

HCT CO., LTD.

CERTIFICATE OF COMPLIANCE

FCC Certification

Applicant Name:

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

Date of Issue: July 10, 2013

Test Site/Location:

Address:

HCT CO., LTD., 105-1, Jangam-ri, Majang-Myeon,

1000 Sylvan Avenue, Englewood Cliffs NJ 07632

Icheon-si, Kyunggi-Do, Korea

Report No.: HCTR1307FR12-1

HCT FRN: 0005866421

FCC ID

: ZNFE410I

APPLICANT

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

FCC Model(s):

LG-E410i

Additional FCC Model(s):

LGE410i, E410i

EUT Type:

GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n

Max. RF Output Power:

Wi-Fi 802.11b(21.86 dBm) / Wi-Fi 802.11g (20.42 dBm) / Wi-Fi 802.11n (20.11 dBm)

Frequency Range:

2412 MHz - 2462 MHz (2.4 GHz Band)

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 : Kwang II Yoon

Test engineer of RF Team

Approved by : Chang Seok Choi Manager of RF Team

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| FCC PT.15.247 TEST REPORT Test Report No. HCTR1307FR12-1 | FCC CERTIFICATION REPORT | | www.hct.co.kr |
|---|---------------------------------|--|---------------------|
| | Date of Issue: July 10, 2013 | EUT Type: GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | FCC ID: ZNFE410I |



Version

| TEST REPORT NO. | DATE | DESCRIPTION |
|------------------------------|---------------|---------------------------------|
| HCTR1307FR12 | July 09, 2013 | - First Approval Report |
| HCTR1307FR12-1 July 10, 2013 | | - Revised Additional Model Name |
| | | |
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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 | |
| 5.2 EQUIPMENT | 6 |
| 6. ANTENNA REQUIREMENTS | 7 |
| 7. SUMMARY TEST OF RESULTS | 8 |
| 8. TEST RESULT | |
| 8.1 DUTY CYCLE | 9 |
| 8.2 6dB BANDWIDTH (802.11b/g/n) | 1 1 |
| 8.3 OUTPUT POWER (802.11b/g/n) | 1 8 |
| 8.4 POWER SPECTRAL DENSITY (802.11b/g/n) | 8 6 |
| 8.5 OUT OF BAND EMISSIONS AT THE BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS | 9 3 |
| 8.6 RADIATED MEASUREMENT | 1 4 |
| 8.6.1 RADIATED SPURIOUS EMISSIONS1 | 1 4 |
| 8.6.2 RADIATED RESTRICTED BAND EDGES 1 | 2 6 |
| 8.7 POWERLINE CONDUCTED EMISSIONS 1 | 2 8 |
| 9. LIST OF TEST EQUIPMENT 1 | 3 3 |

| FCC PT.15.247 TEST REPORT | | www.hct.co.kr | |
|------------------------------|----------------|---|----------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12 | July 09, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |



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Address: 1000 Sylvan Avenue, Englewood Cliffs NJ 07632

FCC ID: ZNFE410I

EUT Type: GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n

Model name(s): LG-E410i

Additional Model name(s): LGE410i, E410i

Date(s) of Tests: June 25, 2013 ~ July 05, 2013

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 | GSM Pho | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | | | |
|---------------------------|---|---|--|--|--|
| FCC Model Name | LG-E410i | | | | |
| Additional FCC Model Name | LGE410i, E410i | | | | |
| Power Supply | DC 3.7 V | | | | |
| Battery type | Li-ion Bat | tery(Standard) | | | |
| Frequency Range | TX: 2412 MHz ~ 2462 MHz | | | | |
| | RX: 2412 | MHz ~ 2462 MHz | | | |
| Max. RF Output Power | Peak | Wi-Fi 802.11b(21.86 dBm) / Wi-Fi 802.11g (20.42 dBm) / | | | |
| | | Wi-Fi 802.11n (20.11 dBm) | | | |
| | Average | Average Wi-Fi 802.11b (15.83 dBm) / Wi-Fi 802.11g (12.13 dBm) / | | | |
| | Wi-Fi 802.11n (11.89 dBm) | | | | |
| Modulation Type | DSSS/CCK(802.11b), OFDM(802.11g, 802.11n) | | | | |
| Antenna Specification | Manufacturer: LS Mtron Co.Ltd. | | | | |
| | Antenna type: PIFA Antenna | | | | |
| | Peak Gai | n : 1.72 dBi | | | |

| FCC PT.15.247 TEST REPORT | | www.hct.co.kr | |
|------------------------------|----------------|---|----------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |



3. TEST METHODOLOGY

FCC KDB 558074 D01 DTS Meas Guidance v03r01 dated April 09, 2013 entitled "Guidance for Performing Compliance Measurements on Digital Transmission Systems(DTS) and the measurement procedure described in the American National Standard for Testing Unlicensed Wireless Devices(ANSI C63.4-2003) 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 13.1.4.1 of ANSI C63.4. (Version :2003) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 13.1.4.1 of ANSI C63.4. (Version: 2003)

Conducted Antenna Terminal

See Section from 9.1 to 9.2.(KDB 558074)

3.4 DESCRIPTION OF TEST MODES

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

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

| FCC PT.15.247 TEST REPORT | | www.hct.co.kr | |
|------------------------------|----------------|---|----------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |



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 June 21, 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 | | www.hct.co.kr | |
|------------------------------|----------------|---|----------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 6 of 133



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."

Page 7 of 133

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

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



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 | | www.hct.co.kr | |
|------------------------------|----------------|---|----------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |



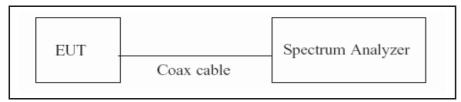
8. TEST RESULT 8.1 DUTY CYCLE

TEST PROCEDURE

According to KDB 558074)6)b), issued 04/09/2013)

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW \geq OBW if possible; otherwise, set RBW to the largest available value. Set VBW \geq RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T \leq 16.7 microseconds.)

TEST CONFIGURATION



■ TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer. We tested accroding to the zero-span measurement method, 6.0)b) in KDB 558074(issued 04/09/2013)

The largest available value of RBW is 8 MHz and VBW is 50 MHz. The zero-span method of measuring duty cycle shall not be used if $T \le 6.25$ microseconds. (50/6.25 = 8)

The zero-span method was used because all measured T data are > 6.25 microseconds and both RBW and VBW are > 50/T.

- 1. RBW = 8 MHz (the largest available value)
- 2. VBW = 8 MHz (≥ RBW)
- 3. SPAN = 0 Hz
- 4. Detector = Peak
- 5. Number of points in sweep > 100
- 6. Trace mode = Clear write
- 7. Measure T_{total} and T_{on}
- 8. Calculate Duty Cycle = T_{on}/T_{total} and Duty Cycle Factor = 10*log(1/Duty Cycle)

| FCC PT.15.247 TEST REPORT | | www.hct.co.kr | |
|------------------------------|----------------|---|----------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |



■ Duty Cycle Factor

| Mode | Data Rate | T _{on} | T _{total} | Duty Cycle | Duty Cycle Factor |
|-------------|-----------|-----------------|--------------------|------------|-------------------|
| | | (ms) | (ms) | | (dB) |
| b | 1 Mbps | 12.390 | 12.510 | 0.99040767 | 0.042 |
| | 2 Mbps | 6.300 | 6.400 | 0.98437500 | 0.068 |
| | 5.5 Mbps | 2.420 | 2.520 | 0.96031746 | 0.176 |
| | 11 Mbps | 1.302 | 1.404 | 0.92735043 | 0.328 |
| g | 6 Mbs | 2.060 | 2.160 | 0.95370370 | 0.206 |
| | 9 Mbs | 1.385 | 1.485 | 0.93265993 | 0.303 |
| | 12 Mbs | 1.044 | 1.146 | 0.91099476 | 0.405 |
| | 18 Mbs | 0.705 | 0.804 | 0.87686567 | 0.571 |
| | 24 Mbs | 0.532 | 0.632 | 0.84177215 | 0.748 |
| | 36 Mbs | 0.363 | 0.465 | 0.78217822 | 1.067 |
| | 48 Mbs | 0.276 | 0.377 | 0.73170732 | 1.357 |
| | 54 Mbs | 0.247 | 0.348 | 0.71034483 | 1.485 |
| n_20 MHz BW | 6.5 Mbs | 1.920 | 2.020 | 0.95049505 | 0.221 |
| | 13 Mbs | 1.920 | 2.020 | 0.95049505 | 0.221 |
| | 19.5 Mbs | 0.980 | 1.080 | 0.90740741 | 0.422 |
| | 26 Mbs | 0.664 | 0.764 | 0.86910995 | 0.609 |
| | 39 Mbs | 0.508 | 0.608 | 0.83552632 | 0.780 |
| | 52 Mbs | 0.352 | 0.452 | 0.77876106 | 1.086 |
| | 58.5 Mbs | 0.271 | 0.373 | 0.72839506 | 1.376 |
| | 65 Mbs | 0.247 | 0.348 | 0.70977011 | 1.489 |

Note : Duty Cycle Factor = 10*log(1/Duty Cycle). where, Duty Cycle = T_{on} / T_{total}

| FCC PT.15.247 TEST REPORT | | FCC CERTIFICATION REPORT | www.hct.co.kr |
|------------------------------|----------------|---|---------------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 10 of 133



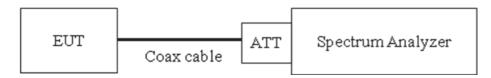
8.2 6dB BANDWIDTH (802.11b/g/n)

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 (Page 5 in KDB 558074, issued 04/09/2013)

RBW = 100 kHz

VBW ≥ 3 x RBW

Detector = Peak

Trace mode = max hold

Sweep = auto couple

Allow the trace to stabilize

Note: We tested 6 dB bandwidth using the automatic bandwidth measurement capability of a spectrum analyzer. X dB is set 6 dB.

Page 11 of 133



■ TEST RESULTS

Conducted 6dB Bandwidth Measurements for 802.11b

| 802.11b Mode | | Measured Bandwidth | Minimum Bandwidth | Pass / Fail |
|-------------------------|-----|--------------------|-------------------|-------------|
| Frequency [MHz] Channel | | [MHz] | [MHz] | |
| | No. | | | |
| 2412 | 1 | 8.133 | 0.500 | Pass |
| 2437 | 6 | 8.147 | 0.500 | Pass |
| 2462 | 11 | 8.592 | 0.500 | Pass |

Conducted 6dB Bandwidth Measurements for 802.11g

| 802.11g Mode | | Measured Bandwidth | Minimum Bandwidth | Pass / Fail |
|-------------------------|-----|--------------------|-------------------|-------------|
| Frequency [MHz] Channel | | [MHz] | [MHz] | |
| | No. | | | |
| 2412 | 1 | 16.08 | 0.500 | Pass |
| 2437 | 6 | 15.99 | 0.500 | Pass |
| 2462 | 11 | 16.34 | 0.500 | Pass |

Conducted 6dB Bandwidth Measurements for 802.11n_20 MHz BW

| 802.11n Mode | | Measured Bandwidth | Minimum Bandwidth | Pass / Fail |
|-------------------------|-----|--------------------|-------------------|-------------|
| Frequency [MHz] Channel | | [MHz] | [MHz] | |
| | No. | | | |
| 2412 | 1 | 16.56 | 0.500 | Pass |
| 2437 | 6 | 15.94 | 0.500 | Pass |
| 2462 | 11 | 16.32 | 0.500 | Pass |

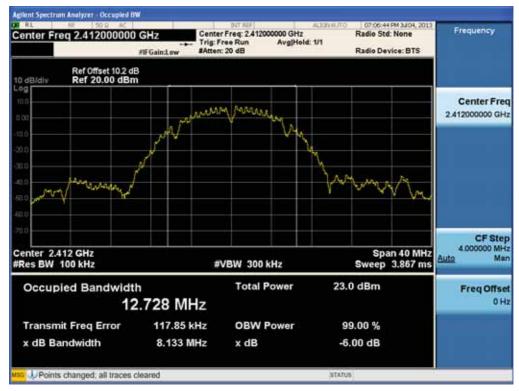
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|------------------------------|----------------|---|---------------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 12 of 133

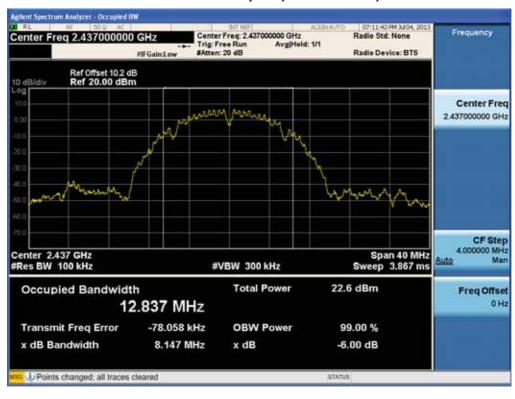


RESULT PLOTS

6dB Bandwidth plot (802.11b-CH 1)



6dB Bandwidth plot (802.11b-CH 6)

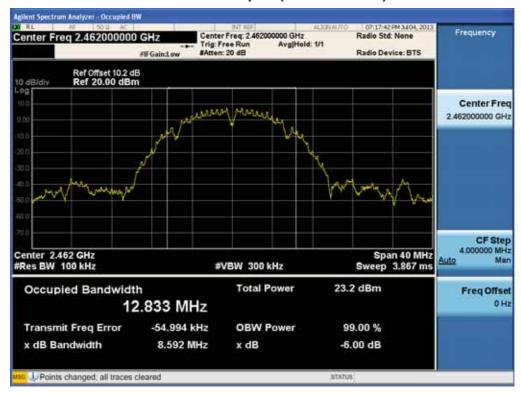


| FCC PT.15.247 TEST REPORT | | FCC CERTIFICATION REPORT | www.hct.co.kr |
|------------------------------|----------------|---|---------------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

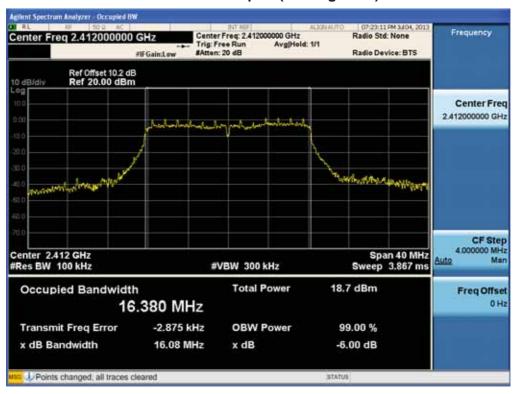
Page 13 of 133



6dB Bandwidth plot (802.11b-CH 11)



6dB Bandwidth plot (802.11g-CH 1)

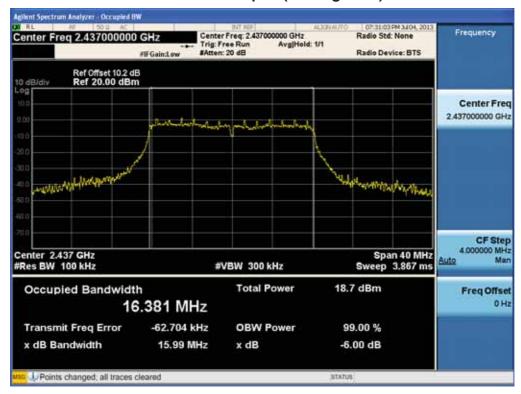


| FCC PT.15.247 TEST REPORT | | FCC CERTIFICATION REPORT | www.hct.co.kr |
|------------------------------|----------------|---|---------------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

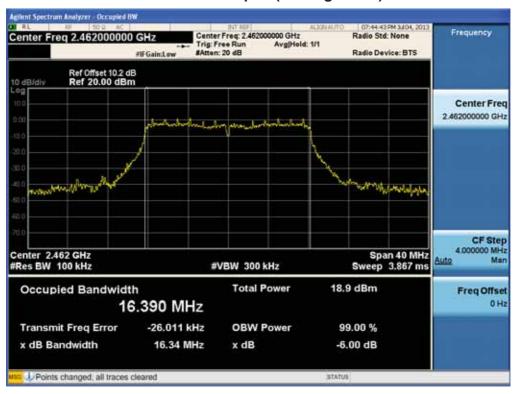
Page 14 of 133



6dB Bandwidth plot (802.11g-CH 6)



6dB Bandwidth plot (802.11g-CH 11)

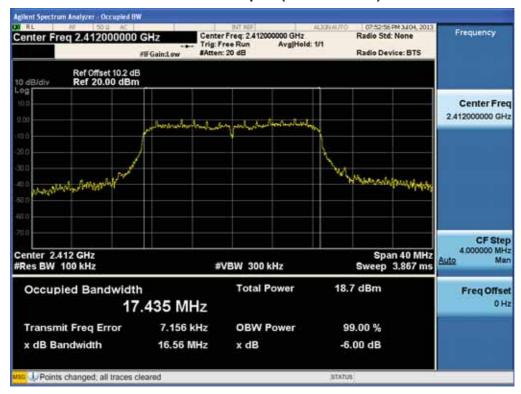


| FCC PT.15.247 TEST REPORT | | FCC CERTIFICATION REPORT | www.hct.co.kr |
|------------------------------|----------------|---|---------------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

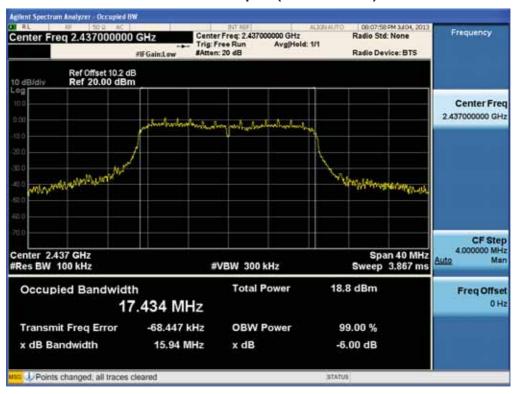
Page 15 of 133



6dB Bandwidth plot (802.11n-CH 1)



6dB Bandwidth plot (802.11n-CH 6)

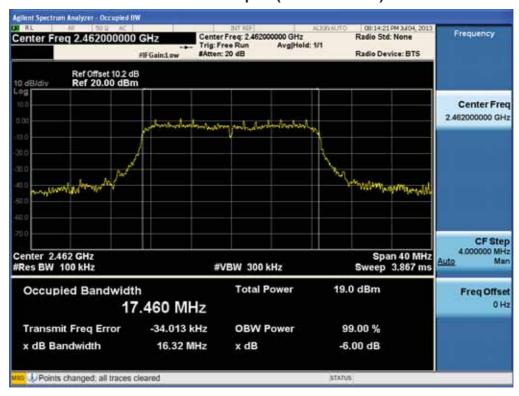


| FCC PT.15.247 TEST REPORT | | FCC CERTIFICATION REPORT | www.hct.co.kr |
|------------------------------|----------------|---|---------------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 16 of 133



6dB Bandwidth plot (802.11n-CH 11)



Page 17 of 133



frequencies.

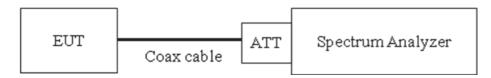
8.3 OUTPUT POWER (802.11b/g/n)

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

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.

The Spectrum Analyzer is set to

Peak Power (Procedure 9.1.2 in KDB 558074, issued 04/09/2013)

RBW = 1 MHz

VBW ≥ 3 x RBW

SPAN ≥ 1.5 x DTS bandwidth

Detector Mode = Peak

Sweep = auto couple

Trace Mode = max hold

Allow trace to fully stabilize.

Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select peak detector).

Average Power (Procedure 9.2.2.4 in KDB 558074, issued 04/09/2013)

Measure the duty cycle

Set span to at least 1.5 times the OBW

RBW = 1-5 % of the OBW, not to exceed 1 MHz.

VBW ≥ $3 \times RBW$.

Number of points in sweep $\ge 2 \times \text{span} / \text{RBW}$. (This gives bin-to-bin spacing $\le \text{RBW}/2$,

so that narrowband signals are not lost between frequency bins.)

Sweep time = auto.

Detector = RMS(i.e., power averaging)

Do not use sweep triggering. Allow the sweep to "free run".

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

Compute power by integrating the spectrum across the OBW of the signal using the instrument's band

| FCC PT.15.247 TEST REPORT | | FCC CERTIFICATION REPORT | www.hct.co.kr |
|------------------------------|----------------|---|---------------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |



power measurement function with band limits set equal to the OBW band edges.

Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Sample Calculation

Note:

- 1. Spectrum reading values are not plot data. The power results in plot is already including the actual values of loss for the attenuator and cable combination.
- 2. Spectrum offset = Attenuator loss + Cable loss
- 3. We apply to the offset in the 2.4 GHz range that was rounded off to the closest tenth dB. So, 10.2 dB is offset for 2.4 GHz Band. Actual value of loss for the attenuator and cable combination is below table.

| Band | Frequency(MHz) | Loss(dB) |
|---------|----------------|----------|
| 2.4 GHz | 2412 | 10.21 |
| | 2437 | 10.24 |
| | 2462 | 10.24 |

(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. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 19 of 133



■ TEST RESULTS-Peak

Conducted Output Power Measurements (802.11b Mode)

| 802.11b | 802.11b Mode | | Measured | Limit |
|----------------|--------------|----------|------------|-------|
| Frequency[MHz] | Channel No. | (Mbps) | Power(dBm) | (dBm) |
| 2412 | 1 | 1 Mbps | 18.18 | 30 |
| | | 2 Mbps | 18.30 | 30 |
| | | 5.5 Mbps | 19.75 | 30 |
| | | 11 Mbps | 21.35 | 30 |
| 2437 | 6 | 1 Mbps | 17.65 | 30 |
| | | 2 Mbps | 17.76 | 30 |
| | | 5.5 Mbps | 19.31 | 30 |
| | | 11 Mbps | 20.79 | 30 |
| 2462 | 11 | 1 Mbps | 18.58 | 30 |
| | | 2 Mbps | 18.82 | 30 |
| | | 5.5 Mbps | 20.24 | 30 |
| | | 11 Mbps | 21.86 | 30 |

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| Test Report No. | Date of Issue: | EUT Type: | FCC ID: | | | | |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I | | | | |
| | | | | | | | |

Page 20 of 133



Conducted Output Power Measurements (802.11g Mode)

| 802.11g | Mode | Rate | Measured | Limit |
|----------------|-------------|---------|------------|-------|
| Frequency[MHz] | Channel No. | (Mbps) | Power(dBm) | (dBm) |
| 2412 | 1 | 6 Mbps | 19.48 | 30 |
| | | 9 Mbps | 19.34 | 30 |
| | | 12 Mbps | 19.24 | 30 |
| | | 18 Mbps | 19.49 | 30 |
| | | 24 Mbps | 20.12 | 30 |
| | | 36 Mbps | 19.88 | 30 |
| | | 48 Mbps | 19.77 | 30 |
| | | 54 Mbps | 19.82 | 30 |
| 2437 | 6 | 6 Mbps | 19.31 | 30 |
| | | 9 Mbps | 19.44 | 30 |
| | | 12 Mbps | 19.44 | 30 |
| | | 18 Mbps | 19.31 | 30 |
| | | 24 Mbps | 19.85 | 30 |
| | | 36 Mbps | 19.77 | 30 |
| | | 48 Mbps | 19.82 | 30 |
| | | 54 Mbps | 19.57 | 30 |
| 2462 | 11 | 6 Mbps | 19.62 | 30 |
| | | 9 Mbps | 19.97 | 30 |
| | | 12 Mbps | 19.86 | 30 |
| | | 18 Mbps | 19.64 | 30 |
| | | 24 Mbps | 20.33 | 30 |
| | | 36 Mbps | 20.42 | 30 |
| | | 48 Mbps | 20.11 | 30 |
| | | 54 Mbps | 20.06 | 30 |

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|------------------------------|----------------|---|----------|--|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: | |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I | |

Page 21 of 133



Conducted Output Power Measurements (802.11n Mode)

| 802.11n Mode | | Rate | Measured | Limit |
|----------------|-------------|-----------|------------|-------|
| Frequency[MHz] | Channel No. | (Mbps) | Power(dBm) | (dBm) |
| 2412 | 1 | 6.5 Mbps | 19.39 | 30 |
| | | 13 Mbps | 19.43 | 30 |
| | | 19.5 Mbps | 19.45 | 30 |
| | | 26 Mbps | 19.30 | 30 |
| | | 39 Mbps | 20.00 | 30 |
| | | 52 Mbps | 19.68 | 30 |
| | | 58.5 Mbps | 19.50 | 30 |
| | | 65 Mbps | 19.79 | 30 |
| 2437 | 6 | 6.5 Mbps | 19.24 | 30 |
| | | 13 Mbps | 19.25 | 30 |
| | | 19.5 Mbps | 19.04 | 30 |
| | | 26 Mbps | 19.16 | 30 |
| | | 39 Mbps | 19.80 | 30 |
| | | 52 Mbps | 19.39 | 30 |
| | | 58.5 Mbps | 19.54 | 30 |
| | | 65 Mbps | 19.35 | 30 |
| 2462 | 11 | 6.5 Mbps | 19.65 | 30 |
| | | 13 Mbps | 19.58 | 30 |
| | | 19.5 Mbps | 19.49 | 30 |
| | | 26 Mbps | 19.36 | 30 |
| | | 39 Mbps | 20.11 | 30 |
| | | 52 Mbps | 19.99 | 30 |
| | | 58.5 Mbps | 19.81 | 30 |
| | | 65 Mbps | 19.94 | 30 |

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| Test Report No. | Date of Issue: | EUT Type: | FCC ID: | |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I | |

Page 22 of 133



■ TEST RESULTS-Average

Conducted Output Power Measurements (802.11b Mode)

| 802.11b Mode | | Rate (Mbps) | Measured | Duty Cycle | Measured | Limit |
|--------------|---------|-------------|------------|------------|------------|-------|
| Frequency | Channel | | Power(dBm) | Factor | Power(dBm) | (dBm) |
| [MHz] | No. | | | | + | |
| | | | | | Duty Cycle | |
| | | | | | Factor | |
| 2412 | 1 | 1 Mbps | 15.22 | 0.042 | 15.26 | 30 |
| | | 2 Mbps | 15.22 | 0.068 | 15.29 | 30 |
| | | 5.5 Mbps | 15.24 | 0.176 | 15.42 | 30 |
| | | 11 Mbps | 15.02 | 0.328 | 15.34 | 30 |
| 2437 | 6 | 1 Mbps | 14.85 | 0.042 | 14.89 | 30 |
| | | 2 Mbps | 14.71 | 0.068 | 14.78 | 30 |
| | | 5.5 Mbps | 14.78 | 0.176 | 14.96 | 30 |
| | | 11 Mbps | 14.50 | 0.328 | 14.83 | 30 |
| 2462 | 11 | 1 Mbps | 15.75 | 0.042 | 15.79 | 30 |
| | | 2 Mbps | 15.67 | 0.068 | 15.74 | 30 |
| | | 5.5 Mbps | 15.62 | 0.176 | 15.80 | 30 |
| | | 11 Mbps | 15.51 | 0.328 | 15.83 | 30 |

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| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I | |

Page 23 of 133



Conducted Output Power Measurements (802.11g Mode)

| 802.11g Mode | | Rate (Mbps) | Measured | Duty Cycle | Measured | Limit |
|--------------|---------|-------------|------------|------------|------------|-------|
| Frequency | Channel | | Power(dBm) | Factor | Power(dBm) | (dBm) |
| [MHz] | No. | | | | + | |
| | | | | | Duty Cycle | |
| | | | | | Factor | |
| 2412 | 1 | 6 Mbps | 11.25 | 0.206 | 11.46 | 30 |
| | | 9 Mbps | 11.05 | 0.303 | 11.36 | 30 |
| | | 12 Mbps | 10.98 | 0.405 | 11.39 | 30 |
| | | 18 Mbps | 11.16 | 0.571 | 11.73 | 30 |
| | | 24 Mbps | 11.11 | 0.748 | 11.86 | 30 |
| | | 36 Mbps | 10.55 | 1.067 | 11.62 | 30 |
| | | 48 Mbps | 10.13 | 1.357 | 11.49 | 30 |
| | | 54 Mbps | 9.96 | 1.485 | 11.44 | 30 |
| 2437 | 6 | 6 Mbps | 11.20 | 0.206 | 11.41 | 30 |
| | | 9 Mbps | 11.24 | 0.303 | 11.54 | 30 |
| | | 12 Mbps | 11.24 | 0.405 | 11.64 | 30 |
| | | 18 Mbps | 10.97 | 0.571 | 11.54 | 30 |
| | | 24 Mbps | 10.80 | 0.748 | 11.54 | 30 |
| | | 36 Mbps | 10.53 | 1.067 | 11.60 | 30 |
| | | 48 Mbps | 10.23 | 1.357 | 11.58 | 30 |
| | | 54 Mbps | 9.72 | 1.485 | 11.21 | 30 |
| 2462 | 11 | 6 Mbps | 11.43 | 0.206 | 11.63 | 30 |
| | | 9 Mbps | 11.68 | 0.303 | 11.98 | 30 |
| | | 12 Mbps | 11.63 | 0.405 | 12.04 | 30 |
| | | 18 Mbps | 11.29 | 0.571 | 11.86 | 30 |
| | | 24 Mbps | 11.20 | 0.748 | 11.95 | 30 |
| | | 36 Mbps | 11.06 | 1.067 | 12.13 | 30 |
| | | 48 Mbps | 10.47 | 1.357 | 11.83 | 30 |
| | | 54 Mbps | 10.19 | 1.485 | 11.67 | 30 |

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| Test Report No. | Date of Issue: | EUT Type: | FCC ID: | |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I | |

Page 24 of 133



Conducted Output Power Measurements (802.11n Mode)

| 802.11n Mode | | Rate (Mbps) | Measured | Duty Cycle | Measured | Limit |
|--------------|---------|-------------|------------|------------|------------|-------|
| Frequency | Channel | | Power(dBm) | Factor | Power(dBm) | (dBm) |
| [MHz] | No. | | | | + | |
| | | | | | Duty Cycle | |
| | | | | | Factor | |
| 2412 | 1 | 6.5 Mbps | 11.29 | 0.221 | 11.51 | 30 |
| | | 13 Mbps | 11.13 | 0.221 | 11.35 | 30 |
| | | 19.5 Mbps | 11.18 | 0.422 | 11.60 | 30 |
| | | 26 Mbps | 10.90 | 0.609 | 11.51 | 30 |
| | | 39 Mbps | 10.76 | 0.780 | 11.54 | 30 |
| | | 52 Mbps | 10.32 | 1.086 | 11.41 | 30 |
| | | 58.5 Mbps | 10.05 | 1.376 | 11.43 | 30 |
| | | 65 Mbps | 10.13 | 1.489 | 11.62 | 30 |
| 2437 | 6 | 6.5 Mbps | 11.23 | 0.221 | 11.45 | 30 |
| | | 13 Mbps | 11.41 | 0.221 | 11.63 | 30 |
| | | 19.5 Mbps | 11.04 | 0.422 | 11.47 | 30 |
| | | 26 Mbps | 10.87 | 0.609 | 11.48 | 30 |
| | | 39 Mbps | 10.89 | 0.780 | 11.67 | 30 |
| | | 52 Mbps | 10.27 | 1.086 | 11.36 | 30 |
| | | 58.5 Mbps | 10.14 | 1.376 | 11.52 | 30 |
| | | 65 Mbps | 9.94 | 1.489 | 11.43 | 30 |
| 2462 | 11 | 6.5 Mbps | 11.63 | 0.221 | 11.85 | 30 |
| | | 13 Mbps | 11.56 | 0.221 | 11.78 | 30 |
| | | 19.5 Mbps | 11.22 | 0.422 | 11.64 | 30 |
| | | 26 Mbps | 10.96 | 0.609 | 11.57 | 30 |
| | | 39 Mbps | 11.11 | 0.780 | 11.89 | 30 |
| | | 52 Mbps | 10.67 | 1.086 | 11.76 | 30 |
| | | 58.5 Mbps | 10.31 | 1.376 | 11.69 | 30 |
| | | 65 Mbps | 10.33 | 1.489 | 11.82 | 30 |

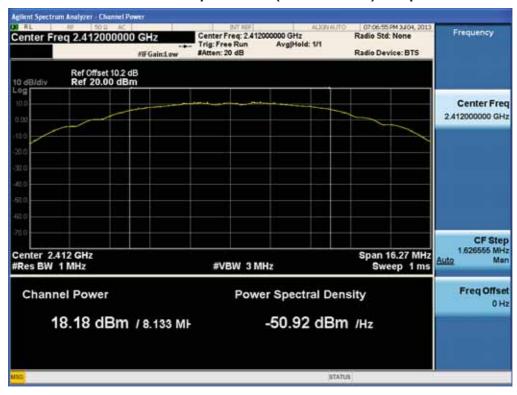
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Page 25 of 133

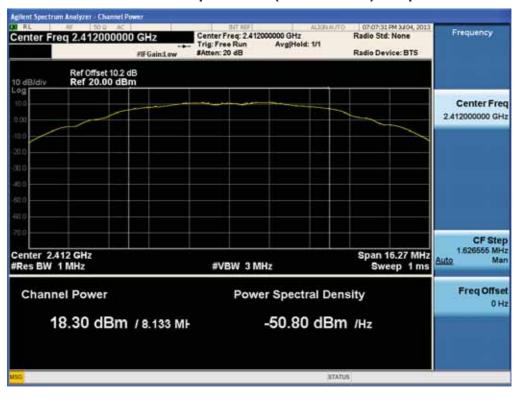


RESULT PLOTS-Peak

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



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



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| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 26 of 133



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



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

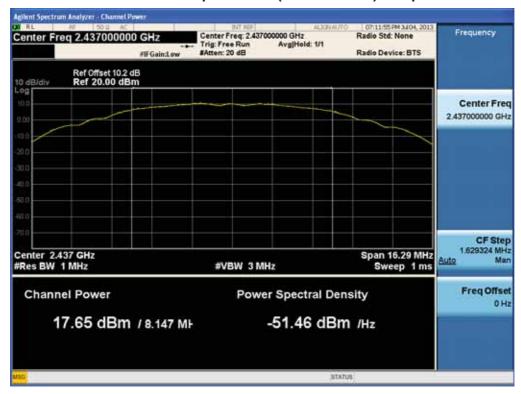


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Page 27 of 133



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



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



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| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 28 of 133



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



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



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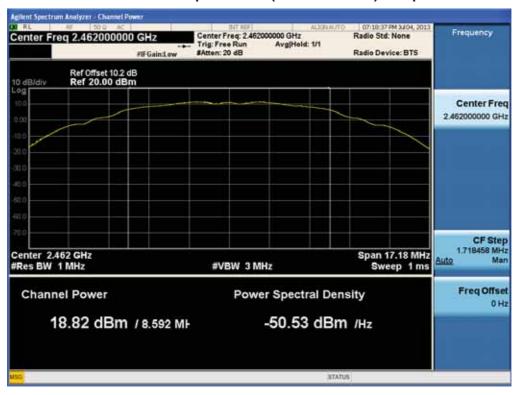
Page 29 of 133



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



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



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| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 30 of 133



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



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



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Page 31 of 133



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



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

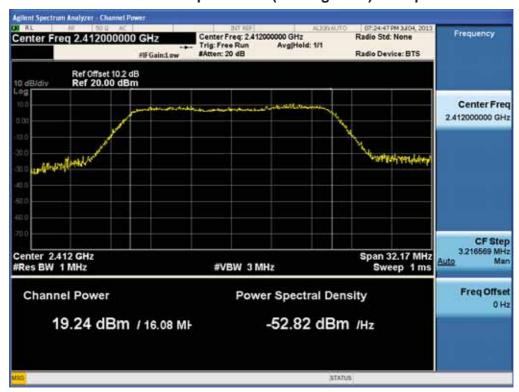


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| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 32 of 133



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



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



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| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 33 of 133



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



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

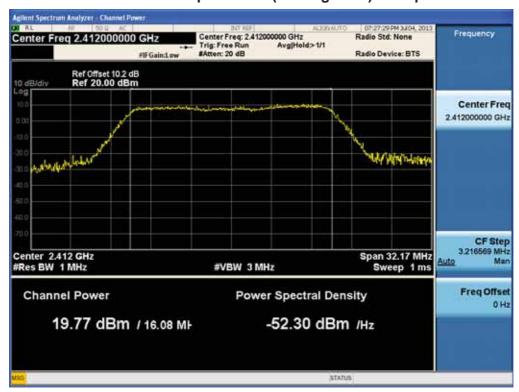


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| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 34 of 133



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



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

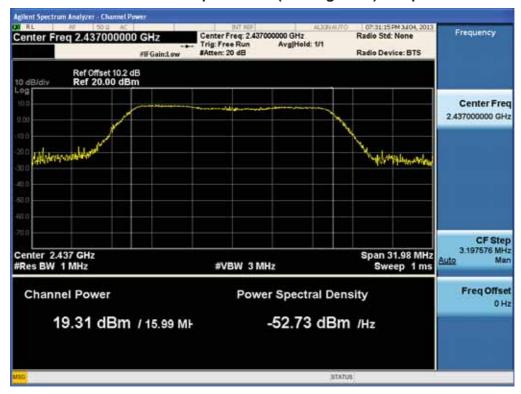


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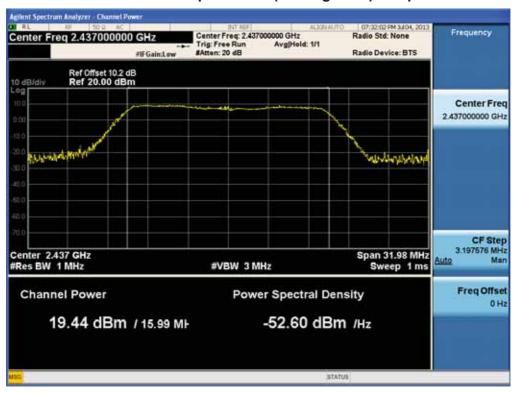
Page 35 of 133



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



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



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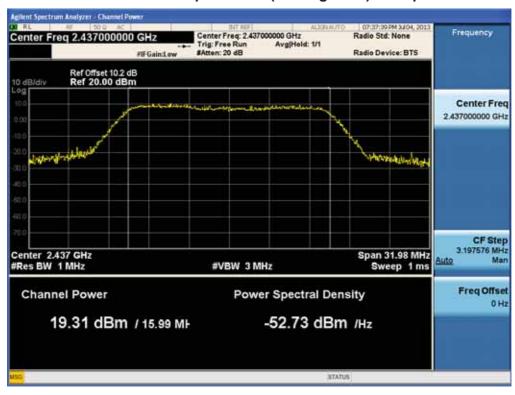
Page 36 of 133



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



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



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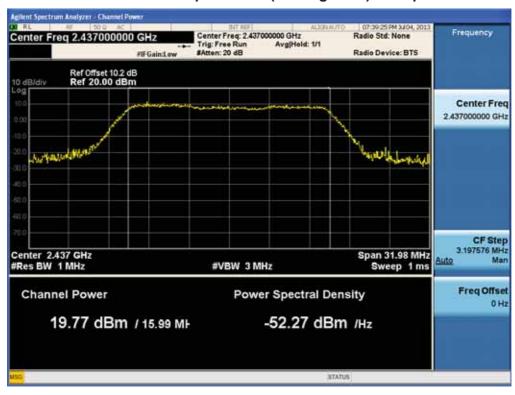
Page 37 of 133



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



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

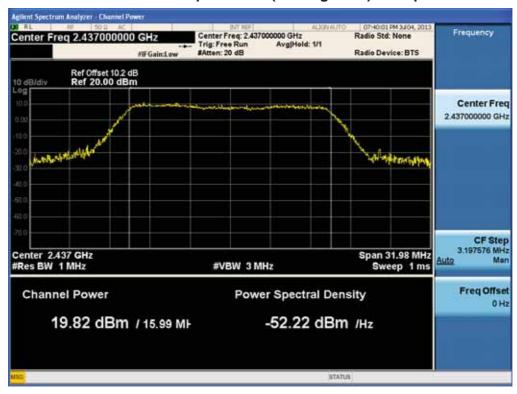


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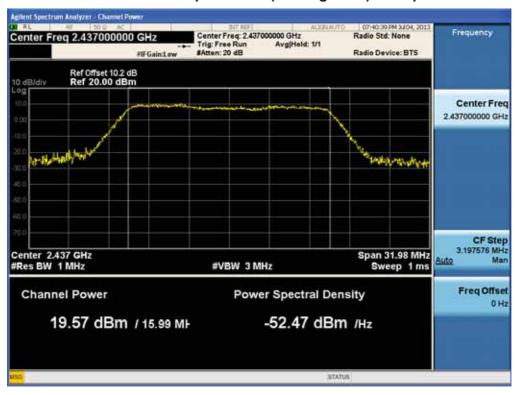
Page 38 of 133



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



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

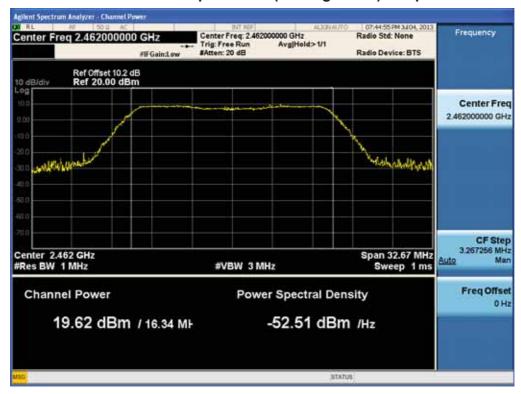


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| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 39 of 133



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 |
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| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
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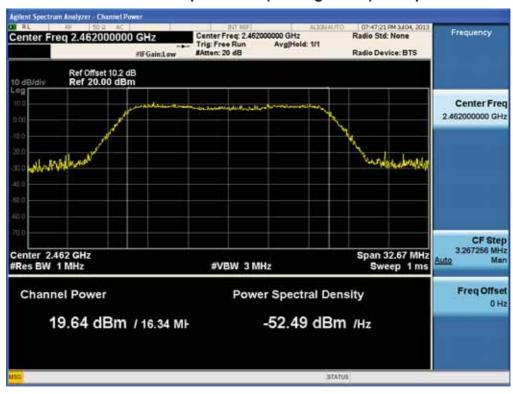
Page 40 of 133



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



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



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| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
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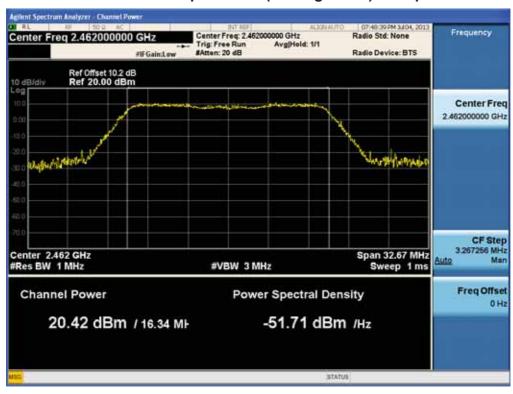
Page 41 of 133



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



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

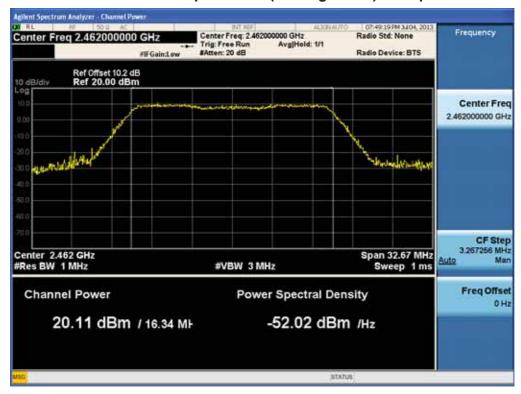


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| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 42 of 133



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 |
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| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 43 of 133



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



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



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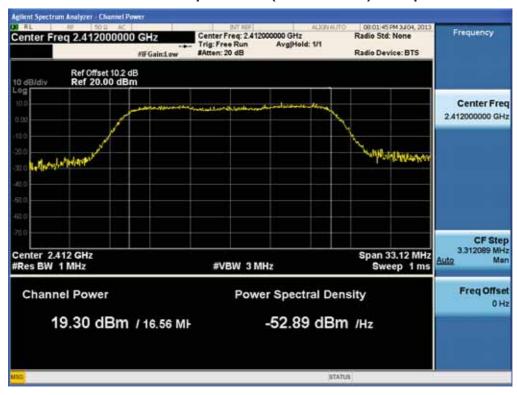
Page 44 of 133



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 |
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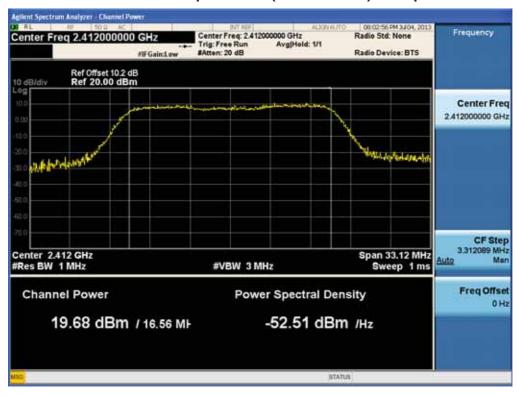
Page 45 of 133



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



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

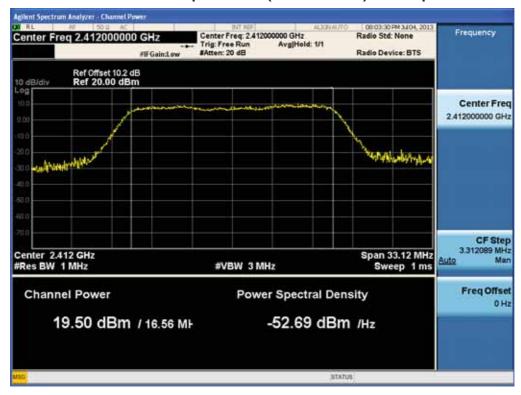


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| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

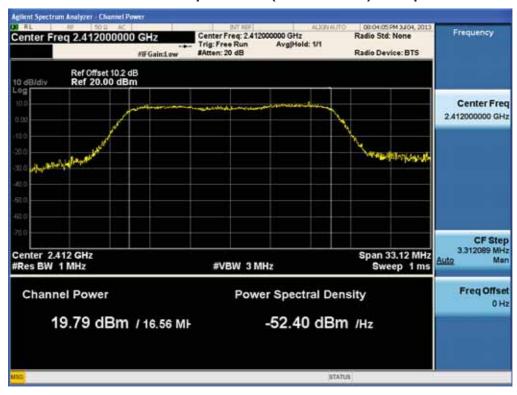
Page 46 of 133



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: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 47 of 133



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: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 48 of 133



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



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

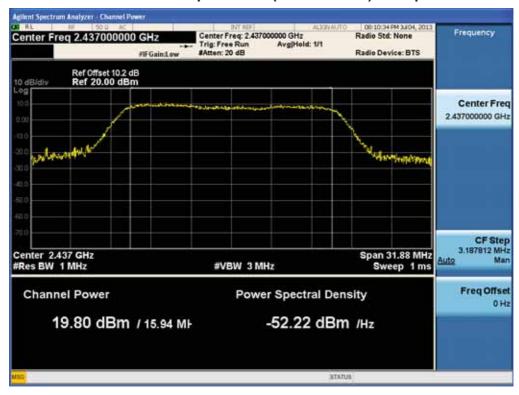


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| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

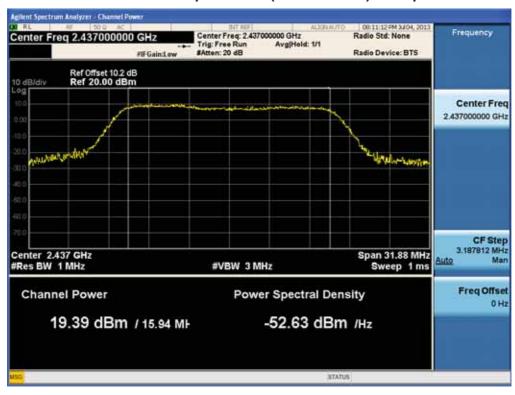
Page 49 of 133



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



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

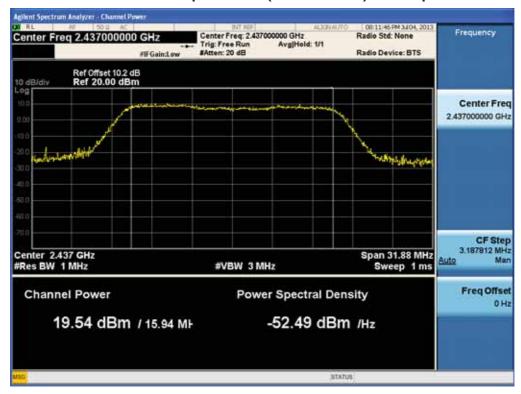


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|------------------------------|--------------------------|---|---------------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 50 of 133



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: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 51 of 133



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. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 52 of 133



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. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 53 of 133



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



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

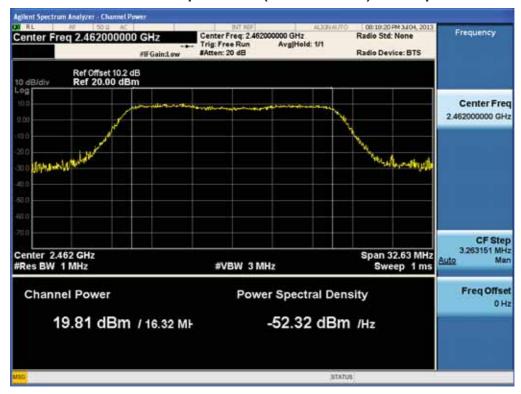


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|------------------------------|--------------------------|---|---------------|
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| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 54 of 133



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: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 55 of 133

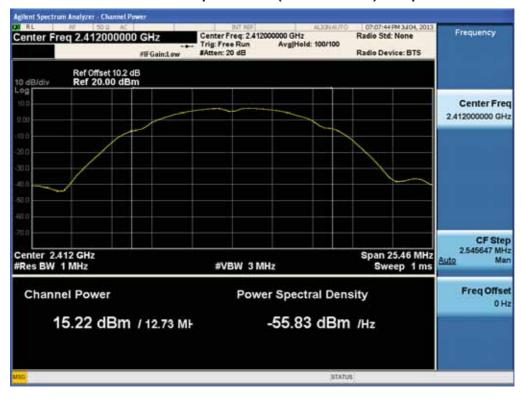


■ RESULT PLOTS-Average

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



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

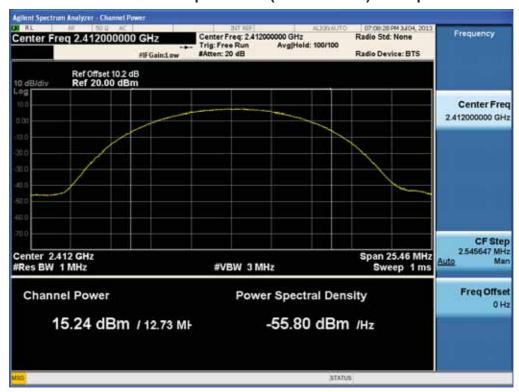


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| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

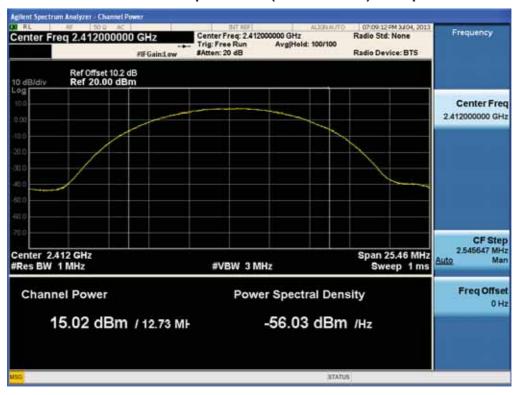
Page 56 of 133



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: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 57 of 133



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



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

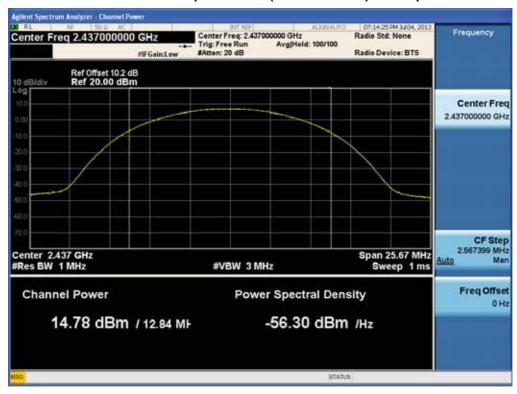


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| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

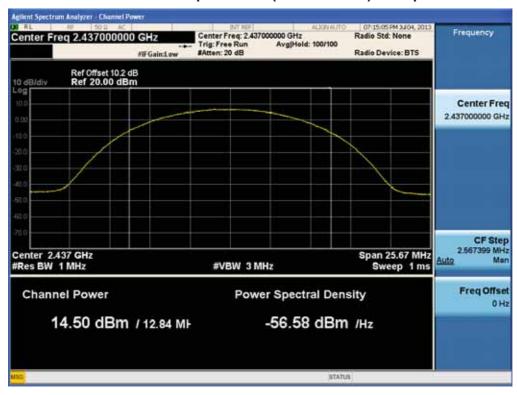
Page 58 of 133



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



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

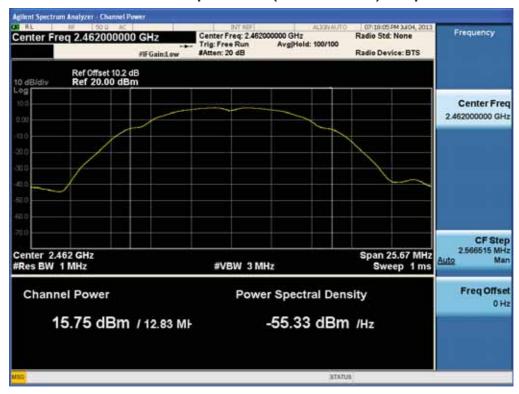


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| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 59 of 133



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: |
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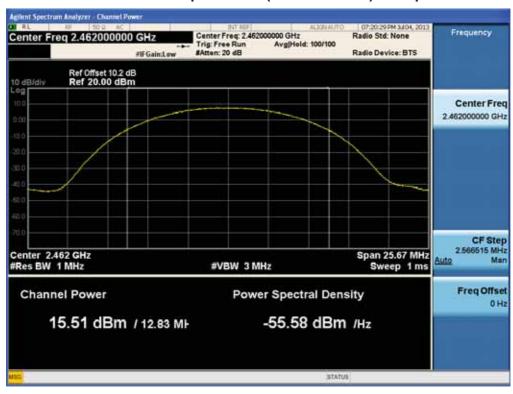
Page 60 of 133



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: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 61 of 133



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



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

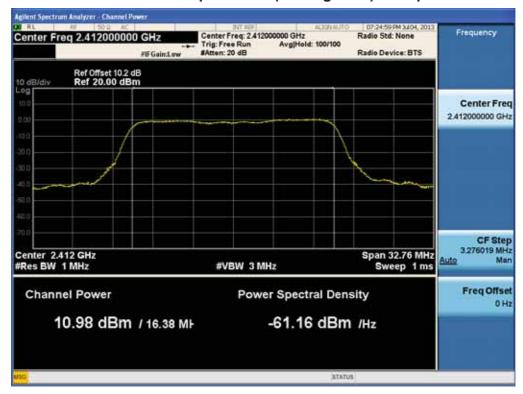


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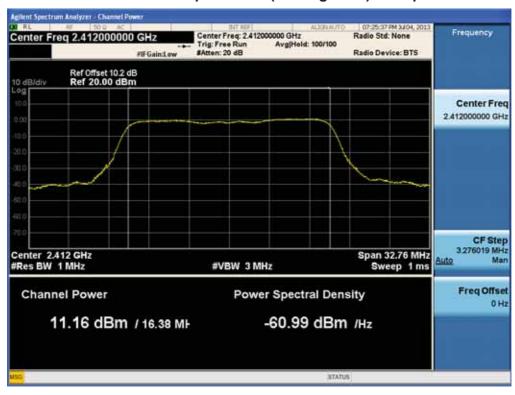
Page 62 of 133



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



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



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|------------------------------|--------------------------|---|---------------|
| Test Report No. | Date of Issue: | EUT Type: | FCC ID: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 63 of 133



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: |
| HCTR1307FR12-1 | July 10, 2013 | GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n | ZNFE410I |

Page 64 of 133