band 5

Band	BW	Modulation	Channel	RB	RB	Result	ERP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band5	1.4	QPSK	Low	1	0	23.24	21.09	0.1285
Band5	1.4		Low	6	0	21.15	19	0.0794
Band5	3		Low	1	0	23.5	21.35	0.1365
Band5	3		Low	6	0	21.34	19.19	0.0830
Band5	5		Low	1	0	23.1	20.95	0.1245
Band5	5		Low	6	0	22.37	20.22	0.1052
Band5	10		Low	1	0	22.96	20.81	0.1205
Band5	10		Low	6	0	22.06	19.91	0.0979
Band5	1.4	16-QAM	Low	1	0	22.67	20.52	0.1127
Band5	1.4		Low	5	0	21.44	19.29	0.0849
Band5	3		Low	1	0	21.79	19.64	0.0920
Band5	3		Low	5	0	21.01	18.86	0.0769
Band5	5		Low	1	0	23.39	21.24	0.1330
Band5	5		Low	5	0	21.31	19.16	0.0824
Band5	10		Low	1	0	23.25	21.1	0.1288
Band5	10		Low	5	0	22.28	20.13	0.1030
Band5	1.4	QPSK	Middle	1	0	23.44	21.29	0.1346
Band5	1.4		Middle	6	0	21.27	19.12	0.0817
Band5	3		Middle	1	0	23.21	21.06	0.1276
Band5	3		Middle	6	0	21.06	18.91	0.0778
Band5	5		Middle	1	0	23.11	20.96	0.1247
Band5	5		Middle	6	0	22.03	19.88	0.0973
Band5	10		Middle	1	0	23.11	20.96	0.1247
Band5	10		Middle	6	0	22.06	19.91	0.0979
Band5	1.4	16-QAM	Middle	1	0	22.32	20.17	0.1040
Band5	1.4		Middle	5	0	21.34	19.19	0.0830
Band5	3		Middle	1	0	22.07	19.92	0.0982
Band5	3		Middle	5	0	21.1	18.95	0.0785
Band5	5		Middle	1	0	23.31	21.16	0.1306
Band5	5		Middle	5	0	21.18	19.03	0.0800
Band5	10		Middle	1	0	23.34	21.19	0.1315
Band5	10		Middle	5	0	22.3	20.15	0.1035

Band	BW	Modulation	Channel	RB	RB	Result	ERP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band5	1.4	QPSK	High	1	5	23.39	21.24	0.1330
Band5	1.4		High	6	0	21.52	19.37	0.0865
Band5	3		High	1	5	23.12	20.97	0.1250
Band5	3		High	6	0	21.29	19.14	0.0820
Band5	5		High	1	5	23.39	21.24	0.1330
Band5	5		High	3	3	21.89	19.74	0.0942
Band5	10		High	1	5	23.46	21.31	0.1352
Band5	10		High	6	0	22.52	20.37	0.1089
Band5	1.4	16-QAM	High	1	5	21.87	19.72	0.0938
Band5	1.4		High	5	1	21.14	18.99	0.0793
Band5	3		High	1	5	22.42	20.27	0.1064
Band5	3		High	5	1	21.14	18.99	0.0793
Band5	5		High	1	5	23.51	21.36	0.1368
Band5	5		High	3	3	21.17	19.02	0.0798
Band5	10		High	1	5	23.23	21.08	0.1282
Band5	10		High	5	1	22.25	20.1	0.1023

LTE Band 12

Band	BW	Modulation	Channel	RB	RB	Result	ERP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band12	1.4	QPSK	Low	1	0	22.68	20.53	0.1130
Band12	1.4		Low	6	0	21.37	19.22	0.0836
Band12	3		Low	1	0	22.79	20.64	0.1159
Band12	3		Low	6	0	21.16	19.01	0.0796
Band12	5		Low	1	0	23.25	21.1	0.1288
Band12	5		Low	6	0	22.12	19.97	0.0993
Band12	10		Low	1	0	23.46	21.31	0.1352
Band12	10		Low	6	0	22.14	19.99	0.0998
Band12	1.4	16-QAM	Low	1	0	22.4	20.25	0.1059
Band12	1.4		Low	5	0	21.07	18.92	0.0780
Band12	3		Low	1	0	22.08	19.93	0.0984
Band12	3		Low	5	0	21.26	19.11	0.0815
Band12	5		Low	1	0	22.44	20.29	0.1069
Band12	5		Low	5	0	21.61	19.46	0.0883
Band12	10		Low	1	0	22.81	20.66	0.1164
Band12	10		Low	5	0	22.41	20.26	0.1062
Band12	1.4	QPSK	Middle	1	0	22.92	20.77	0.1194
Band12	1.4		Middle	6	0	21.04	18.89	0.0774
Band12	3		Middle	1	0	23.06	20.91	0.1233
Band12	3		Middle	6	0	21.38	19.23	0.0838
Band12	5		Middle	1	0	23.11	20.96	0.1247
Band12	5		Middle	6	0	22.01	19.86	0.0968
Band12	10		Middle	1	0	23.24	21.09	0.1285
Band12	10		Middle	6	0	22.17	20.02	0.1005
Band12	1.4	16-QAM	Middle	1	0	22	19.85	0.0966
Band12	1.4		Middle	5	0	21.03	18.88	0.0773
Band12	3		Middle	1	0	22.05	19.9	0.0977
Band12	3		Middle	5	0	21.04	18.89	0.0774
Band12	5		Middle	1	0	22.86	20.71	0.1178
Band12	5		Middle	5	0	21.25	19.1	0.0813
Band12	10		Middle	1	0	22.98	20.83	0.1211
Band12	10		Middle	5	0	22.08	19.93	0.0984

Band	BW	Modulation	Channel	RB	RB	Result	ERP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band12	1.4	QPSK	High	1	5	22.65	20.5	0.1122
Band12	1.4		High	6	0	21.07	18.92	0.0780
Band12	3		High	1	5	23.38	21.23	0.1327
Band12	3		High	6	0	21.03	18.88	0.0773
Band12	5		High	1	5	23.35	21.2	0.1318
Band12	5		High	3	3	21.68	19.53	0.0897
Band12	10		High	1	5	22.98	20.83	0.1211
Band12	10		High	6	0	21.95	19.8	0.0955
Band12	1.4	16-QAM	High	1	5	22.2	20.05	0.1012
Band12	1.4		High	5	1	21.26	19.11	0.0815
Band12	3		High	1	5	22.48	20.33	0.1079
Band12	3		High	5	1	21.2	19.05	0.0804
Band12	5		High	1	5	22.38	20.23	0.1054
Band12	5		High	3	3	21.38	19.23	0.0838
Band12	10		High	1	5	22.94	20.79	0.1199
Band12	10		High	5	1	21.91	19.76	0.0946

LTE Band 13

Band	BW	Modulation	Channel	RB	RB	NBIndex	Result	ERP	
	[MHz]			Size	Start		(dBm)	(dBm)	(watts)
Band13	5	QPSK	Low	1	0	Low	22.82	20.67	0.1167
Band13	5		Low	6	0	Low	22.03	19.88	0.0973
Band13	10		Low	1	0	Low	22.99	20.84	0.1213
Band13	10		Low	6	0	Low	22.28	20.13	0.1030
Band13	5	16-QAM	Low	1	0	Low	22.29	20.14	0.1033
Band13	5		Low	5	0	Low	21.21	19.06	0.0805
Band13	10		Low	1	0	Low	22.94	20.79	0.1199
Band13	10		Low	5	0	Low	22.3	20.15	0.1035
Band13	5	QPSK	Middle	1	0	Low	22.91	20.76	0.1191
Band13	5		Middle	6	0	Low	22.01	19.86	0.0968
Band13	10		Middle	1	0	Low	22.79	20.64	0.1159
Band13	10		Middle	6	0	Low	22.04	19.89	0.0975
Band13	5	16-QAM	Middle	1	0	Low	22.6	20.45	0.1109
Band13	5		Middle	5	0	Low	20.93	18.78	0.0755
Band13	10		Middle	1	0	Low	22.62	20.47	0.1114
Band13	10		Middle	5	0	Low	22.16	20.01	0.1002
Band13	5	QPSK	High	1	5	High	23.04	20.89	0.1227
Band13	5		High	3	3	High	21.88	19.73	0.0940
Band13	10		High	1	5	High	22.69	20.54	0.1132
Band13	10		High	6	0	High	22.36	20.21	0.1050
Band13	5	16-QAM	High	1	5	High	22.48	20.33	0.1079
Band13	5		High	3	3	High	21.27	19.12	0.0817
Band13	10		High	1	5	High	22.45	20.3	0.1072
Band13	10		High	5	1	High	22.17	20.02	0.1005

LTE Band 25

Band	BW	Modulation	Channel	RB	RB	Result	EIRP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band25	1.4	QPSK	Low	1	0	23.38	24.38	0.2742
Band25	1.4		Low	6	0	21.22	22.22	0.1667
Band25	3		Low	1	0	23.19	24.19	0.2624
Band25	3		Low	6	0	21.36	22.36	0.1722
Band25	5		Low	1	0	23.5	24.5	0.2818
Band25	5		Low	6	0	22.42	23.42	0.2198
Band25	10		Low	1	0	23.45	24.45	0.2786
Band25	10		Low	6	0	22.3	23.3	0.2138
Band25	15		Low	1	0	23.57	24.57	0.2864
Band25	15		Low	6	0	23.37	24.37	0.2735
Band25	20		Low	1	0	23.42	24.42	0.2767
Band25	20		Low	6	0	23.46	24.46	0.2793
Band25	1.4	16-QAM	Low	1	0	22.29	23.29	0.2133
Band25	1.4		Low	5	0	21.27	22.27	0.1687
Band25	3		Low	1	0	22.46	23.46	0.2218
Band25	3		Low	5	0	21.38	22.38	0.1730
Band25	5		Low	1	0	23.33	24.33	0.2710
Band25	5		Low	5	0	21.49	22.49	0.1774
Band25	10		Low	1	0	23.58	24.58	0.2871
Band25	10		Low	5	0	22.22	23.22	0.2099
Band25	15		Low	1	0	23.51	24.51	0.2825
Band25	15		Low	5	0	23.74	24.74	0.2979
Band25	20		Low	1	0	23.08	24.08	0.2559
Band25	20		Low	5	0	23.75	24.75	0.2985
Band25	1.4	QPSK	Middle	1	0	23.38	24.38	0.2742
Band25	1.4		Middle	6	0	21.42	22.42	0.1746
Band25	3		Middle	1	0	23.52	24.52	0.2831
Band25	3		Middle	6	0	21.29	22.29	0.1694
Band25	5		Middle	1	0	23.45	24.45	0.2786
Band25	5		Middle	6	0	22.4	23.4	0.2188
Band25	10		Middle	1	0	23.54	24.54	0.2844
Band25	10		Middle	6	0	22.48	23.48	0.2228
Band25	15		Middle	1	0	23.54	24.54	0.2844
Band25	15		Middle	6	0	23.47	24.47	0.2799
Band25	20		Middle	1	0	23.49	24.49	0.2812
Band25	20		Middle	6	0	23.46	24.46	0.2793

Band	BW	Modulation	Channel	RB	RB	Result	EIRP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band25	1.4	16-QAM	Middle	1	0	22.32	23.32	0.2148
Band25	1.4		Middle	5	0	21.4	22.4	0.1738
Band25	3		Middle	1	0	22.39	23.39	0.2183
Band25	3		Middle	5	0	21.34	22.34	0.1714
Band25	5		Middle	1	0	23.36	24.36	0.2729
Band25	5		Middle	5	0	21.55	22.55	0.1799
Band25	10		Middle	1	0	23.46	24.46	0.2793
Band25	10		Middle	5	0	22.36	23.36	0.2168
Band25	15		Middle	1	0	23.41	24.41	0.2761
Band25	15		Middle	5	0	23.68	24.68	0.2938
Band25	20		Middle	1	0	23.32	24.32	0.2704
Band25	20		Middle	5	0	23.48	24.48	0.2805
Band25	1.4	QPSK	High	1	5	23.5	24.5	0.2818
Band25	1.4		High	6	0	21.5	22.5	0.1778
Band25	3		High	1	5	23.52	24.52	0.2831
Band25	3		High	6	0	21.54	22.54	0.1795
Band25	5		High	1	5	23.4	24.4	0.2754
Band25	5		High	3	3	22.39	23.39	0.2183
Band25	10		High	1	5	23.48	24.48	0.2805
Band25	10		High	6	0	22.23	23.23	0.2104
Band25	15		High	1	5	23.49	24.49	0.2812
Band25	15		High	6	0	23.43	24.43	0.2773
Band25	20		High	1	5	23.53	24.53	0.2838
Band25	20		High	6	0	23.48	24.48	0.2805
Band25	1.4	16-QAM	High	1	5	22.19	23.19	0.2084
Band25	1.4		High	5	1	21.59	22.59	0.1816
Band25	3		High	1	5	22.14	23.14	0.2061
Band25	3		High	5	1	21.18	22.18	0.1652
Band25	5		High	1	5	23.25	24.25	0.2661
Band25	5		High	3	3	21.58	22.58	0.1811
Band25	10		High	1	5	23.53	24.53	0.2838
Band25	10		High	5	1	22.42	23.42	0.2198
Band25	15		High	1	5	23.5	24.5	0.2818
Band25	15		High	5	1	23.63	24.63	0.2904
Band25	20		High	1	5	23.32	24.32	0.2704
Band25	20		High	5	1	23.49	24.49	0.2812

LTE Band 26

Band	BW	Modulation	Channel	RB	RB	Result	ERP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band26	1.4	QPSK	Low	1	0	23.32	21.17	0.1309
Band26	1.4		Low	6	0	21.24	19.09	0.0811
Band26	3		Low	1	0	23.12	20.97	0.1250
Band26	3		Low	6	0	21.29	19.14	0.0820
Band26	5		Low	1	0	23.61	21.46	0.1400
Band26	5		Low	6	0	22.94	20.79	0.1199
Band26	10		Low	1	0	23.03	20.88	0.1225
Band26	10		Low	6	0	22.37	20.22	0.1052
Band26	15		Low	1	0	23.36	21.21	0.1321
Band26	15		Low	6	0	23.33	21.18	0.1312
Band26	1.4	16-QAM	Low	1	0	22.27	20.12	0.1028
Band26	1.4		Low	5	0	21.38	19.23	0.0838
Band26	3		Low	1	0	22.74	20.59	0.1146
Band26	3		Low	5	0	21.4	19.25	0.0841
Band26	5		Low	1	0	23.55	21.4	0.1380
Band26	5		Low	5	0	21.47	19.32	0.0855
Band26	10		Low	1	0	23.41	21.26	0.1337
Band26	10		Low	5	0	22.3	20.15	0.1035
Band26	15		Low	1	0	23.19	21.04	0.1271
Band26	15		Low	5	0	23.87	21.72	0.1486
Band26	1.4	QPSK	Middle	1	0	23.36	21.21	0.1321
Band26	1.4		Middle	6	0	21.33	19.18	0.0828
Band26	3		Middle	1	0	23.44	21.29	0.1346
Band26	3		Middle	6	0	21.3	19.15	0.0822
Band26	5		Middle	1	0	23.35	21.2	0.1318
Band26	5		Middle	6	0	22.5	20.35	0.1084
Band26	10		Middle	1	0	23.22	21.07	0.1279
Band26	10		Middle	6	0	22.37	20.22	0.1052
Band26	15		Middle	1	0	23.16	21.01	0.1262
Band26	15		Middle	6	0	23.32	21.17	0.1309
Band26	1.4	16-QAM	Middle	1	0	22.39	20.24	0.1057
Band26	1.4		Middle	5	0	21.23	19.08	0.0809
Band26	3		Middle	1	0	22.57	20.42	0.1102
Band26	3		Middle	5	0	21.42	19.27	0.0845
Band26	5		Middle	1	0	23.38	21.23	0.1327
Band26	5		Middle	5	0	21.31	19.16	0.0824
Band26	10		Middle	1	0	23.34	21.19	0.1315
Band26	10		Middle	5	0	22.4	20.25	0.1059
Band26	15		Middle	1	0	23.31	21.16	0.1306
Band26	15		Middle	5	0	23.79	21.64	0.1459

Band	BW	Modulation	Channel	RB	RB	Result	ERP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band26	1.4	QPSK	High	1	5	23.35	21.2	0.1318
Band26	1.4		High	6	0	21.18	19.03	0.0800
Band26	3		High	1	5	23.35	21.2	0.1318
Band26	3		High	6	0	21.12	18.97	0.0789
Band26	5		High	1	5	23.44	21.29	0.1346
Band26	5		High	3	3	22.62	20.47	0.1114
Band26	10		High	1	5	23.51	21.36	0.1368
Band26	10		High	6	0	22.72	20.57	0.1140
Band26	15		High	1	5	23.33	21.18	0.1312
Band26	15		High	6	0	23.38	21.23	0.1327
Band26	1.4	16-QAM	High	1	5	22.57	20.42	0.1102
Band26	1.4		High	5	1	21	18.85	0.0767
Band26	3		High	1	5	22.62	20.47	0.1114
Band26	3		High	5	1	21.29	19.14	0.0820
Band26	5		High	1	5	23.28	21.13	0.1297
Band26	5		High	3	3	21.43	19.28	0.0847
Band26	10		High	1	5	23.57	21.42	0.1387
Band26	10		High	5	1	22.29	20.14	0.1033
Band26	15		High	1	5	23.29	21.14	0.1300
Band26	15		High	5	1	23.75	21.6	0.1445

LTE Band 66

Band	BW	Modulation	Channel	RB	RB	Result	EIRP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band66	1.4	QPSK	Low	1	0	22.9	23.9	0.2455
Band66	1.4		Low	6	0	21.43	22.43	0.1750
Band66	3		Low	1	0	23.81	24.81	0.3027
Band66	3		Low	6	0	21.04	22.04	0.1600
Band66	5		Low	1	0	23.77	24.77	0.2999
Band66	5		Low	6	0	22.31	23.31	0.2143
Band66	10		Low	1	0	23.75	24.75	0.2985
Band66	10		Low	6	0	22.45	23.45	0.2213
Band66	15		Low	1	0	23.48	24.48	0.2805
Band66	15		Low	6	0	23.45	24.45	0.2786
Band66	20		Low	1	0	23.72	24.72	0.2965
Band66	20		Low	6	0	23.15	24.15	0.2600
Band66	1.4	16-QAM	Low	1	0	22.37	23.37	0.2173
Band66	1.4		Low	5	0	21.06	22.06	0.1607
Band66	3		Low	1	0	22.43	23.43	0.2203
Band66	3		Low	5	0	21.07	22.07	0.1611
Band66	5		Low	1	0	23.24	24.24	0.2655
Band66	5		Low	5	0	21.58	22.58	0.1811
Band66	10		Low	1	0	23.17	24.17	0.2612
Band66	10		Low	5	0	22.49	23.49	0.2234
Band66	15		Low	1	0	23.33	24.33	0.2710
Band66	15		Low	5	0	23.59	24.59	0.2877
Band66	20		Low	1	0	23.36	24.36	0.2729
Band66	20		Low	5	0	23.41	24.41	0.2761
Band66	1.4	QPSK	Middle	1	0	23.36	24.36	0.2729
Band66	1.4		Middle	6	0	21.36	22.36	0.1722
Band66	3		Middle	1	0	23.59	24.59	0.2877
Band66	3		Middle	6	0	21.31	22.31	0.1702
Band66	5		Middle	1	0	23.42	24.42	0.2767
Band66	5		Middle	6	0	22.39	23.39	0.2183
Band66	10		Middle	1	0	23.41	24.41	0.2761
Band66	10		Middle	6	0	22.41	23.41	0.2193
Band66	15		Middle	1	0	23.44	24.44	0.2780
Band66	15		Middle	6	0	23.37	24.37	0.2735
Band66	20		Middle	1	0	23.48	24.48	0.2805
Band66	20		Middle	6	0	23.41	24.41	0.2761

Band	BW	Modulation	Channel	RB	RB	Result	EIRP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band66	1.4	16-QAM	Middle	1	0	22.38	23.38	0.2178
Band66	1.4		Middle	5	0	21.28	22.28	0.1690
Band66	3		Middle	1	0	22.37	23.37	0.2173
Band66	3		Middle	5	0	21.27	22.27	0.1687
Band66	5		Middle	1	0	23.44	24.44	0.2780
Band66	5		Middle	5	0	21.44	22.44	0.1754
Band66	10		Middle	1	0	23.2	24.2	0.2630
Band66	10		Middle	5	0	22.48	23.48	0.2228
Band66	15		Middle	1	0	23.42	24.42	0.2767
Band66	15		Middle	5	0	23.55	24.55	0.2851
Band66	20		Middle	1	0	23.39	24.39	0.2748
Band66	20		Middle	5	0	23.37	24.37	0.2735
Band66	1.4	QPSK	High	1	5	23.19	24.19	0.2624
Band66	1.4		High	6	0	21.18	22.18	0.1652
Band66	3		High	1	5	23.59	24.59	0.2877
Band66	3		High	6	0	21.6	22.6	0.1820
Band66	5		High	1	5	23.35	24.35	0.2723
Band66	5		High	3	3	22.83	23.83	0.2415
Band66	10		High	1	5	23.09	24.09	0.2564
Band66	10		High	6	0	22.11	23.11	0.2046
Band66	15		High	1	5	23.43	24.43	0.2773
Band66	15		High	6	0	23.44	24.44	0.2780
Band66	20		High	1	5	23.36	24.36	0.2729
Band66	20		High	6	0	23.45	24.45	0.2786
Band66	1.4	16-QAM	High	1	5	22.31	23.31	0.2143
Band66	1.4		High	5	1	21.47	22.47	0.1766
Band66	3		High	1	5	22.38	23.38	0.2178
Band66	3		High	5	1	21.46	22.46	0.1762
Band66	5		High	1	5	23.48	24.48	0.2805
Band66	5		High	3	3	21.47	22.47	0.1766
Band66	10		High	1	5	23.2	24.2	0.2630
Band66	10		High	5	1	22.7	23.7	0.2344
Band66	15		High	1	5	23.6	24.6	0.2884
Band66	15		High	5	1	23.18	24.18	0.2618
Band66	20		High	1	5	23.62	24.62	0.2897
Band66	20		High	5	1	22.98	23.98	0.2500

LTE Band 85

Band	BW	Modulation	Channel	RB	RB	Result	ERP	
	[MHz]			Size	Start	(dBm)	(dBm)	(watts)
Band85	5	QPSK	Low	1	0	23.2	21.05	0.1274
Band85	5		Low	6	0	22.23	20.08	0.1019
Band85	10		Low	1	0	22.8	20.65	0.1161
Band85	10		Low	6	0	21.94	19.79	0.0953
Band85	5	16-QAM	Low	1	0	22.88	20.73	0.1183
Band85	5		Low	5	0	21.1	18.95	0.0785
Band85	10		Low	1	0	23.24	21.09	0.1285
Band85	10		Low	5	0	22.59	20.44	0.1107
Band85	5	QPSK	Middle	1	0	23	20.85	0.1216
Band85	5		Middle	6	0	22.09	19.94	0.0986
Band85	10		Middle	1	0	22.96	20.81	0.1205
Band85	10		Middle	6	0	22.08	19.93	0.0984
Band85	5	16-QAM	Middle	1	0	22.94	20.79	0.1199
Band85	5		Middle	5	0	21.22	19.07	0.0807
Band85	10		Middle	1	0	22.95	20.8	0.1202
Band85	10		Middle	5	0	22.36	20.21	0.1050
Band85	5	QPSK	High	1	5	22.67	20.52	0.1127
Band85	5		High	3	3	21.92	19.77	0.0948
Band85	10		High	1	5	22.91	20.76	0.1191
Band85	10		High	6	0	21.75	19.6	0.0912
Band85	5	16-QAM	High	1	5	22.85	20.7	0.1175
Band85	5		High	3	3	20.94	18.79	0.0757
Band85	10		High	1	5	22.74	20.59	0.1146
Band85	10		High	5	1	21.94	19.79	0.0953

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	Chris Chen	Temperature :	22~23℃
		Relative Humidity :	41~42%

LTE Band 13 / 5MHz / QPSK								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1560	-61.99	-42.15	-19.84	-64.62	1.09	5.87	H
	2339	-61.75	-13	-48.75	-64.15	1.37	5.92	H
	3119	-60.34	-13	-47.34	-64.23	1.64	7.68	H
	1560	-65.93	-42.15	-23.78	-68.56	1.09	5.87	V
	2339	-60.39	-13	-47.39	-62.79	1.37	5.92	V
	3119	-60.25	-13	-47.25	-64.14	1.64	7.68	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 13 / 10MHz / QPSK								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1552	-60.31	-13	-47.31	-62.94	1.09	5.87	H
	2332	-61.64	-13	-48.64	-64.04	1.37	5.92	H
	3110	-60.35	-13	-47.35	-64.24	1.64	7.68	H
	1552	-66.15	-13	-53.15	-68.78	1.09	5.87	V
	2332	-60.05	-13	-47.05	-62.45	1.37	5.92	V
	3110	-59.76	-13	-46.76	-63.65	1.64	7.68	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 25 / 20MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3750	-51.19	-13	-38.19	-63.45	2.64	14.90	H
	5625	-54.28	-13	-41.28	-66.14	2.94	14.80	H
	7492	-52.82	-13	-39.82	-62.59	3.39	13.16	H
	3780	-54.45	-13	-41.45	-66.71	2.64	14.90	V
	5619	-54.93	-13	-41.93	-66.79	2.94	14.80	V
	7492	-52.65	-13	-39.65	-62.42	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 26 / 15MHz / QPSK								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1656	-62.21	-13	-49.21	-69.18	1.58	10.70	H
	2489	-61.53	-13	-48.53	-69.78	2.102	12.50	H
	3319	-60.39	-13	-47.39	-69.28	2.856	13.90	H
	1664	-62.83	-13	-49.83	-69.80	1.58	10.70	V
	2489	-59.87	-13	-46.87	-68.12	2.10	12.50	V
	3319	-60.21	-13	-47.21	-69.10	2.86	13.90	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 66 / 20MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3495	-56.49	-13	-43.49	-67.23	2.604	13.34	H
	5238	-54.83	-13	-41.83	-65.34	3.011	13.52	H
	6984	-53.78	-13	-40.78	-63.98	3.271	13.47	H
	3495	-56.96	-13	-43.96	-67.70	2.604	13.34	V
	5238	-54.77	-13	-41.77	-65.28	3.011	13.52	V
	6984	-53.58	-13	-40.58	-63.78	3.271	13.47	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 85 / 10MHz / QPSK								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1408	-59.19	-13	-46.19	-66.16	1.58	10.70	H
	2104	-58.04	-13	-45.04	-66.29	2.102	12.50	H
	2824	-59.26	-13	-46.26	-68.15	2.856	13.90	H
	1407	-65.89	-13	-52.89	-72.86	1.58	10.70	V
	2108	-60.34	-13	-47.34	-68.59	2.10	12.50	V
	2824	-58.93	-13	-45.93	-67.82	2.86	13.90	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.