

FCC RF Test Report

APPLICANT : HTC Corporation
EQUIPMENT : Smartphone
MODEL NAME : PL80120
FCC ID : NM8PL80120
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Aug. 16, 2012 and completely tested on Sep. 27, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the 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., the test report shall not be reproduced except in full.

Reviewed by:



Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.



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APPENDIX A. SETUP PHOTOGRAPHS



REVISION HISTORY

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|------------|---------|-------------------------|---------------|
| FR281609B | Rev. 01 | Initial issue of report | Oct. 31, 2012 |
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SUMMARY OF TEST RESULT

| Report Section | FCC Rule | IC Rule | Description | Limit | Result | Remark |
|----------------|--------------------|-----------|--|-----------------------|--------|---|
| 3.1 | 15.247(a)(2) | A8.2(a) | 6dB Bandwidth | $\geq 0.5\text{MHz}$ | Pass | - |
| 3.2 | 15.247(b)(1) | A8.1(b) | Peak Output Power | $\leq 30\text{dBm}$ | Pass | - |
| 3.5 | 15.247(e) | A8.2(b) | Power Spectral Density | $\leq 8\text{dBm}$ | Pass | - |
| 3.4 | 15.247(d) | A8.5 | Conducted Band Edges and Spurious Emission | $\leq 20\text{dBc}$ | Pass | - |
| 3.5 | 15.247(d) | A8.5 | Radiated Band Edges and Spurious Emission | 15.209(a) & 15.247(d) | Pass | Under limit 6.19 dB at 31.890 MHz |
| 3.6 | 15.207 | Gen 7.2.2 | AC Conducted Emission | 15.207(a) | Pass | Under limit 12.50 dB at 0.566 MHz |
| 3.7 | 15.203 & 15.247(b) | A8.4 | Antenna Requirement | N/A | Pass | - |

1 General Description

1.1 Applicant

HTC Corporation

No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan.

1.2 Manufacturer

HTC Corporation

No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan.

1.3 Feature of Equipment Under Test

| Product Feature | |
|---------------------------------|---|
| Equipment | Smartphone |
| Model Name | PL80120 |
| FCC ID | NM8PL80120 |
| Sample 1 | EUT with LCM 1 and Main Camera 1 |
| Sample 2 | EUT with LCM 2 and Main Camera 2 |
| EUT supports Radios application | CDMA/EV-DO /LTE/ WLAN 11abgn / Bluetooth / NFC |
| 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.

| Product Specification subjective to this standard | |
|---|--|
| Tx/Rx Frequency Range | 2402 MHz ~ 2480 MHz |
| Number of Channels | 40 |
| Carrier Frequency of Each Channel | 40 Channel(37 hopping + 3 advertising channel) |
| Maximum Output Power to Antenna | Bluetooth 4.0 - LE : 2.60 dBm (0.0018 W) |
| Antenna Type | PIFA Antenna type with gain -0.20 dBi |
| Type of Modulation | Bluetooth 4.0 - LE : GFSK |

1.4 Testing Site

| | | | | |
|---------------------------|--|---------|-----------|--------------------------------|
| Test Site | SPORTON INTERNATIONAL INC. | | | |
| Test Site Location | No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978 | | | |
| Test Site No. | Sporton Site No. | | | FCC/IC Registration No. |
| | TH02-HY | CO05-HY | 03CH06-HY | 722060/4086B-1 |

1.5 Applied Standards

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

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v01
- ♦ FCC TCB Workshop 2012, April
- ♦ ANSI C63.4-2003 and ANSI C63.10-2009
- ♦ IC RSS-210 Issue 8
- ♦ IC RSS-Gen Issue 3

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

1.6 Ancillary Equipment List

| 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. | Bluetooth Base Station | R&S | CBT32 | N/A | N/A | Unshielded, 1.8 m |
| 3. | WLAN AP | D-Link | DIR-628 | KA2DIR628A2 | N/A | Unshielded, 1.8 m |
| 4. | Notebook | DELL | Latitude E6320 | FCC DoC | N/A | AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m |
| 5. | Bluetooth Earphone | Sony Ericsson | MW600 | PY7DDA-2029 | N/A | N/A |



2 Test Configuration of Equipment Under Test

2.1 RF Output Power

The RF output power was recorded in the following table:

| Channel | Frequency | Bluetooth 4.0 – LE RF Output Power | |
|---------|-----------|------------------------------------|--|
| | | Data Rate / Modulation | |
| | | GFSK | |
| | | 1Mbps | |
| Ch00 | 2402MHz | 2.39 dBm | |
| Ch19 | 2440MHz | 2.43 dBm | |
| Ch39 | 2480MHz | 2.60 dBm | |

2.2 Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and ANSI C63.10-2009 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 (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations.

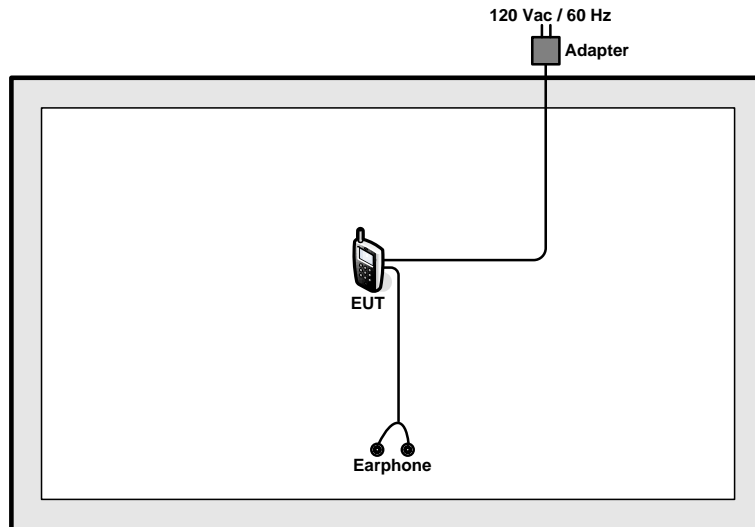
The following tables are showing the test modes as the worst cases (Y plane) and recorded in this report.

The following tables are showing the test modes as the worst cases and recorded in this report.

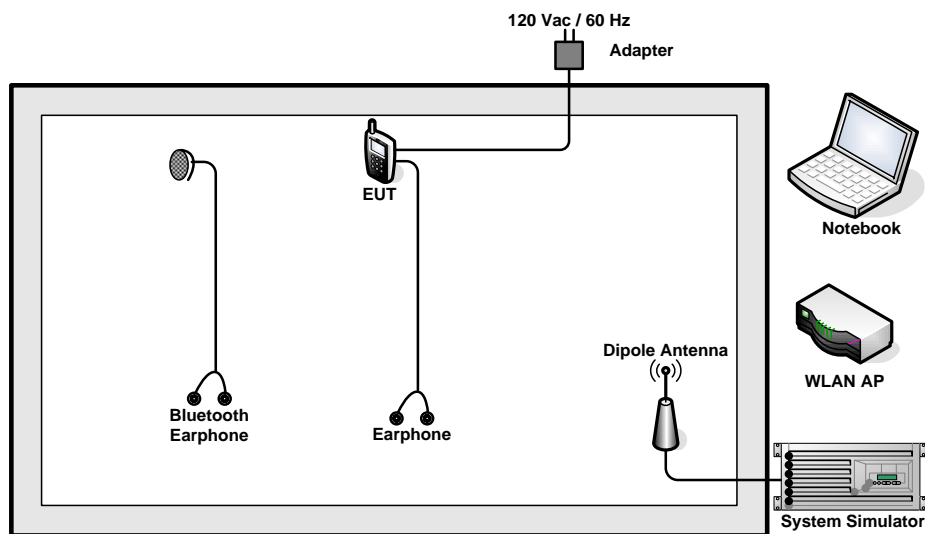
| Test Cases | |
|------------------------------|--|
| Test Item | Data Rate / Modulation |
| | Bluetooth 4.0 – LE / GFSK |
| Conducted TCs | Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps |
| Radiated TCs | Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps for Sample 1 Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps for Sample 1 Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps for Sample 1 Mode 4: Bluetooth Tx CH39_2480 MHz_1Mbps for Sample 2 |
| AC Conducted Emission | Mode 1 :CDMA2000 BC15 Idle + Bluetooth Link + WLAN (2.4G) Link + MPEG4 + Earphone 1 + Battery 1 + USB Cable 1 (Charging from Adapter 1) for Sample 1 Mode 2 :CDMA2000 BC15 Idle + Bluetooth Link + WLAN (2.4G) Link + MPEG4 + Earphone 1 + Battery 1 + USB Cable 1 (Charging from Adapter 1) for Sample 2 |

2.3 Connection Diagram of Test System

<Bluetooth 4.0 – LE Tx Mode>



<AC Conducted Emission Mode>



2.4 RF Utility

For Bluetooth 4.0 – LE function, programmed RF utility, “Remote 432X controller (P2.01)” installed in the notebook make the EUT provides functions like channel selection and power level for continuous transmitting and receiving signals.

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

The minimum 6 dB bandwidth shall be at least 500 KHz.

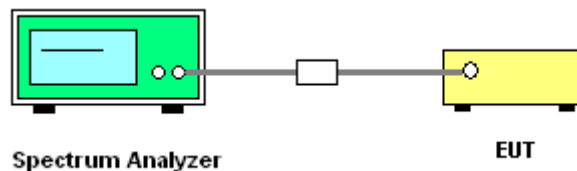
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v01.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 KHz.

3.1.4 Test Setup



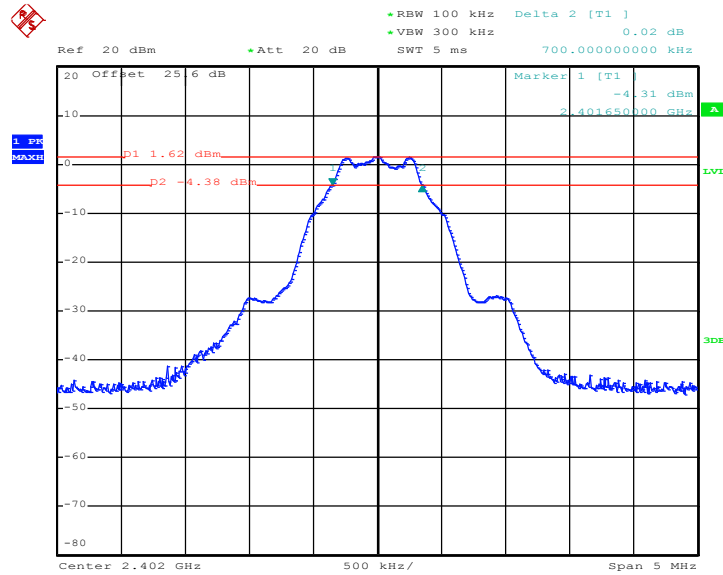


3.1.5 Test Result of 6dB Bandwidth

| | | | |
|-----------------|--------------------|---------------------|---------|
| Test Mode : | Bluetooth 4.0 - LE | Temperature : | 24~26°C |
| Test Engineer : | Book Lin | Relative Humidity : | 58~61% |

| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) |
|---------|-----------------|---------------------|
| 00 | 2402 | 0.70 |
| 19 | 2440 | 0.70 |
| 39 | 2480 | 0.70 |

6 dB Bandwidth Plot on Channel 00

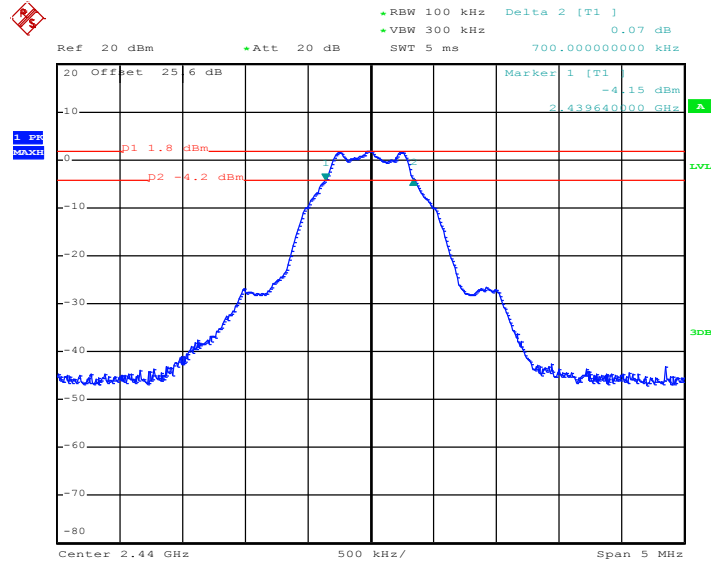


281609LE 15C 6dB.11a 2402 (ch00)

Date: 21.SEP.2012 20:05:03



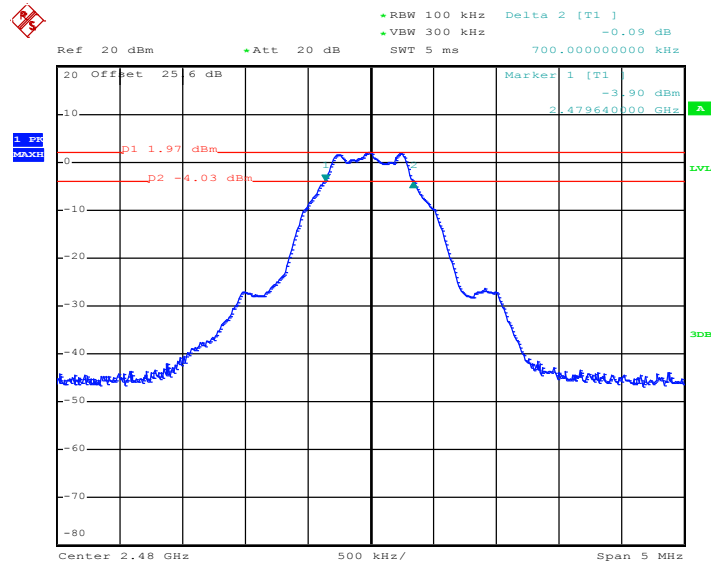
6 dB Bandwidth Plot on Channel 19



281609LE 15C 6dB.11a 2440 (ch19)

Date: 21.SEP.2012 20:12:51

6 dB Bandwidth Plot on Channel 39



281609LE 15C 6dB.11a 2480 (ch39)

Date: 21.SEP.2012 20:17:35

3.2 Peak Output Power Measurement

3.2.1 Limit of Peak Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

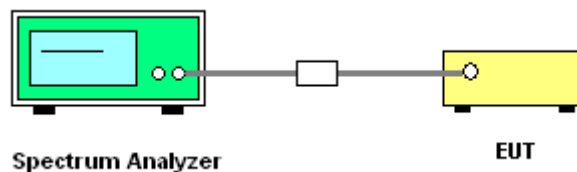
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance and TCB Workshop 2012, April.
2. The RF output of EUT was connected to the power meter by a low loss cable
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



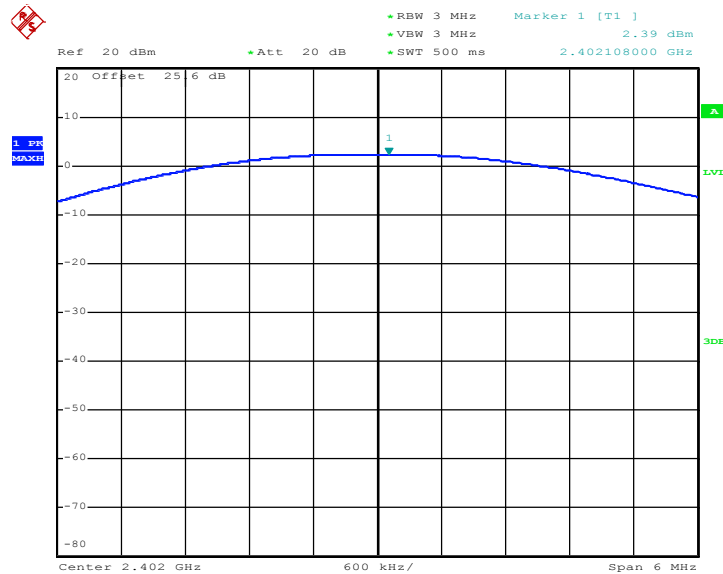


3.2.5 Test Result of Peak Output Power

| | | | |
|-----------------|--------------------|---------------------|---------|
| Test Mode : | Bluetooth 4.0 - LE | Temperature : | 24~26°C |
| Test Engineer : | Book Lin | Relative Humidity : | 58~61% |

| Channel | Frequency (MHz) | RF Power (dBm) | | |
|---------|-----------------|----------------|-------------------|-----------|
| | | GFSK | Max. Limits (dBm) | Pass/Fail |
| | | 1 Mbps | | |
| 00 | 2402 | 2.39 | 30.00 | Pass |
| 19 | 2440 | 2.43 | 30.00 | Pass |
| 39 | 2480 | 2.60 | 30.00 | Pass |

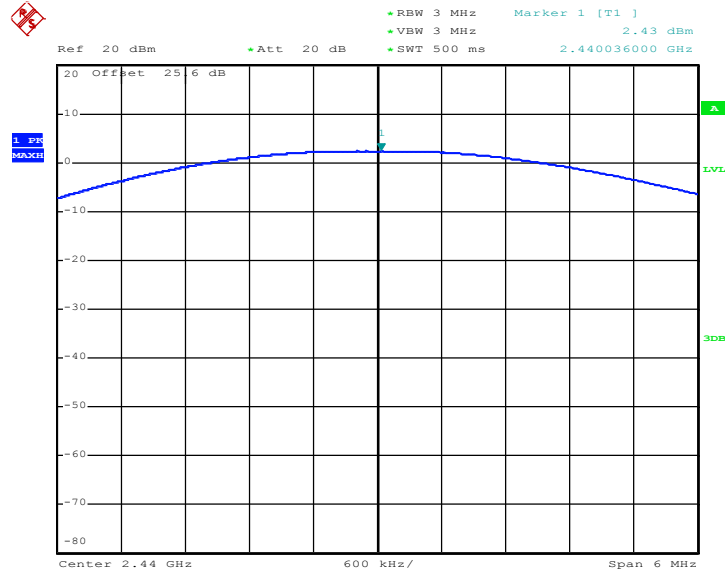
Peak Output Power Plot on Channel 00



Date: 7.SEP.2012 21:54:09

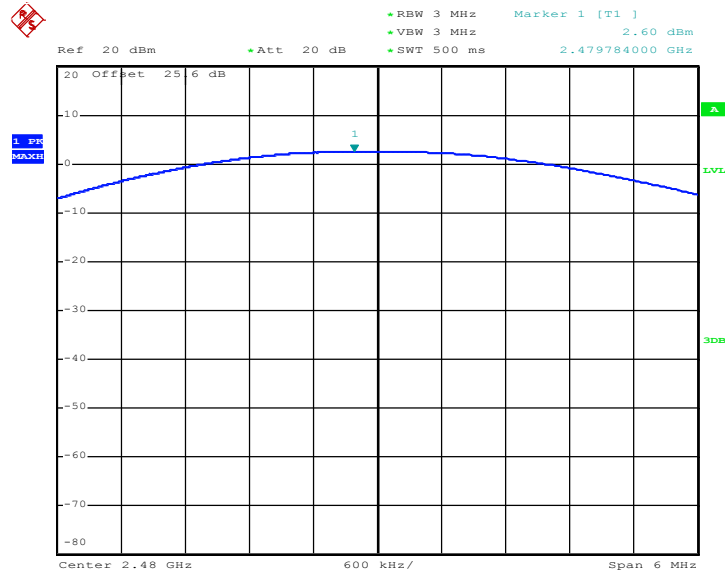


Peak Output Power Plot on Channel 19



Date: 7.SEP.2012 21:54:34

Peak Output Power Plot on Channel 39



Date: 7.SEP.2012 21:54:58

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3KHz band at any time interval of continuous transmission.

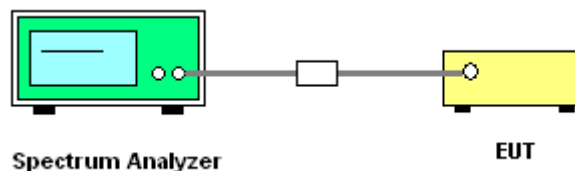
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

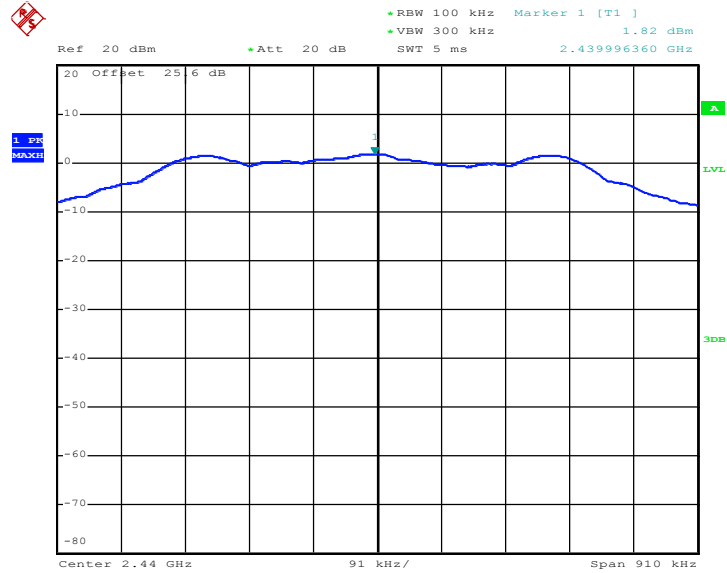
1. The testing follows Measurement Procedure PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v01.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 KHz. Video bandwidth (VBW) \geq 300 KHz In order to make an accurate measurement, set the span to 5-30% greater than Emission Bandwidth (EBW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
6. Record the measurement data derived from spectrum analyzer.
7. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(3\text{ kHz}/100\text{ kHz}) = -15.2\text{ dB}$.

3.3.4 Test Setup



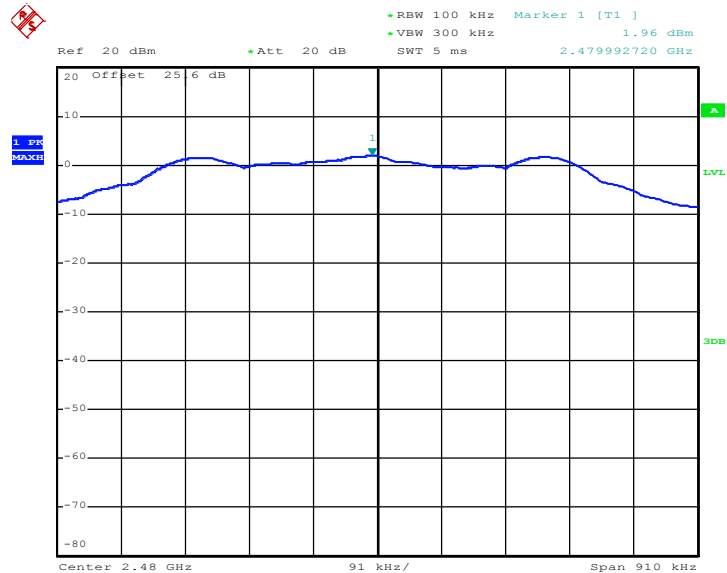


PSD Plot on Channel 19



281609LE 15C PSD 802.11a 2440 (ch19)
Date: 21.SEP.2012 20:13:12

PSD Plot on Channel 39



281609LE 15C PSD 802.11a 2480 (ch39)
Date: 21.SEP.2012 20:17:59

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission

All harmonics/spurious must be at least 20 dB down from the highest emission level within the authorized band.

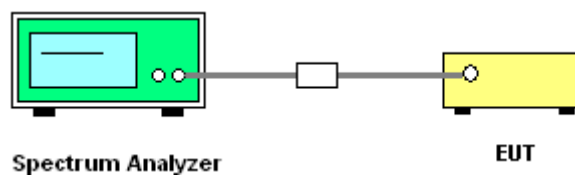
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedure

1. The testing follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009 and the Measurement Procedure of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v01.
2. The transmitter output was connected to the spectrum analyzer via a low lose cable.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 KHz, Video bandwidth (VBW) \geq RBW. Out of the authorized frequency band emissions must be at least 20 dB lower than the highest emission level within the authorized band as measured with a 100 KHz RBW. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).

3.4.4 Test Setup

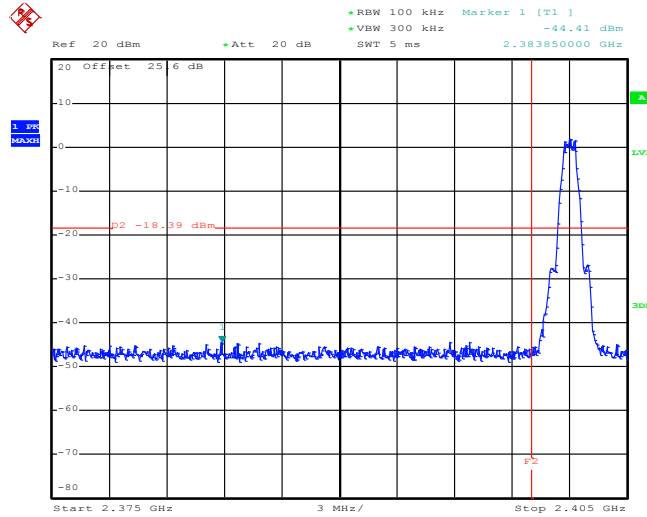




3.4.5 Test Result of Conducted Band Edges

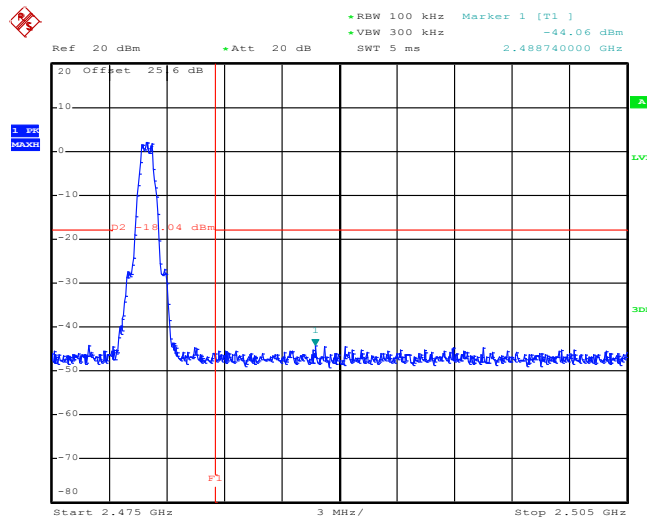
| | | | |
|----------------|--------------------|---------------------|----------|
| Test Mode : | Bluetooth 4.0 - LE | Temperature : | 24~26°C |
| Test Channel : | 00 and 39 | Relative Humidity : | 58~61% |
| | | Test Engineer : | Book Lin |

Low Band Edge Plot on Channel 00



281609LE 15C BandEdge 802.11a 2402 (ch00)
Date: 21.SEP.2012 20:09:29

High Band Edge Plot on Channel 39



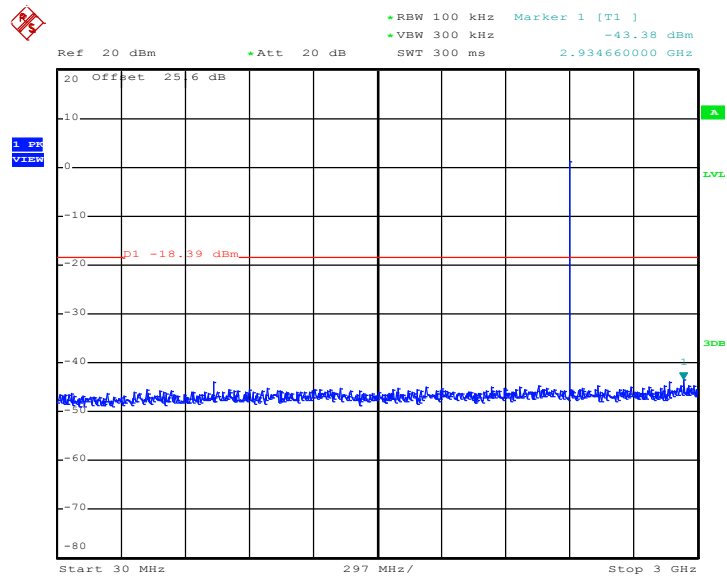
281609LE 15C BandEdge 802.11a 2480 (ch39)
Date: 21.SEP.2012 20:19:01



3.4.6 Test Result of Conducted Spurious Emission

| | | | |
|----------------|--------------------|---------------------|----------|
| Test Mode : | Bluetooth 4.0 - LE | Temperature : | 24~26°C |
| Test Channel : | 00 | Relative Humidity : | 58~61% |
| | | Test Engineer : | Book Lin |

Conducted Spurious Emission Plot on Bluetooth LE 1Mbps GFSK Channel 00

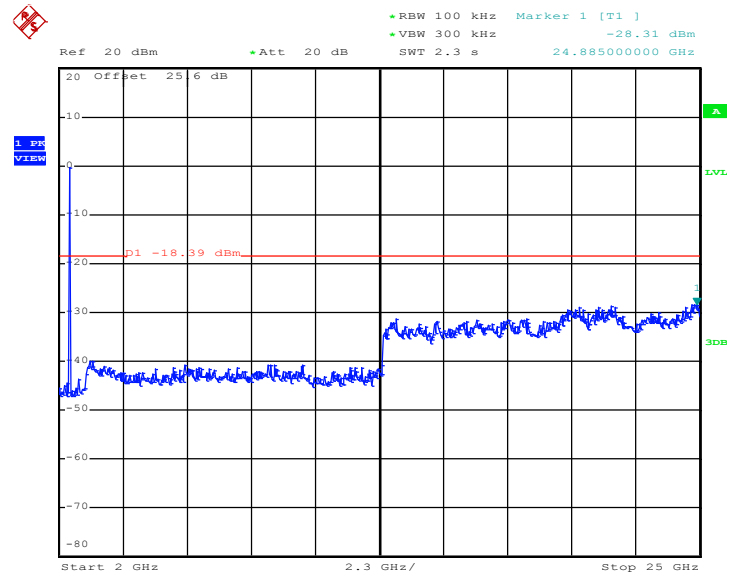


281609LE 15C Spurious 802.11a 2402 (ch00)

Date: 21.SEP.2012 20:09:48



Conducted Spurious Emission Plot on Bluetooth LE 1Mbps
GFSK Channel 00

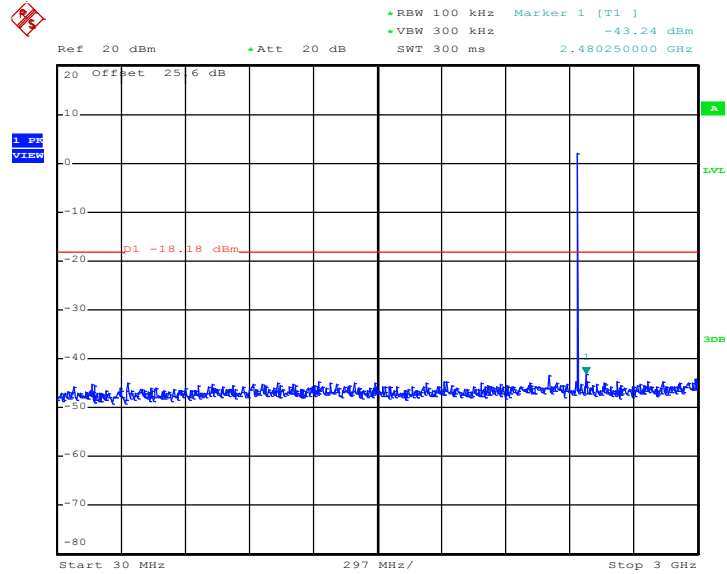


281609LE 15C Spurious 802.11a 2402 (ch00)
Date: 21.SEP.2012 20:10:06



| | | | |
|----------------|--------------------|---------------------|----------|
| Test Mode : | Bluetooth 4.0 - LE | Temperature : | 24~26°C |
| Test Channel : | 19 | Relative Humidity : | 58~61% |
| | | Test Engineer : | Book Lin |

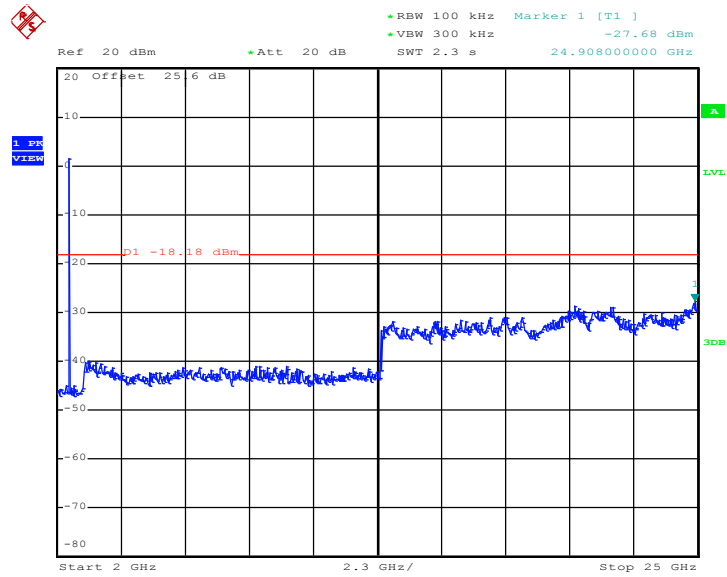
Conducted Spurious Emission Plot on Bluetooth LE 1Mbps
GFSK Channel 19



281609LE 15C Spurious 802.11a 2440 (ch19)
Date: 21.SEP.2012 20:13:42



Conducted Spurious Emission Plot on Bluetooth LE 1Mbps
GFSK Channel 19

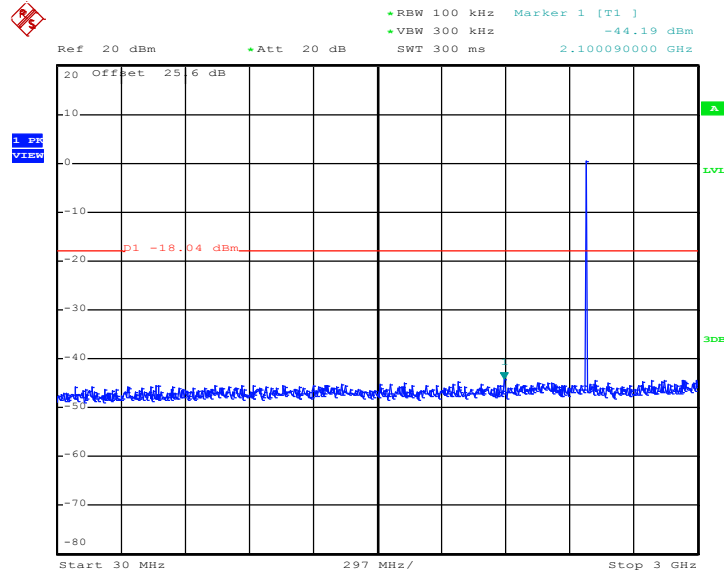


281609LE 15C Spurious 802.11a 2440 (ch19)
Date: 21.SEP.2012 20:14:00



| | | | |
|----------------|--------------------|---------------------|----------|
| Test Mode : | Bluetooth 4.0 - LE | Temperature : | 24~26°C |
| Test Channel : | 39 | Relative Humidity : | 58~61% |
| | | Test Engineer : | Book Lin |

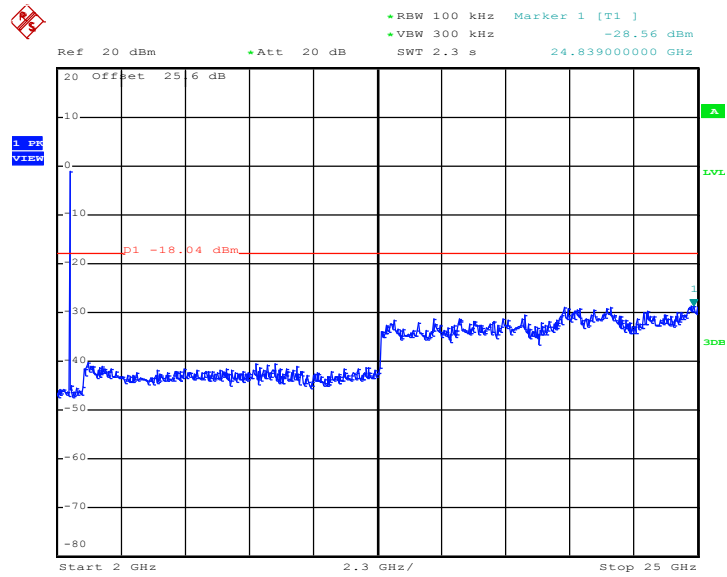
Conducted Spurious Emission Plot on Bluetooth LE 1Mbps
GFSK Channel 39



281609LE 15C Spurious 802.11a 2480 (ch39)
Date: 21.SEP.2012 20:19:59



Conducted Spurious Emission Plot on Bluetooth LE 1Mbps
GFSK Channel 39



281609LE 15C Spurious 802.11a 2480 (ch39)
Date: 21.SEP.2012 20:20:16



3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

| Frequency (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|-----------------|-----------------------------------|-------------------------------|
| 0.009 – 0.490 | 2400/F(kHz) | 300 |
| 0.490 – 1.705 | 24000/F(kHz) | 30 |
| 1.705 – 30.0 | 30 | 30 |
| 30 – 88 | 100 | 3 |
| 88 – 216 | 150 | 3 |
| 216 - 960 | 200 | 3 |
| Above 960 | 500 | 3 |

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.



3.5.3 Test Procedures

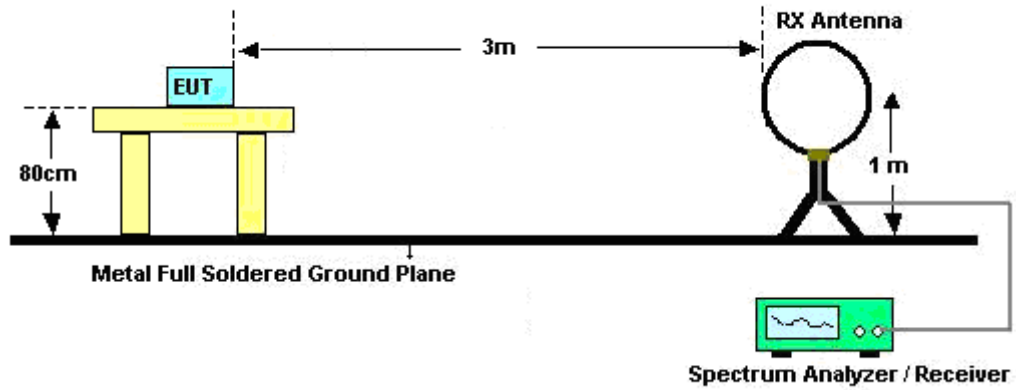
1. The testing follows the guidelines in ANSI C63. 10-2009
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 KHz for $f < 1$ GHz; $VBW \geq RBW$; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, $VBW = 3$ MHz for $f \geq 1$ GHz for peak measurement.
For average measurement:
 - $VBW = 10$ Hz, when duty cycle is no less than 98 percent.
 - $VBW \geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

| Band | Duty Cycle(%) | T(us) | 1/T(KHz) | VBW Setting |
|--------------------|---------------|-------|----------|-------------|
| Bluetooth 4.0 - LE | 70.25 | 444 | 2.25 | 3KHz |

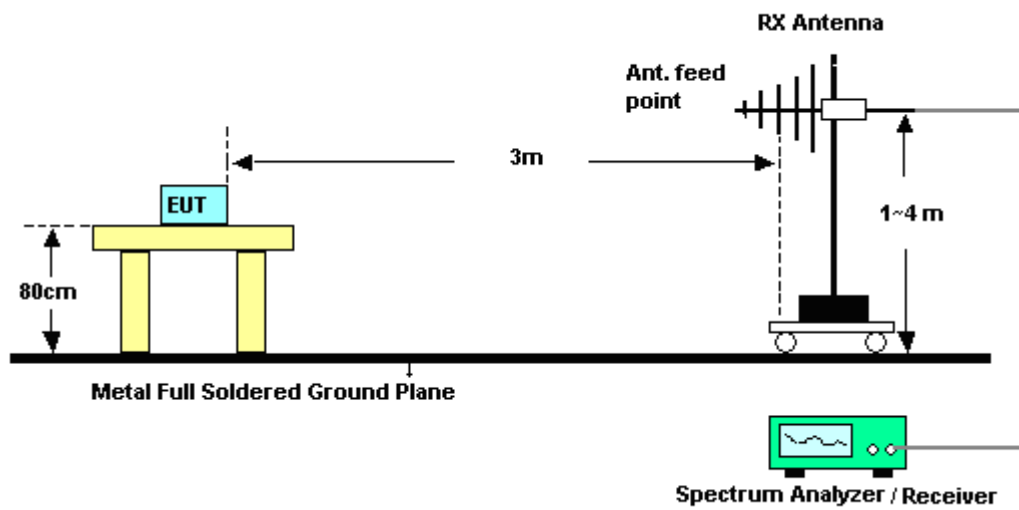
Note: For average measurement with duty cycle < 98%, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

3.5.4 Test Setup

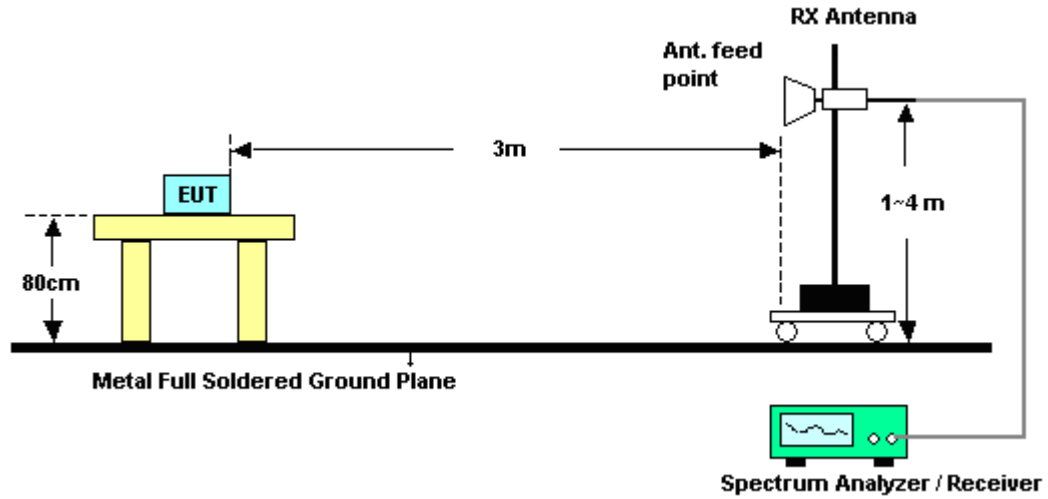
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.5.6 Test Result of Radiated Band Edges

<Sample 1>

| | | | |
|----------------|--------|---------------------|--|
| Test Mode : | Mode 1 | Temperature : | 30~31°C |
| Test Channel : | 00 | Relative Humidity : | 42~43% |
| | | Test Engineer : | Kai Wang, Timberland Lin and Ivan Chiang |

| ANTENNA POLARITY : HORIZONTAL | | | | | | | | | | |
|-------------------------------|---------------------|-------------------------|-----------------------------|---------------------------|-----------------------------|-------------------------|----------------------------|----------------------|-------------------------|---------|
| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
| 2363.46 | 49.04 | -24.96 | 74 | 44.87 | 32.31 | 6.42 | 34.56 | 194 | 32 | Peak |
| 2389.74 | 37.12 | -16.88 | 54 | 32.87 | 32.36 | 6.45 | 34.56 | 194 | 32 | Average |

| ANTENNA POLARITY : VERTICAL | | | | | | | | | | |
|-----------------------------|---------------------|-------------------------|-----------------------------|---------------------------|-----------------------------|-------------------------|----------------------------|----------------------|-------------------------|---------|
| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
| 2338.53 | 47.04 | -26.96 | 74 | 42.95 | 32.28 | 6.38 | 34.57 | 122 | 45 | Peak |
| 2384.43 | 36.55 | -17.45 | 54 | 32.33 | 32.33 | 6.45 | 34.56 | 122 | 45 | Average |

| | | | |
|----------------|--------|---------------------|--|
| Test Mode : | Mode 3 | Temperature : | 30~31°C |
| Test Channel : | 39 | Relative Humidity : | 42~43% |
| | | Test Engineer : | Kai Wang, Timberland Lin and Ivan Chiang |

| ANTENNA POLARITY : HORIZONTAL | | | | | | | | | | |
|-------------------------------|---------------------|-------------------------|-----------------------------|---------------------------|-----------------------------|-------------------------|----------------------------|----------------------|-------------------------|---------|
| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
| 2485.6 | 48.16 | -25.84 | 74 | 43.64 | 32.48 | 6.59 | 34.55 | 180 | 20 | Peak |
| 2483.5 | 38.25 | -15.75 | 54 | 33.73 | 32.48 | 6.59 | 34.55 | 180 | 20 | Average |

| ANTENNA POLARITY : VERTICAL | | | | | | | | | | |
|-----------------------------|---------------------|-------------------------|-----------------------------|---------------------------|-----------------------------|-------------------------|----------------------------|----------------------|-------------------------|---------|
| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
| 2494.48 | 47.22 | -26.78 | 74 | 42.68 | 32.5 | 6.59 | 34.55 | 200 | 258 | Peak |
| 2483.5 | 36.86 | -17.14 | 54 | 32.34 | 32.48 | 6.59 | 34.55 | 200 | 258 | Average |



<Sample 2>

| | | | |
|----------------|--------|---------------------|--|
| Test Mode : | Mode 4 | Temperature : | 30~31°C |
| Test Channel : | 39 | Relative Humidity : | 42~43% |
| | | Test Engineer : | Kai Wang, Timberland Lin and Ivan Chiang |

| ANTENNA POLARITY : HORIZONTAL | | | | | | | | | | |
|-------------------------------|---------------------|-------------------------|-----------------------------|---------------------------|-----------------------------|-------------------------|----------------------------|----------------------|-------------------------|---------|
| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
| 2483.5 | 48.85 | -25.15 | 74 | 44.33 | 32.48 | 6.59 | 34.55 | 123 | 20 | Peak |
| 2483.5 | 39.12 | -14.88 | 54 | 34.6 | 32.48 | 6.59 | 34.55 | 123 | 20 | Average |

| ANTENNA POLARITY : VERTICAL | | | | | | | | | | |
|-----------------------------|---------------------|-------------------------|-----------------------------|---------------------------|-----------------------------|-------------------------|----------------------------|----------------------|-------------------------|---------|
| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
| 2485.72 | 48.29 | -25.71 | 74 | 43.77 | 32.48 | 6.59 | 34.55 | 114 | 141 | Peak |
| 2487.16 | 36.98 | -17.02 | 54 | 32.46 | 32.48 | 6.59 | 34.55 | 114 | 141 | Average |

3.5.7 Test Result of Radiated Emission (30 MHz ~ 10th Harmonic)

<Sample 1>

| | | | |
|------------------------|---|----------------------------|------------|
| Test Mode : | Mode 1 | Temperature : | 30~31°C |
| Test Channel : | 00 | Relative Humidity : | 42~43% |
| Test Engineer : | Kai Wang, Timberland Lin and Ivan Chiang | Polarization : | Horizontal |
| Remark : | 1. 2402 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31. | | |

| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
|-------------------|------------------|-------------------|-----------------------|---------------------|-----------------------|-------------------|----------------------|----------------|-------------------|---------|
| 2402 | 100.88 | - | - | 96.63 | 32.36 | 6.45 | 34.56 | 194 | 32 | Average |
| 2402 | 101.92 | - | - | 97.67 | 32.36 | 6.45 | 34.56 | 194 | 32 | Peak |

| | | | |
|------------------------|---|----------------------------|----------|
| Test Mode : | Mode 1 | Temperature : | 30~31°C |
| Test Channel : | 00 | Relative Humidity : | 42~43% |
| Test Engineer : | Kai Wang, Timberland Lin and Ivan Chiang | Polarization : | Vertical |
| Remark : | 1. 2402 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31. | | |

| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
|-------------------|------------------|-------------------|-----------------------|---------------------|-----------------------|-------------------|----------------------|----------------|-------------------|---------|
| 2402 | 96.26 | - | - | 92.01 | 32.36 | 6.45 | 34.56 | 122 | 45 | Average |
| 2402 | 97.27 | - | - | 93.02 | 32.36 | 6.45 | 34.56 | 122 | 45 | Peak |



| | | | |
|------------------------|---|----------------------------|------------|
| Test Mode : | Mode 2 | Temperature : | 30~31°C |
| Test Channel : | 19 | Relative Humidity : | 42~43% |
| Test Engineer : | Kai Wang, Timberland Lin and Ivan Chiang | Polarization : | Horizontal |
| Remark : | 1. 2440 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31. | | |

| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-----------------------------|-------------------------|----------------------------|----------------------|-------------------------|---------|
| 2440 | 100.53 | - | - | 96.14 | 32.43 | 6.52 | 34.56 | 127 | 30 | Average |
| 2440 | 101.55 | - | - | 97.16 | 32.43 | 6.52 | 34.56 | 127 | 30 | Peak |

| | | | |
|------------------------|---|----------------------------|----------|
| Test Mode : | Mode 2 | Temperature : | 30~31°C |
| Test Channel : | 19 | Relative Humidity : | 42~43% |
| Test Engineer : | Kai Wang, Timberland Lin and Ivan Chiang | Polarization : | Vertical |
| Remark : | 1. 2440 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31. | | |

| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-----------------------------|-------------------------|----------------------------|----------------------|-------------------------|---------|
| 2440 | 95.12 | - | - | 90.73 | 32.43 | 6.52 | 34.56 | 116 | 104 | Average |
| 2440 | 96.09 | - | - | 91.7 | 32.43 | 6.52 | 34.56 | 116 | 104 | Peak |



| | | | |
|------------------------|---|----------------------------|------------|
| Test Mode : | Mode 3 | Temperature : | 30~31°C |
| Test Channel : | 39 | Relative Humidity : | 42~43% |
| Test Engineer : | Kai Wang, Timberland Lin and Ivan Chiang | Polarization : | Horizontal |
| Remark : | 1. 2480 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31. | | |

| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-----------------------------|-------------------------|----------------------------|----------------------|-------------------------|---------|
| 115.86 | 26.49 | -17.01 | 43.5 | 45.14 | 11.82 | 1.24 | 31.71 | - | - | Peak |
| 138.54 | 26.93 | -16.57 | 43.5 | 46.04 | 11.18 | 1.41 | 31.7 | - | - | Peak |
| 215.76 | 26.98 | -16.52 | 43.5 | 47.61 | 9.02 | 2.01 | 31.66 | 100 | 77 | Peak |
| 562.5 | 22.16 | -23.84 | 46 | 32.24 | 18.87 | 2.99 | 31.94 | - | - | Peak |
| 707.4 | 23.44 | -22.56 | 46 | 32.85 | 19.07 | 3.55 | 32.03 | - | - | Peak |
| 832 | 25.18 | -20.82 | 46 | 33.15 | 20.22 | 3.74 | 31.93 | - | - | Peak |
| 2480 | 101.59 | - | - | 97.07 | 32.48 | 6.59 | 34.55 | 180 | 20 | Average |
| 2480 | 102.57 | - | - | 98.05 | 32.48 | 6.59 | 34.55 | 180 | 20 | Peak |



| | | | |
|------------------------|---|----------------------------|----------|
| Test Mode : | Mode 3 | Temperature : | 30~31°C |
| Test Channel : | 39 | Relative Humidity : | 42~43% |
| Test Engineer : | Kai Wang, Timberland Lin and Ivan Chiang | Polarization : | Vertical |
| Remark : | 1. 2480 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31. | | |

| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
|----------------------|---------------------|-------------------------|-----------------------------|-------------------------|-----------------------------|-------------------------|----------------------------|----------------------|-------------------------|---------|
| 51.6 | 32.57 | -7.43 | 40 | 55.52 | 8.1 | 0.65 | 31.7 | 100 | 27 | Peak |
| 115.86 | 25.52 | -17.98 | 43.5 | 44.17 | 11.82 | 1.24 | 31.71 | - | - | Peak |
| 192.54 | 19.73 | -23.77 | 43.5 | 40.53 | 8.96 | 1.9 | 31.66 | - | - | Peak |
| 569.5 | 22.09 | -23.91 | 46 | 32.26 | 18.81 | 3 | 31.98 | - | - | Peak |
| 650 | 22.43 | -23.57 | 46 | 31.79 | 19.2 | 3.41 | 31.97 | - | - | Peak |
| 821.5 | 24.08 | -21.92 | 46 | 32.26 | 20.12 | 3.64 | 31.94 | - | - | Peak |
| 2480 | 95.46 | - | - | 90.94 | 32.48 | 6.59 | 34.55 | 200 | 258 | Average |
| 2480 | 96.47 | - | - | 91.95 | 32.48 | 6.59 | 34.55 | 200 | 258 | Peak |



<Sample 2>

| | | | |
|------------------------|---|----------------------------|------------|
| Test Mode : | Mode 3 | Temperature : | 30~31°C |
| Test Channel : | 39 | Relative Humidity : | 42~43% |
| Test Engineer : | Kai Wang, Timberland Lin and Ivan Chiang | Polarization : | Horizontal |
| Remark : | 1. 2480 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31. | | |

| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-----------------------------|-------------------------|----------------------------|----------------------|-------------------------|---------|
| 40.26 | 25.25 | -14.75 | 40 | 43.89 | 12.12 | 0.74 | 31.5 | - | - | Peak |
| 121.8 | 28.75 | -14.75 | 43.5 | 46.95 | 11.86 | 1.23 | 31.29 | - | - | Peak |
| 211.44 | 29.64 | -13.86 | 43.5 | 50.3 | 8.92 | 1.58 | 31.16 | 100 | 185 | Peak |
| 386.1 | 16.18 | -29.82 | 46 | 30.18 | 15.18 | 2.15 | 31.33 | - | - | Peak |
| 749.4 | 22 | -24 | 46 | 29.99 | 19.8 | 3.05 | 30.84 | - | - | Peak |
| 930.7 | 23.78 | -22.22 | 46 | 30.29 | 20.71 | 3.36 | 30.58 | - | - | Peak |
| 2480 | 102.86 | - | - | 98.34 | 32.48 | 6.59 | 34.55 | 123 | 20 | Average |
| 2480 | 103.89 | - | - | 99.37 | 32.48 | 6.59 | 34.55 | 123 | 20 | Peak |



| | | | |
|------------------------|---|----------------------------|----------|
| Test Mode : | Mode 3 | Temperature : | 30~31°C |
| Test Channel : | 39 | Relative Humidity : | 42~43% |
| Test Engineer : | Kai Wang, Timberland Lin and Ivan Chiang | Polarization : | Vertical |
| Remark : | 1. 2480 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31. | | |

| Frequency (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Remark |
|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-----------------------------|-------------------------|----------------------------|----------------------|-------------------------|---------|
| 31.89 | 33.81 | -6.19 | 40 | 47.44 | 17.24 | 0.66 | 31.53 | 100 | 54 | Peak |
| 46.2 | 32.58 | -7.42 | 40 | 54.04 | 9.33 | 0.77 | 31.56 | - | - | Peak |
| 192.54 | 25.73 | -17.77 | 43.5 | 46.64 | 8.96 | 1.5 | 31.37 | - | - | Peak |
| 350.4 | 16.96 | -29.04 | 46 | 31.62 | 14.3 | 2.05 | 31.01 | - | - | Peak |
| 595.4 | 21.4 | -24.6 | 46 | 31.8 | 18.8 | 2.75 | 31.95 | - | - | Peak |
| 912.5 | 24.1 | -21.9 | 46 | 31.18 | 20.7 | 3.36 | 31.14 | - | - | Peak |
| 2480 | 97.6 | - | - | 93.08 | 32.48 | 6.59 | 34.55 | 114 | 141 | Average |
| 2480 | 98.55 | - | - | 94.03 | 32.48 | 6.59 | 34.55 | 114 | 141 | Peak |

3.6 AC Conducted Emission Measurement

3.6.1 Limit 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.

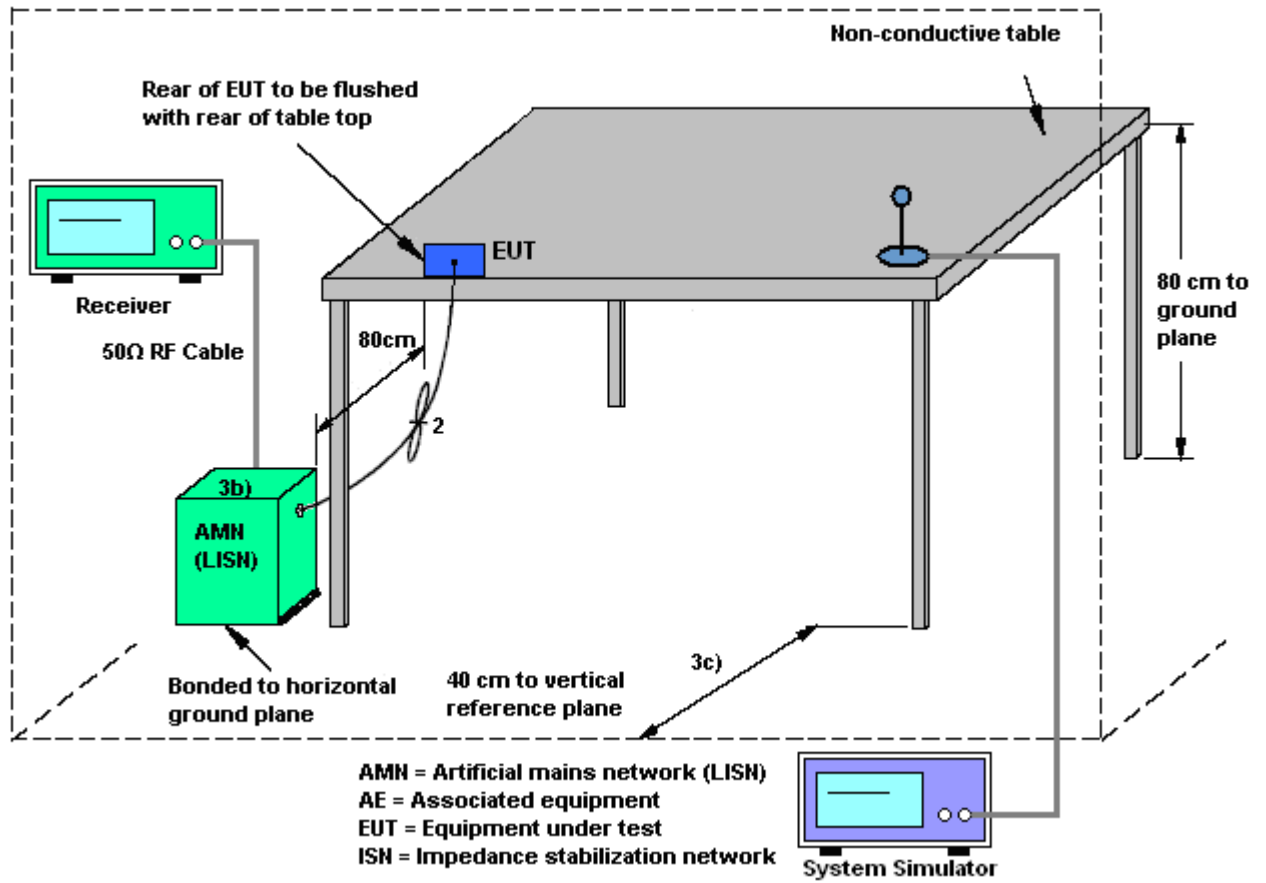
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

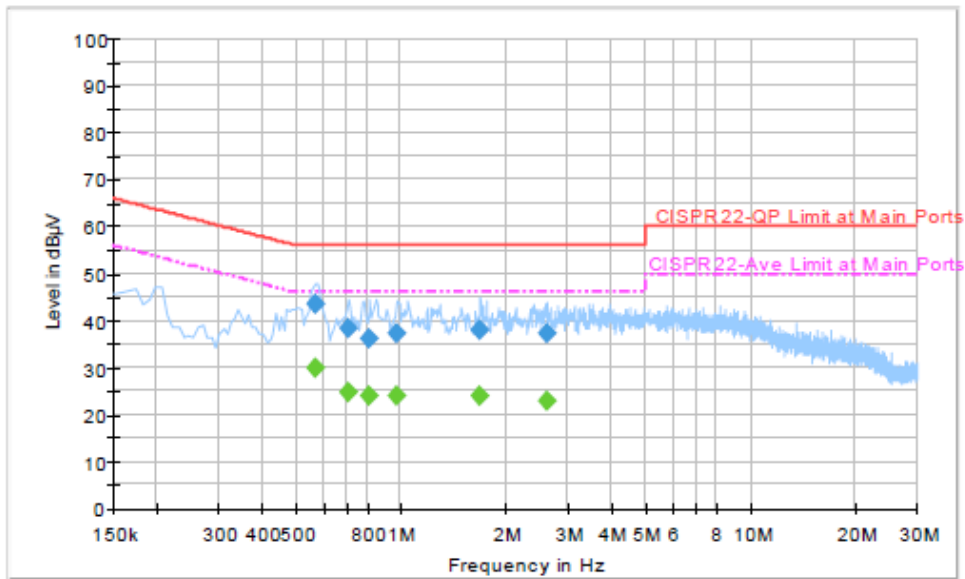
1. Please follow the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

| | | | |
|-----------------|--|---------------------|---------|
| Test Mode : | Mode 2 | Temperature : | 20~21°C |
| Test Engineer : | Kai-Chun Chu | Relative Humidity : | 46~47% |
| Test Voltage : | 120Vac / 60Hz | Phase : | Line |
| Function Type : | CDMA2000 BC15 Idle + Bluetooth Link + WLAN (2.4G) Link + MPEG4 + Earphone 1 + Battery 1 + USB Cable 1 (Charging from Adapter 1) for Sample 2 | | |
| Remark : | All emissions not reported here are more than 10 dB below the prescribed limit. | | |



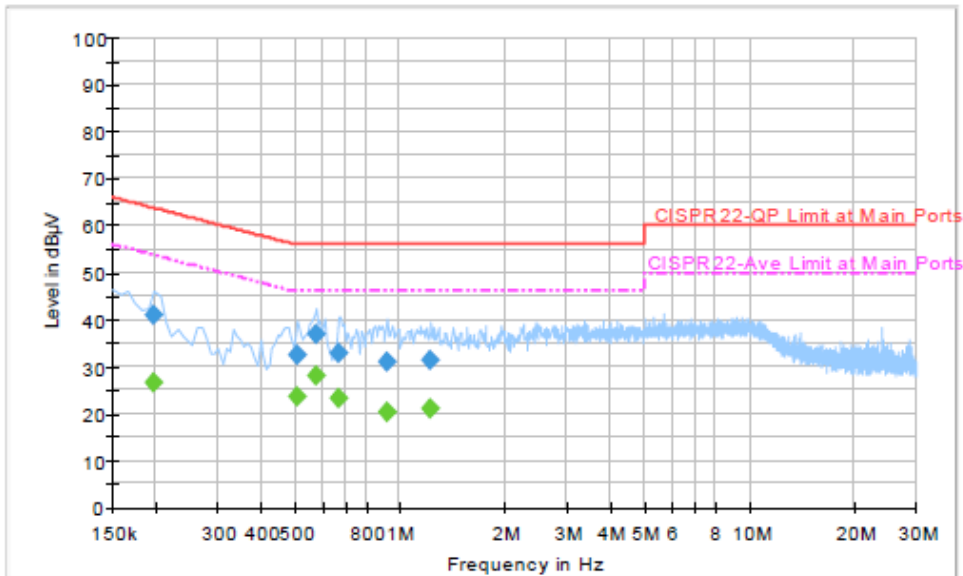
Final Result : Quasi-Peak

| Frequency (MHz) | Quasi-Peak (dBµV) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|-------------------|--------|------|------------|-------------|--------------|
| 0.566000 | 43.5 | Off | L1 | 19.4 | 12.5 | 56.0 |
| 0.710000 | 38.4 | Off | L1 | 19.5 | 17.6 | 56.0 |
| 0.814000 | 36.3 | Off | L1 | 19.5 | 19.7 | 56.0 |
| 0.974000 | 37.2 | Off | L1 | 19.4 | 18.8 | 56.0 |
| 1.686000 | 37.9 | Off | L1 | 19.5 | 18.1 | 56.0 |
| 2.606000 | 37.1 | Off | L1 | 19.6 | 18.9 | 56.0 |

Final Result : Average

| Frequency (MHz) | Average (dBµV) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|----------------|--------|------|------------|-------------|--------------|
| 0.566000 | 29.7 | Off | L1 | 19.4 | 16.3 | 46.0 |
| 0.710000 | 24.6 | Off | L1 | 19.5 | 21.4 | 46.0 |
| 0.814000 | 23.8 | Off | L1 | 19.5 | 22.2 | 46.0 |
| 0.974000 | 23.9 | Off | L1 | 19.4 | 22.1 | 46.0 |
| 1.686000 | 23.9 | Off | L1 | 19.5 | 22.1 | 46.0 |
| 2.606000 | 22.8 | Off | L1 | 19.6 | 23.2 | 46.0 |

| | | | |
|-----------------|--|---------------------|---------|
| Test Mode : | Mode 2 | Temperature : | 20~21°C |
| Test Engineer : | Kai-Chun Chu | Relative Humidity : | 46~47% |
| Test Voltage : | 120Vac / 60Hz | Phase : | Neutral |
| Function Type : | CDMA2000 BC15 Idle + Bluetooth Link + WLAN (2.4G) Link + MPEG4 + Earphone 1 + Battery 1 + USB Cable 1 (Charging from Adapter 1) for Sample 2 | | |
| Remark : | All emissions not reported here are more than 10 dB below the prescribed limit. | | |



Final Result : Quasi-Peak

| Frequency (MHz) | Quasi-Peak (dBµV) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|-------------------|--------|------|------------|-------------|--------------|
| 0.198000 | 40.8 | Off | N | 19.3 | 22.9 | 63.7 |
| 0.510000 | 32.6 | Off | N | 19.4 | 23.4 | 56.0 |
| 0.574000 | 36.8 | Off | N | 19.4 | 19.2 | 56.0 |
| 0.670000 | 32.9 | Off | N | 19.5 | 23.1 | 56.0 |
| 0.918000 | 30.9 | Off | N | 19.4 | 25.1 | 56.0 |
| 1.222000 | 31.5 | Off | N | 19.5 | 24.5 | 56.0 |

Final Result : Average

| Frequency (MHz) | Average (dBµV) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|----------------|--------|------|------------|-------------|--------------|
| 0.198000 | 26.7 | Off | N | 19.3 | 27.0 | 53.7 |
| 0.510000 | 23.6 | Off | N | 19.4 | 22.4 | 46.0 |
| 0.574000 | 27.9 | Off | N | 19.4 | 18.1 | 46.0 |
| 0.670000 | 23.1 | Off | N | 19.5 | 22.9 | 46.0 |
| 0.918000 | 20.2 | Off | N | 19.4 | 25.8 | 46.0 |
| 1.222000 | 20.9 | Off | N | 19.5 | 25.1 | 46.0 |



3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.7.2 Antenna Connected Construction

Non-standard connector used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Test Date | Due Date | Remark |
|---------------------------|--------------|------------------------|-------------|-----------------|------------------|-------------------------------|---------------|-----------------------|
| Spectrum Analyzer | R&S | FSP40 | 100055 | 9kHz~40GHz | Jun. 06, 2012 | Sep. 07, 2012 ~ Sep. 21, 2012 | Jun. 05, 2013 | Conducted (TH02-HY) |
| EMI Test Receiver | R&S | ESCS 30 | 100356 | 9KHz ~ 2.75GHz | Oct. 27, 2011 | Sep. 18, 2012 | Oct. 26, 2012 | Conduction (CO05-HY) |
| Two-LISN | R&S | ENV216 | 11-100081 | 9KHz ~ 30MHz | Dec. 09, 2011 | Sep. 18, 2012 | Dec. 08, 2012 | Conduction (CO05-HY) |
| Two-LISN | R&S | ENV216 | 11-100080 | 9KHz ~ 30MHz | Dec. 06, 2011 | Sep. 18, 2012 | Dec. 05, 2012 | Conduction (CO05-HY) |
| AC Power Source | APC | APC-1000W | N/A | N/A | N/A | Sep. 18, 2012 | N/A | Conduction (CO05-HY) |
| System Simulator | R&S | CMU200 | 117995 | N/A | Jul. 28, 2011 | Sep. 18, 2012 | Jul. 27, 2013 | Conduction (CO05-HY) |
| Spectrum Analyzer | Agilent | E4408B | MY44211030 | 9KHz ~ 26.5GHz | Nov. 23, 2011 | Sep. 18, 2012 ~ Sep. 27, 2012 | Nov. 22, 2012 | Radiation (03CH06-HY) |
| Spectrum Analyzer | R&S | FSP30 | 101352 | 9KHz-30GHz | Nov. 03, 2011 | Sep. 18, 2012 ~ Sep. 27, 2012 | Nov. 02, 2012 | Radiation (03CH06-HY) |
| EMI Test Receiver | R&S | ESVS10 | 834468/003 | 20MHz ~ 1000MHz | May 04, 2012 | Sep. 18, 2012 ~ Sep. 27, 2012 | May. 03, 2013 | Radiation (03CH06-HY) |
| Bilog Antenna | SCHAFFNER | CBL6112B | 2885 | 30MHz ~ 2GHz | Oct. 22, 2011 | Sep. 18, 2012 ~ Sep. 27, 2012 | Oct. 21, 2012 | Radiation (03CH06-HY) |
| Double Ridge Horn Antenna | EMCO | 3117 | 00066583 | 1GHz ~ 18GHz | Aug. 01, 2012 | Sep. 18, 2012 ~ Sep. 27, 2012 | Jul. 31, 2013 | Radiation (03CH06-HY) |
| SHF-EHF Horn Antenna | SCHWARZBECK | BBHA 9170 | BBHA9170251 | 15GHz ~ 40GHz | Oct. 20, 2011 | Sep. 18, 2012 ~ Sep. 27, 2012 | Oct. 19, 2012 | Radiation (03CH06-HY) |
| Preamplifier | Agilent | 8449B | 3008A01917 | 1GHz ~ 26.5GHz | Apr. 13, 2012 | Sep. 18, 2012 ~ Sep. 27, 2012 | Apr. 12, 2013 | Radiation (03CH06-HY) |
| Amplifier | Agilent | 310N | 186713 | 9KHz ~ 1GHz | Apr. 11, 2012 | Sep. 18, 2012 ~ Sep. 27, 2012 | Apr. 10, 2013 | Radiation (03CH06-HY) |
| Pre Amplifier | EMCI | EMC051845 | SN980048 | 1GHz ~ 18GHz | Jul. 21, 2012 | Sep. 18, 2012 ~ Sep. 27, 2012 | Jul. 20, 2013 | Radiation (03CH06-HY) |
| Pre Amplifier | MITEQ | AMF-7D-00101800-30-10P | 159087 | 1GHz~18GHz | Feb. 27, 2012 | Sep. 18, 2012 ~ Sep. 27, 2012 | Feb. 26, 2013 | Radiation (03CH06-HY) |
| Loop Antenna | R&S | HFH2-Z2 | 860004/001 | 9KHz ~ 30MHz | Jul. 03, 2012 | Sep. 18, 2012 ~ Sep. 27, 2012 | Jul. 02, 2014 | Radiation (03CH06-HY) |



5 Uncertainty of Evaluation

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

| | |
|---|------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$) | 2.26 |
|---|------|

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

| | |
|---|------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$) | 2.54 |
|---|------|

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

| | |
|---|------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$) | 4.72 |
|---|------|