

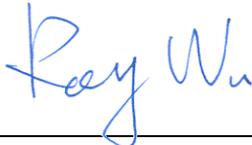
Variant FCC RF Test Report

APPLICANT : HTC Corporation
EQUIPMENT : Smartphone
MODEL NAME : PG05100
FCC ID : NM8PG05100
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : Digital Transmission System (DTS)

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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SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(d)	A8.5	Frequency Band Edges	≤ 20dBc	Pass	-
3.2	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 11.2 dB at 2.374 MHz
3.3	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.2 dB at 47.01 MHz
3.4	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	11
Carrier Frequency of Each Channel	$2412+(n-1)*5$ MHz; n=1~11
Channel Spacing	5 MHz
Antenna Type	PIFA Antenna with gain -3 dBi
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
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 Transmission System (DTS).
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 KDB Publication No. 558074 (Measurement Guidelines of DTS)
- ♦ 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.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	N/A

2 Test Configuration of Equipment Under Test

2.1 Test Mode

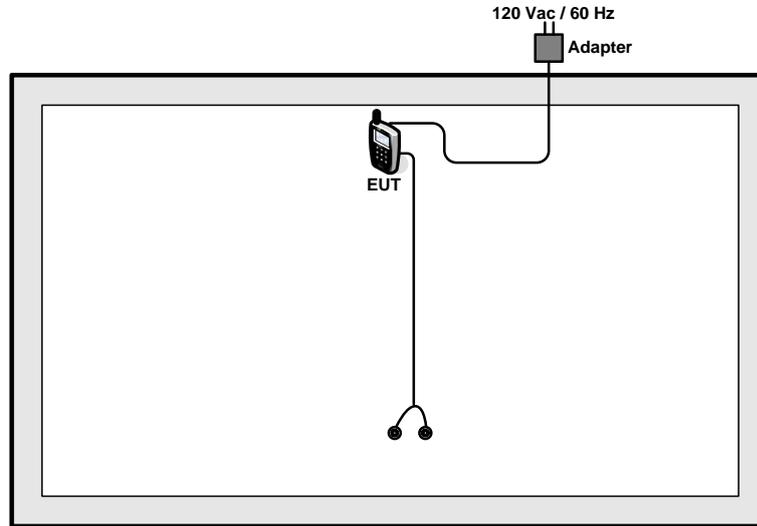
The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (9 kHz to the 10th harmonic of the highest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

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

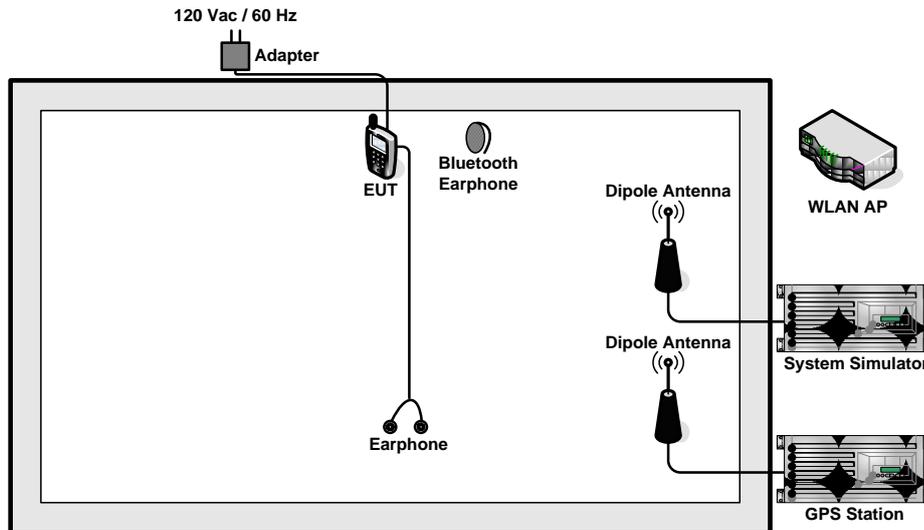
The following tables are showing the test modes as the worst cases and recorded in this report.

Test Cases	
Test Item	802.11b (Modulation : DSSS)
Radiated TCs	Mode 1 : 802.11b CH01_2412 MHz + Battery 5 + Earphone + USB Cable1 (Charging from Adapter1) for Sample 1
	Mode 2 : 802.11b CH01_2412 MHz + Battery 3 + Wireless Charging Cover + Earphone + USB Cable1 (Charging from Adapter1) for Sample 1
	Mode 3 : 802.11b CH01_2412 MHz+ Battery 5 + Earphone + USB Cable1 (Charging from Adapter1) for Sample 2
	Mode 4 : 802.11b CH01_2412 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



<AC Conducted Emission Mode>



2.3 RF Utility

The programmed RF utility "Remote 432X controller(P1.6).exe" is installed in EUT to provide channel selection, power level, data rate and the application type. RF utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.



3 Test Result

3.1 Band Edges Measurement

3.1.1 Limit of Band Edges

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB.

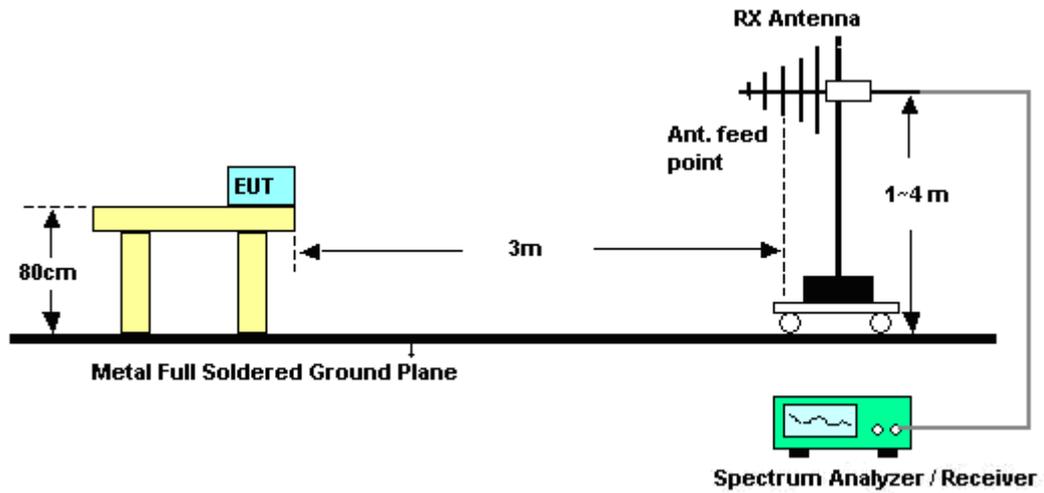
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW) \geq RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW. Note: If the device complies with the use of power option 2 the attenuation under this paragraph shall be 30 dB instead of 20 dB.
3. Radiated emission test: Apply to band edge emissions that fall in the restricted bands listed in FCC Section 15.205. The maximum permitted average field strength is listed in FCC Section 15.209. A pre-amp is necessary for this measurement. For measurements above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep=Auto. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation as in FCC Section 15.35(b) and (c).

3.1.4 Test Setup





3.1.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	50~51%%
Test Channel :	01	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
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
2389.61	61.02	-12.98	74	56.66	32.18	6.03	33.85	111	0	Peak
2389.61	47.91	-6.09	54	43.55	32.18	6.03	33.85	111	0	Average

ANTENNA POLARITY : VERTICAL										
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
2389.99	57.84	-16.16	74	53.48	32.18	6.03	33.85	100	307	Peak
2389.99	45.64	-8.36	54	41.28	32.18	6.03	33.85	100	307	Average

Test Mode :	Mode 2	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	50~51%%
Test Channel :	01	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
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
2389.61	53.09	-20.91	74	48.73	32.18	6.03	33.85	200	30	Peak
2389.61	41.5	-12.5	54	37.14	32.18	6.03	33.85	200	30	Average

ANTENNA POLARITY : VERTICAL										
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
2389.99	53.72	-20.28	74	49.36	32.18	6.03	33.85	100	170	Peak
2389.99	41.56	-12.44	54	37.2	32.18	6.03	33.85	100	170	Average



Test Mode :	Mode 3	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	50~51%%
Test Channel :	01	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
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
2389.99	57.1	-16.9	74	52.74	32.18	6.03	33.85	113	0	Peak
2389.99	44.56	-9.44	54	40.2	32.18	6.03	33.85	113	0	Average

ANTENNA POLARITY : VERTICAL										
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
2389.99	54.47	-19.53	74	50.11	32.18	6.03	33.85	100	307	Peak
2389.99	42.23	-11.77	54	37.87	32.18	6.03	33.85	100	307	Average

Test Mode :	Mode 4	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	50~51%%
Test Channel :	01	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
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
2389.61	55.24	-18.76	74	50.88	32.18	6.03	33.85	111	15	Peak
2389.61	42.73	-11.27	54	38.37	32.18	6.03	33.85	111	15	Average

ANTENNA POLARITY : VERTICAL										
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
2389.61	50.67	-23.33	74	46.31	32.18	6.03	33.85	144	6	Peak
2389.61	38.44	-15.56	54	34.08	32.18	6.03	33.85	144	6	Average

3.2 AC Conducted Emission Measurement

3.2.1 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.

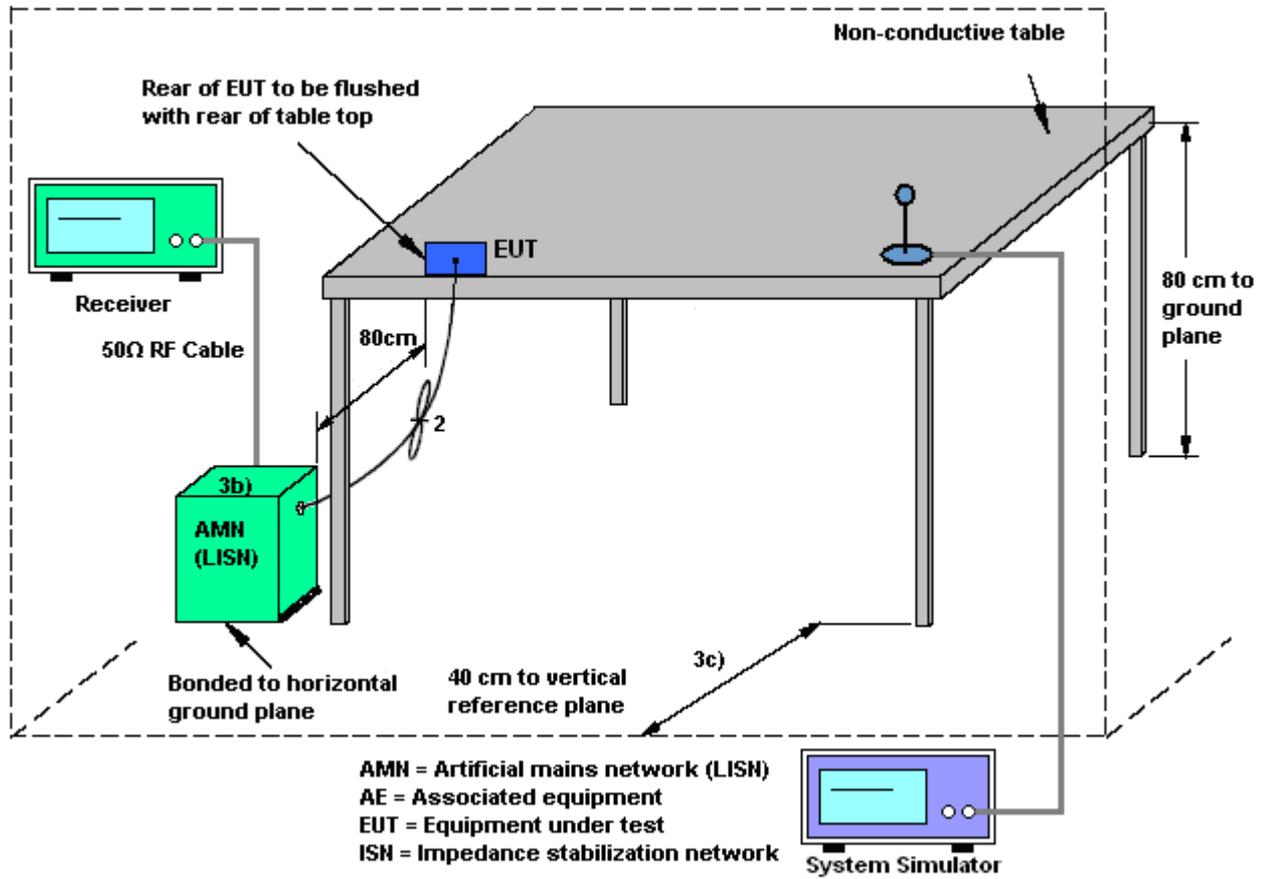
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

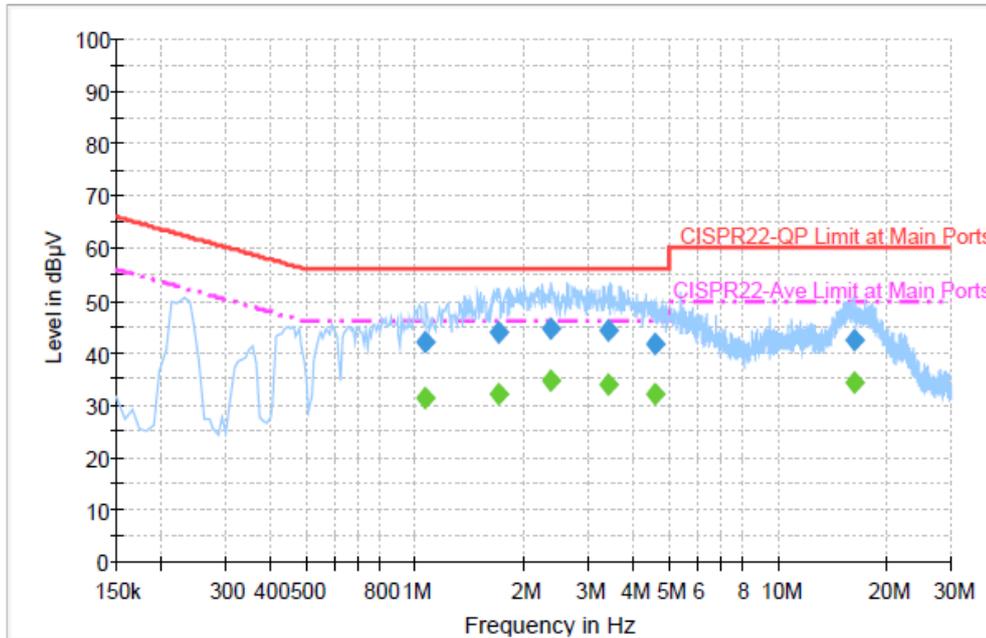
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network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

3.2.4 Test Setup



3.2.5 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

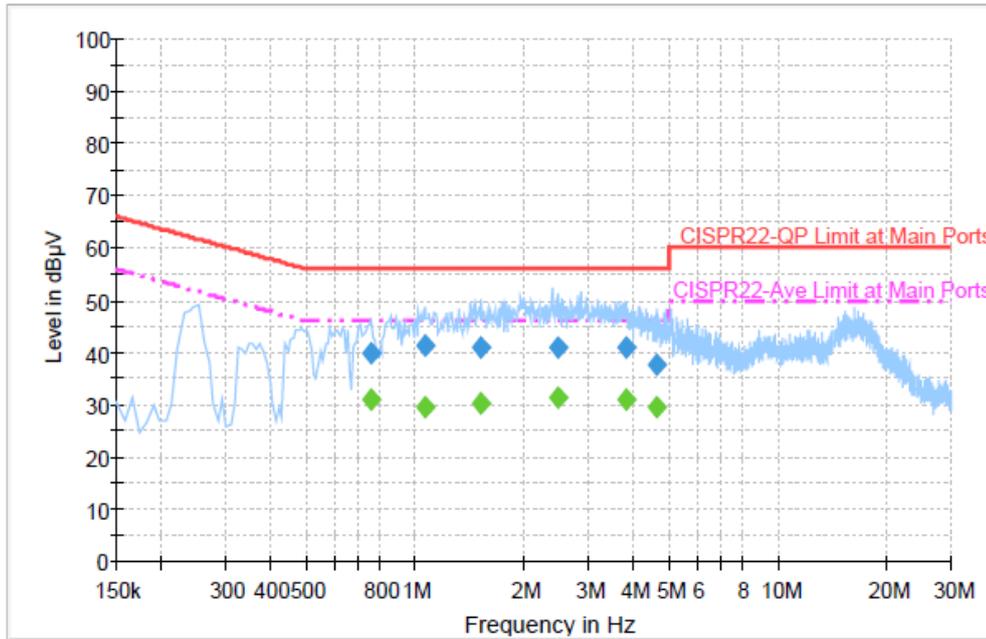
Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
1.070000	42.2	Off	L1	19.4	13.8	56.0
1.702000	43.8	Off	L1	19.4	12.2	56.0
2.374000	44.6	Off	L1	19.5	11.4	56.0
3.414000	44.3	Off	L1	19.5	11.7	56.0
4.574000	41.8	Off	L1	19.5	14.2	56.0
16.230000	42.5	Off	L1	19.7	17.5	60.0

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

3.3 Radiated Emission Measurement

3.3.1 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. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. 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

3.3.2 Measuring Instruments

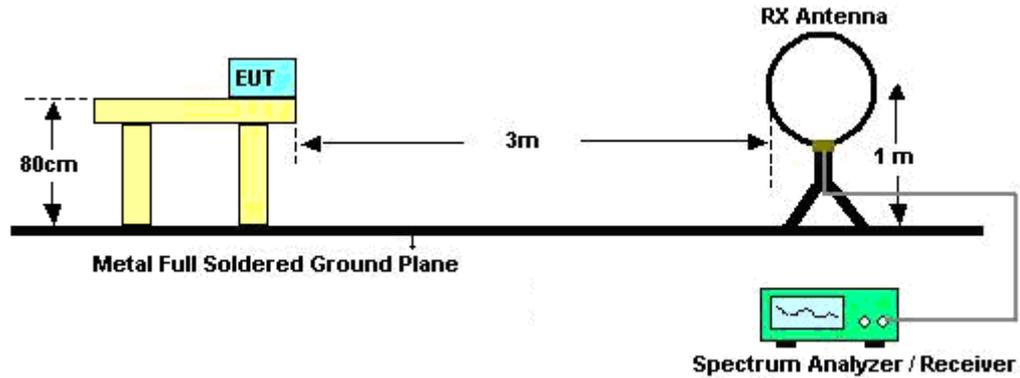
See list of measuring instruments of this test report.

3.3.3 Test Procedures

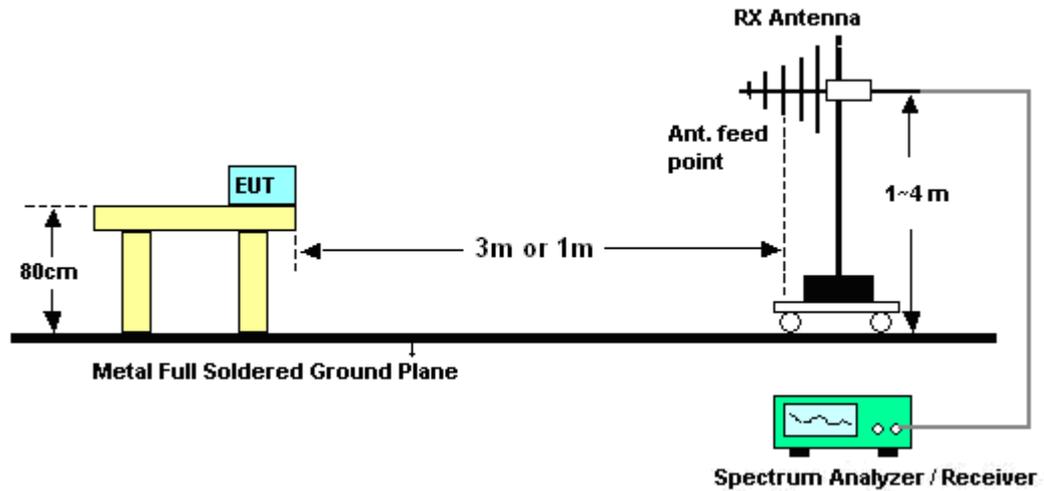
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
 - (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz; VBW \geq RBW; Sweep = 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.

3.3.4 Test Setup

For radiated emissions below 30MHz



For radiated emissions above 30MHz





3.3.5 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.



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

Test Mode :	Mode 1	Temperature :	23~24°C
Test Channel :	01	Relative Humidity :	50~51%%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	2412 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
45.93	29.29	-10.71	40	49.87	10.27	0.66	31.51	162	224	Peak
209.01	30	-13.5	43.5	50.32	9.79	1.36	31.47	-	-	Peak
258.15	34.89	-11.11	46	51.94	12.79	1.58	31.42	-	-	Peak
330.1	24.84	-21.16	46	39.91	14.39	1.85	31.31	-	-	Peak
391.7	25.61	-20.39	46	38.37	16.32	2.12	31.2	-	-	Peak
651.4	21.43	-24.57	46	29.11	20.35	2.84	30.87	-	-	Peak
2389.61	61.02	-12.98	74	56.66	32.18	6.03	33.85	111	0	Peak
2389.61	47.91	-6.09	54	43.55	32.18	6.03	33.85	111	0	Average
2412	110.07	-	-	105.67	32.2	6.07	33.87	111	0	Peak
2412	105.77	-	-	101.37	32.2	6.07	33.87	111	0	Average
2494	48.68	-5.32	54	44.1	32.3	6.18	33.9	111	0	Average
2494	56.73	-17.27	74	52.15	32.3	6.18	33.9	111	0	Peak



Test Mode :	Mode 1	Temperature :	23~24°C
Test Channel :	01	Relative Humidity :	50~51%%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	2412 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	32.43	-7.57	40	46.85	16.51	0.53	31.46	-	-	Peak
47.82	35.85	-4.15	40	57.22	9.48	0.67	31.52	138	329	Peak
258.42	35.12	-10.88	46	52.17	12.79	1.58	31.42	-	-	Peak
343.4	28.75	-17.25	46	43.32	14.81	1.92	31.3	-	-	Peak
416.9	28.28	-17.72	46	40.38	16.85	2.2	31.15	-	-	Peak
699	23.21	-22.79	46	30.21	20.88	2.94	30.82	-	-	Peak
2389.99	57.84	-16.16	74	53.48	32.18	6.03	33.85	100	307	Peak
2389.99	45.64	-8.36	54	41.28	32.18	6.03	33.85	100	307	Average
2412	108.07	-	-	103.67	32.2	6.07	33.87	100	307	Peak
2412	103.84	-	-	99.44	32.2	6.07	33.87	100	307	Average
2494	43.72	-10.28	54	39.14	32.3	6.18	33.9	100	307	Average
2494	52.26	-21.74	74	47.68	32.3	6.18	33.9	100	307	Peak



Test Mode :	Mode 2	Temperature :	23~24°C
Test Channel :	01	Relative Humidity :	50~51%%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	2412 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	24.08	-15.92	40	38.5	16.51	0.53	31.46	-	-	Peak
232.77	32.79	-13.21	46	51.29	11.43	1.5	31.43	-	-	Peak
257.88	34.18	-11.82	46	51.23	12.79	1.58	31.42	177	115	Peak
342.7	28.02	-17.98	46	42.63	14.78	1.91	31.3	-	-	Peak
417.6	26.57	-19.43	46	38.65	16.87	2.2	31.15	-	-	Peak
662.6	21.65	-24.35	46	29.17	20.47	2.87	30.86	-	-	Peak
2389.61	53.09	-20.91	74	48.73	32.18	6.03	33.85	200	30	Peak
2389.61	41.5	-12.5	54	37.14	32.18	6.03	33.85	200	30	Average
2412	107.91	-	-	103.51	32.2	6.07	33.87	200	30	Peak
2412	103.48	-	-	99.08	32.2	6.07	33.87	200	30	Average
2492	37.5	-16.5	54	32.92	32.3	6.18	33.9	200	30	Average
2492	47.68	-26.32	74	43.1	32.3	6.18	33.9	200	30	Peak



Test Mode :	Mode 2	Temperature :	23~24°C
Test Channel :	01	Relative Humidity :	50~51%%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	2412 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	36.51	-3.49	40	50.93	16.51	0.53	31.46	100	269	Peak
48.9	35.06	-4.94	40	56.83	9.08	0.68	31.53	-	-	Peak
184.17	33.54	-9.96	43.5	54.75	9.05	1.26	31.52	-	-	Peak
343.4	29.29	-16.71	46	43.86	14.81	1.92	31.3	-	-	Peak
416.9	28.29	-17.71	46	40.39	16.85	2.2	31.15	-	-	Peak
610.1	21.19	-24.81	46	29.5	19.88	2.72	30.91	-	-	Peak
2389.99	53.72	-20.28	74	49.36	32.18	6.03	33.85	100	170	Peak
2389.99	41.56	-12.44	54	37.2	32.18	6.03	33.85	100	170	Average
2412	105.79	-	-	101.39	32.2	6.07	33.87	100	170	Peak
2412	101.63	-	-	97.23	32.2	6.07	33.87	100	170	Average
2492	34.63	-19.37	54	30.05	32.3	6.18	33.9	100	170	Average
2492	45.8	-28.2	74	41.22	32.3	6.18	33.9	100	170	Peak



Test Mode :	Mode 3	Temperature :	23~24°C
Test Channel :	01	Relative Humidity :	50~51%%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	2412 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	30.9	-9.1	40	51.08	10.67	0.65	31.5	122	158	Peak
90.21	25.08	-18.42	43.5	46.98	8.68	0.94	31.52	-	-	Peak
258.42	33.44	-12.56	46	50.49	12.79	1.58	31.42	-	-	Peak
392.4	27.07	-18.93	46	39.79	16.35	2.13	31.2	-	-	Peak
577.9	20.05	-25.95	46	28.94	19.43	2.63	30.95	-	-	Peak
691.3	22.25	-23.75	46	29.37	20.79	2.92	30.83	-	-	Peak
2389.99	57.1	-16.9	74	52.74	32.18	6.03	33.85	113	0	Peak
2389.99	44.56	-9.44	54	40.2	32.18	6.03	33.85	113	0	Average
2412	103.3	-	-	98.9	32.2	6.07	33.87	113	0	Average
2412	107.69	-	-	103.29	32.2	6.07	33.87	113	0	Peak
2484	53.17	-20.83	74	48.61	32.28	6.18	33.9	113	0	Peak
2484	41.22	-12.78	54	36.66	32.28	6.18	33.9	113	0	Average



Test Mode :	Mode 3	Temperature :	23~24°C
Test Channel :	01	Relative Humidity :	50~51%%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	2412 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	34.56	-5.44	40	48.98	16.51	0.53	31.46	-	-	Peak
47.01	36.8	-3.2	40	58.17	9.48	0.67	31.52	118	245	Peak
85.89	26.6	-13.4	40	49.12	8.1	0.92	31.54	-	-	Peak
343.4	26.5	-19.5	46	41.07	14.81	1.92	31.3	-	-	Peak
533.8	19.28	-26.72	46	29.03	18.74	2.52	31.01	-	-	Peak
760.6	22.81	-23.19	46	28.59	21.84	3.08	30.7	-	-	Peak
2389.99	54.47	-19.53	74	50.11	32.18	6.03	33.85	100	307	Peak
2389.99	42.23	-11.77	54	37.87	32.18	6.03	33.85	100	307	Average
2412	105.57	-	-	101.17	32.2	6.07	33.87	100	307	Peak
2412	100.92	-	-	96.52	32.2	6.07	33.87	100	307	Average
2494	39.65	-14.35	54	35.07	32.3	6.18	33.9	100	307	Average
2494	51.91	-22.09	74	47.33	32.3	6.18	33.9	100	307	Peak



Test Mode :	Mode 4	Temperature :	23~24°C
Test Channel :	01	Relative Humidity :	50~51%%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	2412 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	24.11	-15.89	40	43.84	11.13	0.64	31.5	-	-	Peak
65.37	21.92	-18.08	40	46.68	5.98	0.8	31.54	-	-	Peak
270.3	33.7	-12.3	46	50.43	13	1.64	31.37	132	255	Peak
371.4	20.41	-25.59	46	33.89	15.69	2.08	31.25	-	-	Peak
598.9	21.06	-24.94	46	29.56	19.74	2.68	30.92	-	-	Peak
758.5	23.86	-22.14	46	29.68	21.81	3.07	30.7	-	-	Peak
2389.61	55.24	-18.76	74	50.88	32.18	6.03	33.85	111	15	Peak
2389.61	42.73	-11.27	54	38.37	32.18	6.03	33.85	111	15	Average
2412	106.83	-	-	102.43	32.2	6.07	33.87	111	15	Peak
2412	102.51	-	-	98.11	32.2	6.07	33.87	111	15	Average
2484	35.12	-18.88	54	30.56	32.28	6.18	33.9	111	15	Average
2484	47.56	-26.44	74	43	32.28	6.18	33.9	111	15	Peak



Test Mode :	Mode 4	Temperature :	23~24°C
Test Channel :	01	Relative Humidity :	50~51%%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	2412 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	36.65	-3.35	40	51.3	16.27	0.54	31.46	110	196	Peak
48.9	34.06	-5.94	40	55.83	9.08	0.68	31.53	-	-	Peak
159.33	23.03	-20.47	43.5	42.88	10.45	1.22	31.52	-	-	Peak
335.7	18.58	-27.42	46	33.44	14.57	1.87	31.3	-	-	Peak
618.5	21.27	-24.73	46	29.44	19.98	2.75	30.9	-	-	Peak
822.2	24.5	-21.5	46	29.27	22.73	3.2	30.7	-	-	Peak
2389.61	50.67	-23.33	74	46.31	32.18	6.03	33.85	144	6	Peak
2389.61	38.44	-15.56	54	34.08	32.18	6.03	33.85	144	6	Average
2412	99.44	-	-	95.04	32.2	6.07	33.87	144	6	Peak
2412	95.21	-	-	90.81	32.2	6.07	33.87	144	6	Average
2494	32.6	-21.4	54	28.02	32.3	6.18	33.9	144	6	Average
2494	44.84	-29.16	74	40.26	32.3	6.18	33.9	144	6	Peak



3.4 Antenna Requirements

3.4.1 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. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. 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.

3.4.2 Antenna Connected Construction

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

3.4.3 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-1000 W	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	BBHA917025 1	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)

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

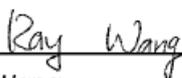
The product, Smartphone, has been granted by FCC dated 02/07/2011, FCC ID:
NM8PG05100.

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 FR001550-03B below.