



FCC RF Test Report

APPLICANT : BandRich Inc.
EQUIPMENT : Ruggedized 4G LTE M2M & Vehicle Mount Router
BRAND NAME : BandLuxe
MODEL NAME : K535
FCC ID : UZI-35K888
STANDARD : FCC 47 CFR Part 2, 90(R)
CLASSIFICATION : PCS Licensed Transmitter (PCB)

The product was received on Nov. 02, 2015 and completely tested on Nov. 10, 2015. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 and shown 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.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.



TABLE OF CONTENTS

REVISION HISTORY 3

SUMMARY OF TEST RESULT 4

1 GENERAL DESCRIPTION 5

 1.1 Applicant 5

 1.2 Manufacturer 5

 1.3 Product Feature of Equipment Under Test 5

 1.4 Product Specification subjective to this standard 5

 1.5 Emission Designator 6

 1.6 Testing Site 6

 1.7 Applied Standards 7

2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST 8

 2.1 Test Mode 8

 2.2 Connection Diagram of Test System 9

 2.3 Support Unit used in test configuration and system 9

 2.4 Measurement Results Explanation Example 10

3 CONDUCTED TEST ITEMS 11

 3.1 Measuring Instruments 11

 3.2 Test Setup 11

 3.3 Test Result of Conducted Test 11

 3.4 Conducted Output Power Measurement 12

 3.5 Occupied Bandwidth 13

 3.6 Conducted Band Edge Measurement 14

 3.7 Emission Mask 15

 3.8 Conducted Spurious Emission Measurement 16

 3.9 Frequency Stability Measurement 17

4 RADIATED TEST ITEMS 18

 4.1 Measuring Instruments 18

 4.2 Test Setup 18

 4.3 Test Result of Radiated Test 18

 4.4 Radiated Spurious Emission Measurement 19

 4.5 Effective Radiated Power 20

5 LIST OF MEASURING EQUIPMENT 21

6 UNCERTAINTY OF EVALUATION 22

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
FG5N0203C	Rev. 01	Initial issue of report	Nov. 20, 2015



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting only	PASS	-
3.5	§2.1049	Occupied Bandwidth	Reporting only	PASS	-
3.6	§2.1053 §90.543 (e)(2)(3)	Conducted Band Edge Measurement	Refer standard	PASS	-
3.7	§2.1051 §90.210(n)	Emission Mask	Mask B	PASS	-
3.8	§2.1053 §90.543 (e)(3)	Conducted Spurious Emission	$< 43+10\log_{10}(P[\text{Watts}])$	PASS	-
3.9	§2.1055 §90.539 (e)	Frequency Stability Temperature & Voltage	$< \pm 1.25 \text{ ppm}$	PASS	-
4.4	§2.1053 §90.543 (e)(3) §90.543 (f)	Radiated Spurious Emission	$< 43+10\log_{10}(P[\text{Watts}])$	PASS	Under limit 14.74 dB at 1576.000 MHz
4.5	§90.542 (a)(7)	Effective Radiated Power	ERP < 3Watt	PASS	-

1 General Description

1.1 Applicant

BandRich Inc.

6F-2., No. 71, Zhouzi St., Neihu Dist., Taipei City 11493, Taiwan (R.O.C.)

1.2 Manufacturer

FAIR GOAL ELECTRONIC CO.

1F., No. 97-1, Haihu, Luzhu Township, Taoyuan County 338, Taiwan (R.O.C.)

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Ruggedized 4G LTE M2M & Vehicle Mount Router
Brand Name	BandLuxe
Model Name	K535
FCC ID	UZI-35K888
Integrated WWAN Module	Brand Name: BandLuxe Model Name: M535
EUT supports Radios application	WCDMA/HSPA/LTE WLAN 11b/g/n HT20
HW Version	K1813ME011
EUT Stage	Identical Prototype

1.4 Product Specification subjective to this standard

Product Specification subjective to this standard	
Tx Frequency	LTE Band 14: 790.5 MHz ~ 795.5 MHz
Rx Frequency	LTE Band 14: 760.5 MHz ~ 765.5 MHz
Bandwidth	LTE Band 14 : 5MHz / 10MHz
Maximum Output Power to Antenna	LTE Band 14 : 22.50 dBm
Antenna Gain	LTE Band 14 : 1.00 dBi
Type of Modulation	QPSK / 16QAM

1.5 Emission Designator

LTE Band 14	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	4M51G7D	-	0.1365	4M52W7D	-	0.1076
10	9M05G7D	0.0117	0.1365	8M97W7D	-	0.1081

1.6 Testing Site

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No. 52, Hwa Ya 1 st 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. TH05-HY

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Guishan Dist, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. 03CH10-HY

Note: The test site complies with ANSI C63.4 2009 requirement.



1.7 Applied Standards

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

- ♦ 47 CFR Part 2, Part 90(R)
- ♦ ANSI / TIA / EIA-603-C-2004
- ♦ FCC KDB 971168 Measurement Guidance of 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

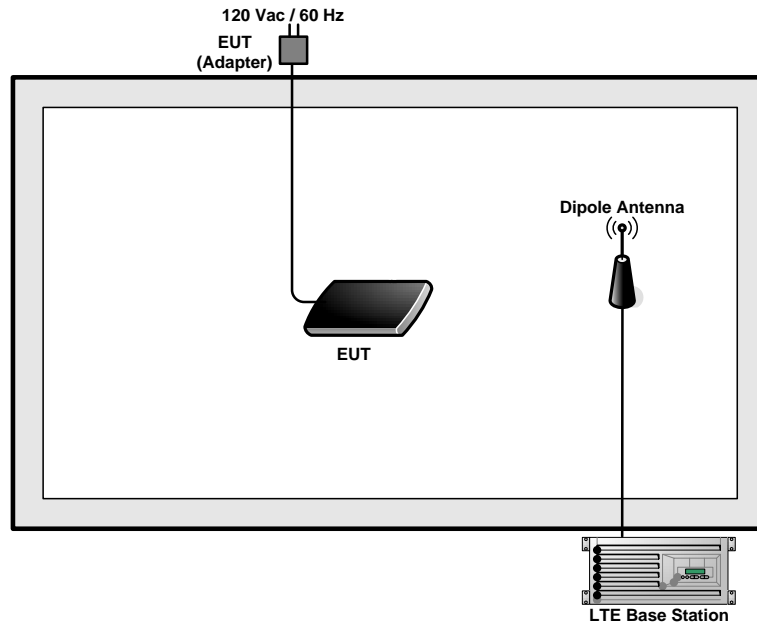
2.1 Test Mode

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range.

Frequency range investigated for radiated emission: 30MHz to 10th harmonic.

Conducted Test Cases	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	14	-	-	V		-	-	V	V	V	V	V	V	V	V
	14	-	-		V	-	-	V	V	V	V	V		V	
26dB and 99% Bandwidth	14	-	-	V		-	-	V	V			V	V	V	V
	14	-	-		V	-	-	V	V			V		V	
Conducted Band Edge	14	-	-	V		-	-	V	V	V		V	V		V
	14	-	-		V	-	-	V	V	V		V		V	
Emission Mask	14	-	-	V		-	-	V	V	V		V	V	V	V
	14	-	-		V	-	-	V	V	V		V		V	
Conducted Spurious Emission	14	-	-	V		-	-	V	V	V			V	V	V
	14	-	-		V	-	-	V	V	V				V	
Frequency Stability	14	-	-		V	-	-	V	V			V		V	
E.R.P	14	-	-	V		-	-	V	V	V			V	V	V
	14	-	-		V	-	-	V	V	V				V	
Radiated Spurious Emission	14	-	-	V		-	-	V	V	V			V	V	V
	14	-	-		V	-	-	V	V	V				V	
Note	<ol style="list-style-type: none"> The mark "v " means that this configuration is chosen for testing The mark "- " means that this bandwidth is not supported. 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. 														

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.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	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 4.5 dB and 10dB attenuator.

Example :

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\ &= 4.5 + 10 = 14.5 \text{ (dB)} \end{aligned}$$

3 Conducted Test Items

3.1 Measuring Instruments

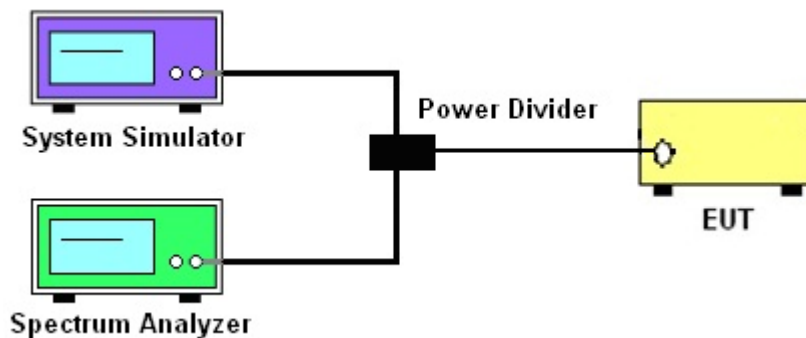
See list of measuring instruments of this test report.

3.2 Test Setup

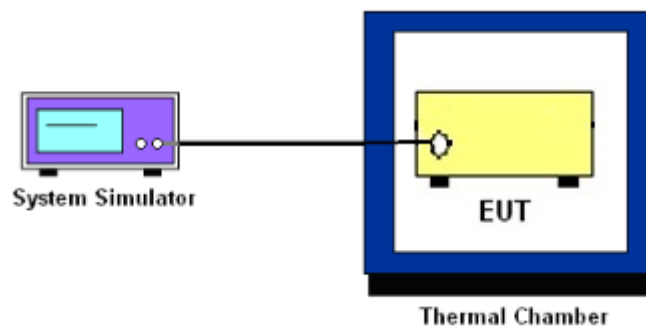
3.2.1 Conducted Output Power



3.2.2 Occupied / 26dB Bandwidth ,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 Measurement

3.4.1 Description of the Conducted Output Power Measurement

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. 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 base station.
2. Set EUT at maximum power through base station.
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 Occupied Bandwidth

3.5.1 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.

3.5.2 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.

3.6 Conducted Band Edge Measurement

3.6.1 Description of Conducted Band Edge Measurement

For operations in the 758-768 MHz and the 788-798 MHz bands

- (1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations.
- (2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.
- (3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log (P)$ dB.

3.6.2 Test Procedures

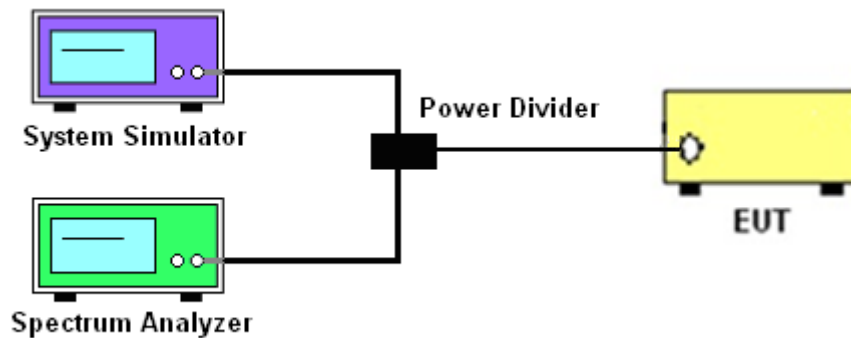
1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. Set spectrum analyzer with RMS detector.
3. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
4. The limit line is derived from $43 + 10 \log(P)$ dB below the transmitter power P(Watts)
= $P(W) - [43 + 10 \log(P)]$ (dB)
= $[30 + 10 \log(P)]$ (dBm) - $[43 + 10 \log(P)]$ (dB)
= -13dBm.

3.7 Emission Mask

3.7.1 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 power of the modulated signal was measured on a spectrum analyzer using an RMS and 10 second sweep time in order to maximize the level.
4. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.7.2 Test Setup



3.8 Conducted Spurious Emission Measurement

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.

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

3.8.2 Test Procedures

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. 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.
3. The middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. Make the measurement with the spectrum analyzer's, for under 1GHz RBW = 100kHz, VBW = 300kHz and for above 1GHz RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
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. 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)
 $= -13\text{dBm}$.



3.9 Frequency Stability Measurement

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 ± 1.25 ppm of the center frequency.

3.9.2 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°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 EUT was placed in a temperature chamber at $25\pm 5^{\circ}\text{C}$ and connected with the base station.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

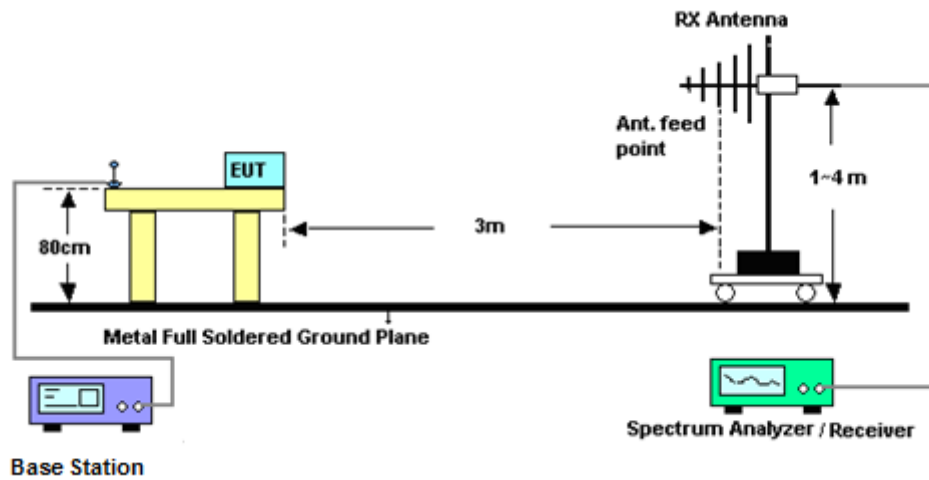
4 Radiated Test Items

4.1 Measuring Instruments

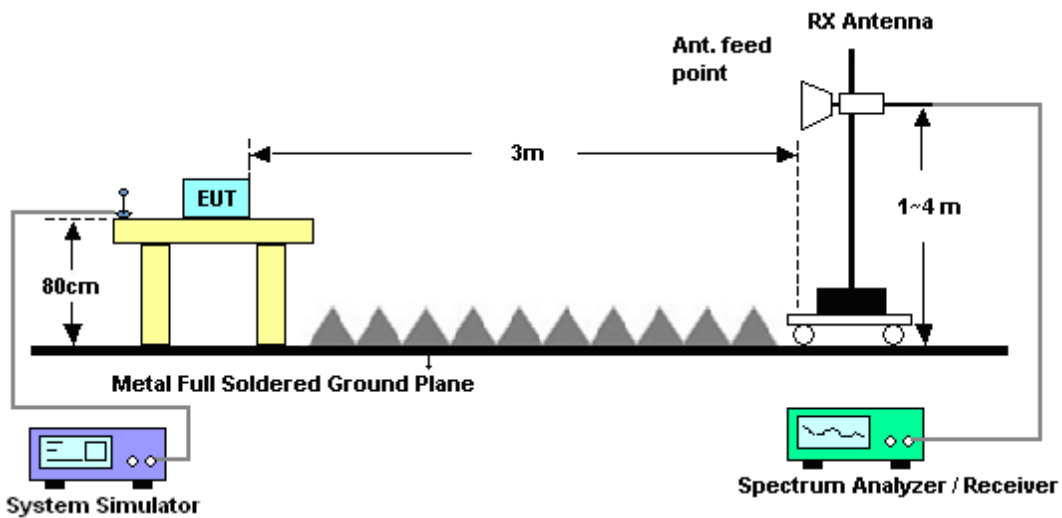
See list of measuring instruments of this test report.

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 Radiated Spurious Emission Measurement

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004.

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 operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics 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. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

4.4.2 Test Procedures

1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. 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.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. 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)
 $= -13$ dBm.

11. $EIRP$ (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
 ERP (dBm) = $EIRP - 2.15$

4.5 Effective Radiated Power

4.5.1 Description of the ERP Measurement

Effective radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-C-2004, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r02. The ERP of mobile transmitters must not exceed 3 Watts for Part90R.

4.5.2 Test Procedures

12. 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.
13. 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.
14. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. 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



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
LTE Base Station	Anritsu	MT8820C	6201432821	GSM/GPRS /WCDMA/LTE	Oct. 16, 2015	Nov. 07, 2015 ~ Nov. 09, 2015	Oct. 15, 2016	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Sep. 11, 2015	Nov. 07, 2015 ~ Nov. 09, 2015	Sep. 10 2016	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-30 ~70 degree	Dec. 04, 2014	Nov. 07, 2015 ~ Nov. 09, 2015	Dec. 03, 2015	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890089	1V~20V 0.5A~5A	Jan. 14, 2015	Nov. 07, 2015 ~ Nov. 09, 2015	Jan. 13, 2016	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890094	1V~20V 0.5A~5A	Oct. 12, 2015	Nov. 07, 2015 ~ Nov. 09, 2015	Oct. 11, 2016	Conducted (TH05-HY)
Amplifier	SONOMA	310N	187311	9kHz~1GHz	Nov. 24, 2014	Nov. 05, 2015 ~ Nov. 10, 2015	Nov. 23, 2015	Radiation (03CH10-HY)
Bilog Antenna	TESEQ	CBL 6111D	35413	30MHz~1GHz	Oct. 31, 2015	Nov. 05, 2015 ~ Nov. 10, 2015	Oct. 30, 2016	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1325	1GHz ~ 18GHz	Sep. 30, 2015	Nov. 05, 2015 ~ Nov. 10, 2015	Sep. 29, 2016	Radiation (03CH10-HY)
Preamplifier	Keysight	83017A	MY53270078	1GHz~26.5GHz	Nov. 20, 2014	Nov. 05, 2015 ~ Nov. 10, 2015	Nov. 19, 2015	Radiation (03CH10-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200485	10Hz ~ 44GHZ	Oct. 15, 2015	Nov. 05, 2015 ~ Nov. 10, 2015	Oct. 14, 2016	Radiation (03CH10-HY)
Antenna Mast	EMEC	AM-BS-450 0-B	N/A	1~4m	N/A	Nov. 05, 2015 ~ Nov. 10, 2015	N/A	Radiation (03CH10-HY)
Turn Table	EMEC	TT 2200	N/A	0-360 degree	N/A	Nov. 05, 2015 ~ Nov. 10, 2015	N/A	Radiation (03CH10-HY)



6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Levxel of Confidence of 95% ($U = 2Uc(y)$)	4.90
--	------



Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 14 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.50	22.03	22.05
5	1	12		22.07	21.69	21.63
5	1	24		21.71	22.28	22.27
5	12	0		21.39	20.92	20.97
5	12	7		21.16	20.87	20.92
5	12	13		21.01	21.05	21.09
5	25	0		21.09	21.03	21.06
5	1	0	16-QAM	21.47	21.07	21.05
5	1	12		21.11	20.69	20.71
5	1	24		20.80	21.28	21.29
5	12	0		20.45	20.00	20.00
5	12	7		20.18	19.94	19.95
5	12	13		20.00	20.08	20.10
5	25	0		20.12	20.01	20.03
10	1	0	QPSK		22.50	
10	1	25			21.82	
10	1	49			21.91	
10	25	0			21.50	
10	25	12			21.14	
10	25	25			21.32	
10	50	0			21.25	
10	1	0	21.49			
10	1	25	20.85			
10	1	49	21.27			
10	25	0	20.21			
10	25	12	20.08			
10	25	25	20.38			
10	50	0	20.21			
			16-QAM			

Appendix B. Test Results of Radiated Test

ERP

LTE Band 14 / 5MHz						
Modes	QPSK			16QAM		
Channel	23305 (Low)	23330 (Mid)	23355 (High)	23305 (Low)	23330 (Mid)	23355 (High)
Frequency (MHz)	790.5	793	795.5	790.5	793	795.5
Conducted Power P _T (dBm)	22.5	22.28	22.27	21.47	21.28	21.29
Conducted Power P _T (Watts)	0.18	0.17	0.17	0.14	0.13	0.13
ERP(dBm)	21.35	21.13	21.12	20.32	20.13	20.14
ERP(Watts)	0.1365	0.1297	0.1294	0.1076	0.1030	0.1033

LTE Band 14 / 10MHz		
Modes	QPSK	16QAM
Channel	23330 (Mid)	23330 (Mid)
Frequency (MHz)	793	793
Conducted Power P _T (dBm)	22.5	21.49
Conducted Power P _T (Watts)	0.18	0.14
ERP(dBm)	21.35	20.34
ERP(Watts)	0.1365	0.1081



Field Strength of Spurious Radiated

LTE Band 14/ 5MHz									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1576	-56.89	-42.15	-14.74	-67.01	-58.88	0.95	5.09	H
	2368	-54.87	-13	-41.87	-68.01	-56.47	1.25	5.00	H
	3152	-58.42	-13	-45.42	-75.74	-61.24	1.50	6.47	H
	1576	-60.24	-42.15	-18.09	-68.39	-62.23	0.95	5.09	V
	2368	-51.87	-13	-38.87	-66.66	-53.47	1.25	5.00	V
	3152	-59.77	-13	-46.77	-75.58	-62.59	1.50	6.47	V
Middle	1584	-58.07	-42.15	-15.92	-68.12	-60.04	0.95	5.06	H
	2376	-54.31	-13	-41.31	-67.37	-55.94	1.25	5.03	H
	3168	-58.55	-13	-45.55	-75.68	-61.44	1.50	6.54	H
	1584	-61.13	-42.15	-18.98	-69.29	-63.1	0.95	5.06	V
	2376	-51.70	-13	-38.70	-66.33	-53.33	1.25	5.03	V
	3168	-59.59	-13	-46.59	-75.66	-62.48	1.50	6.54	V
Highest	1584	-57.82	-42.15	-15.67	-68.04	-59.79	0.95	5.06	H
	2384	-54.70	-13	-41.70	-67.7	-56.35	1.25	5.05	H
	3168	-58.22	-13	-45.22	-75.41	-61.11	1.50	6.54	H
	1584	-61.51	-42.15	-19.36	-69.64	-63.48	0.95	5.06	V
	2384	-51.50	-13	-38.50	-66.2	-53.15	1.25	5.05	V
	3168	-59.85	-13	-46.85	-75.68	-62.74	1.50	6.54	V

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



LTE Band 14/ 10MHz									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1576	-57.03	-42.15	-14.88	-67.08	-59.02	0.95	5.09	H
	2368	-55.04	-13	-42.04	-68.15	-56.64	1.25	5.00	H
	3152	-58.64	-13	-45.64	-75.78	-61.46	1.50	6.47	H
	1576	-60.01	-42.15	-17.86	-68.17	-62	0.95	5.09	V
	2368	-52.56	-13	-39.56	-67.34	-54.16	1.25	5.00	V
	3152	-59.79	-13	-46.79	-75.57	-62.61	1.50	6.47	V

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