

# HCT CO., LTD.

#### CERTIFICATE OF COMPLIANCE

FCC Certification(DFS)

# Applicant Name:<br/>LG Electronics MobileComm U.S.A., Inc.Date of Issue:<br/>April 09, 2014<br/>Test Site/Location:<br/>HCT CO., LTD., 74, Seoicheon-ro 578beon-gil, Majang-<br/>myeon, Icheon-si, Gyeonggi-do, Korea

Report No.: HCT-R-1404-F013

HCT FRN: 0005866421

IC Recognition No.: 5944A-3

# FCC ID: ZNFV400IC: 2703C-V400APPLICANT: LG Electronics MobileComm U.S.A., Inc.

FCC/ IC Model(s):	LG-V400
EUT Type:	2.4/5GHz BT/WiFi Tablet
Max. RF Output Power:	802.11a_UNII2 Band (8.04 dBm)/ 802.11n_20 MHz BW_UNII2 Band (7.24 dBm)/ 802.11n_40 MHz BW_UNII2 Band (7.81 dBm)
	802.11a_UNII2e Band (7.89 dBm)/ 802.11n_20 MHz BW_UNII2e Band (7.35 dBm)/ 802.11n_40 MHz BW_UNII2e Band (7.98 dBm)
Frequency Range:	5260 MHz - 5320 MHz (UNII2 Band) 5500 MHz - 5700 MHz (UNII2e Band)
Modulation type	OFDM
FCC Classification:	Unlicensed National Information Infrastructure (UNII)
FCC Rule Part(s):	Part 15.407(DFS)
IC Rule :	RSS-210

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 : Kyoung Houn Seo 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.,

FCC PT.15.407 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-1404-F013	April 09, 2014		ZNFV400	2703C-V400



# **Version**

TEST REPORT NO.	DATE	DESCRIPTION
HCT-R-1404-F013	April 09, 2014	- First Approval Report

FCC PT.15.407 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400	
Page 2 of 24					



# **Table of Contents**

1. GE	ENERAL INFORMATION	. 4
2. EU	JT DESCRIPTION	. 4
3. SC		. 5
4. IN	STRUMENT CALIBRATION	. 5
5. FA	ACILITIES AND ACCREDITATIONS	. 5
Ę	5.1 FACILITIES	. 5
Ę	5.2 EQUIPMENT	. 5
6. SU	JMMARY OF TEST RESULTS	. 6
7. DE	ESCRIPTION OF DYNAMIC FREQUENCY SELECTION TEST	. 7
7	7.1 APPLICABILITY	. 7
7	7.2 REQUIREMENTS	. 7
7	7.3 DFS DETECTION THRESHOLD VALUES	. 9
7	7.4 PARAMETERS OF DFS TEST SIGNALS	. 9
7	7.5 TEST AND MEASUREMENT SYSTEM 1	1
7	7.6 DESCRIPTION OF EUT 1	3
7	7.7 UNII2 TEST RESULT 1	4
7	7.8 UNII2e TEST RESULT 2	0
8. L	LIST OF TEST EQUIPMENT	. 4

FCC PT.15.407 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400
	·		· · · · · · · · · · · · · · · · · · ·	



Applicant:	LG Electronics MobileComm U.S.A., Inc.
Address:	1000 Sylvan Avenue, Englewood Cliffs NJ 07632
FCC ID:	ZNFV400
IC:	2703C-V400
EUT Type:	2.4/5GHz BT/WiFi Tablet
FCC/ IC Model name(s): Date(s) of Tests:	LG-V400 March 21, 2014 ~ April 08, 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/WiFi Tablet
FCC/ IC Model Name	LG-V400
Power Supply	DC 3.8 V
Battery type	Li-ion Battery(Standard)
Frequency Range	5260 MHz - 5320 MHz (UNII2 Band)_20 MHz BW 5500 MHz - 5700 MHz (UNII2e Band)_20 MHz BW where)Not supported 5600 MHz - 5650 MHz
Max. RF Output Power	802.11a_UNII2 Band (8.04 dBm)/ 802.11n_20 MHz BW_UNII2 Band (7.24 dBm)/ 802.11n_40 MHz BW_UNII2 Band (7.81 dBm)
	802.11a_UNII2e Band (7.89 dBm)/ 802.11n_20 MHz BW_UNII2e Band (7.35 dBm)/ 802.11n_40 MHz BW_UNII2e Band (7.98 dBm)
Modulation Type	OFDM
Antenna Specification	Manufacturer: Ace Technology
	Antenna type: Planar Inverted F Antenna
	Peak Gain : 0.42 dBi (5260 MHz – 5320 MHz)
	-0.33 dBi (5500 MHz – 5700 MHz)

FCC PT.15.407 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr		
Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400	



This report has been prepared to demonstrate compliance with the requirements for Dynamic Frequency Selection(DFS) as stated in FCC 06-96. Testing was performed LG-V400 in accordance with the measurement procedure described in Appendix B of FCC 06-96. As of July 20, 2007 all devices operating in the UNII-II Band and /or the UNII-III Bands must comply with the DFS requirements. As the EUT does not have radar detection capability it was evaluated as a Client Only Device.

### 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."

FCC PT.15.407 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-1404-F013	April 09, 2014		ZNFV400	2703C-V400



## 6. SUMMARY OF TEST RESULTS

Band	Parameter	Measured	Limit	Result
	Channel Move Time	< 1 s	10 seconds	PASS
UNII2	Channel Closing Transmission Time	200 ms + 0 ms (aggregate)	200 ms + aggregate of 60 ms over remaining 10 second period	PASS
	Non-occupancy Period	Monitored > 30 minutes (No transmission occurred)	30 minutes	PASS
	Channel Move Time	<1s	10 seconds	PASS
UNII2e	Channel Closing Transmission Time	200 ms + 0 ms (aggregate)	200 ms + aggregate of 60 ms over remaining 10 second period	PASS
	Non-occupancy Period	Monitored > 30 minutes (No transmission occurred)	30 minutes	PASS

FCC PT.15.407 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400



## 7. DESCRIPTION OF DYNAMIC FREQUENCY SELECTION TEST

#### 7.1 APPLICABILITY

The following table from FCC 06-96 lists the applicable requirements for the DFS testing. The device evaluated in this report is considered a client device without radar detection capability.

	Operation Mode					
Requirement	Master	Client Without Radar	Client With Radar			
	Waster	Detection	Detection			
Non-Occupancy Period	Yes	Not required	Yes			
DFS Detection Threshold	Yes	Not required	Yes			
Channel Availability Check Time	Yes	Not required	Not required			
Uniform Spreading	Yes	Not required	Not required			
U-NII Detection Bandwidth	Yes	Not required	Yes			

Table 1-1. DFS Applicability

	Operation Mode				
Requirement	Master	Client Without Radar	Client With Radar		
	Waster	Detection	Detection		
DFS Detection Threshold	Yes	Not required	Yes		
Channel Closing Transmission Time	Yes	Yes	Yes		
Channel Move Time	Yes	Yes	Yes		
U-NII Detection Bandwidth	Yes	Not required	Yes		

Table 1-2. DFS Applicability During Normal Operation

#### 7.2 REQUIREMENTS

Per FCC 06-96 the following are the requirements for Client Devices:

- a) A Client Device will not transmit before having received appropriate control signals from a Master Device.
- b) A Client Device will stop all its transmissions whenever instructed by a Master Device to which it is associated and will meet the Channel Move Time and Channel Closing Transmission Time requirements.

The Client Device will not resume any transmissions until it has again received control signals from a Master Device.

c) If a Client Device is performing In-Service Monitoring and detects a Radar Waveform

FCC PT.15.407 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400
		Bago 7 of 24	·	



above the DFS Detection Threshold, it will inform the Master Device. This is equivalent to the Master Device detecting the Radar Waveform and d) through f) of section 5.1.1 apply.

d) Irrespective of Client Device or Master Device detection the Channel Move Time and Channel Closing Transmission Time requirements remain the same.

Channel Move Time and Channel Closing Transmission Time requirements are listed following table.

Parameter	Value			
Non-occupancy period	Minimum 30 minutes			
Channel Availability Check Time	60 seconds			
Channel Move Time	10 seconds			
	See Note 1.			
	200 milliseconds + an			
Channel Closing Transmission Time	Aggregate of 60 milliseconds over			
	Remaining 10 second period. See Notes			
	1 and 2.			
	Minimum 80 % of the U-NII			
U-NII Detection Bandwidth	99 % transmission			
	Power bandwidth. See Note 3.			
Note 1: The instant that the Channel Move Time and the Chann	el Closing Transmission Time begins is			
as follows:				
For the Short Pulse Radar Test Signals this instant is the end of the second seco	ne Burst.			
For the Frequency Hopping radar Test Signal, this instant is the end of the second secon	nd of the last radar			
Burst generated.				
For the Long Pulse Radar Test Signal this instant is the end of the	12 second period			
defining the Radar Waveform.				
Note 2: The Channel Closing Transmission Time is comprised	of 200 milliseconds starting at			
the begging of the Channel Move Time plus any additional intermitt	ent control signals required			
to facilitate a Channel move (an aggregate of 60 milliseconds) durin	ng the remainder of the 10			
second period. The aggregate duration of control signals will not count quiet periods in between				
transmissions.				
Note 3: During the U-NII Detection Bandwidth detection test, R	adar type 1 is used and for each			
frequency step the minimum percentage of detection is 90 percent.	Measurements are performed			
with no data traffic.				

Table 1-3: DFS Response requirements

FCC PT.15.407 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-1404-F013	April 09, 2014		ZNFV400	2703C-V400	



#### 7.3 DFS DETECTION THRESHOLD VALUES

The DFS detection thresholds are defined for Master devices and Client Devices with In-service monitoring. These detection thresholds are listed in the following table.

Maximum Transmit Power	Value (See Notes 1 and 2)				
≥ 200 milliwatt	-64 dBm				
< 200 milliwatt	-62 dBm				
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.					
Note 2: Throughout these test procedures an additional 1 dB has been added to the amp	blitude of				
the test transmission waveforms to account for variations in measurement equipment. This will					
ensure that the test signal is at or above the detection threshold level to trigger a DFS response.					

Table 1-4: Detection Thresholds for Master Devices and Client Devices with Radar Detection

#### 7.4 PARAMETERS OF DFS TEST SIGNALS

As the EUT is a Client Device with no Radar Detection only one type radar pulse is required for the testing. Radar Pulse type 1 was used in the evaluation of the Client device for the purpose of measuring the Channel Move Time and the Channel Closing Transmission Time. Table 3-5 lists the parameters for the Short Pulse Radar Waveforms. A plot of the Radar pulse Type 1 used for testing is included in Section 5.0 of this report.

Radar Type	Pulse Width (μsec)	PRI (µsec)	Number Of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
1	1	1428	18	60 %	30
2	1-5	150-230	23-29	60 %	30
3	6-10	200-500	16-18	60 %	30
4	11-20	200-500	12-16	60 %	30
Aggregate (Rada	ar Types 1-4)		80 %	120	

Table 1-5: Parameters for Short Pulse Radar Waveforms

FCC PT.15.407 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-1404-F013	April 09, 2014		ZNFV400	2703C-V400	



Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number Of Pulses Per Burst	Number Of Burst	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50 - 100	5 - 20	5 - 20	1 - 3	8 - 20	60 %	30
Table 1-6. Parameters for Long Pulse Radar Waveforms							

Radar Type	Pulse Width (μsec)	PRI (µsec)	Pulse Per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70 %	30
Table 1-7. Parameters for Long Pulse Radar Waveforms							

FCC PT.15.407 TEST REPORT		FCC & IC CERTIFICATION REPORT			
Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400	
				· ·	



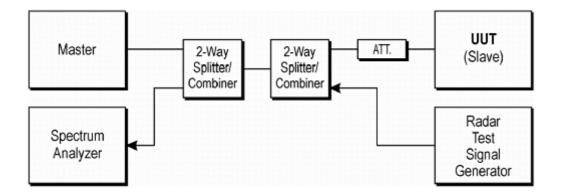
#### 7.5 TEST AND MEASUREMENT SYSTEM

#### **General Test Setup Procedure:**

- 1. Connect FCC approved Master AP to a network, via wired Ethernet, that allows connection to an FTP server.
- 2. Associate the EUT with the Master AP.
- 3. Launch the FTP application on the EUT.
- 4. Connect to the FTP server application to the FTP server hosting the file
- 5. Initiate an FTP download of the file from the host.
- 6. Monitor the channel loading during transfer.
- 7. Reduce the maximum allowed data rate for the Master AP, using the AP's GUI interface.
- 8. Repeat steps 5-7 until the channel loading is as close to 20 % as possible.
- 9. Record the data rate setting on the Master AP and the channel loading.
- 10. While the system is performing an FTP transfer using the settings form item 9 above, perform the Channel Closing Transmission Time and Channel Move Time Measurements as required by FCC 06-96 using a conducted test.

#### PROCEDURE

The FCC 06-96 describes a radiated test setup and a conducted test setup. A radiated test setup was used for this testing. Figure 3-1 shows the typical test setup. Each one channel selected between 5260 and 5320 MHz, 5500 and 5700 is chosen for the testing.



#### Figure 3-1. Conducted Test Setup for DFS

- 1. The radar pulse generator is setup to provide a pulse at the frequency that the Master and Client are operating. A Type 1 radar pulse with a 1 µs pulse width and a 1428 µs PRI is used for the testing.
- 2. The vector signal generator is adjusted to provide the radar burst (18 pulses) at a level of approximately -62 dBm at the antenna of the Master device.

FCC PT.15.407 TEST REPORT		FCC & IC CERTIFICATION REPORT	FCC & IC CERTIFICATION REPORT		
Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400	
		Page 1 1 of 24			



- 3. The Client Device (EUT) is set up per the diagram in Figure 3-1 and communications between the Master device and the Client is established.
- 4. The MPEG file specified by the FCC (*"6½ Magic Hours"*) is streamed from the "file computer" through the Master to the Slave Device and played in full motion video using Media Player Classic Ver.6.4.8.6 in order to properly load the network.
- 5. The real time spectrum analyzer is set to record about 15 sec window to any transmissions occurring up to and after 10 sec.
- 6. The system is again setup and the monitoring time is shortened in order to capture the Channel Closing Transmission Time. This time is measured to insure that the Client ceases transmission within 200 ms and the aggregate of emissions occurring after 200 ms up to 10 sec do not exceed 60 ms.

(Note: the channel may be different since the Master and Client have changed channels due to the detection of the initial radar pulse.)

7. After the initial radar burst the channel is monitored for 30 minutes to insure no transmissions or beacons occur. A second monitoring setup is used to verify that the Master and Client have both moved to different channels.

#### SYSTEM CALIBRATION

A-50-ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to a coaxial cable. The signal generator is set to CW mode. The amplitude of the signal generator is adjusted to yield a level of - 62 dBm as measured on the spectrum analyzer.

Without changing any of the instrument settings, the spectrum analyzer is reconnected to the common port of the spectrum analyzer combiner or divider.

The spectrum analyzer displays the level of the signal generator higher than the client TX level. Because we can not search the signal generator in the spectrum analyzer when the signal generator level is - 62 dBm. The spectrum analyzer will still indicate the level higher than the client TX level.

FCC PT.15.407 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-1404-F013	April 09, 2014		ZNFV400	2703C-V400	



The EUT operates over the 5260 MHz - 5320 MHz and 5500 MHz - 5700 MHz ranges.

The EUT is a slave device without radar detection.

The EUT antenna has a gain of 0.42 dBi in the 5260 MHz - 5320 MHz band and -0.33 dBi in the 5500 MHz- 5700 MHz band.

The highest power level within these bands in 8.46 dBm EIRP in the 5260 MHz - 5320 MHz band and 7.65 dBm EIRP in the 5500 MHz – 5700 MHz band.

The EUT one transmitter/receiver chain connected to a coaxial cable to perform conducted tests.

TPC is not required since the maximum EIRP is less than 500 mW.

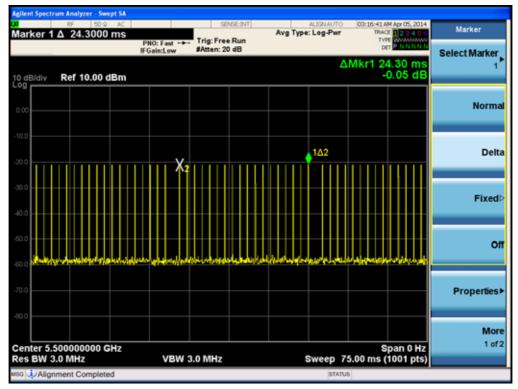
The EUT utilizes the 802.11a/n architecture. Two nominal channel bandwidth is implemented: 20 MHz, 40 MHz

FCC PT.15.407 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-1404-F013	April 09, 2014		ZNFV400	2703C-V400	



7.7 UNII2 TEST RESULT

#### RESULT PLOTS\_(UNII2 Band)



#### Type1 Radar Pulse Number

#### Marker Descriptions:

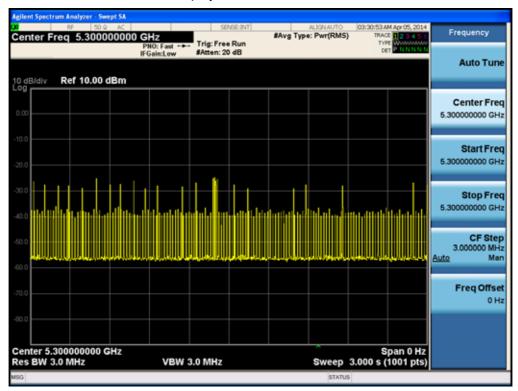
Number of Pulse Form M1R to M1 : 18

FCC PT.15.407 TEST REPORT		FCC & IC CERTIFICATION REPORT					
Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400			



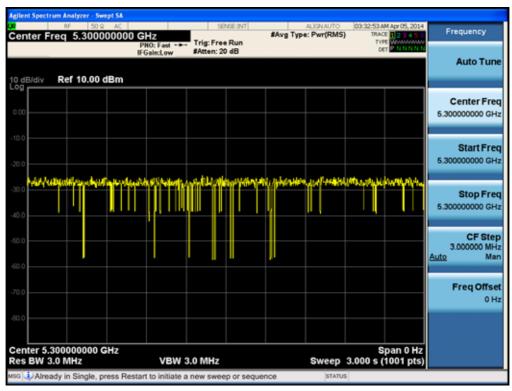
enter F	req 5.500	Swept SA 0 0 AC 000000	0 GHz PNO: Fast ++	. Trig: Free Run #Atten: 20 dB	Avg Ty	ALIGNAUTO pe: Log-Pwr	TRAC	M Apr 05, 2014	Frequency
dBídiv	Ref 10.0	) dBm	IFGain:Low	#Atten: 20 dB		Δ	Mkr1 1	425 ms 0.03 dB	Auto Tun
									Center Fre 5.50000000 GH
3.0 3.0				X <sub>2</sub>		1∆2			Start Fre 5.500000000 GH
1.0 1.0									Stop Fre 5.500000000 GH
	linterition	للرقطه	المدينة والمحاف	at, da Bradades	العالية والم	والمروا والمروا	4.4.1.1.1	a linastate	CF Ste 3.000000 Mi Auto Ma
	hine dan di bi	. And a	ultillan taila	<b>li</b> ssenti teta interi	alan wata awa da	an an Arthur	n prostan p	uditabelian i	Freq Offs 0 I
enter 5.3	500000000	GHz	VPW	2.0 MU-		Swaan 6	000 mo	ipan 0 Hz	
a bw J	.0 MHZ		VDW	3.0 MHz		Sweep 5		1001 pts)	

#### Time Display, Non WLAN Channel Traffic



FCC PT.15.407 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400
		Dago 1 F of 24		· · · · · · · · · · · · · · · · · · ·





#### Time Display, WLAN Channel Traffic (Streaming Video)

Test Report No. Date of Issue: EUT Type: 2.4/5GHz BT/WiFi Tablet FCC ID: IC:   HCT-R-1404-F013 April 09, 2014 EUT Type: 2.4/5GHz BT/WiFi Tablet ZNEV400 2703C-V400	FCC PT.15.407 TEST REPORT		FCC & IC CERTIFICATION REPORT			
	Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet		IC: 2703C-V400	



nter Freg	50 9 AC	GH <sub>7</sub>	SENSE:INT	#Avg Type: Pwr(RMS)	03:34:09 AM Apr 05, 2014 TRACE 12 34 5 6	Frequency
antor rioq		PNO: Fast +++ IFGain:Low	Trig: Free Run #Atten: 20 dB		DET PNNNN	
dB/div <b>Ref</b>	10.00 dBm				∆Mkr1 10.00 s -36.73 dB	Auto Tun
						Center Fre 5.300000000 GH
° X2						Start Fre 5.30000000 GH
						Stop Fre 5.300000000 GH
	a.a.m.e.d., santhinnet	روب حلور او زانعو مرو	e forestation of the states of the	162	4m,98mlAdapa4majarBally	CF Ste 3.000000 MH Auto Ma
0						Freq Offs 0 F
enter 5.3000		VBW 3	0 MHz	Swaan	Span 0 Hz 15.00 s (1001 pts)	

#### Channel Move Time (< 10 sec)

#### Marker Descriptions:

Time from M1R to M1 : 10 s

FCC PT.15.407 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-1404-F013	April 09, 2014		ZNFV400	2703C-V400		



enter Freq 5.300000	DOO GHz PNO: Fast +++ IFGain:Low	SENSE 2NT Trig: Free Run #Atten: 20 dB	#Avg Type: Pwr(RMS	03:35:03 AM Apr 05, 2014 ) TRACE <b>1 2 3 4 5 6</b> TYPE DET <b>P NNNN N</b>	Frequency
odBidiv Ref 10.00 dBn			۵	Mkr1 200.0 ms -36.60 dB	Auto Tun
.00				*	Center Fre 5.300000000 GH
0.0 0.0 ~~~^	X2				Start Fre 5.30000000 GH
					Stop Fre 5.300000000 GH
0.0	1Δ2	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	www.www		CF Ste 3.000000 MH Auto Ma
0.0					Freq Offs 0 F
enter 5.300000000 GHz es BW 3.0 MHz		3.0 MHz	Susan	Span 0 Hz 3.000 s (1001 pts)	

#### Channel Closing Transmission Time, Aggregate Time After 200 ms

#### Calculation of Aggregate Time:

Pulse width = 0

Number of pulses occurring after 200 ms from end of burst = 0

Aggregate time from 200 ms to 10 sec after burst = 0 ms

Aggregate Time: 0 ms

Limit: 60 ms

FCC PT.15.407 TEST REPORT		FCC & IC CERTIFICATION REPORT				
Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400		



Non-occupancy Period – Monitoring live real time spectrum – Elapse time 30 minutes

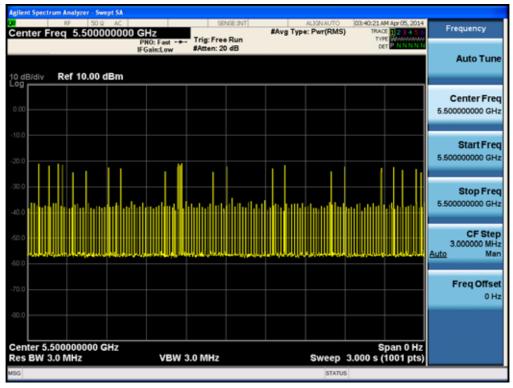
NF 50.0 AC	1.9000		07:03:00 PM Apr 08, 2014	Frequency
	FGain:Low Atten: 10 d		DATE NUMBER	
0 dBildiv Ref 0.00 dBm			ΔMkr1 1.800 ks -49.41 dB	Auto Tune
X2				Center Free 5.300000000 GH
10 p				Start Free 5.30000000 GH
40.0 50.0				Stop Free 5.30000000 GH
	an mar ann an an Ar an Ar an Ann an Ar	an a	162	CF Stej 3.000000 MH <u>Auto</u> Ma
20.0				Freq Offse 0 H
Center 5.300000000 GHz Res BW 3.0 MHz	VBW 3.0 MHz	Sweep	Span 0 Hz 2.000 ks (1001 pts)	

FCC PT.15.407 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400
		Daga 1.0 of 24		



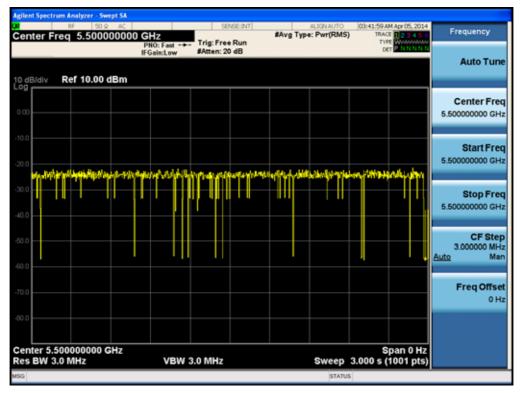
#### 7.8 UNII2e TEST RESULT

#### RESULT PLOTS\_(UNII2e Band)



#### Time Display, Non WLAN Channel Traffic

Time Display, WLAN Channel Traffic (Streaming Video)



Test Report No. Date of Issue: EUT Type: 2.4/5GHz BT/WiFi Tablet FCC ID: IC:   HCT-R-1404-F013 April 09 2014 EUT Type: 2.4/5GHz BT/WiFi Tablet ZNEV400 2703C-V400	FCC PT.15.407 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
	Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400



enter Freq 5.500000000	PNO: Fast Trig: Free Run	#Avg Type: Pwr(RM5)	02:41:54 PM Apr 04, 2014	Frequency
dB/div Ref 0.00 dBm	IFGain:Low #Atten: 10 dB		ΔMkr1 10.00 s -54.51 dB	Auto Tune
×2			*	Center Fre 5.50000000 GH
10 <b>windule</b>				Start Fre 5.50000000 GH
20				Stop Fre 5.50000000 GH
10 Inclu Nation Patients and	1	102		CF Step 3.000000 MH Auto Ma
20				Freq Offse 0 H
enter 5.500000000 GHz es BW 3.0 MHz	VBW 3.0 MHz	Sweep	Span 0 Hz 15.00 s (1001 pts)	

#### Channel Move Time (< 10 sec)

#### Marker Descriptions:

Time from M1R to M1 : 10 s

FCC PT.15.407 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-1404-F013	April 09, 2014		ZNFV400	2703C-V400



T PRO SO Q AC SERVER DI SE	ALOVATO 02:42:10 PM Apr 04, 2014 #Avg Type: Pwr(RMS) TRACE 12:14 type tet Defense	Frequency
o dB/div Ref 0.00 dBm	∆Mkr1 200.0 ms -54.36 dB	Auto Tune
0.0 X2	*	Center Fre 5.500000000 GH
29		Start Fre 5.50000000 GH
an		Stop Fre 5.50000000 GH
ο.» 	๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛	CF Ste 3.000000 MH Auto Ma
o.0		Freq Offse 0 H
enter 5.500000000 GHz es BW 3.0 MHz VBW 3.0 MHz	Span 0 Hz Sweep 3.000 s (1001 pts)	

#### Channel Closing Transmission Time, Aggregate Time After 200 ms

#### Calculation of Aggregate Time:

Pulse width = 0 ms

Number of pulses occurring after 200 ms from end of burst = 0

Aggregate time from 200 ms to 10 sec after burst = 0 ms

Aggregate Time: 0 ms

Limit: 60 ms

FCC PT.15.407 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400



Non-occupancy Period – Monitoring live real time spectrum – Elapse time 30 minutes

NF 50.0 AC	SENGLINT	#Avg Type: RMS	06:24:09 PM Apr 08, 2014	Frequency
	: Fast Trig: Free Run n:Low Atten: 10 dB	wayg type: http://	TYPE WANNER TO THE TYPE	
dB/div Ref 0.00 dBm		4	Mkr1 1.800 ks -47.57 dB	Auto Tune
λ2				Center Free 5.500000000 GH
0.0 MM				Start Free 5.50000000 GH
0.0				Stop Free 5.500000000 GH
00	and the second		1∆2_	CF Stej 3.000000 MH <u>Auto</u> Ma
£ 0				Freq Offse 0 H
Center 5.500000000 GHz	VBW 3.0 MHz	Sweep 2	Span 0 Hz 2.000 ks (1001 pts)	

Test Report No. Date of Issue: EUT Type: 2.4/5GHz BT/WiFi Tablet FCC ID: IC:   HCT_R_1404_F013 April 09, 2014 EUT Type: 2.4/5GHz BT/WiFi Tablet ZNEV/400 2703C-V/400	FCC PT.15.407 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
	Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400



### 8. LIST OF TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Interval	Calibration Due	Serial No.
Cince Custom	AIR-AP1242AG-K-K9 / Wireless AP	N/A	N/A	FCW1323U01K
Cisco System	(Master Device)	N/A	N/A	FCC ID: LDK102056
	MRLBB/1002 / Wireless AP			CN17DLM0JB
HP	(Master Device)	N/A	N/A	FCC ID: RTP-
				MRLBB1003S
Rohde & Schwarz	SMBV 100A/ Signal Generator	Annual	10/28/2014	255727
Agilent	N9020A/ SIGNAL ANALYZER	Annual	05/14/2014	MY51110063
Rohde & Schwarz	FSP / Spectrum Analyzer	Annual	01/24/2015	839117/011
Agilent	N1911A/Power Meter	Annual	01/24/2015	MY45100523
Agilent	N1921A /POWER SENSOR	Annual	07/11/2014	MY45241059
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
Agilent	8493C / Attenuator(10 dB)	Annual	07/24/2014	76649
CERNEX	CDP06400104R/Power Divider-4way	Annual	07/31/2014	14696

FCC PT.15.407 TEST REPORT		FCC & IC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCT-R-1404-F013	Date of Issue: April 09, 2014	EUT Type: 2.4/5GHz BT/WiFi Tablet	FCC ID: ZNFV400	IC: 2703C-V400
			-0	