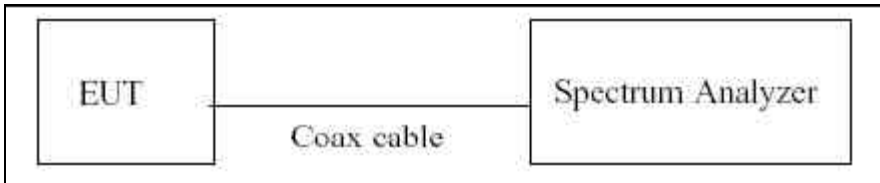


8.4 POWER SPECTRAL DENSITY

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

We tested according to Method in KDB 789033(issued 04/08/2013).

The spectrum analyzer is set to :

1. Set span to encompass the entire emission bandwidth(EBW) of the signal.
2. RBW = 1 MHz.
3. VBW ≥ 3 MHz.
4. Number of points in sweep ≥ 2*span/RBW.
5. Sweep time = auto.
6. Detector = RMS(i.e., power averaging), if available. Otherwise, use sample detector mode.
7. Do not use sweep triggering. Allow the sweep to “free run”.
8. Trace average at least 100 traces in power averaging(RMS) mode
9. Use the peak search function on the spectrum analyzer to find the peak of the spectrum.
10. If Method SA-2 was used, add $10 \log(1/x)$, where x is the duty cycle, to the peak of the spectrum.

Sample Calculation

PSD = Reading Value + ATT loss + Cable loss(1 ea) + Duty Cycle Factor

Output Power = -5 dBm + 10 dB + 0.8 dB + 0.21 dB = 16.01 dBm

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 below table.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

Band	Frequency(MHz)	Loss(dB)
UNII 1	5180	10.30
	5190	10.29
	5200	10.28
	5230	10.29
	5240	10.34
UNII 2	5260	10.37
	5270	10.38
	5300	10.40
	5310	10.39
	5320	10.39
UNII 2e	5500	10.35
	5510	10.36
	5550	10.41
	5580	10.43
	5670	10.43
	5700	10.30

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



TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5180	36	802.11a	0.267	1.366	1.633	4	Pass
5200	40		-0.014	1.366	1.352	4	Pass
5240	48		-0.025	0.318	0.293	4	Pass
5260	52	802.11a	1.561	0.318	1.879	11	Pass
5300	60		0.774	0.766	1.540	11	Pass
5320	64		0.959	0.205	1.164	11	Pass
5500	100	802.11a	-0.117	0.598	0.481	11	Pass
5580	116		0.270	0.598	0.868	11	Pass
5700	140		0.023	0.598	0.621	11	Pass

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5180	36	802.11n	-0.598	0.221	-0.377	4	Pass
5200	40	20MHz BW	-0.391	0.221	-0.170	4	Pass
5240	48		-0.922	1.496	0.574	4	Pass
5260	52	802.11n	-0.835	1.394	0.559	11	Pass
5300	60	20MHz BW	-0.641	1.496	0.855	11	Pass
5320	64		-0.639	0.795	0.156	11	Pass
5500	100	802.11n	-2.052	1.394	-0.658	11	Pass
5580	116	20MHz BW	-1.747	1.496	-0.251	11	Pass
5700	140		-1.325	0.621	-0.704	11	Pass

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5190	38	802.11n	-6.406	1.411	-4.995	4	Pass
5230	46	40MHz BW	-4.811	0.445	-4.366	4	Pass
5270	54	802.11n	-4.437	0.445	-3.992	11	Pass
5310	62	40MHz BW	-4.970	0.804	-4.166	11	Pass
5510	102	802.11n 40MHz BW	-6.367	1.867	-4.500	11	Pass
5550	110		-4.955	0.445	-4.510	11	Pass
5670	134		-6.393	1.867	-4.526	11	Pass

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5180	36	802.11ac 20MHz BW	-1.475	1.476	0.001	4	Pass
5200	40		-1.396	1.094	-0.302	4	Pass
5240	48		-0.750	0.439	-0.311	4	Pass
5260	52	802.11ac 20MHz BW	-0.122	0.230	0.108	11	Pass
5300	60		-0.284	0.230	-0.054	11	Pass
5320	64		-0.688	0.439	-0.249	11	Pass
5500	100	802.11ac 20MHz BW	-1.458	0.797	-0.661	11	Pass
5580	116		-1.455	1.583	0.128	11	Pass
5720	144		-2.413	1.583	-0.830	11	Pass

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5190	38	802.11ac 40MHz BW	-5.960	1.108	-4.852	4	Pass
5230	46		-6.328	2.739	-3.589	4	Pass
5270	54	802.11ac 40MHz BW	-5.246	1.843	-3.403	11	Pass
5310	62		-5.188	2.801	-2.387	11	Pass
5510	102	802.11ac 40MHz BW	-5.992	1.372	-4.620	11	Pass
5550	110		-6.377	1.843	-4.534	11	Pass
5710	142		-4.939	0.434	-4.505	11	Pass

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5210	42	802.11ac 80MHz BW	-8.811	0.854	-7.957	4	Pass
5290	58	802.11ac 80MHz BW	-9.315	3.333	-5.982	11	Pass
5530	106	802.11ac 80MHz BW	-10.162	3.122	-7.040	11	Pass
5690	138		-9.314	1.469	-7.845	11	Pass

Note :

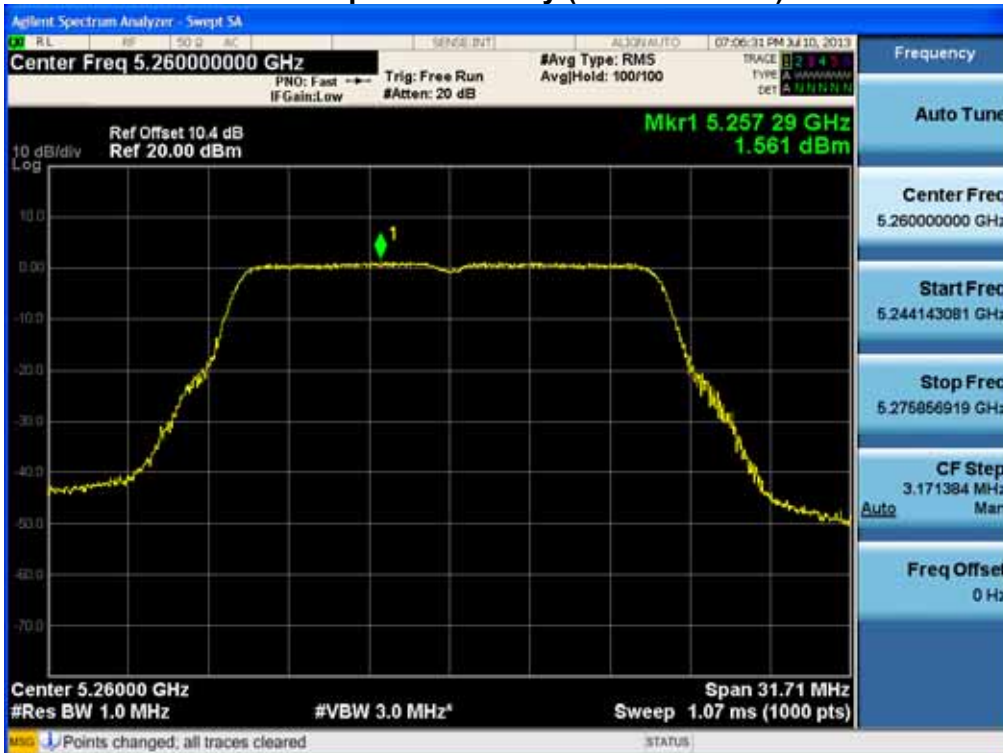
1. In order to simplify the report, attached plots were only the highest PSD channel.
2. We applied the 15.407 for Ch.144, 142 and 138 in 802.11ac according to KDB 644545 D01 v01r01.

RESULT PLOTS

Power Spectral Density (802.11a-CH 36)

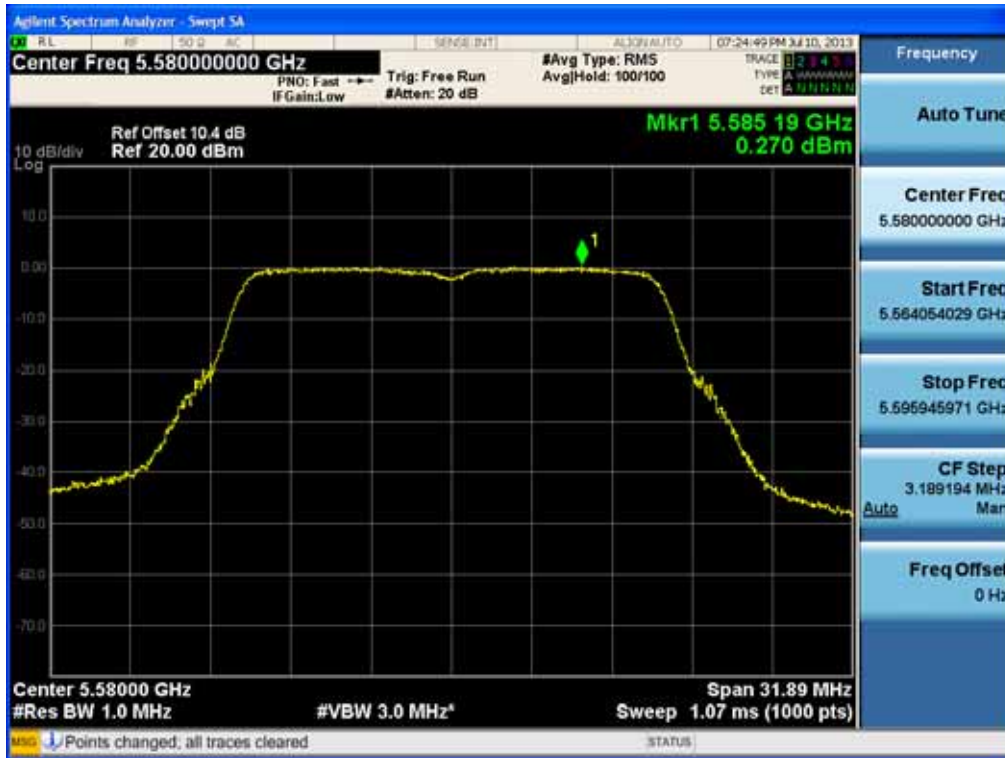


Power Spectral Density (802.11a-CH 52)



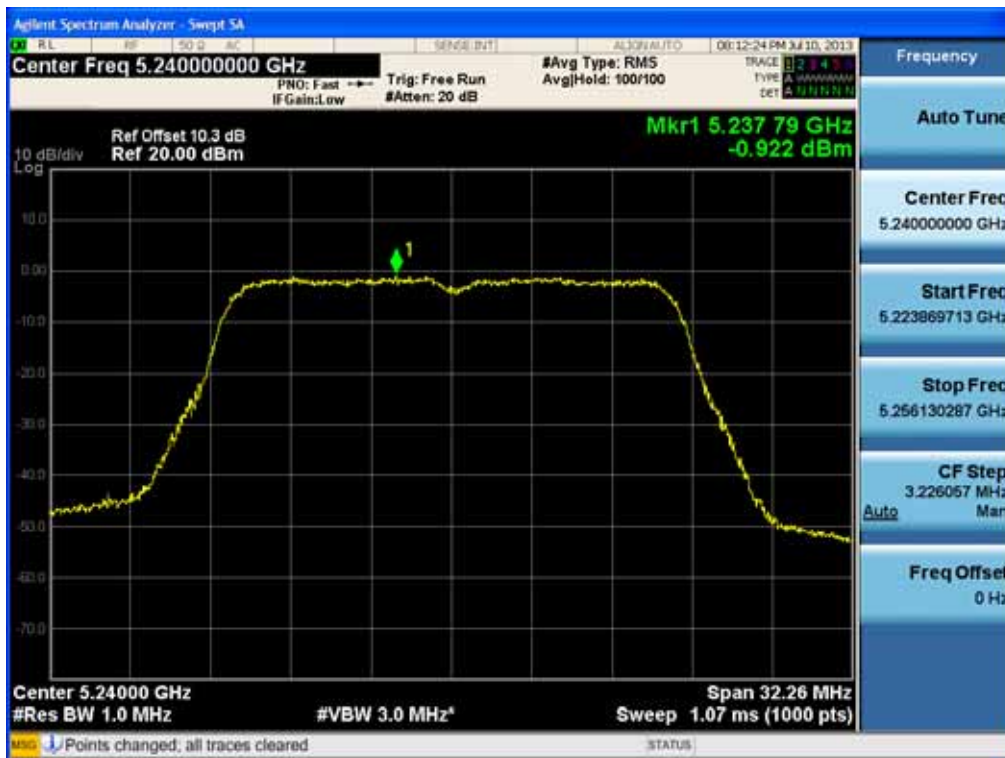
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNF0821

Power Spectral Density (802.11a-CH 116)



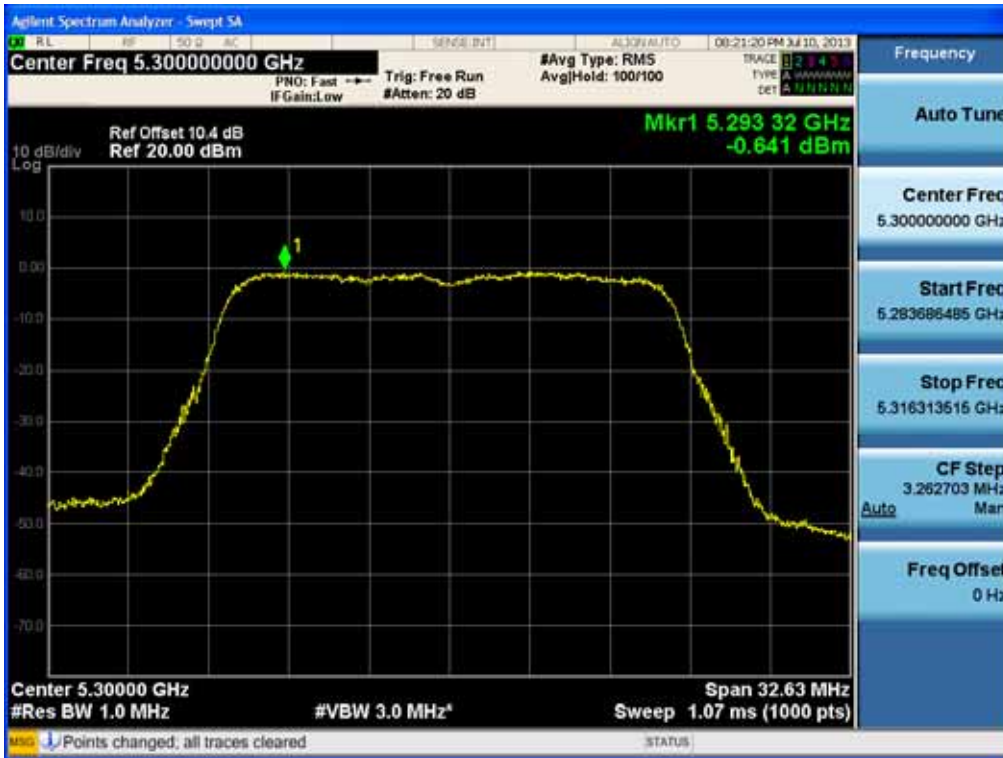
20 MHz BW

Power Spectral Density (802.11n-CH 48)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Power Spectral Density (802.11n-CH 60)

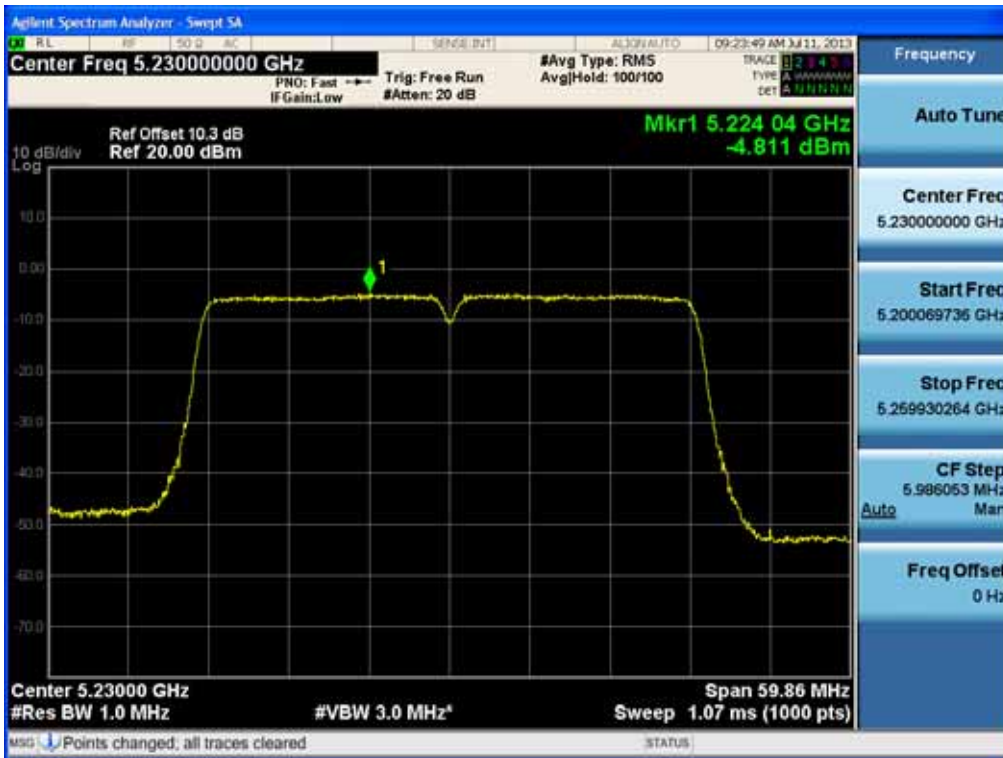


Power Spectral Density (802.11n-CH 116)

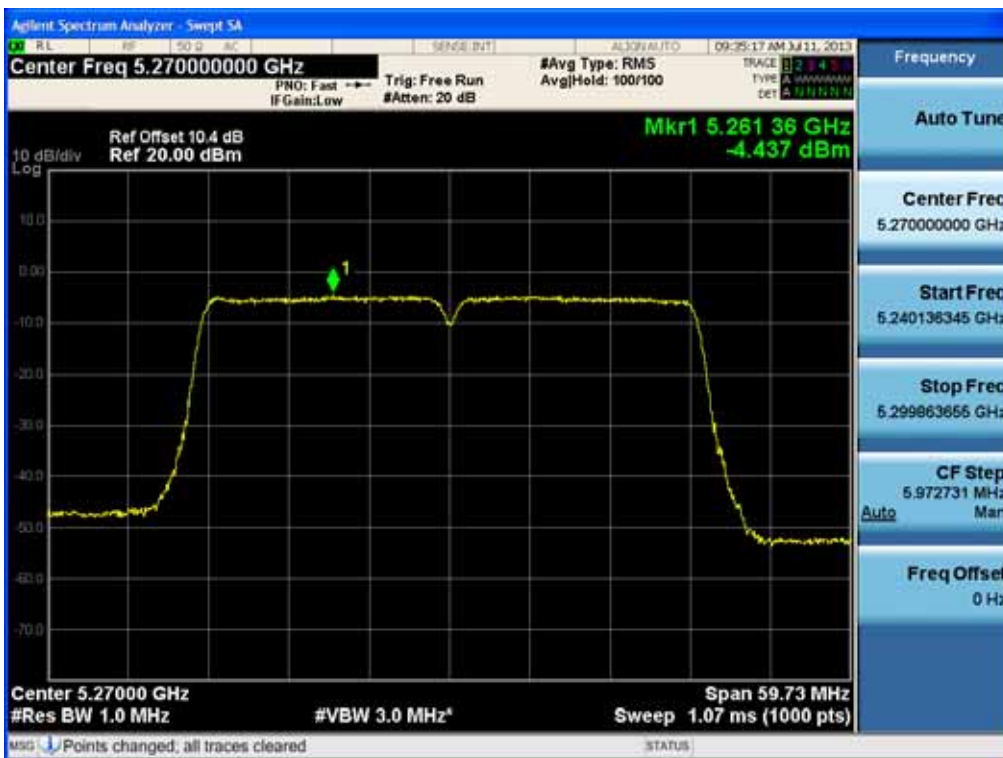


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNF821

Power Spectral Density (802.11n-CH 46)

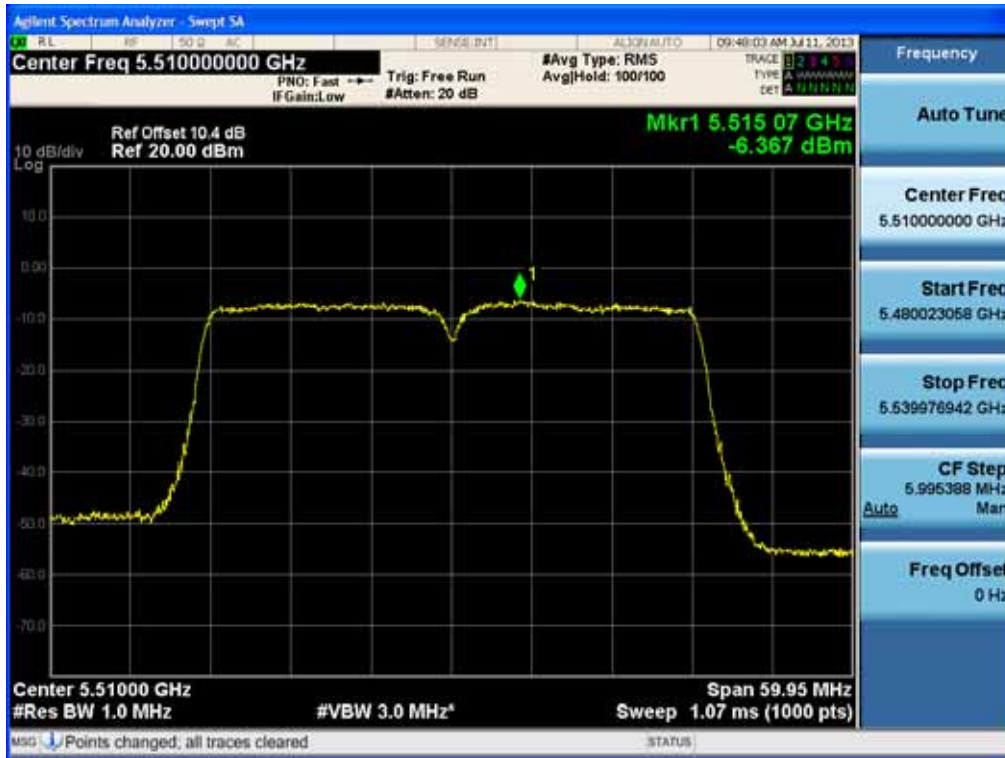


Power Spectral Density (802.11n-CH 54)



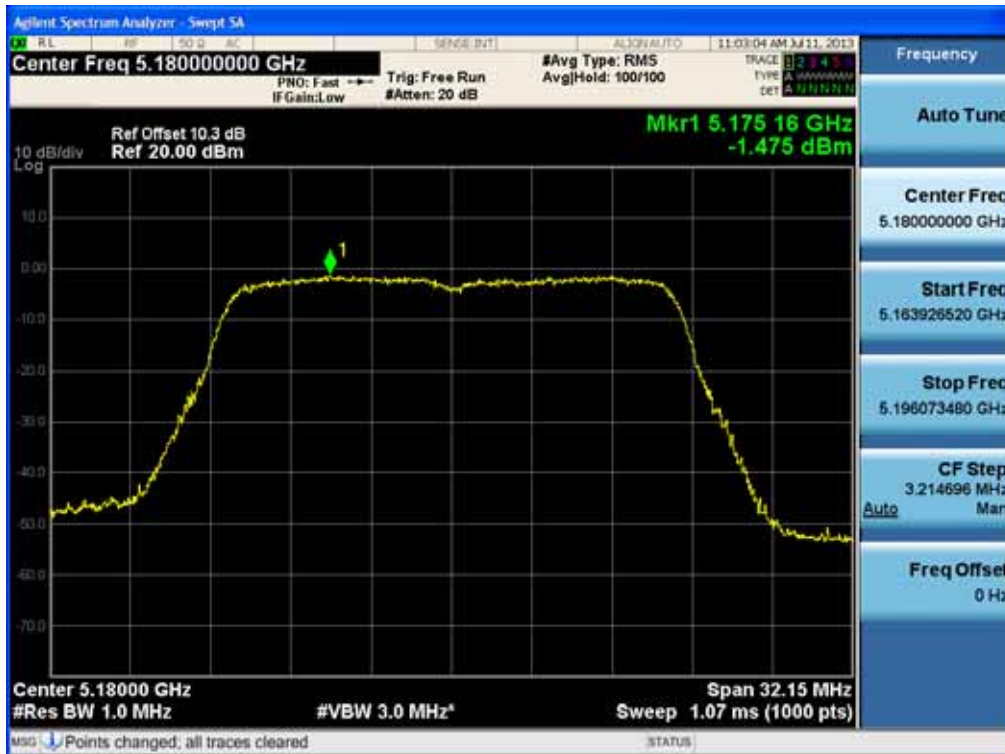
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNF0821

Power Spectral Density (802.11n-CH 102)



20 MHz BW

Power Spectral Density (802.11ac-CH 36)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNF0821

Power Spectral Density (802.11ac-CH 52)

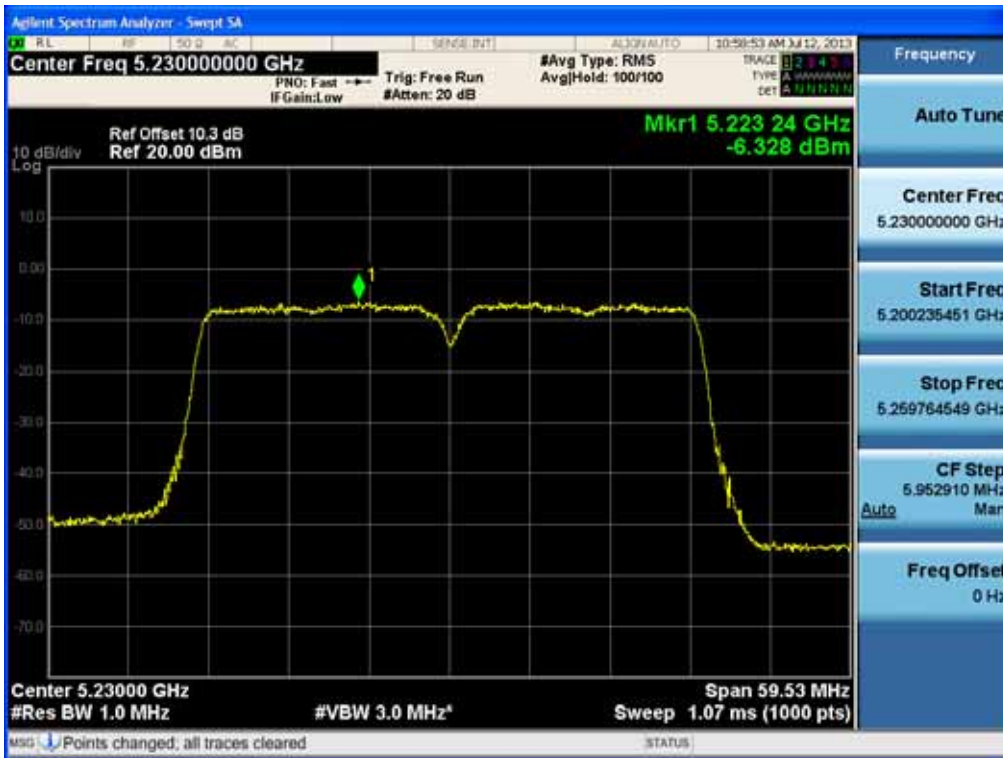


Power Spectral Density (802.11ac-CH 116)

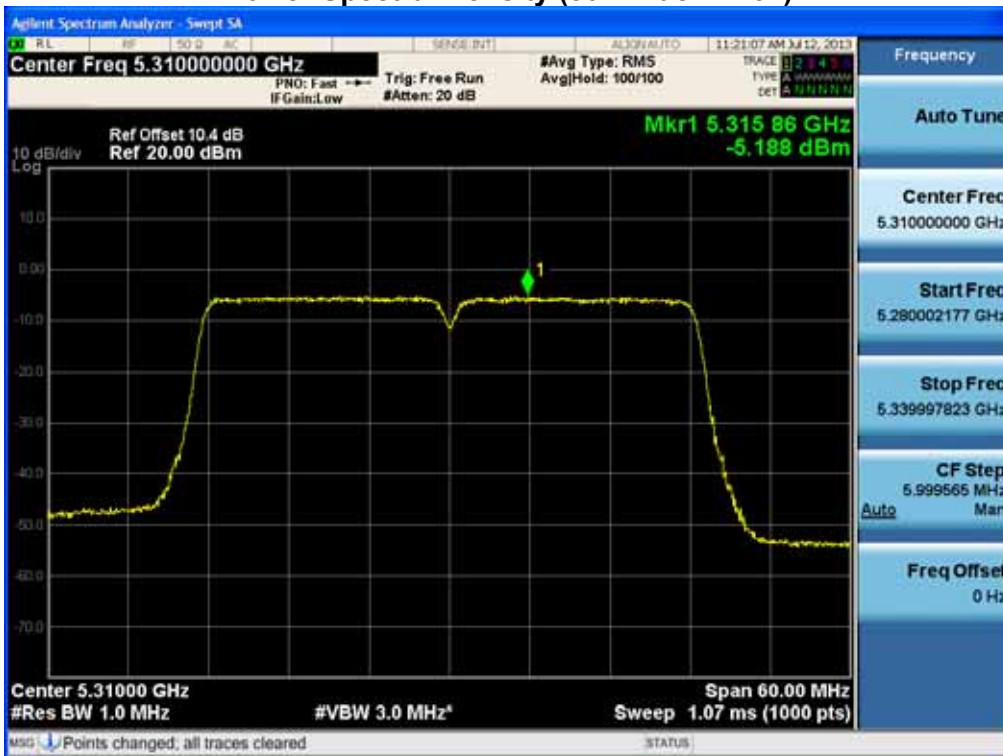


FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

Power Spectral Density (802.11ac-CH 46)

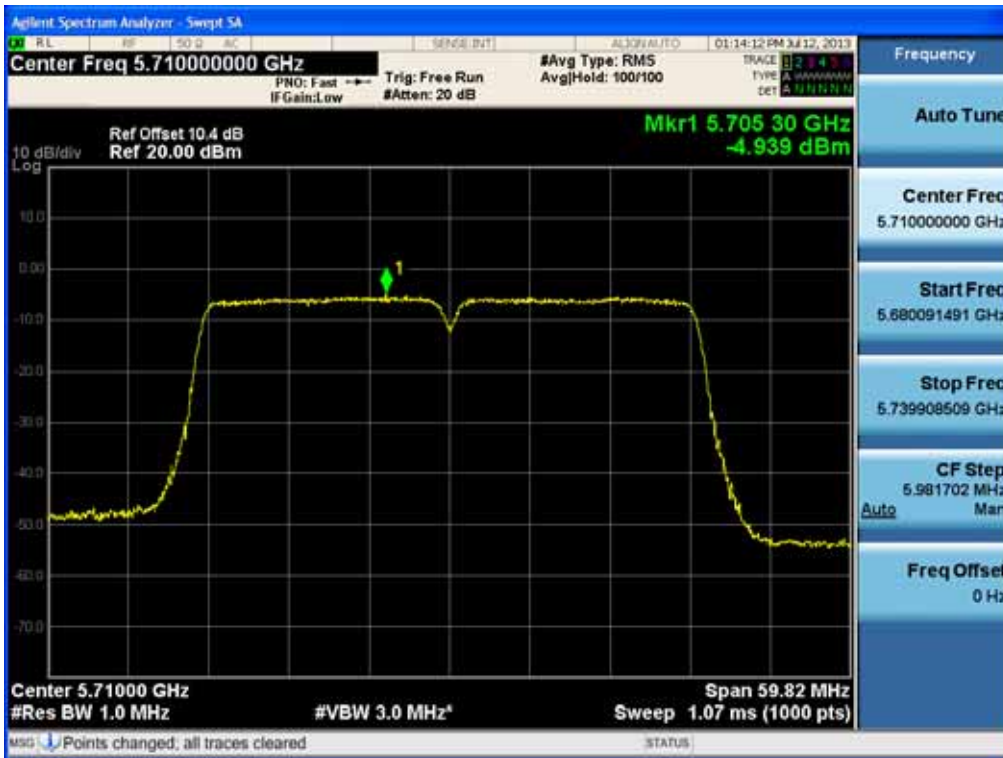


Power Spectral Density (802.11ac-CH 62)



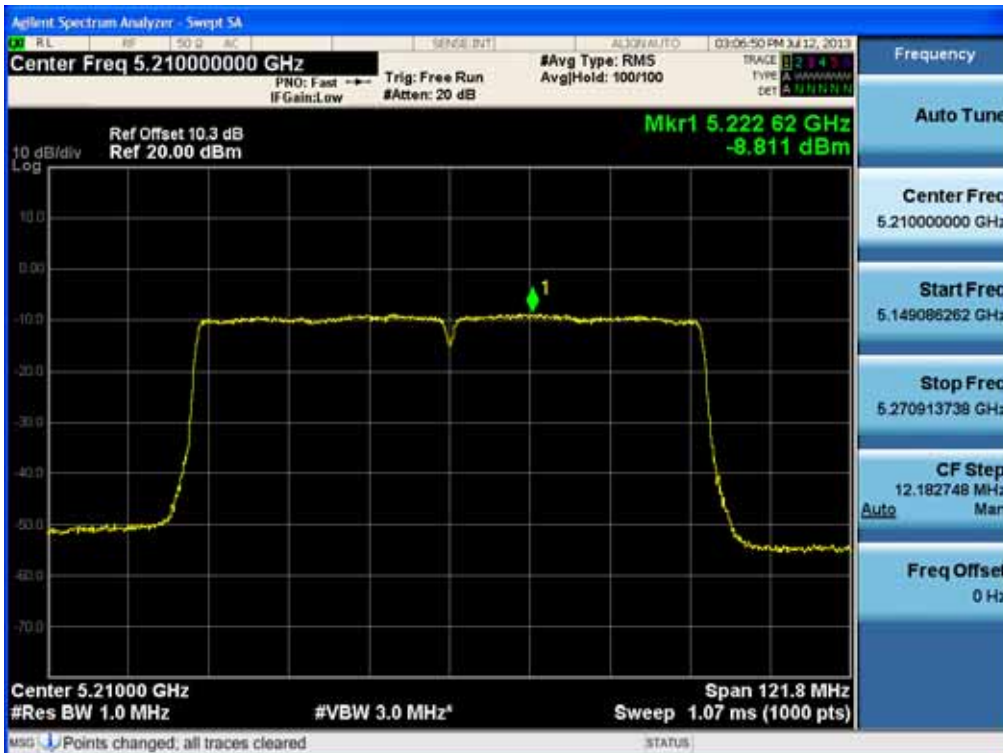
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNF821

Power Spectral Density (802.11ac-CH 142)



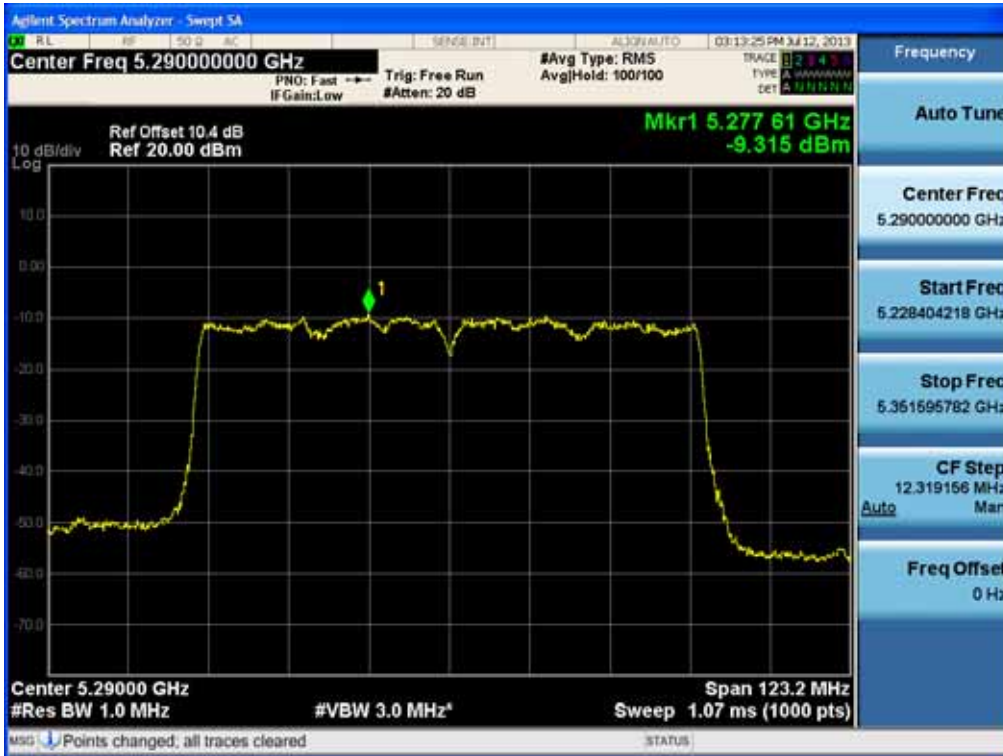
80 MHz BW

Power Spectral Density (802.11ac-CH 42)

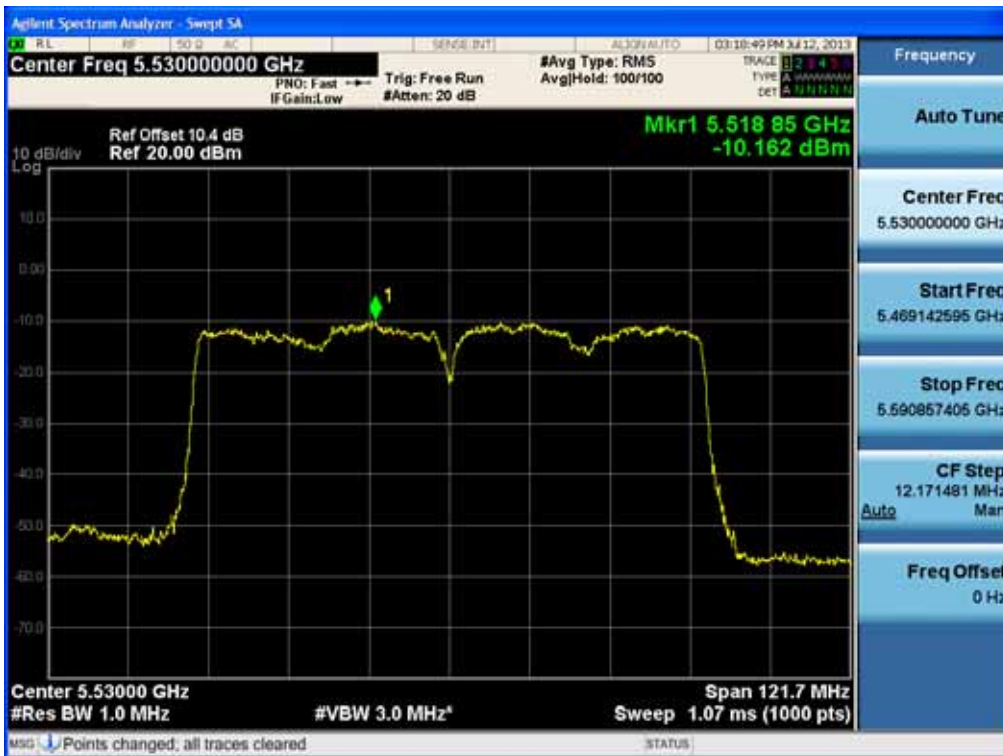


Power Spectral Density (802.11ac-CH 58)

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNF821



Power Spectral Density (802.11ac-CH 106)

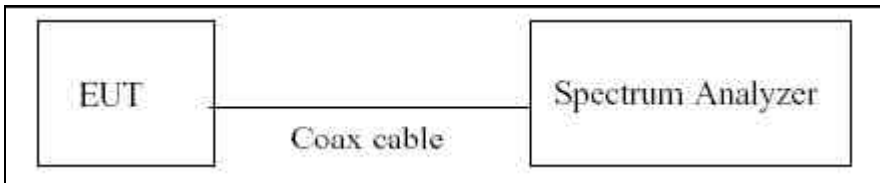


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNF0821

8.5 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 dB/MHz.

TEST CONFIGURATION



TEST PROCEDURE

We tested according to KDB 789033(issued 04/08/2013).

The spectrum analyzer is set to :

1. Span = Set the span to view the entire emission bandwidth.
2. RBW = 1 MHz
3. VBW \geq 3 MHz
4. Detector Mode = Peak
5. Trace Mode = Max hold
6. Allow the sweeps to continue until the trace stabilizes.
7. Use the peak search function to find the peak of the spectrum.
8. Use the procedure to measure the PPSD
9. 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 below table.
4. We applied the 15.407 for Ch.144, 142 and 138 in 802.11ac according to KDB 644545 D01 v01r01.

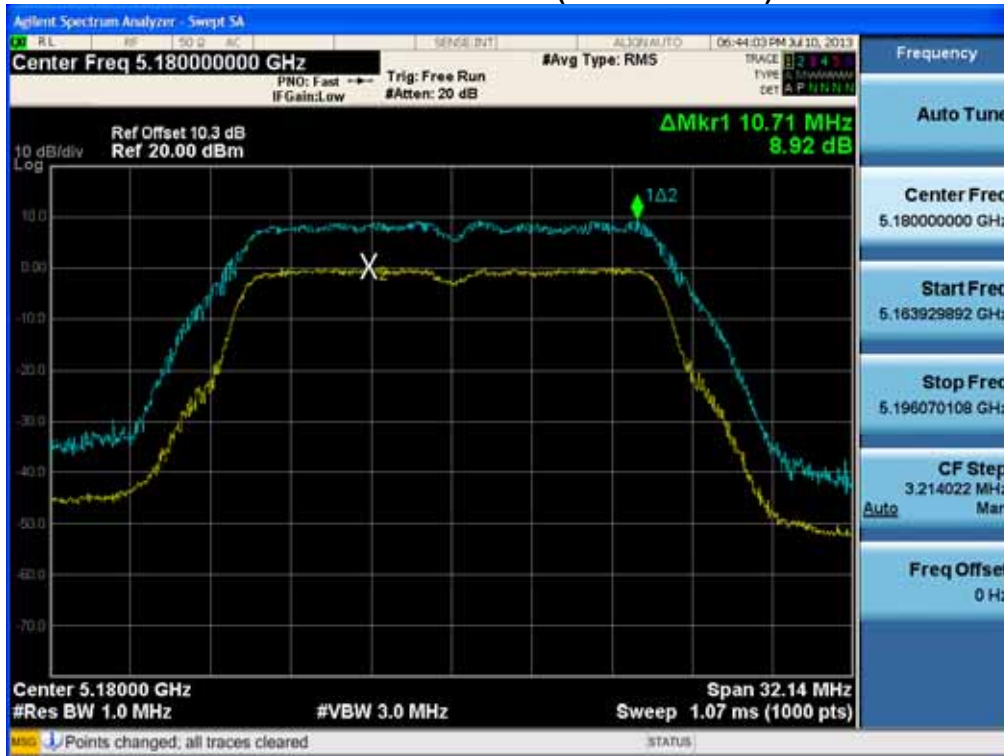
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

Band	Frequency(MHz)	Loss(dB)
UNII 1	5180	10.30
	5190	10.29
	5200	10.28
	5230	10.29
	5240	10.34
UNII 2	5260	10.37
	5270	10.38
	5300	10.40
	5310	10.39
	5320	10.39
UNII 2e	5500	10.35
	5510	10.36
	5550	10.41
	5580	10.43
	5670	10.43
	5700	10.30

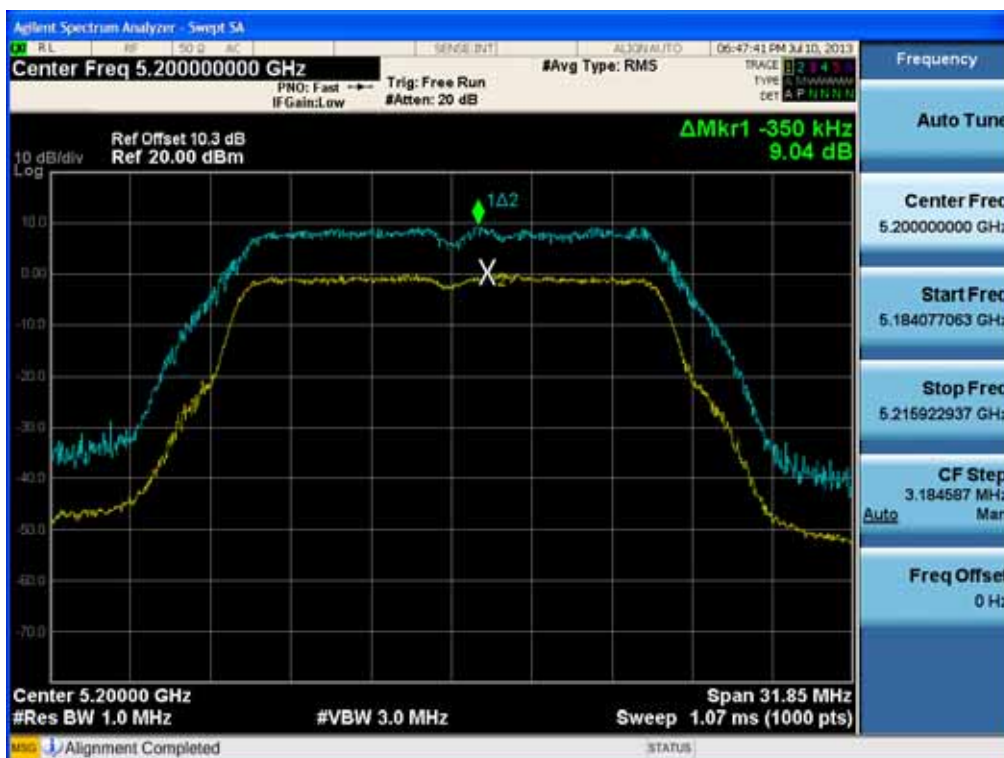
(Actual value of loss for the attenuator and cable combination)

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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11a-CH 48)

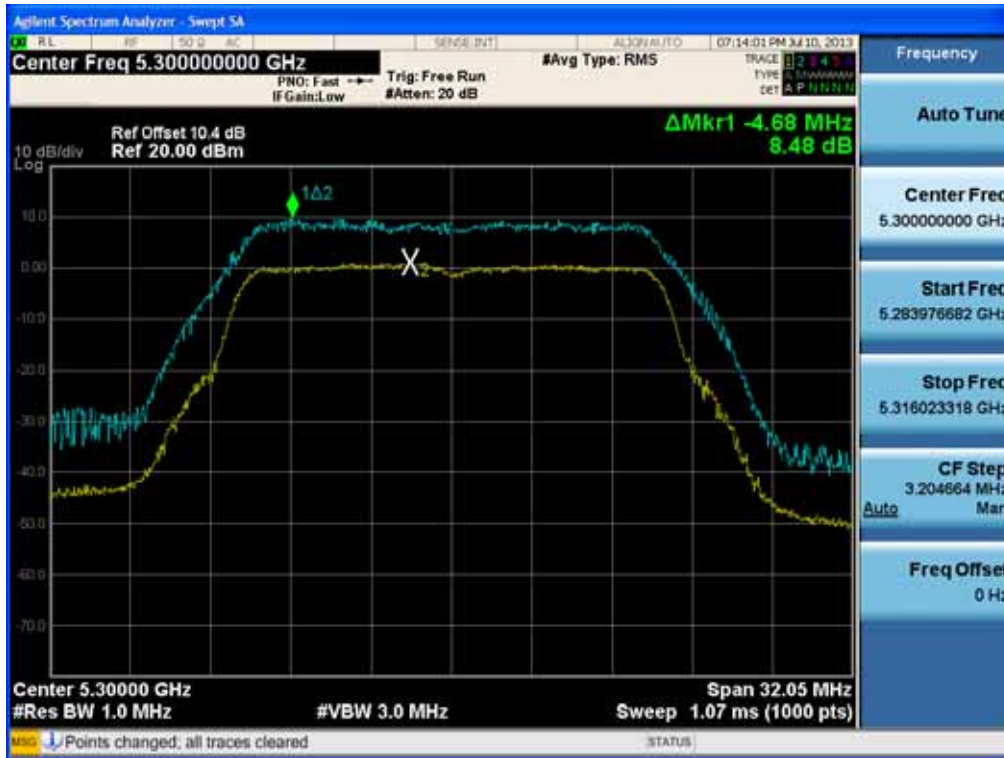


Peak Excursion Ratio (802.11a-CH 52)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11a-CH 60)



Peak Excursion Ratio (802.11a-CH 64)

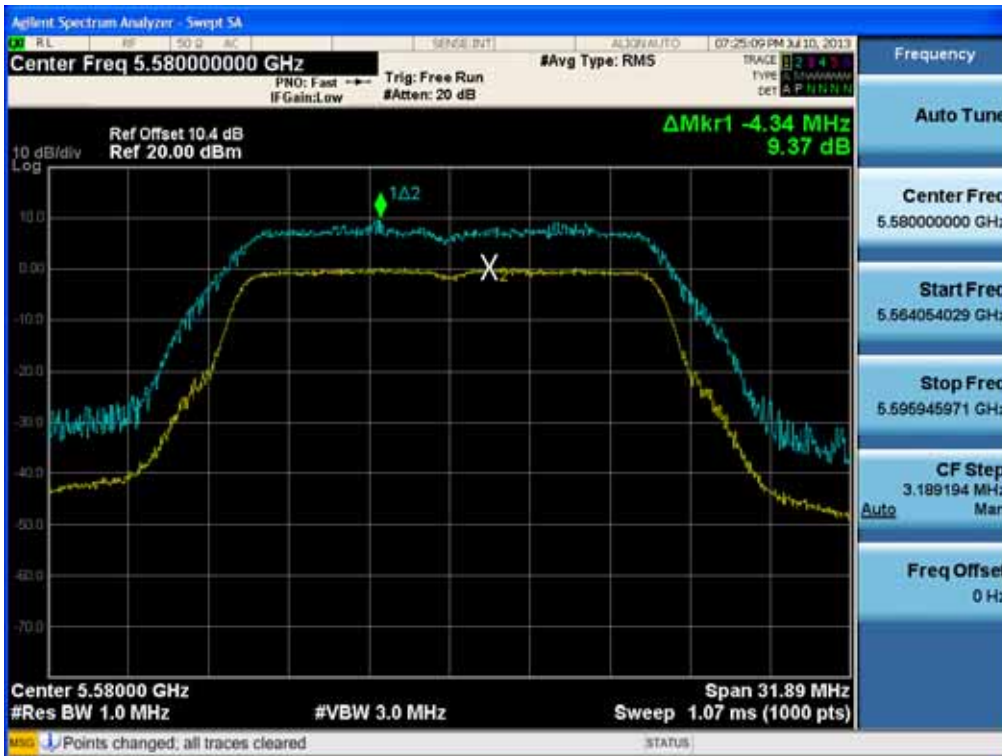


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11a-CH 100)

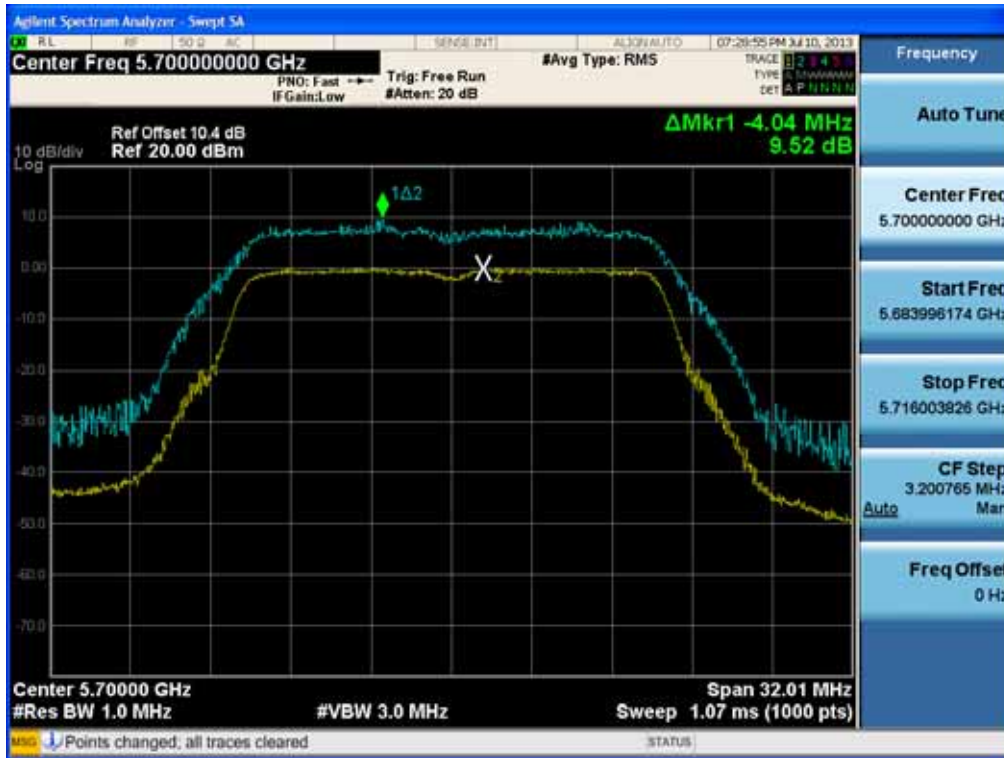


Peak Excursion Ratio (802.11a-CH 116)



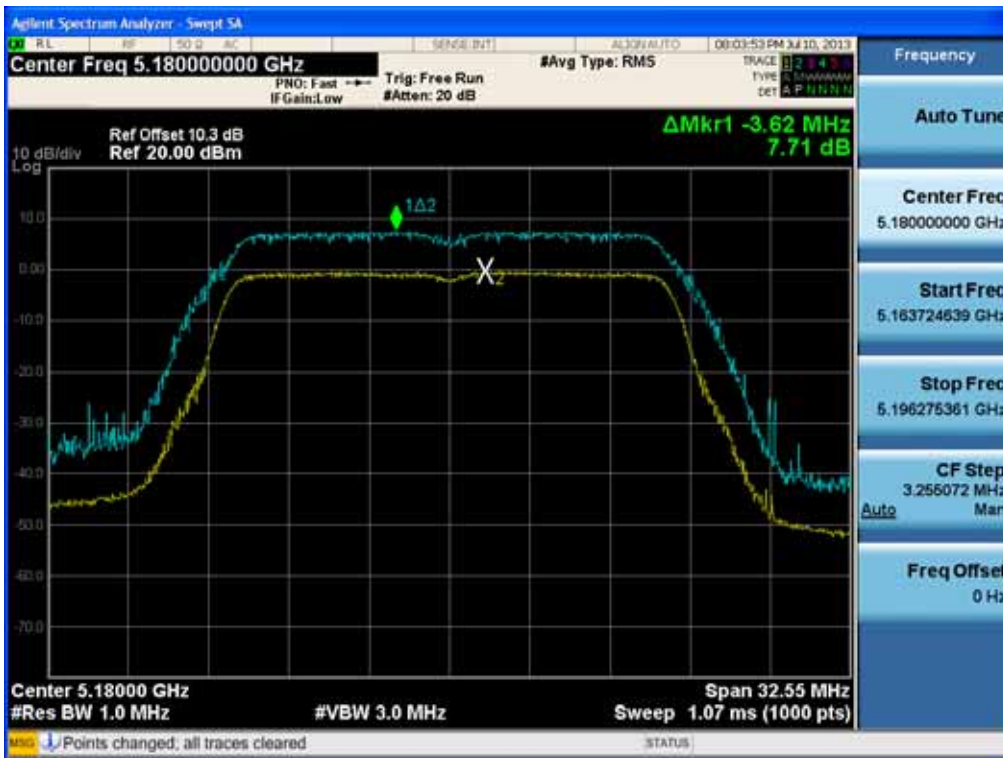
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11a-CH 140)

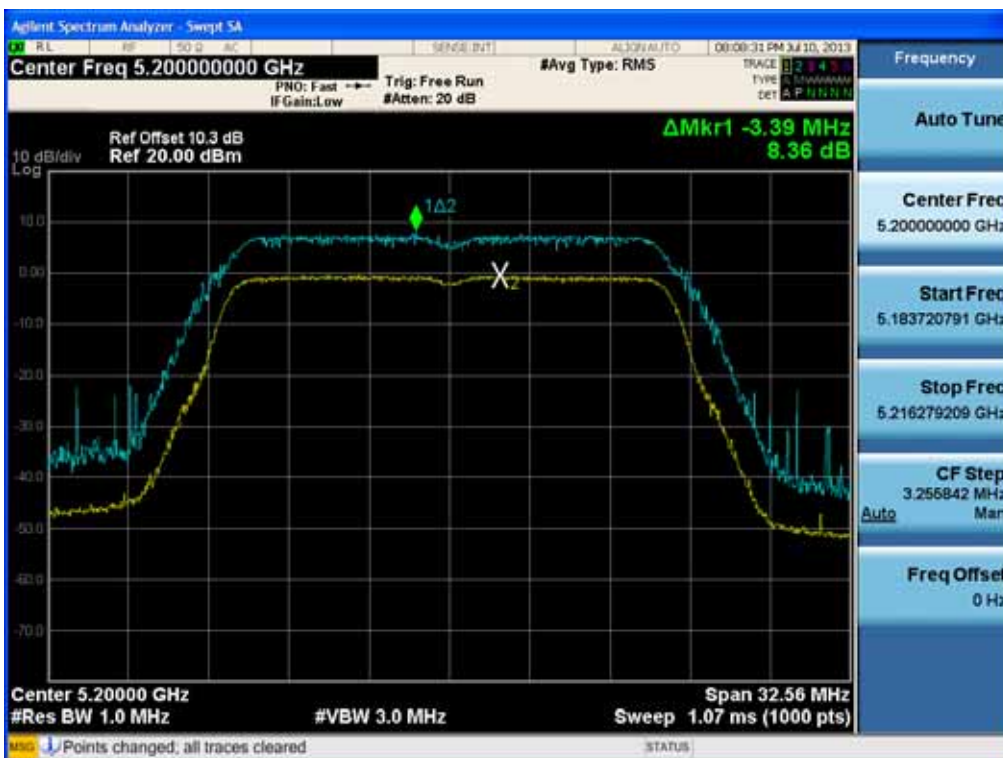


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11n-CH 36)

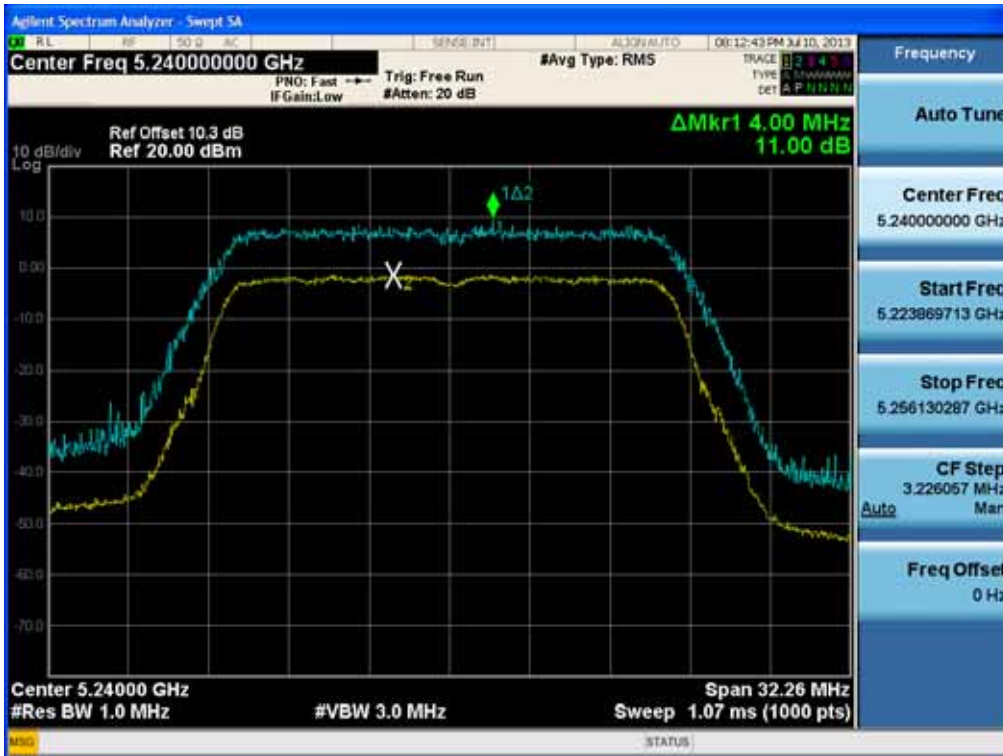


Peak Excursion Ratio (802.11n-CH 40)

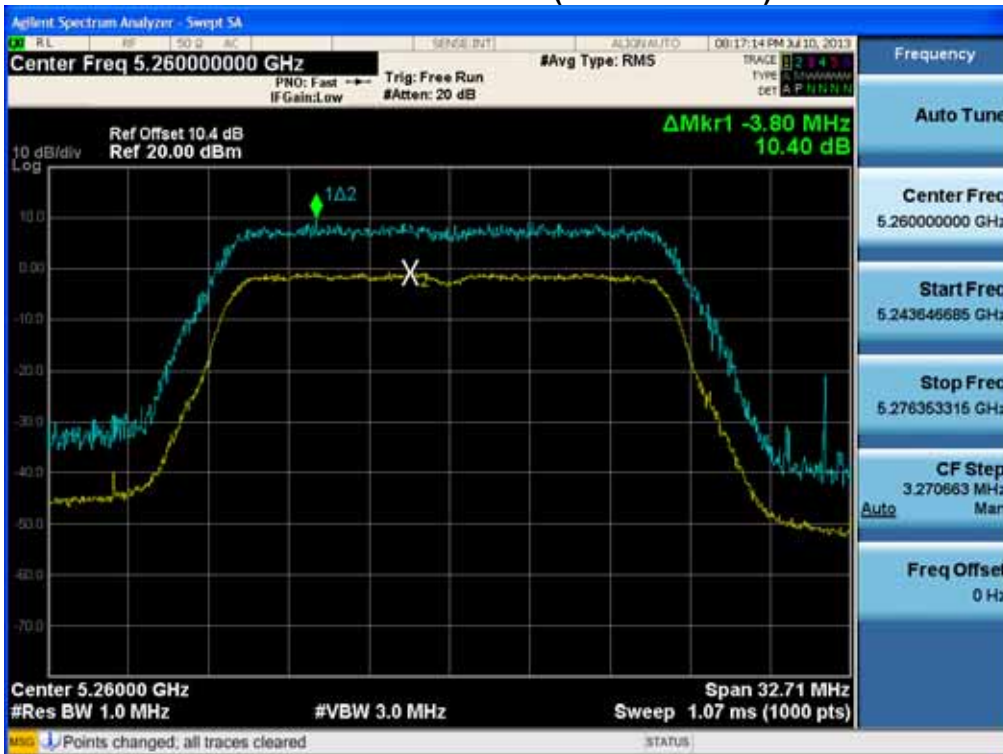


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11n-CH 48)

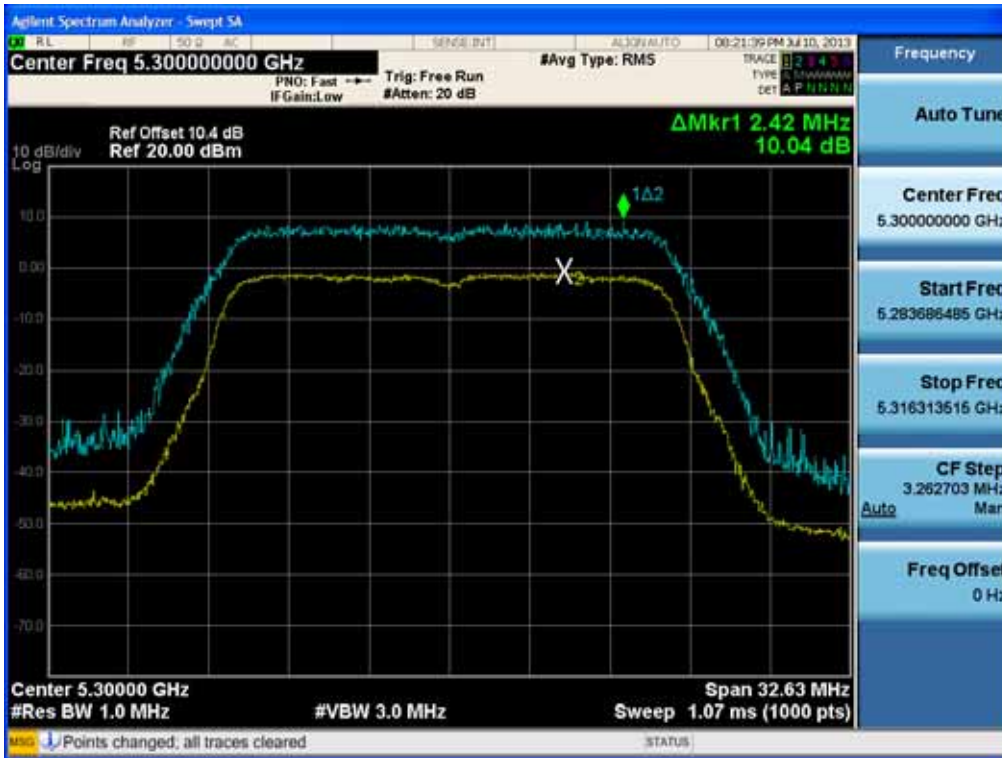


Peak Excursion Ratio (802.11n-CH 52)

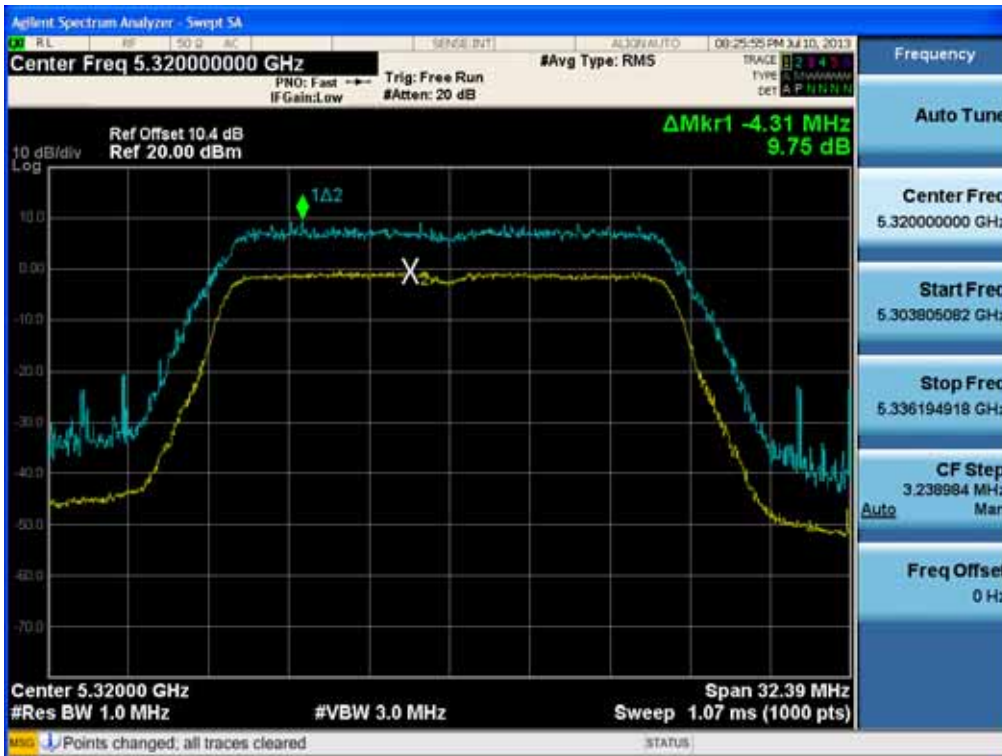


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11n-CH 60)



Peak Excursion Ratio (802.11n-CH 64)

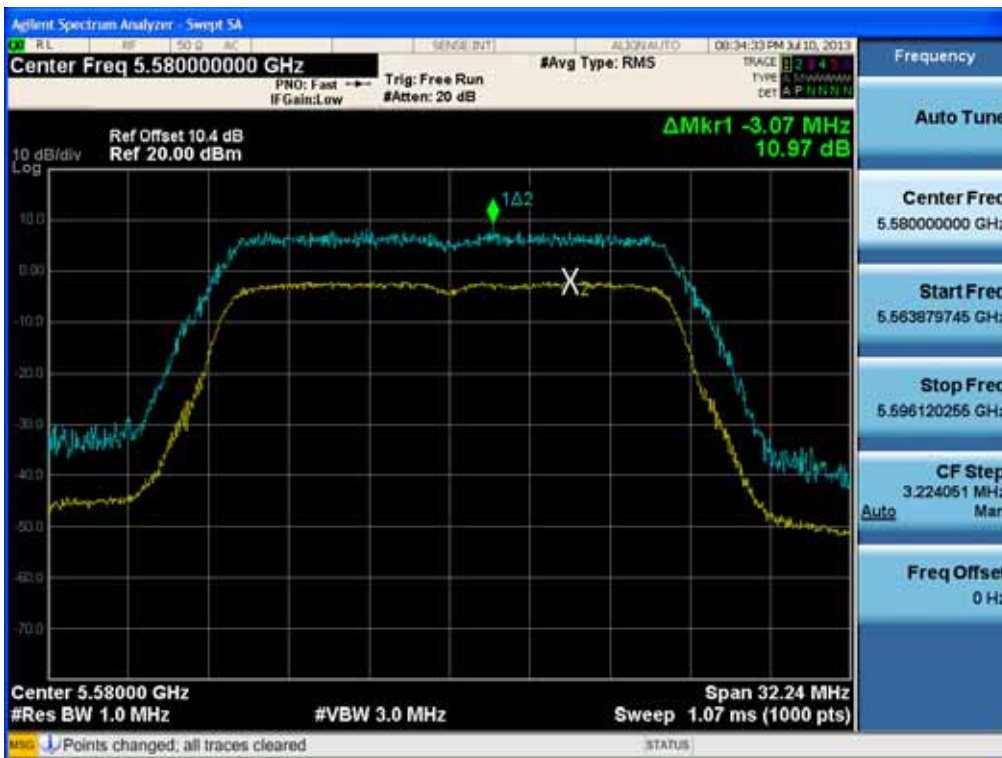


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11n-CH 100)

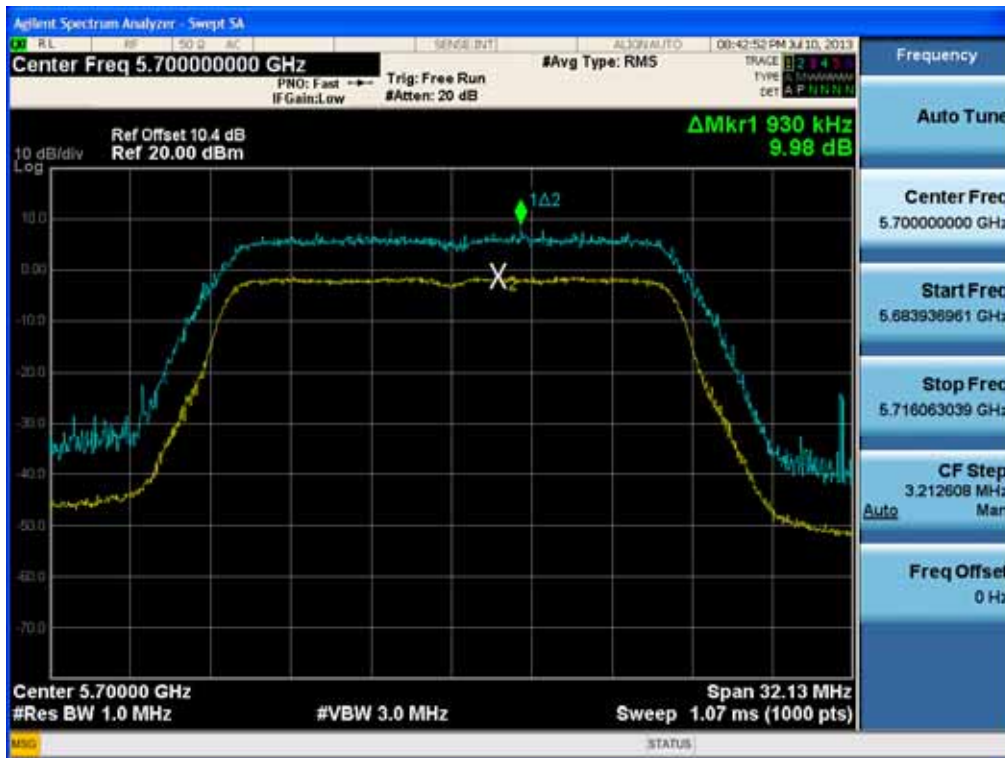


Peak Excursion Ratio (802.11n-CH 116)



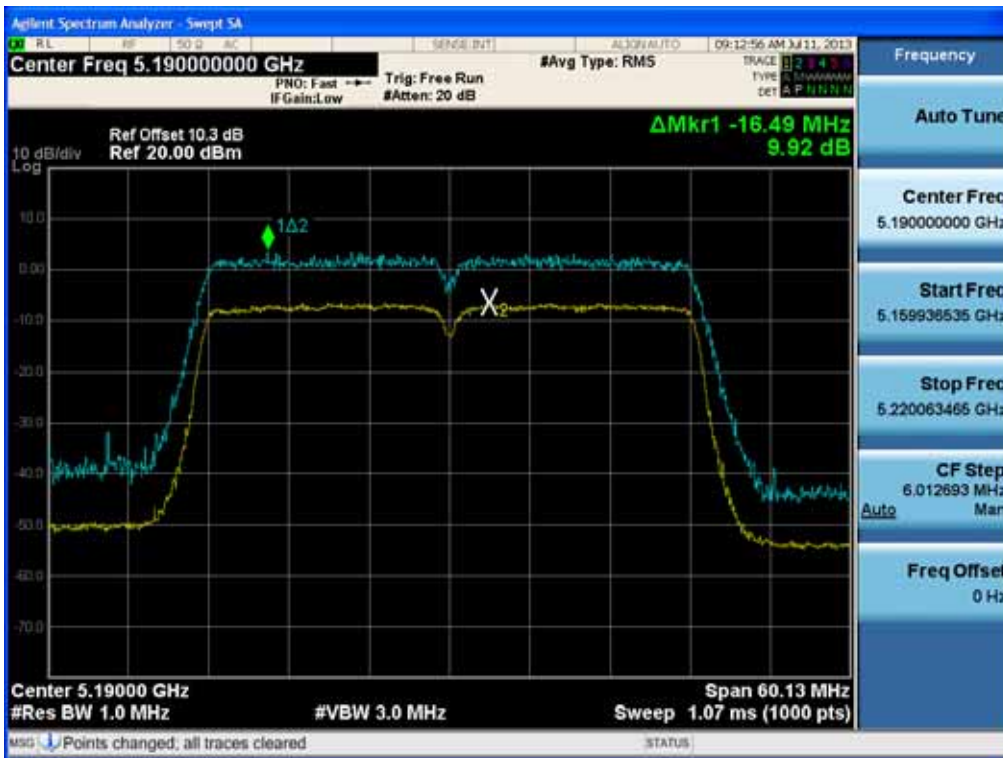
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11n-CH 140)

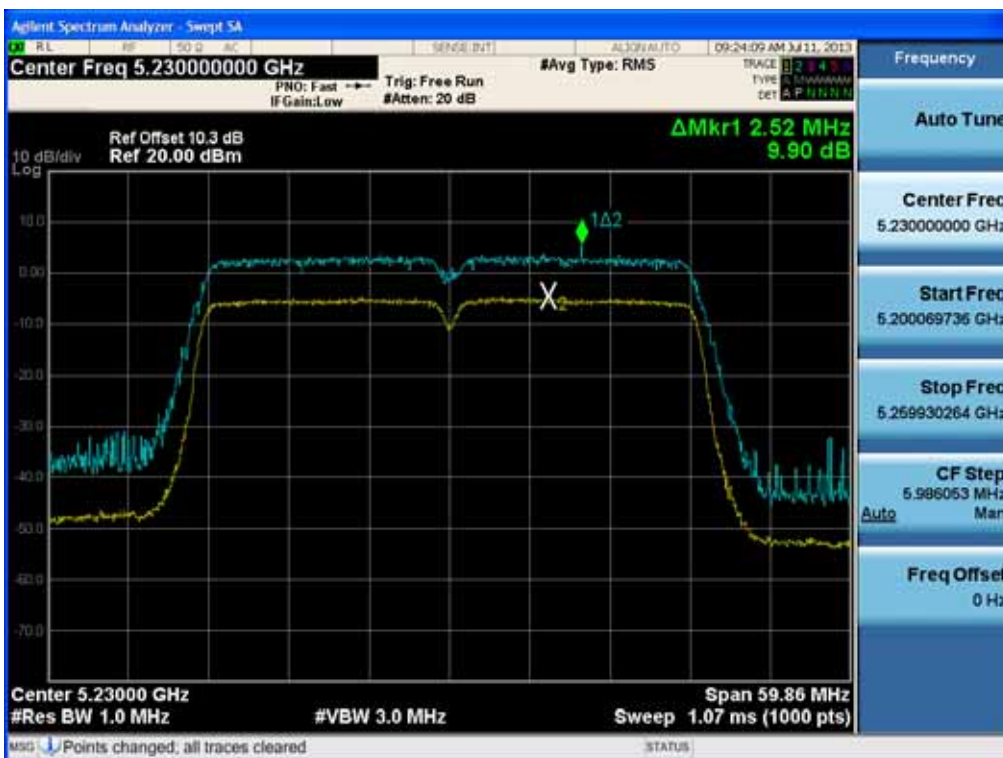


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11n-CH 38)

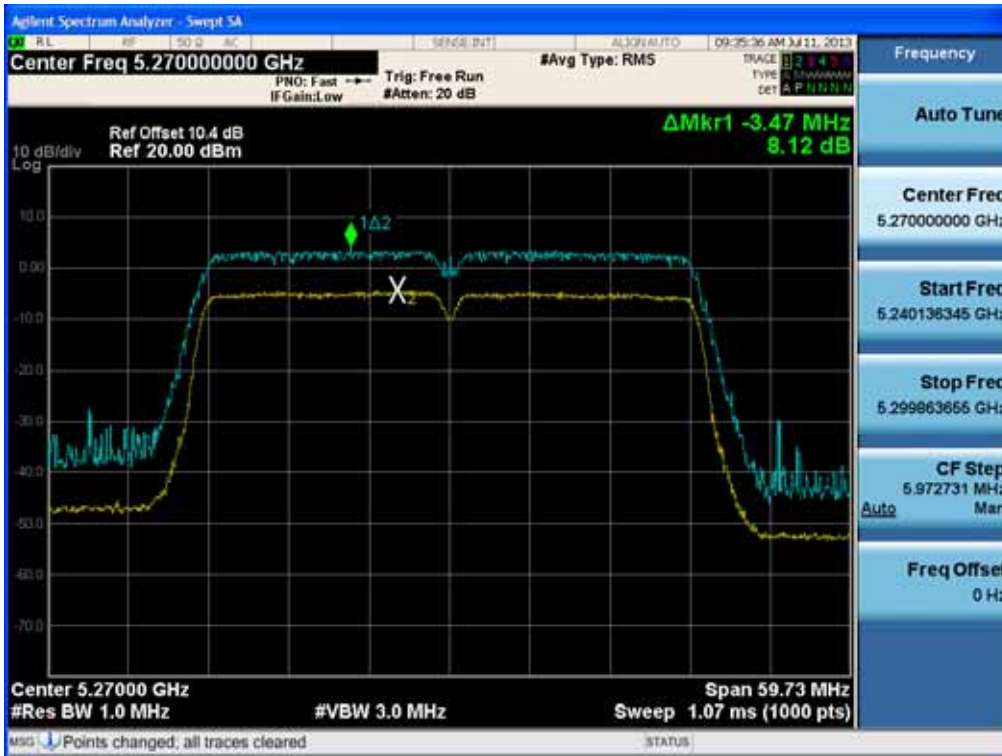


Peak Excursion Ratio (802.11n-CH 46)

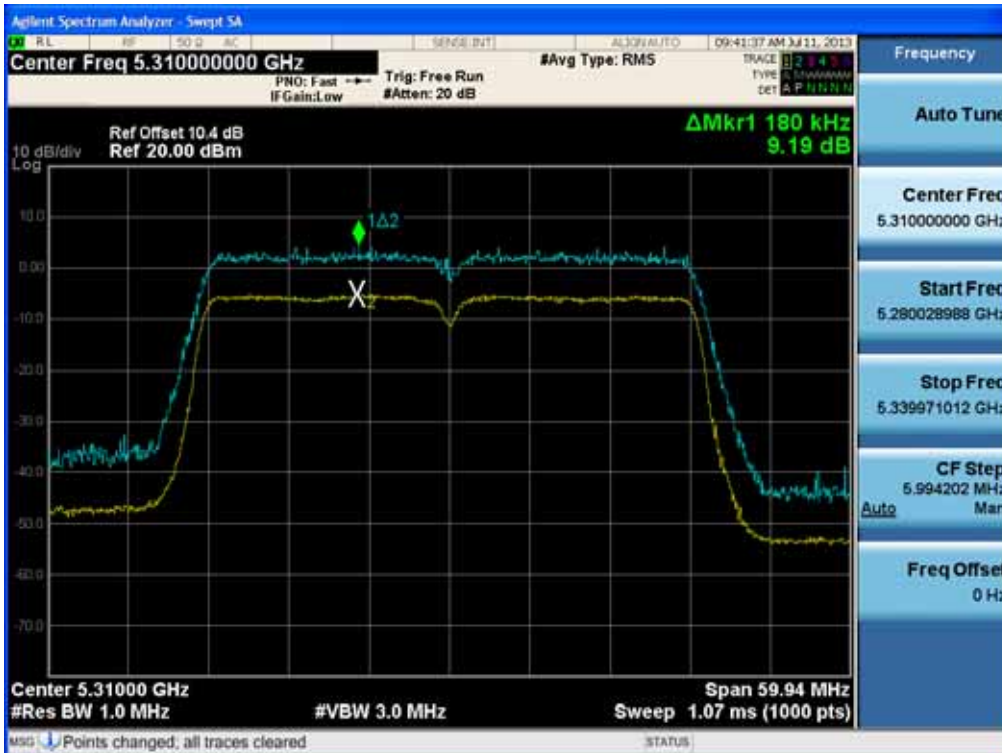


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11n-CH 54)

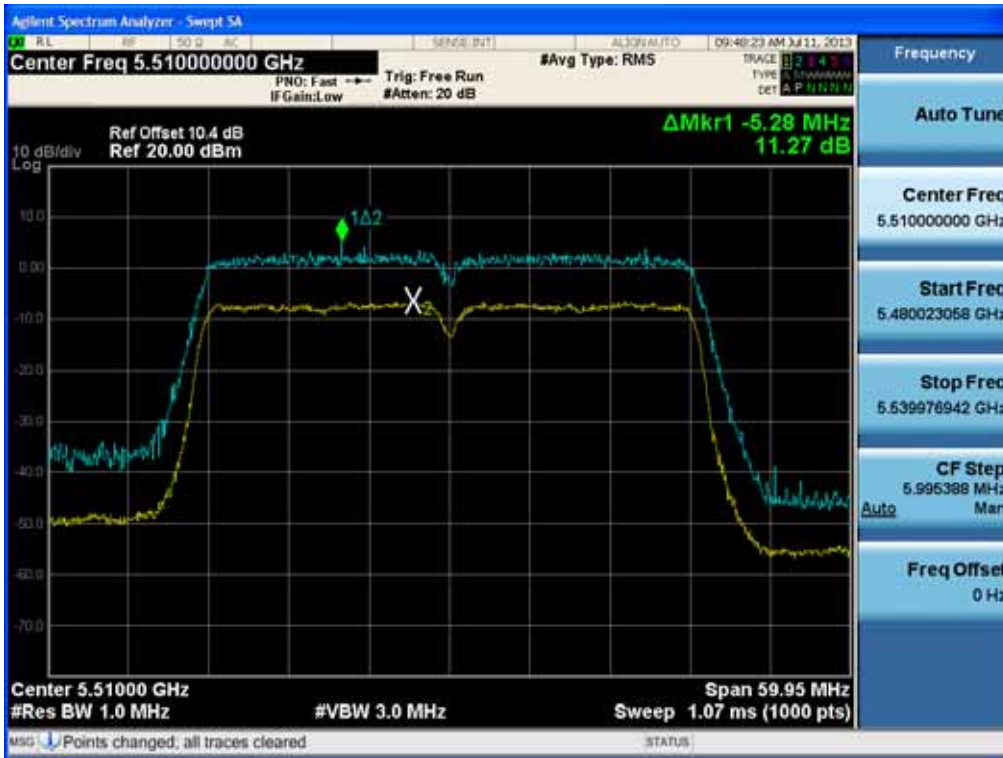


Peak Excursion Ratio (802.11n-CH 62)

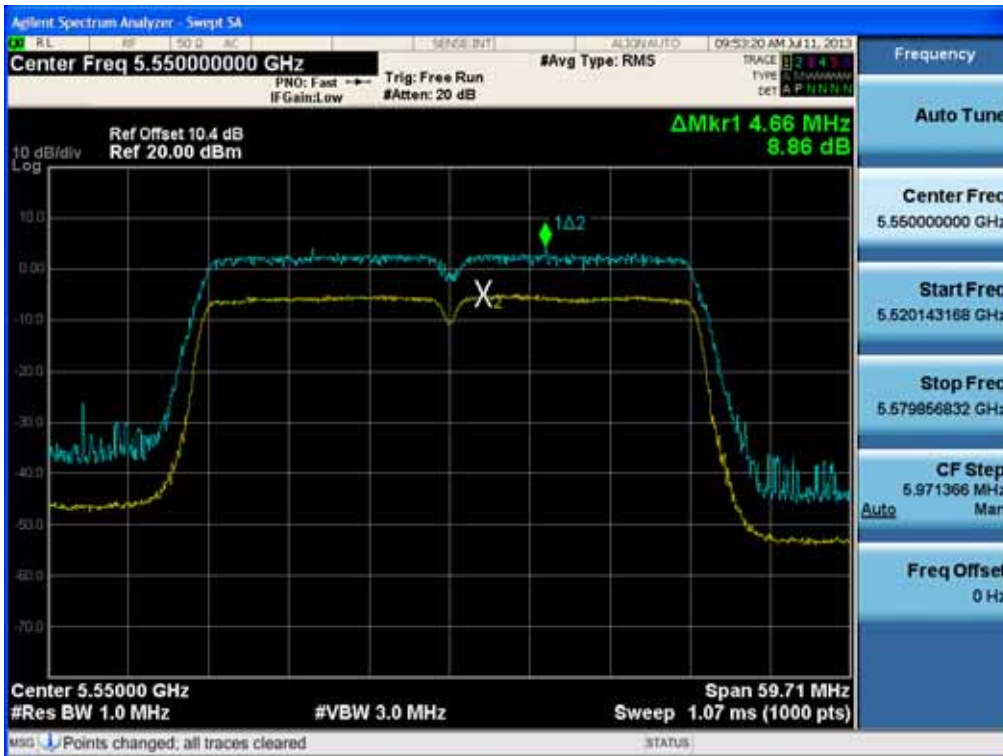


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11n-CH 102)

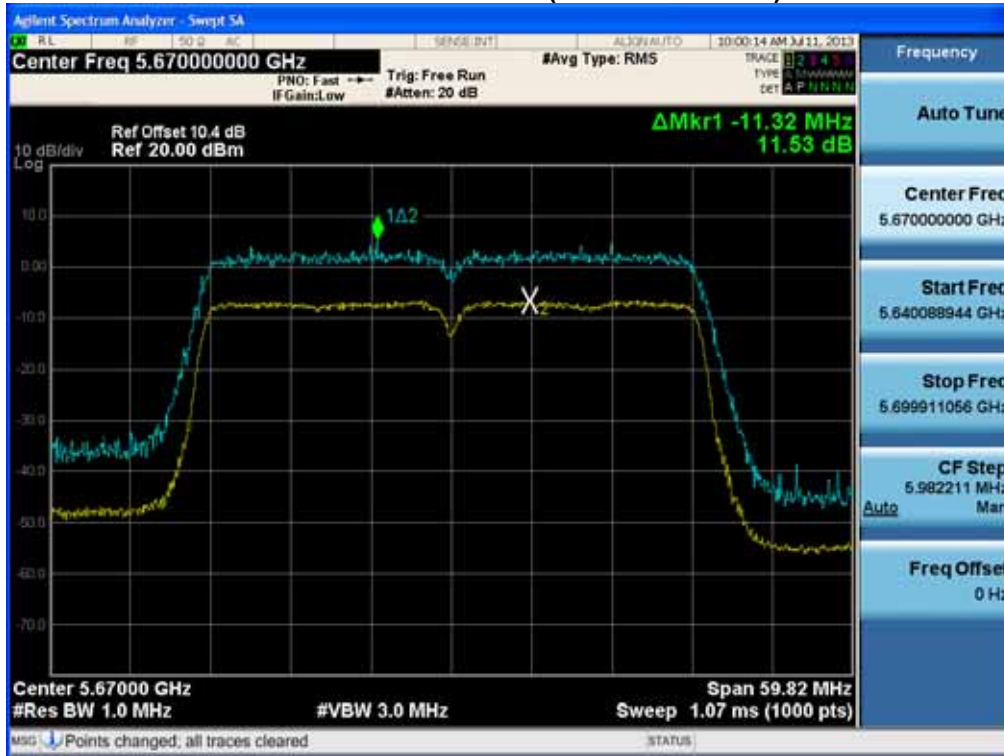


Peak Excursion Ratio (802.11n-CH 110)



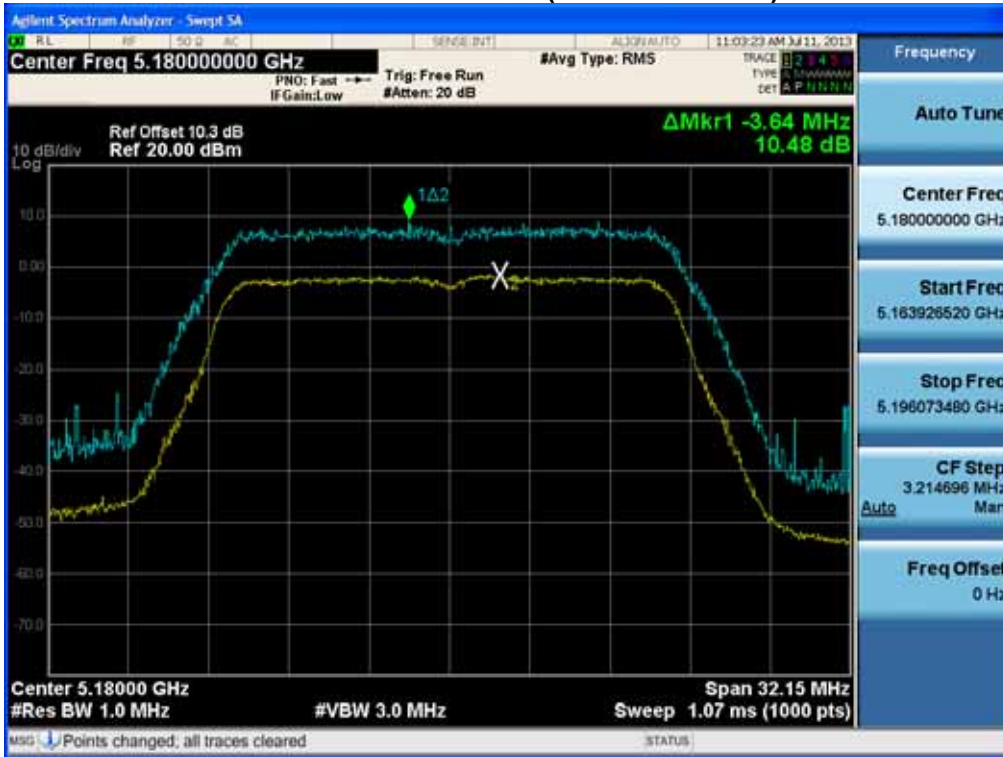
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11n-CH 134)

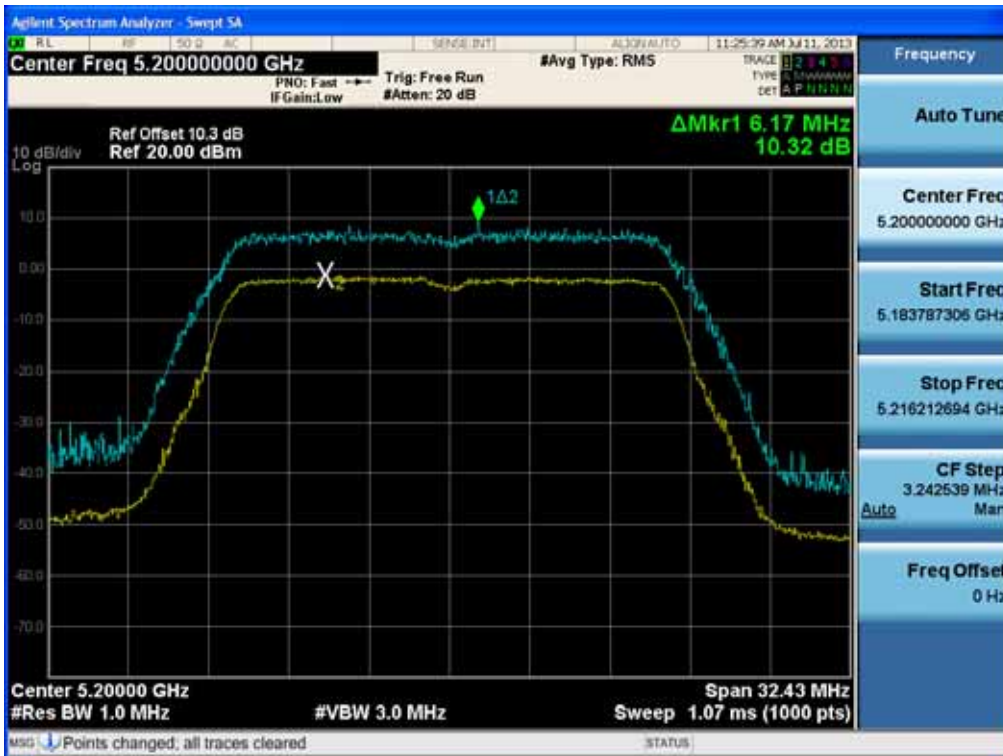


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11ac-CH 36)

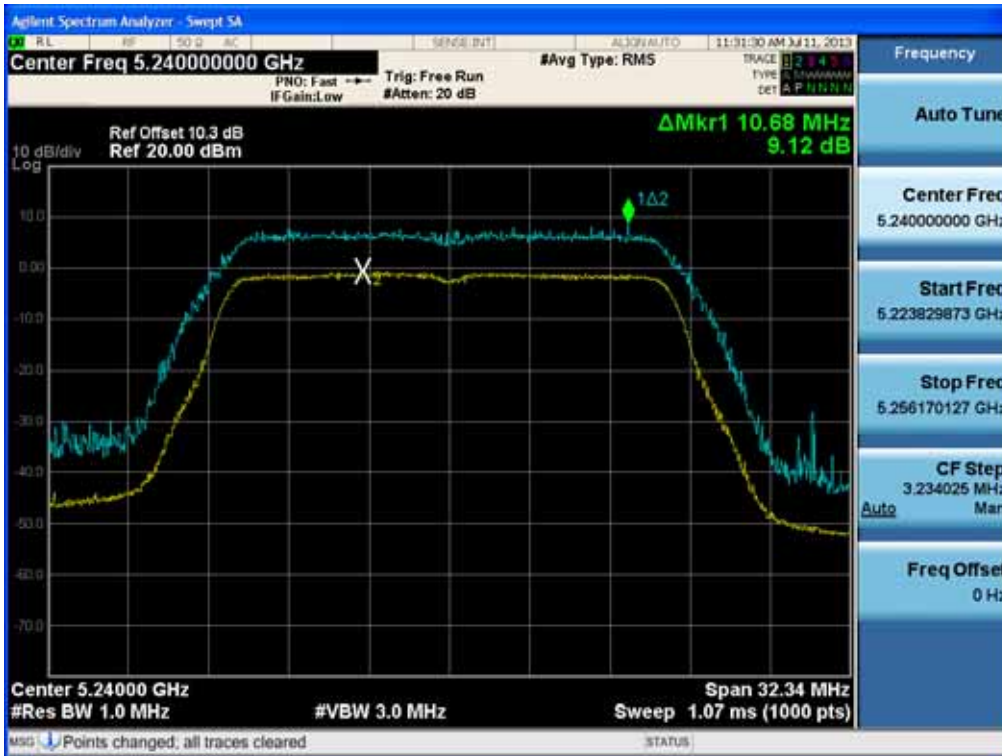


Peak Excursion Ratio (802.11ac-CH 40)

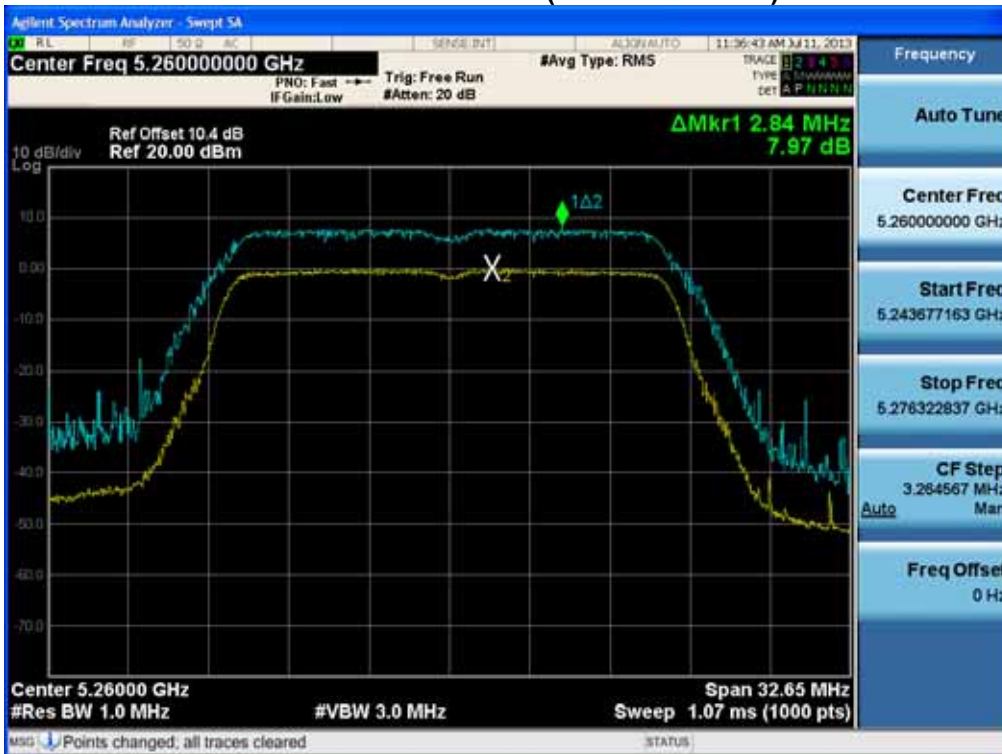


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11ac-CH 48)

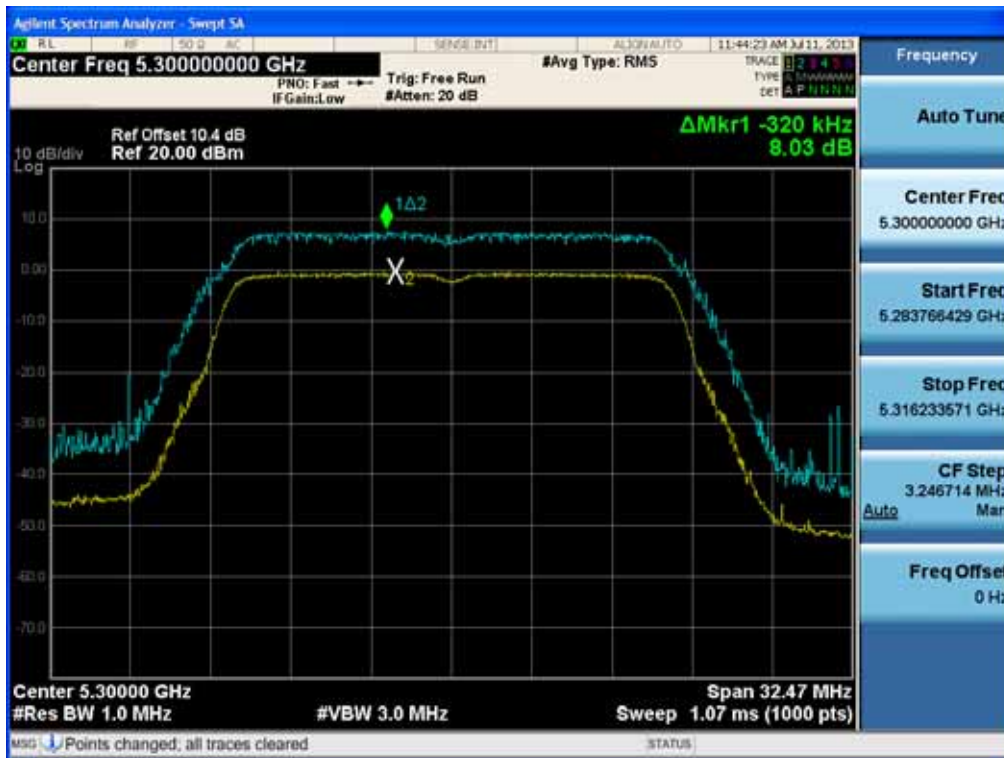


Peak Excursion Ratio (802.11ac-CH 52)

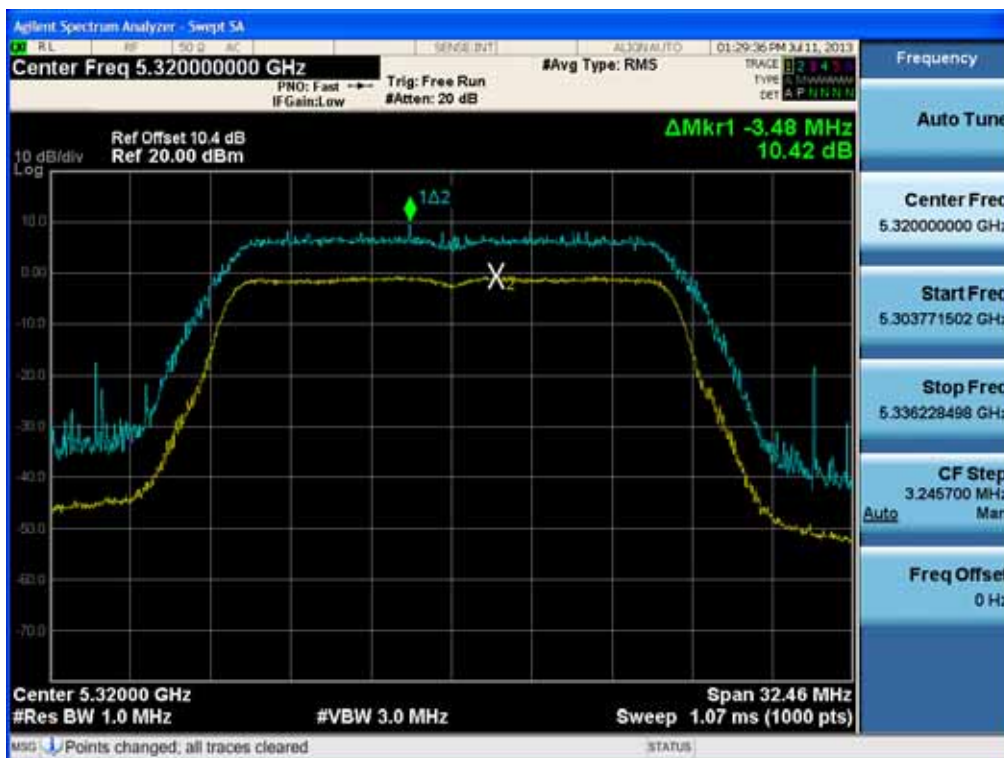


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNF0821

Peak Excursion Ratio (802.11ac-CH 60)

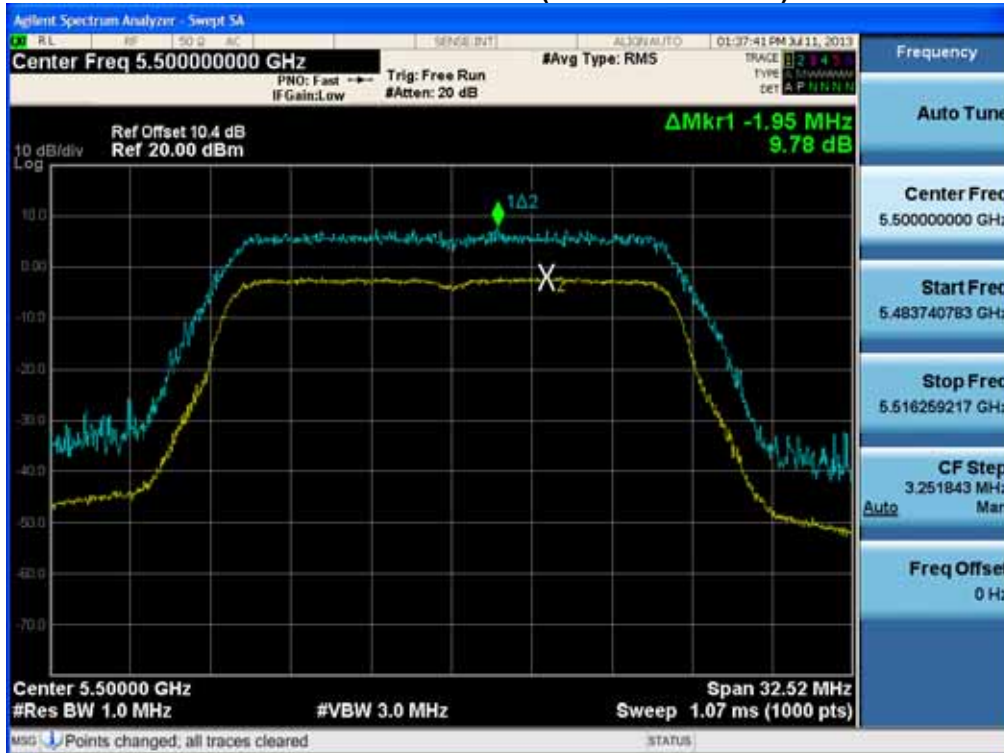


Peak Excursion Ratio (802.11ac-CH 64)

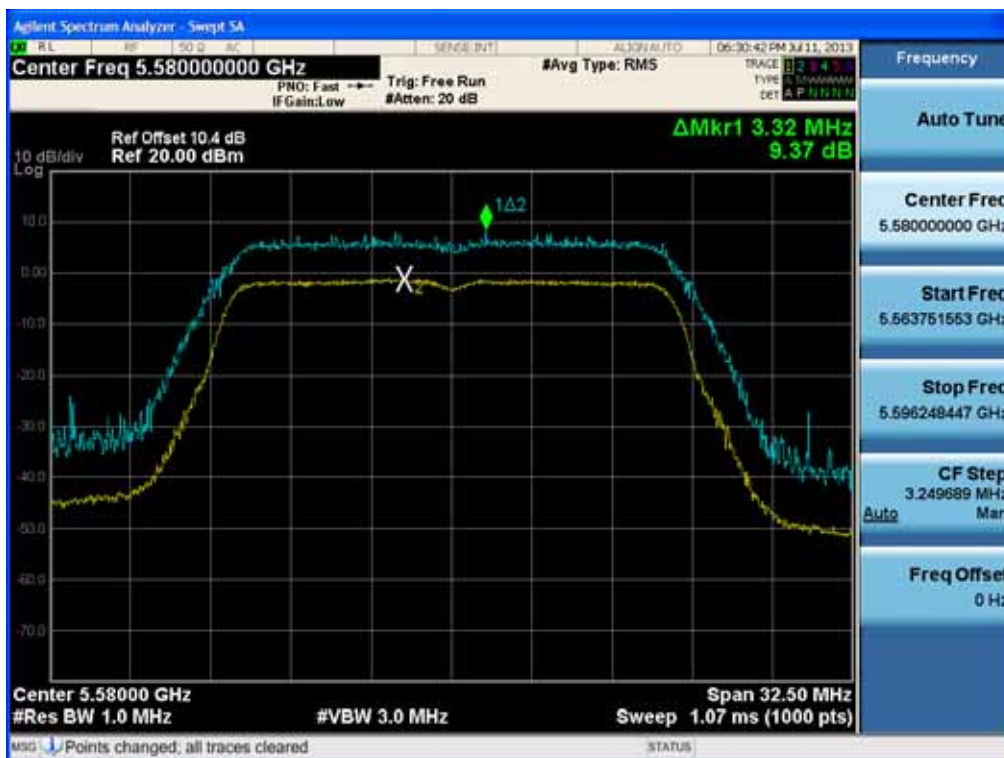


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11ac-CH 100)



Peak Excursion Ratio (802.11ac-CH 116)



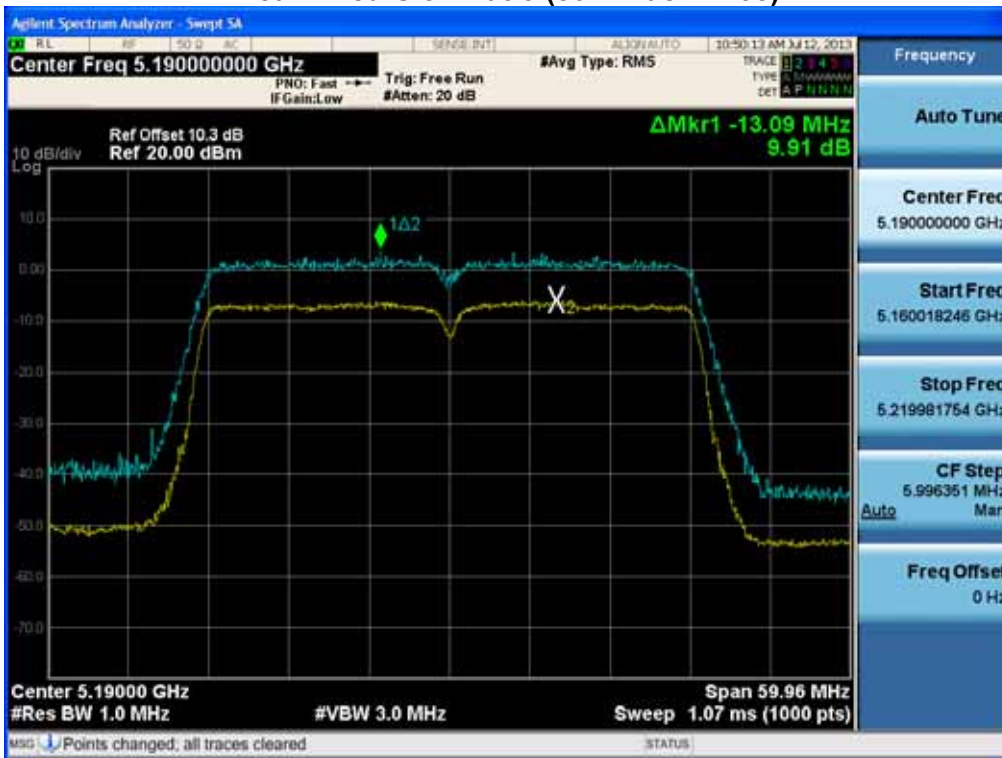
FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11ac-CH 144)

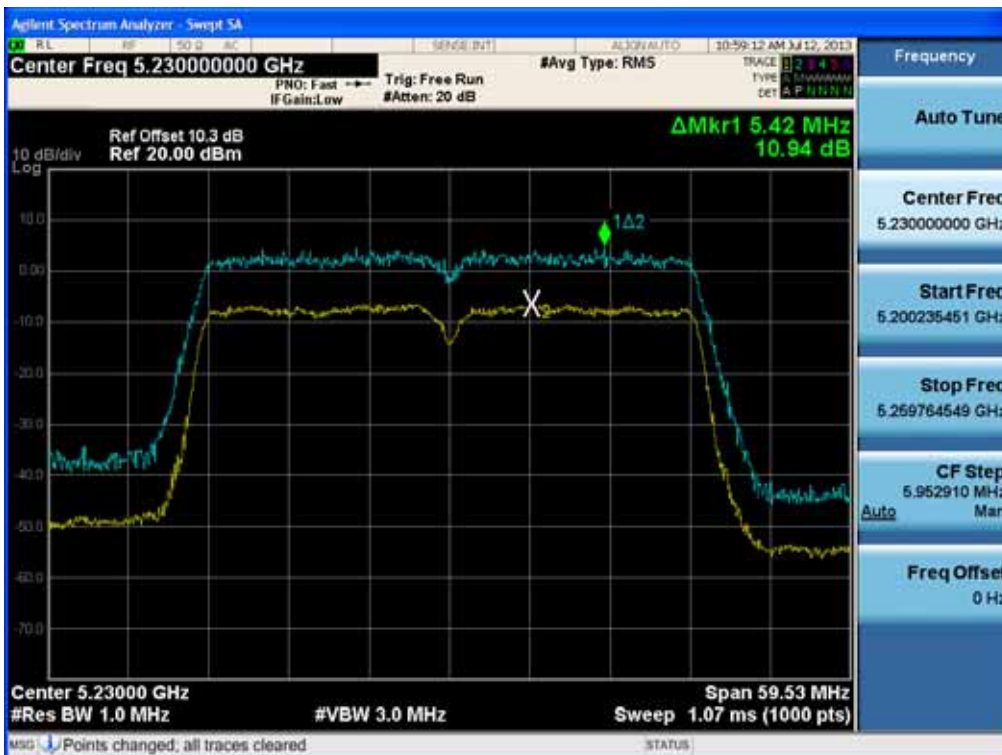


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11ac-CH 38)

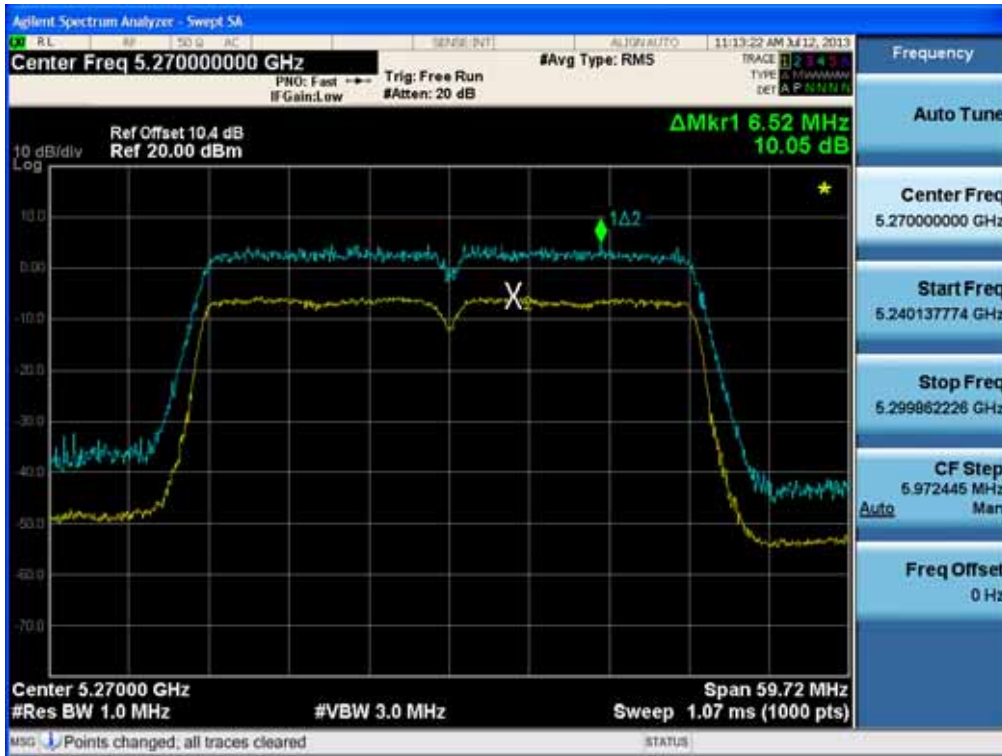


Peak Excursion Ratio (802.11ac-CH 46)

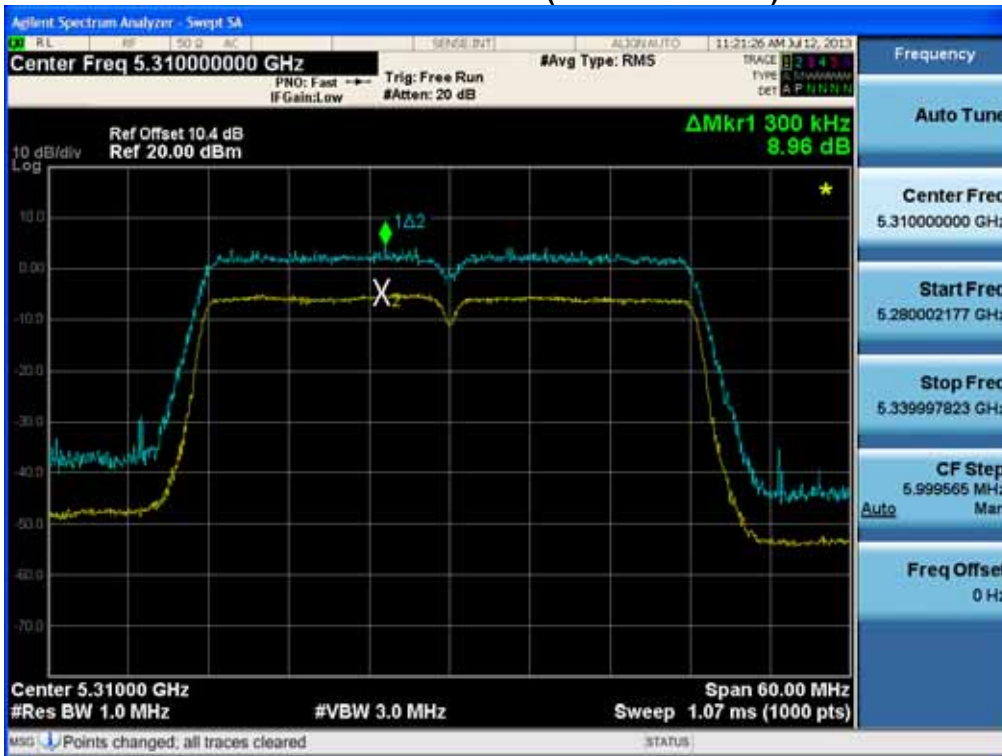


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNF821

Peak Excursion Ratio (802.11ac-CH 54)

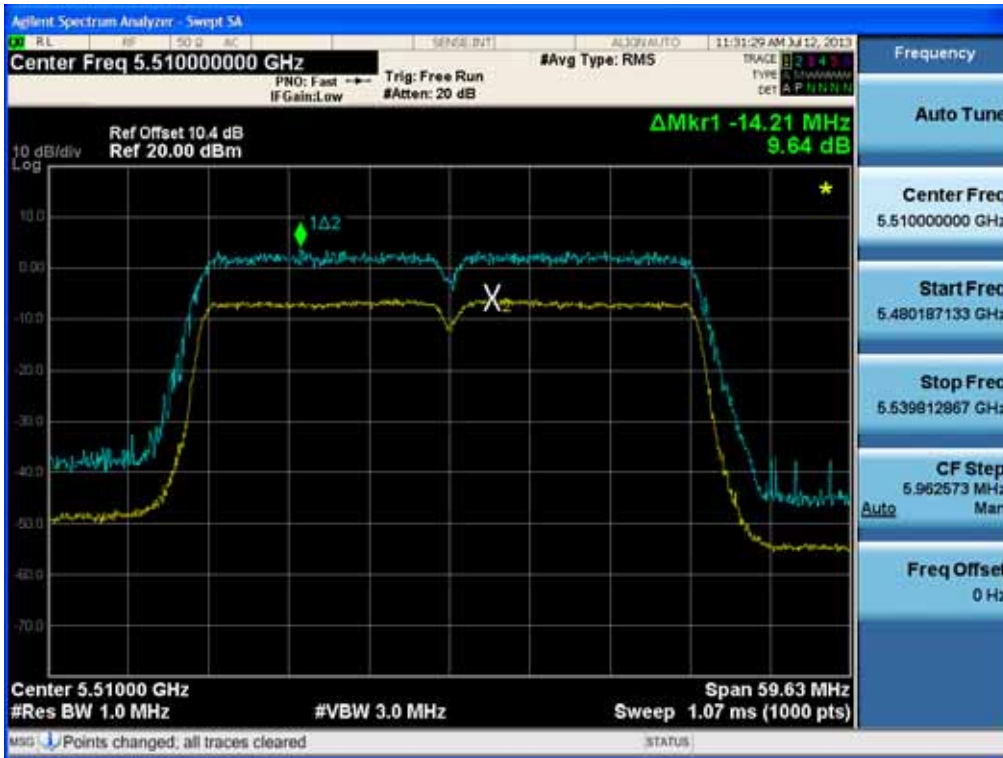


Peak Excursion Ratio (802.11ac-CH 62)

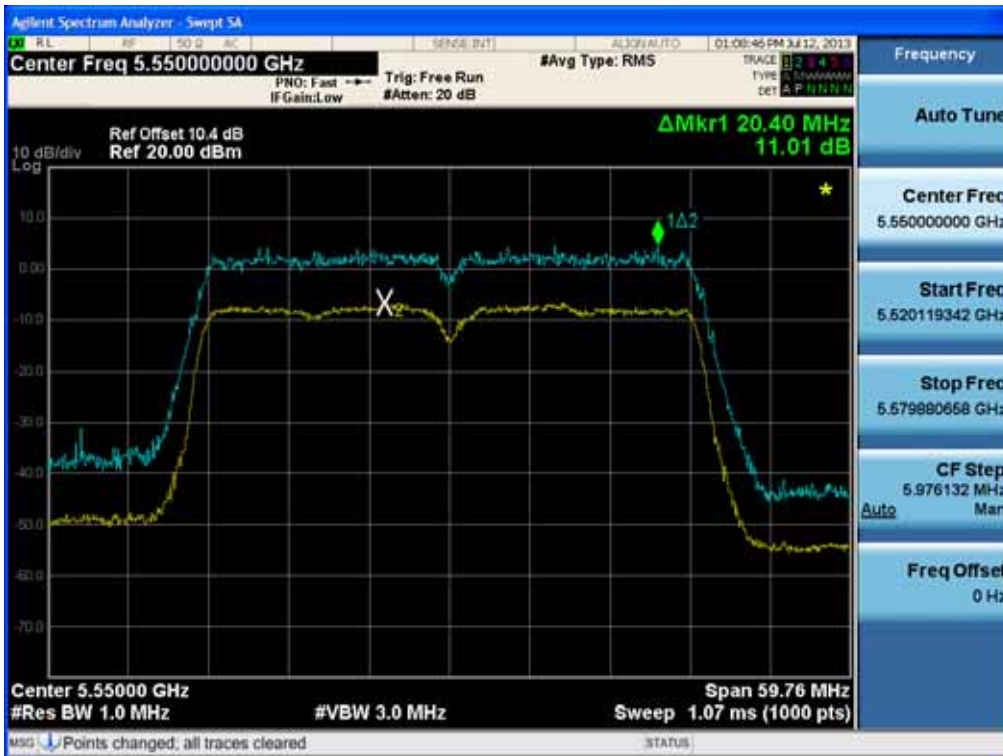


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNF0821

Peak Excursion Ratio (802.11ac-CH 102)

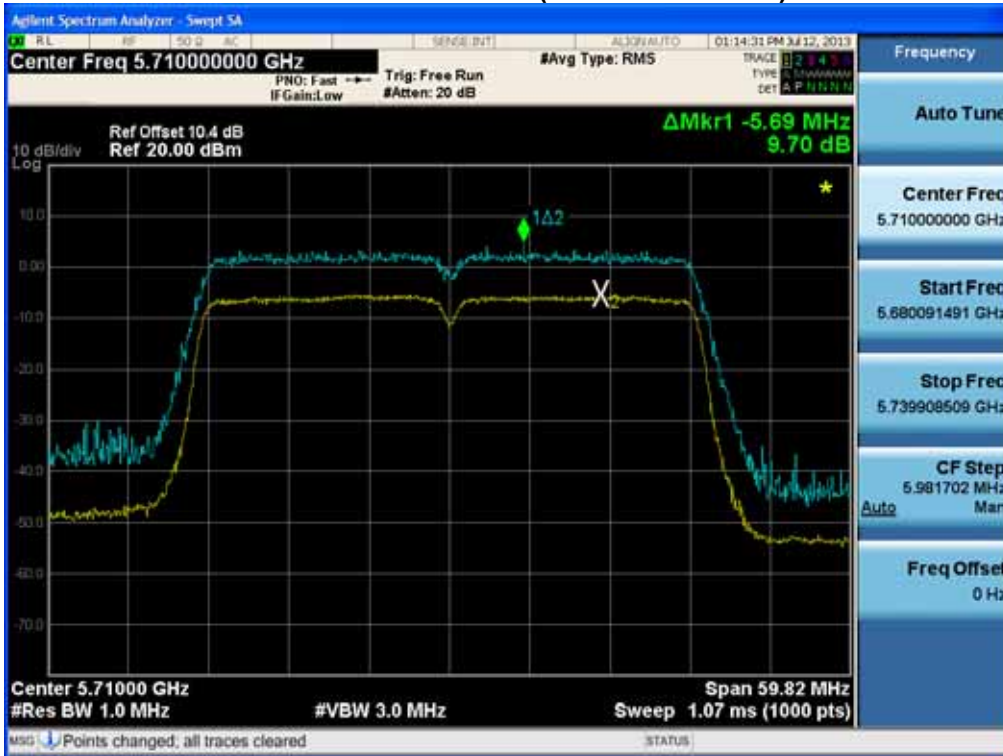


Peak Excursion Ratio (802.11ac-CH 110)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11ac-CH 142)

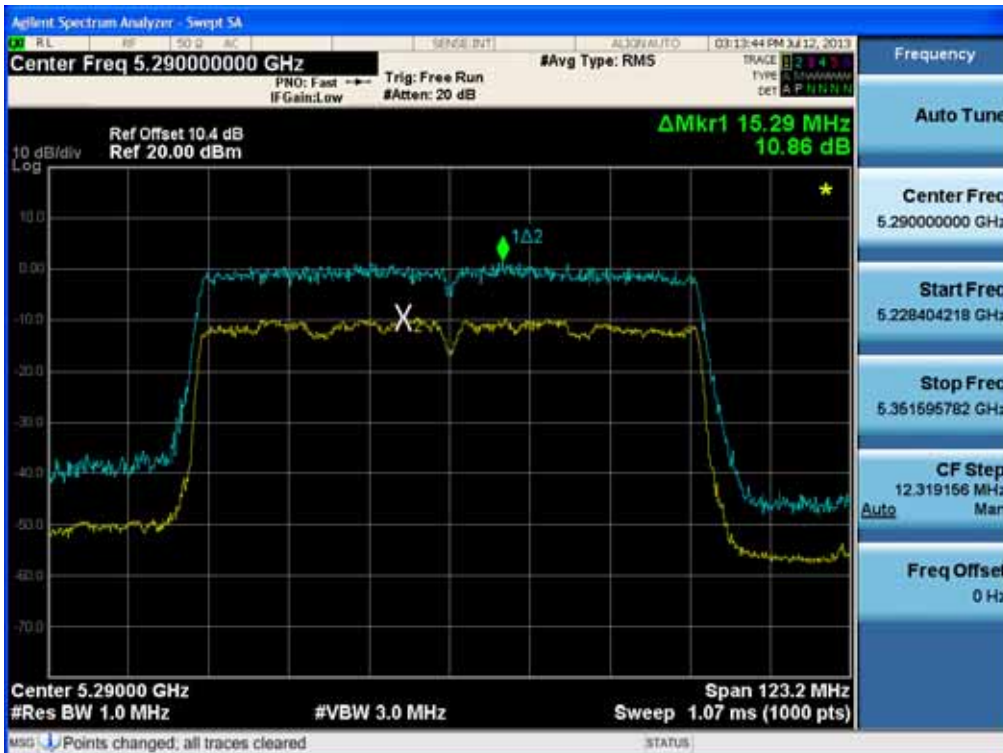


FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNF821

Peak Excursion Ratio (802.11ac-CH 42)

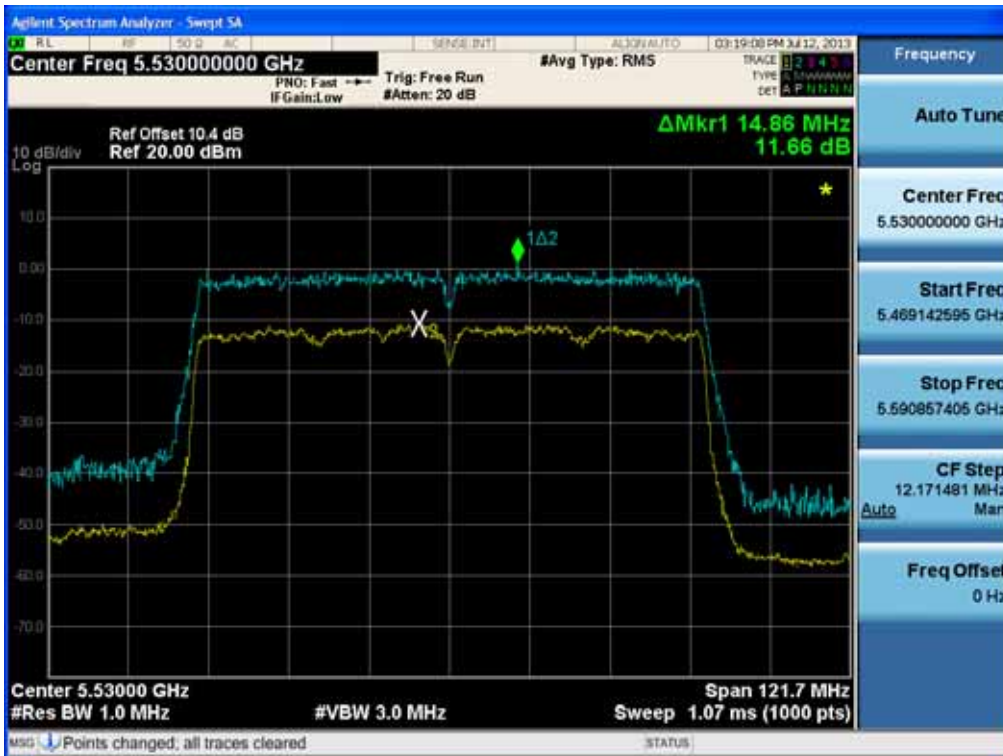


Peak Excursion Ratio (802.11ac-CH 58)

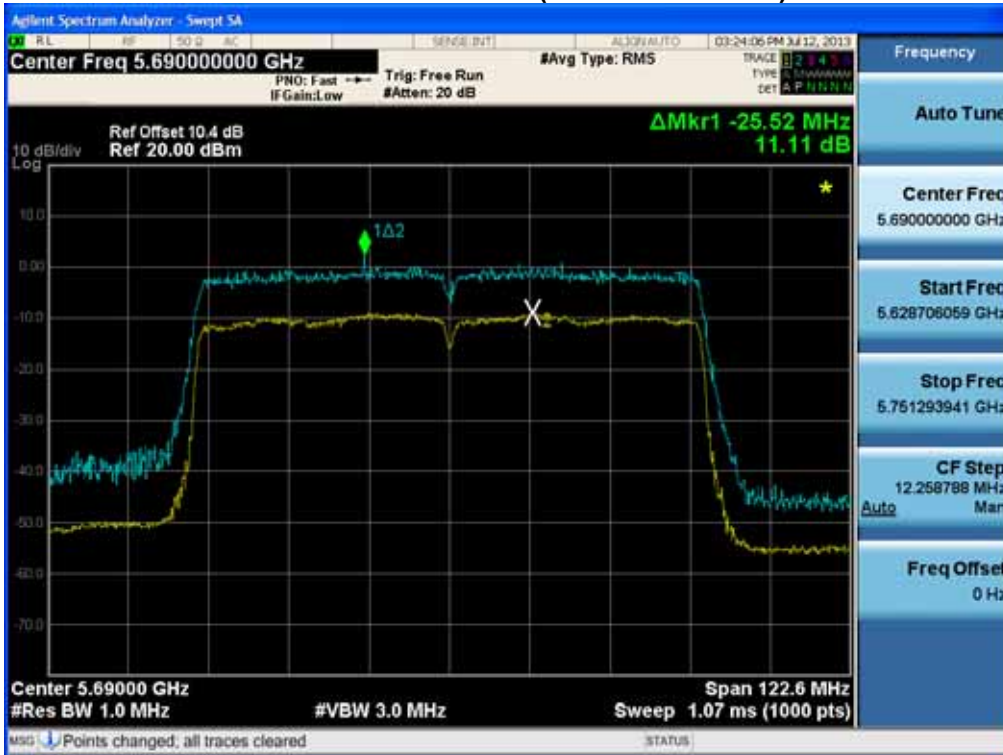


FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Peak Excursion Ratio (802.11ac-CH 106)



Peak Excursion Ratio (802.11ac-CH 138)



FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821



8.6 FREQUENCY STABILITY.

The EUT was placed inside an environmental chamber as the temperature in the chamber was varied between -30 and 50 . The temperature was incremented by 10 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.

20 MHz BW

OPERATING BAND:	<u>UNII Band 1</u>
OPERATING FREQUENCY:	<u>5,180,000,000 Hz</u>
CHANNEL:	<u>36</u>
REFERENCE VOLTAGE:	<u>3.8 VDC</u>

Voltage (%)	Power (VDC)	Temp. ()	Frequency (kHz)	Frequency Error (kHz)
100%	3.8	+20(Ref)	5 179 988.00	12.00
100%		-30	5 179 980.78	19.22
100%		-20	5 179 968.68	31.32
100%		-10	5 179 974.46	25.54
100%		0	5 179 979.67	20.33
100%		10	5 179 982.32	17.68
100%		30	5 179 988.71	11.29
100%		40	5 179 993.53	6.47
100%		50	5 180 002.88	-2.88
115%		4.37	20	5 179 987.61
Batt. Endpoint	3.5	20	5 179 988.13	11.87

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNF821



OPERATING BAND: UNII Band 2
 OPERATING FREQUENCY: 5,300,000,000 Hz
 CHANNEL: 60
 REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. ()	Frequency (kHz)	Frequency Error (kHz)
100%	3.800	+20(Ref)	5 299 988.00	12.00
100%		-30	5 299 980.64	19.36
100%		-20	5 299 968.45	31.55
100%		-10	5 299 974.32	25.68
100%		0	5 299 979.51	20.49
100%		+10	5 299 982.13	17.87
100%		+30	5 299 988.46	11.54
100%		+40	5 299 993.13	6.87
100%		+50	5 300 002.93	-2.93
115%		4.370	+20	5 299 987.57
Batt. Endpoint	3.500	+20	5 299 988.16	11.84

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



OPERATING BAND: UNII Band 3
 OPERATING FREQUENCY: 5,580,000,000 Hz
 CHANNEL: 100
 REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. ()	Frequency (kHz)	Frequency Error (kHz)
100%	3.800	+20(Ref)	5 579 988.00	12.00
100%		-30	5 579 980.73	19.27
100%		-20	5 579 968.52	31.48
100%		-10	5 579 974.41	25.59
100%		0	5 579 979.62	20.38
100%		+10	5 579 982.67	17.33
100%		+30	5 579 988.72	11.28
100%		+40	5 579 993.66	6.34
100%		+50	5 580 003.99	-3.99
115%		4.370	+20	5 579 987.63
Batt. Endpoint	3.500	+20	5 579 988.37	11.63

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



40 MHz BW

OPERATING BAND: UNII Band 1
 OPERATING FREQUENCY: 5,190,000,000 Hz
 CHANNEL: 38
 REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. ()	Frequency (kHz)	Frequency Error (kHz)
100%	3.800	+20(Ref)	5 189 990.00	10.00
100%		-30	5 189 981.67	18.33
100%		-20	5 189 969.46	30.54
100%		-10	5 189 975.32	24.68
100%		0	5 189 980.67	19.33
100%		+10	5 189 982.48	17.52
100%		+30	5 189 989.63	10.37
100%		+40	5 189 994.11	5.89
100%		+50	5 190 002.88	-2.88
115%		4.370	+20	5 189 987.58
Batt. Endpoint	3.500	+20	5 189 988.45	11.55

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



OPERATING BAND: UNII Band 2
 OPERATING FREQUENCY: 5,310,000,000 Hz
 CHANNEL: 62
 REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. ()	Frequency (kHz)	Frequency Error (kHz)
100%	3.800	+20(Ref)	5 309 990.00	10.00
100%		-30	5 309 981.73	18.27
100%		-20	5 309 969.51	30.49
100%		-10	5 309 975.42	24.58
100%		0	5 309 980.88	19.12
100%		+10	5 309 982.55	17.45
100%		+30	5 309 989.71	10.29
100%		+40	5 309 994.23	5.77
100%		+50	5 310 002.76	-2.76
115%		4.370	+20	5 309 987.67
Batt. Endpoint	3.500	+20	5 309 988.51	11.49

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



OPERATING BAND: UNII Band 3
 OPERATING FREQUENCY: 5,510,000,000 Hz
 CHANNEL: 102
 REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. ()	Frequency (kHz)	Frequency Error (kHz)
100%	3.800	+20(Ref)	5 509 990.00	10.00
100%		-30	5 309 982.11	17.89
100%		-20	5 309 970.13	29.87
100%		-10	5 309 975.31	24.69
100%		0	5 309 981.12	18.88
100%		+10	5 309 982.00	18.00
100%		+30	5 309 990.00	10.00
100%		+40	5 309 994.70	5.30
100%		+50	5 310 002.80	-2.80
115%		4.370	+20	5 309 987.70
Batt. Endpoint	3.500	+20	5 309 988.20	11.80

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

80 MHz BW

OPERATING BAND: UNII Band 1
 OPERATING FREQUENCY: 5,210,000,000 Hz
 CHANNEL: 42
 REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. ()	Frequency (kHz)	Frequency Error (kHz)
100%	3.800	+20(Ref)	5 209 990.00	10.00
100%		-30	5 209 983.04	16.96
100%		-20	5 209 971.45	28.55
100%		-10	5 209 975.53	24.47
100%		0	5 209 981.34	18.66
100%		+10	5 209 981.98	18.02
100%		+30	5 209 989.73	10.27
100%		+40	5 209 994.88	5.12
100%		+50	5 210 002.54	-2.54
115%		4.370	+20	5 209 987.69
Batt. Endpoint	3.500	+20	5 209 988.23	11.77

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.



OPERATING BAND: UNII Band 2
 OPERATING FREQUENCY: 5,290,000,000 Hz
 CHANNEL: 58
 REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. ()	Frequency (kHz)	Frequency Error (kHz)
100%	3.800	+20(Ref)	5 289 988.00	12.00
100%		-30	5 209 981.76	18.24
100%		-20	5 209 970.56	29.44
100%		-10	5 209 974.47	25.53
100%		0	5 209 980.53	19.47
100%		+10	5 209 982.12	17.88
100%		+30	5 209 989.35	10.65
100%		+40	5 209 993.78	6.22
100%		+50	5 210 003.54	-3.54
115%		4.370	+20	5 209 987.78
Batt. Endpoint	3.500	+20	5 209 988.13	11.87

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



OPERATING BAND: UNII Band 3
 OPERATING FREQUENCY: 5,530,000,000 Hz
 CHANNEL: 106
 REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. ()	Frequency (kHz)	Frequency Error (kHz)
100%	3.800	+20(Ref)	5 529 990.00	10.00
100%		-30	5 529 982.56	17.44
100%		-20	5 529 971.22	28.78
100%		-10	5 529 974.31	25.69
100%		0	5 529 981.52	18.48
100%		+10	5 529 983.46	16.54
100%		+30	5 529 990.34	9.66
100%		+40	5 529 993.88	6.12
100%		+50	5 530 003.54	-3.54
115%		4.370	+20	5 529 987.89
Batt. Endpoint	3.500	+20	5 529 988.35	11.65

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.



8.7 RADIATED MEASUREMENT.

8.7.1 RADIATED SPURIOUS EMISSIONS.

Test Requirements and limit, §15.205, §15.209, §15.407

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

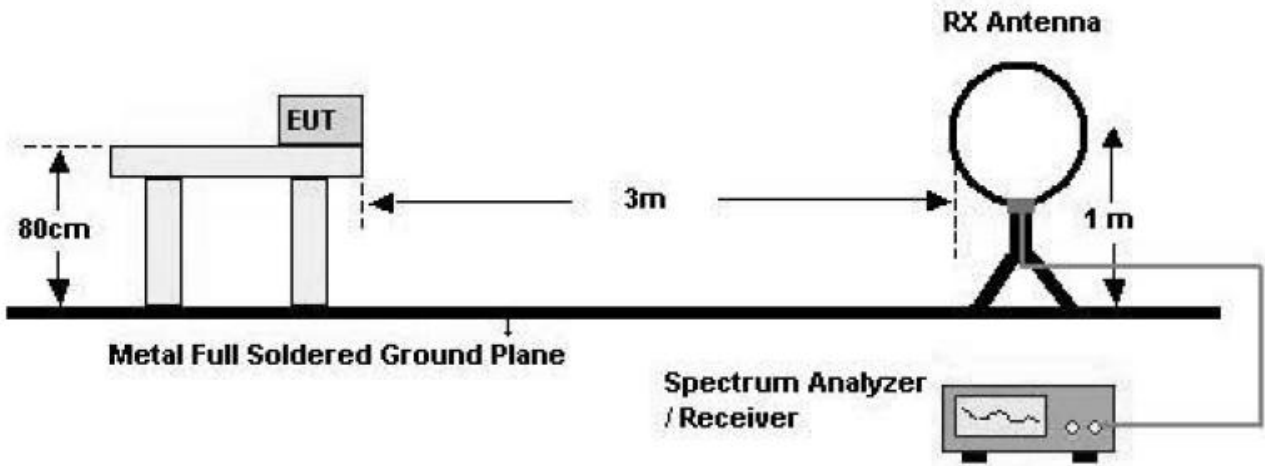
§15.407, KDB 789033

All harmonics that do not lie in a restricted band are subject to a peak limit of -27 dBm/MHz. At a distance of 3 meters the field strength limit in dBµV/m can be determined by adding a “conversion” factor of 95.2 dB to the EIRP limit of -27 dBm/MHz to obtain the limit for out of band spurious emissions of 68.2 dBµV/m.

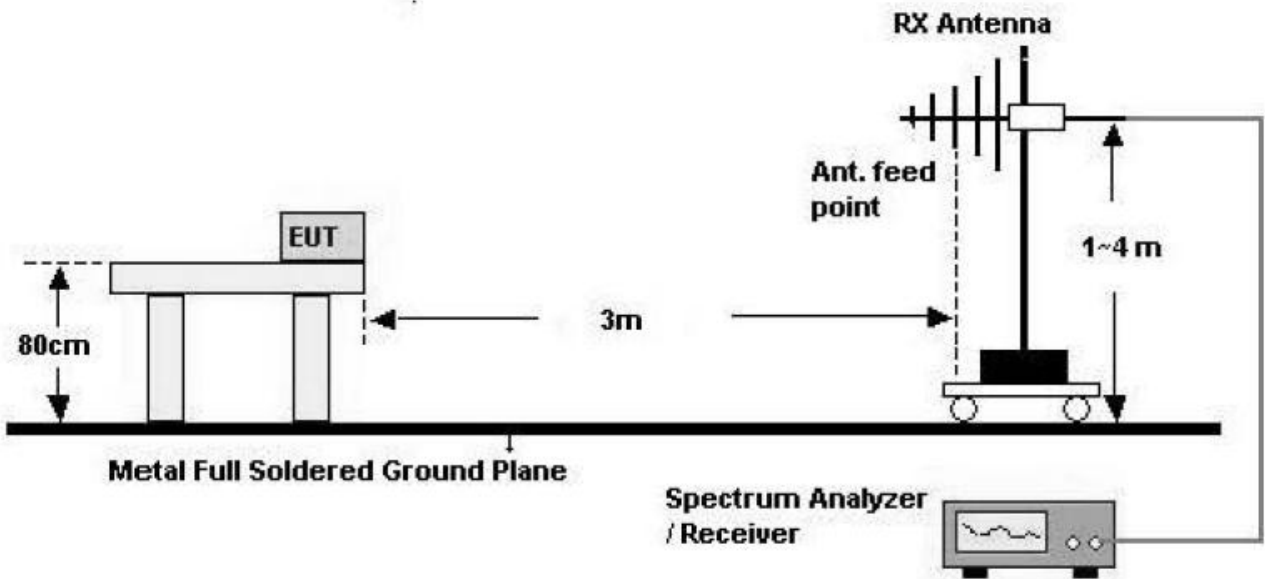
FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

Test Configuration

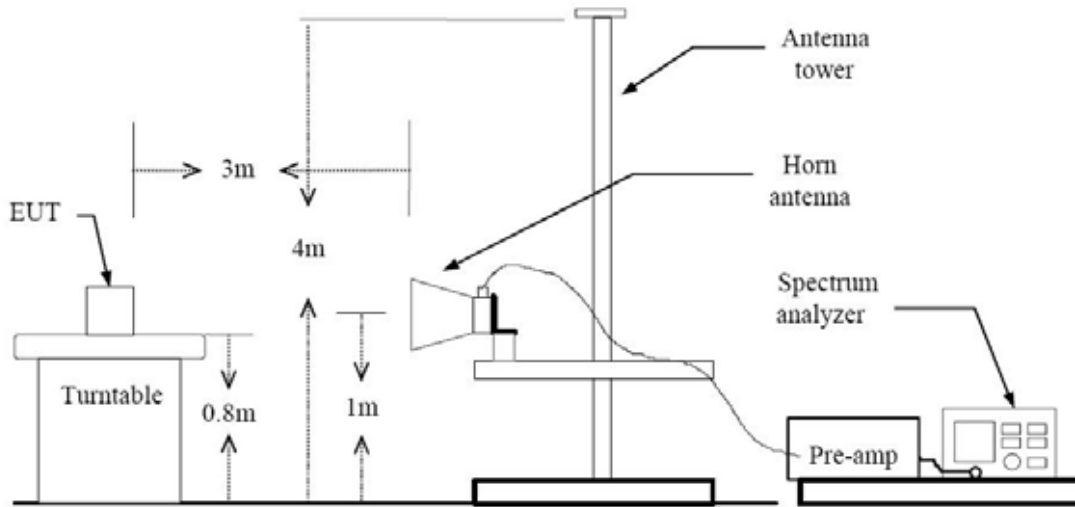
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



TEST PROCEDURE USED

ANSI C63.4(2003)

Method H)5) in KDB 789033, issued 04/08/2013 (Peak)

Method H)6)d) in KDB 789033, issued 04/08/2013 (Average)

. Spectrum setting:

- Peak.

1. RBW = 1 MHz
2. VBW \geq 3 MHz
3. Detector = Peak
4. Sweep Time = auto
5. Trace mode = max hold
6. Allow sweeps to continue until the trace stabilizes.
7. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle.

- Average (Method VB :Averaging using reduced video bandwidth)

1. RBW = 1 MHz
2. VBW
 - 2.1. If the EUT is configured to transmit with duty cycle \geq 98 percent, set VBW \leq RBW/100(i.e., 10 kHz) but not less than 10 Hz.
 - 2.2. If the EUT duty cycle is < 98 percent, set VBW \geq 1/T, where T is the minimum transmission duration.
3. The analyzer is set to linear detector mode.
4. Detector = Peak.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

5. Sweep time = auto.
6. Trace mode = max hold.
7. Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of 1/x, where x is the duty cycle.

Note :

1. We used the case 2 for 802.11a/n_20/n_40/ac_20/ac_40/ac_80 to perform the average field strength measurements for RSE and radiated band edge test.
2. The actual setting value of VBW for 802.11a/n_20/n_40/ac_20/ac_40/ac_80.
3. We applied the 15.407 for Ch.144, 142 and 138 in 802.11ac according to KDB 644545 D01 v01r01.

Mode	Worst Data rate (Mbps)	T _{on} (ms)	T _{total} (ms)	Duty Cycle (%)	VBW(1/T) (Hz)	The actual setting value of VBW (Hz)
a	6	2.605	2.165	95.38	383.9	1000
n_20	6.5	1.920	2.020	95.05	520.8	1000
n_40	13.5	0.945	1.047	90.26	1058.2	3000
ac_20	6.5	1.930	2.035	94.84	518.1	1000
ac_40	13.5	0.952	1.052	90.49	1050.4	3000
ac_80	29.3	0.460	0.560	82.14	2173.9	3000



TEST RESULTS

9 kHz – 30MHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dB μ V	dB /m	dB	(H/V)	dB μ V/m	dB μ 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.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



TEST RESULTS

Below 1 GHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dB μ V	dB /m	dB	(H/V)	dB μ V/m	dB μ 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.

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821



Above 1 GHz

Stand alone

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	41.03	9.33	V	50.36	68.2	17.84	PK
15540	45.28	14.61	V	59.89	74.0	14.09	PK
15540	31.59	14.61	V	46.20	54.0	7.78	AV
10360	41.28	9.33	H	50.61	68.2	17.59	PK
15540	45.39	14.61	H	60.00	74.0	13.98	PK
15540	31.66	14.61	H	46.27	54.0	7.71	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. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



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	40.59	10.13	V	50.72	68.2	17.48	PK
15600	45.87	14.60	V	60.47	74.0	13.51	PK
15600	31.76	14.60	V	46.36	54.0	7.62	AV
10400	40.90	10.13	H	51.03	68.2	17.17	PK
15600	45.93	14.60	H	60.53	74.0	13.45	PK
15600	31.83	14.60	H	46.43	54.0	7.55	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



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	41.65	10.20	V	51.85	68.2	16.35	PK
15720	46.47	13.47	V	59.94	74.0	14.04	PK
15720	32.89	13.47	V	46.36	54.0	7.62	AV
10480	41.78	10.20	H	51.98	68.2	16.22	PK
15720	46.57	13.47	H	60.04	74.0	13.94	PK
15720	32.98	13.47	H	46.45	54.0	7.53	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	41.25	9.33	V	50.58	68.2	17.62	PK
15540	45.19	14.61	V	59.80	74.0	14.18	PK
15540	31.59	14.61	V	46.20	54.0	7.78	AV
10360	41.35	9.33	H	50.68	68.2	17.52	PK
15540	45.21	14.61	H	59.82	74.0	14.16	PK
15540	31.72	14.61	H	46.33	54.0	7.65	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	40.61	10.13	V	50.74	68.2	17.46	PK
15600	45.17	14.60	V	59.77	74.0	14.21	PK
15600	31.65	14.60	V	46.25	54.0	7.73	AV
10400	40.79	10.13	H	50.92	68.2	17.28	PK
15600	45.19	14.60	H	59.79	74.0	14.19	PK
15600	31.71	14.60	H	46.31	54.0	7.67	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. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	41.47	10.20	V	51.67	68.2	16.53	PK
15720	46.02	13.47	V	59.49	74.0	14.49	PK
15720	32.56	13.47	V	46.03	54.0	7.95	AV
10480	41.58	10.20	H	51.78	68.2	16.42	PK
15720	46.37	13.47	H	59.84	74.0	14.14	PK
15720	32.90	13.47	H	46.37	54.0	7.61	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. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	40.21	9.33	V	49.54	68.2	18.66	PK
15540	45.11	14.61	V	59.72	74.0	14.26	PK
15540	31.29	14.61	V	45.90	54.0	8.08	AV
10360	40.40	9.33	H	49.73	68.2	18.47	PK
15540	45.19	14.61	H	59.80	74.0	14.18	PK
15540	31.35	14.61	H	45.96	54.0	8.02	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	40.59	10.13	V	50.72	68.2	17.48	PK
15600	45.23	14.60	V	59.83	74.0	14.15	PK
15600	31.66	14.60	V	46.26	54.0	7.72	AV
10400	40.70	10.13	H	50.83	68.2	17.37	PK
15600	45.42	14.60	H	60.02	74.0	13.96	PK
15600	31.75	14.60	H	46.35	54.0	7.63	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	41.20	10.20	V	51.40	68.2	16.80	PK
15720	46.10	13.47	V	59.57	74.0	14.41	PK
15720	32.78	13.47	V	46.25	54.0	7.73	AV
10480	41.23	10.20	H	51.43	68.2	16.77	PK
15720	46.33	13.47	H	59.80	74.0	14.18	PK
15720	32.85	13.47	H	46.32	54.0	7.66	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10380	40.76	9.70	V	50.46	68.2	17.74	PK
15570	44.52	14.62	V	59.14	74.0	14.84	PK
15570	31.47	14.62	V	46.09	54.0	7.89	AV
10380	40.96	9.70	H	50.66	68.2	17.54	PK
15570	44.72	14.62	H	59.34	74.0	14.64	PK
15570	31.55	14.62	H	46.17	54.0	7.81	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10460	41.28	10.26	V	51.54	68.2	16.66	PK
15690	45.56	14.33	V	59.89	74.0	14.09	PK
15690	32.58	14.33	V	46.91	54.0	7.07	AV
10460	41.31	10.26	H	51.57	68.2	16.63	PK
15690	45.93	14.33	H	60.26	74.0	13.72	PK
15690	32.68	14.33	H	47.01	54.0	6.97	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNF821



Band :	UNII 1
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10380	40.72	9.70	V	50.42	68.2	17.78	PK
15570	44.65	14.62	V	59.27	74.0	14.71	PK
15570	31.48	14.62	V	46.10	54.0	7.88	AV
10380	40.76	9.70	H	50.46	68.2	17.74	PK
15570	44.87	14.62	H	59.49	74.0	14.49	PK
15570	31.56	14.62	H	46.18	54.0	7.80	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10460	40.86	10.26	V	51.12	68.2	17.08	PK
15690	45.82	14.33	V	60.15	74.0	13.83	PK
15690	32.51	14.33	V	46.84	54.0	7.14	AV
10460	40.94	10.26	H	51.20	68.2	17.00	PK
15690	45.86	14.33	H	60.19	74.0	13.79	PK
15690	32.62	14.33	H	46.95	54.0	7.03	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10420	39.87	10.43	V	50.30	68.2	17.90	PK
15630	45.20	14.15	V	59.35	74.0	14.65	PK
15630	31.99	14.15	V	46.14	54.0	7.86	AV
10420	39.73	10.43	H	50.16	68.2	18.04	PK
15630	45.24	14.15	H	59.39	74.0	14.61	PK
15630	31.96	14.15	H	46.11	54.0	7.89	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 all data rate in 802.11ac_80 MHz BW. Worst case is 29.3 Mbps in 802.11ac_80 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



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	43.96	10.38	V	54.34	68.2	13.86	PK
15780	46.91	14.38	V	61.29	74.0	12.71	PK
15780	33.74	14.38	V	48.12	54.0	5.88	AV
10520	44.28	10.38	H	54.66	68.2	13.54	PK
15780	47.18	14.38	H	61.56	74.0	12.44	PK
15780	33.51	14.38	H	47.89	54.0	6.11	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



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	41.00	10.39	V	51.39	74	22.59	PK
10600	27.78	10.39	V	38.17	54	15.81	AV
15900	45.10	14.00	V	59.10	74	14.88	PK
15900	31.14	14.00	V	45.14	54	8.84	AV
10600	41.07	10.39	H	51.46	74	22.52	PK
10600	27.82	10.39	H	38.21	54	15.77	AV
15900	45.19	14.00	H	59.19	74	14.79	PK
15900	31.16	14.00	H	45.16	54	8.82	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



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	41.78	10.50	V	52.28	74	21.70	PK
10640	28.54	10.50	V	39.04	54	14.94	AV
15960	44.39	14.27	V	58.66	74	15.32	PK
15960	30.85	14.27	V	45.12	54	8.86	AV
10640	42.02	10.50	H	52.52	74	21.46	PK
10640	28.68	10.50	H	39.18	54	14.80	AV
15960	44.43	14.27	H	58.70	74	15.28	PK
15960	30.97	14.27	H	45.24	54	8.74	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	41.05	10.38	V	51.43	68.2	16.77	PK
15780	46.21	14.38	V	60.59	74.0	13.39	PK
15780	32.58	14.38	V	46.96	54.0	7.02	AV
10520	41.26	10.38	H	51.64	68.2	16.56	PK
15780	46.29	14.38	H	60.67	74.0	13.31	PK
15780	32.60	14.38	H	46.98	54.0	7.00	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

Band :	UNII 2
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	41.20	10.39	V	51.59	74	22.39	PK
10600	27.56	10.39	V	37.95	54	16.03	AV
15900	44.98	14.00	V	58.98	74	15.00	PK
15900	31.03	14.00	V	45.03	54	8.95	AV
10600	41.38	10.39	H	51.77	74	22.21	PK
10600	27.78	10.39	H	38.17	54	15.81	AV
15900	45.04	14.00	H	59.04	74	14.94	PK
15900	31.10	14.00	H	45.10	54	8.88	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna



Band :	UNII 2
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	41.45	10.50	V	51.95	74	22.03	PK
10640	28.41	10.50	V	38.91	54	15.07	AV
15960	44.86	14.27	V	59.13	74	14.85	PK
15960	31.00	14.27	V	45.27	54	8.71	AV
10640	41.50	10.50	H	52.00	74	21.98	PK
10640	28.52	10.50	H	39.02	54	14.96	AV
15960	44.95	14.27	H	59.22	74	14.76	PK
15960	31.01	14.27	H	45.28	54	8.70	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	41.25	10.38	V	51.63	68.2	16.57	PK
15780	46.21	14.38	V	60.59	74.0	13.39	PK
15780	32.59	14.38	V	46.97	54.0	7.01	AV
10520	41.40	10.38	H	51.78	68.2	16.42	PK
15780	46.33	14.38	H	60.71	74.0	13.27	PK
15780	32.68	14.38	H	47.06	54.0	6.92	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

Band :	UNII 2
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	41.74	10.39	V	52.13	74	21.85	PK
10600	27.65	10.39	V	38.04	54	15.94	AV
15900	45.07	14.00	V	59.07	74	14.91	PK
15900	31.21	14.00	V	45.21	54	8.77	AV
10600	41.78	10.39	H	52.17	74	21.81	PK
10600	27.71	10.39	H	38.10	54	15.88	AV
15900	45.18	14.00	H	59.18	74	14.80	PK
15900	31.30	14.00	H	45.30	54	8.68	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



Band :	UNII 2
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	41.28	10.50	V	51.78	74	22.20	PK
10640	28.45	10.50	V	38.95	54	15.03	AV
15960	44.48	14.27	V	58.75	74	15.23	PK
15960	31.00	14.27	V	45.27	54	8.71	AV
10640	41.48	10.50	H	51.98	74	22.00	PK
10640	28.64	10.50	H	39.14	54	14.84	AV
15960	44.56	14.27	H	58.83	74	15.15	PK
15960	31.07	14.27	H	45.34	54	8.64	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10540	41.65	10.55	V	52.20	68.2	16.00	PK
15810	45.76	14.26	V	60.02	74.0	13.96	PK
15810	32.21	14.26	V	46.47	54.0	7.51	AV
10540	41.76	10.55	H	52.31	68.2	15.89	PK
15810	45.86	14.26	H	60.12	74.0	13.86	PK
15810	32.23	14.26	H	46.49	54.0	7.49	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10620	40.85	10.25	V	51.10	74	22.88	PK
10620	28.01	10.25	V	38.26	54	15.72	AV
15930	44.45	13.62	V	58.07	74	15.91	PK
15930	30.89	13.62	V	44.51	54	9.47	AV
10620	40.95	10.25	H	51.20	74	22.78	PK
10620	28.05	10.25	H	38.30	54	15.68	AV
15930	44.46	13.62	H	58.08	74	15.90	PK
15930	31.00	13.62	H	44.62	54	9.36	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10540	41.21	10.55	V	51.76	68.2	16.44	PK
15810	46.05	14.26	V	60.31	74.0	13.67	PK
15810	32.18	14.26	V	46.44	54.0	7.54	AV
10540	41.35	10.55	H	51.90	68.2	16.30	PK
15810	46.09	14.26	H	60.35	74.0	13.63	PK
15810	32.21	14.26	H	46.47	54.0	7.51	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10620	41.21	10.25	V	51.46	74	22.52	PK
10620	28.03	10.25	V	38.28	54	15.70	AV
15930	44.19	13.62	V	57.81	74	16.17	PK
15930	30.89	13.62	V	44.51	54	9.47	AV
10620	41.36	10.25	H	51.61	74	22.37	PK
10620	28.12	10.25	H	38.37	54	15.61	AV
15930	44.26	13.62	H	57.88	74	16.10	PK
15930	30.91	13.62	H	44.53	54	9.45	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10580	40.15	10.42	V	50.57	68.2	17.63	PK
15870	45.33	13.96	V	59.29	74.0	14.71	PK
15870	31.46	13.96	V	45.42	54.0	8.58	AV
10580	39.79	10.42	H	50.21	68.2	17.99	PK
15870	45.16	13.96	H	59.12	74.0	14.88	PK
15870	31.45	13.96	H	45.41	54.0	8.59	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 all data rate in 802.11ac_80 MHz BW. Worst case is 13.5 Mbps in 802.11ac_80 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNF821

Band :	UNII 2e
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	41.08	11.28	V	52.36	74.0	21.64	PK
11000	27.48	11.28	V	38.76	54.0	15.24	AV
16500	46.14	14.19	V	60.33	68.2	7.87	PK
11000	40.46	11.28	H	51.74	74.0	22.26	PK
11000	26.95	11.28	H	38.23	54.0	15.77	AV
16500	46.80	14.19	H	60.99	68.2	7.21	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



Band :	UNII 2e
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	38.51	11.10	V	49.61	74.0	24.37	PK
11160	25.31	11.10	V	36.41	54.0	17.57	AV
16740	45.64	15.70	V	61.34	68.2	6.86	PK
11160	38.54	11.10	H	49.64	74.0	24.34	PK
11160	25.33	11.10	H	36.43	54.0	17.55	AV
16740	45.70	15.70	H	61.40	68.2	6.80	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

Band :	UNII 2e
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	38.62	10.97	V	49.59	74.0	24.39	PK
11400	25.21	10.97	V	36.18	54.0	17.80	AV
17100	45.01	17.82	V	62.83	68.2	5.37	PK
11400	38.68	10.97	H	49.65	74.0	24.33	PK
11400	25.26	10.97	H	36.23	54.0	17.75	AV
17100	45.03	17.82	H	62.85	68.2	5.35	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



Band :	UNII 2e
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	39.18	11.28	V	50.46	74.0	23.52	PK
11000	25.77	11.28	V	37.05	54.0	16.93	AV
16500	45.44	14.19	V	59.63	68.2	8.57	PK
11000	39.21	11.28	H	50.49	74.0	23.49	PK
11000	25.79	11.28	H	37.07	54.0	16.91	AV
16500	45.46	14.19	H	59.65	68.2	8.55	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	38.71	11.10	V	49.81	74.0	24.17	PK
11160	25.21	11.10	V	36.31	54.0	17.67	AV
16740	44.87	15.70	V	60.57	68.2	7.63	PK
11160	38.75	11.10	H	49.85	74.0	24.13	PK
11160	25.25	11.10	H	36.35	54.0	17.63	AV
16740	44.90	15.70	H	60.60	68.2	7.60	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	38.64	10.97	V	49.61	74.0	24.37	PK
11400	25.04	10.97	V	36.01	54.0	17.97	AV
17100	45.38	17.82	V	63.20	68.2	5.00	PK
11400	38.73	10.97	H	49.70	74.0	24.28	PK
11400	25.10	10.97	H	36.07	54.0	17.91	AV
17100	45.41	17.82	H	63.23	68.2	4.97	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	38.92	11.28	V	50.20	74.0	23.78	PK
11000	25.77	11.28	V	37.05	54.0	16.93	AV
16500	45.59	14.19	V	59.78	68.2	8.42	PK
11000	38.96	11.28	H	50.24	74.0	23.74	PK
11000	25.78	11.28	H	37.06	54.0	16.92	AV
16500	45.63	14.19	H	59.82	68.2	8.38	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	38.19	11.10	V	49.29	74.0	24.69	PK
11160	25.20	11.10	V	36.30	54.0	17.68	AV
16740	45.27	15.70	V	60.97	68.2	7.23	PK
11160	38.21	11.10	H	49.31	74.0	24.67	PK
11160	25.23	11.10	H	36.33	54.0	17.65	AV
16740	45.28	15.70	H	60.98	68.2	7.22	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11440	38.82	10.97	V	49.79	74.0	24.19	PK
11440	25.20	10.97	V	36.17	54.0	17.81	AV
17160	45.74	17.82	V	63.56	68.2	4.64	PK
11440	38.82	10.97	H	49.79	74.0	24.19	PK
11440	25.21	10.97	H	36.18	54.0	17.80	AV
17160	45.78	17.82	H	63.60	68.2	4.60	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. We applied the 15.407 for Ch.144 in 802.11ac according to KDB 644545 D01 v01r01.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11020	39.16	11.28	V	50.44	74.0	23.54	PK
11020	25.74	11.28	V	37.02	54.0	16.96	AV
16530	45.01	14.83	V	59.84	68.2	8.36	PK
11020	39.20	11.28	H	50.48	74.0	23.50	PK
11020	25.75	11.28	H	37.03	54.0	16.95	AV
16530	45.03	14.83	H	59.86	68.2	8.34	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5590 MHz
Channel No.	118 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11180	39.15	11.12	V	50.27	74.0	23.71	PK
11180	25.35	11.12	V	36.47	54.0	17.51	AV
16770	45.34	16.52	V	61.86	68.2	6.34	PK
11180	39.17	11.12	H	50.29	74.0	23.69	PK
11180	25.36	11.12	H	36.48	54.0	17.50	AV
16770	45.51	16.52	H	62.03	68.2	6.17	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5670 MHz
Channel No.	134 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11340	38.24	10.86	V	49.10	74.0	24.88	PK
11340	25.13	10.86	V	35.99	54.0	17.99	AV
17010	44.74	18.15	V	62.89	68.2	5.31	PK
11340	38.26	10.86	H	49.12	74.0	24.86	PK
11340	25.14	10.86	H	36.00	54.0	17.98	AV
17010	44.75	18.15	H	62.90	68.2	5.30	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11020	38.62	11.28	V	49.90	74.0	24.08	PK
11020	25.68	11.28	V	36.96	54.0	17.02	AV
16530	46.23	14.83	V	61.06	68.2	7.14	PK
11020	38.64	11.28	H	49.92	74.0	24.06	PK
11020	25.80	11.28	H	37.08	54.0	16.90	AV
16530	46.50	14.83	H	61.33	68.2	6.87	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5590 MHz
Channel No.	118 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11180	38.11	11.12	V	49.23	74.0	24.75	PK
11180	24.96	11.12	V	36.08	54.0	17.90	AV
16770	45.87	16.52	V	62.39	68.2	5.81	PK
11180	38.46	11.12	H	49.58	74.0	24.40	PK
11180	25.05	11.12	H	36.17	54.0	17.81	AV
16770	46.04	16.52	H	62.56	68.2	5.64	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5710 MHz
Channel No.	142 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11420	38.75	10.73	V	49.48	74.0	24.50	PK
11420	25.13	10.73	V	35.86	54.0	18.12	AV
17130	45.66	18.11	V	63.77	68.2	4.43	PK
11420	38.82	10.73	H	49.55	74.0	24.43	PK
11420	25.29	10.73	H	36.02	54.0	17.96	AV
17130	45.85	18.11	H	63.96	68.2	4.24	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. We applied the 15.407 for Ch.142 in 802.11ac according to KDB 644545 D01 v01r01.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

Band :	UNII 2e
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5530 MHz
Channel No.	106 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11060	39.21	11.48	V	50.69	74.0	23.29	PK
11060	25.78	11.48	V	37.26	54.0	16.72	AV
16590	46.13	14.42	V	60.55	68.2	7.65	PK
11060	39.29	11.48	H	50.77	74.0	23.21	PK
11060	25.83	11.48	H	37.31	54.0	16.67	AV
16590	46.28	14.42	H	60.70	68.2	7.50	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 all data rate in 802.11ac_80 MHz BW. Worst case is 13.5 Mbps in 802.11ac_80 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



Band :	UNII 2e
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5690 MHz
Channel No.	138 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11380	38.59	11.05	V	49.64	74.0	24.34	PK
11380	24.87	11.05	V	35.92	54.0	18.06	AV
17070	45.78	18.08	V	63.86	68.2	4.34	PK
11380	38.65	11.05	H	49.70	74.0	24.28	PK
11380	24.98	11.05	H	36.03	54.0	17.95	AV
17070	45.95	18.08	H	64.03	68.2	4.17	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 all data rate in 802.11ac_80 MHz BW. Worst case is 13.5 Mbps in 802.11ac_80 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna
7. We applied the 15.407 for Ch.138 in 802.11ac according to KDB 644545 D01 v01r01.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



With Wireless Charger

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	41.03	9.33	V	50.36	68.2	17.84	PK
15540	44.36	14.61	V	58.97	74.0	15.01	PK
15540	30.68	14.61	V	45.29	54.0	8.69	AV
10360	40.34	9.33	H	49.67	68.2	18.53	PK
15540	44.57	14.61	H	59.18	74.0	14.80	PK
15540	30.84	14.61	H	45.45	54.0	8.53	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



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	39.69	10.13	V	49.82	68.2	18.38	PK
15600	44.96	14.60	V	59.56	74.0	14.42	PK
15600	30.85	14.60	V	45.45	54.0	8.53	AV
10400	39.02	10.13	H	49.15	68.2	19.05	PK
15600	45.08	14.60	H	59.68	74.0	14.30	PK
15600	30.89	14.60	H	45.49	54.0	8.49	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



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	40.83	10.20	V	51.03	68.2	17.17	PK
15720	45.68	13.47	V	59.15	74.0	14.83	PK
15720	31.90	13.47	V	45.37	54.0	8.61	AV
10480	40.91	10.20	H	51.11	68.2	17.09	PK
15720	45.61	13.47	H	59.08	74.0	14.90	PK
15720	32.05	13.47	H	45.52	54.0	8.46	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	40.32	9.33	V	49.65	68.2	18.55	PK
15540	44.27	14.61	V	58.88	74.0	15.10	PK
15540	30.60	14.61	V	45.21	54.0	8.77	AV
10360	40.44	9.33	H	49.77	68.2	18.43	PK
15540	44.36	14.61	H	58.97	74.0	15.01	PK
15540	30.78	14.61	H	45.39	54.0	8.59	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	39.74	10.13	V	49.87	68.2	18.33	PK
15600	44.29	14.60	V	58.89	74.0	15.09	PK
15600	30.67	14.60	V	45.27	54.0	8.71	AV
10400	39.85	10.13	H	49.98	68.2	18.22	PK
15600	44.31	14.60	H	58.91	74.0	15.07	PK
15600	30.82	14.60	H	45.42	54.0	8.56	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. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	40.55	10.20	V	50.75	68.2	17.45	PK
15720	45.21	13.47	V	58.68	74.0	15.30	PK
15720	31.68	13.47	V	45.15	54.0	8.83	AV
10480	40.67	10.20	H	50.87	68.2	17.33	PK
15720	45.54	13.47	H	59.01	74.0	14.97	PK
15720	31.91	13.47	H	45.38	54.0	8.60	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	39.36	9.33	V	48.69	68.2	19.51	PK
15540	44.30	14.61	V	58.91	74.0	15.07	PK
15540	30.36	14.61	V	44.97	54.0	9.01	AV
10360	39.45	9.33	H	48.78	68.2	19.42	PK
15540	44.28	14.61	H	58.89	74.0	15.09	PK
15540	30.46	14.61	H	45.07	54.0	8.91	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	39.60	10.13	V	49.73	68.2	18.47	PK
15600	44.36	14.60	V	58.96	74.0	15.02	PK
15600	30.66	14.60	V	45.26	54.0	8.72	AV
10400	39.64	10.13	H	49.77	68.2	18.43	PK
15600	44.56	14.60	H	59.16	74.0	14.82	PK
15600	30.88	14.60	H	45.48	54.0	8.50	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	42.86	10.20	V	53.06	68.2	15.14	PK
15720	45.96	13.47	V	59.43	74.0	14.57	PK
15720	32.14	13.47	V	45.61	54.0	8.39	AV
10480	42.74	10.20	H	52.94	68.2	15.26	PK
15720	46.92	13.47	H	60.39	74.0	13.61	PK
15720	32.73	13.47	H	46.20	54.0	7.80	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10380	39.54	9.70	V	49.24	68.2	18.96	PK
15570	44.89	14.62	V	59.51	74.0	14.49	PK
15570	31.28	14.62	V	45.90	54.0	8.10	AV
10380	39.63	9.70	H	49.33	68.2	18.87	PK
15570	44.95	14.62	H	59.57	74.0	14.43	PK
15570	31.45	14.62	H	46.07	54.0	7.93	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10460	40.34	10.26	V	50.60	68.2	17.60	PK
15690	44.75	14.33	V	59.08	74.0	14.90	PK
15690	31.76	14.33	V	46.09	54.0	7.89	AV
10460	40.38	10.26	H	50.64	68.2	17.56	PK
15690	44.99	14.33	H	59.32	74.0	14.66	PK
15690	31.85	14.33	H	46.18	54.0	7.80	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10380	39.83	9.70	V	49.53	68.2	18.67	PK
15570	43.78	14.62	V	58.40	74.0	15.58	PK
15570	30.50	14.62	V	45.12	54.0	8.86	AV
10380	39.89	9.70	H	49.59	68.2	18.61	PK
15570	43.94	14.62	H	58.56	74.0	15.42	PK
15570	30.59	14.62	H	45.21	54.0	8.77	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10460	39.93	10.26	V	50.19	68.2	18.01	PK
15690	44.90	14.33	V	59.23	74.0	14.75	PK
15690	31.72	14.33	V	46.05	54.0	7.93	AV
10460	40.07	10.26	H	50.33	68.2	17.87	PK
15690	44.96	14.33	H	59.29	74.0	14.69	PK
15690	31.78	14.33	H	46.11	54.0	7.87	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 1
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10420	39.80	10.43	V	50.23	68.2	17.97	PK
15630	44.89	14.15	V	59.04	74.0	14.94	PK
15630	30.96	14.15	V	45.11	54.0	8.87	AV
10420	39.97	10.43	H	50.40	68.2	17.80	PK
15630	44.93	14.15	H	59.08	74.0	14.90	PK
15630	31.05	14.15	H	45.20	54.0	8.78	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 all data rate in 802.11ac_80 MHz BW. Worst case is 29.3 Mbps in 802.11ac_80 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



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	40.56	10.38	V	50.94	68.2	17.26	PK
15780	45.21	14.38	V	59.59	74.0	14.39	PK
15780	31.75	14.38	V	46.13	54.0	7.85	AV
10520	40.85	10.38	H	51.23	68.2	16.97	PK
15780	45.36	14.38	H	59.74	74.0	14.24	PK
15780	31.78	14.38	H	46.16	54.0	7.82	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



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	40.11	10.39	V	50.50	74.0	23.48	PK
10600	26.85	10.39	V	37.24	54.0	16.74	AV
15900	44.29	14.00	V	58.29	74.0	15.69	PK
15900	30.28	14.00	V	44.28	54.0	9.70	AV
10600	40.12	10.39	H	50.51	74.0	23.47	PK
10600	26.99	10.39	H	37.38	54.0	16.60	AV
15900	44.35	14.00	H	58.35	74.0	15.63	PK
15900	30.23	14.00	H	44.23	54.0	9.75	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

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	40.94	10.50	V	51.44	74.0	22.54	PK
10640	27.61	10.50	V	38.11	54.0	15.87	AV
15960	43.50	14.27	V	57.77	74.0	16.21	PK
15960	29.97	14.27	V	44.24	54.0	9.74	AV
10640	41.10	10.50	H	51.60	74.0	22.38	PK
10640	27.83	10.50	H	38.33	54.0	15.65	AV
15960	43.62	14.27	H	57.89	74.0	16.09	PK
15960	30.06	14.27	H	44.33	54.0	9.65	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



Band :	UNII 2
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	40.24	10.38	V	50.62	68.2	17.58	PK
15780	45.29	14.38	V	59.67	74.0	14.31	PK
15780	31.69	14.38	V	46.07	54.0	7.91	AV
10520	40.35	10.38	H	50.73	68.2	17.47	PK
15780	45.33	14.38	H	59.71	74.0	14.27	PK
15780	31.65	14.38	H	46.03	54.0	7.95	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNF821



Band :	UNII 2
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	40.28	10.39	V	50.67	74	23.31	PK
10600	26.61	10.39	V	37.00	54	16.98	AV
15900	44.07	14.00	V	58.07	74	15.91	PK
15900	30.21	14.00	V	44.21	54	9.77	AV
10600	40.46	10.39	H	50.85	74	23.13	PK
10600	26.89	10.39	H	37.28	54	16.70	AV
15900	44.09	14.00	H	58.09	74	15.89	PK
15900	30.26	14.00	H	44.26	54	9.72	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	40.56	10.50	V	51.06	74	22.92	PK
10640	27.54	10.50	V	38.04	54	15.94	AV
15960	43.89	14.27	V	58.16	74	15.82	PK
15960	30.20	14.27	V	44.47	54	9.51	AV
10640	40.77	10.50	H	51.27	74	22.71	PK
10640	27.69	10.50	H	38.19	54	15.79	AV
15960	44.09	14.27	H	58.36	74	15.62	PK
15960	30.13	14.27	H	44.40	54	9.58	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	40.39	10.38	V	50.77	68.2	17.43	PK
15780	45.25	14.38	V	59.63	74.0	14.35	PK
15780	31.67	14.38	V	46.05	54.0	7.93	AV
10520	40.57	10.38	H	50.95	68.2	17.25	PK
15780	45.34	14.38	H	59.72	74.0	14.26	PK
15780	31.78	14.38	H	46.16	54.0	7.82	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	40.88	10.39	V	51.27	74	22.71	PK
10600	27.81	10.39	V	38.20	54	15.78	AV
15900	44.21	14.00	V	58.21	74	15.77	PK
15900	30.39	14.00	V	44.39	54	9.59	AV
10600	40.95	10.39	H	51.34	74	22.64	PK
10600	28.89	10.39	H	39.28	54	14.70	AV
15900	44.26	14.00	H	58.26	74	15.72	PK
15900	30.44	14.00	H	44.44	54	9.54	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	42.70	10.50	V	53.20	74	20.80	PK
10640	29.04	10.50	V	39.54	54	14.46	AV
15960	45.27	14.27	V	59.54	74	14.46	PK
15960	31.89	14.27	V	46.16	54	7.84	AV
10640	42.13	10.50	H	52.63	74	21.37	PK
10640	28.02	10.50	H	38.52	54	15.48	AV
15960	43.76	14.27	H	58.03	74	15.97	PK
15960	29.65	14.27	H	43.92	54	10.08	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10540	40.53	10.55	V	51.08	68.2	17.12	PK
15810	45.23	14.26	V	59.49	74.0	14.51	PK
15810	31.94	14.26	V	46.20	54.0	7.80	AV
10540	40.51	10.55	H	51.06	68.2	17.14	PK
15810	45.19	14.26	H	59.45	74.0	14.55	PK
15810	31.95	14.26	H	46.21	54.0	7.79	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10620	39.89	10.25	V	50.14	74	23.84	PK
10620	27.10	10.25	V	37.35	54	16.63	AV
15930	43.60	13.62	V	57.22	74	16.76	PK
15930	29.97	13.62	V	43.59	54	10.39	AV
10620	39.96	10.25	H	50.21	74	23.77	PK
10620	27.16	10.25	H	37.41	54	16.57	AV
15930	43.66	13.62	H	57.28	74	16.70	PK
15930	30.18	13.62	H	43.80	54	10.18	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10540	40.35	10.55	V	50.90	68.2	17.30	PK
15810	45.11	14.26	V	59.37	74.0	14.61	PK
15810	31.32	14.26	V	45.58	54.0	8.40	AV
10540	40.48	10.55	H	51.03	68.2	17.17	PK
15810	45.18	14.26	H	59.44	74.0	14.54	PK
15810	31.40	14.26	H	45.66	54.0	8.32	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

Band :	UNII 2
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10620	40.36	10.25	V	50.61	74	23.37	PK
10620	27.28	10.25	V	37.53	54	16.45	AV
15930	43.35	13.62	V	56.97	74	17.01	PK
15930	29.97	13.62	V	43.59	54	10.39	AV
10620	40.54	10.25	H	50.79	74	23.19	PK
10620	27.37	10.25	H	37.62	54	16.36	AV
15930	43.44	13.62	H	57.06	74	16.92	PK
15930	30.01	13.62	H	43.63	54	10.35	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



Band :	UNII 2
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10580	39.69	10.42	V	50.11	68.2	18.09	PK
15870	43.63	13.96	V	57.59	74.0	16.39	PK
15870	30.22	13.96	V	44.18	54.0	9.80	AV
10580	39.78	10.42	H	50.20	68.2	18.00	PK
15870	43.69	13.96	H	57.65	74.0	16.33	PK
15870	30.58	13.96	H	44.54	54.0	9.44	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 all data rate in 802.11ac_80 MHz BW. Worst case is 13.5 Mbps in 802.11ac_80 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
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	38.64	11.28	V	49.92	74.0	24.06	PK
11000	24.67	11.28	V	35.95	54.0	18.03	AV
16500	44.63	14.19	V	58.82	68.2	9.38	PK
11000	38.67	11.28	H	49.95	74.0	24.03	PK
11000	24.80	11.28	H	36.08	54.0	17.90	AV
16500	44.50	14.19	H	58.69	68.2	9.51	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
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	37.60	11.10	V	48.70	74.0	25.28	PK
11160	24.36	11.10	V	35.46	54.0	18.52	AV
16740	44.72	15.70	V	60.42	68.2	7.78	PK
11160	37.71	11.10	H	48.81	74.0	25.17	PK
11160	24.31	11.10	H	35.41	54.0	18.57	AV
16740	44.89	15.70	H	60.59	68.2	7.61	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

Band :	UNII 2e
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	38.24	10.97	V	49.21	74.0	24.79	PK
11400	24.73	10.97	V	35.70	54.0	18.30	AV
17100	44.89	17.82	V	62.71	68.2	5.49	PK
11400	38.73	10.97	H	49.70	74.0	24.30	PK
11400	25.87	10.97	H	36.84	54.0	17.16	AV
17100	44.65	17.82	H	62.47	68.2	5.73	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 all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



Band :	UNII 2e
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	40.28	11.28	V	51.56	74.0	22.44	PK
11000	26.79	11.28	V	38.07	54.0	15.93	AV
16500	45.50	14.19	V	59.69	68.2	8.51	PK
11000	39.65	11.28	H	50.93	74.0	23.07	PK
11000	26.14	11.28	H	37.42	54.0	16.58	AV
16500	45.63	14.19	H	59.82	68.2	8.38	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	37.91	11.10	V	49.01	74.0	24.97	PK
11160	24.31	11.10	V	35.41	54.0	18.57	AV
16740	43.96	15.70	V	59.66	68.2	8.54	PK
11160	37.89	11.10	H	48.99	74.0	24.99	PK
11160	24.36	11.10	H	35.46	54.0	18.52	AV
16740	44.95	15.70	H	60.65	68.2	7.55	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 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	37.81	10.97	V	48.78	74.0	25.20	PK
11400	24.17	10.97	V	35.14	54.0	18.84	AV
17100	44.54	17.82	V	62.36	68.2	5.84	PK
11400	37.76	10.97	H	48.73	74.0	25.25	PK
11400	24.20	10.97	H	35.17	54.0	18.81	AV
17100	44.45	17.82	H	62.27	68.2	5.93	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 all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	37.94	11.28	V	49.22	74.0	24.76	PK
11000	24.83	11.28	V	36.11	54.0	17.87	AV
16500	44.67	14.19	V	58.86	68.2	9.34	PK
11000	37.99	11.28	H	49.27	74.0	24.71	PK
11000	24.86	11.28	H	36.14	54.0	17.84	AV
16500	44.78	14.19	H	58.97	68.2	9.23	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 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	37.34	11.10	V	48.44	74.0	25.54	PK
11160	24.31	11.10	V	35.41	54.0	18.57	AV
16740	44.31	15.70	V	60.01	68.2	8.19	PK
11160	37.40	11.10	H	48.50	74.0	25.48	PK
11160	24.36	11.10	H	35.46	54.0	18.52	AV
16740	44.35	15.70	H	60.05	68.2	8.15	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

Band :	UNII 2e
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11440	37.83	10.97	V	48.80	74.0	25.20	PK
11440	24.19	10.97	V	35.16	54.0	18.84	AV
17160	44.25	17.82	V	62.07	68.2	6.13	PK
11440	38.23	10.97	H	49.20	74.0	24.80	PK
11440	25.24	10.97	H	36.21	54.0	17.79	AV
17160	44.10	17.82	H	61.92	68.2	6.28	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 all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. We applied the 15.407 for Ch.144 in 802.11ac according to KDB 644545 D01 v01r01.



Band :	UNII 2e
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11020	39.07	11.28	V	50.35	74.0	23.65	PK
11020	25.65	11.28	V	36.93	54.0	17.07	AV
16530	45.16	14.83	V	59.99	68.2	8.21	PK
11020	38.74	11.28	H	50.02	74.0	23.98	PK
11020	25.60	11.28	H	36.88	54.0	17.12	AV
16530	45.04	14.83	H	59.87	68.2	8.33	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5590 MHz
Channel No.	118 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11180	38.24	11.12	V	49.36	74.0	24.62	PK
11180	24.42	11.12	V	35.54	54.0	18.44	AV
16770	44.52	16.52	V	61.04	68.2	7.16	PK
11180	38.26	11.12	H	49.38	74.0	24.60	PK
11180	24.45	11.12	H	35.57	54.0	18.41	AV
16770	44.64	16.52	H	61.16	68.2	7.04	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNF821



Band :	UNII 2e
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5670 MHz
Channel No.	134 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11340	37.36	10.86	V	48.22	74.0	25.76	PK
11340	24.18	10.86	V	35.04	54.0	18.94	AV
17010	43.74	18.15	V	61.89	68.2	6.31	PK
11340	37.37	10.86	H	48.23	74.0	25.75	PK
11340	24.21	10.86	H	35.07	54.0	18.91	AV
17010	43.78	18.15	H	61.93	68.2	6.27	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 all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11020	37.71	11.28	V	48.99	74.0	24.99	PK
11020	24.67	11.28	V	35.95	54.0	18.03	AV
16530	45.50	14.83	V	60.33	68.2	7.87	PK
11020	37.74	11.28	H	49.02	74.0	24.96	PK
11020	24.88	11.28	H	36.16	54.0	17.82	AV
16530	45.74	14.83	H	60.57	68.2	7.63	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5590 MHz
Channel No.	118 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11180	37.28	11.12	V	48.40	74.0	25.58	PK
11180	24.07	11.12	V	35.19	54.0	18.79	AV
16770	44.95	16.52	V	61.47	68.2	6.73	PK
11180	37.61	11.12	H	48.73	74.0	25.25	PK
11180	24.16	11.12	H	35.28	54.0	18.70	AV
16770	45.23	16.52	H	61.75	68.2	6.45	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5710 MHz
Channel No.	142 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11420	37.82	10.73	V	48.55	74.0	25.43	PK
11420	24.24	10.73	V	34.97	54.0	19.01	AV
17130	44.74	18.11	V	62.85	68.2	5.35	PK
11420	37.93	10.73	H	48.66	74.0	25.32	PK
11420	24.35	10.73	H	35.08	54.0	18.90	AV
17130	44.98	18.11	H	63.09	68.2	5.11	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 all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. We applied the 15.407 for Ch.142 in 802.11ac according to KDB 644545 D01 v01r01.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5530 MHz
Channel No.	106 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11060	38.31	11.48	V	49.79	74.0	24.19	PK
11060	24.80	11.48	V	36.28	54.0	17.70	AV
16590	45.27	14.42	V	59.69	68.2	8.51	PK
11060	38.38	11.48	H	49.86	74.0	24.12	PK
11060	24.95	11.48	H	36.43	54.0	17.55	AV
16590	45.36	14.42	H	59.78	68.2	8.42	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 all data rate in 802.11ac_80 MHz BW. Worst case is 13.5 Mbps in 802.11ac_80 MHz BW.
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		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821



Band :	UNII 2e
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5690 MHz
Channel No.	138 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11380	37.63	11.05	V	48.68	74.0	25.30	PK
11380	23.94	11.05	V	34.99	54.0	18.99	AV
17070	44.86	18.08	V	62.94	68.2	5.26	PK
11380	37.77	11.05	H	48.82	74.0	25.16	PK
11380	24.07	11.05	H	35.12	54.0	18.86	AV
17070	45.12	18.08	H	63.20	68.2	5.00	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 all data rate in 802.11ac_80 MHz BW. Worst case is 13.5 Mbps in 802.11ac_80 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. We applied the 15.407 for Ch.138 in 802.11ac according to KDB 644545 D01 v01r01.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC		FCC ID: ZNFD821

8.7.2 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)).

Stand alone

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+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	61.41	-0.51	H	60.90	74	13.08	PK
5150	42.04	-0.51	H	41.53	54	12.45	AV
5150	61.90	-0.51	V	61.39	74	12.59	PK
5150	42.90	-0.51	V	42.39	54	11.59	AV



Band : UNII 1
 Operation Mode: 802.11 n_20 MHz BW
 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	61.57	-0.51	H	61.06	74	12.92	PK
5150	41.43	-0.51	H	40.92	54	13.06	AV
5150	62.11	-0.51	V	61.6	74	12.38	PK
5150	42.00	-0.51	V	41.49	54	12.49	AV

Band : UNII 1
 Operation Mode: 802.11 ac_20 MHz BW
 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	61.47	-0.51	H	60.96	74	13.02	PK
5150	41.67	-0.51	H	41.16	54	12.82	AV
5150	62.98	-0.51	V	62.47	74	11.51	PK
5150	41.96	-0.51	V	41.45	54	12.53	AV



Band : UNII 1
 Operation Mode: 802.11n_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5190 MHz
 Channel No. 38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	65.57	-0.51	H	65.06	74	8.92	PK
5150	46.04	-0.51	H	45.53	54	8.45	AV
5150	66.25	-0.51	V	65.74	74	8.24	PK
5150	46.58	-0.51	V	46.07	54	7.91	AV

Band : UNII 1
 Operation Mode: 802.11 ac_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5190 MHz
 Channel No. 38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	66.57	-0.51	H	66.06	74	7.92	PK
5150	46.04	-0.51	H	45.53	54	8.45	AV
5150	67.28	-0.51	V	66.77	74	7.21	PK
5150	46.21	-0.51	V	45.7	54	8.28	AV



Band : UNII 1
 Operation Mode: 802.11 ac_80 MHz BW
 Transfer Rate: 29.3 Mbps
 Operating Frequency 5210 MHz
 Channel No. 42 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	65.84	-0.51	H	65.33	74	8.65	PK
5150	48.07	-0.51	H	47.56	54	6.42	AV
5150	66.26	-0.51	V	65.75	74	8.23	PK
5150	48.65	-0.51	V	48.14	54	5.84	AV

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT
2. We have done all data rate in 802.11a/n/ac mode test. . Worst case of EUT is lowest data rate in 802.11a/n/ac
3. 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+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	56.14	-0.19	H	55.95	74	18.03	PK
5350	39.04	-0.19	H	38.85	54	15.13	AV
5350	57.01	-0.19	V	56.82	74	17.16	PK
5350	39.46	-0.19	V	39.27	54	14.71	AV

Band : UNII 2
 Operation Mode: 802.11 n_20 MHz BW
 Transfer Rate: 6 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	57.44	-0.19	H	57.25	74	16.73	PK
5350	39.10	-0.19	H	38.91	54	15.07	AV
5350	57.83	-0.19	V	57.64	74	16.34	PK
5350	39.17	-0.19	V	38.98	54	15.00	AV



Band : UNII 2
 Operation Mode: 802.11 ac_20 MHz BW
 Transfer Rate: 6.5 Mbps
 Operating Frequency 5320 MHz
 Channel No. 62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	57.97	4.45	H	62.42	74	11.58	PK
5350	38.78	4.45	H	43.23	54	10.77	AV
5350	53.98	4.45	V	58.43	74	15.57	PK
5350	37.28	4.45	V	41.73	54	12.27	AV

Band : UNII 2
 Operation Mode: 802.11n_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5310 MHz
 Channel No. 62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	57.13	4.45	H	61.58	74	12.42	PK
5350	40.76	4.45	H	45.21	54	8.79	AV
5350	56.02	4.45	V	60.47	74	13.53	PK
5350	39.84	4.45	V	44.29	54	9.71	AV



Band : UNII 2
 Operation Mode: 802.11 ac_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5310 MHz
 Channel No. 62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	57.55	4.45	H	62.00	74	12.00	PK
5350	41.45	4.45	H	45.90	54	8.10	AV
5350	55.46	4.45	V	59.91	74	14.09	PK
5350	40.31	4.45	V	44.76	54	9.24	AV

Band : UNII 2
 Operation Mode: 802.11 ac_80 MHz BW
 Transfer Rate: 29.3 Mbps
 Operating Frequency 5290 MHz
 Channel No. 58 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	56.85	4.45	H	61.30	74	12.70	PK
5350	39.80	4.45	H	44.25	54	9.75	AV
5350	58.11	4.45	V	62.56	74	11.44	PK
5350	39.36	4.45	V	43.81	54	10.19	AV

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT
2. We have done all data rate in 802.11a/n/ac mode test. . Worst case of EUT is lowest data rate in 802.11a/n/ac
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



Band : UNII 2e
 Operation Mode: 802.11 a
 Transfer Rate: 6 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	51.87	0.38	H	52.25	74.0	21.73	PK
5460	38.41	0.38	H	38.79	54.0	15.19	AV
*5470	57.25	0.24	H	57.49	68.2	10.71	PK
5460	52.17	0.38	V	52.55	74.0	21.43	PK
5460	38.44	0.38	V	38.82	54.0	15.16	AV
*5470	57.31	0.24	V	57.55	68.2	10.65	PK

Band : UNII 2e
 Operation Mode: 802.11 a
 Transfer Rate: 6 Mbps
 Operating Frequency 5700 MHz
 Channel No. 140 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
*5725	59.36	1.05	H	60.41	68	7.80	PK
*5725	61.88	1.05	V	62.93	68	5.28	PK



Band : UNII 2e
 Operation Mode: 802.11 n_20 MHz BW
 Transfer Rate: 6 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	52.14	0.38	H	52.52	74.0	21.46	PK
5460	38.41	0.38	H	38.79	54.0	15.19	AV
*5470	56.10	0.24	H	56.34	68.2	11.86	PK
5460	52.25	0.38	V	52.63	74.0	21.35	PK
5460	38.47	0.38	V	38.85	54.0	15.13	AV
*5470	56.40	0.24	V	56.64	68.2	11.56	PK

Band : UNII 2e
 Operation Mode: 802.11 n_20 MHz BW
 Transfer Rate: 6.5 Mbps
 Operating Frequency 5700 MHz
 Channel No. 140 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
*5725	62.14	1.05	H	63.19	68.2	5.02	PK
*5725	62.93	1.05	V	63.98	68.2	4.22	AV



Band : UNII 2e
 Operation Mode: 802.11 ac_20 MHz BW
 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	52.34	0.38	H	52.72	74.0	21.26	PK
5460	38.41	0.38	H	38.79	54.0	15.19	AV
*5470	57.14	0.24	H	57.38	68.2	10.82	PK
5460	52.50	0.38	V	52.88	74.0	21.10	PK
5460	38.48	0.38	V	38.86	54.0	15.12	AV
*5470	57.80	0.24	V	58.04	68.2	10.16	PK

Band : UNII 2e
 Operation Mode: 802.11n_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5510 MHz
 Channel No. 102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	51.04	0.38	H	51.42	74.0	22.56	PK
5460	38.21	0.38	H	38.59	54.0	15.39	AV
*5470	54.18	0.24	H	54.42	68.2	13.78	PK
5460	51.22	0.38	V	51.6	74.0	22.38	PK
5460	38.28	0.38	V	38.66	54.0	15.32	AV
*5470	54.68	0.24	V	54.92	68.2	13.28	PK



Band : UNII 2e
 Operation Mode: 802.11 n_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5670 MHz
 Channel No. 134 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
*5725	54.57	1.05	H	55.62	68.2	12.59	PK
*5725	55.19	1.05	V	56.24	68.2	11.97	AV

Band : UNII 2e
 Operation Mode: 802.11 ac_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5510 MHz
 Channel No. 102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	51.34	0.38	H	51.72	74.0	22.26	PK
5460	38.18	0.38	H	38.56	54.0	15.42	AV
*5470	54.84	0.24	H	55.08	68.2	13.12	PK
5460	51.42	0.38	V	51.8	74.0	22.18	PK
5460	38.24	0.38	V	38.62	54.0	15.36	AV
*5470	56.78	0.24	V	57.02	68.2	11.18	PK



Band : UNII 2e
 Operation Mode: 802.11 ac_80 MHz BW
 Transfer Rate: 29.3 Mbps
 Operating Frequency 5530 MHz
 Channel No. 106 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	53.14	0.38	H	53.52	74.0	20.46	PK
5460	38.94	0.38	H	39.32	54.0	14.66	AV
*5470	56.84	0.24	H	57.08	68.2	11.12	PK
5460	54.02	0.38	V	54.4	74.0	19.58	PK
5460	39.30	0.38	V	39.68	54.0	14.30	AV
*5470	57.53	0.24	V	57.77	68.2	10.43	PK

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT
2. We have done all data rate in 802.11a/n/ac mode test. . Worst case of EUT is lowest data rate in 802.11a/n/ac
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. “*” is radiated band edge test frequency(not restricted band emissions).



With Wireless Charger

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+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	60.55	-0.51	H	60.04	74	13.94	PK
5150	41.21	-0.51	H	40.70	54	13.28	AV
5150	61.10	-0.51	V	60.59	74	13.39	PK
5150	42.00	-0.51	V	41.49	54	12.49	AV

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
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	60.68	-0.51	H	60.17	74	13.81	PK
5150	40.56	-0.51	H	40.05	54	13.93	AV
5150	61.30	-0.51	V	60.79	74	13.19	PK
5150	41.14	-0.51	V	40.63	54	13.35	AV



Band : UNII 1
 Operation Mode: 802.11 ac_20 MHz BW
 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	60.57	-0.51	H	60.06	74	13.92	PK
5150	40.86	-0.51	H	40.35	54	13.63	AV
5150	62.04	-0.51	V	61.53	74	12.45	PK
5150	41.07	-0.51	V	40.56	54	13.42	AV

Band : UNII 1
 Operation Mode: 802.11n_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5190 MHz
 Channel No. 38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	64.68	-0.51	H	64.17	74	9.81	PK
5150	45.22	-0.51	H	44.71	54	9.27	AV
5150	65.42	-0.51	V	64.91	74	9.07	PK
5150	45.75	-0.51	V	45.24	54	8.74	AV



Band : UNII 1
 Operation Mode: 802.11 ac_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5190 MHz
 Channel No. 38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	65.68	-0.51	H	65.17	74	8.81	PK
5150	45.21	-0.51	H	44.7	54	9.28	AV
5150	66.36	-0.51	V	65.85	74	8.13	PK
5150	45.40	-0.51	V	44.89	54	9.09	AV

Band : UNII 1
 Operation Mode: 802.11 ac_80 MHz BW
 Transfer Rate: 29.3 Mbps
 Operating Frequency 5210 MHz
 Channel No. 42 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	64.87	-0.51	H	64.36	74	9.62	PK
5150	47.21	-0.51	H	46.7	54	7.28	AV
5150	65.34	-0.51	V	64.83	74	9.15	PK
5150	47.82	-0.51	V	47.31	54	6.67	AV

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT
2. We have done all data rate in 802.11a/n/ac mode test. . Worst case of EUT is lowest data rate in 802.11a/n/ac
3. 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+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	55.23	-0.19	H	55.04	74	18.94	PK
5350	38.21	-0.19	H	38.02	54	15.96	AV
5350	56.18	-0.19	V	55.99	74	17.99	PK
5350	38.64	-0.19	V	38.45	54	15.53	AV

Band : UNII 2
 Operation Mode: 802.11 n_20 MHz BW
 Transfer Rate: 6 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	56.61	-0.19	H	56.42	74	17.56	PK
5350	38.28	-0.19	H	38.09	54	15.89	AV
5350	56.97	-0.19	V	56.78	74	17.20	PK
5350	38.26	-0.19	V	38.07	54	15.91	AV



Band : UNII 2
 Operation Mode: 802.11 ac_20 MHz BW
 Transfer Rate: 6.5 Mbps
 Operating Frequency 5320 MHz
 Channel No. 62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	56.21	-0.19	H	56.02	74	17.96	PK
5350	38.29	-0.19	H	38.1	54	15.88	AV
5350	56.77	-0.19	V	56.58	74	17.40	PK
5350	38.52	-0.19	V	38.33	54	15.65	AV

Band : UNII 2
 Operation Mode: 802.11n_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5310 MHz
 Channel No. 62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	57.58	-0.19	H	57.39	74	16.59	PK
5350	39.22	-0.19	H	39.03	54	14.95	AV
5350	58.36	-0.19	V	58.17	74	15.81	PK
5350	39.82	-0.19	V	39.63	54	14.35	AV



Band : UNII 2
 Operation Mode: 802.11 ac_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5310 MHz
 Channel No. 62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	54.94	-0.19	H	54.75	74	19.23	PK
5350	38.99	-0.19	H	38.8	54	15.18	AV
5350	58.67	-0.19	V	58.48	74	15.50	PK
5350	39.65	-0.19	V	39.46	54	14.52	AV

Band : UNII 2
 Operation Mode: 802.11 ac_80 MHz BW
 Transfer Rate: 29.3 Mbps
 Operating Frequency 5290 MHz
 Channel No. 58 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	60.74	-0.19	H	60.55	74	13.43	PK
5350	39.85	-0.19	H	39.66	54	14.32	AV
5350	62.00	-0.19	V	61.81	74	12.17	PK
5350	40.54	-0.19	V	40.35	54	13.63	AV

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT
2. We have done all data rate in 802.11a/n/ac mode test. . Worst case of EUT is lowest data rate in 802.11a/n/ac
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.



Band : UNII 2e
 Operation Mode: 802.11 a
 Transfer Rate: 6 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	50.98	0.38	H	51.36	74.0	22.62	PK
5460	37.58	0.38	H	37.96	54.0	16.02	AV
*5470	56.34	0.24	H	56.58	68.2	11.62	PK
5460	51.24	0.38	V	51.62	74.0	22.36	PK
5460	37.65	0.38	V	38.03	54.0	15.95	AV
*5470	57.50	0.24	V	57.74	68.2	10.46	PK

Band : UNII 2e
 Operation Mode: 802.11 a
 Transfer Rate: 6 Mbps
 Operating Frequency 5700 MHz
 Channel No. 140 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
*5725	60.92	1.05	H	61.97	68.2	6.24	PK
*5725	58.38	1.05	V	59.43	68.2	8.78	PK



Band : UNII 2e
 Operation Mode: 802.11 n_20 MHz BW
 Transfer Rate: 6 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	51.32	0.38	H	51.70	74.0	22.28	PK
5460	37.47	0.38	H	37.85	54.0	16.13	AV
*5470	55.31	0.24	H	55.55	68.2	12.65	PK
5460	51.41	0.38	V	51.79	74.0	22.19	PK
5460	37.55	0.38	V	37.93	54.0	16.05	AV
*5470	55.54	0.24	V	55.78	68.2	12.42	PK

Band : UNII 2e
 Operation Mode: 802.11 n_20 MHz BW
 Transfer Rate: 6.5 Mbps
 Operating Frequency 5700 MHz
 Channel No. 140 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
*5725	62.33	1.05	H	63.38	68.2	4.83	PK
*5725	64.01	1.05	V	65.06	68.2	3.15	AV



Band : UNII 2e
 Operation Mode: 802.11 ac_20 MHz BW
 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	51.47	0.38	H	51.85	74.0	22.13	PK
5460	37.42	0.38	H	37.8	54.0	16.18	AV
*5470	56.26	0.24	H	56.5	68.2	11.70	PK
5460	51.65	0.38	V	52.03	74.0	21.95	PK
5460	37.67	0.38	V	38.05	54.0	15.93	AV
*5470	56.91	0.24	V	57.15	68.2	11.05	PK

Band : UNII 2e
 Operation Mode: 802.11n_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5510 MHz
 Channel No. 102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	50.12	0.38	H	50.50	74.0	23.48	PK
5460	37.34	0.38	H	37.72	54.0	16.26	AV
*5470	53.27	0.24	H	53.51	68.2	14.69	PK
5460	50.28	0.38	V	50.66	74.0	23.32	PK
5460	37.33	0.38	V	37.71	54.0	16.27	AV
*5470	53.79	0.24	V	54.03	68.2	14.17	PK



Band : UNII 2e
 Operation Mode: 802.11 n_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5670 MHz
 Channel No. 134 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
*5725	53.59	1.05	H	54.64	68.2	13.57	PK
*5725	54.26	1.05	V	55.31	68.2	12.90	AV

Band : UNII 2e
 Operation Mode: 802.11 ac_40 MHz BW
 Transfer Rate: 13.5 Mbps
 Operating Frequency 5510 MHz
 Channel No. 102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	50.46	0.38	H	50.84	74.0	23.14	PK
5460	37.21	0.38	H	37.59	54.0	16.39	AV
*5470	53.88	0.24	H	54.12	68.2	14.08	PK
5460	50.55	0.38	V	50.93	74.0	23.05	PK
5460	37.37	0.38	V	37.75	54.0	16.23	AV
*5470	55.89	0.24	V	56.13	68.2	12.07	PK

Band : UNII 2e
 Operation Mode: 802.11 ac_80 MHz BW
 Transfer Rate: 29.3 Mbps
 Operating Frequency 5530 MHz
 Channel No. 106 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	52.29	0.38	H	52.67	74.0	21.31	PK
5460	37.98	0.38	H	38.36	54.0	15.62	AV
*5470	56.03	0.24	H	56.27	68.2	11.93	PK
5460	53.10	0.38	V	53.48	74.0	20.50	PK
5460	38.44	0.38	V	38.82	54.0	15.16	AV
*5470	56.67	0.24	V	56.91	68.2	11.29	PK

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT
2. We have done all data rate in 802.11a/n/ac mode test. . Worst case of EUT is lowest data rate in 802.11a/n/ac
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. “*” is radiated band edge test frequency.(not restricted band emissions)

8.8 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 μ 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 9 Mbps, Ch.52 and 802.11a mode in UNII 2. Because 802.11a mode in UNII 2 is worst case.

RESULT PLOTS

Conducted Emissions (Line 1)

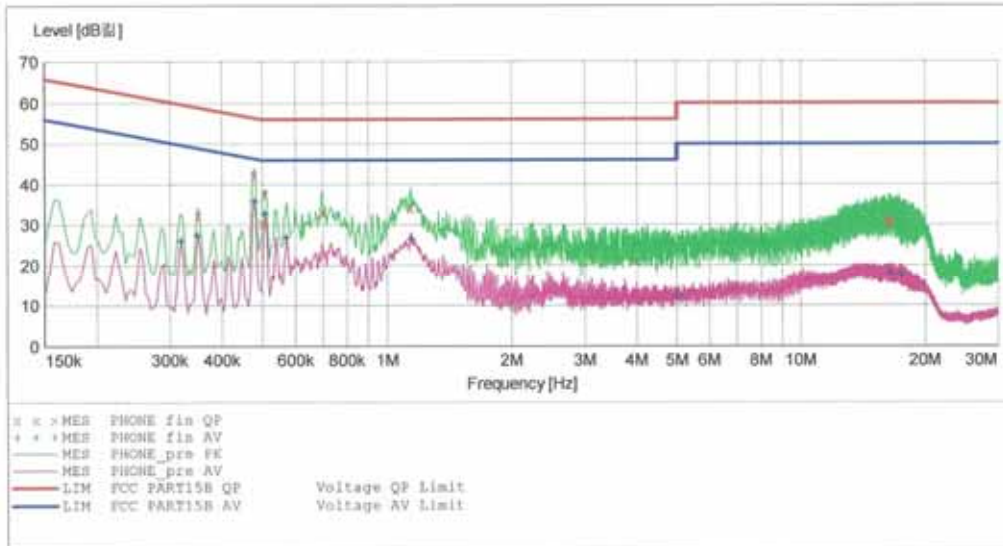
HCT

EMC

EUT: LGD821
 Manufacturer: LG
 Operating Condition: WLAN(UNII) MODE
 Test Site: SHIELD ROOM
 Operator: KI YOON
 Test Specification: FCC PART15 B
 Comment: H

SCAN TABLE: "FCC CLASS B(H)"

Start Frequency	Stop Frequency	Step Width	Short Description	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	KN22 CLASS B	MaxPeak	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz		Average			
5.0 MHz	30.0 MHz	4.0 kHz		MaxPeak	10.0 ms	9 kHz	None
				Average			
				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
0.350001	32.40	9.8	59	26.5	---	---
0.478001	42.30	9.8	56	14.1	---	---
0.500000	30.40	9.8	56	25.6	---	---
0.508000	37.70	9.8	56	18.3	---	---
0.696000	33.20	9.8	56	22.8	---	---
1.140000	34.20	9.9	56	21.8	---	---
16.288000	30.90	10.8	60	29.1	---	---
16.460000	31.00	10.8	60	29.0	---	---
16.496000	30.70	10.8	60	29.3	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

2013-07-15 3:04오.후

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.318001	25.90	9.8	50	23.9	----	----
0.350001	27.40	9.8	49	21.6	----	----
0.478001	35.80	9.8	46	10.6	----	----
0.508000	32.80	9.8	46	13.2	----	----
0.572000	26.90	9.8	46	19.1	----	----
1.144000	26.50	9.9	46	19.5	----	----
5.000000	12.40	10.2	46	33.6	----	----
16.496000	18.10	10.8	50	31.9	----	----
17.512000	17.60	10.8	50	32.4	----	----

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

Conducted Emissions (Line 2)

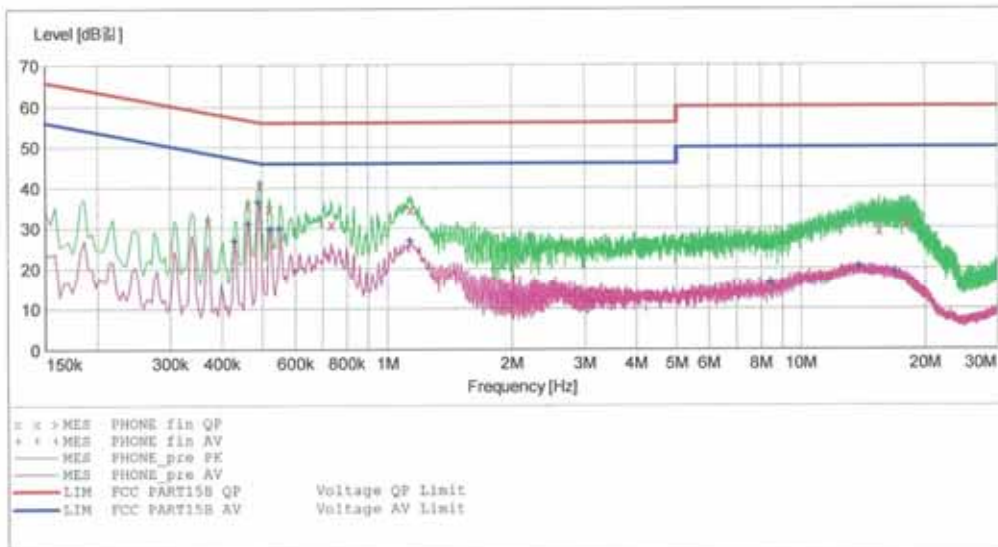
HCT

EMC

EUT: LGD821
 Manufacturer: LG
 Operating Condition: WLAN(UNII) MODE
 Test Site: SHIELD ROOM
 Operator: KI YOON
 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	KN22 CLASS B	10.0 ms	9 kHz	None
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"

2013-07-15 3:44 오후

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.370001	31.60	10.0	59	26.9	---	---
0.462001	36.00	10.0	57	20.7	---	---
0.494001	40.80	10.0	56	15.3	---	---
0.520000	34.90	10.0	56	21.1	---	---
0.736000	30.90	10.0	56	25.1	---	---
1.140000	34.60	10.1	56	21.4	---	---
15.492000	29.30	11.1	60	30.7	---	---
17.940000	31.10	11.2	60	28.9	---	---
17.980000	31.00	11.2	60	29.0	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

2013-07-15 3:44 오후

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.430001	26.80	10.0	47	20.4	---	---
0.462001	31.10	10.0	47	15.5	---	---
0.490001	36.40	10.0	46	9.8	---	---
0.524000	29.70	10.0	46	16.3	---	---
0.552000	29.90	10.0	46	16.1	---	---
1.136000	26.80	10.1	46	19.2	---	---
8.436000	16.30	10.6	50	33.7	---	---
13.788000	20.40	11.0	50	29.6	---	---
16.904000	19.00	11.1	50	31.0	---	---

FCC PT.15.247 TEST REPORT	FCC CERTIFICATION REPORT		www.hct.co.kr
Test Report No. HCTR1308FR43-2	Date of Issue: September 10, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC	FCC ID: ZNFD821

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	09/11/2013	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	E4416A /Power Meter	Annual	11/07/2013	GB41291412
Agilent	E9327A /POWER SENSOR	Annual	04/16/2014	MY4442009
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