



FCC RF Test Report

APPLICANT : Positioning Universal Inc
EQUIPMENT : GPS TRACK
MODEL NAME : FJ1600MW
FCC ID : 2AHRH-FJ1600MW
STANDARD : 47 CFR Part 2, 22(H), 24(E), 27(L), 27(H), 27(F)
CLASSIFICATION : PCS Licensed Transmitter (PCB)
TEST DATE(S) : Jul. 09, 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 leveraged from 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

Approved by: Jason Jia



Sporton International Inc. (Kunshan)

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG262328B	Rev. 01	Initial issue of report	Aug. 04, 2022

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1046	Conducted Output Power	Report Only	PASS	-
	§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	-	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])	-	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])	-	1
-	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22	-	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)	$< 43 + 10\log_{10}(P[\text{Watts}])$	PASS	Under limit 12.35 dB at 2488.000 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

Positioning Universal Inc

4660 La Jolla Village Drive, Suite 1100, San Diego , CA92122

1.2 Manufacturer

Positioning Universal Inc

4660 La Jolla Village Drive, Suite 1100, San Diego , CA92122

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	GPS TRACK
Model Name	FJ1600MW
FCC ID	2AHRH-FJ1600MW
HW Version	P2
SW Version	1.0

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 : 2.61 dBi LTE Band 4 : 2.12 dBi LTE Band 5 : -0.13 dBi LTE Band 12 : -0.78 dBi LTE Band 13 : 2.63 dBi LTE Band 25 : 2.61 dBi LTE Band 26 : -0.13 dBi LTE Band 66 : 2.12 dBi LTE Band 85 : -0.78 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	0.3837	0.3126
3	1851.5 ~ 1908.5	0.4102	0.3266
5	1852.5 ~ 1907.5	0.4111	0.4055
10	1855.0 ~ 1905.0	0.4009	0.3926
15	1857.5 ~ 1902.5	0.4027	0.4266
20	1860.0 ~ 1900.0	0.4207	0.4093
LTE Band 25		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
1.4	1850.7 ~ 1914.3	0.4083	0.3112
3	1851.5 ~ 1913.5	0.4102	0.3214
5	1852.5 ~ 1912.5	0.4083	0.3954
10	1855.0 ~ 1910.0	0.4121	0.4159
15	1857.5 ~ 1907.5	0.4150	0.4315
20	1860.0 ~ 1905.0	0.4111	0.4325
LTE Band 4		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
1.4	1710.7 ~ 1754.3	0.3656	0.2844
3	1711.5 ~ 1753.5	0.3963	0.3027
5	1712.5 ~ 1752.5	0.3715	0.3548
10	1715.0 ~ 1750.0	0.3589	0.3573
15	1717.5 ~ 1747.5	0.3811	0.3673
20	1720.0 ~ 1745.0	0.3664	0.3724
LTE Band 5		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)
1.4	824.7 ~ 848.3	0.1306	0.1094
3	825.5 ~ 847.5	0.1324	0.1033
5	826.5 ~ 846.5	0.1291	0.1327
10	829.0 ~ 844.0	0.1312	0.1276



LTE Band 12		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)
1.4	699.7 ~ 715.3	0.0998	0.0885
3	700.5 ~ 714.5	0.1109	0.0902
5	701.5 ~ 713.5	0.1102	0.0984
10	704.0 ~ 711.0	0.1130	0.1012
LTE Band 13		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)
5	779.5 ~ 784.5	0.2249	0.2032
10	782.0	0.2223	0.2198
LTE Band 26		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)
1.4	824.7 ~ 848.3	0.1282	0.1069
3	825.5 ~ 847.5	0.1306	0.1112
5	826.5 ~ 846.5	0.1358	0.1340
10	829.0 ~ 844.0	0.1327	0.1346
15	831.5 ~ 841.5	0.1288	0.1442
LTE Band 66		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
1.4	1710.7 ~ 1779.3	0.3532	0.2818
3	1711.5 ~ 1778.5	0.3917	0.2851
5	1712.5 ~ 1777.5	0.3882	0.3631
10	1715.0 ~ 1775.0	0.3864	0.3404
15	1717.5 ~ 1772.5	0.3631	0.3733
20	1720.0 ~ 1770.0	0.3837	0.3750
LTE Band 85		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)
5	700.5 ~ 713.5	0.1064	0.1002
10	703.0 ~ 711.0	0.1007	0.1074

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	Manufacturer	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

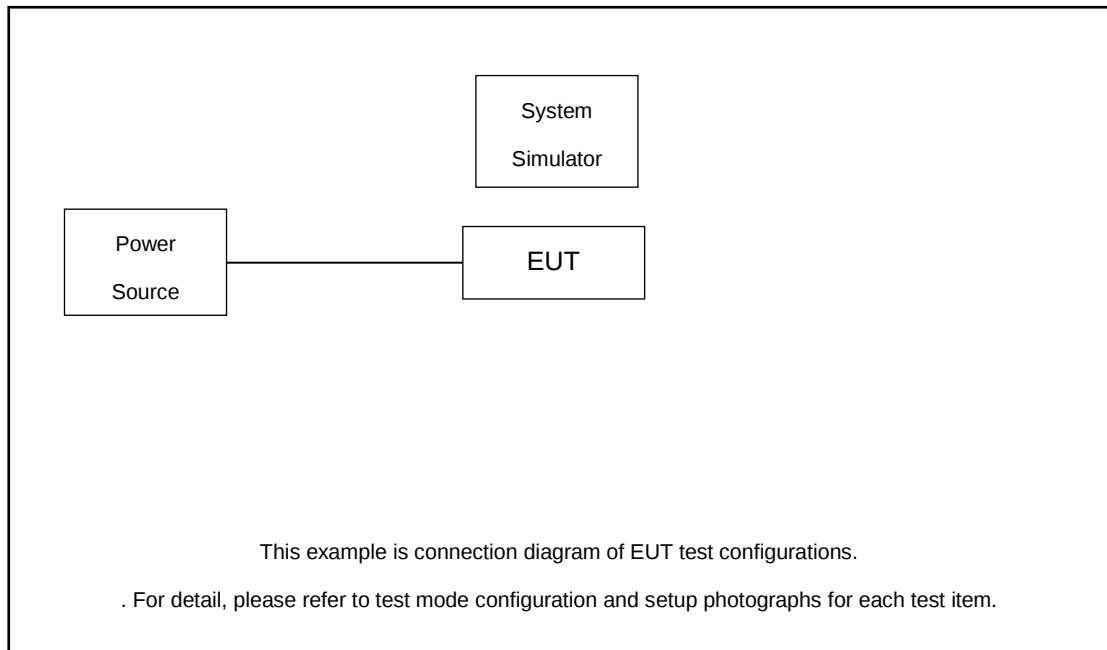
2.1 Test Mode

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	v
	4	v	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	v
	12	v	v	v	v	-	-	v	v	-	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v	-	v	v	v	v	v	v
	17	-	-	v	v	-	-	v	v	-	v	v	v	v	v	v
	25	v	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	v
	66	v	v	v	v	v	v	v	v	-	v	v	v	v	v	v
	85	-	-	v	v	-	-	v	v	-	v	v	v	v	v	v
Radiated Spurious Emission	4	Worst Case													v	
	12	Worst Case													v	
	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 26 as well as Band 5. 5. 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. 6. The RSE was pre-scanned L/M/H channels and the worst cases are middle channel which are reported only in this report.															

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	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 Conducted Output Power and ERP/EIRP

3.1.1 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

3.1.2 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.

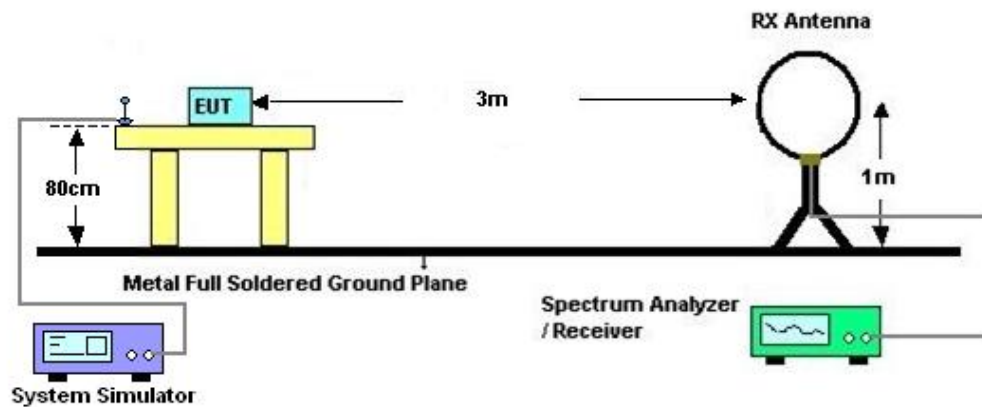
4 Radiated Test Items

4.1 Measuring Instruments

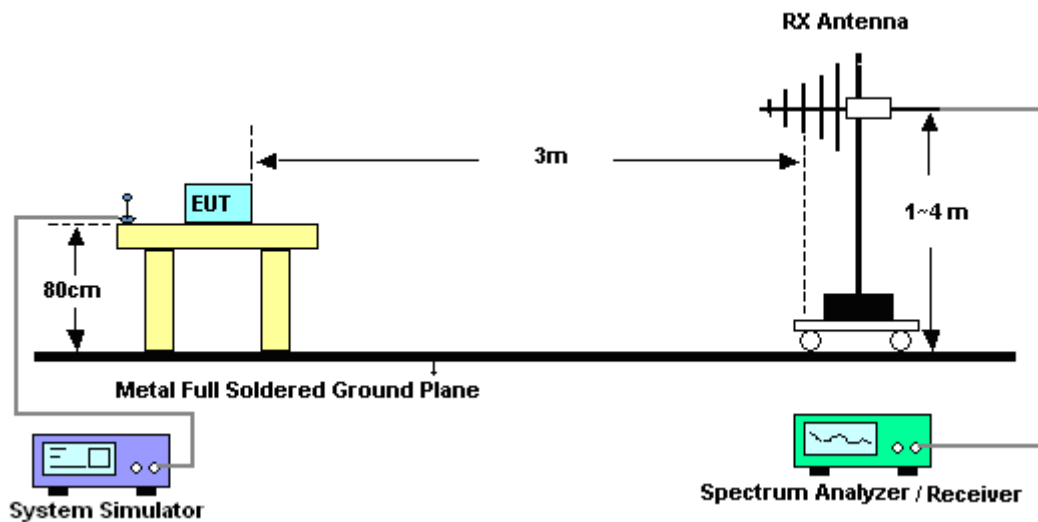
See list of measuring instruments of this test report.

4.2 Test Setup

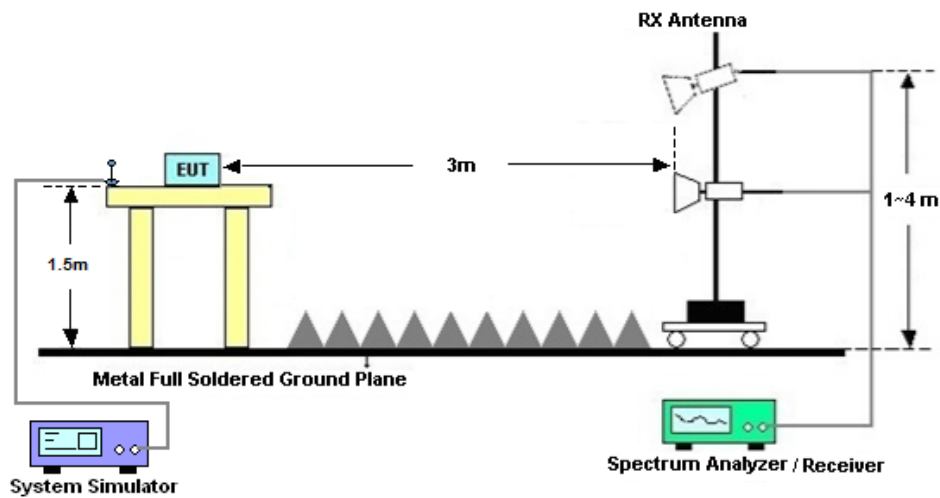
4.2.1 For radiated test below 30MHz



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. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
11. $ERP \text{ (dBm)} = EIRP - 2.15$
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EXA Spectrum Analyzer	Keysight	N9010B	MY57541079	10Hz-44G,MAX 30dB	Oct. 15, 2021	Jul. 09, 2022	Oct. 14, 2022	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Jul. 09, 2022	Oct. 29, 2022	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 24, 2022	Jul. 09, 2022	May 23, 2023	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Jan. 05, 2022	Jul. 09, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Jul. 09, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 05, 2022	Jul. 09, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40G GA	060728	18~40GHz	Jan. 05, 2022	Jul. 09, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18G A	060839	1Ghz-18Ghz	Oct. 14, 2021	Jul. 09, 2022	Oct. 13, 2022	Radiation (03CH04-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5GHz	Oct. 13, 2021	Jul. 09, 2022	Oct. 12, 2022	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jul. 09, 2022	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jul. 09, 2022	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jul. 09, 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
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.8dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.8dB
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----- THE END -----



Appendix A. Test Results of Conducted Test

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

Conducted Output Power(Average power) & ERP/EIRP

LTE Band 2

Band	BW	Modulation	Channel	RB	RB	Result (dBm)	EIRP	
	[MHz]			Size	Start		(dBm)	(watts)
Band2	1.4	QPSK	Low	1	0	23.23	25.84	0.3837
Band2	1.4		Low	6	0	21.45	24.06	0.2547
Band2	3		Low	1	0	23.32	25.93	0.3917
Band2	3		Low	6	0	21.07	23.68	0.2333
Band2	5		Low	1	0	23.48	26.09	0.4064
Band2	5		Low	6	0	22.64	25.25	0.3350
Band2	10		Low	1	0	23.36	25.97	0.3954
Band2	10		Low	6	0	22.23	24.84	0.3048
Band2	15		Low	1	0	23.23	25.84	0.3837
Band2	15		Low	6	0	23.28	25.89	0.3882
Band2	20		Low	1	0	23.41	26.02	0.3999
Band2	20		Low	6	0	23.63	26.24	0.4207
Band2	1.4	16-QAM	Low	1	0	22.28	24.89	0.3083
Band2	1.4		Low	5	0	21.29	23.9	0.2455
Band2	3		Low	1	0	22.53	25.14	0.3266
Band2	3		Low	5	0	21.12	23.73	0.2360
Band2	5		Low	1	0	23.36	25.97	0.3954
Band2	5		Low	5	0	21.36	23.97	0.2495
Band2	10		Low	1	0	23.24	25.85	0.3846
Band2	10		Low	5	0	22.49	25.1	0.3236
Band2	15		Low	1	0	22.96	25.57	0.3606
Band2	15		Low	5	0	23.69	26.3	0.4266
Band2	20		Low	1	0	23.45	26.06	0.4036
Band2	20		Low	5	0	23.34	25.95	0.3936
Band2	1.4	QPSK	Middle	1	0	23.21	25.82	0.3819
Band2	1.4		Middle	6	0	21.3	23.91	0.2460
Band2	3		Middle	1	0	23.52	26.13	0.4102
Band2	3		Middle	6	0	21.29	23.9	0.2455
Band2	5		Middle	1	0	23.53	26.14	0.4111
Band2	5		Middle	6	0	22.4	25.01	0.3170
Band2	10		Middle	1	0	23.41	26.02	0.3999
Band2	10		Middle	6	0	22.35	24.96	0.3133
Band2	15		Middle	1	0	23.32	25.93	0.3917



Band2	15		Middle	6	0	23.35	25.96	0.3945
Band2	20		Middle	1	0	23.3	25.91	0.3899
Band2	20		Middle	6	0	23.34	25.95	0.3936
Band2	1.4	16-QAM	Middle	1	0	22.32	24.93	0.3112
Band2	1.4		Middle	5	0	21.23	23.84	0.2421
Band2	3		Middle	1	0	22.35	24.96	0.3133
Band2	3		Middle	5	0	21.23	23.84	0.2421
Band2	5		Middle	1	0	23.47	26.08	0.4055
Band2	5		Middle	5	0	21.55	24.16	0.2606
Band2	10		Middle	1	0	23.33	25.94	0.3926
Band2	10		Middle	5	0	22.55	25.16	0.3281
Band2	15		Middle	1	0	23.21	25.82	0.3819
Band2	15		Middle	5	0	23.58	26.19	0.4159
Band2	20		Middle	1	0	23.4	26.01	0.3990
Band2	20		Middle	5	0	23.51	26.12	0.4093
Band2	1.4	QPSK	High	1	5	23.17	25.78	0.3784
Band2	1.4		High	6	0	21.5	24.11	0.2576
Band2	3		High	1	5	23.4	26.01	0.3990
Band2	3		High	6	0	21.06	23.67	0.2328
Band2	5		High	1	5	23.31	25.92	0.3908
Band2	5		High	3	3	22.53	25.14	0.3266
Band2	10		High	1	5	23.42	26.03	0.4009
Band2	10		High	6	0	22.27	24.88	0.3076
Band2	15		High	1	5	23.24	25.85	0.3846
Band2	15		High	6	0	23.44	26.05	0.4027
Band2	20		High	1	5	23.27	25.88	0.3873
Band2	20		High	6	0	23.33	25.94	0.3926
Band2	1.4	16-QAM	High	1	5	22.34	24.95	0.3126
Band2	1.4		High	5	1	21	23.61	0.2296
Band2	3		High	1	5	22.31	24.92	0.3105
Band2	3		High	5	1	21.68	24.29	0.2685
Band2	5		High	1	5	23.16	25.77	0.3776
Band2	5		High	3	3	21.09	23.7	0.2344
Band2	10		High	1	5	23.29	25.9	0.3890
Band2	10		High	5	1	22.5	25.11	0.3243
Band2	15		High	1	5	23.46	26.07	0.4046
Band2	15		High	5	1	23.44	26.05	0.4027
Band2	20		High	1	5	23.37	25.98	0.3963
Band2	20		High	5	1	23.45	26.06	0.4036



LTE Band 4

Band	BW	Modulation	Channel	RB	RB	Result	EIRP	
	[MHz]			Size	Start		(dBm)	(watts)
Band4	1.4	QPSK	Low	1	0	23.47	25.59	0.3622
Band4	1.4		Low	6	0	21.48	23.6	0.2291
Band4	3		Low	1	0	23.86	25.98	0.3963
Band4	3		Low	6	0	21.26	23.38	0.2178
Band4	5		Low	1	0	23.31	25.43	0.3491
Band4	5		Low	6	0	22.51	24.63	0.2904
Band4	10		Low	1	0	23.19	25.31	0.3396
Band4	10		Low	6	0	22.47	24.59	0.2877
Band4	15		Low	1	0	23.52	25.64	0.3664
Band4	15		Low	6	0	23.12	25.24	0.3342
Band4	20		Low	1	0	23.48	25.6	0.3631
Band4	20		Low	6	0	23.19	25.31	0.3396
Band4	1.4	16-QAM	Low	1	0	22.25	24.37	0.2735
Band4	1.4		Low	5	0	21.38	23.5	0.2239
Band4	3		Low	1	0	22.69	24.81	0.3027
Band4	3		Low	5	0	21.34	23.46	0.2218
Band4	5		Low	1	0	23.03	25.15	0.3273
Band4	5		Low	5	0	21.84	23.96	0.2489
Band4	10		Low	1	0	23.27	25.39	0.3459
Band4	10		Low	5	0	22.45	24.57	0.2864
Band4	15		Low	1	0	23.53	25.65	0.3673
Band4	15		Low	5	0	23.41	25.53	0.3573
Band4	20		Low	1	0	23.3	25.42	0.3483
Band4	20		Low	5	0	23.59	25.71	0.3724
Band4	1.4	QPSK	Middle	1	0	23.49	25.61	0.3639
Band4	1.4		Middle	6	0	21.37	23.49	0.2234
Band4	3		Middle	1	0	23.48	25.6	0.3631
Band4	3		Middle	6	0	21.36	23.48	0.2228
Band4	5		Middle	1	0	23.33	25.45	0.3508
Band4	5		Middle	6	0	22.44	24.56	0.2858
Band4	10		Middle	1	0	23.43	25.55	0.3589
Band4	10		Middle	6	0	22.46	24.58	0.2871
Band4	15		Middle	1	0	23.46	25.58	0.3614
Band4	15		Middle	6	0	23.38	25.5	0.3548
Band4	20		Middle	1	0	23.52	25.64	0.3664
Band4	20		Middle	6	0	23.43	25.55	0.3589
Band4	1.4	16-QAM	Middle	1	0	22.42	24.54	0.2844
Band4	1.4		Middle	5	0	21.35	23.47	0.2223
Band4	3		Middle	1	0	22.42	24.54	0.2844
Band4	3		Middle	5	0	21.39	23.51	0.2244
Band4	5		Middle	1	0	23.38	25.5	0.3548
Band4	5		Middle	5	0	21.49	23.61	0.2296



Band4	10		Middle	1	0	23.41	25.53	0.3573
Band4	10		Middle	5	0	22.53	24.65	0.2917
Band4	15		Middle	1	0	23.49	25.61	0.3639
Band4	15		Middle	5	0	23.51	25.63	0.3656
Band4	20		Middle	1	0	23.33	25.45	0.3508
Band4	20		Middle	5	0	23.32	25.44	0.3499
Band4	1.4	QPSK	High	1	5	23.51	25.63	0.3656
Band4	1.4		High	6	0	21.73	23.85	0.2427
Band4	3		High	1	5	23.63	25.75	0.3758
Band4	3		High	6	0	21.42	23.54	0.2259
Band4	5		High	1	5	23.58	25.7	0.3715
Band4	5		High	3	3	22.5	24.62	0.2897
Band4	10		High	1	5	23.36	25.48	0.3532
Band4	10		High	6	0	22.88	25	0.3162
Band4	15		High	1	5	23.69	25.81	0.3811
Band4	15		High	6	0	23.4	25.52	0.3565
Band4	20		High	1	5	23.13	25.25	0.3350
Band4	20		High	6	0	23.16	25.28	0.3373
Band4	1.4	16-QAM	High	1	5	22.25	24.37	0.2735
Band4	1.4		High	5	1	21.26	23.38	0.2178
Band4	3		High	1	5	22.17	24.29	0.2685
Band4	3		High	5	1	21.83	23.95	0.2483
Band4	5		High	1	5	23.3	25.42	0.3483
Band4	5		High	3	3	21.77	23.89	0.2449
Band4	10		High	1	5	23.17	25.29	0.3381
Band4	10		High	5	1	22.68	24.8	0.3020
Band4	15		High	1	5	23.48	25.6	0.3631
Band4	15		High	5	1	23.47	25.59	0.3622
Band4	20		High	1	5	23.46	25.58	0.3614
Band4	20		High	5	1	23.32	25.44	0.3499



LTE Band 5

Band	BW	Modulation	Channel	RB	RB	Result	ERP	
	[MHz]			Size	Start		(dBm)	(watts)
Band5	1.4	QPSK	Low	1	0	23.24	20.96	0.1247
Band5	1.4		Low	6	0	21.15	18.87	0.0771
Band5	3		Low	1	0	23.5	21.22	0.1324
Band5	3		Low	6	0	21.34	19.06	0.0805
Band5	5		Low	1	0	23.1	20.82	0.1208
Band5	5		Low	6	0	22.37	20.09	0.1021
Band5	10		Low	1	0	22.96	20.68	0.1169
Band5	10		Low	6	0	22.06	19.78	0.0951
Band5	1.4	16-QAM	Low	1	0	22.67	20.39	0.1094
Band5	1.4		Low	5	0	21.44	19.16	0.0824
Band5	3		Low	1	0	21.79	19.51	0.0893
Band5	3		Low	5	0	21.01	18.73	0.0746
Band5	5		Low	1	0	23.39	21.11	0.1291
Band5	5		Low	5	0	21.31	19.03	0.0800
Band5	10		Low	1	0	23.25	20.97	0.1250
Band5	10		Low	5	0	22.28	20	0.1000
Band5	1.4	QPSK	Middle	1	0	23.44	21.16	0.1306
Band5	1.4		Middle	6	0	21.27	18.99	0.0793
Band5	3		Middle	1	0	23.21	20.93	0.1239
Band5	3		Middle	6	0	21.06	18.78	0.0755
Band5	5		Middle	1	0	23.11	20.83	0.1211
Band5	5		Middle	6	0	22.03	19.75	0.0944
Band5	10		Middle	1	0	23.11	20.83	0.1211
Band5	10		Middle	6	0	22.06	19.78	0.0951
Band5	1.4	16-QAM	Middle	1	0	22.32	20.04	0.1009
Band5	1.4		Middle	5	0	21.34	19.06	0.0805
Band5	3		Middle	1	0	22.07	19.79	0.0953
Band5	3		Middle	5	0	21.1	18.82	0.0762
Band5	5		Middle	1	0	23.31	21.03	0.1268
Band5	5		Middle	5	0	21.18	18.9	0.0776
Band5	10		Middle	1	0	23.34	21.06	0.1276
Band5	10		Middle	5	0	22.3	20.02	0.1005
Band5	1.4	QPSK	High	1	5	23.39	21.11	0.1291
Band5	1.4		High	6	0	21.52	19.24	0.0839
Band5	3		High	1	5	23.12	20.84	0.1213
Band5	3		High	6	0	21.29	19.01	0.0796
Band5	5		High	1	5	23.39	21.11	0.1291
Band5	5		High	3	3	21.89	19.61	0.0914
Band5	10		High	1	5	23.46	21.18	0.1312
Band5	10		High	6	0	22.52	20.24	0.1057
Band5	1.4	16-QAM	High	1	5	21.87	19.59	0.0910
Band5	1.4		High	5	1	21.14	18.86	0.0769



Band5	3		High	1	5	22.42	20.14	0.1033
Band5	3		High	5	1	21.14	18.86	0.0769
Band5	5		High	1	5	23.51	21.23	0.1327
Band5	5		High	3	3	21.17	18.89	0.0774
Band5	10		High	1	5	23.23	20.95	0.1245
Band5	10		High	5	1	22.25	19.97	0.0993



LTE Band 12

Band	BW	Modulation	Channel	RB	RB	Result	ERP	
	[MHz]			Size	Start		(dBm)	(watts)
Band12	1.4	QPSK	Low	1	0	22.68	19.75	0.0944
Band12	1.4		Low	6	0	21.37	18.44	0.0698
Band12	3		Low	1	0	22.79	19.86	0.0968
Band12	3		Low	6	0	21.16	18.23	0.0665
Band12	5		Low	1	0	23.25	20.32	0.1076
Band12	5		Low	6	0	22.12	19.19	0.0830
Band12	10		Low	1	0	23.46	20.53	0.1130
Band12	10		Low	6	0	22.14	19.21	0.0834
Band12	1.4	16-QAM	Low	1	0	22.4	19.47	0.0885
Band12	1.4		Low	5	0	21.07	18.14	0.0652
Band12	3		Low	1	0	22.08	19.15	0.0822
Band12	3		Low	5	0	21.26	18.33	0.0681
Band12	5		Low	1	0	22.44	19.51	0.0893
Band12	5		Low	5	0	21.61	18.68	0.0738
Band12	10		Low	1	0	22.81	19.88	0.0973
Band12	10		Low	5	0	22.41	19.48	0.0887
Band12	1.4	QPSK	Middle	1	0	22.92	19.99	0.0998
Band12	1.4		Middle	6	0	21.04	18.11	0.0647
Band12	3		Middle	1	0	23.06	20.13	0.1030
Band12	3		Middle	6	0	21.38	18.45	0.0700
Band12	5		Middle	1	0	23.11	20.18	0.1042
Band12	5		Middle	6	0	22.01	19.08	0.0809
Band12	10		Middle	1	0	23.24	20.31	0.1074
Band12	10		Middle	6	0	22.17	19.24	0.0839
Band12	1.4	16-QAM	Middle	1	0	22	19.07	0.0807
Band12	1.4		Middle	5	0	21.03	18.1	0.0646
Band12	3		Middle	1	0	22.05	19.12	0.0817
Band12	3		Middle	5	0	21.04	18.11	0.0647
Band12	5		Middle	1	0	22.86	19.93	0.0984
Band12	5		Middle	5	0	21.25	18.32	0.0679
Band12	10		Middle	1	0	22.98	20.05	0.1012
Band12	10		Middle	5	0	22.08	19.15	0.0822
Band12	1.4	QPSK	High	1	5	22.65	19.72	0.0938
Band12	1.4		High	6	0	21.07	18.14	0.0652
Band12	3		High	1	5	23.38	20.45	0.1109
Band12	3		High	6	0	21.03	18.1	0.0646
Band12	5		High	1	5	23.35	20.42	0.1102
Band12	5		High	3	3	21.68	18.75	0.0750
Band12	10		High	1	5	22.98	20.05	0.1012
Band12	10		High	6	0	21.95	19.02	0.0798
Band12	1.4	16-QAM	High	1	5	22.2	19.27	0.0845



Band12	1.4		High	5	1	21.26	18.33	0.0681
Band12	3		High	1	5	22.48	19.55	0.0902
Band12	3		High	5	1	21.2	18.27	0.0671
Band12	5		High	1	5	22.38	19.45	0.0881
Band12	5		High	3	3	21.38	18.45	0.0700
Band12	10		High	1	5	22.94	20.01	0.1002
Band12	10		High	5	1	21.91	18.98	0.0791



LTE Band 13

Band	BW	Modulation	Channel	RB	RB	Result	ERP	
	[MHz]			Size	Start		(dBm)	(watts)
Band13	5	QPSK	Low	1	0	22.82	23.30	0.2138
Band13	5		Low	6	0	22.03	22.51	0.1782
Band13	10		Low	1	0	22.99	23.47	0.2223
Band13	10		Low	6	0	22.28	22.76	0.1888
Band13	5	16-QAM	Low	1	0	22.29	22.77	0.1892
Band13	5		Low	5	0	21.21	21.69	0.1476
Band13	10		Low	1	0	22.94	23.42	0.2198
Band13	10		Low	5	0	22.3	22.78	0.1897
Band13	5	QPSK	Middle	1	0	22.91	23.39	0.2183
Band13	5		Middle	6	0	22.01	22.49	0.1774
Band13	10		Middle	1	0	22.79	23.27	0.2123
Band13	10		Middle	6	0	22.04	22.52	0.1786
Band13	5	16-QAM	Middle	1	0	22.6	23.08	0.2032
Band13	5		Middle	5	0	20.93	21.41	0.1384
Band13	10		Middle	1	0	22.62	23.10	0.2042
Band13	10		Middle	5	0	22.16	22.64	0.1837
Band13	5	QPSK	High	1	5	23.04	23.52	0.2249
Band13	5		High	3	3	21.88	22.36	0.1722
Band13	10		High	1	5	22.69	23.17	0.2075
Band13	10		High	6	0	22.36	22.84	0.1923
Band13	5	16-QAM	High	1	5	22.48	22.96	0.1977
Band13	5		High	3	3	21.27	21.75	0.1496
Band13	10		High	1	5	22.45	22.93	0.1963
Band13	10		High	5	1	22.17	22.65	0.1841



LTE Band 25

Band	BW	Modulation	Channel	RB	RB	Result	EIRP	
	[MHz]			Size	Start		(dBm)	(watts)
Band25	1.4	QPSK	Low	1	0	23.38	25.99	0.3972
Band25	1.4		Low	6	0	21.22	23.83	0.2415
Band25	3		Low	1	0	23.19	25.80	0.3802
Band25	3		Low	6	0	21.36	23.97	0.2495
Band25	5		Low	1	0	23.5	26.11	0.4083
Band25	5		Low	6	0	22.42	25.03	0.3184
Band25	10		Low	1	0	23.45	26.06	0.4036
Band25	10		Low	6	0	22.3	24.91	0.3097
Band25	15		Low	1	0	23.57	26.18	0.4150
Band25	15		Low	6	0	23.37	25.98	0.3963
Band25	20		Low	1	0	23.42	26.03	0.4009
Band25	20		Low	6	0	23.46	26.07	0.4046
Band25	1.4	16-QAM	Low	1	0	22.29	24.90	0.3090
Band25	1.4		Low	5	0	21.27	23.88	0.2443
Band25	3		Low	1	0	22.46	25.07	0.3214
Band25	3		Low	5	0	21.38	23.99	0.2506
Band25	5		Low	1	0	23.33	25.94	0.3926
Band25	5		Low	5	0	21.49	24.10	0.2570
Band25	10		Low	1	0	23.58	26.19	0.4159
Band25	10		Low	5	0	22.22	24.83	0.3041
Band25	15		Low	1	0	23.51	26.12	0.4093
Band25	15		Low	5	0	23.74	26.35	0.4315
Band25	20		Low	1	0	23.08	25.69	0.3707
Band25	20		Low	5	0	23.75	26.36	0.4325
Band25	1.4	QPSK	Middle	1	0	23.38	25.99	0.3972
Band25	1.4		Middle	6	0	21.42	24.03	0.2529
Band25	3		Middle	1	0	23.52	26.13	0.4102
Band25	3		Middle	6	0	21.29	23.90	0.2455
Band25	5		Middle	1	0	23.45	26.06	0.4036
Band25	5		Middle	6	0	22.4	25.01	0.3170
Band25	10		Middle	1	0	23.54	26.15	0.4121
Band25	10		Middle	6	0	22.48	25.09	0.3228
Band25	15		Middle	1	0	23.54	26.15	0.4121
Band25	15		Middle	6	0	23.47	26.08	0.4055
Band25	20		Middle	1	0	23.49	26.10	0.4074
Band25	20		Middle	6	0	23.46	26.07	0.4046
Band25	1.4	16-QAM	Middle	1	0	22.32	24.93	0.3112
Band25	1.4		Middle	5	0	21.4	24.01	0.2518
Band25	3		Middle	1	0	22.39	25.00	0.3162
Band25	3		Middle	5	0	21.34	23.95	0.2483
Band25	5		Middle	1	0	23.36	25.97	0.3954



Band25	5		Middle	5	0	21.55	24.16	0.2606
Band25	10		Middle	1	0	23.46	26.07	0.4046
Band25	10		Middle	5	0	22.36	24.97	0.3141
Band25	15		Middle	1	0	23.41	26.02	0.3999
Band25	15		Middle	5	0	23.68	26.29	0.4256
Band25	20		Middle	1	0	23.32	25.93	0.3917
Band25	20		Middle	5	0	23.48	26.09	0.4064
Band25	1.4	QPSK	High	1	5	23.5	26.11	0.4083
Band25	1.4		High	6	0	21.5	24.11	0.2576
Band25	3		High	1	5	23.52	26.13	0.4102
Band25	3		High	6	0	21.54	24.15	0.2600
Band25	5		High	1	5	23.4	26.01	0.3990
Band25	5		High	3	3	22.39	25.00	0.3162
Band25	10		High	1	5	23.48	26.09	0.4064
Band25	10		High	6	0	22.23	24.84	0.3048
Band25	15		High	1	5	23.49	26.10	0.4074
Band25	15		High	6	0	23.43	26.04	0.4018
Band25	20		High	1	5	23.53	26.14	0.4111
Band25	20		High	6	0	23.48	26.09	0.4064
Band25	1.4	16-QAM	High	1	5	22.19	24.80	0.3020
Band25	1.4		High	5	1	21.59	24.20	0.2630
Band25	3		High	1	5	22.14	24.75	0.2985
Band25	3		High	5	1	21.18	23.79	0.2393
Band25	5		High	1	5	23.25	25.86	0.3855
Band25	5		High	3	3	21.58	24.19	0.2624
Band25	10		High	1	5	23.53	26.14	0.4111
Band25	10		High	5	1	22.42	25.03	0.3184
Band25	15		High	1	5	23.5	26.11	0.4083
Band25	15		High	5	1	23.63	26.24	0.4207
Band25	20		High	1	5	23.32	25.93	0.3917
Band25	20		High	5	1	23.49	26.10	0.4074



LTE Band 26

Band	BW	Modulation	Channel	RB	RB	Result	ERP	
	[MHz]			Size	Start		(dBm)	(watts)
Band26	1.4	QPSK	Low	1	0	23.32	21.04	0.1271
Band26	1.4		Low	6	0	21.24	18.96	0.0787
Band26	3		Low	1	0	23.12	20.84	0.1213
Band26	3		Low	6	0	21.29	19.01	0.0796
Band26	5		Low	1	0	23.61	21.33	0.1358
Band26	5		Low	6	0	22.94	20.66	0.1164
Band26	10		Low	1	0	23.03	20.75	0.1189
Band26	10		Low	6	0	22.37	20.09	0.1021
Band26	15		Low	1	0	23.36	21.08	0.1282
Band26	15		Low	6	0	23.33	21.05	0.1274
Band26	1.4	16-QAM	Low	1	0	22.27	19.99	0.0998
Band26	1.4		Low	5	0	21.38	19.1	0.0813
Band26	3		Low	1	0	22.74	20.46	0.1112
Band26	3		Low	5	0	21.4	19.12	0.0817
Band26	5		Low	1	0	23.55	21.27	0.1340
Band26	5		Low	5	0	21.47	19.19	0.0830
Band26	10		Low	1	0	23.41	21.13	0.1297
Band26	10		Low	5	0	22.3	20.02	0.1005
Band26	15		Low	1	0	23.19	20.91	0.1233
Band26	15		Low	5	0	23.87	21.59	0.1442
Band26	1.4	QPSK	Middle	1	0	23.36	21.08	0.1282
Band26	1.4		Middle	6	0	21.33	19.05	0.0804
Band26	3		Middle	1	0	23.44	21.16	0.1306
Band26	3		Middle	6	0	21.3	19.02	0.0798
Band26	5		Middle	1	0	23.35	21.07	0.1279
Band26	5		Middle	6	0	22.5	20.22	0.1052
Band26	10		Middle	1	0	23.22	20.94	0.1242
Band26	10		Middle	6	0	22.37	20.09	0.1021
Band26	15		Middle	1	0	23.16	20.88	0.1225
Band26	15		Middle	6	0	23.32	21.04	0.1271
Band26	1.4	16-QAM	Middle	1	0	22.39	20.11	0.1026
Band26	1.4		Middle	5	0	21.23	18.95	0.0785
Band26	3		Middle	1	0	22.57	20.29	0.1069
Band26	3		Middle	5	0	21.42	19.14	0.0820
Band26	5		Middle	1	0	23.38	21.1	0.1288
Band26	5		Middle	5	0	21.31	19.03	0.0800
Band26	10		Middle	1	0	23.34	21.06	0.1276
Band26	10		Middle	5	0	22.4	20.12	0.1028
Band26	15		Middle	1	0	23.31	21.03	0.1268
Band26	15		Middle	5	0	23.79	21.51	0.1416
Band26	1.4	QPSK	High	1	5	23.35	21.07	0.1279



Band26	1.4		High	6	0	21.18	18.9	0.0776
Band26	3		High	1	5	23.35	21.07	0.1279
Band26	3		High	6	0	21.12	18.84	0.0766
Band26	5		High	1	5	23.44	21.16	0.1306
Band26	5		High	3	3	22.62	20.34	0.1081
Band26	10		High	1	5	23.51	21.23	0.1327
Band26	10		High	6	0	22.72	20.44	0.1107
Band26	15		High	1	5	23.33	21.05	0.1274
Band26	15		High	6	0	23.38	21.1	0.1288
Band26	1.4		High	1	5	22.57	20.29	0.1069
Band26	1.4	16-QAM	High	5	1	21	18.72	0.0745
Band26	3		High	1	5	22.62	20.34	0.1081
Band26	3		High	5	1	21.29	19.01	0.0796
Band26	5		High	1	5	23.28	21	0.1259
Band26	5		High	3	3	21.43	19.15	0.0822
Band26	10		High	1	5	23.57	21.29	0.1346
Band26	10		High	5	1	22.29	20.01	0.1002
Band26	15		High	1	5	23.29	21.01	0.1262
Band26	15		High	5	1	23.75	21.47	0.1403



LTE Band 66

Band	BW	Modulation	Channel	RB	RB	Result	EIRP	
	[MHz]			Size	Start		(dBm)	(watts)
Band66	1.4	QPSK	Low	1	0	22.9	25.02	0.3177
Band66	1.4		Low	6	0	21.43	23.55	0.2265
Band66	3		Low	1	0	23.81	25.93	0.3917
Band66	3		Low	6	0	21.04	23.16	0.2070
Band66	5		Low	1	0	23.77	25.89	0.3882
Band66	5		Low	6	0	22.31	24.43	0.2773
Band66	10		Low	1	0	23.75	25.87	0.3864
Band66	10		Low	6	0	22.45	24.57	0.2864
Band66	15		Low	1	0	23.48	25.6	0.3631
Band66	15		Low	6	0	23.45	25.57	0.3606
Band66	20		Low	1	0	23.72	25.84	0.3837
Band66	20		Low	6	0	23.15	25.27	0.3365
Band66	1.4	16-QAM	Low	1	0	22.37	24.49	0.2812
Band66	1.4		Low	5	0	21.06	23.18	0.2080
Band66	3		Low	1	0	22.43	24.55	0.2851
Band66	3		Low	5	0	21.07	23.19	0.2084
Band66	5		Low	1	0	23.24	25.36	0.3436
Band66	5		Low	5	0	21.58	23.7	0.2344
Band66	10		Low	1	0	23.17	25.29	0.3381
Band66	10		Low	5	0	22.49	24.61	0.2891
Band66	15		Low	1	0	23.33	25.45	0.3508
Band66	15		Low	5	0	23.59	25.71	0.3724
Band66	20		Low	1	0	23.36	25.48	0.3532
Band66	20		Low	5	0	23.41	25.53	0.3573
Band66	1.4	QPSK	Middle	1	0	23.36	25.48	0.3532
Band66	1.4		Middle	6	0	21.36	23.48	0.2228
Band66	3		Middle	1	0	23.59	25.71	0.3724
Band66	3		Middle	6	0	21.31	23.43	0.2203
Band66	5		Middle	1	0	23.42	25.54	0.3581
Band66	5		Middle	6	0	22.39	24.51	0.2825
Band66	10		Middle	1	0	23.41	25.53	0.3573
Band66	10		Middle	6	0	22.41	24.53	0.2838
Band66	15		Middle	1	0	23.44	25.56	0.3597
Band66	15		Middle	6	0	23.37	25.49	0.3540
Band66	20		Middle	1	0	23.48	25.6	0.3631
Band66	20		Middle	6	0	23.41	25.53	0.3573
Band66	1.4	16-QAM	Middle	1	0	22.38	24.5	0.2818
Band66	1.4		Middle	5	0	21.28	23.4	0.2188
Band66	3		Middle	1	0	22.37	24.49	0.2812
Band66	3		Middle	5	0	21.27	23.39	0.2183
Band66	5		Middle	1	0	23.44	25.56	0.3597



Band66	5		Middle	5	0	21.44	23.56	0.2270
Band66	10		Middle	1	0	23.2	25.32	0.3404
Band66	10		Middle	5	0	22.48	24.6	0.2884
Band66	15		Middle	1	0	23.42	25.54	0.3581
Band66	15		Middle	5	0	23.55	25.67	0.3690
Band66	20		Middle	1	0	23.39	25.51	0.3556
Band66	20		Middle	5	0	23.37	25.49	0.3540
Band66	1.4	QPSK	High	1	5	23.19	25.31	0.3396
Band66	1.4		High	6	0	21.18	23.3	0.2138
Band66	3		High	1	5	23.59	25.71	0.3724
Band66	3		High	6	0	21.6	23.72	0.2355
Band66	5		High	1	5	23.35	25.47	0.3524
Band66	5		High	3	3	22.83	24.95	0.3126
Band66	10		High	1	5	23.09	25.21	0.3319
Band66	10		High	6	0	22.11	24.23	0.2649
Band66	15		High	1	5	23.43	25.55	0.3589
Band66	15		High	6	0	23.44	25.56	0.3597
Band66	20		High	1	5	23.36	25.48	0.3532
Band66	20		High	6	0	23.45	25.57	0.3606
Band66	1.4	16-QAM	High	1	5	22.31	24.43	0.2773
Band66	1.4		High	5	1	21.47	23.59	0.2286
Band66	3		High	1	5	22.38	24.5	0.2818
Band66	3		High	5	1	21.46	23.58	0.2280
Band66	5		High	1	5	23.48	25.6	0.3631
Band66	5		High	3	3	21.47	23.59	0.2286
Band66	10		High	1	5	23.2	25.32	0.3404
Band66	10		High	5	1	22.7	24.82	0.3034
Band66	15		High	1	5	23.6	25.72	0.3733
Band66	15		High	5	1	23.18	25.3	0.3388
Band66	20		High	1	5	23.62	25.74	0.3750
Band66	20		High	5	1	22.98	25.1	0.3236

**LTE Band 85**

Band	BW	Modulation	Channel	RB	RB	Result	ERP	
	[MHz]			Size	Start		(dBm)	(watts)
Band85	5	QPSK	Low	1	0	23.2	20.27	0.1064
Band85	5		Low	6	0	22.23	19.3	0.0851
Band85	10		Low	1	0	22.8	19.87	0.0971
Band85	10		Low	6	0	21.94	19.01	0.0796
Band85	5	16-QAM	Low	1	0	22.88	19.95	0.0989
Band85	5		Low	5	0	21.1	18.17	0.0656
Band85	10		Low	1	0	23.24	20.31	0.1074
Band85	10		Low	5	0	22.59	19.66	0.0925
Band85	5	QPSK	Middle	1	0	23	20.07	0.1016
Band85	5		Middle	6	0	22.09	19.16	0.0824
Band85	10		Middle	1	0	22.96	20.03	0.1007
Band85	10		Middle	6	0	22.08	19.15	0.0822
Band85	5	16-QAM	Middle	1	0	22.94	20.01	0.1002
Band85	5		Middle	5	0	21.22	18.29	0.0675
Band85	10		Middle	1	0	22.95	20.02	0.1005
Band85	10		Middle	5	0	22.36	19.43	0.0877
Band85	5	QPSK	High	1	5	22.67	19.74	0.0942
Band85	5		High	3	3	21.92	18.99	0.0793
Band85	10		High	1	5	22.91	19.98	0.0995
Band85	10		High	6	0	21.75	18.82	0.0762
Band85	5	16-QAM	High	1	5	22.85	19.92	0.0982
Band85	5		High	3	3	20.94	18.01	0.0632
Band85	10		High	1	5	22.74	19.81	0.0957
Band85	10		High	5	1	21.94	19.01	0.0796



Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

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

LTE Band 4 / 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	3465	-51.00	-13	-38.00	-61.74	2.604	13.34	H
	5205	-54.26	-13	-41.26	-64.77	3.011	13.52	H
	6945	-53.01	-13	-40.01	-63.21	3.271	13.47	H
	3465	-56.51	-13	-43.51	-67.25	2.604	13.34	V
	5205	-54.17	-13	-41.17	-64.68	3.011	13.52	V
	6945	-53.42	-13	-40.42	-63.62	3.271	13.47	V

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

LTE Band 12 / 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	-64.94	-13	-51.94	-71.91	1.58	10.70	H
	2112	-61.06	-13	-48.06	-69.31	2.102	12.50	H
	2816	-58.71	-13	-45.71	-67.60	2.856	13.90	H
	1408	-63.54	-13	-50.54	-70.51	1.58	10.70	V
	2112	-60.02	-13	-47.02	-68.27	2.10	12.50	V
	2816	-58.54	-13	-45.54	-67.43	2.86	13.90	V

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

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	-63.87	-42.15	-21.72	-66.50	1.09	5.87	H
	2336	-62.07	-13	-49.07	-64.47	1.37	5.92	H
	3120	-59.84	-13	-46.84	-63.73	1.64	7.68	H
	1560	-66.41	-42.15	-24.26	-69.04	1.09	5.87	V
	2336	-60.68	-13	-47.68	-63.08	1.37	5.92	V
	3120	-59.89	-13	-46.89	-63.78	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	-67.82	-13	-54.82	-70.45	1.09	5.87	H
	2328	-61.84	-13	-48.84	-64.24	1.37	5.92	H
	3112	-60.27	-13	-47.27	-64.16	1.64	7.68	H
	1552	-67.17	-13	-54.17	-69.80	1.09	5.87	V
	2328	-60.51	-13	-47.51	-62.91	1.37	5.92	V
	3112	-60.01	-13	-47.01	-63.90	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	3735	-56.96	-13	-43.96	-69.22	2.64	14.90	H
	5625	-46.98	-13	-33.98	-58.84	2.94	14.80	H
	7485	-52.67	-13	-39.67	-62.44	3.39	13.16	H
	3735	-56.58	-13	-43.58	-68.84	2.64	14.90	V
	5625	-48.03	-13	-35.03	-59.89	2.94	14.80	V
	7485	-52.38	-13	-39.38	-62.15	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	-65.71	-13	-52.71	-72.68	1.58	10.70	H
	2488	-61.69	-13	-48.69	-69.94	2.102	12.50	H
	3319	-55.06	-13	-42.06	-63.95	2.856	13.90	H
	1656	-64.67	-13	-51.67	-71.64	1.58	10.70	V
	2488	-25.35	-13	-12.35	-33.60	2.10	12.50	V
	3319	-60.17	-13	-47.17	-69.06	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	3480	-50.62	-13	-37.62	-61.36	2.604	13.34	H
	5205	-55.17	-13	-42.17	-65.68	3.011	13.52	H
	6945	-54.32	-13	-41.32	-64.52	3.271	13.47	H
	3480	-58.26	-13	-45.26	-69.00	2.604	13.34	V
	5205	-55.20	-13	-42.20	-65.71	3.011	13.52	V
	6945	-54.29	-13	-41.29	-64.49	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	-62.74	-13	-49.74	-69.71	1.58	10.70	H
	2104	-62.47	-13	-49.47	-70.72	2.102	12.50	H
	2808	-60.34	-13	-47.34	-69.23	2.856	13.90	H
	1408	-66.93	-13	-53.93	-73.90	1.58	10.70	V
	2104	-61.51	-13	-48.51	-69.76	2.10	12.50	V
	2808	-59.80	-13	-46.80	-68.69	2.86	13.90	V

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