



FCC Test Report

APPLICANT : Planet Avvio LLC
EQUIPMENT : Mobile Phone
BRAND NAME : Avvio
MODEL NAME : PRO450
FCC ID : 2ALTAPRO450X
STANDARD : FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION : Certification

The product was received on Mar. 10, 2017 and testing was completed on May 10, 2017. 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.

Prepared by: Eric Shih / Manager

Approved by: Jones Tsai / Manager



SPORTON International (ShenZhen) INC.

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



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REVISION HISTORY

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|------------|---------|-------------------------|--------------|
| FC731002 | Rev. 01 | Initial issue of report | May 12, 2017 |
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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 9.30 dB at 3.420 MHz |
| 3.2 | 15.109 | Radiated Emission | < 15.109 limits | PASS | Under limit 1.43 dB at 720.000 MHz for Quasi-Peak |



1. General Description

1.1. Applicant

Planet Avvio LLC
9725 NW 117th Ave., Medley, FL 33178, United States

1.2. Manufacturer

SHENZHEN SINTAVE COMMUNICATION CO, LTD
6th/F, Building 3, SangTai Technology Park, LiuXianDong, XiLi, NanShan District, ShenZhen City,
GuangDong Province, China

1.3. Product Feature of Equipment Under Test

| Product Feature | |
|--|---|
| Equipment | Mobile Phone |
| Brand Name | Avvio |
| Model Name | PRO450 |
| FCC ID | 2ALTAPRO450X |
| EUT supports Radios application | GSM/GPRS/EGPRS/WCDMA/HSPA/ HSPA+(16QAM Uplink is not supported)/LTE WLAN2.4GHz 802.11b/g/n HT20/HT40 Bluetooth v3.0+EDR/ Bluetooth v4.0 LE |
| IMEI Code | Conduction: N/A Radiation: N/A |
| HW Version | WMEVb |
| SW Version | Platinum5.0+_SKY_V1.0_20161029 |
| 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 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 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 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 7: 2622.5 MHz ~ 2687.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1.57542 GHz FM : 87.5 MHz ~ 108 MHz |
| Antenna Type | WWAN : PIFA Antenna WLAN : PIFA Antenna Bluetooth : PIFA Antenna GPS: PIFA Antenna FM: External headset Antenna |
| Type of Modulation | GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA: BPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) HSPA+: 16QAM (Uplink is not supported) LTE: QPSK / 16QAM 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth LE : GFSK Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : $\pi/4$ -DQPSK Bluetooth (3Mbps) : 8-DPSK GPS : BPSK FM |

1.5. Modification of EUT

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



1.6. Test Location

| | | |
|---------------------------|---|--|
| Test Site | SPORTON International (ShenZhen) INC. | |
| Test Site Location | 1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan District, Shenzhen City, Guangdong Province, China TEL: +86-755-8637-9589 FAX: +86-755-8637-9595 | |
| Test Site No. | Sporton Site No. | |
| | CO01-SZ | |

| | | |
|---------------------------|---|-----------------------------|
| Test Site | SPORTON International (ShenZhen) INC. | |
| Test Site Location | No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755- 3320-2398 | |
| Test Site No. | Sporton Site No. | FCC Registration No. |
| | 03CH03-SZ | 565805 |

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

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

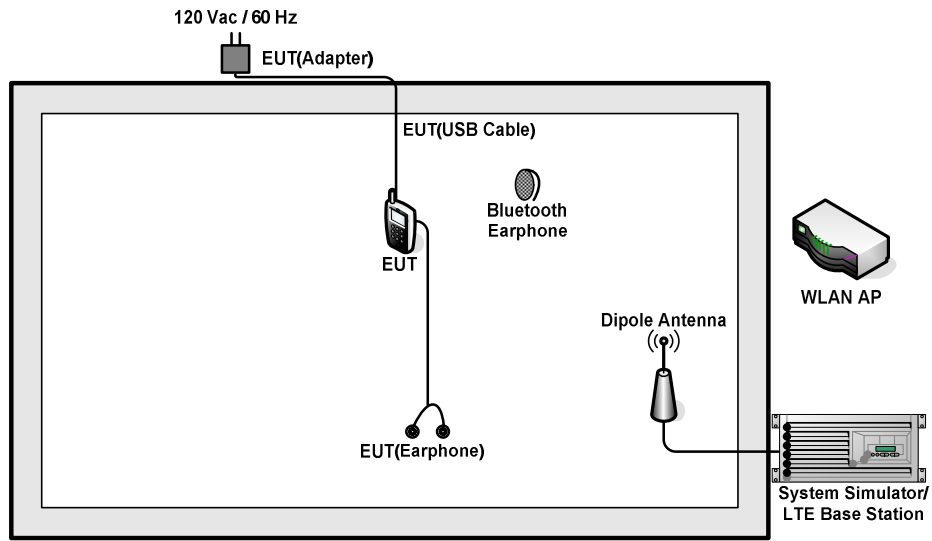
2.1. Test Mode

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.

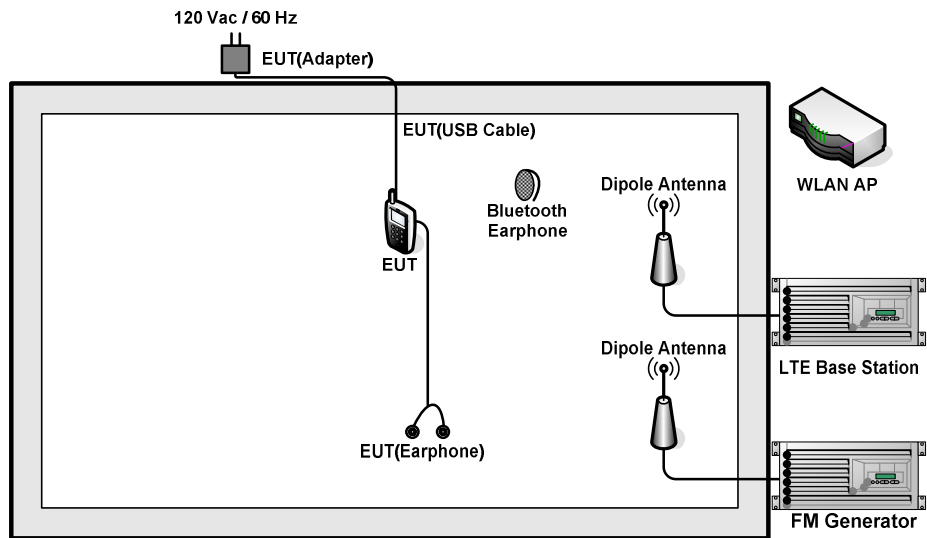
Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

| Test Items | Function Type |
|---|--|
| AC Conducted Emission | <p>Mode 1: GSM850 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Camera(Rear) <Fig.1></p> <p>Mode 2: GSM1900 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Camera(Front) <Fig.1></p> <p>Mode 3: WCDMA Band V Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4<Fig.1></p> <p>Mode 4: LTE Band 4 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + FM Rx (88MHz) <Fig.2></p> <p>Mode 5: LTE Band 7 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + GPS Rx<Fig.3></p> |
| Radiated Emissions < 1GHz | <p>Mode 1: GSM850 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Camera(Rear) <Fig.1></p> <p>Mode 2: GSM1900 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Camera(Front) <Fig.1></p> <p>Mode 3: WCDMA Band V Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4<Fig.1></p> <p>Mode 4: LTE Band 4 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + FM Rx (88MHz) <Fig.2></p> <p>Mode 5: LTE Band 7 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + GPS Rx<Fig.3></p> |
| Radiated Emissions ≥ 1GHz | <p>Mode 1: LTE Band 7 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + GPS Rx<Fig.3></p> |
| Remark: | |
| <ol style="list-style-type: none"> The worst case of AC is mode 1; and the USB link mode of AC is mode 5, the test data of this mode was reported. The worst case of RE < 1G is mode 5; only the test data of this mode was reported. Data Link with Notebook means data application transferred mode between EUT and Notebook. | |

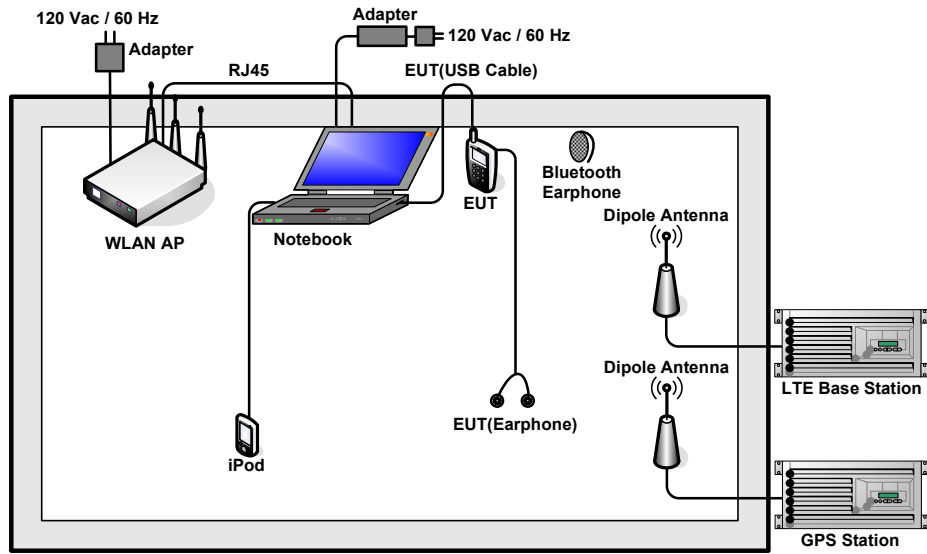
2.2. Connection Diagram of Test System



<Fig.1>



<Fig.2>



<Fig.3>



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 | Anritus | MT8820C | N/A | N/A | Unshielded, 1.8 m |
| 3. | Signal Generator (FM) | R&S | SMB100A | FCC DoC | N/A | Unshielded, 1.5 m |
| 4. | GPS Station | ADIVIC | MP9000 | N/A | N/A | Unshielded, 1.8 m |
| 5. | WLAN AP | D-link | DIR-820L | KA2IR820LA1 | N/A | Unshielded, 1.8m |
| 6. | WLAN AP | ASUSTek | RT-AC66U | MSQ-RTAC66U | N/A | Unshielded, 1.8 m |
| 7. | Notebook | Lenovo | E540 | FCC DoC | N/A | AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m |
| 8. | Bluetooth Earphone | Samsung | HS3000 | A3LHS3000 | N/A | N/A |
| 9. | Bluetooth Earphone | Nokia | BH-108 | PYAHS-107W | N/A | N/A |
| 10. | iPod nano 8GB | Apple | MC690ZP/A | FCC DoC | Shielded, 1.2m | N/A |
| 11. | iPod | Apple | MC525 ZP/A | FCC DoC | Shielded, 1.0m | 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 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 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.
5. Turn on FM function.



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.

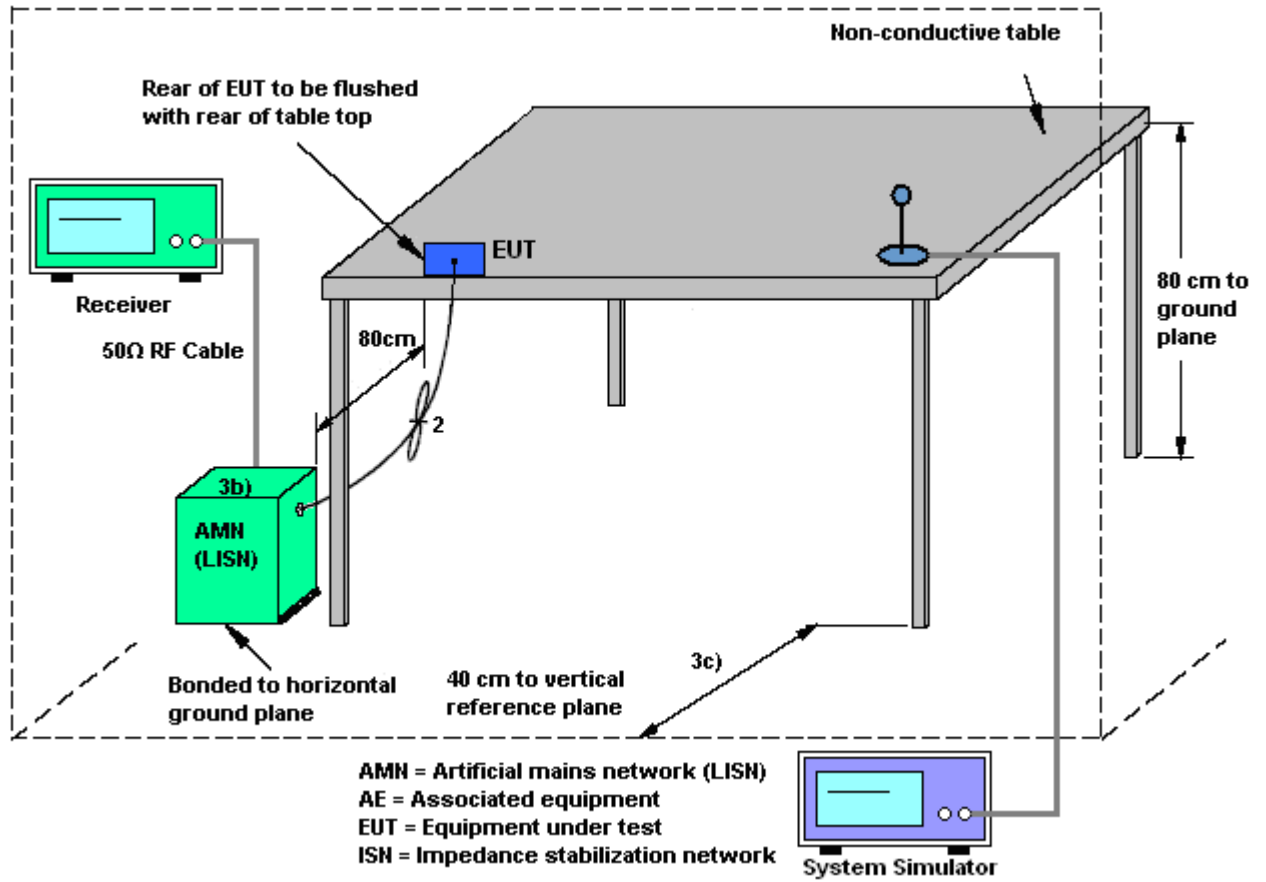
3.1.2 Measuring Instruments

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.

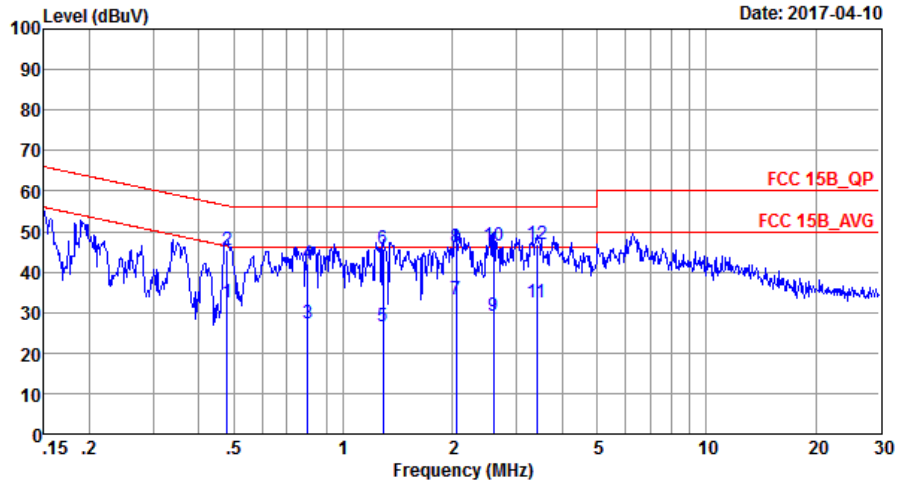
3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

| | | | |
|-----------------|--|---------------------|---------|
| Test Mode : | Mode 1 | Temperature : | 21~23°C |
| Test Engineer : | Tao Cheng | Relative Humidity : | 41~43% |
| Test Voltage : | 120Vac / 60Hz | Phase : | Line |
| Function Type : | GSM850 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Camera(Rear) | | |

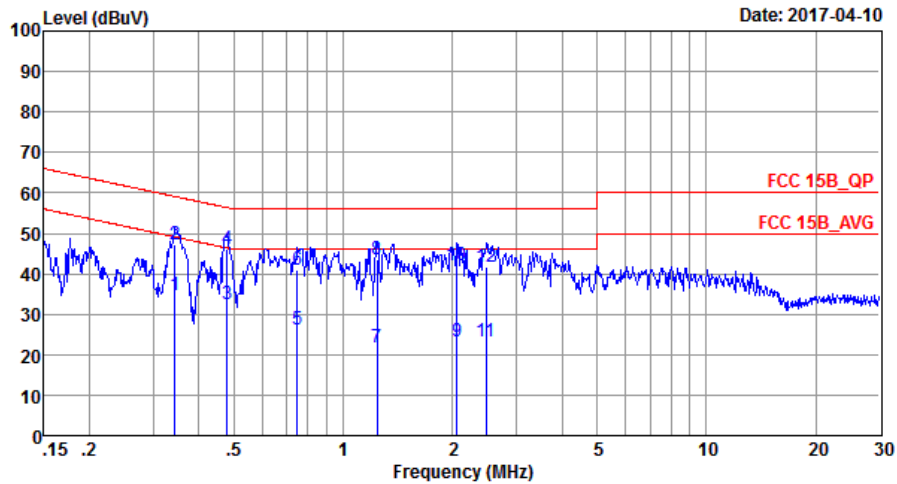


Site : CO01-SZ
 Condition: FCC 15B_QP LISN_20170301_L LINE
 Project : (FC)731002
 Mode : Mode 1

| | Freq | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark |
|------|------|-------|------------|------------|------------|-------------|------------|---------|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.48 | 32.60 | -13.76 | 46.36 | 22.40 | 0.02 | 10.18 | Average |
| 2 | 0.48 | 45.30 | -11.06 | 56.36 | 35.10 | 0.02 | 10.18 | QP |
| 3 | 0.80 | 27.30 | -18.70 | 46.00 | 17.10 | 0.04 | 10.16 | Average |
| 4 | 0.80 | 42.20 | -13.80 | 56.00 | 32.00 | 0.04 | 10.16 | QP |
| 5 | 1.29 | 26.54 | -19.46 | 46.00 | 16.31 | 0.08 | 10.15 | Average |
| 6 | 1.29 | 45.94 | -10.06 | 56.00 | 35.71 | 0.08 | 10.15 | QP |
| 7 | 2.04 | 33.08 | -12.92 | 46.00 | 22.81 | 0.11 | 10.16 | Average |
| 8 | 2.04 | 45.98 | -10.02 | 56.00 | 35.71 | 0.11 | 10.16 | QP |
| 9 | 2.59 | 29.34 | -16.66 | 46.00 | 19.01 | 0.14 | 10.19 | Average |
| 10 | 2.59 | 46.44 | -9.56 | 56.00 | 36.11 | 0.14 | 10.19 | QP |
| 11 | 3.42 | 32.30 | -13.70 | 46.00 | 21.90 | 0.17 | 10.23 | Average |
| 12 * | 3.42 | 46.70 | -9.30 | 56.00 | 36.30 | 0.17 | 10.23 | QP |



| | | | |
|-----------------|--|---------------------|---------|
| Test Mode : | Mode 1 | Temperature : | 21~23°C |
| Test Engineer : | Tao Cheng | Relative Humidity : | 41~43% |
| Test Voltage : | 120Vac / 60Hz | Phase : | Neutral |
| Function Type : | GSM850 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Camera(Rear) | | |

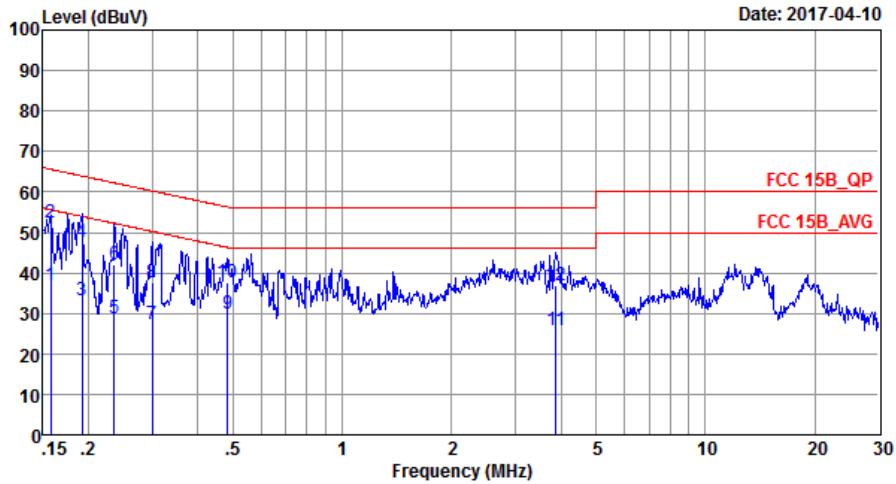


Site : CO01-SZ
 Condition: FCC 15B_QP LISN_20170301_N NEUTRAL
 Project : (FC)731002
 Mode : Mode 1

| | Freq | Level | Over | Limit | Read | LISN | Cable | |
|-----|------|-------|--------|-------|-------|--------|-------|---------|
| | MHz | dBuV | Limit | Line | Level | Factor | Loss | Remark |
| | | | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.34 | 34.83 | -14.26 | 49.09 | 24.59 | 0.03 | 10.21 | Average |
| 2 | 0.34 | 47.33 | -11.76 | 59.09 | 37.09 | 0.03 | 10.21 | QP |
| 3 | 0.48 | 32.60 | -13.76 | 46.36 | 22.40 | 0.02 | 10.18 | Average |
| 4 * | 0.48 | 46.30 | -10.06 | 56.36 | 36.10 | 0.02 | 10.18 | QP |
| 5 | 0.75 | 26.19 | -19.81 | 46.00 | 16.00 | 0.03 | 10.16 | Average |
| 6 | 0.75 | 40.99 | -15.01 | 56.00 | 30.80 | 0.03 | 10.16 | QP |
| 7 | 1.24 | 21.90 | -24.10 | 46.00 | 11.70 | 0.05 | 10.15 | Average |
| 8 | 1.24 | 43.40 | -12.60 | 56.00 | 33.20 | 0.05 | 10.15 | QP |
| 9 | 2.05 | 23.21 | -22.79 | 46.00 | 13.00 | 0.05 | 10.16 | Average |
| 10 | 2.05 | 42.11 | -13.89 | 56.00 | 31.90 | 0.05 | 10.16 | QP |
| 11 | 2.47 | 23.23 | -22.77 | 46.00 | 13.00 | 0.04 | 10.19 | Average |
| 12 | 2.47 | 41.53 | -14.47 | 56.00 | 31.30 | 0.04 | 10.19 | QP |



| | | | |
|-----------------|--|---------------------|---------|
| Test Mode : | Mode 5 | Temperature : | 21~23°C |
| Test Engineer : | Tao Cheng | Relative Humidity : | 41~43% |
| Test Voltage : | 120Vac / 60Hz | Phase : | Line |
| Function Type : | LTE Band 7 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + GPS Rx | | |

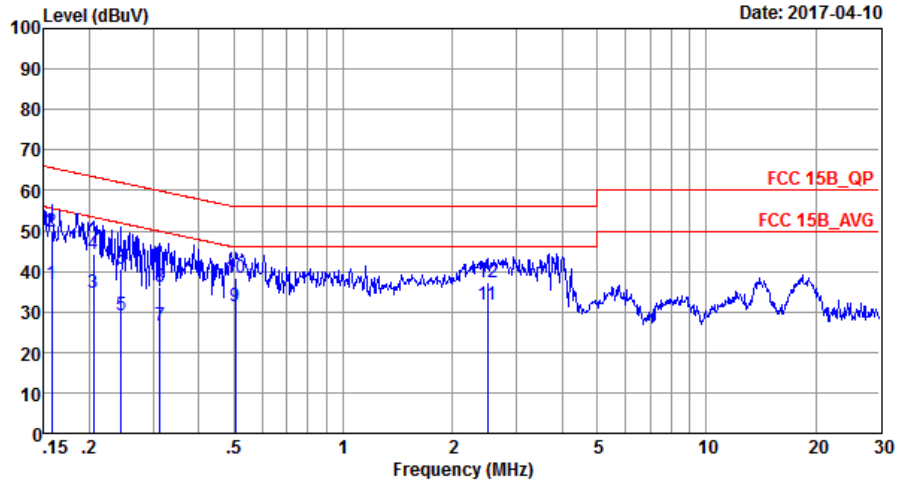


Site : CO01-SZ
 Condition: FCC 15B_QP LISN_20170301_L LINE
 Project : (FC) 731002
 Mode : Mode 5

| | Freq | Level | Over | Limit | Read | LISN | Cable | |
|-----|------|-------|--------|-------|-------|--------|-------|---------|
| | MHz | dBuV | Limit | Line | Level | Factor | Loss | Remark |
| | | | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.16 | 36.91 | -18.69 | 55.60 | 26.50 | 0.03 | 10.38 | Average |
| 2 * | 0.16 | 52.31 | -13.29 | 65.60 | 41.90 | 0.03 | 10.38 | QP |
| 3 | 0.19 | 33.17 | -20.76 | 53.93 | 22.90 | 0.03 | 10.24 | Average |
| 4 | 0.19 | 47.57 | -16.36 | 63.93 | 37.30 | 0.03 | 10.24 | QP |
| 5 | 0.24 | 28.65 | -23.61 | 52.26 | 18.40 | 0.03 | 10.22 | Average |
| 6 | 0.24 | 41.95 | -20.31 | 62.26 | 31.70 | 0.03 | 10.22 | QP |
| 7 | 0.30 | 27.45 | -22.79 | 50.24 | 17.20 | 0.03 | 10.22 | Average |
| 8 | 0.30 | 37.65 | -22.59 | 60.24 | 27.40 | 0.03 | 10.22 | QP |
| 9 | 0.48 | 29.80 | -16.47 | 46.27 | 19.60 | 0.02 | 10.18 | Average |
| 10 | 0.48 | 37.70 | -18.57 | 56.27 | 27.50 | 0.02 | 10.18 | QP |
| 11 | 3.88 | 25.92 | -20.08 | 46.00 | 15.49 | 0.18 | 10.25 | Average |
| 12 | 3.88 | 37.02 | -18.98 | 56.00 | 26.59 | 0.18 | 10.25 | QP |



| | | | |
|-----------------|--|---------------------|---------|
| Test Mode : | Mode 5 | Temperature : | 21~23°C |
| Test Engineer : | Tao Cheng | Relative Humidity : | 41~43% |
| Test Voltage : | 120Vac / 60Hz | Phase : | Neutral |
| Function Type : | LTE Band 7 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + GPS Rx | | |



Site : CO01-SZ
 Condition: FCC 15B_QP LISN_20170301_N NEUTRAL
 Project : (FC)731002
 Mode : Mode 5

| | Freq | Level | Over | Limit | Read | LISN | Cable | |
|------|------|-------|--------|-------|-------|--------|-------|---------|
| | MHz | dBuV | Limit | Line | Level | Factor | Loss | Remark |
| | | | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.16 | 36.81 | -18.79 | 55.60 | 26.40 | 0.03 | 10.38 | Average |
| 2 | 0.16 | 49.91 | -15.69 | 65.60 | 39.50 | 0.03 | 10.38 | QP |
| 3 | 0.21 | 34.55 | -18.85 | 53.40 | 24.30 | 0.03 | 10.22 | Average |
| 4 | 0.21 | 44.35 | -19.05 | 63.40 | 34.10 | 0.03 | 10.22 | QP |
| 5 | 0.24 | 29.25 | -22.70 | 51.95 | 19.00 | 0.03 | 10.22 | Average |
| 6 | 0.24 | 40.65 | -21.30 | 61.95 | 30.40 | 0.03 | 10.22 | QP |
| 7 | 0.31 | 26.54 | -23.34 | 49.88 | 16.29 | 0.03 | 10.22 | Average |
| 8 | 0.31 | 36.14 | -23.74 | 59.88 | 25.89 | 0.03 | 10.22 | QP |
| 9 | 0.50 | 31.40 | -14.60 | 46.00 | 21.20 | 0.02 | 10.18 | Average |
| 10 | 0.50 | 38.50 | -17.50 | 56.00 | 28.30 | 0.02 | 10.18 | QP |
| 11 * | 2.50 | 31.83 | -14.17 | 46.00 | 21.60 | 0.04 | 10.19 | Average |
| 12 | 2.50 | 37.33 | -18.67 | 56.00 | 27.10 | 0.04 | 10.19 | QP |



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

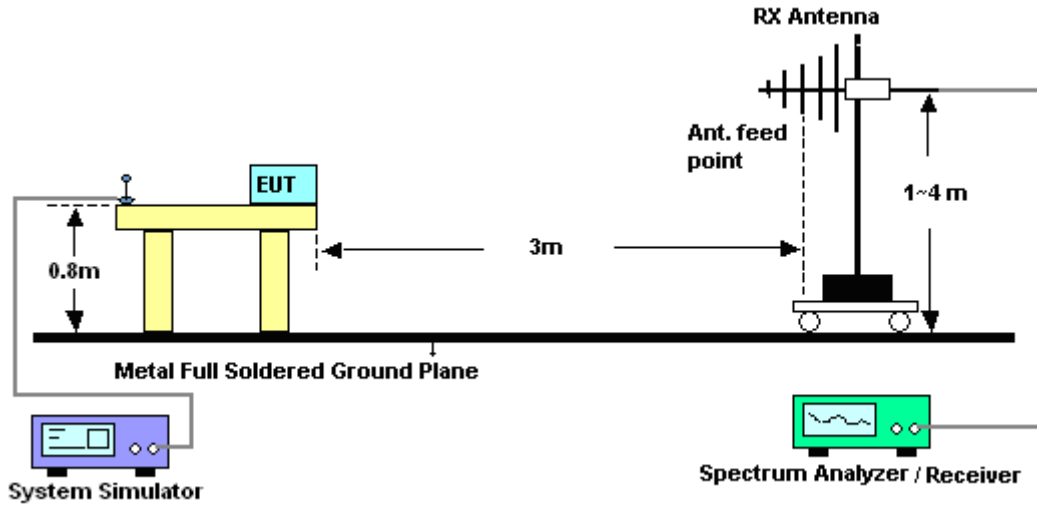
The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

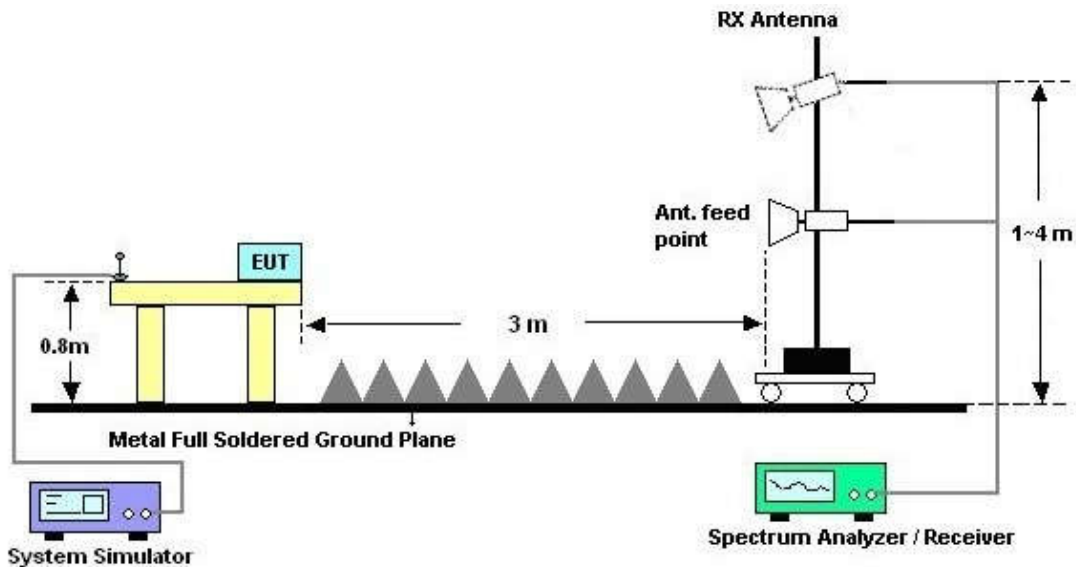
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna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



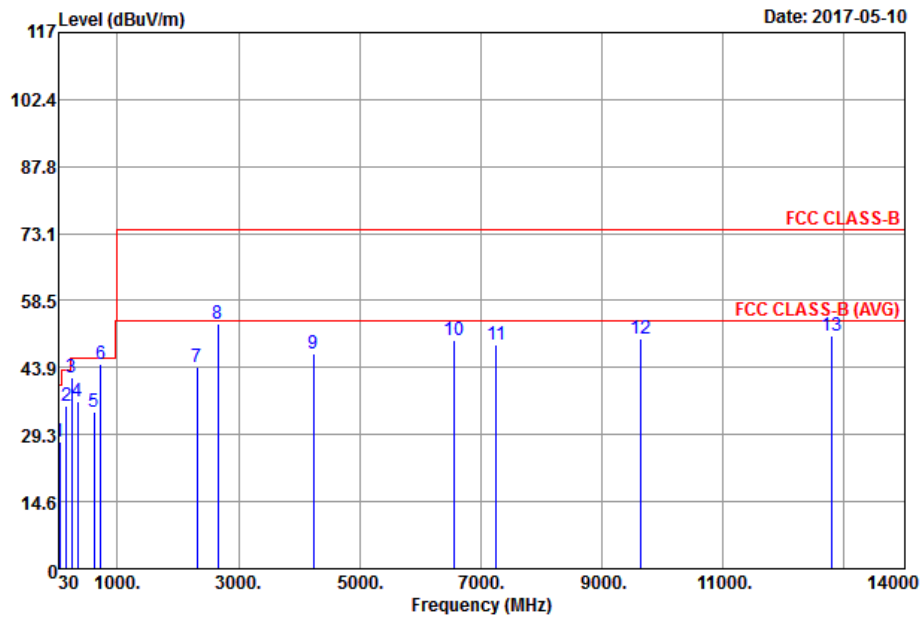
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

| | | | |
|-----------------|--|---------------------|------------|
| Test Mode : | Mode 5 | Temperature : | 23~25°C |
| Test Engineer : | Leo Liao | Relative Humidity : | 48~52% |
| Test Distance : | 3m | Polarization : | Horizontal |
| Function Type : | LTE Band 7 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + GPS Rx | | |
| Remark : | #8 is system simulator signal which can be ignored. | | |

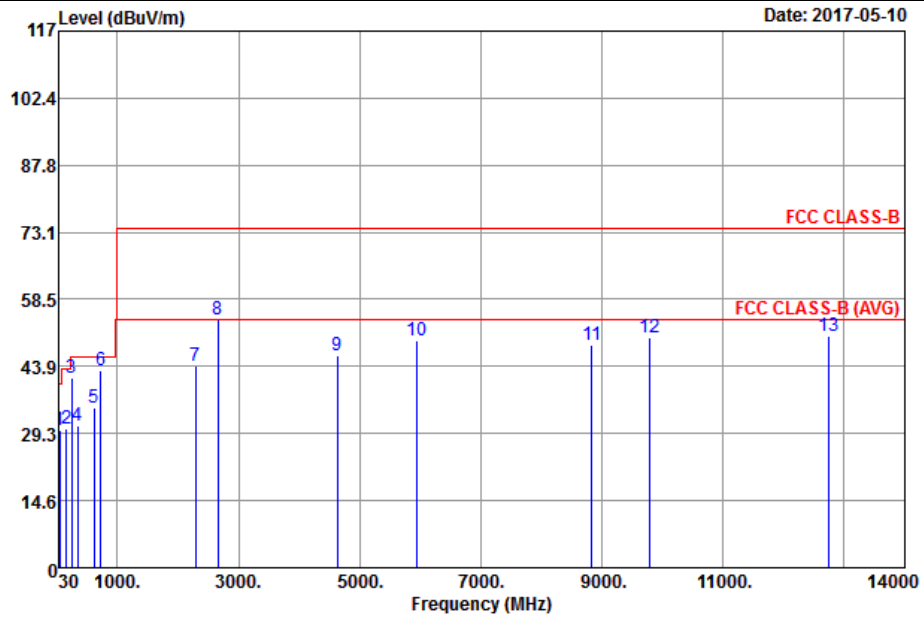


Site : 03CH03-SZ
 Condition : FCC CLASS-B 3m LF_ANT(23188)_6 HORIZONTAL
 Project : (FC)731002
 Mode : Mode 5

| | 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 | 43.50 | 27.56 | -12.44 | 40.00 | 38.22 | 20.22 | 0.42 | 31.30 | --- | --- | Peak |
| 2 | 155.55 | 35.68 | -7.82 | 43.50 | 48.99 | 16.73 | 1.34 | 31.38 | --- | --- | Peak |
| 3 | 240.06 | 41.63 | -4.37 | 46.00 | 53.79 | 17.15 | 1.81 | 31.12 | 100 | 85 | QP |
| 4 | 345.50 | 36.62 | -9.38 | 46.00 | 46.07 | 19.65 | 2.20 | 31.30 | --- | --- | Peak |
| 5 | 615.00 | 34.33 | -11.67 | 46.00 | 37.94 | 24.84 | 3.05 | 31.50 | --- | --- | Peak |
| 6 | 720.00 | 44.57 | -1.43 | 46.00 | 46.39 | 26.34 | 3.34 | 31.50 | 100 | 312 | QP |
| 7 | 2314.00 | 44.13 | -29.87 | 74.00 | 63.60 | 30.77 | 6.65 | 56.89 | --- | --- | Peak |
| 8 | 2654.00 | 53.39 | | | 70.56 | 32.40 | 7.15 | 56.72 | --- | --- | Peak |
| 9 | 4242.00 | 46.84 | -27.16 | 74.00 | 62.81 | 32.65 | 8.84 | 57.46 | --- | --- | Peak |
| 10 | 6552.00 | 50.02 | -23.98 | 74.00 | 60.11 | 35.99 | 11.26 | 57.34 | --- | --- | Peak |
| 11 | 7250.00 | 49.04 | -24.96 | 74.00 | 58.27 | 35.49 | 13.46 | 58.18 | --- | --- | Peak |
| 12 | 9630.00 | 50.21 | -23.79 | 74.00 | 55.34 | 38.01 | 13.25 | 56.39 | --- | --- | Peak |
| 13 | 12786.00 | 50.79 | -23.21 | 74.00 | 53.59 | 39.03 | 15.49 | 57.32 | 100 | 150 | Peak |



| | | | |
|-----------------|--|---------------------|----------|
| Test Mode : | Mode 5 | Temperature : | 23~25°C |
| Test Engineer : | Leo Liao | Relative Humidity : | 48~52% |
| Test Distance : | 3m | Polarization : | Vertical |
| Function Type : | LTE Band 7 Idle + Earphone + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + GPS Rx | | |
| Remark : | #8 is system simulator signal which can be ignored. | | |



Site : 03CH03-SZ
 Condition : FCC CLASS-B 3m LF_ANT(23188)_6 VERTICAL
 Project : (FC)731002
 Mode : Mode 5

| | 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 | 43.50 | 29.94 | -10.06 | 40.00 | 40.60 | 20.22 | 0.42 | 31.30 | --- | --- | Peak |
| 2 | 156.90 | 30.43 | -13.07 | 43.50 | 43.73 | 16.70 | 1.36 | 31.36 | --- | --- | Peak |
| 3 | 240.06 | 41.51 | -4.49 | 46.00 | 53.67 | 17.15 | 1.81 | 31.12 | 100 | 25 | QP |
| 4 | 345.50 | 30.88 | -15.12 | 46.00 | 40.33 | 19.65 | 2.20 | 31.30 | --- | --- | Peak |
| 5 | 615.00 | 34.76 | -11.24 | 46.00 | 38.37 | 24.84 | 3.05 | 31.50 | --- | --- | Peak |
| 6 | 720.00 | 42.91 | -3.09 | 46.00 | 44.73 | 26.34 | 3.34 | 31.50 | 100 | 215 | QP |
| 7 | 2286.00 | 44.06 | -29.94 | 74.00 | 63.76 | 30.65 | 6.56 | 56.91 | --- | --- | Peak |
| 8 | 2654.00 | 54.10 | | | 71.27 | 32.40 | 7.15 | 56.72 | --- | --- | Peak |
| 9 | 4632.00 | 46.23 | -27.77 | 74.00 | 60.84 | 33.18 | 9.27 | 57.06 | --- | --- | Peak |
| 10 | 5942.00 | 49.40 | -24.60 | 74.00 | 56.53 | 36.01 | 13.14 | 56.28 | --- | --- | Peak |
| 11 | 8828.00 | 48.66 | -25.34 | 74.00 | 54.59 | 36.43 | 12.59 | 54.95 | --- | --- | Peak |
| 12 | 9780.00 | 50.19 | -23.81 | 74.00 | 55.02 | 37.81 | 13.65 | 56.29 | --- | --- | Peak |
| 13 | 12748.00 | 50.52 | -23.48 | 74.00 | 53.43 | 39.00 | 15.45 | 57.36 | 100 | 360 | Peak |



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; | Jan. 06, 2017 | Apr. 10, 2017 | Jan. 05, 2018 | Conduction (CO01-SZ) |
| AC LISN | EMCO | 3816/2SH | 00103892 | 9kHz~30MHz | Jan. 05, 2017 | Apr. 10, 2017 | Jan. 04, 2018 | Conduction (CO01-SZ) |
| AC LISN (for auxiliary equipment) | MessTec | 3816/2SH | 00103912 | 9kHz~30MHz | Jan. 05, 2017 | Apr. 10, 2017 | Jan. 04, 2018 | Conduction (CO01-SZ) |
| AC Power Source | Chroma | 61602 | 616020000891 | 100Vac~250Vac | Jul. 16, 2016 | Apr. 10, 2017 | Jul. 15, 2017 | Conduction (CO01-SZ) |
| EMI Test Receiver&SA | KEYSIGHT | N9038A | MY54450083 | 20Hz~8.4GHz | May 07, 2017 | May 10, 2017 | May 06, 2018 | Radiation (03CH03-SZ) |
| EXA Spectrum Analyzer | KEYSIGHT | N9010A | MY55150246 | 10Hz~44GHz | May 07, 2017 | May 10, 2017 | May 06, 2018 | Radiation (03CH03-SZ) |
| Bilog Antenna | TeseQ | CBL6112D | 35408 | 30MHz~2GHz | May 21, 2016 | May 10, 2017 | May 20, 2017 | Radiation (03CH03-SZ) |
| Double Ridge Horn Antenna | SCHWARZBECK | BBHA9120D | 9120D-1355 | 1GHz~18GHz | May 07, 2017 | May 10, 2017 | May 06, 2018 | Radiation (03CH03-SZ) |
| Amplifier | Burgeon | BPA-530 | 102210 | 0.01Hz~3000MHz | Oct. 11, 2016 | May 10, 2017 | Oct. 10, 2017 | Radiation (03CH03-SZ) |
| HF Amplifier | MITEQ | AMF-7D-00101800-30-10P-R | 1943528 | 1GHz~18GHz | Oct. 11, 2016 | May 10, 2017 | Oct. 10, 2017 | Radiation (03CH03-SZ) |
| AC Power Source | Chroma | 61601 | 616010001985 | N/A | NCR | May 10, 2017 | NCR | Radiation (03CH03-SZ) |
| Turn Table | EM | EM1000 | N/A | 0~360 degree | NCR | May 10, 2017 | NCR | Radiation (03CH03-SZ) |
| Antenna Mast | EM | EM1000 | N/A | 1 m~4 m | NCR | May 10, 2017 | NCR | Radiation (03CH03-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% ($U = 2Uc(y)$) | 2.5dB |
|---|-------|

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

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

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

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