

# HCT CO., LTD.

# CERTIFICATE OF COMPLIANCE

## **FCC Certification**

Applicant Name:

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

Date of Issue: May 07, 2013

Test Site/Location:

Address:

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

1000 Sylvan Avenue, Englewood Cliffs NJ 07632

Icheon-si, Kyunggi-Do, Korea Report No.: HCTR1304FR26-3

HCT FRN: 0005866421

FCC ID

: ZNFL05E

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

FCC Model(s):

L-05E

**EUT Type:** 

Power:

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

A-GPS, Wireless Charger, Wi-Fi Direct

Max. RF Output

Wi-Fi 802.11a (5180~5240) (7.97 dBm)/ Wi-Fi 802.11a (5260~5320) (8.17 dBm)/ Wi-Fi 802.11a (5500~5700) (8.54 dBm)/ Wi-Fi 802.11n\_20 MHz BW (5180~5240) (8.12 dBm)/

Wi-Fi 802.11n 20 MHz BW(5260~5320)(8.48 dBm)/ Wi-Fi 802.11n 20 MHz BW(5500~5700)(8.87 dBm)/ Wi-Fi 802.11n\_40 MHz BW(5190~5230) (7.98 dBm)/ Wi-Fi 802.11n\_40 MHz BW (5270~5310) (8.18 dBm)/

Wi-Fi 802.11n\_40 MHz BW (5510~5670) (8.59 dBm)

Frequency Range:

20 MHz BW

5180 MHz - 5240 MHz (UNII 1)/ 5260 MHz - 5320 MHz (UNII 2)/

5500 MHz - 5700 MHz (UNII 3)

40 MHz BW

5190 MHz - 5230 MHz (UNII 1)/ 5270 MHz - 5310 MHz (UNII 2)/

5510 MHz - 5670 MHz (UNII 3)

Modulation type

OFDM

FCC Classification:

Unlicensed National Information Infrastructure(UNII)

FCC Rule Part(s):

Part 15.407

#### Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)

Report prepared by Jong Seok Lee

Test engineer of RF Team

Approved by : Chang Seok Choi

Manager of RF Team

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# **Version**

TEST REPORT NO.	DATE	DESCRIPTION
HCTR1304FR26	April 19, 2013	- First Approval Report
HCTR1304FR26-1	May 03, 2013	- Updated Max. RF Output Power on Page 1.
HCTR1304FR26-2	May 06, 2013	- Change the font (P.173 ~ P.175 : Dotum -> Arial)
HCTR1304FR26-3	May 07, 2013	- Add Band Edge Plot at 5250 MHz on Page.26

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# 1. GENERAL INFORMATION

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

Address: 1000 Sylvan Avenue, Englewood Cliffs NJ 07632

FCC ID: ZNFL05E

EUT Type: Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth,

WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct

Model name(s): L-05E

**Date(s) of Tests:** April 10, 2013 ~ April 19, 2013

Place of Tests: HCT Co., Ltd.

105-1, Jangam-ri, Majang-Myeon, Icheon-si, Kyunggi-Do, 467-811, KOREA.

(IC Recognition No.: 5944A-3)

# 2. EUT DESCRIPTION

EUT Type	Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct			
FCC Model Name	L-05E			
Power Supply	DC 3.8 V			
Frequency Range  Max. RF Output Power:	TX_20 MHz BW: 5180 MHz - 5240 MHz (UNII 1)/ 5260 MHz - 5320 MHz (UNII 2)/ 5500 MHz - 5700 MHz (UNII 3) where) Not supported 5580 MHz - 5640 MHz 40 MHz BW: 5190 MHz - 5230 MHz (UNII 1)/ 5270 MHz - 5310 MHz (UNII 2)/ 5510 MHz - 5670 MHz (UNII 3) where) Not supported 5580 MHz - 5640 MHz  RX_20 MHz BW: 5180 MHz - 5240 MHz (UNII 1)/ 5260 MHz - 5320 MHz (UNII 2)/ 5500 MHz - 5700 MHz (UNII 3) where) Not supported 5580 MHz - 5640 MHz 40 MHz BW: 5190 MHz - 5230 MHz (UNII 1)/ 5270 MHz - 5310 MHz (UNII 2)/ 5510 MHz - 5670 MHz (UNII 3) where) Not supported 5580 MHz - 5640 MHz  Wi-Fi 802.11a (5180~5240) (7.97 dBm)/ Wi-Fi 802.11a (5260~5320) (8.17 dBm)/ Wi-Fi 802.11a (5500~5700) (8.54 dBm)/ Wi-Fi 802.11n_20 MHz BW (5180~5240) (8.12 dBm)/ Wi-Fi 802.11n_20 MHz BW(5260~5320) (8.48 dBm)/ Wi-Fi 802.11n_20 MHz BW (5500~5700) (8.87 dBm)/ Wi-Fi 802.11n_40 MHz BW(5190~5230) (7.98 dBm)/ Wi-Fi 802.11n_40 MHz BW (5270~5310) (8.18 dBm)/ Wi-Fi 802.11n_40 MHz BW (5510~5670) (8.59 dBm)			
Modulation Type	OFDM(802.11a, 802.11n_20 MHz, 802.11n_40 MHz)			
Antenna Specification	Manufacturer: ace technololgyA			
	Antenna type: Internal Antenna			
	Peak Gain : -3.34 dBi			

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#### 3. TEST METHODOLOGY

The measurement procedure described in FCC KDB 789033 D01 General UNII Test Procedures v01r02 dated September 26, 2012 entitled "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices the American National Standard for Testing Unlicensed Wireless Devices(ANSI C63.4-2003) — Part 15, Subpart E" were used in the measurement.

#### 3.1 EUT CONFIGURATION

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

#### 3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.407 under the FCC Rules Part 15 Subpart E.

#### 3.3 GENERAL TEST PROCEDURES

#### **Conducted Emissions**

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4. (Version :2003) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

#### **Radiated Emissions**

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

# **Conducted Antenna Terminal**

See Section from 8.1 to 8.4.(KDB 789033)

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## 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.

## 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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<sup>\*</sup> The antennas of this E.U.T are permanently attached.

<sup>\*</sup>The E.U.T Complies with the requirement of §15.203



# 7. SUMMARY OF TEST RESULTS

Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
TRANSMITTER MODE(TX)				
26dB Bandwidth	NA	NA		PASS
Maximum Conducted Output Power	§15.407(a)(1)	< 4+10 log <sub>10</sub> (BW) dBm (5150-5250 MHz) < 11+10 log <sub>10</sub> (BW) dBm (5250-5350 MHz) < 11+10 log <sub>10</sub> (BW) dBm (5470-5725 MHz)	CONDUCTED	PASS
Peak Power Spectral Density	§15.407(a)(1), (5)	<4 dBm/ MHz (5150-5250) <11 dBm/ MHz (5250-5350) <11 dBm/ MHz (5470-5725)	CONDUCTED	PASS
Peak Excursion	§15.407(a)(6)	<13 dB/ MHz maximum difference		PASS
Frequency Stability	§15.407(g)	NA		PASS
Undesirable Emissions	§15.407(b)(1), (2), (3)	<-27 dBm/ MHz EIRP (5150-5350 MHz, 5470-5725 MHz)	RADIATED	PASS
General Field Strength Limits(Restricted Bands and Radiated Emission Limits)	15.205, 5.407(b)(1), (5), (6)	Emissions in restricted bands must meet the radiated limits detailed in 15.209	IVADIALED	PASS
AC Conducted Emissions 150 kHz-30 MHz	15.207	<fcc 15.207="" limits<="" td=""><td>LINE CONDUCTED</td><td>PASS</td></fcc>	LINE CONDUCTED	PASS

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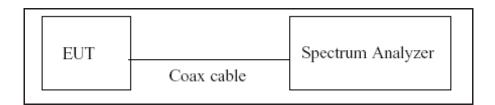
## 8. TEST RESULT

## 8.1 26 dB BANDWIDTH MEASUREMENT

The bandwidth at 26 dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum power control level, as defined in KDB 789033(issued 09/26/2012), at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26 dB bandwidth.

The 26 dB bandwidth is used to determine the conducted power limits.

#### TEST CONFIGURATION



#### TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to( Page 7 in KDB 789033, issued 09/26/2012)

- 1. RBW = approximately 1 % of the emission bandwidth
- 2. VBW > RBW
- 3. Detector = Peak
- 4. Trace mode = max hold
- 5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.



# **■ TEST RESULTS**

# Conducted 26 dB Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5180	36	21.13	N/A	Pass
5200	40	21.05	N/A	Pass
5240	48	21.02	N/A	Pass

## Conducted 26 dB Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5260	52	20.92	N/A	Pass
5300	60	21.17	N/A	Pass
5320	64	21.10	N/A	Pass

# Conducted 26 dB Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5500	100	21.09	N/A	Pass
5580	116	21.09	N/A	Pass
5700	140	21.26	N/A	Pass

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# **■ TEST RESULTS**

## 20 MHz BW

# Conducted 26 dB Bandwidth Measurements for 802.11n

802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5180	36	21.30	N/A	Pass
5200	40	21.31	N/A	Pass
5240	48	21.14	N/A	Pass

# Conducted 26 dB Bandwidth Measurements for 802.11n

802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5260	52	21.21	N/A	Pass
5300	60	21.06	N/A	Pass
5320	64	21.32	N/A	Pass

## Conducted 26 dB Bandwidth Measurements for 802.11n

802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5500	100	21.35	N/A	Pass
5580	116	21.12	N/A	Pass
5700	140	21.29	N/A	Pass

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# 40 MHz BW

# Conducted 26 dB Bandwidth Measurements for 802.11n

802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5190	38	40.22	N/A	Pass
5230	46	40.00	N/A	Pass

## Conducted 26 dB Bandwidth Measurements for 802.11n

802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5270	54	40.24	N/A	Pass
5310	62	40.31	N/A	Pass

## Conducted 26 dB Bandwidth Measurements for 802.11n

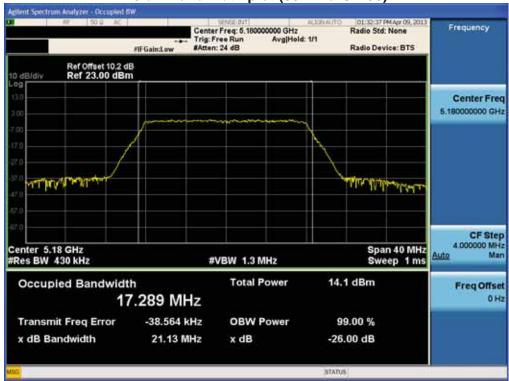
802.11n Mode		Measured Bandwidth	Minimum Bandwidth	
Frequency [MHz]	Channel No.	[MHz]	[MHz]	Pass / Fail
5510	102	40.27	N/A	Pass
5550	110	40.01	N/A	Pass
5670	134	40.35	N/A	Pass

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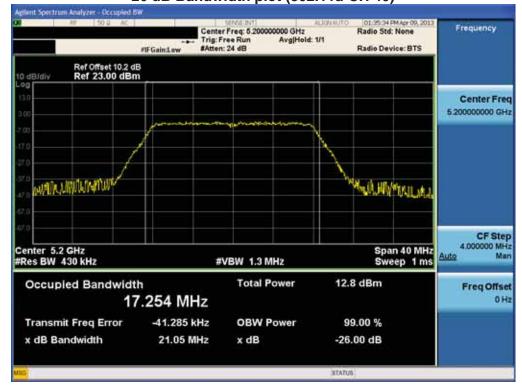


#### **RESULT PLOTS**





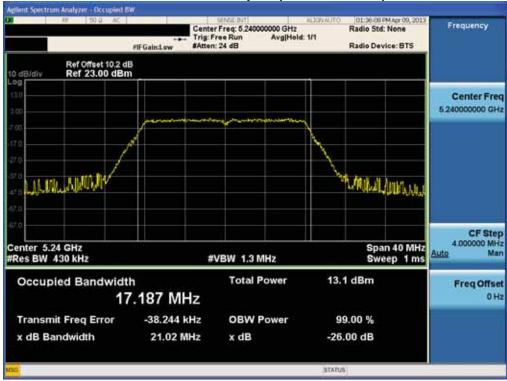
# 26 dB Bandwidth plot (802.11a-CH 40)



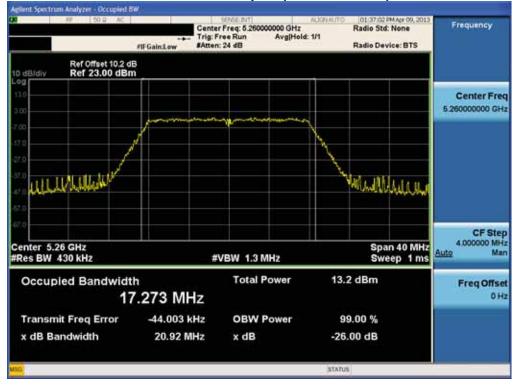
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26 dB Bandwidth plot (802.11a-CH 48)



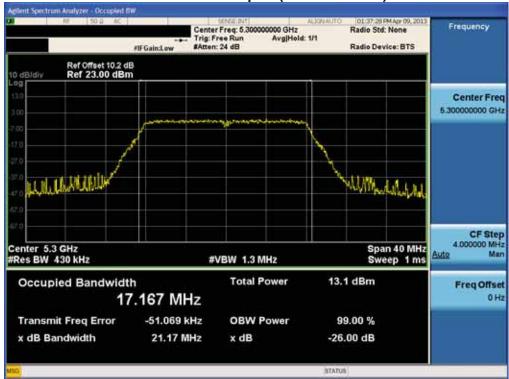
26 dB Bandwidth plot (802.11a-CH 52)



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26 dB Bandwidth plot (802.11a-CH 60)



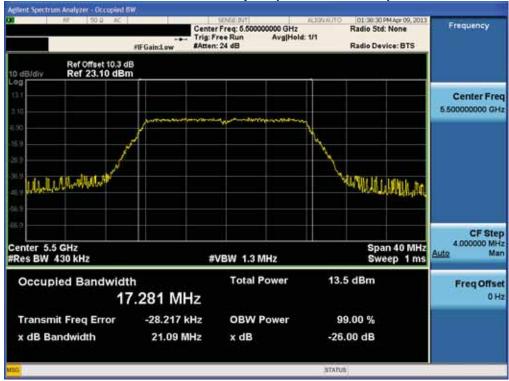
26 dB Bandwidth plot (802.11a-CH 64)



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26 dB Bandwidth plot (802.11a-CH 100)



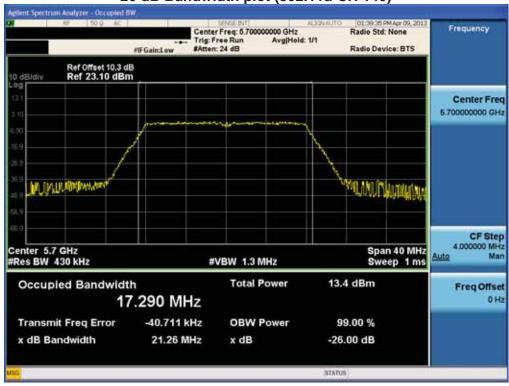
26 dB Bandwidth plot (802.11a-CH 116)



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# 26 dB Bandwidth plot (802.11a-CH 140)

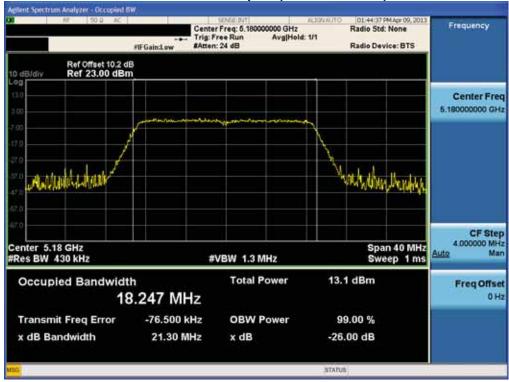


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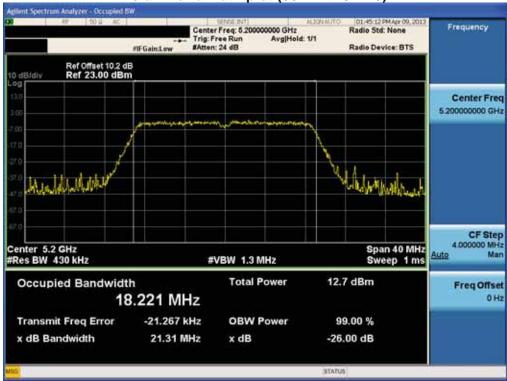


#### 20 MHz BW

# 26 dB Bandwidth plot (802.11n-CH 36)



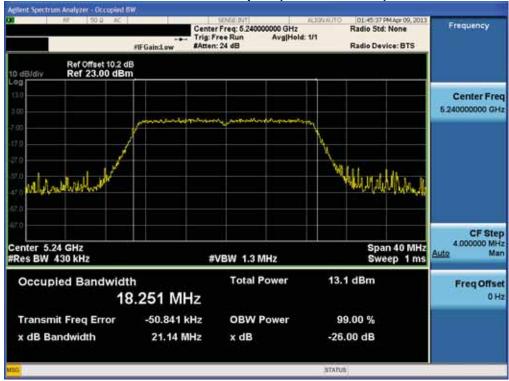
# 26 dB Bandwidth plot (802.11n-CH 40)



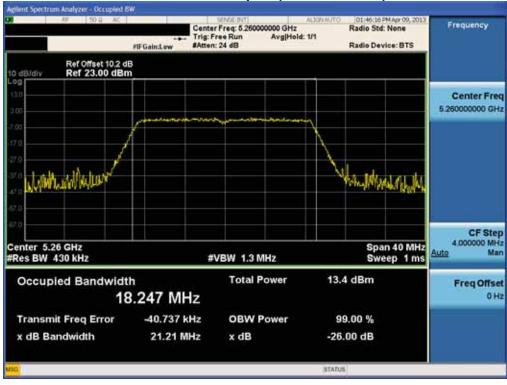
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26 dB Bandwidth plot (802.11n-CH 48)



26 dB Bandwidth plot (802.11n-CH 52)



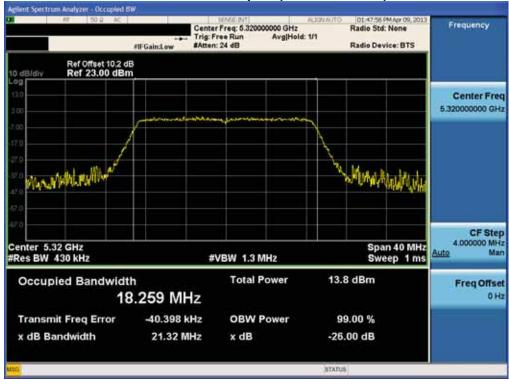
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26 dB Bandwidth plot (802.11n-CH 60)



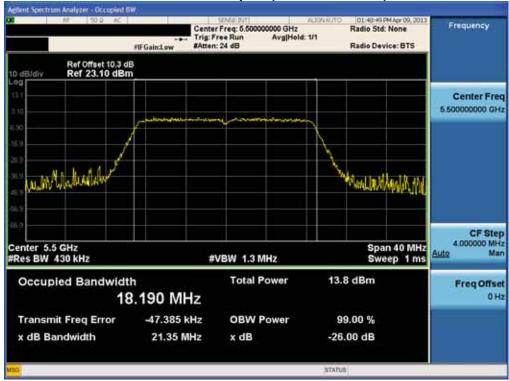
26 dB Bandwidth plot (802.11n-CH 64)



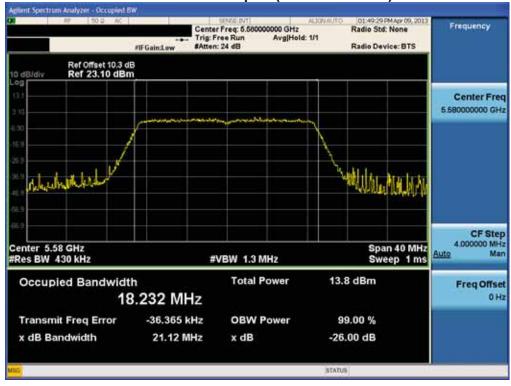
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
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6 dB Bandwidth plot (802.11n-CH 100)



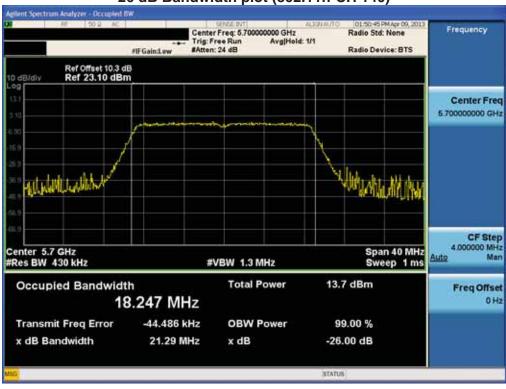
26 dB Bandwidth plot (802.11n-CH 116)



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# 26 dB Bandwidth plot (802.11n-CH 140)

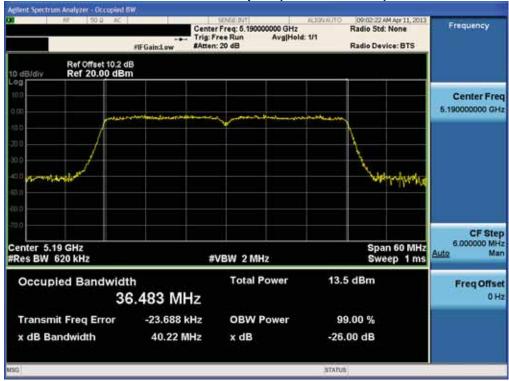


FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
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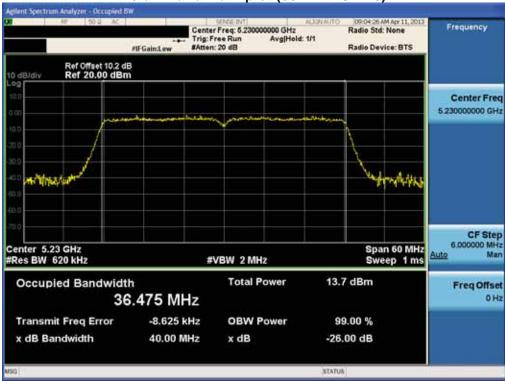


#### 40 MHz BW

# 26 dB Bandwidth plot (802.11n-CH 38)



# 26 dB Bandwidth plot (802.11n-CH 46)



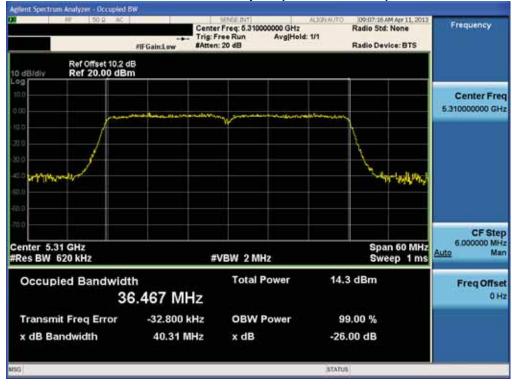
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
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26 dB Bandwidth plot (802.11n-CH 54)



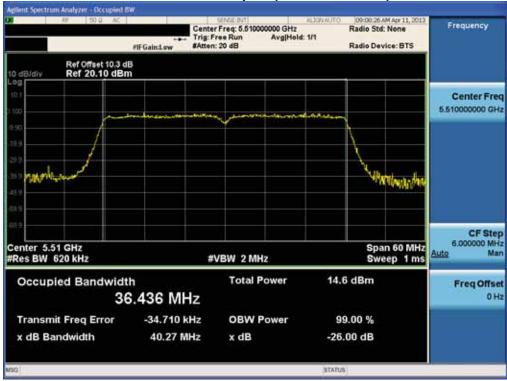
26 dB Bandwidth plot (802.11n-CH 62)



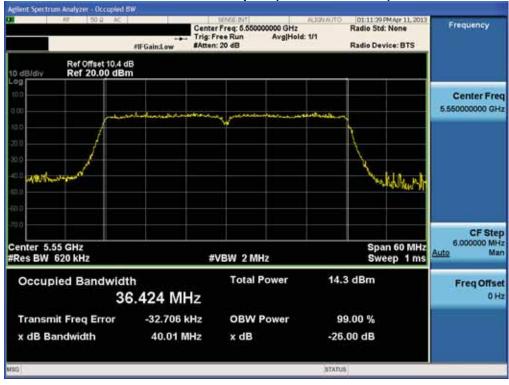
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
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26 dB Bandwidth plot (802.11n-CH 102)



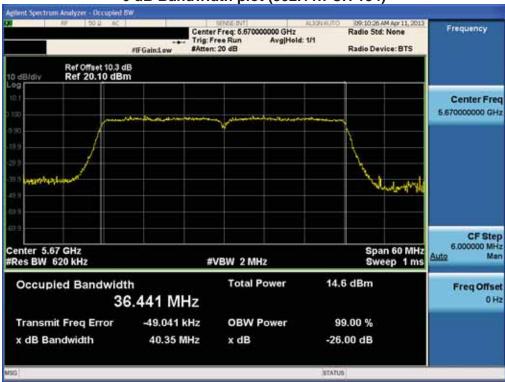
26 dB Bandwidth plot (802.11n-CH 110)



FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT				
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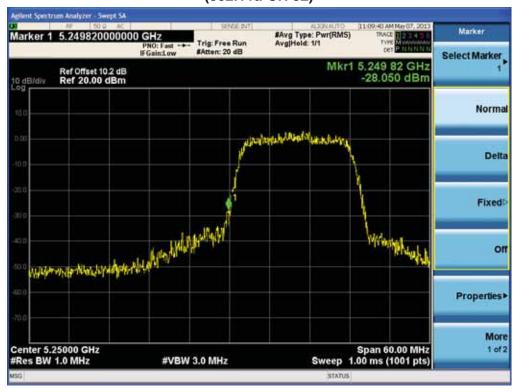


6 dB Bandwidth plot (802.11n-CH 134)



#### **BAND EDGE RESULT PLOTS**

# (802.11a-CH 52)



FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:			
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## **8.2 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. In the 5.15 - 5.25 GHz band, the maximum permissible conducted output power is the lesser of 50 mW ((16.99 dBm) and 4 dBm + 10 log  $_{10}$  (26 dB BW)

frequencies. In the 5.25 - 5.35 GHz band, the maximum permissible conducted output power is the lesser of 250 mW (23.98 dBm) and 11 dBm + 10 log  $_{10}$  (26 dB BW)

frequencies. In the 5.47 - 5.725 GHz band, the maximum permissible conducted output power is the lesser of 250 mW (23.98 dBm) and 11 dBm + 10 log  $_{10}$  (26 dB BW)

Limit: 802.11a\_UNII-1 = 16.99 dBm

802.11n\_UNII-1\_20 MHz BW = 16.99 dBm

802.11n UNII-1 40 MHz BW = 16.99 dBm

802.11a\_UNII-2 = 23.98 dBm

802.11n\_UNII-2\_20 MHz BW = 23.98 dBm

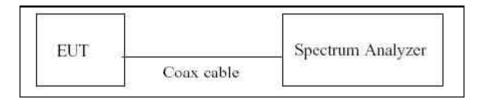
802.11n UNII-2 40 MHz BW = 23.98 dBm

802.11a UNII-3 = 23.98 dBm

802.11n\_UNII-3\_20 MHz BW = 23.98 dBm

802.11n\_UNII-3\_40 MHz BW = 23.98 dBm

#### **TEST CONFIGURATION**



#### TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer. We use the spectrum analyzer's integrated band power measurement function. We tested according to Method SA-2 in KDB 789033(issued 9/26/2012).

The Spectrum Analyzer is set to

- Average Power
  - 1. Measure the duty cycle, x, of the transmitter output signal.
  - 2. Set span to encompass the entire emission bandwidth(EBW) of the signal.
  - 3. RBW = 1 MHz.
  - 4. VBW ≥ 3 MHz.
  - 5. Number of points in sweep ≥ 2\*span/RBW.
  - 6. Sweep time = auto.

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Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:				
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- 7. Detector = RMS(i.e., power averaging), if available. Otherwise, use sample detector mode.
- 8. Do not use sweep triggering. Allow the sweep to "free run".
- 9. Trace average at least 100 traces in power averaging(RMS) mode
- 10. Integrated bandwidth = 26 dB EBW
- 11. Add 10log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

## Sample Calculation

Output Power = Reading Value + ATT loss + Cable loss(1 ea)
Output Power = 10 dBm + 10 dB + 0.8 dB = 20.8 dBm

#### Note:

- 1. Spectrum reading values are not plot data. The power results in plot is already including the actual values of loss for the attenuator and cable combination.
- 2. Spectrum offset = Attenuator loss + Cable loss
- 3. We apply to the offset in the 5.2 GHz, 5.3 GHz and 5.6 GHz range that was rounded off to the closest tenth dB. Actual value of loss for the attenuator and cable combination is below table.

Band	Frequency(MHz)	Loss(dB)
	5180	10.26
	5190	10.22
UNII 1	5200	10.18
	5230	10.19
	5240	10.19
	5260	10.18
	5270	10.17
UNII 2	5300	10.14
	5310	10.11
	5320	10.09
	5500	10.20
	5510	10.20
UNII 3	5550	10.23
	5580	10.24
	5670	10.36

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

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# ■ Duty Cycle Factor

Mode	Data Rate	T <sub>on</sub>	T <sub>total</sub>	Duty Cycle	Duty Cycle Factor
	6 Mbs	2.040	2.175	0.93793103	0.278
	9 Mbs	1.380	1.485	0.92929293	0.318
	12 Mbs	1.020	1.140	0.89473684	0.483
802.11a Mode	18 Mbs	0.690	0.795	0.86792453	0.615
802.11a Wode	24 Mbs	0.525	0.645	0.81395349	0.894
	36 Mbs	0.360	0.465	0.77419355	1.112
	48 Mbs	0.255	0.375	0.68000000	1.675
	54 Mbs	0.225	0.345	0.65217391	1.856
	6.5 Mbs	1.875	2.010	0.93283582	0.302
	13 Mbs	0.975	1.080	0.90277778	0.444
802.11n Mode 20 MHz BW	19.5 Mbs	0.645	0.765	0.84313725	0.741
	26 Mbs	0.495	0.615	0.80487805	0.943
	39 Mbs	0.330	0.450	0.73333333	1.347
	52 Mbs	0.255	0.360	0.70833333	1.498
	58.5 Mbs	0.225	0.345	0.65217391	1.856
	65 Mbs	0.225	0.330	0.68181818	1.663
	13.5 Mbps	0.945	1.044	0.90469349	0.435
	27 Mbps	0.491	0.591	0.83079526	0.805
	40.5 Mbps	0.341	0.440	0.77500000	1.107
802.11n Mode	54 Mbps	0.265	0.364	0.72802198	1.379
40 MHz BW	81 Mbps	0.189	0.288	0.65451389	1.841
	108 Mbps	0.152	0.252	0.60357143	2.193
	121.5 Mbps	0.140	0.240	0.58375000	2.338
	135 Mbps	0.128	0.228	0.56126482	2.508

Note : Duty Cycle Factor = 10\*log(1/Duty Cycle)

where, Duty Cycle =  $T_{on} / T_{total}$ 

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# **■ TEST RESULTS**

# Conducted Output Power Measurements (802.11a Mode: 5180~5240)

802.11a Mode					Measured	
Frequency [MHz]	Channel No.	Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor	Power(dBm) + Duty Cycle Factor	Limit (dBm)
		6 Mbps	7.69	0.28	7.97	16.99
		9 Mbps	7.27	0.32	7.59	16.99
		12 Mbps	7.16	0.48	7.65	16.99
5180	36	18 Mbps	6.87	0.62	7.48	16.99
3100	36	24 Mbps	6.62	0.89	7.52	16.99
		36 Mbps	6.22	1.11	7.33	16.99
		48 Mbps	5.98	1.67	7.65	16.99
		54 Mbps	5.72	1.86	7.57	16.99
	40	6 Mbps	7.52	0.28	7.80	16.99
		9 Mbps	7.12	0.32	7.44	16.99
		12 Mbps	6.86	0.48	7.34	16.99
5200		18 Mbps	6.75	0.62	7.36	16.99
5200		24 Mbps	6.52	0.89	7.41	16.99
		36 Mbps	6.18	1.11	7.29	16.99
		48 Mbps	5.99	1.67	7.67	16.99
		54 Mbps	5.79	1.86	7.64	16.99
		6 Mbps	7.60	0.28	7.87	16.99
		9 Mbps	7.30	0.32	7.62	16.99
		12 Mbps	7.16	0.48	7.64	16.99
5240	48	18 Mbps	6.97	0.62	7.58	16.99
5240	48	24 Mbps	6.63	0.89	7.53	16.99
		36 Mbps	6.33	1.11	7.44	16.99
		48 Mbps	6.22	1.67	7.90	16.99
		54 Mbps	5.89	1.86	7.75	16.99

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT				
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# Conducted Output Power Measurements (802.11a Mode: 5260~5320)

802.11a Mode		_			Measured Power(dBm)	
Frequency [MHz]	Channel No.	Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor	+ Duty Cycle Factor	Limit (dBm)
		6 Mbps	7.67	0.28	7.95	23.98
		9 Mbps	7.41	0.32	7.73	23.98
		12 Mbps	7.31	0.48	7.80	23.98
5260	52	18 Mbps	7.11	0.62	7.73	23.98
5200	52	24 Mbps	6.82	0.89	7.72	23.98
		36 Mbps	6.54	1.11	7.65	23.98
		48 Mbps	6.40	1.67	8.07	23.98
		54 Mbps	6.14	1.86	8.00	23.98
		6 Mbps	7.73	0.28	8.01	23.98
	60	9 Mbps	7.52	0.32	7.83	23.98
		12 Mbps	7.37	0.48	7.85	23.98
5300		18 Mbps	7.14	0.62	7.75	23.98
5300		24 Mbps	6.80	0.89	7.70	23.98
		36 Mbps	6.56	1.11	7.67	23.98
		48 Mbps	6.50	1.67	8.17	23.98
		54 Mbps	6.00	1.86	7.86	23.98
		6 Mbps	7.74	0.28	8.02	23.98
		9 Mbps	6.98	0.32	7.30	23.98
		12 Mbps	6.58	0.48	7.06	23.98
5320	64	18 Mbps	6.43	0.62	7.05	23.98
5320	64	24 Mbps	6.20	0.89	7.09	23.98
		36 Mbps	5.82	1.11	6.94	23.98
		48 Mbps	5.77	1.67	7.44	23.98
		54 Mbps	5.45	1.86	7.31	23.98

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# Conducted Output Power Measurements (802.11a Mode: 5500~5700)

802.11a Mode					Measured	
Frequency [MHz]	Channel No.	Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor	Power(dBm) + Duty Cycle Factor	Limit (dBm)
		6 Mbps	7.95	0.28	8.22	23.98
		9 Mbps	7.49	0.32	7.81	23.98
		12 Mbps	7.45	0.48	7.94	23.98
5500	100	18 Mbps	7.25	0.62	7.86	23.98
3300	100	24 Mbps	7.03	0.89	7.93	23.98
		36 Mbps	6.73	1.11	7.84	23.98
		48 Mbps	6.56	1.67	8.24	23.98
		54 Mbps	6.30	1.86	8.16	23.98
	116	6 Mbps	7.89	0.28	8.17	23.98
		9 Mbps	7.75	0.32	8.07	23.98
		12 Mbps	7.73	0.48	8.21	23.98
5580		18 Mbps	7.59	0.62	8.20	23.98
5500		24 Mbps	7.30	0.89	8.20	23.98
		36 Mbps	6.93	1.11	8.05	23.98
		48 Mbps	6.73	1.67	8.41	23.98
		54 Mbps	6.47	1.86	8.32	23.98
		6 Mbps	7.87	0.28	8.15	23.98
		9 Mbps	7.84	0.32	8.16	23.98
		12 Mbps	7.72	0.48	8.20	23.98
<b>5700</b>	140	18 Mbps	7.53	0.62	8.15	23.98
5700	140	24 Mbps	7.29	0.89	8.18	23.98
		36 Mbps	6.97	1.11	8.08	23.98
		48 Mbps	6.86	1.67	8.54	23.98
		54 Mbps	6.65	1.86	8.51	23.98

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# 20 MHz BW

# Conducted Output Power Measurements (802.11n Mode: 5180~5240)

802.11n Mode					Measured	
Frequency [MHz]	Channel No.	Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor	Power(dBm) + Duty Cycle Factor	Limit (dBm)
		6.5 Mbps	7.82	0.30	8.12	16.99
		13 Mbps	7.29	0.44	7.74	16.99
		19.5 Mbps	7.11	0.74	7.86	16.99
5180	36	26 Mbps	6.79	0.94	7.74	16.99
5100	36	39 Mbps	6.57	1.35	7.92	16.99
		52 Mbps	6.20	1.50	7.70	16.99
		58.5 Mbps	6.14	1.86	7.99	16.99
		65 Mbps	5.96	1.66	7.63	16.99
		6.5 Mbps	7.60	0.30	7.91	16.99
	40	13 Mbps	7.25	0.44	7.69	16.99
		19.5 Mbps	6.52	0.74	7.26	16.99
5200		26 Mbps	6.39	0.94	7.33	16.99
5200		39 Mbps	6.13	1.35	7.48	16.99
		52 Mbps	5.81	1.50	7.30	16.99
		58.5 Mbps	5.65	1.86	7.50	16.99
		65 Mbps	5.59	1.66	7.26	16.99
		6.5 Mbps	7.68	0.30	7.99	16.99
		13 Mbps	7.20	0.44	7.64	16.99
		19.5 Mbps	7.00	0.74	7.74	16.99
5240	40	26 Mbps	6.94	0.94	7.88	16.99
5240	48	39 Mbps	6.58	1.35	7.93	16.99
		52 Mbps	6.24	1.50	7.74	16.99
		58.5 Mbps	6.15	1.86	8.01	16.99
		65 Mbps	6.02	1.66	7.68	16.99

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# Conducted Output Power Measurements (802.11n Mode: 5260~5320)

802.11n Mode					Measured	
Frequency [MHz]	Channel No.	Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor	Power(dBm) + Duty Cycle Factor	Limit (dBm)
		6.5 Mbps	7.68	0.30	7.98	23.98
		13 Mbps	7.53	0.44	7.98	23.98
		19.5 Mbps	7.35	0.74	8.09	23.98
5260	52	26 Mbps	7.17	0.94	8.11	23.98
5260	52	39 Mbps	6.95	1.35	8.30	23.98
		52 Mbps	6.63	1.50	8.13	23.98
		58.5 Mbps	6.47	1.86	8.33	23.98
		65 Mbps	6.35	1.66	8.01	23.98
		6.5 Mbps	8.00	0.30	8.30	23.98
	60	13 Mbps	7.62	0.44	8.07	23.98
		19.5 Mbps	7.48	0.74	8.22	23.98
5300		26 Mbps	7.35	0.94	8.30	23.98
5300		39 Mbps	7.13	1.35	8.48	23.98
		52 Mbps	6.60	1.50	8.10	23.98
		58.5 Mbps	6.53	1.86	8.39	23.98
		65 Mbps	6.38	1.66	8.04	23.98
		6.5 Mbps	7.90	0.30	8.20	23.98
	64	13 Mbps	7.65	0.44	8.09	23.98
		19.5 Mbps	7.43	0.74	8.17	23.98
5320		26 Mbps	7.27	0.94	8.21	23.98
		39 Mbps	6.94	1.35	8.29	23.98
		52 Mbps	6.65	1.50	8.15	23.98
		58.5 Mbps	6.53	1.86	8.38	23.98
		65 Mbps	6.46	1.66	8.12	23.98

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# Conducted Output Power Measurements (802.11n Mode: 5500~5700)

802.11n Mode		4			Measured Power(dBm)		
Frequency [MHz]	Channel No.	Rate (Mbps)	Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor	+ Duty Cycle Factor	Limit (dBm)
		6.5 Mbps	7.87	0.30	8.17	23.98	
		13 Mbps	7.78	0.44	8.23	23.98	
		19.5 Mbps	7.58	0.74	8.32	23.98	
5500	100	26 Mbps	7.34	0.94	8.28	23.98	
3300	100	39 Mbps	7.01	1.35	8.36	23.98	
		52 Mbps	6.77	1.50	8.26	23.98	
		58.5 Mbps	6.60	1.86	8.46	23.98	
		65 Mbps	6.63	1.66	8.29	23.98	
	116	6.5 Mbps	7.93	0.30	8.23	23.98	
		13 Mbps	7.90	0.44	8.34	23.98	
		19.5 Mbps	7.75	0.74	8.49	23.98	
5580		26 Mbps	7.40	0.94	8.35	23.98	
5500		39 Mbps	7.19	1.35	8.54	23.98	
		52 Mbps	6.96	1.50	8.46	23.98	
		58.5 Mbps	6.87	1.86	8.72	23.98	
		65 Mbps	6.77	1.66	8.44	23.98	
		6.5 Mbps	8.12	0.30	8.42	23.98	
		13 Mbps	8.15	0.44	8.59	23.98	
		19.5 Mbps	8.01	0.74	8.76	23.98	
5700	140	26 Mbps	7.73	0.94	8.67	23.98	
5700	140	39 Mbps	7.45	1.35	8.80	23.98	
		52 Mbps	7.16	1.50	8.65	23.98	
		58.5 Mbps	7.02	1.86	8.87	23.98	
		65 Mbps	6.92	1.66	8.58	23.98	

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



# 40 MHz BW

# Conducted Output Power Measurements (802.11n Mode: 5190~5230)

802.11n M Frequency [MHz]	Mode Channel No.	Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor	Measured Power(dBm) + Duty Cycle Factor	Limit (dBm)
		13.5 Mbps	7.50	0.43	7.93	16.99
		27 Mbps	7.09	0.81	7.90	16.99
		40.5 Mbps	6.73	1.11	7.84	16.99
5400	20	54 Mbps	6.46	1.38	7.84	16.99
5190	38	81 Mbps	6.07	1.84	7.91	16.99
		108 Mbps	5.59	2.19	7.78	16.99
		121.5 Mbps	5.48	2.34	7.82	16.99
		135 Mbps	5.31	2.51	7.82	16.99
		13.5 Mbps	7.54	0.43	7.98	16.99
	46	27 Mbps	6.93	0.81	7.73	16.99
		40.5 Mbps	6.56	1.11	7.67	16.99
5000		54 Mbps	6.46	1.38	7.83	16.99
5230		81 Mbps	5.95	1.84	7.79	16.99
		108 Mbps	5.53	2.19	7.73	16.99
		121.5 Mbps	5.41	2.34	7.75	16.99
		135 Mbps	5.25	2.51	7.76	16.99

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



# Conducted Output Power Measurements (802.11n Mode: 5270~5310)

802.11n Mode					Measured	
Frequency [MHz]	Channel No.	Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor	Power(dBm) + Duty Cycle Factor	Limit (dBm)
		13.5 Mbps	7.52	0.43	7.96	23.98
		27 Mbps	7.28	0.81	8.08	23.98
		40.5 Mbps	6.64	1.11	7.75	23.98
5270	E 4	54 Mbps	6.44	1.38	7.82	23.98
5270	54	81 Mbps	5.99	1.84	7.83	23.98
		108 Mbps	5.50	2.19	7.69	23.98
		121.5 Mbps	5.52	2.34	7.86	23.98
		135 Mbps	5.13	2.51	7.64	23.98
		13.5 Mbps	7.65	0.43	8.08	23.98
		27 Mbps	7.38	0.81	8.18	23.98
		40.5 Mbps	6.91	1.11	8.01	23.98
5040	00	54 Mbps	6.61	1.38	7.99	23.98
5310	62	81 Mbps	6.13	1.84	7.98	23.98
		108 Mbps	5.73	2.19	7.92	23.98
		121.5 Mbps	5.58	2.34	7.92	23.98
		135 Mbps	5.51	2.51	8.02	23.98

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



# Conducted Output Power Measurements (802.11n Mode: 5510~5670)

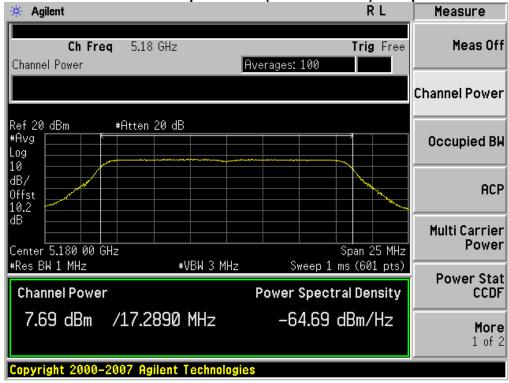
802.11n M Frequency [MHz]	Mode Channel No.	Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor	Measured Power(dBm) + Duty Cycle Factor	Limit (dBm)
		13.5 Mbps	7.57	0.43	8.01	23.98
		27 Mbps	7.28	0.81	8.08	23.98
		40.5 Mbps	7.07	1.11	8.18	23.98
5540	400	54 Mbps	6.69	1.38	8.07	23.98
5510	102	81 Mbps	6.20	1.84	8.04	23.98
		108 Mbps	5.82	2.19	8.01	23.98
		121.5 Mbps	5.69	2.34	8.03	23.98
		135 Mbps	5.46	2.51	7.97	23.98
		13.5 Mbps	7.80	0.43	8.24	23.98
	110	27 Mbps	7.44	0.81	8.24	23.98
		40.5 Mbps	7.13	1.11	8.24	23.98
5550		54 Mbps	6.78	1.38	8.15	23.98
5550		81 Mbps	6.41	1.84	8.25	23.98
		108 Mbps	5.88	2.19	8.08	23.98
		121.5 Mbps	5.86	2.34	8.20	23.98
		135 Mbps	5.62	2.51	8.13	23.98
		13.5 Mbps	7.92	0.43	8.35	23.98
		27 Mbps	7.78	0.81	8.59	23.98
		40.5 Mbps	7.39	1.11	8.50	23.98
5670	134	54 Mbps	6.98	1.38	8.36	23.98
3070		81 Mbps	6.56	1.84	8.40	23.98
		108 Mbps	6.05	2.19	8.24	23.98
		121.5 Mbps	6.06	2.34	8.40	23.98
		135 Mbps	5.75	2.51	8.25	23.98

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E

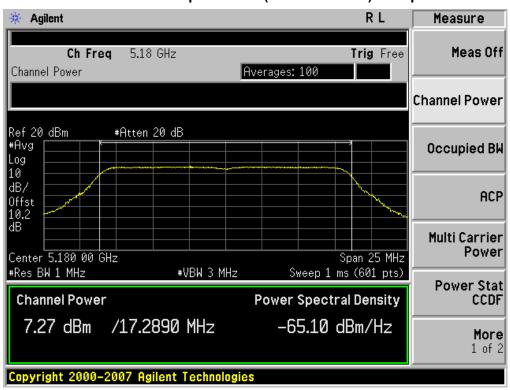


#### ■ RESULT PLOTS (5180 MHz ~5240 MHz)

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



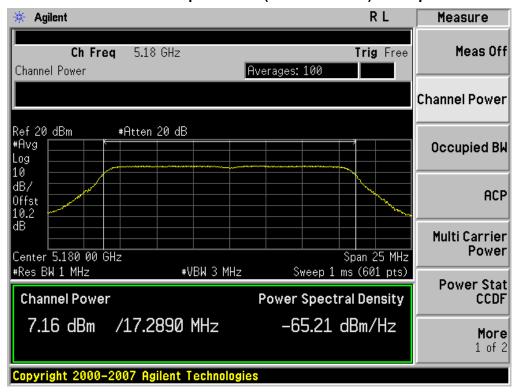
#### Conducted Output Power (802.11a-CH 36) 9 Mbps



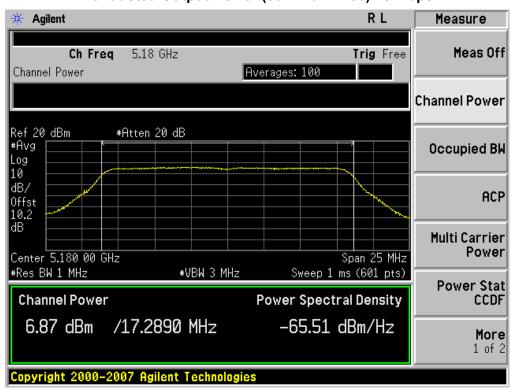
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 36) 12 Mbps



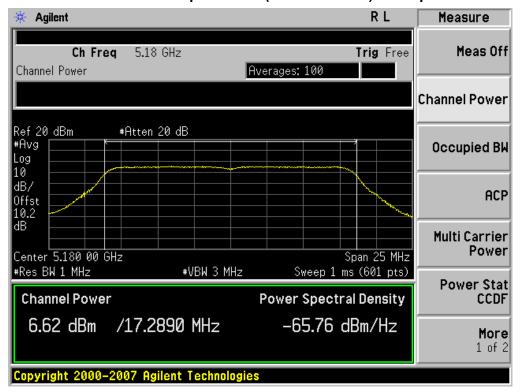
#### Conducted Output Power (802.11a-CH 36) 18 Mbps



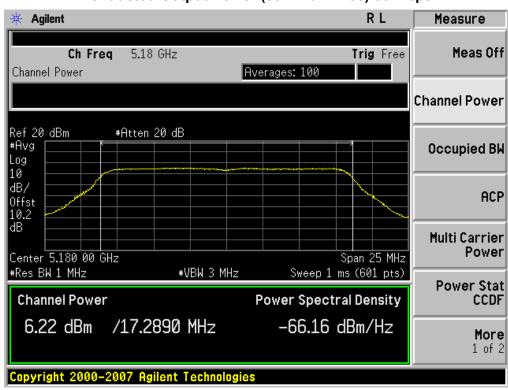
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 36) 24 Mbps



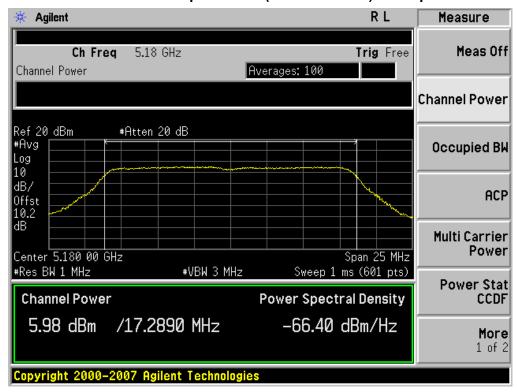
#### Conducted Output Power (802.11a-CH 36) 36 Mbps



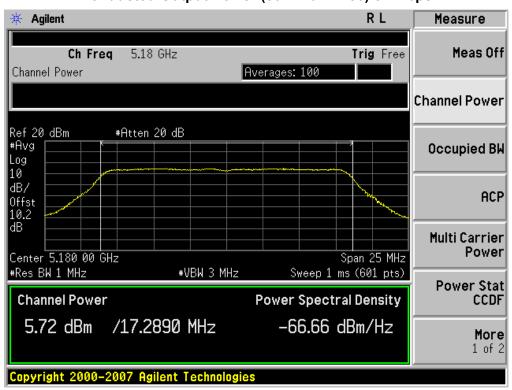
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Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 36) 48 Mbps



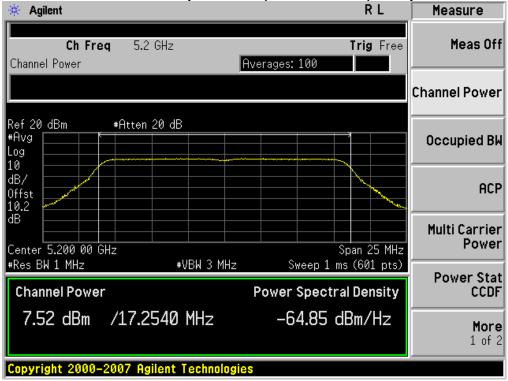
#### Conducted Output Power (802.11a-CH 36) 54 Mbps



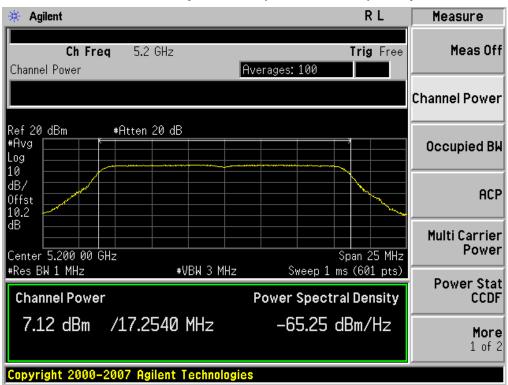
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



Conducted Output Power (802.11a-CH 40) 6 Mbps



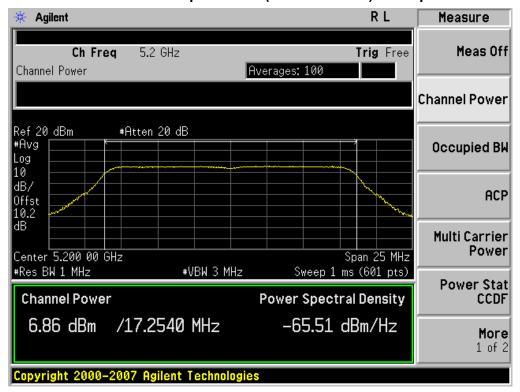
# Conducted Output Power (802.11a-CH 40) 9 Mbps



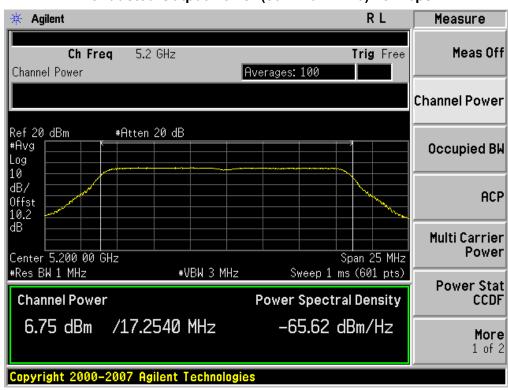
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 40) 12 Mbps



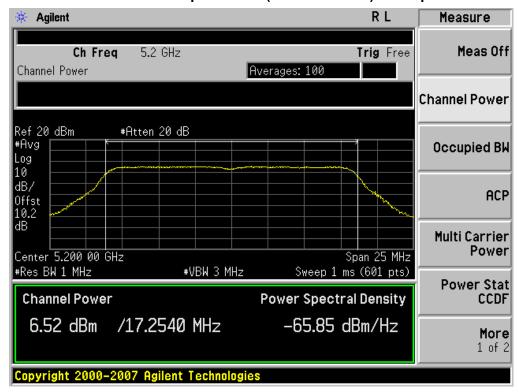
#### Conducted Output Power (802.11a-CH 40) 18 Mbps



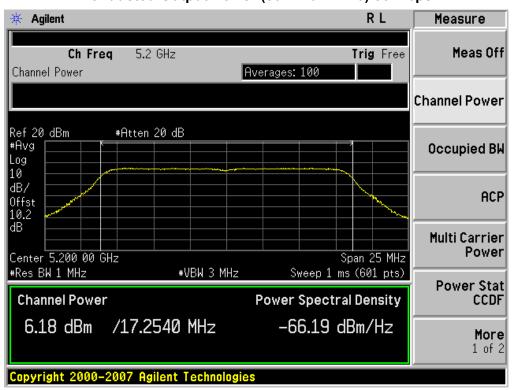
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 40) 24 Mbps



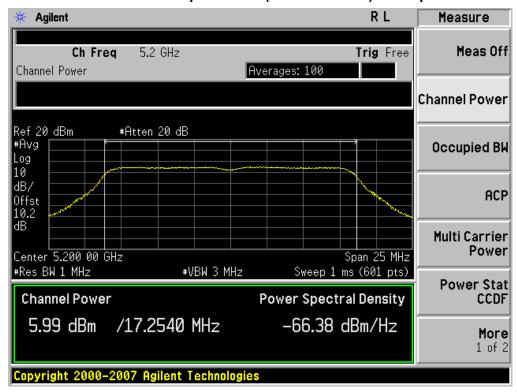
#### Conducted Output Power (802.11a-CH 40) 36 Mbps



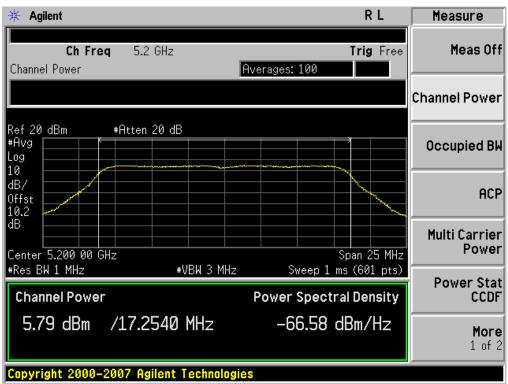
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 40) 48 Mbps



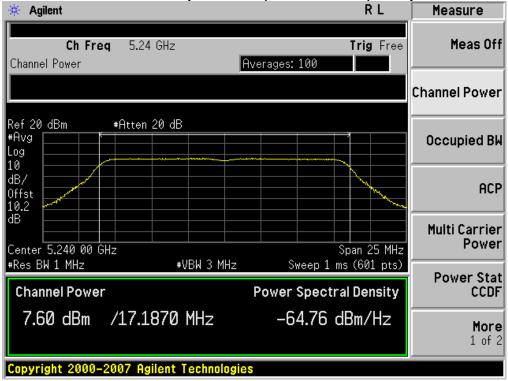
# Conducted Output Power (802.11a-CH 40) 54 Mbps



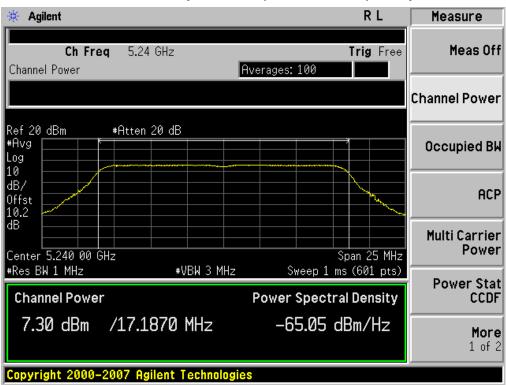
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Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



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



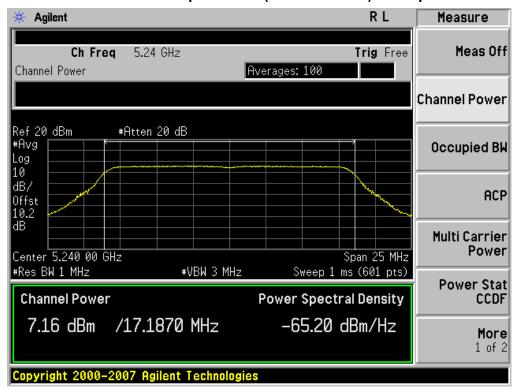
# Conducted Output Power (802.11a-CH 48) 9 Mbps



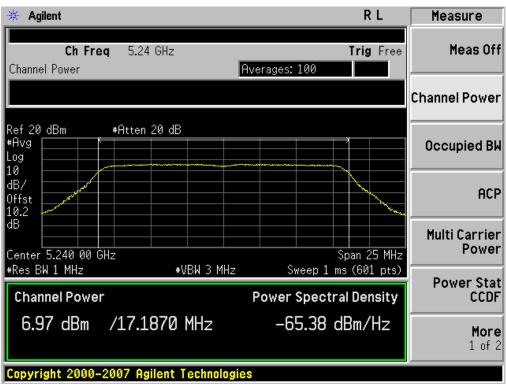
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Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 48) 12 Mbps



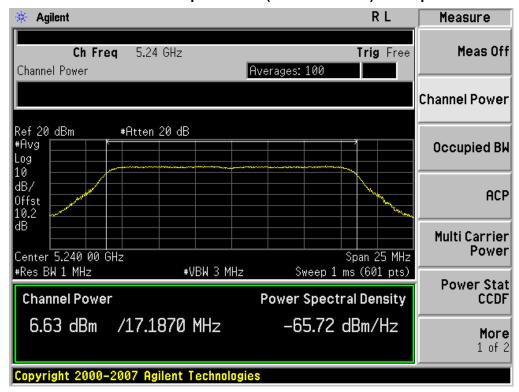
# Conducted Output Power (802.11a-CH 48) 18 Mbps



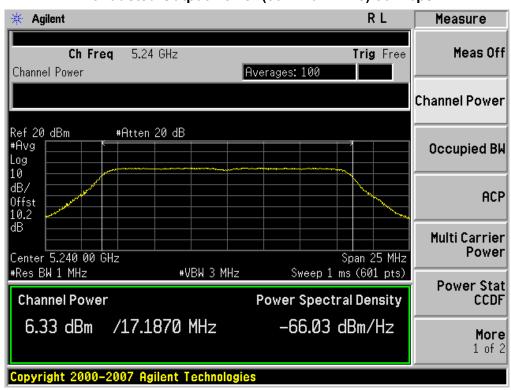
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Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 48) 24 Mbps



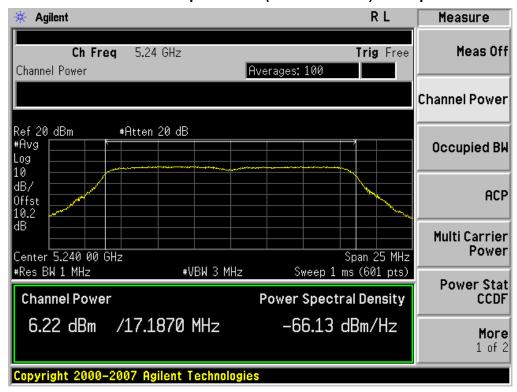
#### Conducted Output Power (802.11a-CH 48) 36 Mbps



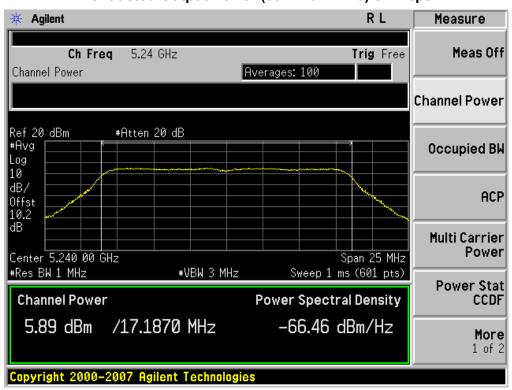
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
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### Conducted Output Power (802.11a-CH 48) 48 Mbps



#### Conducted Output Power (802.11a-CH 48) 54 Mbps

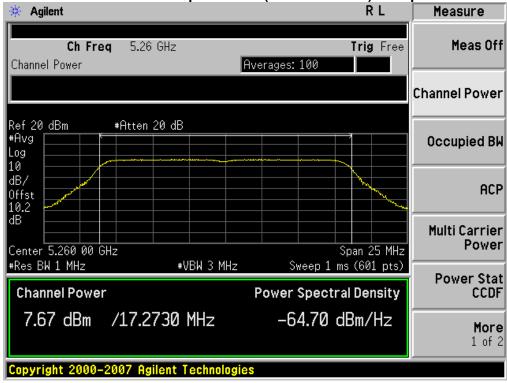


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E

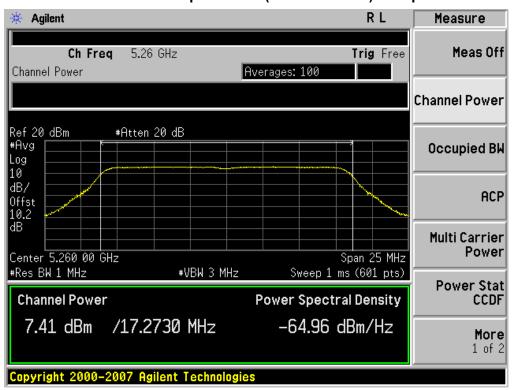


# ■ RESULT PLOTS (5260 MHz ~5320 MHz)

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



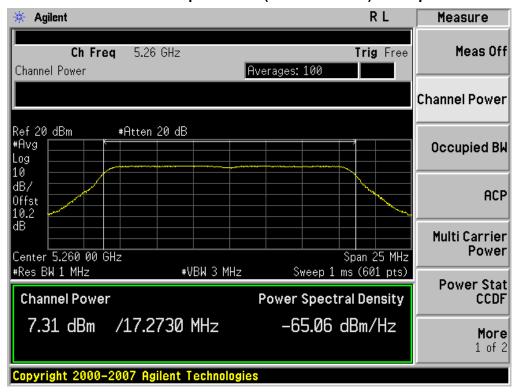
#### Conducted Output Power (802.11a-CH 52) 9 Mbps



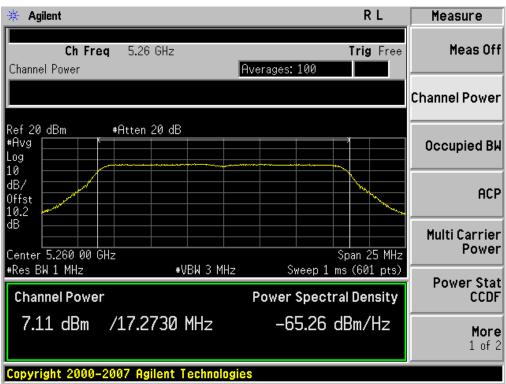
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Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 52) 12 Mbps



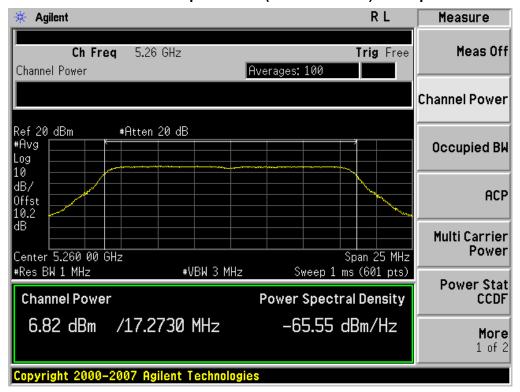
# Conducted Output Power (802.11a-CH 52) 18 Mbps



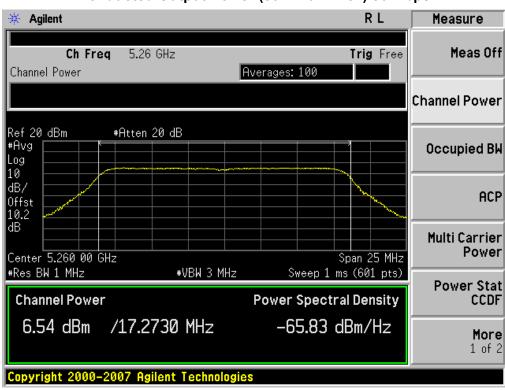
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 52) 24 Mbps



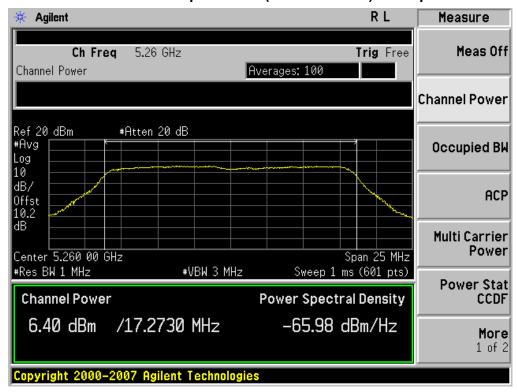
#### Conducted Output Power (802.11a-CH 52) 36 Mbps



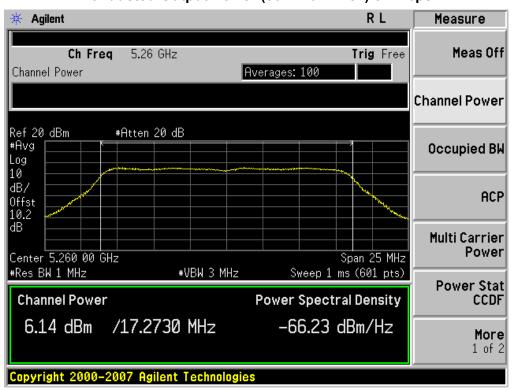
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 52) 48 Mbps



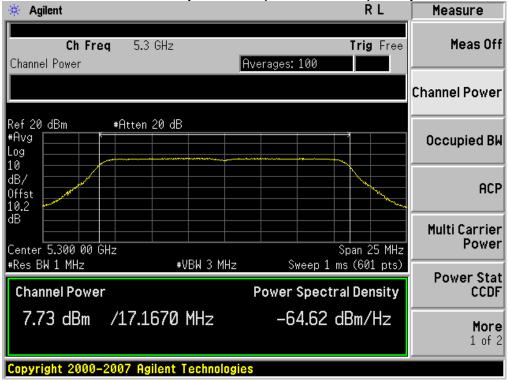
#### Conducted Output Power (802.11a-CH 52) 54 Mbps



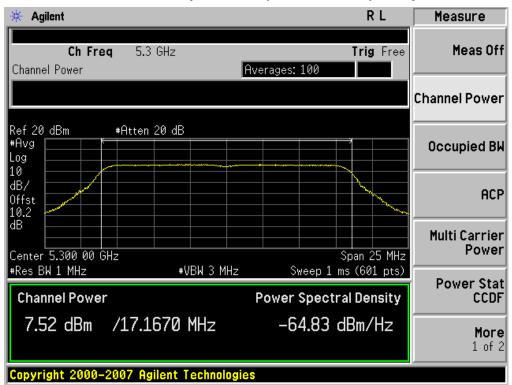
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
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Conducted Output Power (802.11a-CH 60) 6 Mbps



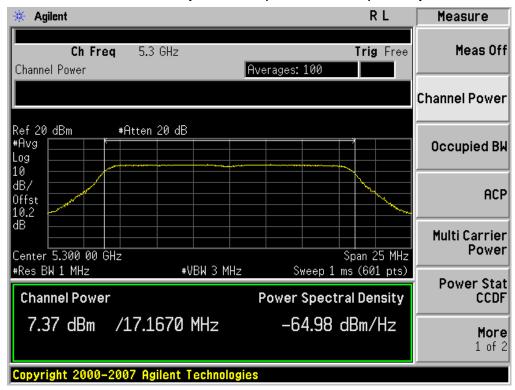
# Conducted Output Power (802.11a-CH 60) 9 Mbps



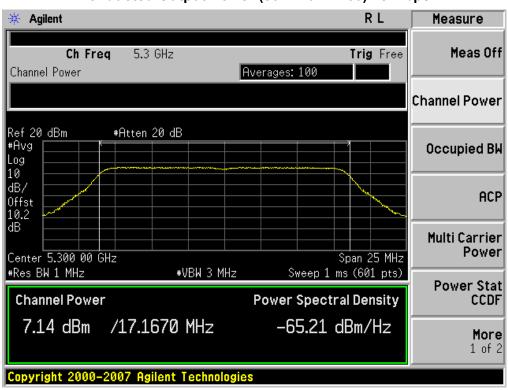
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 60) 12 Mbps



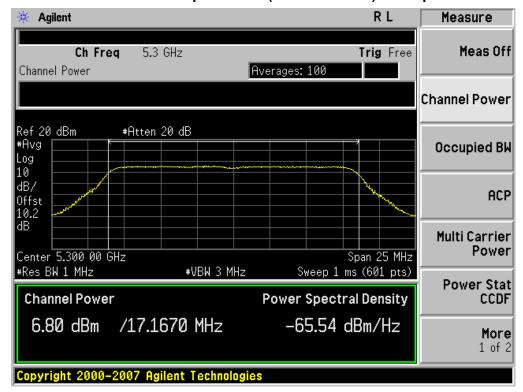
#### Conducted Output Power (802.11a-CH 60) 18 Mbps



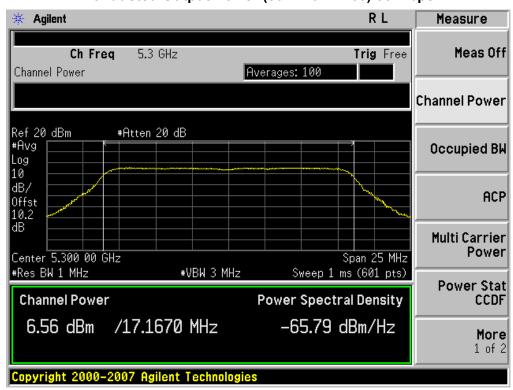
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 60) 24 Mbps



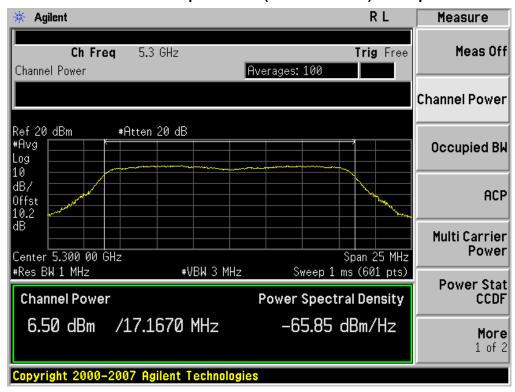
#### Conducted Output Power (802.11a-CH 60) 36 Mbps



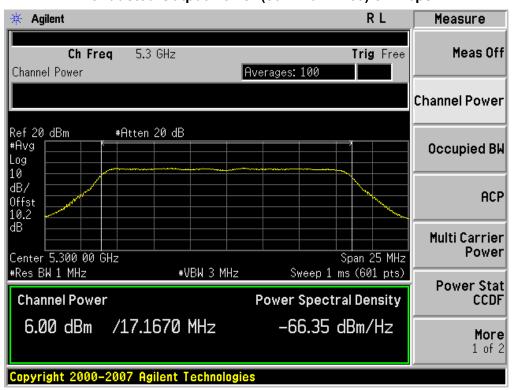
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 60) 48 Mbps



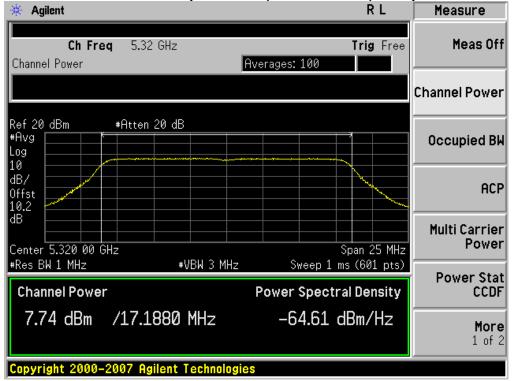
#### Conducted Output Power (802.11a-CH 60) 54 Mbps



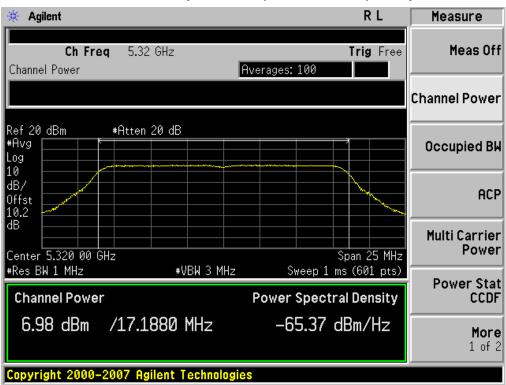
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



Conducted Output Power (802.11a-CH 64) 6 Mbps



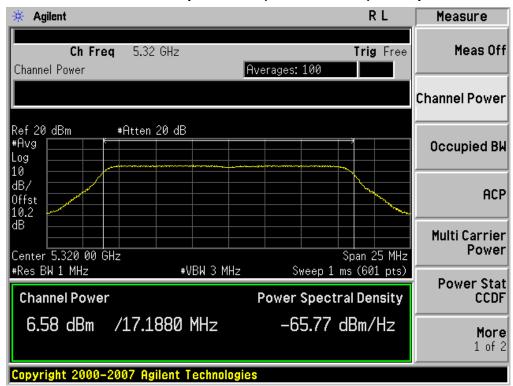
# Conducted Output Power (802.11a-CH 64) 9 Mbps



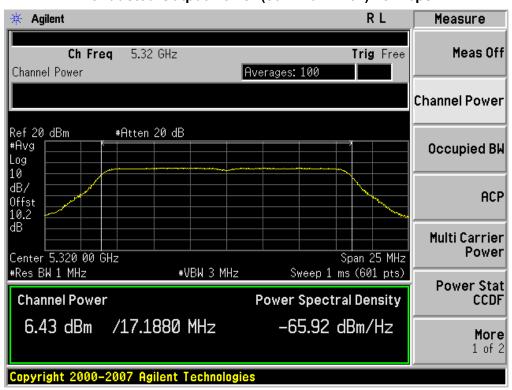
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 64) 12 Mbps



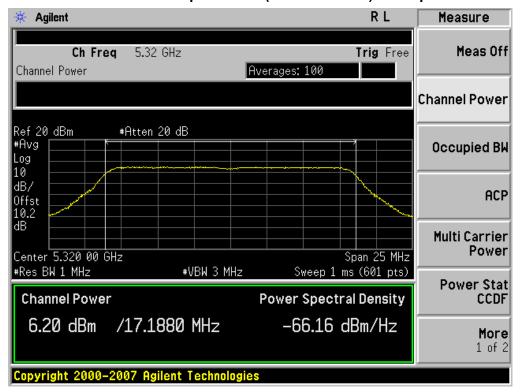
#### Conducted Output Power (802.11a-CH 64) 18 Mbps



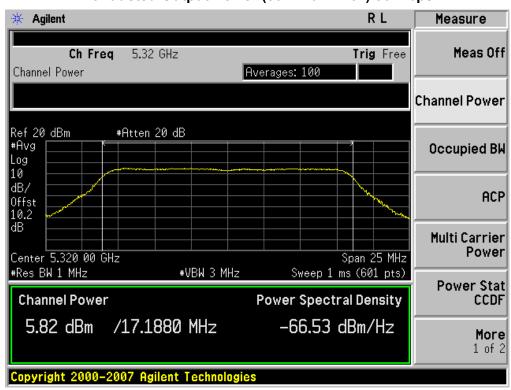
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 64) 24 Mbps



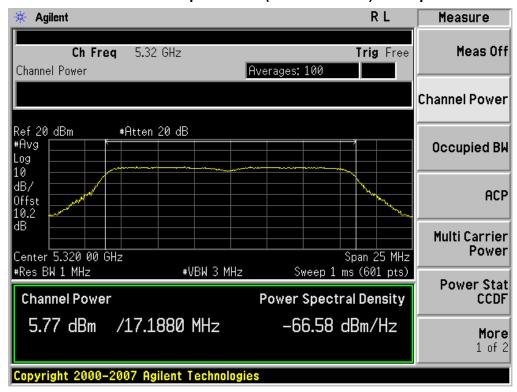
#### Conducted Output Power (802.11a-CH 64) 36 Mbps



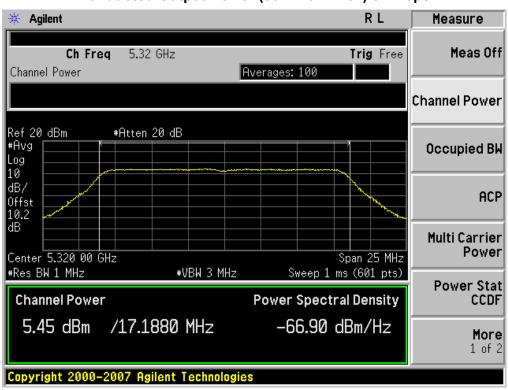
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 64) 48 Mbps



#### Conducted Output Power (802.11a-CH 64) 54 Mbps

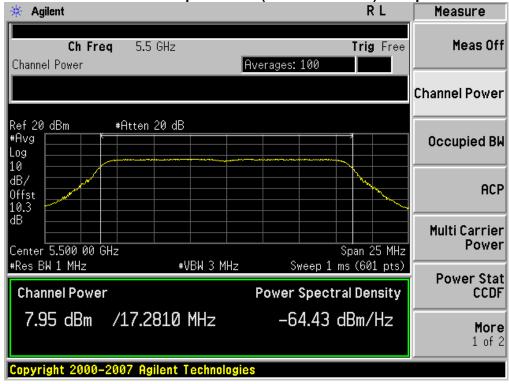


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E

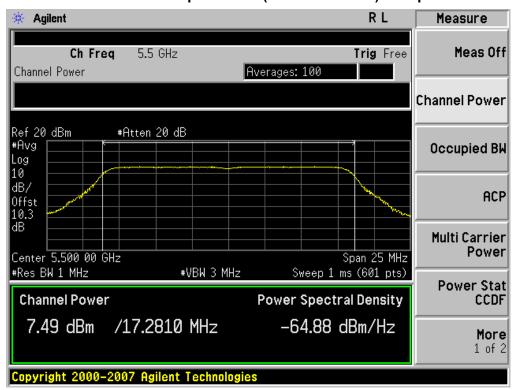


#### ■ RESULT PLOTS (5500 MHz ~5700 MHz)

Conducted Output Power (802.11a-CH 100) 6 Mbps



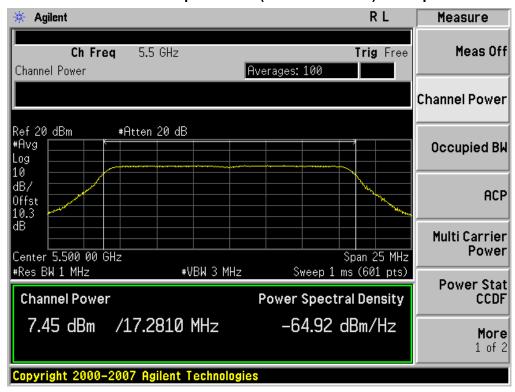
#### Conducted Output Power (802.11a-CH 100) 9 Mbps



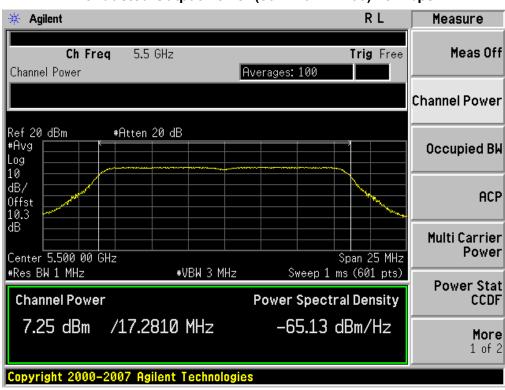
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 100) 12 Mbps



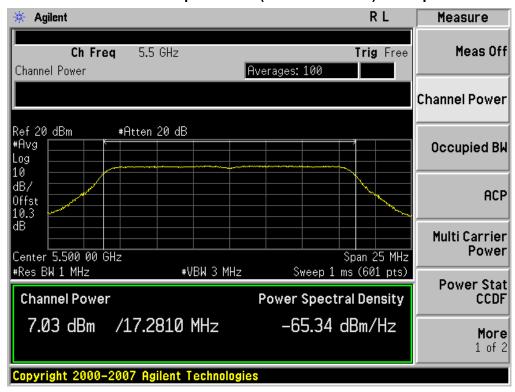
#### Conducted Output Power (802.11a-CH 100) 18 Mbps



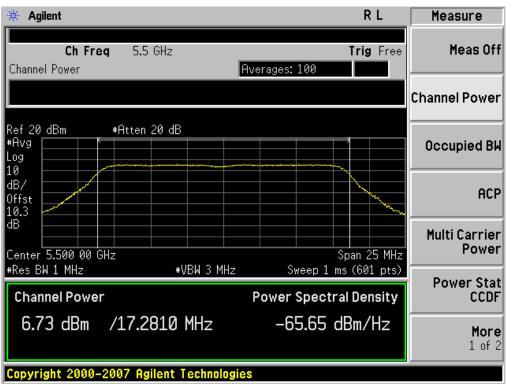
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 100) 24 Mbps



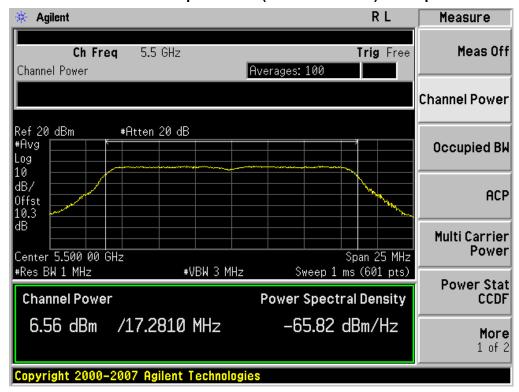
# Conducted Output Power (802.11a-CH 100) 36 Mbps



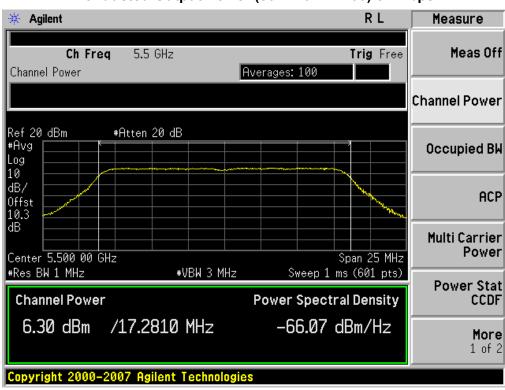
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 100) 48 Mbps



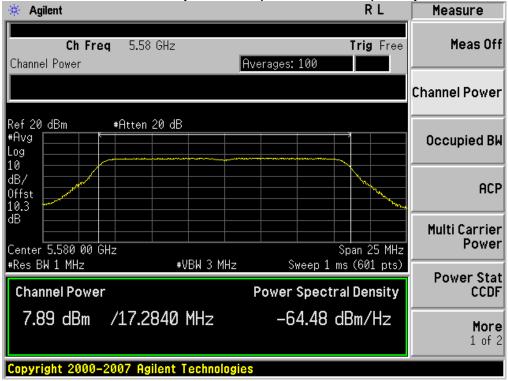
#### Conducted Output Power (802.11a-CH 100) 54 Mbps



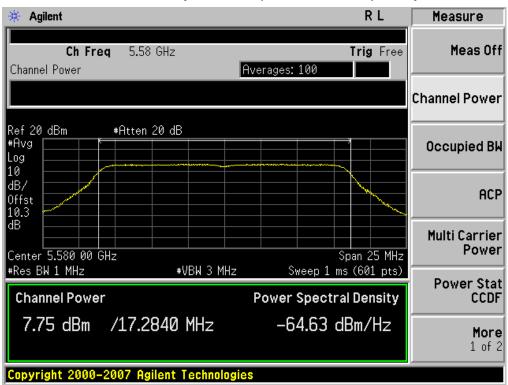
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



Conducted Output Power (802.11a-CH 116) 6 Mbps



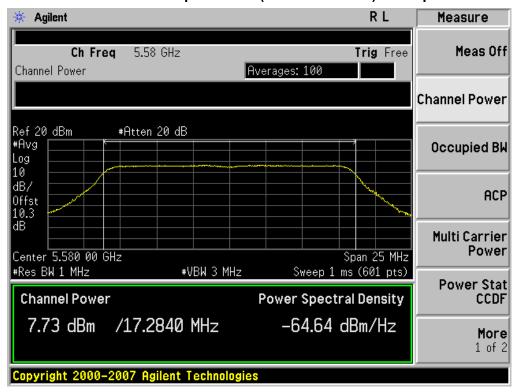
# Conducted Output Power (802.11a-CH 116) 9 Mbps



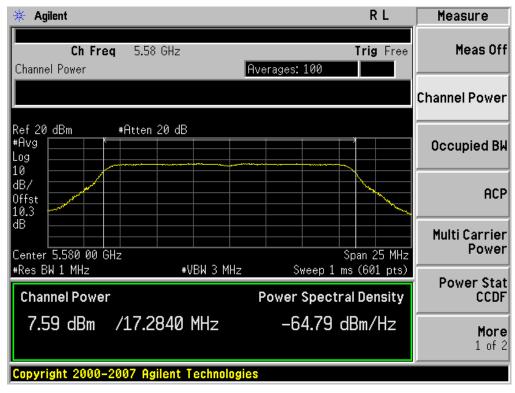
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 116) 12 Mbps



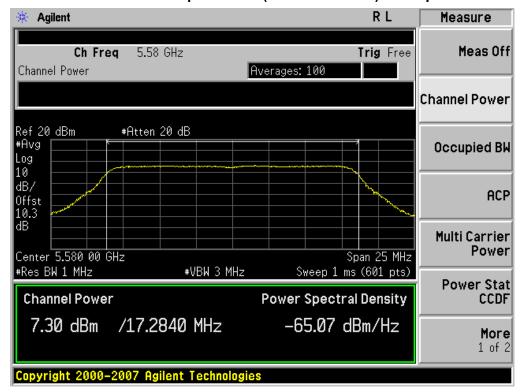
# Conducted Output Power (802.11a-CH 116) 18 Mbps



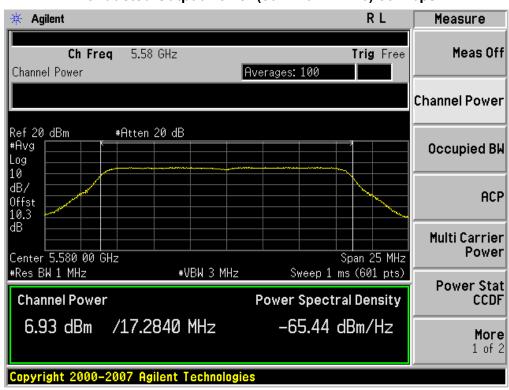
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 116) 24 Mbps



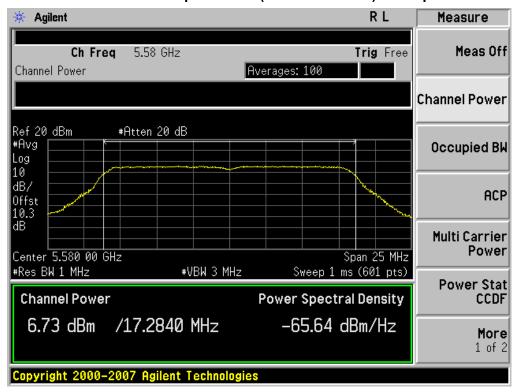
#### Conducted Output Power (802.11a-CH 116) 36 Mbps



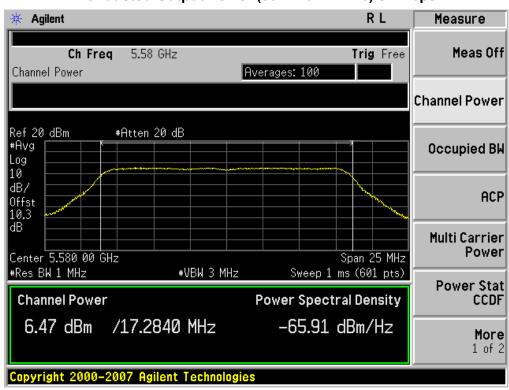
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 116) 48 Mbps



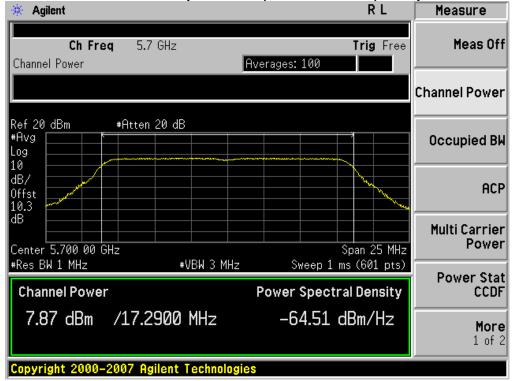
#### Conducted Output Power (802.11a-CH 116) 54 Mbps



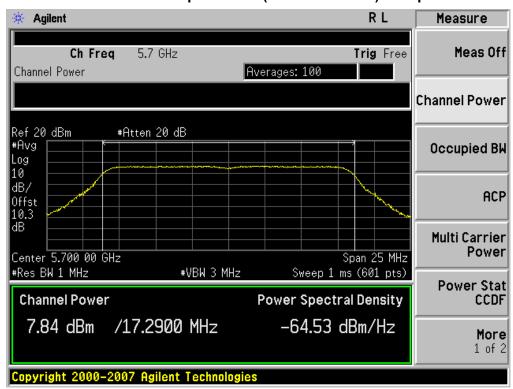
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



Conducted Output Power (802.11a-CH 140) 6 Mbps



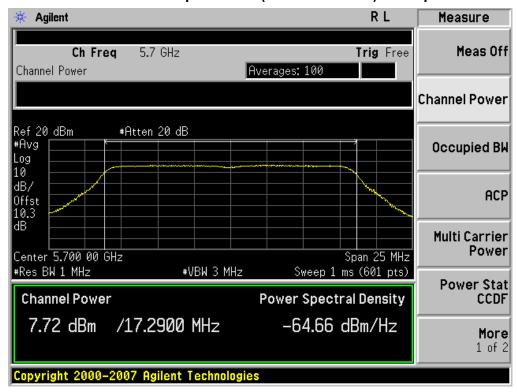
#### Conducted Output Power (802.11a-CH 140) 9 Mbps



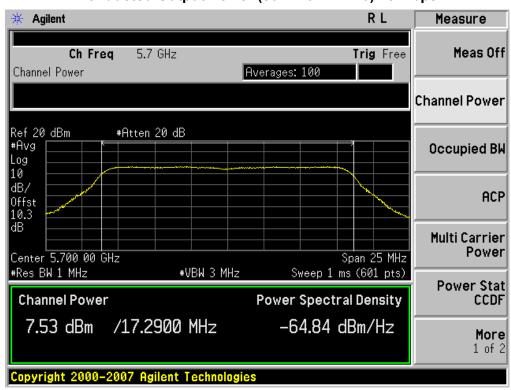
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 140) 12 Mbps



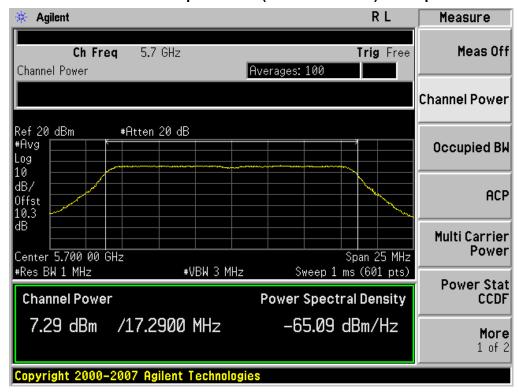
#### Conducted Output Power (802.11a-CH 140) 18 Mbps



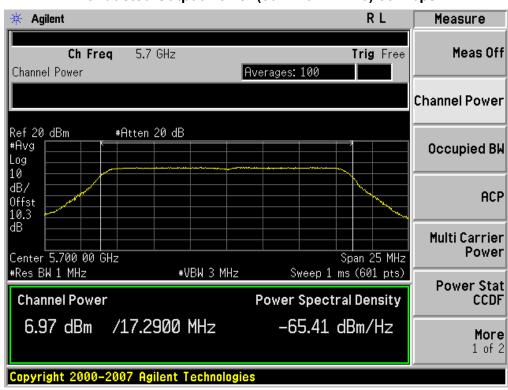
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 140) 24 Mbps



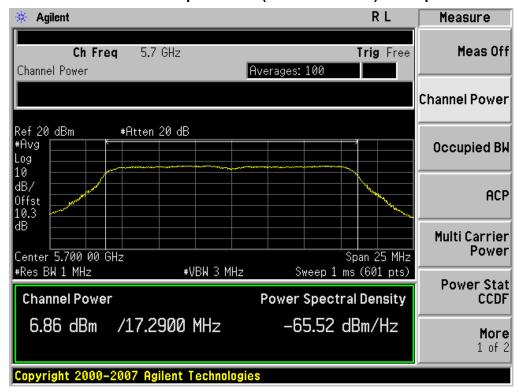
#### Conducted Output Power (802.11a-CH 140) 36 Mbps



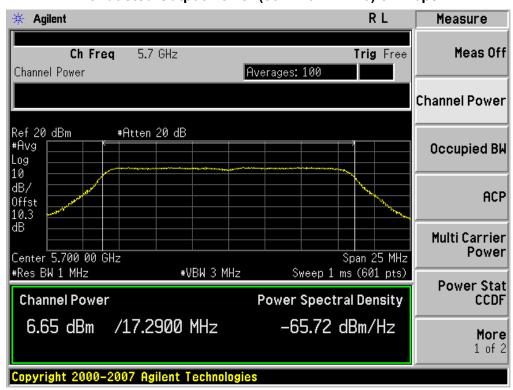
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11a-CH 140) 48 Mbps



#### Conducted Output Power (802.11a-CH 140) 54 Mbps

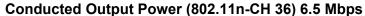


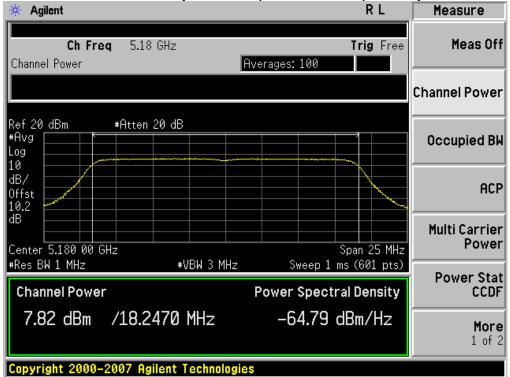
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



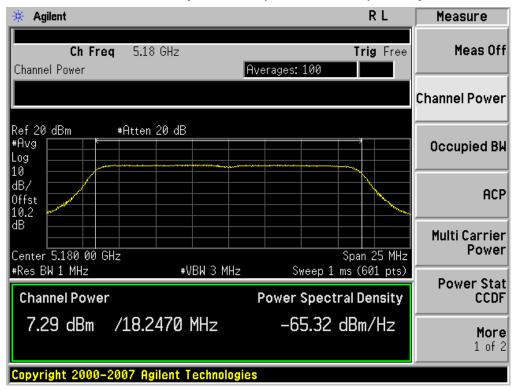
#### 20 MHz BW

#### ■ RESULT PLOTS (5180 MHz ~5240 MHz)





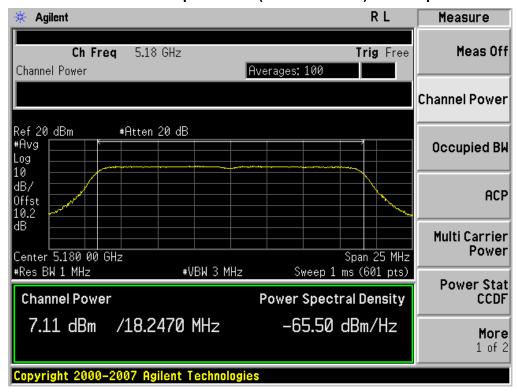
## Conducted Output Power (802.11n-CH 36) 13 Mbps



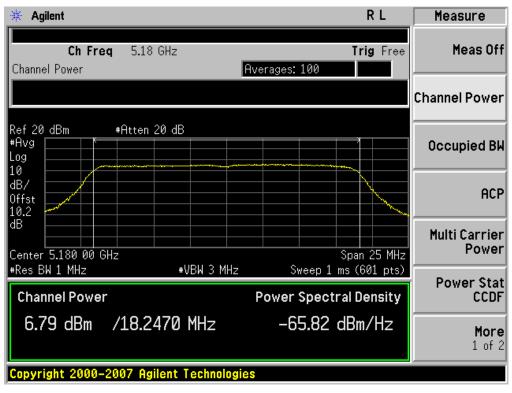
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 36) 19.5 Mbps



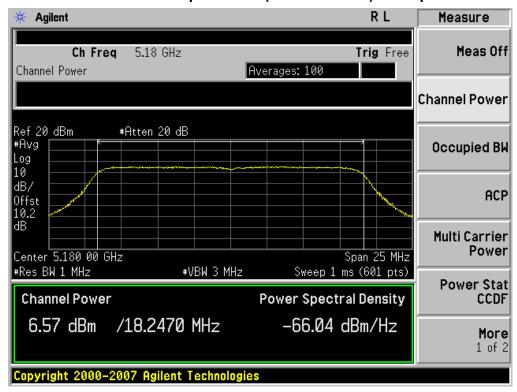
# Conducted Output Power (802.11n-CH 36) 26 Mbps



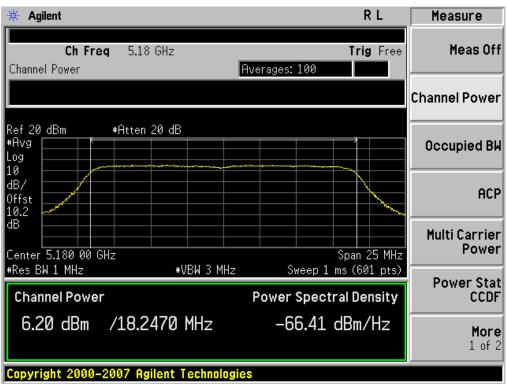
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 36) 39 Mbps



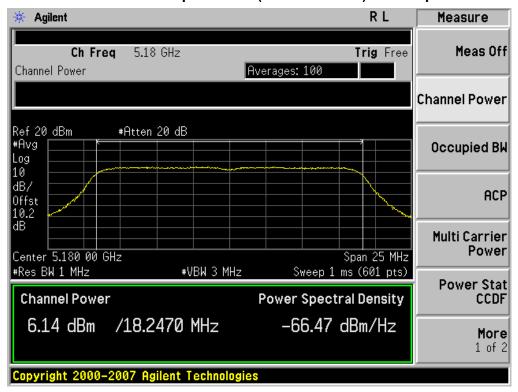
# Conducted Output Power (802.11n-CH 36) 52 Mbps



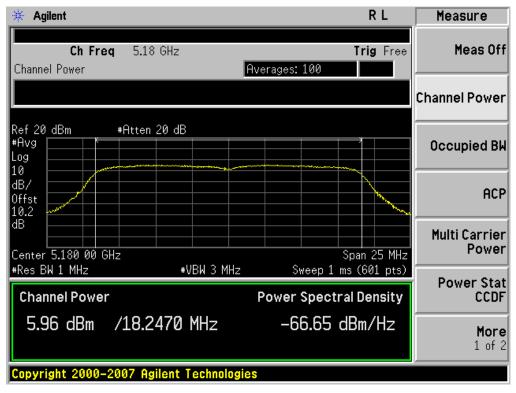
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 36) 58.5 Mbps



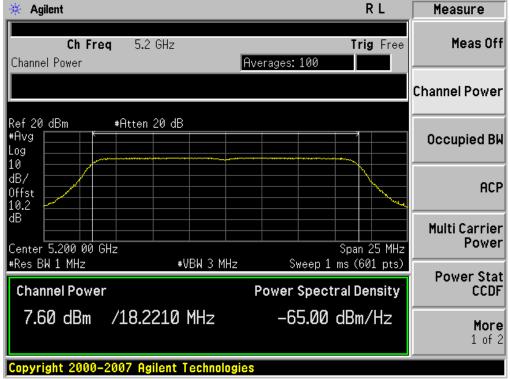
# Conducted Output Power (802.11n-CH 36) 65 Mbps



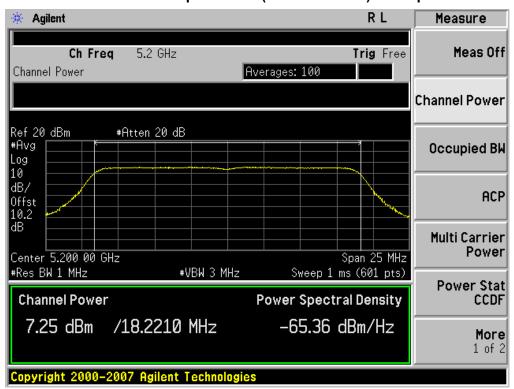
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



Conducted Output Power (802.11n-CH 40) 6.5 Mbps



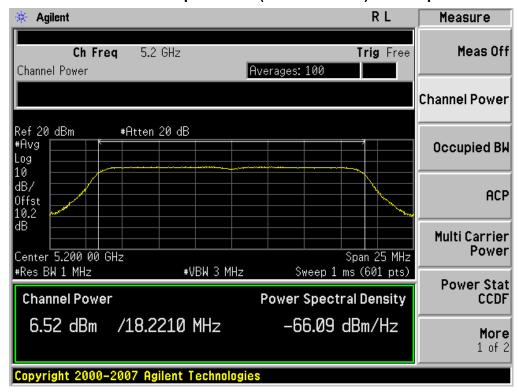
#### Conducted Output Power (802.11n-CH 40) 13 Mbps



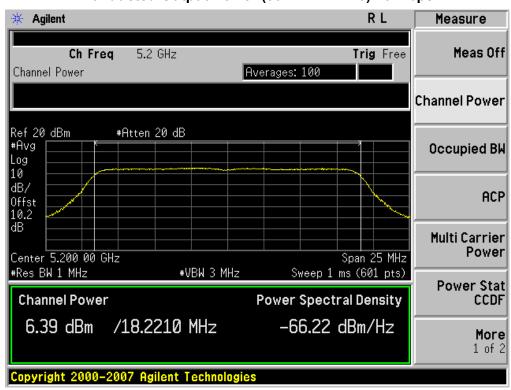
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 40) 19.5 Mbps



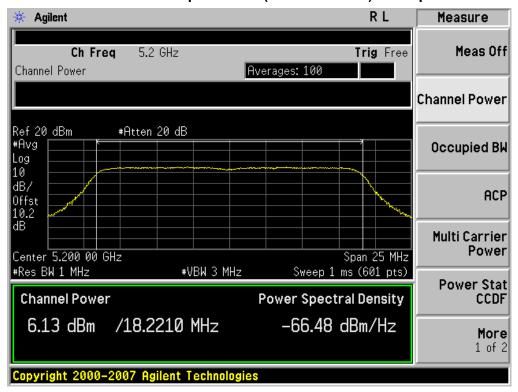
#### Conducted Output Power (802.11n-CH 40) 26 Mbps



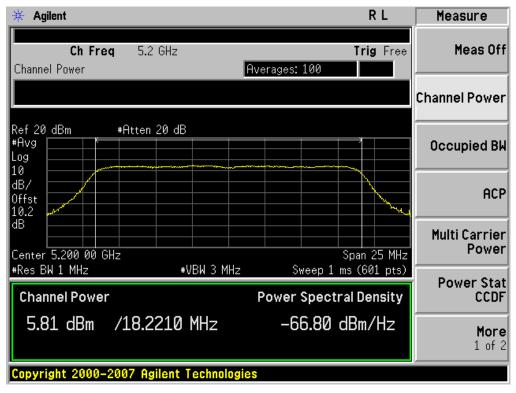
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 40) 39 Mbps



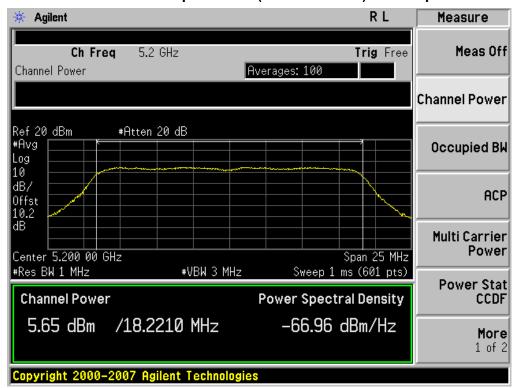
# Conducted Output Power (802.11n-CH 40) 52 Mbps



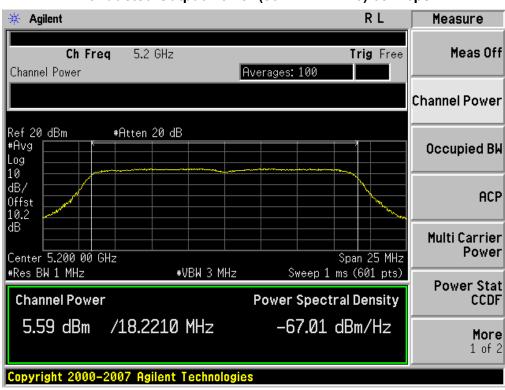
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 40) 58.5 Mbps



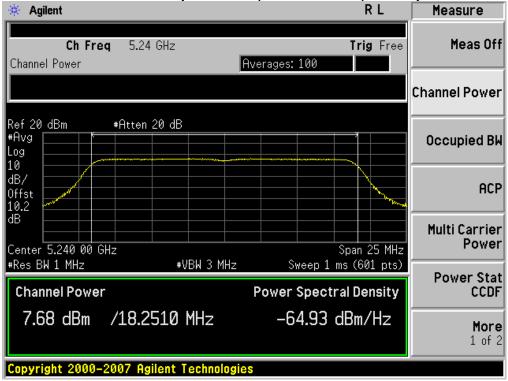
#### Conducted Output Power (802.11n-CH 40) 65 Mbps



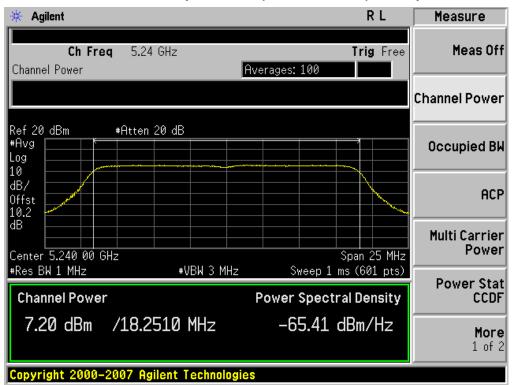
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



Conducted Output Power (802.11n-CH 48) 6.5 Mbps



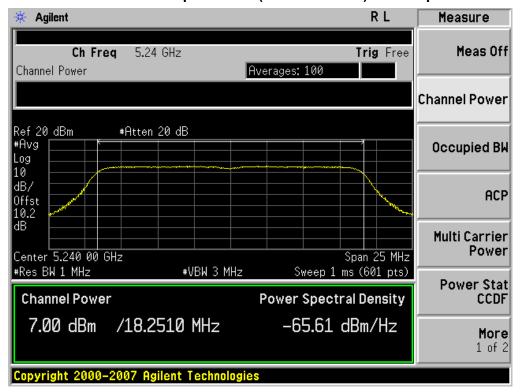
# Conducted Output Power (802.11n-CH 48) 13 Mbps



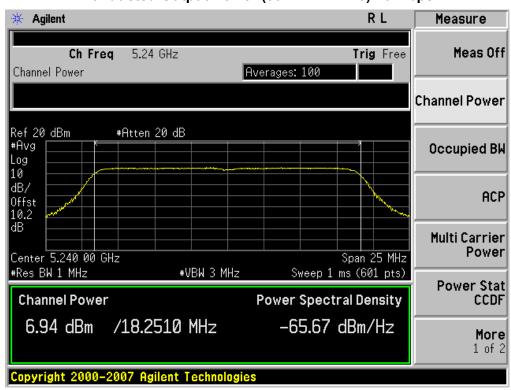
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 48) 19.5 Mbps



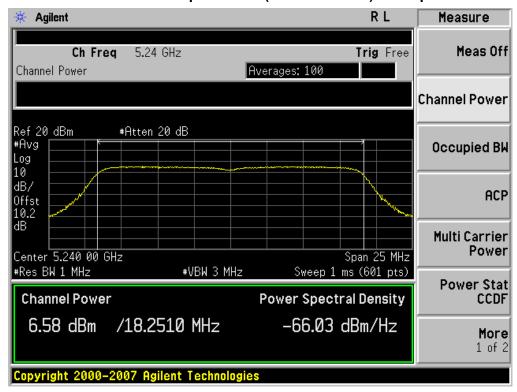
#### Conducted Output Power (802.11n-CH 48) 26 Mbps



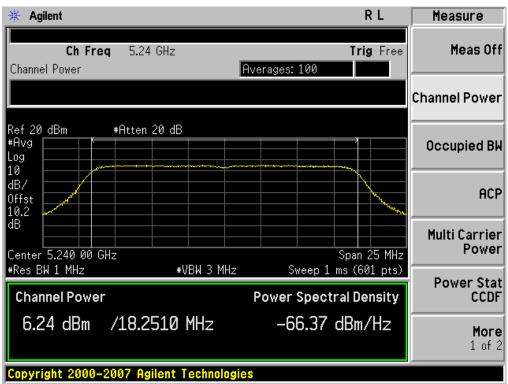
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 48) 39 Mbps



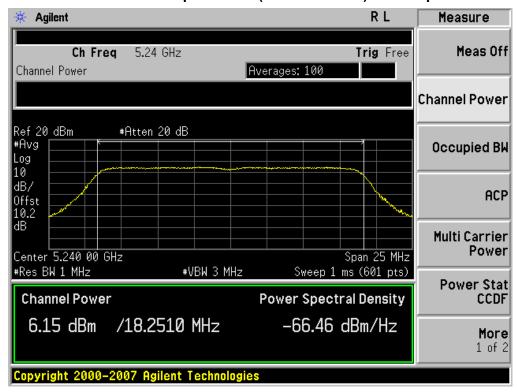
# Conducted Output Power (802.11n-CH 48) 52 Mbps



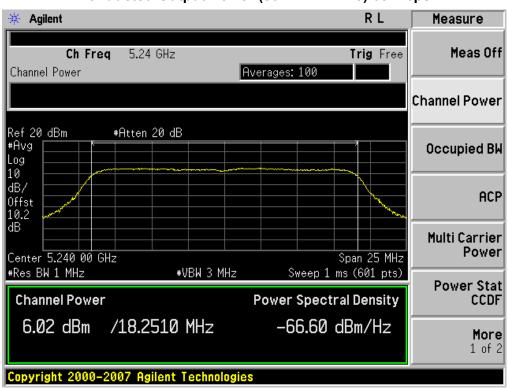
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 48) 58.5 Mbps



#### Conducted Output Power (802.11n-CH 48) 65 Mbps

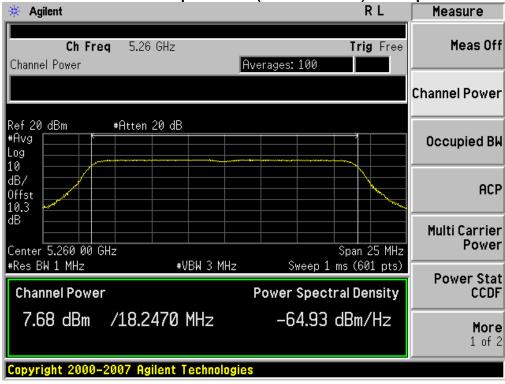


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E

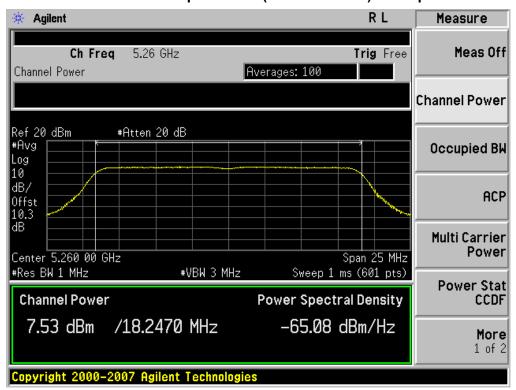


#### ■ RESULT PLOTS (5260 MHz ~5320 MHz)

Conducted Output Power (802.11n-CH 52) 6.5 Mbps



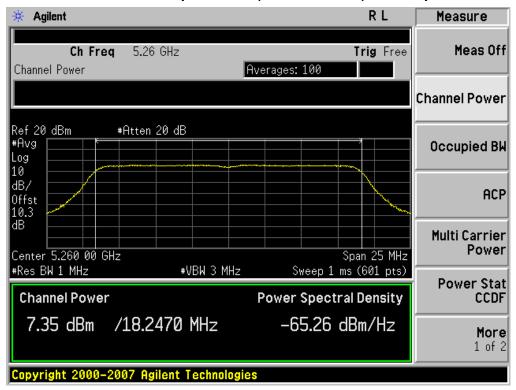
#### Conducted Output Power (802.11n-CH 52) 13 Mbps



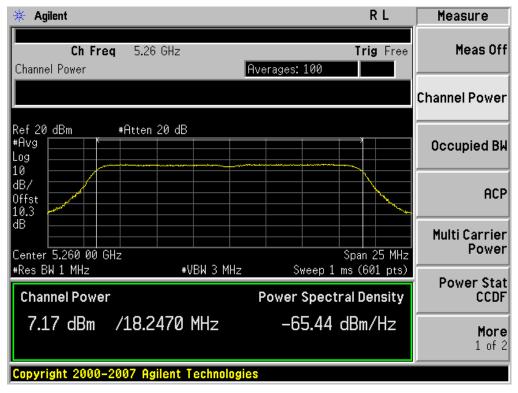
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 52) 19.5 Mbps



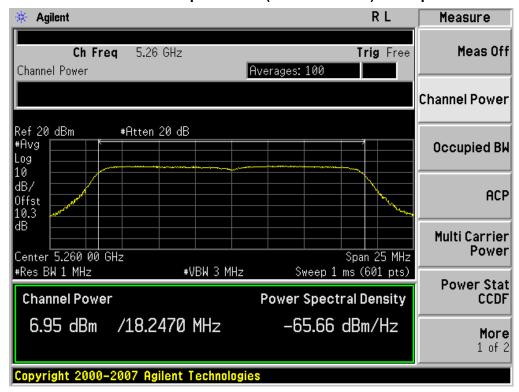
# Conducted Output Power (802.11n-CH 52) 26 Mbps



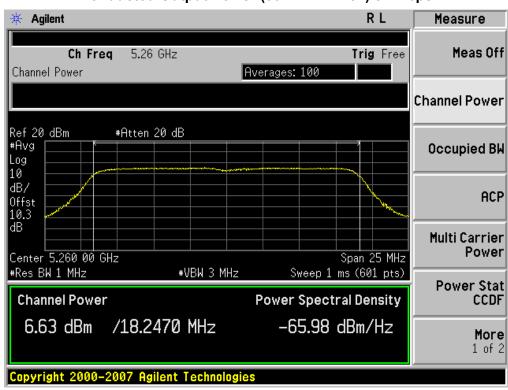
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 52) 39 Mbps



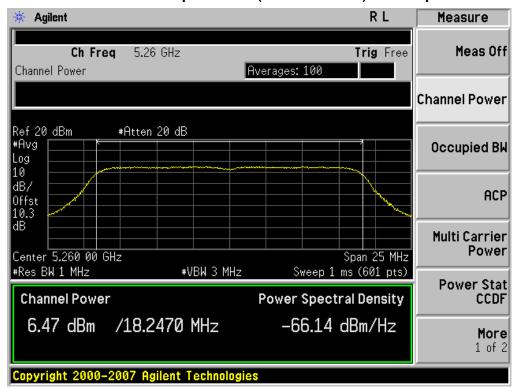
#### Conducted Output Power (802.11n-CH 52) 52 Mbps



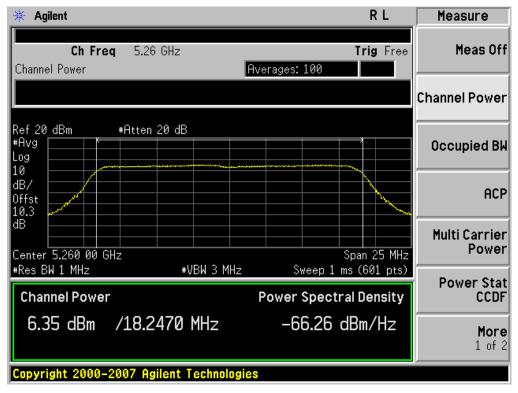
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 52) 58.5 Mbps



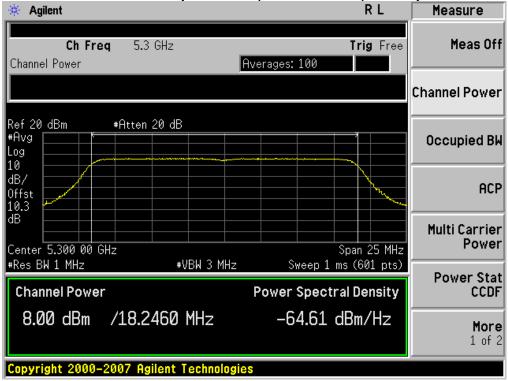
# Conducted Output Power (802.11n-CH 52) 65 Mbps



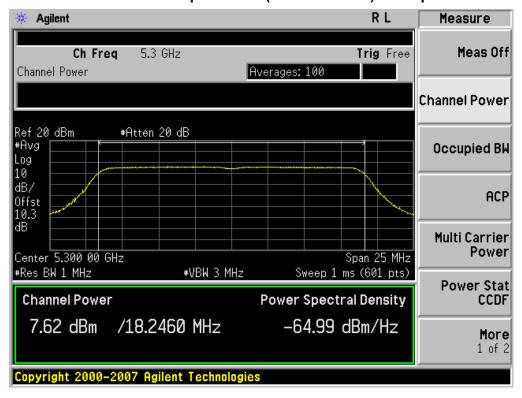
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



Conducted Output Power (802.11n-CH 60) 6.5 Mbps



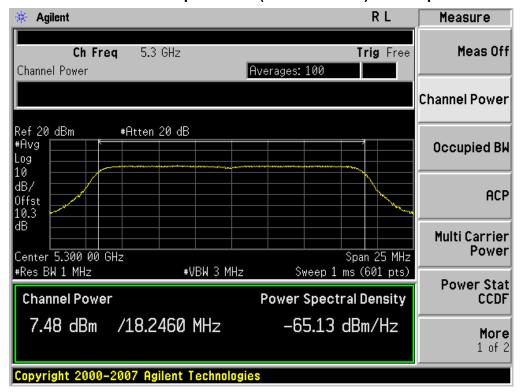
#### Conducted Output Power (802.11n-CH 60) 13 Mbps



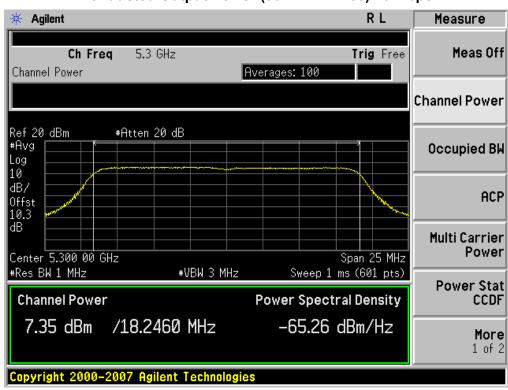
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 60) 19.5 Mbps



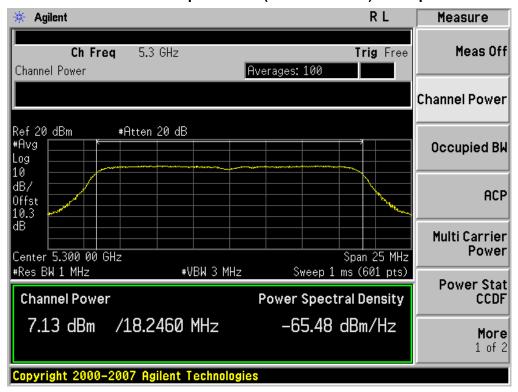
#### Conducted Output Power (802.11n-CH 60) 26 Mbps



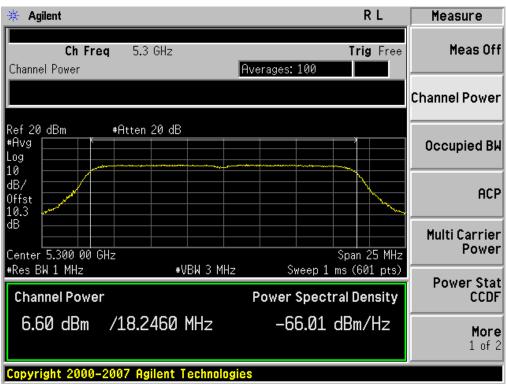
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 60) 39 Mbps



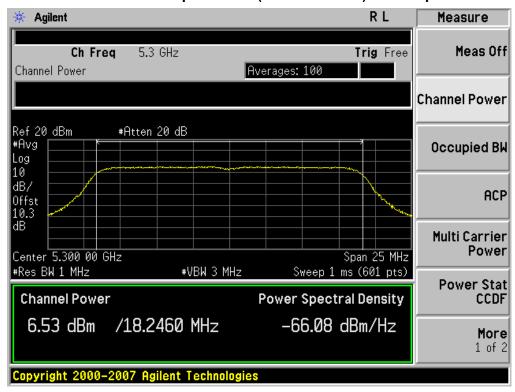
# Conducted Output Power (802.11n-CH 60) 52 Mbps



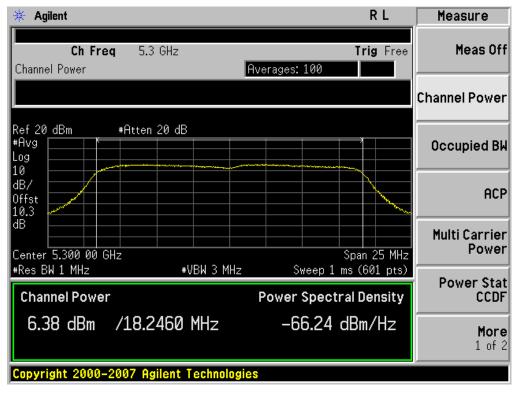
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 60) 58.5 Mbps



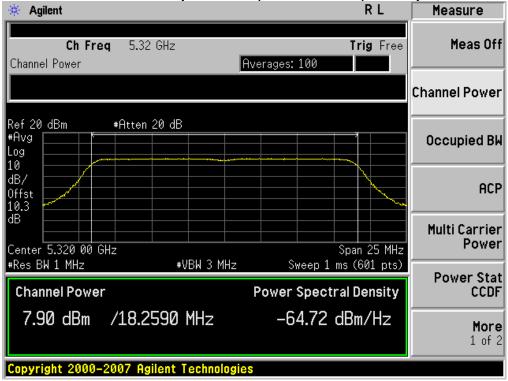
# Conducted Output Power (802.11n-CH 60) 65 Mbps



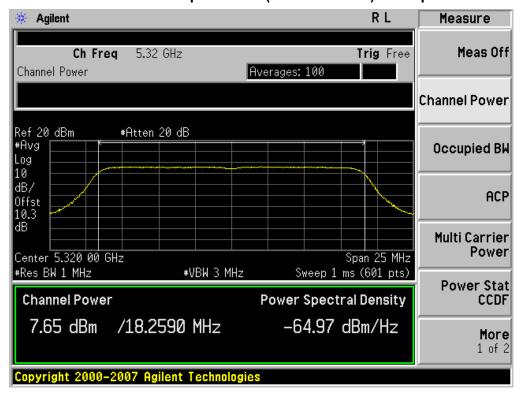
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



Conducted Output Power (802.11n-CH 64) 6.5 Mbps



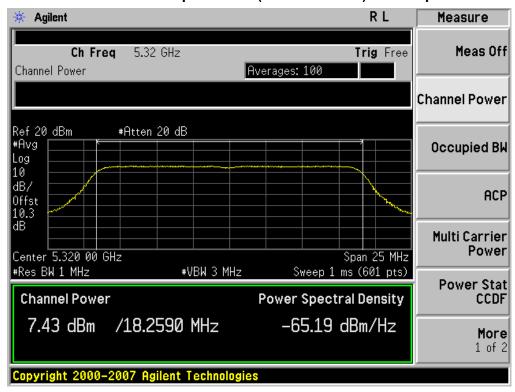
#### Conducted Output Power (802.11n-CH 64) 13 Mbps



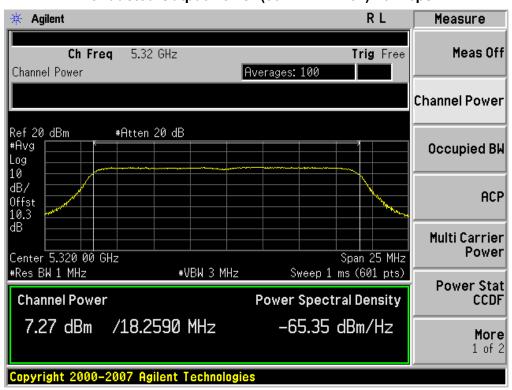
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 64) 19.5 Mbps



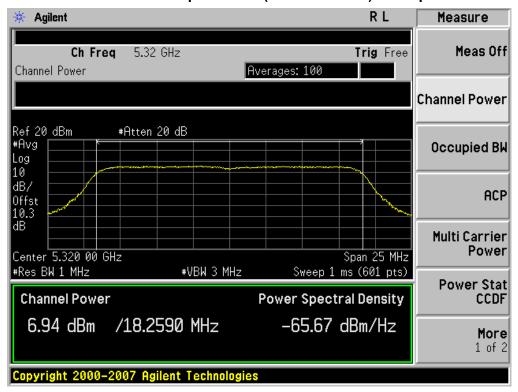
#### Conducted Output Power (802.11n-CH 64) 26 Mbps



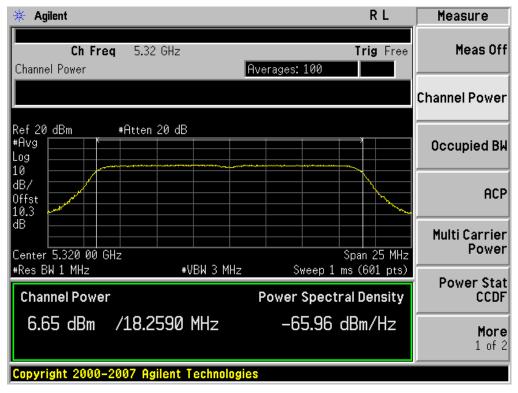
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 64) 39 Mbps



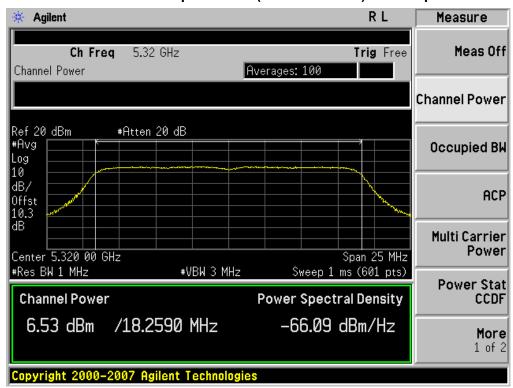
# Conducted Output Power (802.11n-CH 64) 52 Mbps



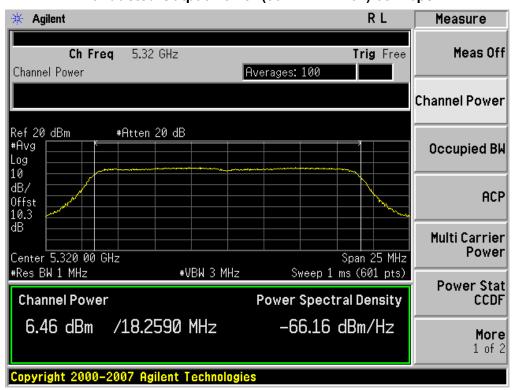
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 64) 58.5 Mbps



#### Conducted Output Power (802.11n-CH 64) 65 Mbps

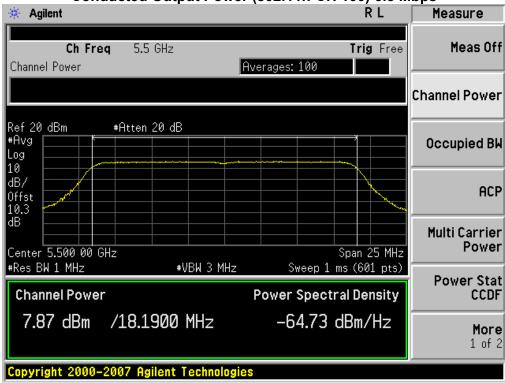


FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E

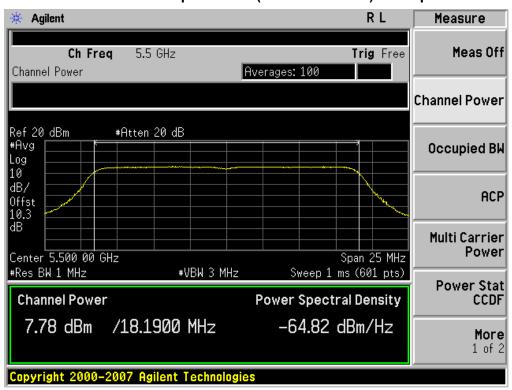


#### ■ RESULT PLOTS (5500 MHz ~5700 MHz)

Conducted Output Power (802.11n-CH 100) 6.5 Mbps



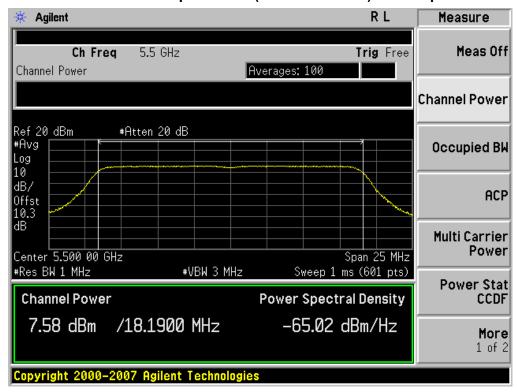
#### Conducted Output Power (802.11n-CH 100) 13 Mbps



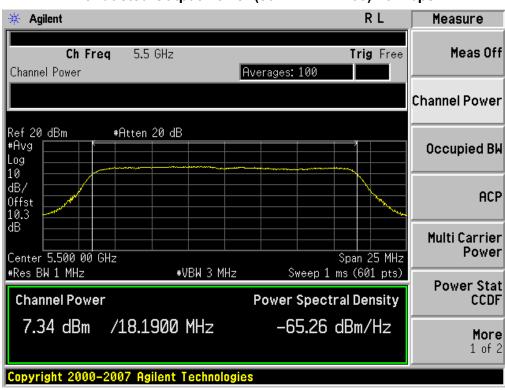
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 100) 19.5 Mbps



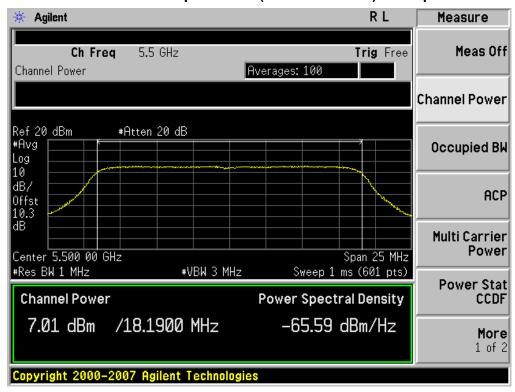
#### Conducted Output Power (802.11n-CH 100) 26 Mbps



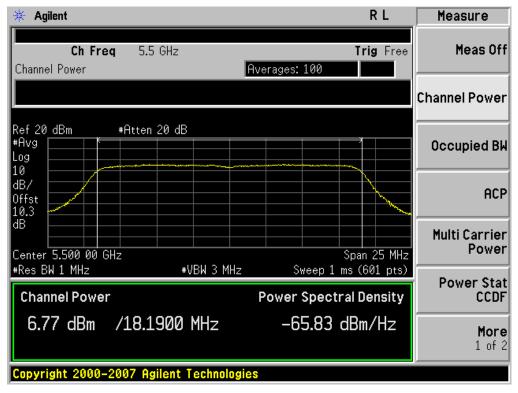
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 100) 39 Mbps



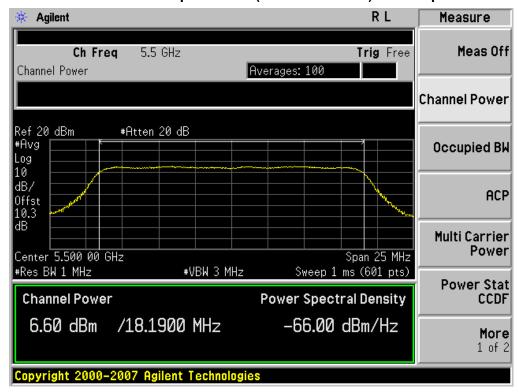
# Conducted Output Power (802.11n-CH 100) 52 Mbps



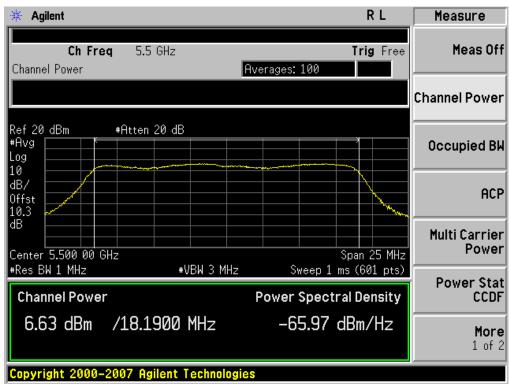
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 100) 58.5 Mbps



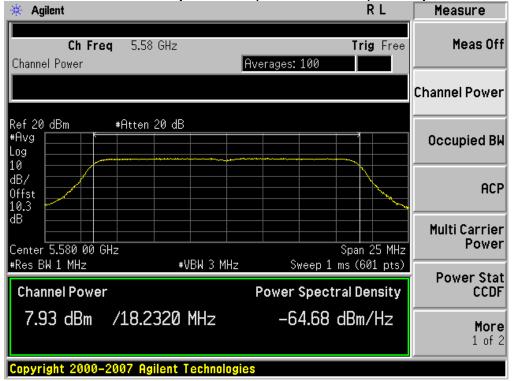
# Conducted Output Power (802.11n-CH 100) 65 Mbps



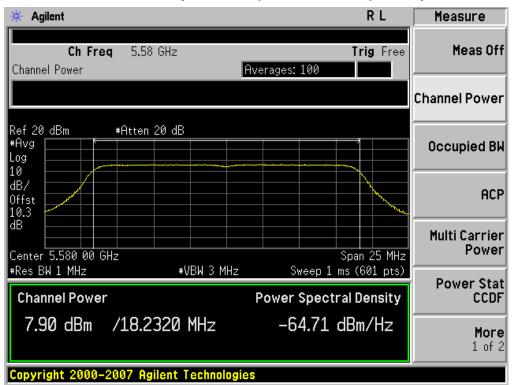
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



Conducted Output Power (802.11n-CH 116) 6.5 Mbps



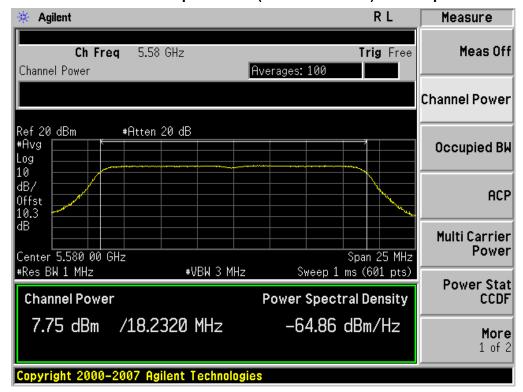
# Conducted Output Power (802.11n-CH 116) 13 Mbps



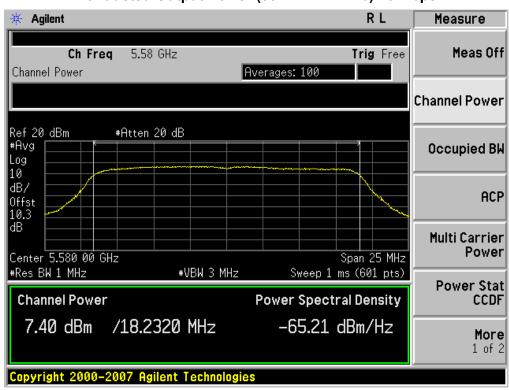
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 116) 19.5 Mbps



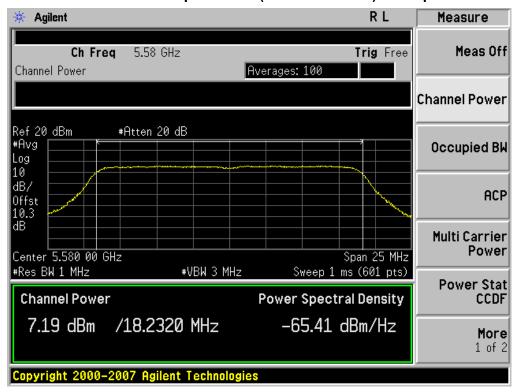
#### Conducted Output Power (802.11n-CH 116) 26 Mbps



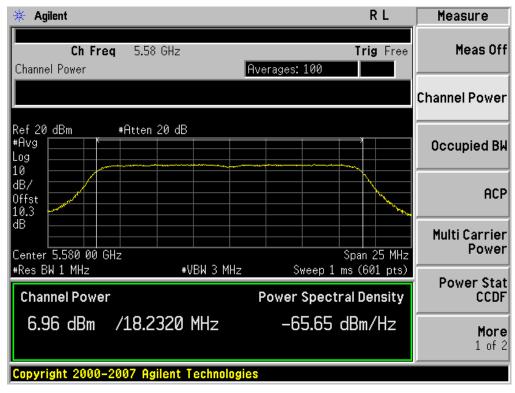
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 116) 39 Mbps



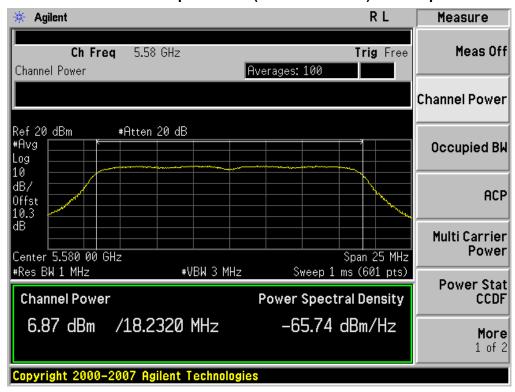
# Conducted Output Power (802.11n-CH 116) 52 Mbps



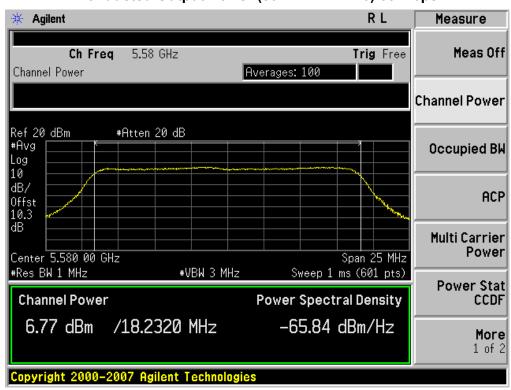
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 116) 58.5 Mbps



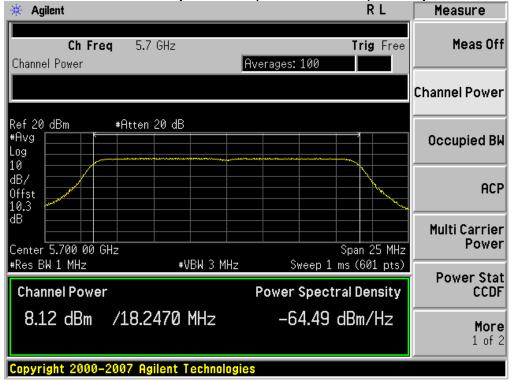
#### Conducted Output Power (802.11n-CH 116) 65 Mbps



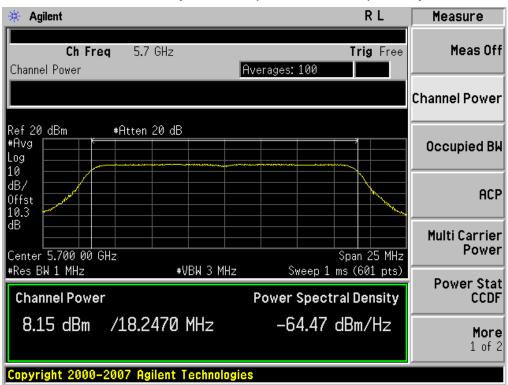
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



Conducted Output Power (802.11n-CH 140) 6.5 Mbps



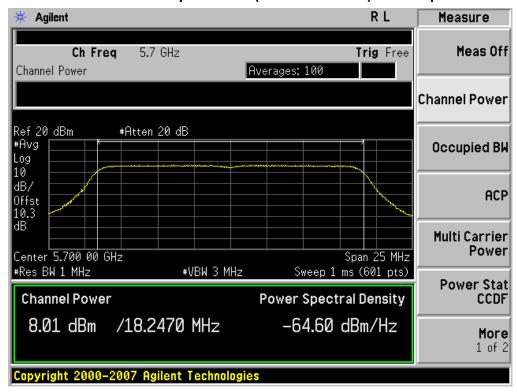
# Conducted Output Power (802.11n-CH 140) 13 Mbps



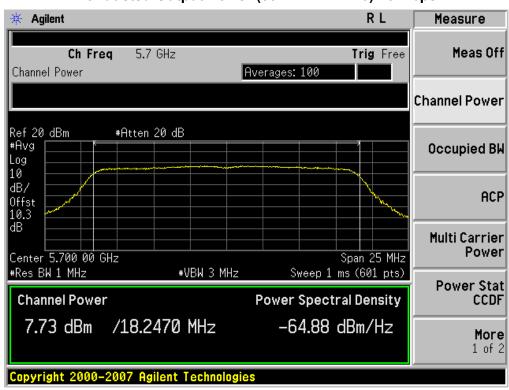
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 140) 19.5 Mbps



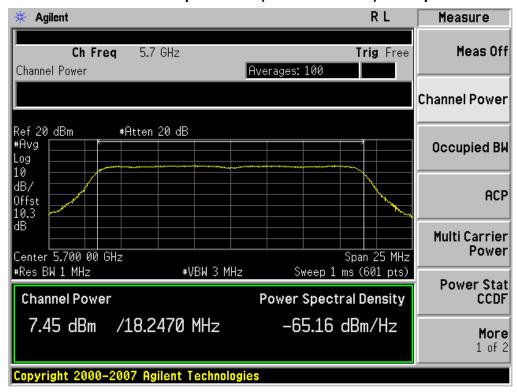
#### Conducted Output Power (802.11n-CH 140) 26 Mbps



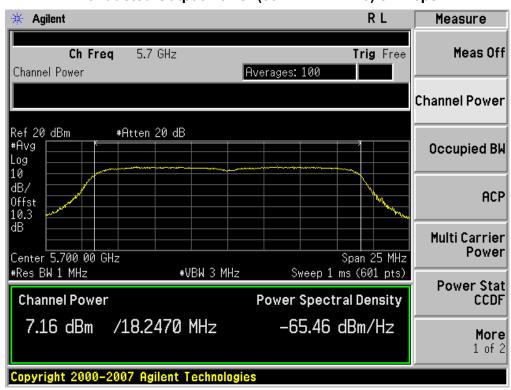
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 140) 39 Mbps



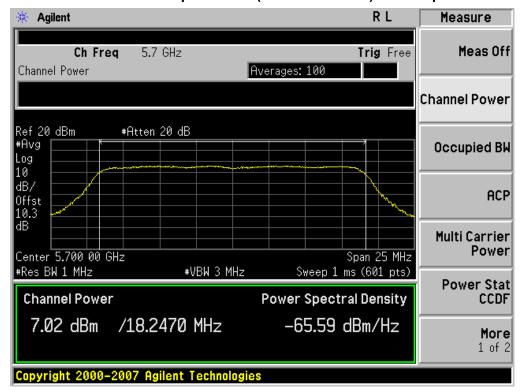
#### Conducted Output Power (802.11n-CH 140) 52 Mbps



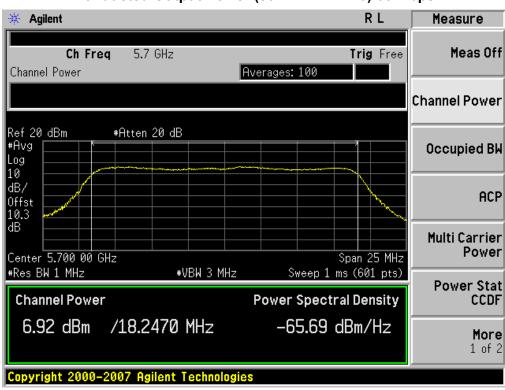
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 140) 58.5 Mbps



#### Conducted Output Power (802.11n-CH 140) 65 Mbps

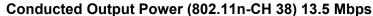


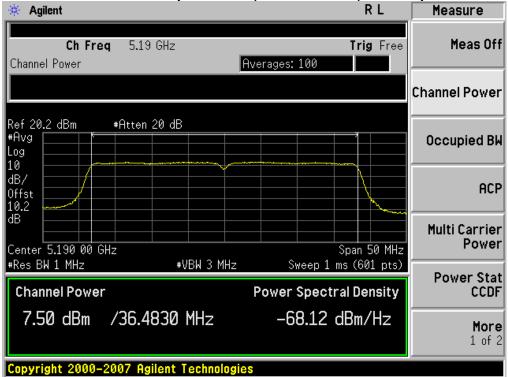
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



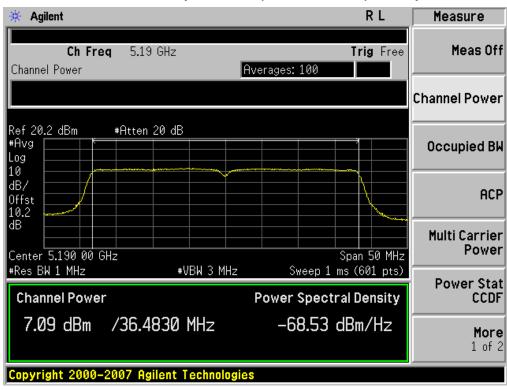
#### 40 MHz BW

#### ■ RESULT PLOTS (5190 MHz ~5230 MHz)





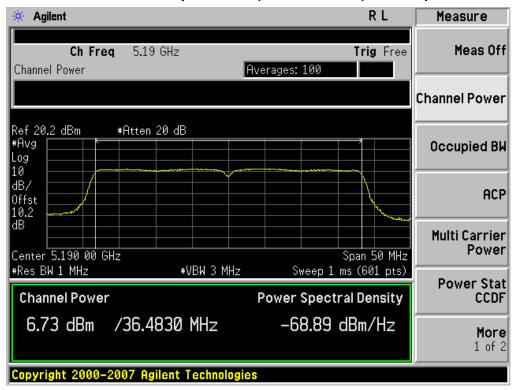
## Conducted Output Power (802.11n-CH 38) 27 Mbps



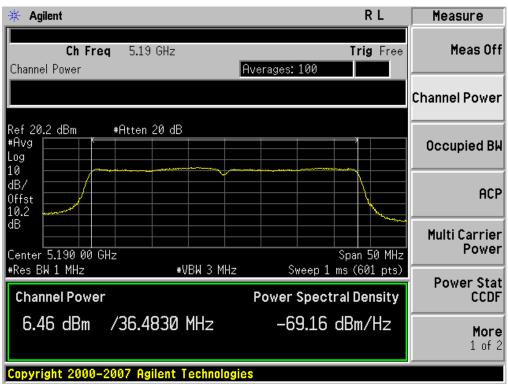
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 38) 40.5 Mbps



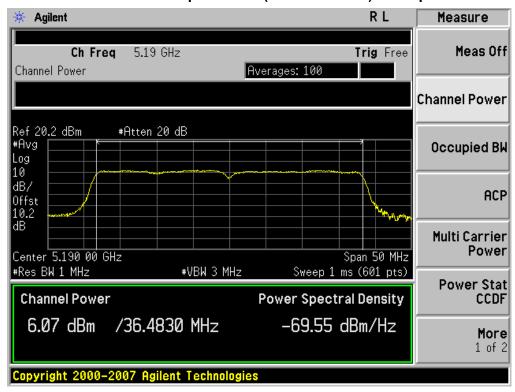
# Conducted Output Power (802.11n-CH 38) 54 Mbps



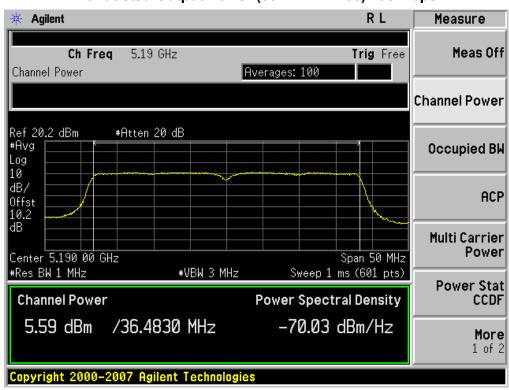
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 38) 81 Mbps



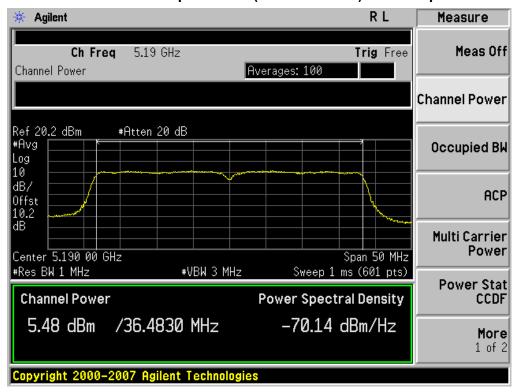
#### Conducted Output Power (802.11n-CH 38) 108 Mbps



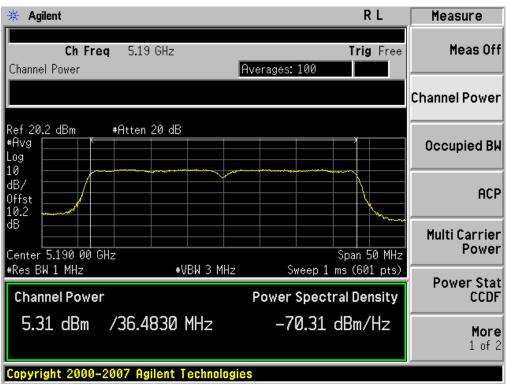
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 38) 121.5 Mbps



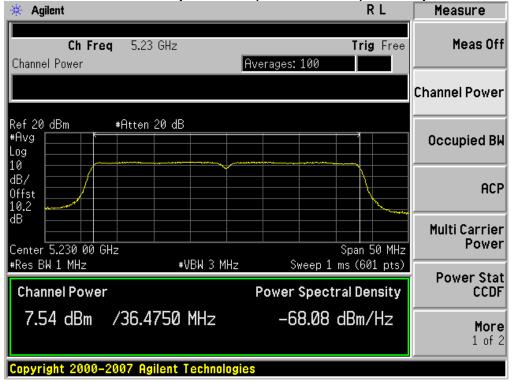
# Conducted Output Power (802.11n-CH 38) 135 Mbps



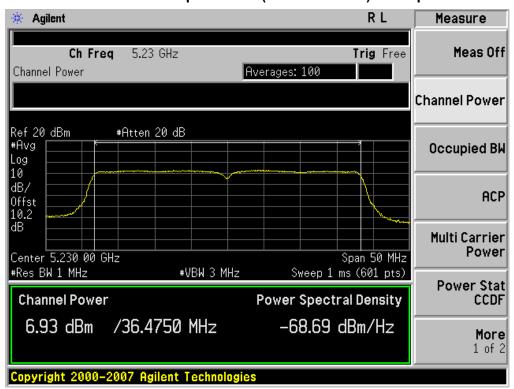
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



Conducted Output Power (802.11n-CH 46) 13.5 Mbps



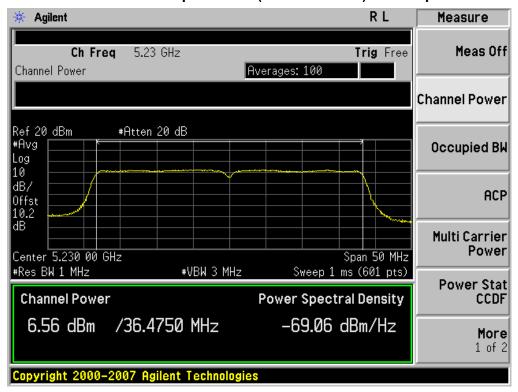
#### Conducted Output Power (802.11n-CH 46) 27 Mbps



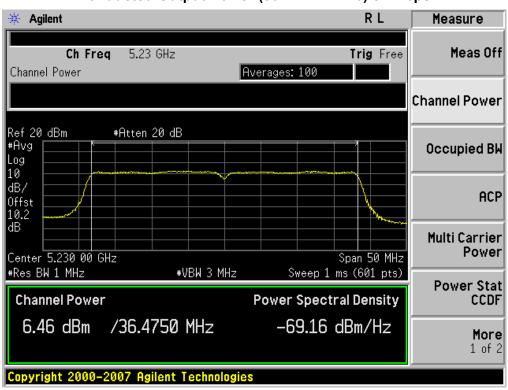
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 46) 40.5 Mbps



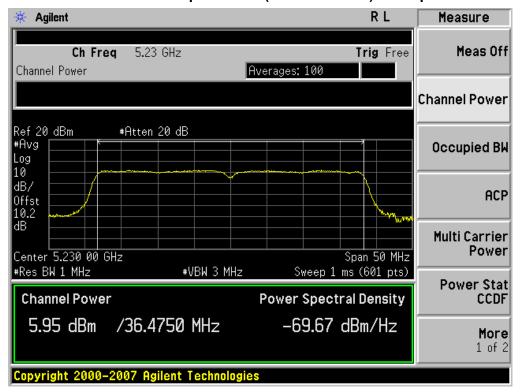
#### Conducted Output Power (802.11n-CH 46) 54 Mbps



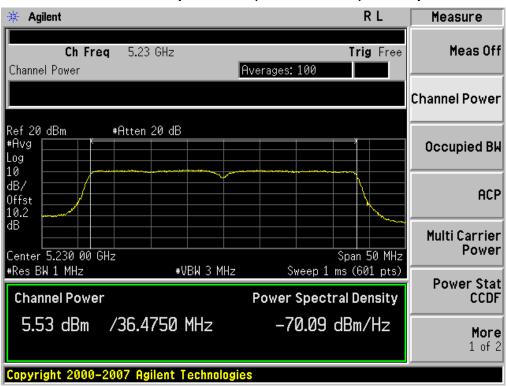
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No.	Date of Issue:	<b>EUT Type:</b> Cellular/PCS GSM/GPRS and Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN, NFC(Felica), A-GPS, Wireless Charger, Wi-Fi Direct	FCC ID:
HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 46) 81 Mbps



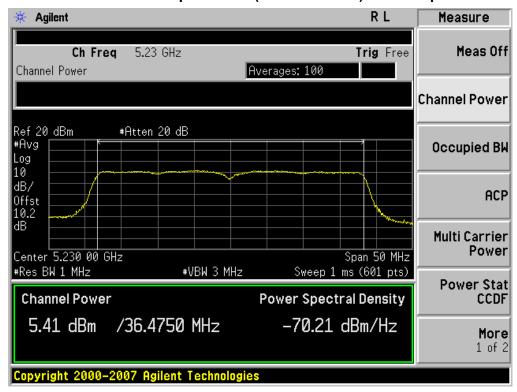
# Conducted Output Power (802.11n-CH 46) 108 Mbps



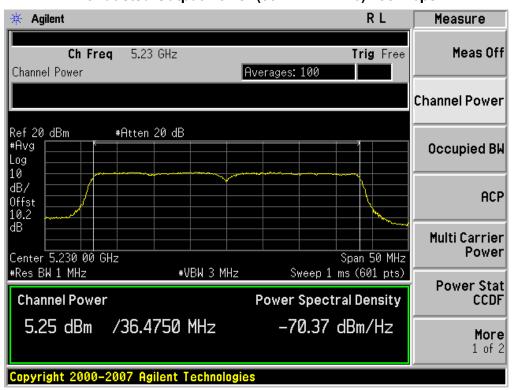
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
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HCTR1304FR26-3	May 07, 2013		ZNFL05E



### Conducted Output Power (802.11n-CH 46) 121.5 Mbps



#### Conducted Output Power (802.11n-CH 46) 135 Mbps



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