

HCT CO., LTD.

CERTIFICATE OF COMPLIANCE

FCC Certification

Applicant Name:

LG Electronics Inc.

Address:

19-1, Cheongho-ri, Jinwi-myeon, Pyeongtaek-Si, Gyeonggi-do,

Korea(451-713)

Date of Issue:

October 26, 2011

Test Site/Location:

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

Kyunggi-Do, Korea

Report No.: HCTR1110FR01-3

HCT FRN: 0005866421

IC Recognition No.: 5944A-3

FCC ID: BEJTWFMB003D IC: 2703H-TWFMB003D

APPLICANT: LG Electronics Inc.

FCC Model(s): TWFM-B003D TWFM-B003D EUT Type: WI-FI Module

Max. RF Output Power: Ant.0: Wi

Wi-Fi 802.11b(19.18 dBm) / Wi-Fi 802.11g (24.25 dBm) / Wi-Fi 802.11n (24.55 dBm)

/ Wi-Fi 802.11n_40 MHz (17.71 dBm)/ Wi-Fi 802.11a (5745~5825) (21.71 dBm)

/ Wi-Fi 802.11n (5745~5825) (21.66 dBm)/ Wi-Fi 802.11n_40 MHz (5755~5795) (12.18 dBm)

Ant.1: Wi-Fi 802.11b(18.78 dBm) / Wi-Fi 802.11g (24.20 dBm) / Wi-Fi 802.11n (24.27 dBm)

/ Wi-Fi 802.11n_40 MHz (18.23 dBm)/ Wi-Fi 802.11a (5745~5825) (20.98 dBm)

/ Wi-Fi 802.11n (5745~5825) (21.04 dBm)/ Wi-Fi 802.11n 40 MHz (5755~5795) (11.50 dBm)

Frequency Range: 2412 MHz - 2462 MHz (2.4 GHz Band)

5745 MHz - 5825 MHz (5.8 GHz Band)

Modulation type CCK/DSSS/OFDM

FCC Classification: Digital Transmission System(DTS)

FCC Rule Part(s): Part 15.247

IC Rule: RSS-210, RSS-GEN

IC Registration No.: 5944A-3

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

long Seck Lee

: Jong Seok Lee

Test engineer of RF Team

Approved by

: Sang Jun Lee Manager of RF Team

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Version

TEST REPORT NO. DATE		DESCRIPTION
HCTR1110FR01	October 18, 2011 - First Approval Report	
HCTR1110FR01-1	10FR01-1 October 24, 2011 - Add Directional Antenna Gain	
HCTR1110FR01-2	HCTR1110FR01-2 October 25, 2011 - Add AC Power Line Conducted	
HCTR1110FR01-3	October 26, 2011	- Insert OBW test result

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1. GENERAL INFORMATION

LG Electronics Inc. **Applicant:**

19-1, Cheongho-ri, Jinwi-myeon, Pyeongtaek-Si, Gyeonggi-do, Korea (451-713) Address:

FCC ID: BEJTWFMB003D

EUT Type: WI-FI Module **FCC Model Name:** TWFM-B003D IC Model Name: TWFM-B003D

Date(s) of Tests: September 09,2011 ~ October 15, 2011

Name: Min Seok Kim Contact person:

Phone #: +82-31-610-5844

HCT Co., Ltd. Place of Tests:

105-1, Jangam-ri , Majang-Myeon, Icheon-si, Kyunggi-Do, 467-811, KOREA. (IC Recognition No. : 5944A-3)

2. EUT DESCRIPTION

EUT Type	WI-FI Module				
FCC Model Name	TWFM-B003D				
IC Model Name	TWFM-B003D				
Power Supply	DC 5.0 V				
Frequency Range	TX: 2412 MHz ~	2462 MHz, 5745 MHz ~ 5825 MHz			
	RX: 2412 MHz ~	Hz ~ 2462 MHz, 5745 MHz ~ 5825 MHz			
Max. RF Output Power:	/ Wi-Fi 8 / Wi-Fi (12.18 0	Ant.0: Wi-Fi 802.11b(19.18 dBm) / Wi-Fi 802.11g (24.25 dBm) / Wi-Fi 802.11n (24.55 dBm) / Wi-Fi 802.11n_40 MHz (17.71 dBm)/ Wi-Fi 802.11a (5745~5825) (21.71 dBm) / Wi-Fi 802.11n (5745~5825) (21.66 dBm)/ Wi-Fi 802.11n_40 MHz (5755~5795) (12.18 dBm)			
	/ Wi-Fi i	-Fi 802.11b(18.78 dBm) / Wi-Fi 802.11g (24.20 dBm) / Wi-Fi 802.11n (24.27 dBm) / I-Fi 802.11n_40 MHz (18.23 dBm) / Wi-Fi 802.11a (5745~5825) (20.98 dBm) / Wi-Fi 802.11n (5745~5825) (21.04 dBm) / Wi-Fi 802.11n_40 MHz (5755~5795) I.50 dBm)			
Modulation Type	DSSS/CCK(802	.11b), OFDM(802.11a, 802.11g, 802.11n)			
Antenna Specification	Ant.0:	Manufacturer: LGINNOTEK			
		Antenna type: PIFA Antenna			
		Peak Gain : 1.94 dBi (2.4 GHz) / 2.49 dBi (5.8 GHz)			
	Ant.1:	Manufacturer: LGINNOTEK			
		Antenna type: PIFA Antenna			
		Peak Gain : 1.94 dBi (2.4 GHz) / 1.45 dBi (5.8 GHz)			
	Directional Antenna Gain	4.95 dBi(802.11g_2.4 GHz), 5.0 dBi(802.11a_5.8 GHz),			
	, antonna Gam	1.94 dBi(802.11n_2.4 GHz), 2.0 dBi (802.11n_5.8 GHz)			

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3. TEST METHODOLOGY

The measurement procedure described in the American National Standard for Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz(ANSI C63.4-2003)

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)

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 March 02, 2011 (Registration Number: 90661)

5.2 EQUIPMENT

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

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

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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."

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

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



7. TEST RESULT

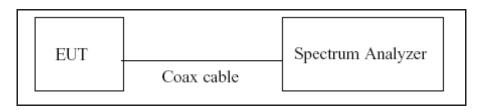
7.1 6dB BANDWIDTH MEASUREMENT

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

The bandwidth at 6dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the receive antenna while the EUT is operating in transmission mode at the appropriate frequencies.

The minimum permissible 6dB bandwidth is 500 kHz.

■ TEST CONFIGURATION



■ TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

RBW: 100 kHz VBW: 100 kHz SPAN: 40 MHz

■ TEST RESULTS_Ant. 0

Conducted 6dB Bandwidth Measurements for 802.11b

802.11b Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
2412	1	7.497	0.5	Pass
2437	6	7.976	0.5	Pass
2462	11	8.031	0.5	Pass

Conducted 6dB Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
2412	1	14.510	0.5	Pass
2437	6	15.030	0.5	Pass
2462	11	15.144	0.5	Pass

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Conducted 6dB Bandwidth Measurements for 802.11n_20 MHz BW

802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
2412	1	16.000	0.5	Pass
2437	6	16.950	0.5	Pass
2462	11	14.711	0.5	Pass

Conducted 6dB Bandwidth Measurements for 802.11n_40 MHz BW

802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
2422	3	36.409	0.5	Pass
2437	6	36.124	0.5	Pass
2452	9	36.085	0.5	Pass

Conducted 6dB Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5745	149	15.500	0.5	Pass
5785	157	16.050	0.5	Pass
5825	165	15.720	0.5	Pass

Conducted 6dB Bandwidth Measurements for 802.11n_20 MHz BW

802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5745	149	15.420	0.5	Pass
5785	157	16.040	0.5	Pass
5825	165	15.160	0.5	Pass

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Conducted 6dB Bandwidth Measurements for 802.11n_40 MHz BW

802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5755	151	36.460	0.5	Pass
5795	159	36.400	0.5	Pass

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■ TEST RESULTS_Ant. 1

Conducted 6dB Bandwidth Measurements for 802.11b

802.11b Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
2412	1	8.137	0.5	Pass
2437	6	8.010	0.5	Pass
2462	11	8.056	0.5	Pass

Conducted 6dB Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
2412	1	15.100	0.5	Pass
2437	6	15.730	0.5	Pass
2462	11	15.154	0.5	Pass

Conducted 6dB Bandwidth Measurements for 802.11n _20 MHz BW

802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
2412	1	16.910	0.5	Pass
2437	6	17.180	0.5	Pass
2462	11	16.115	0.5	Pass

Conducted 6dB Bandwidth Measurements for 802.11n_40 MHz BW

802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
2422	3	36.443	0.5	Pass
2437	6	35.795	0.5	Pass
2452	9	36.366	0.5	Pass

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Conducted 6dB Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5745	149	15.630	0.5	Pass
5785	157	15.710	0.5	Pass
5825	165	15.390	0.5	Pass

Conducted 6dB Bandwidth Measurements for 802.11n_20 MHz BW

802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5745	149	16.360	0.5	Pass
5785	157	15.440	0.5	Pass
5825	165	15.410	0.5	Pass

Conducted 6dB Bandwidth Measurements for 802.11n_40 MHz BW

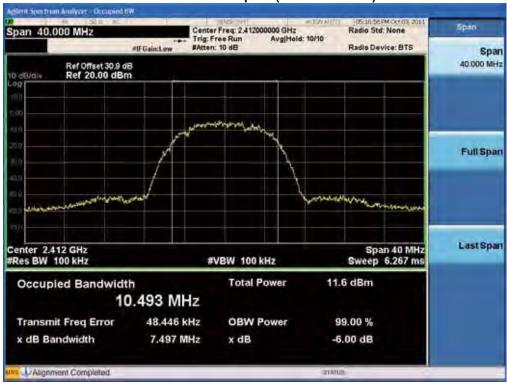
802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5755	151	36.500	0.5	Pass
5795	159	36.520	0.5	Pass

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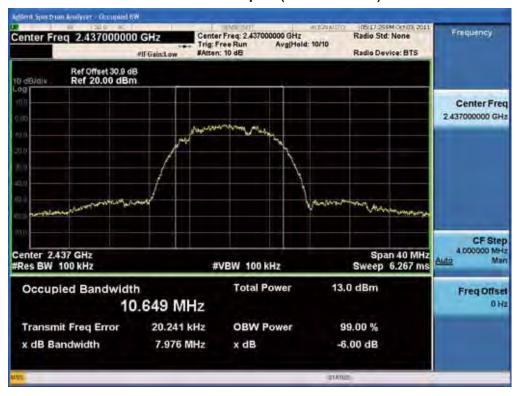


RESULT PLOTS_Ant.0

6dB Bandwidth plot (802.11b-CH 1)



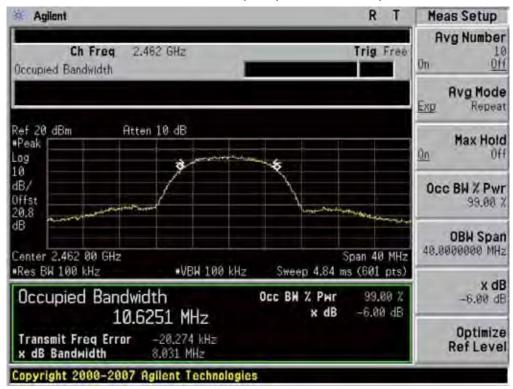
6dB Bandwidth plot (802.11b-CH 6)



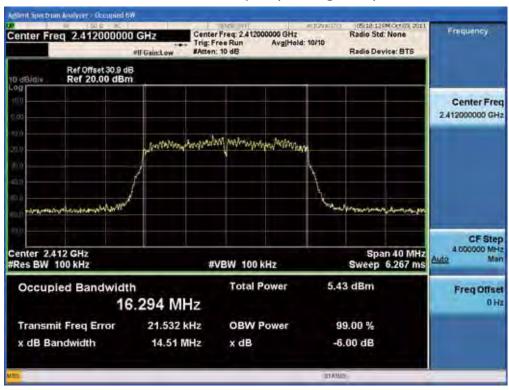
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6dB Bandwidth plot (802.11b-CH 11)



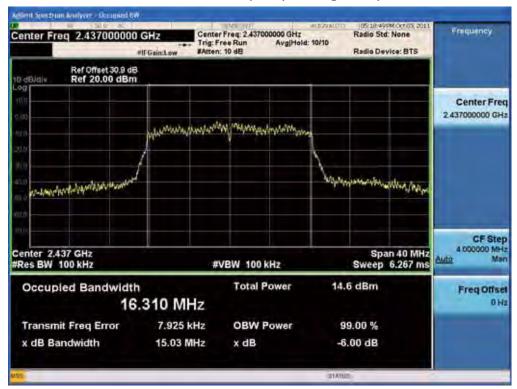
6dB Bandwidth plot (802.11g-CH 1)



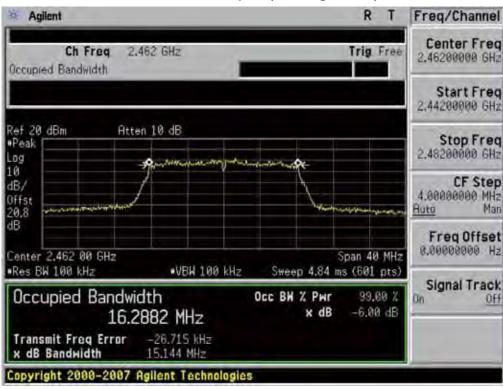
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6dB Bandwidth plot (802.11g-CH 6)



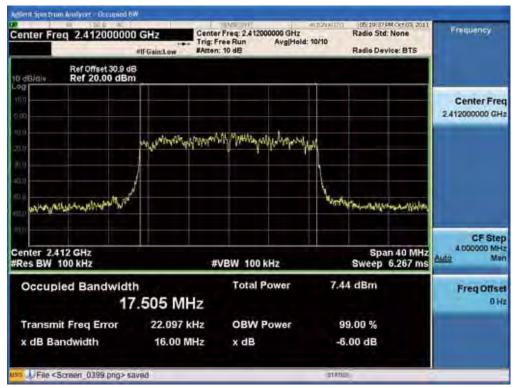
6dB Bandwidth plot (802.11g-CH 11)



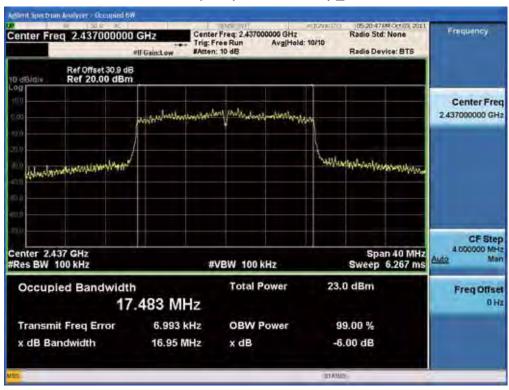
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6dB Bandwidth plot (802.11n-CH 1)_20 MHz BW



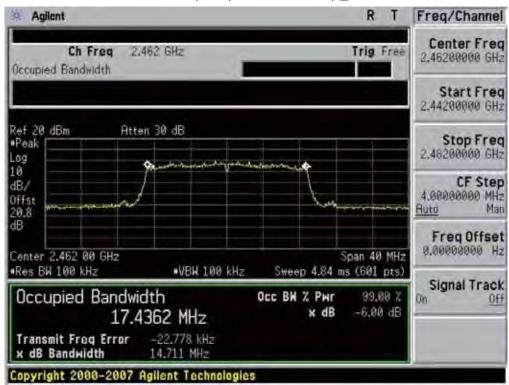
6dB Bandwidth plot (802.11n-CH 6) _20 MHz BW



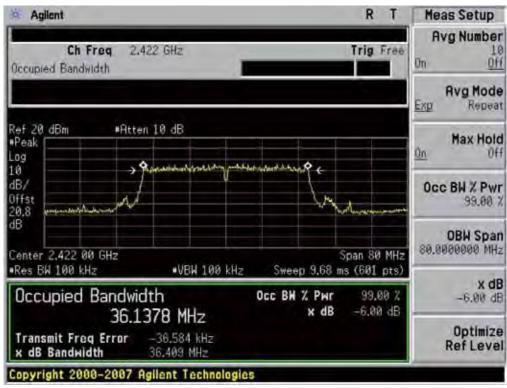
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6dB Bandwidth plot (802.11n-CH 11) _20 MHz BW



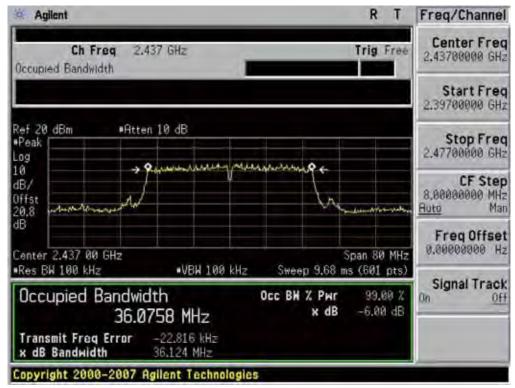
6dB Bandwidth plot (802.11n-CH 3)_40 MHz BW



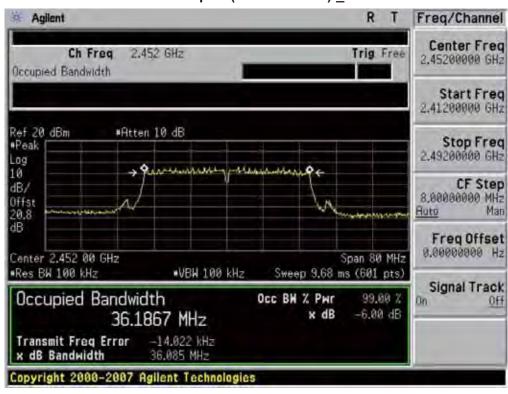
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6dB Bandwidth plot (802.11n-CH 6) _40 MHz BW



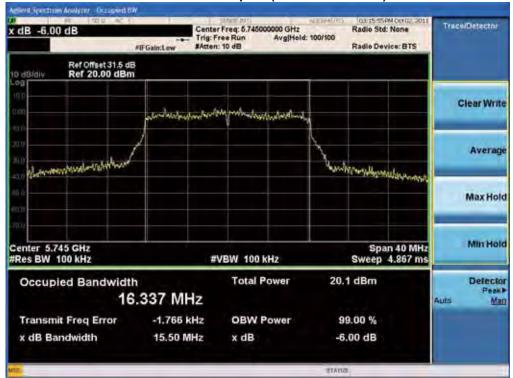
6dB Bandwidth plot (802.11n-CH 9) _40 MHz BW



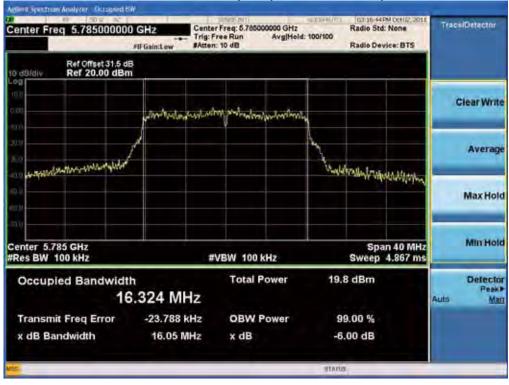
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6dB Bandwidth plot (802.11a-CH 149)



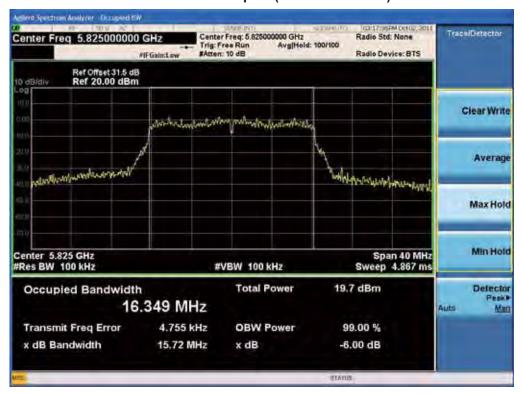
6dB Bandwidth plot (802.11a-CH 157)



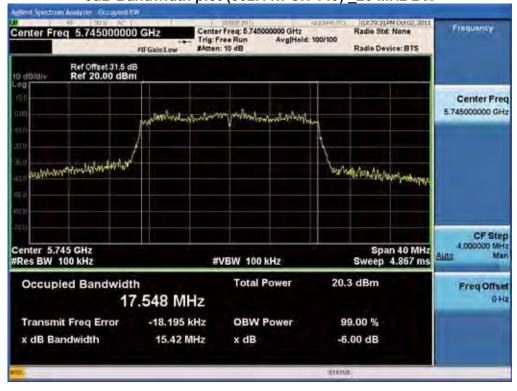
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6dB Bandwidth plot (802.11a-CH 165)



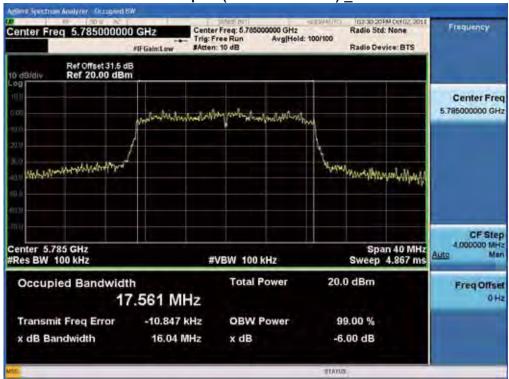
6dB Bandwidth plot (802.11n-CH 149) _20 MHz BW



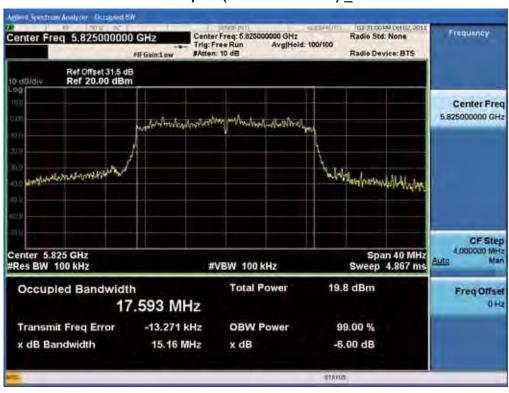
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



6dB Bandwidth plot (802.11n-CH 157) _20 MHz BW



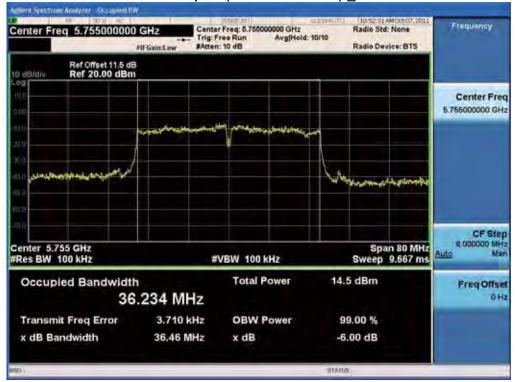
6dB Bandwidth plot (802.11n-CH 165) _20 MHz BW



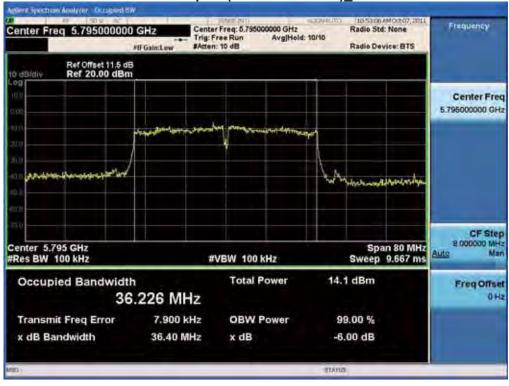
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



6dB Bandwidth plot (802.11n-CH 151) _40 MHz BW



6 dB Bandwidth plot (802.11n-CH 159)_40 MHz BW

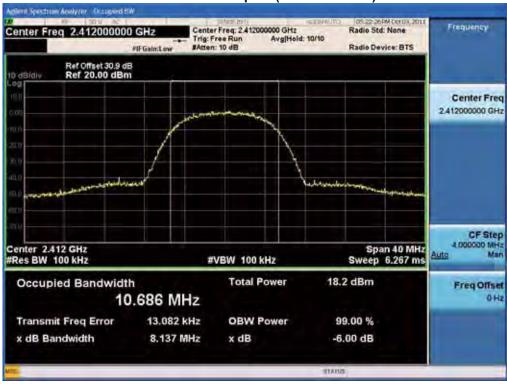


FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D

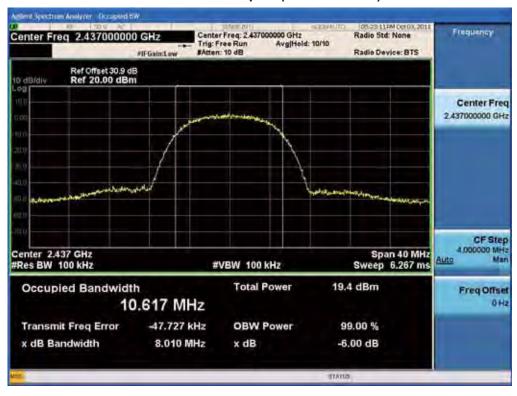


■ RESULT PLOTS_Ant.1

6dB Bandwidth plot (802.11b-CH 1)



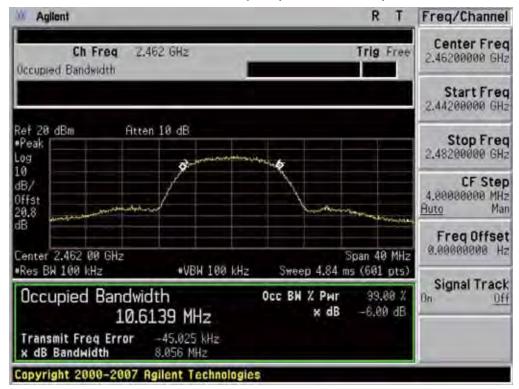
6dB Bandwidth plot (802.11b-CH 6)



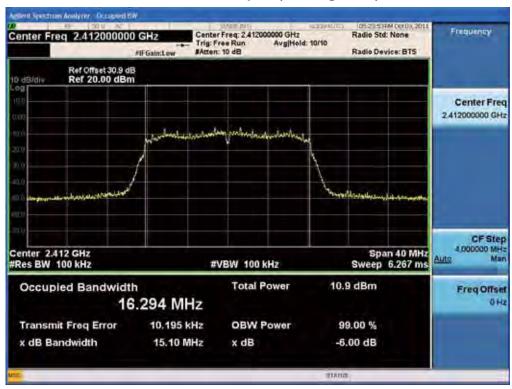
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



6dB Bandwidth plot (802.11b-CH 11)



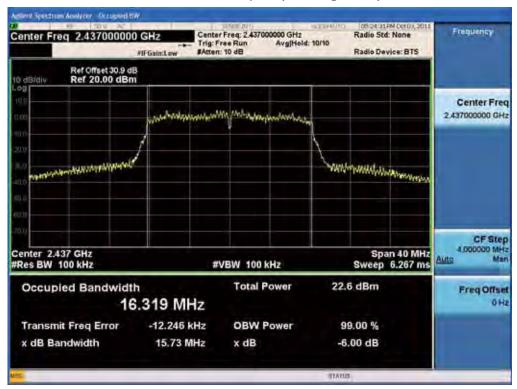
6dB Bandwidth plot (802.11g-CH 1)



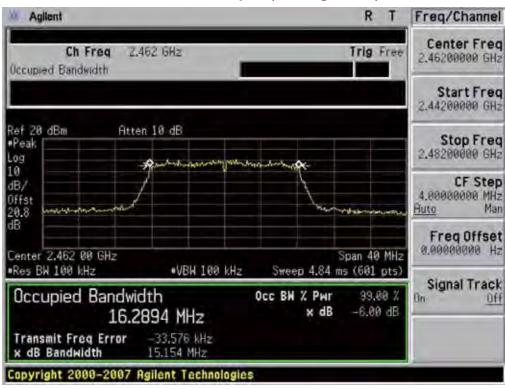
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



6dB Bandwidth plot (802.11g-CH 6)



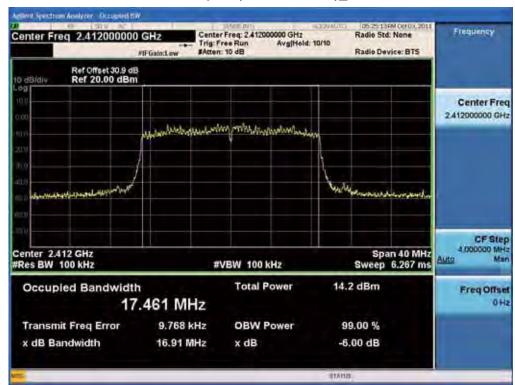
6dB Bandwidth plot (802.11g-CH 11)



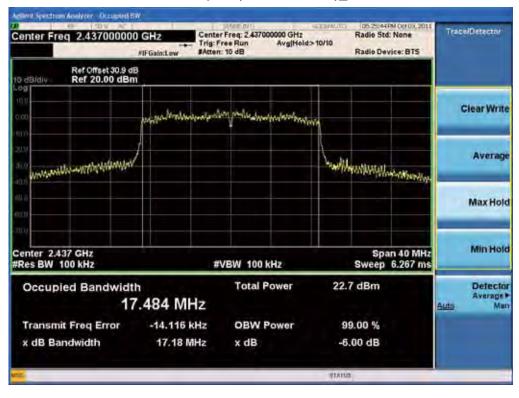
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



6dB Bandwidth plot (802.11n-CH 1)_20 MHz BW



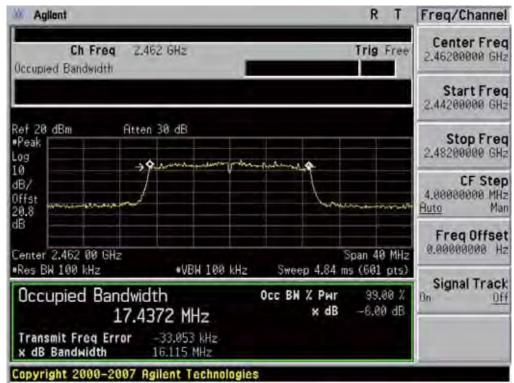
6dB Bandwidth plot (802.11n-CH 6)_20 MHz BW



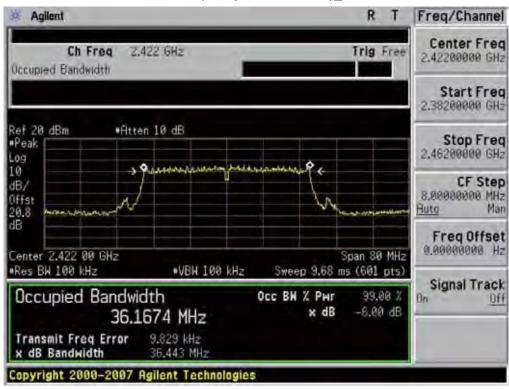
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



6dB Bandwidth plot (802.11n-CH 11)_20 MHz BW



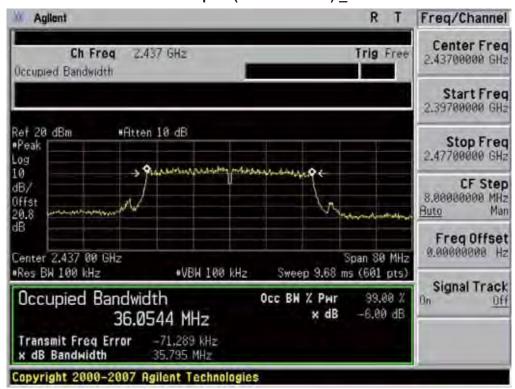
6dB Bandwidth plot (802.11n-CH 3)_40 MHz BW



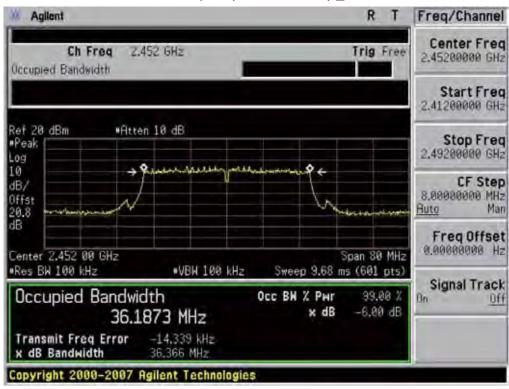
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



6dB Bandwidth plot (802.11n-CH 6) 40 MHz BW



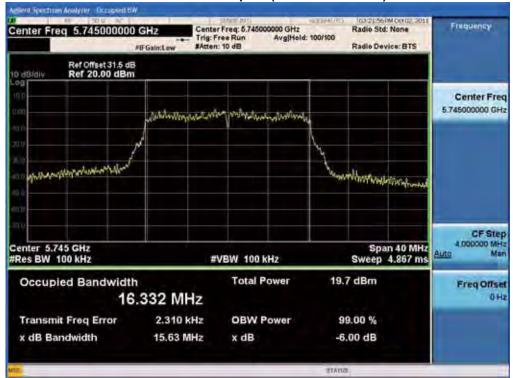
6dB Bandwidth plot (802.11n-CH 9) _40 MHz BW



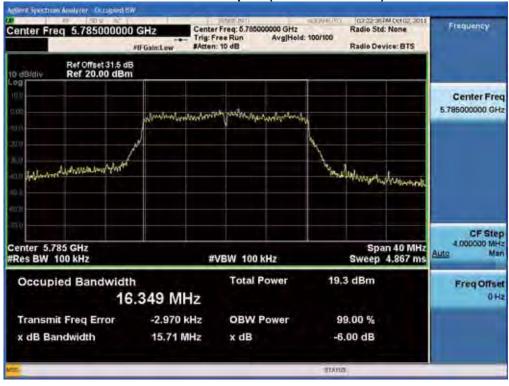
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



6dB Bandwidth plot (802.11a-CH 149)



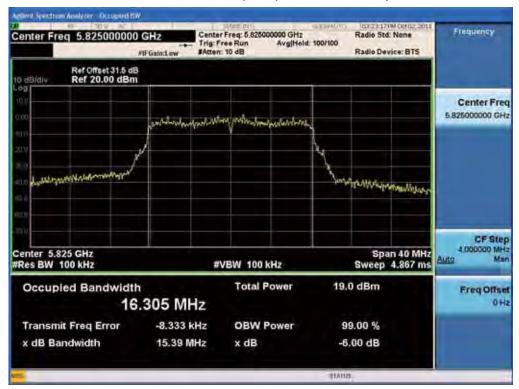
6dB Bandwidth plot (802.11a-CH 157)



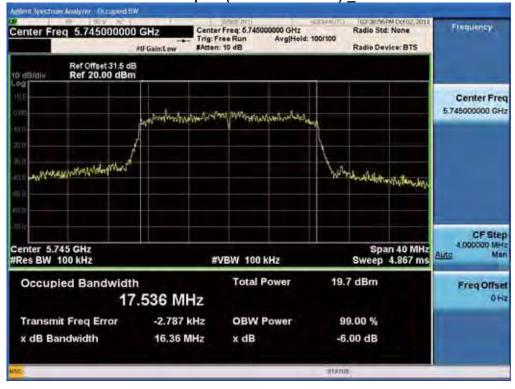
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



6dB Bandwidth plot (802.11a-CH 165)



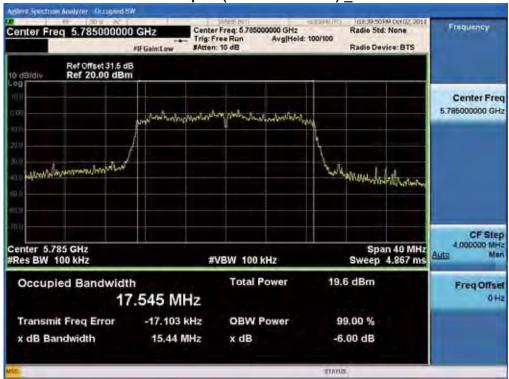
6dB Bandwidth plot (802.11n-CH 149) _20 MHz BW



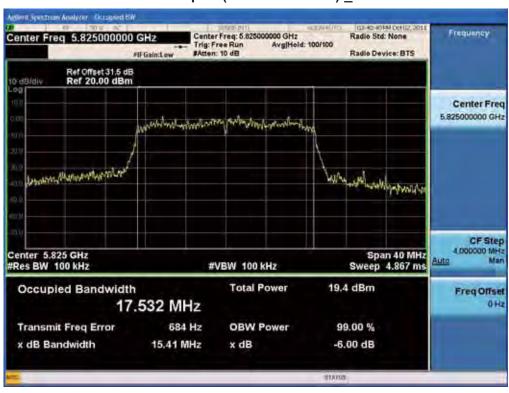
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



6dB Bandwidth plot (802.11n-CH 157) _20 MHz BW



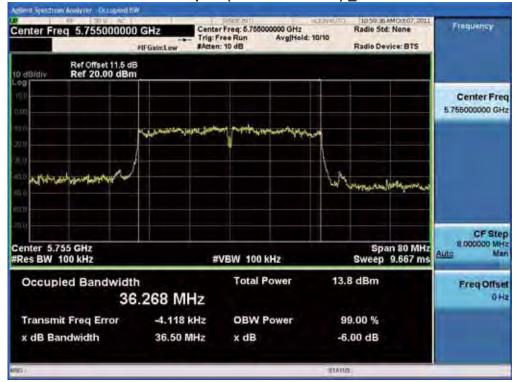
6dB Bandwidth plot (802.11n-CH 165) _20 MHz BW



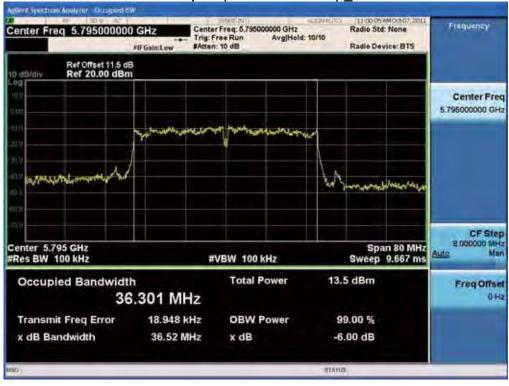
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



6dB Bandwidth plot (802.11n-CH 151) _40 MHz BW



6dB Bandwidth plot (802.11n-CH 159) _40 MHz BW

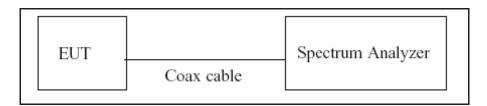


FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



7.2 OBW (99 % BW) BANDWIDTH MEASUREMENT

■ TEST CONFIGURATION



■ TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

RBW: RSS GEN required the RBW used for measuring 99 % must be at least 1 % of the SPAN.

VBW: 3 times of RBW

SPAN: 40 MHz

■ TEST RESULTS_Ant. 0

Conducted OBW Measurements for 802.11b

802.11b Mo	Measured Bandwidth	
Frequency [MHz]	Channel No.	[MHz]
2412	1	10.66
2437	6	10.64
2462	11	10.69

Conducted OBW Measurements for 802.11g

802.11g Mo	Measured Bandwidth	
Frequency [MHz]	Channel No.	[MHz]
2412	1	16.53
2437	6	16.58
2462	11	16.52

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
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Conducted OBW Measurements for 802.11n_20 MHz BW

802.11n Mo	Measured Bandwidth		
Frequency [MHz]	Channel No.	[MHz]	
2412	1	17.52	
2437	6	17.55	
2462	11	17.53	

Conducted OBW Measurements for 802.11n_40 MHz BW

802.11n Mo	Measured Bandwidth	
Frequency [MHz]	Channel No.	[MHz]
2422	3	36.46
2437	6	36.82
2452	9	36.32

Conducted OBW Measurements for 802.11a

802.11a Mo	Measured Bandwidth	
Frequency [MHz]	Channel No.	[MHz]
5745	149	16.56
5785	157	16.54
5825	165	16.46

Conducted OBW Measurements for 802.11n_20 MHz BW

802.11n Mo	Measured Bandwidth	
Frequency [MHz]	Channel No.	[MHz]
5745	149	17.59
5785	157	17.62
5825	165	17.63

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



Conducted OBW Measurements for 802.11n_40 MHz BW

802.11n Mo	Measured Bandwidth	
Frequency [MHz]	Channel No.	[MHz]
5755	151	36.41
5795	159	36.45

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
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■ TEST RESULTS_Ant. 1

Conducted OBW Measurements for 802.11b

802.11b Mo	Measured Bandwidth	
Frequency [MHz] Channel		[MHz]
2412	1	10.69
2437	6	10.64
2462	11	10.66

Conducted OBW Measurements for 802.11g

802.11g Mode		Measured Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	
2412	1	16.40	
2437	6	16.58	
2462	11	16.49	

Conducted OBW Measurements for 802.11n _20 MHz BW

802.11n Mode		Measured Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	
2412	1	17.50	
2437	6	17.53	
2462	11	17.47	

Conducted OBW Measurements for 802.11n_40 MHz BW

802.11n Mode		Measured Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	
2422	3	36.48	
2437	6	36.72	
2452	9	36.34	

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



Conducted OBW Measurements for 802.11a

802.11a Mo	Measured Bandwidth	
Frequency [MHz]	Channel No.	[MHz]
5745	149	16.58
5785	157	16.61
5825	165	16.51

Conducted OBW Measurements for 802.11n_20 MHz BW

802.11n Mo	Measured Bandwidth	
Frequency [MHz]	Channel No.	[MHz]
5745	149	17.57
5785	157	17.58
5825	165	17.66

Conducted OBW Measurements for 802.11n_40 MHz BW

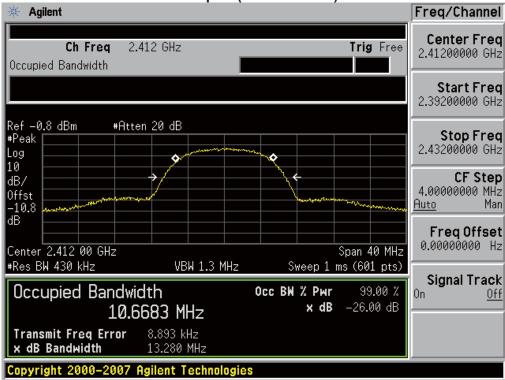
802.11n Mo	Measured Bandwidth	
Frequency [MHz] Channel No.		[MHz]
5755	151	36.34
5795	159	36.50

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D

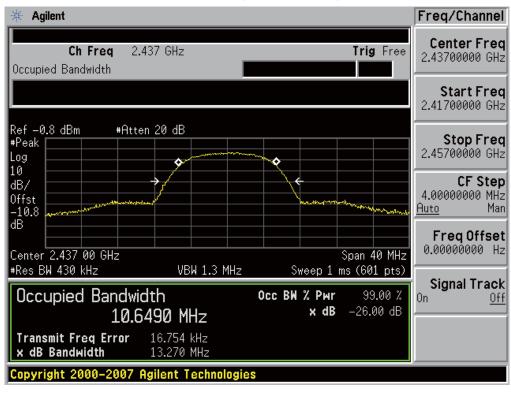


■ RESULT PLOTS_Ant.0

OBW plot (802.11b-CH 1)



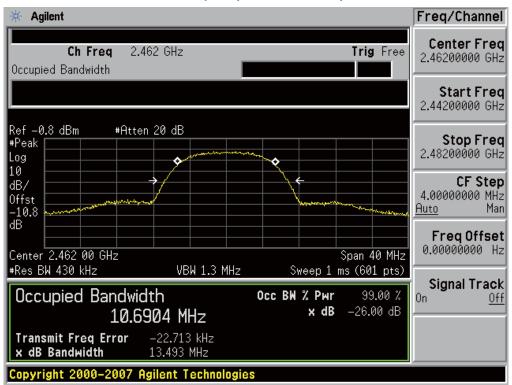
OBW plot (802.11b-CH 6)



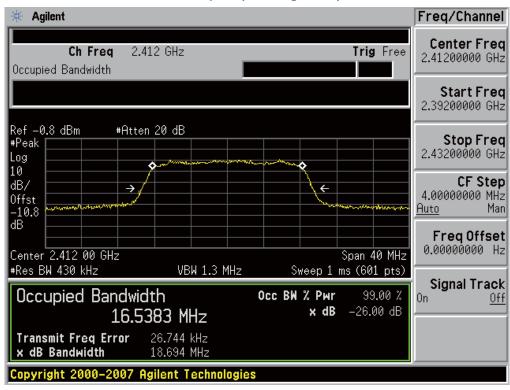
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



OBW plot (802.11b-CH 11)



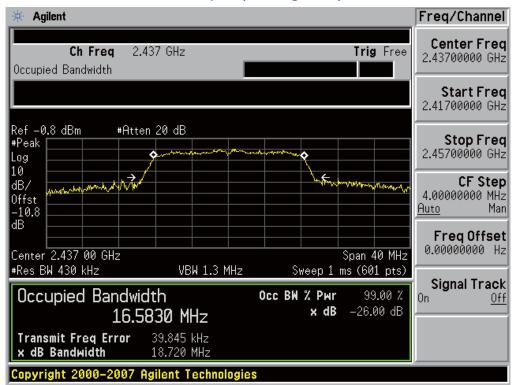
OBW plot (802.11g-CH 1)



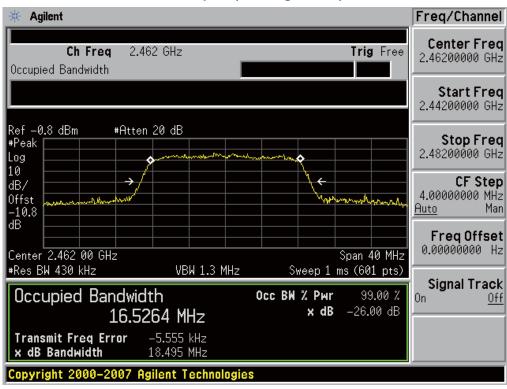
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



OBW plot (802.11g-CH 6)



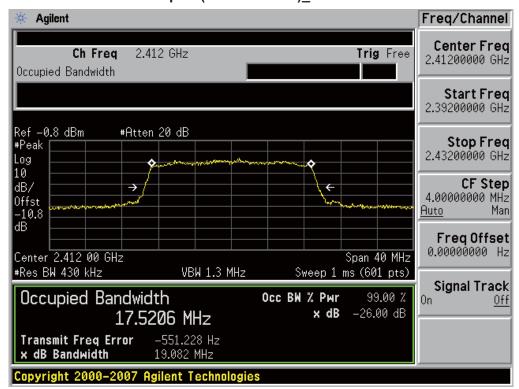
OBW plot (802.11g-CH 11)



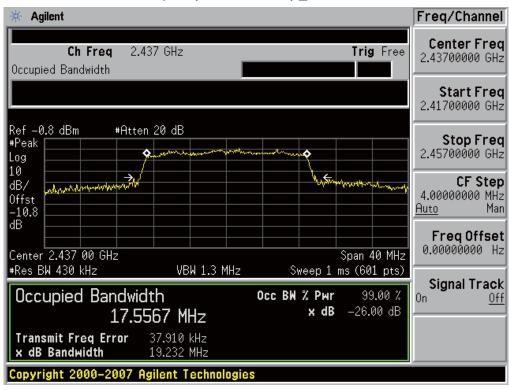
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



OBW plot (802.11n-CH 1) 20 MHz BW



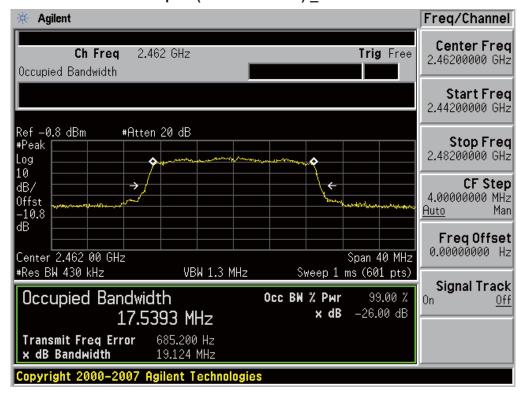
OBW plot (802.11n-CH 6) _20 MHz BW



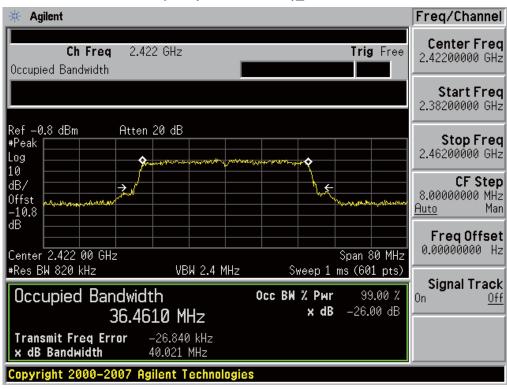
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



OBW plot (802.11n-CH 11) 20 MHz BW



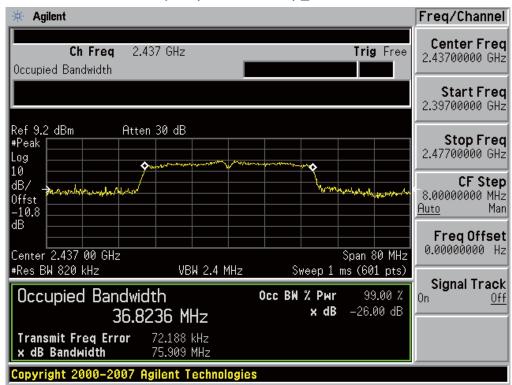
OBW plot (802.11n-CH 3)_40 MHz BW



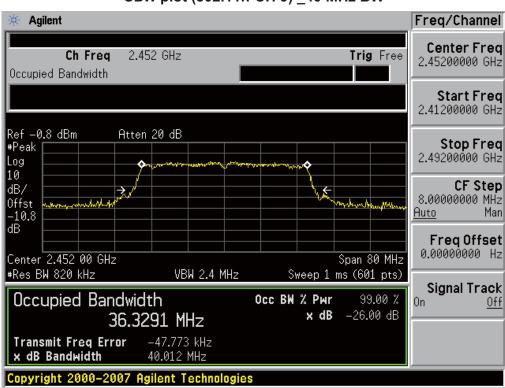
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



OBW plot (802.11n-CH 6) _40 MHz BW



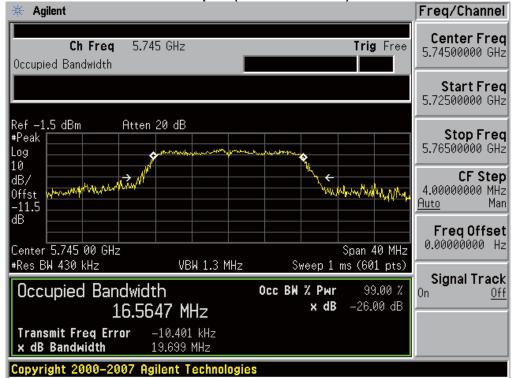
OBW plot (802.11n-CH 9) _40 MHz BW



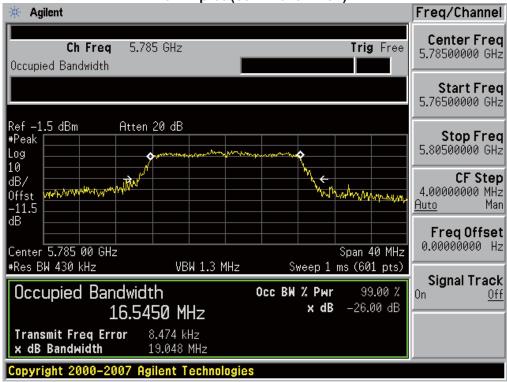
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



OBW plot (802.11a-CH 149)



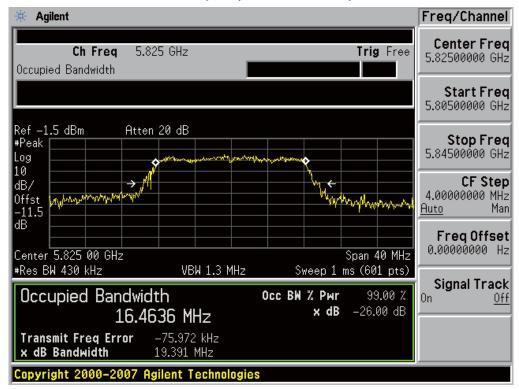




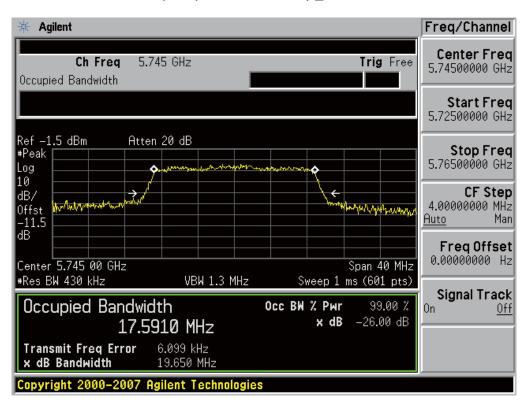
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



OBW plot (802.11a-CH 165)



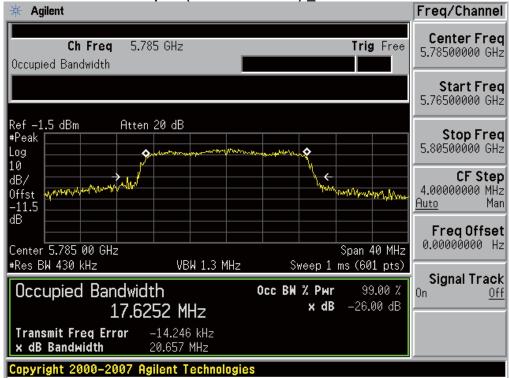
OBW plot (802.11n-CH 149) _20 MHz BW



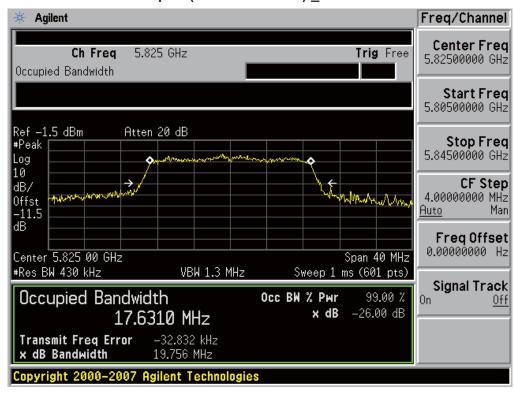
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



OBW plot (802.11n-CH 157) _20 MHz BW



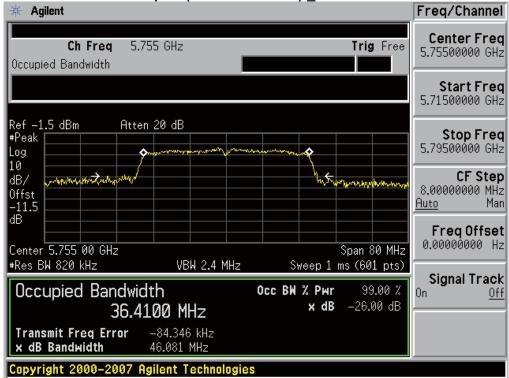
OBW plot (802.11n-CH 165) _20 MHz BW



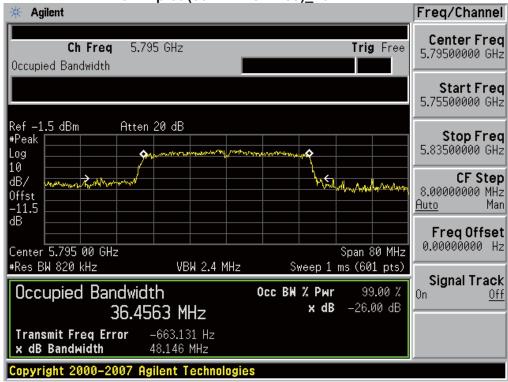
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



OBW plot (802.11n-CH 151) _40 MHz BW





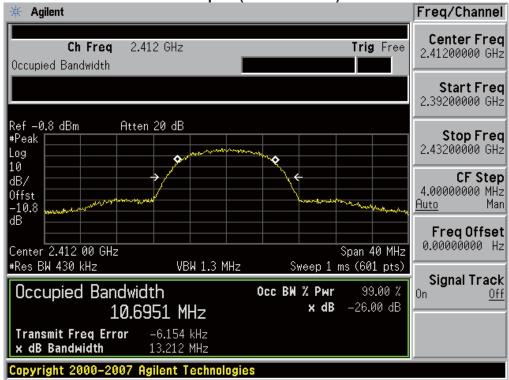


FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D

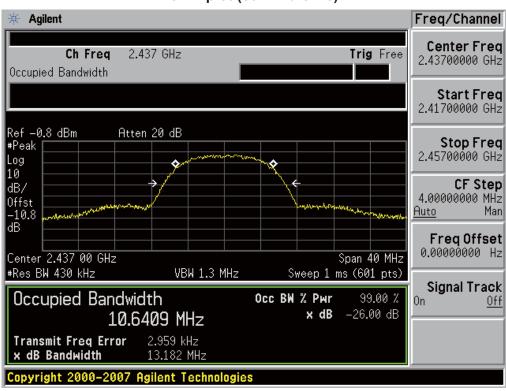


■ RESULT PLOTS_Ant.1

OBW plot (802.11b-CH 1)



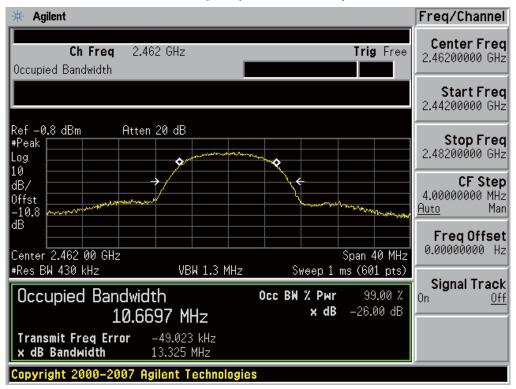
OBW plot (802.11b-CH 6)



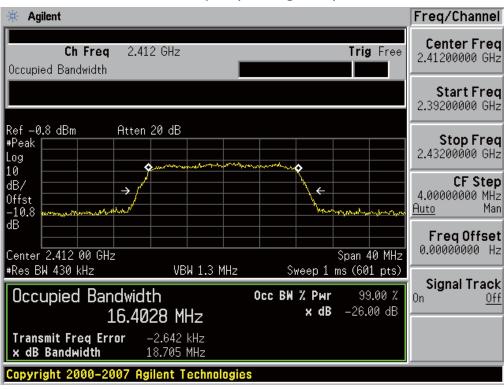
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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OBW plot (802.11b-CH 11)



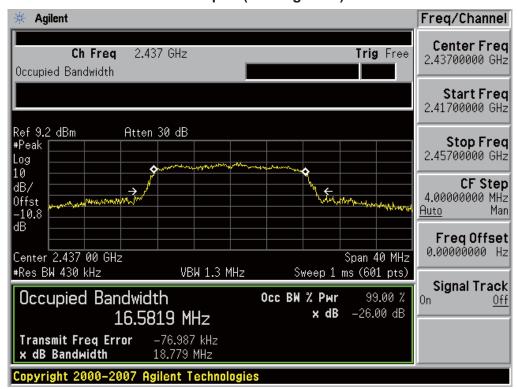
OBW plot (802.11g-CH 1)



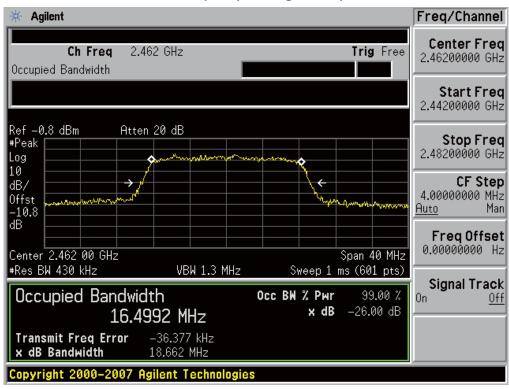
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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OBW plot (802.11g-CH 6)



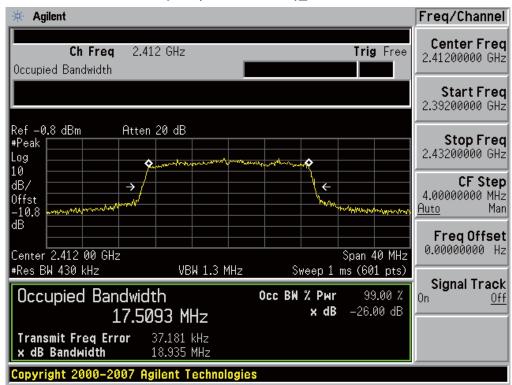
OBW plot (802.11g-CH 11)



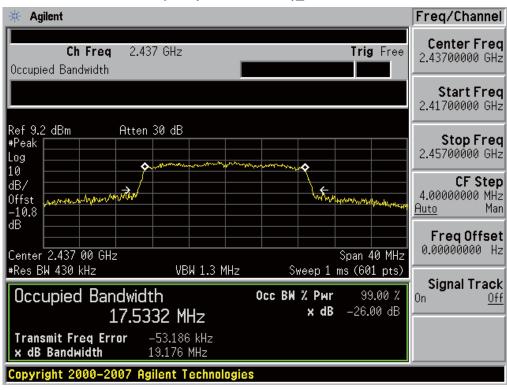
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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OBW plot (802.11n-CH 1)_20 MHz BW



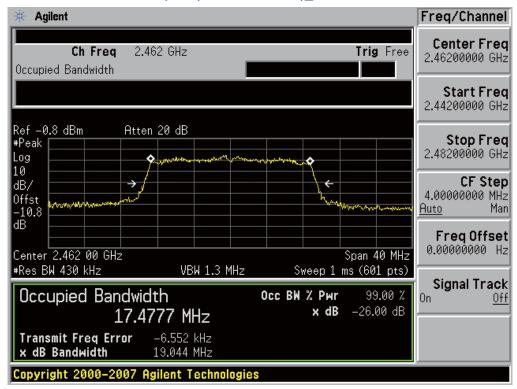
OBW plot (802.11n-CH 6)_20 MHz BW



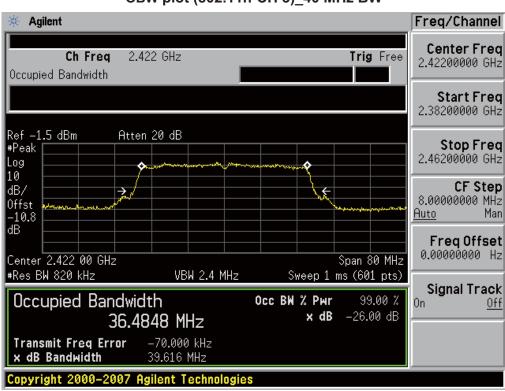
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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OBW plot (802.11n-CH 11)_20 MHz BW



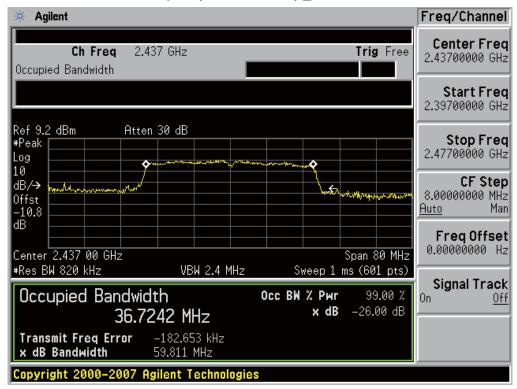
OBW plot (802.11n-CH 3)_40 MHz BW



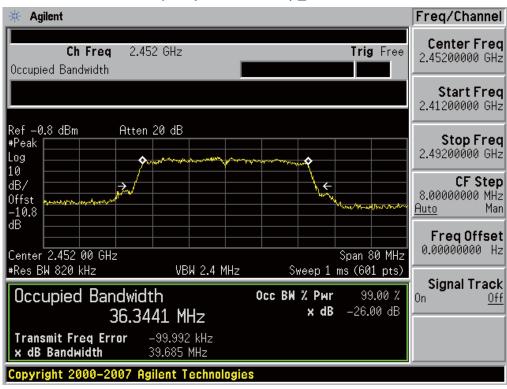
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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OBW plot (802.11n-CH 6) _40 MHz BW



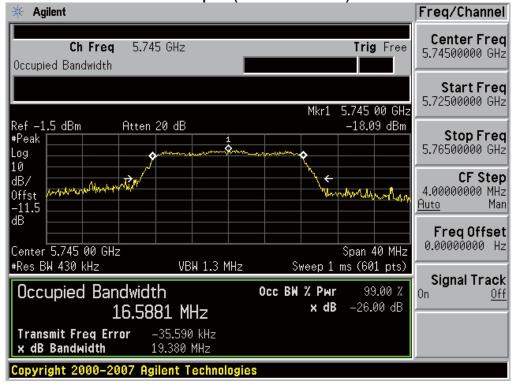
OBW plot (802.11n-CH 9) _40 MHz BW



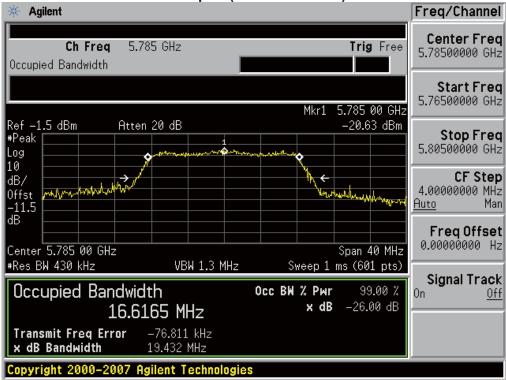
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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OBW plot (802.11a-CH 149)



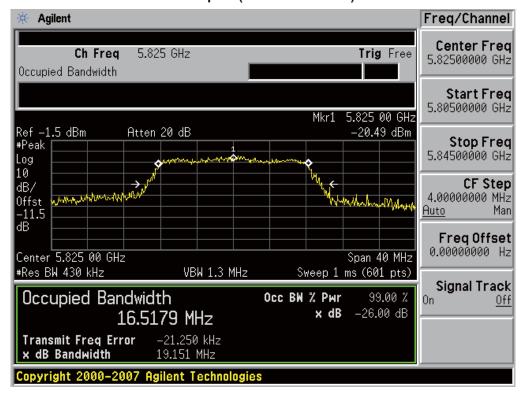




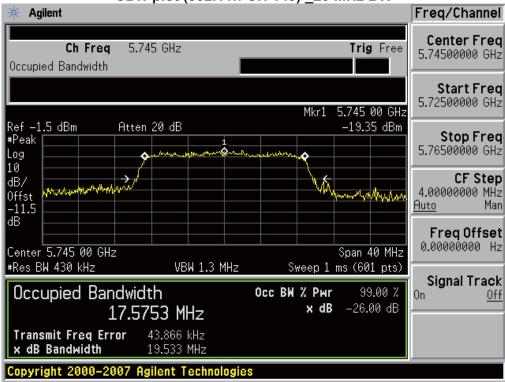
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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OBW plot (802.11a-CH 165)



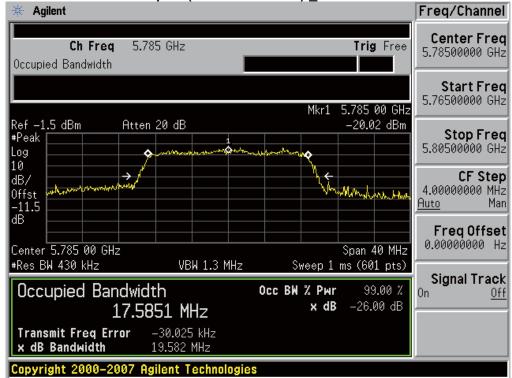




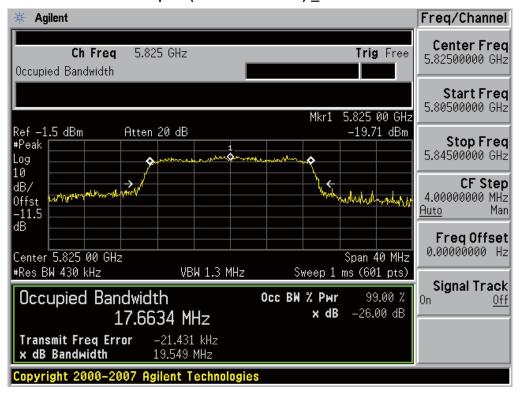
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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OBW plot (802.11n-CH 157) _20 MHz BW



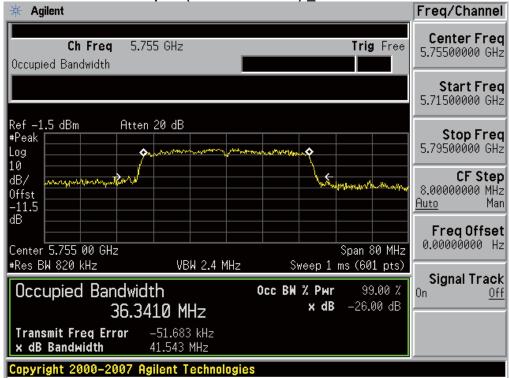
OBW plot (802.11n-CH 165) _20 MHz BW



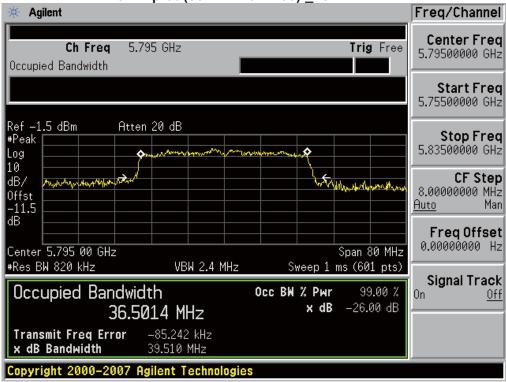
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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OBW plot (802.11n-CH 151) _40 MHz BW



OBW plot (802.11n-CH 159) _40 MHz BW



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7.3 OUTPUT POWER MEASUREMENT

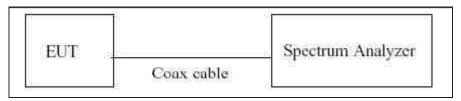
Test Requirements and limit, §15.247(b)(3)

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.

The Spectrum Analyzer is set to

RBW: 1 MHz VBW: 1 MHz SPAN: 40 MHz

Detector Mode = Peak

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Conducted Output Power Measurements (802.11b Mode)

802.11b Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps) Power(dBm)		(dBm)
		1 Mbps	14.45	30
2412	1	2 Mbps	14.71	30
2412	•	5.5 Mbps	16.37	30
		11 Mbps	17.99	30
		1 Mbps	15.83	30
2437	6	2 Mbps	15.85	30
2437	0	5.5 Mbps	17.61	30
		11 Mbps	19.18	30
		1 Mbps	15.35	30
2462	11	2 Mbps	15.53	30
	11	5.5 Mbps	17.44	30
		11 Mbps	19.02	30

■ TEST RESULTS_Ant.1

Conducted Output Power Measurements (802.11b Mode)

802.11b Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps) Power(dBm)		(dBm)
		1 Mbps	13.91	30
2412	1	2 Mbps	14.11	30
2412	•	5.5 Mbps	15.79	30
		11 Mbps	17.34	30
	6	1 Mbps	15.08	30
2437		2 Mbps	15.18	30
2437	0	5.5 Mbps 16.93	16.93	30
		11 Mbps	18.34	30
		1 Mbps	15.28	30
2462	11	2 Mbps	15.34	30
	11	5.5 Mbps	17.26	30
		11 Mbps	18.78	30

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Conducted Output Power Measurements (802.11g Mode)

802.11g	802.11g Mode		Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
Trequency[iiii12]		6 Mbps	14.64	30
		9 Mbps	14.69	30
		12 Mbps	14.72	30
2412	1	18 Mbps	14.62	30
2412	'	24 Mbps	15.05	30
		36 Mbps	15.01	30
		48 Mbps 15.06	15.06	30
		54 Mbps	15.09	30
		6 Mbps	23.89	30
	6	9 Mbps	23.79	30
		12 Mbps	23.94	30
2437		18 Mbps	23.80	30
2437		24 Mbps	24.11	30
		36 Mbps	24.12	30
		48 Mbps	24.09	30
		54 Mbps	24.25	30
		6 Mbps	19.34	30
		9 Mbps	19.07	30
		12 Mbps	19.52	30
2462	11	18 Mbps	19.45	30
∠40 ∠	''	24 Mbps	19.89	30
		36 Mbps	19.83	30
		48 Mbps	19.79	30
		54 Mbps	19.97	30

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Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		6 Mbps	12.71	30
		9 Mbps	13.38	30
		12 Mbps	12.92	30
2412	1	18 Mbps	12.67	30
2412	•	24 Mbps	13.25	30
		36 Mbps	13.22	30
		48 Mbps 13.28		30
		54 Mbps	13.31	30
		6 Mbps	23.51	30
	6	9 Mbps	23.50	30
		12 Mbps	23.59	30
2437		18 Mbps	23.45	30
2431		24 Mbps	24.20	30
		36 Mbps	23.90	30
		48 Mbps	23.95	30
		54 Mbps	23.97	30
		6 Mbps	18.80	30
		9 Mbps	18.48	30
		12 Mbps	18.92	30
2462	11	18 Mbps	19.05	30
	''	24 Mbps	19.28	30
		36 Mbps	19.24	30
		48 Mbps	19.13	30
		54 Mbps	19.28	30

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■ Measure and sum data

Conducted Output Power Measurements (802.11g Mode)

802.11g	802.11g Mode		Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
Trequency[iiii12]		6 Mbps	16.79	30
		9 Mbps	17.09	30
		12 Mbps	16.92	30
2412	1	18 Mbps	16.76	30
2412	'	24 Mbps	17.25	30
		36 Mbps	17.22	30
		48 Mbps	17.27	30
		54 Mbps	17.30	30
		6 Mbps	26.71	30
	6	9 Mbps	26.66	30
		12 Mbps	26.78	30
2437		18 Mbps	26.64	30
2431		24 Mbps	27.17	30
		36 Mbps	27.02	30
		48 Mbps	27.03	30
		54 Mbps	27.12	30
		6 Mbps	22.09	30
		9 Mbps	21.80	30
		12 Mbps	22.24	30
2462	11	18 Mbps	22.26	30
	''	24 Mbps	22.61	30
		36 Mbps	22.56	30
		48 Mbps	22.48	30
		54 Mbps	22.65	30

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Conducted Output Power Measurements (802.11n Mode)_20 MHz BW

802.11n	802.11n Mode		Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
1104401109[111112]		6 Mbps	16.63	30
		9 Mbps	16.68	30
		12 Mbps	16.61	30
2412	1	18 Mbps	17.05	30
2412	•	24 Mbps	16.99	30
		36 Mbps	17.07	30
		48 Mbps	17.13	30
		54 Mbps	17.02	30
		6 Mbps	24.04	30
	6	9 Mbps	24.00	30
		12 Mbps	24.11	30
2437		18 Mbps	24.55	30
2437		24 Mbps	24.51	30
		36 Mbps	24.23	30
		48 Mbps	24.38	30
		54 Mbps	24.33	30
		6 Mbps	18.03	30
		9 Mbps	18.38	30
		12 Mbps	18.36	30
2462	11	18 Mbps	18.83	30
	''	24 Mbps	18.87	30
		36 Mbps	18.92	30
		48 Mbps	18.80	30
		54 Mbps	18.79	30

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Conducted Output Power Measurements (802.11n Mode)_20 MHz BW

802.11n Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
rrequency[winz]		6 Mbps	15.52	30
		9 Mbps	15.48	30
		12 Mbps	15.46	30
2412	1	18 Mbps	15.96	30
2412	•	24 Mbps	15.85	30
		36 Mbps	bps 15.89 bps 15.90 bps 15.96	
		48 Mbps	15.90	30
		54 Mbps	15.96	30
		6 Mbps	23.71	30
	6	9 Mbps	23.64	30
		12 Mbps	23.70	30
2437		18 Mbps	23.97	30
2437		24 Mbps	24.00	30
		36 Mbps	23.95	30
		48 Mbps	23.99	30
		54 Mbps	24.27	30
		6 Mbps	17.51	30
		9 Mbps	17.78	30
		12 Mbps	17.68	30
2462	11	18 Mbps	18.26	30
	11	24 Mbps	18.22	30
		36 Mbps	18.17	30
		48 Mbps	18.30	30
		54 Mbps	18.28	30

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■ Measure and sum data

Conducted Output Power Measurements (802.11n Mode)_20 MHz BW

802.11n	802.11n Mode		Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	bps) Power(dBm)	
Troquency[iiiriz]		6 Mbps	19.12	30
		9 Mbps	19.13	30
		12 Mbps	19.08	30
2412	1	18 Mbps	19.55	30
2412	'	24 Mbps	19.47	30
		36 Mbps	Mbps 19.53 Mbps 19.57	30
		48 Mbps	19.57	30
		54 Mbps	19.53	30
		6 Mbps	26.89	30
	6	9 Mbps	26.83	30
		12 Mbps	26.92	30
2437		18 Mbps	27.28	30
2437		24 Mbps	27.27	30
		36 Mbps	27.10	30
		48 Mbps	27.20	30
		54 Mbps	27.31	30
		6 Mbps	20.79	30
		9 Mbps	21.10	30
2462		12 Mbps	21.04	30
	11	18 Mbps	21.56	30
	''	24 Mbps	21.57	30
		36 Mbps	21.57	30
		48 Mbps	21.57	30
		54 Mbps	21.55	30

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Conducted Output Power Measurements (802.11n Mode)_40 MHz BW

802.11n Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		13.5 Mbps	17.54	30
		27 Mbps	16.96	30
		40.5 Mbps	17.41	30
2422	3	54 Mbps	17.53	30
2422	3	81 Mbps	17.44	30
		108 Mbps	17.53	30
		121.5 Mbps	17.49	30
		135 Mbps	17.40	30
		13.5 Mbps	17.71	30
	6	27 Mbps	17.08	30
		40.5 Mbps	17.17	30
2437		54 Mbps	17.39	30
2437		81 Mbps	17.28	30
		108 Mbps	17.43	30
		121.5 Mbps	17.35	30
		135 Mbps	17.36	30
		13.5 Mbps	17.66	30
		27 Mbps	16.78	30
		40.5 Mbps	16.76	30
2452	9	54 Mbps	17.27	30
2452	3	81 Mbps	17.17	30
		108 Mbps	17.26	30
		121.5 Mbps	17.10	30
		135 Mbps	17.13	30

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Conducted Output Power Measurements (802.11n Mode) _40 MHz BW

802.11n Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
. , , , ,		13.5 Mbps	17.41	30
		27 Mbps	17.55	30
		40.5 Mbps	17.45	30
2422	3	54 Mbps	17.87	30
2422	3	81 Mbps	17.94	30
		108 Mbps	Mbps 18.23	30
		121.5 Mbps	17.85	30
		135 Mbps	17.95	30
		13.5 Mbps	17.17	30
	6	27 Mbps	17.50	30
		40.5 Mbps	17.40	30
2437		54 Mbps	17.94	30
2437		81 Mbps	17.75	30
		108 Mbps	17.87	30
		121.5 Mbps	18.19	30
		135 Mbps	17.77	30
		13.5 Mbps	17.49	30
		27 Mbps	16.98	30
		40.5 Mbps	16.82	30
2452	9	54 Mbps	17.17	30
2432	3	81 Mbps	17.26	30
		108 Mbps	17.27	30
		121.5 Mbps	17.06	30
		135 Mbps	17.35	30

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■ Measure and sum data

Conducted Output Power Measurements (802.11n Mode) _40 MHz BW

802.11n	802.11n Mode		Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		13.5 Mbps	20.49	30
		27 Mbps	20.28	30
		40.5 Mbps	20.44	30
2422	3	54 Mbps	20.71	30
2422	3	81 Mbps	20.71	30
		108 Mbps	20.90	30
		121.5 Mbps	20.68	30
		135 Mbps	20.69	30
		13.5 Mbps	20.46	30
	6	27 Mbps	20.31	30
		40.5 Mbps	20.30	30
2437		54 Mbps	20.68	30
2437		81 Mbps	20.53	30
		108 Mbps	20.67	30
		121.5 Mbps	20.80	30
		135 Mbps	20.58	30
		13.5 Mbps	20.59	30
		27 Mbps	19.89	30
		40.5 Mbps	19.80	30
2452	9	54 Mbps	20.23	30
245 2	3	81 Mbps	20.23	30
		108 Mbps	20.28	30
		121.5 Mbps	20.09	30
		135 Mbps	20.25	30

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

802.11a	802.11a Mode		Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		6 Mbps	21.29	30
		9 Mbps	21.27	30
		12 Mbps	21.23	30
E7.45	149	18 Mbps	21.13	30
5745	149	24 Mbps	21.71	30
		36 Mbps	21.58	30
		48 Mbps	21.66	30
		54 Mbps	21.71	30
		6 Mbps	20.90	30
	157	9 Mbps	20.81	30
		12 Mbps	20.89	30
5785		18 Mbps	20.83	30
5765		24 Mbps	21.31	30
		36 Mbps	21.36	30
		48 Mbps	21.37	30
		54 Mbps	21.43	30
		6 Mbps	20.65	30
		9 Mbps	20.63	30
		12 Mbps	20.74	30
5825	165	18 Mbps	20.68	30
3623	105	24 Mbps	21.17	30
		36 Mbps	21.05	30
		48 Mbps	21.12	30
		54 Mbps	20.88	30

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
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Conducted Output Power Measurements (802.11a Mode: 5745~5825)

802.11a Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
	149	6 Mbps	20.57	30
		9 Mbps	20.42	30
		12 Mbps	20.55	30
5745		18 Mbps	20.42	30
5745	149	24 Mbps	20.89	30
		36 Mbps	20.88	30
		48 Mbps	20.94	30
		54 Mbps	20.98	30
	157	6 Mbps	20.21	30
		9 Mbps	20.17	30
		12 Mbps	20.29	30
5785		18 Mbps	20.20	30
5765		24 Mbps	20.75	30
		36 Mbps	20.62	30
		48 Mbps	20.64	30
		54 Mbps	20.72	30
	165	6 Mbps	20.09	30
5825		9 Mbps	20.13	30
		12 Mbps	20.18	30
		18 Mbps	20.11	30
		24 Mbps	20.60	30
		36 Mbps	20.49	30
		48 Mbps	20.52	30
		54 Mbps	20.51	30

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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■ Measure and sum data

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

802.11a Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps) Power(dBm)		(dBm)
	440	6 Mbps	23.96	30
		9 Mbps	23.88	30
		12 Mbps	23.91	30
		18 Mbps	23.80	30
5745	149	24 Mbps	24.33	30
		36 Mbps	24.25	30
		48 Mbps	24.33	30
		54 Mbps	24.37	30
	157	6 Mbps	23.58	30
		9 Mbps	23.51	30
		12 Mbps	23.61	30
5785		18 Mbps	23.54	30
5765		24 Mbps	24.05	30
		36 Mbps	24.02	30
		48 Mbps	24.03	30
		54 Mbps	24.10	30
5825	165	6 Mbps	23.39	30
		9 Mbps	23.40	30
		12 Mbps	23.48	30
		18 Mbps	23.41	30
		24 Mbps	23.90	30
		36 Mbps	23.79	30
		48 Mbps	23.84	30
		54 Mbps	23.71	30

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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Conducted Output Power Measurements (802.11n Mode: 5745~5825)_20 MHz BW

802.11n Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
	149	6.5 Mbps	21.21	30
		13 Mbps	21.33	30
		19.5 Mbps	21.13	30
5745		26 Mbps	21.66	30
5745	149	39 Mbps	21.60	30
		52 Mbps	21.55	30
		58.5 Mbps	21.63	30
		65 Mbps	21.53	30
	157	6.5 Mbps	20.80	30
		13 Mbps	20.82	30
		19.5 Mbps	20.88	30
5785		26 Mbps	21.18	30
5765		39 Mbps	21.20	30
		52 Mbps	21.24	30
		58.5 Mbps	21.32	30
		65 Mbps	21.33	30
5825	165	6.5 Mbps	20.60	30
		13 Mbps	20.67	30
		19.5 Mbps	20.55	30
		26 Mbps	21.05	30
		39 Mbps	21.00	30
		52 Mbps	21.06	30
		58.5 Mbps	21.09	30
		65 Mbps	21.16	30

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
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■ TEST RESULTS_Ant.1

Conducted Output Power Measurements (802.11n Mode: 5745~5825) _20 MHz BW

802.11n Mode		Rate	Measured	Limit		
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)		
,		6.5 Mbps	20.84	30		
		13 Mbps	20.66	30		
		19.5 Mbps	20.57	30		
5745	149	26 Mbps	21.03	30		
5745	149	39 Mbps	21.02	30		
		52 Mbps	20.99	(dBm) 30 30 30 30 30		
		58.5 Mbps	21.04	30		
		65 Mbps	21.02	30		
		6.5 Mbps	20.28	30		
	157	13 Mbps	20.37	30		
		19.5 Mbps	20.24	30		
5785		26 Mbps	20.83	30		
5765		39 Mbps	20.67	30		
		52 Mbps	20.69	30		
		58.5 Mbps	20.68	30		
		65 Mbps	20.72	30		
		6.5 Mbps	20.21	30		
		13 Mbps	20.28	30		
		19.5 Mbps	20.19	30		
5825	165	26 Mbps	20.67	30		
3623	105	39 Mbps	20.64	30		
		52 Mbps	20.66	30		
		58.5 Mbps	20.70	30		
		65 Mbps	20.80	30		

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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■ Measure and sum data

Conducted Output Power Measurements (802.11n Mode: 5745~5825) _20 MHz BW

802.11n Mode		Rate	Measured	Limit	
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)	
r requestoy[mri2]		6.5 Mbps	24.04	30	
		13 Mbps	24.02	30	
		19.5 Mbps	23.87	30	
5745	149	26 Mbps	24.37	30	
5745	149	39 Mbps	24.33	30	
		52 Mbps	24.29	(dBm) 30 30 30 30 30	
		58.5 Mbps	5 Mbps 24.36	30	
		65 Mbps	24.29	30	
		6.5 Mbps	23.56	30	
	157	13 Mbps	23.61	30	
		19.5 Mbps	23.58	30	
5785		26 Mbps	24.02	30	
5765		39 Mbps	23.95	30	
		52 Mbps	23.98	30	
		58.5 Mbps	24.02	30	
		65 Mbps	24.05	30	
		6.5 Mbps	23.42	30	
		13 Mbps	23.49	30	
		19.5 Mbps	23.38	30	
5825	165	26 Mbps	23.87	30	
	105	39 Mbps	23.83	30	
		52 Mbps	23.87	30	
		58.5 Mbps	23.91	30	
		65 Mbps	23.99	30	

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■ TEST RESULTS_Ant.0

Conducted Output Power Measurements (802.11n Mode: 5755~5795) _40 MHz BW

802.11n Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		13.5 Mbps	12.18	30
		27 Mbps	11.42	30
		40.5 Mbps	Mbps 10.83	30
5755	454	54 Mbps	10.39	30
5755	151	81 Mbps	9.84	30
		108 Mbps	9.20	30
		121.5 Mbps	9.07	30
		135 Mbps	8.87	30
		13.5 Mbps	11.80	30
		27 Mbps	10.98	30
		40.5 Mbps	0.5 Mbps 10.33	30
5795	450	54 Mbps	9.87	30
5795	159	81 Mbps	9.34	30
		108 Mbps	8.83	30
		121.5 Mbps	8.70	30
		135 Mbps	8.52	30

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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■ TEST RESULTS_Ant.1

Conducted Output Power Measurements (802.11n Mode: 5755~5795) _40 MHz BW

802.11n Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
		13.5 Mbps	11.50	30
		27 Mbps	10.67	30
		40.5 Mbps	5 Mbps 10.16 30 4 Mbps 9.76 30 Mbps 9.09 30	30
5755	151	54 Mbps	9.76	30
5/55	151	81 Mbps	9.09	30
		108 Mbps	8.54	30
		121.5 Mbps	8.40	30
		135 Mbps	8.25	30
		13.5 Mbps	11.24	30
		27 Mbps	10.47	30
		40.5 Mbps	-	30
5795	159	54 Mbps	9.37	30
5795	159	81 Mbps	8.84	30
		108 Mbps	8.26	30
		121.5 Mbps	8.14	30
		135 Mbps	7.97	30

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■ Measure and sum data

Conducted Output Power Measurements (802.11n Mode: 5755~5795) _40 MHz BW

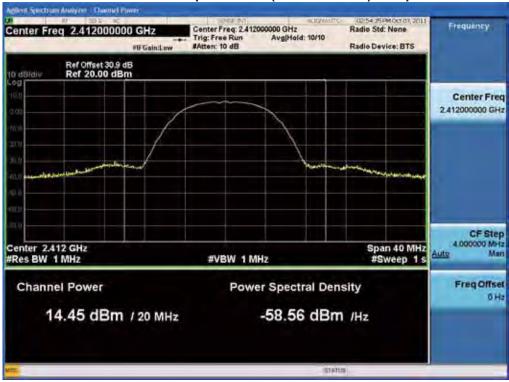
802.11n Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps) Power(dBm)		(dBm)
		13.5 Mbps	14.86	30
		27 Mbps	14.07	30
		40.5 Mbps	13.52	30
5755	151	54 Mbps	13.10	30
5755	151	81 Mbps	12.49	30
		108 Mbps	11.89	30
		121.5 Mbps	11.76	30
		135 Mbps	11.58	30
		13.5 Mbps	14.54	30
		27 Mbps	13.74	30
		40.5 Mbps	13.09	30
5795	159	54 Mbps	12.64	30
5795	139	81 Mbps	12.11	30
		108 Mbps	11.56	30
		121.5 Mbps	11.44	30
		135 Mbps	11.26	30

FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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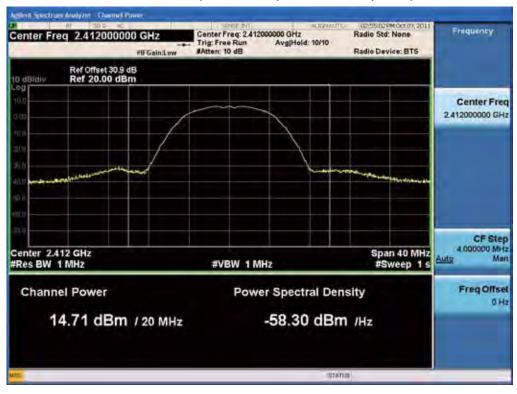


■ RESULT PLOTS_Ant.0

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



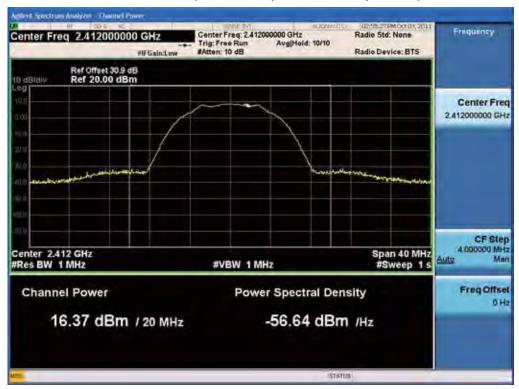
Conducted Output Power (802.11b-CH 1) 2Mbps



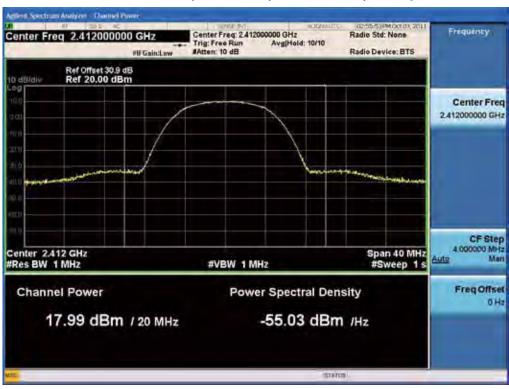
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HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



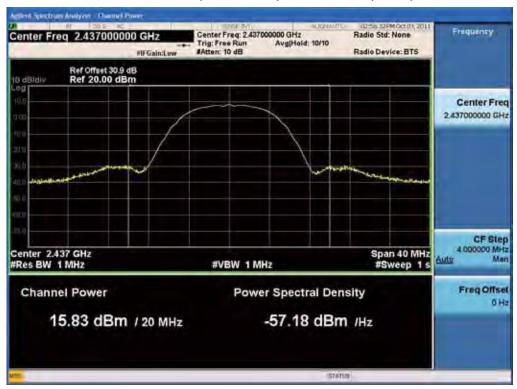
Conducted Output Power (802.11b-CH 1) 11Mbps



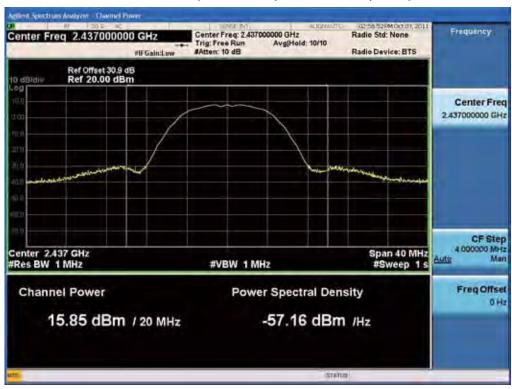
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



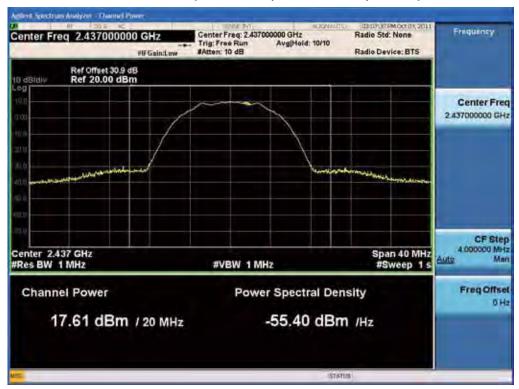
Conducted Output Power (802.11b-CH 6) 2Mbps



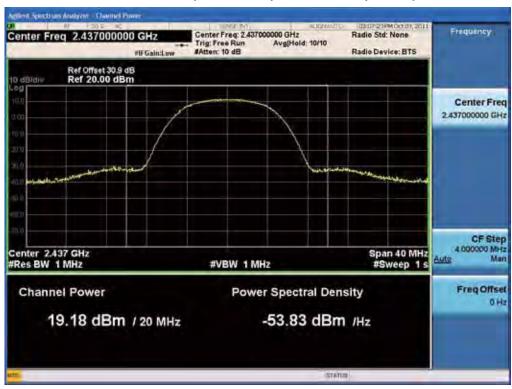
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
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Conducted Output Power (802.11b-CH 6) 5.5Mbps



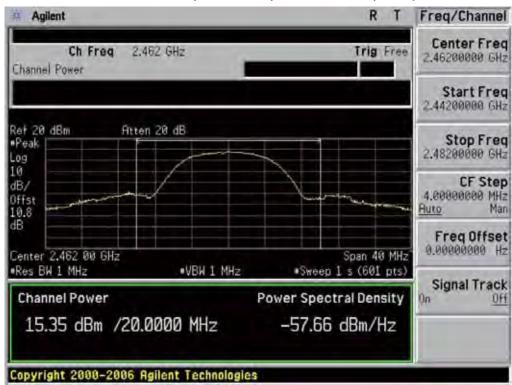
Conducted Output Power (802.11b-CH 6) 11Mbps



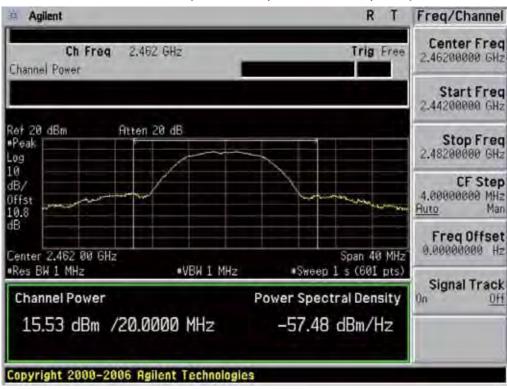
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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Conducted Output Power (802.11b-CH 11) 1Mbps



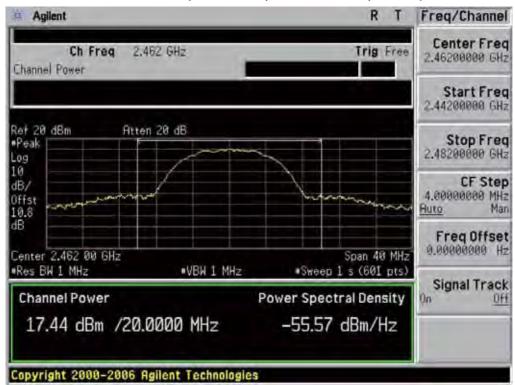
Conducted Output Power (802.11b-CH 11) 2Mbps



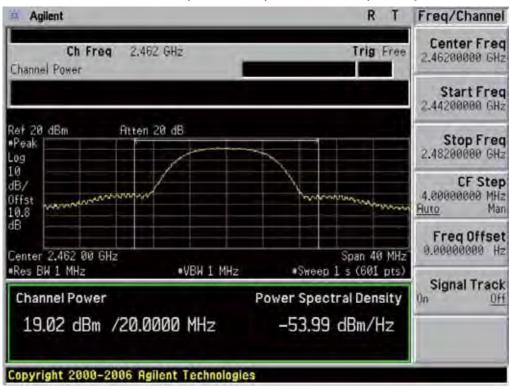
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Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
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Conducted Output Power (802.11b-CH 11) 5.5Mbps



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

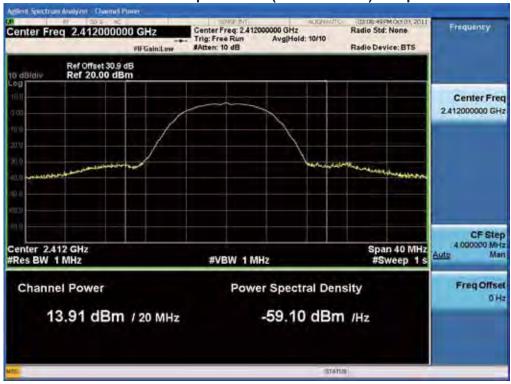


FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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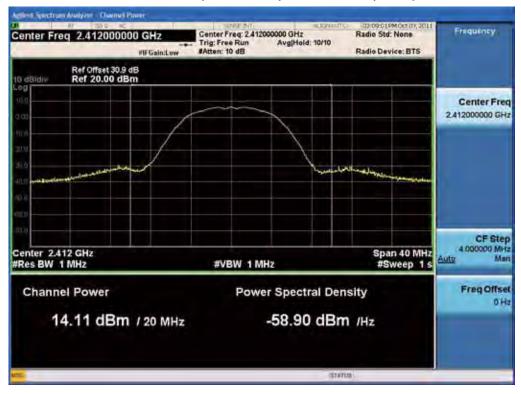


■ RESULT PLOTS_Ant.1

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



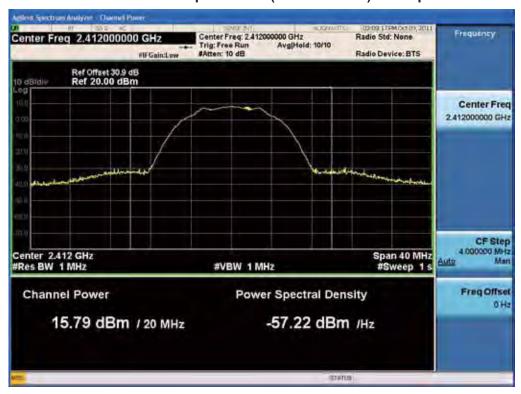
Conducted Output Power (802.11b-CH 1) 2Mbps



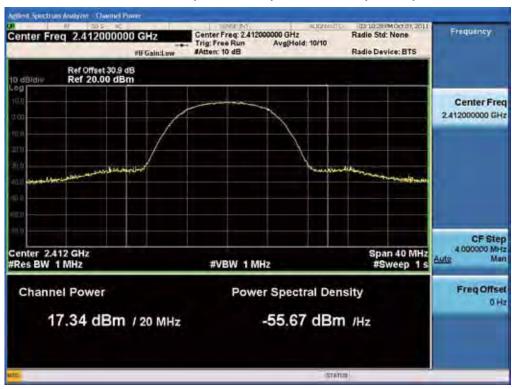
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



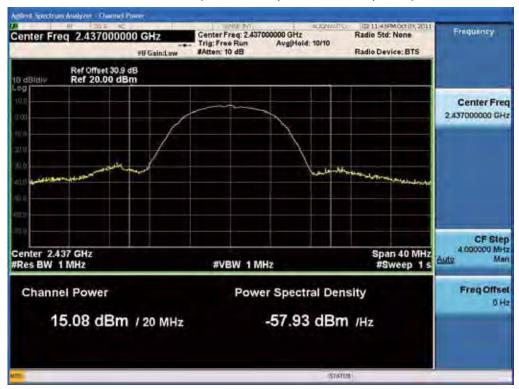
Conducted Output Power (802.11b-CH 1) 11Mbps



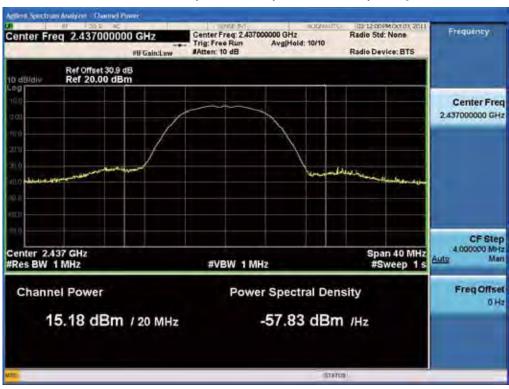
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Conducted Output Power (802.11b-CH 6) 1Mbps



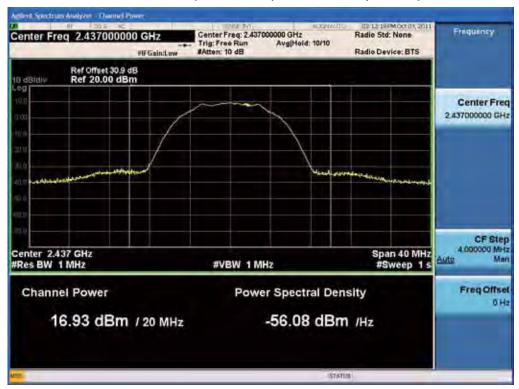
Conducted Output Power (802.11b-CH 6) 2Mbps



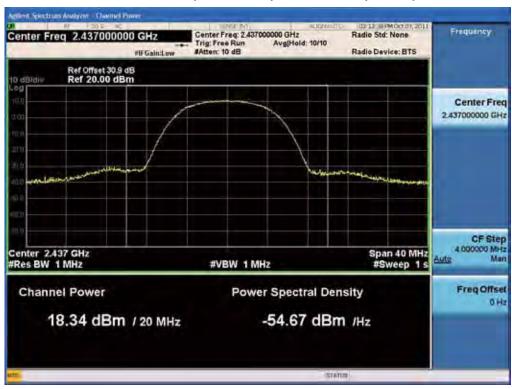
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



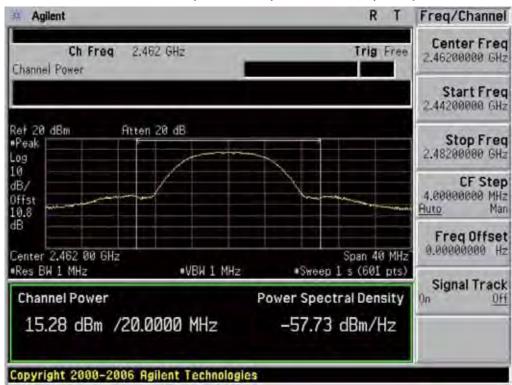
Conducted Output Power (802.11b-CH 6) 11Mbps



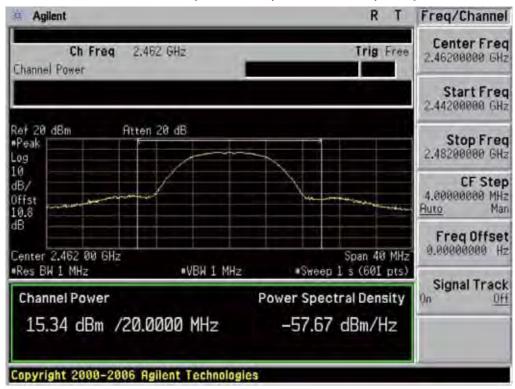
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



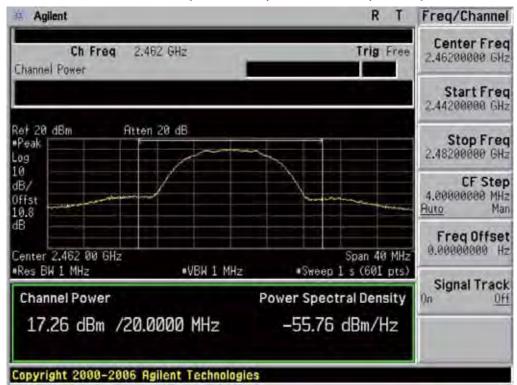
Conducted Output Power (802.11b-CH 11) 2Mbps



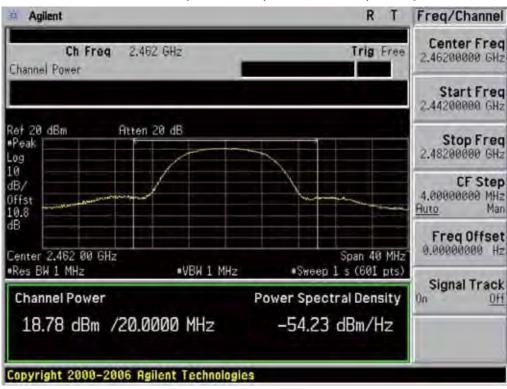
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
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Conducted Output Power (802.11b-CH 11) 5.5Mbps



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

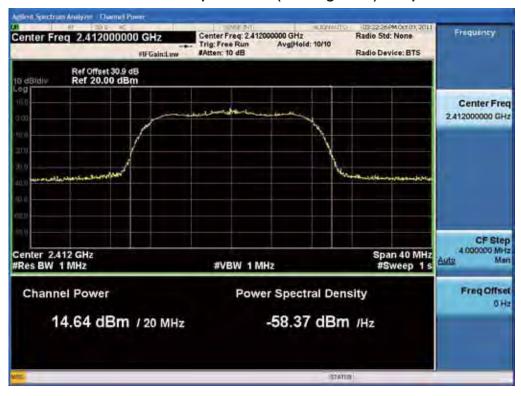


FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
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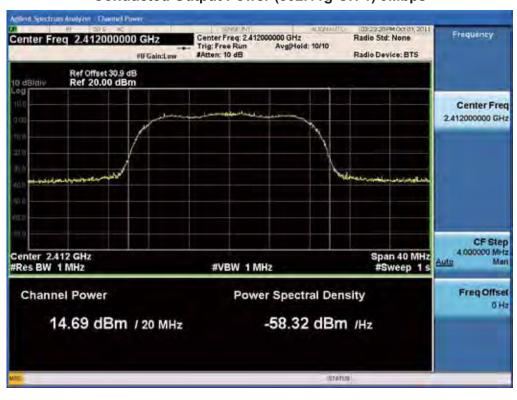


■ RESULT PLOTS Ant.0

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



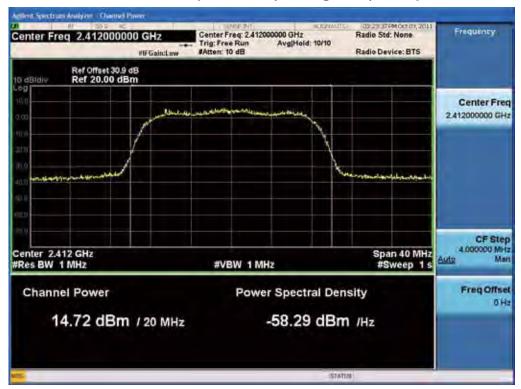
Conducted Output Power (802.11g-CH 1) 9Mbps



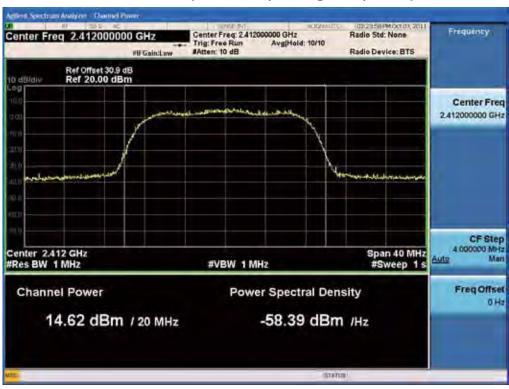
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
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Conducted Output Power (802.11g-CH 1) 12Mbps



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



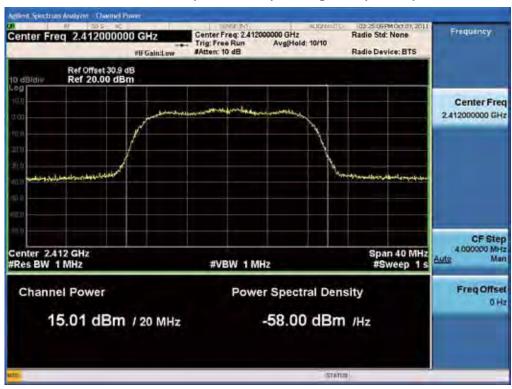
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



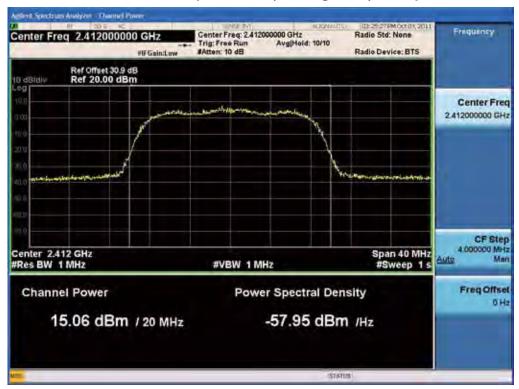
Conducted Output Power (802.11g-CH 1) 36Mbps



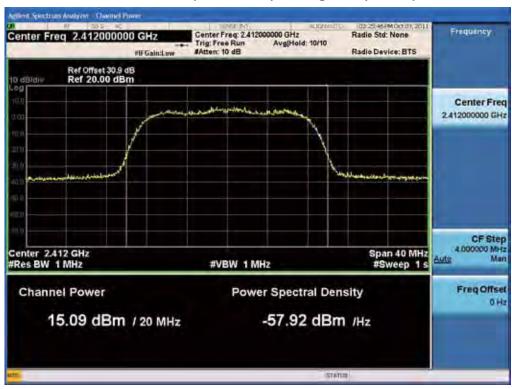
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



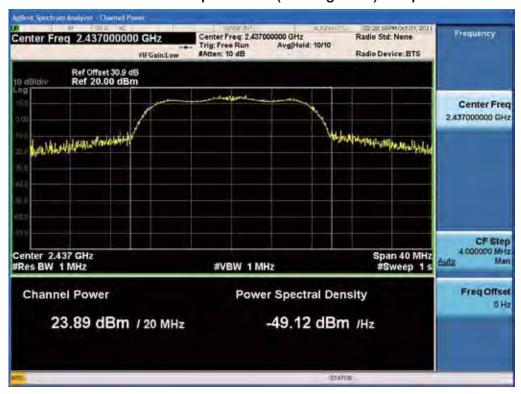
Conducted Output Power (802.11g-CH 1) 54Mbps



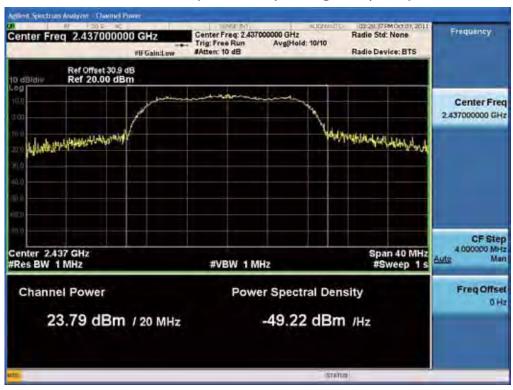
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



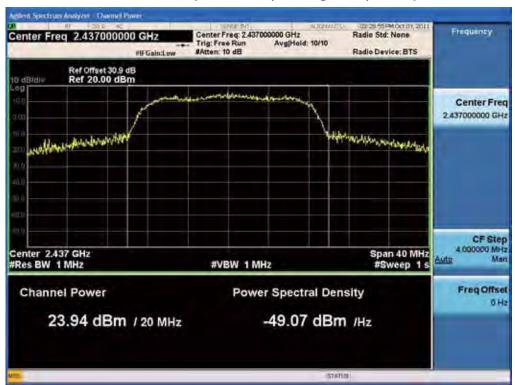
Conducted Output Power (802.11g-CH 6) 9Mbps



FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



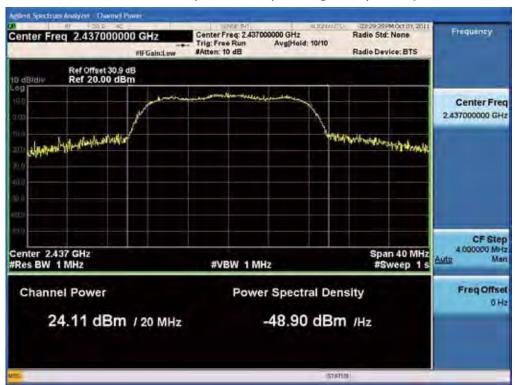
Conducted Output Power (802.11g-CH 6) 18Mbps



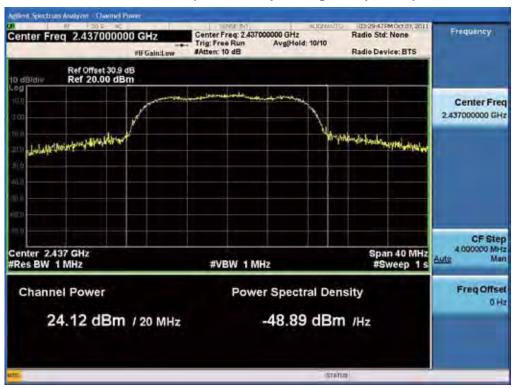
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



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



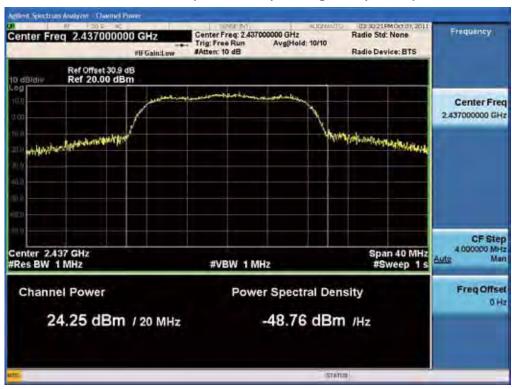
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



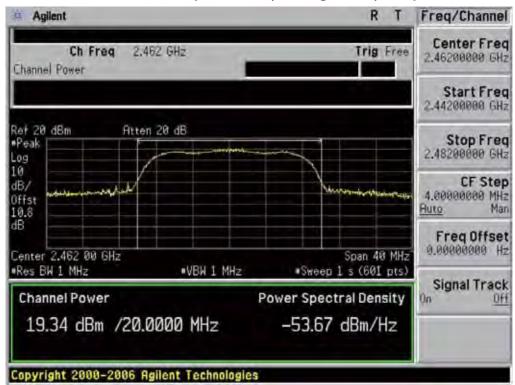
Conducted Output Power (802.11g-CH 6) 54Mbps



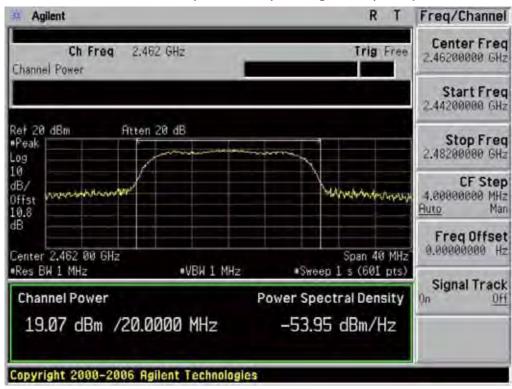
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



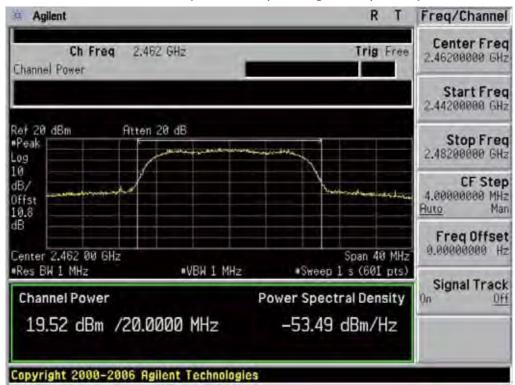
Conducted Output Power (802.11g-CH 11) 9Mbps



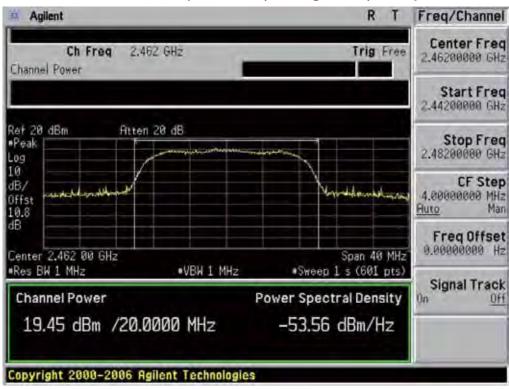
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



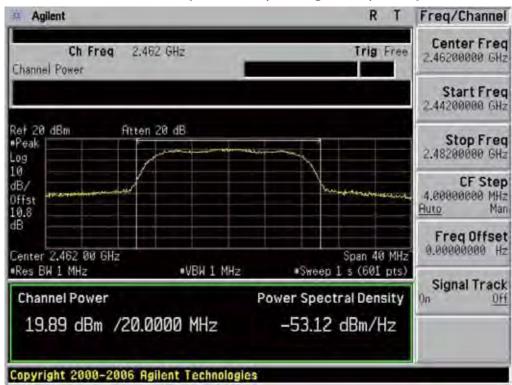
Conducted Output Power (802.11g-CH 11) 18Mbps



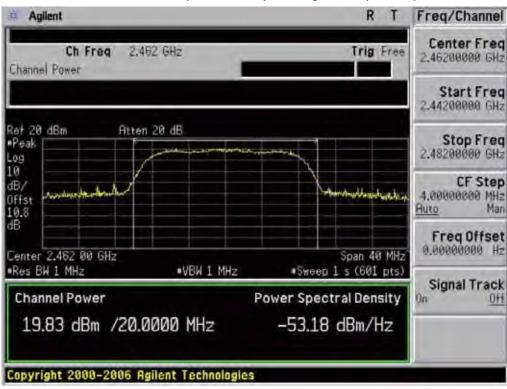
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



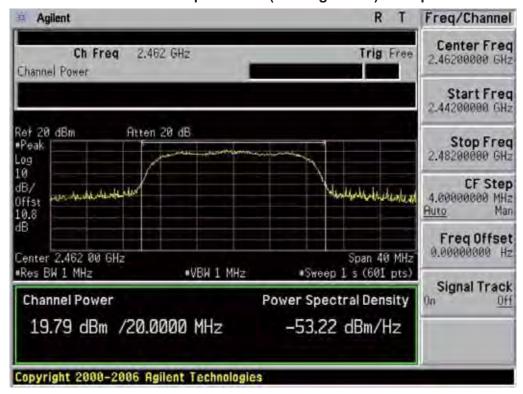
Conducted Output Power (802.11g-CH 11) 36Mbps



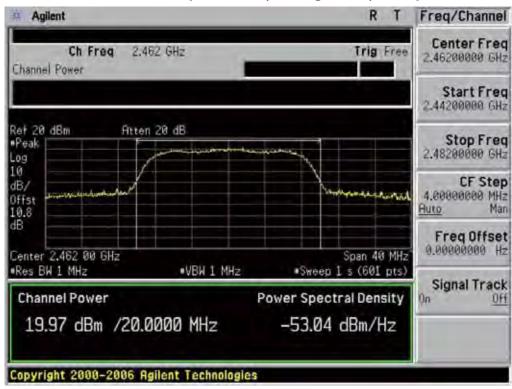
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



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

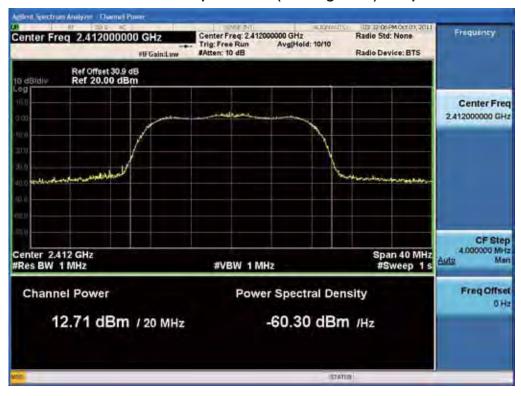


FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
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HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D

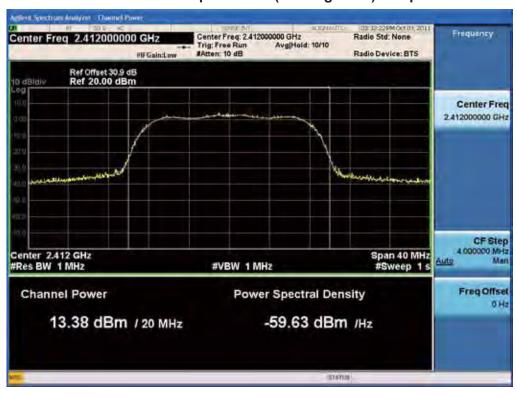


■ RESULT PLOTS Ant.1

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



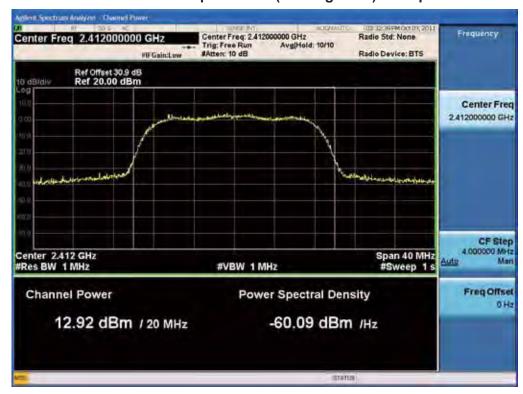
Conducted Output Power (802.11g-CH 1) 9Mbps



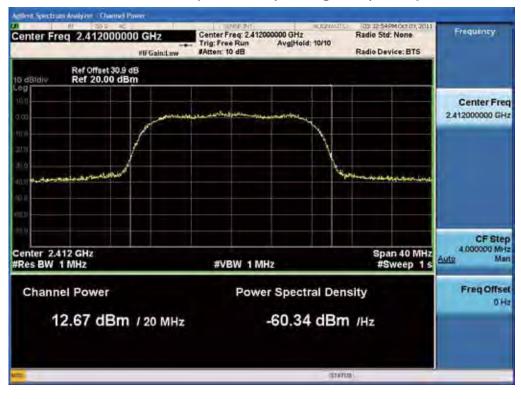
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



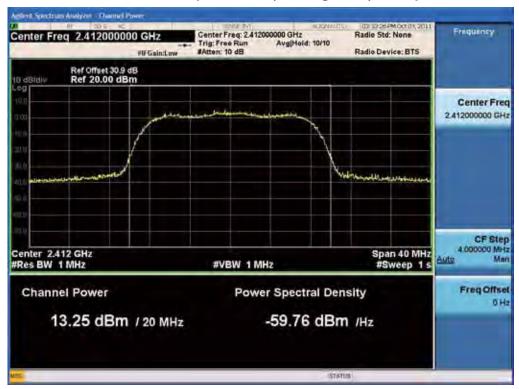
Conducted Output Power (802.11g-CH 1) 18Mbps



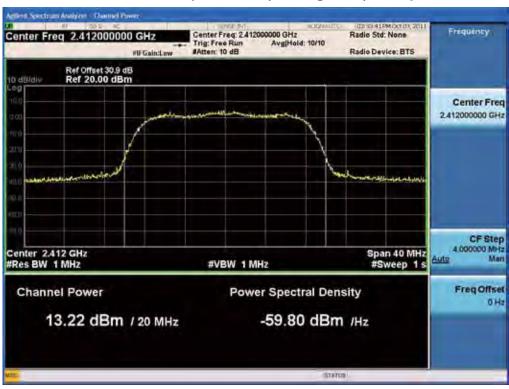
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
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Conducted Output Power (802.11g-CH 1) 24Mbps



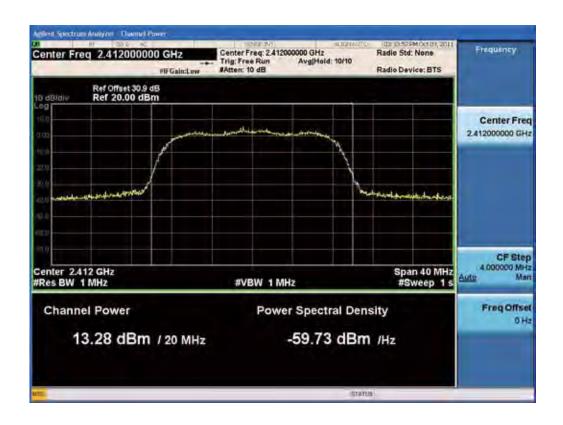
Conducted Output Power (802.11g-CH 1) 36Mbps



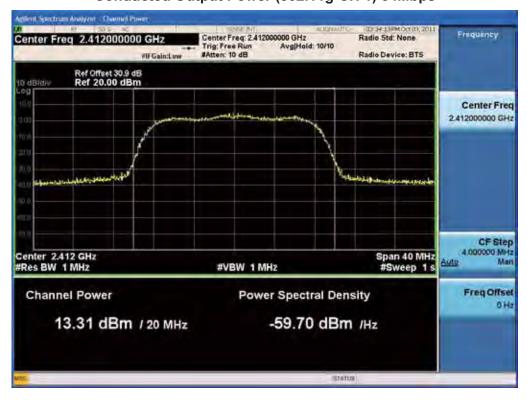
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



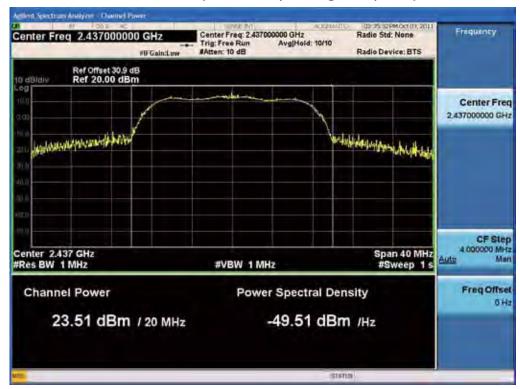
Conducted Output Power (802.11g-CH 1) 54Mbps



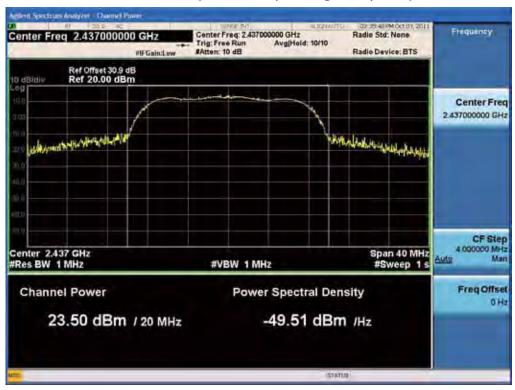
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



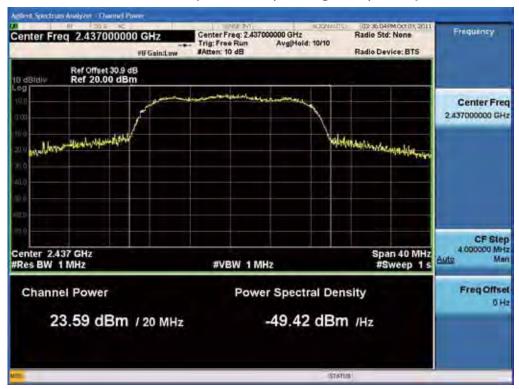
Conducted Output Power (802.11g-CH 6) 9Mbps



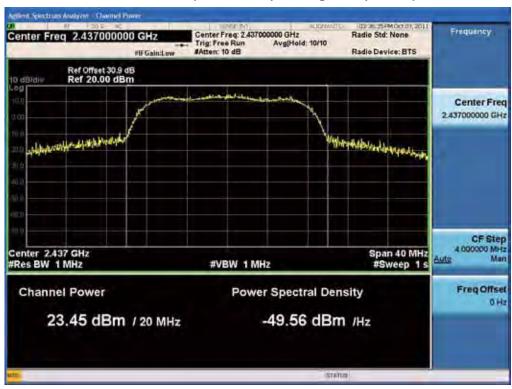
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



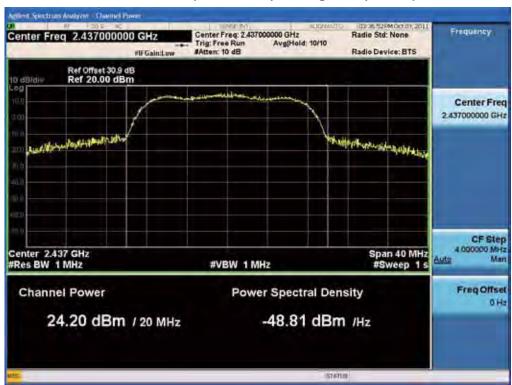
Conducted Output Power (802.11g-CH 6) 18Mbps



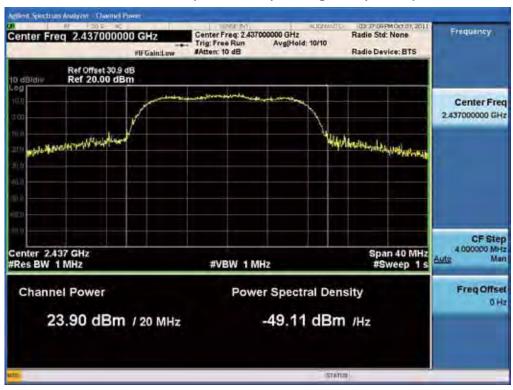
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



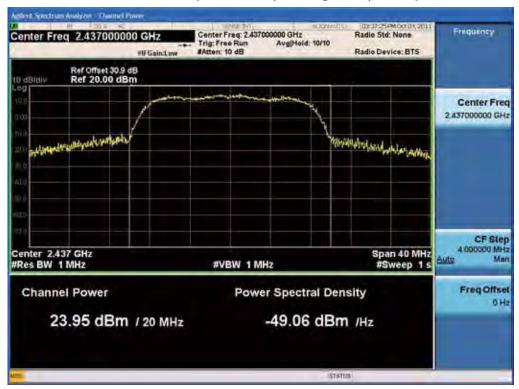
Conducted Output Power (802.11g-CH 6) 36Mbps



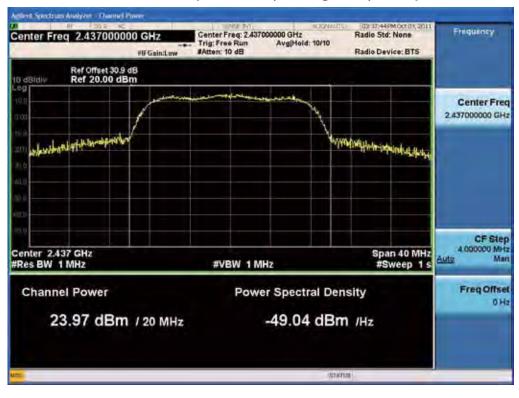
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



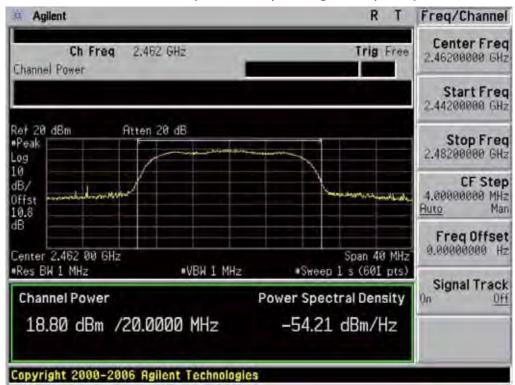
Conducted Output Power (802.11g-CH 6) 54Mbps



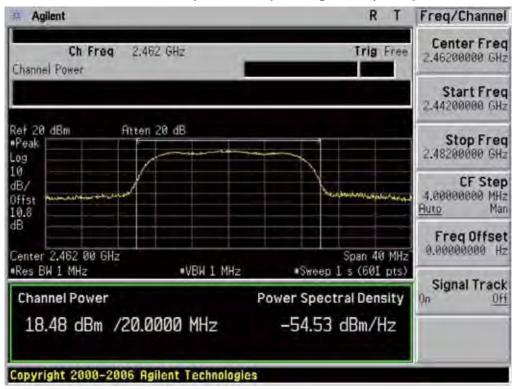
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



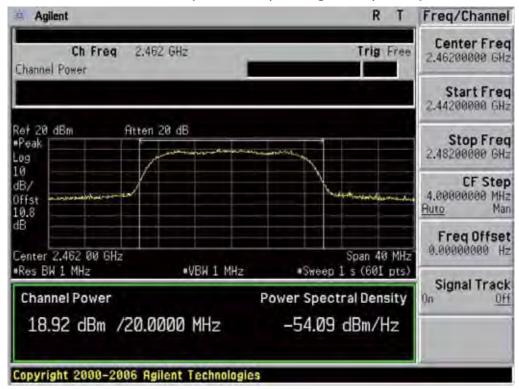
Conducted Output Power (802.11g-CH 11) 9Mbps



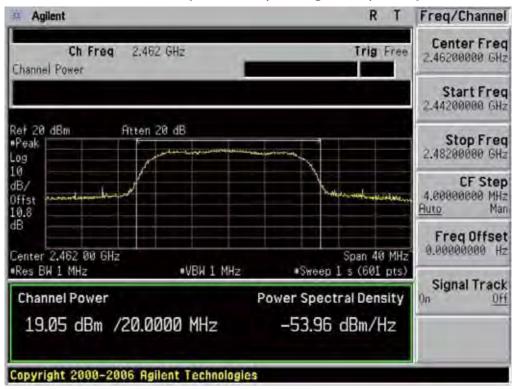
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



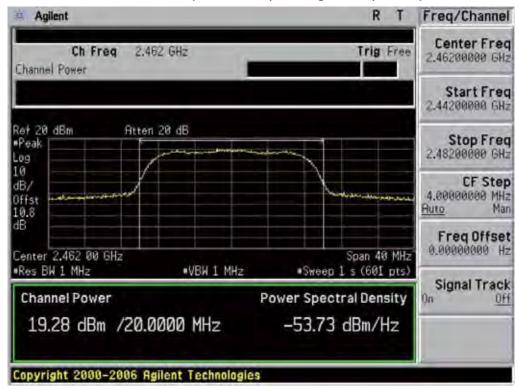
Conducted Output Power (802.11g-CH 11) 18Mbps



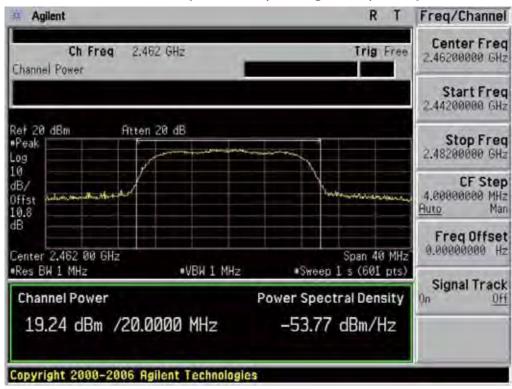
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Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
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Conducted Output Power (802.11g-CH 11) 24Mbps



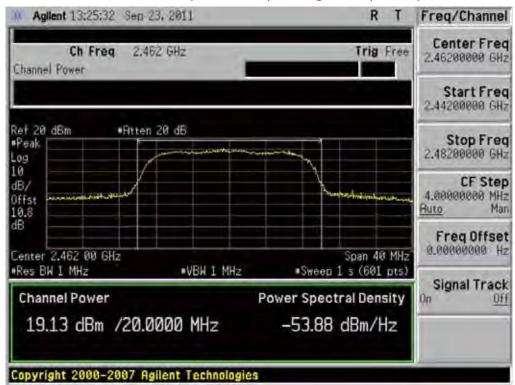
Conducted Output Power (802.11g-CH 11) 36Mbps



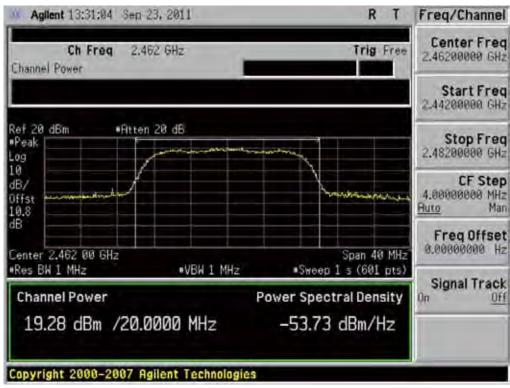
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HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



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

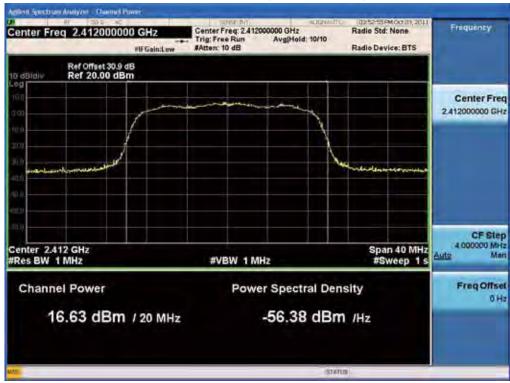


FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D

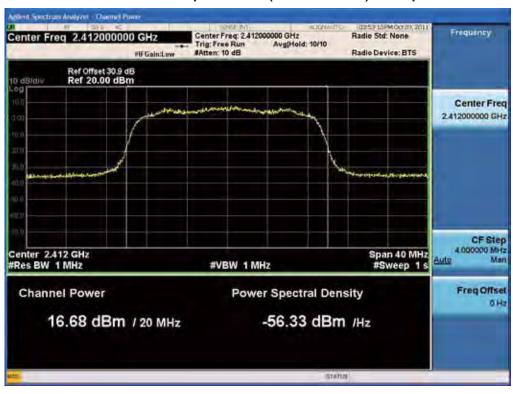


■ RESULT PLOTS_Ant.0_ 20 MHz BW

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



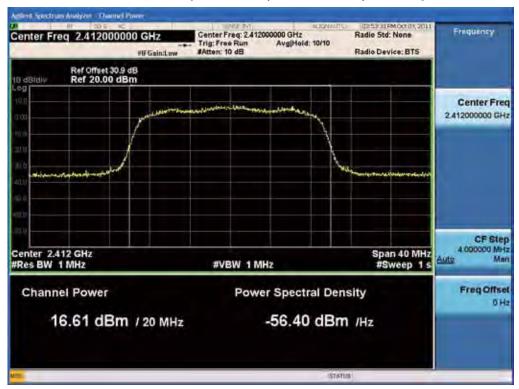
Conducted Output Power (802.11n-CH 1) 13Mbps



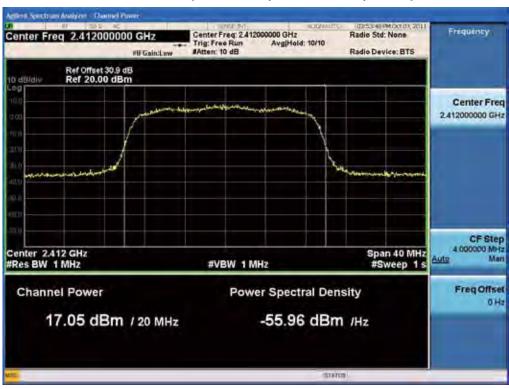
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



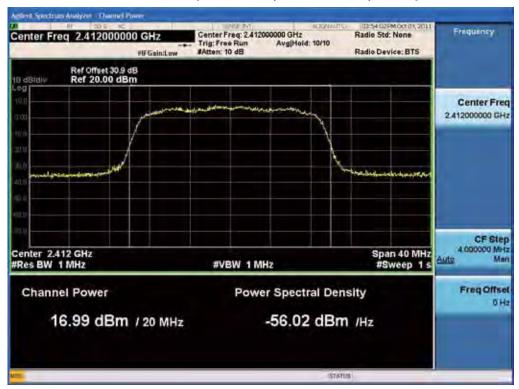
Conducted Output Power (802.11n-CH 1) 26Mbps



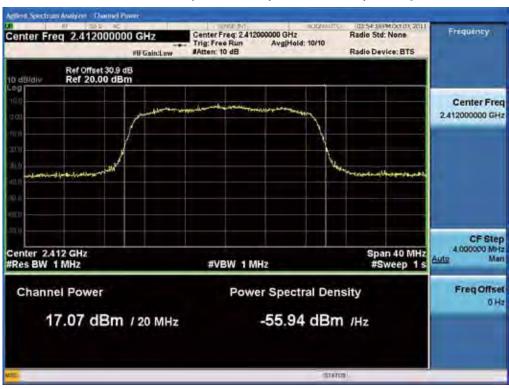
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



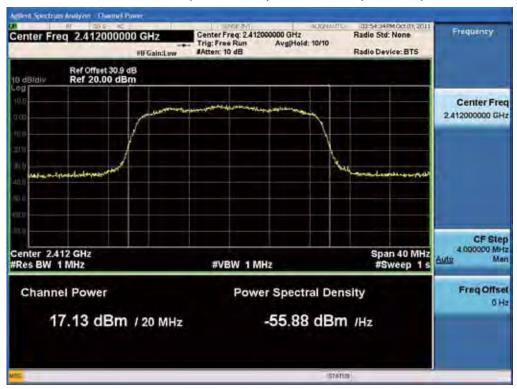
Conducted Output Power (802.11n-CH 1) 52Mbps



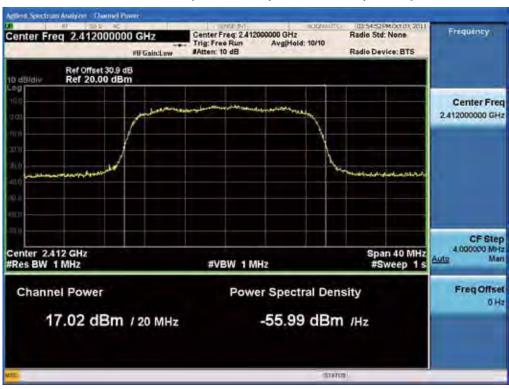
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



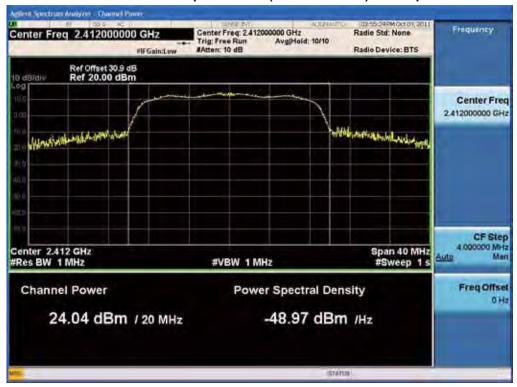
Conducted Output Power (802.11n-CH 1) 65Mbps



FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



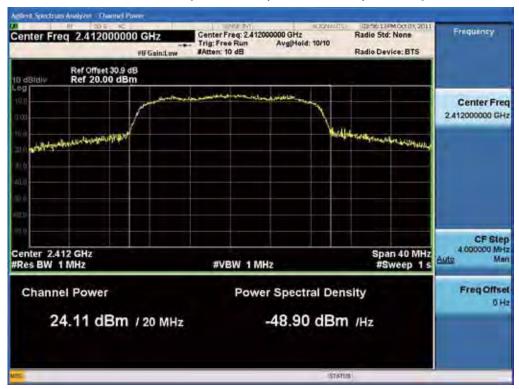
Conducted Output Power (802.11n-CH 6) 13Mbps



FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



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



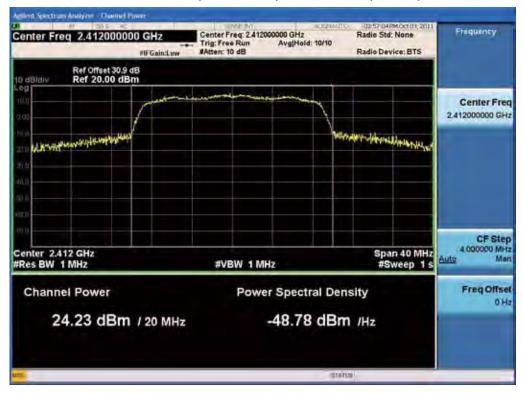
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



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



FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



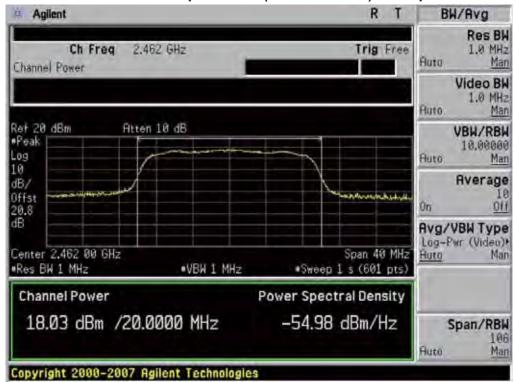
Conducted Output Power (802.11n-CH 6) 65Mbps



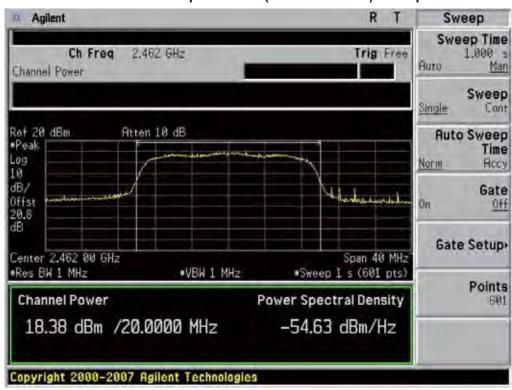
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



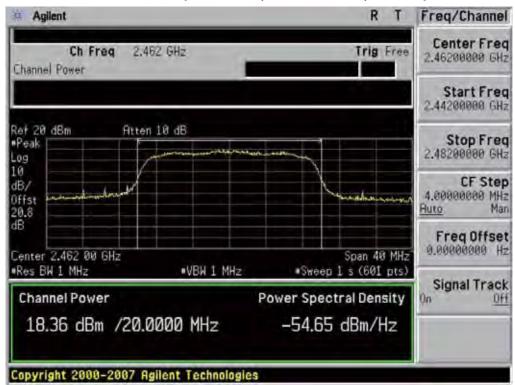
Conducted Output Power (802.11n-CH 11) 13Mbps



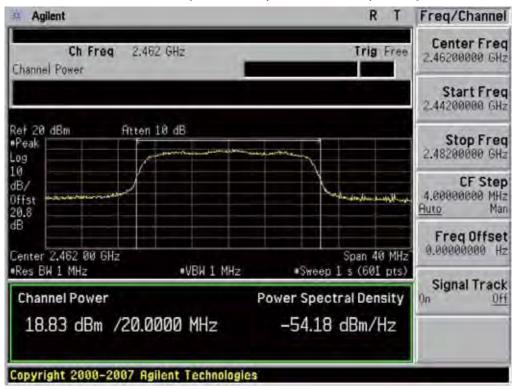
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



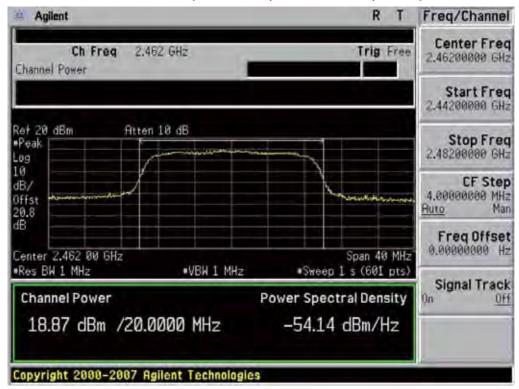
Conducted Output Power (802.11n-CH 11) 26Mbps



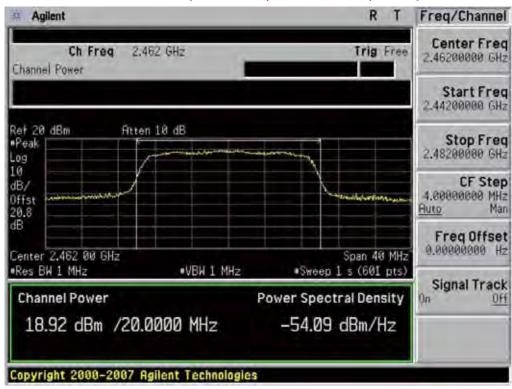
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



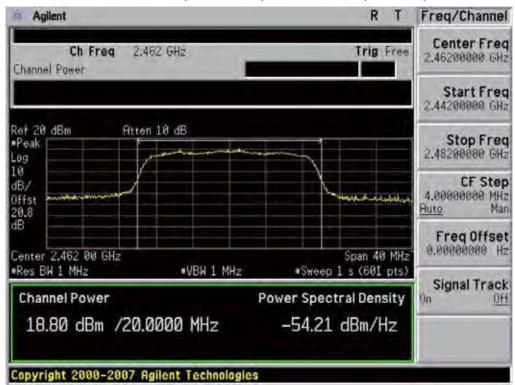
Conducted Output Power (802.11n-CH 11) 52Mbps



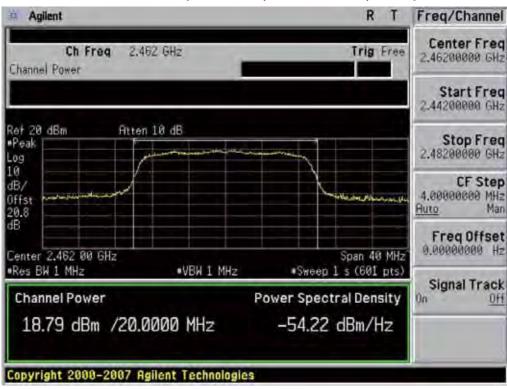
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



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

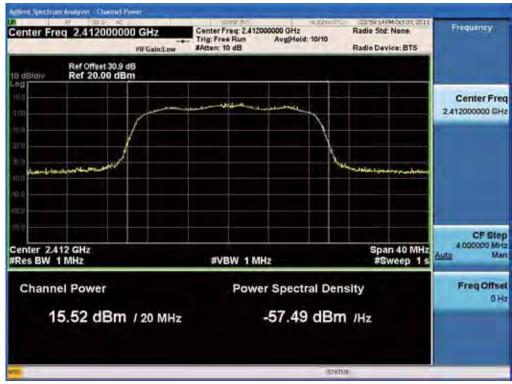


FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D

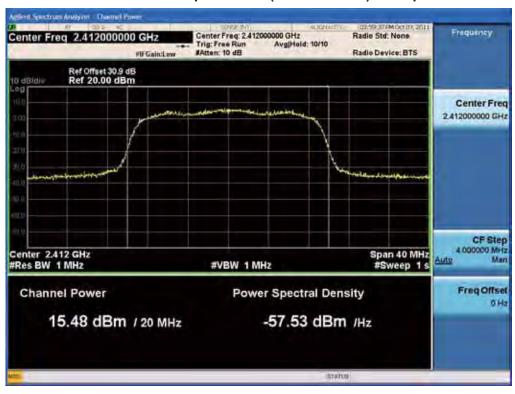


■ RESULT PLOTS_Ant.1_ 20 MHz BW

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



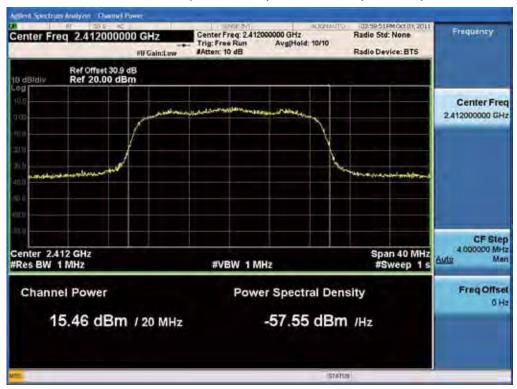
Conducted Output Power (802.11n-CH 1) 13Mbps



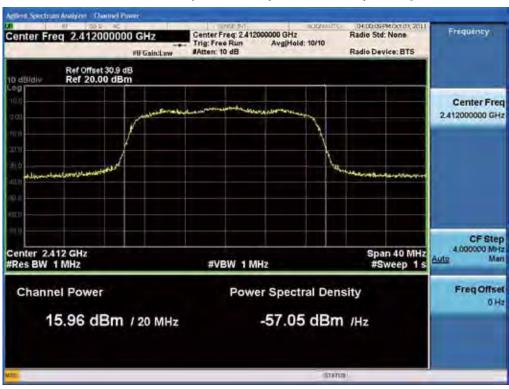
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Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



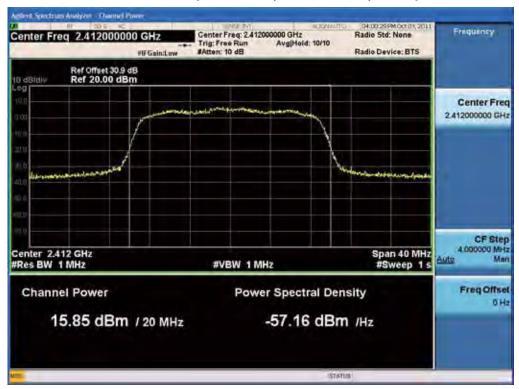
Conducted Output Power (802.11n-CH 1) 26Mbps



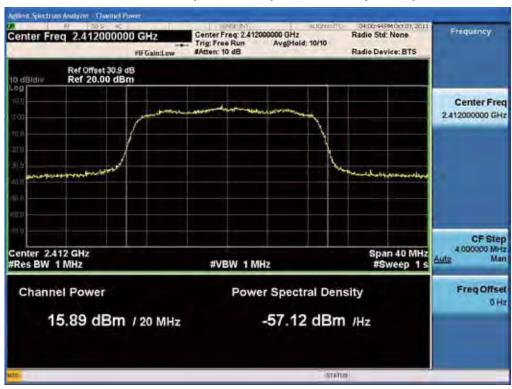
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



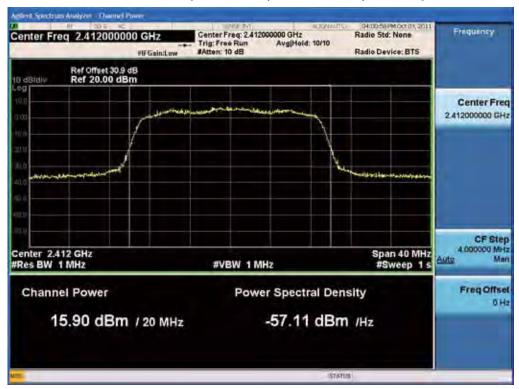
Conducted Output Power (802.11n-CH 1) 52Mbps



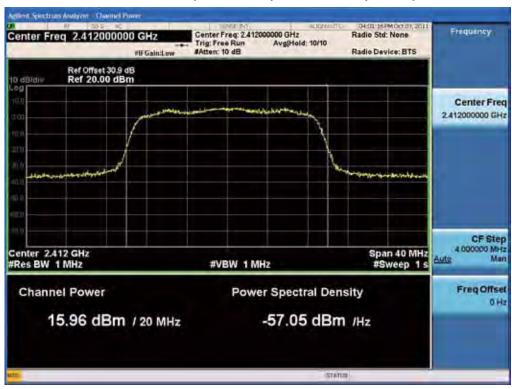
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



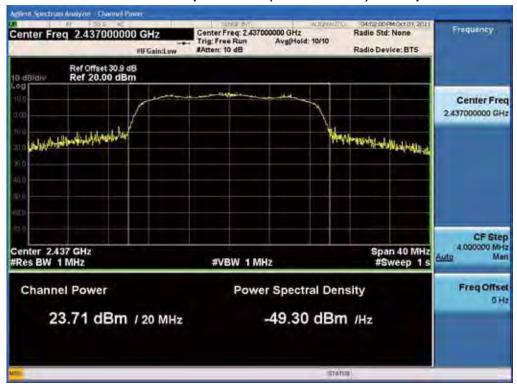
Conducted Output Power (802.11n-CH 1) 65Mbps



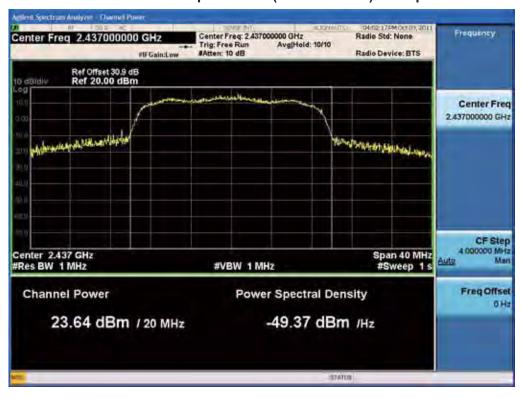
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



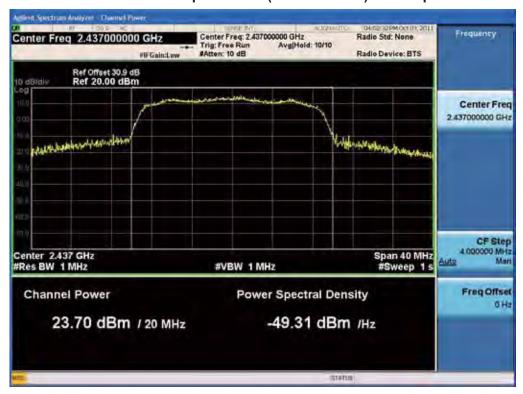
Conducted Output Power (802.11n-CH 6) 13Mbps



FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



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



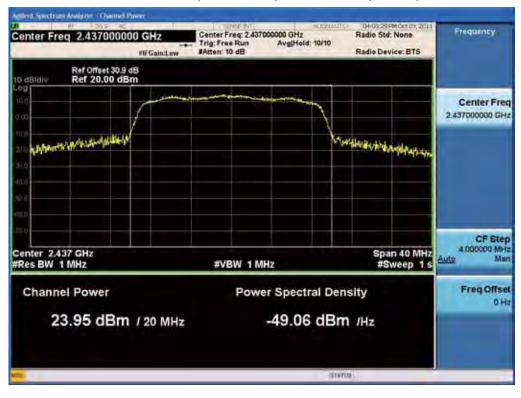
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



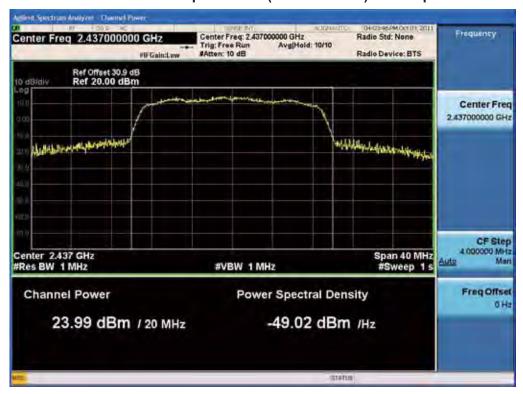
Conducted Output Power (802.11n-CH 6) 52Mbps



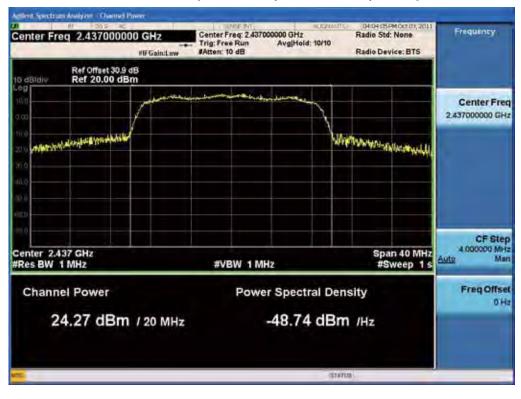
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



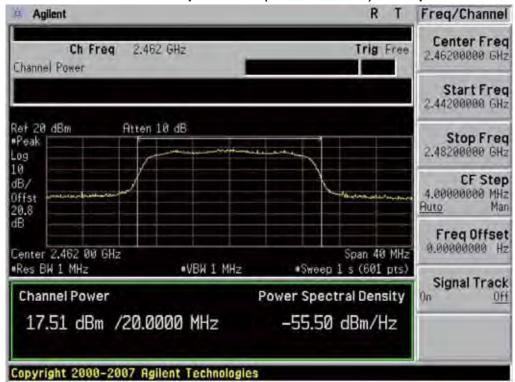
Conducted Output Power (802.11n-CH 6) 65Mbps



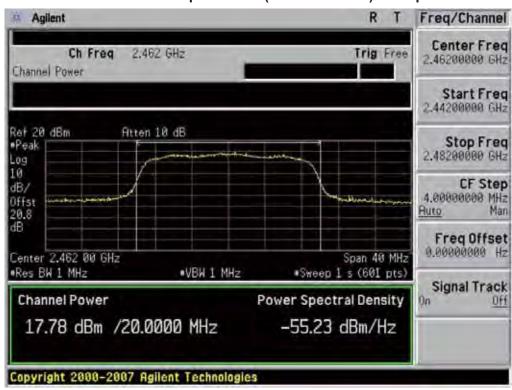
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



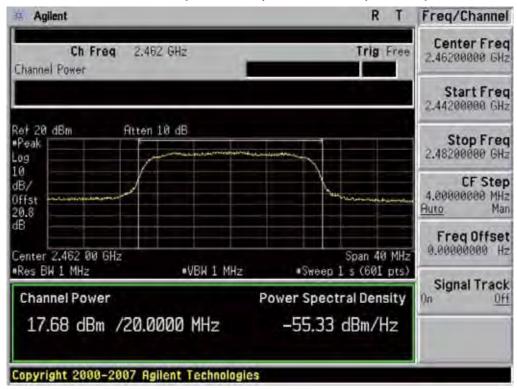
Conducted Output Power (802.11n-CH 11) 13Mbps



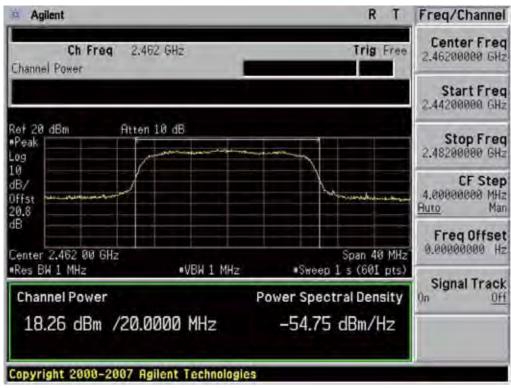
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



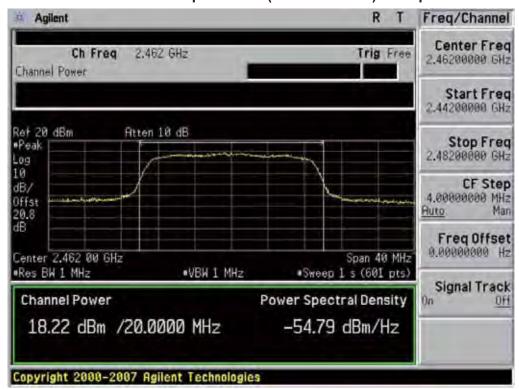
Conducted Output Power (802.11n-CH 11) 26Mbps



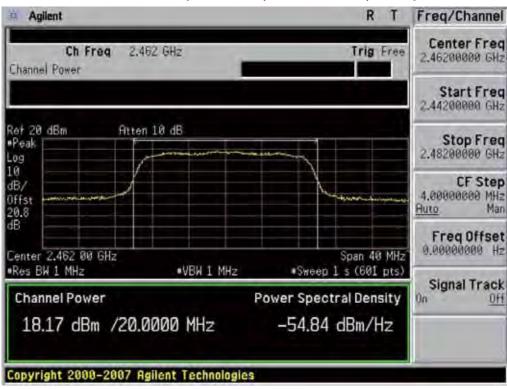
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Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



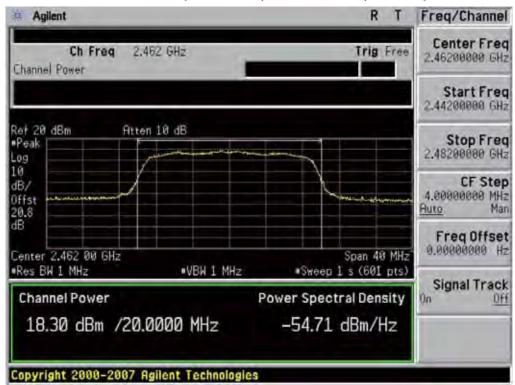
Conducted Output Power (802.11n-CH 11) 52Mbps



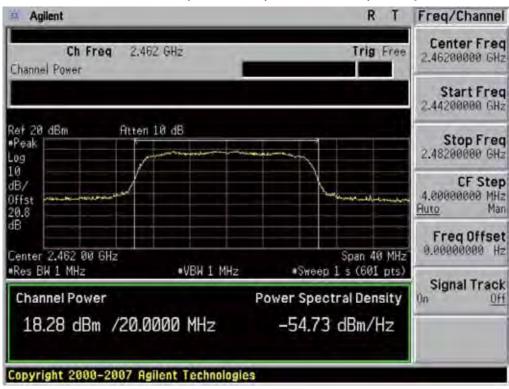
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



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



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

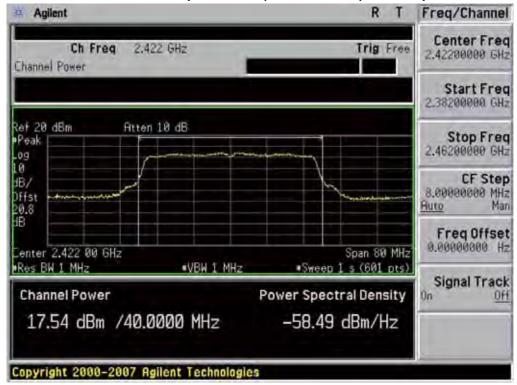


FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D

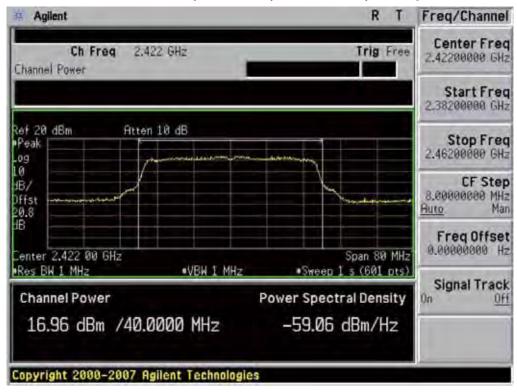


■ RESULT PLOTS_Ant.0:_40 MHz BW

Conducted Output Power (802.11n-CH 3) 13.5 Mbps



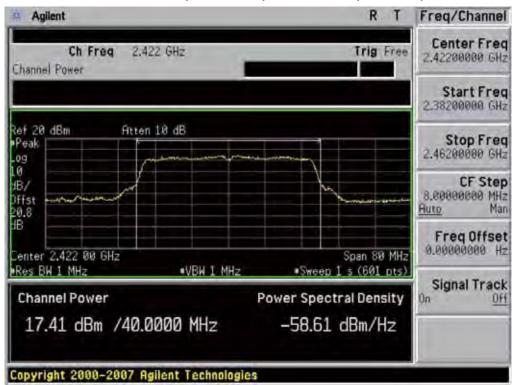
Conducted Output Power (802.11n-CH 3) 27 Mbps



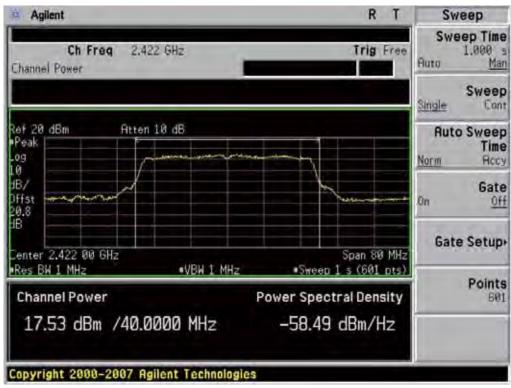
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



Conducted Output Power (802.11n-CH 3) 40.5 Mbps



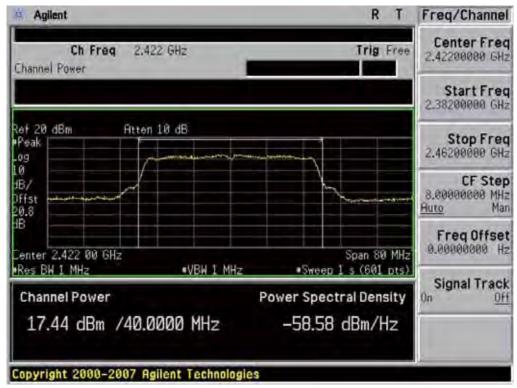
Conducted Output Power (802.11n-CH 3) 54 Mbps



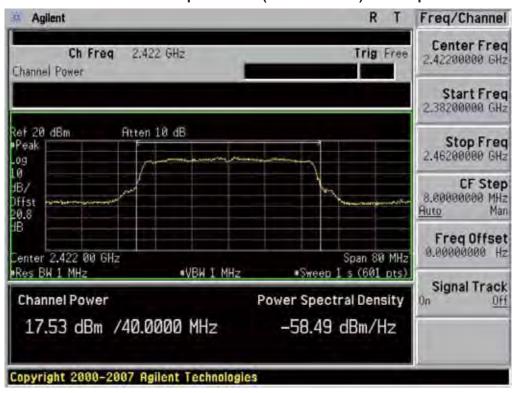
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



Conducted Output Power (802.11n-CH 3) 81 Mbps



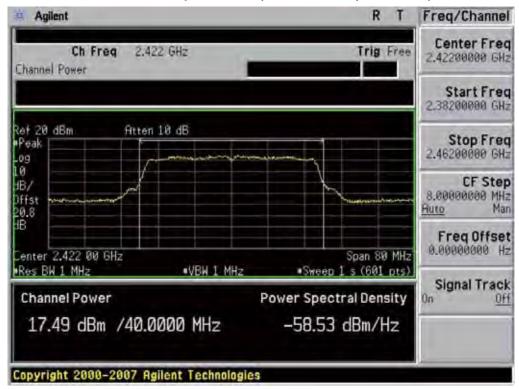
Conducted Output Power (802.11n-CH 3) 108 Mbps



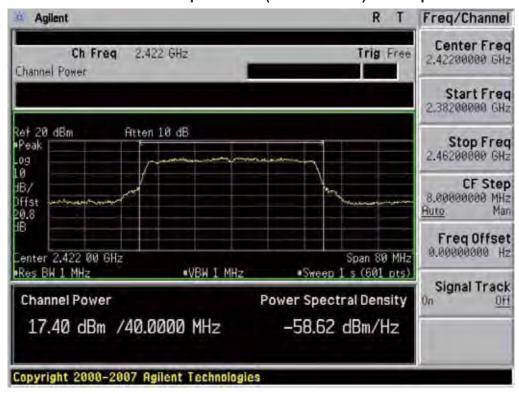
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



Conducted Output Power (802.11n-CH 3) 121.5 Mbps



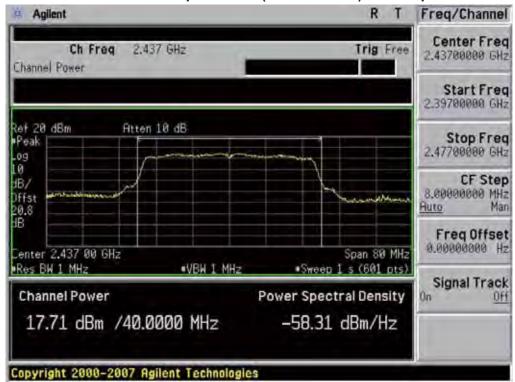
Conducted Output Power (802.11n-CH 3) 135 Mbps



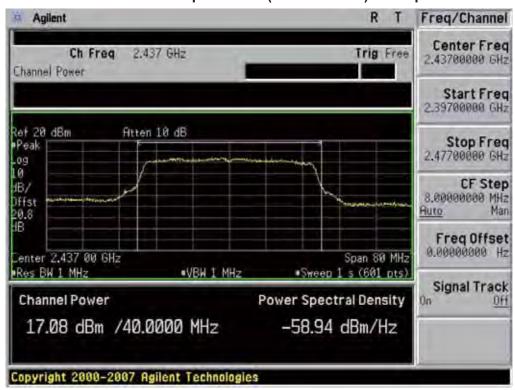
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



Conducted Output Power (802.11n-CH 6) 13.5 Mbps



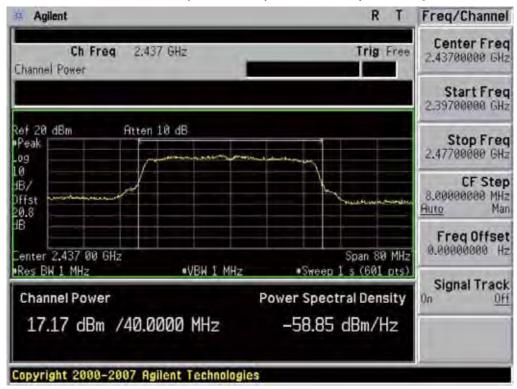
Conducted Output Power (802.11n-CH 6) 27 Mbps



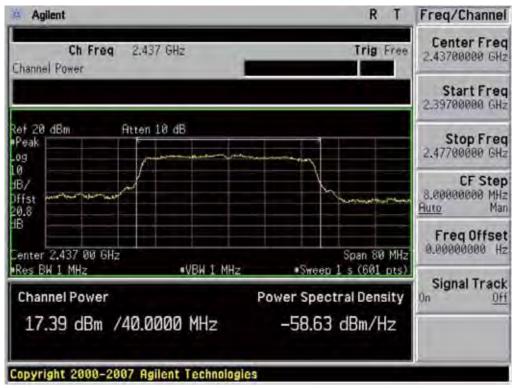
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



Conducted Output Power (802.11n-CH 6) 40.5 Mbps



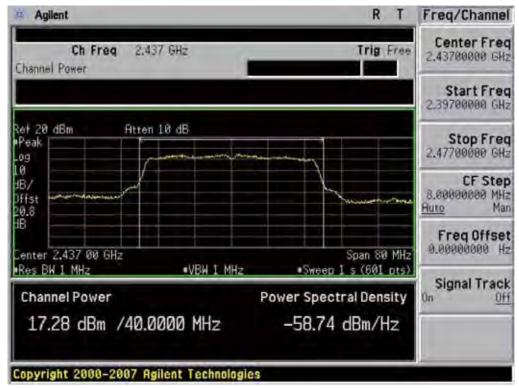
Conducted Output Power (802.11n-CH 6) 54 Mbps



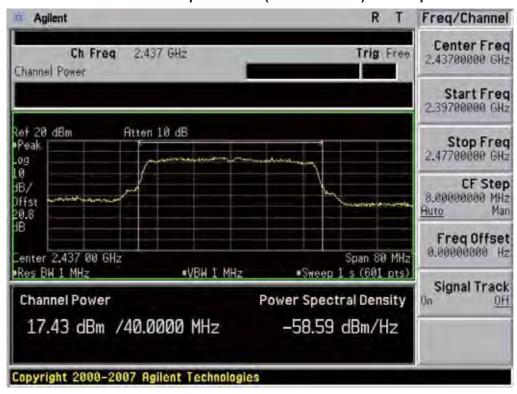
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



Conducted Output Power (802.11n-CH 6) 81 Mbps



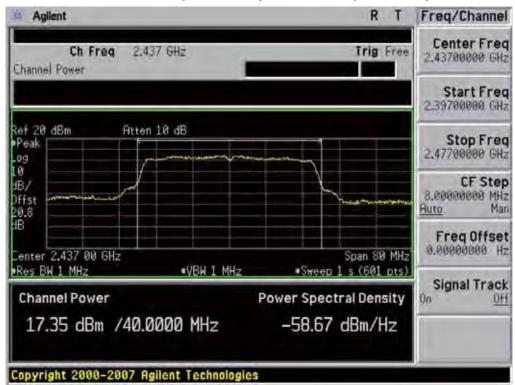
Conducted Output Power (802.11n-CH 6) 108 Mbps



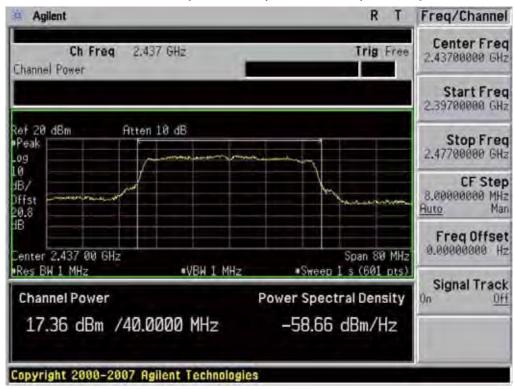
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



Conducted Output Power (802.11n-CH 6) 121.5 Mbps



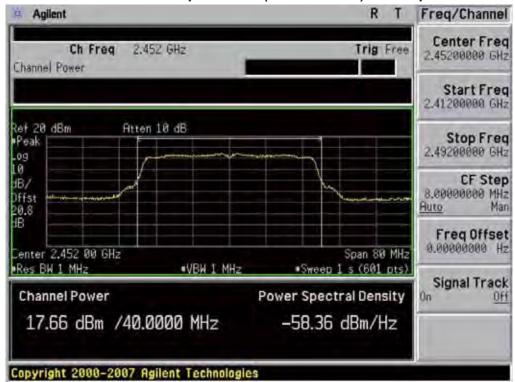
Conducted Output Power (802.11n-CH 6) 135 Mbps



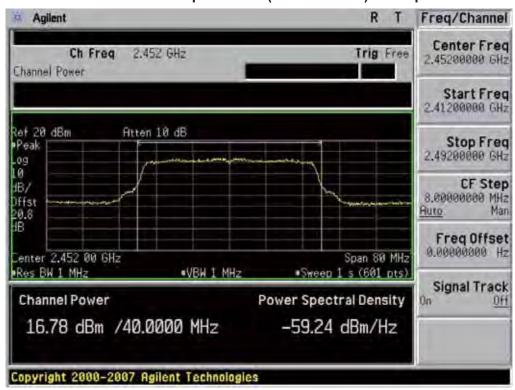
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



Conducted Output Power (802.11n-CH 9) 13.5Mbps



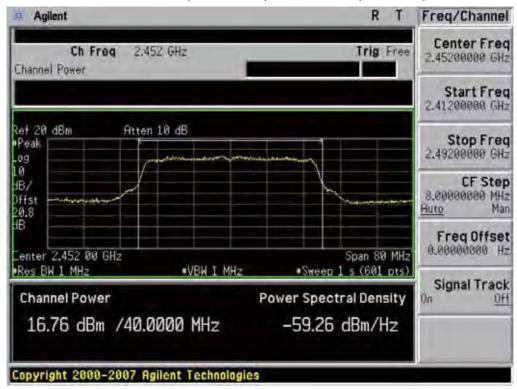
Conducted Output Power (802.11n-CH 9) 27 Mbps



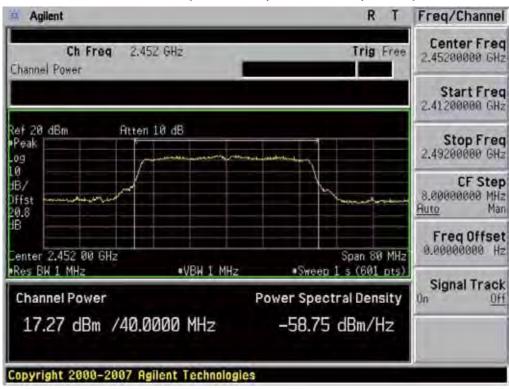
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



Conducted Output Power (802.11n-CH 9) 40.5 Mbps



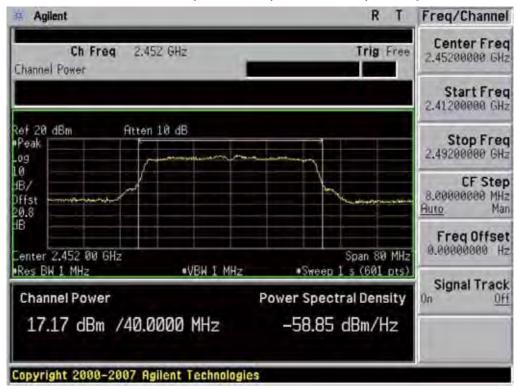
Conducted Output Power (802.11n-CH 9) 54 Mbps



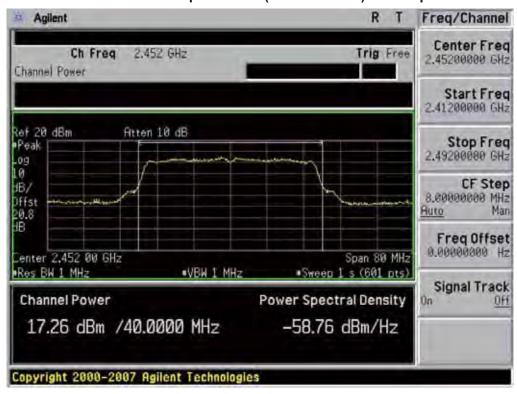
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



Conducted Output Power (802.11n-CH 9) 81 Mbps



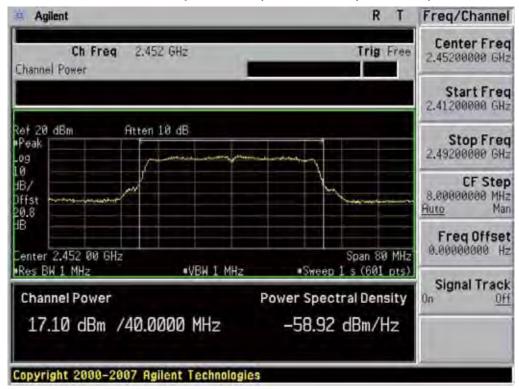
Conducted Output Power (802.11n-CH 9) 108 Mbps



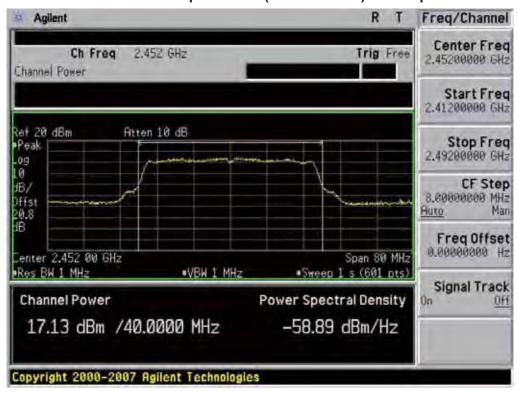
FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D



Conducted Output Power (802.11n-CH 9) 121.5 Mbps



Conducted Output Power (802.11n-CH 9) 135 Mbps

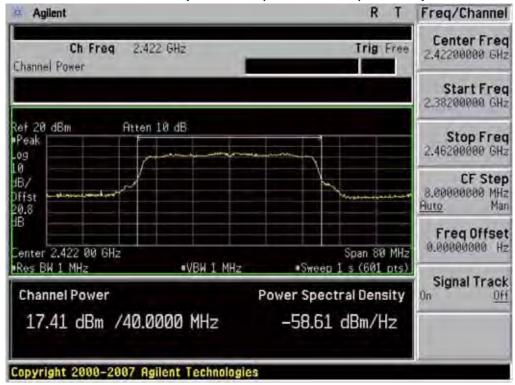


FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D

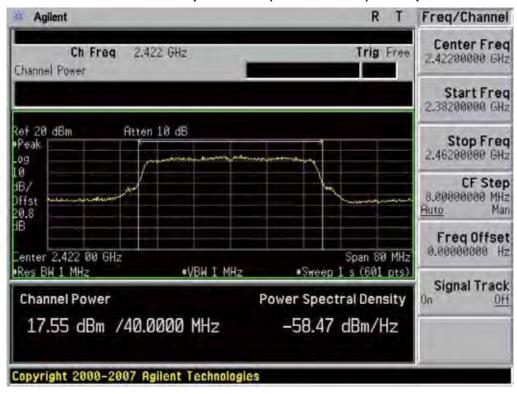


■ RESULT PLOTS_Ant.1:_40 MHz BW

Conducted Output Power (802.11n-CH 3) 13.5 Mbps



Conducted Output Power (802.11n-CH 3) 27 Mbps



FCC PT.15.247 TEST REPORT	FCC & IC CERTIFICATION REPORT			www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type: WI-FI Module	FCC ID:	IC:
HCTR1110FR01-3	October 26, 2011		BEJTWFMB003D	2703H-TWFMB003D