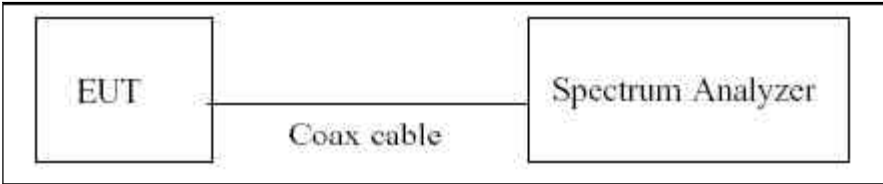


### 8.3 POWER SPECTRAL DENSITY

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies. The maximum permissible peak power spectral density is 4 dBm/ MHz in the 5.15 GHz – 5.25 GHz band and 11 dBm/ MHz in the 5.25 GHz – 5.35 GHz and 5.47 GHz – 5.725 GHz bands

#### ■ TEST CONFIGURATION



#### ■ TEST PROCEDURE

The spectrum analyzer is set to :

RBW = 1 MHz

VBW = 3 MHz

SPAN = to encompass the entire EBW of the signal

Sweep Time = auto

Detector Mode = Average

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

#### ■ Sample Calculation

$$\begin{aligned}
 \text{PSD} &= \text{Reading Value} + \text{ATT loss} + \text{Cable loss}(1 \text{ ea}) \\
 &= -5 \text{ dBm} + 10 \text{ dB} + 0.8 \text{ dB} = 15.8 \text{ dBm}
 \end{aligned}$$

Note :

1. Spectrum reading values are not plot data. The PSD 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 10.78 dB at 5.2 GHz and is 10.81 dB at 5.3 GHz and is 10.86 at 5500 MHz, 10.89 at 5580 MHz, 10.91 at 5700 MHz.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC		FCC ID: ZNFP880

■ TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result		
			Power Density (dBm)	Limit (dBm)	Pass/Fail
5180	36	802.11a	-2.903	4	Pass
5200	40		-3.113	4	Pass
5240	48		-3.150	4	Pass
5260	52	802.11a	-3.224	11	Pass
5300	60		-2.769	11	Pass
5320	64		-2.830	11	Pass
5500	100	802.11a	-4.234	11	Pass
5580	116		-4.092	11	Pass
5700	140		-5.108	11	Pass

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result		
			Power Density (dBm)	Limit (dBm)	Pass/Fail
5180	36	802.11n	-4.614	4	Pass
5200	40		-4.616	4	Pass
5240	48		-4.571	4	Pass
5260	52	802.11n	-4.496	11	Pass
5300	60		-4.435	11	Pass
5320	64		-4.440	11	Pass
5500	100	802.11n	-5.628	11	Pass
5580	116		-5.462	11	Pass
5700	140		-6.270	11	Pass

■ RESULT PLOTS

Power Spectral Density (802.11a-CH 36)



Power Spectral Density (802.11a-CH 40)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Power Spectral Density (802.11a-CH 48)



### Power Spectral Density (802.11a-CH 52)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Power Spectral Density (802.11a-CH 60)



### Power Spectral Density (802.11a-CH 64)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Power Spectral Density (802.11a-CH 100)



### Power Spectral Density (802.11a-CH 120)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Power Spectral Density (802.11a-CH 140)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Power Spectral Density (802.11n-CH 36)



### Power Spectral Density (802.11n-CH 40)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880



### Power Spectral Density (802.11n-CH 48)



### Power Spectral Density (802.11n-CH 52)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Power Spectral Density (802.11n-CH 60)



### Power Spectral Density (802.11n-CH 64)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Power Spectral Density (802.11n-CH 100)



### Power Spectral Density (802.11n-CH 120)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Power Spectral Density (802.11n-CH 140)

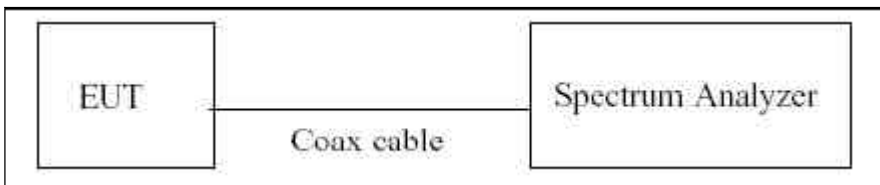


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

## 8.4 PEAK EXCURSION RATIO

The spectrum analyzer was connected to the antenna terminal while the EUT was operating in the continuous transmission mode at the appropriate center frequencies. The largest permissible difference between the modulation envelope(measured using a peak hold function) and the maximum conducted output power 13 dBm/MHz.

### ■ TEST CONFIGURATION



### ■ TEST PROCEDURE

We tested according to KDB 789033(issued 03/05/2012).

The spectrum analyzer is set to :

1. Span = Set the span to view the entire emission bandwidth.
2. RBW = 1 MHz
3. VBW = 3 MHz
4. Sweep = Auto couple
5. Detector Mode = Peak
6. Trace Mode = Max hold
7. Use the procedure to measure the PPSD
8. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

Note :

1. The PSD 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 10.78 dB at 5.2 GHz and is 10.81 dB at 5.3 GHz and is 10.86 at 5500 MHz, 10.89 at 5580 MHz, 10.91 at 5700 MHz.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC		FCC ID: ZNFP880

RESULT PLOTS

Peak Excursion Ratio (802.11a-CH 36)

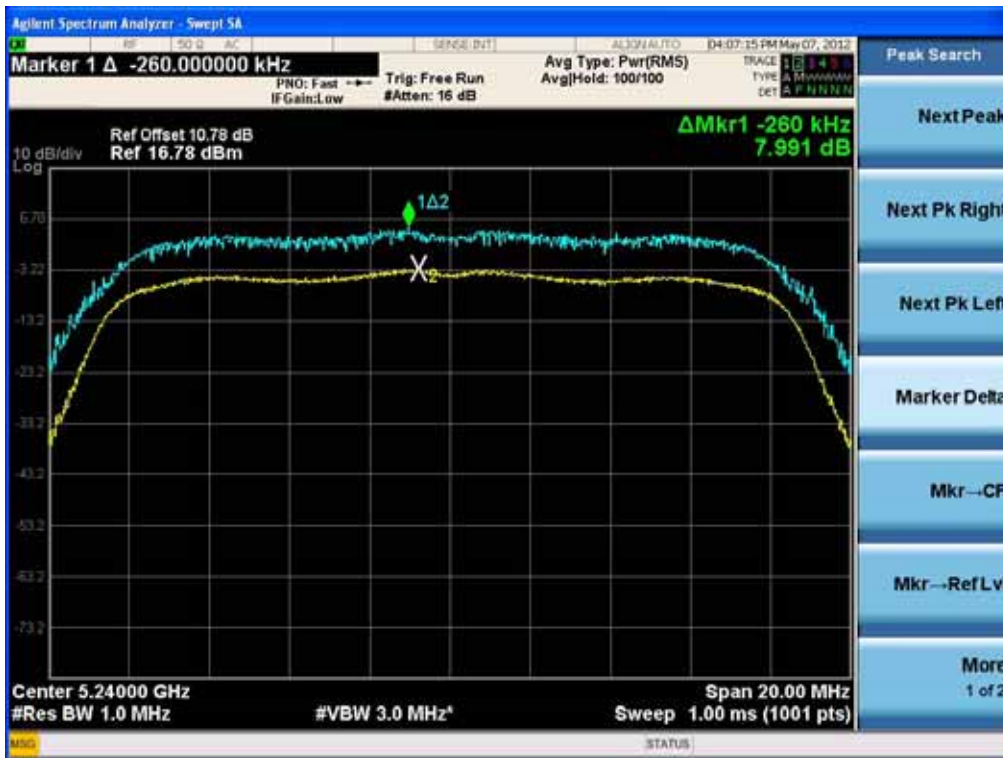


Peak Excursion Ratio (802.11a-CH 40)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Peak Excursion Ratio (802.11a-CH 48)



### Peak Excursion Ratio (802.11a-CH 52)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Peak Excursion Ratio (802.11a-CH 60)



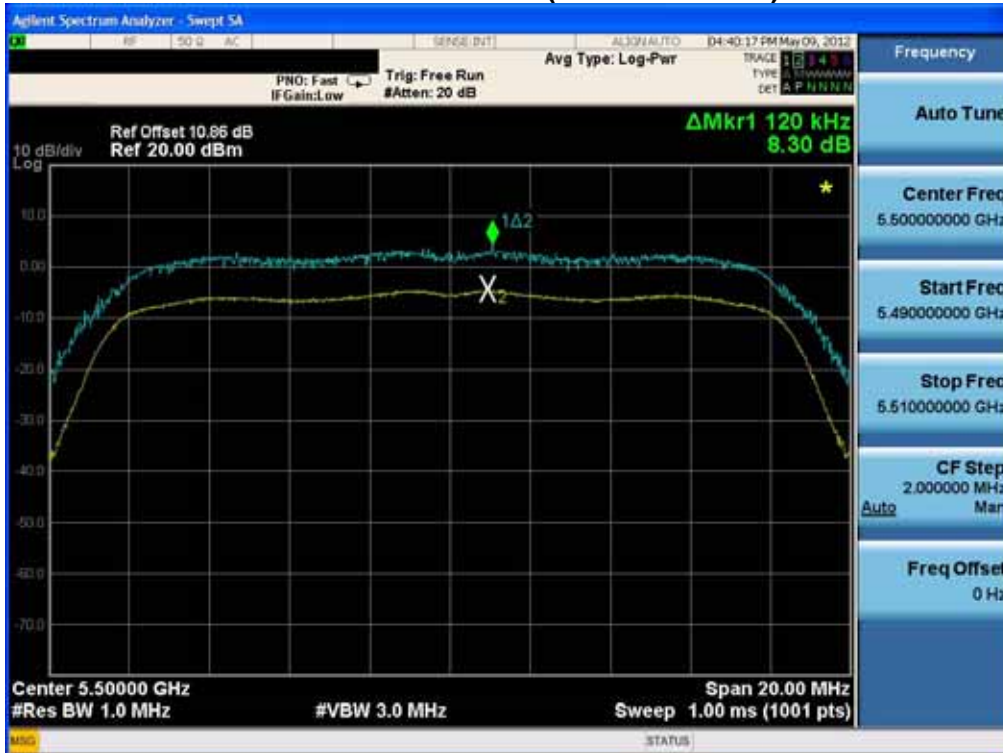
### Peak Excursion Ratio (802.11a-CH 64)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880



### Peak Excursion Ratio (802.11a-CH 100)

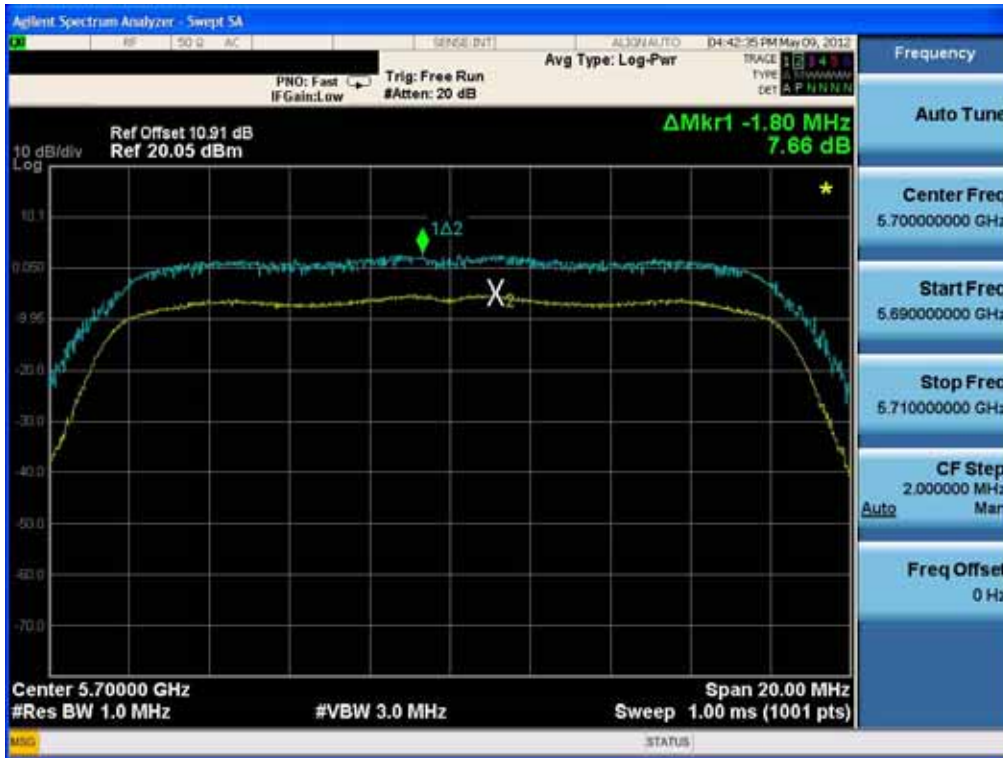


### Peak Excursion Ratio (802.11a-CH 116)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Peak Excursion Ratio (802.11a-CH 140)

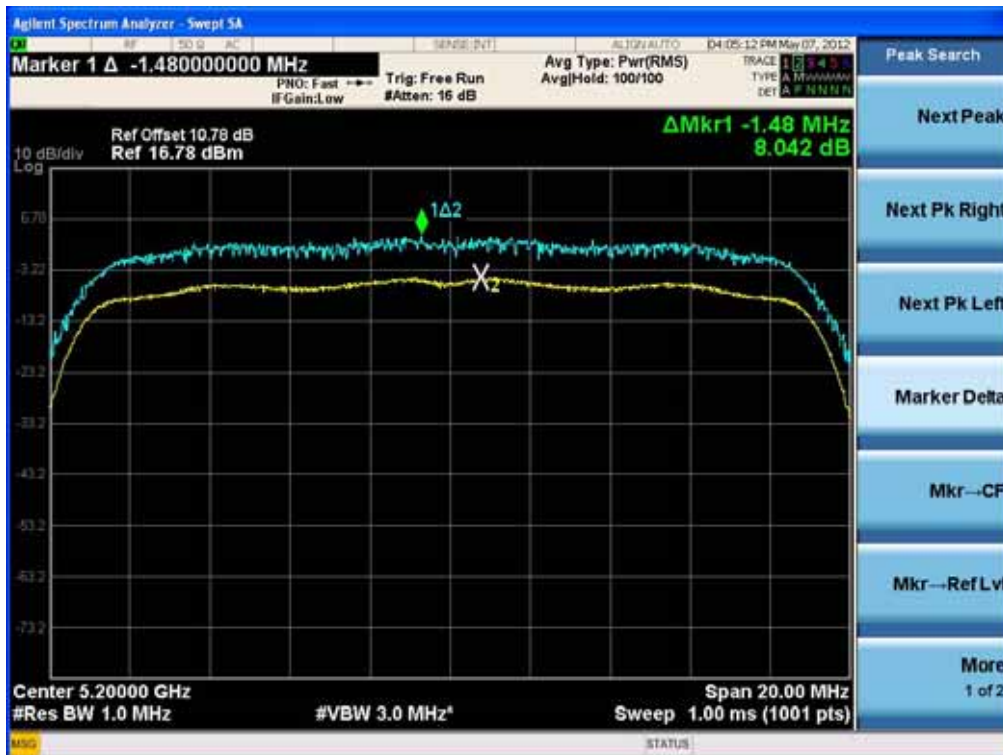


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Peak Excursion Ratio (802.11n-CH 36)



### Peak Excursion Ratio (802.11n-CH 40)

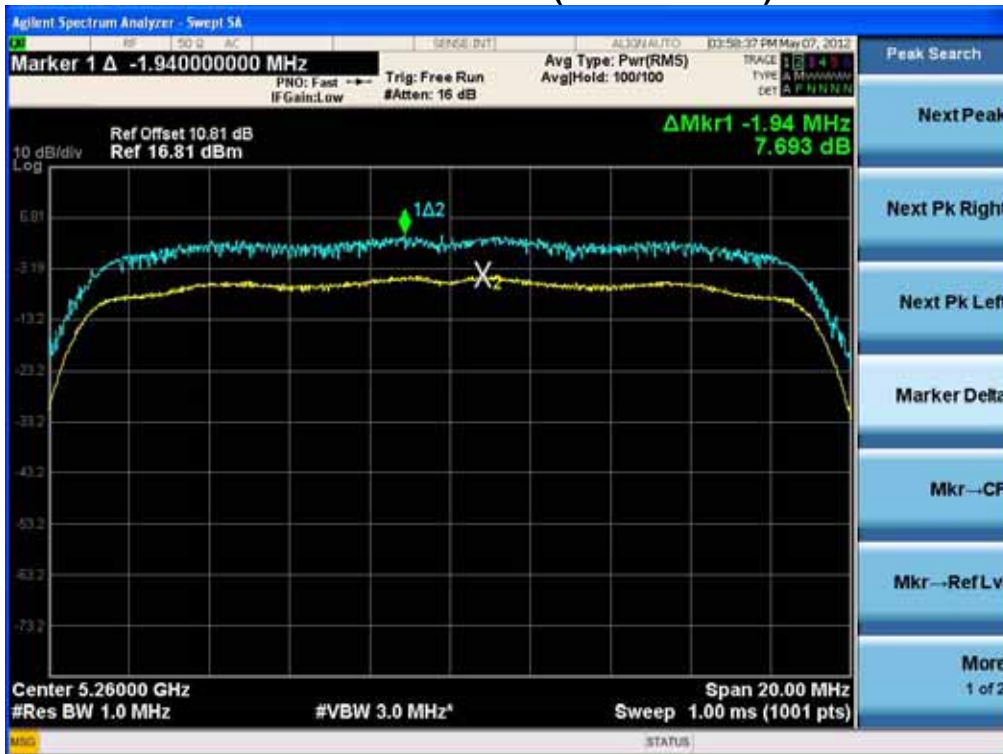


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Peak Excursion Ratio (802.11n-CH 48)



### Peak Excursion Ratio (802.11n-CH 52)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Peak Excursion Ratio (802.11n-CH 60)



### Peak Excursion Ratio (802.11n-CH 64)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Peak Excursion Ratio (802.11n-CH 100)

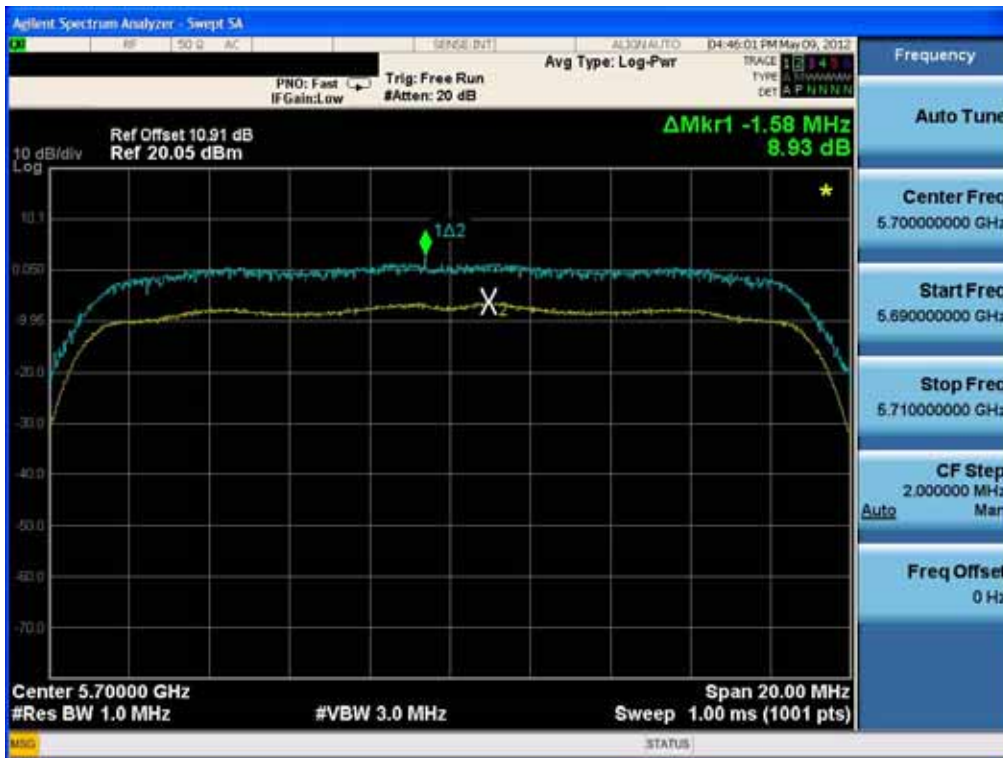


### Peak Excursion Ratio (802.11n-CH 116)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Peak Excursion Ratio (802.11n-CH 140)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### 8.5 FREQUENCY STABILITY.

The EUT was placed inside an environmental chamber as the temperature in the chamber was varied between -30 °C and 50 °C. The temperature was incremented by 10 °C intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

OPERATING FREQUENCY: 5,200,000,000 Hz  
 CHANNEL: 40  
 REFERENCE VOLTAGE: 3.7 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.7	+20(Ref)	5 199 979	-20.7
100%		-30	5 199 979	-21.2
100%		-20	5 200 017	17.3
100%		-10	5 200 022	22.0
100%		0	5 200 015	15.4
100%		+10	5 200 017	16.7
100%		+30	5 200 022	22.2
100%		+40	5 199 977	-23.1
100%		+50	5 200 016	16.3
115%		3.3	+20	5 200 018
Batt. Endpoint	4.7	+20	5 200 018	17.9



OPERATING FREQUENCY: 5,300,000,000 Hz  
 CHANNEL: 60  
 REFERENCE VOLTAGE: 3.7 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.7	+20(Ref)	5 299 970	-30.1
100%		-30	5 299 968	-32.0
100%		-20	5 300 029	29.0
100%		-10	5 299 972	-28.2
100%		0	5 300 021	21.3
100%		+10	5 300 023	22.5
100%		+30	5 299 977	-23.0
100%		+40	5 300 016	16.4
100%		+50	5 300 018	18.0
115%		3.3	+20	5 300 018
Batt. Endpoint	4.7	+20	5 299 974	-26.0

OPERATING FREQUENCY: 5,580,000,000 Hz  
 CHANNEL: 120  
 REFERENCE VOLTAGE: 3.7 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.7	+20(Ref)	5 579 968	-31.8
100%		-30	5 580 029	28.7
100%		-20	5 580 033	32.6
100%		-10	5 579 967	-33.0
100%		0	5 580 019	19.2
100%		+10	5 579 971	-28.7
100%		+30	5 580 021	20.6
100%		+40	5 579 973	-27.4
100%		+50	5 580 020	20.1
115%		3.3	+20	5 579 974
Batt. Endpoint	4.7	+20	5 579 971	-29.5

**8.6 RADIATED MEASUREMENT.**

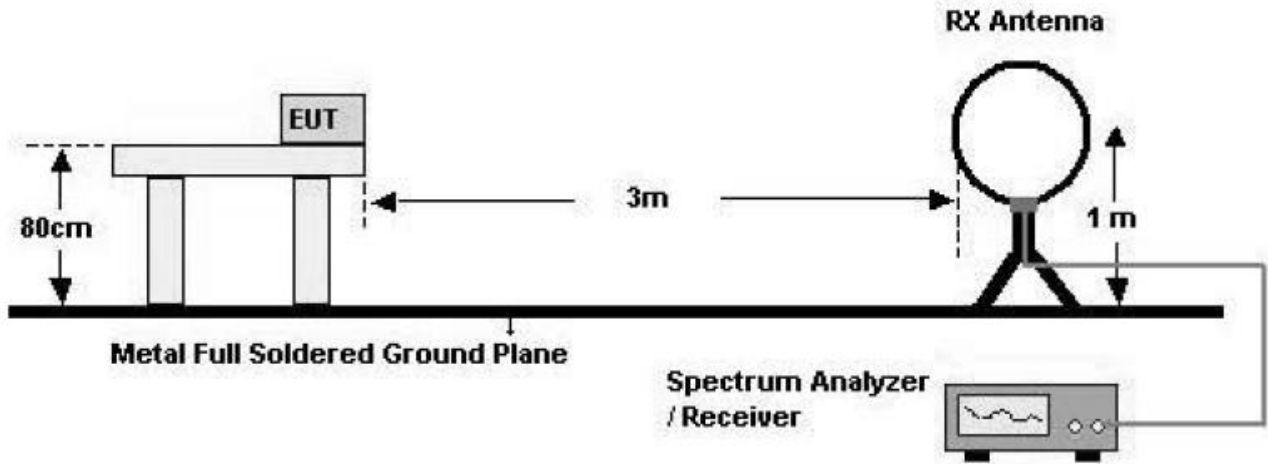
**8.6.1 RADIATED SPURIOUS EMISSIONS.**

Test Requirements and limit, §15.205, §15.209

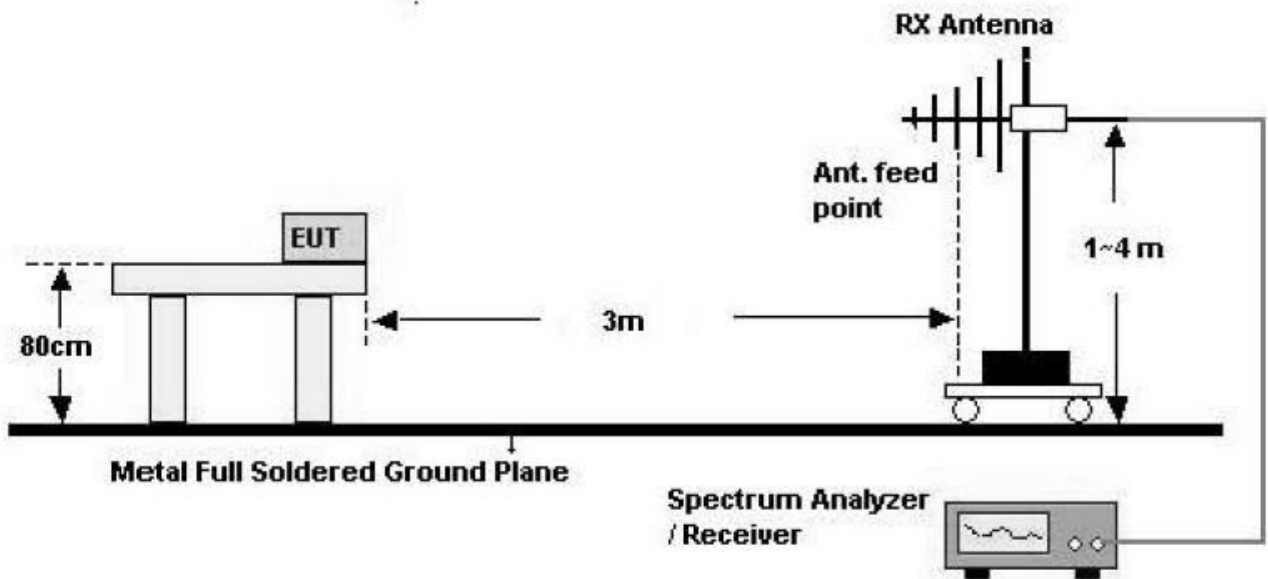
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

**Test Configuration**

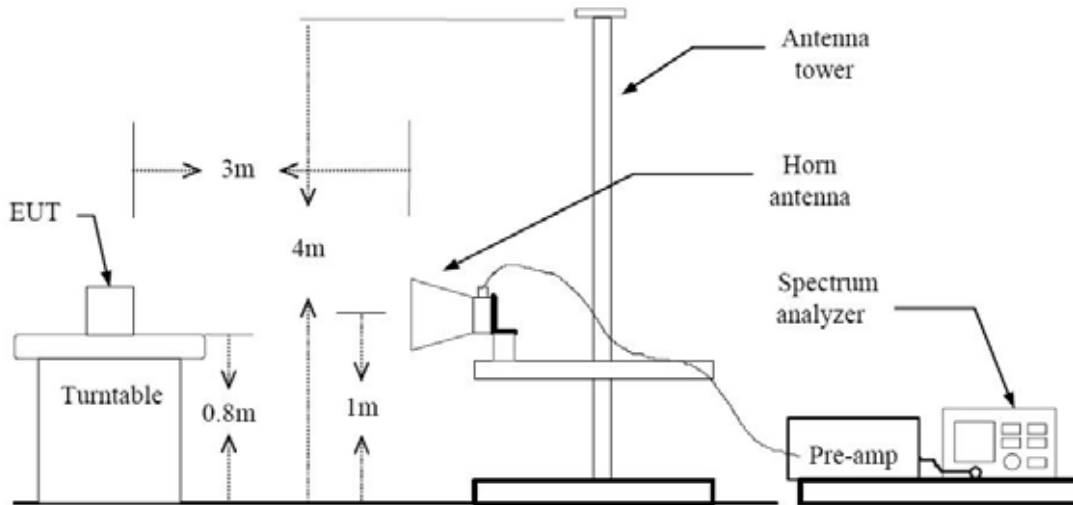
**Below 30 MHz**



**30 MHz - 1 GHz**



**Above 1 GHz**



**TEST PROCEDURE**

1. The EUT is placed on a turntable, which is 0.8 m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

<b>FCC PT.15.247 TEST REPORT</b>		<b>FCC CERTIFICATION REPORT</b>		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
<b>Test Report No.</b> HCTR1205FR19-1	<b>Date of Issue:</b> May 17, 2012	<b>EUT Type:</b> Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	<b>FCC ID:</b> ZNFP880	

**TEST RESULTS**

**9 kHz – 30MHz**

**Operation Mode:** Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dB $\mu$ V	dB /m	dB	(H/V)	dB $\mu$ V/m	dB $\mu$ V/m	dB
No Critical peaks found							

**Notes:**

1. Measuring frequencies from 9 kHz to the 30MHz.
2. The reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
3. Distance extrapolation factor = 40 log (specific distance / test distance) (dB)
4. Limit line = specific Limits (dBuV) + Distance extrapolation factor
5. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



**TEST RESULTS**

**Below 1 GHz**

**Operation Mode:** Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dB $\mu$ V	dB /m	dB	(H/V)	dB $\mu$ V/m	dB $\mu$ V/m	dB
No Critical peaks found							

**Notes:**

1. Measuring frequencies from 30 MHz to the 1 GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

<b>FCC PT.15.247 TEST REPORT</b>	<b>FCC CERTIFICATION REPORT</b>		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
<b>Test Report No.</b> HCTR1205FR19-1	<b>Date of Issue:</b> May 17, 2012	<b>EUT Type:</b> Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	<b>FCC ID:</b> ZNFP880



**Above 1 GHz**

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10360	54.46	9.3	V	63.76	68.2	4.44	PK
10360	37.59	9.3	V	46.89	54.0	7.11	AV
15540	44.92	15.04	V	59.96	74.0	14.04	PK
15540	31.12	15.04	V	46.16	54.0	7.84	AV
10360	53.93	9.3	H	63.23	68.2	4.97	PK
10360	37.45	9.3	H	46.75	54.0	7.25	AV
15540	45.14	15.04	H	60.18	74.0	13.82	PK
15540	31.13	15.04	H	46.17	54.0	7.83	AV

**Notes:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:
  - a. Peak Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 1 MHz.
  - b. AV Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 10 Hz.
6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

<b>FCC PT.15.247 TEST REPORT</b>	<b>FCC CERTIFICATION REPORT</b>		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR-19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880



Band : UNII 1  
 Operation Mode: 802.11 a  
 Transfer Rate: 6 Mbps  
 Operating Frequency 5200 MHz  
 Channel No. 40 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10400	52.66	9.6	V	62.26	68.2	5.94	PK
10400	35.56	9.6	V	45.16	54.0	8.84	AV
15600	44.34	14.81	V	59.15	74.0	14.85	PK
15600	31.25	14.81	V	46.06	54.0	7.94	AV
10400	54.97	9.6	H	64.57	68.2	3.63	PK
10400	36.66	9.6	H	46.26	54.0	7.74	AV
15600	45.1	14.81	H	59.91	74.0	14.09	PK
15600	31.34	14.81	H	46.15	54.0	7.85	AV

**Notes:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:
  - a. Peak Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 1 MHz.
  - b. AV Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 10 Hz.
6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band : UNII 1  
 Operation Mode: 802.11 a  
 Transfer Rate: 6 Mbps  
 Operating Frequency 5240 MHz  
 Channel No. 48 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10480	54.24	9.83	V	64.07	68.2	4.13	PK
10480	36.17	9.83	V	46.00	54.0	8.00	AV
15720	46.21	14.83	V	61.04	74.0	12.96	PK
15720	32.48	14.83	V	47.31	54.0	6.69	AV
10480	54.52	9.83	H	64.35	68.2	3.85	PK
10480	37.05	9.83	H	46.88	54.0	7.12	AV
15720	47.01	14.83	H	61.84	74.0	12.16	PK
15720	32.56	14.83	H	47.39	54.0	6.61	AV

**Notes:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:
  - a. Peak Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 1 MHz.
  - b. AV Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 10 Hz.
6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10520	54.76	9.86	V	64.62	68.2	3.58	PK
10520	36.95	9.86	V	46.81	54.0	7.19	AV
15780	45.61	14.94	V	60.55	74.0	13.45	PK
15780	32.34	14.94	V	47.28	54.0	6.72	AV
10520	52.78	9.86	H	62.64	68.2	5.56	PK
10520	36.89	9.86	H	46.75	54.0	7.25	AV
15780	46.56	14.94	H	61.50	74.0	12.5	PK
15780	32.35	14.94	H	47.29	54.0	6.71	AV

**Notes:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:
  - a. Peak Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 1 MHz.
  - b. AV Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 10 Hz.
6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10600	51.84	9.35	V	61.19	68.2	7.01	PK
10600	33.42	9.35	V	42.77	54.0	11.23	AV
15900	44.02	14.89	V	58.91	74.0	15.09	PK
15900	30.86	14.89	V	45.75	54.0	8.25	AV
10600	49.09	9.35	H	58.44	68.2	9.76	PK
10600	33.38	9.35	H	42.73	54.0	11.27	AV
15900	44.49	14.89	H	59.38	74.0	14.62	PK
15900	30.88	14.89	H	45.77	54.0	8.23	AV

**Notes:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:
  - a. Peak Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 1 MHz.
  - b. AV Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 10 Hz.
6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



Band : UNII 2  
 Operation Mode: 802.11 a  
 Transfer Rate: 6 Mbps  
 Operating Frequency 5320 MHz  
 Channel No. 64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10640	46.20	9.46	V	55.66	74	18.34	PK
10640	31.00	9.46	V	40.46	54	13.54	AV
15960	44.60	15.06	V	59.66	74	14.34	PK
15960	30.55	15.06	V	45.61	54	8.39	AV
10640	46.47	9.46	H	55.93	74	18.07	PK
10640	31.43	9.46	H	40.89	54	13.11	AV
15960	43.60	15.06	H	58.66	74	15.34	PK
15960	30.56	15.06	H	45.62	54	8.38	AV

**Notes:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:
  - a. Peak Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 1 MHz.
  - b. AV Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 10 Hz.
6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC		FCC ID: ZNFP880

Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11000	41.91	10.54	V	52.45	74.0	21.55	PK
11000	27.95	10.54	V	38.49	54.0	15.51	AV
16500	46.01	16.37	V	62.38	68.2	5.82	PK
16500	31.96	16.37	V	48.33	54.0	5.67	AV
11000	39.5	10.54	H	50.04	74.0	23.96	PK
11000	26.62	10.54	H	37.16	54.0	16.84	AV
16500	45.52	16.37	H	61.89	68.2	6.31	PK
16500	31.96	16.37	H	48.33	54.0	5.67	AV

**Notes:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:
  - a. Peak Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 1 MHz.
  - b. AV Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 10 Hz.
6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5580 MHz
Channel No.	116 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11160	39.52	10.16	V	49.68	74.0	24.32	PK
11160	26.24	10.16	V	36.4	54.0	17.60	AV
16740	45.92	18.26	V	64.18	68.2	4.02	PK
16740	31.88	18.26	V	50.14	54.0	3.86	AV
11160	39.49	10.16	H	49.65	74.0	24.35	PK
11160	26.6	10.16	H	36.76	54.0	17.24	AV
16740	45.29	18.26	H	63.55	68.2	4.65	PK
16740	31.89	18.26	H	50.15	54.0	3.85	AV

**Notes:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:
  - a. Peak Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 1 MHz.
  - b. AV Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 10 Hz.
6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC		FCC ID: ZNFP880

Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5700 MHz
Channel No.	140 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11400	38.59	10.21	V	48.8	74.0	25.2	PK
11400	26.65	10.21	V	36.86	54.0	17.14	AV
17100	44.93	18.86	V	63.79	68.2	4.41	PK
17100	31.59	18.86	V	50.45	54.0	3.55	AV
11400	40.51	10.21	H	50.72	74.0	23.28	PK
11400	27.52	10.21	H	37.73	54.0	16.27	AV
17100	44.86	18.86	H	63.72	68.2	4.48	PK
17100	31.58	18.86	H	50.44	54.0	3.56	AV

**Notes:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:
  - a. Peak Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 1 MHz.
  - b. AV Setting 1 GHz – 40 GHz, RBW = 1 MHz, VBW = 10 Hz.
6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



## 8.6.2 RADIATED RESTRICTED BAND EDGE MEASUREMENTS

### Test Requirements and limit, §15.247(d) §15.205, §15.209

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in section 15.209(a) (See section 15.205(c)).

Band :	UNII 1
Operation Mode:	802.11 n
Transfer Rate:	6.5 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	62.02	4.18	H	66.2	74	7.80	PK
5150	38.60	4.18	H	42.78	54	11.22	AV
5150	59.80	4.18	V	63.98	74	10.02	PK
5150	38.27	4.18	V	42.45	54	11.55	AV

Band : UNII 2  
 Operation Mode: 802.11 n  
 Transfer Rate: 6.5 Mbps  
 Operating Frequency 5320 MHz  
 Channel No. 64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	57.11	4.80	H	61.91	74	12.09	PK
5350	37.32	4.80	H	42.12	54	11.88	AV
5350	55.35	4.80	V	60.15	74	13.85	PK
5350	36.57	4.80	V	41.37	54	12.63	AV

Band : UNII 3  
 Operation Mode: 802.11 n  
 Transfer Rate: 6.5 Mbps  
 Operating Frequency 5500 MHz  
 Channel No. 100 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	48.46	5.04	H	53.50	68.2	14.70	PK
5460	36.31	5.04	H	41.35	54.0	12.65	AV
5460	48.58	5.04	V	53.62	68.2	14.58	PK
5460	36.23	5.04	V	41.27	54.0	12.73	AV

**Notes:**

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT
2. Spectrum setting:
  - a. Peak Setting 1 GHz – 26 GHz, RBW = 1 MHz, VBW = 1 MHz.
  - b. AV Setting 1 GHz – 26 GHz, RBW = 1 MHz, VBW = 10 Hz.
3. We have done 802.11a/n mode test. . Worst case of EUT is 6.5 Mbps in 802.11n
4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

## 8.7 POWERLINE CONDUCTED EMISSIONS

### Test Requirements and limit, §15.207

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dB $\mu$ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

### Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

### TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference groundplane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.
5. We are performed the AC Power Line Conducted Emission test for 6.5 Mbps, Ch.60 and 802.11n(UNII 2). Because 802.11n mode in UNII 2 is worst case.

■ RESULT PLOTS

Conducted Emissions (Line 1)

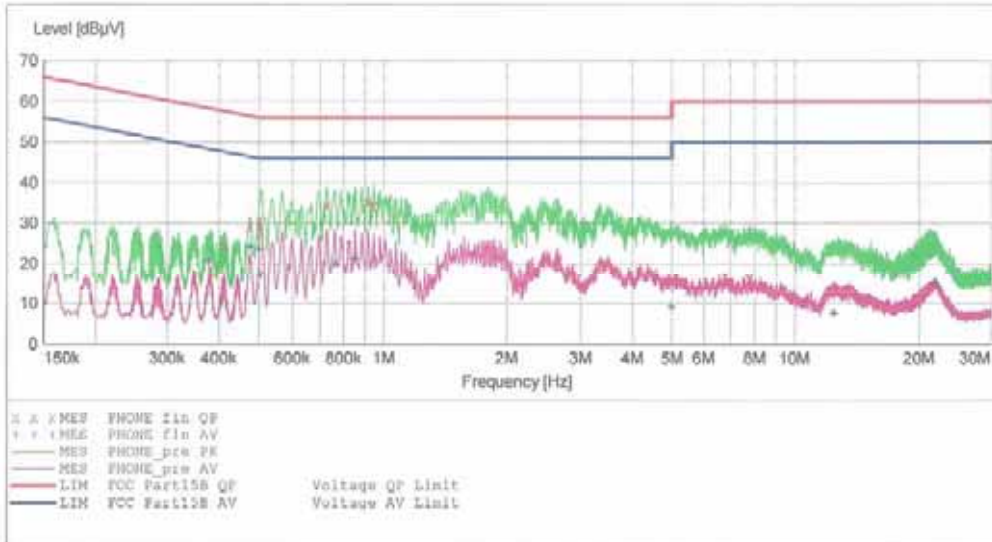
HCT

EMC

EUT: LG-P880  
 Manufacturer: LG  
 Operating Condition: WLAN MODE(5 GHz)  
 Test Site: SHIELD ROOM  
 Operator: JS LEE  
 Test Specification: FCC PART15 CLASS B  
 Comment: H

SCAN TABLE: "FCC PART 15 B(H)"

Start Frequency	Stop Frequency	Step Width	FCC PART 15 CLASS B Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	1.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			



MEASUREMENT RESULT: "PHONE\_fin QP"

5/3/2012 1:24PM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Line	PE
0.412010	24.40	10.1	58	33.2	---	---
0.476010	29.30	10.1	56	27.1	---	---
0.499010	30.90	10.1	56	25.1	---	---
0.728000	34.60	10.1	56	21.4	---	---
0.916000	35.20	10.1	56	20.8	---	---
0.948000	34.30	10.1	56	21.7	---	---
5.220000	15.70	10.5	60	44.3	---	---
6.788000	16.70	10.8	60	43.3	---	---
7.772000	16.20	10.8	60	43.8	---	---

MEASUREMENT RESULT: "PHONE\_fin AV"

5/3/2012 1:24PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.379010	20.80	10.1	48	27.5	---	---
0.476010	24.20	10.1	46	22.2	---	---
0.499010	23.60	10.1	46	22.4	---	---
0.504000	17.20	10.1	46	20.8	---	---
0.760000	19.90	10.1	46	26.1	---	---
0.852000	21.30	10.1	46	24.7	---	---
5.000000	9.10	10.5	46	36.9	---	---
12.424000	7.70	11.0	50	42.3	---	---
21.936000	15.10	11.7	50	34.9	---	---

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1205FR19-1	Date of Issue: May 17, 2012	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFP880

### Conducted Emissions (Line 2)

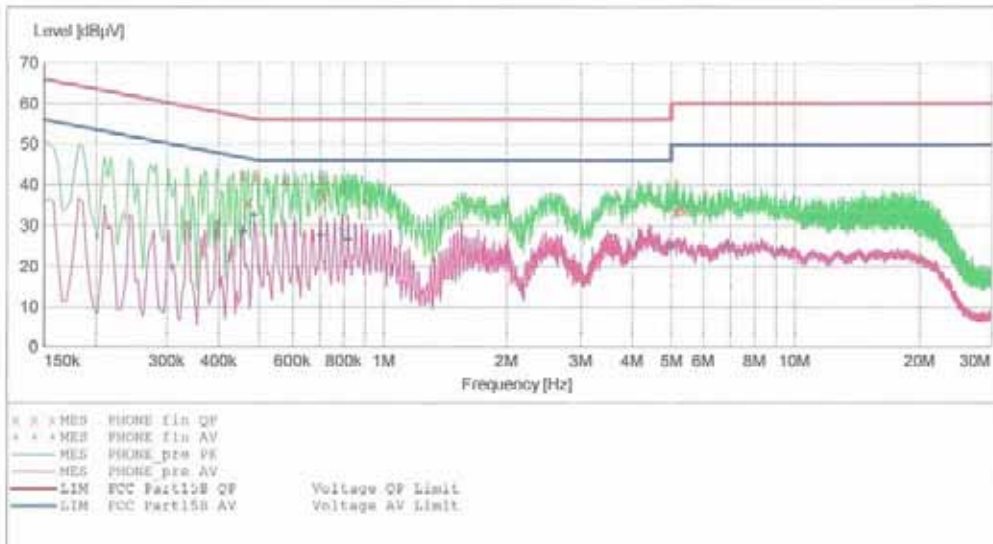
HCT

EMC

EUT: LG-P880  
 Manufacturer: LG  
 Operating Condition: WLAN MODE(5 GHz)  
 Test Site: SHIELD ROOM  
 Operator: JS LEE  
 Test Specification: FCC PART15 CLASS B  
 Comment: N

**SCAN TABLE: "FCC PART 15 B(N)"**

Short Description:			FCC PART 15 CLASS B				Transducer
Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.		
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				



**MEASUREMENT RESULT: "PHONE\_fin OP"**

5/3/2012 1:20PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.458010	42.20	10.1	57	14.5	---	---
0.470010	35.60	10.0	57	20.9	---	---
0.490010	41.90	10.0	56	14.3	---	---
0.576000	41.10	10.1	56	14.9	---	---
0.704000	41.40	10.1	56	14.6	---	---
0.716000	37.60	10.1	56	18.4	---	---
5.140000	33.30	10.5	60	26.7	---	---
5.188000	33.60	10.5	60	26.4	---	---
5.368000	33.80	10.5	60	26.2	---	---

**MEASUREMENT RESULT: "PHONE\_fin AV"**

5/3/2012 1:20PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.394010	28.20	10.1	48	19.8	---	---
0.458010	28.80	10.1	47	17.9	---	---
0.486010	32.60	10.0	46	13.6	---	---
0.704000	27.90	10.1	46	18.1	---	---
0.792000	29.10	10.1	46	16.9	---	---
0.820000	26.60	10.1	46	19.4	---	---
5.000000	25.00	10.5	46	21.0	---	---
6.920000	25.40	10.7	50	24.6	---	---
9.344000	24.40	10.8	50	25.6	---	---

<b>FCC PT.15.247 TEST REPORT</b>	<b>FCC CERTIFICATION REPORT</b>		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
<b>Test Report No.</b> HCTR1205FR19-1	<b>Date of Issue:</b> May 17, 2012	<b>EUT Type:</b> Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	<b>FCC ID:</b> ZNFP880

## 9. LIST OF TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Interval	Calibration Due	Serial No.
Rohde & Schwarz	ESH2-Z5/ LISN	Annual	02/03/2013	861741/013
Schwarzbeck	VULB 9168/ TRILOG Antenna	Biennial	02/09/2013	200
Rohde & Schwarz	ESI 40 / EMI TEST RECEIVER	Annual	05/03/2013	831564103
Agilent	E4440A/ Spectrum Analyzer	Annual	05/02/2013	US45303008
Agilent	N9020A/ SIGNAL ANALYZER	Annual	09/23/2012	MY51110020
HD	MA240/ Antenna Position Tower	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	12
Rohde & Schwarz	ESH3-Z2/ PULSE LIMITER	Annual	08/01/2012	375.8810.352
Rohde & Schwarz	SCU-18/ Signal Conditioning Unit	Annual	09/19/2012	10094
MITEQ	AFS44-00102650-42-10P-44-PS/ POWER AMP	Annual	09/23/2012	1532439
MITEQ	AMF-6B-180265-35-10P / POWER AMP	Annual	04/16/2013	667624
CERNEX	CBL26405040 / POWER AMP	Annual	04/16/2013	19660
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	10/17/2013	937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	Biennial	10/26/2012	BBHA9170342
Rohde & Schwarz	FSP / Spectrum Analyzer	Annual	02/09/2013	839117/011
Agilent	E4416A /Power Meter	Annual	11/07/2012	GB41291412
Agilent	E9327A /POWER SENSOR	Annual	05/02/2013	MY4442009
Wainwright Instrument	WHF3.3/18G-10EF / High Pass Filter	Annual	05/02/2013	1
Wainwright Instrument	WHNX6.0/26.5G-6SS / High Pass Filter	Annual	05/02/2013	1
Wainwright Instrument	WHNX7.0/18G-8SS / High Pass Filter	Annual	05/02/2013	29
Wainwright Instrument	WRCJ2400/2483.5-2370/2520-60/14SS/Band Reject Filter	Annual	05/02/2013	1
Hewlett Packard	11636B/Power Divider	Annual	11/07/2012	11377
Hewlett Packard	11667B / Power Splitter	Annual	11/04/2012	10126
DIGITAL	EP-3010 /DC POWER SUPPLY	Annual	11/07/2012	3110117
ITECH	IT6720 / DC POWER SUPPLY	Annual	11/07/2012	010002156287001199
TESCOM	TC-3000C / BLUETOOTH TESTER	Annual	11/14/2012	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	Annual	05/02/2013	100422
EMCO	6502.LOOP ANTENNA	Biennial	01/11/2014	9009-2536
MITEQ	AMF-6D-001180-35-20P/ POWER AMP	Annual	12/26/2012	990893
Agilent	8493C / Attenuator(10 dB)	Annual	09/23/2012	76649

<b>FCC PT.15.247 TEST REPORT</b>	<b>FCC CERTIFICATION REPORT</b>		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
<b>Test Report No.</b> HCTR1205FR19-1	<b>Date of Issue:</b> May 17, 2012	<b>EUT Type:</b> Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	<b>FCC ID:</b> ZNF880