

FCC TEST REPORT (PART 24)

 REPORT NO.:
 RF120508C07-1

 MODEL NO.:
 PL01200

 FCC ID:
 NM8PL01200

 RECEIVED:
 May 08, 2012

 TESTED:
 Jun. 07 ~ Jun. 19, 2012

 ISSUED:
 Jun. 22, 2012

APPLICANT: HTC Corporation

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

- **ISSUED BY:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
- LAB ADDRESS: No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
- **TEST LOCATION:** No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.



TABLE OF CONTENTS

RELEAS	SE CONTROL RECORD	3
1	CERTIFICATION	
2	SUMMARY OF TEST RESULTS	
2.1	MEASUREMENT UNCERTAINTY	5
2.2	TEST SITE AND INSTRUMENTS	6
3	GENERAL INFORMATION	7
3.1	GENERAL DESCRIPTION OF EUT	7
3.2	CONFIGURATION OF SYSTEM UNDER TEST	8
3.3	DESCRIPTION OF SUPPORT UNITS	9
3.4	TEST ITEM AND TEST CONFIGURATION	10
3.5	EUT OPERATING CONDITIONS	11
3.6	GENERAL DESCRIPTION OF APPLIED STANDARDS	11
4	TEST TYPES AND RESULTS	
4.1	OUTPUT POWER MEASUREMENT	12
4.1.1	LIMITS OF OUTPUT POWER MEASUREMENT	12
4.1.2	TEST PROCEDURES	12
4.1.3	TEST SETUP	
4.1.4	AGILENT COMMUNICATION CALL BOX SETTING	14
4.1.5	TEST RESULTS	
4.2	FREQUENCY STABILITY MEASUREMENT	17
4.2.1	LIMITS OF FREQUENCY STABILIITY MEASUREMENT	17
4.2.2	TEST PROCEDURE	17
4.2.3	TEST SETUP	17
4.2.4	TEST RESULTS	18
4.3	OCCUPIED BANDWIDTH MEASUREMENT	19
4.3.1	TEST PROCEDURES	19
4.3.2	TEST SETUP	19
4.3.3	TEST RESULTS	20
4.4	BAND EDGE MEASUREMENT	
4.4.1	LIMITS OF BAND EDGE MEASUREMENT	21
4.4.2	TEST SETUP	21
4.4.3	TEST PROCEDURES	21
4.4.4	TEST RESULTS	22
4.5	CONDUCTED SPURIOUS EMISSIONS	23
4.5.1	LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT	23
4.5.2	TEST PROCEDURE	
4.5.3	TEST SETUP	23
4.5.4	TEST RESULTS	
4.6	RADIATED EMISSION MEASUREMENT	25
4.6.1	LIMITS OF RADIATED EMISSION MEASUREMENT	25
4.6.2	TEST PROCEDURES	
4.6.3	DEVIATION FROM TEST STANDARD	
4.6.4	TEST SETUP	26
4.6.5	TEST RESULTS	
5	PHOTOGRAPHS OF THE TEST CONFIGURATION	
6	INFORMATION ON THE TESTING LABORATORIES	
7	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES	ГО
	THE EUT BY THE LAB	31



RELEASE CONTROL RECORD

-		
ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120508C07-1	Original release	Jun. 22, 2012



CERTIFICATION 1

PRODUCT: Smartphone **MODEL:** PL01200 BRAND: HTC **APPLICANT: HTC Corporation TESTED:** Jun. 07 ~ Jun. 19, 2012 **TEST SAMPLE:** Production Unit STANDARDS: FCC Part 24, Subpart E

The above equipment (model: PL01200) has been tested by Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Jun. 22, 2012 Ivonne Wu / Senior Specialist

APPROVED BY : _______, DATE : ______ Jun. 22, 2012



2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

	APPLIED STANDARD: FCC Part 24 & Part 2						
STANDARD SECTION	TEST TYPE		REMARK				
2.1046 24.232	Equivalent isotropically radiated power	PASS	Meet the requirement of limit.				
2.1055 24.235	Frequency Stability	PASS	Meet the requirement of limit.				
2.1049 24.238(b)	Occupied Bandwidth	PASS	Meet the requirement of limit.				
24.238(b)	Band Edge Measurements	PASS	Meet the requirement of limit.				
2.1051 24.238	Conducted Spurious Emissions	PASS	Meet the requirement of limit.				
2.1053 24.238	Radiated Spurious Emissions		Meet the requirement of limit. Minimum passing margin is -19.78dB at 34.05MHz.				

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	150kHz~30MHz	2.44 dB
	30MHz ~ 200MHz	2.93 dB
Radiated emissions	200MHz ~1000MHz	2.95 dB
Radiated emissions	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.



2.2 TEST SITE AND INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver N9038A		MY51210203 Dec. 22, 20 ⁴		Dec. 21, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 21, 2011	Dec. 20, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Dec. 20, 2011	Dec. 19, 2012
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Dec. 20, 2011	Dec. 19, 2012
ORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 20, 2011	Dec. 19, 2012
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier EMCI	EMC 012645	980115	Dec. 30, 2011	Dec. 29, 2012
Preamplifier EMCI	EMC 330H	980112	Dec. 30, 2011	Dec. 29, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 21, 2011	Oct. 20, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Jan. 02, 2012	Jan. 01, 2013
RF signal cable Worken	RG-213	NA	Jan. 02, 2012	Jan. 01, 2013
Software	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
Communications Tester-Wireless	8960 Series 10	MY50260642	Oct. 25, 2011	Oct. 24, 2012
Radio Communication Analyzer	MT8820C	6201010284	Aug. 01, 2011	Jul. 31, 2012

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 9.
- 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 460141.
- 5. The IC Site Registration No. is IC 7450F-4.



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Smartphone	
MODEL NO.	PL01200	
POWER SUPPLY	5.0Vdc (adapter)	
	3.7Vdc (battery)	
MODULATION TYPE	QPSK, OQPSK, HPSK	
FREQUENCY RANGE	1851.25MHz ~ 1908.75MHz	
MAX. EIRP POWER	0.22Watts	
ANTENNA TYPE	Fixed Internalantenna with -1dBi gain	
I/O PORTS	Refer to users' manual	
DATA CABLE	Refer to NOTE as below	
ACCESSORY DEVICES	Refer to NOTE as below	

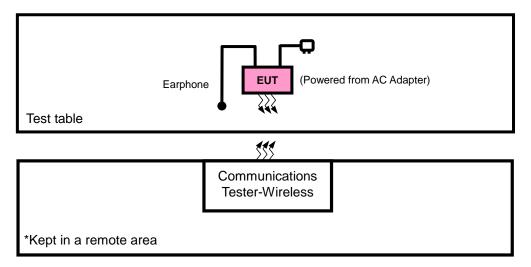
NOTE:

- 1. The EUT's accessories list refers to EUT photo.
- 2. 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.

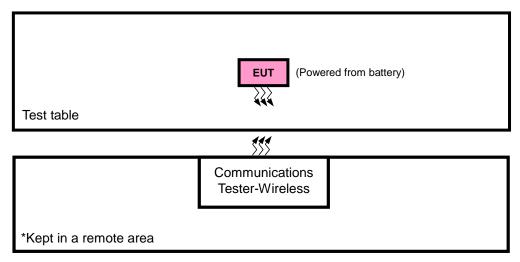


3.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



FOR E.I.R.P. TEST





3.3 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.

FOR EMISSION TEST

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	EARPHONE	Cotron	HS S250	NA	NA

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

NOTE:

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

2. Item 1 was provided by client.



3.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports The worst case was found when positioned on Y-plane for ERP and Y-axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
-	EIRP	25 to 1175	25, 600, 1175	RC3+SO55
-	FREQUENCY STABILITY	25 to 1175	600	RC3+SO55
-	OCCUPIED BANDWIDTH	25 to 1175	25, 600, 1175	RC3+SO55
-	BAND EDGE	25 to 1175	25, 1175	RC3+SO55
-	CONDCUDETED EMISSION	25 to 1175	600	RC3+SO55
-	RADIATED EMISSION	25 to 1175	600	RC3+SO55
-	RADIATED EMISSION	25 to 1175	600	RC3+SO55

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP	25deg. C, 65%RH	3.7Vdc	Phoenix Chen
FREQUENCY STABILITY	25deg. C, 65%RH	3.7Vdc	Phoenix Chen
OCCUPIED BANDWIDTH	25deg. C, 65%RH	3.7Vdc	Phoenix Chen
BAND EDGE	25deg. C, 65%RH	3.7Vdc	Phoenix Chen
CONDCUDETED EMISSION	25deg. C, 65%RH	3.7Vdc	Phoenix Chen
RADIATED EMISSION	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu



3.5 EUT OPERATING CONDITIONS

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

3.6 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 24 ANSI/TIA/EIA-603-C 2004

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



4 TEST TYPES AND RESULTS

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile and portable stations are limited to 2 watts EIRP

4.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

- a. All measurements were done at low, middle and high operational frequency range. RWB and VBW is 5MHz for CDMA mode.
- b. 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.
- c. 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 b. Record the power level of S.G
- d. EIRP = Output power level of S.G TX cable loss + Antenna gain of substitution horn.

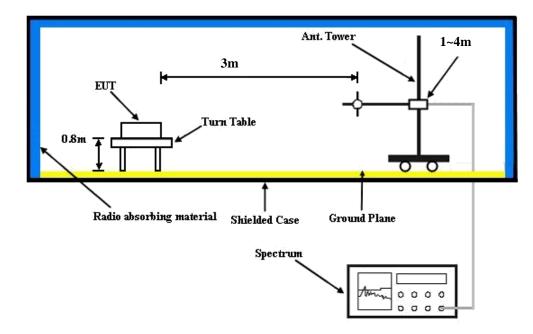
CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with CDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.



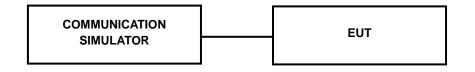
4.1.3 TEST SETUP

EIRP MEASUREMENT:



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

CONDUCTED POWER MEASUREMENT:



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



4.1.4 AGILENT COMMUNICATION CALL BOX SETTING

Application

Rev, License

CDMA2000 Mobile Test B.17.08

- Call Setup > Shift & Preset
- Cell Info > Cell Parameters > System ID (SID) > 8
 - > Network ID (NID) > 65535
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > Please see following table or details
- FCH Service Option (SO) Setup > Please see following table or details
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps > R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Rvs Power Ctrl > Active bits
 Rvs Power Ctrl > All Up bits (Maximum TxPout)

Application	<u>Rev, License</u>
1xEV-DO Terminal Test	A.12.08

EVDO Release 0 - RTAP

- Call Setup > Shift & Preset
- Call Control:
 - Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
 - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots Call Parms:
 - Cell Power > -105.5 dBm/1.23 MHz
 - Cell Band > (Select US Cellular or US PCS)
 - Channel > (Enter channel number)
 - Application Config > Enhanced Test Application Protocol > RTAP
 - RTAP Rate > 153.6 kbps
 - Rvs Power Ctrl > Active bits
 - Protocol Rel > 0 (1xEV-DO)
- Press "Start Data Connection" when "Session Open" appear in "Active Cell"
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

EVDO Release 0 - FTAP

- Call Setup > Shift & Preset
- Call Control:
 - Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
 - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
 - \circ Cell Power > -105.5 dBm/1.23 MHz
 - Cell Band > (Select US Cellular or US PCS)
 - Channel > (Enter channel number)
 - Application Config > Enhanced Test Application Protocol > FTAP (default)
 - FTAP Rate > 307.2 kbps (2 Slot, QPSK)
 - Rvs Power Ctrl > Active bits
 - Protocol Rel > 0 (1xEV-DO)
- Press "Start Data Connection" when "Session Open" appear in "Active Cell"
- Rvs Power Ctrl > All Up bits (Maximum TxPout)



Application 1xEV-DO Terminal Test

<u>Rev, License</u> A.12.08

EVDO Release A – RETAP

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > RETAP
- R-Data Pkt Size > 4096
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
- > PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)
- Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

EVDO Release A - FETAP

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > FETAP
- F-Traffic Format > 4 (1024, 2,128) Canonical (307.2k, QPSK)
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
- > PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)
- Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
 Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)



4.1.5 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	CDMA2000 BC0		
Channel	25	600	1175
Frequency (MHz)	1851.25	1880	1908.75
RC1+SO55	24.73	24.71	24.70
RC3+SO55	24.72	24.80	24.73
RC3+SO32(+ F-SCH)	24.72	24.76	24.74
RC3+SO32(+SCH)	24.73	24.76	24.70
RTAP 153.6	24.78	24.78	24.77
RETAP 4096	24.77	24.79	24.76

EIRP POWER (dBm) FOR 1xRTT RC3+SO55 MODE

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(W)	Polarization (H/V)
	25	1851.25	-21.10	38.19	17.09	0.05	Н
	600	1880.00	-21.24	38.70	17.46	0.06	Н
v	1175	1908.75	-21.92	39.35	17.43	0.06	Н
r	25	1851.25	-15.45	38.48	23.03	0.20	V
	600	1880.00	-15.14	38.59	23.45	0.22	V
	1175	1908.75	-15.43	38.87	23.44	0.22	V



4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

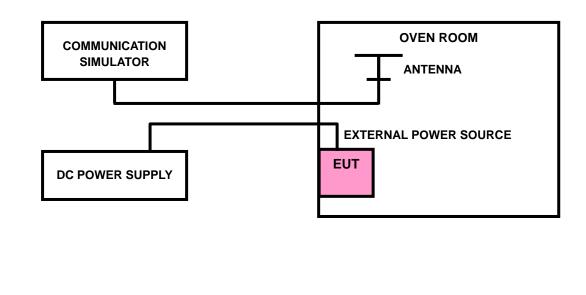
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

4.2.2 TEST PROCEDURE

- a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}$ C during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.







4.2.4 TEST RESULTS

1xRTT RC3+SO55 MODE

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)	LIMIT (ppm)
3.8	-0.002	2.5
3.6	-0.002	2.5
4.2	-0.002	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.6Vdc to 4.2Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	FREQUENCY ERROR (ppm)	LIMIT (ppm)
-10	-0.002	2.5
0	-0.002	2.5
10	-0.002	2.5
20	-0.002	2.5
30	-0.002	2.5
40	-0.002	2.5
50	-0.002	2.5
55	-0.002	2.5

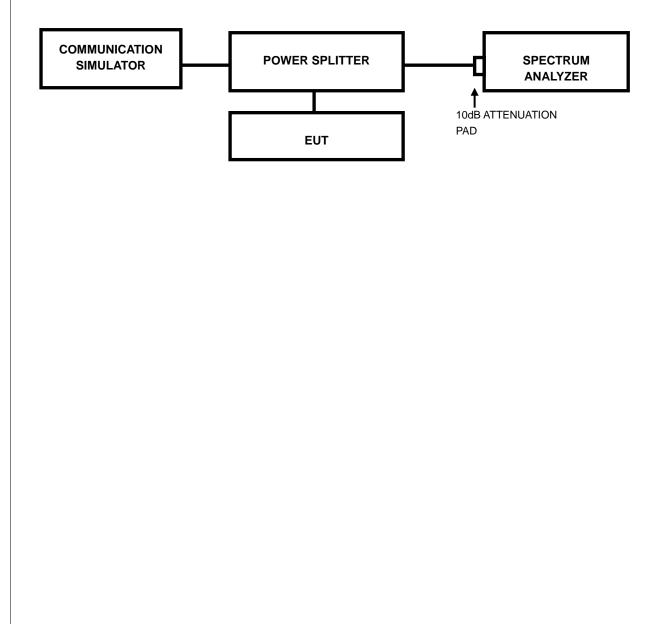


4.3 OCCUPIED BANDWIDTH MEASUREMENT

4.3.1 TEST PROCEDURES

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.3.2 TEST SETUP





4.3.3 TEST RESULTS

1xRTT RC3+SO55 MODE

CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	26dB BANDWIDTH (MHz)
25	1851.25	1.273	1.423
600	1880	1.272	1.423
1175	1908.75	1.272	1.417

	d Sale Allowed)	totype - Limiter					cupied BW	n Analyzer - Oc	ent Spectru
Trace/Detector	11:29:50 AM Jun 11, 2012 Radio Std: None Radio Device: BTS	Center Freq: 1.851250000 GHz		RF 50 Ω AC eq 1.851250000 GHz #IFGain:Low		enter Fre			
								Ref Offset Ref 30.0	dB/div
									g .0
Clear Wri									0
		N.	and a second second			/	1		-
		1				/			0
Averag									0
		- Wy					a share	Ang	0
	and and and a								0 And and a second
Max Ho									0
									0
									0
Min Hold	Span 3 MHz #Sweep 300 ms		kHz	/BW 100	#V				nter 1.8 es BW
Detect	5 dBm	26.5	ower	Total			lwidth	ed Band	Occup
Average <u>Auto</u> Ma					MHz	1.2732 Mł			
	9.00 %	99	Power	овw	211 Hz	-21	ror	it Freq Eri	Transm
	.00 dB	-26.		x dB	3 MHz	1.423		ndwidth	x dB Ba

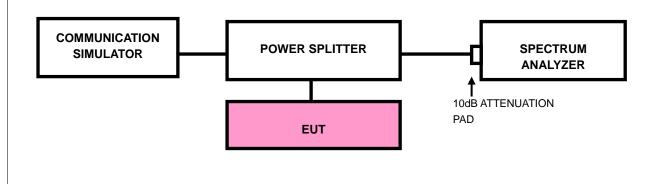


4.4 BAND EDGE MEASUREMENT

4.4.1 LIMITS OF BAND EDGE MEASUREMENT

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

4.4.2 TEST SETUP

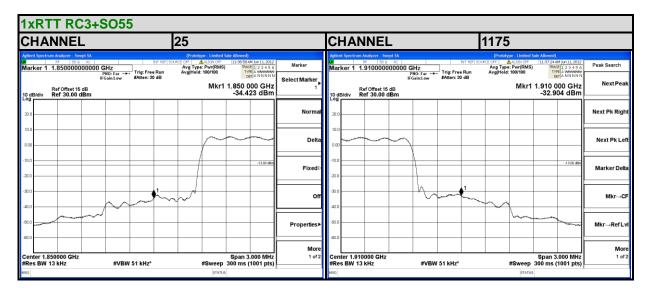


4.4.3 TEST PROCEDURES

- a. All measurements were done at low and high operational frequency range.
- b. The center frequency of spectrum is the band edge frequency and span is 3 MHz. RB of the spectrum is 13kHz and VB of the spectrum is 51kHz.
- c. Record the max trace plot into the test report.



4.4.4 TEST RESULTS





4.5 CONDUCTED SPURIOUS EMISSIONS

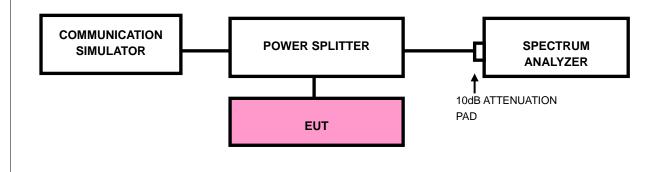
4.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$. The emission limit equal to -13dBm.

4.5.2 TEST PROCEDURE

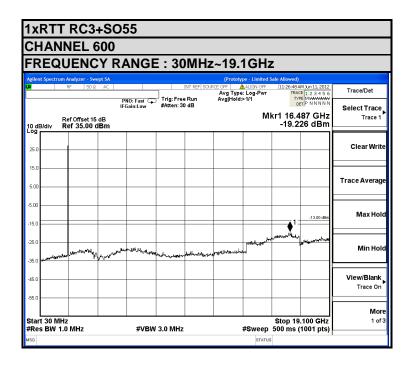
- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 30MHz to 19.1GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

4.5.3 TEST SETUP





4.5.4 TEST RESULTS





4.6 RADIATED EMISSION MEASUREMENT

4.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$. The emission limit equal to -13dBm.

4.6.2 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. EIRP = Output power level of S.G TX cable loss + 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, E.R.P power = E.I.P.R power - 2.15dBi.

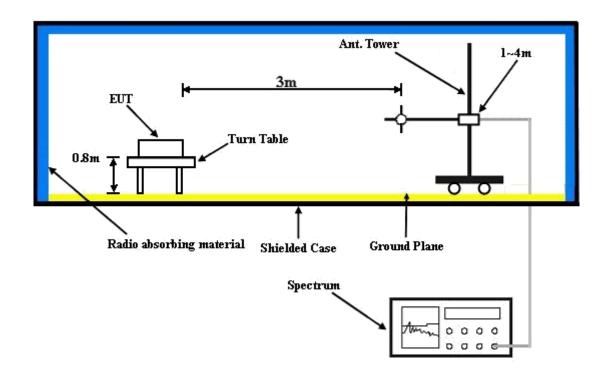
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.6.3 DEVIATION FROM TEST STANDARD

No deviation



4.6.4 TEST SETUP



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

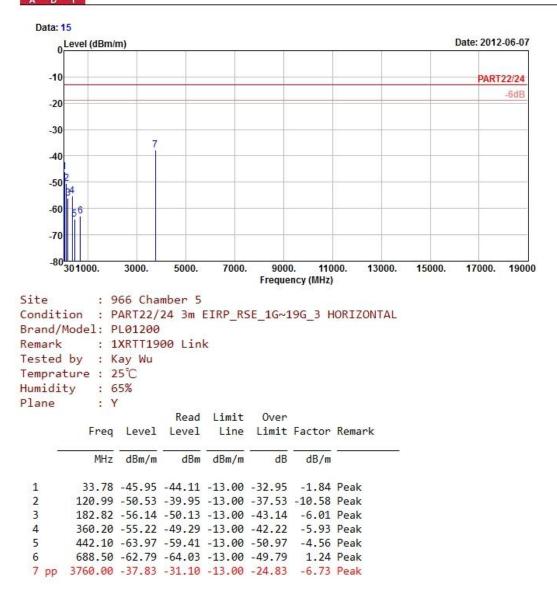


4.6.5 TEST RESULTS

1xRTT RC3+SO55



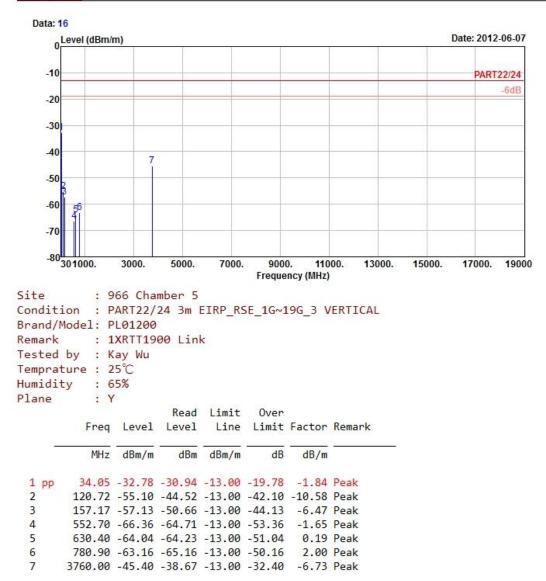
Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch







Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch





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.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab: Tel: 886-2-26052180 Fax: 886-2-26051924 Hsin Chu EMC/RF Lab: Tel: 886-3-5935343 Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab: Tel: 886-3-3183232 Fax: 886-3-3270892 Email: <u>service.adt@tw.bureauveritas.com</u> Web Site: <u>www.adt.com.tw</u>

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



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

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

---END----