

**HCT CO., LTD.****CERTIFICATE OF COMPLIANCE****FCC Certification****Applicant Name:**  
Kyocera Corporation**Address:**  
1-34, Sanyo-cho, Daito-Shi, Osaka, 574-8501, JAPAN**Date of Issue:**

July 16, 2013

**Test Site/Location:**HCT CO., LTD., 105-1, Jangam-ri, Majang-Myeon,  
Icheon-si, Kyunggi-Do, Korea**Report No.:** HCTR1307FR17**HCT FRN:** 0005866421**FCC ID** : V65C6522**APPLICANT** : Kyocera Corporation**FCC Model(s):** C6522N**EUT Type:** GSM/WCDMA/LTE Phone with Bluetooth/WLAN**Max. RF Output Power:** Wi-Fi 802.11b(22.12 dBm) / Wi-Fi 802.11g (24.22 dBm) / Wi-Fi 802.11n (24.15 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)



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# Version

TEST REPORT NO.	DATE	DESCRIPTION
HCTR1307FR17	July 16, 2013	- First Approval Report

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## 1. GENERAL INFORMATION

**Applicant:** Kyocera Corporation  
**Address:** 1-34, Sanyo-cho, Daito-Shi, Osaka, 574-8501, JAPAN  
**FCC ID:** V65C6522  
**EUT Type:** GSM/WCDMA/LTE Phone with Bluetooth/WLAN  
**Model name(s):** C6522N  
**Date(s) of Tests:** June 02, 2013 ~ July 04, 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

<b>EUT Type</b>	GSM/WCDMA/LTE Phone with Bluetooth/WLAN	
<b>FCC Model Name</b>	C6522N	
<b>Power Supply</b>	DC 3.8 V	
<b>Battery type</b>	Li-ion Battery(Standard)	
<b>Frequency Range</b>	TX: 2412 MHz ~ 2462 MHz RX: 2412 MHz ~ 2462 MHz	
<b>Max. RF Output Power</b>	Peak	Wi-Fi 802.11b(22.12 dBm) / Wi-Fi 802.11g (24.22 dBm) / Wi-Fi 802.11n (24.15 dBm)
	Average	Wi-Fi 802.11b (16.18 dBm) / Wi-Fi 802.11g (15.83 dBm) / Wi-Fi 802.11n (15.79 dBm)
<b>Modulation Type</b>	DSSS/CCK(802.11b), OFDM(802.11g, 802.11n)	
<b>Antenna Specification</b>	Manufacturer: DONGNAM Antenna type: Built in Antenna Peak Gain : 3.80 dBi	

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### 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.

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## 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."

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## 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

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## 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

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## 8. TEST RESULT

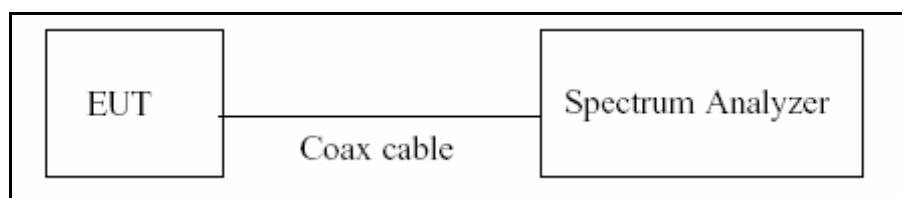
### 8.1 DUTY CYCLE

#### ■ 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 according 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  $T \leq 6.25$  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 ( $\geq$  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 =  $10^{\star}\log(1/\text{Duty Cycle})$

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**Duty Cycle Factor**

Mode	Data Rate	T <sub>on</sub> (ms)	T <sub>total</sub> (ms)	Duty Cycle	Duty Cycle Factor (dB)
<b>b</b>	<b>1 Mbps</b>	<b>8.220</b>	<b>8.415</b>	<b>0.97682709</b>	<b>0.102</b>
	<b>2 Mbps</b>	<b>4.210</b>	<b>4.410</b>	<b>0.95464853</b>	<b>0.202</b>
	<b>5.5 Mbps</b>	<b>1.650</b>	<b>1.850</b>	<b>0.89189189</b>	<b>0.497</b>
	<b>11 Mbps</b>	<b>0.921</b>	<b>1.122</b>	<b>0.82085561</b>	<b>0.857</b>
<b>g</b>	<b>6 Mbs</b>	<b>1.362</b>	<b>1.563</b>	<b>0.87140115</b>	<b>0.598</b>
	<b>9 Mbs</b>	<b>0.915</b>	<b>1.116</b>	<b>0.81989247</b>	<b>0.862</b>
	<b>12 Mbs</b>	<b>0.693</b>	<b>0.891</b>	<b>0.77777778</b>	<b>1.091</b>
	<b>18 Mbs</b>	<b>0.468</b>	<b>0.668</b>	<b>0.70059880</b>	<b>1.545</b>
	<b>24 Mbs</b>	<b>0.356</b>	<b>0.555</b>	<b>0.64078544</b>	<b>1.933</b>
	<b>36 Mbs</b>	<b>0.244</b>	<b>0.444</b>	<b>0.54954955</b>	<b>2.600</b>
	<b>48 Mbs</b>	<b>0.188</b>	<b>0.388</b>	<b>0.48453608</b>	<b>3.147</b>
	<b>54 Mbs</b>	<b>0.172</b>	<b>0.372</b>	<b>0.46236559</b>	<b>3.350</b>
<b>n_20 MHz BW</b>	<b>6.5 Mbs</b>	<b>1.280</b>	<b>1.480</b>	<b>0.86486486</b>	<b>0.631</b>
	<b>13 Mbs</b>	<b>0.656</b>	<b>0.856</b>	<b>0.76635514</b>	<b>1.156</b>
	<b>19.5 Mbs</b>	<b>0.452</b>	<b>0.654</b>	<b>0.69113150</b>	<b>1.604</b>
	<b>26 Mbs</b>	<b>0.347</b>	<b>0.547</b>	<b>0.63299233</b>	<b>1.986</b>
	<b>39 Mbs</b>	<b>0.244</b>	<b>0.444</b>	<b>0.54954955</b>	<b>2.600</b>
	<b>52 Mbs</b>	<b>0.192</b>	<b>0.392</b>	<b>0.48979592</b>	<b>3.100</b>
	<b>58.5 Mbs</b>	<b>0.176</b>	<b>0.376</b>	<b>0.46808511</b>	<b>3.297</b>
	<b>65 Mbs</b>	<b>0.159</b>	<b>0.360</b>	<b>0.44222222</b>	<b>3.544</b>

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

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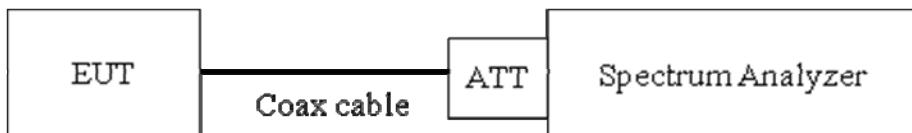
## 8.2 6dB BANDWIDTH (802.11b/g/n)

### 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  $\geq$  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.

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## TEST RESULTS

### Conducted 6dB Bandwidth Measurements for 802.11b

802.11b Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	8.120	0.500	Pass
2437	6	8.117	0.500	Pass
2462	11	8.110	0.500	Pass

### Conducted 6dB Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	16.410	0.500	Pass
2437	6	16.420	0.500	Pass
2462	11	16.410	0.500	Pass

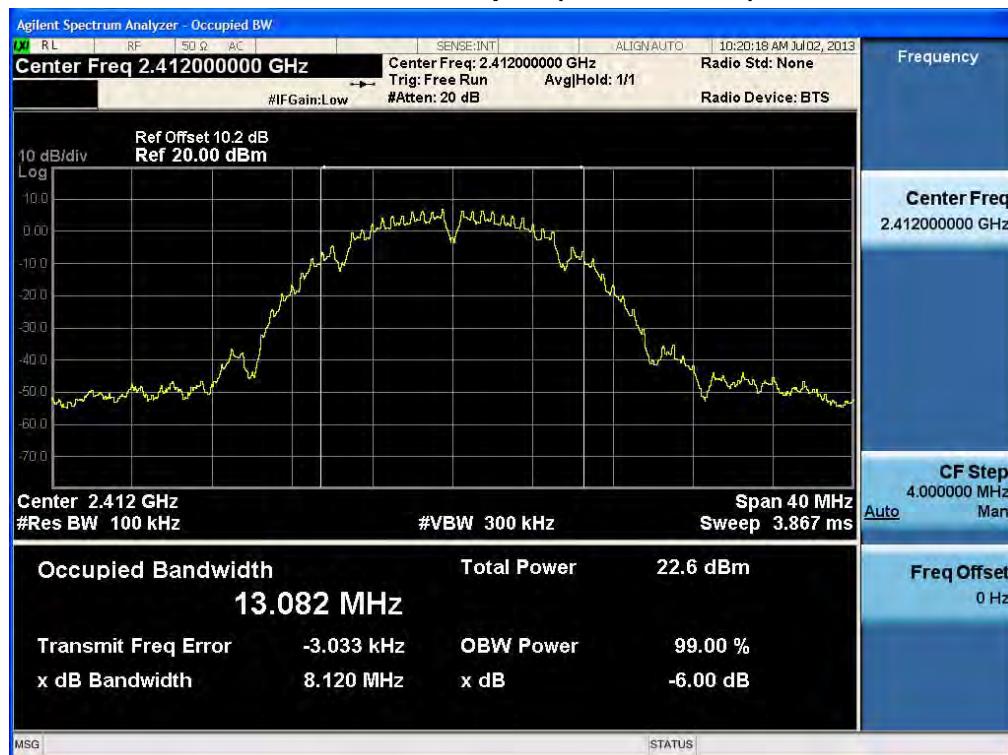
### Conducted 6dB Bandwidth Measurements for 802.11n\_20 MHz BW

802.11n Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	17.630	0.500	Pass
2437	6	17.630	0.500	Pass
2462	11	17.610	0.500	Pass

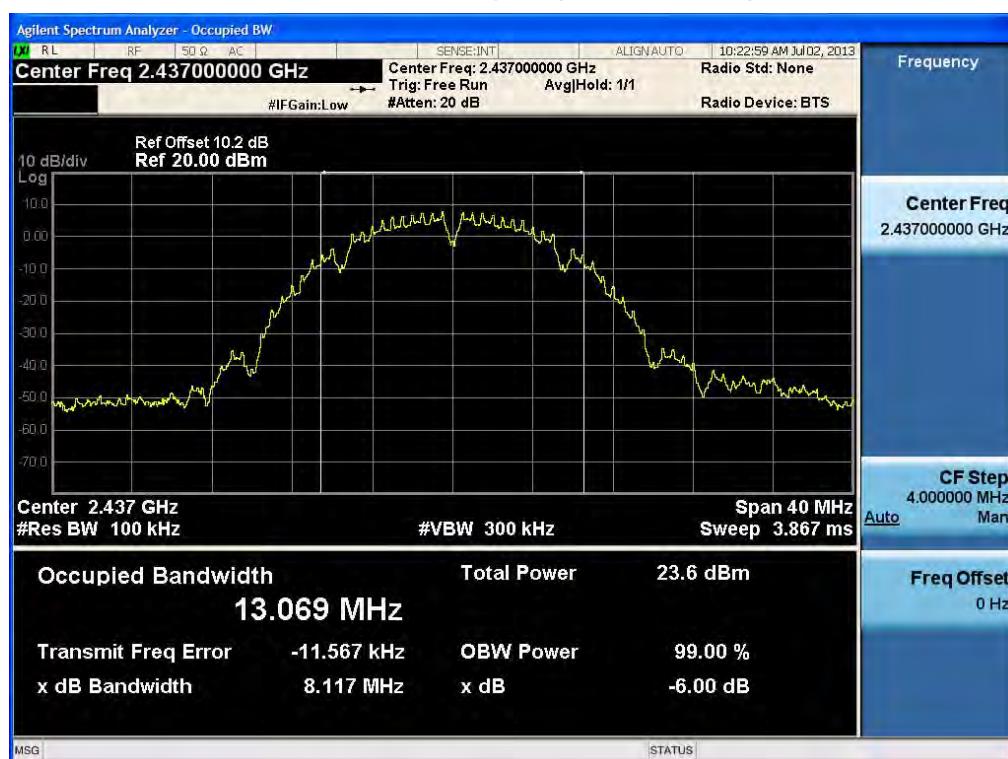
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## RESULT PLOTS

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

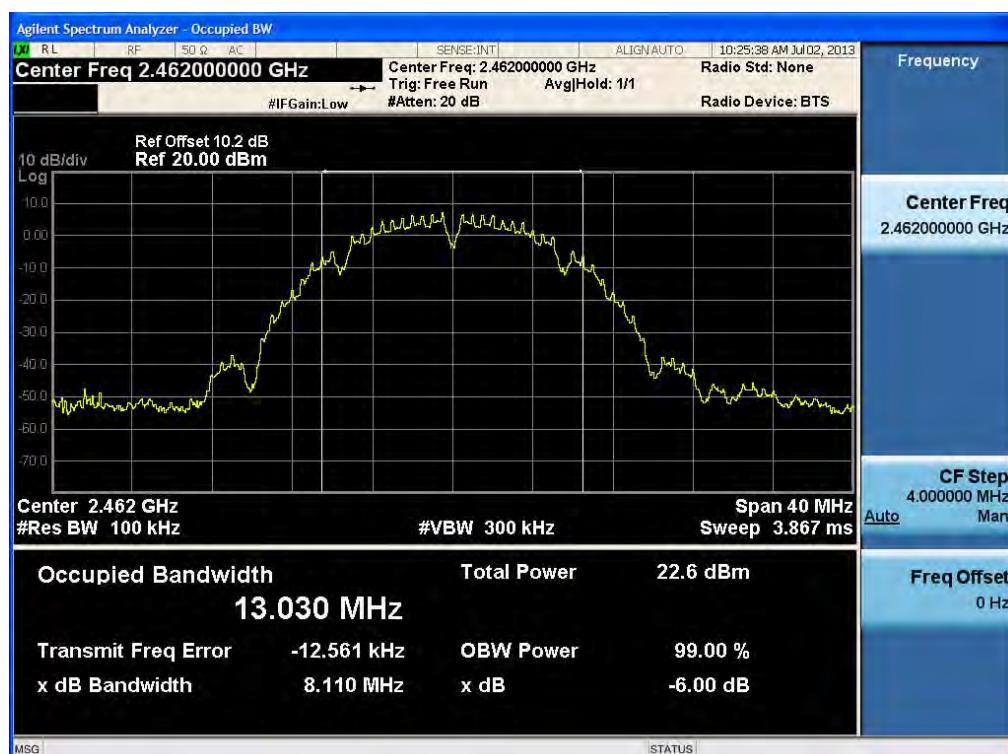


### 6dB Bandwidth plot (802.11b-CH 6)

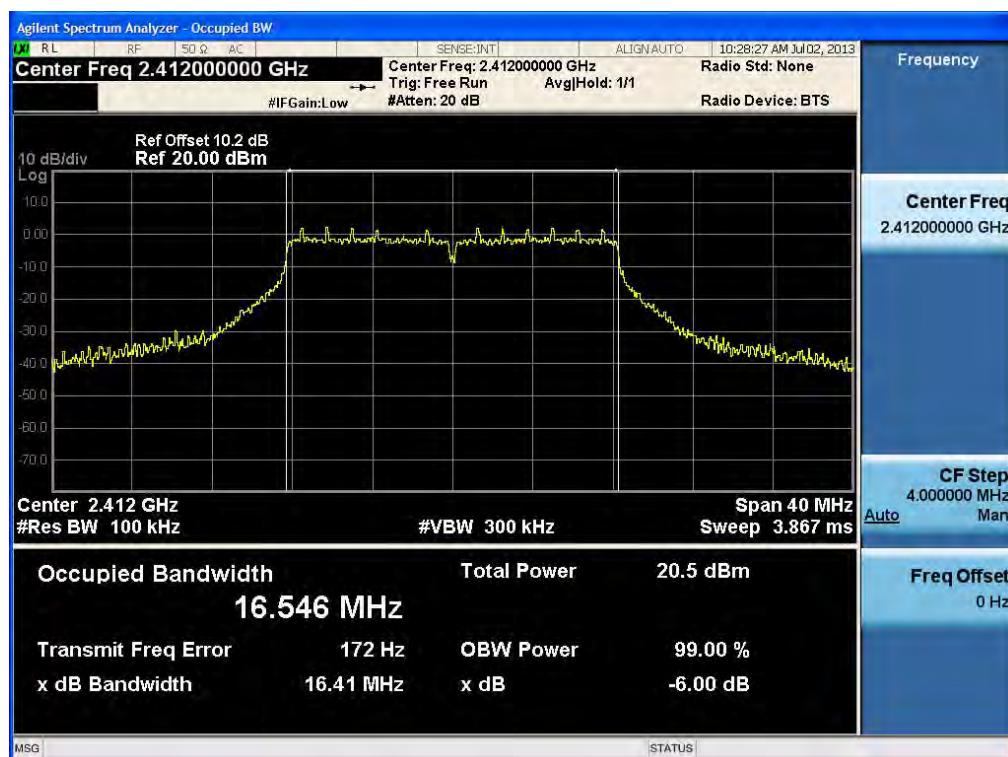


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### 6dB Bandwidth plot (802.11b-CH 11)

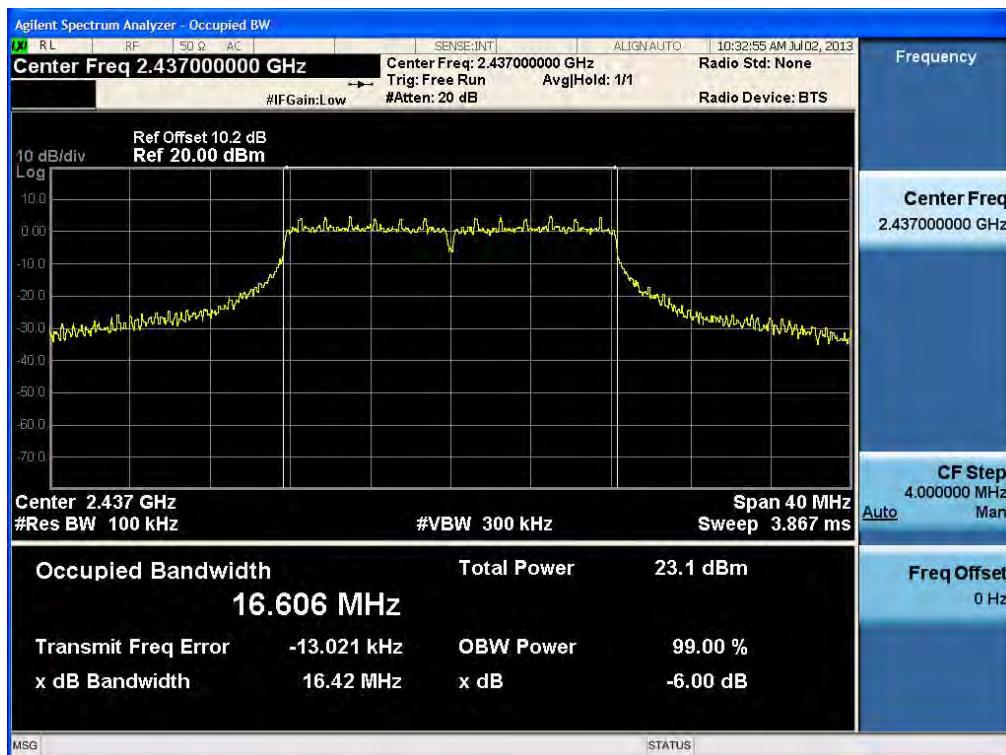


### 6dB Bandwidth plot (802.11g-CH 1)

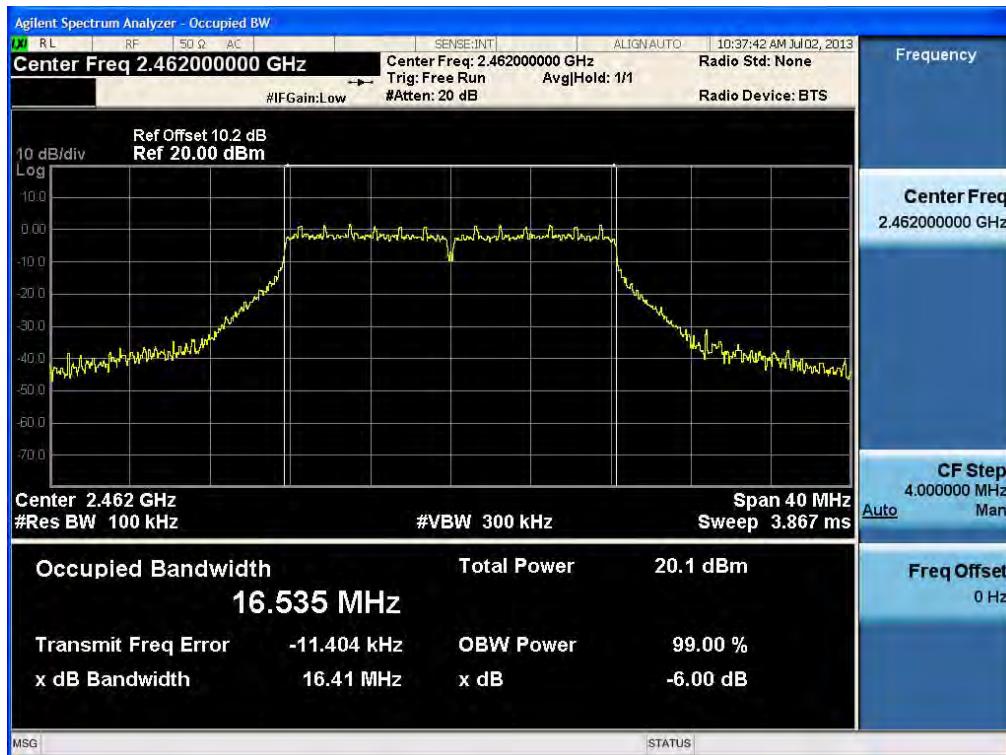


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### 6dB Bandwidth plot (802.11g-CH 6)

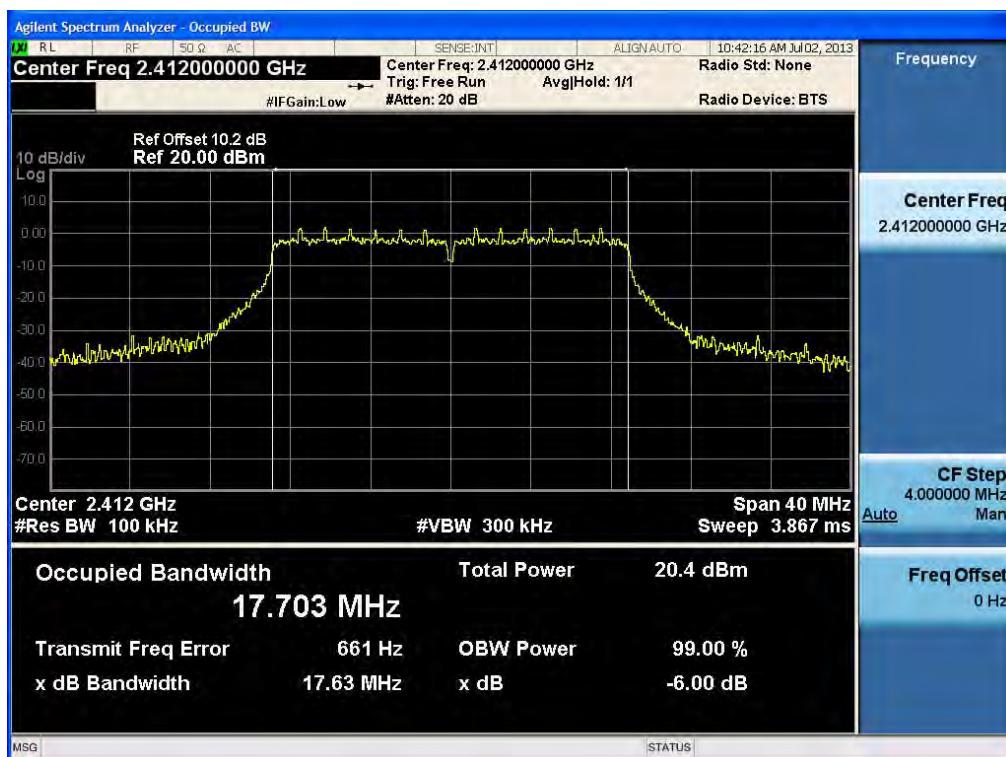


### 6dB Bandwidth plot (802.11g-CH 11)

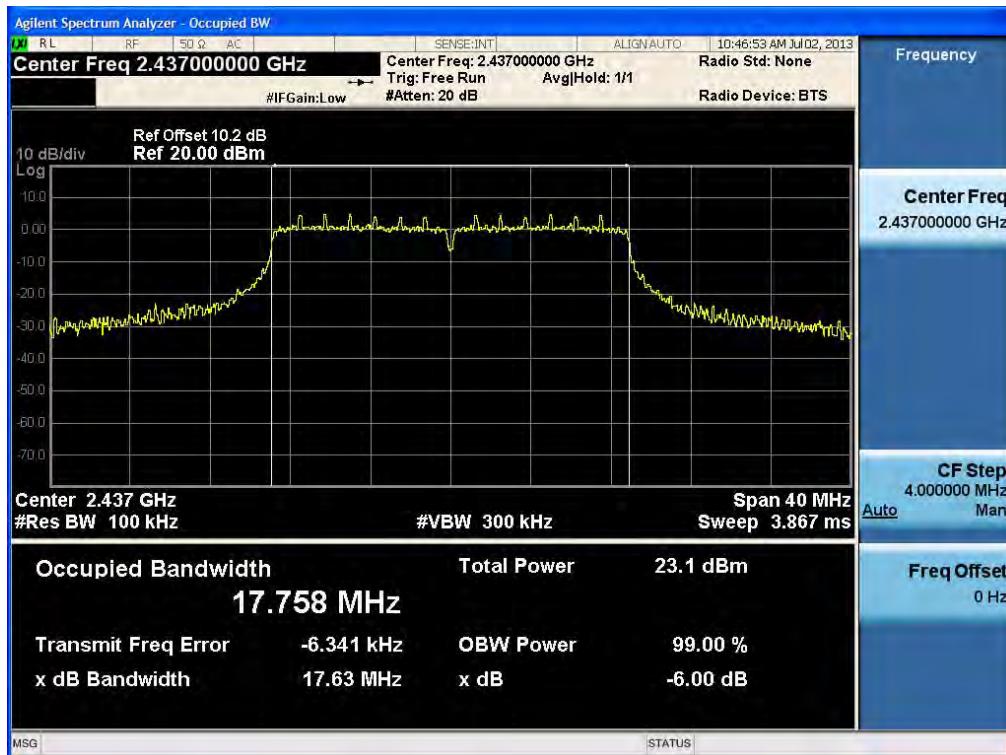


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### 6dB Bandwidth plot (802.11n-CH 1)

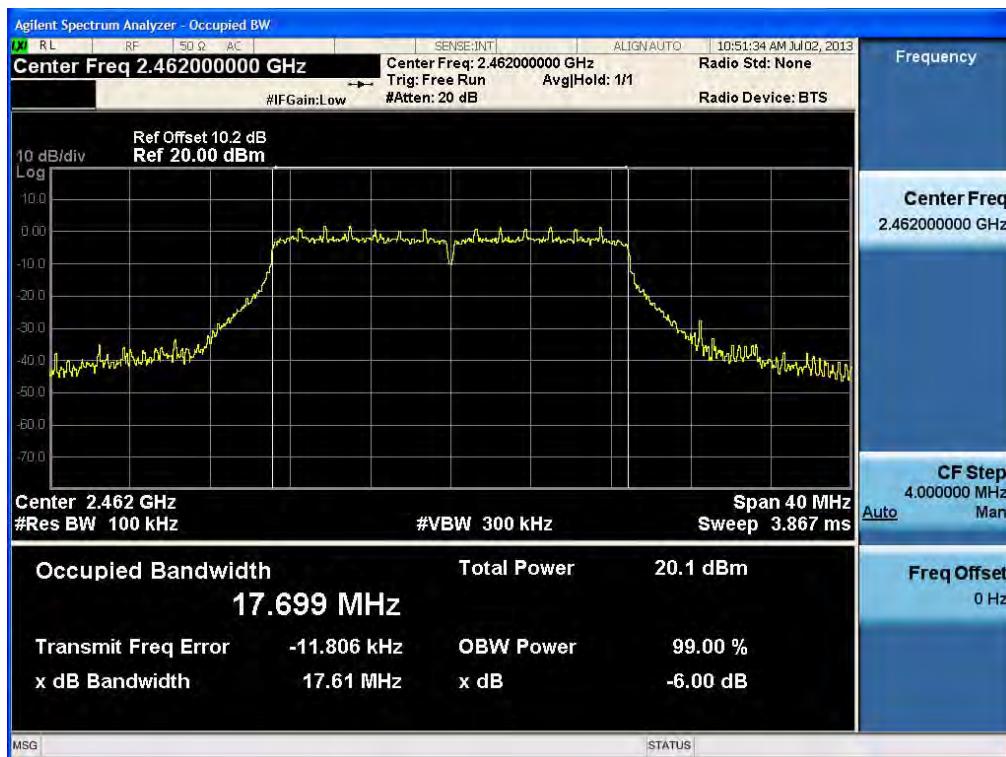


### 6dB Bandwidth plot (802.11n-CH 6)



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



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

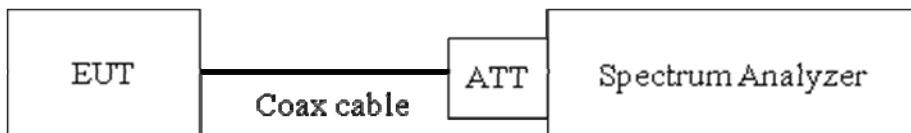
#### Test Requirements and limit, §15.247(b)(3)

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 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.

The Spectrum Analyzer is set to

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

RBW = 1 MHz

VBW  $\geq$  3 x RBW

SPAN  $\geq$  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  $\geq$  3 x RBW.

Number of points in sweep  $\geq$  2 x span / RBW. (This gives bin-to-bin spacing  $\leq$  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

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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

$$\begin{aligned}\text{Output Power} &= \text{Reading Value} + \text{ATT loss} + \text{Cable loss(1 ea)} + \text{Duty Cycle Factor} \\ &= 10 \text{ dBm} + 10 \text{ dB} + 0.8 \text{ dB} + 0.2 \text{ dB} = 21.0 \text{ dBm}\end{aligned}$$

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 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)

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## 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	17.45	30
		2 Mbps	17.73	30
		5.5 Mbps	19.36	30
		11 Mbps	21.18	30
2437	6	1 Mbps	18.39	30
		2 Mbps	18.66	30
		5.5 Mbps	20.27	30
		11 Mbps	22.12	30
2462	11	1 Mbps	17.44	30
		2 Mbps	17.67	30
		5.5 Mbps	19.28	30
		11 Mbps	21.08	30

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## 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	21.10	30
		9 Mbps	21.16	30
		12 Mbps	21.26	30
		18 Mbps	21.28	30
		24 Mbps	21.73	30
		36 Mbps	21.73	30
		48 Mbps	21.75	30
		54 Mbps	21.75	30
2437	6	6 Mbps	23.62	30
		9 Mbps	23.61	30
		12 Mbps	23.61	30
		18 Mbps	23.65	30
		24 Mbps	24.22	30
		36 Mbps	24.14	30
		48 Mbps	24.21	30
		54 Mbps	24.22	30
2462	11	6 Mbps	20.70	30
		9 Mbps	20.74	30
		12 Mbps	20.83	30
		18 Mbps	20.80	30
		24 Mbps	21.21	30
		36 Mbps	21.23	30
		48 Mbps	21.31	30
		54 Mbps	21.30	30

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**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	20.99	30
		13 Mbps	21.10	30
		19.5 Mbps	21.04	30
		26 Mbps	21.51	30
		39 Mbps	21.51	30
		52 Mbps	21.53	30
		58.5 Mbps	21.59	30
		65 Mbps	21.51	30
2437	6	6.5 Mbps	23.64	30
		13 Mbps	23.70	30
		19.5 Mbps	23.64	30
		26 Mbps	24.15	30
		39 Mbps	24.15	30
		52 Mbps	23.14	30
		58.5 Mbps	23.17	30
		65 Mbps	22.22	30
2462	11	6.5 Mbps	20.75	30
		13 Mbps	20.79	30
		19.5 Mbps	20.72	30
		26 Mbps	21.26	30
		39 Mbps	21.17	30
		52 Mbps	21.32	30
		58.5 Mbps	21.30	30
		65 Mbps	21.27	30

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## TEST RESULTS-Average

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

802.11b Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor	Measured Power(dBm) + Duty Cycle Factor	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	1 Mbps	14.88	0.102	14.98	30
		2 Mbps	14.87	0.202	15.07	30
		5.5 Mbps	14.64	0.497	15.14	30
		11 Mbps	14.39	0.857	15.25	30
2437	6	1 Mbps	15.84	0.102	15.94	30
		2 Mbps	15.74	0.202	15.95	30
		5.5 Mbps	15.57	0.497	16.06	30
		11 Mbps	15.32	0.857	16.18	30
2462	11	1 Mbps	14.82	0.102	14.92	30
		2 Mbps	14.81	0.202	15.01	30
		5.5 Mbps	14.56	0.497	15.06	30
		11 Mbps	14.29	0.857	15.15	30

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## Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor	Measured Power(dBm) + Duty Cycle Factor	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	6 Mbps	12.50	0.598	13.10	30
		9 Mbps	12.29	0.862	13.15	30
		12 Mbps	12.09	1.091	13.18	30
		18 Mbps	11.67	1.545	13.21	30
		24 Mbps	11.30	1.933	13.24	30
		36 Mbps	10.72	2.600	13.32	30
		48 Mbps	10.18	3.147	13.33	30
		54 Mbps	10.00	3.350	13.35	30
2437	6	6 Mbps	14.98	0.598	15.57	30
		9 Mbps	14.69	0.862	15.55	30
		12 Mbps	14.53	1.091	15.63	30
		18 Mbps	14.14	1.545	15.68	30
		24 Mbps	13.77	1.933	15.70	30
		36 Mbps	13.16	2.600	15.76	30
		48 Mbps	12.65	3.147	15.80	30
		54 Mbps	12.48	3.350	15.83	30
2462	11	6 Mbps	12.06	0.598	12.66	30
		9 Mbps	11.82	0.862	12.68	30
		12 Mbps	11.63	1.091	12.72	30
		18 Mbps	11.16	1.545	12.70	30
		24 Mbps	10.78	1.933	12.71	30
		36 Mbps	10.25	2.600	12.85	30
		48 Mbps	9.63	3.147	12.78	30
		54 Mbps	9.48	3.350	12.83	30

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## Conducted Output Power Measurements (802.11n Mode)

802.11n Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor	Measured Power(dBm) + Duty Cycle Factor	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	6.5 Mbps	12.29	0.631	12.92	30
		13 Mbps	11.88	1.156	13.04	30
		19.5 Mbps	11.46	1.604	13.07	30
		26 Mbps	11.05	1.986	13.04	30
		39 Mbps	10.52	2.600	13.12	30
		52 Mbps	10.03	3.100	13.13	30
		58.5 Mbps	9.86	3.297	13.15	30
		65 Mbps	9.60	3.544	13.14	30
2437	6	6.5 Mbps	14.95	0.631	15.58	30
		13 Mbps	14.53	1.156	15.69	30
		19.5 Mbps	14.09	1.604	15.70	30
		26 Mbps	13.73	1.986	15.72	30
		39 Mbps	13.19	2.600	15.79	30
		52 Mbps	11.68	3.100	14.78	30
		58.5 Mbps	11.48	3.297	14.78	30
		65 Mbps	10.36	3.544	13.90	30
2462	11	6.5 Mbps	11.98	0.631	12.61	30
		13 Mbps	11.58	1.156	12.74	30
		19.5 Mbps	11.18	1.604	12.79	30
		26 Mbps	10.74	1.986	12.73	30
		39 Mbps	10.18	2.600	12.78	30
		52 Mbps	9.74	3.100	12.84	30
		58.5 Mbps	9.55	3.297	12.85	30
		65 Mbps	9.45	3.544	12.99	30

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## □ RESULT PLOTS-Peak

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

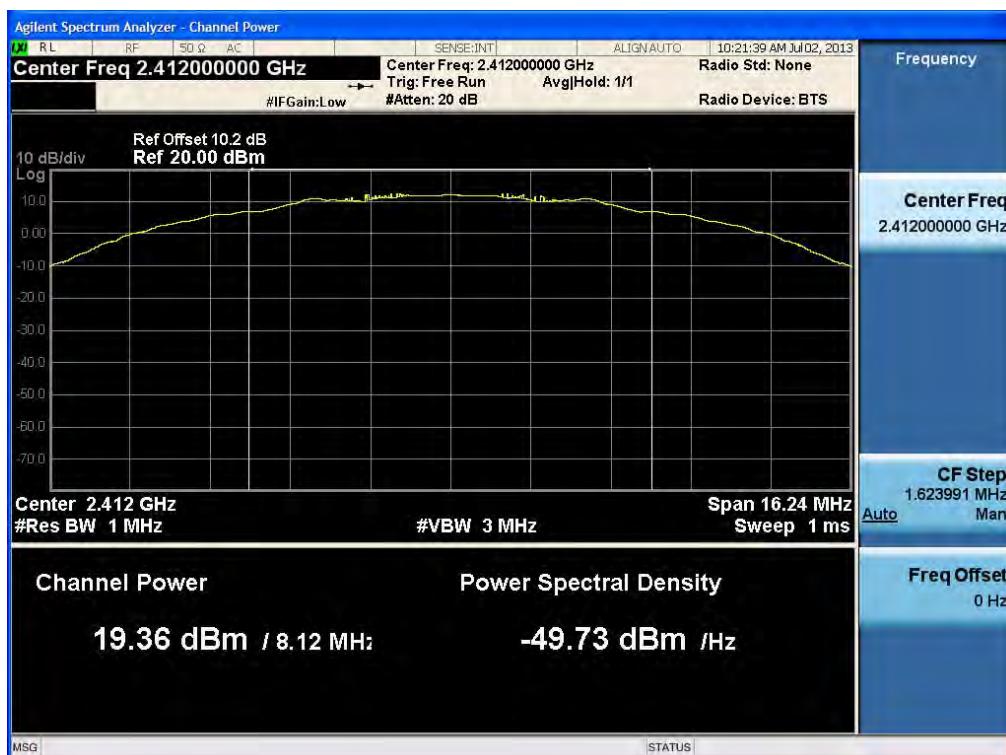


### Conducted Output Power (802.11b-CH 1) 2Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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### Conducted Output Power (802.11b-CH 1) 5.5Mbps



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



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



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



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



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



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

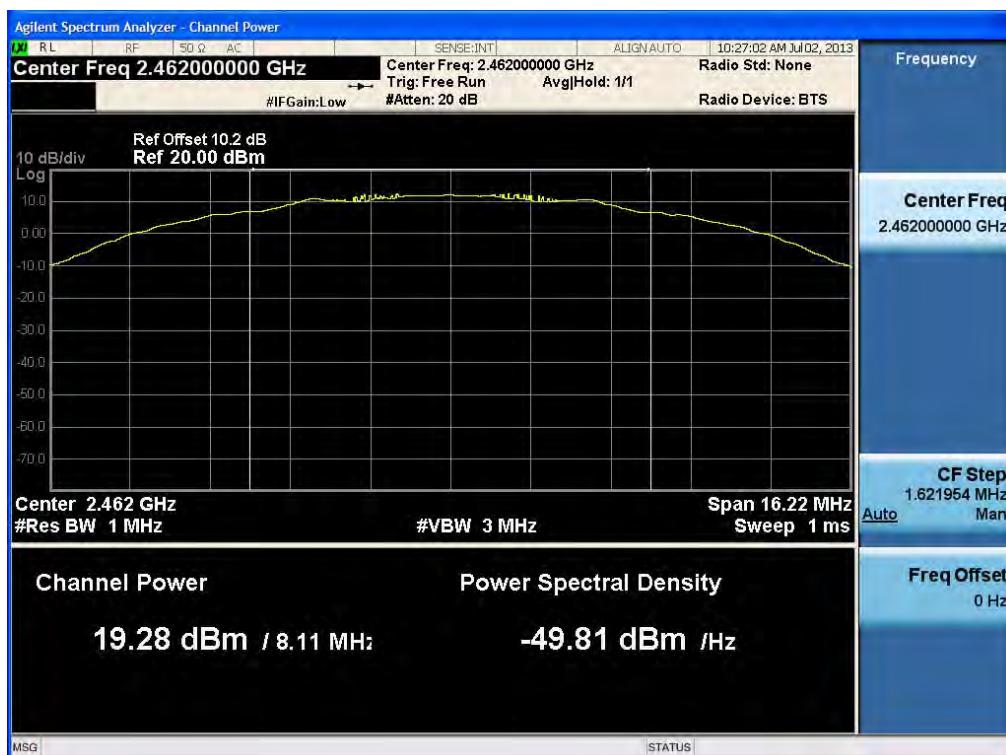


### Conducted Output Power (802.11b-CH 11) 2Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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### Conducted Output Power (802.11b-CH 11) 5.5Mbps



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

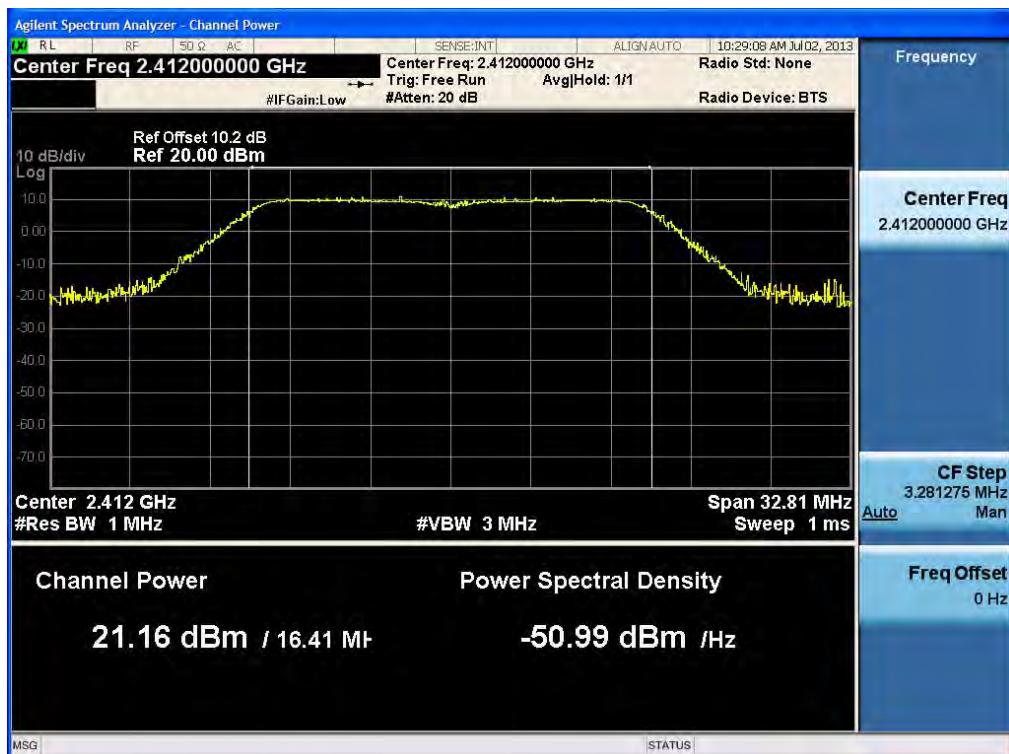


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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## Conducted Output Power (802.11g-CH 1) 6Mbps



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



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

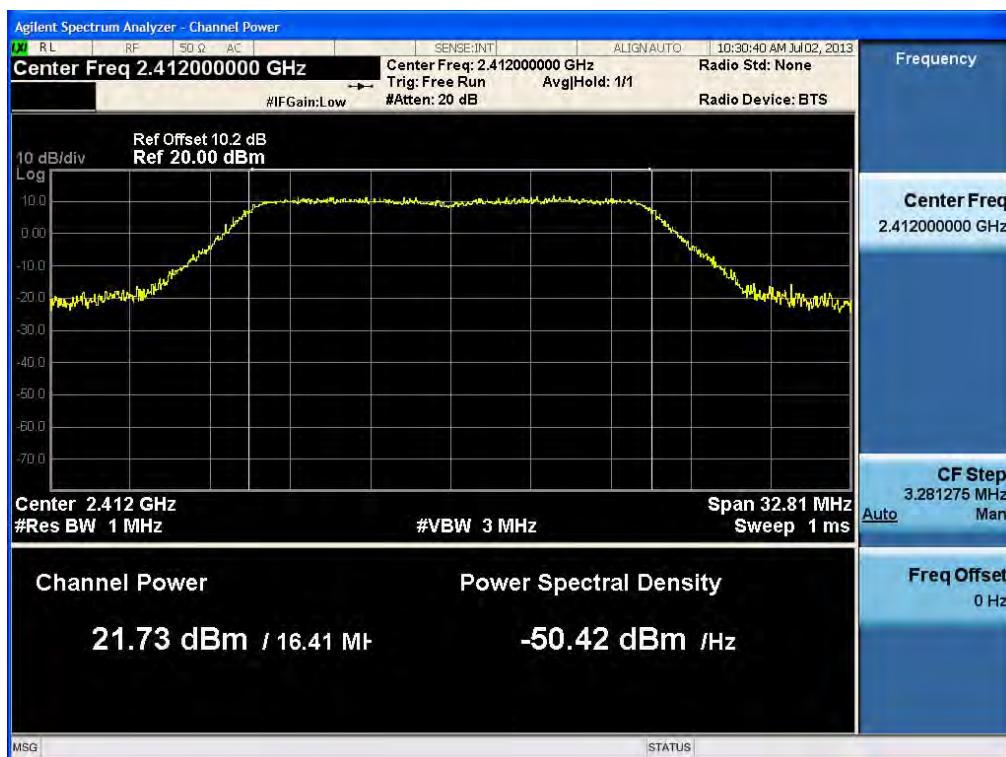


### Conducted Output Power (802.11g-CH 1) 18Mbps

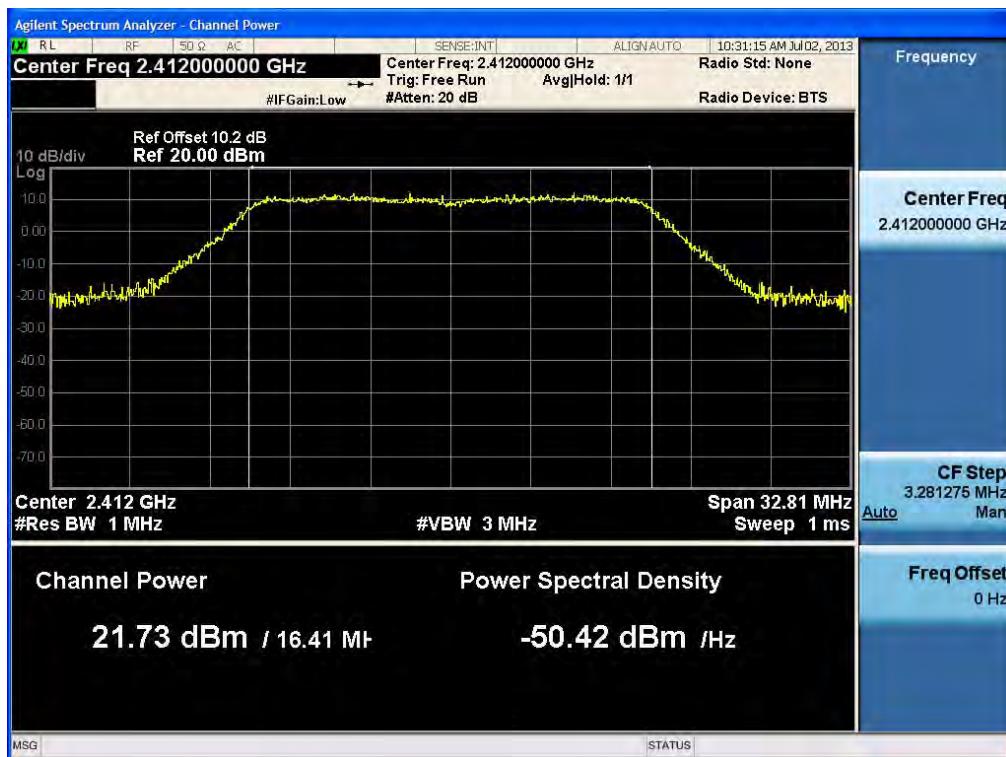


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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### Conducted Output Power (802.11g-CH 1) 24Mbps

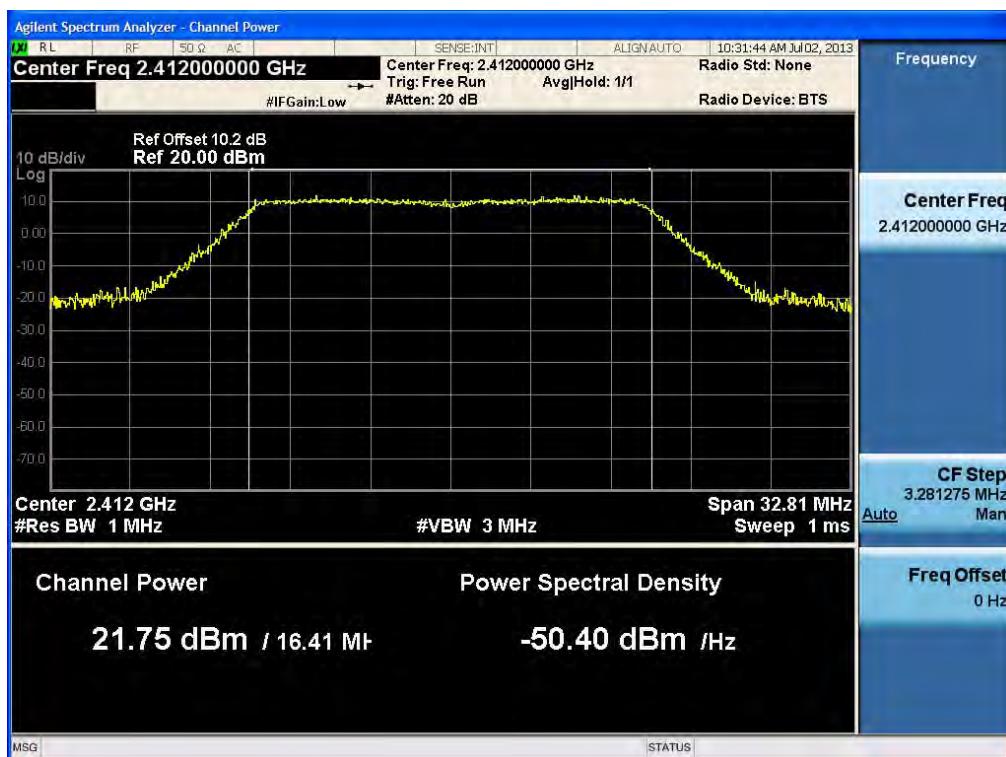


### Conducted Output Power (802.11g-CH 1) 36Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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### Conducted Output Power (802.11g-CH 1) 48Mbps

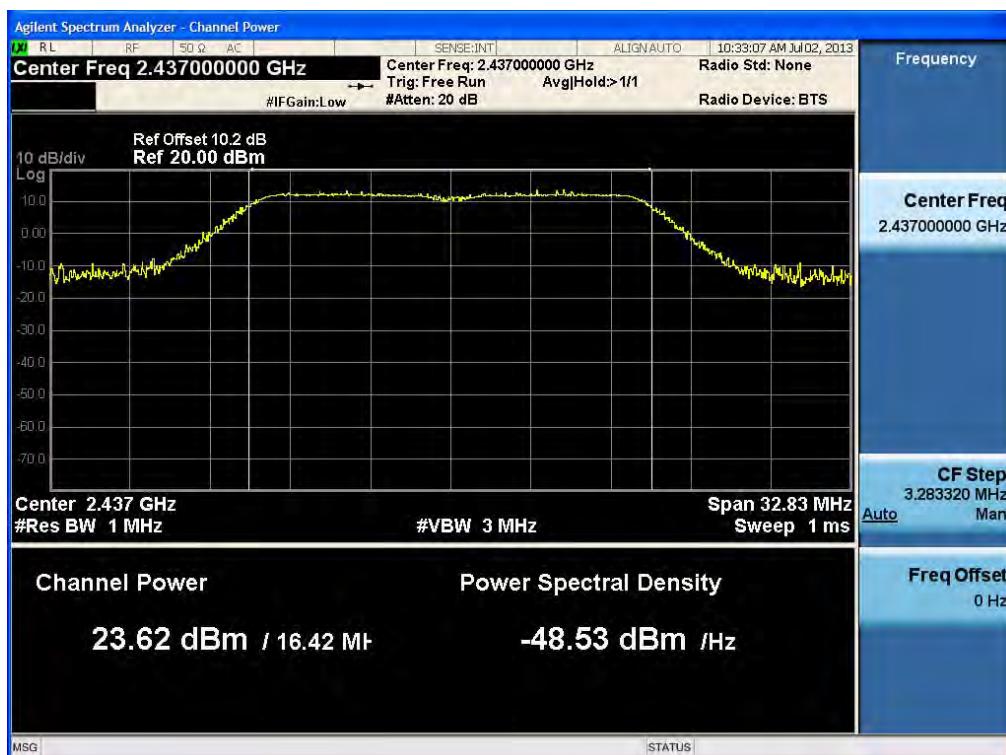


### Conducted Output Power (802.11g-CH 1) 54Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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### Conducted Output Power (802.11g-CH 6) 6Mbps



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



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



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



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



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



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

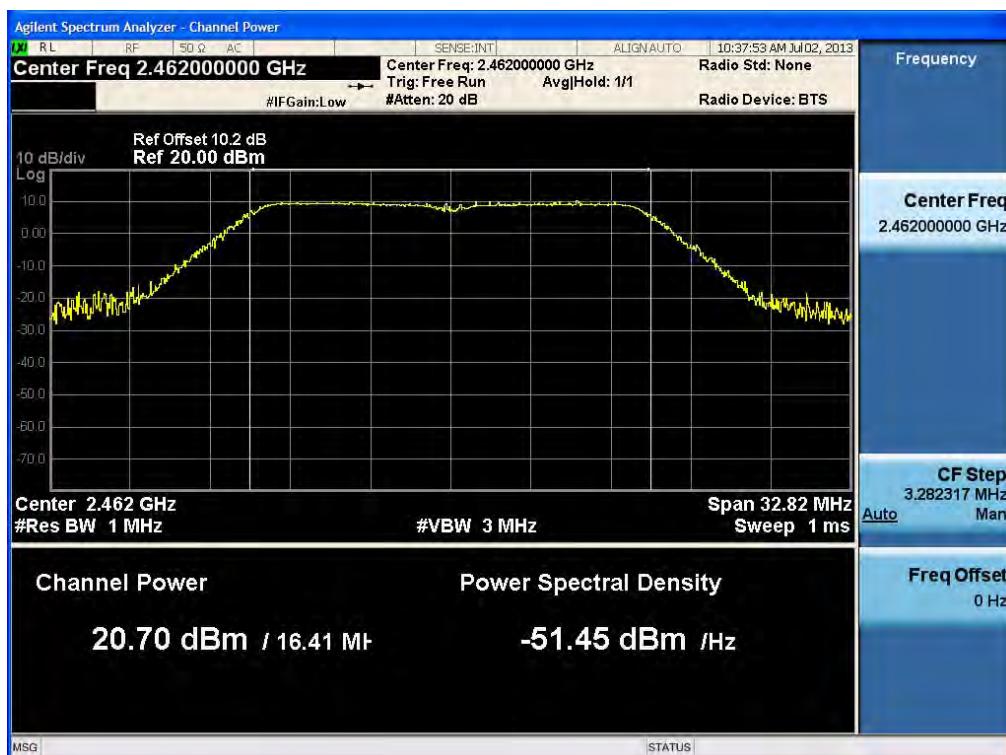


### Conducted Output Power (802.11g-CH 6) 54Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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### 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			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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### 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:		
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### 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			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
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### Conducted Output Power (802.11g-CH 11) 48Mbps

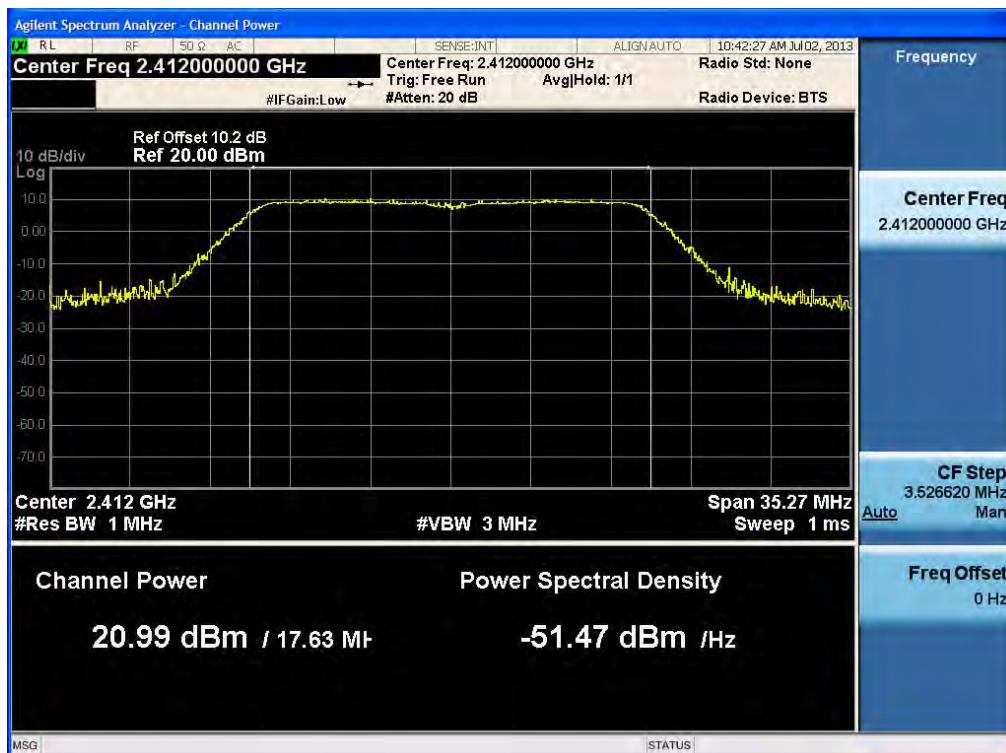


### Conducted Output Power (802.11g-CH 11) 54Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
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### Conducted Output Power (802.11n-CH 1) 6.5Mbps

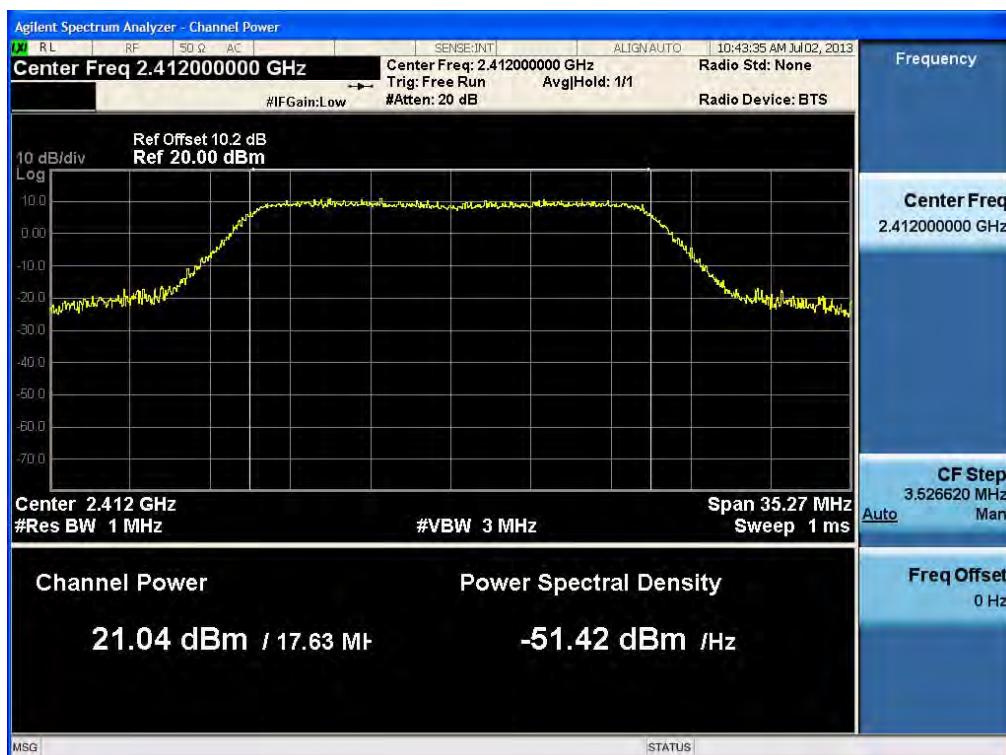


### Conducted Output Power (802.11n-CH 1) 13Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
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### Conducted Output Power (802.11n-CH 1) 19.5Mbps



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

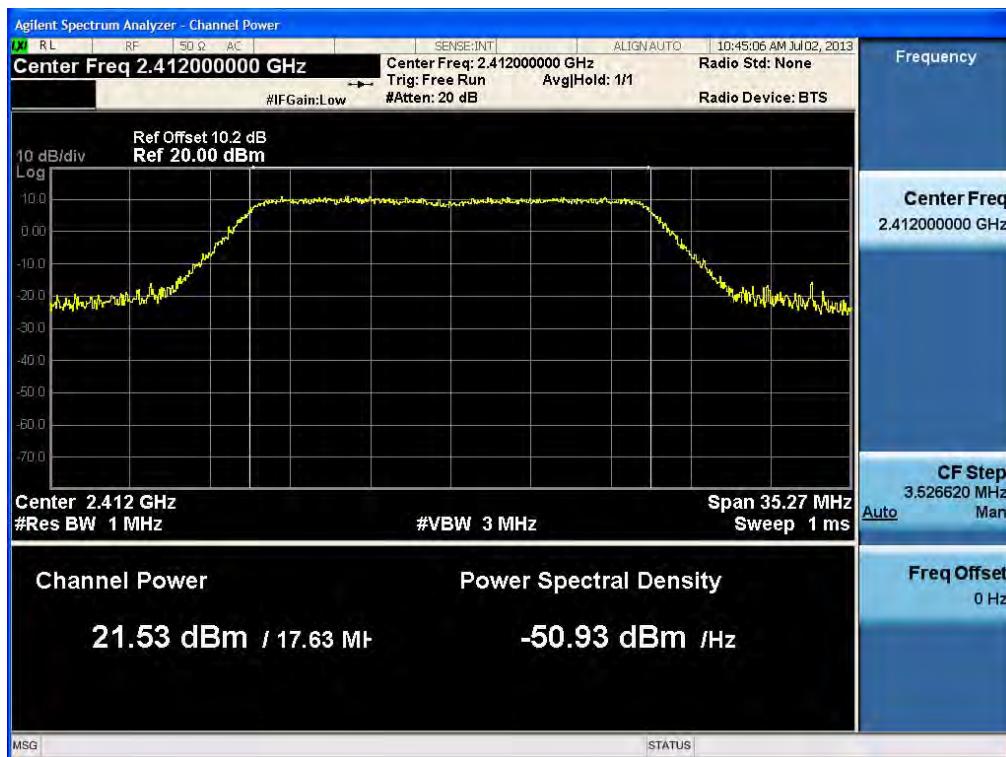


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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### Conducted Output Power (802.11n-CH 1) 39Mbps



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

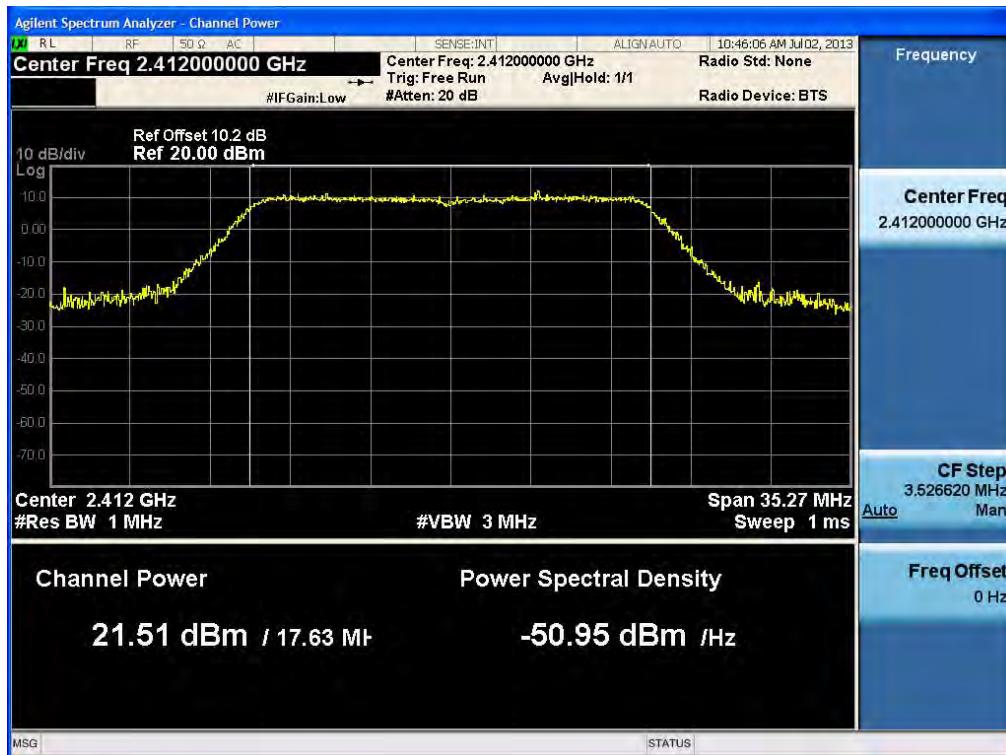


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
HCTR1307FR17	July 16, 2013	GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

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

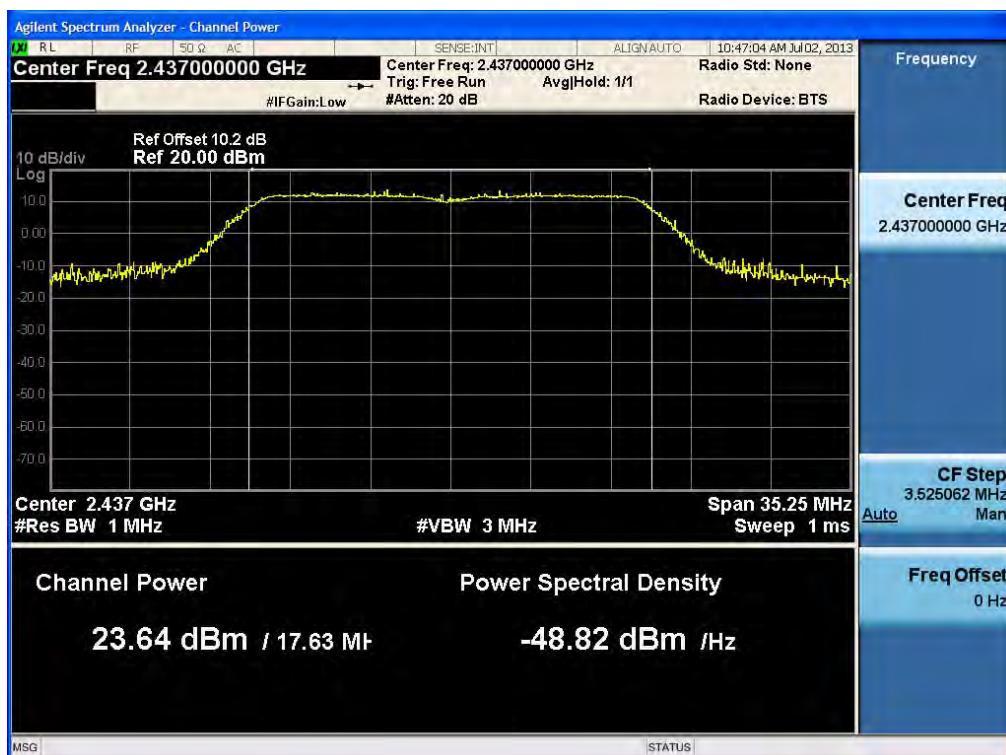


### Conducted Output Power (802.11n-CH 1) 65Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
HCTR1307FR17	July 16, 2013	GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

### 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			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
HCTR1307FR17	July 16, 2013	GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

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



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

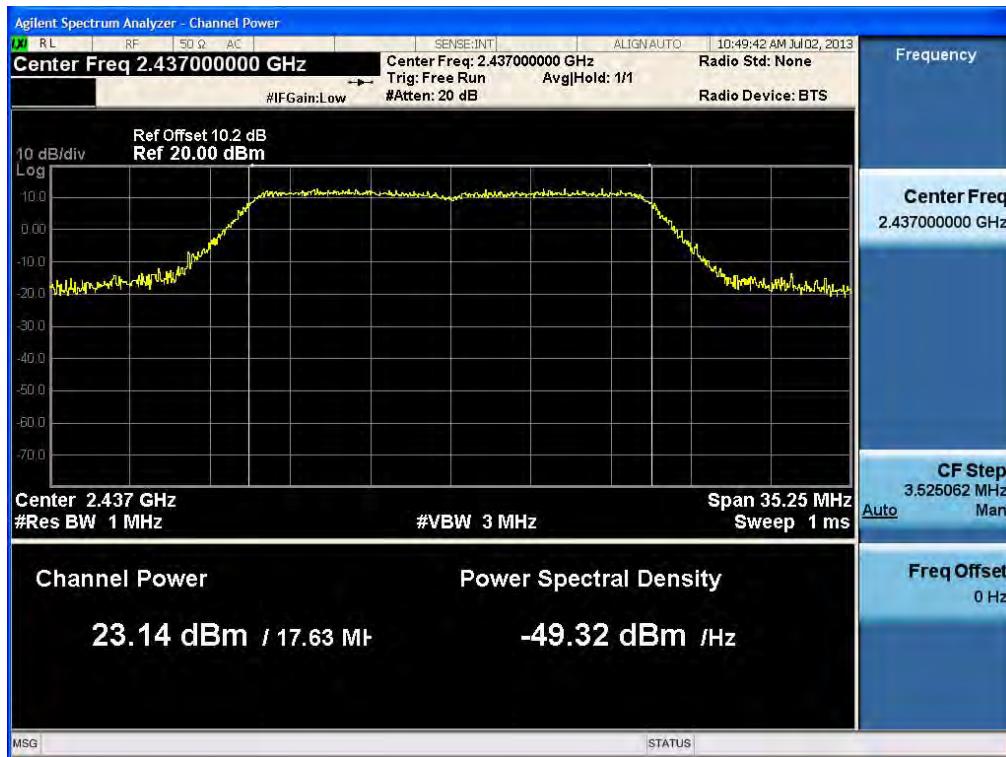


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1307FR17	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522

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

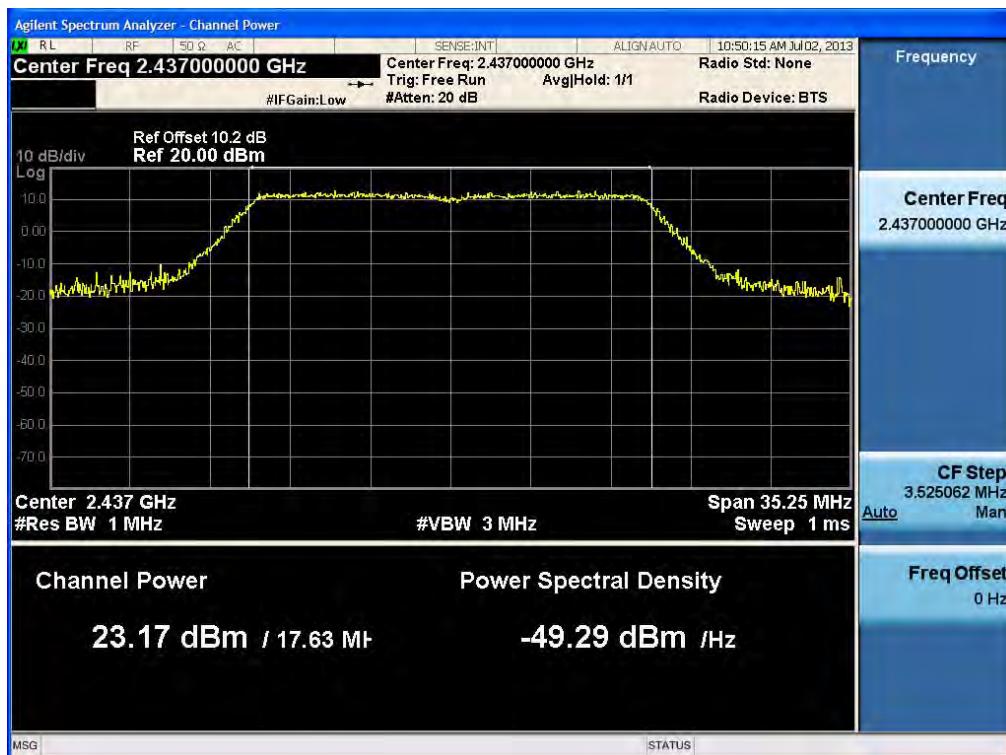


### Conducted Output Power (802.11n-CH 6) 52Mbps

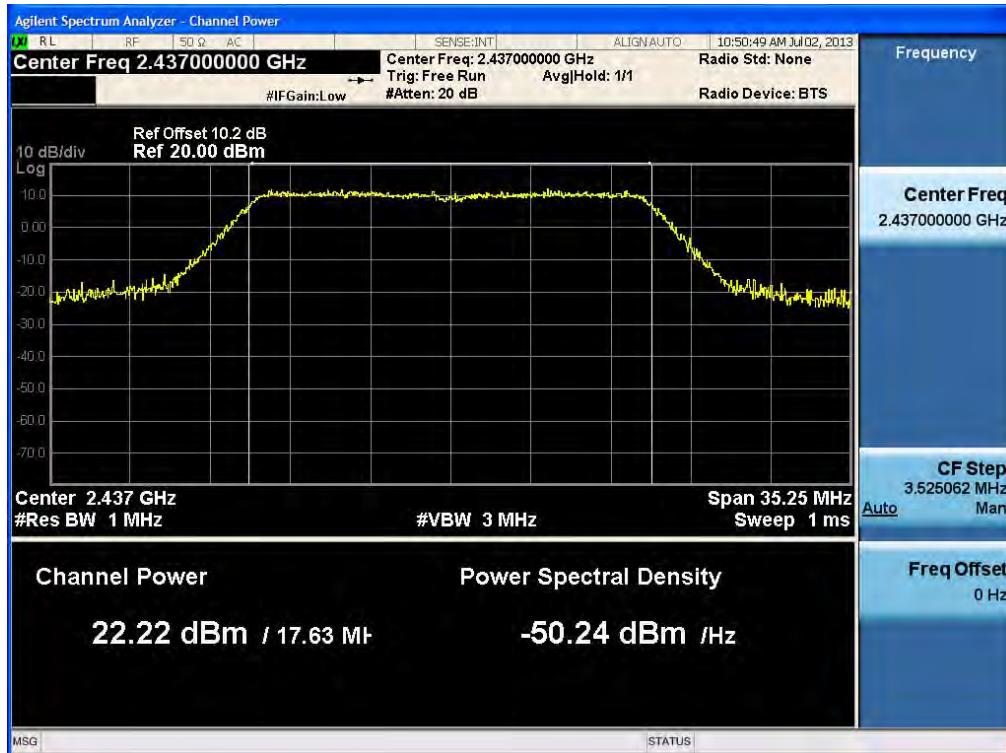


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
HCTR1307FR17	July 16, 2013	GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

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

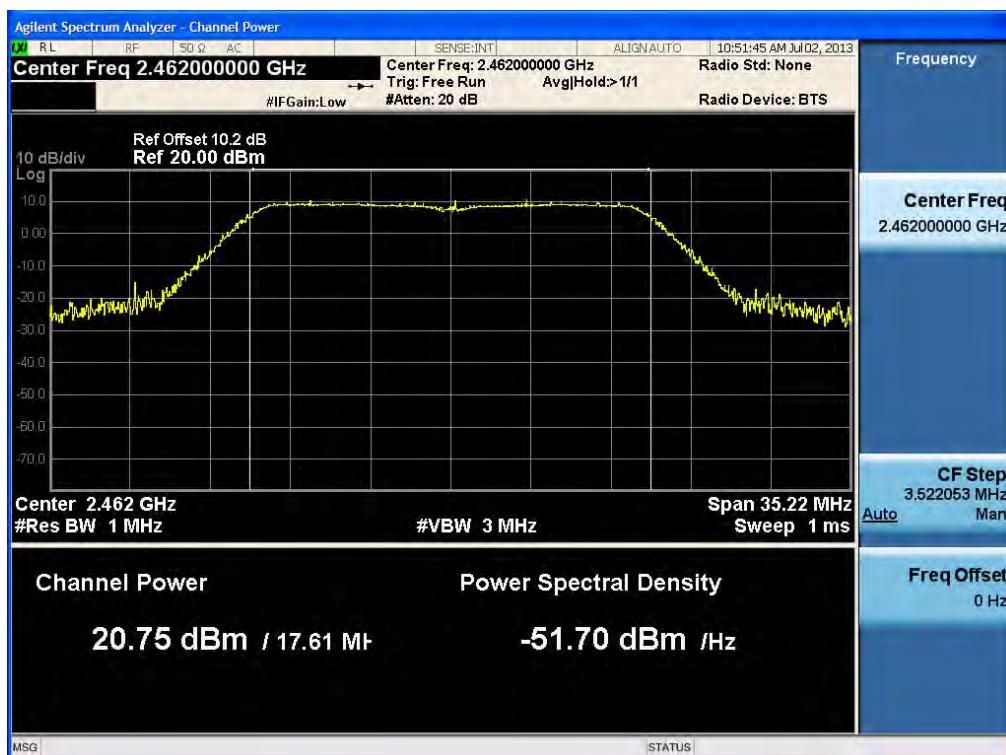


### Conducted Output Power (802.11n-CH 6) 65Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
HCTR1307FR17	July 16, 2013	GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

### 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		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1307FR17	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522

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

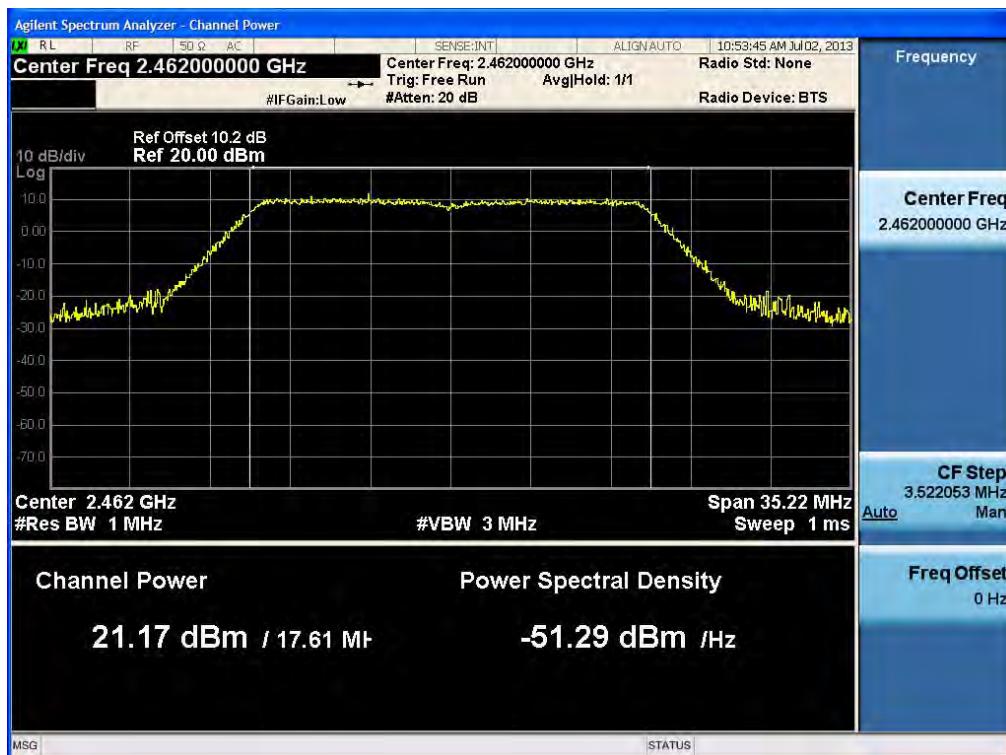


### Conducted Output Power (802.11n-CH 11) 26Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1307FR17	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522

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

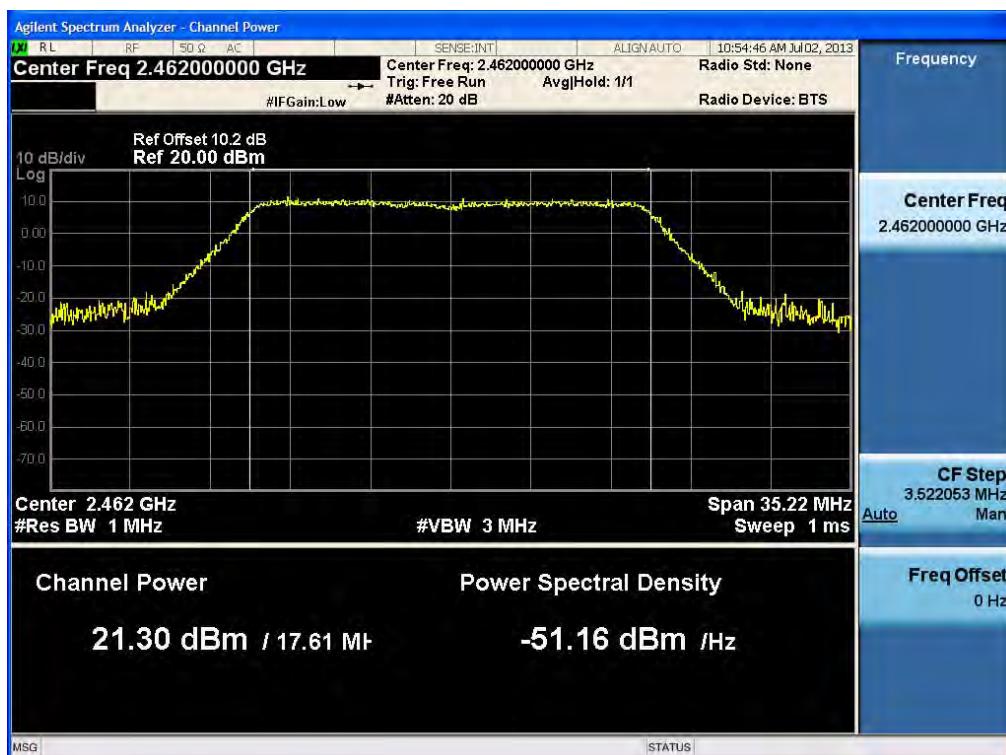


### Conducted Output Power (802.11n-CH 11) 52Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1307FR17	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522

### 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			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1307FR17	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

## RESULT PLOTS-Average

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



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



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1307FR17	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

### 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			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1307FR17	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

### 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			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
HCTR1307FR17	July 16, 2013	GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

### 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			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
HCTR1307FR17	July 16, 2013	GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

### 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			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1307FR17	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

### 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			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1307FR17	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

### 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		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1307FR17	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522

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



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

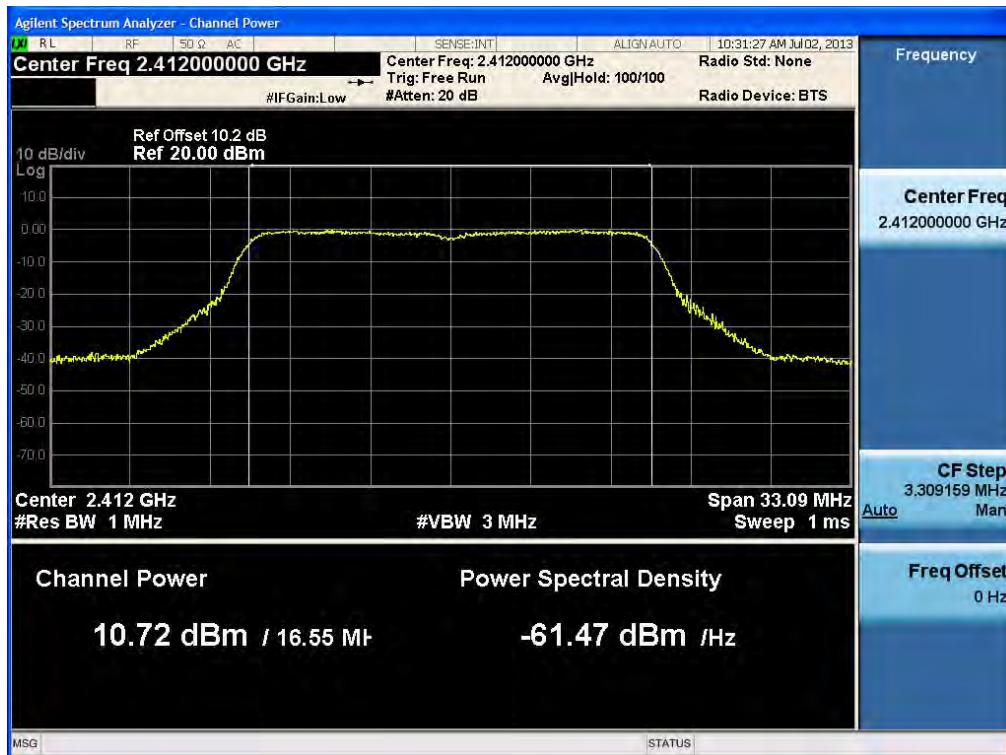


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
HCTR1307FR17	July 16, 2013	GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

### 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			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1307FR17	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

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

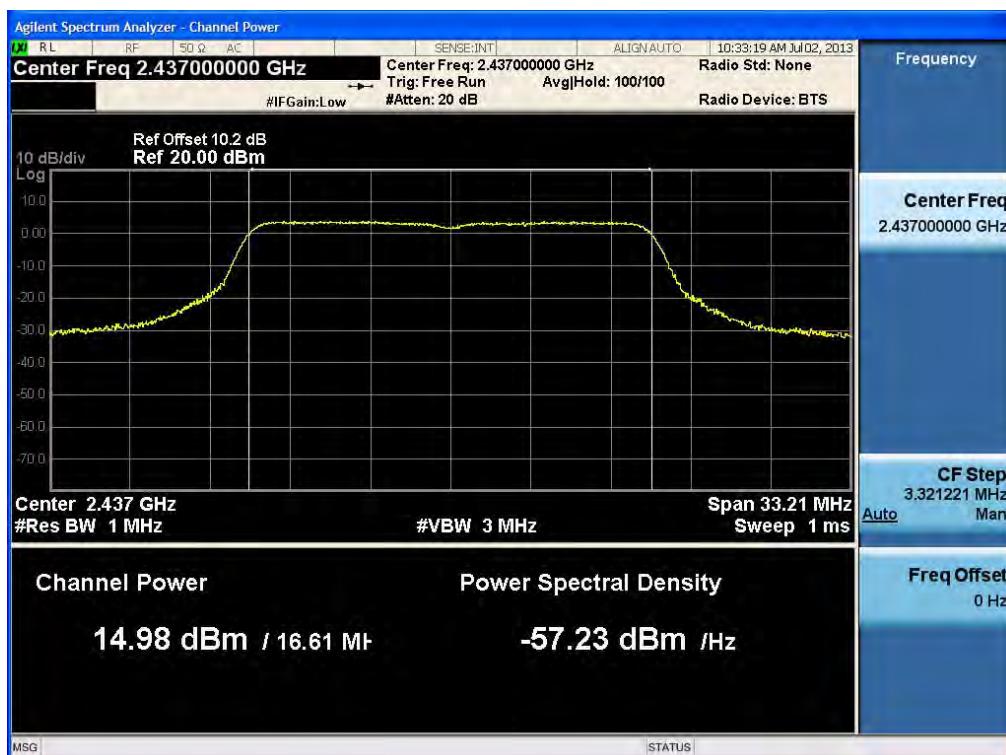


### Conducted Output Power (802.11g-CH 1) 54Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1307FR17	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

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



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

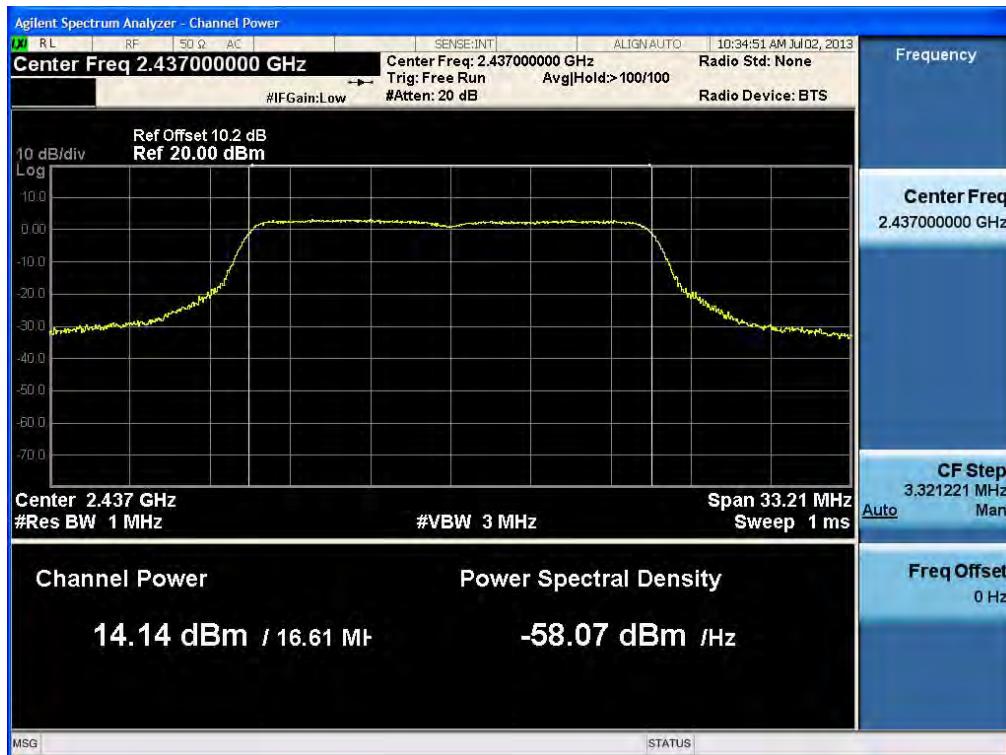


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
HCTR1307FR17	July 16, 2013	GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

### 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			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
HCTR1307FR17	July 16, 2013	GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

### 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			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
HCTR1307FR17	July 16, 2013	GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

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

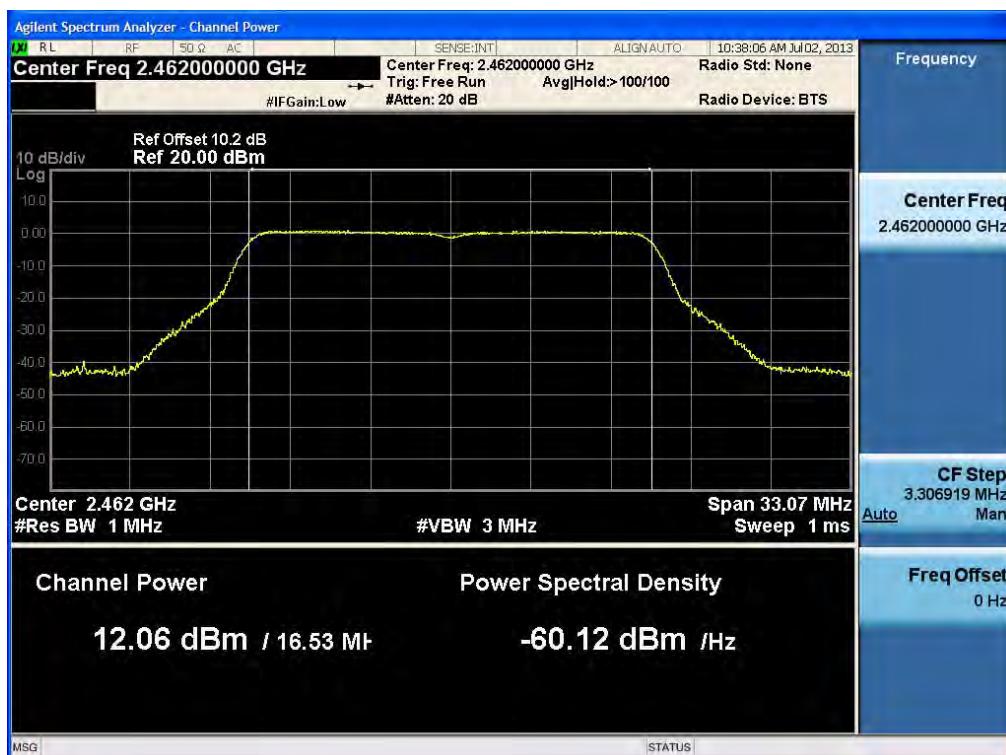


### Conducted Output Power (802.11g-CH 6) 54Mbps



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
HCTR1307FR17	July 16, 2013	GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

### 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			<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No.	Date of Issue:	EUT Type:		
HCTR1307FR17	July 16, 2013	GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522