

HCT CO., LTD.

CERTIFICATE OF COMPLIANCE

FCC Certification

Applicant Name: LG Electronics MobileComm U.S.A., Inc.	Date of Issue: July 01, 2014 Test Site/Location:
Address:	HCT CO., LTD., 74, Seoicheon-ro 578beon-gil,
1000 Sylvan Avenue, Englewood Cliffs NJ 07632	Majang-myeon, Icheon-si, Gyeonggi-do, Korea
	Report No.: HCT-R-1407-F002-1
	HCT FRN: 0005866421
	IC Recognition No.: 5944A-3

FCC ID: ZNFV480IC: 2703C-V480APPLICANT: LG Electronics MobileComm U.S.A., Inc.

FCC/ IC Model(s):	LG-V480
Additional FCC/ IC Model(s):	LGV480, V480
EUT Type:	2.4/5GHz BT/WiFi Tablet
Max. RF Output Power:	3.188 dBm (2.0835 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
IC Rule :	RSS-210 Issue 8, RSS-GEN Issue 3

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

This report only responds to the tested sample and may not be reproduced, except in full, without written approval of the HCT Co., Ltd.

FCC PT.15.247 FCC & IC CERTIFICATION REPORT FCC & IC CERTIFICATION REPORT		www.hct.co.kr		
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480
			·	



Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-R-1407-F002	July 01, 2014	- First Approval Report
HCT-R-1407-F002-1	July 01, 2014	-Revised the IC Rule on page 1

FCC PT.15.247 TEST REPORT FCC & IC CERTIFICATION REPORT		www.hct.co.kr		
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	FILL IVDE: 2.4/5(FHZ BT/W/FL Jablet		IC: 2703C-V480
		Dago 2 of 57		



Table of Contents

1. GENERAL INFORMATION	. 4
2. EUT DESCRIPTION	. 4
3. TEST METHODOLOGY	. 5
3.1 EUT CONFIGURATION	. 5
3.2 EUT EXERCISE	. 5
3.3 GENERAL TEST PROCEDURES	. 5
3.4 DESCRIPTION OF TEST MODES	. 5
4. INSTRUMENT CALIBRATION	. 6
5. FACILITIES AND ACCREDITATIONS	. 6
5.1 FACILITIES	. 6
5.2 EQUIPMENT	. 6
6. ANTENNA REQUIREMENTS	. 6
7. SUMMARY TEST OF RESULTS	. 7
8. TEST RESULT	
8.1 DUTY CYCLE	. 9
8.1 DUTY CYCLE	. 9 0
8.1 DUTY CYCLE	. 9 0 3
8.1 DUTY CYCLE	. 9 0 3 7
8.1 DUTY CYCLE	. 9 0 3 7 4
8.1 DUTY CYCLE	. 9 0 3 7 4 8
8.1 DUTY CYCLE	. 9 0 3 7 4 8
8.1 DUTY CYCLE	. 9 0 3 7 2 4 2 8 3 9 3 9
8.1 DUTY CYCLE. 8.2 6dB BANDWIDTH MEASUREMENT 1 8.3 99% BANDWIDTH 1 8.4 OUTPUT POWER MEASUREMENT. 1 8.5 POWER SPECTRAL DENSITY. 2 8.6 OUT OF BAND EMISSIONS AT THE BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS 2 8.7 RADIATED MEASUREMENT. 3 8.7.1 RADIATED SPURIOUS EMISSIONS. 3 8.7.2 RECEIVER SPURIOUS EMISSIONS	. 9 0 3 7 2 4 2 8 9 3 9 4 8 9
8.1 DUTY CYCLE	- 9 0 3 7 2 4 3 9 3 9 5 9 4 3 9 5 9 4 3 9 5 9
8.1 DUTY CYCLE	. 9 0 3 7 2 4 2 8 9 4 9 5 9 5 1
8.1 DUTY CYCLE	. 9 0 3 7 2 4 2 8 9 4 9 5 9 5 1
8.1 DUTY CYCLE	. 9 0 3 7 2 4 8 9 5 9 5 1 5 6

FCC PT.15.247 TEST REPORT	ECC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480



Applicant:	LG Electronics MobileComm U.S.A., Inc.
Address:	1000 Sylvan Avenue, Englewood Cliffs NJ 07632
FCC ID:	ZNFV480
IC:	2703C-V480
EUT Type:	2.4/5GHz BT/WiFi Tablet
FCC/IC Model name(s): Additional FCC/IC Model name(s):	LG-V480 LGV480, V480
Date(s) of Tests:	June 17, 2014 ~ June 27, 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	2.4/5GHz BT/W	'iFi Tablet	
FCC/ IC Model Name	LG-V480	LG-V480	
Additional FCC/ IC Model Name	LGV480, V480		
Power Supply	DC 3.7 V	DC 3.7 V	
Battery type	Li-ion Battery(S	tandard)	
Frequency Range	TX: 2402 MHz ~ 2480 MHz		
	RX: 2402 MHz	~ 2480 MHz	
Max. RF Output Power	Peak	3.188 dBm (2.0835 mW)	
	Average 3.020 dBm (2.0045 mW)		
BT Operating Mode	BT 4.0_Low Energy Mode		
Modulation Type	GFSK		
Number of Channels	40 Channels		
Antenna Specification	Manufacturer: ace technology A		
	Antenna type: F	Planar Inverted F Antenna	
	Peak Gain : 1.2	2 dBi	

FCC PT.15.247 TEST REPORT	ECC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480



3. TEST METHODOLOGY

FCC KDB 558074 D01 DTS Meas Guidance v03r02 dated June 05, 2014 entitled "Guidance for Performing Compliance Measurements on Digital Transmission Systems(DTS) Operating Under §15.247" and the measurement procedure described in the American National Standard for Testing Unlicensed Wireless Devices(ANSI C63.4-2003) 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.

TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
	ate of Issue: uly 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480



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 February 28, 2014 (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, RSS-GEN 7.1.2

"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.

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480



7. SUMMARY TEST OF RESULTS

7.1 FCC Part

Test Description	IC Part Section(s)	FCC Part Section(s)	Test Limit	Test Condition	Test Result
6 dB Bandwidth	RSS-210 [A8.2]	§15.247(a)(2)	> 500 kHz		PASS
Conducted Maximum Peak Output Power	RSS-210 [A8.4]	§15.247(b)(3)	< 1 Watt		PASS
Power Spectral Density	RSS-210 [A8.2]	§15.247(e)	< 8 dBm / 3 kHz Band	CONDUCTED	PASS
Band Edge(Out of Band Emissions)	RSS-210 [A8.5]	§15.247(d)	Conducted > 20 dBc		PASS
AC Power line Conducted Emissions	RSS-GEN [7.2.2]	§15.207	cf. Section 8.8		PASS
Radiated Spurious Emissions	RSS-210 [A8.5]	§15.205, 15.209	cf. Section 8.7.1	RADIATED	PASS
Radiated Restricted Band Edge	RSS-210 [A8.5]	§15.247(d), 15.205, 15.209	cf. Section 8.7.3		PASS

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT			
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480	



7.2 IC Part

Test Description	IC Part Section(s)	FCC Part Section(s)	Test Limit	Test Condition	Test Result
6 dB Bandwidth	RSS-210 [A8.2]	§15.247(a)(2)	> 500 kHz		PASS
99% Bandwidth (only for IC)	RSS-GEN [4.6.1]	NA	NA		NA
Conducted Maximum Peak Output Power	RSS-210 [A8.4]	§15.247(b)(3)	< 1 Watt		PASS
Power Spectral Density	RSS-210 [A8.2]	§15.247(e)	< 8 dBm / 3 kHz Band	CONDUCTED	PASS
Band Edge(Out of Band Emissions)	RSS-210 [A8.5]	§15.247(d)	Conducted > 20 dBc		PASS
AC Power line Conducted Emissions	RSS-GEN [7.2.2]	§15.207	cf. Section 8.8		PASS
Radiated Spurious Emissions	RSS-210 [A8.5]	§15.205, 15.209	cf. Section 8.7.1		PASS
Receiver Spurious Emissions	RSS-GEN, Section 7.2.3	§15.109	cf. Section 8.7.2	RADIATED	PASS
Radiated Restricted Band Edge	RSS-210 [A8.5]	§15.247(d), 15.205, 15.209	cf. Section 8.7.3		PASS

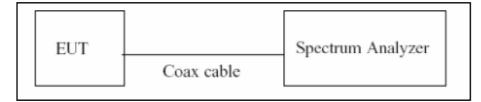
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480
			· · · · · · · · · · · · · · · · · · ·	



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 06/05/2014).

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 $T \le 6.25$ 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_{total} and T_{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

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480



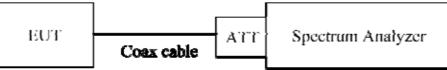
8.2 6dB BANDWIDTH MEASUREMENT

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 06/05/2014)

RBW = 100 kHz $VBW \ge 3 \times RBW$ Detector = PeakTrace mode = max holdSweep = auto coupleAllow 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.

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480



Center Freq	2.402000000	In	nter Freq: 2.402000000 GH g: Free Run Avg(H ten: 20 dB	A,309/A/TO Iz Iold>1/1	Radio Device: BTS	Frequency
10 dB/div	Ref Offset 10.2 dB Ref 20.00 dBm					
10.0 0.00 10.0			~~			Center Fred 2.402000000 GHz
20.0		\sim				
Center 2.402 Res BW 100			#VBW 300 kHz		Span 5 MHz Sweep 1 ms	CF Step 500.000 kH Auto Mar
Occupied	d Bandwidth 1.0	899 MHz	Total Power	8.9	0 dBm	Freq Offset 0 Hz
Transmit F x dB Band		31.849 kHz 689.6 kHz	OBW Power x dB		9.00 % 6.00 dB	
50				STATU	6	

6dB Bandwidth plot (Low-CH 0)

6dB Bandwidth plot (Mid-CH 19)



FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480
				·



Center Freq 2.48000000	Trig: F	r Freq: 2.480000000 GHz Free Run Avg Hold : 20 dB	ALIGNAUTO 01:03:37 PM Sar Radio Std: Nor >1/1 Radio Device:	Frequency
10 dB/dly Ref 20.00 dBn				
10.0		n		Center Freq 2.480000000 GHz
20.0	\square			
400 600 600				~~~.
Center 2.48 GHz #Res BW 100 kHz		VBW 300 kHz	Span Sweep	5 MHz 1 ms
Occupied Bandwidt		Total Power	9.78 dBm	Freq Offset 0 Hz
Transmit Freq Error x dB Bandwidth	32.103 kHz 688.9 kHz	OBW Power x dB	99.00 % -6.00 dB	
450			STATUS	

6dB Bandwidth plot (High-CH 39)

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480



8.3 99% BANDWIDTH

limit

None; for IC reporting purposes only

TEST CONFIGURATION



TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to as close to 1% of the selected span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

```
RBW = 1% of the total span
VBW ≥ 3 x RBW
Detector = Peak
Trace mode = max hold
Sweep = auto couple
Allow the trace to stabilize
```

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480

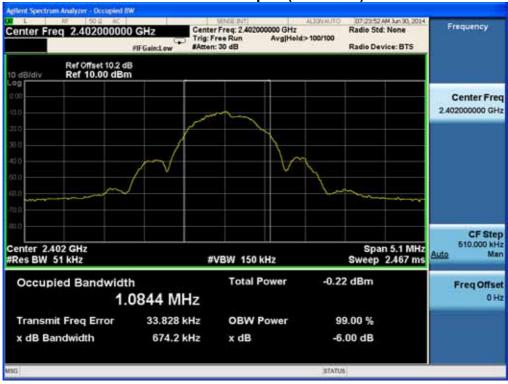


LE Mode	Measured Bandwidth	
Frequency [MHz]	Channel No.	[kHz]
2402	0	674.2
2440	19	704.0
2480	39	678.9

Conducted 99% Bandwidth Measurements for LE Mode

FCC PT.15.247 TEST REPORT		www.hct.co.kr		
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480





99% Bandwidth plot (Low-CH 0)

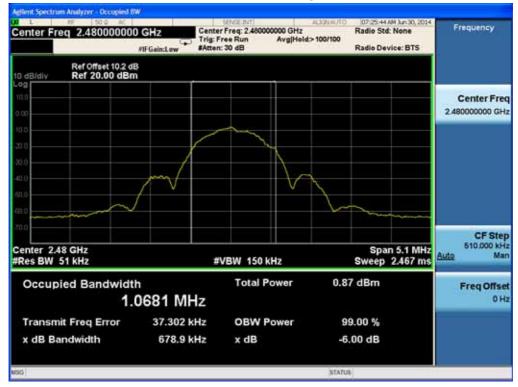
99% Bandwidth plot (Mid-CH 19)



FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT			
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480	



99% Bandwidth plot (High-CH 39)



FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT			
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480	



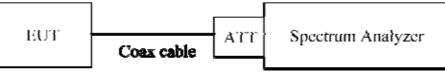
8.4 OUTPUT POWER MEASUREMENT

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 06/05/2014)
 - RBW ≥ DTS Bandwidth
 - VBW ≥ 3 x RBW
 - SPAN ≥ 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 06/05/2014)
 - 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 x 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

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT					
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480			



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.

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480



Conducted Output Power Measurements

LE Mo	ode	Measured	Limit
Frequency[MHz] Channel No.		Power(dBm)	(dBm)
2402	0	2.280	30
2440	19	2.873	30
2480	39	3.188	30

TEST RESULTS-Average

Conducted Output Power Measurements

LE Mode				Measured	
Frequency[MHz]	Channel No.	Measured Power(dBm)	Duty Cycle Factor	Power(dBm) + Duty Cycle Factor	Limit (dBm)
2402	0	0.02	2.04	2.06	30
2440	19	0.50	2.04	2.54	30
2480	39	0.98	2.04	3.02	30

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT			
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:	
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480	



Center Freq 2.4020000	PNO: Fast	Trig: Free Run Atten: 20 dB	#Avg Type: Pwr(RMS) Avg[Hold: 1/1	01:00:26 PM An 17, 2014 TRAGE 2:14 TYPE MODELED DET P.P.F.P.P.P	Frequency
Ref Offset 10.2 dB	a desine on		Mkr1 2	2.402 263 GHz 2.280 dBm	Auto Tune
10.0					Center Free 2.402000000 GH
8.00					
10.0					Start Free 2.400500000 GH
20.0					Stop Fre
30.0					2.403500000 GH
42.0					CF Stej 300.000 kH <u>Auto</u> Ma
					Freq Offse
					OH
-70.0					
Center 2.402000 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep 1	Span 3.000 MHz 07 ms (1000 pts)	

Conducted Output Power (Low-CH 0)

Conducted Output Power (Mid-CH 19)

RL	NF: 50.0 AC		SENGLINT	OTUNINCIA	01:02:12 PM Jun 17, 2014	Frequency
enter Fi	req 2.44000000	PNO: Fast IFGain:Low	Trig: Free Run Atten: 20 dB	#Avg Type: Pwr(RM5) Avg(Hold: 1/1	TRACE 2 4 Type Monomous tet P P F P P P	requertey
0 dB/div	Ref Offset 10.2 dB Ref 20.00 dBm			Mkr1	2.440 278 GHz 2.873 dBm	Auto Tun
00						Center Fre 2.44000000 GH
10.0						Start Fre 2.438500000 GH
no						Stop Fre 2.441500000 GH
10.0 50.0						CF Ste 300.000 kH Auto Ma
2.0						Freq Offse 0 F
center 2.4	40000 GHz				Span 3.000 MHz	
Res BW		#VBW	3.0 MHz	Sweep	1.07 ms (1000 pts)	
Point	s changed; all traces o	leared		STATUS		

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480



Center Freq 2.48000000	GH2 PNO: Fast	Trig: Free Run Atten: 20 dB	#Avg Type: Pwr(RMS) Avg(Hold: 1/1	01:03:50 PM Jun 17, 2014 TRACE 2 0 4 0 TYPE MUNICIPAL PERPERPENDING	Frequency
Ref Offset 10.2 dB			Mkr1 2	.480 257 GHz 3.188 dBm	Auto Tune
10.0					Center Free 2.480000000 GH
0.00					Start Free 2.478500000 GH
300					Stop Free 2.481500000 GH
40.0					CF Ste 300.000 kH Auto Ma
ELG					Freq Offse 0 H
Center 2.480000 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep 1.	Span 3.000 MHz 07 ms (1000 pts)	

Conducted Output Power (High-CH 39)

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480





Conducted Output Power (Low-CH 0)

Conducted Output Power (Mid-CH 19)



FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480





Conducted Output Power (High-CH 39)

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480



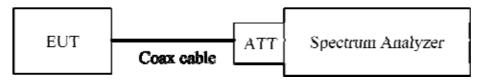
8.5 POWER SPECTRAL DENSITY

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 06/05/2014

The spectrum analyzer is set to :

Set analyzer center frequency to DTS channel center frequency.

Span = 1.5 times the DTS channel bandwidth.

 $RBW = 3 kHz \le RBW \le 100 kHz.$

VBW \geq 3 x 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) Output Power = -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.

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480



Fraguanav	equency Channel (MHz) No.		Test Result		
		Mode	PSD	Limit	Pass/
(11112)			(dBm)	(dBm)	Fail
2402	0		-12.862	8	Pass
2440	19	LE	-12.267	8	Pass
2480	39		-11.964	8	Pass

Conducted Power Density Measurements

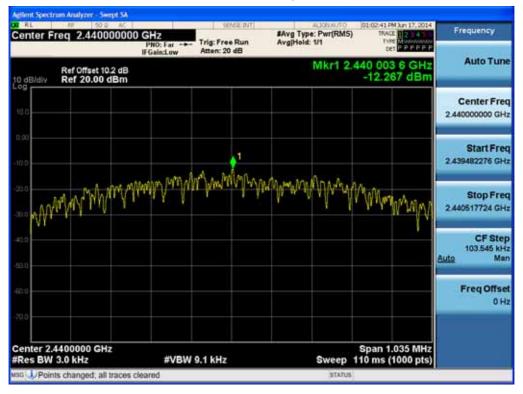
FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480
Pogo 2 E of 57				





Power Spectral Density (Low-CH 0)

Power Spectral Density (Mid-CH 19)



Test Report No. Date of Issue: EUT Type: 2.4/5GHz BT/WiFi Tablet FCC ID: IC: HCT-R-1407-F002-1 July 01, 2014 EUT Type: 2.4/5GHz BT/WiFi Tablet ZNFV480 2703C-V480	FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
			EUT Type: 2.4/5GHz BT/WiFi Tablet		



Center Freq 2.48000000	PNO: Far +++	Trig: Free Run	#Avg Type: Pwr(RMS) Avg[Hold: 1/1	01:04:19 FM 3.m 17, 2014 TRACE 2014 10 TYPE Monocommon	Frequency
Ref Offset 10.2 dB 0 dBi/div Ref 20.00 dBm	IF Gain:Low	Atten: 20 dB	Mkr1 2.48	30 003 6 GHz -11.964 dBm	Auto Tun
og 10 0					Center Fre 2.48000000 GH
0.0		a alta			Start Fre 2.479483289 GH
WWWWWWWW	And Would	a ferran har da	approximation of the	Manwangy	Stop Fre 2.480516711 GF
0.0					CF Ste 103.342 ki Auto Mi
B.0					Freq Offs 0 i
70.0					

Power Spectral Density (High-CH 39)

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480

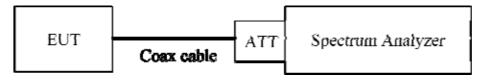


8.6 OUT OF BAND EMISSIONS AT THE BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS Test Requirements and limit, §15.247(d)

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 06/05/2014)

RBW = 100 kHz

VBW ≥ 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

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480	



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

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480
		Daga 2.0 of 57		



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

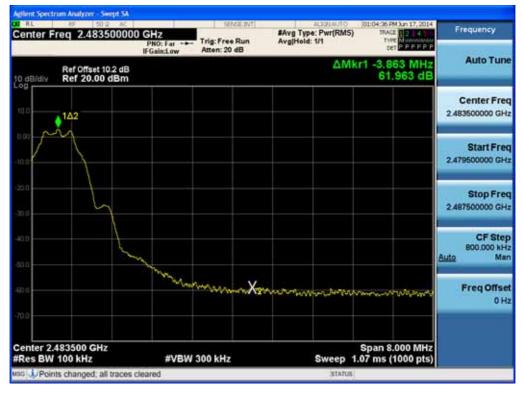
FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT					
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480			



Center Freq 2.4000000	PNO: Far ++-	Several and	#Avg Type: Pwr(R) Avg(Hold: 1/1		Frequency
Ref Offset 10.2 dB	IFGain:Low	Atten: 20 dB	4	Mkr1 2.182 MHz 55.962 dB	Auto Tune
.og 10.0				Δ2	Center Free 2.400000000 GH
10.0			1 /	\mathbf{i}	Start Fre 2.396000000 GH
20				6	Stop Free 2.404000000 GH
40.0				- Long	CF Ste B00.000 kH Auto Ma
and and and a second	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Mart Agent			Freq Offse 0 H
700 Center 2.400000 GHz #Res BW 100 kHz		300 kHz	Sweet	Span 8.000 MHz 5 1.07 ms (1000 pts)	
st UPoints changed; all traces			STA		

BandEdge (Low-CH 0)

BandEdge (High-CH 39)

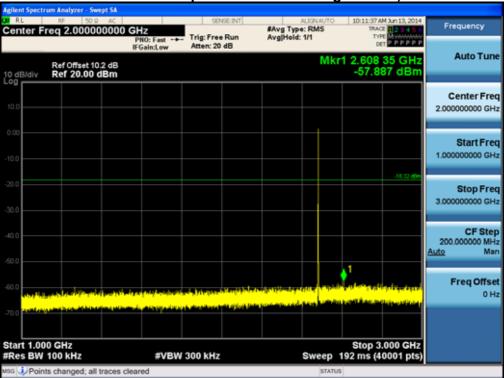


FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT					
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480			
1101-101-1002-1	July 01, 2014	Base 2.4 (57	2111 0400	27030-1400			



Agilent Spectrum Analyzer - Swept SA					- 10
00 RL RF 50 9 AC Center Freq 515.000000 M	PNO: Fast Trig: Fr		#Avg Type: RMS Avg[Hold: 1/1	0 10:11:53 AM 3.m 13, 2014 TRACE 2 3 4 5 6 TYPE M MANAGED P P P P P	Frequency
Ref Offset 10.2 dB 10 dB/div Ref 20.00 dBm	IFGain:Low Atten: 2	20 46	•	Mkr1 959.74 MHz -59.180 dBm	Auto Tune
10.0					Center Freq 515.000000 MHz
-10.0					Start Freq 30.000000 MHz
-20.0				-18.32 dBm	Stop Freq 1.00000000 GHz
-40.0					CF Step 97.000000 MHz <u>Auto</u> Man
-60.0 Addite strateging and a state of the s	a fa dha a chu a fa da dhi an Sila buran a Ta na an			and a second second second	Freq Offset 0 Hz
3700 Start 30.0 MHz #Res BW 100 kHz	#VBW 300 kH		Swaan	Stop 1.0000 GHz 93.3 ms (20000 pts)	
MRES EW 100 KHZ		2	Sweep		

1 GHz ~ 3 GHz



FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT					
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480			



	req 4.0000000		Tria Day	#Avg Type: RMS Avg[Hold: 1/1	10:12:09 AM Jun 13, 2014 TRACE 2 34 5 6 TYPE MUNICIPAL P P P P P P	Frequency
0 dB/div	Ref Offset 10.2 o Ref 20.00 dBr			Mkr	1 3.316 70 GHz -57.578 dBm	Auto Tuni
10.0						Center Free 4.000000000 GH
1.00						Start Fre 3.000000000 GH
0.0					-18.32 dBm	Stop Fre 5.000000000 GH
0.0						CF Ste 200.000000 MH Auto Ma
0.0 <mark>majilad</mark>			on on the workerstates	hand the state of the		Freq Offse 0 H
0.0		in and his black in the	در بر _ا ی روید فیلا میکردها (۱	y, dit (yandi ila yikiyidi ila si andy de		
tart 3.00 Res BW	0 GHz 100 kHz	#VB\	V 300 kHz	Sweep 1	Stop 5.000 GHz 92 ms (40001 pts)	

5 GHz ~ 7 GHz

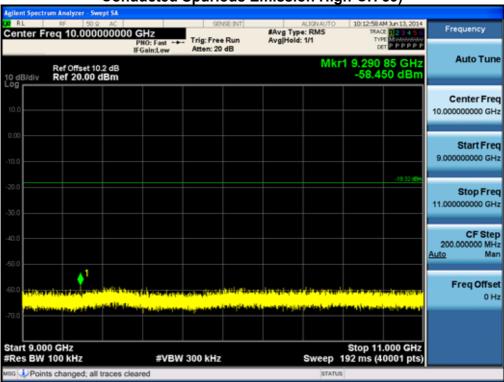
		oonaa		opun		1113310	n niệ	л-Сп	55)	
	um Analyzer - Swej									
RL Center E	req 6.00000		7	SEN	SE:INT	#Avg Type	RMS	10:12:26 A	M Jun 13, 2014	Frequency
center r	req 0.00000	PN	0: Fast 🔸	Trig: Free Atten: 20		Avg Hold:		TYS	а <mark>123456</mark> трррррр	
		IFG	ain:Low	Atten: 20	9D		MIK	1 5.284	_	Auto Tune
10 dB/div	Ref Offset 10.2 Ref 20.00 dl						IVIK	-57.7	48 dBm	
°°										
10.0										Center Free
10.0										6.00000000 GH
0.00										
										Start Free
10.0										5.00000000 GH
									-18.32 dBm	
20.0										Stop Free
30.0										7.00000000 GH
30.0										
+0.0										CF Ste
										200.000000 MH Auto Mar
50.0	_									<u>Cons</u> mai
	♦ ¹									Freq Offse
50.0 <mark>'alin' 174</mark>	align participation and	arthough the	enote estable	adardadda	-second states	diam day	dentidad.	adamath	estra de la dela de la dela dela dela dela d	0 H
Babiliti	alaya ing sinak matala	inije (ve zad	ales in design	(Billion Register)	(inclusion)	- تسعينة. حقا	and specific state	ves,aa	Anterna Silina	
70.0										
tart 5.00 Res BW			#UDW	300 kHz			Curaan		.000 GHz 0001 pts)	
_			#VBW	500 KHZ					ooo r pts)	
Nigr	iment Completed	1					STATU	9		

TEST REPORT		FCC & IC CERTIFICATION REPORT					
	e of Issue: 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480			



							<u> </u>	/	/	
igilent Spectrum /	Analyzer - Swept S	SA .								
RL	RF 50 9 A	VC		- 507	SE:INT		ALIGN AUTO		M Jun 13, 2014	Francisco
enter Frec	3 8.0000000	000 GHz	-		_	#Avg Type			1 2 3 4 5 6	Frequency
): Fast 🔸	Trig: Free		Avg Hold:	1/1		PERMIN	
		IFGa	iin:Low	Atten: 20	dB					
	ef Offset 10.2 d						Mk	r1 7.392	95 GHz	Auto Tun
	ef 20.00 dBr							-58.1	98 dBm	
	er 20.00 dBi									
										Center Fre
10.0										8.00000000 GH
0.00										
										Start Fre
										7.00000000 GH
10.0										7.00000000 GH
20.0									-18.32 dBm	
2010										Stop Fre
										9.00000000 GH
30.0										
40.0										CF Ste
40.0										200.000000 MH
										Auto Ma
50.0										_
	1									
60.0 minita lu	1. Y									Freq Offse
enn <mark>uitensvee</mark> t	AND A REAL PROPERTY.	of the second second	out samples	and the state of the	UL ou Mathe	alignitiper the	-distribution	a tan interaction	Second second	. он
and a second law film	in a subject to the second	ويعتب بالمرقبا بباللا	alara las a a	and the local sector	والمراجع والمراجع	وقعدت والم	وتواجعك والأرا	instante en alt stad	A Red Broker Brok	
70.0				- 11 - 11 - P				a manufacture (all the second	
Start 7.000 G	Hz							Stop 9	.000 GHz	
Res BW 10			#VBW	300 kHz			Sweep		0001 pts)	
	O MILLE			000 NH2			oneep	197 1119 14	ooor praj	
	hanged; all trac				_		STATU			

9 GHz ~ 11 GHz

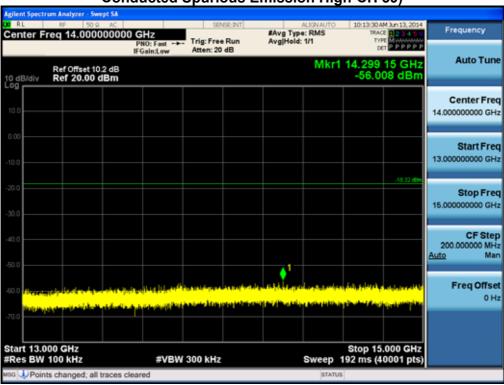


FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480



Agilent Spect	rum Analyzer - Swep RF 50 Q			SEINT		NJGNAUTO	1012114	M 3 m 13, 2014	
	req 12.0000		st +++ Trig: Free	Run	#Avg Type Avg Hold:	RMS	TRAC	а да 1), 2014 а 1 2 3 4 5 6 а Миниции т р р р р р р	Frequency
10 dB/div	Ref Offset 10.2 Ref 20.00 di	dB				Mkr1	12.595 -56.8	80 GHz 02 dBm	Auto Tune
10.0									Center Freq 12.00000000 GHz
0.00									Start Free 11.000000000 GH2
30.0								-18.32 dBn	Stop Free 13.000000000 GH2
40.0									CF Step 200.000000 MH: Auto Mar
		nini epanjatan ni minena indenini inde		n a dhàinn an Mhàinn an A	at all and the	and distant of the	1 In algebraiter 1 gelgte estador	n fallaite der Trijt men det er	Freq Offse 0 Ha
-70.0							Stop 13	.000 GHz	
	100 GH2	#	VBW 300 kHz			Sweep	192 ms (4		
isg 🤳 Poir	nts changed; all tra	aces cleared				STATU	5		

13 GHz ~ 15 GHz

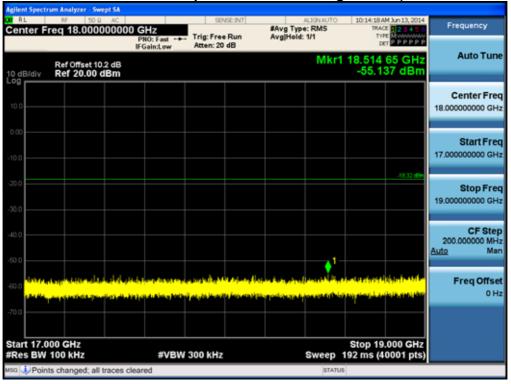


FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT					
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480			



Agilen	t Spectru	m Analyzer - Sw	rept SA						,	,	
Cen		⊮ 50 s eq 16.000				SENT	#Avg Type Avg[Hold:			M Jun 13, 2014	Frequency
				NO: Fast ++ Gain:Low	Atten: 20	dB	Avgineia:	1/1	DE		
10 dE	3/div	Ref Offset 10 Ref 20.00						Mkr	1 16.771 -54.6	70 GHz 88 dBm	Auto Tune
Log											Center Freq
10.0											16.00000000 GHz
0.00											
											Start Freq 15.00000000 GHz
+10.0											15.00000000 0112
-20.0										-18.32 dBn	Stop Freq
-30.0											17.00000000 GHz
											CF Step
-40.0											200.000000 MHz
-50.0								_		i ———	<u>Auto</u> Man
-60.0	Lotition		(al actor dis	بقباعير وأعاوره	فاستصحمك	NonAuthor	a hadalleri	and the second	فأفع والمحاور والمحاور	almaniata atati	Freq Offset
	a an fairt an a	dischesond parts	(aster)	Print Street	ala ta sa fasis da	ilasa kainan		ARLINE	a na ana ana ana an	A STREET, STREE	0 Hz
-70.0											
Ctar	t 15.00								Stop 17	.000 GHz	
		00 kHz		#VBW	300 kHz			Sweep	192 ms (4		
MSG 🧕	Points	changed; all	traces clea	red				STATE	15		

17 GHz ~ 19 GHz



FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT						
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480				

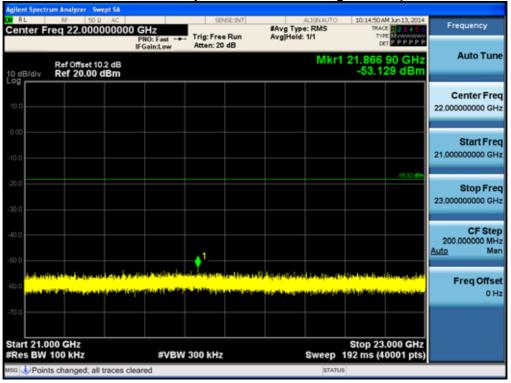


Agilen	nt Spectru	m Analyzer - Sw	rept SA		1				,	,	
Cen	ter Fr	eq 20.000	F	PNO: Fast ++			#Avg Type Avg Hold:				Frequency
10 di	B/div	Ref Offset 10 Ref 20.00	0.2 dB	Gain:Low	Atten: 20	dB		Mkr1	19.320		Auto Tune
10.0											Center Freq 20.000000000 GHz
0.00 +10.0										-18.32 d 0 m	Start Freq 19.00000000 GHz
-20.0 -30.0										-10.32 00%	Stop Freq 21.00000000 GHz
-40.0 -50.0		1									CF Step 200.000000 MHz <u>Auto</u> Man
-60.0	lilih odi ka po o		Nithing and Alighter	kalendi kale Malaniska p	anter (a stalia) Médana a st	dedetan seri Nacional series	n (Blankov) Naty (Cynawr		eldinen told Pagenainen	in di berti <mark>yangini dar</mark>	Freq Offset 0 Hz
	t 19.00 s BW 1	0 GHz 00 kHz		#VBW	300 kHz			Sweep	Stop 21. 192 ms (40	000 GHz	
		changed; all	traces clea		o o o Rinz			STATU		- pes/	

Conducted Spurious Emission High-CH 39)

21 GHz ~ 23 GHz

Conducted Spurious Emission High-CH 39)



FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480
		D		



Agilent Spectrum Analyzer - Swept S RL RF 50 Q A Center Freq 24.000000	C 0000 GHz PN0: Fast	SENSE 2VT	ALIGNAUTO #Avg Type: RMS Avg[Hold: 1/1	10:15:07 AM Jun 13, 2014 TRACE 1 2 3 4 5 0 TYPE M P P P P P	Frequency
Ref Offset 10.2 d 10 dB/div Ref 20.00 dBr	IFGain:Low IB II	Atten: 20 dB	Mkr1	24.611 05 GHz -50.836 dBm	Auto Tuni
10.0					Center Fre 24.000000000 GH
10.00					Start Fre 23.000000000 GH
20.0				-18.32 dBn	Stop Fre 25.000000000 GH
40.0				41	CF Ste 200.000000 MH Auto Ma
50.0 Alien falle tit honel-attraction 60.0 Alien falle tit honel-attraction	assered endededed pagetification of the second	deskezi orazora Piputenez pozisionez		and the state of t	Freq Offse
70.0					
Start 23.000 GHz Res BW 100 kHz	#VBW	300 kHz	Sweep	Stop 25.000 GHz 192 ms (40001 pts)	

Conducted Spurious Emission High-CH 39)

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480



8.7 RADIATED MEASUREMENT. 8.7.1 RADIATED SPURIOUS EMISSIONS.

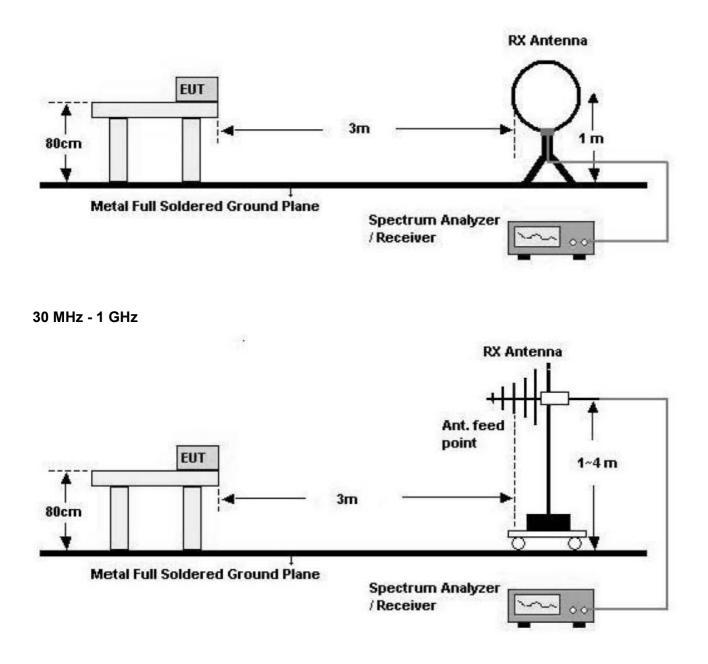
Test Requirements and limit, §15.205, §15.209

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

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr				
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480				
	Dama 2.0 af 57							

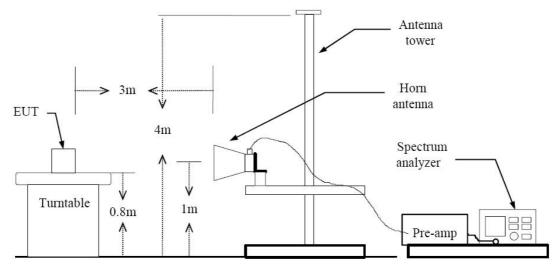


Below 30 MHz



FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480





TEST PROCEDURE USED

Method 12.1 in KDB 558074, issued 06/05/2014

Spectrum Setting

- Peak

Peak emission levels are measured by setting the instrument as follows:

RBW = cf. Table 1.

VBW \geq 3 x RBW.

Detector = Peak.

Sweep time = auto.

Trace mode = max hold.

Allow sweeps to continue until the trace stabilizes.

(Note that the required measurement time may be longer for low duty cycle applications).

DDW
RBW
200-300 Hz
9-10 kHz
100-120 kHz
1 MHz

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480



- Average Set RBW = 1 MHz

Set VBW \geq 1/T.(at least 100 times less than the resolution bandwidth, but no less than 10 Hz.)

Select spectrum analyzer linear display mode.

Detector = Peak.

Sweep time = auto.

Trace mode = max hold.

Note :

- 1. We are performed the RSE and radiated band edge using standard radiated method.
- 2. The actual setting value of VBW for BT LE mode.

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

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480
			÷	· · · · · · · · · · · · · · · · · · ·



9 kHz – 30MHz

Operation Mode: Normal Mode

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

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480



Below 1 GHz

Operation Mode: Normal Mode

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

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480



Above 1 GHz

Operation Mode: CH Low(LE Mode)

Frequency	Reading	AN.+CL-AMP G	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBuV/m]	[dBm]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Туре
4804	49.22	-2.16	V	47.06	73.98	26.92	PK
4804	35.32	-2.16	V	33.16	53.98	20.82	AV
7206	46.18	7.31	V	53.49	73.98	20.49	PK
7206	32.18	7.31	V	39.49	53.98	14.49	AV
4804	49.41	-2.16	Н	47.25	73.98	26.73	PK
4804	35.33	-2.16	Н	33.17	53.98	20.81	AV
7206	46.50	7.31	Н	53.81	73.98	20.17	PK
7206	32.20	7.31	Н	39.51	53.98	14.47	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 & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480



Operation Mode:	CH Mid(LE Mode)
------------------------	-----------------

Frequency	Reading	AN.+CL-AMP G	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBuV/m]	[dBm]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Туре
4880	50.11	-1.87	V	48.24	73.98	25.74	PK
4880	35.88	-1.87	V	34.01	53.98	19.97	AV
7320	45.94	7.35	V	53.29	73.98	20.69	PK
7320	32.53	7.35	V	39.88	53.98	14.10	AV
4880	50.39	-1.87	Н	48.52	73.98	25.46	PK
4880	35.90	-1.87	Н	34.03	53.98	19.95	AV
7320	46.41	7.35	Н	53.76	73.98	20.22	PK
7320	32.56	7.35	Н	39.91	53.98	14.07	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.

Test Report No. Date of Issue: HCT-R-1407-F002-1 July 01, 2014 EUT Type: 2.4/5GHz BT/WiFi Tablet FCC ID: IC: ZNFV480 2703C-V480	FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT	www.hct.co.kr
		 EUT Type: 2.4/5GHz BT/WiFi Tablet	



operation in							
Frequency	Reading	AN.+CL-AMP G	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBuV/m]	[dBm]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Туре
4960	49.72	-1.84	V	47.88	73.98	26.10	PK
4960	35.98	-1.84	V	34.14	53.98	19.84	AV
7440	45.80	7.13	V	52.93	73.98	21.05	PK
7440	32.26	7.13	V	39.39	53.98	14.59	AV
4960	49.74	-1.84	Н	47.90	73.98	26.08	PK
4960	35.99	-1.84	Н	34.15	53.98	19.83	AV
7440	46.16	7.13	Н	53.29	73.98	20.69	PK
7440	32.29	7.13	Н	39.42	53.98	14.56	AV

Operation Mode: CH High(LE Mode)

- 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.

TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
	ate of Issue: ly 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480



8.7.2 RECEIVER SPURIOUS EMISSIONS

IC Rule(s)	RSS-GEN
Test Requirements:	Blow the table
Operating conditions:	Under normal test conditions
Method of testing:	Radiated
S/A Sottings:	F < 1 GHz: RBW: 120 kHz, VBW: 300 kHz (Quasi Peak)
S/A. Settings:	F < 1 GHz: RBW: 120 kHz, VBW: 300 kHz (Quasi Peak) F > 1 GHz: RBW: 1 MHz, VBW: 1 MHz (Peak)
S/A. Settings: Mode of operation:	· · · · · · · · · · · · · · · · · · ·

Frequency	Field Strength
(MHz)	(microvolts/m at 3 meters)
30 – 88	100
88 - 216	150
216 – 960	200
Above 960	500

Operation Mode: Receive:

30 MHz ~ 1 GHz

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

Above 1 GHz

Frequency Reading Ant. Factor Cable Loss ANT POL Total Limit Margin									
MHz dBuV dB/m dB (H/V) dBuV/m dBuV/m dB									
No Critical peaks found									

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480



8.7.3 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	Measurement
[MHz]	[dBuV/m]	[dBm]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Туре
2390.0	24.91	31.47	н	56.38	73.98	17.60	PK
2390.0	11.95	31.47	Н	43.42	53.98	10.56	AV
2390.0	25.32	31.47	V	56.79	73.98	17.19	PK
2390.0	11.99	31.47	V	43.46	53.98	10.52	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.

Test Report No. Date of Issue: HCT-R-1407-F002-1 July 01, 2014 EUT Type: 2.4/5GHz BT/WiFi Tablet FCC ID: IC: ZNFV480 2703C-V480	FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT	www.hct.co.kr
		 EUT Type: 2.4/5GHz BT/WiFi Tablet	



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

Frequency	Reading	A.F.+CL	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBuV/m]	[dBm]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Туре
2483.5	28.26	31.46	н	59.72	73.98	14.26	PK
2483.5	17.40	31.46	н	48.86	53.98	5.12	AV
2483.5	28.37	31.46	V	59.83	73.98	14.15	PK
2483.5	17.43	31.46	V	48.89	53.98	5.09	AV

- 1. Frequency range of measurement = 2483.5 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 & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480



8.8 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

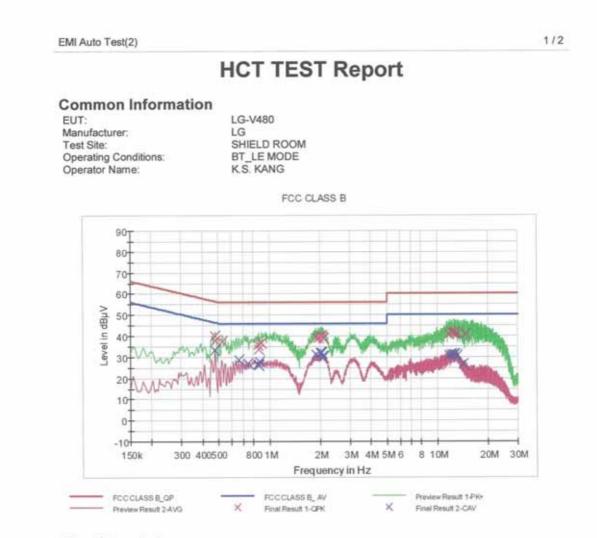
See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

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.0 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 & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480





Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.474000	40.1	9.000	Off	L1	9.7	16.3	56.4
0.483000	38.1	9.000	tto	L1	9.7	18.2	56.3
0.527000	37,4	9.000	Off	L1	9.7	18.6	56.0
0.855500	35.9	9,000	Off	L1	9.7	20.1	56.0
0.864500	33.9	9,000	Off	L1	9.7	22.1	56.0
0.900500	36.8	9.000	Off	L1	9.7	19.2	56.0
1.886000	39.3	9.000	Off	L1	9,8	16.7	56.0
1.953500	39.1	9,000	Off	L1	9.8	16.9	56.0
2.016500	39,9	9.000	Off	L1	9.9	16.1	56.0
2.039000	39.9	9.000	Off	L1	9.9	16.1	56.0
2.066000	39.3	9.000	Off	L1	9,9	16.7	56.0
2.088500	38.7	9.000	Off	L1	9.9	17.3	56.0
11.664500	40.8	9,000	110	L1	10.5	19.2	60.0
12.101000	41.6	9,000	ott	L1	10.5	18.4	60.0
12,510500	41.4	9.000	Off	L1	10.5	18.6	60.0
12.717500	41.7	9,000	Off	L1	10.5	18.3	60.0

6/17/2014

10:38:00

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT			
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:	
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480	



EMI Auto Test(2)

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBpV)
13.113500	41.3	9,000	Off	L1	10.6	18.7	60.0
14,688500	40.7	9.000	Off	L1	10.6	19.3	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.478500	33.4	9,000	011	L1	9.7	13.0	46.4
0.657500	28.5	9,000	110	L1	9.7	17.5	46.0
0.747500	27.0	9.000	Off	L1	9.7	19.0	46.0
0.855500	26.7	9.000	110	L1	9.7	19.3	46.0
0.864500	26.3	9,000	MO	L1	9.7	19.7	45.0
0.873500	27.7	9.000	Off	L1	9.7	18.3	46.0
1.886000	31.1	9,000	110	L1	9.8	14.9	46.0
1.994000	32.0	9,000	Off	L1	9.8	14.0	46.0
2.016500	32.0	9,000	110	L1	9,9	14.0	46.0
2.039000	31.9	9,000	110	L1	9.9	14.1	46.0
2.066000	30.5	9.000	110	L1	9.9	15.5	46.0
2.088500	30.0	9.000	Off	L1	9.9	16.0	46.0
11.664500	30.6	9.000	110	L1	10.5	19.4	50.0
12.101000	31.0	9.000	110	L1	10.5	19.0	50.0
12.510500	31.1	9.000	110	L1	10.5	18.9	50.0
12.717500	31.3	9,000	no	L1	10.5	18.7	50.0
13.113500	30.6	9.000	011	L1	10.6	19.4	50.0
14.283500	26.3	9.000	Off	L1	10.6	23.7	50.0

6/17/2014

10:38:00

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480	

2/2



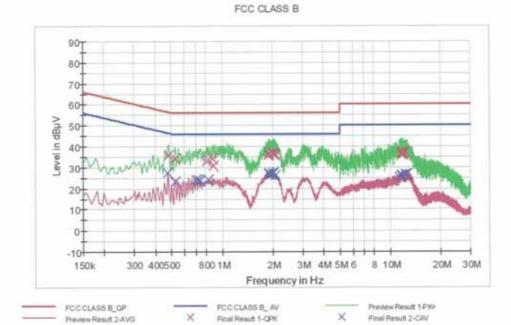
EMI Auto Test(2)

1/2

HCT TEST Report

Common Information

EUT: Manufacturer: Test Site: Operating Conditions: Operator Name: LG-V480 LG SHIELD ROOM BT_LE MODE K.S. KANG



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0,483000	35.6	9,000	Off	N	9,7	20.7	56,3
0.527000	34.0	9,000	Off	N	9.7	22.0	56.0
0.810500	33.1	9.000	Off	N	9,8	22.9	56.0
0.833000	33.6	9.000	Off	N	9.8	22.4	56.0
0.878000	34.3	9.000	Off	N	9,8	21.7	56.0
0.887000	30.7	9.000	Off	N	9.8	25.3	56.0
1.886000	36.5	9.000	Off	N	9,8	19.5	56.0
1.904000	36.0	9,000	Off	N	9,9	20.0	56.0
1.998500	36.8	9.000	Off	N	9.9	19.2	56.0
2.021000	36.7	9,000	Off	N	9.9	19.3	56.0
2.039000	36.6	9.000	Off	N	9.9	19.4	56.0
2.066000	36.0	9.000	Off	N	9,9	20.0	56.0
11.538500	36.0	9.000	Off	N	10.5	24.0	60.0
11.651000	36.7	9.000	Off	N	10.5	23.3	60.0
11.687000	37.1	9,000	Off	N	10.5	22.9	60.0
11.867000	36.4	9.000	Off	N	10.5	23.6	60.0

6/17/2014

10:32:47

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT			
Test Report No.	Date of Issue:	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID:	IC:	
HCT-R-1407-F002-1	July 01, 2014		ZNFV480	2703C-V480	



EMI Auto Test(2)

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
11.880500	37.0	9,000	110	N	10.5	23.0	60.0
12.299000	37.0	9,000	Off	N	10.5	23.0	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.478500	27.6	9,000	110	N	9.7	18.8	46.4
0.527000	23.0	9,000	Off	N	9.7	23.0	46.0
0.702500	24.2	9.000	0ff	N	9.7	21.8	46.0
0.725000	24.2	9.000	Off	N	9.7	21.8	45.0
0.743000	23.5	9.000	Off	N	9.7	22.5	46.0
0.828500	24.1	9.000	Off	N	9.8	21.9	46.0
1,886000	26.8	9.000	Off	N.	9.8	19.2	46.0
1.904000	27.3	9,000	Off	N	9.9	18.7	46.0
1.931000	26.6	9,000	Off	N	9,9	19.4	46.0
1.976000	26.9	9.000	Off	N	9,9	19.1	46.0
2.034500	27.3	9.000	110	N	9.9	18.7	46.0
2.066000	26.0	9.000	Off	N	9.9	20.0	46.0
11.291000	25.2	9,000	Off	N	10.4	24.8	50.0
11.538500	26.0	9.000	Off	N	10.5	24.0	50.0
11.696000	26.1	9.000	Off	N	10.5	23.9	50.0
11.709500	26.2	9.000	Off	N	10.5	23.8	50.0
12.299000	26.6	9,000	Off	N	10.5	23.4	50.0
12.519500	26.7	9.000	11O	N	10.5	23.3	50.0

6/17/2014

10:32:47

FCC PT.15.247 TEST REPORT		www.hct.co.kr			
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480	
	Page 5 5 of 57				

2/2



9.1 LIST OF TEST EQUIPMENT(Conducted Test)

Manufacturer	Model / Equipment	Calibration	Calibration	Calibration	Serial No.
		Date	Interval	Due	
Rohde & Schwarz	ENV216/ LISN	01/29/2014	Annual	01/29/2015	100073
Agilent	E4440A/ Spectrum Analyzer	04/09/2014	Annual	04/09/2015	US45303008
Agilent	N9020A/ SIGNAL ANALYZER	05/23/2014	Annual	05/23/2015	MY51110063
Agilent	N1911A/Power Meter	01/24/2014	Annual	01/24/2015	MY45100523
Agilent	N1921A /POWER SENSOR	07/11/2013	Annual	07/11/2014	MY45241059
Hewlett Packard	11636B/Power Divider	10/22/2013	Annual	10/22/2014	11377
Agilent	87300B/Directional Coupler	12/18/2013	Annual	12/18/2014	3116A03621
Hewlett Packard	11667B / Power Splitter	01/27/2014	Annual	01/27/2015	10545
DIGITAL	EP-3010 /DC POWER SUPPLY	10/29/2013	Annual	10/29/2014	3110117
ITEOU		11/05/2012	Annual	11/05/0014	0100021562870011
ITECH	IT6720 / DC POWER SUPPLY	11/05/2013	Annual	11/05/2014	99
TESCOM	TC-3000C / BLUETOOTH TESTER	04/11/2014	Annual	04/11/2015	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	05/07/2014	Annual	05/07/2015	100422
Agilent	8493C / Attenuator(10 dB)	07/24/2013	Annual	07/24/2014	76649
WEINSCHEL	2-3 / Attenuator(3 dB)	10/28/2013	Annual	10/28/2014	BR0617

FCC PT.15.247 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480
			•	



9.2 LIST OF TEST EQUIPMENT(Radiated Test)

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Calibration Due	Serial No.
Schwarzbeck	VULB 9160/ TRILOG Antenna	12/17/2012	Biennial	12/17/2014	3150
				-	
Rohde & Schwarz	ESCI / EMI TEST RECEIVER	01/24/2014	Annual	01/24/2015	100584
HD	MA240/ Antenna Position Tower	N/A	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A		N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	N/A	12
Rohde & Schwarz	SCU-18/ Signal Conditioning Unit	09/10/2013	Annual	09/10/2014	10094
CERNEX	CBL18265035 / POWER AMP	07/24/2013	Annual	07/24/2014	22966
CERNEX	CBL26405040 / POWER AMP	04/04/2014	Annual	04/04/2015	19660
Schwarzbeck	BBHA 9120D/ Horn Antenna	07/05/2013	Biennial	07/05/2015	1151
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	10/30/2012	Biennial	10/30/2014	BBHA9170124
Rohde & Schwarz	FSP / Spectrum Analyzer	01/24/2014	Annual	01/24/2015	839117/011
Wainwright Instrument	WHF3.0/18G-10EF / High Pass Filter	02/03/2014	Annual	02/03/2015	F6
Wainwright Instrument	WHNX6.0/26.5G-6SS / High Pass Filter	04/09/2014	Annual	04/09/2015	1
Wainwright Instrument	WHNX7.0/18G-8SS / High Pass Filter	04/04/2014	Annual	04/04/2015	29
Wainwright Instrument	WRCJ2400/2483.5-2370/2520-60/14SS / Band Reject Filter	06/17/2014	Annual	06/17/2015	1
TESCOM	TC-3000C / BLUETOOTH TESTER	04/11/2014	Annual	04/11/2015	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	05/07/2014	Annual	05/07/2015	100422
Rohde & Schwarz	LOOP ANTENNA	NA 08/14/2012 Biennial 08/14/20		08/14/2014	100179
CERNEX	CBL06185030 / POWER AMP	07/24/2013	Annual	07/24/2014	22965
CERNEX	CBLU1183540 / POWER AMP	07/24/2013	Annual	07/24/2014	22964

Note :This equipment (WRCJ2400/2483.5-2370/2520-60/14SS / Band Reject Filter) is used after 06/17/2014

and actual calibration date is 06/17/2014

FCC PT.15.247 TEST REPORT		www.hct.co.kr						
Test Report No. HCT-R-1407-F002-1	Date of Issue: July 01, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV480	IC: 2703C-V480				