



# FCC RADIO TEST REPORT

FCC ID : QISLYA-L0C  
Equipment : Smart Phone  
Brand Name : HUAWEI  
Model Name : LYA-L0C  
Applicant : Huawei Technologies Co., Ltd.  
Administration Building, Headquarters of Huawei  
Technologies Co., Ltd., Bantian, Longgang District,  
Shenzhen, 518129, P.R.C  
Manufacturer : Huawei Technologies Co., Ltd.  
Administration Building, Headquarters of Huawei  
Technologies Co., Ltd., Bantian, Longgang District,  
Shenzhen, 518129, P.R.C  
Standard : FCC 47 CFR Part 2, and 90(S)

The product was received on Aug. 17, 2018 and testing was started from Aug. 31, 2018 and completed on Aug. 31, 2018. We, Sporton International (Shenzhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

*Eric Shih*



Approved by: Eric Shih / Manager

**Sporton International (Shenzhen) Inc.**

**1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan Shenzhen City  
Guangdong Province 518055 China**



## Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
<b>1 General Description .....</b>	<b>5</b>
1.1 Feature of Equipment Under Test.....	5
1.2 Table for Multiple Listing .....	7
1.3 Product Specification of Equipment Under Test .....	11
1.4 Modification of EUT .....	11
1.5 Testing Site.....	11
1.6 Applied Standards .....	12
<b>2 Test Configuration of Equipment Under Test .....</b>	<b>13</b>
2.1 Test Mode.....	13
2.2 Connection Diagram of Test System .....	13
2.3 Support Unit used in test configuration and system.....	13
2.4 Frequency List of Low/Middle/High Channels.....	14
2.5 Field Strength of Spurious Radiation Measurement .....	15
<b>3 List of Measuring Equipment.....</b>	<b>17</b>
<b>4 Uncertainty of Evaluation .....</b>	<b>18</b>
<b>Appendix A. Test Results of Radiated Test</b>	





### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	§2.1046 §90.635	Conducted Output Power and Effective Radiated Power	Not Required	-
-	-	Peak-to-Average Ratio	Not Required	-
-	§2.1049 §90.209	Occupied Bandwidth and 26dB Bandwidth	Not Required	-
-	§2.1051 §90.691	Emission masks – In-band emissions	Not Required	-
-	§2.1051 §90.691	Emission masks – Out of band emissions	Not Required	-
-	§2.1055 §90.213	Frequency Stability for Temperature & Voltage	Not Required	-
2.5	§2.1053 §90.691	Field Strength of Spurious Radiation	Pass	Under limit 47.58 dB at 2457.750 MHz

**Remark:**

1. Not required means after assessing, test items are not necessary to carry out.
2. This is a variant report which can be referred to the Table for Multiple Listing. All the test cases were performed on original report which can be referred to Sporton Report Number FG880204B. Based on the original report, the Field Strength of Spurious Radiation test case was verified.

**Reviewed by: Wii Chang**

**Report Producer: Polly Tsai**



# 1 General Description

## 1.1 Feature of Equipment Under Test

Product Feature	
Equipment	Smart Phone
Brand Name	HUAWEI
Model Name	LYA-LOC
FCC ID	QISLYA-L0C
EUT supports Radios application	GSM/WCDMA/HSPA/LTE/NFC/GNSS/WPC WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80/VHT160 Bluetooth BR/EDR/LE
HW Version	HL2LAYAM
SW Version	5.0.1.82(C792E4R1P9log)
EUT Stage	Identical Prototype



Accessories Information				
AC Adapter 1	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-100400U00
	Manufacturer	Huawei Technologies Co., Ltd.		
	Power Rating	I/P: 100 - 240 Vac~50/60Hz, 1.2 A; O/P: 5V === 2A or 9V === 2A or 10V === 4A		
AC Adapter 2	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-100400E00
	Manufacturer	Huawei Technologies Co., Ltd.		
	Power Rating	I/P: 100 - 240 Vac~50/60Hz, 1.2 A; O/P: 5V === 2A or 9V === 2A or 10V === 4A		
AC Adapter 3	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-100400B00
	Manufacturer	Huawei Technologies Co., Ltd.		
	Power Rating	I/P: 100 - 240 Vac~50/60Hz, 1.2 A; O/P: 5V === 2A or 9V === 2A or 10V === 4A		
AC Adapter 4	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-100400A00
	Manufacturer	Huawei Technologies Co., Ltd.		
	Power Rating	I/P: 100 - 240 Vac~50/60Hz, 1.2 A; O/P: 5V === 2A or 9V === 2A or 10V === 4A		
Battery 1	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HB486486ECW
	Power Rating	Nominal Voltage: ===+3.82Vdc Charging Voltage: ===+4.4V Rated Capacity: 4100mAh	Type	Li-ion Polymer
Battery 2	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HB486486ECW
	Power Rating	Nominal Voltage: ===+3.82Vdc Charging Voltage: ===+4.4V Rated Capacity: 4100mAh	Type	Li-ion Polymer
Battery 3	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HB486486ECW
	Power Rating	Nominal Voltage: ===+3.82Vdc Charging Voltage: ===+4.4V Rated Capacity: 4100mAh	Type	Li-ion Polymer
Earphone 1	Brand Name	Jiangxi Lianchuang Hongsheng Electronic Co. ,LTD		
	Model Name	MEND1632B729003		
Earphone 2	Brand Name	GoerTek Inc.		
	Model Name	Windy-S		
Earphone 3	Brand Name	Boluo County Quancheng Electronic Co., ltd		
	Model Name	1331-3301-6001-TC-088		
Earphone 4	Brand Name	Foster Electric Co.,(GuangZhou)LTD.Sales Dep.		
	Model Name	630276		

Note: Regarding to more detail and other information, please refer to user manual.



## 1.2 Table for Multiple Listing

The brand/model names in the following table are all refer to the identical product.

Model	LYA-L29	LYA-L0C																						
PCB	The same	The same																						
Frequency-GSM	The same	The same																						
Frequency-WCDMA	The same	The same																						
Frequency-LTE	Different B2/4/5/7/12/17/38/40/41 (2545~2655MHz , support AXGP)	Different B2/4/5/7/12/17/38/40/41 (2545~2655MHz , support AXGP)/B66																						
4*4 Mimo	Different Support B3、 B7、 B1	Different Support B2、 B7、 B66(B4) Replace TRI SAW filters of B1/B3/B7 with SAW filters of B2/B66/B7. Replace																						
SIM Card	Dual	Single																						
RF NV parameters	Different	<p>Different</p> <p>The power of LYA-L0C is different from LYA-L29 by change RF NV parameters.</p> <ul style="list-style-type: none"> <li>Down antenna ( Primary )               <ul style="list-style-type: none"> <li>① 0mm body Scenario                   <table border="1" style="margin-left: 20px;"> <tr> <td></td> <td>WB2</td> <td>WB4</td> <td>LTEB2</td> <td>LTEB4</td> </tr> <tr> <td>reduce</td> <td>0.5dB</td> <td>0.5dB</td> <td>0.5dB</td> <td>1.5dB</td> </tr> </table> </li> <li>② 10mm hotspot Scenario                   <table border="1" style="margin-left: 20px;"> <tr> <td></td> <td>LTEB4</td> </tr> <tr> <td>reduce</td> <td>0.5dB</td> </tr> </table> </li> </ul> </li> <li>Up antenna (Secondary)               <p>Head Scenario</p> <table border="1" style="margin-left: 20px;"> <tr> <td></td> <td>WB2</td> <td>WB4</td> <td>LTEB2</td> </tr> <tr> <td>rise</td> <td>1dB</td> <td>1dB</td> <td>1dB</td> </tr> </table> </li> </ul>		WB2	WB4	LTEB2	LTEB4	reduce	0.5dB	0.5dB	0.5dB	1.5dB		LTEB4	reduce	0.5dB		WB2	WB4	LTEB2	rise	1dB	1dB	1dB
	WB2	WB4	LTEB2	LTEB4																				
reduce	0.5dB	0.5dB	0.5dB	1.5dB																				
	LTEB4																							
reduce	0.5dB																							
	WB2	WB4	LTEB2																					
rise	1dB	1dB	1dB																					



<p>Hardware</p>	<p>Different Location ID: Z4102, Z4302, Z4401 Description: B1/3/7 Tri saw filter, 2140MHz.  Location ID: Z4103 Description: SAW filter -1960MHz</p>	<p>Different 1) Replace TRI SAW filters of B1/B3/B7 with SAW filters of B2/B66/B7. Replace Location ID: Z4102, Z4302, Z4401 Description: B2/B66/B7 Tri saw filter, 2655MHz. 2) Delete some chip inductors in Peripheral RF Matching circuits of the diversity circuit, MIMO main circuit, and MIMO diversity circuit. Delete Location ID: L4126 L4127 L4130 L3506 Description: Chip inductor 0.018uH/0.001uH/0.0022uH/0.0039uH 3) Delete The circuits related to the B32 frequency band. Delete: Location ID: Z3502, Z4104 Description: B32 saw filter 1474MHz Location ID: C3512, C5401, C5405 Description: Ceramic capacitor 0.033nF Location ID: Z5403 Description: Ceramic filter -1710MHz Location ID: U3503, U4101 Description: RF low noise amplifier -1559~1610MHz 4) Replace B3 SAW filter with B2 SAW filter and slight change of Peripheral RF matching circuits. Replace: Location ID: Z4103 Description: SAW filter -1842.5MHz Delete: Location ID: L3502 L3516 L4129 Description: Chip inductor 0.0056uH/0.002uH/0.0075uH Location ID: C3514, C4110 Description: Ceramic capacitor 0.018nF</p>
<p>Software</p>	<p>Different</p>	<p>Different</p>
<p>Dimensions</p>	<p>The same</p>	<p>The same</p>





Appearance	The same	The same
main antenna	The same	The same
BT/Wi-Fi antenna	The same	The same
DIV antenna	The same	The same
Supported CA configurations for DL CA	<p>Different</p> <p>support:CA_1A-3A CA_1C-3A CA_1A-3C  CA_1A-3A-3A CA_1C-3C CA_1A-3D CA_1C-3D  CA_1A-7A-7A CA_1A-32A CA_1A-38A CA_1A-38C  CA_1A-40A CA_1A-40C CA_1A-41A CA_1A-41C  CA_3A-3A-7A CA_3A-7A-7A CA_3A-3A-7A-7A  CA_3A-3A-8A CA_3A-32A CA_3C-32A CA_3A-38A  CA_3C-38A CA_3A-38C CA_3C-38C CA_3A-40A  CA_3A-40C CA_3A-40D CA_3A-41A CA_7A-7A-8A  CA_7A-32A CA_8A-32A CA_20A-32A CA_1A-3A-5A  CA_1A-3C-5A CA_1A-3A-7A CA_1C-3A-7A  CA_1A-3C-7A CA_1A-3A-3A-7A CA_1A-3A-7C  CA_1A-3A-7A-7A CA_1C-3C-7A  CA_1A-3A-3A-7A-7A CA_1A-3A-8A CA_1A-3C-8A  CA_1A-3A-19A CA_1A-3A-20A CA_1A-3C-20A  CA_1A-3A-26A CA_1A-3A-28A CA_1A-3C-28A  CA_1A-3A-32A CA_1A-3A-38A CA_1A-3C-38A  CA_1A-3A-38C CA_1A-3C-38C CA_1A-28A-40C  CA_3A-3A-7A-8A CA_3A-7A-7A-8A  CA_3A-3A-7A-7A-8A CA_3A-3A-7A-20A  CA_3A-7A-32A CA_3C-7A-32A CA_3A-8A-38A  CA_3C-8A-38A CA_3A-20A-32A CA_3A-28A-40A  CA_3A-28A-40C CA_3A-28A-40D CA_7A-8A-32A  CA_7A-20A-32A CA_1A-3A-7A-8A CA_1A-3C-7A-8A  CA_1A-3A-7A-20A CA_1A-3C-7A-20A  CA_1A-3A-7A-28A CA_1A-3A-7C-28A  CA_1A-3A-7A-32A CA_1A-3A-8A-38A  CA_1A-3A-20A-32A CA_1A-3A-28A-40A  CA_1A-3A-28A-40C CA_1A-7A-20A-32A  CA_3A-7A-20A-32A CA_1A-3A-7A-20A-32A</p> <p>unsupport:CA_66B CA_66C CA_66D CA_2A-2A</p>	<p>Different</p> <p>unsupport:CA_1A-3A CA_1C-3A CA_1A-3C  CA_1A-3A-3A CA_1C-3C CA_1A-3D CA_1C-3D  CA_1A-7A-7A CA_1A-32A CA_1A-38A CA_1A-38C  CA_1A-40A CA_1A-40C CA_1A-41A CA_1A-41C  CA_3A-3A-7A CA_3A-7A-7A CA_3A-3A-7A-7A  CA_3A-3A-8A CA_3A-32A CA_3C-32A CA_3A-38A  CA_3C-38A CA_3A-38C CA_3C-38C CA_3A-40A  CA_3A-40C CA_3A-40D CA_3A-41A CA_7A-7A-8A  CA_7A-32A CA_8A-32A CA_20A-32A CA_1A-3A-5A  CA_1A-3C-5A CA_1A-3A-7A CA_1C-3A-7A  CA_1A-3C-7A CA_1A-3A-3A-7A CA_1A-3A-7C  CA_1A-3A-7A-7A CA_1C-3C-7A  CA_1A-3A-3A-7A-7A CA_1A-3A-8A CA_1A-3C-8A  CA_1A-3A-19A CA_1A-3A-20A CA_1A-3C-20A  CA_1A-3A-26A CA_1A-3A-28A CA_1A-3C-28A  CA_1A-3A-32A CA_1A-3A-38A CA_1A-3C-38A  CA_1A-3A-38C CA_1A-3C-38C CA_1A-28A-40C  CA_3A-3A-7A-8A CA_3A-7A-7A-8A  CA_3A-3A-7A-7A-8A CA_3A-3A-7A-20A  CA_3A-7A-32A CA_3C-7A-32A CA_3A-8A-38A  CA_3C-8A-38A CA_3A-20A-32A CA_3A-28A-40A  CA_3A-28A-40C CA_3A-28A-40D CA_7A-8A-32A  CA_7A-20A-32A CA_1A-3A-7A-8A CA_1A-3C-7A-8A  CA_1A-3A-7A-20A CA_1A-3C-7A-20A  CA_1A-3A-7A-28A CA_1A-3A-7C-28A  CA_1A-3A-7A-32A CA_1A-3A-8A-38A  CA_1A-3A-20A-32A CA_1A-3A-28A-40A  CA_1A-3A-28A-40C CA_1A-7A-20A-32A  CA_3A-7A-20A-32A CA_1A-3A-7A-20A-32A</p> <p>support:CA_66B CA_66C CA_66D CA_2A-2A  CA_4A-4A CA_12A-12A CA_66A-66A CA_2A-4A</p>



	<p>CA_4A-4A CA_12A-12A CA_66A-66A CA_2A-4A  CA_2C-4A CA_2A-4A-4A CA_2A-5A CA_2A-7A  CA_2A-7C CA_2A-7A-7A CA_2A-12A  CA_2A-2A-12A CA_2A-12B CA_2A-12A-12A  CA_2A-17A CA_2A-28A CA_2A-66A CA_2A-2A-66A  CA_4A-5A CA_4A-4A-5A CA_4A-7A CA_4A-4A-7A  CA_4A-7C CA_4A-7A-7A CA_4A-12A  CA_4A-4A-12A CA_4A-12B CA_4A-12A-12A  CA_4A-17A CA_4A-28A CA_7A-12A CA_7A-12B  CA_7A-12A-12A CA_7A-66A CA_7C-66A  CA_7A-66A-66A CA_7C-66A-66A CA_12A-66A  CA_12B-66A CA_12A-66A-66A CA_2A-4A-5A  CA_2A-4A-7A CA_2A-4A-7C CA_2A-4A-7A-7A  CA_2A-4A-12A CA_2A-4A-12A-12A CA_2A-4A-28A  CA_2A-7A-12A CA_2A-7A-12B CA_2A-7A-12A-12A  CA_2A-7A-66A CA_2A-12A-66A CA_2A-2A-12A-66A  CA_2A-12B-66A CA_4A-5A-7A CA_4A-7A-12A  CA_4A-7A-12B CA_4A-7A-12A-12A  CA_7A-12A-66A CA_7A-12B-66A CA_2A-4A-7A-12A  CA_2A-7A-12A-66A CA_2A-7A-12B-66A  CA_2A-7A-7A-66A-66A CA_2A-7A-7A-66A  CA_2A-7A-66A-66A CA_7A-7A-66A  CA_7A-7A-66A-66A CA_2A-66A-66A</p>	<p>CA_2C-4A CA_2A-4A-4A CA_2A-5A CA_2A-7A  CA_2A-7C CA_2A-7A-7A CA_2A-12A  CA_2A-2A-12A CA_2A-12B CA_2A-12A-12A  CA_2A-17A CA_2A-28A CA_2A-66A CA_2A-2A-66A  CA_4A-5A CA_4A-4A-5A CA_4A-7A CA_4A-4A-7A  CA_4A-7C CA_4A-7A-7A CA_4A-12A  CA_4A-4A-12A CA_4A-12B CA_4A-12A-12A  CA_4A-17A CA_4A-28A CA_7A-12A CA_7A-12B  CA_7A-12A-12A CA_7A-66A CA_7C-66A  CA_7A-66A-66A CA_7C-66A-66A CA_12A-66A  CA_12B-66A CA_12A-66A-66A CA_2A-4A-5A  CA_2A-4A-7A CA_2A-4A-7C CA_2A-4A-7A-7A  CA_2A-4A-12A CA_2A-4A-12A-12A CA_2A-4A-28A  CA_2A-7A-12A CA_2A-7A-12B CA_2A-7A-12A-12A  CA_2A-7A-66A CA_2A-12A-66A CA_2A-2A-12A-66A  CA_2A-12B-66A CA_4A-5A-7A CA_4A-7A-12A  CA_4A-7A-12B CA_4A-7A-12A-12A  CA_7A-12A-66A CA_7A-12B-66A CA_2A-4A-7A-12A  CA_2A-7A-12A-66A CA_2A-7A-12B-66A  CA_2A-7A-7A-66A-66A CA_2A-7A-7A-66A  CA_2A-7A-66A-66A CA_7A-7A-66A  CA_7A-7A-66A-66A CA_2A-66A-66A</p>
Supported CA configurations for UL CA	Different support:CA_3A-20A CA_7A-20A	Different Unsupport:CA_3A-20A CA_7A-20A
Others	NA	NA



### 1.3 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx Frequency	LTE Band 26 : 814.7 ~ 823.3 MHz
Rx Frequency	LTE Band 26 : 859.7 ~ 868.3 MHz
Bandwidth	1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz
Antenna Type	IFA Antenna
Antenna Gain	LTE Band 26 : -5.35 dBi for Up Antenna
Type of Modulation	QPSK / 16QAM / 64QAM

### 1.4 Modification of EUT

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

### 1.5 Testing Site

Sporton International (Shenzhen) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600156-0) and the FCC designation No are CN5018 and CN5019.

<b>Test Site</b>	Sporton International (Shenzhen) Inc.	
<b>Test Site Location</b>	No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan District Shenzhen City Guangdong Province 518055 China TEL: +86-755-3320-2398	
<b>Test Site No.</b>	<b>Sporton Site No.</b>	<b>FCC Test Firm Registration No.</b>
	03CH01-SZ	337463/577730

**Note:** The test site complies with ANSI C63.4 2014 requirement.



## 1.6 Applied Standards

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

- ♦ FCC 47 CFR Part 2, 90
- ♦ ANSI / TIA-603-E
- ♦ ANSI C63.26-2015
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- ♦ Interim Guidance for Equipment Authorization of Devices with Channel Bandwidths Combined Across Two Contiguous Service Rule Allocations OET/Lab/EACB, June 6, 2013

**Remark:** All test items were verified and recorded according to the standards and without any deviation during the test.

## 2 Test Configuration of Equipment Under Test

### 2.1 Test Mode

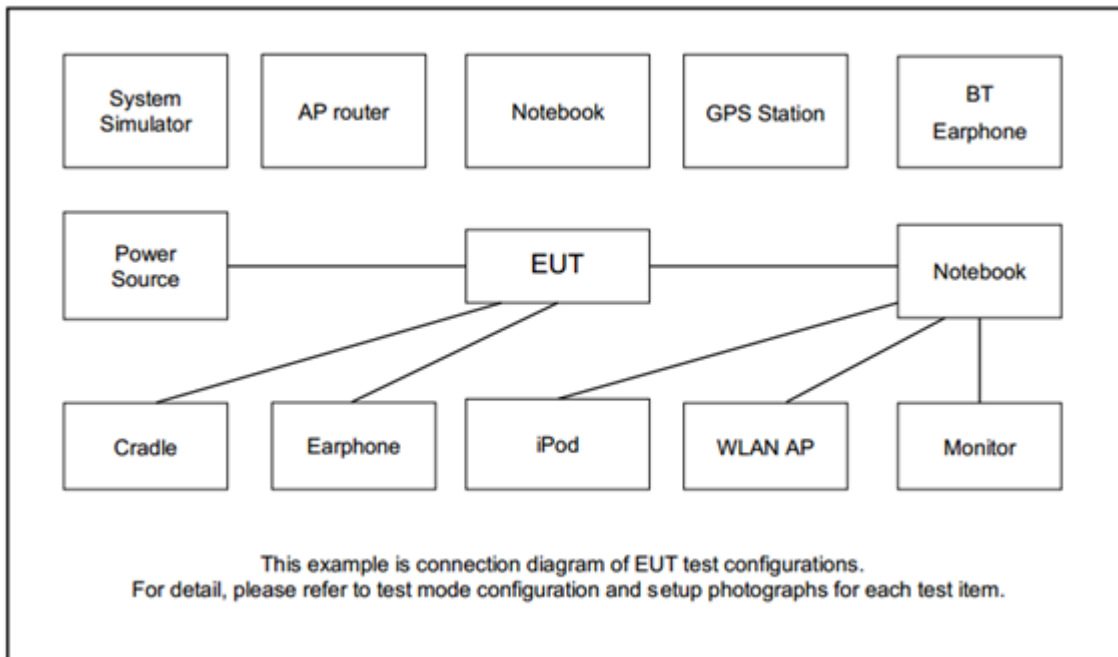
During all testing, EUT is in link mode with base station emulator at maximum power level.

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.

Frequency range investigated for radiated emission is 30 MHz to 9000 MHz.

Conducted Test Cases	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Radiated Spurious Emission	26	Worst Case											V	V	V	
Remark	1. The mark "v" means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. LTE Band26 transmit frequency for part22 rule is 824MHz-849MHz, for part90 rule is 814MHz-824MHz. ERP over 15MHz bandwidth complies the ERP limit line of part22 rule, therefore ERP of the partial frequency spectrum which falls within part 22 also complies. 4. All the radiated test cases were performed with Earphone 1.															

### 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	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m



## 2.4 Frequency List of Low/Middle/High Channels

LTE Band 26 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
15	Channel	26765	-	-
	Frequency	821.5	-	-
10	Channel	-	26740	-
	Frequency	-	819	-
5	Channel	26715	26740	26765
	Frequency	816.5	819	821.5
3	Channel	26705	26740	26775
	Frequency	815.5	819	822.5
1.4	Channel	26697	26740	26783
	Frequency	814.7	819	823.3



## 2.5 Field Strength of Spurious Radiation Measurement

### 2.5.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. The power of any emission FCC Part 90.691 on any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth at least  $43 + 10 \log (P)$  dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

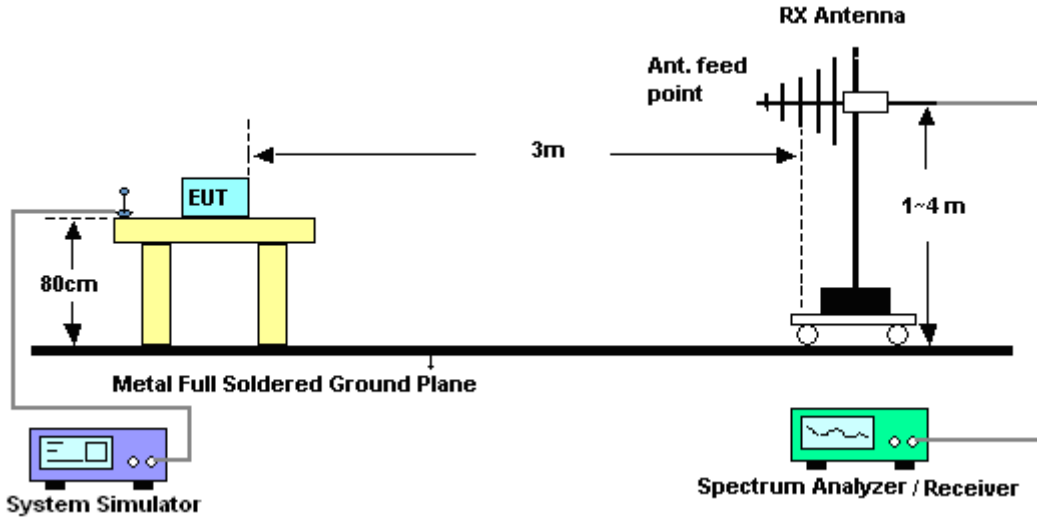
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least  $43+10\log_{10}(P[\text{Watts}])$  dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

### 2.5.2 Test Procedures

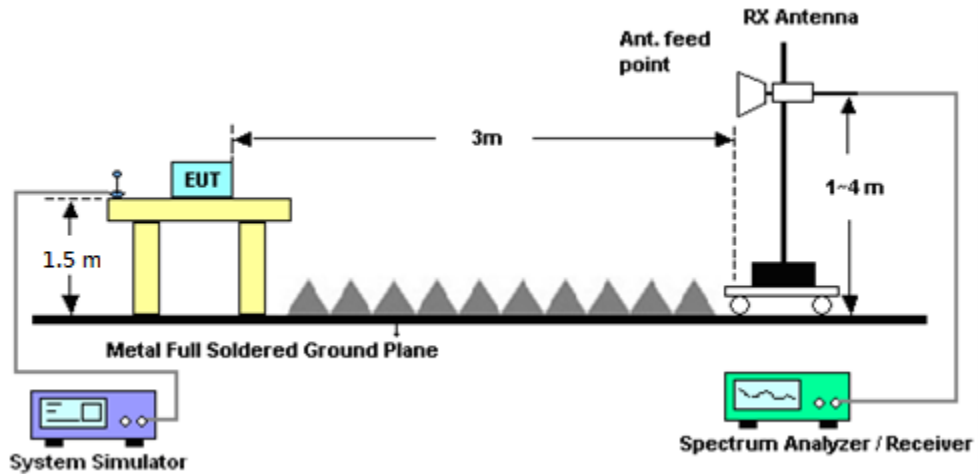
1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
1. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
2. The table was rotated 360 degrees to determine the position of the highest spurious emission.
3. 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.
4. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
5. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
6. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
7. Taking the record of output power at antenna port.
8. Repeat step 7 to step 8 for another polarization.
9.  $\text{EIRP (dBm)} = \text{S.G. Power} - \text{Tx Cable Loss} + \text{Tx Antenna Gain}$
10.  $\text{ERP (dBm)} = \text{EIRP} - 2.15$
11. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
12. The limit line is derived from  $43 + 10\log(P)$  dB below the transmitter power P(Watts)

### 2.5.3 Test Setup

For radiated test from 30MHz to 1GHz



For radiated test above 1GHz



### 2.5.4 Test Result of Field Strength of Spurious Radiated

Please refer to Appendix B.





### 3 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Apr. 19, 2018	Aug. 31, 2018	Apr. 18, 2019	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz-2GHz	Apr. 19, 2018	Aug. 31, 2018	Apr. 18, 2019	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	119436	1GHz~18GHz	Jul. 28, 2018	Aug. 31, 2018	Jul. 27, 2019	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Mar. 30, 2018	Aug. 31, 2018	Mar. 29, 2019	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 19, 2018	Aug. 31, 2018	Apr. 18, 2019	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-0010 1800-30-10P-R	1707137	1GHz~18GHz	Oct.19, 2017	Aug. 31, 2018	Oct. 18, 2018	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270104	0.5GHz~26.5GHz	Oct.19, 2017	Aug. 31, 2018	Oct. 18, 2018	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 30, 2018	Aug. 31, 2018	Jul. 30, 2019	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Aug. 31, 2018	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Aug. 31, 2018	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Aug. 31, 2018	NCR	Radiation (03CH01-SZ)



## 4 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	2.5
---	-----

### Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	3.5
---	-----

### Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.0
---	-----



## Appendix A. Test Result of Radiated Test

<For Up Antenna>

### LTE Band 26

LTE Band 26 / 5MHz / QPSK									
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	1628.5	-73.24	-13	-60.24	-78.80	-77.61	2.86	9.38	H
	2442.75	-69.38	-13	-56.38	-79.80	-74.07	3.74	10.58	H
	3257	-65.64	-13	-52.64	-80.40	-71.61	4.45	12.57	H
									H
	1628.5	-73.98	-13	-60.98	-78.69	-78.35	2.86	9.38	V
	2442.75	-70.26	-13	-57.26	-80.09	-74.95	3.74	10.58	V
	3257	-67.12	-13	-54.12	-80.69	-73.09	4.45	12.57	V
									V
Middle	1633.5	-73.33	-13	-60.33	-78.89	-77.70	2.86	9.38	H
	2450.25	-61.57	-13	-48.57	-71.99	-66.26	3.74	10.58	H
	3267	-65.72	-13	-52.72	-80.48	-71.69	4.45	12.57	H
									H
	1633.5	-74.08	-13	-61.08	-78.79	-78.45	2.86	9.38	V
	2450.25	-62.21	-13	-49.21	-72.04	-66.90	3.74	10.58	V
	3267	-66.83	-13	-53.83	-80.40	-72.80	4.45	12.57	V
									V
Highest	1638.5	-73.33	-13	-60.33	-78.89	-77.70	2.86	9.38	H
	2457.75	-60.58	-13	-47.58	-71.00	-65.27	3.74	10.58	H
	3277	-65.92	-13	-52.92	-80.68	-71.89	4.45	12.57	H
									H
	1638.5	-73.89	-13	-60.89	-78.60	-78.26	2.86	9.38	V
	2457.75	-62.20	-13	-49.20	-72.03	-66.89	3.74	10.58	V
	3277	-67.03	-13	-54.03	-80.60	-73.00	4.45	12.57	V
									V

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