



# FCC Test Report

APPLICANT : Motorola Mobility LLC  
EQUIPMENT : Mobile Cellular Phone  
BRAND NAME : Motorola  
MODEL NAME : XT2213-1,XT2213DL,XT2213-2,XT2213-3  
FCC ID : IHDT56AA3  
STANDARD : 47 CFR Part 15 Subpart B  
CLASSIFICATION : Certification  
TEST DATE(S) : Jan. 08, 2022 ~ Jan. 22, 2022

We, Sporton International Inc. (Kunshan), 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 Inc. (Kunshan), the test report shall not be reproduced except in full.

Reviewed by: Jason Jia / Supervisor

Approved by: Alex Wang / Manager



**Sporton International Inc. (Kunshan)**

No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300  
People's Republic of China



# 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 of Equipment Under Test ..... 6

    1.5. Modification of EUT ..... 8

    1.6. Test Location ..... 8

    1.7. Test Software ..... 8

    1.8. Applicable Standards ..... 8

**2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST ..... 9**

    2.1. Test Mode ..... 9

    2.2. Connection Diagram of Test System ..... 11

    2.3. Support Unit used in test configuration and system ..... 11

    2.4. EUT Operation Test Setup ..... 12

**3. TEST RESULT ..... 13**

    3.1. Test of AC Conducted Emission Measurement ..... 13

    3.2. Test of Radiated Emission Measurement ..... 17

**4. LIST OF MEASURING EQUIPMENT ..... 22**

**5. UNCERTAINTY OF EVALUATION ..... 23**

**APPENDIX A. SETUP PHOTOGRAPHS**





### 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 8.20 dB at 0.150 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 5.33 dB at 506.270 MHz

<b>Declaration of Conformity:</b>
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
<b>Comments and Explanations:</b>
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



# 1. General Description

## 1.1. Applicant

Motorola Mobility LLC  
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

## 1.2. Manufacturer

Motorola Mobility LLC  
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

## 1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2213-1,XT2213DL,XT2213-2,XT2213-3
FCC ID	IHDT56AA3
EUT supports Radios application	GSM/WCDMA/LTE/5G NR WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE GNSS,FM
IMEI Code	Conduction: 35373948001222 for Sample 1 359463900011633/41 for Sample 2 356574630014151 for Sample 3 Radiation: 353739480012232 for Sample 1 359463900009454/78 for Sample 2 356574630014276/78 for Sample 3
HW Version	DVT2
SW Version	S1SA32.27
EUT Stage	Identical Prototype

**Remark:**

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. The purpose of different model name (XT2213-1, XT2213-2, XT2213DL, XT2213-3) is for marketing segmentation.



### 1.4. Product Specification of Equipment Under Test

Standards-related Product Specification	
<b>Tx Frequency</b>	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850MHz ~ 1910MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV : 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 4 : 1710 MHz ~ 1755 MHz LTE Band 5 : 824 MHz ~ 849 MHz LTE Band 7 : 2500 MHz ~ 2570 MHz LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 14 : 788 MHz ~ 798 MHz LTE Band 17 : 704 MHz ~ 716 MHz LTE Band 25 : 1850 MHz ~ 1915 MHz LTE Band 26 : 814 MHz ~ 849 MHz LTE Band 30 : 2305 MHz ~ 2315 MHz LTE Band 38 : 2570 MHz ~ 2620 MHz LTE Band 41 : 2496 MHz ~ 2690 MHz LTE Band 48 : 3550 MHz ~ 3700 MHz LTE Band 66 : 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n14 : 788 MHz ~ 798 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n70 : 1695 MHz ~ 1710 MHz 5G NR n71: 663 MHz ~ 698 MHz 5G NR n77: 3300 MHz ~ 4200 MHz 5G NR n78: 3300 MHz ~ 3800 MHz 802.11b/g/n: 2400 MHz ~ 2483.5 MHz 802.11a/n/ac: 5150 MHz ~ 5250 MHz; 5250 MHz ~ 5350 MHz; 5470 MHz ~ 5725 MHz 5725 MHz ~ 5850 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz
<b>Rx Frequency</b>	GSM850: 869 MHz ~ 894 MHz GSM1900: 1930 MHz ~ 1990 MHz WCDMA Band II: 1930 MHz ~ 1990 MHz WCDMA Band IV : 2110 MHz ~ 2155 MHz WCDMA Band V: 869 MHz ~ 894 MHz LTE Band 2 : 1930 MHz ~ 1990 MHz LTE Band 4 : 2110 MHz ~ 2155 MHz LTE Band 5 : 869 MHz ~ 894 MHz LTE Band 7 : 2620 MHz ~ 2690 MHz LTE Band 12 : 729 MHz ~ 746 MHz LTE Band 13 : 746 MHz ~ 756 MHz



	<p>LTE Band 14 : 758 MHz ~ 768 MHz          LTE Band 17 : 734 MHz ~ 746 MHz          LTE Band 25 : 1930 MHz ~ 1995 MHz          LTE Band 26 : 859 MHz ~ 894 MHz          LTE Band 29 : 717 MHz ~ 728 MHz          LTE Band 30 : 2350 MHz ~ 2360 MHz          LTE Band 38: 2570 MHz ~ 2620 MHz          LTE Band 41 : 2496 MHz ~ 2690 MHz          LTE Band 48 : 3550 MHz ~ 3700 MHz          LTE Band 66 : 2110 MHz~ 2200 MHz          LTE Band 71: 617 MHz ~ 652 MHz          5G NR n2 : 1930 MHz ~ 1990 MHz          5G NR n5 : 869 MHz ~ 894 MHz          5G NR n12 : 729 MHz ~ 746 MHz          5G NR n14 : 758 MHz ~ 768 MHz          5G NR n25 : 1930 MHz ~ 1995 MHz          5G NR n26 : 859 MHz ~ 894 MHz          5G NR n29 : 717 MHz ~ 728 MHz          5G NR n30 : 2350 MHz ~ 2360 MHz          5G NR n41 : 2496 MHz ~ 2690 MHz          5G NR n66 : 2110 MHz~ 2200 MHz          5G NR n70 : 1995 MHz~ 2020 MHz          5G NR n71: 617 MHz ~ 652 MHz          5G NR n77: 3300 MHz ~ 4200 MHz          5G NR n78: 3300 MHz ~ 3800 MHz          802.11b/g/n: 2400 MHz ~ 2483.5 MHz          802.11a/n/ac: 5150 MHz ~ 5250 MHz;                            5250 MHz ~ 5350 MHz;                            5470 MHz ~ 5725 MHz                            5725 MHz ~ 5850 MHz          Bluetooth: 2400 MHz ~ 2483.5 MHz          GNSS : 1559 MHz ~ 1610 MHz          FM : 88 MHz ~ 108 MHz</p>
<b>Antenna Type</b>	<p>WWAN : PIFA Antenna          WLAN : PIFA Antenna          Bluetooth : PIFA Antenna          GNSS: PIFA Antenna          FM : External Earphone Antenna</p>
<b>Type of Modulation</b>	<p>GSM/GPRS: GMSK          EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK          WCDMA : BPSK (Uplink)          HSDPA/DC-HSDPA : QPSK (Uplink)          HSUPA : QPSK (Uplink)          HSPA+ : 16QAM          DC-HSDPA : 64QAM          LTE: QPSK / 16QAM / 64QAM / 256QAM (Downlink only)          5G NR:          DFT-s-OFDM (PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM)          CP-OFDM (QPSK / 16QAM / 64QAM / 256QAM)          802.11b : DSSS (DBPSK / DQPSK / CCK)          802.11a/g/n/ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)          Bluetooth LE : GFSK</p>



	Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : $\pi$ /4-DQPSK Bluetooth (3Mbps) : 8-DPSK GNSS : BPSK FM
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### 1.5. Modification of EUT

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

### 1.6. Test Location

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

<b>Test Firm</b>	Sporton International Inc. (Kunshan)		
<b>Test Site Location</b>	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People’s Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
<b>Test Site No.</b>	<b>Sporton Site No.</b>	<b>FCC Designation No.</b>	<b>FCC Test Firm Registration No.</b>
	CO01-KS 03CH04KS	CN1257	314309

### 1.7. Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH04-KS	AUDIX	E3	6.2009-8-24a
2.	CO01-KS	AUDIX	E3	6.2009-8-24

### 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 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 emission (150 kHz to 30 MHz), radiation emission (30MHz to the 5th harmonic of the highest frequency or to 40 GHz, whichever is lower).

Test Items	Function Type
AC Conducted Emission	Mode 1: GSM 850 Rx(Middle CH) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 1 + USB Cable 1(Charging from Adapter 1) + SIM 1 for Sample 1
	Mode 2: WCDMA Band II Rx + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + USB Cable 2(Charging from Adapter 2) + SIM 2 for Sample 1
	Mode 3: LTE Band 13 Rx(High CH) + Bluetooth Idle + WLAN (2.4G) Idle + MPEG4(Run Color Bar) + Earphone + Battery 1 + USB Cable3(Charging from Adapter3 ) + SIM 1 for Sample 1
	Mode 4: LTE Band 14 Rx(High CH) + Bluetooth Idle + WLAN (5G) Idle + FM RX(98) + Earphone + Battery 1 + USB Cable(2)(Charging from Adapter2) + SIM 2 for Sample 1
	Mode 5: LTE Band 71 Rx(Low CH) + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx + Earphone + Battery 1 + USB Cable1 (Data Link with Notebook) + SIM 2 for Sample 1
	Mode 6: 5G NR n26 Rx(Low CH) + Bluetooth Idle + WLAN (5G) Idle + GNSS Rx + Earphone + Battery 1 + USB Cable2 (Data Link with Notebook) + SIM 1 for Sample 1
	Mode 7: 5G NR n12 Rx(Middle CH) + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx + Earphone + Battery 1 + USB Cable3 (Data Link with Notebook) + SIM 2 for Sample 1
	Mode 8: LTE Band 71 Rx(Low CH) + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx + Earphone + Battery 1 + USB Cable1 (Data Link with Notebook) + SIM 2 for Sample 2
	Mode 9: WCDMA Band II Rx + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 2 + USB Cable 2(Charging from Adapter 2) + SIM 2 for Sample 2
	Mode 10 : LTE Band 71 Rx(Low CH) + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx + Earphone + Battery 2 + USB Cable1 (Data Link with Notebook) + SIM 2 for Sample 3

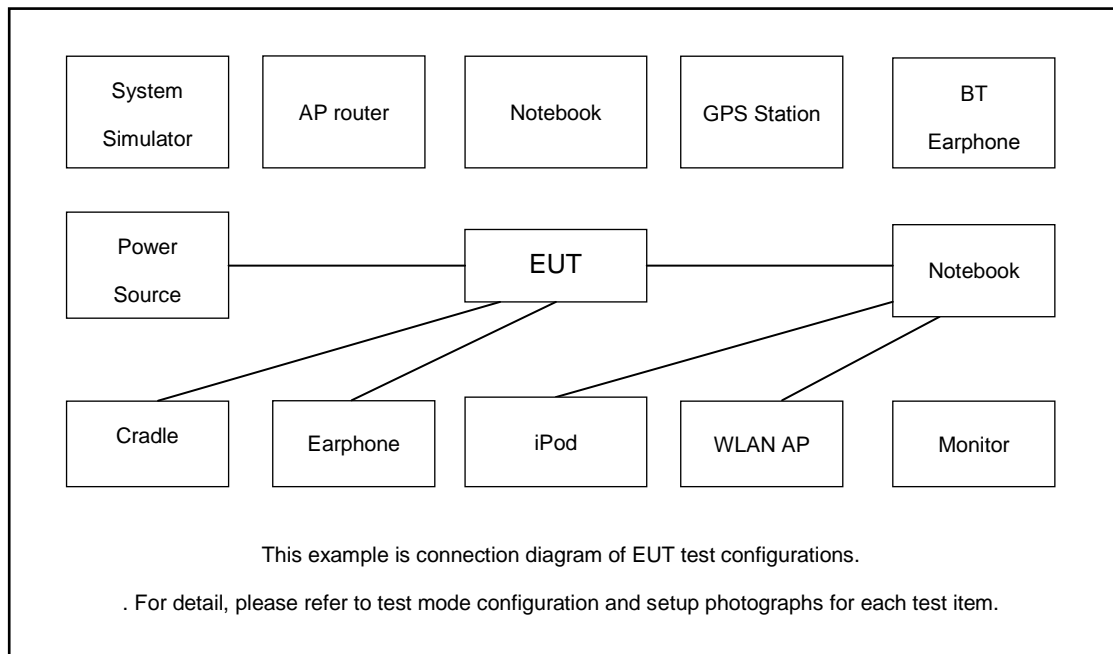


Radiated Emissions	<p>Mode 1: GSM 850 Rx(Middle CH) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 1 + USB Cable 1(Charging from Adapter 1) + SIM 1 for Sample 1</p> <p>Mode 2: WCDMA Band II Rx + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + USB Cable 2(Charging from Adapter 2) + SIM 2 for Sample 1</p> <p>Mode 3: LTE Band 13 Rx(High CH) + Bluetooth Idle + WLAN (2.4G) Idle + MPEG4(Run Color Bar) + Earphone + Battery 1 + USB Cable3(Charging from Adapter3 ) + SIM 1 for Sample 1</p> <p>Mode 4: LTE Band 14 Rx(High CH) + Bluetooth Idle + WLAN (5G) Idle + FM RX(88) + Earphone + Battery 1 + USB Cable3(Charging from Adapter3 ) + SIM 2 for Sample 1</p> <p>Mode 5: LTE Band 71 Rx(Low CH) + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx + Earphone + Battery 1 + USB Cable1 (Data Link with Notebook) + SIM 2 for Sample 1</p> <p>Mode 6: 5G NR n26 Rx(Low CH) + Bluetooth Idle + WLAN (5G) Idle + GNSS Rx + Earphone + Battery 1 + USB Cable2 (Data Link with Notebook) + SIM 1 for Sample 1</p> <p>Mode 7: 5G NR n12 Rx(Middle CH) + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx + Earphone + Battery 1 + USB Cable3 (Data Link with Notebook) + SIM 2 for Sample 1</p> <p>Mode 8: 5G NR n26 Rx(Low CH) + Bluetooth Idle + WLAN (5G) Idle + GNSS Rx + Earphone + Battery 1 + USB Cable2 (Data Link with Notebook) + SIM 1 for Sample 2</p> <p>Mode 9: 5G NR n26 Rx(Low CH) + Bluetooth Idle + WLAN (5G) Idle + Camera(Rear) + Earphone + USB Cable3(Charging from Adapter3 ) + SIM 1 for Sample 3</p> <p>Mode 10 : 5G NR n26 Rx(Low CH) + Bluetooth Idle + WLAN (5G) Idle + GNSS Rx + Earphone + Battery 1 + USB Cable2 (Data Link with Notebook) + SIM 1 for Sample 3</p>
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**Remark:**

1. The worst case of AC is mode 5 only the test data of this mode is reported.
2. The worst case of RE is mode 6 only the test data of this mode is reported.
3. Data Link with Notebook / PC means data application transferred mode between EUT and Notebook / PC.
4. Pre-scanned Low/Middle/High channel for GSM 850/WCDMA Band V/LTE Band 13 and FM Rx, the worst channel was recorded in this report.

## 2.2. Connection Diagram of Test System



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

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

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritus	MT8821C	N/A	N/A	Unshielded,1.8m
2.	LTE Base Station	Anritus	MT8820C	N/A	N/A	Unshielded,1.8m
3.	WLAN AP	D-link	DIR-655	KA21R655B1	N/A	Unshielded,1.8m
4.	WLAN AP	TP-Link	TL-WDR5600	N/A	N/A	Unshielded,1.8m
5.	Signal Generator	R&S	SMBV100A	N/A	N/A	Unshielded,1.8m
6.	Bluetooth Earphone	Lenovo	LBH308	N/A	N/A	N/A
7.	Bluetooth Earphone	Xiaomi	LYEJ02LM	N/A	N/A	N/A
8.	Notebook	Lenovo	G480	QDS-BRCM1050I	N/A	shielded cable DC O/P 1.8m ,Unshielded AC I/P cable 1.8m
9.	Notebook	Lenovo	S730-13IWL	N/A	N/A	shielded cable DC O/P. 1.8m ,Unshielded AC I/P cable 1.8m
10.	Vector gnal Generator	R&S	SMBV100A	258305	N/A	N/A
11.	Hard Disk	Lenovo	F310	DoC	Shielded, 1.2m	N/A
12.	Hard disk	KINGSHARE	KSP6120G	Fcc DoC	Shielded, 1.2m	N/A
13.	SD Card	Kingston	8GB	N/A	N/A	N/A



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

The EUT was in GSM or WCDMA or LTE or 5G NR 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 or WLAN AP, 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 camera to capture images.
3. Turn on MPEG4 function.
4. Turn on FM function to make the EUT receive continuous signals from FM station.
5. Turn on GNSS function to make the EUT receive continuous signals from GNSS station.



### 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.

<Class B Limit>

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.

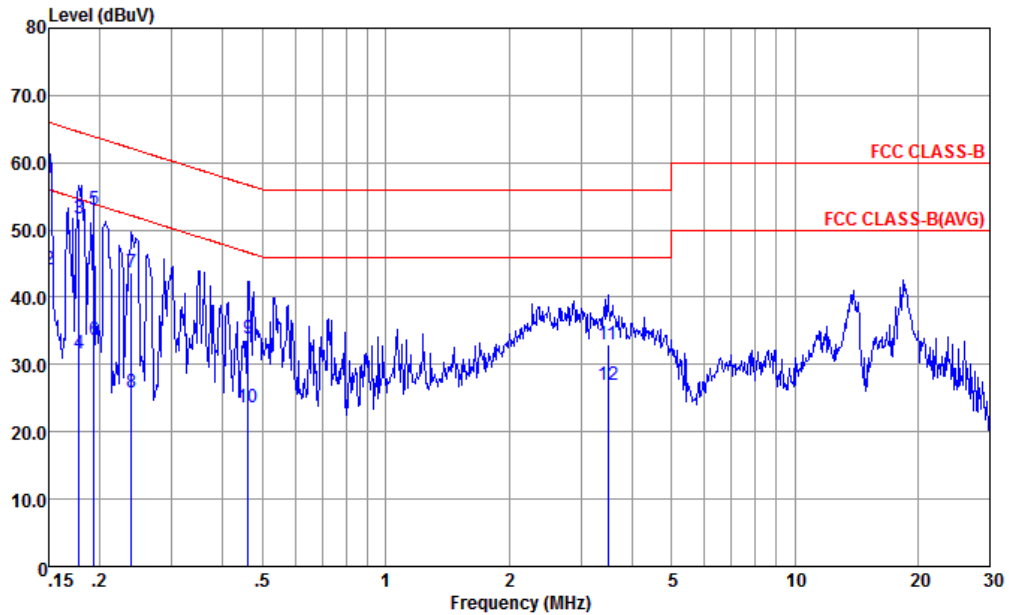
### 3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

Test Engineer :	Amos Zhao	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

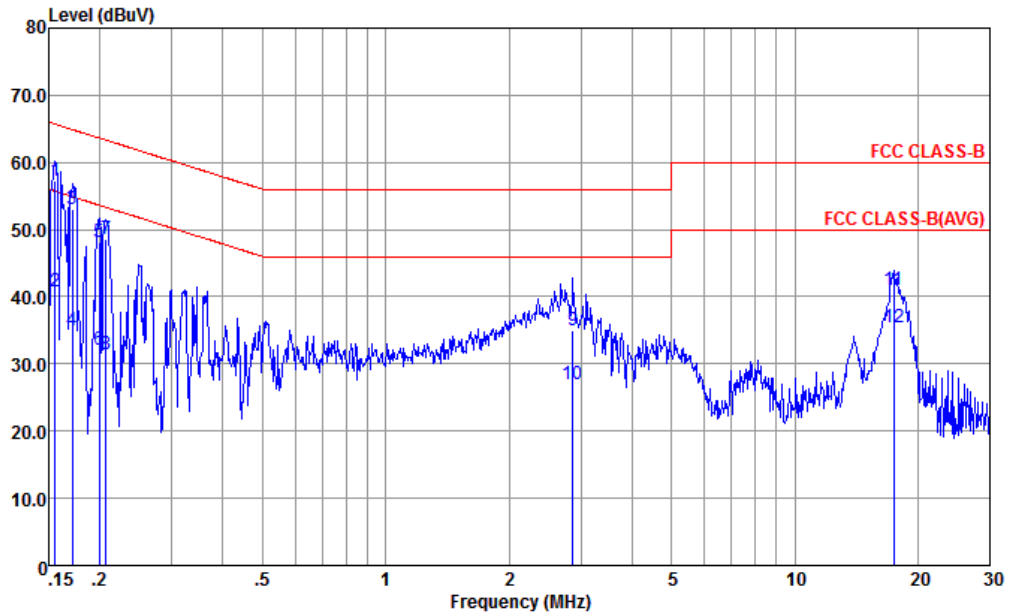


Site : CO01-KS  
 Condition : FCC CLASS-B LISN-060105-L LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1 *	0.150	57.80	-8.20	66.00	47.30	0.02	10.48	QP
2	0.150	44.10	-11.90	56.00	33.60	0.02	10.48	Average
3	0.178	51.64	-12.96	64.59	41.20	0.03	10.41	QP
4	0.178	31.64	-22.96	54.59	21.20	0.03	10.41	Average
5	0.193	53.02	-10.87	63.89	42.60	0.04	10.38	QP
6	0.193	33.62	-20.27	53.89	23.20	0.04	10.38	Average
7	0.239	43.59	-18.54	62.13	33.20	0.05	10.34	QP
8	0.239	25.89	-26.24	52.13	15.50	0.05	10.34	Average
9	0.461	33.84	-22.83	56.67	23.49	0.10	10.25	QP
10	0.461	23.64	-23.03	46.67	13.29	0.10	10.25	Average
11	3.491	32.91	-23.09	56.00	22.50	0.16	10.25	QP
12	3.491	27.01	-18.99	46.00	16.60	0.16	10.25	Average



Test Engineer :	Amos Zhao	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS  
 Condition : FCC CLASS-B LISN-060105-N NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1 *	0.156	57.17	-8.52	65.69	46.59	0.11	10.47	QP
2	0.156	40.77	-14.92	55.69	30.19	0.11	10.47	Average
3	0.171	53.13	-11.77	64.90	42.59	0.11	10.43	QP
4	0.171	35.03	-19.87	54.90	24.49	0.11	10.43	Average
5	0.200	48.06	-15.56	63.62	37.60	0.10	10.36	QP
6	0.200	32.06	-21.56	53.62	21.60	0.10	10.36	Average
7	0.207	48.66	-14.66	63.32	38.20	0.10	10.36	QP
8	0.207	31.36	-21.96	53.32	20.90	0.10	10.36	Average
9	2.869	34.89	-21.11	56.00	24.50	0.15	10.24	QP
10	2.869	26.89	-19.11	46.00	16.50	0.15	10.24	Average
11	17.475	41.06	-18.94	60.00	30.19	0.42	10.45	QP
12	17.475	35.46	-14.54	50.00	24.59	0.42	10.45	Average

Note:

- Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
- Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)





### 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:

<Class B Limit>

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.

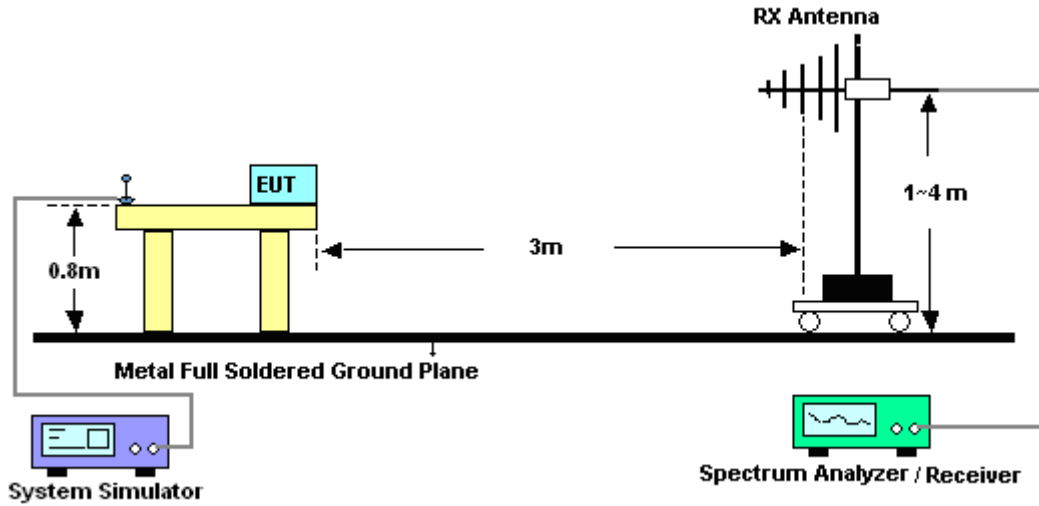


### **3.2.3. Test Procedures**

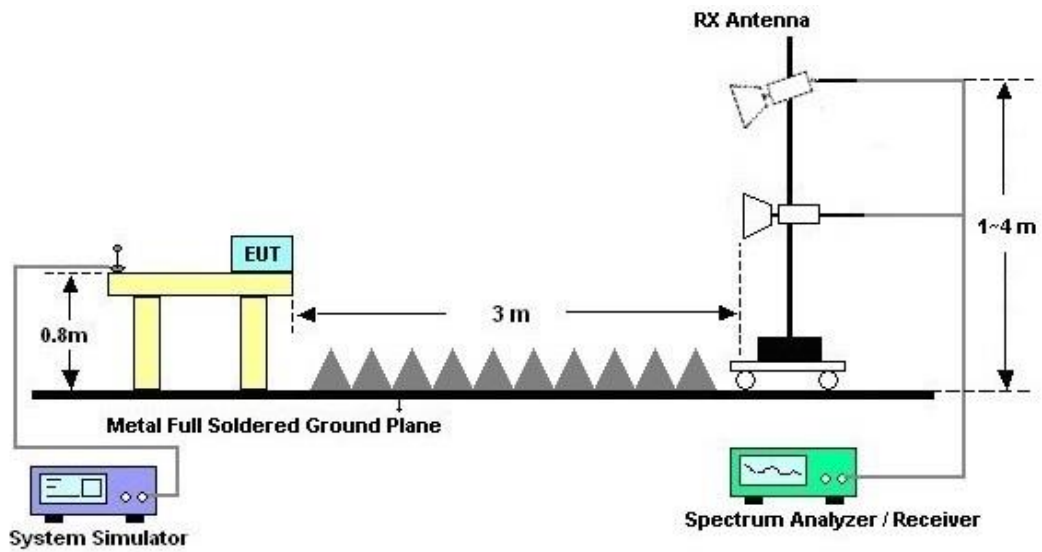
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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
10. Exploratory radiated emissions testing of handheld and/or body-worn devices shall include rotation of the EUT through three orthogonal axes (X/Y/Z Plane) to determine the orientation (attitude) that maximizes the emissions.

### 3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



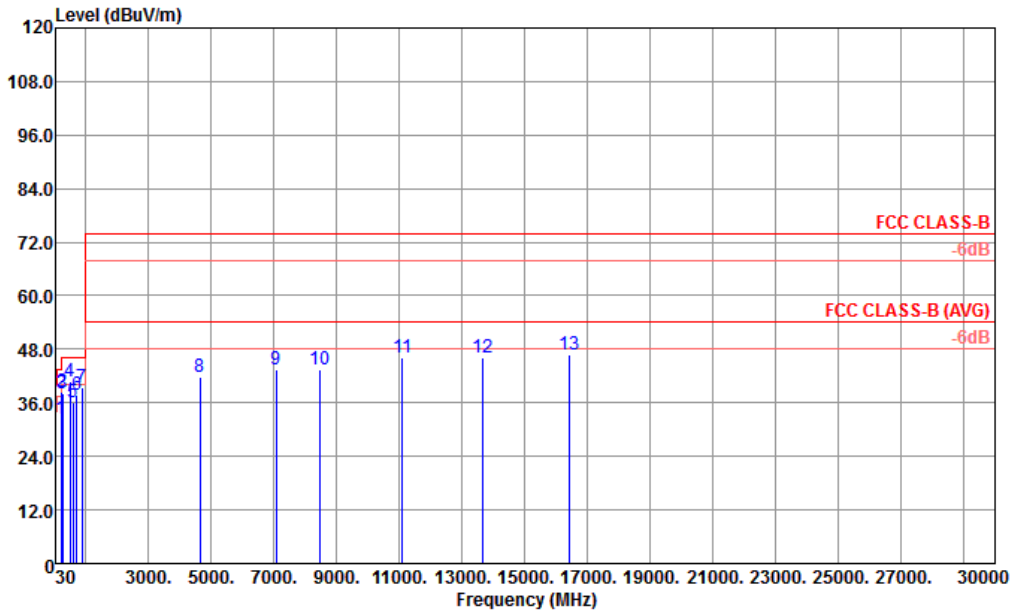
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

Test Engineer :	LEVI ZHUO	Temperature :	21~22°C
		Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Horizontal
Remark :	#7 is system simulator signal which can be ignored.		

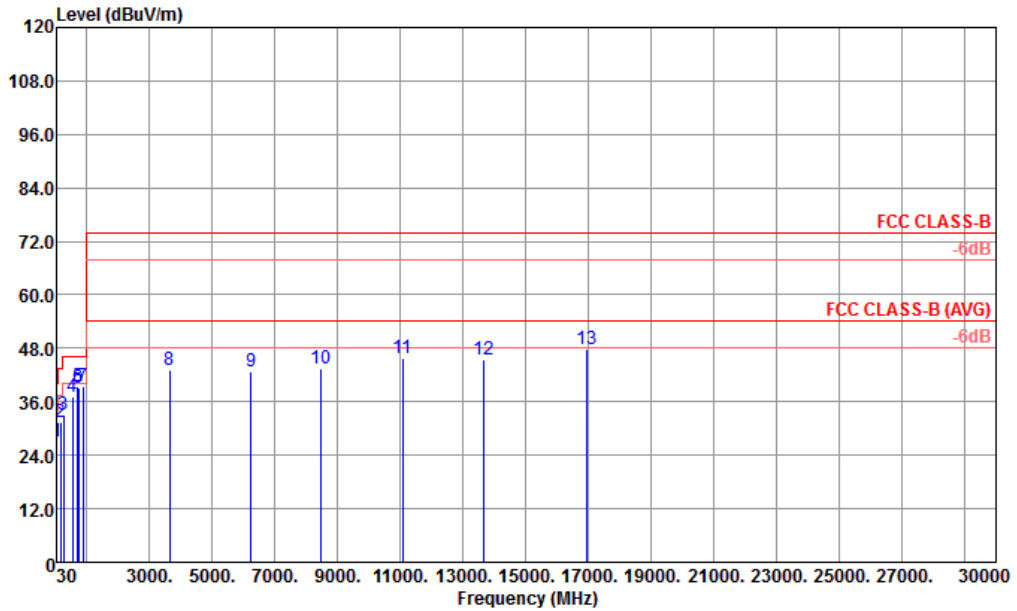


Site : 03ch04-KS  
 Condition : FCC CLASS-B 3m GBL6112D SN49922NEW HORIZONTAL

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	216.24	32.27	-13.73	46.00	47.98	15.01	2.15	32.87	---	---	Peak
2	240.49	38.42	-7.58	46.00	51.73	17.24	2.27	32.82	---	---	Peak
3	263.77	37.98	-8.02	46.00	48.69	19.68	2.38	32.77	---	---	Peak
4	506.27	40.67	-5.33	46.00	45.69	24.22	3.31	32.55	100	300	Peak
5	592.60	36.11	-9.89	46.00	39.68	25.67	3.58	32.82	---	---	Peak
6	711.91	37.69	-8.31	46.00	39.56	26.73	3.92	32.52	---	---	Peak
7	876.81	39.37	-	46.00	38.22	29.07	4.33	32.25	---	---	Peak
8	4640.00	41.70	-32.30	74.00	62.37	34.58	7.97	63.22	---	---	Peak
9	7072.00	43.33	-30.67	74.00	60.53	36.74	9.88	63.82	---	---	Peak
10	8464.00	43.34	-30.66	74.00	59.51	36.43	10.90	63.50	---	---	Peak
11	11088.00	46.02	-27.98	74.00	58.62	38.23	12.97	63.80	---	---	Peak
12	13680.00	45.98	-28.02	74.00	55.62	38.71	14.26	62.61	---	---	Peak
13	16416.00	46.83	-27.17	74.00	52.74	40.56	15.58	62.05	---	---	Peak



Test Engineer :	LEVI ZHUO	Temperature :	21~22°C
		Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Vertical
Remark :	#7 is system simulator signal which can be ignored.		



Site : 03ch04-KS  
 Condition : FCC CLASS-B 3m GBL6112D SN49922NEW VERTICAL  
 Project : 1D1722  
 mode : 6  
 : #18  
 : 19%  
 : PC/NB USB Data Link to EUT (eMMC)

Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	51.34	27.24	-12.76	40.00	45.36	13.97	1.03	33.12	Peak
2	167.74	31.47	-12.03	43.50	46.87	15.68	1.88	32.96	Peak
3	263.77	33.13	-12.87	46.00	43.84	19.68	2.38	32.77	Peak
4	530.52	37.21	-8.79	46.00	41.79	24.76	3.40	32.74	Peak
5	711.91	39.43	-6.57	46.00	41.30	26.73	3.92	32.52	Peak
6	727.43	38.96	-7.04	46.00	40.36	27.19	3.96	32.55	Peak
7	876.81	39.43			38.28	29.07	4.33	32.25	Peak
8	3640.00	42.98	-31.02	74.00	64.86	34.34	7.09	63.31	Peak
9	6240.00	42.63	-31.37	74.00	61.63	35.49	9.24	63.73	Peak
10	8440.00	43.48	-30.52	74.00	59.67	36.44	10.89	63.52	Peak
11	11079.00	45.94	-28.06	74.00	58.54	38.23	12.97	63.80	Peak
12	13644.00	45.54	-28.46	74.00	55.16	38.69	14.24	62.55	Peak
13	16938.00	47.68	-26.32	74.00	52.62	40.51	15.86	61.31	Peak

Note:

- Level(dBμV/m) = Read Level(dBμV) + Antenna Factor(dB/m) + Cable Loss(dB) - Preamp Factor(dB)
- Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)



## 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 21, 2021	Jan. 22, 2022	Apr. 20, 2022	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 14, 2021	Jan. 22, 2022	Oct. 13, 2022	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	Apr. 13, 2021	Jan. 22, 2022	Apr. 12, 2022	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP0000008 11	AC 0V~300V, 45Hz~1000Hz	Oct. 14, 2021	Jan. 22, 2022	Oct. 13, 2022	Conduction (CO01-KS)
EMI Test Receiver	Keysight	N9038A	MY57290151	3Hz~8.5GHz;M ax 30dBm	Jul.17. 2021	Jan. 08, 2022 ~Jan. 10, 2022	Jul.16. 2022	Radiation (03CH04-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44G,MAX 30dB	Apr.13, 2021	Jan. 08, 2022 ~Jan. 10, 2022	Apr. 12, 2022	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz~1GHz	May. 30, 2021	Jan. 08, 2022 ~Jan. 10, 2022	May. 29, 2022	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1356	1GHz~18GHz	Apr. 18, 2021	Jan. 08, 2022 ~Jan. 10, 2022	Apr. 17, 2022	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Jan. 08, 2022 ~Jan. 10, 2022	Jan. 04 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2022	Jan. 08, 2022 ~Jan. 10, 2022	Jan. 04 2023	Radiation (03CH04-KS)
Amplifier	Burgeon	BPA-530	102219	0.01MHz ~3000MHz	Oct. 30, 2021	Jan. 08, 2022 ~Jan. 10, 2022	Oct. 29, 2022	Radiation (03CH04-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5G Hz	Oct. 13, 2021	Jan. 08, 2022 ~Jan. 10, 2022	Oct. 12, 2022	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jan. 08, 2022 ~Jan. 10, 2022	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jan. 08, 2022 ~Jan. 10, 2022	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jan. 08, 2022 ~Jan. 10, 2022	NCR	Radiation (03CH04-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% ( $U = 2Uc(y)$ )	2.94dB
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.0dB
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### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 30000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.1dB
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