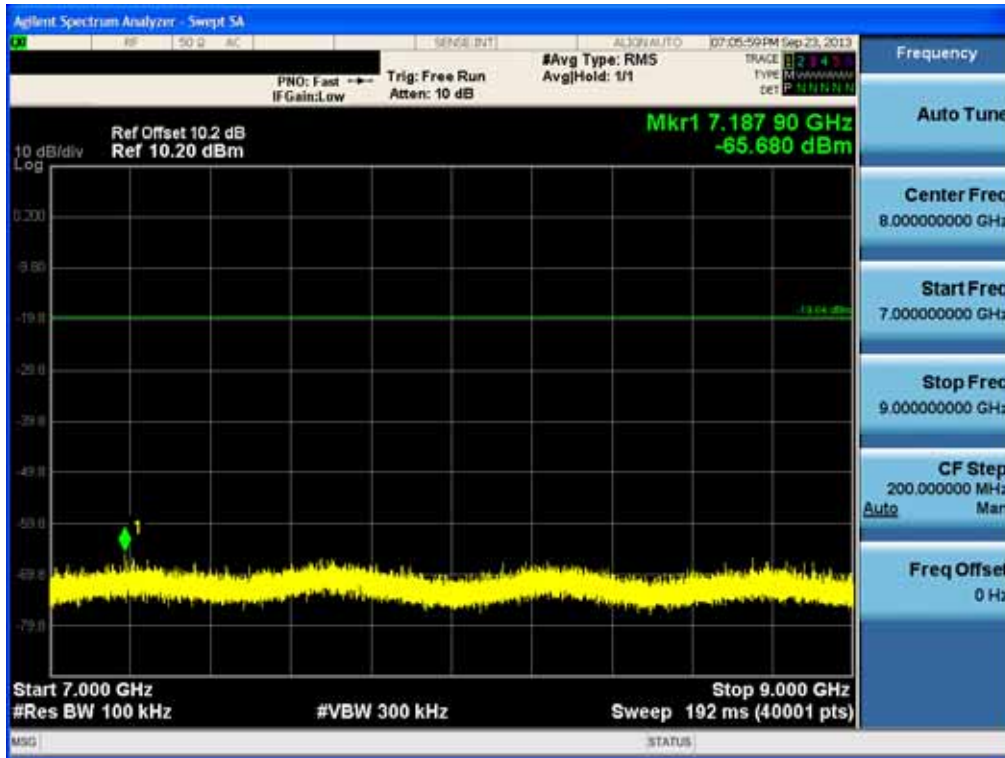
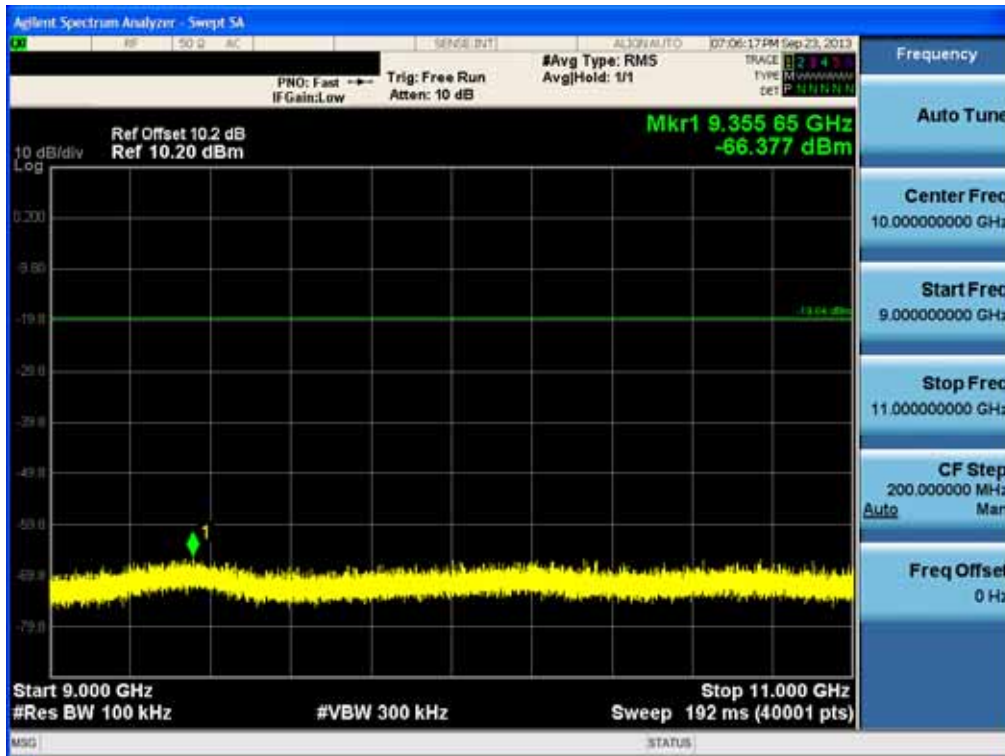


Conducted Spurious Emission (802.11n-CH1)

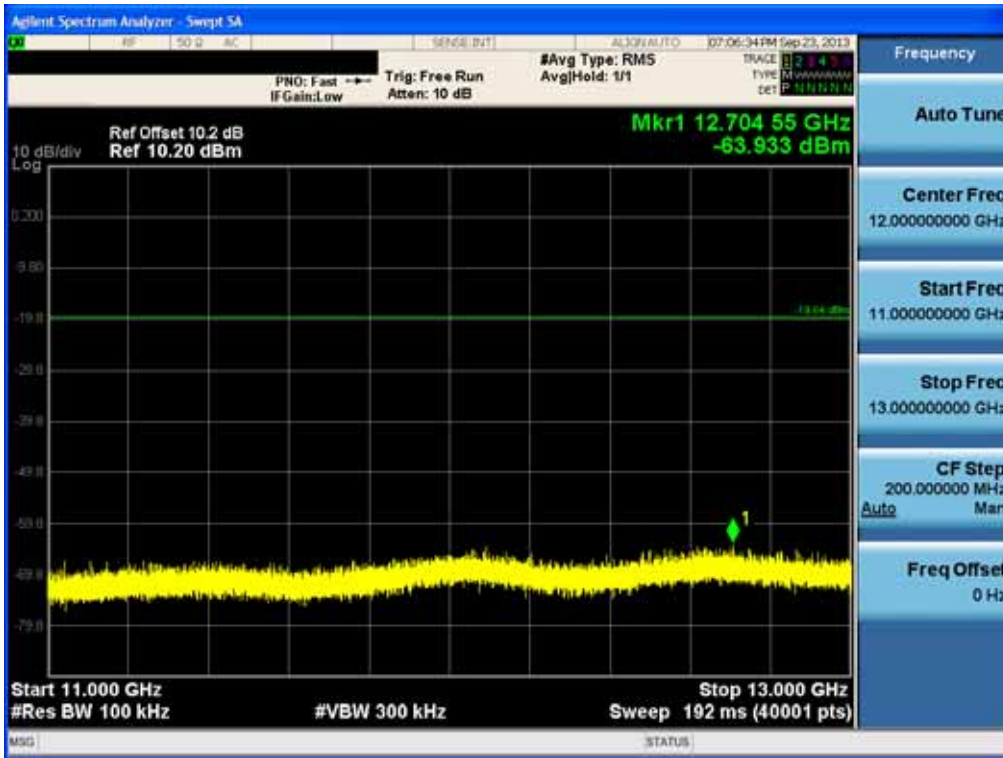


Conducted Spurious Emission (802.11n-CH1)

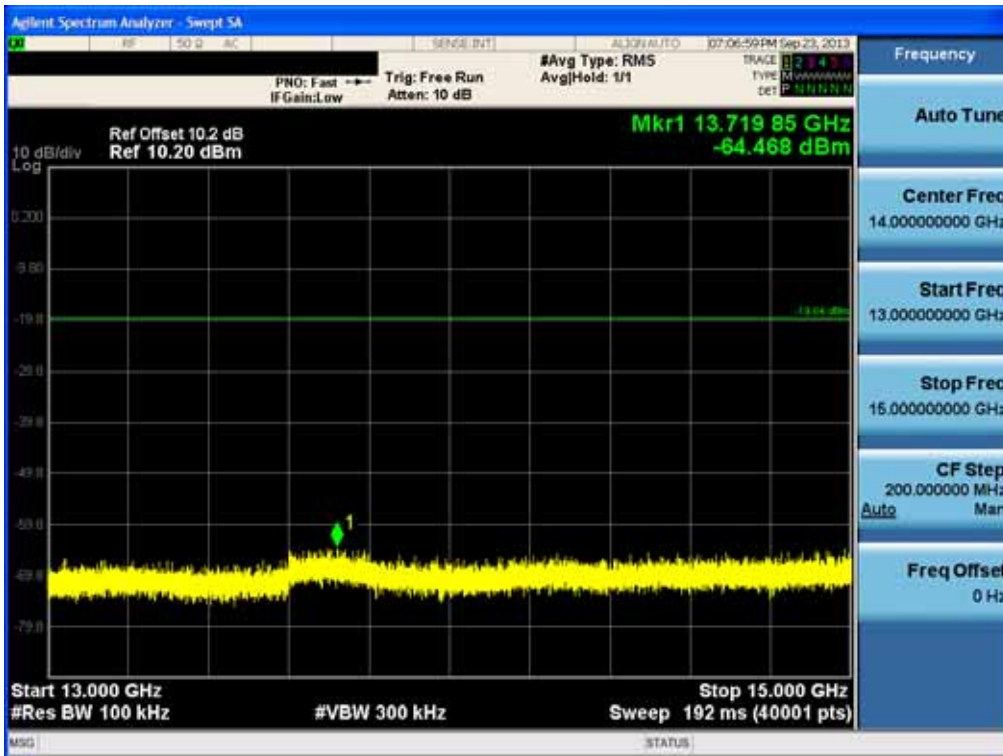


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22

Conducted Spurious Emission (802.11n-CH1)



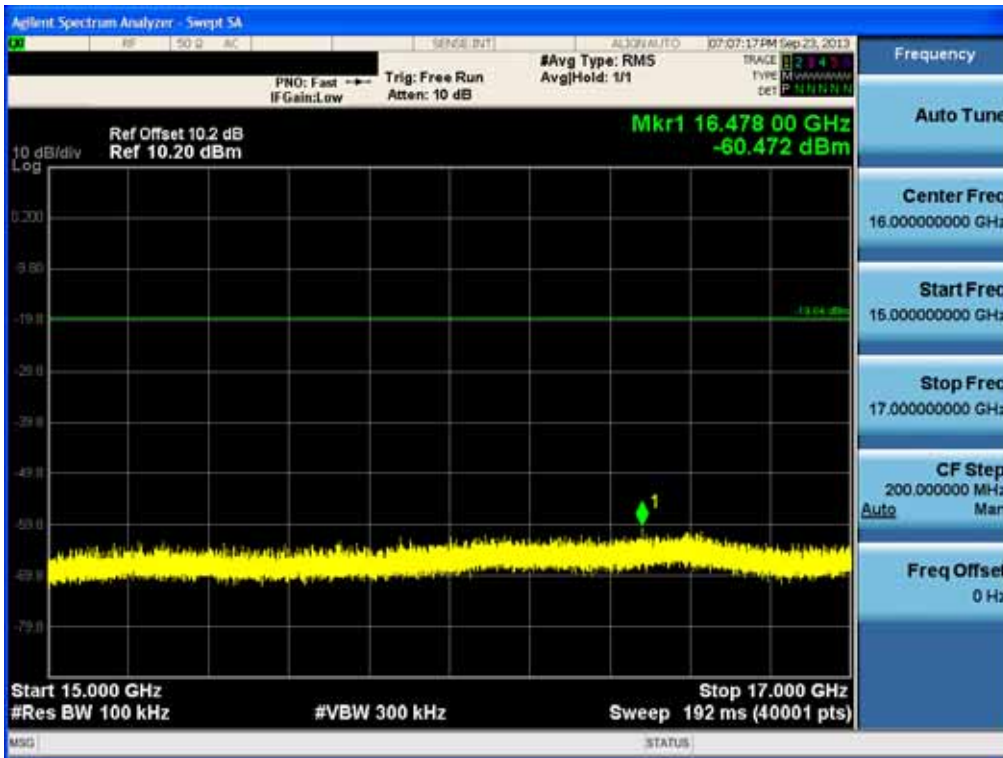
Conducted Spurious Emission (802.11n-CH1)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22

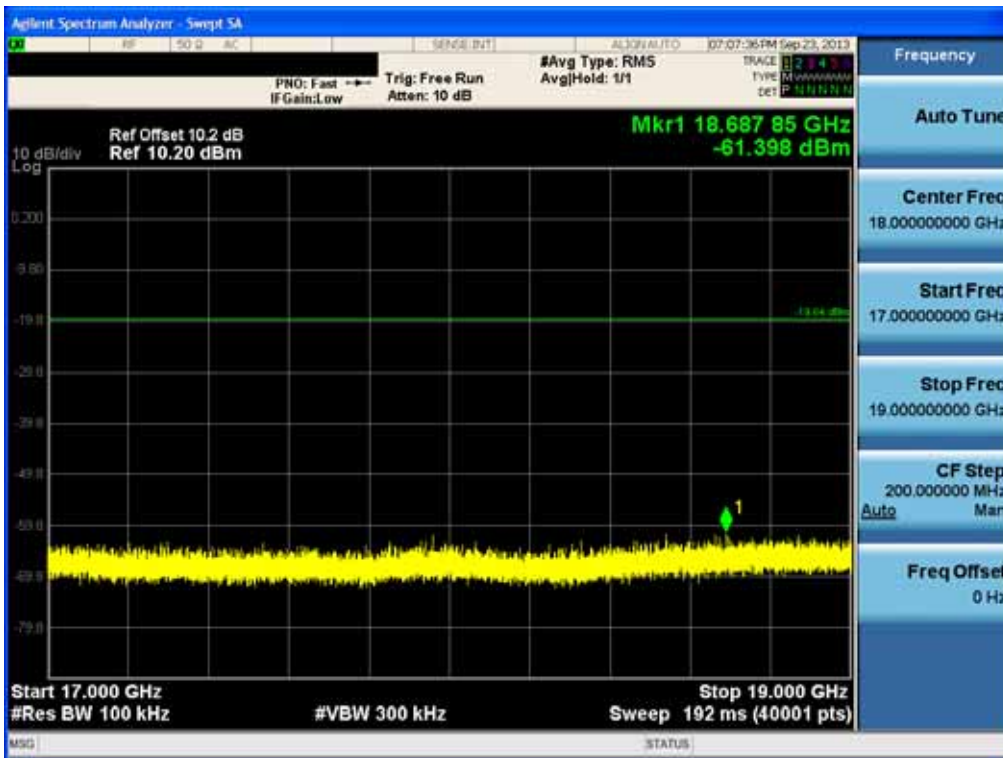
15 GHz ~ 17 GHz

Conducted Spurious Emission (802.11n-CH1)



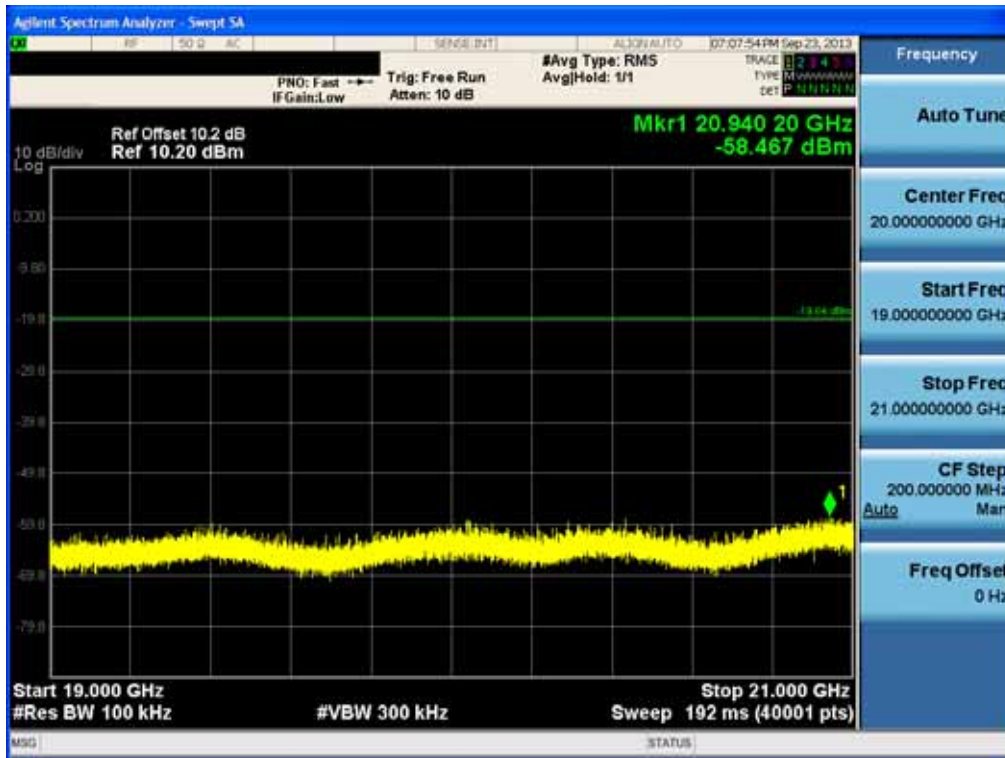
17 GHz ~ 19 GHz

Conducted Spurious Emission (802.11n-CH1)

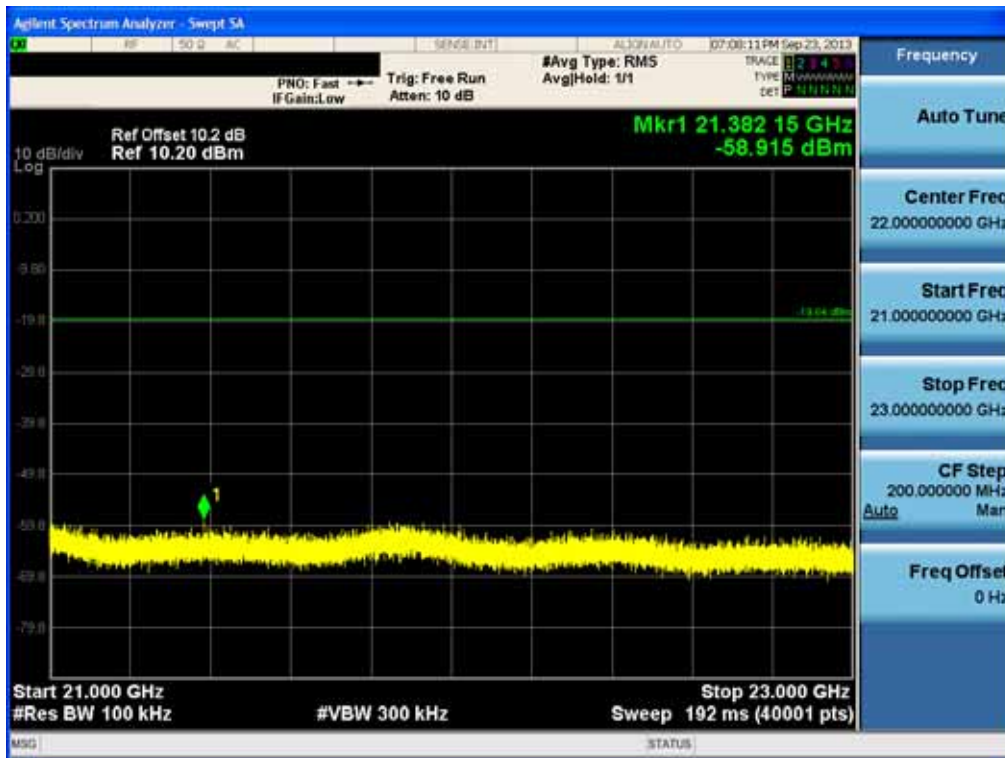


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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Conducted Spurious Emission (802.11n-CH1)

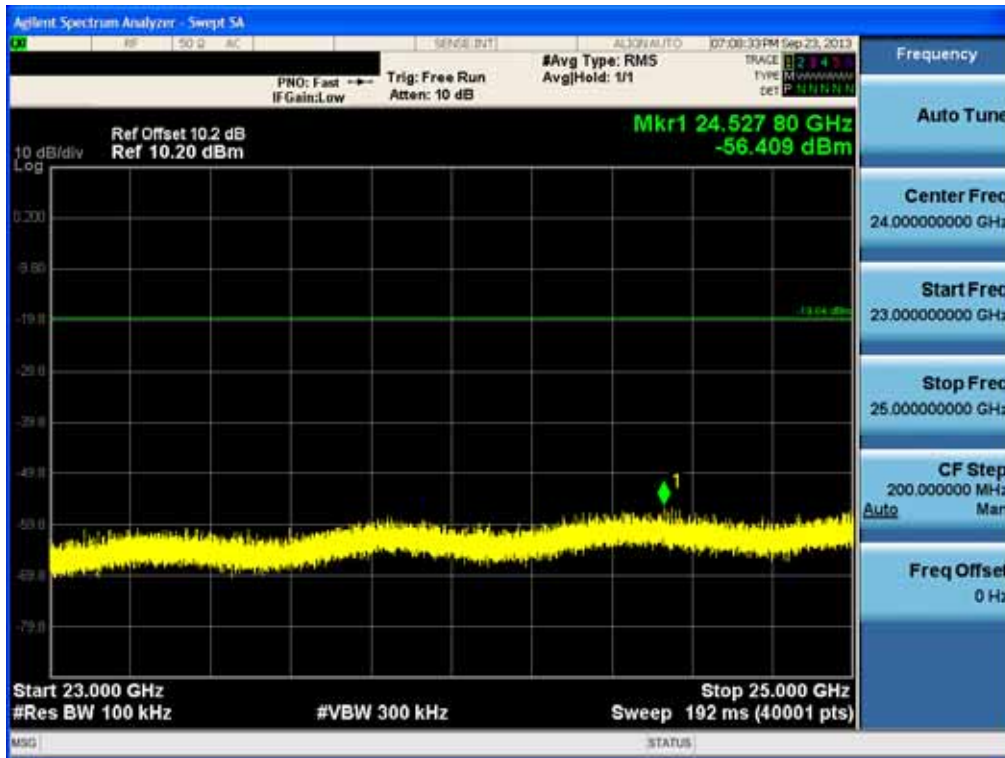


Conducted Spurious Emission (802.11n-CH1)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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Conducted Spurious Emission (802.11n-CH1)

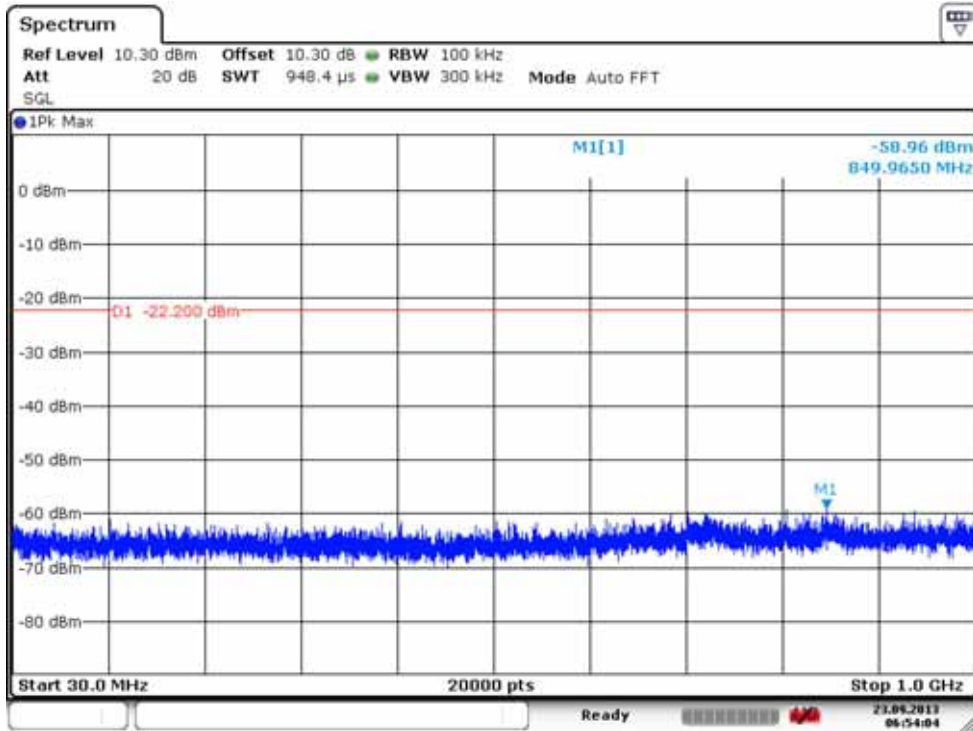


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22

### 5.8 GHz Band

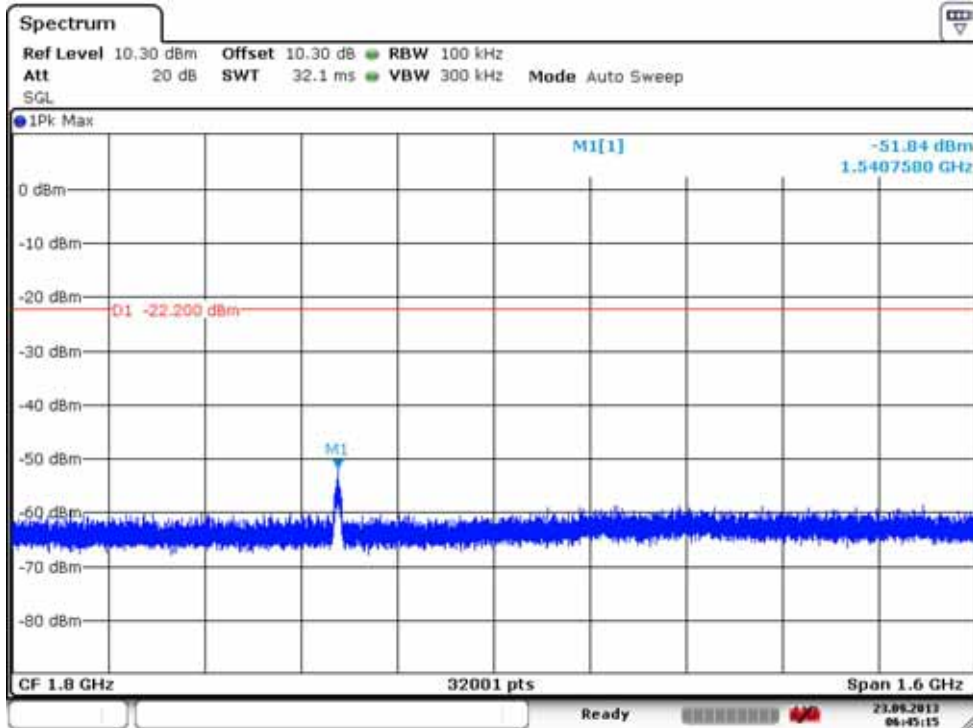
30 MHz ~ 1 GHz

#### Conducted Spurious Emission (802.11a-CH149)



1 GHz ~ 2.6 GHz

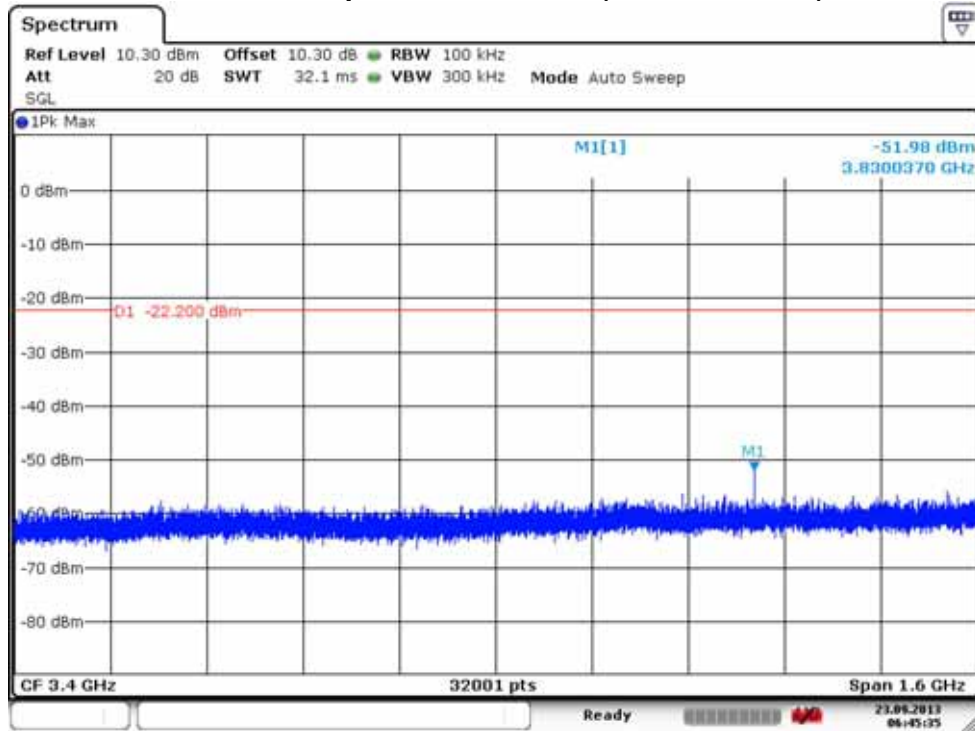
#### Conducted Spurious Emission (802.11a-CH149)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22

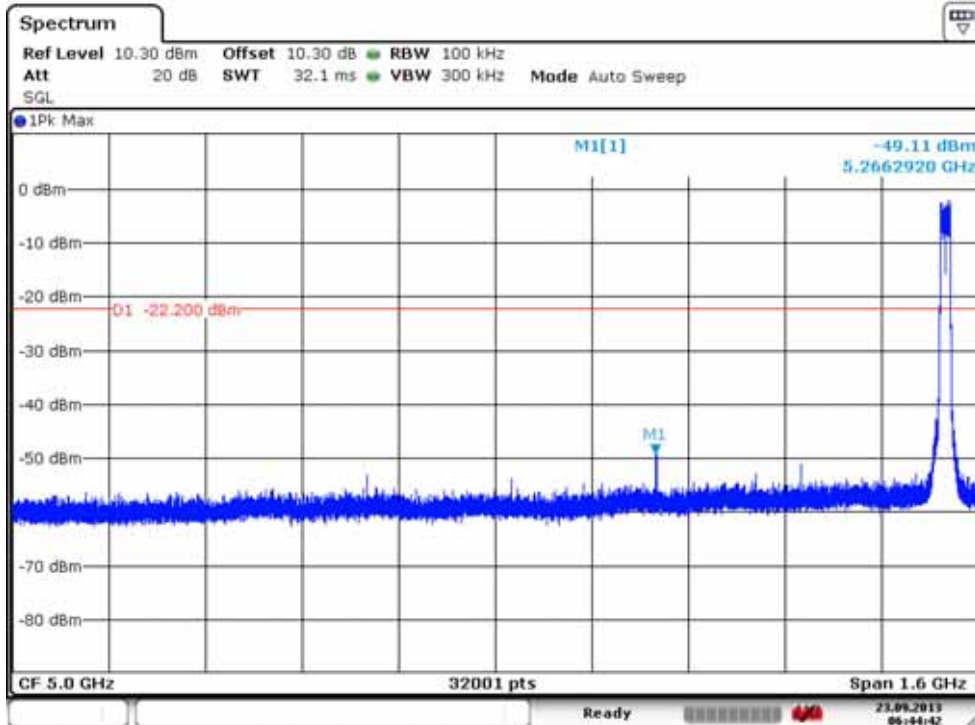
2.6 GHz ~ 4.2 GHz

Conducted Spurious Emission (802.11a-CH149)



4.2 GHz ~ 5.8 GHz

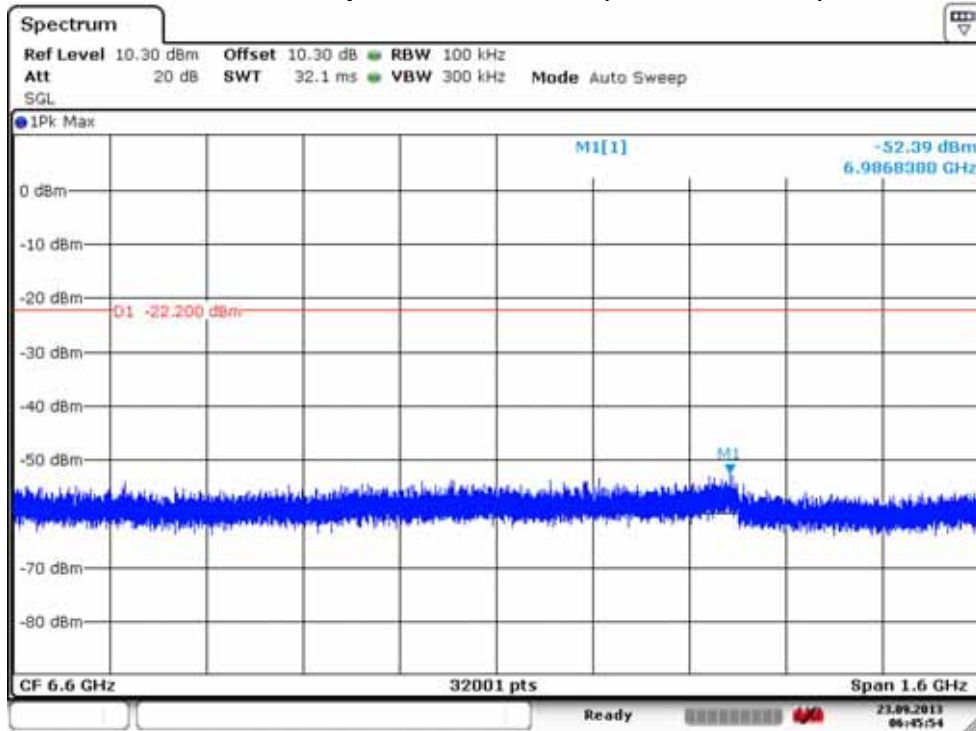
Conducted Spurious Emission (802.11a-CH149)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22

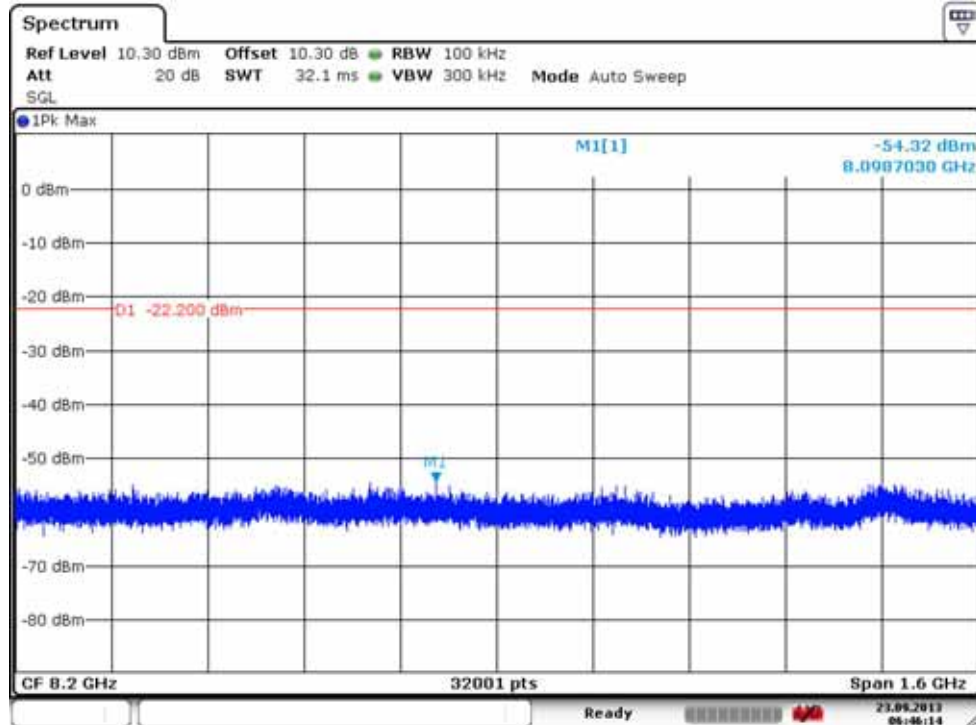
5.8 GHz ~ 7.4 GHz

Conducted Spurious Emission (802.11a-CH149)



7.4 GHz ~ 9 GHz

Conducted Spurious Emission (802.11a-CH149)

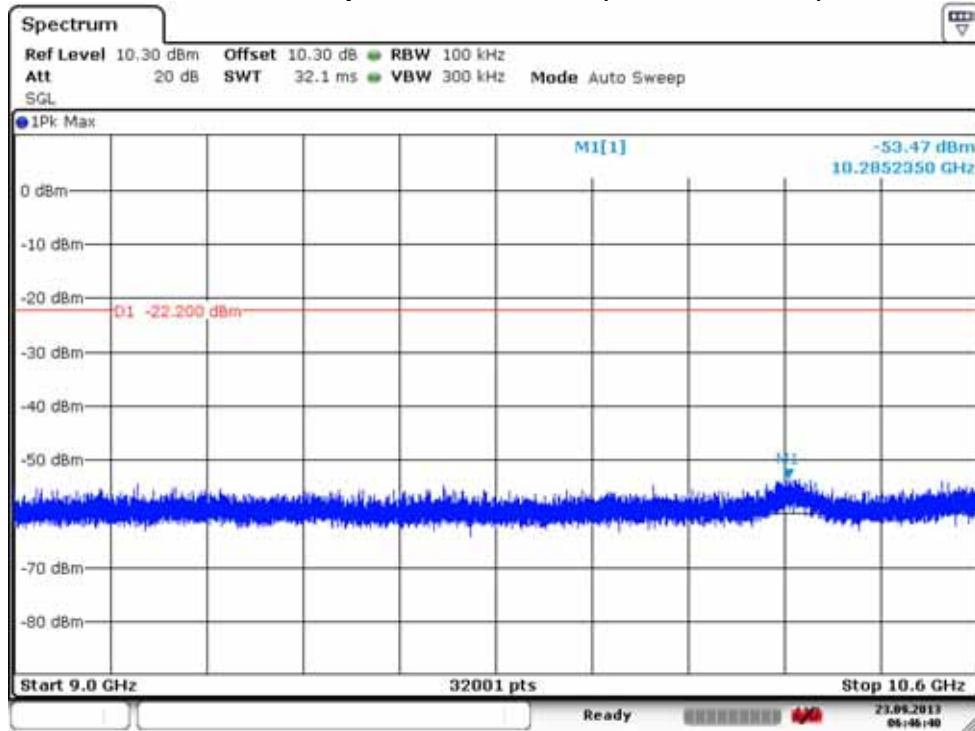


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22



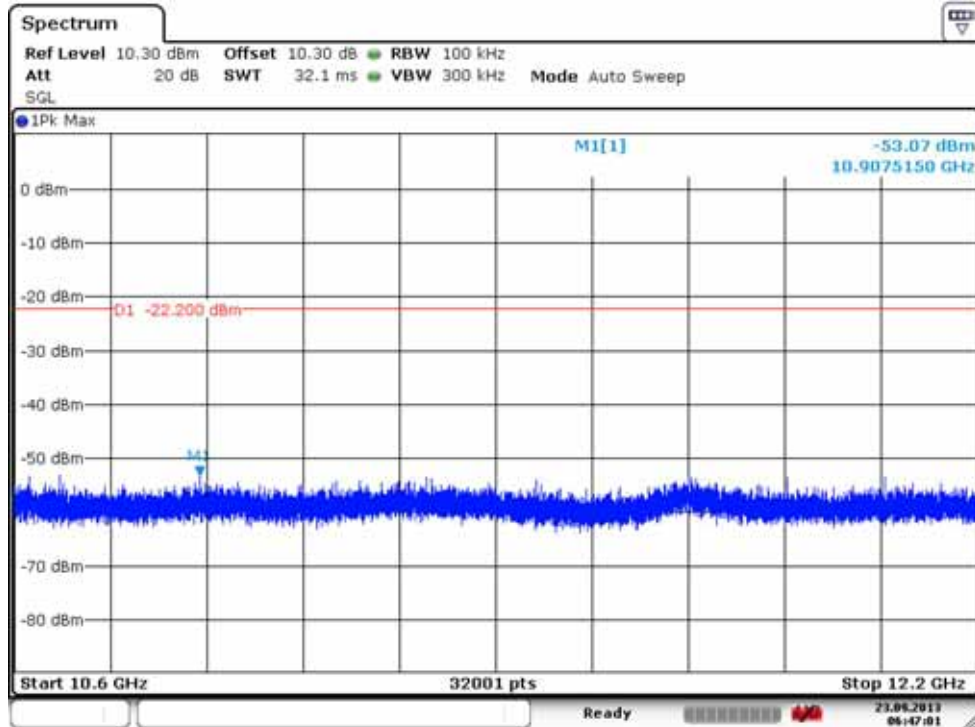
9 GHz ~ 10.6 GHz

Conducted Spurious Emission (802.11a-CH149)



10.6 GHz ~ 12.2 GHz

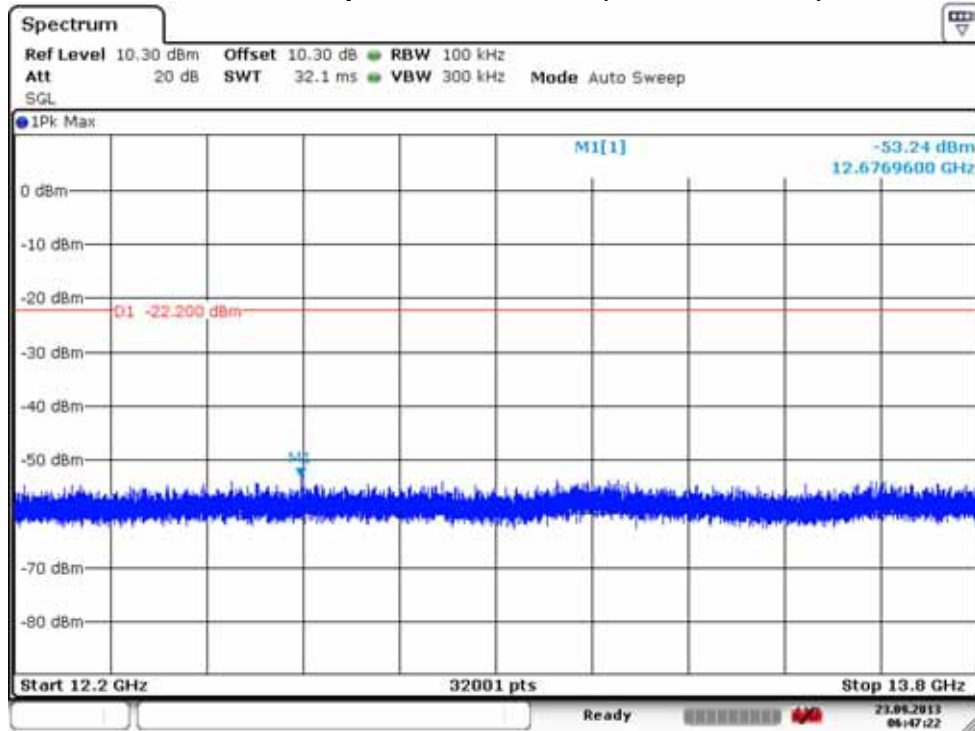
Conducted Spurious Emission (802.11a-CH149)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22

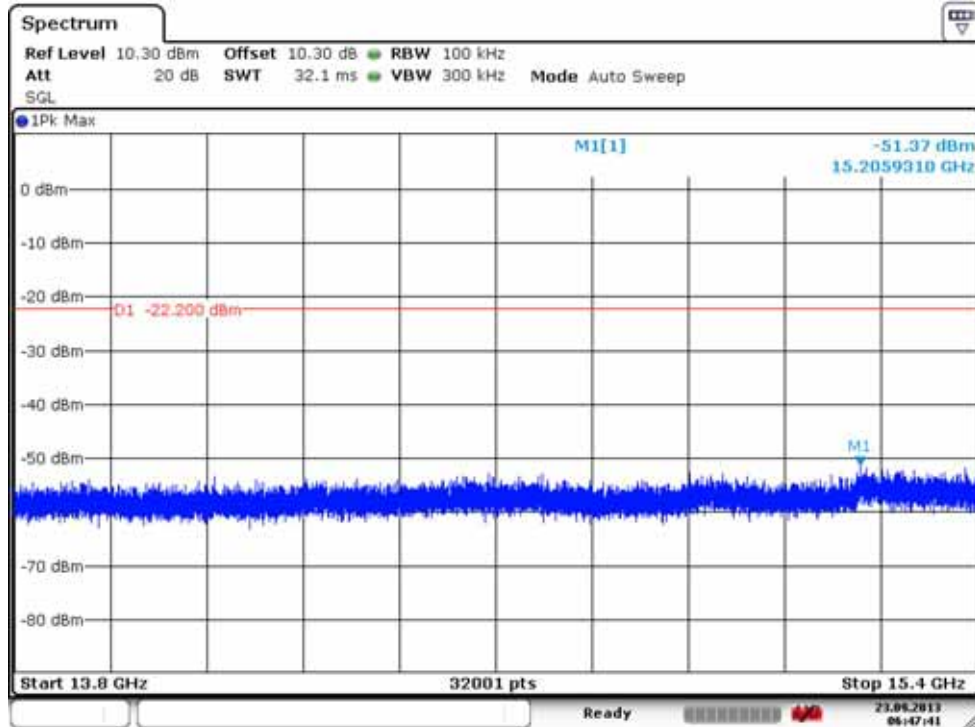
12.2 GHz ~ 13.8 GHz

Conducted Spurious Emission (802.11a-CH149)



13.8 GHz ~ 15.4 GHz

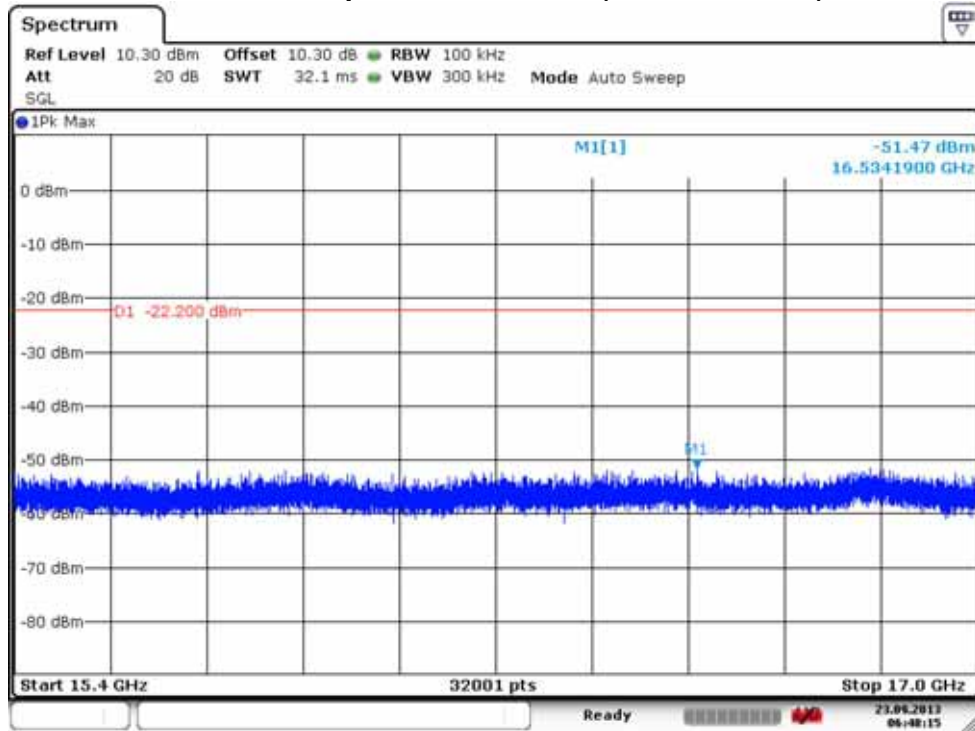
Conducted Spurious Emission (802.11a-CH149)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22

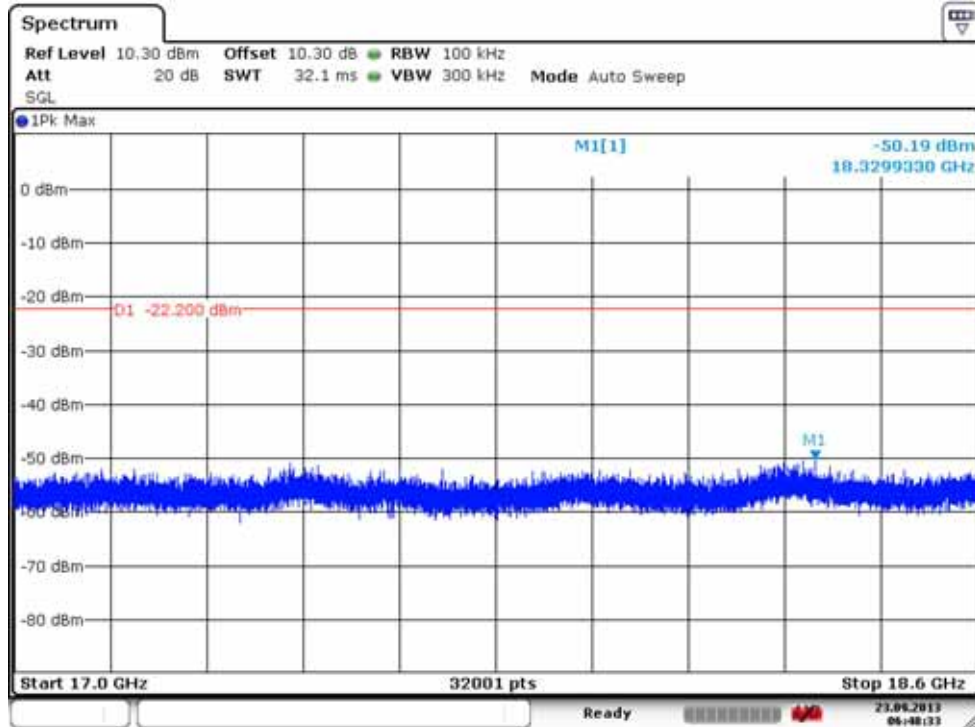
15.4 GHz ~ 17 GHz

Conducted Spurious Emission (802.11a-CH149)



17 GHz ~ 18.6 GHz

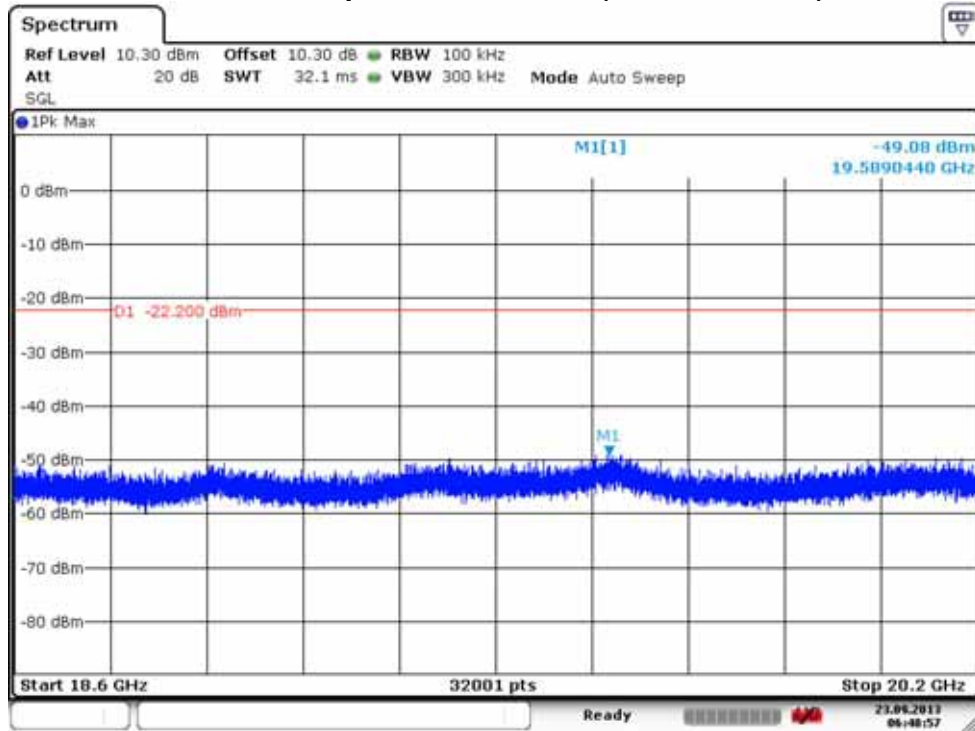
Conducted Spurious Emission (802.11a-CH149)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22

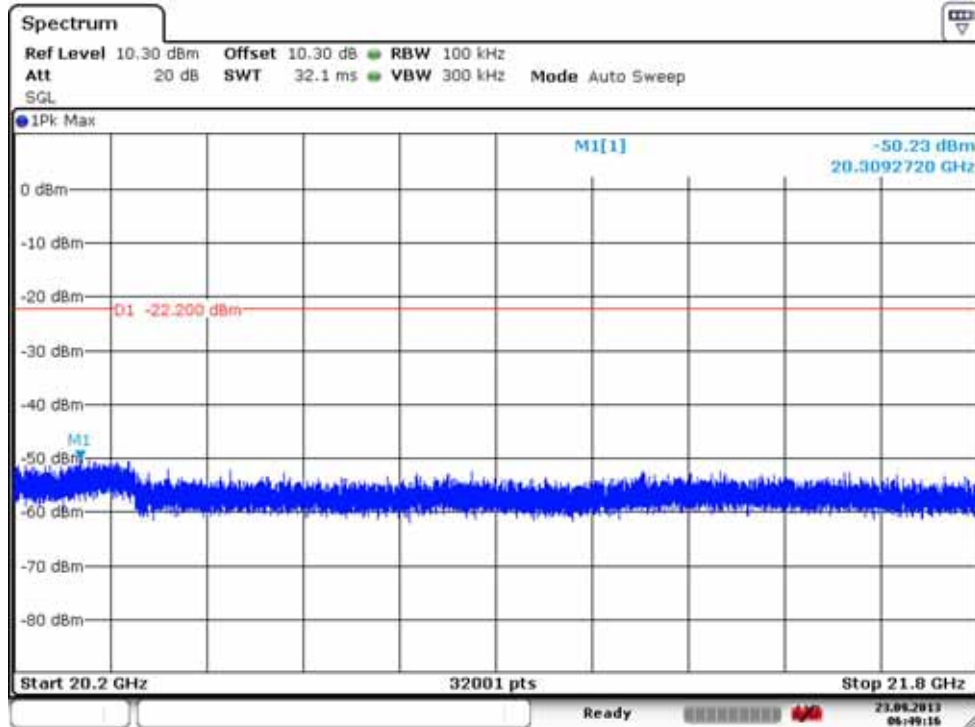
18.6 GHz ~ 20.2 GHz

Conducted Spurious Emission (802.11a-CH149)



20.2 GHz ~ 21.8 GHz

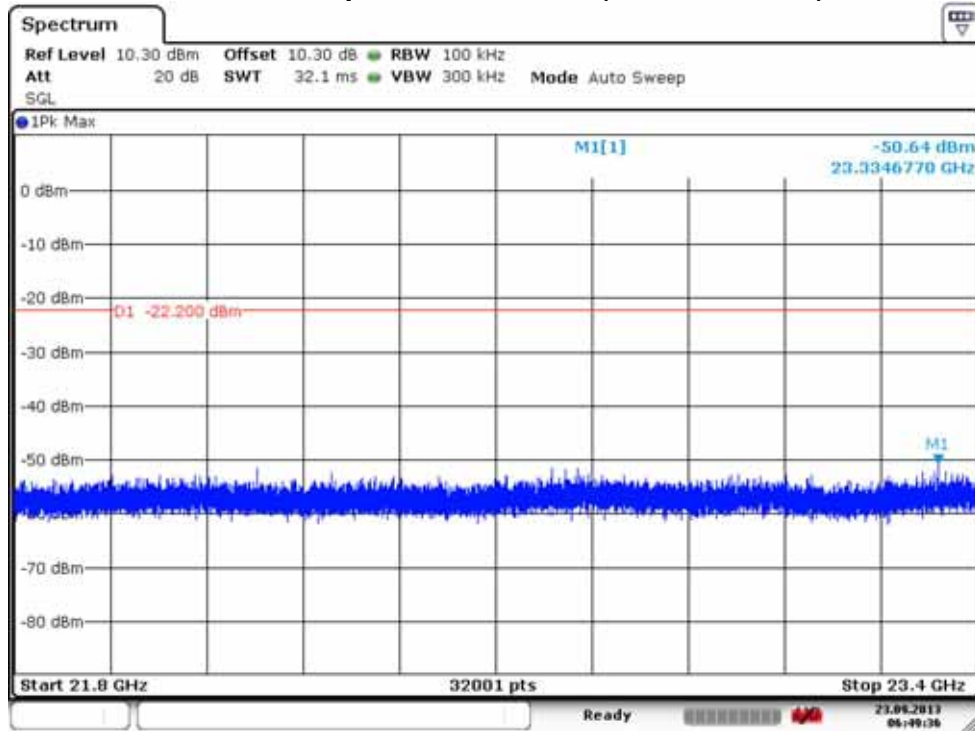
Conducted Spurious Emission (802.11a-CH149)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22

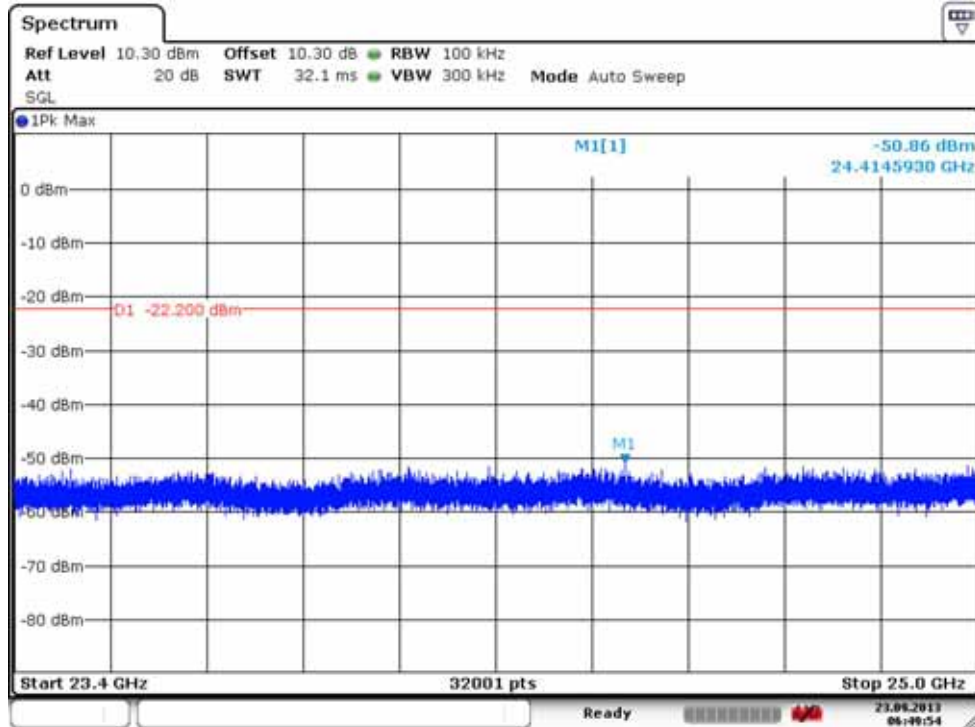
21.8 GHz ~ 23.4 GHz

Conducted Spurious Emission (802.11a-CH149)



23.4 GHz ~ 25 GHz

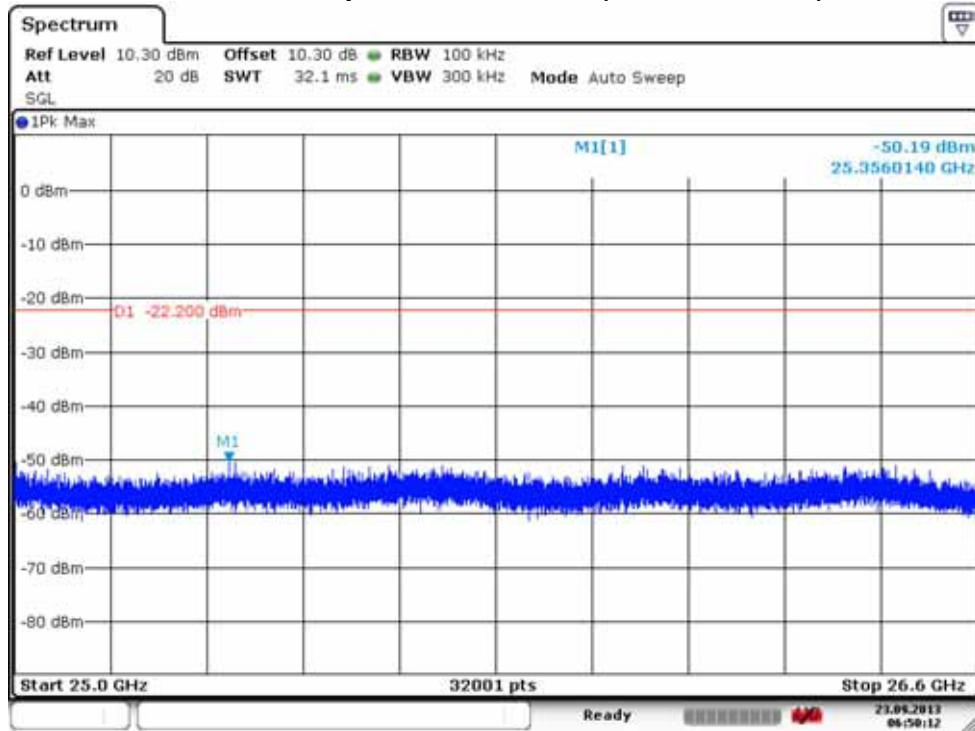
Conducted Spurious Emission (802.11a-CH149)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22

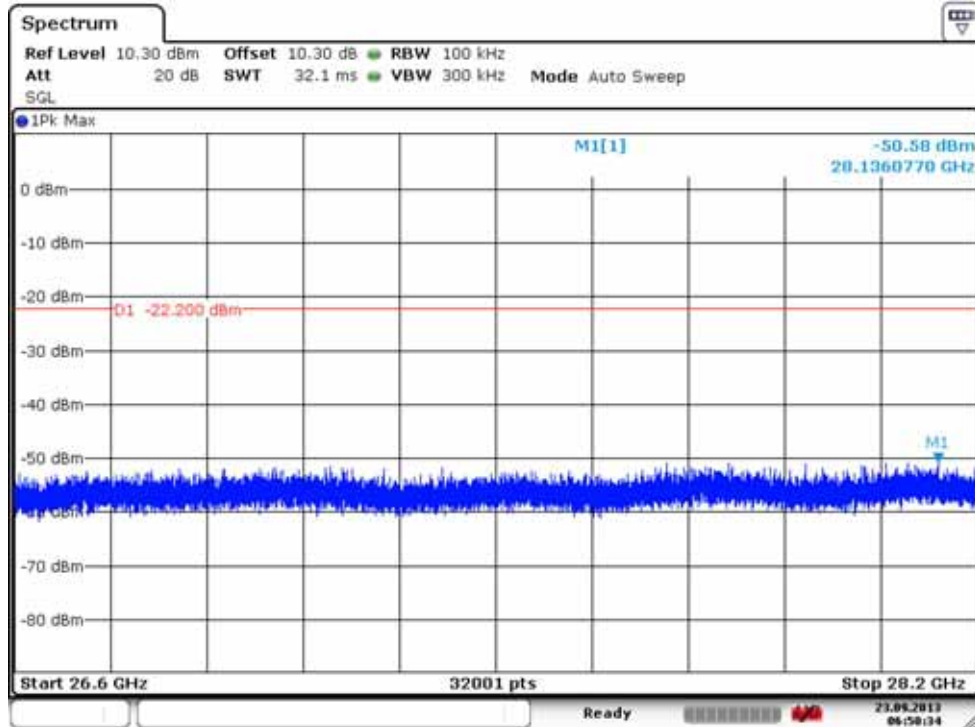
25 GHz ~ 26.6 GHz

Conducted Spurious Emission (802.11a-CH149)



26.6 GHz ~ 28.2 GHz

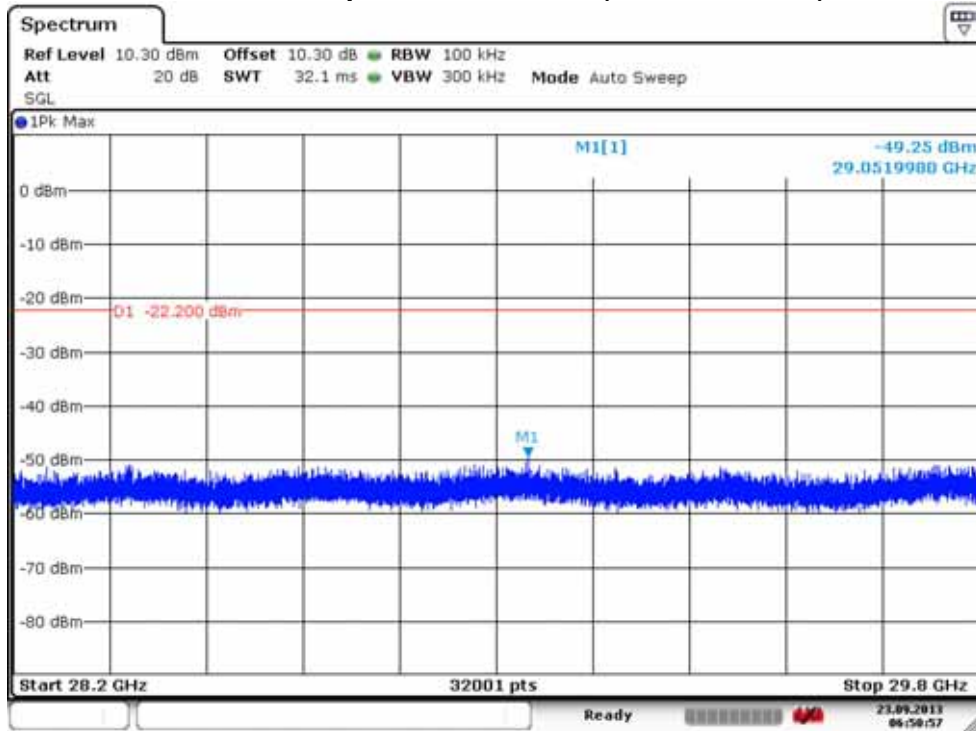
Conducted Spurious Emission (802.11a-CH149)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22

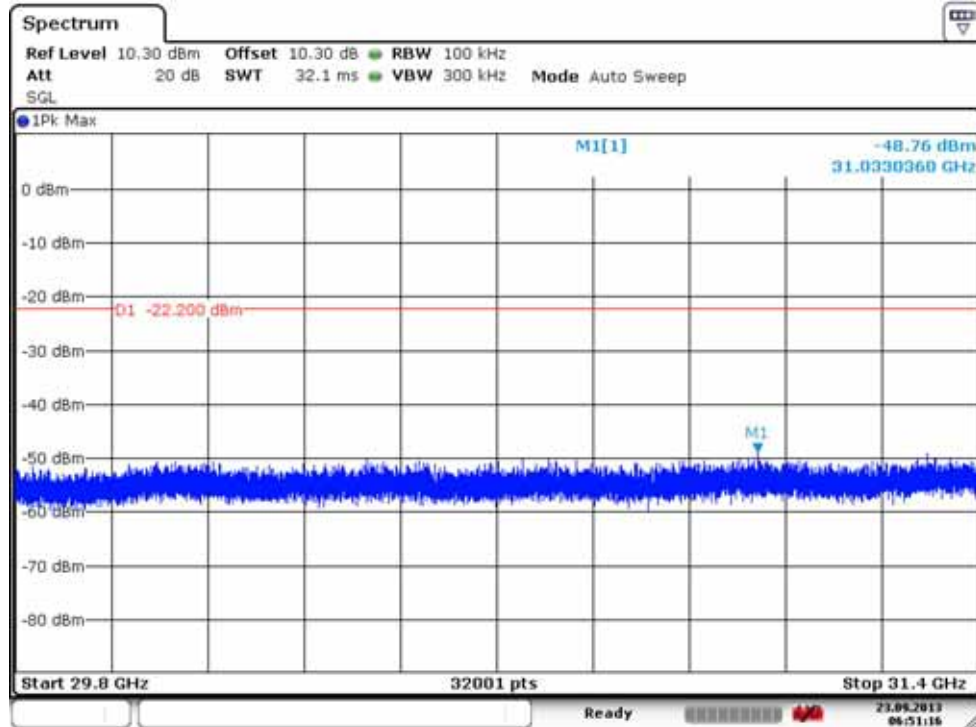
28.2 GHz ~ 29.8 GHz

Conducted Spurious Emission (802.11a-CH149)



29.8 GHz ~ 31.4 GHz

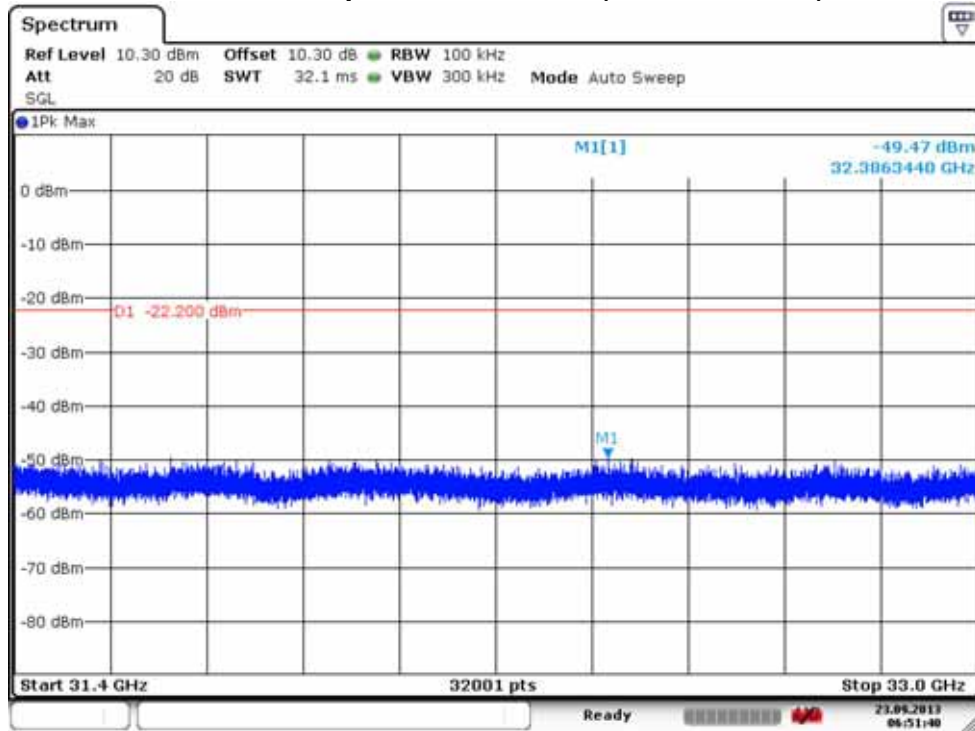
Conducted Spurious Emission (802.11a-CH149)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22

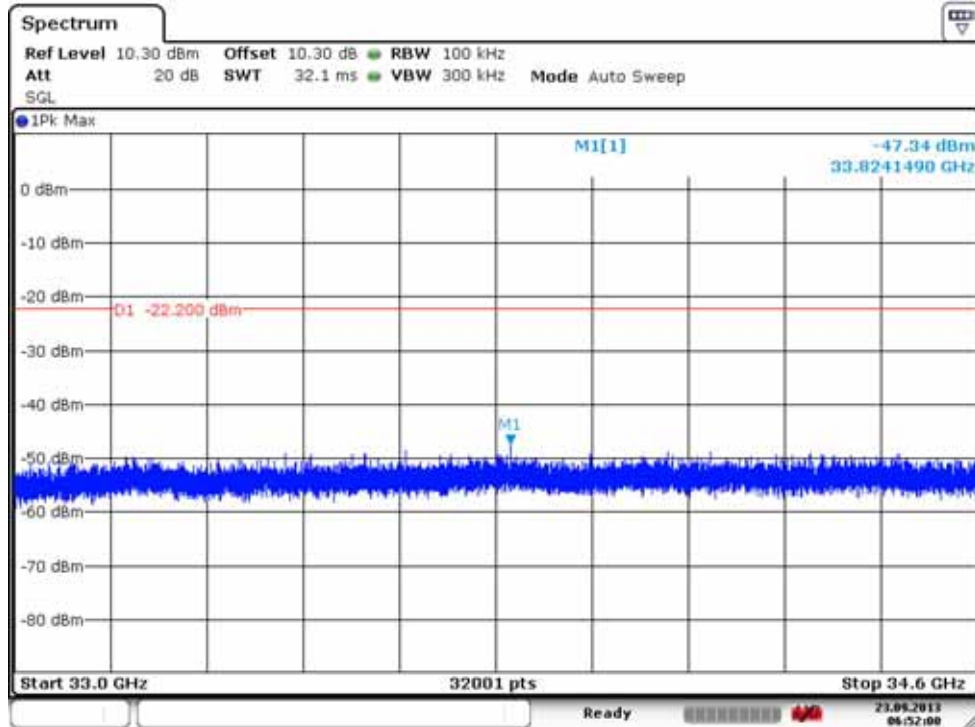
31.4 GHz ~ 33 GHz

Conducted Spurious Emission (802.11a-CH149)



33 GHz ~ 34.6 GHz

Conducted Spurious Emission (802.11a-CH149)

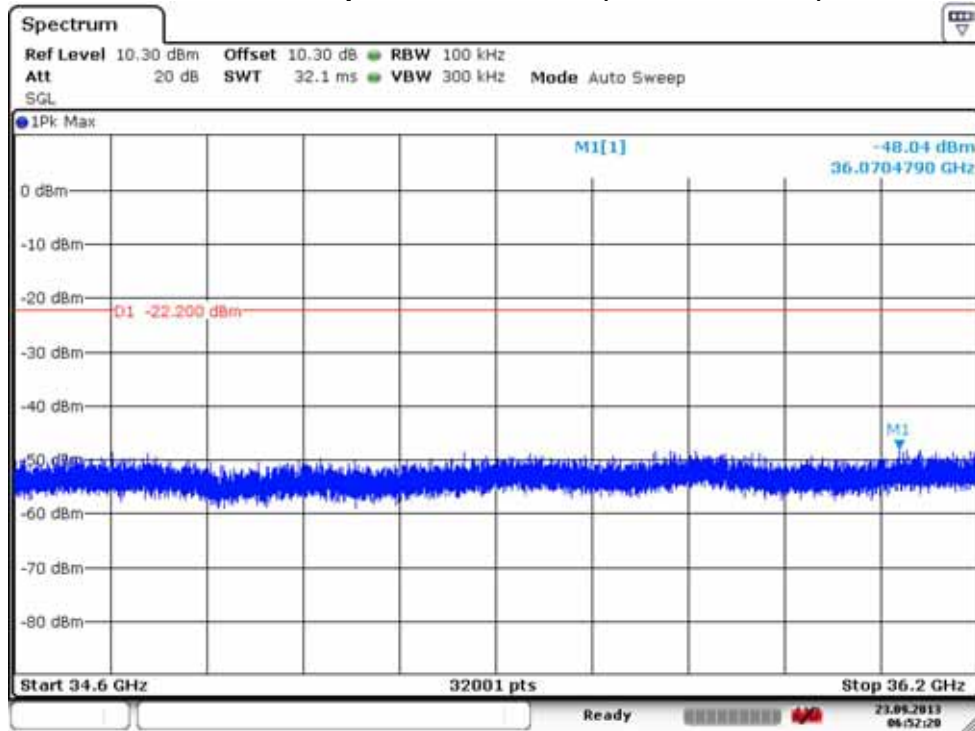


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22



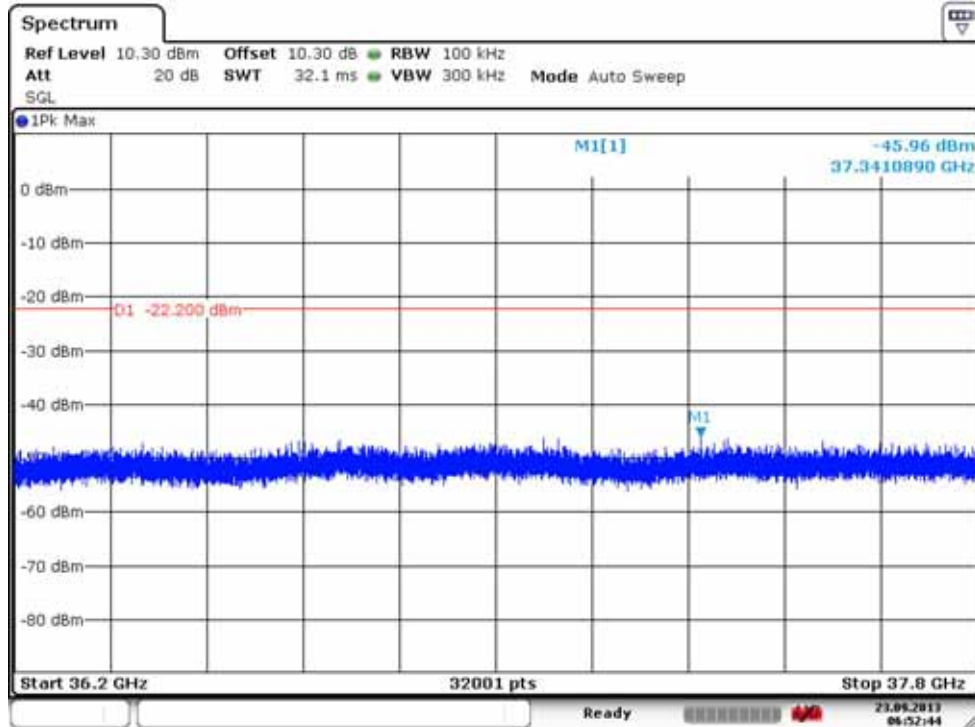
34.6 GHz ~ 36.2 GHz

Conducted Spurious Emission (802.11a-CH149)



36.2 GHz ~ 37.8 GHz

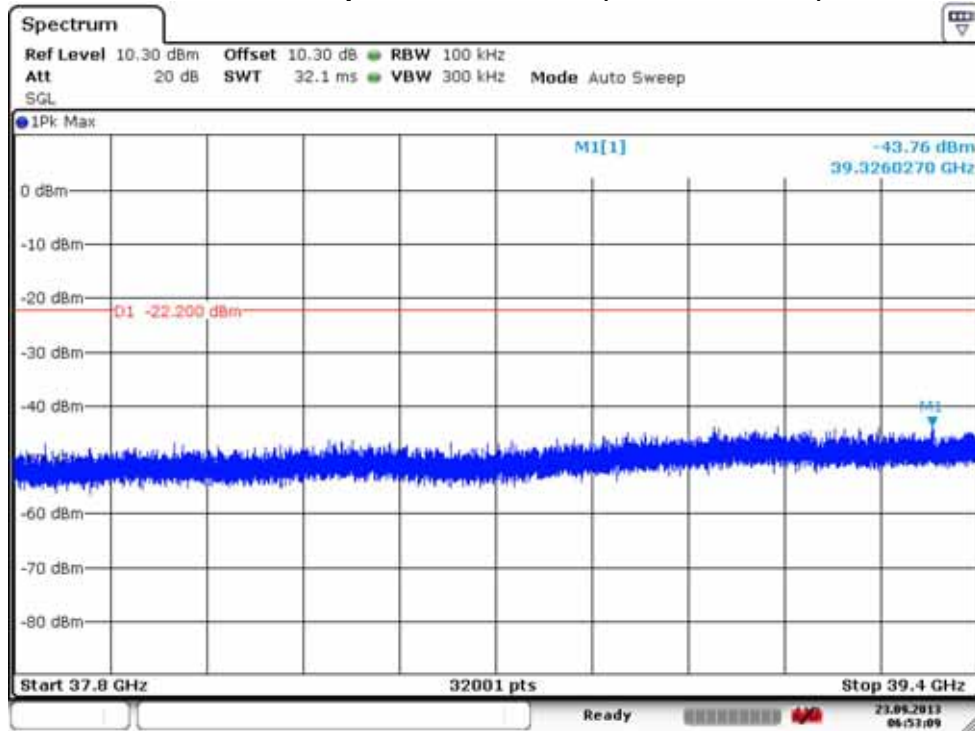
Conducted Spurious Emission (802.11a-CH149)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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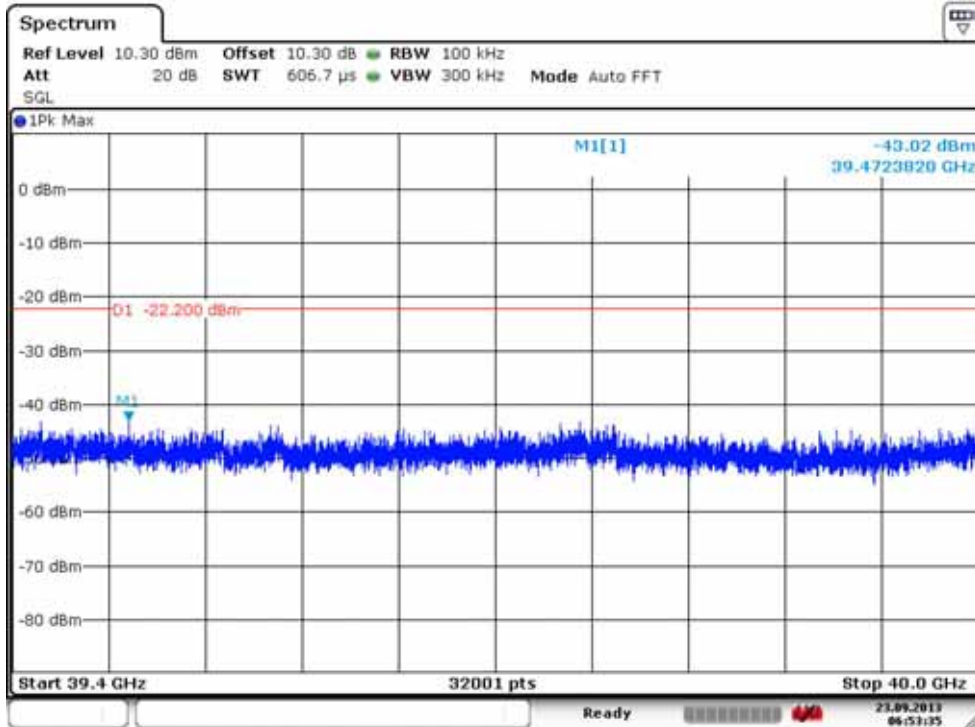
37.8 GHz ~ 39.4 GHz

Conducted Spurious Emission (802.11a-CH149)



39.4 GHz ~ 40 GHz

Conducted Spurious Emission (802.11a-CH149)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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**8.6 RADIATED MEASUREMENT.**

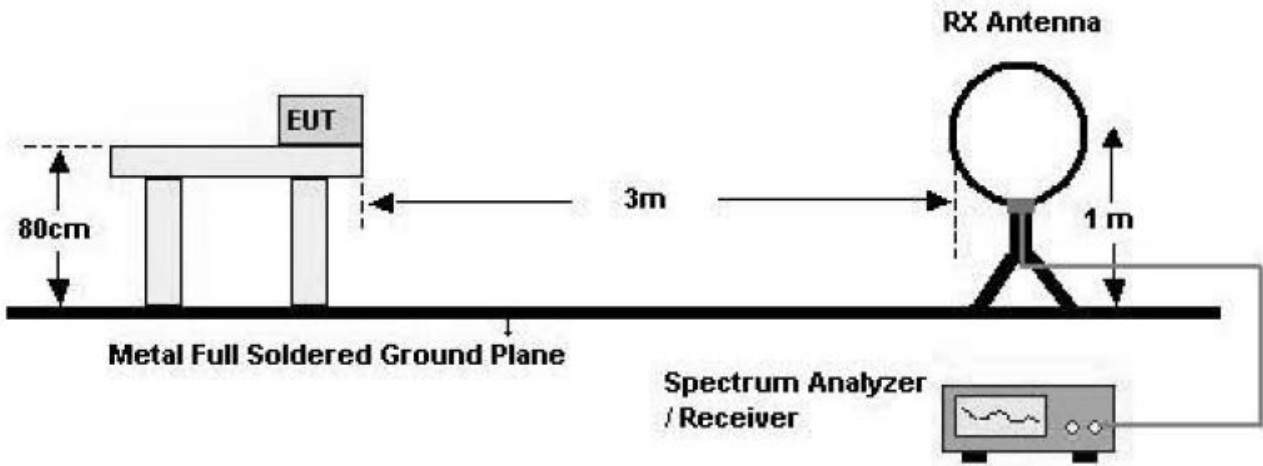
**8.6.1 RADIATED SPURIOUS EMISSIONS.**

Test Requirements and limit, §15.205, §15.209

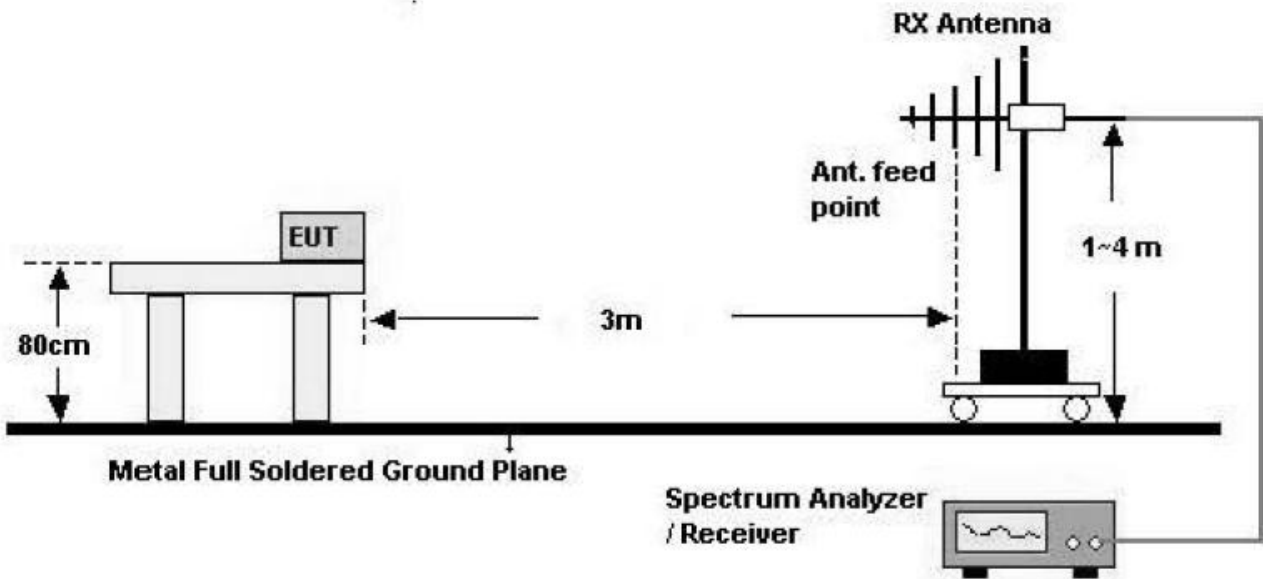
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

## Test Configuration

### Below 30 MHz

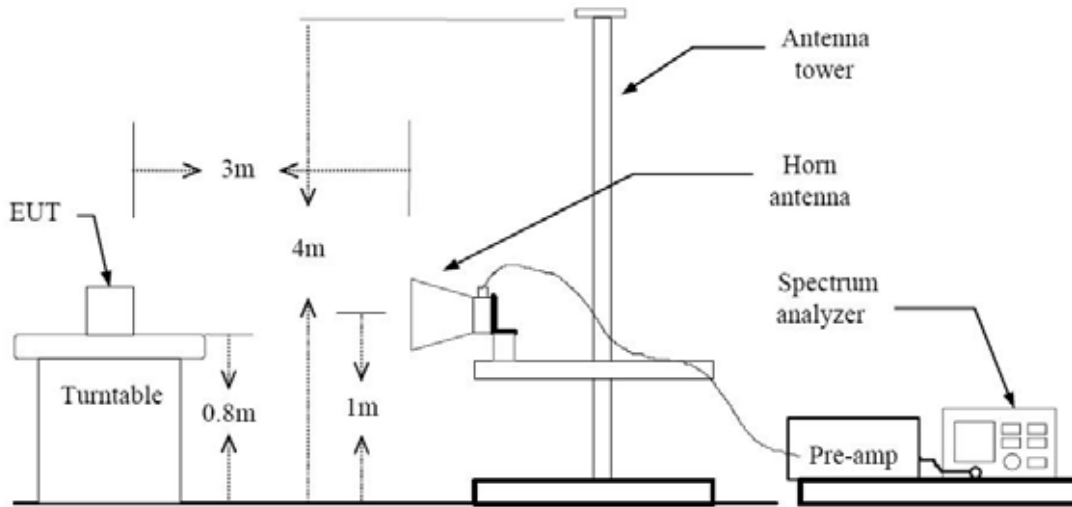


### 30 MHz - 1 GHz



FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC		FCC ID: ZNFLGL22

**Above 1 GHz**



**TEST PROCEDURE USED**

ANSI C63.4(2003)

Method 12.2.4 in KDB 558074, issued 04/09/2013 (Peak)

Method 12.2.5.1 in KDB 558074, issued 04/09/2013(Average Case 1)

Method 12.2.5.3 in KDB 558074, issued 04/09/2013(Average Case 2)

**Spectrum Setting**

- Peak

Peak emission levels are measured by setting the instrument as follows:

RBW = cf. Table 1.

VBW  $\geq$  3 x RBW.

Detector = Peak.

Sweep time = auto.

Trace mode = max hold.

Allow sweeps to continue until the trace stabilizes.

(Note that the required measurement time may be longer for low duty cycle applications).

**Table 1 —RBW as a function of frequency**

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz



- Average

Case 1

If the EUT can be configured or modified to transmit continuously (duty cycle ≥ 98 percent then the average emission levels shall be measured using the following method (with EUT transmitting continuously).

RBW = 1 MHz (unless otherwise specified).

VBW ≥ 3 x RBW.

Detector = RMS, if span/(# of points in sweep) ≤ (RBW/2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.

Averaging type = power (i.e., RMS).

- 1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
- 2) Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.

Sweep time = auto.

Perform a trace average of at least 100 traces.

Case 2

If continuous transmission of the EUT (i.e., duty cycle ≥ 98 percent) cannot be achieved and the duty cycle is not constant (i.e., duty cycle variations exceed ± 2 percent), then the following procedure shall be used:

Set RBW = 1 MHz.

Set VBW ≥ 1/T.

Video bandwidth mode or display mode

- 1) The instrument shall be set to ensure that video filtering is applied in the power domain. Typically, this requires setting the detector mode to RMS and setting the Average-VBW Type to Power (RMS).
- 2) As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode.

Detector = Peak.

Sweep time = auto.

Trace mode = max hold.

Allow max hold to run for at least 50 times (1/duty cycle) traces.

Note :

- 1. We used the case 1 for 802.11b mode and the case 2 for 802.11a/g/n\_20/n\_40/ac\_20/ac\_40/ac\_80 to perform the average filed strength measurements for RSE and radiated band edge test.
- 2. The actual setting value of VBW for 802.11a/g/n\_20/n\_40/ac\_20/ac\_40/ac\_80.

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Test Report No. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC		FCC ID: ZNFLGL22

Mode	Worst Data rate (Mbps)	T <sub>on</sub> (ms)	T <sub>total</sub> (ms)	Duty Cycle (%)	VBW(1/T) (Hz)	The actual setting value of VBW (Hz)
a	6	2.064	2.162	0.95467160	484	1000
g	6	2.064	2.162	0.95467160	484	1000
n_20	6.5	1.921	2.019	95.15	521	1000
n_40	13.5	0.945	1.045	90.43	1058	3000
ac_20	6.5	1.935	2.035	95.09	517	1000
ac_40	13.5	0.952	1.052	90.49	1050	3000
ac_80	29.3	0.460	0.560	82.14	2174	3000



**TEST RESULTS**

**9 kHz – 30MHz**

**Operation Mode:** Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dB $\mu$ V/m	dBm /m	dBm	(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.

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**TEST RESULTS**

**Below 1 GHz**

**Operation Mode:** Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dB $\mu$ V/m	dBm /m	dBm	(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> HCTR1309FR12-1	<b>Date of Issue:</b> September 24, 2013	<b>EUT Type:</b> Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	<b>FCC ID:</b> ZNFLGL22



**Above 1 GHz**

Band : 2.4 GHz  
 Operation Mode: 802.11 b  
 Transfer Rate: 1 Mbps  
 Operating Frequency 2412  
 Channel No. 01 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4824	54.51	-4.25	V	50.26	73.98	23.72	PK
4824	45.37	-4.25	V	41.12	53.98	12.86	AV
7236	53.29	5.21	V	58.50	73.98	15.48	PK
7236	41.04	5.21	V	46.25	53.98	7.73	AV
4824	54.21	-4.25	H	49.96	73.98	24.02	PK
4824	44.59	-4.25	H	40.34	53.98	13.64	AV
7236	53.25	5.21	H	58.46	73.98	15.52	PK
7236	41.01	5.21	H	46.22	53.98	7.76	AV

Band : 2.4 GHz  
 Operation Mode: 802.11 b  
 Transfer Rate: 1 Mbps  
 Operating Frequency 2437  
 Channel No. 06 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4874	53.83	-3.93	V	49.90	73.98	24.08	PK
4874	42.36	-3.93	V	38.43	53.98	15.55	AV
7311	53.17	4.97	V	58.14	73.98	15.84	PK
7311	41.24	4.97	V	46.21	53.98	7.77	AV
4874	53.56	-3.93	H	49.63	73.98	24.35	PK
4874	41.59	-3.93	H	37.66	53.98	16.32	AV
7311	53.14	4.97	H	58.11	73.98	15.87	PK
7311	41.16	4.97	H	46.13	53.98	7.85	AV



Band :	2.4 GHz
Operation Mode:	802.11 b
Transfer Rate:	1 Mbps
Operating Frequency	2462
Channel No.	11 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4924	53.61	-3.75	V	49.86	73.98	24.12	PK
4924	43.98	-3.75	V	40.23	53.98	13.75	AV
7386	52.55	5.60	V	58.15	73.98	15.83	PK
7386	41.24	5.60	V	46.84	53.98	7.14	AV
4924	53.48	-3.75	H	49.73	73.98	24.25	PK
4924	43.11	-3.75	H	39.36	53.98	14.62	AV
7386	52.32	5.60	H	57.92	73.98	16.06	PK
7386	41.15	5.60	H	46.75	53.98	7.23	AV

**Notes:**

11. 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. We have done 802.11b mode and all data rate. Worst data rate is the lowest data of each mode.
6. 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. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22



Band : 2.4 GHz  
 Operation Mode: 802.11 g  
 Transfer Rate: 6 Mbps  
 Operating Frequency 2412  
 Channel No. 01 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4824	53.52	-4.25	V	49.27	73.98	24.71	PK
4824	39.47	-4.25	V	35.22	53.98	18.76	AV
7236	53.64	5.21	V	58.85	73.98	15.13	PK
7236	39.74	5.21	V	44.95	53.98	9.03	AV
4824	53.47	-4.25	H	49.22	73.98	24.76	PK
4824	39.38	-4.25	H	35.13	53.98	18.85	AV
7236	53.59	5.21	H	58.80	73.98	15.18	PK
7236	39.66	5.21	H	44.87	53.98	9.11	AV

Band : 2.4 GHz  
 Operation Mode: 802.11 g  
 Transfer Rate: 6 Mbps  
 Operating Frequency 2437  
 Channel No. 06 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4874	51.97	-3.93	V	48.04	73.98	25.94	PK
4874	38.39	-3.93	V	34.46	53.98	19.52	AV
7311	53.14	4.97	V	58.11	73.98	15.87	PK
7311	39.41	4.97	V	44.38	53.98	9.60	AV
4874	51.88	-3.93	H	47.95	73.98	26.03	PK
4874	38.32	-3.93	H	34.39	53.98	19.59	AV
7311	53.08	4.97	H	58.05	73.98	15.93	PK
7311	39.36	4.97	H	44.33	53.98	9.65	AV



Band :	2.4 GHz
Operation Mode:	802.11 g
Transfer Rate:	6 Mbps
Operating Frequency	2462
Channel No.	11 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4924	52.64	-3.75	V	48.89	73.98	25.09	PK
4924	38.13	-3.75	V	34.38	53.98	19.60	AV
7386	52.69	5.60	V	58.29	73.98	15.69	PK
7386	39.25	5.60	V	44.85	53.98	9.13	AV
4924	52.54	-3.75	H	48.79	73.98	25.19	PK
4924	38.09	-3.75	H	34.34	53.98	19.64	AV
7386	52.59	5.60	H	58.19	73.98	15.79	PK
7386	39.21	5.60	H	44.81	53.98	9.17	AV

**Notes:**

11. 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. We have done 802.11g mode and all data rate. Worst data rate is the lowest data of each mode.
6. 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. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22



Band : 2.4 GHz  
 Operation Mode: 802.11 n  
 Transfer Rate: 6.5 Mbps  
 Operating Frequency 2412  
 Channel No. 01 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4824	52.88	-4.25	V	48.63	73.98	25.35	PK
4824	39.26	-4.25	V	35.01	53.98	18.97	AV
7236	53.01	5.21	V	58.22	73.98	15.76	PK
7236	39.59	5.21	V	44.80	53.98	9.18	AV
4824	52.79	-4.25	H	48.54	73.98	25.44	PK
4824	39.24	-4.25	H	34.99	53.98	18.99	AV
7236	52.98	5.21	H	58.19	73.98	15.79	PK
7236	39.52	5.21	H	44.73	53.98	9.25	AV

Band : 2.4 GHz  
 Operation Mode: 802.11 n  
 Transfer Rate: 6.5 Mbps  
 Operating Frequency 2437  
 Channel No. 06 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4874	51.62	-3.93	V	47.69	73.98	26.29	PK
4874	38.28	-3.93	V	34.35	53.98	19.63	AV
7311	52.57	4.97	V	57.54	73.98	16.44	PK
7311	39.24	4.97	V	44.21	53.98	9.77	AV
4874	51.58	-3.93	H	47.65	73.98	26.33	PK
4874	38.26	-3.93	H	34.33	53.98	19.65	AV
7311	52.49	4.97	H	57.46	73.98	16.52	PK
7311	39.20	4.97	H	44.17	53.98	9.81	AV



Band :	2.4 GHz
Operation Mode:	802.11 n
Transfer Rate:	6.5 Mbps
Operating Frequency	2462
Channel No.	11 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4924	51.92	-3.75	V	48.17	73.98	25.81	PK
4924	38.13	-3.75	V	34.38	53.98	19.60	AV
7386	52.44	5.60	V	58.04	73.98	15.94	PK
7386	39.19	5.60	V	44.79	53.98	9.19	AV
4924	51.87	-3.75	H	48.12	73.98	25.86	PK
4924	38.09	-3.75	H	34.34	53.98	19.64	AV
7386	52.38	5.60	H	57.98	73.98	16.00	PK
7386	39.13	5.60	H	44.73	53.98	9.25	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. We have done 802.11n mode and all data rate. Worst data rate is the lowest data of each mode.
6. 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. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22



Band : 5.8 GHz  
 Operation Mode: 802.11 a  
 Transfer Rate: 6 Mbps  
 Operating Frequency 5745 MHz  
 Channel No. 149 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11490	51.74	11.22	V	62.96	73.98	11.02	PK
11490	38.86	11.22	V	50.08	53.98	3.90	AV
11490	51.78	11.22	H	63.00	73.98	10.98	PK
11490	38.87	11.22	H	50.09	53.98	3.89	AV

Band : 5.8 GHz  
 Operation Mode: 802.11 a  
 Transfer Rate: 6 Mbps  
 Operating Frequency 5785 MHz  
 Channel No. 157 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11570	50.12	11.71	V	61.83	73.98	12.15	PK
11570	37.55	11.71	V	49.26	53.98	4.72	AV
11570	50.55	11.71	H	62.26	73.98	11.72	PK
11570	37.64	11.71	H	49.35	53.98	4.63	AV





Band :	5.8 GHz
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11650	50.36	11.34	V	61.70	73.98	12.28	PK
11650	37.48	11.34	V	48.82	53.98	5.16	AV
11650	50.49	11.34	H	61.83	73.98	12.15	PK
11650	37.52	11.34	H	48.86	53.98	5.12	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. We have done 802.11a mode and all data rate. Worst data rate is the lowest data of each mode
6. 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>
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Band : 5.8 GHz  
 Operation Mode: 802.11 n\_20 MHz BW  
 Transfer Rate: 6.5 Mbps  
 Operating Frequency 5745 MHz  
 Channel No. 149 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11490	52.32	11.22	V	63.54	73.98	10.44	PK
11490	37.72	11.22	V	48.94	53.98	5.04	AV
11490	52.36	11.22	H	63.58	73.98	10.40	PK
11490	37.77	11.22	H	48.99	53.98	4.99	AV

Band : 5.8 GHz  
 Operation Mode: 802.11 n\_20 MHz BW  
 Transfer Rate: 6.5 Mbps  
 Operating Frequency 5785 MHz  
 Channel No. 157 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11570	51.22	11.71	V	62.93	73.98	11.05	PK
11570	36.89	11.71	V	48.60	53.98	5.38	AV
11570	51.30	11.71	H	63.01	73.98	10.97	PK
11570	37.01	11.71	H	48.72	53.98	5.26	AV



Band :	5.8 GHz
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11650	51.11	11.34	V	62.45	73.98	11.53	PK
11650	36.94	11.34	V	48.28	53.98	5.70	AV
11650	51.19	11.34	H	62.53	73.98	11.45	PK
11650	36.95	11.34	H	48.29	53.98	5.69	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. We have done 802.11n\_20 MHz BW mode and all data rate. Worst data rate is the lowest data of each mode
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

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Band : 5.8 GHz  
 Operation Mode: 802.11 n\_40 MHz BW  
 Transfer Rate: 13.5 Mbps  
 Operating Frequency 5755 MHz  
 Channel No. 151 Ch

Frequency [MHz]	Reading [dBUV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBUV/m]	Limit [dBUV/m]	Margin [dB]	Detect
11510	50.02	11.53	V	61.55	73.98	12.43	PK
11510	35.42	11.53	V	46.95	53.98	7.03	AV
11510	50.14	11.53	H	61.67	73.98	12.31	PK
11510	35.73	11.53	H	47.26	53.98	6.72	AV

Band : 5.8 GHz  
 Operation Mode: 802.11 n\_40 MHz BW  
 Transfer Rate: 13.5 Mbps  
 Operating Frequency 5795 MHz  
 Channel No. 159 Ch

Frequency [MHz]	Reading [dBUV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBUV/m]	Limit [dBUV/m]	Margin [dB]	Detect
11590	48.72	11.64	V	60.36	73.98	13.62	PK
11590	34.26	11.64	V	45.90	53.98	8.08	AV
11590	48.74	11.64	H	60.38	73.98	13.60	PK
11590	34.37	11.64	H	46.01	53.98	7.97	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. We have done 802.11n\_40 MHz BW mode and all data rate. Worst data rate is the lowest data of each mode
6. 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. HCTR1309FR12-1	Date of Issue: September 24, 2013	EUT Type: Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	FCC ID: ZNFLGL22



Band : 5.8 GHz  
 Operation Mode: 802.11 ac\_20 MHz BW  
 Transfer Rate: 6.5 Mbps  
 Operating Frequency 5745 MHz  
 Channel No. 149 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11490	51.87	11.22	V	63.09	73.98	10.89	PK
11490	36.97	11.22	V	48.19	53.98	5.79	AV
17235	45.02	18.82	V	63.84	68.2	4.36	PK
11490	51.93	11.22	H	63.15	73.98	10.83	PK
11490	37.04	11.22	H	48.26	53.98	5.72	AV
17235	45.25	18.82	H	64.07	68.2	4.13	PK

Band : 5.8 GHz  
 Operation Mode: 802.11 ac\_20 MHz BW  
 Transfer Rate: 6.5 Mbps  
 Operating Frequency 5785 MHz  
 Channel No. 157 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11570	50.48	11.71	V	62.19	73.98	11.79	PK
11570	35.94	11.71	V	47.65	53.98	6.33	AV
17355	44.49	18.94	V	63.43	68.2	4.77	PK
11570	50.63	11.71	H	62.34	73.98	11.64	PK
11570	35.99	11.71	H	47.70	53.98	6.28	AV
17355	45.19	18.94	H	64.13	68.2	4.07	PK



Band :	5.8 GHz
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11650	50.74	11.34	V	62.08	73.98	11.90	PK
11650	35.99	11.34	V	47.33	53.98	6.65	AV
17475	45.34	19.52	V	64.86	68.2	3.34	PK
11650	50.95	11.34	H	62.29	73.98	11.69	PK
11650	36.05	11.34	H	47.39	53.98	6.59	AV
17475	45.56	19.52	H	65.08	68.2	3.12	PK

**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. We have done 802.11ac mode and all data rate. Worst data rate is the lowest data of each mode
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna
7. In case of 802.11ac, we applied the limit of spurious emissions according to KDB 644545 D01 Alternative Guidance for 802.11ac v01.

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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Band : 5.8 GHz  
 Operation Mode: 802.11 ac\_40 MHz BW  
 Transfer Rate: MCS0  
 Operating Frequency 5755 MHz  
 Channel No. 151 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11510	48.83	11.53	V	60.36	73.98	13.62	PK
11510	34.69	11.53	V	46.22	53.98	7.76	AV
17265	45.59	18.46	V	64.05	68.2	4.15	PK
11510	48.97	11.53	H	60.50	73.98	13.48	PK
11510	34.75	11.53	H	46.28	53.98	7.70	AV
17265	45.57	18.46	H	64.03	68.2	4.17	PK

Band : 5.8 GHz  
 Operation Mode: 802.11 ac\_40 MHz BW  
 Transfer Rate: MCS0  
 Operating Frequency 5795 MHz  
 Channel No. 159 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11590	48.14	11.64	V	59.78	73.98	14.20	PK
11590	33.98	11.64	V	45.62	53.98	8.36	AV
17385	45.76	18.91	V	64.67	68.2	3.53	PK
11590	48.16	11.64	H	59.80	73.98	14.18	PK
11590	34.01	11.64	H	45.65	53.98	8.33	AV
17385	45.62	18.91	H	64.53	68.2	3.67	PK



Band :	5.8 GHz
Operation Mode:	802.11 ac _80 MHz BW
Transfer Rate:	MCS0
Operating Frequency	5775 MHz
Channel No.	155 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11550	46.72	11.50	V	58.22	73.98	15.76	PK
11550	32.84	11.50	V	44.34	53.98	9.64	AV
17325	44.78	18.90	V	63.68	68.2	4.52	PK
11550	46.79	11.50	H	58.29	73.98	15.69	PK
11550	32.86	11.50	H	44.36	53.98	9.62	AV
17325	44.57	18.90	H	63.47	68.2	4.73	PK

**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. We have done 802.11ac mode and all data rate. Worst data rate is the lowest data of each mode
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna
7. In case of 802.11ac, we applied the limit of spurious emissions according to KDB 644545 D01 Alternative Guidance for 802.11ac v01.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
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## 8.6.2 RADIATED RESTRICTED BAND EDGES

### 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 :	2.4 GHz
Operation Mode:	802.11g
Transfer Rate:	6 Mbps
Operating Frequency	2412 MHz, 2462 MHz
Channel No.	01 Ch, 11 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
2390.0	28.76	33.90	H	62.66	73.98	11.32	PK
2390.0	12.50	33.90	H	46.40	53.98	7.58	AV
2390.0	28.54	33.90	V	62.44	73.98	11.54	PK
2390.0	12.46	33.90	V	46.36	53.98	7.62	AV
2483.5	29.29	33.99	H	63.28	73.98	10.70	PK
2483.5	12.69	33.99	H	46.68	53.98	7.30	AV
2483.5	29.18	33.99	V	63.17	73.98	10.81	PK
2483.5	12.17	33.99	V	46.16	53.98	7.82	AV

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Band : 2.4 GHz  
 Operation Mode: 802.11b  
 Transfer Rate: 1 Mbps  
 Operating Frequency 2412 MHz, 2462 MHz  
 Channel No. 01 Ch, 11 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
2390.0	25.18	33.90	H	59.08	73.98	14.90	PK
2390.0	14.31	33.90	H	48.21	53.98	5.77	AV
2390.0	24.98	33.90	V	58.88	73.98	15.10	PK
2390.0	14.06	33.90	V	47.96	53.98	6.02	AV
2483.5	24.85	33.99	H	58.84	73.98	15.14	PK
2483.5	14.52	33.99	H	48.51	53.98	5.47	AV
2483.5	24.79	33.99	V	58.78	73.98	15.20	PK
2483.5	14.19	33.99	V	48.18	53.98	5.80	AV

Band : 2.4 GHz  
 Operation Mode: 802.11n  
 Transfer Rate: 6.5 Mbps  
 Operating Frequency 2412 MHz, 2462 MHz  
 Channel No. 01 Ch, 11 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
2390.0	29.20	33.90	H	63.10	73.98	10.88	PK
2390.0	12.33	33.90	H	46.23	53.98	7.75	AV
2390.0	28.99	33.90	V	62.89	73.98	11.09	PK
2390.0	12.24	33.90	V	46.14	53.98	7.84	AV
2483.5	32.56	33.99	H	66.55	73.98	7.43	PK
2483.5	12.46	33.99	H	46.45	53.98	7.53	AV
2483.5	31.59	33.99	V	65.58	73.98	8.40	PK
2483.5	12.38	33.99	V	46.37	53.98	7.61	AV



Band:	5.8 GHz
Operation Mode:	802.11ac_20 MHz
Transfer Rate:	6.5 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp Gain [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
*5850	58.01	0.94	H	58.95	68.2	9.25	PK
*5850	59.67	0.94	V	60.61	68.2	7.59	PK

Band:	5.8 GHz
Operation Mode:	802.11ac_40 MHz
Transfer Rate:	13.5 Mbps
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp Gain [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
*5850	53.55	0.94	H	54.59	68.2	13.71	PK
*5850	53.31	0.94	V	54.25	68.2	13.95	PK

Band:	5.8 GHz
Operation Mode:	802.11ac_80 MHz
Transfer Rate:	29.3 Mbps
Operating Frequency	5775 MHz
Channel No.	155 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp Gain [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
*5850	54.57	0.94	H	55.51	68.2	12.69	PK
*5850	56.31	0.94	V	57.25	68.2	10.95	PK

**Notes:**

1. Total = Reading Value + Antenna Factor + Cable Loss
2. We have done 802.11b/g/n/ac mode and all data rate. Worst data rate is the lowest data of each mode.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

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- 4. In case of 802.11ac, we applied the limit of spurious emissions according to KDB 644545 D02 Alternative Guidance for 802.11ac v01.
- 5. ‘\*’ is radiated band edge test frequency(not restricted band emissions).

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<b>Test Report No.</b> HCTR1309FR12-1	<b>Date of Issue:</b> September 24, 2013	<b>EUT Type:</b> Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	<b>FCC ID:</b> ZNFLGL22

## 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 ground plane.
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 13 Mbps, Ch.1 and 802.11n. Because 802.11n mode is worst case.



**RESULT PLOTS**

**Conducted Emissions (Line 1)**

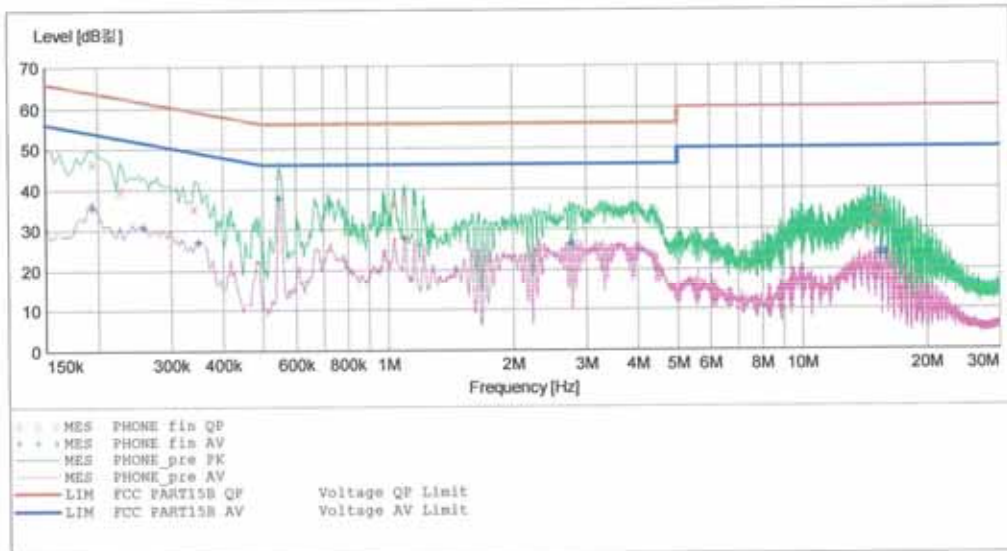
HCT

EMC

EUT: KS1204  
 Manufacturer: LG  
 Operating Condition: WLAN MODE  
 Test Site: SHIELD ROOM  
 Operator: JC SHIN  
 Test Specification: FCC PART15 B  
 Comment: H

**SCAN TABLE: "FCC CLASS B(H)"**

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



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

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.194001	46.50	9.8	64	17.4	---	---
0.226001	39.80	9.8	63	22.8	---	---
0.342001	35.20	9.8	59	23.9	---	---
0.548000	43.80	9.8	56	12.2	---	---
1.036000	36.20	9.8	56	19.8	---	---
1.100000	37.30	9.9	56	18.7	---	---
14.940000	31.00	10.8	60	29.0	---	---
15.032000	35.00	10.8	60	25.0	---	---
15.528000	34.00	10.8	60	26.0	---	---

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

2013-09-03 9:40오전

Frequency MHz	Level dB <sub>μV</sub>	Transd dB	Limit dB <sub>μV</sub>	Margin dB	Line	PE
0.194001	35.50	9.8	54	18.4	---	---
0.258001	30.60	9.8	52	20.8	---	---
0.350001	26.90	9.8	49	22.1	---	---
0.548000	37.70	9.8	46	8.3	---	---
1.100000	27.70	9.9	46	18.3	---	---
2.748000	26.30	10.0	46	19.7	---	---
15.380000	23.50	10.8	50	26.5	---	---
15.460000	24.50	10.8	50	25.5	---	---
15.872000	23.70	10.8	50	26.3	---	---

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## Conducted Emissions (Line 2)

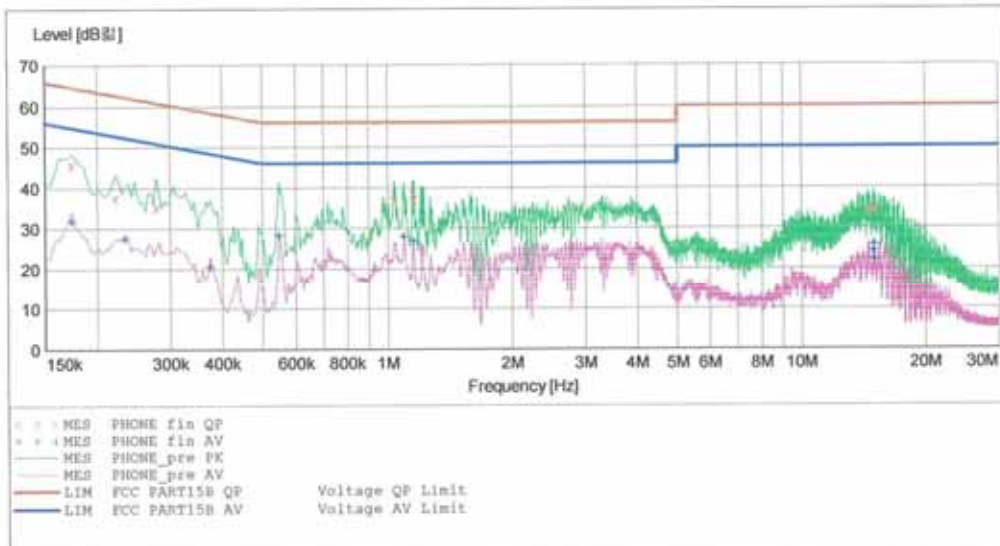
HCT

EMC

EUT: KS1204  
 Manufacturer: LG  
 Operating Condition: WLAN MODE  
 Test Site: SHIELD ROOM  
 Operator: JC SHIN  
 Test Specification: FCC PART15 B  
 Comment: N

### SCAN TABLE: "FCC CLASS B(N)"

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



### MEASUREMENT RESULT: "PHONE\_fin QP"

2013-09-03 9:45오전

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.174001	45.70	10.0	65	19.1	---	---
0.222001	37.50	10.0	63	25.2	---	---
0.278001	35.10	10.0	61	25.7	---	---
1.040000	36.90	10.1	56	19.1	---	---
1.156000	38.60	10.1	56	17.4	---	---
1.164000	37.30	10.1	56	18.7	---	---
14.524000	34.10	11.0	60	25.9	---	---
14.968000	34.80	11.0	60	25.2	---	---
15.028000	35.00	11.0	60	25.0	---	---



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

2013-09-03 9:45오전

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.174001	31.80	10.0	55	23.0	---	---
0.234001	27.50	10.0	52	24.8	---	---
0.374001	20.50	10.0	48	27.9	---	---
0.548000	28.20	10.0	46	17.8	---	---
1.100000	27.80	10.1	46	18.2	---	---
1.156000	26.90	10.1	46	19.1	---	---
14.976000	24.10	11.0	50	25.9	---	---
15.024000	25.70	11.0	50	24.3	---	---
15.072000	22.00	11.0	50	28.0	---	---

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## 9. LIST OF TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Interval	Calibration Due	Serial No.
Rohde & Schwarz	ENV216/ LISN	Annual	02/06/2014	100073
Schwarzbeck	VULB 9160/ TRILOG Antenna	Biennial	12/17/2014	3150
Rohde & Schwarz	ESI 40 / EMI TEST RECEIVER	Annual	04/16/2014	831564103
Agilent	E4440A/ Spectrum Analyzer	Annual	04/25/2014	US45303008
Agilent	N9020A/ SIGNAL ANALYZER	Annual	05/14/2014	MY51110063
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	SCU-18/ Signal Conditioning Unit	Annual	09/10/2014	10094
MITEQ	AMF-6B-180265-35-10P / POWER AMP	Annual	04/16/2014	667624
CERNEX	CBL26405040 / POWER AMP	Annual	04/16/2014	19660
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	10/17/2013	937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	Biennial	10/30/2014	BBHA9170124
Rohde & Schwarz	FSP / Spectrum Analyzer	Annual	02/08/2014	839117/011
Agilent	N1911A/Power Meter	Annual	01/22/2014	MY45100523
Agilent	N1921A /POWER SENSOR	Annual	07/11/2014	MY45241059
Wainwright Instrument	WHF3.0/18G-10EF / High Pass Filter	Annual	02/08/2014	F6
Wainwright Instrument	WHNX6.0/26.5G-6SS / High Pass Filter	Annual	04/16/2014	1
Wainwright Instrument	WHNX7.0/18G-8SS / High Pass Filter	Annual	04/16/2014	29
Wainwright Instrument	WRCJ2400/2483.5-2370/2520-60/14SS / Band Reject Filter	Annual	03/19/2014	1
Hewlett Packard	11636B/Power Divider	Annual	11/07/2013	11377
Agilent	87300B/Directional Coupler	Annual	12/24/2013	3116A03621
Hewlett Packard	11667B / Power Splitter	Annual	05/29/2014	05001
DIGITAL	EP-3010 /DC POWER SUPPLY	Annual	11/07/2013	3110117
ITECH	IT6720 / DC POWER SUPPLY	Annual	11/07/2013	010002156287001199
TESCOM	TC-3000C / BLUETOOTH TESTER	Annual	04/24/2014	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	Annual	04/25/2014	100422
EMCO	6502.LOOP ANTENNA	Biennial	01/11/2014	9009-2536
CERNEX	CBLU1183540 / POWER AMP	Annual	07/24/2014	21691
Agilent	8493C / Attenuator(10 dB)	Annual	07/24/2014	76649
WEINSCHL	2-3 / Attenuator(3 dB)	Annual	11/07/2013	BR0617

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<b>Test Report No.</b> HCTR1309FR12-1	<b>Date of Issue:</b> September 24, 2013	<b>EUT Type:</b> Cellular/PCS GSM/GPRS/EDGE Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth/WLAN/NFC	<b>FCC ID:</b> ZNFLGL22