

HCT CO., LTD.

CERTIFICATE OF COMPLIANCE

FCC Certification

Applicant Name:

LG Electronics MobileComm U.S.A., Inc.

Address:

1000 Sylvan Avenue, Englewood Cliffs NJ 07632

Date of Issue: February 20, 2014 Test Site/Location: HCT CO., LTD., 74, Seoicheon-ro 578beon-gil, Majangmyeon, Icheon-si, Gyeonggi-do, Korea Report No.: HCTR1401F029-3

HCT FRN: 0005866421

FCC ID : ZNFD400H

APPLICANT : LG Electronics MobileComm U.S.A., Inc.

FCC Model(s):	LG-D400h
Additional FCC Model(s):	D400h, D400H, D405h, D405H, LGD400h, LGD400H, LGD405h, LGD405H, LG-D400H, LG- D405h, LG-D405H
EUT Type:	Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth and WLAN
Max. RF Output Power:	0.523 dBm (1.128 mW)
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 : Jae Chul Shin Test engineer of RF Team

Approved by : Chang Seok Choi Manager of RF Team

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FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		
Test Report No. HCTR1401F029-3	Date of Issue: February 20, 2014	EUL IVDE: Cellular/PCS (SSM/GPRS/EDGE/W/CDMA/HSDPA/HSDPA/HSDPA Phone with Bluetooth and W/LAN		
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Version

TEST REPORT NO. DATE		DESCRIPTION
HCTR1401F029	February 10, 2014	- First Approval Report
HCTR1401F029-1	February 17, 2014	- Revised the average output power in page 4 and
HCTR1401F029-1	February 17, 2014	added the note in page 37.
HCTR1401F029-2	February 19, 2014	- Add the Sample Calculation on Page 38 and Revised the
NG1R1401F029-2		Reading Value for RSE(dBuV/m \rightarrow dBm)
HCTR1401F029-3 February 20, 2014		- Revised the test procedure in page 36.

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FCC ID:	ZNFD400H
EUT Type:	Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth and WLAN
Model name(s):	LG-D400h
Additional Model name(s):	D400h, D400H, D405h, D405H, LGD400h, LGD400H, LGD405h, LGD405H, LG-D400H, LG-D405h, LG-D405H
Date(s) of Tests:	January 13, 2014 ~ February 10, 2014
Place of Tests:	HCT Co., Ltd. 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea (IC Recognition No. : 5944A-3)

2. EUT DESCRIPTION

EUT Type	Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth and WLAN				
FCC Model Name	LG-D400h				
Additional FCC Model Name		D400h, D400H, D405h, D405H, LGD400h, LGD400H, LGD405h, LGD405H, LG-D400H, LG-D405h, LG-D405H			
Power Supply	DC 3.8 V				
Battery type	Li-ion Battery(S	tandard)			
Frequency Range	TX: 2402 MHz ~	TX: 2402 MHz ~ 2480 MHz			
	RX: 2402 MHz ⁄	~ 2480 MHz			
Max. RF Output Power	Peak 0.523 dBm (1.128 mW)				
	Average 0.21 dBm (1.050 mW)				
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: Planar Inverted F Antenna				
	Peak Gain : 1.9	5 dBi			

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3. TEST METHODOLOGY

FCC KDB 558074 D01 DTS Meas Guidance v03r01 dated April 09, 2013 entitled "Guidance for Performing Compliance Measurements on Digital Transmission Systems(DTS) and the measurement procedure described in the American National Standard for Testing Unlicensed Wireless Devices(ANSI C63.4-2003) 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 13.1.4.1 of ANSI C63.4. (Version :2003) 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 13.1.4.1 of ANSI C63.4. (Version: 2003)

Conducted Antenna Terminal

See Section from 9.1 to 9.2.(KDB 558074)

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 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 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 June 21, 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."

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
6 dB Bandwidth	§15.247(a)(2)	> 500 kHz		PASS
Conducted Maximum Peak Output Power	§15.247(b)(3)	< 1 Watt		PASS
Power Spectral Density	§15.247(e)	< 8 dBm / 3 kHz Band	CONDUCTED	PASS
Band Edge(Out of Band Emissions)	§15.247(d)	Conducted > 20 dBc		PASS
AC Power line Conducted Emissions	§15.207	cf. Section 8.6		PASS
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	RADIATED	PASS

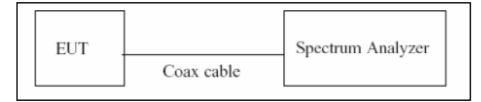
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TEST PROCEDURE

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW \geq OBW if possible; otherwise, set RBW to the largest available value. Set VBW \geq RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T \leq 16.7 microseconds.)

TEST CONFIGURATION



TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer. We tested accroding to the zerospan measurement method, 6.0)b) in KDB 558074(issued 04/09/2013)

The largest available value of RBW is 8 MHz and VBW is 50 MHz. The zero-span method of measuring duty cycle shall not be used if T \leq 6.25 microseconds. (50/6.25 = 8)

The zero-span method was used because all measured T data are > 6.25 microseconds and both RBW and VBW are > 50/T.

- 1. RBW = 8 MHz (the largest available value)
- 2. VBW = 8 MHz (≥ RBW)
- 3. SPAN = 0 Hz
- 4. Detector = Peak
- 5. Number of points in sweep > 100
- 6. Trace mode = Clear write
- 7. Measure $T_{\text{total}} \, \text{and} \, T_{\text{on}}$
- 8. Calculate Duty Cycle = T_{on}/T_{total} and Duty Cycle Factor = 10*log(1/Duty Cycle)

LE Mode	T _{on} (ms)	T _{total} (ms)	Duty Cycle	Duty Cycle Factor
	0.3904	0.6240	0.6256	2.04

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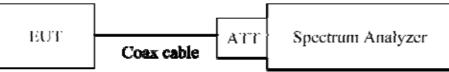
8.2 6dB BANDWIDTH MEASUREMENT

Test Requirements and limit, §15.247(a)(2)

The bandwidth at 6dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the receive antenna while the EUT is operating in transmission mode at the appropriate frequencies.

The minimum permissible 6dB bandwidth is 500 kHz.

TEST CONFIGURATION



TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer.

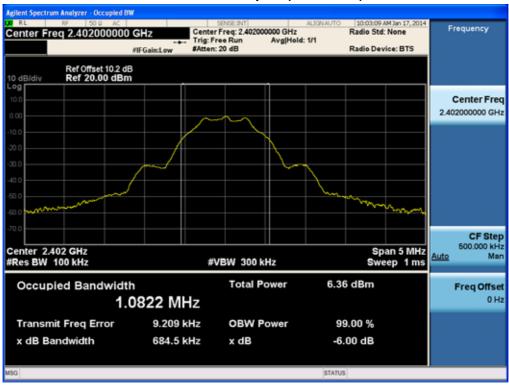
The Spectrum Analyzer is set to (Page 5 in KDB 558074, issued 04/09/2013)

```
RBW = 100 \text{ kHz}
VBW \ge 3 \text{ x RBW}
Detector = Peak
Trace mode = max hold
Sweep = auto couple
Allow the trace to stabilize
```

Note : We tested 6 dB bandwidth using the automatic bandwidth measurement capability of a spectrum analyzer. X dB is set 6 dB.

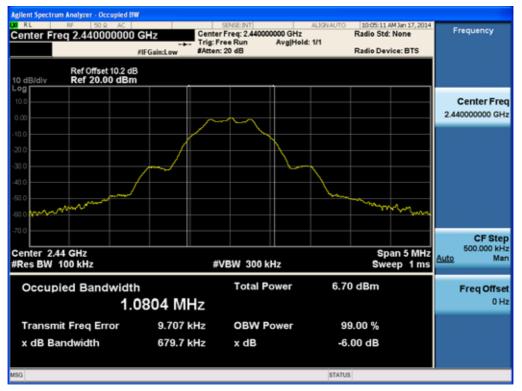
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6dB Bandwidth plot (Low-CH 0)

6dB Bandwidth plot (Mid-CH 19)



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Center Freq 2.480000000	GHz Cente Trig: F	SENSE INT r Freq: 2.480000000 GHz ree Run Avg Ho :: 20 dB	ld: 1/1	10:06:57 AM Jan 17, 2014 Radio Std: None Radio Device: BTS	Frequency
Ref Offset 10.2 dB IO dB/div Ref 20.00 dBm					
0 00					Center Fre 2.480000000 GH
20.0					
40.0 50.0 50.0				man man	
Center 2.48 GHz		VBW 300 kHz		Span 5 MHz	CF Ste 500.000 kł Auto Ma
Res BW 100 kHz Occupied Bandwidth		Total Power	6.93	Sweep 1 ms dBm	FreqOffs
	824 MHz		0.00		0 H
Transmit Freq Error	9.331 kHz	OBW Power	99	.00 %	
x dB Bandwidth	679.4 kHz	x dB	-6.0	00 dB	
sa			STATUS		

6dB Bandwidth plot (High-CH 39)

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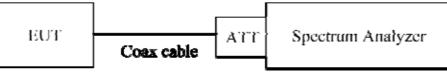
8.3 OUTPUT POWER MEASUREMENT

Test Requirements and limit, §15.247(b)(3)

A transmitter antenna terminal of EUT is connected to the input of a Spectrum Analyzer. Measurement is made while the EUT is operating in transmission mode at the appropriate frequencies.

The maximum permissible conducted output power is 1 Watt.

TEST CONFIGURATION



TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer. We use the spectrum analyzer's integrated band power measurement function.

This EUT TX condition is actual operating mode by BT LE mode test program.

The Spectrum Analyzer is set to

Peak Power (Procedure 9.1.1 in KDB 558074, issued 04/09/2013)
RBW ≥ DTS Bandwidth
$VBW \geq 3 \times RBW$
SPAN \geq 3 x RBW
Detector Mode = Peak
Sweep = auto couple
Trace Mode = max hold
Allow trace to fully stabilize.
Use peak marker function to determine the peak amplitude level
 Average Power (Procedure 9.2.2.4 in KDB 558074, issued 04/09/2013)
Measure the duty cycle
Set span to at least 1.5 times the OBW
RBW = 1-5 % of the OBW, not to exceed 1 MHz.
$VBW \geq 3 \times RBW.$
Number of points in sweep \geq 2 x span / RBW. (This gives bin-to-bin spacing \leq RBW/2,
so that narrowband signals are not lost between frequency bins.)
Sweep time = auto.
Detector = RMS(i.e., power averaging)
Do not use sweep triggering. Allow the sweep to "free run".
Trace average at least 100 traces in power averaging(RMS) mode.
Compute power by integrating the spectrum across the OBW of the signal using the instrument's band

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power measurement function with band limits set equal to the OBW band edges. Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Sample Calculation

Output Power = Reading Value + ATT loss + Cable loss(1 ea) + Duty Cycle Factor Output Power = 10 dBm + 10 dB + 0.8 dB + 0.2 dB = 21.0 dBm

Note :

- 1. Spectrum reading values are not plot data. The power results in plot is already including the actual values of loss for the attenuator and cable combination.
- 2. Spectrum offset = Attenuator loss + Cable loss
- 3. We apply to the offset in the 2.4 GHz range that was rounded off to the closest tenth dB. So, 10.2 dB is offset for 2.4 GHz Band.

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TEST RESULTS-Peak

Conducted Output Power Measurements

LE Mo	ode	Measured	Limit
Frequency[MHz]	Channel No.	Power(dBm)	(dBm)
2402	0	-0.060	30
2440	19	0.306	30
2480	39	0.523	30

TEST RESULTS-Average

Conducted Output Power Measurements

LE M	ode			Measured		
Frequency[MHz]	Channel No.	Measured Power(dBm)	Duty Cycle Factor	Power(dBm) + Duty Cycle Factor	Limit (dBm)	
2402	0	-2.43	2.04	-0.39	30	
2440	19	-2.12	2.04	-0.09	30	
2480	39	-1.83	2.04	0.21	30	

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RL 10 10 AC		SEVELINT	OT/JA WOLA	10:03:22 AM Jan 17, 2014	Frequency
Center Freq 2.40200000	PNO: Fast ++-	Trig: Free Run Atten: 20 dB	#Avg Type: RMS Avg Hold: 1/1	TYPE MUNICIPAL P	Prequeitey
Ref Offset 10.2 dB			Mkr1	2.401 989 GHz -0.060 dBm	Auto Tun
100		1			Center Fre 2 402000000 GH
0.00					Start Fre 2.400500000 GH
20 0 31 0					Stop Fre 2,403500000 GH
40.0 50.0					CF Ste 300.000 kH Auto Ma
					Freq Offse 0 H
700 Center 2.402000 GHz Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep	Span 3.000 MHz I.07 ms (1000 pts)	

Conducted Output Power (Low-CH 0)

Conducted Output Power (Mid-CH 19)



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Center Freq 2.480000000	GHZ PNO: Fast ++	Trig: Free Run Atten: 20 dB	#Avg Type: RMS Avg Hold: 1/1	10:07:10 AM Jan 17, 2014 TRACE 2 2 4 4 TYPE M	Frequency
Ref Offset 10.2 dB			Mkr1	2.480 161 GHz 0.523 dBm	Auto Tune
10.0					Center Free 2.480000000 GH
0.00					Start Fre 2.478500000 GH
20.0					Stop Fre 2.481500000 GH
H2.0					CF Ste 300.000 kH Auto Ma
10.0					Freq Offse 0 H
700 Center 2.480000 GHz Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep	Span 3.000 MHz 1.07 ms (1000 pts)	

Conducted Output Power (High-CH 39)

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Conducted Output Power (Low-CH 0)

Conducted Output Power (Mid-CH 19)



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Conducted Output Power (High-CH 39)

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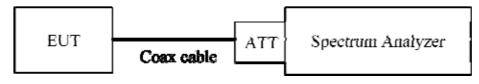
8.4 POWER SPECTRAL DENSITY

Test Requirements and limit, §15.247(e)

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

Minimum Standard – The transmitter power density average over 1-second interval shall not be greater than 8dBm in any 3kHz BW.

TEST CONFIGURATION



TEST PROCEDURE

We tested according to Procedure 10.2 in KDB 558074, issued 04/09/2013

The spectrum analyzer is set to :

Set analyzer center frequency to DTS channel center frequency.

Span = 1.5 times the DTS channel bandwidth.

 $\mathsf{RBW} = 3 \; \mathsf{kHz} \; \le \; \mathsf{RBW} \; \le \; \mathsf{100} \; \mathsf{kHz}.$

 $VBW \ge 3 \times RBW.$

Sweep = auto couple

Detector = peak

Trace Mode = max hold

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

Sample Calculation

PSD = Reading Value + ATT loss + Cable loss(1 ea)

= -5 dBm + 10 dB + 0.8 dB = 5.8 dBm

Note :

- 1. Spectrum reading values are not plot data. The PSD results in plot is already including the actual values of loss for the attenuator and cable combination.
- 2. Spectrum offset = Attenuator loss + Cable loss
- 3. We apply to the offset in the 2.4 GHz range that was rounded off to the closest tenth dB. So,10.2 dB is offset for 2.4 GHz Band.

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Frequency Channel			Test Result		
Frequency (MHz)	No.	Mode	PSD	Limit	Pass/
(11112)			(dBm)	(dBm)	Fail
2402	0		-15.389	8	Pass
2440	19	LE	-14.975	8	Pass
2480	39		-14.830	8	Pass

Conducted Power Density Measurements

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Test Report No. HCTR1401F029-3	Date of Issue: February 20, 2014	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth and WLAN	FCC ID: ZNFD400H
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Power Spectral Density (Low-CH 0)

Power Spectral Density (Mid-CH 19)



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enter Freg 2.48000000	CH7	SENGLINT]	#Avg Type: RMS	10:07:39 AM Jan 17, 2014 TRACE	Frequency
anter Fred 2.48000000	PNO: Wide IFGain:Low	Trig: Free Run Atten: 20 dB	Avg Hold: 1/1	the PPPPP	
dB/div Ref 20.00 dBm			Mkr1 2.	479 982 15 GHz -14.830 dBm	Auto Tun
a					Center Fre 2.480000000 GH
20		•1			Start Fre 2.479490470 GH
an when when he was	mpymphi	Americanalisation	Marily	MMMMMMMM	Stop Fre 2.480509530 GH
un				101	CF Ste 101.906 ki Auto Ma
					Freq Offse 0 H
enter 2.4800000 GHz		9.1 kHz	Sweep	Span 1.019 MHz 108 ms (1000 pts)	

Power Spectral Density (High-CH 39)

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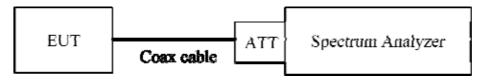


8.5 OUT OF BAND EMISSIONS AT THE BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS Test Requirements and limit, §15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.205(c)).

Limit : 20 dBc

TEST CONFIGURATION



TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. (Procedure 11.0 in KDB 558074, issued 04/09/2013)

RBW = 100 kHz

 $VBW \, \geq \, 3 \, x \, RBW$

Set span to encompass the spectrum to be examined

Detector = Peak

Trace Mode = max hold

Sweep time = auto couple

Ensure that the number of measurement points \geq 2*Span/RBW

Allow trace to fully stabilize.

Use peak marker function to determine the maximum amplitude level.

Measurements are made over the 30 MHz to 10th harmonic range with the transmitter set to the lowest, middle, and highest channels.

Note :

- 1. The band edge results in plot is already including the actual values of loss for the attenuator and cable combination.
- 2. Spectrum offset = Attenuator loss + Cable loss
- 3. We apply to the offset in the 2.4 GHz range that was rounded off to the closest tenth dB. So, 10.2 dB is

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offset for 2.4 GHz Band.

4. In case of conducted spurious emissions test, please check factors blow table.

5. In order to simplify the report, attached plots were only the worst case channel and data rate.

Freq(MHz)	Factor(dB)
30	9.95
100	10.01
200	10.03
300	10.04
400	10.05
500	10.04
600	10.03
700	10.09
800	10.10
900	10.08
1000	10.11
2000	10.25
2400*	10.19
2500*	10.26
3000	10.27
4000	10.22
5000	10.48
5700*	10.42
5800*	10.48
6000	10.48
7000	10.57
8000	10.45
9000	10.50
10000	10.64
11000	10.69
12000	10.75
13000	10.92
14000	11.90
15000	11.00
16000	11.03
17000	10.93
18000	10.96

FACTORS FOR FREQUENCY

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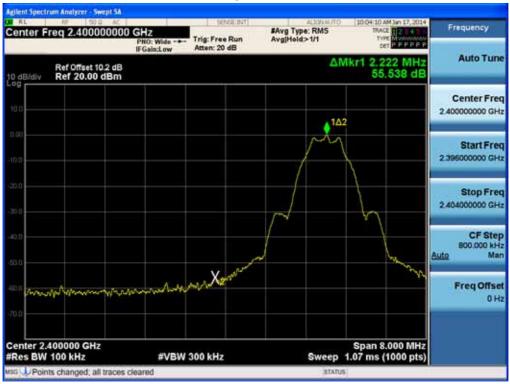
19000	10.85
20000	12.11
21000	11.17
22000	10.99
23000	11.12
24000	11.10
25000	11.42

Note : 1. '*' is fundamental frequency range.

2. Factor = Cable loss + Attenuator loss

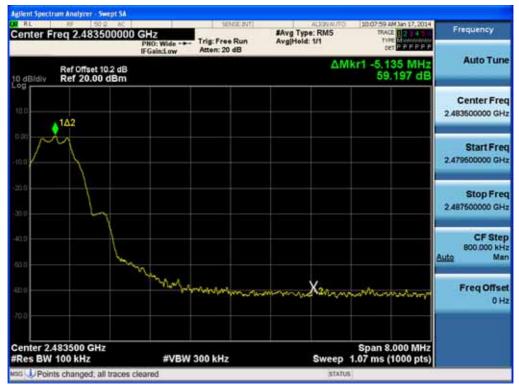
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BandEdge (Low-CH 0)

BandEdge (High-CH 39)

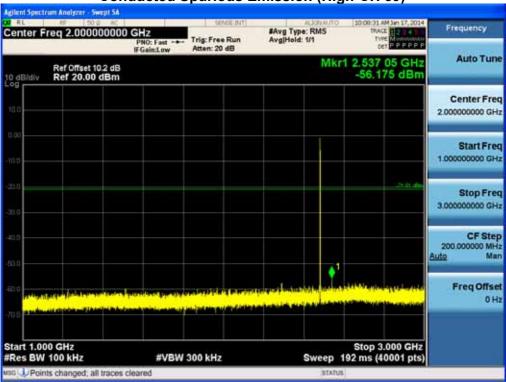


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Agilent Spectrum Analyzer - Swep	t SA				
Center Freq 515.0000	000 MHz PNO: Fast	Several avt	#Avg Type: RMS Avg Hold: 1/1	10:00:47 AM 3in 17, 20 TRACE 12 TYPE	Frequency
Ref Offset 10.2	IFGain:Low	Atten: 20 dB	M	kr1 806.43 MH -59.605 dBr	z Auto Tune
10.0					Center Freq 515.000000 MHz
-10.0					Start Freq 30.000000 MHz
-20.0				-stata	Stop Freq 1.00000000 GHz
40.9					CF Step 97.000000 MHz <u>Auto</u> Man
42.0	einersteilen fin ättlefi Birer	an a chuine bhaon	Weiter Herbergermein alle einer erst	1 Hännin ein ocher Aust	Freq Offset
-70.0	and the second secon	and a set of the states of		Waani diratin tin	
Start 30.0 MHz #Res BW 100 kHz	#VBW	300 kHz	Sweep §	Stop 1.0000 GH 3.3 ms (20000 pt	
st 🜙 Points changed; all tra	aces cleared		STATU	5]	14

1 GHz ~ 3 GHz



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Center Freq 4.000000000	GHZ PN0: Fast -+ IFGain:Low Atten: 20 dB	#Avg Type: RMS Avg Hold: 1/1	10:09:03 AM Jan 17, 2014 19:42 2 4 4 19:42 2 4 4	Frequency
Ref Offset 10.2 dB		Mkrt	4.757 90 GHz -57.993 dBm	Auto Tune
10.0				Center Freq 4.000000000 GHz
10.0				Start Free 3.00000000 GHa
20.0			. 31 bij dan	Stop Freq 5.00000000 GHz
40.0 50.0				CF Step 200.000000 MH Auto Mar
Construction of the second	(1993) Martin Barrison Martin Amerikan Martin Martin Samatan Martin Martin			Freq Offset 0 Hz
700 Start 3.000 GHz Res BW 100 kHz	#VBW 300 kHz		Stop 5.000 GHz 92 ms (40001 pts)	

5 GHz ~ 7 GHz

RL NF 500 AC		SEMA INT	#Avg Typ	ALIGNAL/TO	10:09:19 AM Jan 17, 2014 TRACE	Frequency
Center Freq 6.00000000	PNO: Fast ++- IFGain:Low	Trig: Free Run Atten: 20 dB	Avg Hold		type Monomous tet P.P.F.P.P.P	
Ref Offset 10.2 dB				Mkr	6.316 00 GHz -57.984 dBm	Auto Tun
100						Center Fre 6.000000000 GH
10.0						Start Fre 5.000000000 GH
30.0					39.01 an	Stop Fre 7.000000000 GH
10.0 50.0						CF Ste 200.000000 MH Auto Ma
						Freq Offse 0 H
700 Start 5.000 GHz #Res BW 100 kHz		300 kHz			Stop 7.000 GHz 92 ms (40001 pts)	

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
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enter Freq 8.00000000	1190M				
	PNO: Fast Trig: Free I IFGain:Low Atten: 20 d	#Avg Type Run Avg Hold:	RMS TR	AM 3m 17, 2014 AGE 2 4 1 We Monthly PEPPP	Frequency
Ref Offset 10.2 dB	a dente da		Mkr1 7.466 -58.4	6 75 GHz 453 dBm	Auto Tur
0 a					Center Fre
00 2.0					Start Fre 7.000000000 GH
20				-34.04 [°] efter	Stop Fre 9.00000000 GF
20					CF Ste 200.000000 MH Suto Ma
²⁰ Interferter and the set of the set o					Freq Offs 0 F
tart 7.000 GHz Res BW 100 kHz	#VBW 300 kHz			9.000 GHz	

9 GHz ~ 11 GHz

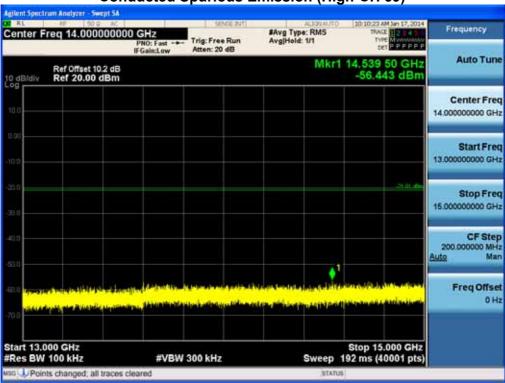
RL NE 50.2 AC		SENGLINT	OTUNIDEA.	10:09:51 AM Jan 17, 2014	Frequency
Center Freq 10.0000000	PNO: Fast ++- IFGain:Low	Trig: Free Run Atten: 20 dB	#Avg Type: RMS Avg Hold: 1/1	TRACE 2 4 1	
Ref Offset 10.2 dB			Mkr	9.223 65 GHz -58.505 dBm	Auto Tune
10.0					Center Free 10.000000000 GH
10.0					Start Free 9.00000000 GH
20 0				- Still doe	Stop Free 11.00000000 GH
40.0					CF Stej 200.000000 MH <u>Auto</u> Ma
		and the second second			Freq Offse 0 H
start 9.000 GHz		300 kHz		Stop 11.000 GHz 92 ms (40001 pts)	

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
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Center Fi	req 12.000000		Trig: Free Run Atten: 20 dB	#Avg Type: Ri Avg Hold: 1/1	MS 18	ACE 214 ACE 214 ACE 214 THE REPERP	Frequency
0 dB/div	Ref Offset 10.2 dB Ref 20.00 dBm				Mkr1 11.80 -57.	9 90 GHz 096 dBm	Auto Tune
100							Center Fred 12.000000000 GH
10:0							Start Free 11.00000000 GH
no						in the second	Stop Free 13.000000000 GH
0.0			,				CF Ste 200.000000 MH Auto Ma
						dadama na alisi Matana na alisi	Freq Offse 0 H
Start 11.0		#VBW	/ 300 kHz	Sw	Stop 1 eep 192 ms	3.000 GHz	

13 GHz ~ 15 GHz



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Agilent Spectrum An	50.0 AC		- 50	VALINT]		ALIGNAUTO	10:10:39 AM	Jan 17, 2014	Francisco
Center Freq	16.00000000	0 GHz PNO: Fast ++- IFGain:Low	Trig: Free Atten: 20		#Avg Typ Avg Hold		TRACE type pet	PPFPPP	Frequency
	Offset 10.2 dB 20.00 dBm					Mkr	1 16.851 8	8 dBm	Auto Tune
100									Center Freq 16.00000000 GHz
-10.0									Start Freq 15.00000000 GHz
-200								- 31 AL 400	Stop Freq 17.000000000 GHz
-40.0								<u>م</u> ۱	CF Step 200.000000 MHz <u>Auto</u> Man
-02.0 441 (1997) (1997) 1997 - 1997 (1997) 1997 - 1997 (1997)	and an				alanidaska Terrestor			and the second s	Freq Offset 0 Hz
Start 15.000 G #Res BW 100		#VBW	300 kHz			Sweep	Stop 17.0 192 ms (40	000 GHz 001 pts)	
uso DPoints cha	inged; all traces of	leared				STAT			

17 GHz ~ 19 GHz

RL 1800 400 400 400 400 400 400 400 400 400	0 GHz	SENA INT	#Avg Type: RMS	10:11:11 AM 3in 17, 2014 TRACE	Frequency
	PNO: Fast +++ IFGain:Low	Trig: Free Run Atten: 20 dB	Avg Hold: 1/1	type X	200.000
Ref Offset 10.2 dB 0 dBi/div Ref 20.00 dBm			Mkr1	18.880 55 GHz -54.872 dBm	Auto Tun
0.0					Center Fre 18.00000000 GH
0.0					Start Fre 17.00000000 GH
100 0				- 39.01 abs	Stop Fre 19.00000000 GH
0.0					CF Ste 200.000000 MH Auto Ma
na <mark>na kun ja unda habulat.</mark> Mapa yaka na kaj Chinavaa	ndelse stadieles Regenerationer	ardinina aktore a Martije Provinsiona	an a	an gland directoring	Freq Offse 0 H
start 17.000 GHz Res BW 100 kHz	#VBW 3	300 kHz	Sweep 1	Stop 19.000 GHz 92 ms (40001 pts)	

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Center Freq 20.00000000	PN0: Fast IFGain:Low Atten: 20 dB	#Avg Type: RMS Avg[Hold: 1/1	10:11:27 AM Jan 17, 2014 TRACE 2 4 TYPE M VANNAME tet P P F P P P	Frequency
Ref Offset 10.2 dB		Mkr1	20.919 90 GHz -53.002 dBm	Auto Tune
100				Center Freq 20.000000000 GHz
-10.9				Start Freq 19.00000000 GHz
-200			- 34 def altre	Stop Freq 21.00000000 GHz
-40.17				CF Step 200.000000 MHz Auto Man
423 0 Constant of Aller Andrews	not e stor balasti data ekalikateak Arte senera persena kanjar senera			Freq Offset 0 Hz
Start 19.000 GHz #Res BW 100 kHz	#VBW 300 kHz	Sweep 1	Stop 21.000 GHz 92 ms (40001 pts)	

21 GHz ~ 23 GHz

enter Fre	q 22.0000000	PNO: Fast ++-	SENSE 241	#Avg Type: Avg Hold: 1	RMS M	10:11:43 AM 3er 17, 201 TRACE 2 4 TYPE M SET P. F. F. P.	Frequency
0 dB/div	Ref Offset 10.2 dB Ref 20.00 dBm	IFGain:Low	Atten: 20 dB	meand c	Mkr1 3	22.337 25 GH: -51.924 dBm	Auto Tune
0g							Center Free 22.000000000 GH
10:0							Start Fre 21.00000000 GH
0.0 nip						-31 b) ato	Stop Fre 23.00000000 GH
0.0				A1			CF Ste 200.000000 MH Auto Ma
	etilita in tânair		filmal Latinian Sector provinger				Freq Offse 0 H
tart 21.000		#VBW	300 kHz	s	weep 19	Stop 23.000 GHz 2 ms (40001 pts	

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RL RF 50.0 AC		SENGLINT	OTLIANDEJA	10:11:59 AMJan 17, 2014	-
Center Freq 24.0000000	PNO: Fast	Trig: Free Run Atten: 20 dB	#Avg Type: RMS Avg Hold: 1/1	TWEE 2 4 B	Frequency
Ref Offset 10.2 dB			Mkr1	24.899 80 GHz -49.655 dBm	Auto Tune
10.0					Center Freq 24.00000000 GHz
-10.0					Start Freq 23.00000000 GHz
-20.0				an in an	Stop Freq 25.00000000 GHz
40.0				n une na stati es divides	CF Step 200.000000 MH2 Auto Mar
-20.0					Freq Offset 0 Hz
Start 23.000 GHz #Res BW 100 kHz	#VBW	300 kHz	Sweep	Stop 25.000 GHz 92 ms (40001 pts)	

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8.6 RADIATED MEASUREMENT. 8.6.1 RADIATED SPURIOUS EMISSIONS.

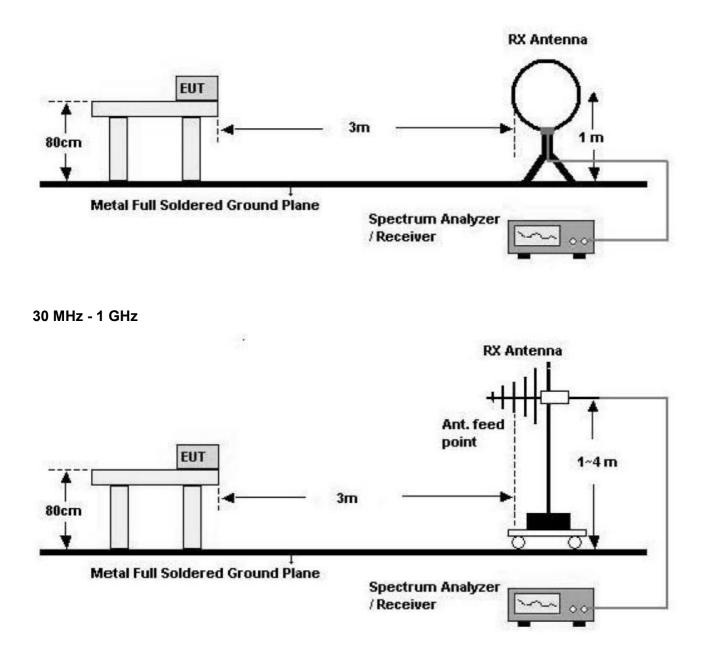
Test Requirements and limit, §15.205, §15.209

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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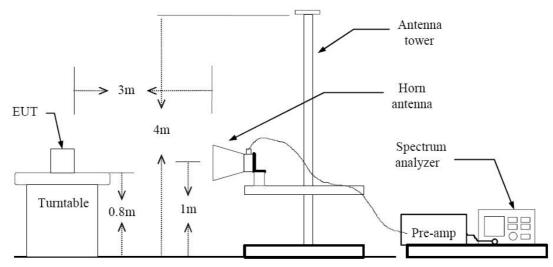


Below 30 MHz



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TEST PROCEDURE USED

ANSI C63.4(2003) Method 12.2.7 in KDB 558074, issued 04/09/2013

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4 - 2003. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and add duty cycle factor for average measurements.

Duty cycle factor = 10 log (1/x). For this sample: DCF = $10\log(1/x)=2.04dB$

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth.

The EUT is rotated through 360 degrees to maximize emissions received.

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The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission.

Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

Note :

1. The actual setting value of VBW for BT LE mode.

2. All radiated spurious emissions levels were measured in a radiated test setup.

BT LE Mode	T _{on} (ms)	T _{total} (ms)	Duty Cycle (%)	VBW(1/T) (Hz)	The actual setting value of VBW (Hz)
	0.3904	0.6240	62.56	2561	10000

Sample Calculation

Determinig Spurious Emissions Levels

1. Field Strength Level(dBuV/m) = Analyzer Level(dBm) + 107 + Ant.Factor(dB)

+ Cable loss(dB)

2. Margin(dB) = Field Strength Level(dBuV/m) – Limit(dBuV/m)

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9 kHz – 30MHz

Operation Mode: Normal Mode

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

- 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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Below 1 GHz

Operation Mode: Normal Mode

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

- 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	Reading	AN.+CL-AMP G	ANT. POL	Total	Limit	Margin	
[MHz]	[dBm]	[dBm]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Detect
4804	-53.98	-4.32	V	48.70	73.98	25.28	PK
4804	-65.16	-4.32	V	37.52	53.98	16.46	AV
7206	-54.36	5.18	V	57.82	73.98	16.16	PK
7206	-65.92	5.18	V	46.26	53.98	7.72	AV
4804	-54.00	-4.32	Н	48.68	73.98	25.30	PK
4804	-65.10	-4.32	Н	37.58	53.98	16.40	AV
7206	-54.15	5.18	Н	58.03	73.98	15.95	PK
7206	-66.00	5.18	Н	46.18	53.98	7.80	AV

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 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. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT			
Test Report No.	Date of Issue:	EUT Type:	FCC ID:		
HCTR1401F029-3	February 20, 2014	Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth and WLAN	ZNFD400H		
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Operation Mode: CH Mid(LE Mode)

Frequency	Reading	AN.+CL-AMP G	ANT. POL	Total	Limit	Margin	
[MHz]	[dBm]	[dBm]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Detect
4880	-55.06	-3.95	V	47.99	74	26.01	PK
4880	-66.48	-3.95	V	36.57	54	17.43	AV
7320	-53.92	5.46	V	58.54	74	15.47	PK
7320	-65.66	5.46	V	46.80	54	7.21	AV
4880	-54.94	-3.95	Н	48.11	74	25.89	PK
4880	-66.67	-3.95	Н	36.38	54	17.62	AV
7320	-53.59	5.46	Н	58.87	74	15.14	PK
7320	-65.60	5.46	Н	46.86	54	7.15	AV

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 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. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT			
Test Report No. HCTR1401F029-3	Date of Issue: February 20, 2014	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth and WLAN	FCC ID: ZNFD400H		
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Operation Mode: CH High(LE Mode)

Frequency	Reading	AN.+CL-AMP G	ANT. POL	Total	Limit	Margin	
[MHz]	[dBm]	[dBm]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Detect
4960	-54.92	-3.49	V	48.59	74.00	25.41	PK
4960	-67.05	-3.49	V	36.46	54.00	17.54	AV
7440	-54.74	5.10	V	57.36	74	16.64	PK
7440	-65.92	5.10	V	46.18	54	7.82	AV
4960	-55.12	-3.49	Н	48.39	74	25.61	PK
4960	-66.99	-3.49	Н	36.52	54	17.48	AV
7440	-54.11	5.10	Н	57.99	74	16.01	PK
7440	-65.88	5.10	Н	46.22	54	7.78	AV

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 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. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT			
Test Report No.	Date of Issue:	EUT Type:	FCC ID:		
HCTR1401F029-3	February 20, 2014	Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth and WLAN	ZNFD400H		
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8.6.2 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	Reading	A.F.+CL	Ant. Pol.	Total	Limit	Margin	Detect
[MHz]	[dBuV/m]	[dBm]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Deleci
2390.0	25.93	33.90	Н	59.83	73.98	14.15	PK
2390.0	14.07	33.90	н	47.97	53.98	6.01	AV
2390.0	26.11	33.90	V	60.01	73.98	13.97	PK
2390.0	14.60	33.90	V	48.50	53.98	5.48	AV

- 1. Frequency range of measurement = 2310 MHz ~ 2390 MHz
- 2. Total = Reading Value + Antenna Factor + Cable Loss
- 3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
- 4. The radiated restricted band edge measurements are measured with a spectrum analyzer connected to the receive antenna while the EUT is transmitting.

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Test Report No.	Date of Issue:	EUT Type:	FCC ID:
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Operation Mode

Channel No

Operating Frequency

BT 4.0_LE		
2480 MHz		
39 Ch		

Frequency [MHz]	Reading [dBuV/m]	A.F.+CL [dBm]	Ant. Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
2483.5	25.90	33.99	H	59.89	73.98	14.09	PK
2483.5	16.68	33.99	Н	50.67	53.98	3.31	AV
2483.5	26.32	33.99	V	60.31	73.98	13.67	PK
2483.5	16.82	33.99	V	50.81	53.98	3.17	AV

- 1. Frequency range of measurement = 2483.5 MHz ~ 2485.5 MHz
- 2. Total = Reading Value + Antenna Factor + Cable Loss
- 3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
- 4. The radiated restricted band edge measurements are measured with a spectrum analyzer connected to the receive antenna while the EUT is transmitting.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
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Operation Mode

Channel No

Operating Frequency

BT 4.0_LE		
2480 MHz		
39 Ch		

Frequency	Reading	A.F.+CL	Ant. Pol.	Total	Limit	Margin	Detect
[MHz]	[dBuV/m]	[dBm]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Deleci
2485.5	24.93	33.99	Н	58.92	73.98	15.06	PK
2485.5	13.73	33.99	Н	47.72	53.98	6.26	AV
2485.5	24.57	33.99	V	58.56	73.98	15.42	PK
2485.5	13.67	33.99	V	47.66	53.98	6.32	AV

Notes:

1. Frequency range of measurement = 2485.5 MHz ~ 2500 MHz

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

- 3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
- 4. The radiated restricted band edge measurements are measured with a spectrum analyzer connected to the receive antenna while the EUT is transmitting.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
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8.7 POWERLINE CONDUCTED EMISSIONS

Test Requirements and limit, §15.207

For an intentional radiator which 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 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

	Limits (dBµV)				
Frequency Range (MHz)	Quasi-peak	Average			
0.15 to 0.50	66 to 56	56 to 46			
0.50 to 5	56	46			
5 to 30	60	50			

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

- 1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
- 2. The EUT is connected via LISN to a test power supply.
- 3. The measurement results are obtained as described below:
- 4. Detectors Quasi Peak and Average Detector.
- 5. We are performed the AC Power Line Conducted Emission test for Ch.39 on BT 4.0 LE mode. Because Ch.39 on BT 4.0 LE mode is worst case.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
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 EMI Auto Test(1)
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 HCT TEST Report

 Common Information

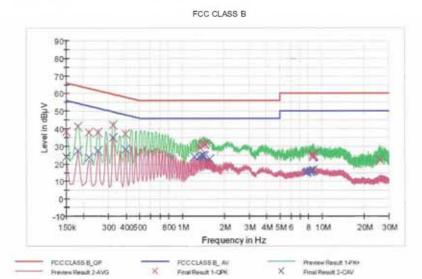
 EUT:
 LG-D400H

 Manufacturer:
 LG

 Test Site:
 SHIELD ROOM

 Operating Conditions:
 BT_LE MODE

 Operator Name:
 JC SHIN



Final Result 1

1	(MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
E	0,150000	38.2	9.000	Off	N	10.0	27.8	66.0
E	0.181500	41.4	9.000	Off	N	10.0	23.0	64.4
Г	0.217500	38.1	9,000	Off	N	10.0	24.8	62.9
Г	0.253500	37.8	9.000	Off	N	10.0	23.8	61.6
. [0.325500	42.0	9.000	Off	N	10.0	17.6	59.6
	0.397500	37.2	9,000	Off	N	10,0	20.7	57.9
E	1.350500	29.0	9.000	Off	N	10.1	27.0	\$6.0
E	1.377500	31.2	9.000	Off	N	10.1	24.8	55.0
	1.409000	31.9	9.000	Off	N	10.1	24.1	56.0
Г	1.418000	32.0	9.000	Off	N	10.1	24.0	56.0
Г	1.440500	31.1	9.000	Off	N	10.1	24.9	56.0
Г	1.454000	31.2	9.000	Off	N	10.1	24.8	56.0
Г	8.492000	25.3	9.000	Off	N	10.6	34.7	60.0
	8.555000	24.1	9.000	Off	N	10.6	35.9	60.0
	8.667500	24.2	9.000	Off	N	10.6	35.8	60.0
Г	8.703500	25.0	9.000	Off	N	10.6	35.0	60.0

1/17/2014

9:17:05

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr					
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EMI Auto Test(1)

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
8.712500	24.5	9.000	Off	N	10.6	35.5	60.0
25.826000	22.5	9.000	Off	N	11.6	37.5	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	24.2	9.000	Off	N	10.0	31.8	56.0
0.181500	27.4	9.000	Off	N	10.0	27.0	54.4
0.217500	23.4	9.000	Off	N	10.0	29.5	52.9
0.253500	27.5	9.000	Off	N	10.0	24.1	51.6
0.325500	35.0	9.000	Off	N	10.0	14.6	49.6
0.397500	28.4	9.000	Off	N	10.0	19.5	47.9
1.229000	24.0	9.000	Off	N	10.1	22.0	46.0
1.337000	24.0	9.000	Off	N	10.1	22.0	46.0
1.373000	24.5	9.000	Off	N	10.1	21.5	46.0
1.409000	24.7	9.000	Off	N	10.1	21.3	46.0
1.445000	24.4	9.000	Off	N	10.1	21.6	46.0
1.589000	22.9	9.000	Off	N	10.1	23.1	46.0
7.682000	15.3	9.000	Off	N	10.5	34.7	50.0
7.853000	15.8	9.000	Off	N	10.6	34.2	50.0
8.208500	15.8	9.000	Off	N	10.6	34.2	50.0
8.289500	15.9	9.000	Off	N	10.6	34.1	50.0
8.505500	16.2	9.000	Off	N	10.6	33.8	50.0
8.667500	16.3	9.000	Off	N	10.6	33.7	50.0

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9:17:05

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT			
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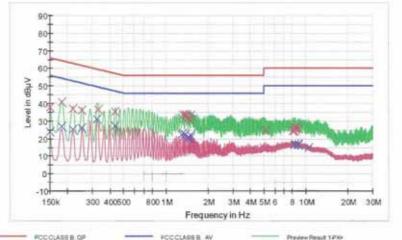
EMI Auto Test(1)

HCT TEST Report

Common Information

EUT: Manufacturer: Test Site: Operating Conditions: Operator Name: LG-D400H LG SHIELD ROOM BT_LE MODE JC SHIN





	POUCLASS B_OP		HOCCDASS 8_ WV		NAMES OF TAXABLE PARTY.
-	Preview Result 2 AVG	×	Final Result 1-OPK	×	Final Result 2-CAV

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filler	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	37.7	9,000	Off	L1	9.8	28.3	65.0
0.181500	40.6	9.000	Off	L1	9.8	23.8	64.4
0.217500	37.2	9,000	Off	L1	9.8	25.7	62.9
0,253500	36.2	9,000	Off	L1	9,8	25,4	61.6
0.330000	36.7	9.000	Off	L1	9.8	22.8	\$9.5
0.433500	35.3	9.000	017	L1	9.8	21.9	57.2
1.337000	33.8	9,000	011	LI	9.9	22.2	56.0
1.373000	33.6	9,000	Off	L1	9.9	22.4	56.0
1.409000	33.4	9.000	Off	L1	9.9	22.6	56.0
1.449500	31.7	9.000	Off	L1	9.9	24.3	56.0
1.485500	30.8	9.000	Off	L1	9.9	25.2	56.0
1.517000	33.2	9.000	Off	L1	9.9	22.8	56.0
5.139500	25.0	9.000	Off	L1	10.2	35.0	60.0
8.051000	24.4	9.000	Off	L1	10.4	35.6	60.0
8.217500	24.3	9.000	Off	L1	10.4	35.7	60.0
8.388500	25.8	9.000	Off	L1	10.4	34.2	60.0

1/17/2014

9:11:55

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr					
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EMI Auto Test(1)

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
8.424500	26.5	9.000	Off	L1	10.4	33.5	60.0
8.784500	25.6	9.000	Off	L1	10.4	34.4	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	24.1	9.000	Off	L1	9.8	31.9	56.0
0.181500	26.8	9.000	Off	L1	9.8	27.6	54.4
0.217500	25.3	9.000	Off	L1	9.8	27.6	52.9
0.253500	26.2	9.000	Off	L1	9.8	25.4	51.6
0.325500	31.2	9.000	Off	L1	9.8	18.4	49.6
0.433500	27.6	9.000	Off	L1	9.8	19.6	47.2
1.301000	22.1	9.000	Off	L1	9,9	23.9	46.0
1.337000	23.0	9.000	Off	L1	9.9	23.0	46.0
1.373000	22.5	9.000	Off	L1	9.9	23.5	46.0
1.449500	20.6	9.000	Off	L1	9.9	25.4	46.0
1.485500	20.4	9.000	Off	L1	9.9	25.6	46.0
1.517000	21.9	9.000	Off	L1	9.9	24.1	46.0
8.217500	16.3	9.000	Off	L1	10.4	33.7	50.0
8.316500	17.0	9.000	Off	L1	10.4	33.0	50.0
8.388500	17.0	9.000	Off	L1	10.4	33.0	50.0
8.784500	16.8	9,000	Off	L1	10.4	33.2	50.0
8.847500	16.6	9.000	Off	L1	10.4	33.4	50.0
10.521500	14.8	9.000	Off	L1	10.5	35.2	50.0

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FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT			
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9. LIST TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration	Calibration	Serial No.
Rohde & Schwarz		Interval Annual	Due 02/06/2014	100073
	ENV216/ LISN VULB 9160/ TRILOG Antenna		12/17/2014	3150
Schwarzbeck		Biennial		
Rohde & Schwarz	ESI 40 / EMI TEST RECEIVER	Annual	04/16/2014	831564103
Agilent	E4440A/ Spectrum Analyzer	Annual	04/25/2014	US45303008
Agilent	N9020A/ SIGNAL ANALYZER	Annual	05/14/2014	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	09/10/2014	10094
CERNEX	CBL18265035 / POWER AMP	Annual	07/24/2014	22966
CERNEX	CBL26405040 / POWER AMP	Annual	04/16/2014	19660
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	07/05/2015	1151
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	N1911A/Power Meter	Annual	01/22/2014	MY45100523
Agilent	N1921A /POWER SENSOR	Annual	07/11/2014	MY45241059
Wainwright Instrument	WHF3.0/18G-10EF / High Pass Filter	Annual	02/08/2014	F6
Wainwright Instrument	WHNX6.0/26.5G-6SS / High Pass Filter	Annual	04/16/2014	1
Wainwright Instrument	WHNX7.0/18G-8SS / High Pass Filter	Annual	04/16/2014	29
Wainwright Instrument	WRCJ2400/2483.5-2370/2520-60/14SS / Band Reject Filter	Annual	03/19/2014	1
Hewlett Packard	11636B/Power Divider	Annual	10/22/2014	11377
Agilent	87300B/Directional Coupler	Annual	12/18/2014	3116A03621
Hewlett Packard	11667B / Power Splitter	Annual	05/29/2014	05001
DIGITAL	EP-3010 /DC POWER SUPPLY	Annual	10/29/2014	3110117
ITECH	IT6720 / DC POWER SUPPLY	Annual	11/05/2014	010002156287001199
TESCOM	TC-3000C / BLUETOOTH TESTER	Annual	04/24/2014	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	Annual	04/25/2014	100422
Rohde & Schwarz	LOOP ANTENNA	Biennial	08/14/2014	100179
Agilent	8493C / Attenuator(10 dB)	Annual	07/24/2014	76649
WEINSCHEL	2-3 / Attenuator(3 dB)	Annual	10/28/2014	BR0617
CERNEX	CBL06185030 / POWER AMP	Annual	07/24/2014	22965
CERNEX	CBLU1183540 / POWER AMP	Annual	07/24/2014	22964

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1401F029-3	February 20, 2014	Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth and WLAN	ZNFD400H
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