



# FCC RF Test Report

**APPLICANT** : Nextbit systems Inc.  
**EQUIPMENT** : Smartphone  
**BRAND NAME** : NEXTBIT  
**MODEL NAME** : ROBIN  
**MARKETING NAME** : ROBIN  
**FCC ID** : 2AFGX-ROBIN  
**STANDARD** : 47 CFR Part 2, 22(H), 24(E), 27  
**CLASSIFICATION** : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Nov. 26, 2015 and completely tested on Dec. 26, 2015. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA / EIA-603-D-2010 and the testing has shown the tested sample to be in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

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Reviewed by: Joseph Lin / Supervisor

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Approved by: Jones Tsai / Manager



## **SPORTON INTERNATIONAL INC.**

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FCC ID : 2AFGX-ROBIN

Page Number : 1 of 32

Report Issued Date : Jan. 15, 2016

Report Version : Rev. 02

Report Template No.: BU5-FGLTE Version 1.5



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**APPENDIX A. TEST RESULTS OF CONDUCTED TEST**

**APPENDIX B. TEST RESULTS OF RADIATED TEST**

**APPENDIX C. TEST SETUP PHOTOGRAPHS**



## REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG5N2627B	Rev. 01	Initial issue of report	Jan. 13, 2016
FG5N2627B	Rev. 02	Updating the FCC ID.	Jan. 15, 2016

## SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
3.5	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §22.917(a) §24.238(a) §27.53(g) §27.53(h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 12) (Band 17)	$< 43 + 10\log_{10}(P[\text{Watts}])$	PASS	-
	§27.53(m)(4)	Conducted Band Edge Measurement (Band 7)	§27.53(m)(4) RSS-199 (4.6)		
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(g) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 17)	$< 43 + 10\log_{10}(P[\text{Watts}])$	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7)	$< 55 + 10\log_{10}(P[\text{Watts}])$		



Report Section	FCC Rule	Description	Limit	Result	Remark
3.9	§2.1055	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22	PASS	-
	§22.355				
	§2.1055		Within Authorized Band		
	§24.235 §27.54				
4.4	§22.913(a)(2)	Effective Radiated Power (Band 5)	ERP < 7 Watt	PASS	-
	§27.50(c)(10)	Effective Radiated Power (Band 12) (Band 17)	ERP < 3 Watt		
	§24.232(c) §27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2) (Band 7)	EIRP < 2Watt		
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4)	EIRP < 1Watt		
4.5	§2.1053 §22.917(a) §24.238(a) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 17)	< 43+10log <sub>10</sub> (P[Watts])	PASS	Under limit 13.51 dB at 10248.000 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7)	< 55+10log <sub>10</sub> (P[Watts])		



# 1 General Description

## 1.1 Applicant

**Nextbit systems Inc.**

290 King Street Suite 9, San Francisco, CA94107

## 1.2 Manufacturer

**FIH Mobile Limited**

No.4, Mingsheng St., Tu-Cheng Dist., New Taipei City 23679, Taiwan

## 1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smartphone
Brand Name	NEXTBIT
Model Name	ROBIN
Marketing Name	ROBIN
FCC ID	2AFGX-ROBIN
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/NFC/GPS WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth v4.0 EDR/LE
HW Version	DVT
EUT Stage	Identical Prototype

## 1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
<b>Tx Frequency</b>	LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz
<b>Rx Frequency</b>	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz LTE Band 12 : 729 MHz ~ 746 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz
<b>Bandwidth</b>	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 7 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 17 : 5MHz / 10MHz
<b>Maximum Output Power to Antenna</b>	LTE Band 2 : 23.50 dBm LTE Band 4 : 23.49 dBm LTE Band 5 : 22.70 dBm LTE Band 7 : 23.20 dBm LTE Band 12 : 23.38 dBm LTE Band 17 : 23.29 dBm
<b>Type of Modulation</b>	QPSK / 16QAM

## 1.5 Modification of EUT

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





## 1.6 Emission Designator

LTE Band 2		QPSK		16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1M10G7D	-	0.2175	1M09W7D	-	0.1951
3	2M74G7D	-	0.2246	2M73W7D	-	0.1819
5	4M51G7D	-	0.2242	4M49W7D	-	0.1877
10	9M07G7D	0.0078	0.2434	8M99W7D	-	0.2165
15	13M5G7D	-	0.2620	13M5W7D	-	0.2148
20	18M5G7D	-	0.2840	18M4W7D	-	0.2433
LTE Band 4		QPSK		16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1M10G7D	-	0.2094	1M09W7D	-	0.1711
3	2M72G7D	-	0.2177	2M73W7D	-	0.1703
5	4M52G7D	-	0.2185	4M49W7D	-	0.1703
10	9M01G7D	0.0016	0.2326	9M03W7D	-	0.1926
15	13M5G7D	-	0.2268	13M5W7D	-	0.1956
20	18M5G7D	-	0.2424	18M5W7D	-	0.2049
LTE Band 5		QPSK		16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
1.4	1M09G7D	-	0.0561	1M10W7D	-	0.0439
3	2M73G7D	-	0.0558	2M73W7D	-	0.0433
5	4M50G7D	-	0.0548	4M51W7D	-	0.0451
10	9M07G7D	0.0017	0.0534	9M07W7D	-	0.0483
LTE Band 7		QPSK		16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	4M50G7D	-	0.2558	4M50W7D	-	0.2055
10	9M07G7D	0.0406	0.2696	9M03W7D	-	0.2359
15	13M5G7D	-	0.2724	13M5W7D	-	0.2228
20	18M5G7D	-	0.2797	18M5W7D	-	0.2311



LTE Band 12		QPSK		16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
1.4	1M09G7D	-	0.0428	1M09W7D	-	0.0352
3	2M73G7D	-	0.0398	2M72W7D	-	0.0340
5	4M50G7D	-	0.0400	4M50W7D	-	0.0342
10	9M09G7D	0.0114	0.0350	9M07W7D	-	0.0304
LTE Band 17		QPSK		16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
5	4M49G7D	-	0.0386	4M50W7D	-	0.0344
10	9M03G7D	0.0104	0.0349	9M03W7D	-	0.0296

## 1.7 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 <sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	
	TH02-HY	03CH07-HY

## 1.8 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
- ANSI / TIA / EIA-603-D-2010
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02

### 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 v02r02 with maximum output power.

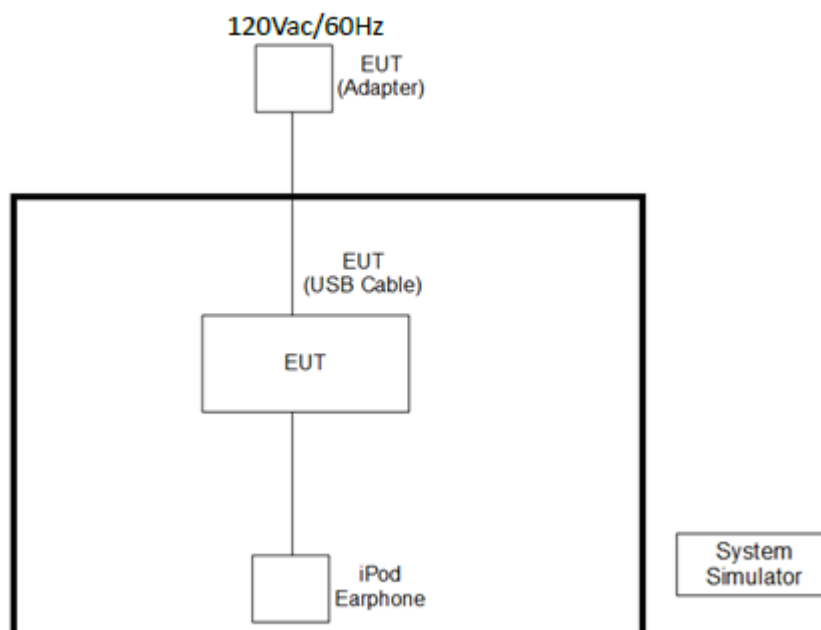
Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Max. Output Power	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5	✓	✓	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	12	✓	✓	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓
	17	-	-	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Peak-to-Average Ratio	2						✓	✓	✓	✓		✓	✓	✓	✓
	4						✓	✓	✓	✓		✓	✓	✓	✓
	5				✓	-	-	✓	✓	✓		✓	✓	✓	✓
	7	-	-				✓	✓	✓	✓		✓	✓	✓	✓
	12				✓	-	-	✓	✓	✓		✓	✓	✓	✓
	17	-	-		✓	-	-	✓	✓	✓		✓	✓	✓	✓
26dB and 99% Bandwidth	2	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
	5	✓	✓	✓	✓	-	-	✓	✓			✓	✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
	12	✓	✓	✓	✓	-	-	✓	✓			✓	✓	✓	✓
	17	-	-	✓	✓	-	-	✓	✓			✓	✓	✓	✓
Conducted Band Edge	2	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
	5	✓	✓	✓	✓	-	-	✓	✓	✓		✓	✓		✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
	12	✓	✓	✓	✓	-	-	✓	✓	✓		✓	✓		✓
	17	-	-	✓	✓	-	-	✓	✓	✓		✓	✓		✓



Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Conducted Spurious Emission	2	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	5	✓	✓	✓	✓	-	-	✓	✓	✓			✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	12	✓	✓	✓	✓	-	-	✓	✓	✓			✓	✓	✓
	17	-	-	✓	✓	-	-	✓	✓	✓			✓	✓	✓
Frequency Stability	2				✓			✓				✓		✓	
	4				✓			✓				✓		✓	
	5				✓	-	-	✓				✓		✓	
	7	-	-		✓			✓				✓		✓	
	12				✓	-	-	✓				✓		✓	
	17	-	-		✓	-	-	✓				✓		✓	
E.R.P./E.I.R.P.	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5	✓	✓	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	17	-	-	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Radiated Spurious Emission	2	✓	✓	✓	✓	✓	✓	✓		✓			✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓		✓			✓	✓	✓
	5	✓	✓	✓	✓	-	-	✓		✓			✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓		✓			✓	✓	✓
	12	✓	✓	✓	✓	-	-	✓		✓			✓	✓	✓
	17	-	-	✓	✓	-	-	✓		✓			✓	✓	✓
Note	<p>1. The mark “✓” means that this configuration is chosen for testing</p> <p>2. The mark “-” means that this bandwidth is not supported.</p> <p>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.</p>														

## 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 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

*Offset = RF cable loss + attenuator factor.*

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Example :

$$\begin{aligned}
 \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\
 &= 4.2 + 10 = 14.2 \text{ (dB)}
 \end{aligned}$$



## 2.5 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 7 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20850	21100	21350
	Frequency	2510	2535	2560
15	Channel	20825	21100	21375
	Frequency	2507.5	2535	2562.5
10	Channel	20800	21100	21400
	Frequency	2505	2535	2565
5	Channel	20775	21100	21425
	Frequency	2502.5	2535	2567.5





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 17 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	23780	23790	23800
	Frequency	709	710	711
5	Channel	23755	23790	23825
	Frequency	706.5	710	713.5

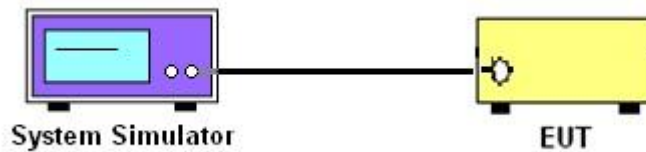
### 3 Conducted Test Items

#### 3.1 Measuring Instruments

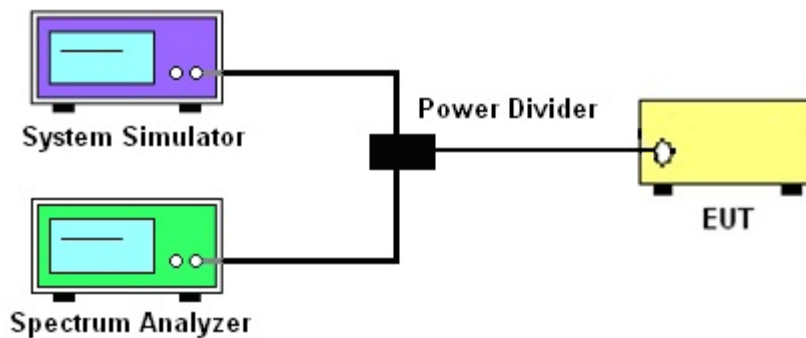
See list of measuring instruments of this test report.

#### 3.2 Test Setup

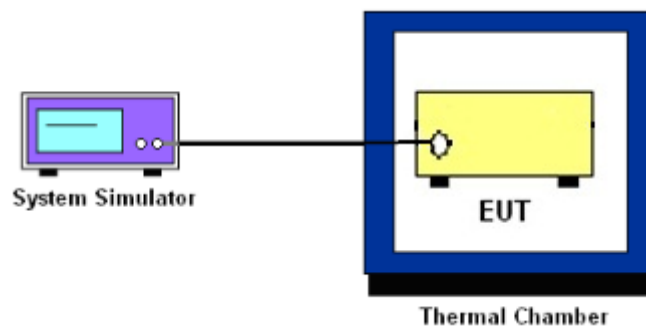
##### 3.2.1 Conducted Output Power



##### 3.2.2 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted Band-Edge and Conducted Spurious Emission



##### 3.2.3 Frequency Stability



### 3.3 Test Result of Conducted Test

Please refer to Appendix A.



### **3.4 Conducted Output Power**

#### **3.4.1 Description of the Conducted Output Power 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.

#### **3.4.2 Test Procedures**

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



## **3.5 Peak-to-Average Ratio**

### **3.5.1 Description of the PAR Measurement**

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

### **3.5.2 Test Procedures**

1. The testing follows FCC KDB 971168 v02r02 Section 5.7.1.
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.

## 3.6 Occupied Bandwidth

### 3.6.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

### 3.6.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 4.2.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
4. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
5. Set the detection mode to peak, and the trace mode to max hold.
6. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.  
(this is the reference value)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

### 3.7 Conducted Band Edge

#### 3.7.1 Description of Conducted Band Edge Measurement

22.917(a) for Band 5

For operations in the 824 – 849 MHz band, the FCC limit is  $43 + 10\log_{10}(P[\text{Watts}])$  dB below the transmitter power  $P(\text{Watts})$  in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

24.238 (a) for Band 2

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is  $43 + 10\log_{10}(P[\text{Watts}])$  dB below the transmitter power  $P(\text{Watts})$  in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53 (g) for Band 12,17

For operations in the 698 -746 MHz band, the FCC limit is  $43 + 10\log_{10}(P[\text{Watts}])$  dB below the transmitter power  $P(\text{Watts})$  in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

27.53 (h) for Band 4

For operations in the 1710 – 1755 MHz band, the FCC limit is  $43 + 10\log_{10}(P[\text{Watts}])$  dB below the transmitter power  $P(\text{Watts})$  in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53(m)(4) for FCC Band 7:

For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

### 3.7.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW  $\geq 1\%$  EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.

Example:

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

9. For LTE Band 7 the other 40 dB, and 55 dB have additionally applied same calculation above.

### 3.8 Conducted Spurious Emission

#### 3.8.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

For Band 7:

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least  $55 + 10 \log (P)$  dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10<sup>th</sup> harmonic.

#### 3.8.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.  
The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
7. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is derived from  $43 + 10\log(P)$ dB below the transmitter power P(Watts)  
 $= P(W) - [43 + 10\log(P)]$  (dB)  
 $= [30 + 10\log(P)]$  (dBm) -  $[43 + 10\log(P)]$  (dB)  
 $= -13$ dBm.
11. For Band 7  
The limit line is derived from  $55 + 10\log(P)$ dB below the transmitter power P(Watts)  
 $= P(W) - [55 + 10\log(P)]$  (dB)  
 $= [30 + 10\log(P)]$  (dBm) -  $[55 + 10\log(P)]$  (dB)  
 $= -25$ dBm.



### **3.9 Frequency Stability**

#### **3.9.1 Description of Frequency Stability Measurement**

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5\text{ppm}$ ) of the center frequency.

#### **3.9.2 Test Procedures for Temperature Variation**

1. The testing follows FCC KDB 971168 v02r02 Section 9.0.
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to  $-30^{\circ}\text{C}$  and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in  $10^{\circ}\text{C}$  step up to  $50^{\circ}\text{C}$ . The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

#### **3.9.3 Test Procedures for Voltage Variation**

1. The testing follows FCC KDB 971168 v02r02 Section 9.0.
2. The EUT was placed in a temperature chamber at  $25\pm 5^{\circ}\text{C}$  and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

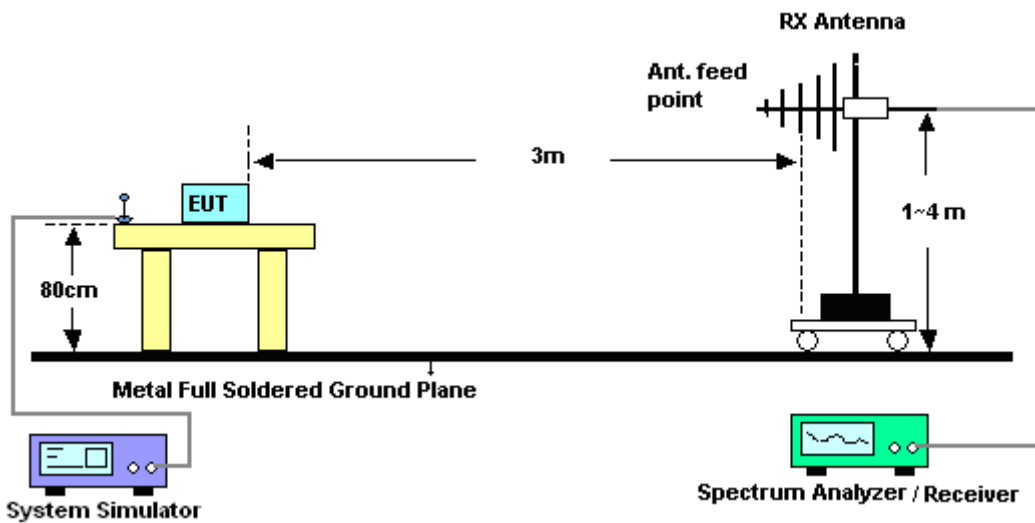
## 4 Radiated Test Items

### 4.1 Measuring Instruments

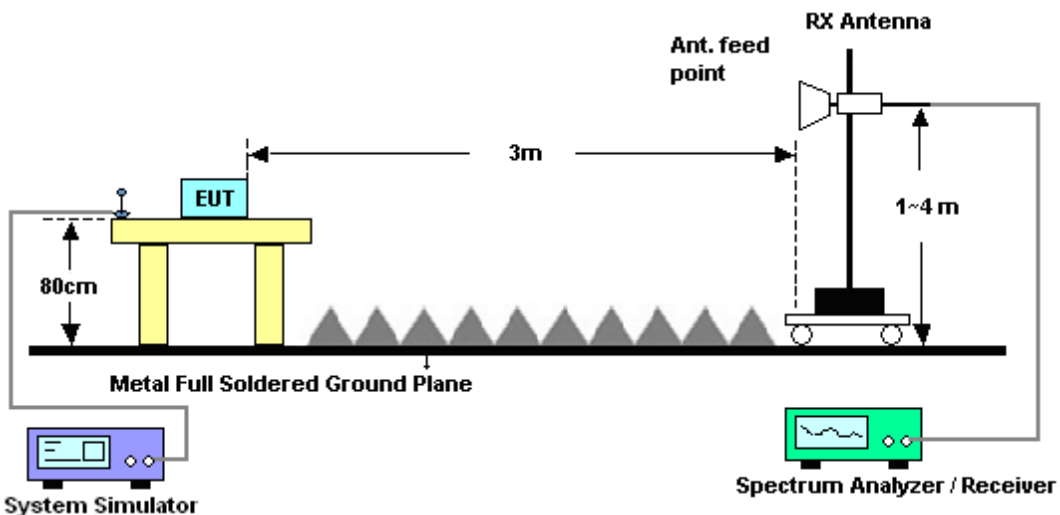
See list of measuring instruments of this test report.

### 4.2 Test Setup

#### 4.2.1 For radiated test from 30MHz to 1GHz



#### 4.2.2 For radiated test above 1GHz



### 4.3 Test Result of Radiated Test

Please refer to Appendix B.

## **4.4 Effective Radiated Power and Effective Isotropic Radiated Power**

### **4.4.1 Description of the ERP/EIRP Measurement**

Effective radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-D-2010, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r02. Mobile and portable (hand-held) stations operating are limited to average ERP of 7 watts with LTE band 5 and 3 watts with LTE band 12 / 17.

Equivalent isotropic radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-D-2010, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r02. Mobile and portable (hand-held) stations operating are limited to average EIRP of 2 watts with LTE band 2 / 7 and 1 watt with LTE band 4.

### **4.4.2 Test Procedures**

1. The EUT was placed on a non-conductive rotating platform 0.8 meters high in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RMS detector per section 5. of KDB 971168 D01.
2. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power. The maximum emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
3. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-D. The EUT was replaced by the substitution antenna at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor,  $EIRP = LVL + \text{Correction factor}$  and  $ERP = EIRP - 2.15$ . Take the record of the output power at substitution antenna.



	LTE Average					
LTE BW	1.4M	3M	5M	10M	15M	20M
Span	3MHz	6MHz	10MHz	20MHz	30MHz	40MHz
RBW	30kHz	100kHz	100kHz	300kHz	300kHz	300kHz
VBW	100kHz	300kHz	300kHz	1MHz	1MHz	1MHz
Detector	RMS	RMS	RMS	RMS	RMS	RMS
Trace	Average	Average	Average	Average	Average	Average
Average Type	Power	Power	Power	Power	Power	Power
Sweep Count	100	100	100	100	100	100

	LTE Peak					
LTE BW	1.4M	3M	5M	10M	15M	20M
Span	3MHz	6MHz	10MHz	20MHz	30MHz	40MHz
RBW	30kHz	100kHz	100kHz	300kHz	300kHz	300kHz
VBW	100kHz	300kHz	300kHz	1MHz	1MHz	1MHz
Detector	Peak	Peak	Peak	Peak	Peak	Peak
Trace	Max Hold	Max Hold	Max Hold	Max Hold	Max Hold	Max Hold
Power	Channel	Channel	Channel	Channel	Channel	Channel



## **4.5 Radiated Spurious Emission**

### **4.5.1 Description of Radiated Spurious Emission**

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-D-2010. 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 Band 7,

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  $55 + 10 \log (P)$  dB.

For LTE Band 12,17

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.

#### 4.5.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 5.8 and ANSI / TIA-603-D-2010 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
3. The EUT was set 3 meters from the receiving antenna, which was 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 one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. 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)

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

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

= -13dBm.

For Band 7:

The limit line is derived from  $55 + 10\log(P)$ dB below the transmitter power P(Watts)

12. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain

13. ERP (dBm) = EIRP - 2.15



## 5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Sep. 11, 2015	Dec. 13, 2015 ~ Dec. 16, 2015	Sep. 10 2016	Conducted (TH05-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Mar. 18, 2015	Dec. 13, 2015 ~ Dec. 16, 2015	Mar. 17, 2016	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-30℃~70℃	Sep. 08, 2015	Dec. 13, 2015 ~ Dec. 16, 2015	Sep. 07, 2016	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890089	1V~20V 0.5A~5A	Jan. 14, 2015	Dec. 13, 2015 ~ Dec. 16, 2015	Jan. 13, 2016	Conducted (TH05-HY)
Bilog Antenna	Teseq GmbH	CBL6111C	2725	30MHz~1GHz	Nov. 17, 2015	Dec. 19, 2015 ~ Dec. 26, 2015	Nov. 16, 2016	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 21, 2015	Dec. 19, 2015 ~ Dec. 26, 2015	Aug. 20, 2016	Radiation (03CH07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 25, 2015	Dec. 19, 2015 ~ Dec. 26, 2015	Aug. 24, 2016	Radiation (03CH07-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1156	1GHz ~ 18GHz	Aug. 21, 2015	Dec. 19, 2015 ~ Dec. 26, 2015	Aug. 20, 2016	Radiation (03CH07-HY)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 02, 2015	Dec. 19, 2015 ~ Dec. 26, 2015	Nov. 01, 2016	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz-1000MHz	Mar. 12, 2015	Dec. 19, 2015 ~ Dec. 26, 2015	Mar. 11, 2016	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Oct. 19, 2015	Dec. 19, 2015 ~ Dec. 26, 2015	Oct. 18, 2016	Radiation (03CH07-HY)
Signal Analyzer	Rohde & Schwarz	FSV 30	101749	10Hz~30GHz	Mar. 10, 2015	Dec. 19, 2015 ~ Dec. 26, 2015	Mar. 09, 2016	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Dec. 19, 2015 ~ Dec. 26, 2015	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 degree	N/A	Dec. 19, 2015 ~ Dec. 26, 2015	N/A	Radiation (03CH07-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	May 22, 2015	Dec. 19, 2015 ~ Dec. 26, 2015	May 21, 2016	Radiation (03CH07-HY)



## 6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.2
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### Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.1
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## **Appendix A. Test Results of Conducted Test**

### **Conducted Output Power(Average power)**



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.45	23.50	23.48
20	1	49		22.31	22.50	22.62
20	1	99		22.38	22.73	22.88
20	50	0		21.75	21.98	21.91
20	50	24		21.48	21.61	21.72
20	50	50		21.31	21.55	21.68
20	100	0		21.46	21.84	21.77
20	1	0	16-QAM	22.30	22.51	22.49
20	1	49		21.56	21.82	21.78
20	1	99		21.61	22.00	22.14
20	50	0		20.67	20.91	20.87
20	50	24		20.37	20.60	20.65
20	50	50		20.21	20.54	20.68
20	100	0		20.50	20.79	20.83
15	1	0	QPSK	23.15	23.06	23.06
15	1	37		22.42	22.32	22.53
15	1	74		22.60	22.60	22.80
15	36	0		21.86	21.77	21.85
15	36	20		21.65	21.54	21.68
15	36	39		21.67	21.54	21.74
15	75	0		21.67	21.58	21.84
15	1	0	16-QAM	22.43	22.37	22.27
15	1	37		21.65	21.58	21.77
15	1	74		21.81	21.87	22.11
15	36	0		20.86	20.76	20.81
15	36	20		20.66	20.51	20.60
15	36	39		20.65	20.52	20.68
15	75	0		20.70	20.57	20.82



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.09	23.06	23.01
10	1	25		22.93	22.83	23.07
10	1	49		22.88	22.74	23.00
10	25	0		22.04	21.90	22.11
10	25	12		21.91	21.79	22.04
10	25	25		21.89	21.75	21.99
10	50	0		21.90	21.88	22.03
10	1	0	16-QAM	22.42	22.40	22.41
10	1	25		22.26	22.09	22.33
10	1	49		22.07	22.19	22.22
10	25	0		21.06	20.92	21.10
10	25	12		20.92	20.81	21.04
10	25	25		20.86	20.75	20.97
10	50	0		20.88	20.85	21.01
5	1	0	QPSK	22.90	22.75	23.10
5	1	12		22.76	22.61	22.99
5	1	24		22.66	22.58	23.02
5	12	0		21.76	21.70	22.01
5	12	7		21.75	21.63	21.99
5	12	13		21.75	21.60	21.94
5	25	0		21.73	21.62	21.98
5	1	0	16-QAM	22.14	21.97	22.31
5	1	12		21.97	21.90	22.21
5	1	24		21.95	21.86	22.21
5	12	0		20.78	20.69	21.06
5	12	7		20.76	20.61	21.01
5	12	13		20.74	20.58	20.96
5	25	0		20.76	20.64	20.99



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.83	22.73	23.04
3	1	8		22.93	22.65	22.88
3	1	14		22.81	22.53	22.94
3	8	0		21.73	21.66	21.99
3	8	4		21.77	21.64	22.01
3	8	7		21.73	21.60	21.97
3	15	0		21.72	21.59	21.94
3	1	0	16-QAM	22.02	21.94	22.29
3	1	8		22.02	21.94	22.32
3	1	14		21.87	21.86	22.21
3	8	0		20.75	20.72	21.04
3	8	4		20.74	20.68	21.04
3	8	7		20.76	20.66	21.05
3	15	0		20.68	20.61	20.93
1.4	1	0	QPSK	22.82	22.77	23.00
1.4	1	3		22.95	22.78	23.13
1.4	1	5		22.79	22.73	22.94
1.4	3	0		22.71	22.67	22.95
1.4	3	1		22.80	22.74	23.02
1.4	3	3		22.80	22.74	22.97
1.4	6	0		21.73	21.61	21.94
1.4	1	0	16-QAM	22.12	22.07	22.30
1.4	1	3		22.42	21.98	22.36
1.4	1	5		22.02	22.04	22.30
1.4	3	0		21.72	21.68	22.01
1.4	3	1		21.78	21.66	22.10
1.4	3	3		21.89	21.79	22.16
1.4	6	0		20.88	20.72	21.11



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.26	23.49	23.38
20	1	49		22.49	22.52	22.73
20	1	99		22.55	22.64	22.95
20	50	0		21.90	22.07	21.93
20	50	24		21.66	21.58	21.87
20	50	50		21.53	21.60	21.87
20	100	0		21.68	21.84	21.83
20	1	0	16-QAM	22.35	22.49	22.41
20	1	49		21.68	21.71	21.97
20	1	99		21.74	21.92	22.17
20	50	0		20.80	20.84	21.03
20	50	24		20.60	20.50	20.84
20	50	50		20.54	20.58	20.81
20	100	0		20.78	20.68	20.90
15	1	0	QPSK	23.06	23.10	23.21
15	1	37		22.26	22.16	22.36
15	1	74		22.53	22.59	22.73
15	36	0		21.77	21.68	21.82
15	36	20		21.64	21.51	21.76
15	36	39		21.52	21.44	21.64
15	75	0		21.62	21.58	21.81
15	1	0	16-QAM	22.35	22.34	22.40
15	1	37		21.72	21.75	21.67
15	1	74		21.77	21.85	21.97
15	36	0		20.76	20.65	20.80
15	36	20		20.65	20.48	20.73
15	36	39		20.48	20.40	20.58
15	75	0		20.65	20.61	20.77



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.92	23.06	23.19
10	1	25		22.64	22.73	22.93
10	1	49		22.65	22.68	22.86
10	25	0		21.88	21.83	21.89
10	25	12		21.71	21.67	21.91
10	25	25		21.68	21.58	21.92
10	50	0		21.78	21.64	21.94
10	1	0	16-QAM	22.26	22.19	22.45
10	1	25		21.88	21.92	22.03
10	1	49		21.97	22.01	22.26
10	25	0		20.87	20.79	20.88
10	25	12		20.69	20.67	20.88
10	25	25		20.68	20.55	20.90
10	50	0		20.77	20.58	20.89
5	1	0	QPSK	22.82	22.95	23.00
5	1	12		22.71	22.67	22.84
5	1	24		22.50	22.64	22.86
5	12	0		21.68	21.70	21.87
5	12	7		21.68	21.69	21.87
5	12	13		21.59	21.64	21.86
5	25	0		21.67	21.65	21.83
5	1	0	16-QAM	22.08	22.03	22.10
5	1	12		21.97	21.89	22.13
5	1	24		21.79	21.85	22.07
5	12	0		20.69	20.68	20.80
5	12	7		20.68	20.65	20.82
5	12	13		20.59	20.59	20.80
5	25	0		20.69	20.66	20.83



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.70	22.87	23.09
3	1	8		22.77	22.84	22.97
3	1	14		22.67	22.71	22.85
3	8	0		21.72	21.70	21.91
3	8	4		21.70	21.73	21.85
3	8	7		21.58	21.66	21.81
3	15	0		21.65	21.68	21.81
3	1	0	16-QAM	21.90	21.88	22.15
3	1	8		22.07	22.02	22.20
3	1	14		21.87	21.86	22.06
3	8	0		20.77	20.74	20.95
3	8	4		20.68	20.73	20.84
3	8	7		20.63	20.70	20.84
3	15	0		20.64	20.64	20.75
1.4	1	0	QPSK	22.67	22.79	23.02
1.4	1	3		22.70	22.81	22.99
1.4	1	5		22.81	22.67	22.96
1.4	3	0		22.57	22.72	22.84
1.4	3	1		22.71	22.85	22.89
1.4	3	3		22.71	22.79	22.93
1.4	6	0		21.54	21.64	21.84
1.4	1	0	16-QAM	22.15	22.10	22.29
1.4	1	3		21.99	22.00	22.22
1.4	1	5		22.12	21.96	22.29
1.4	3	0		21.64	21.71	21.92
1.4	3	1		21.65	21.72	21.93
1.4	3	3		21.77	21.80	21.96
1.4	6	0		20.66	20.75	20.92



LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.67	22.70	22.60
10	1	25		22.62	22.50	22.30
10	1	49		22.47	22.33	22.06
10	25	0		21.62	21.67	21.35
10	25	12		21.55	21.48	21.30
10	25	25		21.57	21.46	21.21
10	50	0		21.55	21.60	21.32
10	1	0	16-QAM	21.88	21.94	21.80
10	1	25		21.88	21.74	21.54
10	1	49		21.82	21.62	21.43
10	25	0		20.65	20.53	20.35
10	25	12		20.65	20.49	20.27
10	25	25		20.52	20.46	20.18
10	50	0		20.61	20.43	20.28
5	1	0	QPSK	22.60	22.69	22.34
5	1	12		22.64	22.47	22.01
5	1	24		22.49	22.54	21.97
5	12	0		21.64	21.40	21.08
5	12	7		21.69	21.42	21.06
5	12	13		21.66	21.34	21.08
5	25	0		21.67	21.40	21.10
5	1	0	16-QAM	21.82	22.05	21.65
5	1	12		21.92	21.67	21.36
5	1	24		21.80	21.84	21.29
5	12	0		20.61	20.39	20.01
5	12	7		20.67	20.47	19.99
5	12	13		20.62	20.34	20.00
5	25	0		20.72	20.43	20.10





LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.61	22.64	22.00
3	1	8		22.54	22.42	22.06
3	1	14		22.52	22.22	22.01
3	8	0		21.65	21.37	21.11
3	8	4		21.70	21.45	21.18
3	8	7		21.72	21.38	21.10
3	15	0		21.67	21.40	21.21
3	1	0	16-QAM	21.99	21.66	21.34
3	1	8		21.99	22.08	21.72
3	1	14		21.96	21.75	21.33
3	8	0		20.70	20.42	20.16
3	8	4		20.72	20.47	20.20
3	8	7		20.80	20.42	20.16
3	15	0		20.64	20.38	20.18
1.4	1	0	QPSK	22.55	22.50	22.28
1.4	1	3		22.57	22.45	22.25
1.4	1	5		22.66	22.31	22.25
1.4	3	0		22.65	22.41	22.09
1.4	3	1		22.61	22.67	22.19
1.4	3	3		22.58	22.50	22.17
1.4	6	0		21.62	21.30	21.12
1.4	1	0	16-QAM	22.01	22.04	21.65
1.4	1	3		21.92	21.83	21.44
1.4	1	5		21.89	21.65	21.40
1.4	3	0		21.66	21.39	21.16
1.4	3	1		21.67	21.38	21.06
1.4	3	3		21.72	21.46	21.21
1.4	6	0		20.77	20.46	20.23



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.06	23.08	23.20
20	1	49		22.94	22.93	22.95
20	1	99		22.46	22.53	22.65
20	50	0		22.06	22.02	22.17
20	50	24		22.00	21.95	22.09
20	50	50		21.85	21.87	21.92
20	100	0		21.84	21.89	21.98
20	1	0	16-QAM	22.25	22.23	22.23
20	1	49		22.16	22.29	22.43
20	1	99		21.79	21.85	21.94
20	50	0		21.08	21.03	21.14
20	50	24		21.01	21.10	21.23
20	50	50		20.86	20.90	20.92
20	100	0		20.91	20.93	21.01
15	1	0	QPSK	23.07	22.89	23.08
15	1	37		22.91	22.94	22.99
15	1	74		22.71	22.73	22.77
15	36	0		22.05	22.02	22.09
15	36	20		21.99	22.07	22.08
15	36	39		21.81	21.93	21.89
15	75	0		21.96	21.97	21.99
15	1	0	16-QAM	22.40	22.31	22.42
15	1	37		22.18	22.33	22.31
15	1	74		21.97	22.03	22.04
15	36	0		21.08	21.04	21.09
15	36	20		21.01	21.06	21.10
15	36	39		20.84	20.95	20.88
15	75	0		21.02	20.99	21.01



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.01	22.92	23.03
10	1	25		22.90	22.92	23.01
10	1	49		22.63	22.86	22.83
10	25	0		21.86	21.85	21.98
10	25	12		21.89	21.88	21.89
10	25	25		21.75	21.82	21.86
10	50	0		21.83	21.79	21.91
10	1	0	16-QAM	22.39	22.30	22.41
10	1	25		22.26	22.30	22.34
10	1	49		22.00	22.27	22.28
10	25	0		20.91	20.86	21.01
10	25	12		20.92	20.90	20.88
10	25	25		20.76	20.84	20.91
10	50	0		20.88	20.83	20.94
5	1	0	QPSK	23.03	22.92	23.06
5	1	12		23.00	22.90	22.97
5	1	24		22.90	22.79	22.88
5	12	0		21.95	21.84	21.85
5	12	7		21.87	21.81	21.91
5	12	13		21.87	21.77	21.88
5	25	0		21.86	21.81	21.87
5	1	0	16-QAM	22.18	22.08	22.27
5	1	12		22.14	22.02	22.18
5	1	24		22.17	22.09	22.23
5	12	0		21.06	20.99	20.97
5	12	7		20.99	20.93	20.98
5	12	13		20.95	20.87	20.95
5	25	0		20.92	20.81	20.88



LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.20	23.25	23.19
10	1	25		23.19	23.15	23.10
10	1	49		23.12	23.10	22.89
10	25	0		22.29	22.30	22.11
10	25	12		22.28	22.15	22.07
10	25	25		22.23	22.13	22.02
10	50	0		22.24	22.30	22.07
10	1	0	16-QAM	22.69	22.63	22.43
10	1	25		22.60	22.46	22.42
10	1	49		22.53	22.47	22.24
10	25	0		21.28	21.19	21.14
10	25	12		21.29	21.16	21.15
10	25	25		21.23	21.16	21.02
10	50	0		21.25	21.07	21.07
5	1	0	QPSK	23.29	23.19	23.17
5	1	12		23.30	23.04	23.05
5	1	24		23.29	23.17	22.98
5	12	0		22.19	22.04	22.08
5	12	7		22.19	22.13	22.08
5	12	13		22.22	22.10	22.15
5	25	0		22.23	22.10	22.15
5	1	0	16-QAM	22.41	22.41	22.39
5	1	12		22.50	22.35	22.30
5	1	24		22.53	22.39	22.31
5	12	0		21.25	21.07	21.18
5	12	7		21.24	21.22	21.09
5	12	13		21.28	21.21	21.10
5	25	0		21.28	21.24	21.18



LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.26	23.03	23.11
3	1	8		23.03	23.00	23.04
3	1	14		23.24	23.16	22.99
3	8	0		22.20	22.10	22.16
3	8	4		22.27	22.13	22.10
3	8	7		22.27	22.12	22.11
3	15	0	16-QAM	22.18	22.08	22.13
3	1	0		22.40	22.28	22.31
3	1	8		22.54	22.52	22.47
3	1	14		22.51	22.36	22.26
3	8	0		21.29	21.15	21.23
3	8	4		21.30	21.24	21.13
3	8	7	QPSK	20.57	20.54	20.40
3	15	0		20.39	20.36	20.31
1.4	1	0		23.20	23.13	23.13
1.4	1	3		23.38	23.28	23.20
1.4	1	5		23.19	23.23	23.09
1.4	3	0		23.09	23.09	23.01
1.4	3	1	16-QAM	23.35	23.17	23.11
1.4	3	3		23.25	23.07	23.01
1.4	6	0		22.13	22.06	21.94
1.4	1	0		22.50	22.37	22.41
1.4	1	3		22.51	22.47	22.46
1.4	1	5		22.43	22.36	22.32
1.4	3	0	16-QAM	22.08	22.13	22.14
1.4	3	1		22.22	22.13	22.13
1.4	3	3		22.27	22.14	22.06
1.4	6	0		21.30	21.25	21.08



LTE Band 17 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.22	23.29	23.20
10	1	25		23.16	23.19	23.17
10	1	49		23.03	23.01	23.00
10	25	0		22.09	22.10	22.08
10	25	12		22.14	22.16	22.11
10	25	25		22.11	22.05	22.05
10	50	0		22.10	22.14	22.06
10	1	0	16-QAM	22.52	22.62	22.58
10	1	25		22.46	22.49	22.44
10	1	49		22.40	22.37	22.36
10	25	0		21.12	21.15	21.12
10	25	12		21.24	21.19	21.19
10	25	25		21.15	21.08	21.07
10	50	0		21.16	21.10	21.13
5	1	0	QPSK	23.16	23.27	23.13
5	1	12		23.21	23.14	23.01
5	1	24		23.20	23.10	23.06
5	12	0		22.17	22.06	22.06
5	12	7		22.20	22.14	22.07
5	12	13		22.10	22.08	22.04
5	25	0		22.10	22.15	22.08
5	1	0	16-QAM	22.45	22.33	22.42
5	1	12		22.44	22.35	22.31
5	1	24		22.40	22.48	22.34
5	12	0		21.18	21.17	21.12
5	12	7		21.24	21.22	21.06
5	12	13		21.09	21.14	20.98
5	25	0		21.14	21.15	21.07



## **Appendix B. Test Results of Radiated Test**

**ERP/EIRP**



LTE Band 2 / 1.4MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	3	21.83	0.1524	23.25	0.2112
Middle		1	3	21.58	0.1439	23.37	0.2175
Highest		1	3	21.43	0.1389	23.15	0.2064
Lowest	16QAM	1	3	21.12	0.1293	22.51	0.1782
Middle		1	3	20.86	0.1218	22.90	0.1951
Highest		1	3	20.75	0.1188	22.50	0.1780
Limit	EIRP < 2W			Result		PASS	

LTE Band 2 / 3MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	21.84	0.1529	22.98	0.1985
Middle		1	0	21.61	0.1447	23.30	0.2139
Highest		1	0	21.65	0.1463	23.51	0.2246
Lowest	16QAM	1	8	20.74	0.1186	22.26	0.1681
Middle		1	8	20.57	0.1141	22.60	0.1819
Highest		1	8	20.53	0.1131	22.37	0.1728
Limit	EIRP < 2W			Result		PASS	

LTE Band 2 / 5MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	21.99	0.1581	23.46	0.2219
Middle		1	0	21.81	0.1518	23.51	0.2242
Highest		1	0	21.78	0.1507	23.49	0.2234
Lowest	16QAM	1	0	21.07	0.1278	22.48	0.1768
Middle		1	0	21.07	0.1279	22.71	0.1865
Highest		1	0	20.84	0.1214	22.73	0.1877
Limit	EIRP < 2W			Result		PASS	





LTE Band 2 / 10MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	22.12	0.1629	23.27	0.2122
Middle		1	0	22.32	0.1705	23.86	0.2434
Highest		1	0	22.13	0.1634	23.65	0.2320
Lowest	16QAM	1	0	21.53	0.1422	23.17	0.2073
Middle		1	0	21.75	0.1496	23.35	0.2165
Highest		1	0	21.60	0.1445	23.28	0.2127
Limit	EIRP < 2W			Result		PASS	

LTE Band 2 / 15MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	22.40	0.1736	23.88	0.2442
Middle		1	0	22.50	0.1780	24.18	0.2620
Highest		1	0	22.26	0.1683	23.99	0.2505
Lowest	16QAM	1	0	21.43	0.1390	22.99	0.1989
Middle		1	0	21.66	0.1464	23.32	0.2148
Highest		1	0	21.55	0.1428	23.16	0.2068
Limit	EIRP < 2W			Result		PASS	

LTE Band 2 / 20MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	22.62	0.1828	24.12	0.2580
Middle		1	0	22.88	0.1939	24.53	0.2840
Highest		1	0	22.54	0.1796	24.37	0.2736
Lowest	16QAM	1	0	21.63	0.1455	23.27	0.2123
Middle		1	0	22.12	0.1631	23.86	0.2433
Highest		1	0	22.01	0.1587	23.85	0.2426
Limit	EIRP < 2W			Result		PASS	



LTE Band 4 / 1.4MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	21.91	0.1552	22.72	0.1873
Middle		1	0	22.08	0.1616	23.21	0.2094
Highest		1	0	21.74	0.1494	23.02	0.2003
Lowest	16QAM	1	0	21.14	0.1302	22.17	0.1646
Middle		1	0	21.20	0.1319	22.33	0.1711
Highest		1	0	21.00	0.1258	22.11	0.1626
Limit	EIRP < 1W			Result		PASS	

LTE Band 4 / 3MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	21.95	0.1568	23.08	0.2033
Middle		1	0	22.12	0.1628	23.38	0.2177
Highest		1	0	21.87	0.1537	23.07	0.2029
Lowest	16QAM	1	8	21.00	0.1260	22.09	0.1620
Middle		1	8	21.07	0.1279	22.31	0.1703
Highest		1	8	20.94	0.1241	22.17	0.1647
Limit	EIRP < 1W			Result		PASS	

LTE Band 4 / 5MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	21.83	0.1525	23.17	0.2075
Middle		1	0	22.12	0.1628	23.39	0.2185
Highest		1	0	22.11	0.1625	23.25	0.2111
Lowest	16QAM	1	12	20.93	0.1239	22.21	0.1662
Middle		1	12	21.00	0.1258	22.31	0.1703
Highest		1	12	20.96	0.1248	22.18	0.1651
Limit	EIRP < 1W			Result		PASS	



LTE Band 4/ 10MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	22.33	0.1711	23.44	0.2206
Middle		1	0	22.47	0.1766	23.67	0.2326
Highest		1	0	22.16	0.1645	23.51	0.2246
Lowest	16QAM	1	0	21.44	0.1392	22.70	0.1861
Middle		1	0	21.65	0.1461	22.85	0.1926
Highest		1	0	21.40	0.1380	22.77	0.1894
Limit	EIRP < 1W			Result		PASS	

LTE Band 4 / 15MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	21.95	0.1567	23.37	0.2174
Middle		1	0	22.25	0.1677	23.56	0.2268
Highest		1	0	21.73	0.1489	23.53	0.2255
Lowest	16QAM	1	0	21.11	0.1292	22.60	0.1818
Middle		1	0	21.65	0.1462	22.91	0.1956
Highest		1	0	20.98	0.1254	22.46	0.1763
Limit	EIRP < 1W			Result		PASS	

LTE Band 4 / 20MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	22.48	0.1770	23.46	0.2219
Middle		1	0	22.52	0.1788	23.84	0.2424
Highest		1	0	22.58	0.1810	23.78	0.2389
Lowest	16QAM	1	0	21.65	0.1463	22.88	0.1939
Middle		1	0	21.72	0.1486	23.11	0.2049
Highest		1	0	21.66	0.1467	22.84	0.1923
Limit	EIRP < 1W			Result		PASS	



LTE Band 5 / 1.4MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	3	1	9.02	0.0080	17.49	0.0561
Middle		3	1	9.87	0.0097	16.91	0.0491
Highest		3	1	9.92	0.0098	16.96	0.0497
Lowest	16QAM	1	0	8.06	0.0064	16.43	0.0439
Middle		1	0	8.82	0.0076	16.13	0.0410
Highest		1	0	8.99	0.0079	16.12	0.0409
Limit	ERP < 7W			Result		PASS	

LTE Band 5 / 3MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	8.98	0.0079	17.47	0.0558
Middle		1	0	9.84	0.0096	17.15	0.0519
Highest		1	0	9.77	0.0095	16.67	0.0465
Lowest	16QAM	1	8	8.06	0.0064	16.36	0.0433
Middle		1	8	9.04	0.0080	15.96	0.0394
Highest		1	8	8.89	0.0078	16.10	0.0407
Limit	ERP < 7W			Result		PASS	



LTE Band 5 / 5MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	8.93	0.0078	17.39	0.0548
Middle		1	0	9.70	0.0093	16.88	0.0488
Highest		1	0	9.79	0.0095	16.64	0.0461
Lowest	16QAM	1	0	8.11	0.0065	16.54	0.0451
Middle		1	0	8.76	0.0075	16.20	0.0417
Highest		1	0	9.03	0.0080	15.93	0.0392
Limit	ERP < 7W			Result		PASS	

LTE Band 5 / 10MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	8.99	0.0079	17.28	0.0534
Middle		1	0	9.56	0.0090	17.15	0.0518
Highest		1	0	10.10	0.0102	16.98	0.0499
Lowest	16QAM	1	0	8.59	0.0072	16.84	0.0483
Middle		1	0	8.82	0.0076	16.57	0.0454
Highest		1	0	9.60	0.0091	16.56	0.0452
Limit	ERP < 7W			Result		PASS	



LTE Band 7 / 5MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	20.96	0.1248	23.09	0.2038
Middle		1	0	21.80	0.1512	24.03	0.2528
Highest		1	0	22.18	0.1654	24.08	0.2558
Lowest	16QAM	1	0	20.05	0.1011	22.19	0.1656
Middle		1	0	21.00	0.1259	23.04	0.2015
Highest		1	0	21.38	0.1374	23.13	0.2055
Limit	EIRP < 2W			Result		PASS	

LTE Band 7 / 10MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	20.98	0.1253	22.86	0.1933
Middle		1	0	21.79	0.1509	23.90	0.2453
Highest		1	0	22.31	0.1703	24.31	0.2696
Lowest	16QAM	1	0	20.54	0.1132	22.55	0.1801
Middle		1	0	21.12	0.1293	23.47	0.2224
Highest		1	0	21.82	0.1519	23.73	0.2359
Limit	EIRP < 2W			Result		PASS	



LTE Band 7 / 15MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	21.32	0.1356	22.96	0.1979
Middle		1	0	21.91	0.1553	23.79	0.2391
Highest		1	0	22.60	0.1820	24.35	0.2724
Lowest	16QAM	1	0	20.35	0.1083	22.34	0.1715
Middle		1	0	21.23	0.1327	23.09	0.2036
Highest		1	0	21.82	0.1520	23.48	0.2228
Limit	EIRP < 2W			Result		PASS	

LTE Band 7 / 20MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	21.12	0.1293	23.36	0.2169
Middle		1	0	21.52	0.1419	24.03	0.2531
Highest		1	0	22.05	0.1603	24.47	0.2797
Lowest	16QAM	1	49	20.40	0.1096	22.88	0.1940
Middle		1	49	20.98	0.1253	23.33	0.2153
Highest		1	49	21.60	0.1445	23.64	0.2311
Limit	EIRP < 2W			Result		PASS	



LTE Band 7 / 5MHz (Peak)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	25.79	0.3796	27.75	0.5956
Middle		1	0	26.61	0.4578	28.85	0.7676
Highest		1	0	27.21	0.5260	29.19	0.8297
Lowest	16QAM	1	0	25.25	0.3350	27.18	0.5225
Middle		1	0	26.13	0.4106	28.46	0.7013
Highest		1	0	26.37	0.4333	28.40	0.6912
Limit	EIRP < 2W			Result		PASS	

LTE Band 7 / 10MHz (Peak)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	25.90	0.3889	27.98	0.6282
Middle		1	0	26.61	0.4577	28.74	0.7474
Highest		1	0	27.29	0.5361	29.46	0.8824
Lowest	16QAM	1	0	25.46	0.3513	27.45	0.5564
Middle		1	0	26.40	0.4369	28.54	0.7146
Highest		1	0	27.03	0.5043	29.08	0.8090
Limit	EIRP < 2W			Result		PASS	





LTE Band 7 / 15MHz (Peak)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	25.99	0.3973	28.06	0.6398
Middle		1	0	26.55	0.4520	28.95	0.7857
Highest		1	0	27.22	0.5268	29.15	0.8226
Lowest	16QAM	1	0	25.19	0.3300	27.30	0.5366
Middle		1	0	26.01	0.3990	28.30	0.6756
Highest		1	0	26.59	0.4565	28.73	0.7457
Limit	EIRP < 2W			Result		PASS	

LTE Band 7 / 20MHz (Peak)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	25.99	0.3974	28.20	0.6602
Middle		1	0	26.39	0.4352	28.75	0.7491
Highest		1	0	26.86	0.4851	29.18	0.8287
Lowest	16QAM	1	49	25.37	0.3443	27.65	0.5819
Middle		1	49	25.97	0.3957	28.49	0.7062
Highest		1	49	26.46	0.4427	28.78	0.7547
Limit	EIRP < 2W			Result		PASS	



LTE Band 12 / 1.4MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	3	5.29	0.0034	15.41	0.0348
Middle		1	3	6.12	0.0041	15.25	0.0335
Highest		1	3	6.66	0.0046	16.31	0.0428
Lowest	16QAM	1	3	4.38	0.0027	14.48	0.0280
Middle		1	3	5.22	0.0033	14.46	0.0279
Highest		1	3	5.74	0.0037	15.46	0.0352
Limit	ERP < 3W			Result		PASS	

LTE Band 12 / 3MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	5.15	0.0033	15.22	0.0333
Middle		1	0	5.80	0.0038	15.11	0.0324
Highest		1	0	6.52	0.0045	16.00	0.0398
Lowest	16QAM	1	8	4.41	0.0028	14.38	0.0274
Middle		1	8	5.13	0.0033	14.46	0.0279
Highest		1	8	5.37	0.0034	15.32	0.0340
Limit	ERP < 3W			Result		PASS	



LTE Band 12 / 5MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	12	5.27	0.0034	15.12	0.0325
Middle		1	12	5.72	0.0037	15.15	0.0328
Highest		1	12	6.37	0.0043	16.02	0.0400
Lowest	16QAM	1	24	4.66	0.0029	14.29	0.0269
Middle		1	24	5.10	0.0032	14.43	0.0277
Highest		1	24	5.61	0.0036	15.35	0.0342
Limit	ERP < 3W			Result		PASS	

LTE Band 12 / 10MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	5.49	0.0035	15.45	0.0350
Middle		1	0	5.93	0.0039	15.42	0.0349
Highest		1	0	5.91	0.0039	15.12	0.0325
Lowest	16QAM	1	0	4.83	0.0030	14.83	0.0304
Middle		1	0	5.25	0.0034	14.81	0.0303
Highest		1	0	5.21	0.0033	14.51	0.0283
Limit	ERP < 3W			Result		PASS	



LTE Band 17 / 5MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	5.88	0.0039	15.29	0.0338
Middle		1	0	6.16	0.0041	15.42	0.0348
Highest		1	0	6.61	0.0046	15.87	0.0386
Lowest	16QAM	1	24	5.25	0.0034	14.55	0.0285
Middle		1	24	5.58	0.0036	15.00	0.0316
Highest		1	24	5.70	0.0037	15.37	0.0344
Limit	ERP < 3W			Result		PASS	

LTE Band 17 / 10MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	6.09	0.0041	15.43	0.0349
Middle		1	0	6.05	0.0040	15.33	0.0341
Highest		1	0	5.98	0.0040	15.30	0.0339
Lowest	16QAM	1	0	5.17	0.0033	14.70	0.0295
Middle		1	0	5.42	0.0035	14.71	0.0296
Highest		1	0	5.41	0.0035	14.70	0.0295
Limit	ERP < 3W			Result		PASS	