

Variant FCC RF Test Report

APPLICANT : HTC Corporation
EQUIPMENT : Smartphone
MODEL NAME : PG05100
FCC ID : NM8PG05100
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : Digital Spread Spectrum (DSS)

This is a variant report which is only valid combine with the original test report. The product was received on Dec. 30, 2010 and completely tested on Feb. 23, 2011. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:



Roy Wu / Manager



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR001550-01A	Rev. 01	This is a variant report by adding extend battery (battery 5), extend battery cover, and wireless charging cover. All the test cases were performed on original report which can be referred to Sporton Report No. FR001550-03A. Based on original report, only the Radiated Emission, and AC Conducted Emission were verified.	Mar. 29, 2011



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 11.2 dB at 2.374 MHz
3.2	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.69 dB at 30.54 MHz
3.3	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

HTC Corporation

No. 23, Xinghua Rd., Taoyuan City, Taiwan

1.2 Manufacturer

HTC Corporation

No. 23, Xinghua Rd., Taoyuan City, Taiwan

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Smartphone
Model Name	PG05100
FCC ID	NM8PG05100
Sample 1	EUT with LCM1, Camera1, Filter1, and PA1
Sample 2	EUT with LCM2, Camera2, Filter2, and PA2
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz
Number of Channels	79
Carrier Frequency of Each Channel	$2402+n*1$ MHz; $n=0\sim78$
Channel Spacing	1 MHz
Antenna Type	PIFA Antenna with gain -3 dBi
Type of Modulation	Bluetooth (1Mbps) : GFSK Bluetooth EDR (2Mbps) : $\pi/4$ -DQPSK Bluetooth EDR (3Mbps) : 8-DPSK
EUT Stage	Production Unit

Remark:

1. For other wireless features of this EUT, test report will be issued separately.
2. This test report recorded only product characteristics and test results of Digital Spread Spectrum (DSS).
3. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.



1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	CO05-HY	03CH07-HY	722060/4086B-1

1.5 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC Public Notice DA 00-705
- ♦ ANSI C63.4-2003
- ♦ IC RSS-210 Issue 8

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B (DoC), recorded in a separate test report.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
3.	Bluetooth Base Station	R&S	CBT32	N/A	N/A	Unshielded, 1.8 m
4.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
5.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
6.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	N/A

2 Test Configuration of Equipment Under Test

2.1 Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

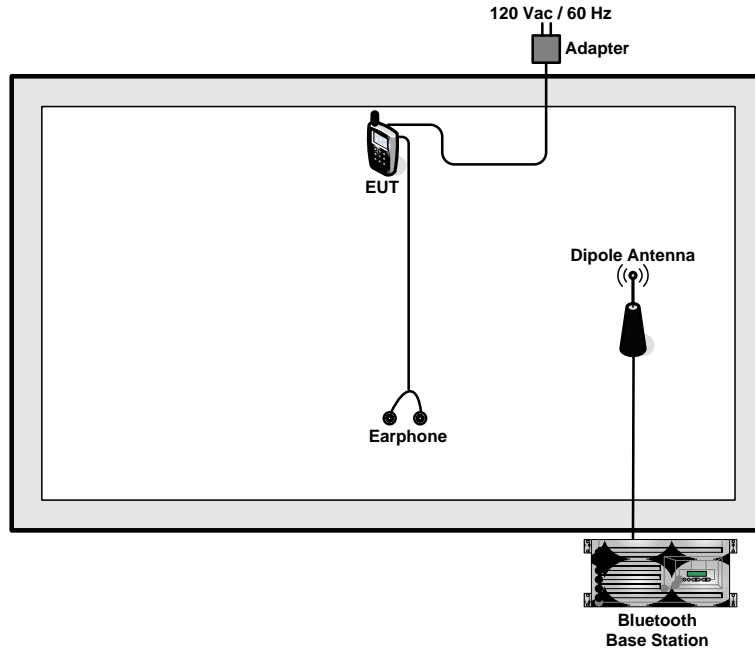
Pre-scanned tests were conducted to determine the final configuration from all possible combinations.

The following tables are showing the test modes as the worst cases and recorded in this report.

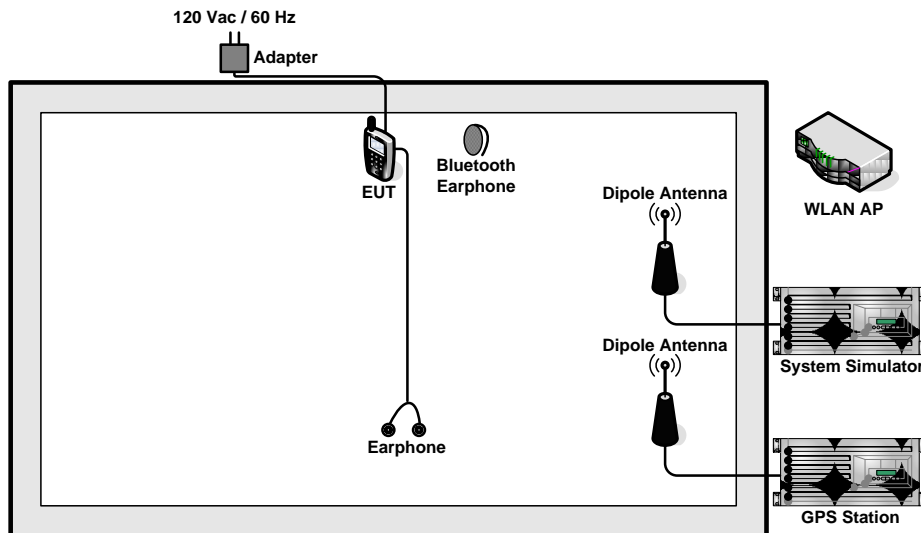
Test Cases	
Test Item	Data Rate / Modulation
	Bluetooth EDR 2Mbps π /4-DQPSK
Radiated TCs	Mode 1: CH39_2441 MHz + Battery 5 + Earphone + USB Cable1 (Charging from Adapter1) for Sample 1
	Mode 2: CH39_2441 MHz + Battery 3 + Wireless Charging Cover + Earphone + USB Cable1 (Charging from Adapter1) for Sample 1
	Mode 3: CH39_2441 MHz + Battery 5 + Earphone + USB Cable1 (Charging from Adapter1) for Sample 2
	Mode 4: CH39_2441 MHz + Battery 3 + Wireless Charging Cover + Earphone + USB Cable1 (Charging from Adapter1) for Sample 2
AC Conducted Emission	Mode 1 : CDMA2000 BC0 Idle + Bluetooth Link + WLAN Link + GPS Rx + Battery 5 + Earphone + USB Cable1 (Charging from Adapter1) for Sample 1
	Mode 2 : CDMA2000 BC0 Idle + Bluetooth Link + WLAN Link + GPS Rx + Battery 5 + Earphone + USB Cable1 (Charging from Adapter1) for Sample 2
Remark: For conducted emission, the worst case is mode 2; only the test data of this mode was reported.	

2.2 Connection Diagram of Test System

<Bluetooth Tx Mode>



<AC Conducted Emission Mode>



2.3 RF Utility

For Bluetooth function, the RF utility was installed in EUT which was programmed in order to make the EUT into the engineering modes to contact with Bluetooth base station for transmitting and receiving signals continuously.

3 Test Result

3.1 AC Conducted Emission Measurement

3.1.1 Limit of AC Conducted Emission

For equipment that 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 the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

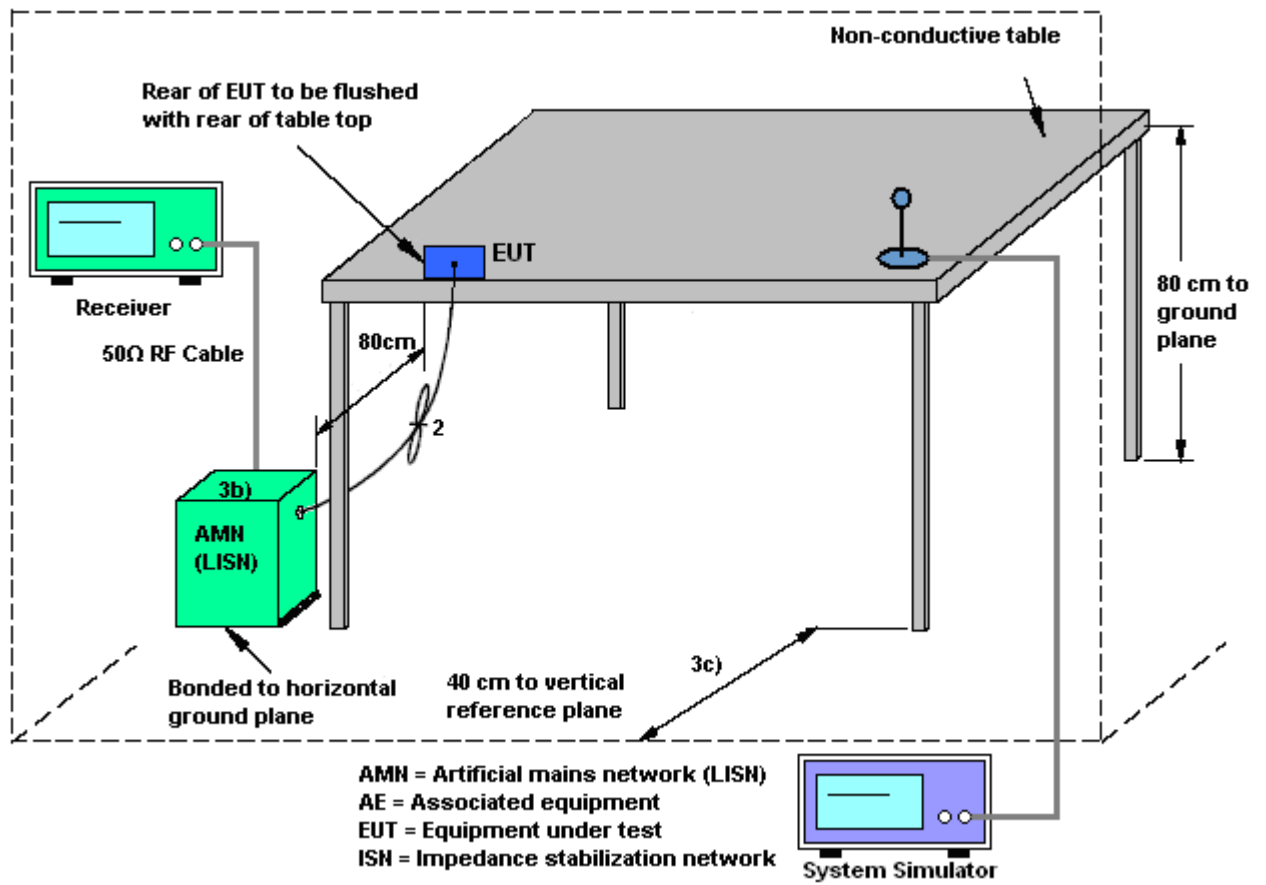
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

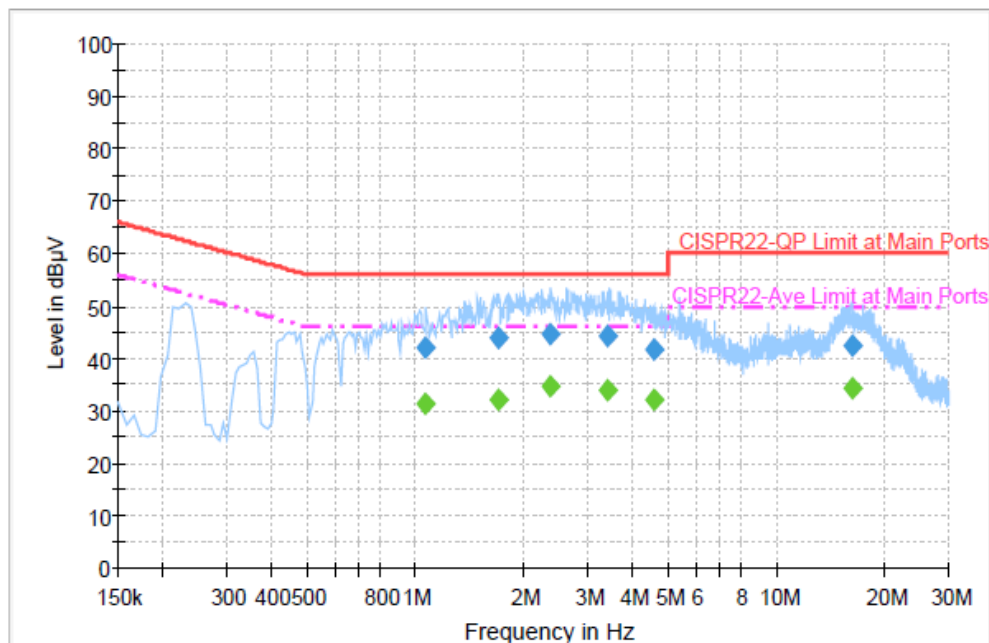
1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
1. Connect EUT to the power mains through a line impedance stabilization network (LISN).
2. All the support units are connecting to the other LISN.
3. The LISN provides 50 ohm coupling impedance for the measuring instrument.
4. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
5. Both sides of AC line were checked for maximum conducted interference.
6. The frequency range from 150 kHz to 30 MHz was searched.
7. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.1.4 Test Setup



3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Novic Chiang	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	CDMA2000 BC0 Idle + Bluetooth Link + WLAN Link + GPS Rx + Battery 5 + Earphone + USB Cable1 (Charging from Adapter1) for Sample 2		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



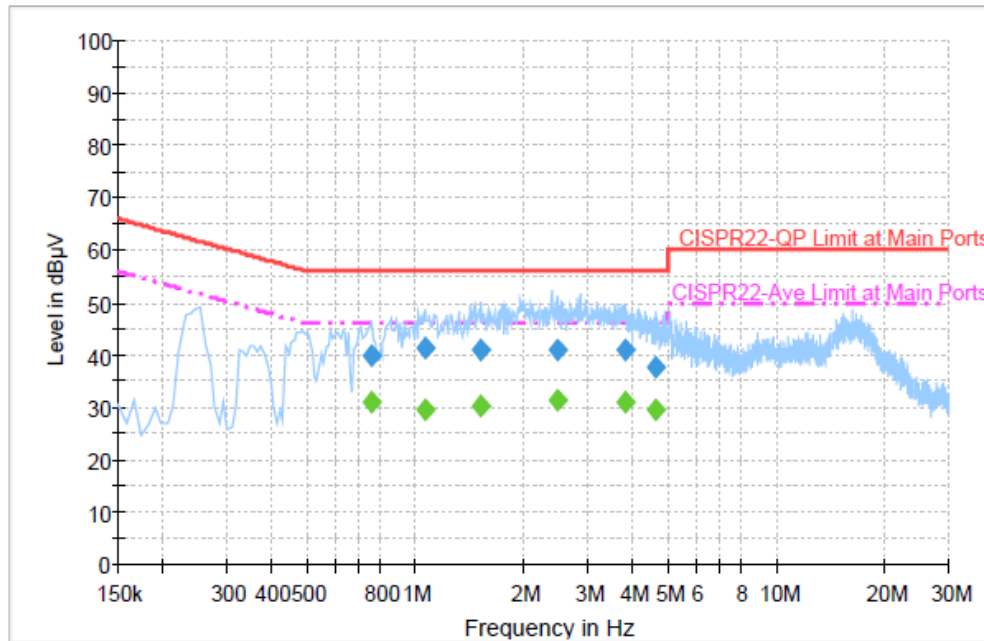
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.070000	42.2	Off	L1	19.4	13.8	56.0
1.702000	43.8	Off	L1	19.4	12.2	56.0
2.374000	44.6	Off	L1	19.5	11.4	56.0
3.414000	44.3	Off	L1	19.5	11.7	56.0
4.574000	41.8	Off	L1	19.5	14.2	56.0
16.230000	42.5	Off	L1	19.7	17.5	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.070000	31.3	Off	L1	19.4	14.7	46.0
1.702000	32.3	Off	L1	19.4	13.7	46.0
2.374000	34.8	Off	L1	19.5	11.2	46.0
3.414000	33.9	Off	L1	19.5	12.1	46.0
4.574000	32.1	Off	L1	19.5	13.9	46.0
16.230000	34.3	Off	L1	19.7	15.7	50.0

Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Novic Chiang	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA2000 BC0 Idle + Bluetooth Link + WLAN Link + GPS Rx + Battery 5 + Earphone + USB Cable1 (Charging from Adapter1) for Sample 2		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.758000	39.8	Off	N	19.4	16.2	56.0
1.062000	41.4	Off	N	19.4	14.6	56.0
1.518000	40.9	Off	N	19.4	15.1	56.0
2.462000	41.1	Off	N	19.5	14.9	56.0
3.806000	41.1	Off	N	19.5	14.9	56.0
4.646000	37.8	Off	N	19.5	18.2	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.758000	30.8	Off	N	19.4	15.2	46.0
1.062000	29.7	Off	N	19.4	16.3	46.0
1.518000	30.3	Off	N	19.4	15.7	46.0
2.462000	31.3	Off	N	19.5	14.7	46.0
3.806000	30.9	Off	N	19.5	15.1	46.0
4.646000	29.4	Off	N	19.5	16.6	46.0

3.2 Radiated Emission Measurement

3.2.1 Limit of Radiated Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.2.2 Measuring Instruments

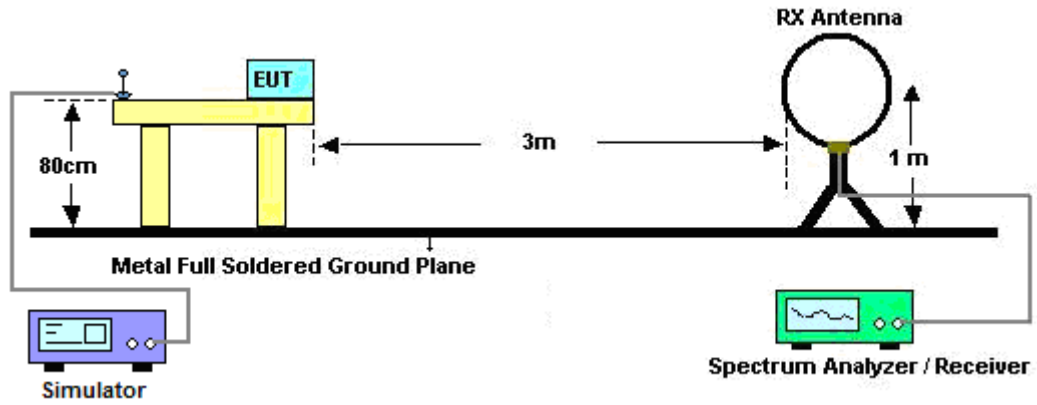
See list of measuring instruments of this test report.

3.2.3 Test Procedures

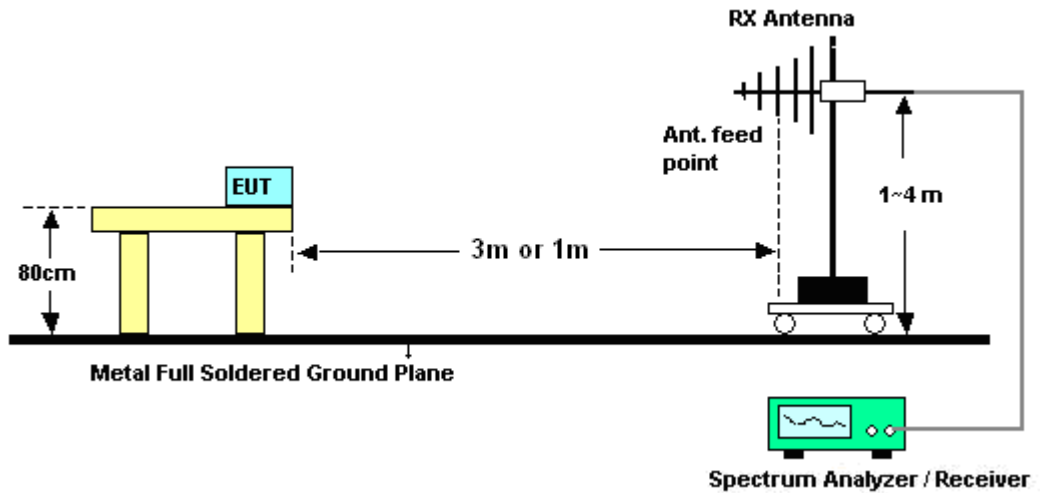
1. The testing follows the guidelines in FCC Public Notice DA 00-705 Measurement Guidelines.
2. Use the following spectrum analyzer settings:
 - (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz; VBW \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold.
 - (2) Above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.
 Distance extrapolation factor = $20 \log(\text{specific distance [3m]} / \text{test distance [1m]})$ (dB)
3. Follow the guidelines in ANSI C63.4-2003 with respect to maximizing the emission by rotating the EUT, measuring the emission for three EUT orthogonal planes, and adjusting the measurement antenna height and polarization. A pre-amp and a high pass filter are used for this test in order to get the good signal level.
4. Measured average value for the peak value is greater than 54 dBuV/m

3.2.4 Test Setup

For radiated emissions below 30MHz



For radiated emissions above 30MHz





3.2.5 Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

Test Engineer :	Ivan Chiang	Temperature :	23~24°C	
		Relative Humidity :	50~51%	
Frequency (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log(\text{specific distance} / \text{test distance})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.



3.2.6 Test Result of Radiated Emission (30 MHz ~ 10th Harmonic)

Test Mode :	Mode 1	Temperature :	23~24°C
Test Channel :	39	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	2441 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
44.85	31.32	-8.68	40	51.5	10.67	0.65	31.5	188	269	Peak
88.86	24.91	-18.59	43.5	46.97	8.53	0.93	31.52	-	-	Peak
257.61	36.77	-9.23	46	53.82	12.79	1.58	31.42	-	-	Peak
355.3	24.9	-21.1	46	38.98	15.18	2.02	31.28	-	-	Peak
441.4	22.96	-23.04	46	34.55	17.25	2.28	31.12	-	-	Peak
624.1	21.73	-24.27	46	29.84	20.03	2.76	30.9	-	-	Peak
2340	44.56	-29.44	74	40.33	32.11	5.95	33.83	133	35	Peak
2340	32.24	-21.76	54	28.01	32.11	5.95	33.83	133	35	Average
2441	99.36	-	-	94.89	32.24	6.11	33.88	133	35	Peak
2441	82.69	-	-	78.22	32.24	6.11	33.88	133	35	Average
2494	43.13	-30.87	74	38.55	32.3	6.18	33.9	133	35	Peak
2494	31.76	-22.24	54	27.18	32.3	6.18	33.9	133	35	Average



Test Mode :	Mode 1	Temperature :	23~24°C
Test Channel :	39	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	2441 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	33.92	-6.08	40	48.34	16.51	0.53	31.46	-	-	Peak
47.82	35.47	-4.53	40	56.84	9.48	0.67	31.52	119	173	Peak
233.58	34.73	-11.27	46	53.16	11.5	1.5	31.43	-	-	Peak
343.4	28.45	-17.55	46	43.02	14.81	1.92	31.3	-	-	Peak
416.9	28.21	-17.79	46	40.31	16.85	2.2	31.15	-	-	Peak
593.3	21.21	-24.79	46	29.8	19.67	2.67	30.93	-	-	Peak
2316	44.46	-29.54	74	40.29	32.07	5.92	33.82	103	302	Peak
2316	32.22	-21.78	54	28.05	32.07	5.92	33.82	103	302	Average
2441	97.66	-	-	93.19	32.24	6.11	33.88	103	302	Peak
2441	81.12	-	-	76.65	32.24	6.11	33.88	103	302	Average
2484	43.06	-30.94	74	38.5	32.28	6.18	33.9	103	302	Peak
2484	31.75	-22.25	54	27.19	32.28	6.18	33.9	103	302	Average



Test Mode :	Mode 2	Temperature :	23~24°C
Test Channel :	39	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	2441 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
48.9	30.15	-9.85	40	51.92	9.08	0.68	31.53	-	-	Peak
233.31	37.96	-8.04	46	56.39	11.5	1.5	31.43	-	-	Peak
257.61	38.18	-7.82	46	55.23	12.79	1.58	31.42	121	193	Peak
352.5	16.2	-29.8	46	30.4	15.09	1.99	31.28	-	-	Peak
522.6	19.73	-26.27	46	29.69	18.57	2.5	31.03	-	-	Peak
699.7	22.75	-23.25	46	29.75	20.88	2.94	30.82	-	-	Peak
2364	44.92	-29.08	74	40.64	32.13	5.99	33.84	140	325	Peak
2364	32.82	-21.18	54	28.54	32.13	5.99	33.84	140	325	Average
2441	96.57	-	-	92.1	32.24	6.11	33.88	140	325	Peak
2441	80.83	-	-	76.36	32.24	6.11	33.88	140	325	Average
2486	44.44	-29.56	74	39.88	32.28	6.18	33.9	140	325	Peak
2486	32.15	-21.85	54	27.59	32.28	6.18	33.9	140	325	Average



Test Mode :	Mode 2	Temperature :	23~24°C
Test Channel :	39	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	2441 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.54	36.31	-3.69	40	50.96	16.27	0.54	31.46	105	93	Peak
49.17	34.43	-5.57	40	56.59	8.68	0.69	31.53	-	-	Peak
139.62	23.37	-20.13	43.5	42.12	11.6	1.2	31.55	-	-	Peak
371.4	16.17	-29.83	46	29.65	15.69	2.08	31.25	-	-	Peak
523.3	18.99	-27.01	46	28.93	18.59	2.5	31.03	-	-	Peak
699	23.74	-22.26	46	30.74	20.88	2.94	30.82	-	-	Peak
2348	45.5	-28.5	74	41.27	32.11	5.95	33.83	169	360	Peak
2348	32.75	-21.25	54	28.52	32.11	5.95	33.83	169	360	Average
2441	91.23	-	-	86.76	32.24	6.11	33.88	169	360	Peak
2441	76.15	-	-	71.68	32.24	6.11	33.88	169	360	Average
2484	44.28	-29.72	74	39.72	32.28	6.18	33.9	169	360	Peak
2484	32.11	-21.89	54	27.55	32.28	6.18	33.9	169	360	Average



Test Mode :	Mode 3	Temperature :	23~24°C
Test Channel :	39	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	2441 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
44.85	31.26	-8.74	40	51.44	10.67	0.65	31.5	145	172	Peak
90.21	24.22	-19.28	43.5	46.12	8.68	0.94	31.52	-	-	Peak
258.42	35.08	-10.92	46	52.13	12.79	1.58	31.42	-	-	Peak
343.4	27.79	-18.21	46	42.36	14.81	1.92	31.3	-	-	Peak
391.7	29.25	-16.75	46	42.01	16.32	2.12	31.2	-	-	Peak
548.5	19.39	-26.61	46	28.84	18.98	2.55	30.98	-	-	Peak
2374	44.54	-29.46	74	40.23	32.16	5.99	33.84	137	37	Peak
2374	33.05	-20.95	54	28.74	32.16	5.99	33.84	137	37	Average
2441	98.14	-	-	93.67	32.24	6.11	33.88	137	37	Peak
2441	81.98	-	-	77.51	32.24	6.11	33.88	137	37	Average
2484	44.31	-29.69	74	39.75	32.28	6.18	33.9	137	37	Peak
2484	31.87	-22.13	54	27.31	32.28	6.18	33.9	137	37	Average



Test Mode :	Mode 3	Temperature :	23~24°C
Test Channel :	39	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	2441 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	34.42	-5.58	40	48.84	16.51	0.53	31.46	-	-	Peak
48.09	35.54	-4.46	40	57.31	9.08	0.68	31.53	132	325	Peak
238.98	34.05	-11.95	46	52.1	11.85	1.52	31.42	-	-	Peak
316.1	18.95	-27.05	46	34.5	13.97	1.8	31.32	-	-	Peak
522.6	19.37	-26.63	46	29.33	18.57	2.5	31.03	-	-	Peak
699	24.42	-21.58	46	31.42	20.88	2.94	30.82	-	-	Peak
2348	44.17	-29.83	74	39.94	32.11	5.95	33.83	100	181	Peak
2348	32.46	-21.54	54	28.23	32.11	5.95	33.83	100	181	Average
2441	95.68	-	-	91.21	32.24	6.11	33.88	100	181	Peak
2441	79.62	-	-	75.15	32.24	6.11	33.88	100	181	Average
2484	44.21	-29.79	74	39.65	32.28	6.18	33.9	100	181	Peak
2484	31.8	-22.2	54	27.24	32.28	6.18	33.9	100	181	Average



Test Mode :	Mode 4	Temperature :	23~24°C
Test Channel :	39	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	2441 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
43.77	23.1	-16.9	40	42.83	11.13	0.64	31.5	-	-	Peak
65.1	22.92	-17.08	40	47.68	5.98	0.8	31.54	-	-	Peak
270.3	29.69	-16.31	46	46.42	13	1.64	31.37	121	189	Peak
318.2	19.57	-26.43	46	35.05	14.03	1.81	31.32	-	-	Peak
503	18.8	-27.2	46	29.13	18.27	2.46	31.06	-	-	Peak
727.7	22.4	-23.6	46	28.82	21.32	3.01	30.75	-	-	Peak
2388	45.11	-28.89	74	40.75	32.18	6.03	33.85	109	333	Peak
2388	32.8	-21.2	54	28.44	32.18	6.03	33.85	109	333	Average
2441	96.45	-	-	91.98	32.24	6.11	33.88	109	333	Peak
2441	80.56	-	-	76.09	32.24	6.11	33.88	109	333	Average
2484	44.32	-29.68	74	39.76	32.28	6.18	33.9	109	333	Peak
2484	31.56	-22.44	54	27	32.28	6.18	33.9	109	333	Average



Test Mode :	Mode 4	Temperature :	23~24°C
Test Channel :	39	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	2441 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.54	36.07	-3.93	40	50.72	16.27	0.54	31.46	110	118	Peak
47.82	33.2	-6.8	40	54.57	9.48	0.67	31.52	-	-	Peak
270.3	28.2	-17.8	46	44.93	13	1.64	31.37	-	-	Peak
391.7	24.13	-21.87	46	36.89	16.32	2.12	31.2	-	-	Peak
559.7	19.94	-26.06	46	29.19	19.14	2.58	30.97	-	-	Peak
808.2	23.94	-22.06	46	28.91	22.56	3.16	30.69	-	-	Peak
2366	45.03	-28.97	74	40.75	32.13	5.99	33.84	189	310	Peak
2366	32.71	-21.29	54	28.43	32.13	5.99	33.84	189	310	Average
2441	95.51	-	-	91.04	32.24	6.11	33.88	189	310	Peak
2441	79.78	-	-	75.31	32.24	6.11	33.88	189	310	Average
2492	43.83	-30.17	74	39.25	32.3	6.18	33.9	189	310	Peak
2492	32.07	-21.93	54	27.49	32.3	6.18	33.9	189	310	Average



3.3 Antenna Requirements

3.3.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.3.2 Antenna Connected Construction

The antennas type used in this product is PIFA Antenna without connector and it is considered to meet antenna requirement.

3.3.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMI Test Receive	R&S	ESCS 30	100356	9KHz – 2.75GHz	Aug. 16, 2010	Aug. 15, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz – 30MHz	Dec. 03, 2010	Dec. 02, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz – 30MHz	Dec. 01, 2010	Nov. 30, 2011	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117995	N/A	Mar. 19, 2009	Mar. 18, 2011	Conduction (CO05-HY)
GPS Station	T&E	GS-50	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 31, 2010	Oct. 30, 2011	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP	101067	9KHz ~ 30GHz	Dec. 03, 2010	Dec. 02, 2011	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 19, 2010	Aug. 18, 2011	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 18, 2010	Oct. 17, 2011	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Dec. 06, 2010	Dec. 05, 2011	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Mar. 27, 2010	Mar. 26, 2011	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Jul. 28, 2011	Radiation (03CH07-HY)
Bluetooth Base Station	R&S	CBT32	100519	N/A	May 12, 2009	May 11, 2011	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.10	Normal (k=2)	0.05
Cable Loss	0.10	Normal (k=2)	0.05
AMN Insertion Loss	2.50	Rectangular	0.63
Receiver Specification	1.50	Rectangular	0.43
Site Imperfection	1.39	Rectangular	0.80
Mismatch	+0.34 / -0.35	U-Shape	0.24
Combined Standard Uncertainty $U_c(y)$	1.13		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.26		

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
Combined Standard Uncertainty $U_c(y)$	1.27		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.54		



Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Contribution	Uncertainty of X_i		$u(X_i)$	C_i	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	±0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	±1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	±0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site Imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty $U_c(y)$	2.36				
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72				



Appendix B. Product Equality Declaration



宏達國際電子股份有限公司
HTC Corporation

1F, No. 6-3, Baoqiang Rd.,
Xindian City, Taipei County
231, Taiwan

Mar. 14, 2011

Federal Communication Commission

Equipment Authorization Division, Application Processing Branch

7435 Oakland Mills Road

Columbia, MD 21048

TO WHOM IT MAY CONCERN :

SUBJECT: Class II Permissive Change for FCC ID: NM8PG05100

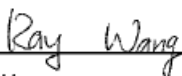
The product, Smartphone, has been granted by FCC dated 02/07/2011, FCC ID:
NM8PG05100.

Now we, HTC Corporation, would like to modify the authorized equipment for below
changes:

- Extend Battery
- Extend Battery cover
- Wireless Charging cover

We would like to certify the additional of certified FCC ID: NM8PG05100 as a Class
II Permissive Change in this device.

Sincerely yours,



Ray Wang
HTC Corporation
TEL:+ 886-2-89124138
FAX:+ 886-2-89126307



Appendix C. Original Report

Please refer to Sporton report number FR001550-03A as below.