



# FCC Test Report

**APPLICANT** : ZTE CORPORATION  
**EQUIPMENT** : LTE/CDMA Multi-Mode Digital Mobile Phone  
**BRAND NAME** : ZTE  
**MODEL NAME** : Z233VL  
**FCC ID** : SRQ-Z233VL  
**STANDARD** : FCC 47 CFR FCC Part 15 Subpart B  
**CLASSIFICATION** : Certification

The product was received on Oct. 19, 2016 and testing was completed on Oct. 31, 2016. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 and has been 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 (KUNSHAN) INC., the test report shall not be reproduced except in full.

Prepared by: James Huang / Manager

Approved by: Jones Tsai / Manager



**SPORTON INTERNATIONAL (KUNSHAN) INC.**  
**No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China**



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### REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC601901	Rev. 01	Initial issue of report	Nov. 15, 2016



### SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	Under limit 7.79 dB at 0.433 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 1.62 dB at 480.080 MHz for Quasi-Peak



# 1. General Description

## 1.1. Applicant

**ZTE CORPORATION**

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

## 1.2. Manufacturer

**ZTE CORPORATION**

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

## 1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	LTE/CDMA Multi-Mode Digital Mobile Phone
Brand Name	ZTE
Model Name	Z233VL
FCC ID	SRQ-Z233VL
EUT supports Radios application	CDMA/EV-DO/LTE/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
IMEI Code	Conduction: 990006870012423 Radiation: 990006870012654
HW Version	Z233VLHVV1.0
SW Version	Z233VLV1.0.0B04
EUT Stage	Identical Prototype

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.



### 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 13 : 779.5 MHz ~ 784.5 MHz CDMA2000 BC0: 824.70 MHz ~ 848.31 MHz CDMA2000 BC1: 1851.25 MHz ~ 1908.75 MHz Bluetooth: 2402 MHz ~ 2480 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 13 : 748.5 MHz ~ 753.5 MHz CDMA2000 BC0: 869.70 MHz ~ 893.31 MHz CDMA2000 BC1: 1931.25 MHz ~ 1988.75 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1.57542 GHz
<b>Antenna Type</b>	WWAN : PIFA Antenna Bluetooth : PIFA Antenna GPS : PIFA Antenna
<b>Type of Modulation</b>	LTE: QPSK / 16QAM CDMA2000 : QPSK CDMA2000 1xEV-DO : QPSK/8PSK Bluetooth LE : GFSK Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : $\pi/4$ -DQPSK Bluetooth (3Mbps) : 8-DPSK GPS : BPSK

### 1.5. Modification of EUT

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



### 1.6. Test Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.		
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958		
Test Site No.	Sporton Site No.		FCC Registration No.
	CO01-KS	03CH02-KS	418269

### 1.7. Applicable Standards

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

- FCC 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2014

**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

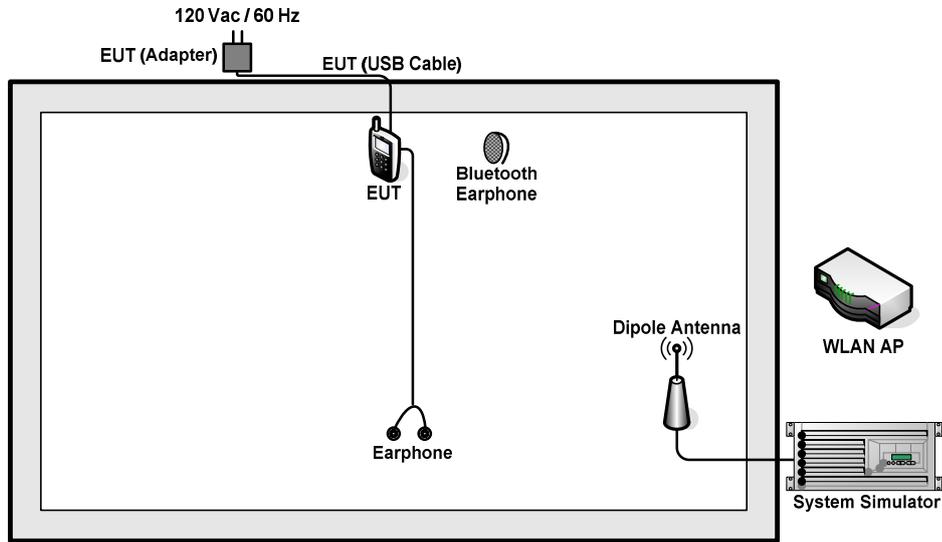
### 2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

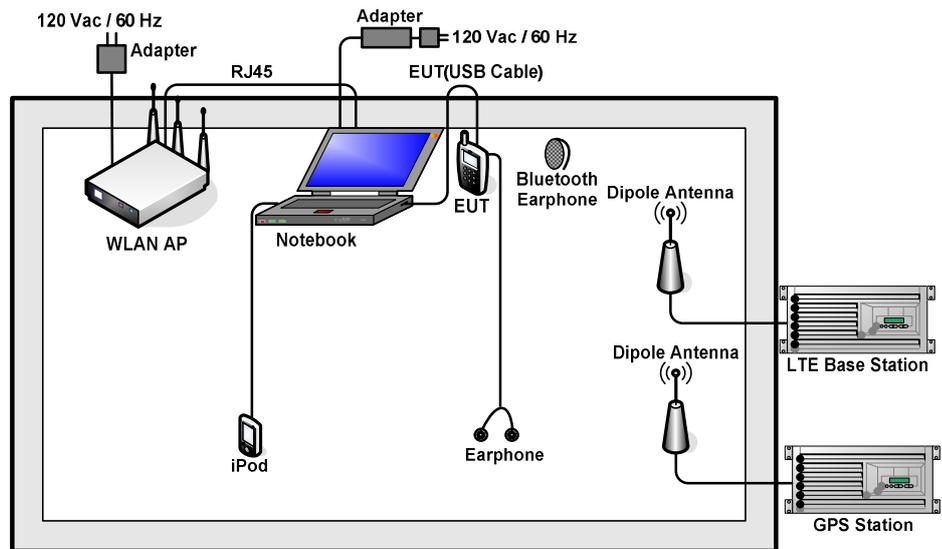
Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Test Items	Function Type
AC Conducted Emission	Mode 1: CDMA2000 BC0 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + Camera <Fig.1>
	Mode 2: CDMA2000 BC1 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 <Fig.1>
	Mode 3: LTE Band 4 Idle + Bluetooth Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx <Fig.2>
Radiated Emissions < 1GHz	Mode 1: CDMA2000 BC0 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + Camera <Fig.1>
	Mode 2: CDMA2000 BC1 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 <Fig.1>
	Mode 3: LTE Band 4 Idle + Bluetooth Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx <Fig.2>
Radiated Emissions ≥ 1GHz	Mode 1: LTE Band 4 Idle + Bluetooth Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx <Fig.2>
<b>Remark:</b>	
<ol style="list-style-type: none"> <li>1. The worst case of AC is mode 1; and the USB Link mode of AC is mode 3; the test data of these modes are reported.</li> <li>2. The worst case of RE &lt; 1G is mode 3; only the test data of this mode was reported.</li> <li>3. Data Link with Notebook means data application transferred mode between EUT and Notebook.</li> </ol>	

## 2.2. Connection Diagram of Test System



<Fig.1>



<Fig.2>



### 2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	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
3.	GPS Station	ADIVIC	MP9000	N/A	N/A	Unshielded, 1.8 m
4.	WLAN AP	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
5.	WLAN AP	LINKSYS	WRT600N	Q87-WRT600NV11	N/A	Unshielded, 1.8 m
6.	Notebook	Lenovo	G480	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
7.	Notebook	Dell	Latitude 3440	N/A	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
8.	iPod	Apple	A1199	FCC DoC	Unshielded, 1.2 m	N/A
9.	Bluetooth Earphone	Lenovo	BH308	N/A	N/A	N/A
10.	Earphone	Lenovo	SH102	N/A	Unshielded, 1.2 m	N/A
11.	SD Card	Kingston	4GB	N/A	N/A	N/A
12.	SD Card	Kingston	SD 16GB	N/A	N/A	N/A



## **2.4. EUT Operation Test Setup**

The EUT was in LTE or CDMA2000 idle mode during the testing. The EUT was synchronized to the BCCH, and is in continuous receiving mode by setting system simulator's paging reorganization.

At the same time, the EUT was attached to the Bluetooth earphone, and the following programs installed in the EUT were programmed during the test.

1. Data application is transferred between notebook and EUT via USB cable.
2. Turn on GPS function to make the EUT receive continuous signals from GPS station.
3. Execute "Video Player" to play MPEG4 files.
4. Turn on camera to capture images.



### 3. Test Result

#### 3.1. Test of AC Conducted Emission Measurement

##### 3.1.1 Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\*Decreases with the logarithm of the frequency.

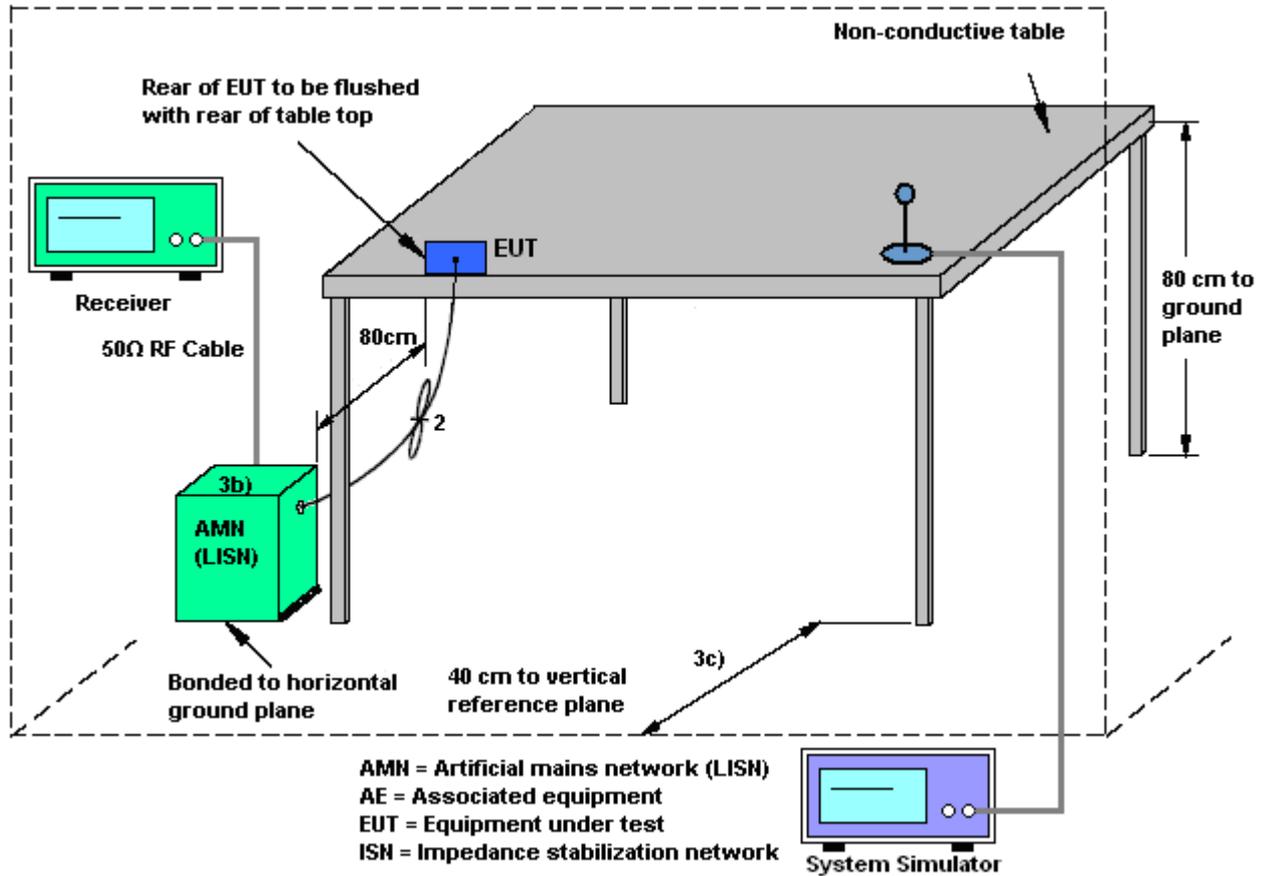
##### 3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

##### 3.1.3 Test Procedure

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

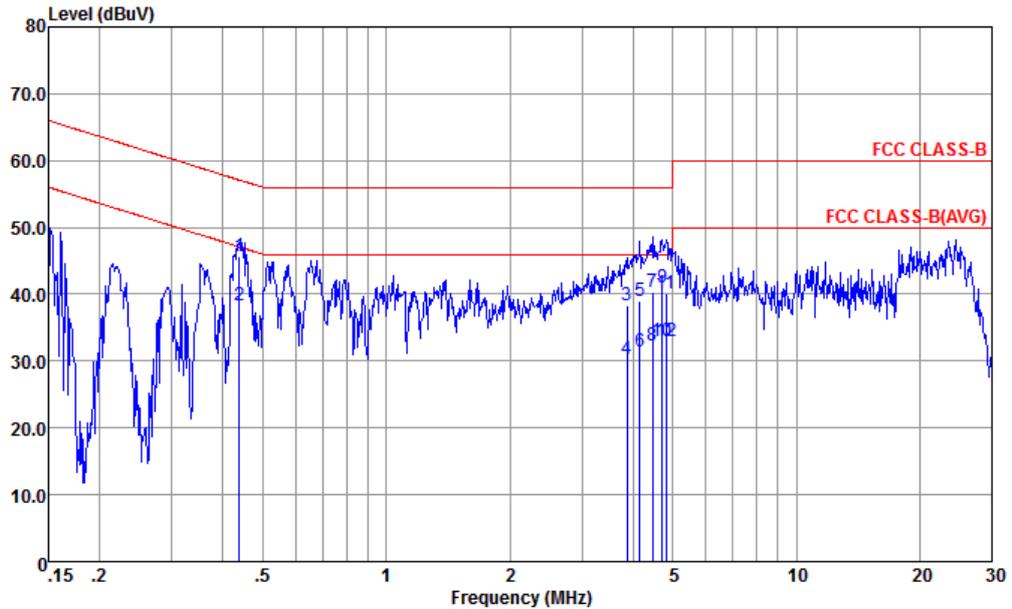
### 3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Morris Li	Relative Humidity :	48~50%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	CDMA2000 BC0 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + Camera		

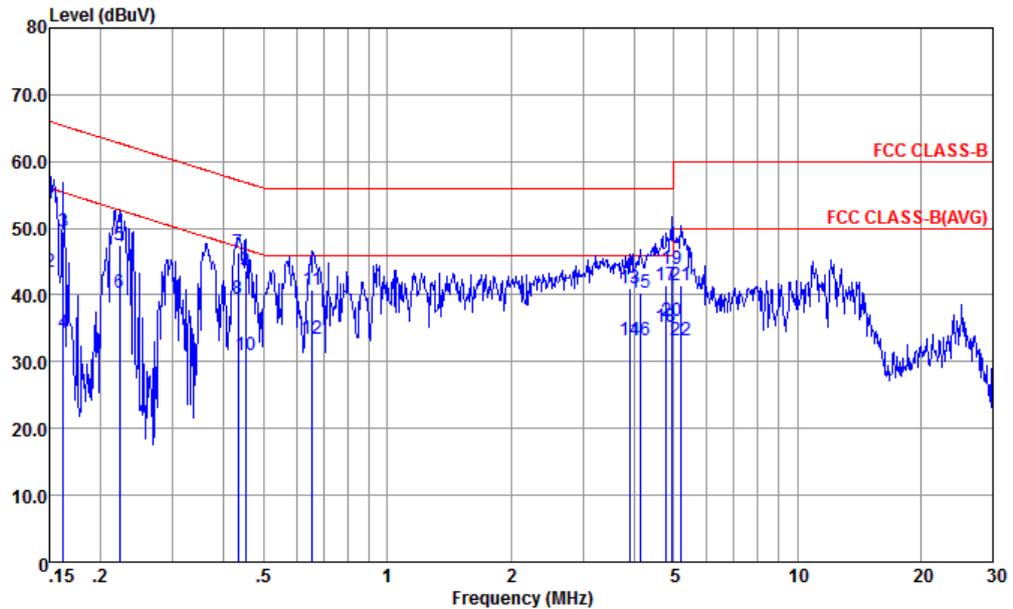


Site : CO01-KS  
 Condition : FCC CLASS-B LISN-L-20151024 LINE  
 Project : (FC) 601901  
 mode : Mode 1  
 IMEI : 990006870012423

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.437	45.62	-11.49	57.11	35.20	0.23	10.19	QP
2 *	0.437	38.22	-8.89	47.11	27.80	0.23	10.19	Average
3	3.860	38.32	-17.68	56.00	27.89	0.19	10.24	QP
4	3.860	30.22	-15.78	46.00	19.79	0.19	10.24	Average
5	4.158	38.93	-17.07	56.00	28.50	0.19	10.24	QP
6	4.158	31.33	-14.67	46.00	20.90	0.19	10.24	Average
7	4.454	40.23	-15.77	56.00	29.80	0.19	10.24	QP
8	4.454	32.23	-13.77	46.00	21.80	0.19	10.24	Average
9	4.721	41.03	-14.97	56.00	30.60	0.19	10.24	QP
10	4.721	32.93	-13.07	46.00	22.50	0.19	10.24	Average
11	4.822	40.13	-15.87	56.00	29.70	0.19	10.24	QP
12	4.822	32.93	-13.07	46.00	22.50	0.19	10.24	Average



Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Morris Li	Relative Humidity :	48~50%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA2000 BC0 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + Camera		

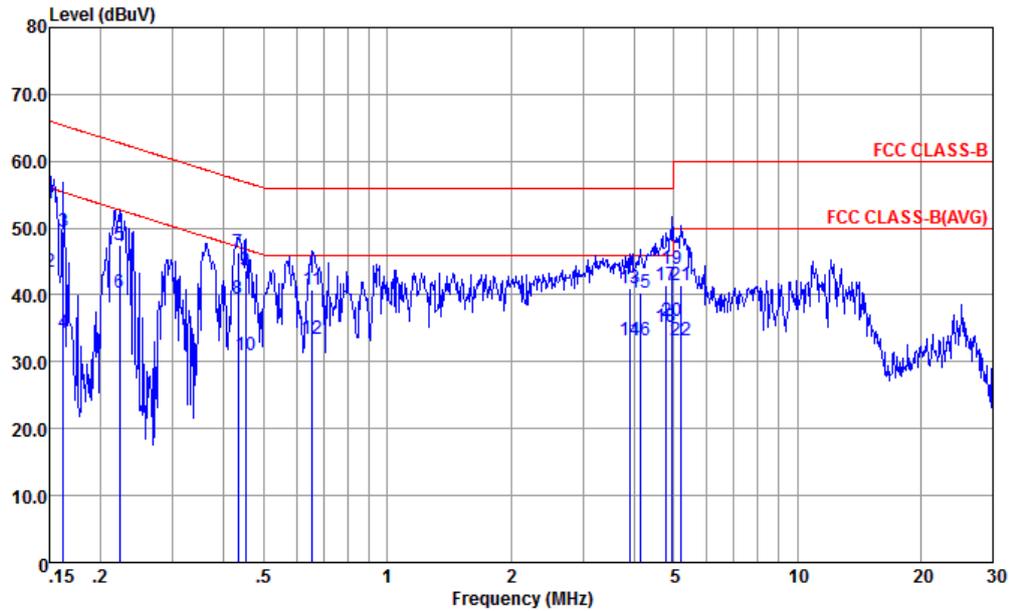


Site : CO01-KS  
 Condition : FCC CLASS-B LISN-N-20151024 NEUTRAL  
 Project : (FC) 601901  
 mode : Mode 1  
 IMEI : 990006870012423

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.150	53.59	-12.41	66.00	42.90	0.30	10.39	QP
2	0.150	43.49	-12.51	56.00	32.80	0.30	10.39	Average
3	0.162	49.58	-15.76	65.34	38.90	0.30	10.38	QP
4	0.162	34.38	-20.96	55.34	23.70	0.30	10.38	Average
5	0.222	47.52	-15.22	62.74	36.90	0.31	10.31	QP
6	0.222	40.32	-12.42	52.74	29.70	0.31	10.31	Average
7	0.433	46.41	-10.79	57.20	35.89	0.32	10.20	QP
8 *	0.433	39.41	-7.79	47.20	28.89	0.32	10.20	Average
9	0.452	43.71	-13.14	56.85	33.20	0.32	10.19	QP
10	0.452	31.01	-15.84	46.85	20.50	0.32	10.19	Average
11	0.658	40.72	-15.28	56.00	30.20	0.34	10.18	QP
12	0.658	33.42	-12.58	46.00	22.90	0.34	10.18	Average
13	3.901	41.10	-14.90	56.00	30.49	0.37	10.24	QP
14	3.901	33.20	-12.80	46.00	22.59	0.37	10.24	Average
15	4.136	40.40	-15.60	56.00	29.80	0.36	10.24	QP
16	4.136	33.20	-12.80	46.00	22.60	0.36	10.24	Average



Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Morris Li	Relative Humidity :	48~50%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA2000 BC0 Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + Camera		

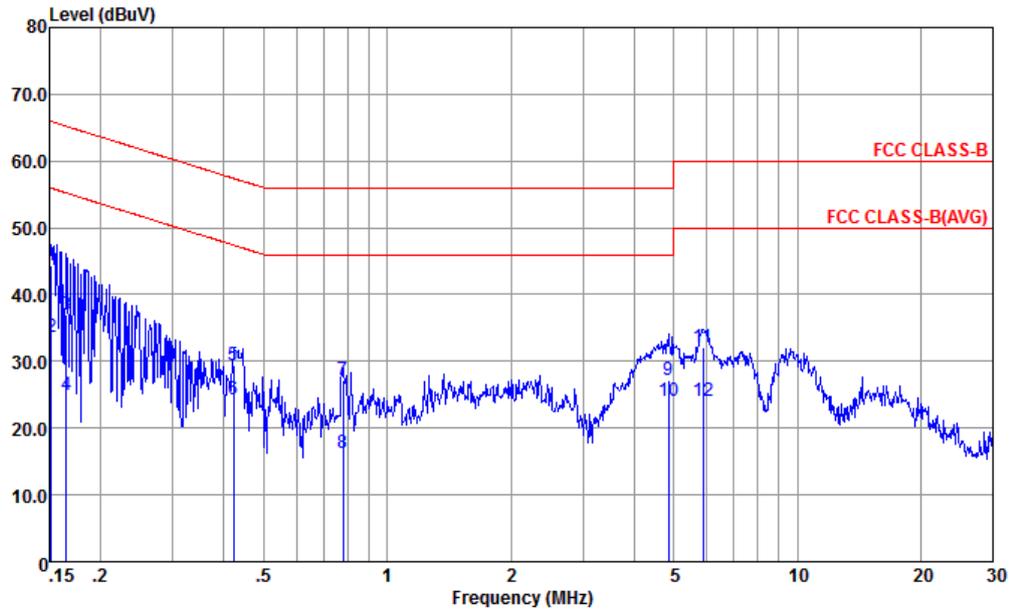


Site : CO01-KS  
 Condition : FCC CLASS-B LISN-N-20151024 NEUTRAL  
 Project : (FC) 601901  
 mode : Mode 1  
 IMEI : 990006870012423

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
17	4.797	41.40	-14.60	56.00	30.80	0.36	10.24	QP
18	4.797	35.10	-10.90	46.00	24.50	0.36	10.24	Average
19	4.952	43.90	-12.10	56.00	33.30	0.36	10.24	QP
20	4.952	36.10	-9.90	46.00	25.50	0.36	10.24	Average
21	5.221	41.40	-18.60	60.00	30.80	0.35	10.25	QP
22	5.221	33.20	-16.80	50.00	22.60	0.35	10.25	Average



Test Mode :	Mode 3	Temperature :	20~22°C
Test Engineer :	Morris Li	Relative Humidity :	48~50%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	LTE Band 4 Idle + Bluetooth Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx		

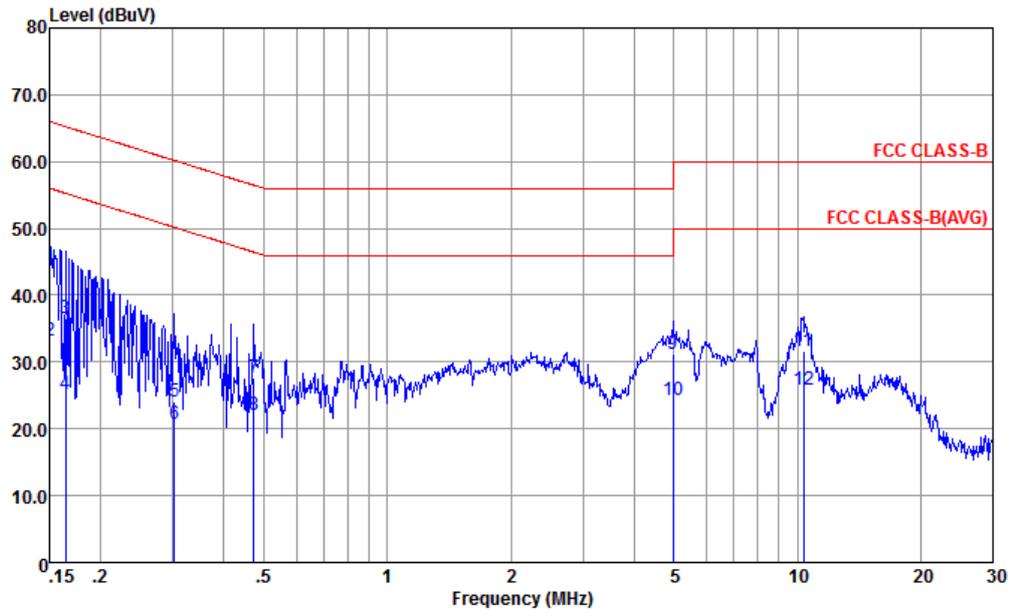


Site : CO01-KS  
 Condition : FCC CLASS-B LISN-L-20151024 LINE  
 Project : (FC) 601901  
 mode : Mode 3  
 IMEI : 990006870012423

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1 *	0.152	44.41	-21.50	65.91	33.50	0.52	10.39	QP
2	0.152	33.71	-22.20	55.91	22.80	0.52	10.39	Average
3	0.165	37.00	-28.21	65.21	26.21	0.42	10.37	QP
4	0.165	24.90	-30.31	55.21	14.11	0.42	10.37	Average
5	0.421	29.32	-28.10	57.42	18.89	0.23	10.20	QP
6	0.421	24.22	-23.20	47.42	13.79	0.23	10.20	Average
7	0.779	27.12	-28.88	56.00	16.71	0.24	10.17	QP
8	0.779	16.22	-29.78	46.00	5.81	0.24	10.17	Average
9	4.848	27.23	-28.77	56.00	16.80	0.19	10.24	QP
10	4.848	24.13	-21.87	46.00	13.70	0.19	10.24	Average
11	5.898	32.17	-27.83	60.00	21.70	0.21	10.26	QP
12	5.898	24.17	-25.83	50.00	13.70	0.21	10.26	Average



Test Mode :	Mode 3	Temperature :	20~22°C
Test Engineer :	Morris Li	Relative Humidity :	48~50%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	LTE Band 4 Idle + Bluetooth Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx		



Site : CO01-KS  
 Condition : FCC CLASS-B LISN-N-20151024 NEUTRAL  
 Project : (FC) 601901  
 mode : Mode 3  
 IMEI : 990006870012423

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.150	43.89	-22.11	66.00	33.20	0.30	10.39	QP
2	0.150	33.09	-22.91	56.00	22.40	0.30	10.39	Average
3	0.164	36.48	-28.77	65.25	25.81	0.30	10.37	QP
4	0.164	25.28	-29.97	55.25	14.61	0.30	10.37	Average
5	0.302	24.07	-36.12	60.19	13.51	0.31	10.25	QP
6	0.302	20.77	-29.42	50.19	10.21	0.31	10.25	Average
7	0.474	27.71	-28.74	56.45	17.20	0.32	10.19	QP
8	0.474	22.01	-24.44	46.45	11.50	0.32	10.19	Average
9	4.978	31.10	-24.90	56.00	20.50	0.36	10.24	QP
10 *	4.978	24.20	-21.80	46.00	13.60	0.36	10.24	Average
11	10.342	31.73	-28.27	60.00	21.10	0.28	10.35	QP
12	10.342	25.93	-24.07	50.00	15.30	0.28	10.35	Average



### 3.2. Test of Radiated Emission Measurement

#### 3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

#### 3.2.2. Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

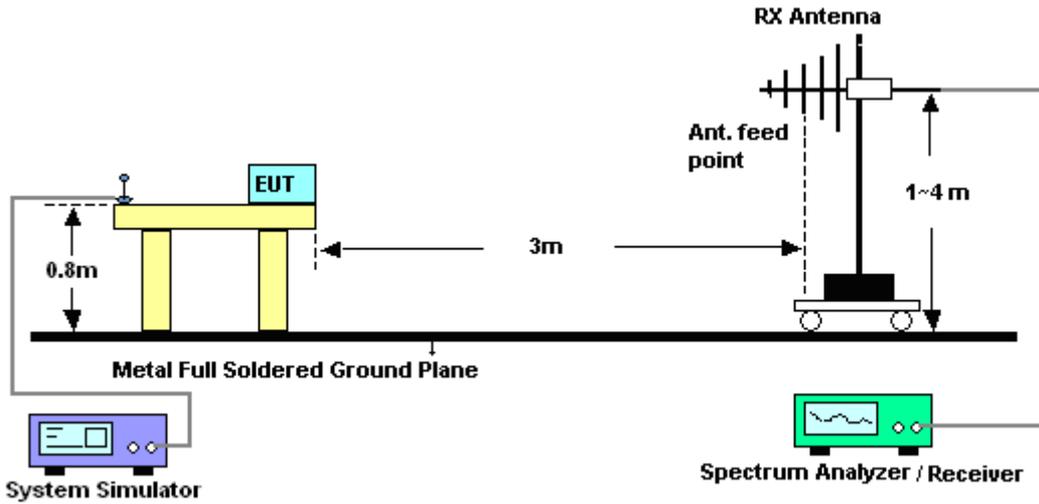


### **3.2.3. Test Procedures**

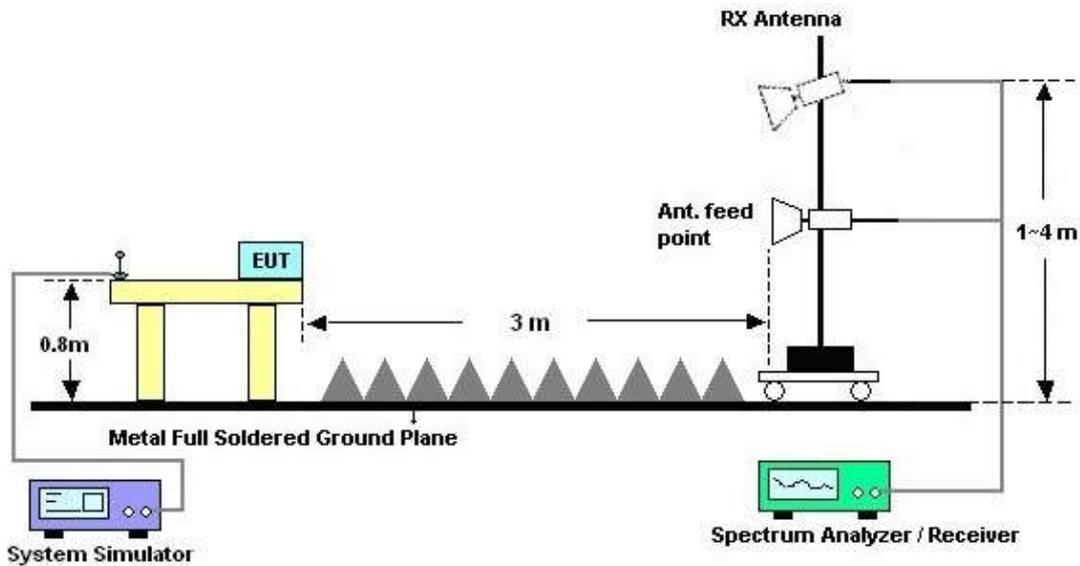
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

### 3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



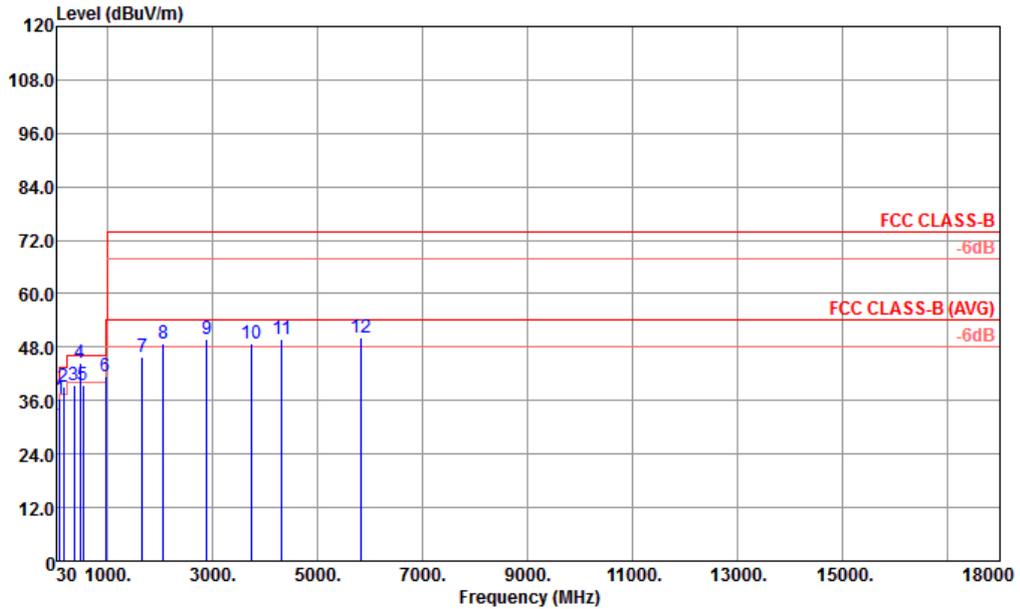
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 1	Temperature :	22~23°C
Test Engineer :	GenShui Long	Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	LTE Band 4 Idle + Bluetooth Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx		

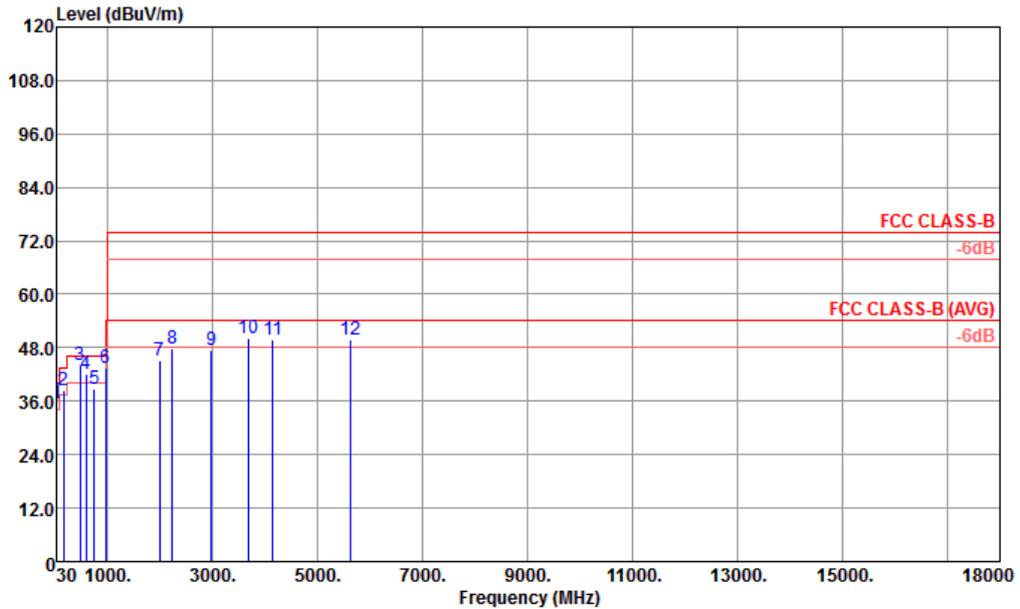


Site : 03CH02-KS  
 Condition : FCC CLASS-B 3m 966-02 LF ANT HORIZONTAL  
 Project : (FC) 601901  
 Mode : 3

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos	T/Pos	Remark	Pol/Phas
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	99.84	36.43	-7.07	43.50	49.50	18.17	0.23	31.47	---	---	Peak HORIZONTAL
2 !	169.68	38.96	-4.54	43.50	53.29	16.73	0.36	31.42	177	335	QP HORIZONTAL
3	359.80	39.39	-6.61	46.00	48.03	21.26	0.76	30.66	---	---	Peak HORIZONTAL
4 !	480.08	44.38	-1.62	46.00	49.79	23.37	0.92	29.70	100	87	QP HORIZONTAL
5	530.52	39.31	-6.69	46.00	43.99	23.92	0.91	29.51	---	---	Peak HORIZONTAL
6 !	959.98	41.41	-4.59	46.00	37.39	28.66	1.75	26.39	---	---	Peak HORIZONTAL
7	1672.00	45.91	-28.09	74.00	48.83	29.10	4.28	36.30	---	---	Peak HORIZONTAL
8	2070.00	48.88	-25.12	74.00	47.67	30.73	5.05	34.57	---	---	Peak HORIZONTAL
9	2900.00	49.88	-24.12	74.00	42.86	32.35	2.95	28.28	---	---	Peak HORIZONTAL
10	3747.00	48.71	-25.29	74.00	39.31	34.50	6.39	31.49	---	---	Peak HORIZONTAL
11	4329.00	49.93	-24.07	74.00	40.89	35.19	5.34	31.49	---	---	Peak HORIZONTAL
12	5817.00	49.99	-24.01	74.00	43.71	35.17	6.60	35.49	---	---	Peak HORIZONTAL



Test Mode :	Mode 1	Temperature :	22~23°C
Test Engineer :	GenShui Long	Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Vertical
Function Type :	LTE Band 4 Idle + Bluetooth Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx		



Site : 03CH02-KS  
 Condition : FCC CLASS-B 3m 966-02 LF ANT VERTICAL  
 Project : (FC) 601901  
 Mode : 3

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Pol/Phas	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		
1 !	30.00	35.39	-4.61	40.00	41.23	25.80	0.11	31.75	---	---	Peak	VERTICAL
2 !	166.77	38.34	-5.16	43.50	52.57	16.86	0.35	31.44	---	---	Peak	VERTICAL
3 !	480.08	43.98	-2.02	46.00	49.39	23.37	0.92	29.70	126	345	QP	VERTICAL
4 !	600.36	42.27	-3.73	46.00	45.92	24.34	0.90	28.89	---	---	Peak	VERTICAL
5	748.77	38.66	-7.34	46.00	39.12	26.21	1.35	28.02	---	---	Peak	VERTICAL
6 !	959.90	43.32	-2.68	46.00	39.30	28.66	1.75	26.39	100	350	QP	VERTICAL
7	1988.00	45.16	-28.84	74.00	45.06	30.36	4.46	34.72	---	---	Peak	VERTICAL
8	2236.00	47.93	-26.07	74.00	45.11	31.24	5.75	34.17	---	---	Peak	VERTICAL
9	2976.00	47.40	-26.60	74.00	40.40	32.52	3.09	28.61	---	---	Peak	VERTICAL
10	3687.00	49.99	-24.01	74.00	40.73	34.23	6.29	31.26	---	---	Peak	VERTICAL
11	4149.00	49.90	-24.10	74.00	40.18	35.05	6.53	31.86	---	---	Peak	VERTICAL
12	5637.00	49.87	-24.13	74.00	44.14	35.40	7.70	37.37	---	---	Peak	VERTICAL



### 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Aug. 09, 2016	Oct. 26, 2016	Aug. 08, 2017	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz~44GHz; Max 30dB	Apr. 22, 2016	Oct. 26, 2016	Apr. 21, 2017	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6112D	37879	30MHz~2GHz	Aug. 20, 2016	Oct. 26, 2016	Aug. 19, 2017	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Nov. 07, 2015	Oct. 26, 2016	Nov. 06, 2016	Radiation (03CH02-KS)
Amplifier	com-power	PA-103A	161069	1kHz~1000MHz / 32 dB	Apr. 22, 2016	Oct. 26, 2016	Apr. 21, 2017	Radiation (03CH02-KS)
Amplifier	Agilent	8449B	3008A02384	1~26.5GHz Gain 30dB	Oct. 13, 2016	Oct. 26, 2016	Oct. 12, 2017	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	61601000247 3	N/A	NCR	Oct. 26, 2016	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Oct. 26, 2016	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Oct. 26, 2016	NCR	Radiation (03CH02-KS)
EMI Receiver	R&S	ESC17	100768	9kHz~7GHz;	Apr. 29, 2016	Oct. 31, 2016	Apr. 28, 2017	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 13, 2016	Oct. 31, 2016	Oct. 12, 2017	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 13, 2016	Oct. 31, 2016	Oct. 12, 2017	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP0000008 11	AC 0V~300V, 45Hz~1000Hz	Oct. 13, 2016	Oct. 31, 2016	Oct. 12, 2017	Conduction (CO01-KS)

NCR: No Calibration Required



## 5. Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	2.3 dB
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.1 dB
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### Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.5 dB
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