HCT CO., LTD.

CERTIFICATE OF COMPLIANCE
FCC Class II Permissive Change

Applicant Name: LG Electronics MobileComm U.S.A., Inc. **Address:** 1000 Sylvan Avenue, Englewood Cliffs NJ 07632	**Date of Issue:** March 29, 2013 **Test Site/Location:** HCT CO., LTD., 105-1, Jangam-ri, Majang-Myeon, Icheon-si, Kyunggi-Do, Korea **Report No.:** HCTR1303FR09-2 **HCT FRN:** 0005866421

FCC ID	: ZNFUS780
APPLICANT	: LG Electronics MobileComm U.S.A., Inc.

FCC Model(s):	US780
Additional FCC Model(s):	LG-US780, LGUS780, AS780, LGAS780, LG-AS780
EUT Type:	AWS/Cellular/PCS CDMA Phone with AWS/Cellular/PCS LTE WLAN, Bluetooth and NFC
Frequency Range:	2402 MHz -2480 MHz(BT 4.0_Low Energy Mode)
Modulation type	GFSK
FCC Classification:	Digital Transmission System(DTS)
FCC Rule Part(s):	Part 15.247

Engineering Statement:

 The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)

Report prepared by
: Jong Seok Lee
Test engineer of RF Team

Approved by
: Chang Seok Choi
Manager of RF Team

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Version

TEST REPORT NO.	DATE	DESCRIPTION
HCTR1303FR09	March 06, 2013	- First Approval Report
HCTR1303FR09-1	March 20, 2013	- Revised Setting of VBW for Radiated Spurious Emissions and Restricted Band Edge.
HCTR1303FR09-2	March 29, 2013	- Revised Setting of VBW for Radiated Spurious Emissions and Restricted Band Edge.

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1. GENERAL INFORMATION

Applicant:	LG Electronics MobileComm U.S.A., Inc.
Address:	1000 Sylvan Avenue, Englewood Cliffs NJ 07632
FCC ID:	ZNFUS780
EUT Type:	AWS/Cellular/PCS CDMA Phone with AWS/Cellular/PCS LTE WLAN, Bluetooth and NFC
Model name(s):	US780
Additional Model name(s):	LG-US780, LGUS780, AS780, LGAS780, LG-AS780
Date(s) of Tests:	January 21, 2013 ~ January 23, 2013
Place of Tests:	HCT Co., Ltd. 105-1, Jangam-ri , Majang-Myeon, Icheon-si, Kyunggi-Do, 467-811, KOREA. (IC Recognition No. : 5944A-3)

2. EUT DESCRIPTION

EUT Type	AWS/Cellular/PCS CDMA Phone with AWS/Cellular/PCS LTE WLAN, Bluetooth and NFC
FCC Model Name	US780
Additional FCC Model Name	LG-US780, LGUS780, AS780, LGAS780, LG-AS780
Power Supply	DC 3.8 V
Battery type	Li-ion Battery(Standard)
Frequency Range	TX: 2402 MHz ~ 2480 MHz RX: 2402 MHz ~ 2480 MHz
BT Operating Mode	BT 4.0_Low Energy Mode
Modulation Type	GFSK
Number of Channels	40 Channels
Antenna Specification	Manufacturer: LS Mtron Co., Ltd. Antenna type: Internal Antenna Peak Gain : 0.1 dBi

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3. TEST METHODOLOGY

The measurement procedure described in the American National Standard for Testing Unlicensed Wireless Devices(ANSI C63.10-2009) Operating Under §15.247" were used in the measurement.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10. (Version :2009) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 6.3 of ANSI C63.10. (Version: 2009).

3.4 DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.
Channel low, mid and high with highest data rate (worst case) is chosen for full testing.

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4. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipments, which is traceable to recognized national standards.

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 105-1, Jangam-ri, Majang-Myeon, Icheon-si, Kyunggi-Do, 467-811, Korea. The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2003) and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated March 02, 2011 (Registration Number: 90661)

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements. Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

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6. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203:

  "An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. 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 provisions of this section."

* The antennas of this E.U.T are permanently attached.

*The E.U.T Complies with the requirement of §15.203

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7. SUMMARY TEST OF RESULTS

Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
Radiated Spurious Emissions	§15.205, 15.209	cf. Section 8.5.1	RADIATED	PASS
Radiated Restricted Band Edge	§15.247(d), 15.205, 15.209	cf. Section 8.5.2		PASS

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8. TEST RESULT

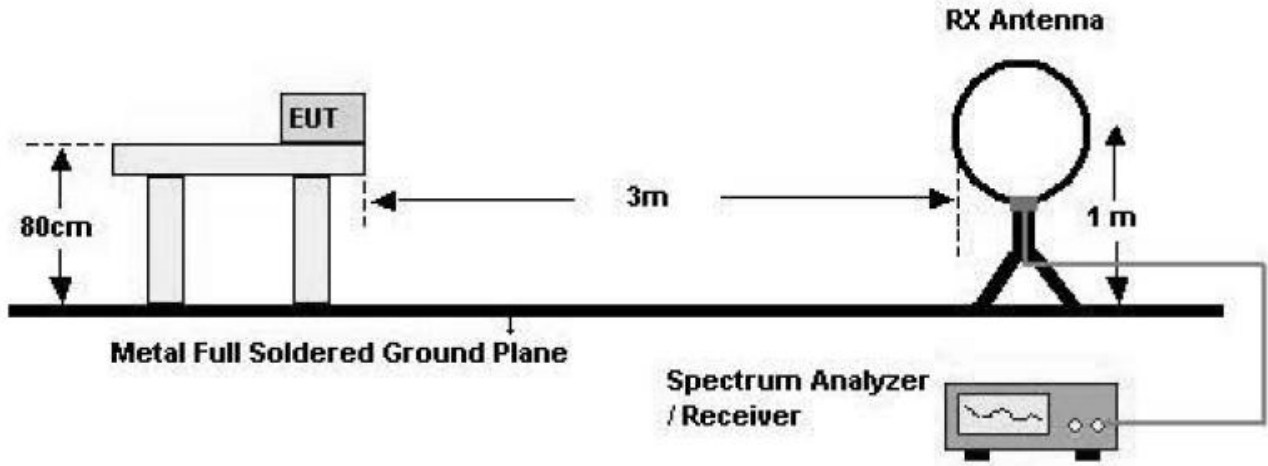### 8.1 RADIATED MEASUREMENT.

8.1.1 RADIATED SPURIOUS EMISSIONS.

Test Requirements and limit, §15.205, §15.209

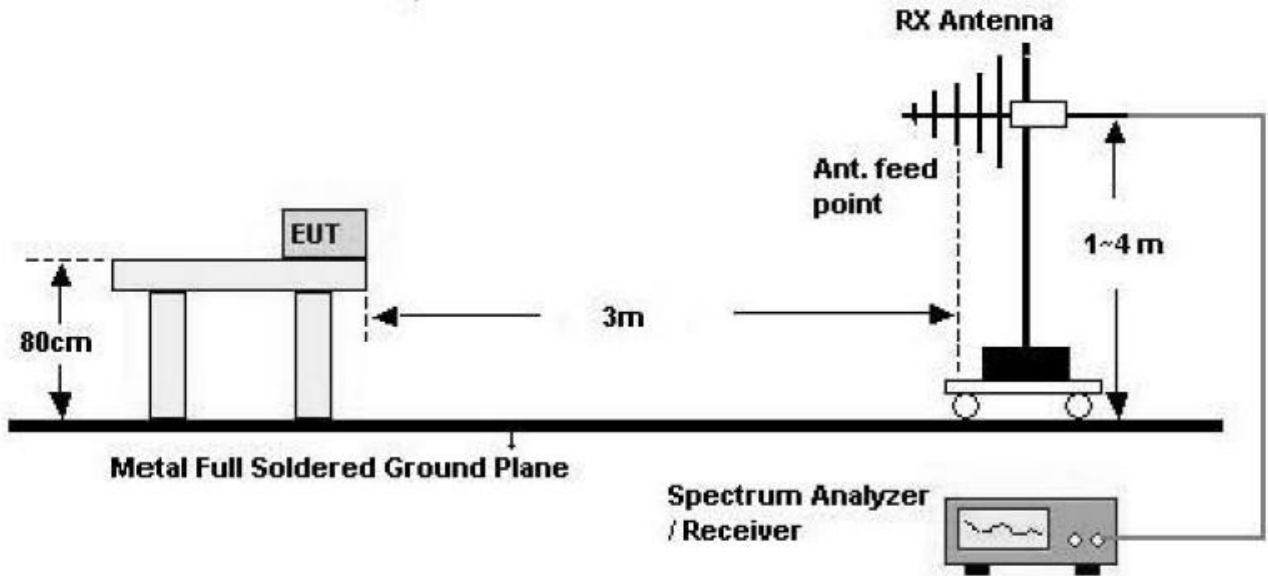| Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

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Test Configuration

Below 30 MHz

30 MHz - 1 GHz

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Above 1 GHz

TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8 m above ground plane.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.

3. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.

4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.

5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

6. Repeat above procedures until the measurements for all frequencies are complete.

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TEST RESULTS

9 kHz – 30MHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
㎒	dBμV	dB /m	dB	(H/V)	dBμV/m	dBμV/m	dB
No Critical peaks found							

Notes:

1. Measuring frequencies from 9 kHz to the 30MHz.

2. The reading of emissions are attenuated more than 20 dB below the permissible

   limits or the field strength is too small to be measured.

3. Distance extrapolation factor = 40 log (specific distance / test distance) (dB)

4. Limit line = specific Limits (dBuV) + Distance extrapolation factor

5. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

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TEST RESULTS

Below 1 GHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
㎒	dBμV	dB /m	dB	(H/V)	dBμV/m	dBμV/m	dB
No Critical peaks found							

Notes:

1. Measuring frequencies from 30 MHz to the 1 GHz.

2. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.

3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

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Above 1 GHz

Operation Mode: CH Low(LE Mode)

Frequency [MHz]	Reading dBuV	AN.+CL-AMP G [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4804	51.57	-0.84	V	50.73	74	23.27	PK
4804	40.43	-0.84	V	39.59	54	14.41	AV
7206	49.54	9.15	V	58.69	74	15.31	PK
7206	38.39	9.15	V	47.54	54	6.46	AV
4804	52.16	-0.84	H	51.32	74	22.68	PK
4804	40.58	-0.84	H	39.74	54	14.26	AV
7206	48.96	9.15	H	58.11	74	15.89	PK
7206	38.20	9.15	H	47.35	54	6.65	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.

4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain

5. Spectrum setting:

 a. Peak (Procedure 4.2.3.2.2 in ANSI 63.10)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Trace = Max hold

   Sweep = auto couple

 b. Average (Procedure 4.2.3.2.3 in ANSI 63.10)

   RBW = 1 MH

   VBW >1/T, (We set 10 kHz for VBW)

   Span = Zero

   Detector Mode = Peak

   Trace = Max hold

   We performed using a reduced video BW method was done with the analyzer in linear mode.

6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

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Operation Mode: CH Mid(LE Mode)

Frequency [MHz]	Reading dBuV	AN.+CL-AMP G [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4880	50.29	-0.37	V	49.92	74	24.08	PK
4880	39.41	-0.37	V	39.04	54	14.96	AV
7320	49.07	8.71	V	57.78	74	16.22	PK
7320	37.88	8.71	V	46.59	54	7.41	AV
4880	50.33	-0.37	H	49.96	74	24.04	PK
4880	39.38	-0.37	H	39.01	54	14.99	AV
7320	49.86	8.71	H	58.57	74	15.43	PK
7320	37.75	8.71	H	46.46	54	7.54	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.

4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain

5. Spectrum setting:

   a. Peak (Procedure 4.2.3.2.2 in ANSI 63.10)

     RBW = 1 MHz

     VBW = 3 MHz

     Detector = Peak

     Trace = Max hold

     Sweep = auto couple

   b. Average (Procedure 4.2.3.2.3 in ANSI 63.10)

     RBW = 1 MH

     VBW >1/T, (We set 10 kHz for VBW)

     Span = Zero

     Detector Mode = Peak

     Trace = Max hold

     We performed using a reduced video BW method was done with the analyzer in linear mode.

6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Operation Mode: CH High(LE Mode)

Frequency [MHz]	Reading dBuV	AN.+CL-AMP G [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4960	49.33	0.50	V	49.83	74	24.17	PK
4960	38.39	0.50	V	38.89	54	15.11	AV
7440	49.61	8.95	V	58.56	74	15.44	PK
7440	39.15	8.95	V	48.10	54	5.90	AV
4960	49.72	0.50	H	50.22	74	23.78	PK
4960	38.31	0.50	H	38.81	54	15.19	AV
7440	49.58	8.95	H	58.53	74	15.47	PK
7440	38.93	8.95	H	47.88	54	6.12	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.

4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain

5. Spectrum setting:

  a. Peak (Procedure 4.2.3.2.2 in ANSI 63.10)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Trace = Max hold

   Sweep = auto couple

  b. Average (Procedure 4.2.3.2.3 in ANSI 63.10)

   RBW = 1 MH

   VBW >1/T, (We set 10 kHz for VBW)

   Span = Zero

   Detector Mode = Peak

   Trace = Max hold

   We performed using a reduced video BW method was done with the analyzer in linear mode.

6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

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8.1.2 RADIATED RESTRICTED BAND EDGES

Test Requirements and limit, §15.247(d) §15.205, §15.209

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in section 15.209(a) (See section 15.205(c)).

Operation Mode	BT 4.0_LE
Operating Frequency	2402 MHz
Channel No	0 Ch

Frequency [MHz]	Reading dBuV	A.F.+CL [dB]	Ant. Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
2390.0	23.37	33.90	H	57.27	74	16.73	PK
2390.0	13.61	33.90	H	47.51	54	6.49	AV
2390.0	24.02	33.90	V	57.92	74	16.08	PK
2390.0	13.35	33.90	V	47.25	54	6.75	AV

Notes:

1. Measurement Frequency Range = 2310 MHz ~ 2390 MHz

2. Total = Reading Value + Antenna Factor + Cable Loss

3. Spectrum setting:

 a. Peak (Procedure 4.2.3.2.2 in ANSI 63.10)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Trace = Max hold

   Sweep = auto couple

 b. Average (Procedure 4.2.3.2.3 in ANSI 63.10)

   RBW = 1 MH

   VBW >1/T, (We set 10 kHz for VBW)

   Span = Zero

   Detector Mode = Peak

   Trace = Max hold

   We performed using a reduced video BW method was done with the analyzer in linear mode.

4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

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Operation Mode	BT 4.0_LE
Operating Frequency	2480 MHz
Channel No	39 Ch

Frequency [MHz]	*Fund. Reading dBuV	※ A.F.+CL [dB]	Ant. Pol. [H/V]	*Fundamental [dBuV/m]	Delta Value [dBuV/m]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
2483.5	71.57	33.99	H	105.56	55.85	49.71	74	24.29	PK
2483.5	70.81	33.99	H	104.80	55.85	24.19	54	29.81	AV
2483.5	66.63	33.99	V	100.62	50.90	49.72	74	24.28	PK
2483.5	65.94	33.99	V	99.93	50.90	24.27	54	29.73	AV

※ A·F: ANTENNA FACTOR

C·L: CABLE LOSS

AMP GAIN: AMPLIFIER GAIN

Notes:

1. Measurement Frequency Range = 2483.5 MHz ~ 2485.5 MHz

2. Total = Fundamental Reading Value + Antenna Factor + Cable Loss – Delta Value + Duty Cycle Correction Factor

3. Spectrum setting:

a. Peak (Procedure 4.2.3.2.2 in ANSI 63.10)

RBW = 1 MHz

VBW = 3 MHz

Detector = Peak

Trace = Max hold

Sweep = auto couple

b. Average (Procedure 4.2.3.2.3 in ANSI 63.10)

RBW = 1 MH

VBW >1/T, (We set 10 kHz for VBW)

Span = Zero

Detector Mode = Peak

Trace = Max hold

We performed using a reduced video BW method was done with the analyzer in linear mode.

4. Radiated Restricted Band Edge measures by marker-delta method according to ANSI C63.10(version : 2009)

5. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

6. Marker-Delta Method

In making radiated band-edge measurements, there can be a problem obtaining meaningful data

because a measurement instrument that is tuned to a band-edge frequency may also capture some

in-band signals when using the resolution bandwidth (RBW).In an effort to compensate for this problem, the following

technique for determining band-edge compliance shall be used.

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a) Perform an in-band field strength measurement of the fundamental emission using the RBW and detector function specified in 6.3 and 6.4, 6.5, or 6.6, as applicable, and the appropriate regulatory requirements for the frequency being measured. and our Rules for the frequency being measured.

For example, for a device operating in the 902-928 MHz band under 47 CFR 15.249, use a 120 kHz RBW with a CISPR QP detector (a peak detector with 100 kHz RBW may alternatively be used). For unlicensed wireless devices operating above 1 GHz, use a 1 MHz RBW, a 1 MHz VBW, and a peak detector as required by 47 CFR 15.35. Repeat the measurement with an average detector (i.e., 1 MHz RBW with 10 Hz VBW). For pulsed emissions, other factors must be included.   For example note that radiated measurements of the fundamental emission of a spread spectrum unlicensed wireless device operating under 47 CFR 15.247 are not normally required, but they are necessary in connection with this procedure.

b) Choose a spectrum analyzer span that encompasses both the peak of the fundamental emission and the band-edge emission under investigation. Set the analyzer RBW to approximately 1% to 5 % of the total span, unless otherwise specified, with a video bandwidth equal to or greater than the RBW. Record the peak levels of the fundamental emission and the relevant band-edge emission (i.e., run several sweeps in peak hold mode). Observe the stored trace and measure the amplitude delta between the peak of the fundamental and the peak of the band-edge emission. This is not an absolute field strength measurement; it is only a relative measurement to determine the amount by which the emission drops at the band-edge relative to the highest fundamental emission level.

c) Subtract the delta measured in b) from the field strengths measured in a). The resultant field strengths (CISPR QP, average, or peak, as appropriate) are then used to determine band-edge compliance of the resricted bands, described in 5.9.

Operation Mode	BT 4.0_LE
Operating Frequency	2480 MHz
Channel No	39 Ch

Frequency [MHz]	Reading dBuV	A.F.+CL [dB]	Ant. Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
2485.5	24.22	33.99	H	58.21	74	15.79	PK
2485.5	15.84	33.99	H	49.83	54	4.17	AV
2485.5	23.88	33.99	V	57.87	74	16.13	PK
2485.5	13.89	33.99	V	47.88	54	6.12	AV

Notes:

1. Measurement Frequency Range = 2485.5 MHz ~ 2500 MHz

2. Total = Reading Value + Antenna Factor + Cable Loss

3. Spectrum setting:

a. Peak (Procedure 4.2.3.2.2 in ANSI 63.10)

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RBW = 1 MHz

VBW = 3 MHz

Detector = Peak

Trace = Max hold

Sweep = auto couple

b. Average (Procedure 4.2.3.2.3 in ANSI 63.10)

RBW = 1 MH

VBW >1/T, (We set 10 kHz for VBW)

Span = Zero

Detector Mode = Peak

Trace = Max hold

We performed using a reduced video BW method was done with the analyzer in linear mode.

4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
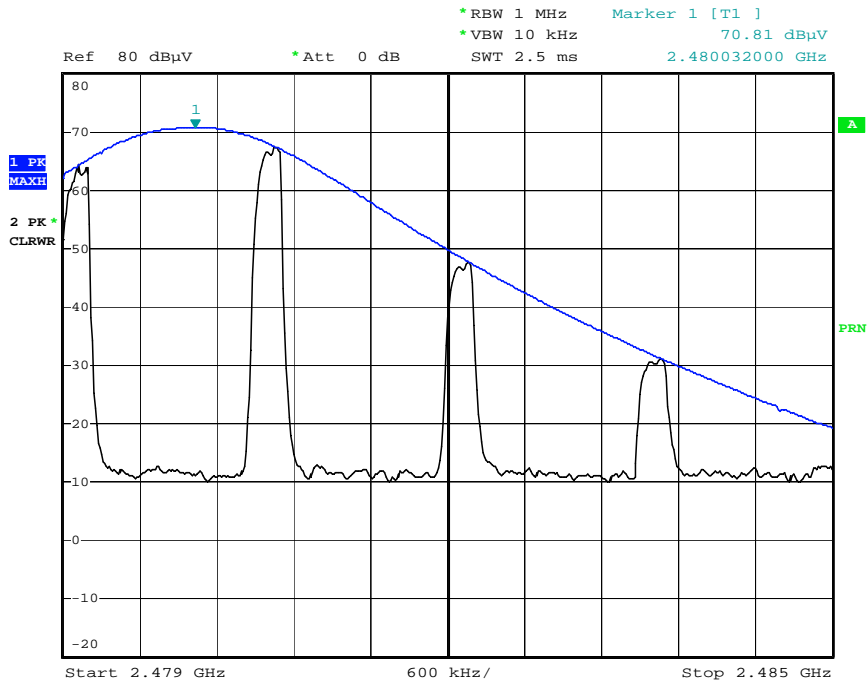
FCC PT.15.247 TEST REPORT		FCC Class II Permissive Change REPORT	www.hct.co.kr
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Fund. (Peak_Horizontal_CH 39)
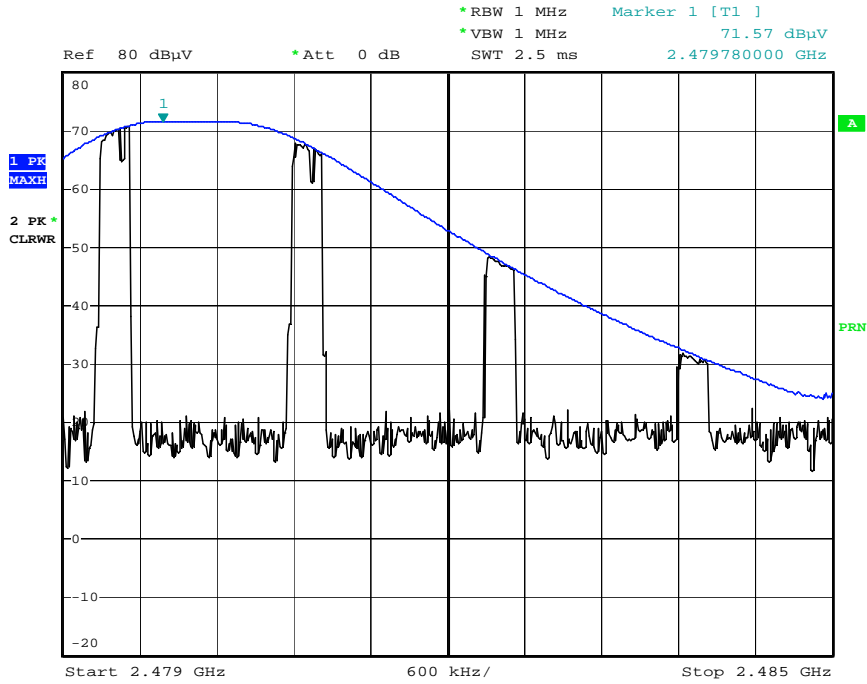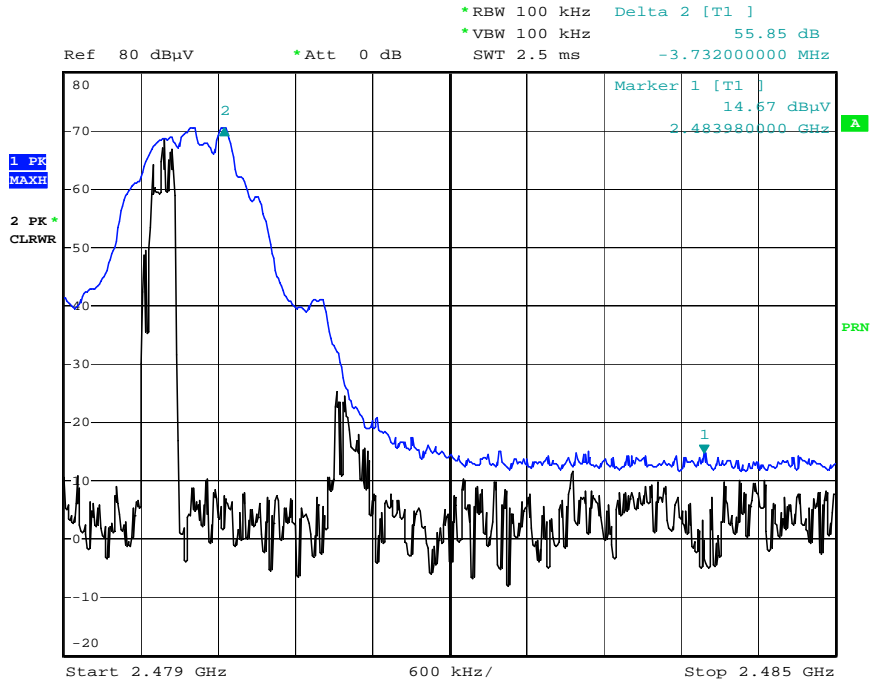

Date: 28.MAR.2013 09:06:19

Fund. (Average_Horizontal_CH 39)

Date: 28.MAR.2013 09:06:45

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Delta (Horizontal_CH 39)


```
                                        *RBW 100 kHz   Delta 2 [T1 ]
                                        *VBW 100 kHz          55.85 dB
        Ref  80 dBµV      *Att  0 dB    SWT 2.5 ms     -3.732000000 MHz
```

Date: 28.MAR.2013 09:07:37

Fund. (Peak_Vertical_CH 39)


```
                                        *RBW 1 MHz     Marker 1 [T1 ]
                                        *VBW 1 MHz           66.63 dBµV
        Ref  80 dBµV      *Att  0 dB    SWT 2.5 ms      2.480104000 GHz
```
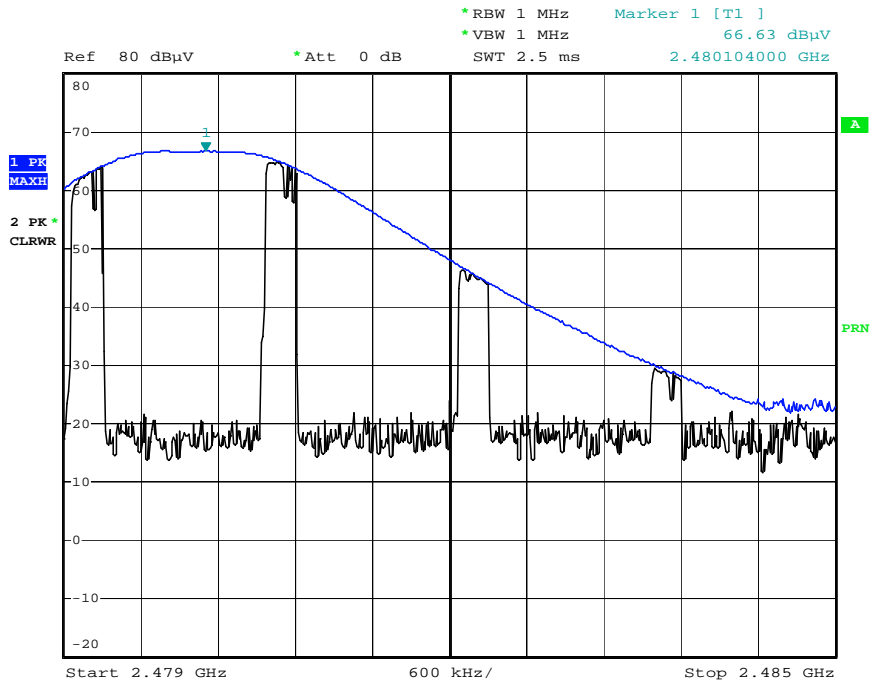
Date: 28.MAR.2013 09:18:02

FCC PT.15.247 TEST REPORT		**FCC Class II Permissive Change REPORT**	www.hct.co.kr
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Fund. (Average_Vertical_CH 39)

Date: 28.MAR.2013 09:18:31
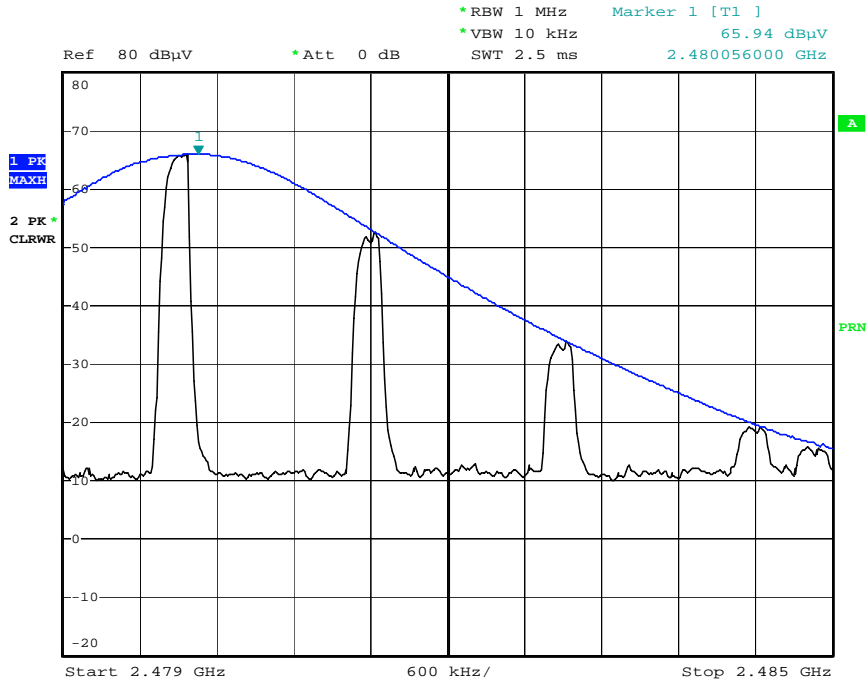
Delta (Vertical_CH 39)
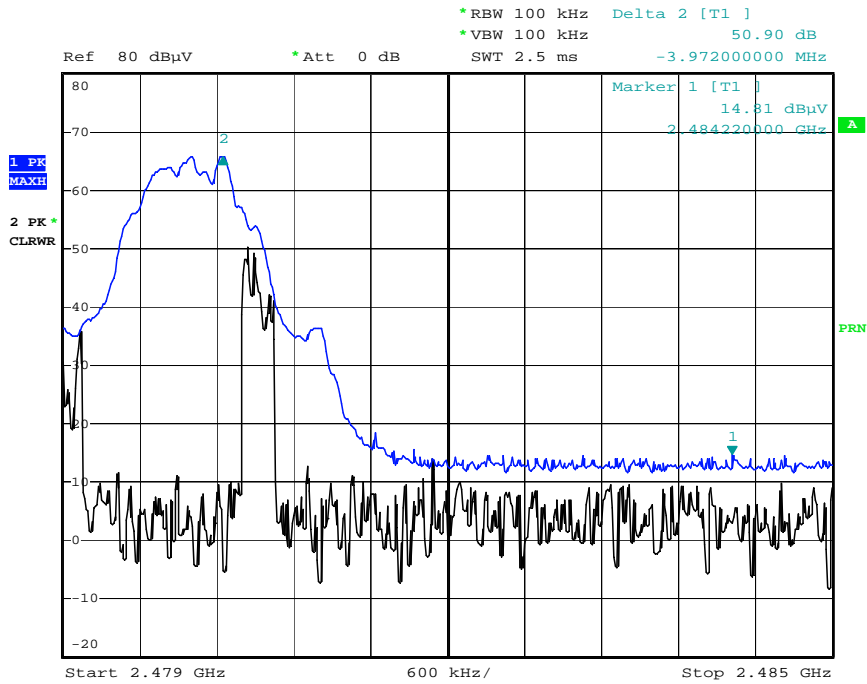
Date: 28.MAR.2013 09:19:25

FCC PT.15.247 TEST REPORT		FCC Class II Permissive Change REPORT	www.hct.co.kr
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9. LIST OF TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Interval	Calibration Due	Serial No.
Rohde & Schwarz	ENV216/ LISN	Annual	02/06/2014	100073
Schwarzbeck	VULB 9168/ TRILOG Antenna	Biennial	06/17/2013	255
Rohde & Schwarz	ESI 40 / EMI TEST RECEIVER	Annual	05/03/2013	831564103
Agilent	E4440A/ Spectrum Analyzer	Annual	05/02/2013	US45303008
Agilent	N9020A/ SIGNAL ANALYZER	Annual	05/21/2013	MY51110063
HD	MA240/ Antenna Position Tower	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	12
Rohde & Schwarz	SCU-18/ Signal Conditioning Unit	Annual	09/11/2013	10094
MITEQ	AMF-6B-180265-35-10P / POWER AMP	Annual	04/16/2013	667624
CERNEX	CBL26405040 / POWER AMP	Annual	04/16/2013	19660
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	10/17/2013	937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	Biennial	10/30/2014	BBHA9170124
Rohde & Schwarz	FSP / Spectrum Analyzer	Annual	02/08/2014	839117/011
Agilent	E4416A /Power Meter	Annual	11/07/2013	GB41291412
Agilent	E9327A /POWER SENSOR	Annual	05/02/2013	MY4442009
Wainwright Instrument	WHF3.0/18G-10EF / High Pass Filter	Annual	02/08/2014	F6
Wainwright Instrument	WRCJ2400/2483.5-2370/2520-60/14SS / Band Reject Filter	Annual	05/02/2013	1
Hewlett Packard	11636B/Power Divider	Annual	11/07/2013	11377
Agilent	87300B/Directional Coupler	Annual	12/24/2013	3116A03621
Hewlett Packard	11667B / Power Splitter	Annual	06/05/2013	05001
DIGITAL	EP-3010 /DC POWER SUPPLY	Annual	11/07/2013	3110117
ITECH	IT6720 / DC POWER SUPPLY	Annual	11/07/2013	010002156287001199
TESCOM	TC-3000C / BLUETOOTH TESTER	Annual	11/07/2013	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	Annual	05/02/2013	100422
EMCO	6502.LOOP ANTENNA	Biennial	01/11/2014	9009-2536
CERNEX	CBLU1183540 / POWER AMP	Annual	07/27/2013	21691

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