



FCC Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : XT2129-2
FCC ID : IHDT56ZN2
STANDARD : 47 CFR Part 15 Subpart B
CLASSIFICATION : Certification

The product was received on Oct. 20, 2020 and testing was completed on Oct. 30, 2020. 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 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 (ShenZhen) Inc., the test report shall not be reproduced except in full.

Reviewed by: Derreck Chen / Supervisor

Approved by: Eric Shih / Manager



Sporton International (ShenZhen) Inc.

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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 7

 1.6. Test Location 7

 1.7. Test Software 8

 1.8. Applicable Standards 8

 1.9. Specification of Accessory 8

2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST 9

 2.1. Test Mode 9

 2.2. Connection Diagram of Test System 10

 2.3. Support Unit used in test configuration and system 10

 2.4. EUT Operation Test Setup 11

3. TEST RESULT 12

 3.1. Test of AC Conducted Emission Measurement 12

 3.2. Test of Radiated Emission Measurement 16

4. LIST OF MEASURING EQUIPMENT 21

5. UNCERTAINTY OF EVALUATION 22

APPENDIX A. SETUP PHOTOGRAPHS



REVISION HISTORY

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|-------------------|----------------|-------------------------|--------------------|
| FC002023 | Rev. 01 | Initial issue of report | Dec. 17, 2020 |
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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 8.12 dB at 0.150 MHz |
| 3.2 | 15.109 | Radiated Emission | < 15.109 limits | PASS | Under limit 5.61 dB at 192.960 MHz for Quasi-Peak |

| |
|--|
| Declaration of Conformity: |
| The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. |
| Comments and Explanations: |
| 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,IL60654 USA

1.2. Manufacturer

Motorola Mobility LLC
222 W,Merchandise Mart Plaza,Chicago,IL60654 USA

1.3. Product Feature of Equipment Under Test

| Product Feature | |
|---------------------------------|---|
| Equipment | Mobile Cellular Phone |
| Brand Name | Motorola |
| Model Name | XT2129-2 |
| FCC ID | IHDT56ZN2 |
| EUT supports Radios application | GSM/WCDMA/LTE/NFC WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE FM Receiver and GNSS |
| IMEI Code | Conduction: 350443160013510/350443160013528 Radiation: 350443160013478/350443160013486 |
| HW Version | DVT2 |
| SW Version | RRC31.30 |
| EUT Stage | Production Unit |

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 | |
|---|--|
| Tx Frequency | GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 26 : 814.7 MHz ~ 848.3 MHz LTE Band 38 : 2572.5 MHz ~ 2617.5 MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5720 MHz 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz |
| Rx Frequency | GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 7 : 2622.5 MHz ~ 2687.5 MHz LTE Band 26 : 859.7 MHz ~ 893.3 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5720 MHz 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz GNSS : 1559 MHz ~ 1610 MHz NFC : 13.56 MHz FM : 88 MHz ~ 108 MHz |
| Antenna Type | WWAN : PIFA Antenna WLAN : PIFA Antenna Bluetooth : PIFA Antenna GNSS: PIFA Antenna NFC : PIFA Antenna FM : External Earphone Antenna |
| Type of Modulation | GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA : BPSK HSDPA/DC-HSDPA : QPSK HSUPA : QPSK HSPA+ : 16QAM(16QAM not support uplink) DC-HSDPA : 64QAM |



| | |
|--|---|
| | LTE: QPSK / 16QAM / 64QAM 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n/ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) Bluetooth LE : GFSK Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : $\pi/4$ -DQPSK Bluetooth (3Mbps) : 8-DPSK GNSS : BPSK NFC: ASK FM: FM |
|--|---|

GNSS=Galileo+GLONASS+GPS

1.5. Modification of EUT

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

1.6. Test Location

Sporton International (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

| | | | |
|---------------------------|---|----------------------------|---------------------------------------|
| Test Firm | Sporton International (Shenzhen) Inc. | | |
| Test Site Location | 1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595 | | |
| Test Site No. | Sporton Site No. | FCC Designation No. | FCC Test Firm Registration No. |
| | CO01-SZ | CN1256 | 421272 |

| | | | |
|---------------------------|---|----------------------------|---------------------------------------|
| Test Firm | Sporton International (Shenzhen) Inc. | | |
| Test Site Location | 101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City Guangdong Province China 518103 TEL: +86-755-33202398 | | |
| Test Site No. | Sporton Site No. | FCC Designation No. | FCC Test Firm Registration No. |
| | 03CH04-SZ | CN1256 | 421272 |



1.7. Test Software

| Item | Site | Manufacture | Name | Version |
|------|-----------|-------------|------|-------------|
| 1. | 03CH04-SZ | AUDIX | E3 | 6.2009-8-24 |
| 2. | CO01-SZ | AUDIX | E3 | 6.120613b |

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.

1.9. Specification of Accessory

| Specification of Accessory | | | | |
|----------------------------|------------|-------------------------|------------|-----------------|
| AC Adapter 1(US) | Brand Name | Motorola (Chenyang) | Model Name | MC-201 |
| AC Adapter 1(EU) | Brand Name | Motorola (Chenyang) | Model Name | MC-202 |
| AC Adapter 1(UK) | Brand Name | Motorola (Chenyang) | Model Name | MC-203 |
| AC Adapter 1(IN) | Brand Name | Motorola (Chenyang) | Model Name | MC-204 |
| AC Adapter 1(AU) | Brand Name | Motorola (Chenyang) | Model Name | MC-205 |
| AC Adapter 2(US) | Brand Name | Motorola (Acbel) | Model Name | MC-201 |
| AC Adapter 2(EU) | Brand Name | Motorola (Acbel) | Model Name | MC-202 |
| AC Adapter 2(UK) | Brand Name | Motorola (Acbel) | Model Name | MC-203 |
| AC Adapter 2(AU) | Brand Name | Motorola (Acbel) | Model Name | MC-205 |
| Battery | Brand Name | Motorola (Sunwoda) | Model Name | JK50 |
| Earphone 1 | Brand Name | Motorola (New Leader) | Model Name | EM301K-11SF |
| Earphone 2 | Brand Name | Motorola (Juwei) | Model Name | JWEP1182-T03H |
| Earphone 3 | Brand Name | Motorola (New Leader) | Model Name | NLD-EM313A-11SF |
| Earphone 4 | Brand Name | Motorola (LIANYUN) | Model Name | SH38C81577 |
| Earphone 5 | Brand Name | Motorola (Lianchuang) | Model Name | SH38C81576 |
| Earphone 6 | Brand Name | Motorola | Model Name | Motobuds charge |
| USB Cable 1 | Brand Name | Motorola (Chuangyitong) | Model Name | 88806-024 |
| USB Cable 2 | Brand Name | Motorola (SUNTOPS) | Model Name | 336258 |



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.

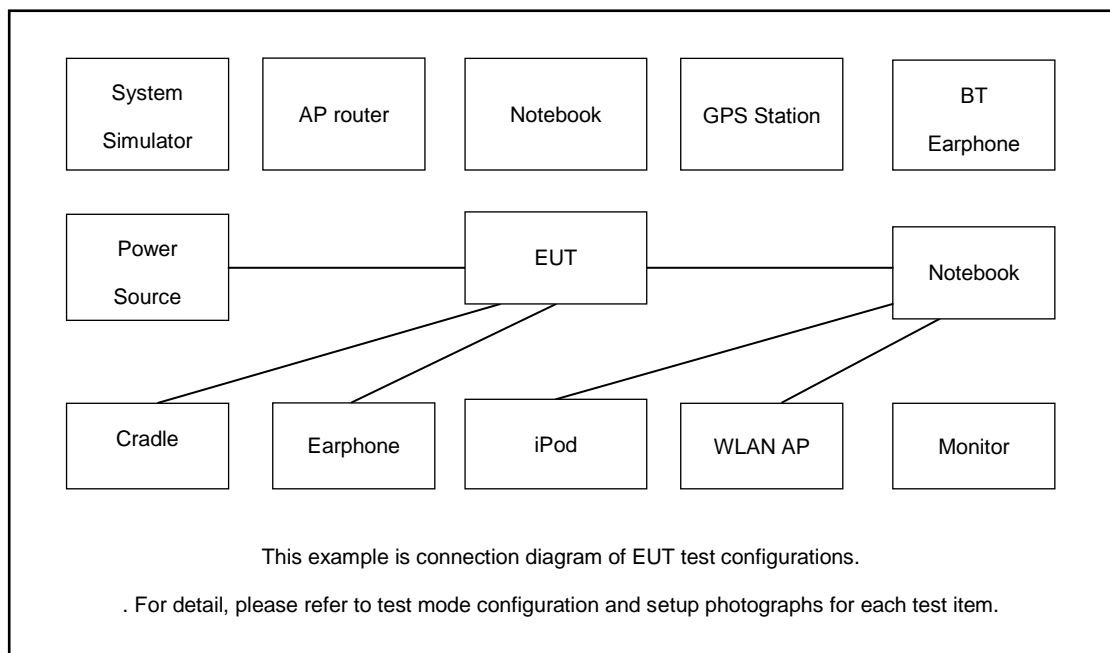
Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

| Test Items | Function Type |
|-----------------------|--|
| AC Conducted Emission | Mode 1 : GSM 850 Idle(Middle CH) + Earphone 1 + Battery + Camera(Rear) + SD Card Load + USB Cable1(Charging from Adapter1) + SIM 1 |
| | Mode 2 : WCDMA Band 5 Idle(High CH) + Earphone 2 + Battery + Camera(Front) + SD Card Load + USB Cable 1(Charging from Adapter 1) + SIM 2 |
| | Mode 3 : LTE Band 5 Idle(Low CH) + Earphone 3 + Battery + MPEG4(Colour bar) + SD Card Link + USB Cable 1(Charging from Adapter 1) + SIM 1 |
| | Mode 4 : LTE Band 7 Idle(Middle CH) + Earphone 4 + Battery + FM Rx(98Mhz) + SD Card Load + USB Cable 1(Charging from Adapter 1) + SIM 2 |
| | Mode 5 : LTE Band 26 Idle(High CH) + Earphone 5 + Battery + Camera(Rear) + SD Card Load + USB Cable2(Charging from Adapter2) + SIM 1 |
| | Mode 6 : LTE Band 7 Idle(Middle CH) + Earphone 4 + Battery + H-Pattern + SD Card Link + USB Cable 1(Data Link with Notebook) + SIM 2 |
| | Mode 7 : LTE Band 7 Idle(Middle CH) + Earphone 4 + Battery + H-Pattern + SD Card Link + USB Cable 2 (Data Link with Notebook) + SIM 2 |
| | Mode 8 : LTE Band 7 Idle(Middle CH) + Earphone 6(BT Link) + Battery + H-Pattern + SD Card Link + USB Cable 2 (Data Link with Notebook) + SIM 2 |
| Radiated Emissions | Mode 1 : GSM 850 Idle(Middle CH) + Earphone 1 + Battery + Camera(Rear) + SD Card Load + USB Cable1(Charging from Adapter1) + SIM 1 |
| | Mode 2 : WCDMA Band 5 Idle(High CH) + Earphone 2 + Battery + Camera(Front) + SD Card Load + USB Cable 1(Charging from Adapter 1) + SIM 2 |
| | Mode 3 : LTE Band 5 Idle(Low CH) + Earphone 3 + Battery + MPEG4(Colour bar) + SD Card Link + USB Cable 1(Charging from Adapter 1) + SIM 1 |
| | Mode 4 : LTE Band 7 Idle(Middle CH) + Earphone 4 + Battery + FM Rx(98Mhz) + SD Card Load + USB Cable 1(Charging from Adapter 1) + SIM 2 |
| | Mode 5 : LTE Band 26 Idle(High CH) + Earphone 5 + Battery + Camera(Rear) + SD Card Load + USB Cable2(Charging from Adapter2) + SIM 1 |
| | Mode 6 : LTE Band 26 Idle(High CH) + Earphone 5 + Battery + H-Pattern + SD Card Link + USB Cable1(Data Link with Notebook) + SIM 1 |
| | Mode 7 : LTE Band 26 Idle(High CH) + Earphone 5 + Battery + H-Pattern + SD Card Link + USB Cable 2 (Data Link with Notebook) + SIM 1 |
| | Mode 8 : LTE Band 26 Idle(High CH) + Earphone 6(BT Link) + Battery + H-Pattern + SD Card Link + USB Cable 2 (Data Link with Notebook) + SIM 1 |

Remark:

1. The worst case of AC is mode 6; 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 means data application transferred mode between EUT and Notebook.
4. Pre-scanned Low/Middle/High channel for GSM 850/WCDMA Band V/LTE Band 5/26 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. | Base Station(LTE) | Anritsu | MT8820C | N/A | N/A | Unshielded,1.8m |
| 2. | FM Station | R&S | SMB100A | N/A | N/A | Unshielded,1.8m |
| 3. | WLAN AP | Dlink | DIR-820L | KA2IR820LA1 | N/A | Unshielded,1.8m |
| 4. | WLAN AP | ASUSTek | RT-AC66U | MSQ-RTAC66U | N/A | Unshielded,2.7m with Core |
| 5. | NOTE BOOK | Lenovo | E540 | FCC DoC | N/A | AC I/P: Unshielded, 1.2 m DC O/P: |



| | | | | | | |
|----|---------|-------|------------|---------|-----|-----------------|
| | | | | | | Shielded, 1.8 m |
| 6. | iPod | Apple | MC525 ZP/A | N/A | N/A | Fcc DoC |
| 7. | lopd | apple | MC69029/A | N/A | N/A | N/A |
| 8. | SD Card | N/A | MicroSD HC | FCC DoC | N/A | N/A |

2.4. EUT Operation Test Setup

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

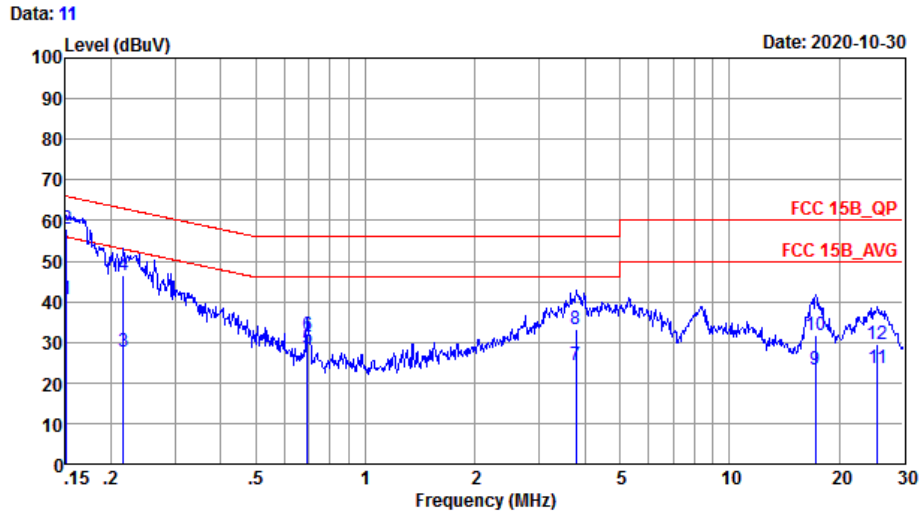
3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

| | | | |
|-----------------|---|---------------------|---------|
| Test Engineer : | Xie YuQiang | Temperature : | 22~25°C |
| | | Relative Humidity : | 50~55% |
| Test Voltage : | 120Vac / 60Hz | Phase : | Line |
| Remark : | All emissions not reported here are more than 10 dB below the prescribed limit. | | |



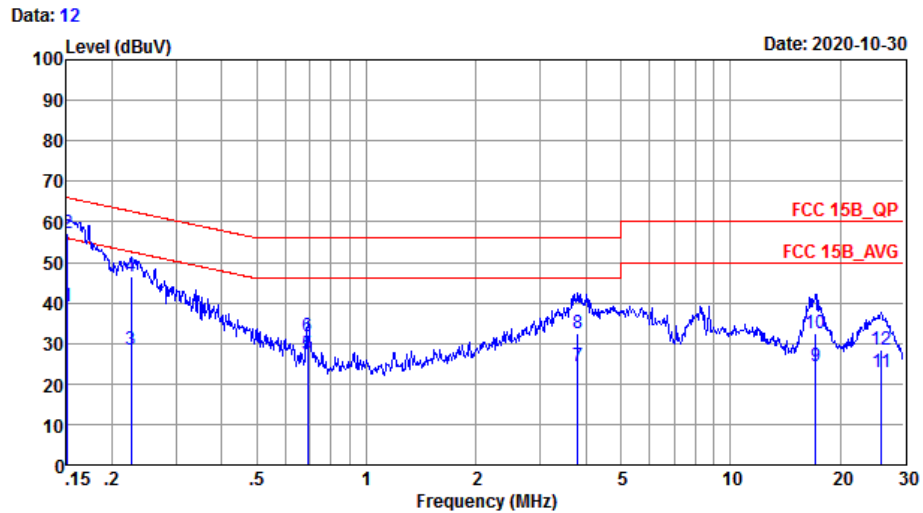
Site : CO01-SZ
 Condition: FCC 15B_QP LISN_20200719_L LINE

IMEI : 350443160013510/350443160013528

| | Freq | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark |
|-----|-------|-------|------------|------------|------------|-------------|------------|---------|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.15 | 40.54 | -15.42 | 55.96 | 30.50 | 0.03 | 10.01 | Average |
| 2 * | 0.15 | 57.84 | -8.12 | 65.96 | 47.80 | 0.03 | 10.01 | QP |
| 3 | 0.22 | 27.54 | -25.42 | 52.96 | 17.50 | 0.03 | 10.01 | Average |
| 4 | 0.22 | 46.44 | -16.52 | 62.96 | 36.40 | 0.03 | 10.01 | QP |
| 5 | 0.69 | 28.49 | -17.51 | 46.00 | 18.40 | 0.02 | 10.07 | Average |
| 6 | 0.69 | 31.69 | -24.31 | 56.00 | 21.60 | 0.02 | 10.07 | QP |
| 7 | 3.78 | 24.50 | -21.50 | 46.00 | 14.21 | 0.17 | 10.12 | Average |
| 8 | 3.78 | 33.10 | -22.90 | 56.00 | 22.81 | 0.17 | 10.12 | QP |
| 9 | 17.20 | 23.17 | -26.83 | 50.00 | 12.00 | 0.88 | 10.29 | Average |
| 10 | 17.20 | 31.87 | -28.13 | 60.00 | 20.70 | 0.88 | 10.29 | QP |
| 11 | 25.46 | 23.62 | -26.38 | 50.00 | 11.90 | 1.37 | 10.35 | Average |
| 12 | 25.46 | 29.42 | -30.58 | 60.00 | 17.70 | 1.37 | 10.35 | QP |



| | | | |
|-----------------|---|---------------------|---------|
| Test Engineer : | Xie YuQiang | Temperature : | 22~25°C |
| | | Relative Humidity : | 50~55% |
| Test Voltage : | 120Vac / 60Hz | Phase : | Neutral |
| Remark : | All emissions not reported here are more than 10 dB below the prescribed limit. | | |



Site : CO01-SZ
Condition: FCC 15B QP LISN_20200719_N NEUTRAL

IMEI : 350443160013510/350443160013528

| | Freq | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark |
|-----|-------|-------|------------|------------|------------|-------------|------------|---------|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.15 | 39.14 | -16.82 | 55.96 | 29.10 | 0.03 | 10.01 | Average |
| 2 * | 0.15 | 57.04 | -8.92 | 65.96 | 47.00 | 0.03 | 10.01 | QP |
| 3 | 0.23 | 28.24 | -24.37 | 52.61 | 18.20 | 0.03 | 10.01 | Average |
| 4 | 0.23 | 46.54 | -16.07 | 62.61 | 36.50 | 0.03 | 10.01 | QP |
| 5 | 0.69 | 27.19 | -18.81 | 46.00 | 17.10 | 0.02 | 10.07 | Average |
| 6 | 0.69 | 31.59 | -24.41 | 56.00 | 21.50 | 0.02 | 10.07 | QP |
| 7 | 3.80 | 24.37 | -21.63 | 46.00 | 14.20 | 0.05 | 10.12 | Average |
| 8 | 3.80 | 32.37 | -23.63 | 56.00 | 22.20 | 0.05 | 10.12 | QP |
| 9 | 17.11 | 24.33 | -25.67 | 50.00 | 13.60 | 0.44 | 10.29 | Average |
| 10 | 17.11 | 32.33 | -27.67 | 60.00 | 21.60 | 0.44 | 10.29 | QP |
| 11 | 26.00 | 23.01 | -26.99 | 50.00 | 11.60 | 1.06 | 10.35 | Average |
| 12 | 26.00 | 28.51 | -31.49 | 60.00 | 17.10 | 1.06 | 10.35 | QP |

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.

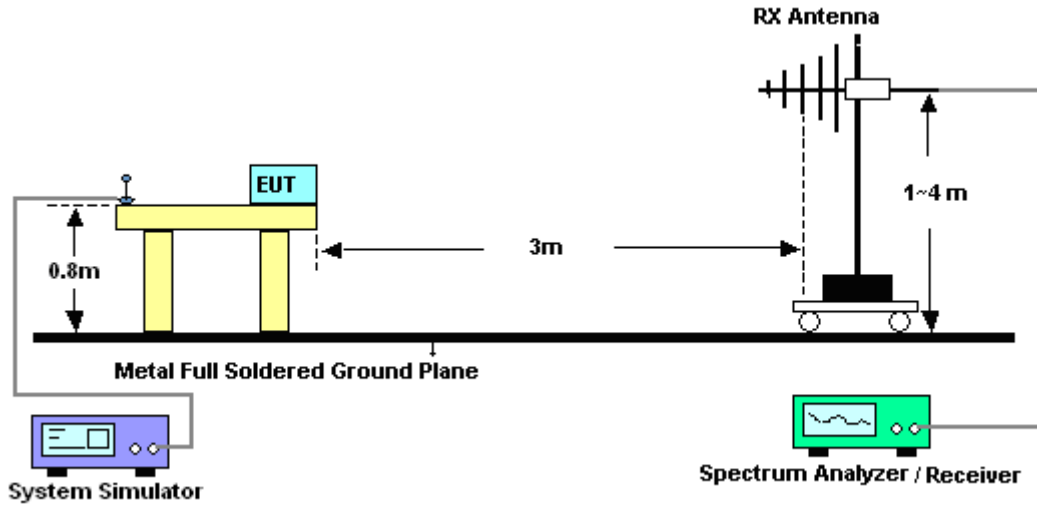


3.2.3. Test Procedures

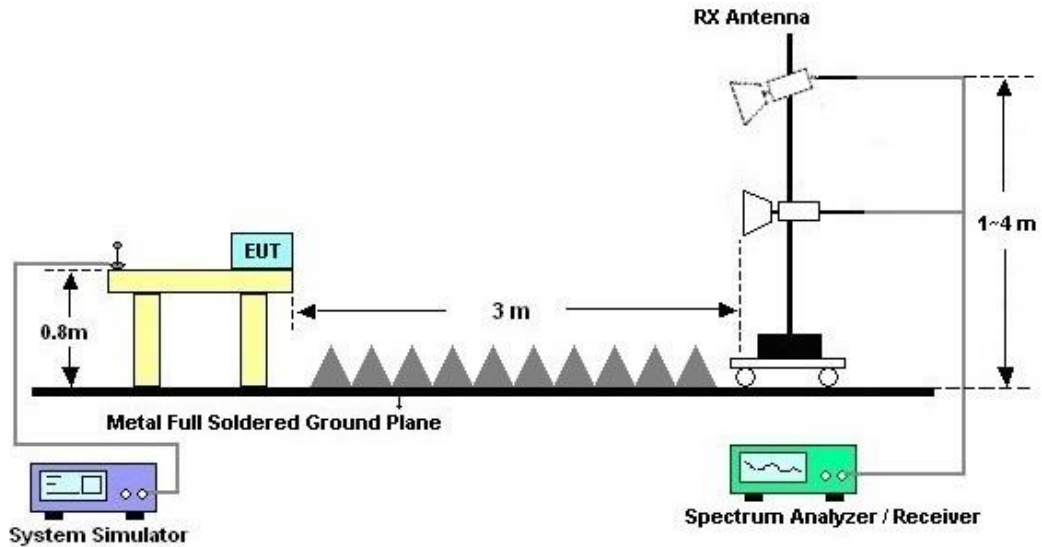
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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 μ V/m) = 20 log Emission level (μ 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



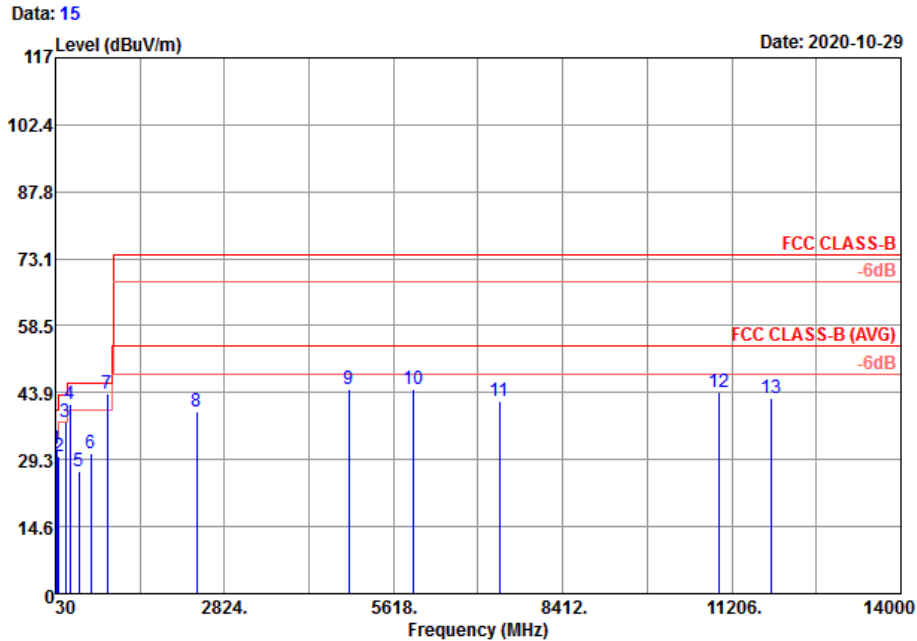
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

| | | | |
|-----------------|---|---------------------|------------|
| Test Engineer : | Feiyan Zhang | Temperature : | 22~25°C |
| | | Relative Humidity : | 50~55% |
| Test Distance : | 3m | Polarization : | Horizontal |
| Remark : | #7 is system simulator signal which can be ignored. | | |

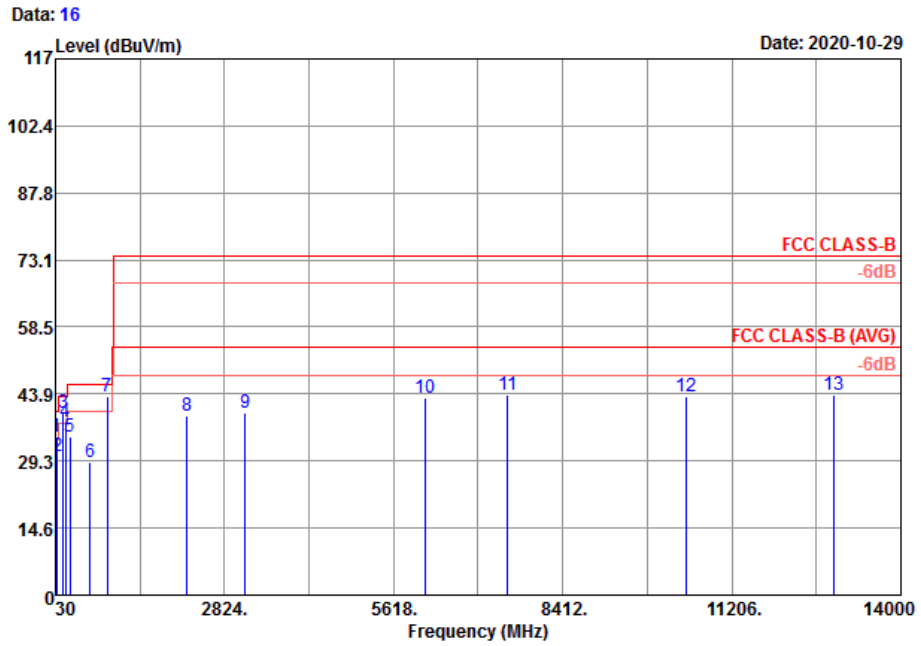


Site : 03CH04-SZ
Condition : FCC CLASS-B 3m LF_ANT47611_20 HORIZONTAL

| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Remark |
|----|----------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|--------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | cm | deg | |
| 1 | 45.52 | 31.48 | -8.52 | 40.00 | 47.39 | 16.03 | 0.66 | 32.60 | --- | --- | Peak |
| 2 | 89.17 | 30.01 | -13.49 | 43.50 | 46.85 | 14.80 | 0.94 | 32.58 | --- | --- | Peak |
| 3 | 193.93 | 37.64 | -5.86 | 43.50 | 53.00 | 15.45 | 1.41 | 32.22 | 100 | 25 | QP |
| 4 | 270.56 | 41.49 | -4.51 | 46.00 | 52.88 | 18.90 | 1.71 | 32.00 | --- | --- | Peak |
| 5 | 418.00 | 26.85 | -19.15 | 46.00 | 34.02 | 22.59 | 2.14 | 31.90 | --- | --- | Peak |
| 6 | 613.94 | 30.51 | -15.49 | 46.00 | 34.75 | 25.31 | 2.58 | 32.13 | --- | --- | Peak |
| 7 | 889.42 | 43.80 | | | 45.87 | 27.01 | 3.14 | 32.22 | --- | --- | Peak |
| 8 | 2360.00 | 39.64 | -34.36 | 74.00 | 69.65 | 27.74 | 0.00 | 57.75 | --- | --- | Peak |
| 9 | 4880.00 | 44.75 | -29.25 | 74.00 | 70.39 | 31.88 | 0.00 | 57.52 | 100 | 64 | Peak |
| 10 | 5950.00 | 44.68 | -29.32 | 74.00 | 69.48 | 32.80 | 0.00 | 57.60 | --- | --- | Peak |
| 11 | 7366.00 | 42.18 | -31.82 | 74.00 | 64.04 | 37.08 | 0.00 | 58.94 | --- | --- | Peak |
| 12 | 10982.00 | 43.96 | -30.04 | 74.00 | 63.47 | 38.81 | 0.00 | 58.32 | --- | --- | Peak |
| 13 | 11858.00 | 42.81 | -31.19 | 74.00 | 60.86 | 39.30 | 0.00 | 57.35 | --- | --- | Peak |



| | | | |
|-----------------|---|---------------------|----------|
| Test Engineer : | Feiyan Zhang | Temperature : | 22~25°C |
| | | Relative Humidity : | 50~55% |
| Test Distance : | 3m | Polarization : | Vertical |
| Remark : | #7 is system simulator signal which can be ignored. | | |



Site : 03CH04-SZ
Condition : FCC CLASS-B 3m LF_ANT47611_20 VERTICAL

| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | A/Pos | T/Pos | Remark |
|----|----------|--------|------------|------------|-------------------|----------------|------------|---------------|-------|-------|--------|
| | MHz | dBUV/m | dB | dBUV/m | dBUV | dB/m | dB | dB | cm | deg | |
| 1 | 45.52 | 34.51 | -5.49 | 40.00 | 50.42 | 16.03 | 0.66 | 32.60 | --- | --- | Peak |
| 2 | 62.01 | 30.39 | -9.61 | 40.00 | 49.61 | 12.59 | 0.79 | 32.60 | --- | --- | Peak |
| 3 | 156.10 | 39.85 | -3.65 | 43.50 | 54.56 | 16.40 | 1.27 | 32.38 | --- | --- | Peak |
| 4 | 192.96 | 37.89 | -5.61 | 43.50 | 53.30 | 15.41 | 1.41 | 32.23 | 100 | 158 | QP |
| 5 | 265.71 | 34.62 | -11.38 | 46.00 | 45.88 | 19.04 | 1.70 | 32.00 | --- | --- | Peak |
| 6 | 607.15 | 28.91 | -17.09 | 46.00 | 33.28 | 25.17 | 2.57 | 32.11 | --- | --- | Peak |
| 7 | 889.42 | 43.50 | | | 45.57 | 27.01 | 3.14 | 32.22 | --- | --- | Peak |
| 8 | 2210.00 | 39.21 | -34.79 | 74.00 | 69.17 | 27.90 | 0.00 | 57.86 | --- | --- | Peak |
| 9 | 3164.00 | 39.82 | -34.18 | 74.00 | 68.05 | 29.01 | 0.00 | 57.24 | --- | --- | Peak |
| 10 | 6146.00 | 43.14 | -30.86 | 74.00 | 67.63 | 33.29 | 0.00 | 57.78 | --- | --- | Peak |
| 11 | 7496.00 | 43.52 | -30.48 | 74.00 | 64.92 | 37.60 | 0.00 | 59.00 | --- | --- | Peak |
| 12 | 10464.00 | 43.20 | -30.80 | 74.00 | 63.74 | 38.34 | 0.00 | 58.88 | --- | --- | Peak |
| 13 | 12892.00 | 43.54 | -30.46 | 74.00 | 61.53 | 39.84 | 0.00 | 57.83 | 100 | 174 | 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 | ESR7 | 101630 | 9kHz~7GHz; | Dec. 27, 2019 | Oct. 30, 2020 | Dec. 26, 2021 | Conduction (CO01-SZ) |
| AC LISN | EMCO | 3816/2SH | 00103912 | 9kHz~30MHz | Dec.28, 2019 | Oct. 30, 2020 | Dec 27, 2020 | Conduction (CO01-SZ) |
| AC LISN (for auxiliary equipment) | EMCO | 3816/2SH | 00103892 | 9kHz~30MHz | Oct. 15, 2020 | Oct. 30, 2020 | Oct. 14, 2021 | Conduction (CO01-SZ) |
| AC Power Source | Chroma | 61602 | 616020000891 | 100Vac~250Vac | Jul. 21, 2020 | Oct. 30, 2020 | Jul. 20, 2021 | Conduction (CO01-SZ) |
| EMI Test Receiver | R&S | ESR7 | 101404 | 9kHz~7GHz | Oct. 16, 2020 | Oct. 29, 2020 | Oct. 15, 2021 | Radiation (03CH04-SZ) |
| EXA Spectrum Analyzer | KEYSIGHT | N9010A | MY55150213 | 10Hz~44GHz | Jul. 21, 2020 | Oct. 29, 2020 | Jul. 20, 2021 | Radiation (03CH04-SZ) |
| Bilog Antenna | TeseQ | CBL6111D | 41909 | 30MHz~1GHz | Nov. 08, 2019 | Oct. 29, 2020 | Nov. 07, 2020 | Radiation (03CH04-SZ) |
| LF Amplifier | Burgeon | BPA-530 | 102211 | 0.01~3000Mhz | Oct. 17,2020 | Oct. 29, 2020 | Oct. 16,2021 | Radiation (03CH04-SZ) |
| Double Ridge Horn Antenna | SCHWARZBECK | BBHA9120D | 9120D-1474 | 1GHz~18GHz | May. 23, 2020 | Oct. 29, 2020 | Mar. 22, 2021 | Radiation (03CH04-SZ) |
| HF Amplifier | MITEQ | AMF-7D-00101800-30-10P-R | 1943528 | 1GHz~18GHz | Oct. 17,2020 | Oct. 29, 2020 | Oct. 16,2021 | Radiation (03CH04-SZ) |
| AC Power Source | Chroma | 61601 | N/A | N/A | NCR | Oct. 29, 2020 | NCR | Radiation (03CH04-SZ) |
| Turn Table | EM | EM1000 | N/A | 0~360 degree | NCR | Oct. 29, 2020 | NCR | Radiation (03CH04-SZ) |
| Antenna Mast | EM | EM1000 | N/A | 1 m~4 m | NCR | Oct. 29, 2020 | NCR | Radiation (03CH04-SZ) |

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% ($U = 2Uc(y)$) | 2.7dB |
|---|-------|

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

| | |
|---|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$) | 5.0dB |
|---|-------|

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

| | |
|---|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$) | 4.8dB |
|---|-------|