

HCT CO., LTD.

CERTIFICATE OF COMPLIANCE FCC Certification

Applicant Name: LG Electronics MobileComm U.S.A., Inc.	Date of Issue: October 23, 2012
Address: 1000 Sylvan Avenue, Englewood Cliffs NJ 07632	Test Site/Location: HCT CO., LTD., 105-1, Jangam-ri, Majang-Myeon, Icheon-si, Kyunggi-Do, Korea
	Report No.: HCTR1210FR19-1
	HCT FRN: 0005866421

FCC ID : ZNFL02E

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

FCC Model(s): L-02E

EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)

Max. RF Output Power: Wi-Fi 802.11b (22.58 dBm) / Wi-Fi 802.11g (18.70 dBm)/ Wi-Fi 802.11n (2.4 GHz) (17.81 dBm) / Wi-Fi 802.11a (5.8 GHz) (18.51 dBm)/ Wi-Fi 802.11n_20 MHz BW (5.8 GHz) (18.67 dBm) / Wi-Fi 802.11n_40 MHz BW (5.8 GHz) (18.51 dBm)

Frequency Range: 2412 MHz - 2462 MHz (2.4 GHz Band)
5745 MHz - 5825 MHz (5.8 GHz Band)_20 MHz BW,
5755 MHz - 5795 MHz (5.8 GHz Band)_40 MHz BW

Modulation type CCK/DSSS/OFDM

FCC Classification: Digital Transmission System(DTS)

FCC Rule Part(s): Part 15.247

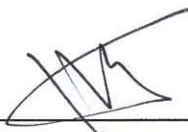
Engineering Statement:

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
: Sang Jun Lee
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		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)		FCC ID: ZNFL02E

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCTR1210FR19	October 15, 2012	- First Approval Report
HCTR1210FR19-1	October 23, 2012	- Insert 3D Antenna Information on Page 4 - Revised EUT TX condition on Page 21 - Revised RADIATED MEASUREMENT and TEST RESULT On section 8.5

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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 6 dB BANDWIDTH MEASUREMENT (802.11a/b/g/n).....	9
8.2 OUTPUT POWER MEASUREMENT (802.11a/b/g/n).....	2 1
8.3 POWER SPECTRAL DENSITY (802.11a/b/g/n).....	1 5 9
8.4 OUT OF BAND EMISSIONS AT THE BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS	1 7 1
8.5 RADIATED MEASUREMENT.....	2 0 0
8.5.1 RADIATED SPURIOUS EMISSIONS.	2 0 0
8.6 POWERLINE CONDUCTED EMISSIONS	2 1 4
9. LIST OF TEST EQUIPMENT	2 2 0

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E



1. GENERAL INFORMATION

Applicant: LG Electronics MobileComm U.S.A., Inc.
Address: 1000 Sylvan Avenue, Englewood Cliffs NJ 07632
FCC ID: ZNFL02E
EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)
Model name(s): L-02E
Date(s) of Tests: September 07, 2012 ~ October 11, 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 GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	
FCC Model Name	L-02E	
Power Supply	DC 3.7 V	
Battery type	Li-ion Battery(Standard)	
Frequency Range	TX: 2412 MHz ~ 2462 MHz, 5745 MHz – 5825 MHz_20 MHz, 5755 MHz - 5795 MHz_ 40 MHz RX: 2412 MHz ~ 2462 MHz, 5745 MHz – 5825 MHz_20 MHz, 5755 MHz - 5795 MHz_ 40 MHz	
Max. RF Output Power:	Peak	Wi-Fi 802.11b (22.58 dBm) / Wi-Fi 802.11g (18.70 dBm)/ Wi-Fi 802.11n (2.4 GHz) (17.81 dBm) / Wi-Fi 802.11a (5.8 GHz) (18.51 dBm)/ Wi-Fi 802.11n_20 MHz BW (5.8 GHz) (18.67 dBm) / Wi-Fi 802.11n_40 MHz BW (5.8 GHz) (18.51 dBm)
	Average	Wi-Fi 802.11b (15.81 dBm) / Wi-Fi 802.11g (10.31 dBm)/ Wi-Fi 802.11n (2.4 GHz) (9.25 dBm) / Wi-Fi 802.11a (5.8 GHz) (11.04 dBm)/ Wi-Fi 802.11n_20 MHz BW (5.8 GHz) (11.05 dBm) / Wi-Fi 802.11n_40 MHz BW (5.8 GHz) (10.89 dBm)
Modulation Type	DSSS/CCK(802.11b), OFDM(802.11a, 802.11g, 802.11n_20 MHz BW, 802.11n_40 MHz BW)	
Antenna Specification	Manufacturer: ace technologyA Antenna type: BUILT-IN Antenna Peak 3D Gain : 0.97dBi (2.4 GHz Band), -6.07 dBi (5.8 GHz Band)	

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)		FCC ID: ZNFL02E



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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E



6. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203:

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

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

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

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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	CONDUCTED	PASS
Conducted Maximum Peak Output Power	§15.247(b)(3)	< 1 Watt		PASS
Power Spectral Density	§15.247(e)	< 8 dBm / 3 kHz Band		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		PASS

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

8. TEST RESULT

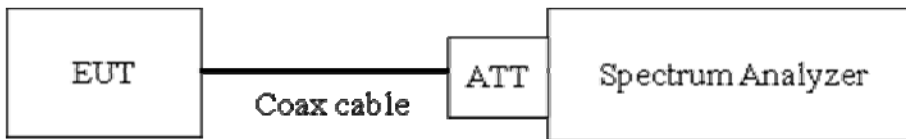
8.1 6 dB BANDWIDTH MEASUREMENT (802.11a/b/g/n)

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

The bandwidth at 6 dB 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 6 dB 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 the EBW

VBW = 3 * RBW

SPAN = 40 MHz(20 MHz BW) / 60 MHz(40 MHz BW)

Detector = Peak

Trace mode = max hold

Sweep = auto couple

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)		FCC ID: ZNFL02E



TEST RESULTS

Conducted 6 dB Bandwidth Measurements for 802.11b

802.11b Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	8.393	0.500	Pass
2437	6	8.847	0.500	Pass
2462	11	8.754	0.500	Pass

Conducted 6 dB Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	16.690	0.500	Pass
2437	6	16.840	0.500	Pass
2462	11	16.580	0.500	Pass

Conducted 6 dB Bandwidth Measurements for 802.11n(2.4 GHz Band)

802.11n Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	17.780	0.500	Pass
2437	6	17.980	0.500	Pass
2462	11	17.770	0.500	Pass

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

Conducted 6 dB Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Frequency [MHz]			
5745	149	16.520	0.5	Pass
5785	157	16.550	0.5	Pass
5825	165	16.600	0.5	Pass

Conducted 6 dB Bandwidth Measurements for 802.11n_20 MHz BW(5.8 GHz Band)

802.11n Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	17.720	0.5	Pass
5785	157	17.730	0.5	Pass
5825	165	17.700	0.5	Pass

Conducted 6 dB Bandwidth Measurements for 802.11n_40 MHz BW(5.8 GHz Band)

802.11n Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	35.820	0.5	Pass
5795	159	35.860	0.5	Pass

RESULT PLOTS

6dB Bandwidth plot (802.11b-CH 1)

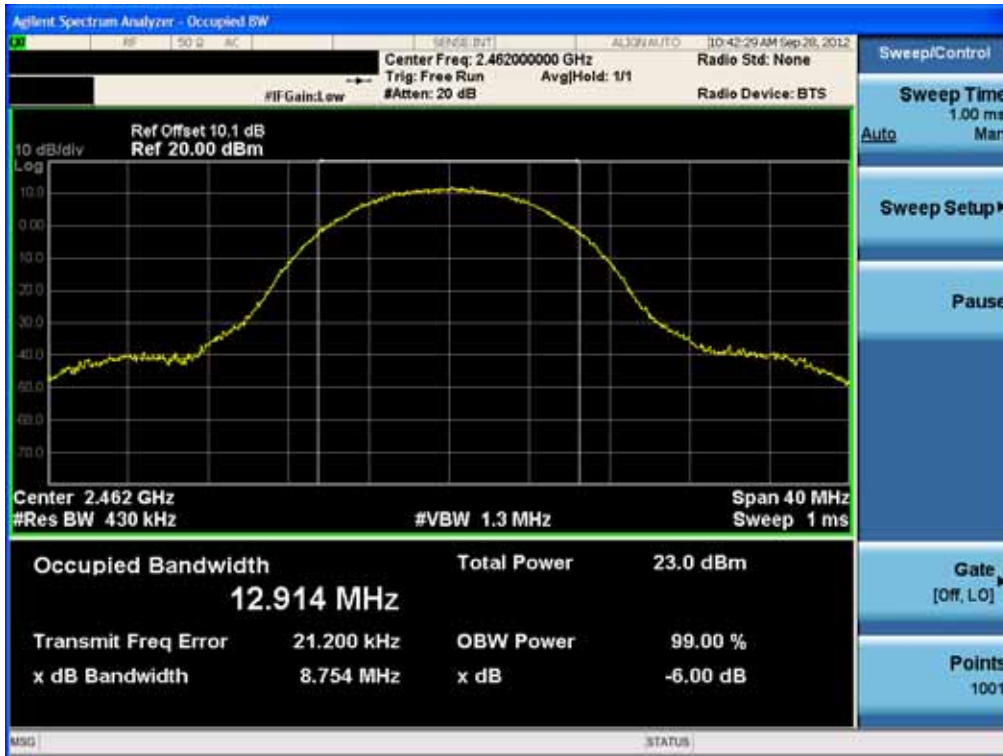


6dB Bandwidth plot (802.11b-CH 6)

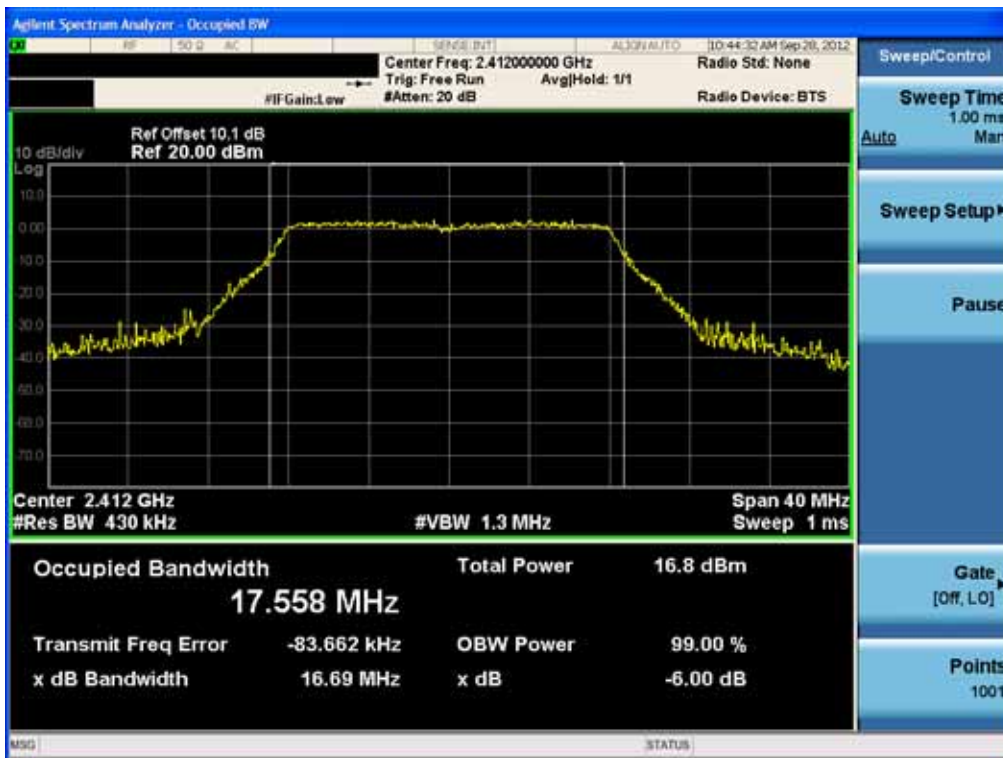


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

6dB Bandwidth plot (802.11b-CH 11)

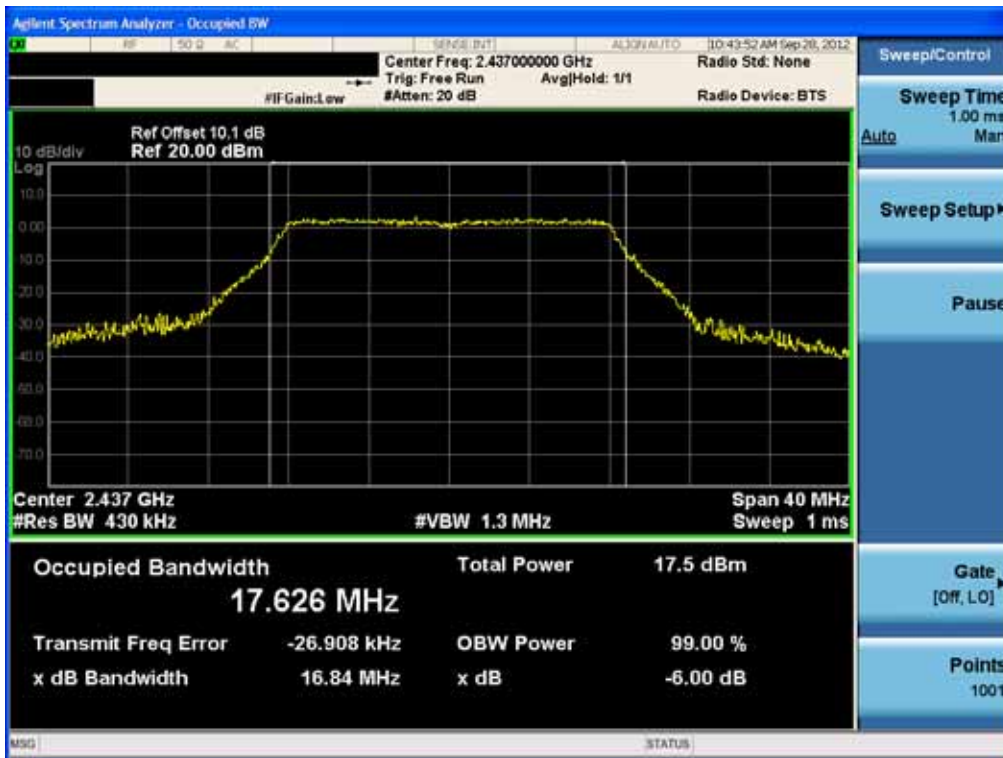


6dB Bandwidth plot (802.11g-CH 1)

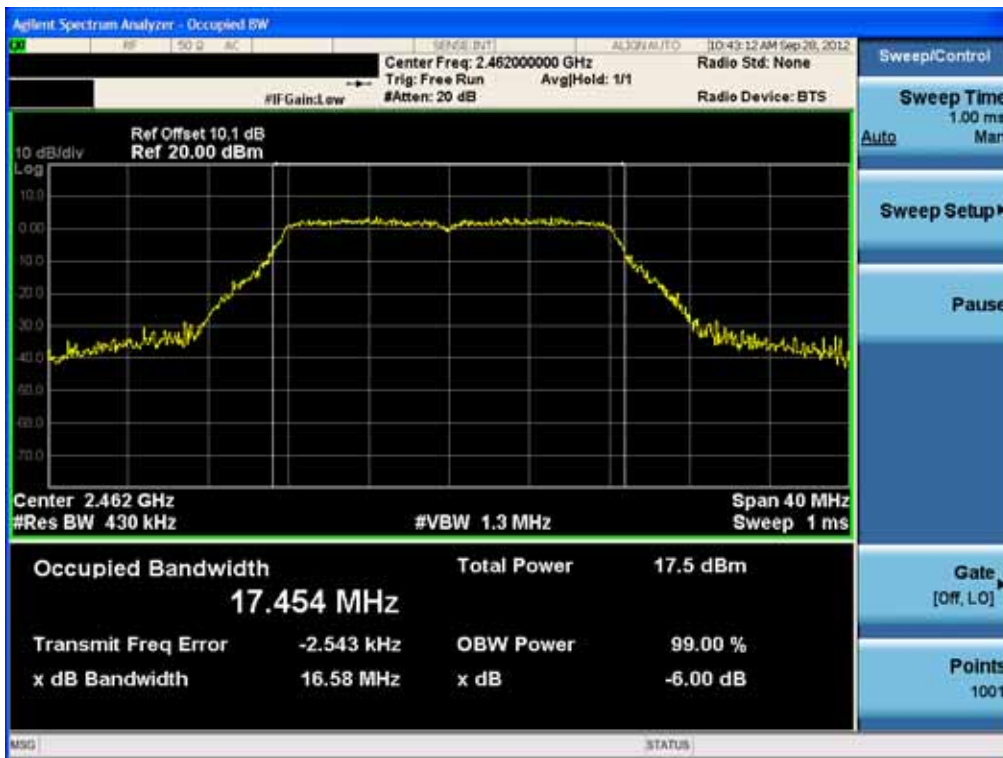


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

6dB Bandwidth plot (802.11g-CH 6)

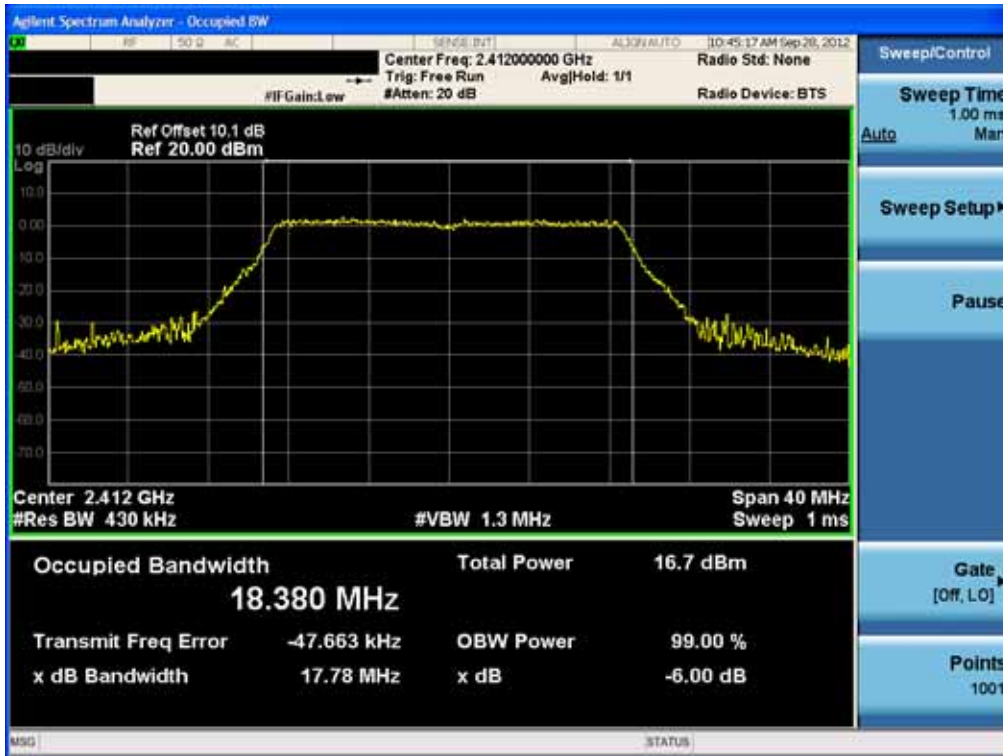


6dB Bandwidth plot (802.11g-CH 11)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

6dB Bandwidth plot (802.11n-CH 1)

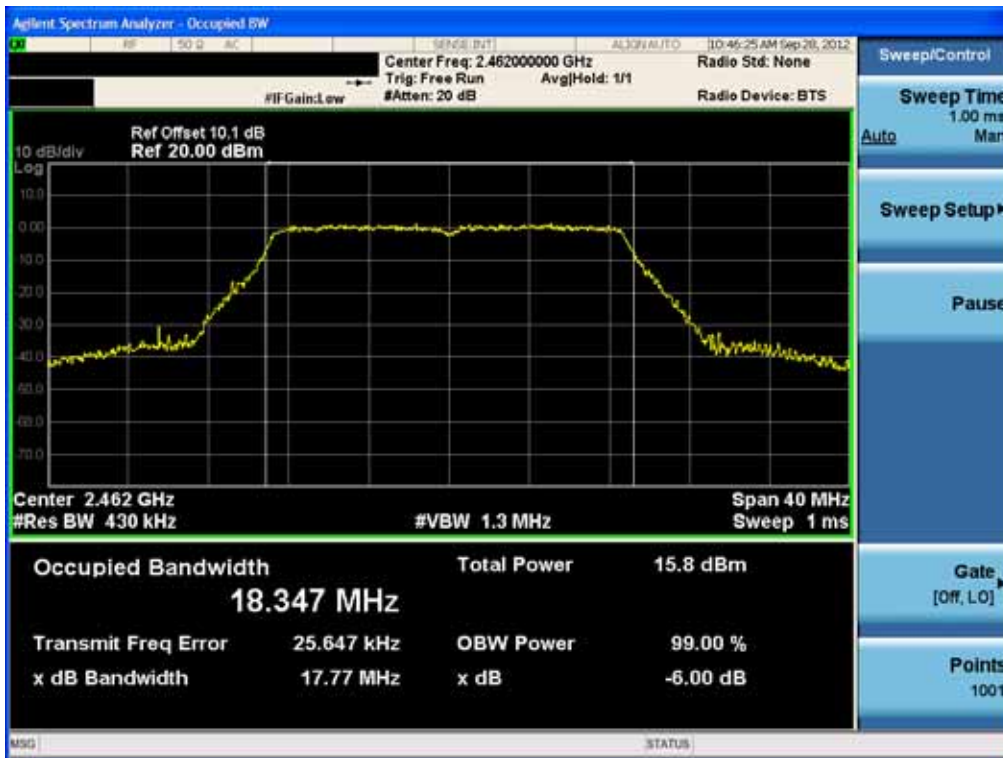


6dB Bandwidth plot (802.11n-CH 6)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

6dB Bandwidth plot (802.11n-CH 11)

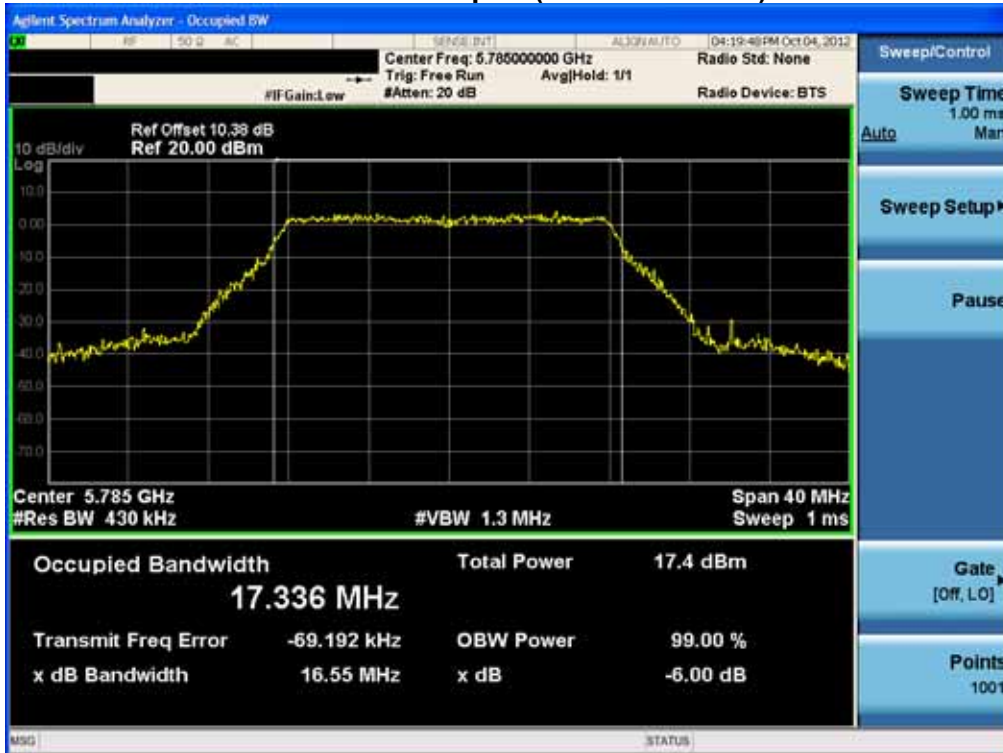


6dB Bandwidth plot (802.11a-CH 149)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

6dB Bandwidth plot (802.11a-CH 157)

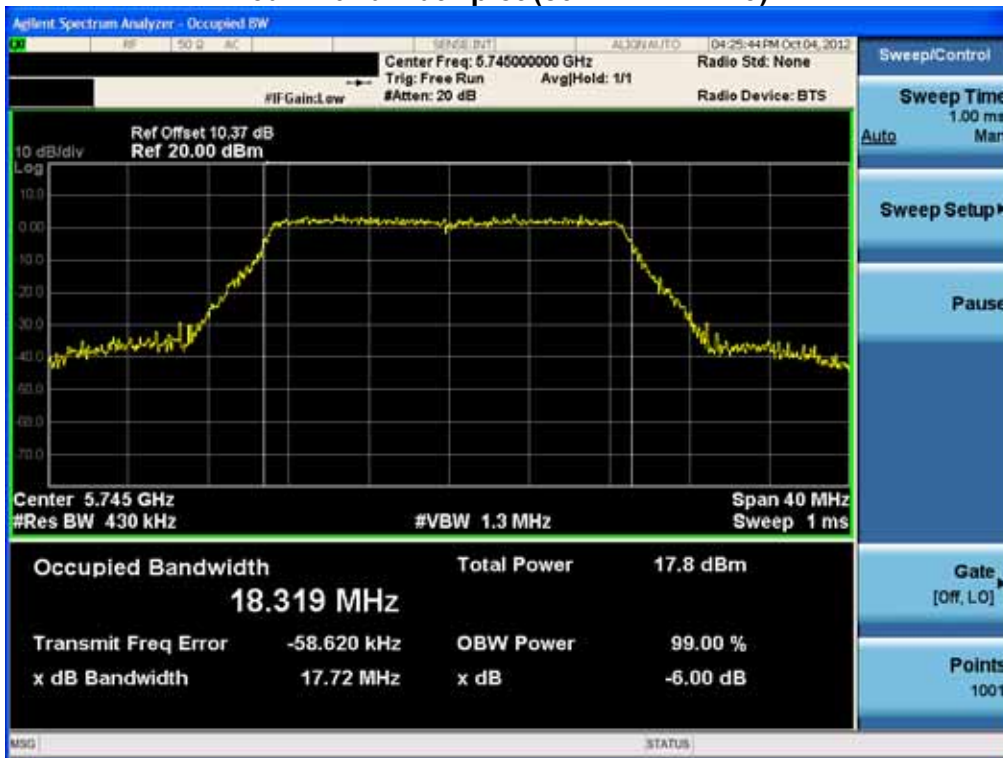


6dB Bandwidth plot (802.11a-CH 165)

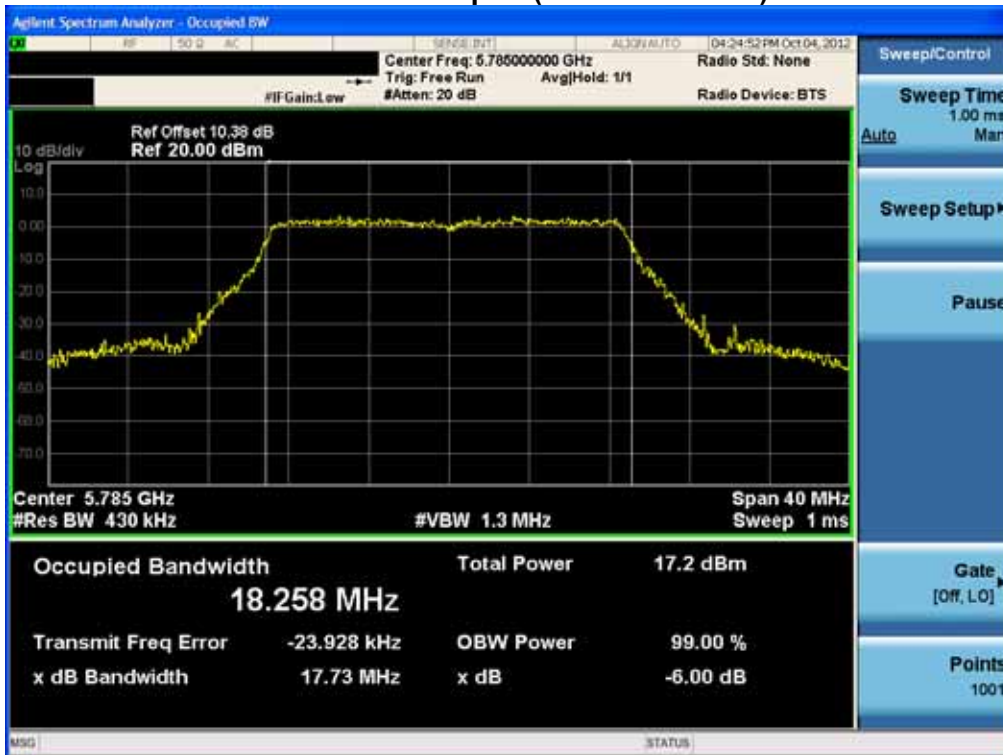


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

6dB Bandwidth plot (802.11n-CH 149)

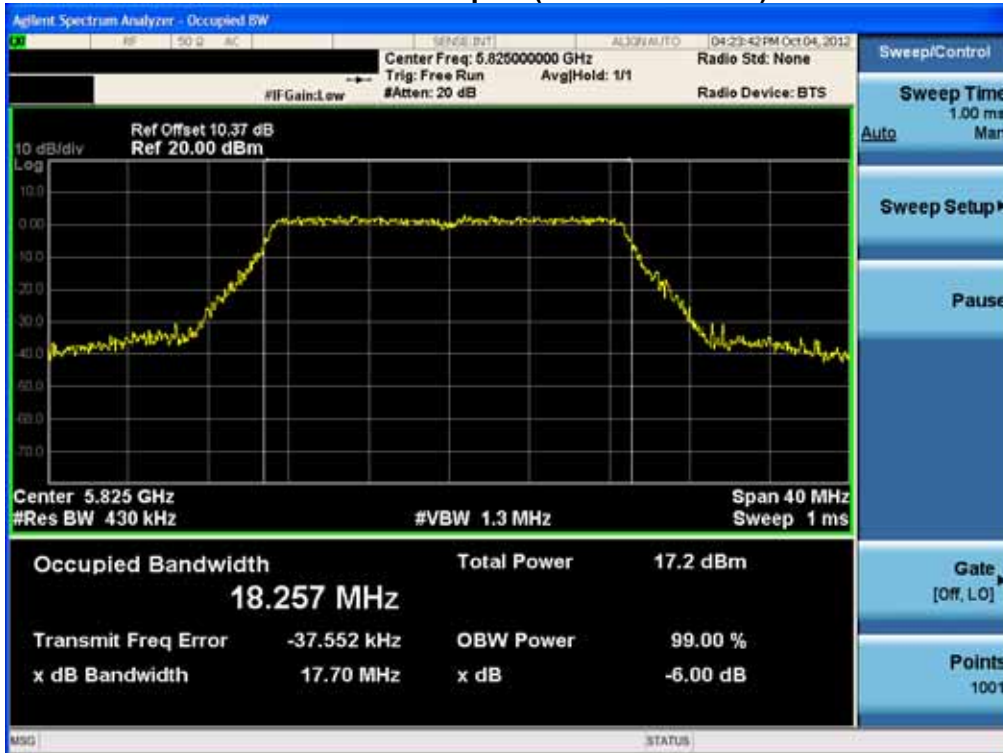


6dB Bandwidth plot (802.11n-CH 157)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

6dB Bandwidth plot (802.11n-CH 165)

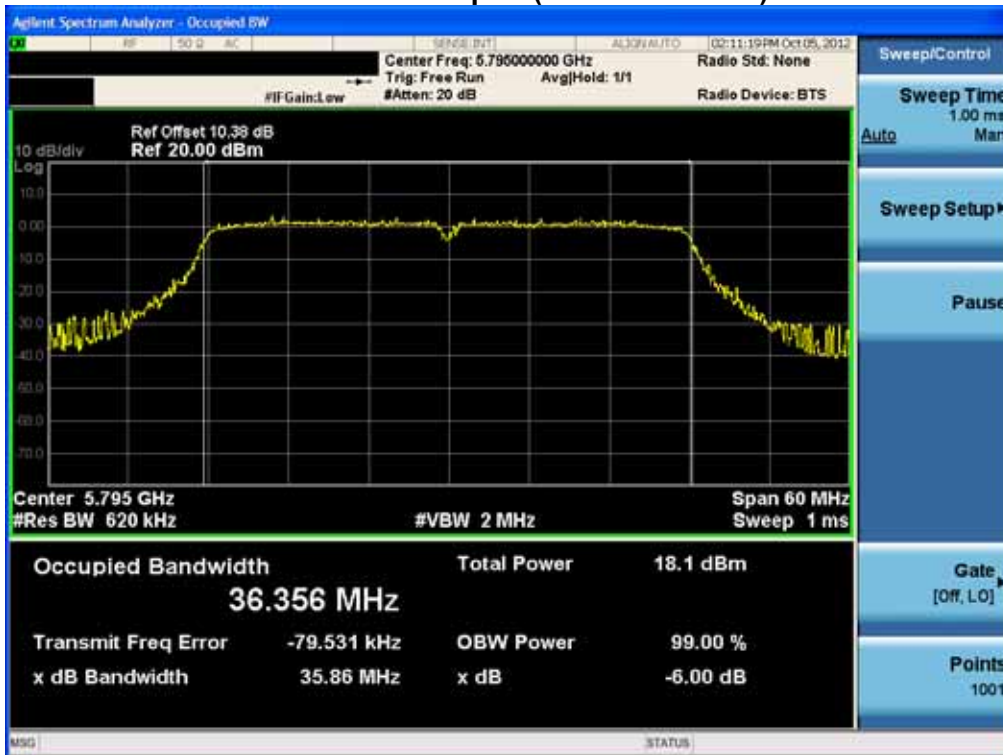


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

6dB Bandwidth plot (802.11n-CH 151)



6dB Bandwidth plot (802.11n-CH 159)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

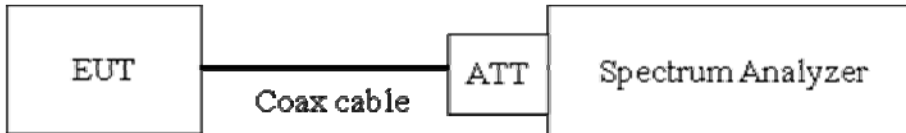
8.2 OUTPUT POWER MEASUREMENT (802.11a/b/g/n)

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(with a duty cycle of greater than or equal to 98%) 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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)		FCC ID: ZNFL02E



Sample Calculation

$$\begin{aligned} \text{Output Power} &= \text{Reading Value} + \text{ATT loss} + \text{Cable loss}(1 \text{ ea}) \\ &= 10 \text{ dBm} + 10 \text{ dB} + 0.8 \text{ dB} = 20.8 \text{ dBm} \end{aligned}$$

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 5.8 GHz range that was rounded off to the closest tenth dB. Actual value of loss for the attenuator and cable combination is below table.

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 10.11 dB at 2412 MHz , 10.10 dB at 2437 MHz and is 10.12 dB at 2462 MHz. So, the offset is 10.1 dB. And the offset gap in the 2.4 GHz range do not affect the output power final result.

Band	Frequency(MHz)	Loss(dB)
5.8 GHz	5745	10.37
	5755	10.37
	5785	10.38
	5795	10.38
	5825	10.37

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

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E



TEST RESULTS-Peak

Conducted Output Power Measurements (802.11b Mode)

802.11b Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	1 Mbps	18.76	30
		2 Mbps	19.07	30
		5.5 Mbps	20.74	30
		11 Mbps	22.21	30
2437	6	1 Mbps	19.23	30
		2 Mbps	19.53	30
		5.5 Mbps	21.13	30
		11 Mbps	22.37	30
2462	11	1 Mbps	19.43	30
		2 Mbps	19.73	30
		5.5 Mbps	21.30	30
		11 Mbps	22.58	30

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)		FCC ID: ZNFL02E



Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	17.35	30
		9 Mbps	17.74	30
		12 Mbps	17.39	30
		18 Mbps	17.43	30
		24 Mbps	17.83	30
		36 Mbps	17.83	30
		48 Mbps	17.24	30
		54 Mbps	17.55	30
2437	6	6 Mbps	18.23	30
		9 Mbps	18.28	30
		12 Mbps	18.06	30
		18 Mbps	18.08	30
		24 Mbps	18.51	30
		36 Mbps	18.63	30
		48 Mbps	18.46	30
		54 Mbps	18.52	30
2462	11	6 Mbps	18.50	30
		9 Mbps	18.43	30
		12 Mbps	18.13	30
		18 Mbps	18.21	30
		24 Mbps	18.37	30
		36 Mbps	18.66	30
		48 Mbps	18.70	30
		54 Mbps	18.64	30

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

Conducted Output Power Measurements (802.11n Mode)

802.11n Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6.5 Mbps	17.78	30
		13 Mbps	17.18	30
		19.5 Mbps	17.44	30
		26 Mbps	17.81	30
		39 Mbps	17.31	30
		52 Mbps	17.58	30
		58.5 Mbps	17.64	30
		65 Mbps	17.49	30
2437	6	6.5 Mbps	17.6	30
		13 Mbps	16.25	30
		19.5 Mbps	16.78	30
		26 Mbps	17.14	30
		39 Mbps	17.05	30
		52 Mbps	17.09	30
		58.5 Mbps	16.41	30
		65 Mbps	17.31	30
2462	11	6.5 Mbps	16.67	30
		13 Mbps	16.58	30
		19.5 Mbps	16.62	30
		26 Mbps	17.02	30
		39 Mbps	16.95	30
		52 Mbps	16.93	30
		58.5 Mbps	16.77	30
		65 Mbps	16.99	30



Conducted Output Power Measurements (802.11a Mode: 5745~5825)

802.11a Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
5745	149	6 Mbps	18.21	30
		9 Mbps	17.92	30
		12 Mbps	18.00	30
		18 Mbps	17.72	30
		24 Mbps	17.95	30
		36 Mbps	18.06	30
		48 Mbps	17.99	30
		54 Mbps	18.04	30
5785	157	6 Mbps	17.97	30
		9 Mbps	18.23	30
		12 Mbps	17.96	30
		18 Mbps	17.89	30
		24 Mbps	18.32	30
		36 Mbps	18.30	30
		48 Mbps	18.28	30
		54 Mbps	18.51	30
5825	165	6 Mbps	18.36	30
		9 Mbps	17.97	30
		12 Mbps	17.58	30
		18 Mbps	17.75	30
		24 Mbps	17.99	30
		36 Mbps	17.97	30
		48 Mbps	18.11	30
		54 Mbps	17.93	30

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

Conducted Output Power Measurements (802.11n_20 MHz BW Mode: 5745~5825)

802.11n Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
5745	149	6.5 Mbps	18.42	30
		13 Mbps	17.97	30
		19.5 Mbps	18.01	30
		26 Mbps	18.32	30
		39 Mbps	18.04	30
		52 Mbps	18.14	30
		58.5 Mbps	18.18	30
		65 Mbps	18.20	30
5785	157	6.5 Mbps	18.00	30
		13 Mbps	17.76	30
		19.5 Mbps	18.01	30
		26 Mbps	18.24	30
		39 Mbps	18.29	30
		52 Mbps	18.15	30
		58.5 Mbps	18.41	30
		65 Mbps	18.47	30
5825	165	6.5 Mbps	18.67	30
		13 Mbps	18.03	30
		19.5 Mbps	18.07	30
		26 Mbps	18.57	30
		39 Mbps	18.08	30
		52 Mbps	18.28	30
		58.5 Mbps	18.13	30
		65 Mbps	18.12	30

Conducted Output Power Measurements (802.11n_40 MHz BW Mode: 5755~5795)

802.11n Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
5755	151	13.5 Mbps	17.65	30
		27 Mbps	17.20	30
		40.5 Mbps	17.36	30
		54 Mbps	17.31	30
		81 Mbps	17.10	30
		108 Mbps	16.97	30
		121.5 Mbps	17.11	30
		135 Mbps	16.93	30
5795	159	13.5 Mbps	18.41	30
		27 Mbps	18.35	30
		40.5 Mbps	18.19	30
		54 Mbps	18.36	30
		81 Mbps	18.51	30
		108 Mbps	18.45	30
		121.5 Mbps	18.48	30
		135 Mbps	18.46	30

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)		FCC ID: ZNFL02E



TEST RESULTS-Average

Conducted Output Power Measurements (802.11b Mode)

802.11b Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	1 Mbps	15.40	30
		2 Mbps	15.37	30
		5.5 Mbps	15.42	30
		11 Mbps	15.22	30
2437	6	1 Mbps	15.75	30
		2 Mbps	15.79	30
		5.5 Mbps	15.78	30
		11 Mbps	15.32	30
2462	11	1 Mbps	15.81	30
		2 Mbps	15.80	30
		5.5 Mbps	15.76	30
		11 Mbps	15.55	30

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	9.25	30
		9 Mbps	9.17	30
		12 Mbps	9.05	30
		18 Mbps	8.89	30
		24 Mbps	8.65	30
		36 Mbps	8.35	30
		48 Mbps	8.07	30
		54 Mbps	7.40	30
2437	6	6 Mbps	10.06	30
		9 Mbps	9.95	30
		12 Mbps	9.82	30
		18 Mbps	9.63	30
		24 Mbps	9.35	30
		36 Mbps	9.09	30
		48 Mbps	8.79	30
		54 Mbps	8.70	30
2462	11	6 Mbps	10.31	30
		9 Mbps	10.20	30
		12 Mbps	10.10	30
		18 Mbps	9.92	30
		24 Mbps	9.66	30
		36 Mbps	9.29	30
		48 Mbps	9.00	30
		54 Mbps	8.94	30

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

Conducted Output Power Measurements (802.11n Mode)

802.11n Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6.5 Mbps	9.25	30
		13 Mbps	9.15	30
		19.5 Mbps	8.87	30
		26 Mbps	8.48	30
		39 Mbps	8.18	30
		52 Mbps	7.84	30
		58.5 Mbps	7.60	30
		65 Mbps	7.28	30
2437	6	6.5 Mbps	8.41	30
		13 Mbps	7.94	30
		19.5 Mbps	8.14	30
		26 Mbps	7.92	30
		39 Mbps	7.62	30
		52 Mbps	7.33	30
		58.5 Mbps	7.26	30
		65 Mbps	7.11	30
2462	11	6.5 Mbps	8.02	30
		13 Mbps	8.22	30
		19.5 Mbps	8.00	30
		26 Mbps	7.81	30
		39 Mbps	7.54	30
		52 Mbps	6.73	30
		58.5 Mbps	7.03	30
		65 Mbps	6.87	30



Conducted Output Power Measurements (802.11a Mode: 5745~5825)

802.11a Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
5745	149	6 Mbps	11.04	30
		9 Mbps	10.95	30
		12 Mbps	10.91	30
		18 Mbps	10.32	30
		24 Mbps	10.19	30
		36 Mbps	9.79	30
		48 Mbps	9.47	30
		54 Mbps	9.34	30
5785	157	6 Mbps	10.61	30
		9 Mbps	10.50	30
		12 Mbps	10.32	30
		18 Mbps	10.25	30
		24 Mbps	10.14	30
		36 Mbps	9.86	30
		48 Mbps	9.58	30
		54 Mbps	9.43	30
5825	165	6 Mbps	10.71	30
		9 Mbps	10.61	30
		12 Mbps	10.48	30
		18 Mbps	10.24	30
		24 Mbps	10.40	30
		36 Mbps	9.62	30
		48 Mbps	9.30	30
		54 Mbps	9.15	30

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

Conducted Output Power Measurements (802.11n_20 MHz BW Mode: 5745~5825)

802.11n Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
5745	149	6.5 Mbps	11.05	30
		13 Mbps	10.83	30
		19.5 Mbps	10.71	30
		26 Mbps	10.29	30
		39 Mbps	9.99	30
		52 Mbps	9.61	30
		58.5 Mbps	9.43	30
		65 Mbps	9.37	30
5785	157	6.5 Mbps	10.80	30
		13 Mbps	10.69	30
		19.5 Mbps	10.52	30
		26 Mbps	10.41	30
		39 Mbps	10.08	30
		52 Mbps	9.87	30
		58.5 Mbps	9.78	30
		65 Mbps	9.54	30
5825	165	6.5 Mbps	10.89	30
		13 Mbps	10.67	30
		19.5 Mbps	10.47	30
		26 Mbps	10.09	30
		39 Mbps	9.69	30
		52 Mbps	9.44	30
		58.5 Mbps	9.35	30
		65 Mbps	9.26	30



Conducted Output Power Measurements (802.11n_40 MHz BW Mode: 5755~5795)

802.11n Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
5755	151	13.5 Mbps	10.03	30
		27 Mbps	9.68	30
		40.5 Mbps	9.35	30
		54 Mbps	9.18	30
		81 Mbps	8.82	30
		108 Mbps	8.48	30
		121.5 Mbps	8.46	30
		135 Mbps	8.39	30
5795	159	13.5 Mbps	10.89	30
		27 Mbps	10.67	30
		40.5 Mbps	10.58	30
		54 Mbps	10.39	30
		81 Mbps	10.20	30
		108 Mbps	9.99	30
		121.5 Mbps	9.88	30
		135 Mbps	9.82	30

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

RESULT PLOTS-Peak

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



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



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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

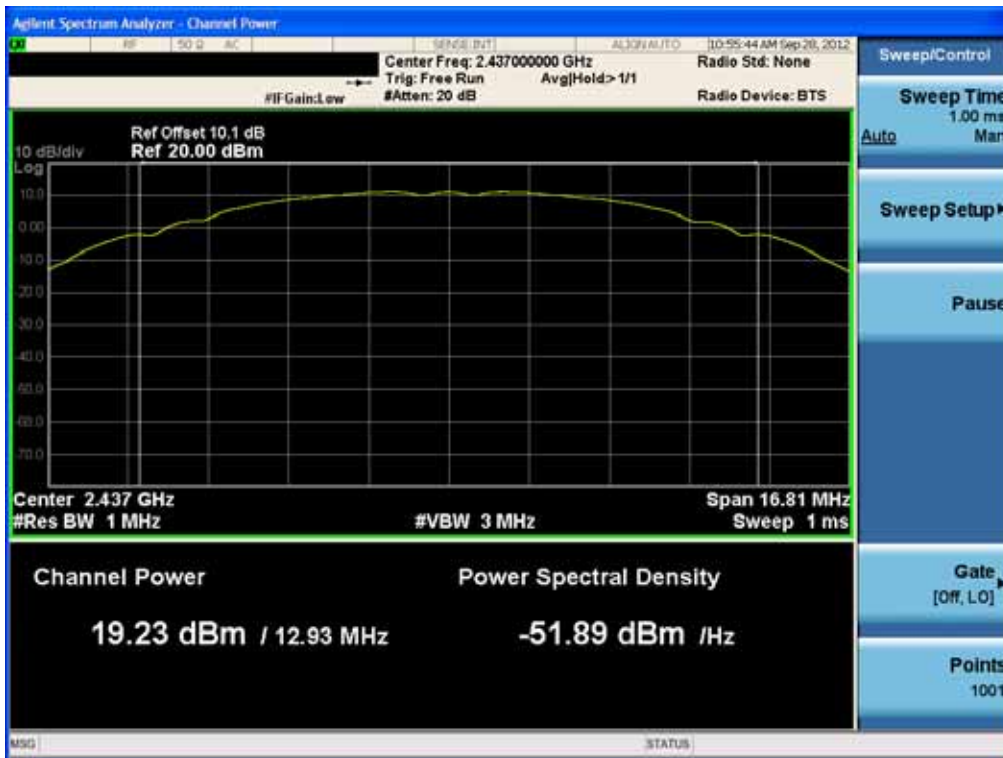


Conducted Output Power (802.11b-CH 1) 11Mbps

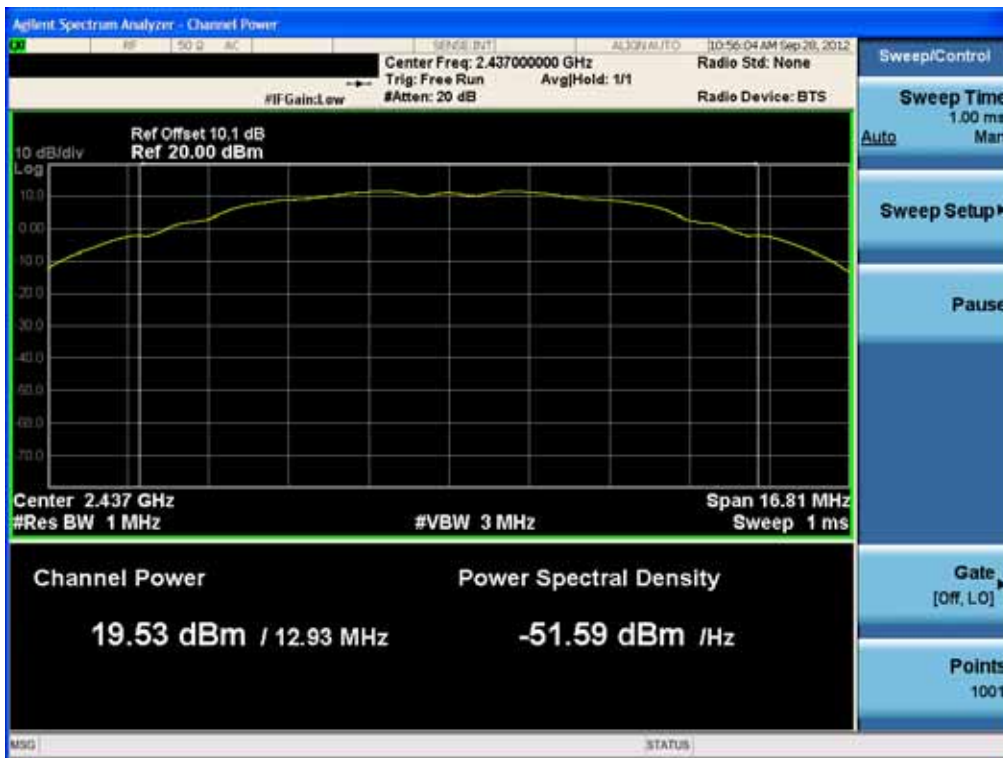


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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

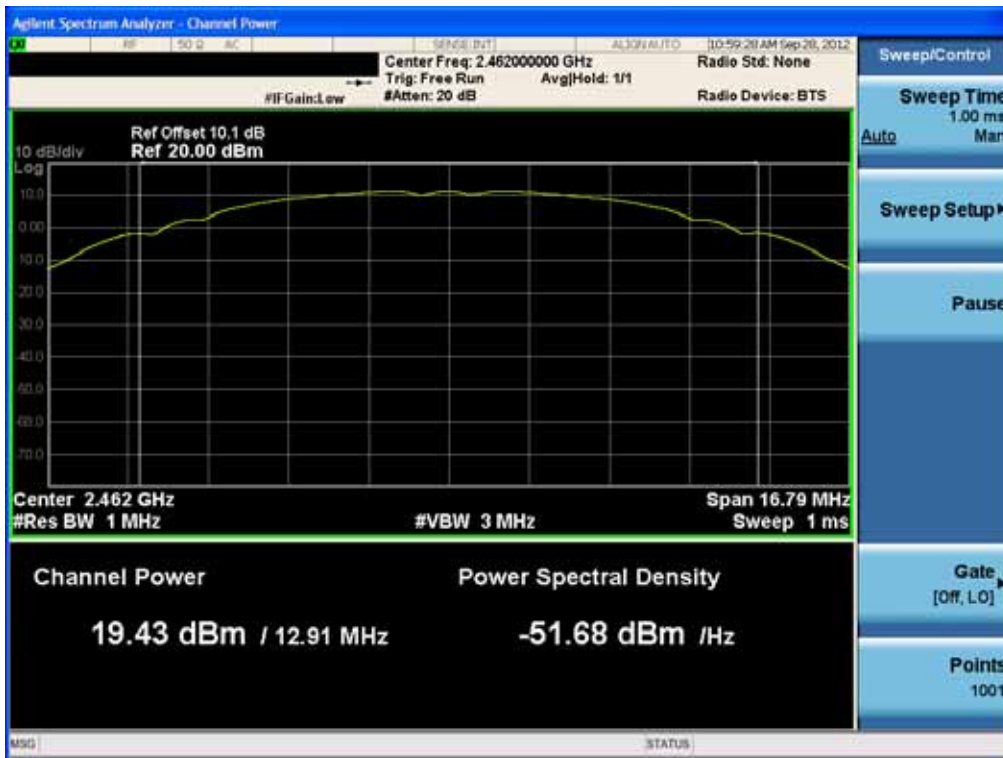


Conducted Output Power (802.11b-CH 6) 11Mbps

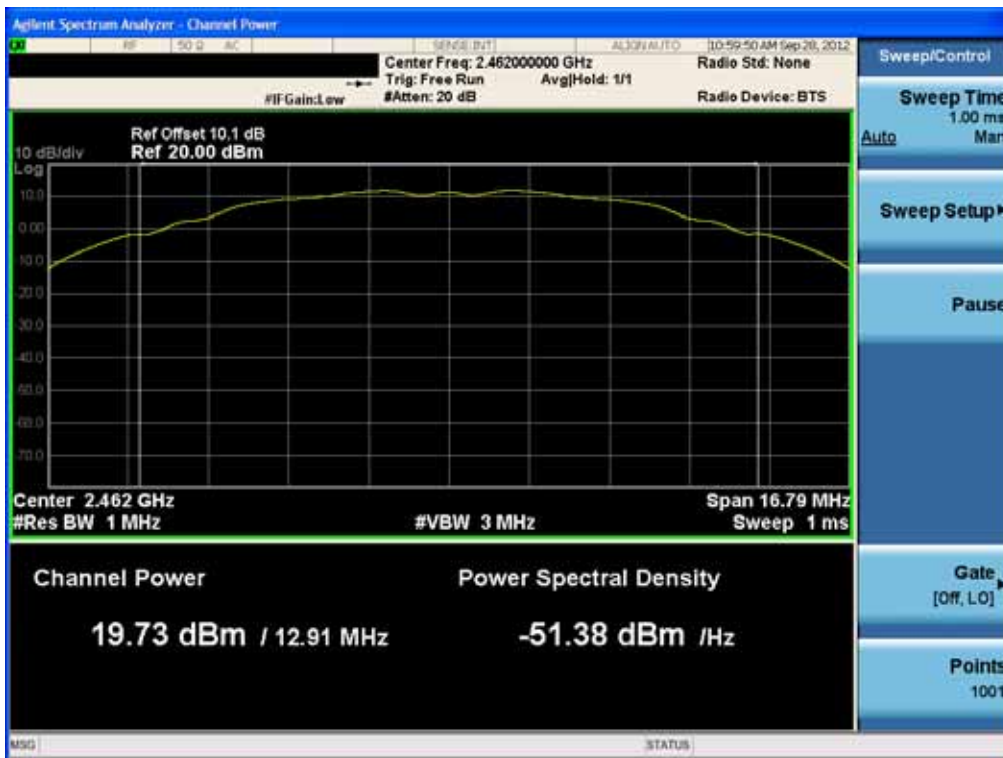


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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



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

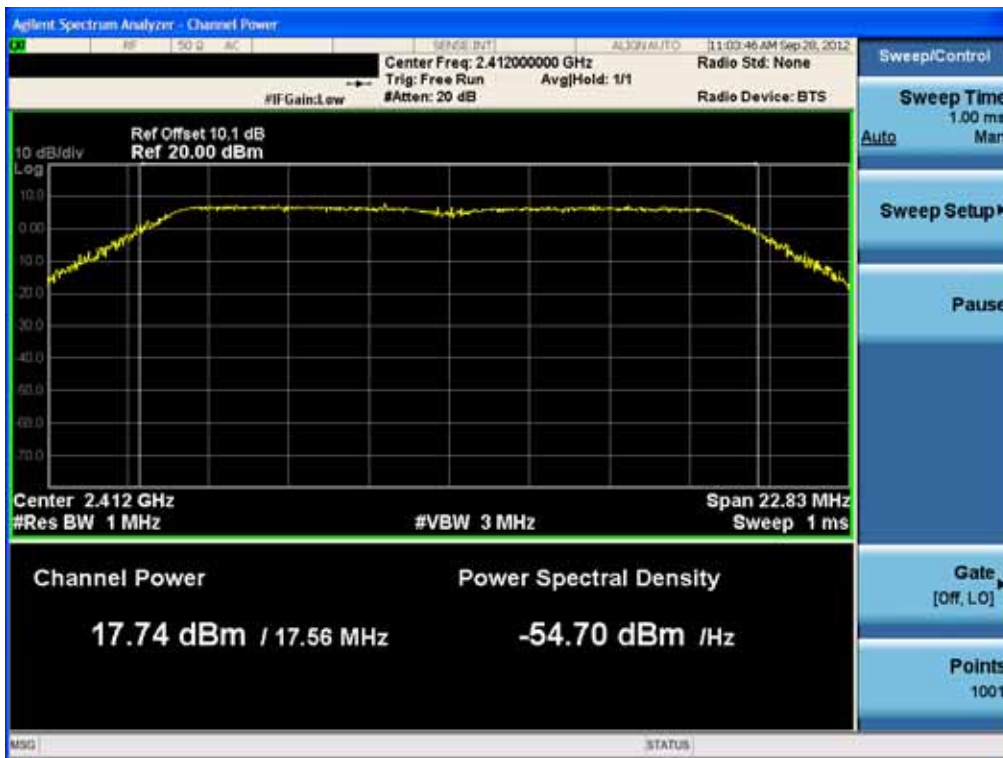


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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



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

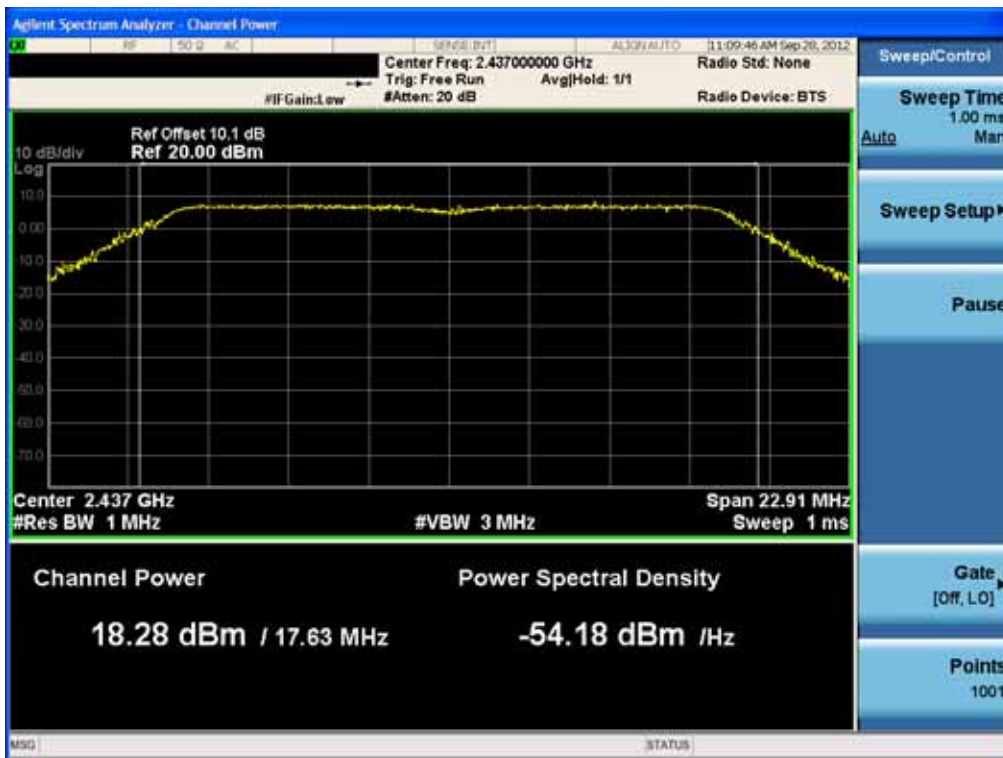


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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

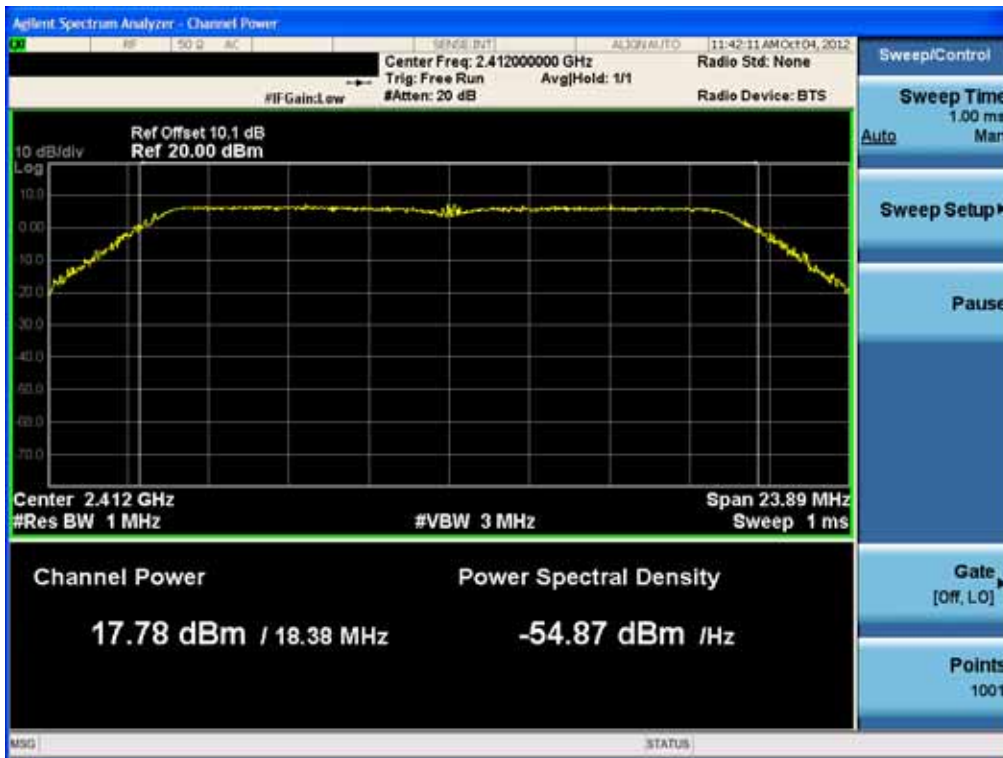


Conducted Output Power (802.11g-CH 11) 54Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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



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

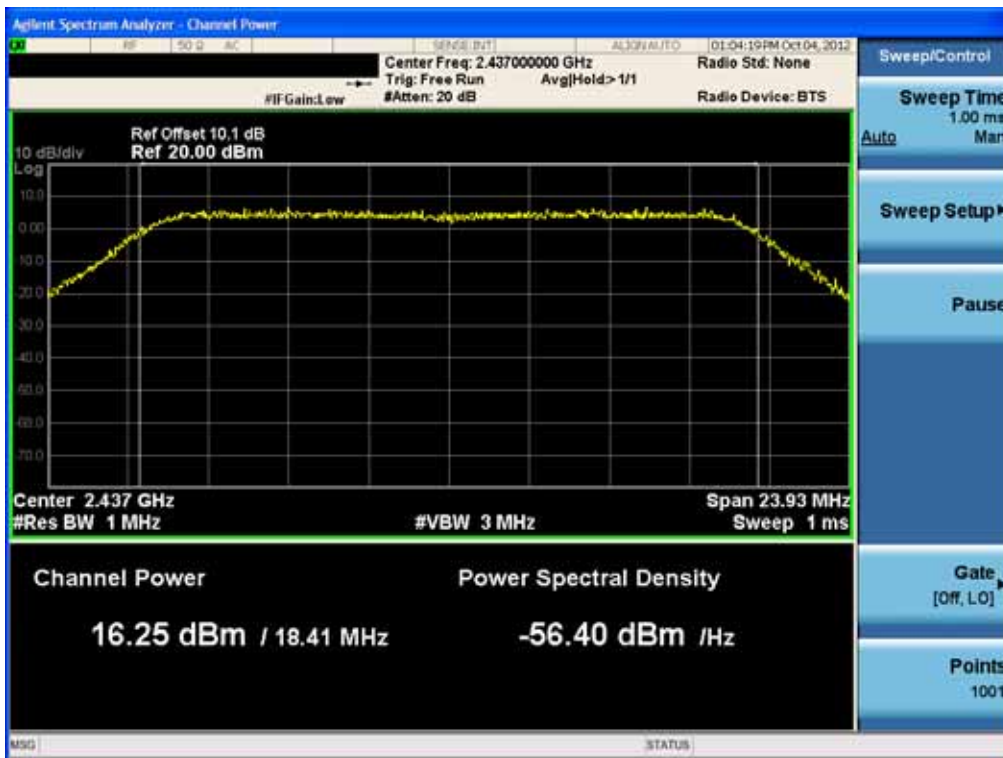


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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



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

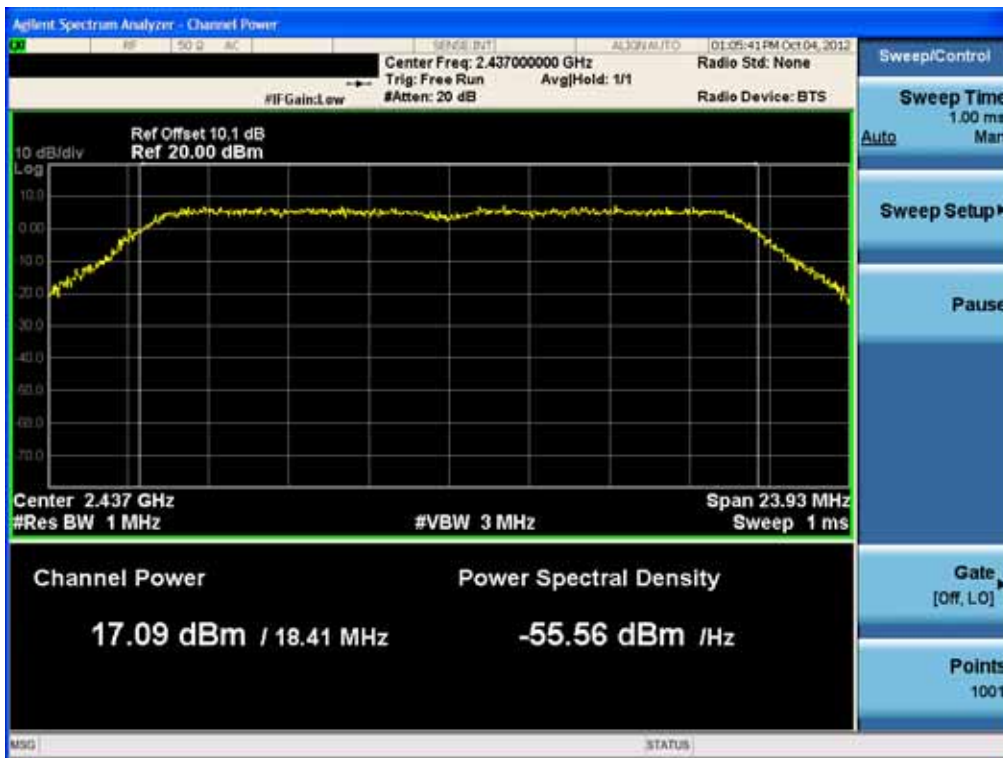


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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



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

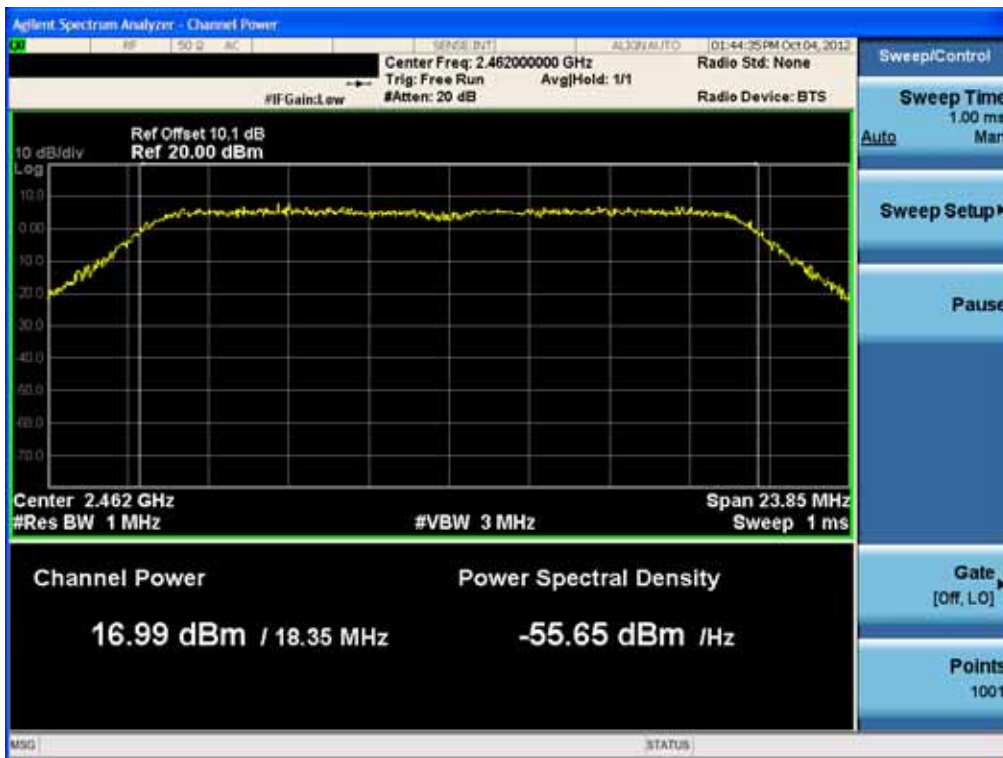


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E

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. HCTR1210R19-1	Date of Issue: October 23, 2012	EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFL02E