

HCT CO., LTD.

CERTIFICATE OF COMPLIANCE

FCC Certification

Applicant Name:

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

Address:

1000 Sylvan Avenue, Englewood Cliffs NJ 07632

Date of Issue: February 07, 2013 Test Site/Location: HCT CO., LTD., 105-1, Jangam-ri, Majang-Myeon, Icheon-si, Kyunggi-Do, Korea Report No.: HCTR1301FR23-1 HCT FRN: 0005866421

FCC ID : ZNFP710

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

FCC Model(s):	LG-P710
Additional FCC Model(s):	P710, LGP710
EUT Type:	Cellular/PCS GSM/GPRS/EDGE Rx only/PCS WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC
Max. RF Output Power:	Wi-Fi 802.11b(23.49 dBm) / Wi-Fi 802.11g (21.68 dBm) / Wi-Fi 802.11n (21.38 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)

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 TEST REPORT	FCC CERTIFICATION REPORT						
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/PCS WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP710				



Version

TEST REPORT NO.	DATE	DESCRIPTION
HCTR1301FR23	January 30, 2013	- First Approval Report
HCTR1301FR23-1	February 07, 2013	- Retest 6 dB BW on Page.11

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/PCS WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP710
	•	Page 9 of 124	



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	6
8.3 POWER SPECTRAL DENSITY (802.11b/g/n)8	4
8.4 OUT OF BAND EMISSIONS AT THE BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS 9^{-2}	1
8.5 RADIATED MEASUREMENT 1 0 6	6
8.5.1 RADIATED SPURIOUS EMISSIONS	-
8.5.2 RADIATED RESTRICTED BAND EDGES 1 1 7 8.6 POWERLINE CONDUCTED EMISSIONS	-
9. LIST OF TEST EQUIPMENT	-
	•

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT								www.hct.co.kr
	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710



Applicant:	LG Electronics MobileComm U.S.A., Inc.
Address:	1000 Sylvan Avenue, Englewood Cliffs NJ 07632
FCC ID:	ZNFP710
EUT Type:	Cellular/PCS GSM/GPRS/EDGE Rx only/PCS WCDMA/HSDPA/HSUPA Phone with
	Bluetooth/WLAN/NFC
Model name(s):	LG-P710
Additional Model name(s):	P710, LGP710
Date(s) of Tests:	December 02, 2012 ~ December 20, 2012
Place of Tests:	HCT Co., Ltd. 105-1, Jangam-ri , Majang-Myeon, Icheon-si, Kyunggi-Do, 467-811, KOREA. (IC Recognition No. : 5944A-3)

2. EUT DESCRIPTION

EUT Type	Cellular/PCS Bluetooth/WL	GSM/GPRS/EDGE AN/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with			
FCC Model Name	LG-P710									
Additional	P710, LGP71	0								
FCC Model Name										
Power Supply	DC 3.7 V									
Battery type	Li-ion Battery	ion Battery(Standard)								
Frequency Range	TX: 2412 MH	z ~ 2462 MHz								
	RX: 2412 MH	z ~ 2462 MHz								
Max. RF Output Power	Peak	Wi-Fi 802.11b(23.49 c / Wi-Fi 802.11n (21.38			g (21.68 dBm)					
	Average	Wi-Fi 802.11b(17.05 c / Wi-Fi 802.11n (13.20			g (13.24 dBm)					
Modulation Type	DSSS/CCK(8	02.11b), OFDM(802.11	g, 802	11n)						
Antenna Specification	Manufacture	r: acetechnology A								
	Antenna type	e: Built-in Antenna								
	Peak Gain :	-0.29 dBi								

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	Collular/DCS CSM/CDDS/EDCE Dy only/DCS M/CDMA/USDDA/USDDA Doono with L	FCC ID: ZNFP710						
		Page 4 of 124							



3. TEST METHODOLOGY

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

3.1 EUT CONFIGURATION

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

3.2 EUT EXERCISE

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

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

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

Radiated Emissions

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

3.4 DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Channel low, mid and high with highest data rate (worst case) is chosen for full testing.

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT								www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710



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							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710



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

Test Report No. HCTR1301FR23-1 Date of Issue: February 07, 2013 EUT Type: Cellular/PCS EUT Type: Cellular/PCS FCC ID: SIMULATION CONTROL	FCC PT.15.247 TEST REPORT		www.hct.co.kr	
			Cellular/PCS GSM/GPRS/EDGE Rx only/PCS WCDMA/HSDPA/HSUPA Phone with	



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	wer 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	5.205, 15.209 cf. Section 8.5.1		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								www.hct.co.kr	
	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710



8. TEST RESULT

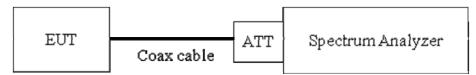
8.1 6dB BANDWIDTH (802.11b/g/n)

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

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

RBW = 1 - 5 % of DTS BW

VBW = 3 * RBW

SPAN = The span range for the SA display shall be between two times and five times the OBW.

Detector = Peak

Trace mode = max hold

Sweep = auto couple

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 CERTIFICATION REPORT		www.hct.co.kr
	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/PCS WCDMA/HSDPA/HSUPA Phone Bluetooth/WLAN/NFC	with	FCC ID: ZNFP710



TEST RESULTS

Conducted 6dB Bandwidth Measurements for 802.11b

802.11b Mo	ode	Measured Bandwidth	Minimum Bandwidth		
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail	
2412	1	8.682	0.500	Pass	
2437	6	8.709	0.500	Pass	
2462	11	8.618	0.500	Pass	

Conducted 6dB Bandwidth Measurements for 802.11g

802.11g Mo	ode	Measured Bandwidth	Minimum Bandwidth		
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail	
2412	1	16.140	0.500	Pass	
2437	6	16.570	0.500	Pass	
2462	11	15.930	0.500	Pass	

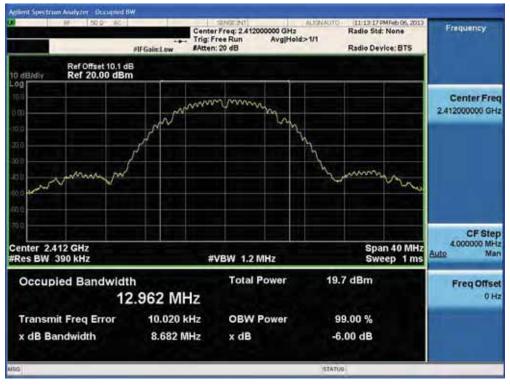
Conducted 6dB Bandwidth Measurements for 802.11n

802.11n Mc	ode	Measured Bandwidth	Minimum Bandwidth		
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail	
2412	1	17.200	0.500	Pass	
2437	6	17.560	0.500	Pass	
2462	11	17.220	0.500	Pass	

TEST REPORT								www.hct.co.kr	
	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710



6dB Bandwidth plot (802.11b-CH 1)



6dB Bandwidth plot (802.11b-CH 6)



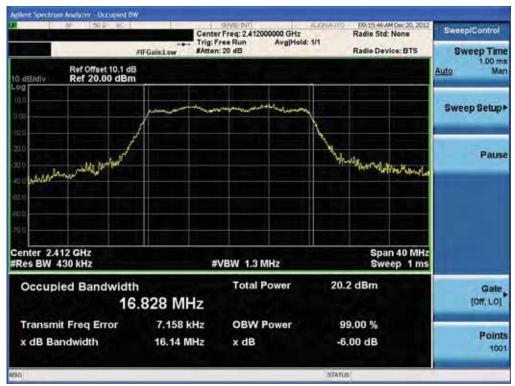
FCC PT.15.247 TEST REPORT			FCC CERTIFIC		REPORT				www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
			Demo 11 of	104					



6dB Bandwidth plot (802.11b-CH 11)

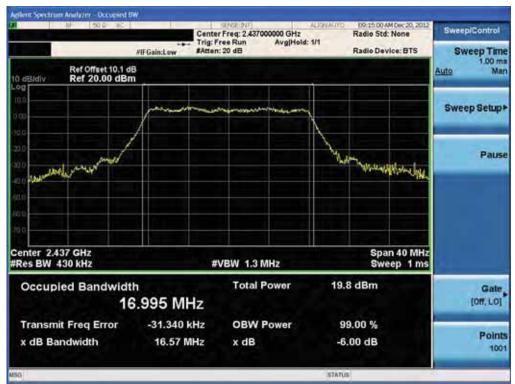


6dB Bandwidth plot (802.11g-CH 1)



FCC PT.15.247 TEST REPORT			FCC CERTIFIC		REPORT				www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
			Dece 1.0 of	104					





6dB Bandwidth plot (802.11g-CH 6)





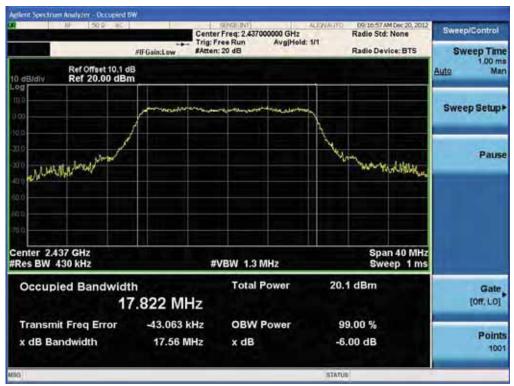
Test Report No. Date of Issue: EUT Type: HCTR1301FR23-1 February 07, 2013 Cellular/PCS GSM/GPRS/EDGE Rx only/PCS WCDMA/HSDPA/HSUPA Phone with FCC ID:	FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT	www.hct.co.kr
Biuetooth/WLAN/NFC			





6dB Bandwidth plot (802.11n-CH 1)

6dB Bandwidth plot (802.11n-CH 6)



TEST REPORT			FCC CERTIFIC	ATION	REPORT				www.hct.co.kr
	te of Issue: oruary 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710





6dB Bandwidth plot (802.11n-CH 11)

FCC PT.15.247 TEST REPORT			FCC CERTIFIC		N REPORT				www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
			D 15 (404					



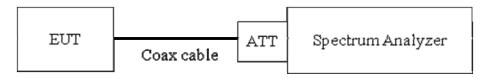
8.2 OUTPUT POWER (802.11b/g/n)

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 ANSI 63.10. This EUT TX condition is actual operating mode(duty cycle \geq 98%) by WLAN test program.

The Spectrum Analyzer is set to

```
Peak Power (Procedure 6.10.2.1 in ANCI 63.10)
RBW = 1 MHz
VBW = 3 MHz
SPAN = Set the span just large enough to capture the emission
Detector Mode = Peak
Integrated bandwidth = EBW
Sweep = auto couple
Trace Mode = max hold
Turn averaging off

   Average Power (Procedure 6.10.3.1 in ANSI 63.10)

RBW = 1 MHz
VBW = 3 MHz
SPAN = Set span to encompass the entire EBW of the signal.
Detector Mode = Use sample detector if bin width
                (i.e., span/number of points in spectrum display) < 0.5 RBW.
                Otherwise, use peak detector
Integrated bandwidth = EBW
Sweep = auto couple
Sweep Point = 1001
```

Trace average across 100 traces in power averaging mode.

FCC PT.15.247 TEST REPORT			FCC CERTIFIC		REPORT				www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA		Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710



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 below table.

So, 10.1 dB is offset. And the offset gap in the 2.4 GHz range do not affect the conducted peak power final result.

Band	Frequency(MHz)	Loss(dB)
	2412	10.11
2.4 GHz	2437	10.10
	2462	10.12

(Actual value of loss for the attenuator and cable combination)

FCC PT.15.247 TEST REPORT			FCC CERTIFIC	ATION	REPORT				www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710



802.11b	Mode	Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		1 Mbps	19.370	30
2412	4	2 Mbps	19.580	30
	1	5.5 Mbps	21.20	30
		11 Mbps	22.60	30
0.407	C	1 Mbps	20.10	30
		2 Mbps	20.30	30
2437	6	5.5 Mbps	21.92	30
		11 Mbps	23.49	30
		1 Mbps	19.54	30
2462	44	2 Mbps	19.69	30
2462	11	5.5 Mbps	21.34	30
		11 Mbps	23.09	30

Conducted Output Power Measurements (802.11b Mode)

FCC PT.15.247 TEST REPORT			FCC CERTIFIC	ATION	I REPORT				www.hct.co.kr
	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710



Conducted Output Power Measurements (802.11g Mode)

802.11g	Mode	Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		6 Mbps	21.40	30
		9 Mbps	21.14	30
		12 Mbps	21.15	30
0.140	4	18 Mbps	21.18	30
2412	1	24 Mbps	21.58	30
		36 Mbps	21.56	30
		48 Mbps	21.68	30
		54 Mbps	21.40	30
		6 Mbps	21.03	30
0.407		9 Mbps	21.05	30
		12 Mbps	20.98	30
	6	18 Mbps	20.89	30
2437	6	24 Mbps	21.24	30
		36 Mbps	21.51	30
		48 Mbps	21.39	30
		54 Mbps	21.47	30
		6 Mbps	20.99	30
		9 Mbps	21.00	30
		12 Mbps	20.88	30
2462	44	18 Mbps	20.66	30
2402	11	24 Mbps	21.43	30
		36 Mbps	21.19	30
		48 Mbps	21.35	30
		54 Mbps	21.44	30

TEST REPORT	FCC CERTIFICATION REPORT						
Test Report No.Date of Issue:HCTR1301FR23-1February 07, 2	Bluetooth/WLAN/NFC	FCC ID: ZNFP710					



Conducted Output Power Measurements (802.11n Mode)

802.11n	Mode	Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		6.5 Mbps	20.37	30
		13 Mbps	20.28	30
		19.5 Mbps	20.11	30
0.110		26 Mbps	20.22	30
2412	1	39 Mbps	20.72	30
		52 Mbps	20.67	30
		58.5 Mbps	20.60	30
		65 Mbps	20.87	30
		6.5 Mbps	20.93	30
		13 Mbps	20.86	30
		19.5 Mbps	20.77	30
2437	6	26 Mbps	21.00	30
2437		39 Mbps	21.04	30
		52 Mbps	21.23	30
		58.5 Mbps	21.35	30
		65 Mbps	21.38	30
		6.5 Mbps	18.98	30
		13 Mbps	19.10	30
		19.5 Mbps	19.24	30
2462	11	26 Mbps	19.09	30
2402		39 Mbps	19.43	30
		52 Mbps	19.44	30
		58.5 Mbps	19.46	30
		65 Mbps	19.59	30

TEST REPORT	FCC CERTIFICATION REPORT							www.hct.co.kr	
	e of Issue: ruary 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710



802.11b	Mode	Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		1 Mbps	16.32	30
2412	4	2 Mbps	16.24	30
2412	1	5.5 Mbps	16.31	30
		11 Mbps	16.11	30
0.407	6	1 Mbps	17.05	30
		2 Mbps	16.90	30
2437	0	5.5 Mbps	17.04	30
		11 Mbps	16.84	30
		1 Mbps	16.47	30
2462	44	2 Mbps	16.41	30
2402	11	5.5 Mbps	16.44	30
		11 Mbps	16.23	30

Conducted Output Power Measurements (802.11b Mode)

FCC PT.15.247 TEST REPORT			FCC CERTIFIC	ATION	REPORT				www.hct.co.kr
	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710



Conducted Output Power Measurements (802.11g Mode)

802.11g	Mode	Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		6 Mbps	13.24	30
		9 Mbps	13.05	30
		12 Mbps	13.02	30
0440	4	18 Mbps	12.91	30
2412	1	24 Mbps	12.58	30
		36 Mbps	12.21	30
		48 Mbps	11.98	30
		54 Mbps	11.70	30
2437		6 Mbps	13.05	30
		9 Mbps	12.84	30
		12 Mbps	12.82	30
	6	18 Mbps	12.54	30
2437		24 Mbps	12.52	30
		36 Mbps	12.30	30
		48 Mbps	11.86	30
		54 Mbps	11.80	30
		6 Mbps	13.12	30
		9 Mbps	12.93	30
		12 Mbps	12.77	30
2462	11	18 Mbps	12.78	30
2402	11	24 Mbps	12.55	30
		36 Mbps	12.16	30
		48 Mbps	11.95	30
		54 Mbps	11.90	30

Test Report No. Date of Issue: EUT Type: Cellular/PCS_GSM/GPRS/EDGE_Rx_only/PCS_WCDMA/HSDPA/HSUPA_Phone_with FCC ID:	FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
HCTR1301FR23-1 February 07, 2013 Bluetooth/WLAN/NFC	Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	Cellular/PCS GSM/GPRS/EDGE Rx only/PCS WCDMA/HSDPA/HSUPA Phone with	FCC ID: ZNFP710



Conducted Output Power Measurements (802.11n Mode)

802.11n	Mode	Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		6.5 Mbps	12.24	30
		13 Mbps	12.11	30
		19.5 Mbps	12.01	30
2412	4	26 Mbps	11.63	30
2412	1	39 Mbps	11.65	30
		52 Mbps	11.15	30
		58.5 Mbps	10.85	30
		65 Mbps	11.04	30
		6.5 Mbps	13.20	30
		13 Mbps	12.99	30
2437	6	19.5 Mbps	12.88	30
		26 Mbps	12.62	30
2437		39 Mbps	12.35	30
		52 Mbps	12.21	30
		58.5 Mbps	11.67	30
		65 Mbps	11.63	30
		6.5 Mbps	11.14	30
		13 Mbps	10.85	30
		19.5 Mbps	10.54	30
2462	11	26 Mbps	10.55	30
2462	11	39 Mbps	10.33	30
		52 Mbps	9.92	30
		58.5 Mbps	9.82	30
		65 Mbps	9.87	30

FCC PT.15.247 TEST REPORT			FCC CERTIFIC	ATION	REPORT				www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710

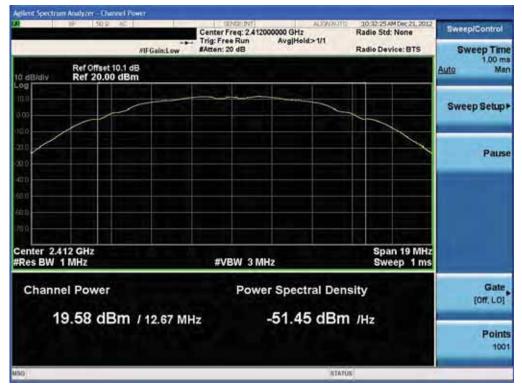


RESULT PLOTS-Peak





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



FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/PCS WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP710
		Dogo 9.4 of 124	





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

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



FCC PT.15.247 TEST REPORT			FCC CERTIFIC		REPORT				www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
			Page 2 5 of	12/					



Sweep/Control	10.3536 AM Dec 21, 2012 Radio Std: None	ALIQUALITO	reg: 2.437000000 Gi	Center Trig: Fr		IF 50.2	
Sweep Time 1.00 mi Auto Mar	Radio Device: BTS		Bb 03	#Atten:	#IFGain:Low	Ref Offset 1	
			445		dBm	Ref 20.00	o dBidiv
Sweep Setup						//	000
		1					
Paus							20
							00 80
							99
	Span 18.98 MHz					7 6 11 7	enter 2.43
	Sweep 1 ms		BW 3 MHz	#V			Res BW 1
Gate [Off, LO]			Power Spe			Power	
Point 100	/Hz	dBm	-50.1	MHZ	m / 12.65	. 10 dE	20
	5	STATU				_	à

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

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



FCC PT.15.247 TEST REPORT			FCC CERTIFIC		REPORT				www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
			Page 2.6 of	101					





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

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



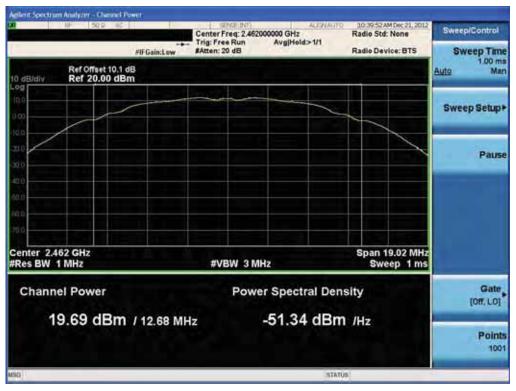
FCC PT.15.247 TEST REPORT			FCC CERTIFIC	ATION	REPORT				www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA		Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
Page 2 7 of 124									



Sweep/Control	10:39:25 AM Dec 21, 2012 Radio Std: None	1/1	AvgiHol				2 40	1F - 2	
Sweep Tim 1.00 m	Radio Device: BTS		100	Bb 0	#Atten: 2	Gain:Low			-
Auto Ma	_					_	t 10.1 dB 00 dBm	Ref 20	o dB/div
Sweep Setup		/		-			/		n n 0 00
Paus									
Faus									00
									a.o
									0.0 0.0
	Span 19.02 MHz Sweep 1 ms		Iz	BW 3N	#VI				enter 2.4 Res BW
Gate [Off, LO]			r Spect	Pow			r Bm / 1	el Powe	
Point 100	/HZ	ивп	-51.40		HZ	2.68 N	BIII / 1	9.97 0	
		STAT							0

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

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



FCC PT.15.247 TEST REPORT			FCC CERTIFIC		REPORT				www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
			Page 2.8 of	104					



		Trig	ter Freq: 2.462000000 GHz : Free Run Avg[Hold:	: 1/1	Radio Std: None	
	Ref Offset 10.1 dB	FIFGain:Low BAtt	en: 20 dB		Radio Device: B	TS Sweep Tim 1.00 m Auto Ma
dB/div	Ref 20.00 dBm					Auto ma
0	-					Sweep Setup
						Paus
0						
n						
0						-
nter 2.46 es BW 1			#VBW 3 MHz		Span 19.02 Sweep	MHz 1 ms
	I Power		Power Spectr			Gate [0ff, L0]
21	.34 dBm <i>i</i>	12.68 MHz	-49.69	dBm	/Hz	Point 100

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

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



FCC PT.15.247 TEST REPORT			FCC CERTIFIC		REPORT				www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE AN/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
Page 2 9 of 124									





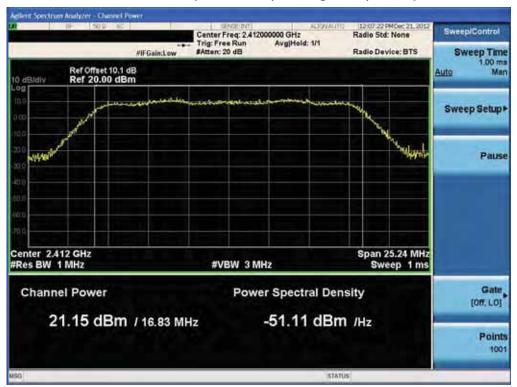
Conducted Output Power (802.11g-CH 1) 6Mbps

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



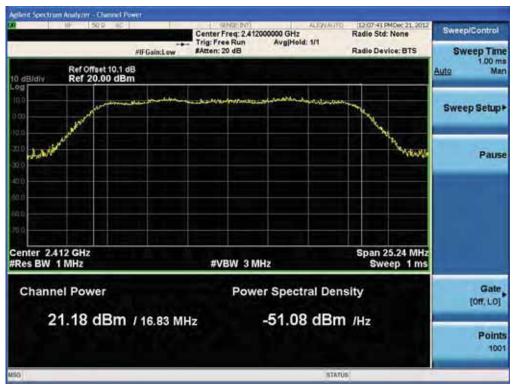
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLAI	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710





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							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	Collular/PCS CSM/CPRS/EDCE Ry only/PCS W/CDMA/HSDPA/HSDPA Phone with 1							FCC ID: ZNFP710
Page 3 1 of 124									





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							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE AN/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
Page 3 2 of 124									





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							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/PCS WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP710						
Dogo 2.2 of 124									





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

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



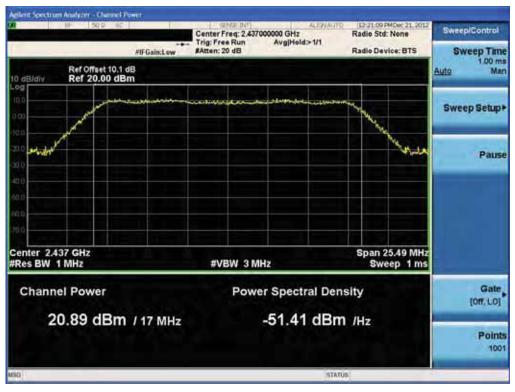
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT							www.hct.co.kr	
	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710





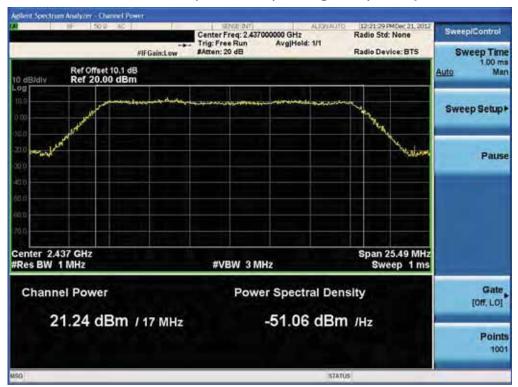
Conducted Output Power (802.11g-CH 6) 12Mbps

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



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT							www.hct.co.kr	
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLAI	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710





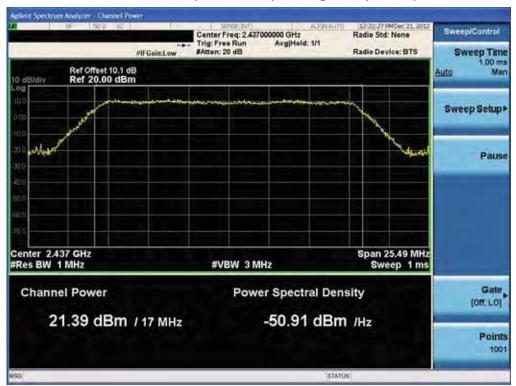
Conducted Output Power (802.11g-CH 6) 24Mbps

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



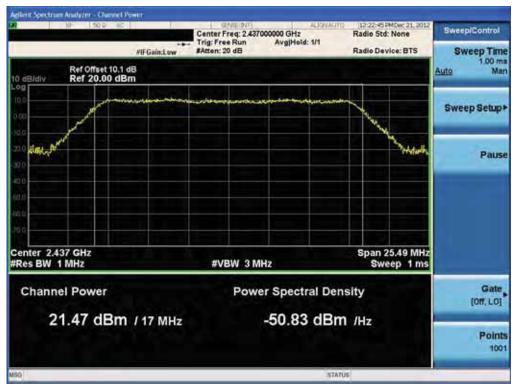
FCC PT.15.247 TEST REPORT		www.hct.co.kr						
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	Collular/DCS CSM/CDDS/ENCE Dy only/DCS M/CDMA/USDDA/USDDA Dhono with L	FCC ID: ZNFP710					
Bogo 2 6 of 124								





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

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



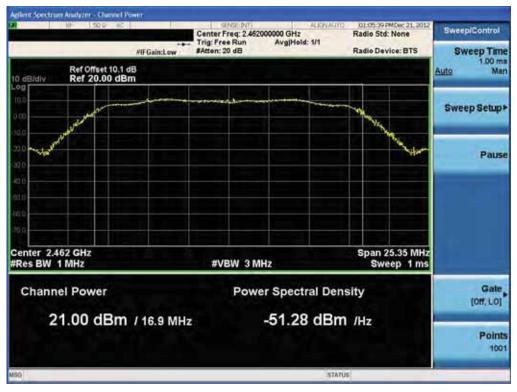
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT								
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	Collular/DCS CSM/CDDS/EDCE Dy only/DCS M/CDMA/USDDA/USDDA Dhono with	FCC ID: ZNFP710							
		Pege 2.7 of 124								





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

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



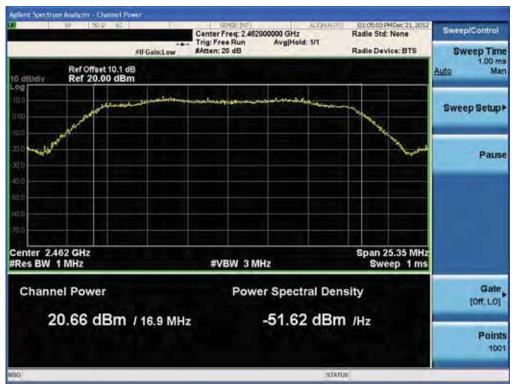
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT							www.hct.co.kr
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710





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

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



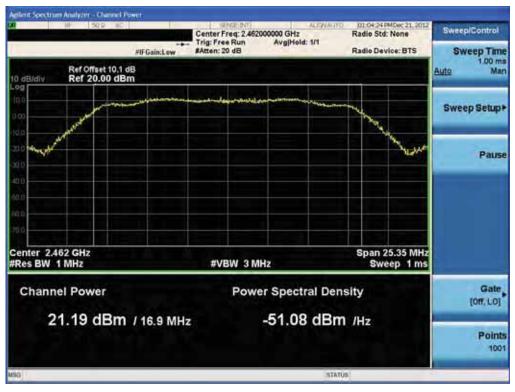
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
			Page 3.0 of	124					





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							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
			Page 4.0 of	101					





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							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
			Page 4 1 of	12/					





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								
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE AN/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710	
	Page 4 2 of 124									





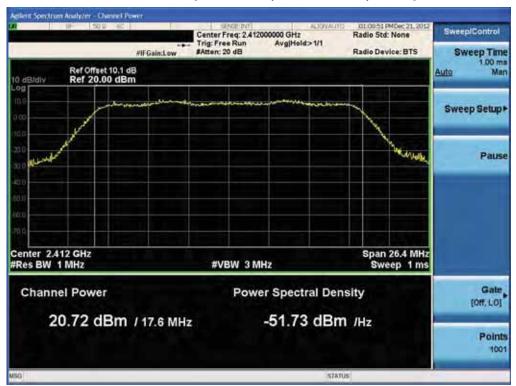
Conducted Output Power (802.11n-CH 1) 19.5Mbps

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



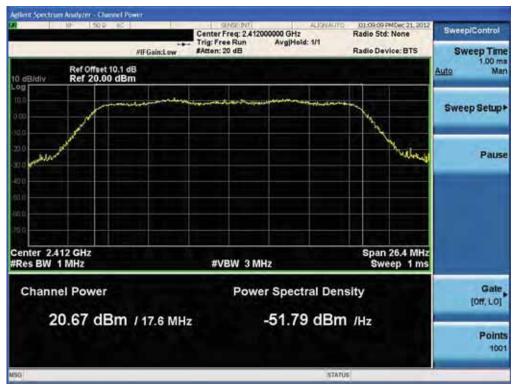
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/PCS WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP710						
		Page 4.2 of 124							





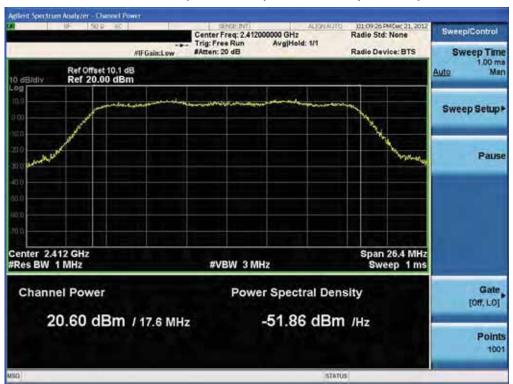
Conducted Output Power (802.11n-CH 1) 39Mbps

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



FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT						
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	Collular/DCS (2SM/CDDS/EDCE Dy only/DCS \//CDMA/USDDA/USUDA Dhono with I	FCC ID: ZNFP710					
		Baga 4.4 of 124						





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

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



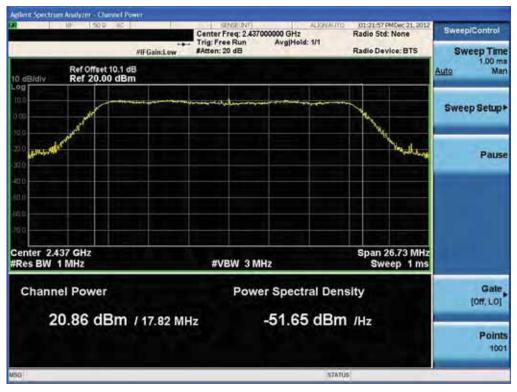
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Rx only/PCS WCDMA/HSDPA/HSUPA Phor Bluetooth/WLAN/NFC	e with	FCC ID: ZNFP710					
		Dage 4 5 of 124							





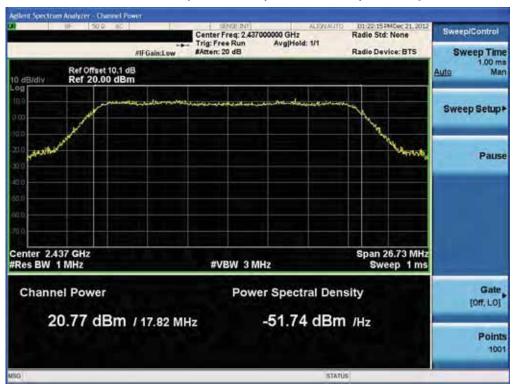
Conducted Output Power (802.11n-CH 6) 6.5Mbps

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



FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT								
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE AN/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710	
	Page 4 6 of 124									





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

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



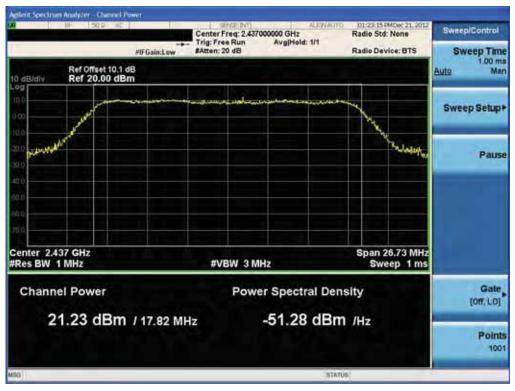
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	Collular/DCS CSM/CDDS/EDCE Dy only/DCS M/CDMA/USDDA/USDDA Dooro with	FCC ID: ZNFP710						
		Dogo 4 7 of 124							





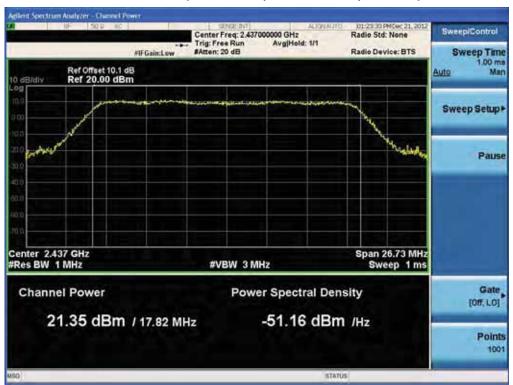
Conducted Output Power (802.11n-CH 6) 39Mbps

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



FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS GSM/GPR: Bluetooth/WLAN/NFC	S/EDGE Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone with	FCC ID: ZNFP710		
		Dee	1 0 of 121						





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

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



FCC PT.15.247 TEST REPORT		www.hct.co.kr							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710





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

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



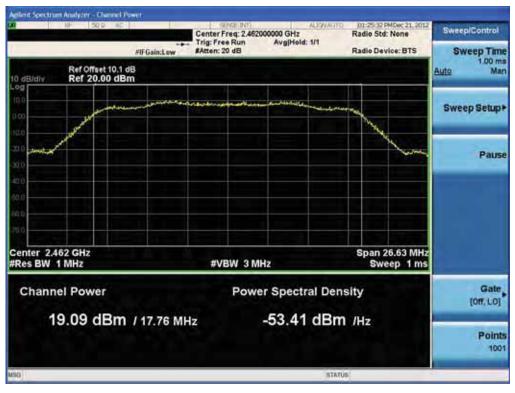
FCC PT.15.247 TEST REPORT		www.hct.co.kr							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE AN/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
Page 5 0 of 124									





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

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



FCC PT.15.247 TEST REPORT		www.hct.co.kr							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710
Page 5.1 of 124									





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

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



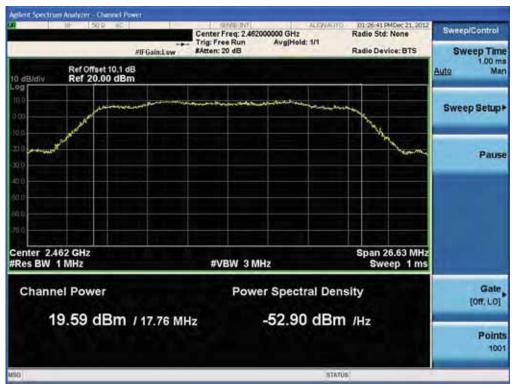
FCC PT.15.247 TEST REPORT		www.hct.co.kr							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	Callular/PCS CSM/CPRS/EDCE Ry only/PCS W/CDMA/HSDPA/HSUPA Phone with I							FCC ID: ZNFP710
Page 5 2 of 124									





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

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



FCC PT.15.247 TEST REPORT		www.hct.co.kr							
Test Report No. HCTR1301FR23-1	Date of Issue: February 07, 2013	EUT Type: Cellular/PCS Bluetooth/WLA	GSM/GPRS/EDGE N/NFC	Rx	only/PCS	WCDMA/HSDPA/HSUPA	Phone	with	FCC ID: ZNFP710