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FCC TEST REPORT (PART 22)

REPORT NO.: RF110705C18C-3 R1

MODEL NO.: PH98100

FCC ID: NM8PH98100

RECEIVED: Aug. 23, 2011

TESTED: Sep. 05 ~ Oct. 12, 2011

ISSUED: Oct. 12, 2011

APPLICANT: HTC Corporation

ADDRESS: 23, Xinghua Rd., Taoyuan 330, Taiwan, R.O.C.

ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist.,
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TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei
Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	N/A	Sep. 15, 2011
RF110705C18C-3 R1	Add wireless charging mode	Oct. 12, 2011



1 CERTIFICATION

PRODUCT: Smartphone

Model No.: PH98100

BRAND: HTC

APPLICANT: HTC Corporation

TEST SAMPLE: Production Unit

TESTED: Sep. 05 ~ Oct. 12, 2011

STANDARDS: FCC Part 22, Subpart H
ANSI C63.4-2003

This report is issued as a supplementary report of **RF110705C18-4** for a new inductive cover. This report shall be used combining with its original report.

PREPARED BY :  , **DATE :** Oct. 12, 2011
Pettie Chen / Specialist

APPROVED BY :  , **DATE :** Oct. 12, 2011
Gary Chang / Technical Manager

NOTE: The emission tests and e.r.p peak power were performed for the addendum. Refer to original report for the other test data.

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 22 & Part 2			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
2.1046 22.913 (a)	Maximum Peak Output Power Limit: max. 7 watts e.r.p peak power	PASS	Meet the requirement of limit. Minimum passing margin is 20.1dBm at 836.52MHz.
2.1055	Frequency Stability AFC Freq. Error vs. Voltage AFC Freq. Error vs. Temperature Limit: max. ± 2.5 ppm	NA	Refer to Note
2.1049 (h)	Occupied Bandwidth	NA	Refer to Note
22.917	Band Edge Measurements	NA	Refer to Note
2.1051 22.917	Conducted Spurious Emissions	NA	Refer to Note
2.1053 22.917	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -15.8dB at 74.71MHz.

NOTE: The emission tests and e.r.p peak power were performed for the addendum. Refer to original report for the other test data.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.34 dB
	200MHz ~1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Smartphone
MODEL NO.	PH98100
FCC ID	NM8PH98100
NOMINAL VOLTAGE	3.8Vdc (Li-ion battery) 3.7Vdc (Li-ion battery) 5Vdc (Adapter & host equipment)
OPERATION TEMPERATURE RANGE	-30°C ~ 50°C
MODULATION TYPE	QPSK, OQPSK, HPSK
FREQUENCY RANGE	824.7MHz ~ 848.31MHz
NUMBER OF CHANNEL	788
MAX. ERP POWER	EV-DO mode: 19.5dBm 1xRTT mode: 20.1dBm
ANTENNA TYPE	Fixed internal antenna with -1dBi gain
I/O PORTS	Refer to user's manual
DATA CABLE	Refer to note as below
ACCESSORY DEVICES	Refer to note as below

NOTE:

1. This is a supplementary report of RF110705C18-4. This report shall be combined together with its original report.
2. This report is prepared for FCC class II permissive change. Difference compared with the original report is adding inductive cover, BR C700; therefore, re-tested emission tests and e.r.p peak power and presented in the test report.
3. The Test Mode C & D of The section 4.2.7 & 4.3.7 are tested under wireless charging mode, which is compliant to WPC v1.0 standard. Because technologic confidential issue, please see the wireless charging back cover operational description.
4. The EUT's accessories list refers to Ext Pho_ NM8PH98100.pdf.
*Item 1, 3, 5, 6, 8 were used for the test.
5. MEID Code: 99000033xxxxxx.
6. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

The device includes CDMA and EV-DO transmitter. CDMA transmitter only supports 1x RTT without EV-DO mode. EV-DO transmitter only supports EV-DO without 1x RTT mode. 2 transmitters are tested separately for all test items.

For EV-DO, the low, middle and high channels are chosen for testing.

	CHANNEL	FREQUENCY	TX MODE
LOW	1013	824.70 MHz	1xEVDO Rev. 0
MIDDLE	384	836.52 MHz	1xEVDO Rev. 0
HIGH	777	848.31 MHz	1xEVDO Rev. 0

NOTE:

1. Below 1 GHz, the channel 1013, 384 and 777 were pre-tested in chamber. The channel 384 was the worst case and chosen for final test.
2. Above 1 GHz, the channel 384 was tested individually.
3. The channel space is 0.03MHz.
4. For EV-DO after pretest of output power and spurious emission under 1xEVDO Rev. 0 & 1xEVDO Rev. A mode, find the worst mode is 1xEVDO Rev. 0. Therefore, select 1xEVDO Rev. 0 mode to do final test

For 1x RTT, the low, middle and high channels are chosen for testing.

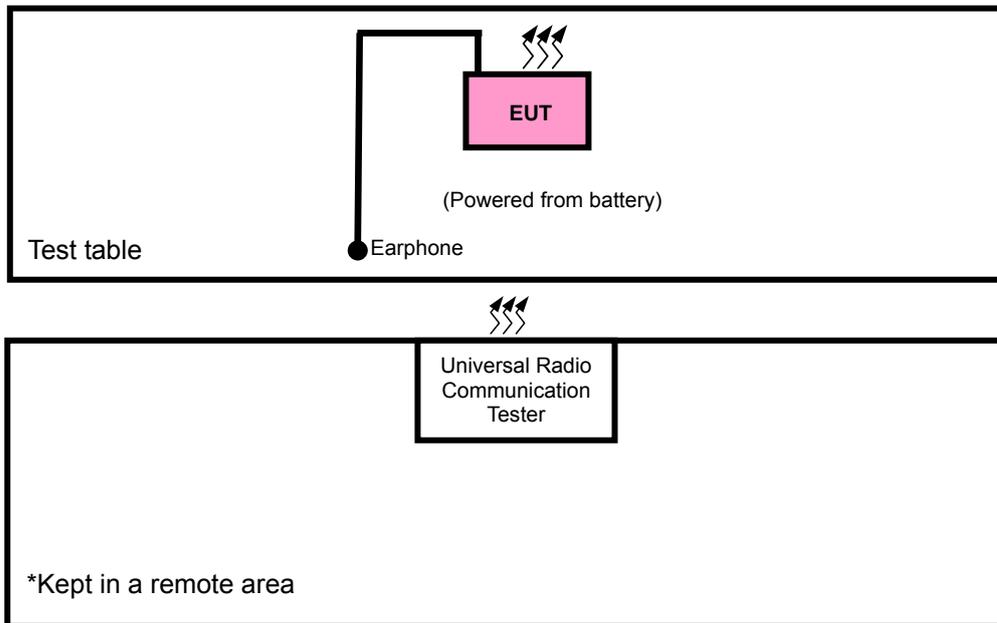
	CHANNEL	FREQUENCY	TX MODE
LOW	1013	824.70 MHz	CDMA2000(SO55)
MIDDLE	384	836.52 MHz	CDMA2000(SO55)
HIGH	777	848.31 MHz	CDMA2000(SO55)

NOTE:

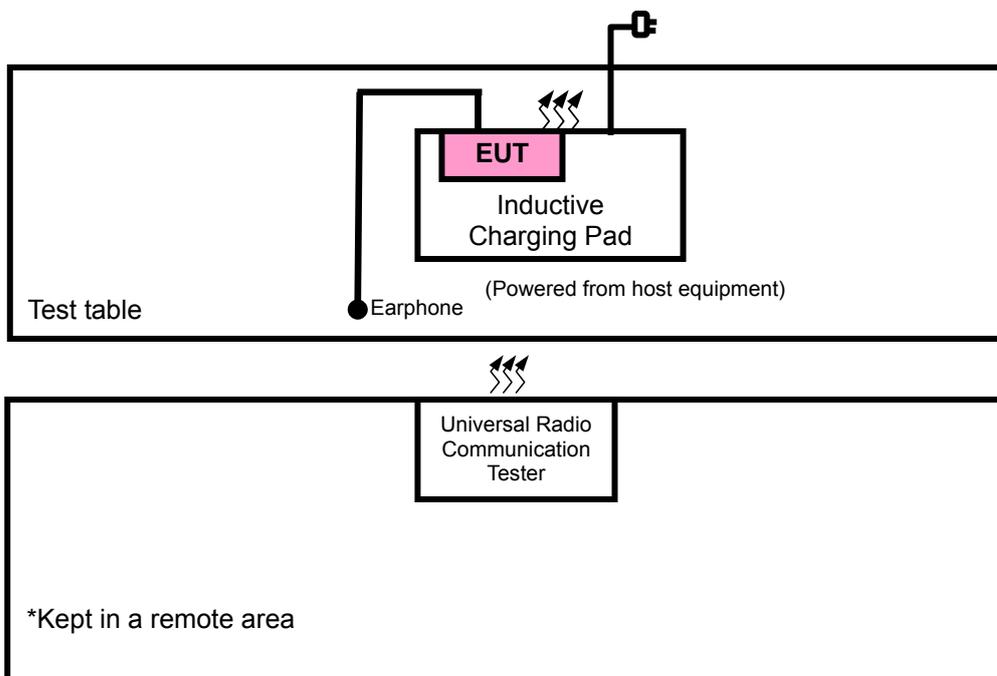
1. Below 1 GHz, the channel 1013, 384 and 777 were pre-tested in chamber. The channel 1013 was the worst case and chosen for final test.
2. Above 1 GHz, the channel 1013 was tested individually.
3. The channel space is 0.03MHz.
4. For 1xRTT after pretest of output power and spurious emission under CDMA2000(SO32), CDMA2000(SO2) & CDMA2000(SO55) mode, find the worst mode is CDMA2000(SO55). Therefore, select CDMA2000(SO55) mode to do final test

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

TEST MODE A, B



TEST MODE C, D





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3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO			DESCRIPTION	
	OP	RE<1G	RE≥1G		
A	√	√	√	EUT Standalone	For EVDO
B	√	√	√		For 1x RTT
C	-	√	√	Wireless charging mode	For EVDO
D	-	√	√		For 1x RTT

Where **OP**: Output power **RE<1G**: Radiated emission below 1GHz
RE≥1G: Radiated emission above 1GHz **NOTE**: "-": Means no effect.

OUTPUT POWER MEASUREMENT:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL
A & B	1013 to 777	1013, 384, 777

RADIATED EMISSION MEASUREMENT (BELOW 1 GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	AXIS
A	1013 to 777	384	Y
B	1013 to 777	1013	Y
C	1013 to 777	384	-
D	1013 to 777	1013	-

RADIATED EMISSION MEASUREMENT (ABOVE 1 GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	AXIS
A	1013 to 777	384	Y
B	1013 to 777	1013	Y
C	1013 to 777	384	-
D	1013 to 777	1013	-

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
OP	25deg. C, 65%RH	120Vac, 60Hz	Sam Chen
RE < 1G (Test Mode A,B)	25deg. C, 65%RH	120Vac, 60Hz	Sam Chen
RE < 1G (Test Mode C,D)	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
RE ≥ 1G (Test Mode A,B)	25deg. C, 65%RH	120Vac, 60Hz	Sam Chen
RE ≥ 1G (Test Mode C,D)	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 22

ANSI C63.4-2003

ANSI/TIA/EIA-603-C 2004

NOTE: All test items have been performed and recorded as per the above standards.



3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	UNIVERSAL RADIO COMMUNICATION TESTER	R&S	CMU200	104484	NA
2	NJZ-2000 (GPRS+WCDMA SIMULATOR)	JRC	NJZ-2000	ET00054	NA
3	Inductive Charging Pad	Energizer	IC2B	NA	NA
4	Inductive Charging Pad Adapter	Energizer	APS-A024090 23W-G	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA
3	NA
4	NA

NOTE 1: All power cords of the above support units are non shielded (1.8m).

NOTE 2: Item 1, 2 acted as a communication partners to transfer data.

NOTE 3: Item 3, 4 were provided by client.

4 TEST TYPES AND RESULTS

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

The radiated peak output power shall be according to the specific rule Part 22.913 (a) that "Mobile / Portable station are limited to 7 watts e.r.p".



4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	Aug. 02, 2011	Aug. 01, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSP 40	100041	Jul. 21, 2011	Jul. 20, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 13, 2011	Apr. 12, 2012
HORN Antenna SCHWARZBECK	9120D	209	Aug. 25, 2011	Aug. 24, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 27, 2010	Dec. 26, 2011
Preamplifier Agilent	8447D	2944A10633	Nov. 02, 2010	Nov. 01, 2011
Preamplifier Agilent	8449B	3008A01964	Nov. 02, 2010	Nov. 01, 2011
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295014/4	Aug. 19, 2011	Aug. 18, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	12738/6	Aug. 19, 2011	Aug. 18, 2012
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100.	TT93021703	NA	NA
Turn Table Controller ADT.	SC100.	SC93021703	NA	NA

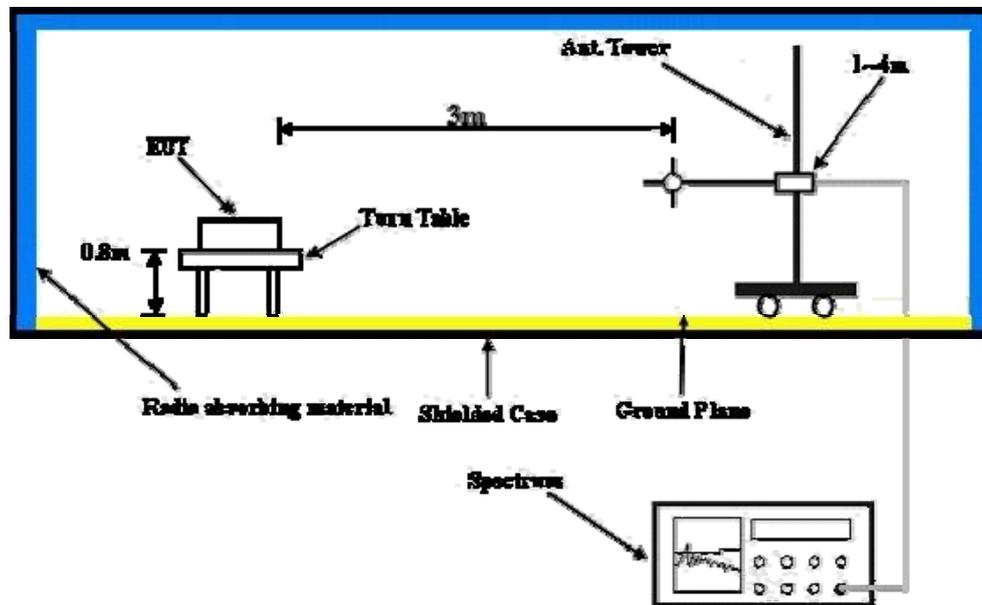
- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 3.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 988962.
 5. The IC Site Registration No. is IC 7450F-3.

4.1.3 TEST PROCEDURES

- a. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels 1013, 384 and 777 (low, middle and high operational frequency range.)
- b. The conducted output power used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer. The path loss included the splitter loss, cable loss and 20dB pad loss. The spectrum set RB/VB 3MHz then read peak power value and record to the test. (All transmitted path loss shall be considered in the test report data.)
- c. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- d. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable . Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step c. Record the power level of S.G
- e. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$
- f. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,
 $E.R.P \text{ power} = E.I.P.R \text{ power} - 2.15dBi.$

4.1.4 TEST SETUP

ERP POWER MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.5 EUT OPERATING CONDITIONS

- a. The EUT makes a call to the communication simulator.
- b. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.



4.1.6 TEST RESULTS

TEST MODE A:

ERP POWER (1x EV-DO)								
CHANNEL	FREQ. (MHz)	S.G. VALUE (dBm)		CORR. FACTOR (dB)	OUTPUT POWER			
					Rev. A		Rev. 0	
		Rev. A	Rev. 0		dBm	Watt	dBm	Watt
1013	824.70	26.6	28.1	-8.6	18.0	0.0631	19.5	0.0891
384	836.52	27.8	27.0	-8.6	19.2	0.0832	18.4	0.0692
777	848.31	27.8	28.2	-8.7	19.1	0.0813	19.5	0.0891

TEST MODE B:

ERP POWER (SO55)					
CHANNEL NO.	FREQUENCY (MHz)	S.G. VALUE (dBm)	CORRECTION FACTOR (dB)	OUTPUT POWER	
				dBm	Watt
1013	824.70	28.9	-8.6	20.3	0.1072
384	836.52	28.7	-8.6	20.1	0.1023
777	848.31	27.7	-8.7	19.0	0.0794

REMARKS: 1. Peak Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
 2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

4.2 RADIATED EMISSION MEASUREMENT (BELOW 1GHz)

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

In the FCC 24.238(a), On any frequency outside a licensee's frequency block within USPCS spectrum, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dB. The emission limit equal to -13dBm .

4.2.2 TEST INSTRUMENTS

Same as 4.1.2

4.2.3 TEST PROCEDURES

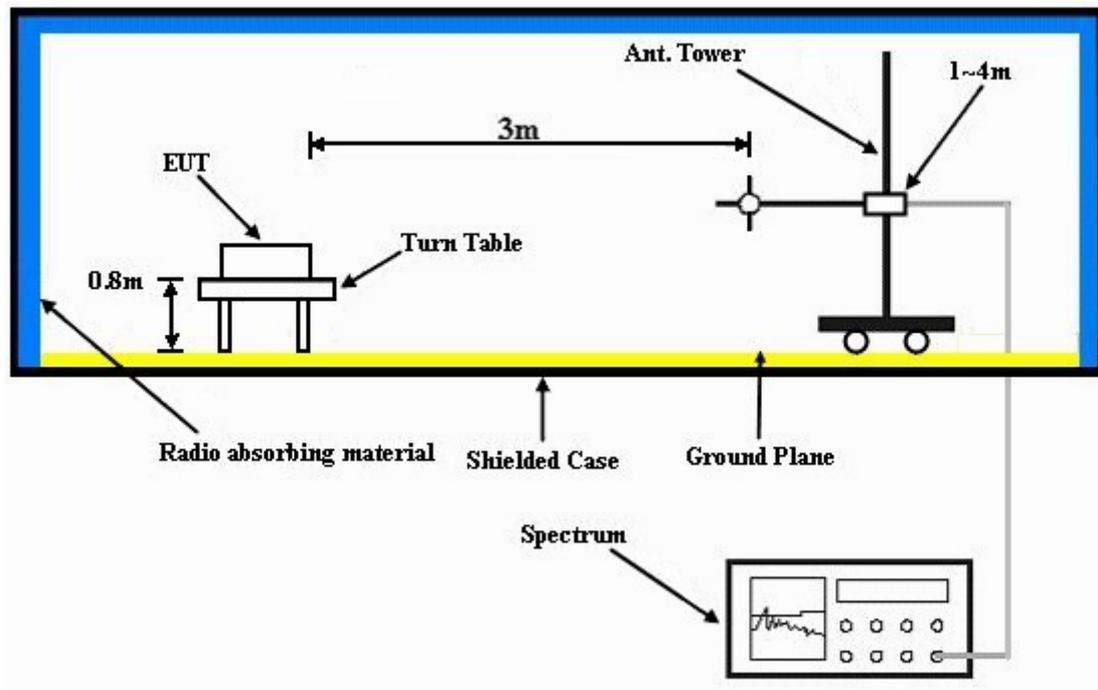
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G
- c. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi}$.

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT OPERATING CONDITIONS

- a. The EUT makes a call to the communication simulator.
- b. The communication simulator station system controlled an EUT to export maximum output power under transmission mode and specific channel frequency.



4.2.7 TEST RESULTS

MODE	TX channel 384	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TEST MODE	A	TESTED BY	Sam Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	43.61	50.2	-13.0	-37.0	-7.7	-44.7
2	86.37	51.1	-13.0	-36.7	-7.7	-44.4
3	134.97	50.1	-13.0	-37.1	-7.7	-44.8
4	189.40	47.0	-13.0	-41.4	-7.7	-49.1
5	397.39	35.0	-13.0	-48.6	-7.8	-56.4
6	566.51	33.9	-13.0	-49.2	-7.8	-57.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	41.66	56.8	-13.0	-30.9	-7.7	-38.6
2	88.32	46.8	-13.0	-40.7	-7.7	-48.4
3	140.80	41.3	-13.0	-45.4	-7.7	-53.1
4	175.79	39.7	-13.0	-48.3	-7.7	-56.0
5	366.29	37.8	-13.0	-49.7	-7.8	-57.5
6	537.35	35.9	-13.0	-49.4	-7.8	-57.2

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



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MODE	TX channel 1013	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TEST MODE	B	TESTED BY	Sam Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	42.56	50.1	-13.0	-50.4	-7.7	-58.1
2	85.37	51.2	-13.0	-48.9	-7.7	-56.6
3	123.31	52.5	-13.0	-47.0	-7.7	-54.7
4	181.62	47.1	-13.0	-46.8	-7.7	-54.5
5	300.20	40.7	-13.0	-45.0	-7.8	-52.8
6	556.79	35.2	-13.0	-43.6	-7.8	-51.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	45.55	56.3	-13.0	-40.2	-7.7	-47.9
2	84.43	45.3	-13.0	-42.6	-7.7	-50.3
3	136.91	40.2	-13.0	-43.7	-7.7	-51.4
4	298.26	33.5	-13.0	-39.6	-7.7	-47.3
5	348.80	36.8	-13.0	-42.4	-7.8	-50.2
6	558.74	35.6	-13.0	-43.8	-7.8	-51.6

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



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MODE	TX channel 384	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TEST MODE	C	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	74.71	64.0	-13.0	-23.0	-7.7	-30.7
2	160.24	50.5	-13.0	-36.0	-7.7	-43.7
3	265.21	45.7	-13.0	-40.4	-7.7	-48.1
4	337.13	45.6	-13.0	-41.1	-7.8	-48.9
5	381.84	42.5	-13.0	-44.3	-7.8	-52.1
6	490.70	42.1	-13.0	-44.1	-7.8	-51.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	74.71	61.9	-13.0	-25.2	-7.7	-32.9
2	183.57	39.5	-13.0	-47.6	-7.7	-55.3
3	261.32	37.3	-13.0	-49.2	-7.7	-56.9
4	389.62	36.1	-13.0	-50.5	-7.8	-58.3
5	475.15	37.6	-13.0	-49.0	-7.8	-56.8
6	687.03	34.3	-13.0	-52.7	-7.8	-60.5

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



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MODE	TX channel 1013	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TEST MODE	D	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	74.71	65.8	-13.0	-21.1	-7.7	-28.8
2	175.79	52.8	-13.0	-34.0	-7.7	-41.7
3	263.27	49.3	-13.0	-37.6	-7.7	-45.3
4	387.68	42.5	-13.0	-44.0	-7.8	-51.8
5	490.70	40.8	-13.0	-45.9	-7.8	-53.7
6	694.81	42.1	-13.0	-44.4	-7.8	-52.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	74.71	64.4	-13.0	-22.0	-7.7	-29.7
2	177.74	42.8	-13.0	-43.7	-7.7	-51.4
3	249.66	41.7	-13.0	-45.4	-7.7	-53.1
4	362.40	36.4	-13.0	-49.9	-7.8	-57.7
5	480.98	37.9	-13.0	-48.4	-7.8	-56.2
6	685.09	37.3	-13.0	-49.0	-7.8	-56.8

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).

4.3 RADIATED EMISSION MEASUREMENT (ABOVE 1GHz)

4.3.1 LIMITS OF RADIATED EMISSION MEASUREMENT

In the FCC 22.917 (a), On any frequency outside a licensee's frequency block within GPRS spectrum, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dB. The emission limit equal to -13dBm .

4.3.2 TEST INSTRUMENTS

Same as 4.1.2.

4.3.3 TEST PROCEDURES

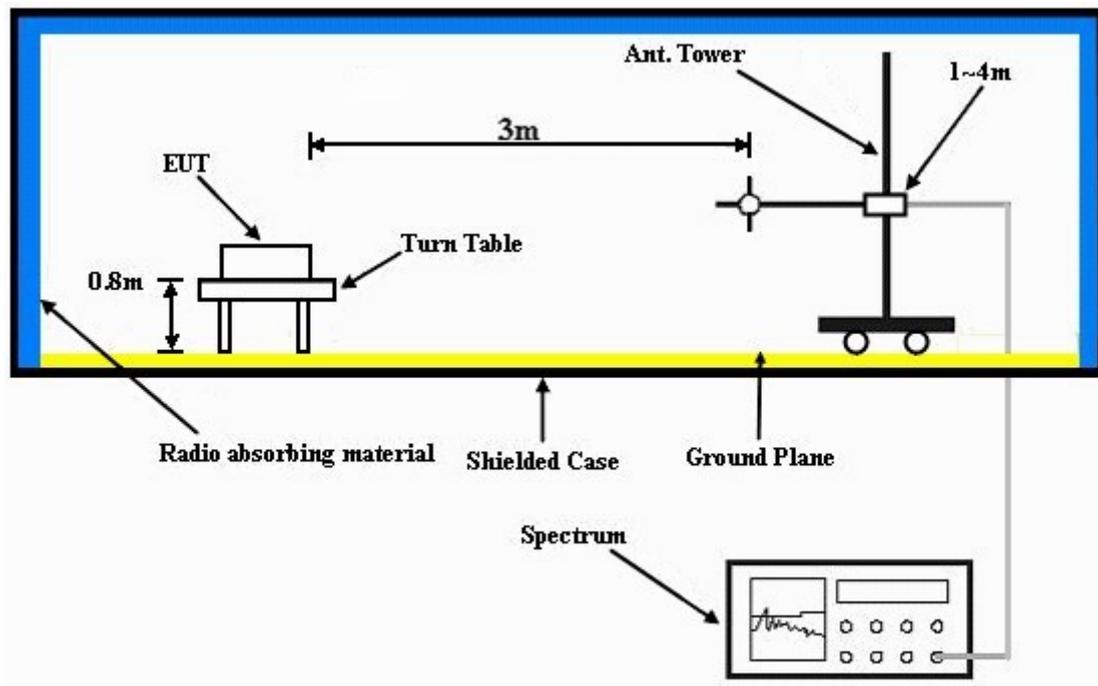
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G
- c. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi}$.

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.3.6 EUT OPERATING CONDITIONS

- a. The EUT makes a call to the communication simulator.
- b. The communication simulator station system controlled an EUT to export maximum output power under transmission mode and specific channel frequency.



4.3.7 TEST RESULTS

MODE	Channel 384	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH
TEST MODE	A	TESTED BY	Sam Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	1673.04	43.2	-13.0	-59.2	7.7	-51.5
2	2509.56	38.9	-13.0	-64.0	8.4	-55.6
3	3346.08	42.5	-13.0	-62.2	9.9	-52.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	1673.04	44.5	-13.0	-57.9	7.7	-50.2
2	2509.56	41.7	-13.0	-61.2	8.4	-52.8
3	3346.08	42.5	-13.0	-62.2	9.9	-52.3

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



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MODE	Channel 1013	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH
TEST MODE	B	TESTED BY	Sam Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	1649.4	47.2	-13.0	-55.1	7.6	-47.5
2	2474.1	44.9	-13.0	-58.1	8.4	-49.7
3	3298.8	44.0	-13.0	-60.4	9.9	-50.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	1649.4	52.7	-13.0	-49.6	7.6	-42.0
2	2474.1	42.6	-13.0	-60.4	8.4	-52.0
3	3298.8	42.3	-13.0	-62.1	9.9	-52.2

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



MODE	Channel 384	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH
TEST MODE	C	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	1673.04	49.2	-13.0	-53.2	7.7	-45.5
2	2509.56	47.0	-13.0	-55.9	8.4	-47.5
3	3346.08	42.0	-13.0	-62.7	9.9	-52.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	1673.04	50.3	-13.0	-52.1	7.7	-44.4
2	2509.56	46.3	-13.0	-56.6	8.4	-48.2
3	3346.08	47.2	-13.0	-57.5	9.9	-47.6

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



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MODE	Channel 1013	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH
TEST MODE	D	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	1649.4	52.8	-13.0	-49.5	7.6	-41.9
2	2474.1	56.1	-13.0	-46.9	8.4	-38.5
3	3298.8	46.6	-13.0	-57.8	9.9	-47.9

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	1649.4	50.5	-13.0	-51.8	7.6	-44.2
2	2474.1	54.2	-13.0	-48.8	8.4	-40.4
3	3298.8	50.3	-13.0	-54.1	9.9	-44.2

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



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5 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



6 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Copies of accreditation and authorization certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5.phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

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Hwa Ya EMC/RF/Safety/Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3185050

Email: service.adt@tw.bureauveritas.com

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.



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7 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

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