

## HCT CO., LTD.

## CERTIFICATE OF COMPLIANCE

#### **FCC Certification**

Applicant Name: LG Electronics MobileComm U.S.A., Inc. Address: 1000 Sylvan Avenue, Englewood Cliffs NJ 07632		Date of Issue: June 05, 2012 Test Site/Location: HCT CO., LTD., 105-1, Jangam-ri, Majang-Myeon Icheon-si, Kyunggi-Do, Korea
		Report No.: HCTR1206FR03 HCT FRN: 0005866421
FCC ID	: ZNFE610V	
APPLICANT	: LG Electronic	s MobileComm U.S.A., Inc.
FCC Model(s):	LG-E610v	
Additional FCC Model(s):	LG-E610V, E610v, E6	10V, LGE610v, LGE610V
EUT Type:	Cellular/PCS GSM/GP	PRS Phone with Bluetooth/WLAN/NFC
Max. RF Output Power:	Wi-Fi 802.11b(24.02 d / Wi-Fi 802.11n (21.63	IBm) / Wi-Fi 802.11g (23.34 dBm) 3 dBm)
Frequency Range:	2412 MHz -2462 MHz	

Modulation type CCK/DSSS/OFDM

 FCC Classification:
 Digital Transmission System(DTS)

 FCC Rule Part(s):
 Part 15.247

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this

equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

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

Seok

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

Approved by : Sang Jun Lee Manager of RF Team

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FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No. HCTR1206FR03	Date of Issue: June 05, 2012	EUT Type: Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFE610V
1011012001100	JUNE 00, 2016	Page 1 of 119	



# **Version**

05, 2012	- First Approval Report
	05, 2012

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V	
Page 9 of 110				



## **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	7
7. SUMMARY TEST OF RESULTS	8
8. TEST RESULT	9
8.1 6dB BANDWIDTH (802.11b/g/n)	9
8.2 OUTPUT POWER (802.11b/g/n)1	6
8.3 POWER SPECTRAL DENSITY (802.11b/g/n)8	3
8.4 OUT OF BAND EMISSIONS AT THE BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS $9$	0
8.5 RADIATED MEASUREMENT1 0	5
8.5.1 RADIATED SPURIOUS EMISSIONS1 0	-
8.5.2 RADIATED RESTRICTED BAND EDGES	-
8.6 POWERLINE CONDUCTED EMISSIONS	
9. LIST OF TEST EQUIPMENT 1 1	9

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V	
Page 3 of 119				



Applicant:	LG Electronics MobileComm U.S.A., Inc.
Address:	1000 Sylvan Avenue, Englewood Cliffs NJ 07632
FCC ID:	ZNFE610V
EUT Type: Model name(s):	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC LG-E610v
Additional Model name(s):	LG-E610V, E610v, E610V, LGE610v, LGE610V
Date(s) of Tests:	May 24, 2012 ~ May 31, 2012
Contact Person:	Name: Cheol Goo Lee Phone #: +82-2-2033-1111
Place of Tests:	HCT Co., Ltd. 105-1, Jangam-ri , Majang-Myeon, Icheon-si, Kyunggi-Do, 467-811, KOREA. (IC Recognition No. : 5944A-3)

## 2. EUT DESCRIPTION

ЕUT Туре	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC			
FCC Model Name	LG-E610v	LG-E610v		
Additional FCC Model Name	LG-E610V,	E610v, E610V, LGE610v, LGE610V		
Power Supply	DC 3.7 V			
Battery type	Li-ion Batte	ry(Standard)		
Frequency Range	TX: 2412 MHz ~ 2462 MHz			
	RX: 2412 MHz ~ 2462 MHz			
Max. RF Output Power	Peak         Wi-Fi 802.11b(24.02 dBm) / Wi-Fi 802.11g (23.34 dBm)           / Wi-Fi 802.11n (21.63 dBm)			
	Average         Wi-Fi 802.11b(17.40 dBm) / Wi-Fi 802.11g (13.83 dBm) / Wi-Fi 802.11n (12.46 dBm)			
Modulation Type	DSSS/CCK(802.11b), OFDM(802.11g, 802.11n)			
Antenna Specification	Manufacturer: Mobitech			
	Antenna type: Built-in Antenna			
	Peak Gain :	Peak Gain : -1.15 dBi		

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 4 of 119	



## **3. TEST METHODOLOGY**

The measurement procedure described in the American National Standard for Testing Unlicensed Wireless Devices(ANSI C63.10-2009) and FCC KDB 558074 D01 DTS Meas Guidance V01 dated January 18, 2012 entitled "Guidance for Performing Compliance Measurements on Digital Transmission Systems(DTS) Operating Under §15.247" were used in the measurement.

## **3.1 EUT CONFIGURATION**

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

## **3.2 EUT EXERCISE**

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

## **3.3 GENERAL TEST PROCEDURES**

## **Conducted Emissions**

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

## **Radiated Emissions**

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

## **3.4 DESCRIPTION OF TEST MODES**

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

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V	
Page 5 of 110				



## 4. INSTRUMENT CALIBRATION

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

## 5. FACILITIES AND ACCREDITATIONS

## **5.1 FACILITIES**

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

## **5.2 EQUIPMENT**

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

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

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V	
Page 6 of 110				



## According to FCC 47 CFR §15.203:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

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

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

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V	
Dego 7 of 110				



## 7. SUMMARY TEST OF RESULTS

Test Description	FCC Part Section(s) Test Limit		Test Condition	Test Result
6 dB Bandwidth	§15.247(a)(2)	> 500 kHz		PASS
Conducted Maximum Peak Output Power	§15.247(b)(3)	< 1 Watt		PASS
Power Spectral Density	§15.247(e)	< 8 dBm / 3 kHz Band	CONDUCTED	PASS
Band Edge(Out of Band Emissions)	§15.247(d)	Conducted < 20 dBc		PASS
AC Power line Conducted Emissions	§15.207	cf. Section 8.6		PASS
Radiated Spurious Emissions	§15.205, 15.209	cf. Section 8.5.1	RADIATED	PASS
Radiated Restricted Band Edge	§15.247(d), 15.205, 15.209	cf. Section 8.5.2	RADIATED	PASS

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
•		Page 8 of 119	



## 8. TEST RESULT

## 8.1 6dB BANDWIDTH (802.11b/g/n)

## 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

ı.

The transmitter output is connected to the Spectrum Analyzer. The Spectrum Analyzer is set to RBW = 1 – 5 % of the EBW VBW = 3 \* RBW SPAN = 40 MHz Detector = Peak Trace mode = max hold Sweep = auto couple

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT			
Test Report No.	Date of Issue:	EUT Type:	FCC ID:		
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V		



802.11b Mo	ode	Measured Bandwidth	Minimum Bandwidth		
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail	
2412	1	8.792	0.500	Pass	
2437	6	8.465	0.500	Pass	
2462	11	8.397	0.500	Pass	

#### Conducted 6dB Bandwidth Measurements for 802.11b

## Conducted 6dB Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
2412	1	16.260	0.500	Pass
2437	6	16.390	0.500	Pass
2462	11	16.310	0.500	Pass

## Conducted 6dB Bandwidth Measurements for 802.11n

802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
2412	1	17.380	0.500	Pass
2437	6	17.280	0.500	Pass
2462	11	17.290	0.500	Pass

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr		
Test Report No.	Date of Issue:	EUT Type:	FCC ID:		
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V		



## 6dB Bandwidth plot (802.11b-CH 1)



#### 6dB Bandwidth plot (802.11b-CH 6)



FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012 Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC		ZNFE610V
		Page 1 1 of 119	



## 6dB Bandwidth plot (802.11b-CH 11)



## 6dB Bandwidth plot (802.11g-CH 1)



FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:		FCC ID:
HCTR1206FR03	June 05, 2012 Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC			ZNFE610V
		Page 1 2 of 119		



#### m Analyzer - Occupied 8W 08:14:51 PM May 29, 2012 Radio Std: None Sweep/Control Center Freq: 2.437000000 GHz Trig: Free Run Avg[Hold: 1/1 #Atten: 20 dB Sweep Time #FGain:Low Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 0 dB/div Log Sweep Setup> mehres forthere Pause by motor manda wer Center 2.437 GHz #Res BW 430 kHz Span 40 MHz Sweep 1 ms #VBW 1.3 MHz **Occupied Bandwidth Total Power** 22.2 dBm Gate, 16.730 MHz [Off, LO] -29.351 kHz **Transmit Freq Error OBW Power** 99.00 % Points -6.00 dB x dB Bandwidth 16.39 MHz x dB 1001 STATUS

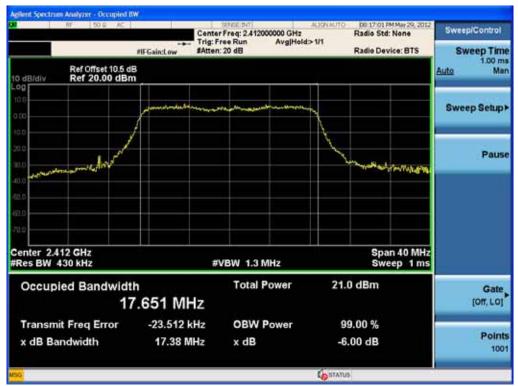
## 6dB Bandwidth plot (802.11g-CH 6)





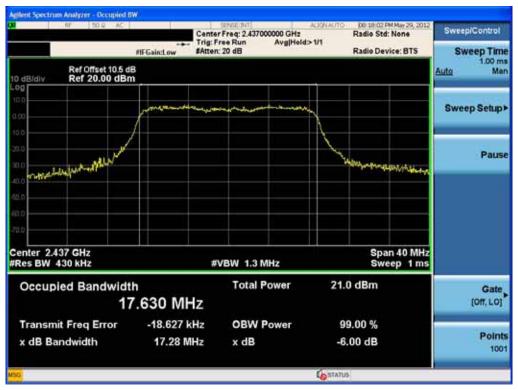
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
HCTR1206FR03	June 05, 2012 Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC		ZNFE610V	
		Page 1 3 of 119		





## 6dB Bandwidth plot (802.11n-CH 1)

## 6dB Bandwidth plot (802.11n-CH 6)



FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
HCTR1206FR03	June 05, 2012	ZNFE610V		
		Page 1 4 of 119		



RF 50 9	Trig:	er Freq: 2.462000000 GHz Free Run Avg Hold n: 20 dB	Radio Sto		Sweep/Control Sweep Time
to dB/div Ref 20.00					1.00 ms Auto Man
10.0 0.00	- annoration anno	ىلەرچەر ئارىكىلىي. مەرچەر ئارىكىلىي بىلىلىنى تەر	7		Sweep Setup)
2020 37.0 40.0 Maghter Magheriche Shiri	/		mound	himburte	Pause
42.0 62.0 					
Center 2.462 GHz #Res BW 430 kHz		#VBW 1.3 MHz	Spa Sw	an 40 MHz eep 1 ms	
Occupied Band	width 17.633 MHz	Total Power	20.7 dBm		Gate [Off, LO]
Transmit Freq Erro x dB Bandwidth	or -87.309 kHz 17.29 MHz	OBW Power x dB	99.00 % -6.00 dB		Points 1001
00			<b>G</b> STATUS		

## 6dB Bandwidth plot (802.11n-CH 11)

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
HCTR1206FR03	June 05, 2012	ZNFE610V		
Pege 1.5 of 110				



## 8.2 OUTPUT POWER (802.11b/g/n)

## 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. We tested according to KDB 558074(issued 1/18/2012).

This EUT TX condition is actual operating mode(not near 100 % duty cycle) by WLAN test program.

The Spectrum Analyzer is set to

Peak Power( Measurement Procedure PK2 in KDB 558074)

RBW = 1 MHz

**...** 

VBW = 3 MHz

SPAN = 5 - 30 % greater than the EBW

Detector Mode = Peak

Integrated bandwidth = EBW

Sweep = auto couple

Trace Mode = max hold

• Average Power(Measurement Procedure AVG2 in KDB 558074)

RBW = 1 MHz

VBW = 3 MHz

SPAN = 5 - 30 % greater than the EBW

Detector Mode = power averaging(RMS) or sample

Integrated bandwidth = EBW

Sweep = auto couple

Sweep Point = 1001

Trace average at least 100 traces in power averaging(RMS) mode

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
HCTR1206FR03	June 05, 2012	ZNFE610V		
Page 1.6 of 110				



#### Sample Calculation

Output Power = Reading Value + ATT loss + Cable loss(1 ea)

= 10 dBm + 10 dB + 0.8 dB = 20.8 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. Actual value of loss for the attenuator and cable combination is 10.49 dB at 2412 MHz and is 10.52 dB at 2462 MHz. So, the offset is 10.5 dB. And the offset gab in the 2.4 GHz range do not affect the conducted output power final result.

#### TEST RESULTS-Peak

#### Conducted Output Power Measurements (802.11b Mode)

802.11b Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		1 Mbps	20.30	30
2412	1	2 Mbps	20.67	30
2412	I I	5.5 Mbps	21.98	30
		11 Mbps	23.59	30
		1 Mbps	20.56	30
0.407	0	2 Mbps	20.67	30
2437	6	5.5 Mbps	22.33	30
		11 Mbps	24.02	30
		1 Mbps	20.67	30
2462	44	2 Mbps	20.80	30
	11	5.5 Mbps	22.25	30
		11 Mbps	24.01	30

FCC PT.15.247 TEST REPORT		www.hct.co.kr			
Test Report No.	Date of Issue:	EUT Type:	FCC ID:		
HCTR1206FR03	June 05, 2012	ZNFE610V			
	Page 1 7 of 119				



## Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		6 Mbps	22.06	30
		9 Mbps	22.09	(dBm)
		12 Mbps	22.46	30
0.440		18 Mbps	22.25	(dBm) 30 30 30 30 30 30 30 30 30 30
2412	1	24 Mbps	22.76	
		36 Mbps	22.81	30
		48 Mbps	22.75	30
		54 Mbps	22.89	30
		6 Mbps	22.44	30
		9 Mbps	22.43	30
		12 Mbps	22.73	30
0.407	0	18 Mbps	22.91	30
2437	6	24 Mbps	23.14	30
		36 Mbps	23.03	30          30
		48 Mbps	23.26	
		54 Mbps	23.34	30
		6 Mbps	22.10	30
		9 Mbps	22.19	30
		12 Mbps	22.52	30
2462	11	18 Mbps	22.47	30
	11	24 Mbps	22.91	30
		36 Mbps	22.90	30
		48 Mbps	22.96	30
		54 Mbps	22.69	30

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	ZNFE610V	
		Page 1 8 of 119	



## Conducted Output Power Measurements (802.11n Mode)

802.11n Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		6.5 Mbps	21.57	30
		13 Mbps	21.30	30
		19.5 Mbps	21.42	30
0440		26 Mbps	21.63	30
2412	1	39 Mbps	21.59	(dBm) 30 30 30 30
		52 Mbps	21.16	
		58.5 Mbps	21.27	
		65 Mbps	21.08	
		6.5 Mbps	20.85	30
		13 Mbps	20.90	30 30
		19.5 Mbps	21.03	30
0.407	6	26 Mbps	21.47	30
2437	6	39 Mbps	21.30	30         30
		52 Mbps	21.28	30
		58.5 Mbps	21.24	30         30
		65 Mbps	21.36	30
		6.5 Mbps	20.74	30
		13 Mbps	21.01	30
		19.5 Mbps	20.83	30
2462	11	26 Mbps	21.21	30
2462	11	39 Mbps	21.14	30
		52 Mbps	21.20	30
		58.5 Mbps	21.12	30
		65 Mbps	21.04	30

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V	
Page 1.0 of 110				



802.11b Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		1 Mbps	17.28	30
2412	4	2 Mbps	17.03	30
2412	1	5.5 Mbps	17.40	30
		11 Mbps	17.20	30
		1 Mbps	17.05	30
2437	C	2 Mbps	16.91	30
2437	6	5.5 Mbps	17.21	30
		11 Mbps	17.12	30
		1 Mbps	17.07	30
2462	44	2 Mbps	16.87	30
	11	5.5 Mbps	17.32	30
		11 Mbps	16.94	30

## Conducted Output Power Measurements (802.11b Mode)

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
HCTR1206FR03	June 05, 2012	ZNFE610V		



## Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		6 Mbps	13.00	30
		9 Mbps	12.98	30
		12 Mbps	13.41	(dBm)         30 </td
0440	4	18 Mbps	13.20	
2412	1	24 Mbps	13.08	
		36 Mbps	12.80	
		48 Mbps	12.42	
		54 Mbps	12.39	30
		6 Mbps	13.83	30
		9 Mbps	13.71	30
		12 Mbps	13.62	30
0407	6	18 Mbps	13.51	30 30 30
2437	6	24 Mbps	13.30	
		36 Mbps	12.31	30
		48 Mbps	12.68	30 30
		54 Mbps	12.02	30
		6 Mbps	13.68	30
		9 Mbps	13.71	30
		12 Mbps	13.60	30
0.400	11	18 Mbps	13.40	30
2462	11	24 Mbps	13.32	30
		36 Mbps	12.94	30
		48 Mbps	12.50	30
		54 Mbps	12.27	30

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	ZNFE610V	
		Page 2 1 of 119	



## Conducted Output Power Measurements (802.11n Mode)

802.11n Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		6.5 Mbps	11.73	30
		13 Mbps	12.01	30
		19.5 Mbps	11.81	30
0440	4	26 Mbps	11.69	30
2412	1	39 Mbps	11.04	30
		52 Mbps	11.12	30
		58.5 Mbps	10.61	30
		65 Mbps	11.03	30
		6.5 Mbps	12.45	30
	6	13 Mbps	12.26	30
		19.5 Mbps	12.09	30
0407		26 Mbps	11.90	30
2437		39 Mbps	11.64	30
		52 Mbps	11.35	30
		58.5 Mbps	11.20	30
		65 Mbps	11.08	30
		6.5 Mbps	12.46	30
		13 Mbps	12.22	30
		19.5 Mbps	12.10	30
2462	14	26 Mbps	11.81	30
2462	11	39 Mbps	11.63	30
		52 Mbps	11.22	30
		58.5 Mbps	11.15	30
		65 Mbps	11.07	30

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 2 2 of 119	



#### RESULT PLOTS-Peak





#### Conducted Output Power (802.11b-CH 1) 2Mbps



FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr		
Test Report No.	Date of Issue:	EUT Type:	FCC ID:		
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V		
Page 2.3 of 110					



#### m Analyzer - Channel Po D8:24 38 PM May 29, 2012 Radio Std: None Sweep/Control Center Freq: 2.412000000 GHz Trig: Free Run Avg[Hold: 1/1 #Atten: 20 dB Sweep Time #IFGain:Low Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 10 dB/div Sweep Setup> Pause Center 2.412 GHz #Res BW 1 MHz Span 16.55 MHz Sweep 1 ms #VBW 3 MHz Gate, **Channel Power Power Spectral Density** [Off, LO] 21.98 dBm / 12.73 MHz -49.07 dBm /Hz Points 1001 STATUS

## Conducted Output Power (802.11b-CH 1) 5.5Mbps

## Conducted Output Power (802.11b-CH 1) 11Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:		FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC		ZNFE610V
		Page 2 4 of 119		



#### m Analyzer - Channel Pow 08:27-42 PM May 29, 2012 Radio Std: None Sweep/Control Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 1/1 #Atten: 20 dB Sweep Time #IFGain:Low Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 10 dB/div Sweep Setup> Pause Center 2.437 GHz #Res BW 1 MHz Span 16.49 MHz Sweep 1 ms #VBW 3 MHz Gate, **Channel Power Power Spectral Density** [Off, LO] 20.56 dBm / 12.68 MHz -50.47 dBm /Hz Points 1001 Costatus.

## Conducted Output Power (802.11b-CH 6) 1Mbps

## Conducted Output Power (802.11b-CH 6) 2Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 2 5 of 119	



#### n Analyzer - Channel Ps D0:29:11 PM May 29, 2012 Radio Std: None Sweep/Control Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 1/1 #Atten: 20 dB Sweep Time #IFGain:Low Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 10 dB/div Sweep Setup> Pause Center 2.437 GHz #Res BW 1 MHz Span 16.49 MHz Sweep 1 ms #VBW 3 MHz Gate, **Channel Power Power Spectral Density** [Off, LO] 22.33 dBm / 12.68 MHz -48.70 dBm /Hz Points 1001 STATUS

## Conducted Output Power (802.11b-CH 6) 5.5Mbps

## Conducted Output Power (802.11b-CH 6) 11Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 2 6 of 119	



#### m Analyzer - Channel Po DE 30-50 PM May 29, 2012 Radio Std: None Sweep/Control Center Freq: 2.462000000 GHz Trig: Free Run Avg/Hold: 1/1 #Atten: 20 dB Sweep Time #IFGain:Low Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 10 dB/div Sweep Setup> Pause Center 2.462 GHz #Res BW 1 MHz Span 16.61 MHz Sweep 1 ms #VBW 3 MHz Gate, **Channel Power Power Spectral Density** [Off, LO] 20.67 dBm / 12.78 MHz -50.39 dBm /Hz Points 1001 STATUS

## Conducted Output Power (802.11b-CH 11) 1Mbps

## Conducted Output Power (802.11b-CH 11) 2Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 2 7 of 119	



#### Analyzer - Channel Ps DB-32-29 PM May 29, 2012 Radio Std: None Sweep/Control Center Freq: 2.462000000 GHz Trig: Free Run Avg[Hold: 1/1 #Atten: 20 dB Sweep Time #IFGain:Low Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 10 dB/div Sweep Setup> Pause Center 2.462 GHz #Res BW 1 MHz Span 16.61 MHz Sweep 1 ms #VBW 3 MHz Gate, **Channel Power Power Spectral Density** [Off, LO] 22.25 dBm / 12.78 MHz -48.81 dBm /Hz Points 1001 STATUS

## Conducted Output Power (802.11b-CH 11) 5.5Mbps

## Conducted Output Power (802.11b-CH 11) 11Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 2 8 of 119	





#### Conducted Output Power (802.11g-CH 1) 6Mbps

## Conducted Output Power (802.11g-CH 1) 9Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 2 9 of 119	





#### Conducted Output Power (802.11g-CH 1) 12Mbps

## Conducted Output Power (802.11g-CH 1) 18Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 3 0 of 119	





#### Conducted Output Power (802.11g-CH 1) 24Mbps

## Conducted Output Power (802.11g-CH 1) 36Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 3 1 of 119	





#### Conducted Output Power (802.11g-CH 1) 48Mbps

## Conducted Output Power (802.11g-CH 1) 54Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 3 2 of 119	



#### dyzer - Char net Po 09:01:52 PM May 29, 2012 Radio Std: None Sweep/Control Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 1/1 #Atten: 20 dB Sweep Time #IFGain:Low Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 0 dB/div Sweep Setup> Pause Center 2.437 GHz #Res BW 1 MHz Span 21.75 MHz Sweep 1 ms #VBW 3 MHz Gate, **Channel Power Power Spectral Density** [Off, LO] 22.44 dBm / 16.73 MHz -49.80 dBm /Hz Points 1001 STATUS

## Conducted Output Power (802.11g-CH 6) 6Mbps

## Conducted Output Power (802.11g-CH 6) 9Mbps



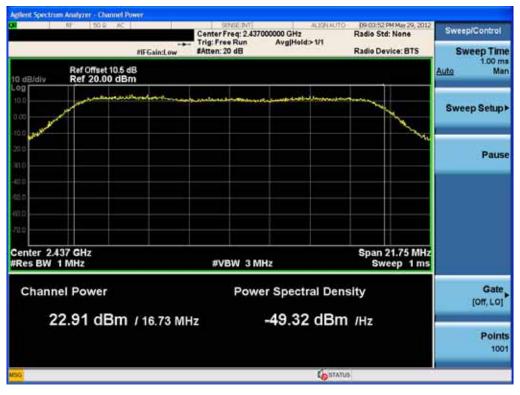
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr		
Test Report No.	Date of Issue:	EUT Type:	FCC ID:		
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V		
Page 3 3 of 119					





#### Conducted Output Power (802.11g-CH 6) 12Mbps

## Conducted Output Power (802.11g-CH 6) 18Mbps



FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 3 4 of 119	





#### Conducted Output Power (802.11g-CH 6) 24Mbps

## Conducted Output Power (802.11g-CH 6) 36Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			. <u>kr</u>	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:		
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V		
Page 3 5 of 119					





#### Conducted Output Power (802.11g-CH 6) 48Mbps

## Conducted Output Power (802.11g-CH 6) 54Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 3 6 of 119	



#### n Analyzer - Channel Ps 09:07:32 PM May 29, 2012 Radio Std: None Sweep/Control Center Freq: 2.462000000 GHz Trig: Free Run Avg[Hold: 1/1 #Atten: 20 dB Sweep Time #IFGain:Low Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 0 dB/div Sweep Setup> Pause Center 2.462 GHz #Res BW 1 MHz Span 21.77 MHz Sweep 1 ms #VBW 3 MHz Gate, **Channel Power Power Spectral Density** [Off, LO] 22.10 dBm / 16.75 MHz -50.13 dBm /Hz Points 1001 STATUS

# Conducted Output Power (802.11g-CH 11) 6Mbps

## Conducted Output Power (802.11g-CH 11) 9Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:		FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC		ZNFE610V
		Page 3 7 of 119		



#### Analyzer - Channel Ps 09:11:39 PM May 29, 2012 Radio Std: None Sweep/Control Center Freq: 2.462000000 GHz Trig: Free Run Avg[Hold: 1/1 #Atten: 20 dB Sweep Time #IFGain:Low Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 0 dB/div Sweep Setup> Pause Center 2.462 GHz #Res BW 1 MHz Span 21.77 MHz Sweep 1 ms #VBW 3 MHz Gate, **Channel Power Power Spectral Density** [Off, LO] 22.52 dBm / 16.75 MHz -49.72 dBm /Hz Points 1001 STATUS

# Conducted Output Power (802.11g-CH 11) 12Mbps

## Conducted Output Power (802.11g-CH 11) 18Mbps



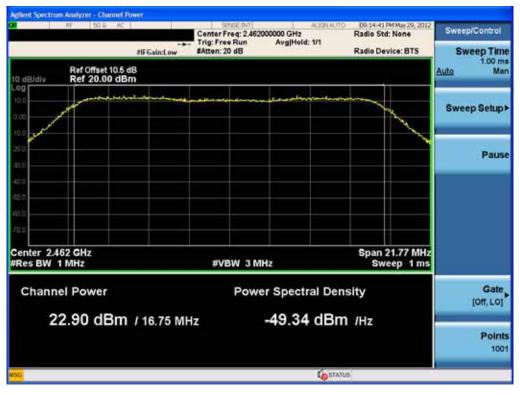
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 3 8 of 119	



#### Analyzer - Channel Ps 09:13:49 PM May 29, 2012 Radio Std: None Sweep/Control Center Freq: 2.462000000 GHz Trig: Free Run Avg[Hold: 1/1 #Atten: 20 dB Sweep Time #IFGain:Low Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 0 dB/div Sweep Setup> Pause Center 2.462 GHz #Res BW 1 MHz Span 21.77 MHz Sweep 1 ms #VBW 3 MHz Gate, **Channel Power Power Spectral Density** [Off, LO] 22.91 dBm / 16.75 MHz -49.33 dBm /Hz Points 1001 STATUS

# Conducted Output Power (802.11g-CH 11) 24Mbps

## Conducted Output Power (802.11g-CH 11) 36Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:		FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC		ZNFE610V
		Page 3 9 of 119		



#### Analyzer - Channel Ps 09:15:29 PM May 29, 2012 Radio Std: None Sweep/Control Center Freq: 2.462000000 GHz Trig: Free Run Avg[Hold: 1/1 #Atten: 20 dB Sweep Time #IFGain:Low Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 0 dB/div Sweep Setup> Pause Center 2.462 GHz #Res BW 1 MHz Span 21.77 MHz Sweep 1 ms #VBW 3 MHz Gate, **Channel Power Power Spectral Density** [Off, LO] 22.96 dBm / 16.75 MHz -49.28 dBm /Hz Points 1001 STATUS

# Conducted Output Power (802.11g-CH 11) 48Mbps

## Conducted Output Power (802.11g-CH 11) 54Mbps



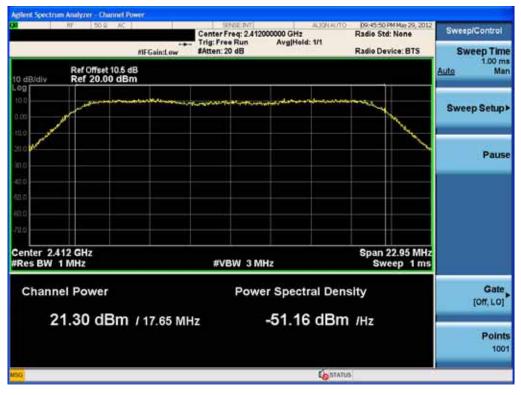
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 4 0 of 119	





## Conducted Output Power (802.11n-CH 1) 6.5Mbps

## Conducted Output Power (802.11n-CH 1) 13Mbps



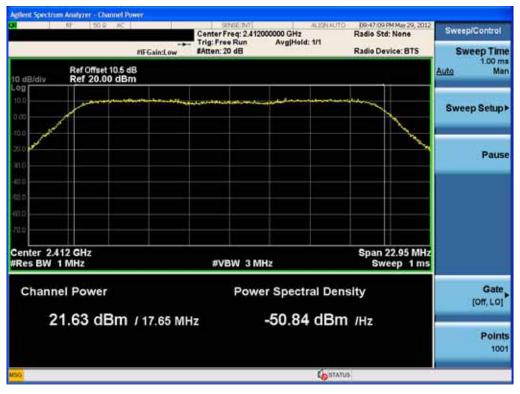
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 4 1 of 119	





#### Conducted Output Power (802.11n-CH 1) 19.5Mbps

## Conducted Output Power (802.11n-CH 1) 26Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:		FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC		ZNFE610V
		Page 4 2 of 119		





## Conducted Output Power (802.11n-CH 1) 39Mbps

## Conducted Output Power (802.11n-CH 1) 52Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 4 3 of 119	





## Conducted Output Power (802.11n-CH 1) 58.5Mbps

## Conducted Output Power (802.11n-CH 1) 65Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 4 4 of 119	



#### dyzer - Channel Po 09-29:37 AM May 30, 2013 Radio Std: None Sweep/Control Center Freq: 2.437000000 GHz Trig: Free Run Avg|Hold: 1/1 FIFGain:Low #Atten: 20 dB Radio Device: BTS Sweep Time 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 0 dB/div .00 Sweep Setup> Pause Center 2.437 GHz #Res BW 1 MHz Span 22.92 MHz Sweep 1 ms #VBW 3 MHz Gate **Channel Power Power Spectral Density** [Off, LO] -51.61 dBm /Hz 20.85 dBm / 17.63 MHz Points 1001 STATUS

## Conducted Output Power (802.11n-CH 6) 6.5Mbps

## Conducted Output Power (802.11n-CH 6) 13Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 4 5 of 119	





#### Conducted Output Power (802.11n-CH 6) 19.5Mbps

#### Conducted Output Power (802.11n-CH 6) 26Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 4 6 of 119	





## Conducted Output Power (802.11n-CH 6) 39Mbps

## Conducted Output Power (802.11n-CH 6) 52Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 4 7 of 119	





#### Conducted Output Power (802.11n-CH 6) 58.5Mbps

#### Conducted Output Power (802.11n-CH 6) 65Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 4 8 of 119	





## Conducted Output Power (802.11n-CH 11) 6.5Mbps

## Conducted Output Power (802.11n-CH 11) 13Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.	. <u>kr</u>
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V	
		Page 4 9 of 119		



#### yzer - Channel Po 09:30:13 AM May 30, 2012 Radio Std: None Sweep/Control Center Freq: 2.462000000 GHz Trig: Free Run Avg|Hold: 1/1 Trig: Free Run #IFGain:Low #Atten: 20 dB Radio Device: BTS Sweep Time 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 0 dB/div .00 Sweep Setup> Pause Center 2.462 GHz #Res BW 1 MHz Span 22.92 MHz Sweep 1 ms #VBW 3 MHz Gate **Channel Power Power Spectral Density** [Off, LO] 20.83 dBm / 17.63 MHz -51.63 dBm /Hz Points 1001 STATUS

## Conducted Output Power (802.11n-CH 11) 19.5Mbps

## Conducted Output Power (802.11n-CH 11) 26Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.h	nct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610	0V
		Page 5 0 of 119		



#### dyzer - Channel Pow 09:39:31 AM May 30, 2013 Radio Std: None Sweep/Control Center Freq: 2.462000000 GHz #IFGain:Low Trig: Free Run #Atten: 20 dB Avg|Hold: 1/1 Radio Device: BTS Sweep Time 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 0 dB/di .00 Sweep Setup> Pause Center 2.462 GHz #Res BW 1 MHz Span 22.92 MHz Sweep 1 ms #VBW 3 MHz Gate **Channel Power Power Spectral Density** [Off, LO] 21.14 dBm / 17.63 MHz -51.33 dBm /Hz Points 1001 Costatus .

# Conducted Output Power (802.11n-CH 11) 39Mbps

## Conducted Output Power (802.11n-CH 11) 52Mbps



FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 5 1 of 119	



#### yzer - Channel Po 09:40:47 AM May 30, 2013 Radio Std: None Sweep/Control Center Freq: 2.462000000 GHz Trig: Free Run Avg|Hold: 1/1 FIFGain:Low #Atten: 20 dB Radio Device: BTS Sweep Time 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 0 dB/di .00 Sweep Setup> Pause Center 2.462 GHz #Res BW 1 MHz Span 22.92 MHz Sweep 1 ms #VBW 3 MHz Gate **Channel Power Power Spectral Density** [Off, LO] -51.34 dBm /Hz 21.12 dBm / 17.63 MHz Points 1001 Lo STATUS

## Conducted Output Power (802.11n-CH 11) 58.5Mbps

## Conducted Output Power (802.11n-CH 11) 65Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 5 2 of 119	



## RESULT PLOTS-Average

## Conducted Output Power (802.11b-CH 1) 1Mbps



## Conducted Output Power (802.11b-CH 1) 2Mbps



FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 5 3 of 119	



#### m Analyzer - Channel Po DB 53:38 PM May 29, 2012 Radio Std: None Sweep/Control Center Freq: 2.412000000 GHz Trig: Free Run Avg|Hold: 100/100 #Atten: 20 dB Sweep Time #IFGain:Low Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 10 dB/div Sweep Setup> Pause Center 2.412 GHz #Res BW 1 MHz Span 16.55 MHz Sweep 1 ms #VBW 3 MHz Gate, **Channel Power Power Spectral Density** [Off, LO] -53.65 dBm /Hz 17.40 dBm / 12.73 MHz Points 1001 STATUS

## Conducted Output Power (802.11b-CH 1) 5.5Mbps

# Conducted Output Power (802.11b-CH 1) 11Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 5 4 of 119	



#### dyzer - Channel Pow Center Freq: 2.437000000 GHz Trig: Free Run Avg|Held: 100/100 DE 52:06 PM May 29, 2012 Radio Std: None Sweep/Control Sweep Time Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 0 dB/div Log Sweep Setup> Pause Center 2.437 GHz #Res BW 1 MHz Span 16.49 MHz Sweep 1 ms #VBW 3 MHz Gate\_ **Channel Power Power Spectral Density** [Off, LO] -53.98 dBm /Hz 17.05 dBm / 12.68 MHz Points 1001 Lo STATUS

## Conducted Output Power (802.11b-CH 6) 1Mbps

# Conducted Output Power (802.11b-CH 6) 2Mbps



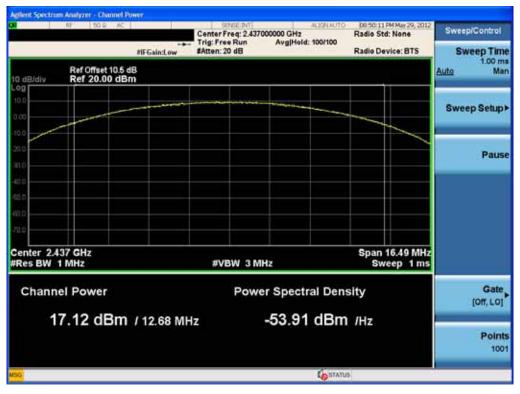
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 5 5 of 119	





## Conducted Output Power (802.11b-CH 6) 5.5Mbps

## Conducted Output Power (802.11b-CH 6) 11Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 5 6 of 119	



#### m Analyzer - Channel Po 08-48-25 PM May 29, 2012 Radio Std: None Sweep/Control Center Freq: 2.462000000 GHz Trig: Free Run Avg|Hold>100/100 #Atten: 20 dB Sweep Time #IFGain:Low Radio Device: BTS 1.00 ms Man Ref Offset 10.5 dB Ref 20.00 dBm Auto 10 dB/div Sweep Setup> Pause Center 2.462 GHz #Res BW 1 MHz Span 16.61 MHz Sweep 1 ms #VBW 3 MHz Gate, **Channel Power Power Spectral Density** [Off, LO] 17.07 dBm / 12.78 MHz -54.00 dBm /Hz Points 1001 STATUS

## Conducted Output Power (802.11b-CH 11) 1Mbps

# Conducted Output Power (802.11b-CH 11) 2Mbps



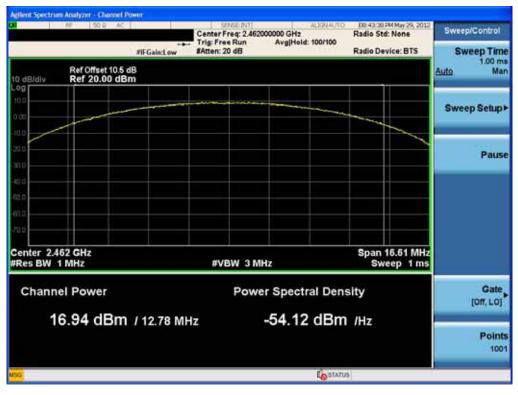
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 5 7 of 119	





## Conducted Output Power (802.11b-CH 11) 5.5Mbps

## Conducted Output Power (802.11b-CH 11) 11Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 5 8 of 119	





## Conducted Output Power (802.11g-CH 1) 6Mbps

# Conducted Output Power (802.11g-CH 1) 9Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<u>v</u>	www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	F	CC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	Ζ	INFE610V
		Page 5 9 of 119		





## Conducted Output Power (802.11g-CH 1) 12Mbps

## Conducted Output Power (802.11g-CH 1) 18Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1206FR03	June 05, 2012	Cellular/PCS GSM/GPRS Phone with Bluetooth/WLAN/NFC	ZNFE610V
		Page 6 0 of 119	