

# FCC TEST REPORT (RFID)

**REPORT NO.:** RF120710C03-6

MODEL NO.: PM23300

FCC ID: NM8PM23300

**RECEIVED:** Jul. 10, 2012

**TESTED:** Jul. 24 ~ Jul. 25, 2012

**ISSUED:** Aug. 10, 2012

**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., 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.

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#### **RELEASE CONTROL RECORD**

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120710C03-6	Original release	Aug. 10, 2012

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#### 1. CERTIFICATION

**PRODUCT:** Smartphone

MODEL NO.: PM23300

**BRAND: HTC** 

**APPLICANT: HTC Corporation** 

**TESTED:** Jul. 24 ~ Jul. 25, 2012

**TEST SAMPLE:** Production Unit

STANDARDS: FCC Part 15, Subpart C (Section 15.225)

FCC Part 15, Subpart C (Section 15.215)

ANSI C63.10-2009

The above equipment (model: PM23300) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**. 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: , DATE: Aug. 10, 2012

Ivonne Wu / Senior Specialist

APPROVED BY: Aug. 10, 2012

Gary Chang / Technical Manager



#### 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.225, 15.215)					
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK		
15.225 (a)	The field strength of any emissions within the band 13.553-13.567 MHz	PASS	Meet the requirement of limit. Minimum passing margin is -71.0dB at 13.56MHz.		
15.225 (d)	The field strength of any emissions appearing outside of the 13.110-14.010 MHz band	PASS	Meet the requirement of limit. Minimum passing margin is -9.3dB at 30.24MHz.		
15.225 (e)	The frequency tolerance	PASS	Meet the requirement of limit.		
15.215 (c)	20dB Bandwidth	PASS	Meet the requirement of limit.		

#### 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
Radiated emissions	30MHz ~ 200MHz	3.34 dB
	200MHz ~1000MHz	3.35 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

EUT	Smartphone
MODEL NO.	PM23300
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.75Vdc (Li-ion battery)
MODULATION TYPE	ASK
OPERATING FREQUENCY	13.56MHz
ANTENNA TYPE	Loop antenna
DATA CABLE	Refer to Note as below
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Refer to Note as below

#### NOTE:

- 1. The EUT's accessories list refers to Ext Pho.
  - \* item 2, 3, 5, 6, 7 were the worst for the final test.
- 2. The above EUT information is declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

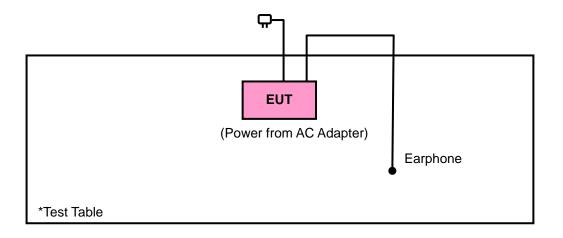


#### 3.2 DESCRIPTION OF TEST MODES

The EUT only have one channel.

CHANNEL	FREQUENCY (MHz)	
1	13.56	

#### 3.2.1 CONFIGURATION OF SYSTEM UNDER TEST





#### 3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE	<del>-</del>	APPLICABLE TO	)	DESCRIPTION
MODE	RE	FS	BW	DESCRIPTION
-	√	$\checkmark$	√	-

Where

**RE:** Radiated Emission

FS: Frequency Stability

BW: 20dB Bandwidth

#### **RADIATED EMISSION TEST:**

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	AILABLE CHANNEL TESTED CHANNEL		AXIS
1	1	ASK	Z

#### FREQUENCY STABILITY:

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE	AXIS
1	1	ASK	Z

#### **20dB BANDWIDTH:**

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE	
1	1	ASK	

#### **TEST CONDITION:**

APPLICABLE TO	PPLICABLE TO ENVIRONMENTAL CONDITIONS		TESTED BY
RE	25deg. C, 68%RH	120Vac, 60Hz	Haru Yang
FS	25deg. C, 65%RH	120Vac, 60Hz	Mark Liao
BW	25deg. C, 65%RH	120Vac, 60Hz	Aska Huang

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#### 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

**FCC Part 15, Subpart C (15.225)** 

**FCC Part 15, Subpart C (15.215)** 

ANSI C63.10-2009

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

**NOTE:** The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B. The test report has been issued separately.

#### 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	Earphone	Merry	HS S250	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.1m non-shielded cable

#### NOTE:

- 1. All power cords of the above support units are non shielded (1.8m).
- 2. Item 1 was provided by client.



#### 4. TEST TYPES AND RESULTS

#### 4.1 RADIATED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

FREQUENCIES (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

#### NOTE:

- 1. The lower limit shall apply at the transition frequencies.
- 2. Emission level  $(dBuV/m) = 20 \log Emission level (uV/m)$ .
- 3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



#### 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. 06, 2012	Aug. 05, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Feb. 03, 2012	Feb. 02, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 06, 2012	Apr. 05, 2013
HORN Antenna SCHWARZBECK	9120D	209	Aug. 25, 2011	Aug. 24, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 11, 2012	Jul. 10, 2013
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier Agilent	8447D	2944A10633	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8449B	3008A01964	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250723/4	Aug. 30, 2011	Aug. 29, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6+309224/4	Aug. 30, 2011	Aug. 29, 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 calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
- 3. The test was performed in HwaYa Chamber 3.
- 4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
- 5. The FCC Site Registration No. is 988962.
- 6. The IC Site Registration No. is IC 7450F-3.



#### 4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

#### NOTE:

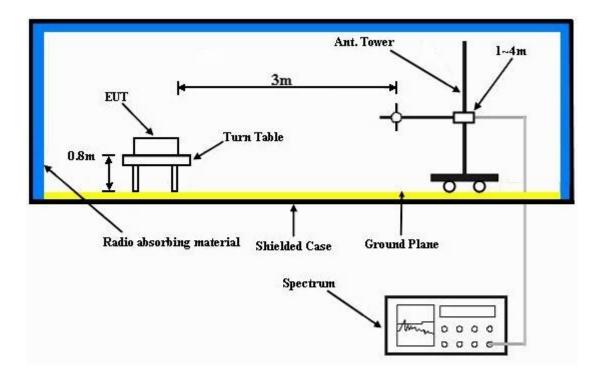
- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
- 2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
- 3. All modes of operation were investigated and the worst-case emissions are reported.

#### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation.



#### 4.1.5 TEST SETUP



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

#### 4.1.6 EUT OPERATING CONDITIONS

Set the EUT under transmission condition continuously at specific channel frequency.



#### 4.1.7 TEST RESULTS

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL Channel 1		FREQUENCY RANGE	13.553 ~ 13.567MHz	
INPUT POWER	3.8Vdc	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Haru Yang	

	ANTENNA POLARITY & TEST DISTANCE: LOOP ANTENNA OPEN AT 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	
1	13.56	53.0	124.0	-71.0	1.00	169	33.2	19.8	

#### **REMARKS:**

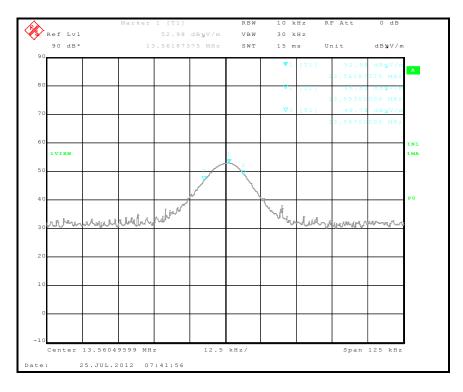
- 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
- 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. Above limits have been translated by the formula

The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance) Example:

13.56MHz =

= 15848uV/m 30m = 84dBuV/m 30m =  $84+20log(30/3)^2$  3m

= 124dBuV/m





EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL Channel 1		FREQUENCY RANGE	13.553 ~ 13.567MHz	
INPUT POWER	3.8Vdc	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Haru Yang	

	ANTENNA POLARITY & TEST DISTANCE: LOOP ANTENNA CLOSE AT 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	
1	13.56	49.2	124.0	-74.8	1.00	252	29.4	19.8	

#### **REMARKS:**

- 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
- 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. Above limits have been translated by the formula

The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance) Example:

13.56MHz = 15848uV/m

30m 84dBuV/m 30m  $84+20\log(30/3)^2$ 3m 124dBuV/m

Center 13.56 MHz

25.JUL.2012 07:53:47

Ref Lvl 13.56162826 MHz 15 ms

12.5 kHz/

Span 125 kHz



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL Channel 1		FREQUENCY RANGE	Below 30MHz	
INPUT POWER	3.8Vdc	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Haru Yang	

	ANTENNA POLARITY & TEST DISTANCE: LOOP ANTENNA OPEN AT 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	
1	13.55	46.80 QP	69.50	-22.70	1.00 V	169	27.00	19.80	
2	13.57	48.80 QP	69.50	-20.70	1.00 V	169	29.00	19.80	
3	27.12	32.40 QP	69.50	-37.10	1.00 V	305	12.10	20.30	
	ANT	ENNA POLA	RITY & TES	ST DISTANC	E: LOOP A	NTENNA CL	OSE AT 3m	1	
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	
1	13.55	42.90 QP	69.50	-26.60	1.00 V	252	23.10	19.80	
2	13.57	45.70 QP	69.50	-23.80	1.00 V	252	25.90	19.80	
3	27.12	32.50 QP	69.50	-37.00	1.00 V	237	12.20	20.30	

#### **REMARKS:**

- 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m) 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL Channel 1		FREQUENCY RANGE	Below 1000MHz	
INPUT POWER	3.8Vdc	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang	

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
1	39.62	15.90 QP	40.00	-24.10	1.24 H	354	2.30	13.60	
2	70.73	16.40 QP	40.00	-23.60	1.50 H	237	4.30	12.10	
3	115.45	17.10 QP	43.50	-26.40	1.75 H	226	5.80	11.30	
4	191.28	19.20 QP	43.50	-24.30	1.24 H	207	7.50	11.70	
5	220.44	17.60 QP	46.00	-28.40	1.00 H	175	5.80	11.80	
6	360.43	24.60 QP	46.00	-21.40	1.00 H	66	8.10	16.50	
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M		
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
1	30.24	30.70 QP	40.00	-9.30	1.25 V	358	18.80	11.90	
2	57.12	23.90 QP	40.00	-16.10	1.00 V	200	10.30	13.60	
3	80.45	20.50 QP	40.00	-19.50	1.00 V	303	10.70	9.80	
4	288.49	18.70 QP	46.00	-27.30	1.50 V	154	4.20	14.50	
5	605.41	21.60 QP	46.00	-24.40	1.75 V	5	-0.60	22.20	
6	778.45	24.40 QP	46.00	-21.60	1.00 V	299	-0.70	25.10	

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.



#### 4.2 FREQUENCY STABILITY

#### 4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of –20 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

#### 4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100039	Feb. 03, 2012	Feb. 02, 2013
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 13, 2012	Jun. 12, 2013

**NOTE:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

#### 4.2.3 TEST PROCEDURE

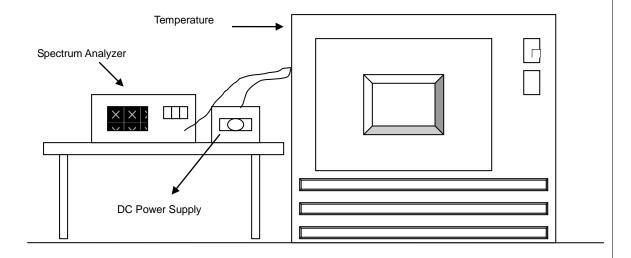
- a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.



#### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.2.5 TEST SETUP



#### 4.2.6 EUT OPERATING CONDITION

Same as Item 4.1.6.



#### 4.2.7 TEST RESULTS

	FREQUEMCY STABILITY VERSUS TEMP.								
	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
<b>TEMP.</b> (℃)		Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	%	(MHz)	%	(MHz)	%	(MHz)	%
60	3.75	13.560010	0.0000737	13.559631	-0.0027212	13.559627	-0.0027507	13.559601	-0.0029425
50	3.75	13.560146	0.0010767	13.559795	-0.0015118	13.559699	-0.0022198	13.559814	-0.0013717
40	3.75	13.560060	0.0004425	13.559686	-0.0023156	13.559616	-0.0028319	13.559725	-0.0020280
30	3.75	13.560060	0.0004425	13.559673	-0.0024115	13.559683	-0.0023378	13.559685	-0.0023230
20	3.75	13.560106	0.0007817	13.559738	-0.0019322	13.559713	-0.0021165	13.559739	-0.0019248
10	3.75	13.560027	0.0001991	13.559683	-0.0023378	13.559611	-0.0028687	13.559664	-0.0024779
0	3.75	13.560061	0.0004499	13.559669	-0.0024410	13.559688	-0.0023009	13.559691	-0.0022788
-10	3.75	13.560008	0.0000590	13.559601	-0.0029425	13.559606	-0.0029056	13.559652	-0.0025664
-20	3.75	13.559960	-0.0002950	13.559602	-0.0029351	13.559554	-0.0032891	13.559622	-0.0027876

FREQUEMCY STABILITY VERSUS VOLTAGE									
	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
<b>TEMP.</b> (℃)		Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	%	(MHz)	%	(MHz)	%	(MHz)	%
	3.60	13.559671	-0.0024263	13.559658	-0.0025221	13.559671	-0.0024263	13.559674	-0.0024041
20	3.75	13.560106	0.0007817	13.559738	-0.0019322	13.559713	-0.0021165	13.559739	-0.0019248
	4.30	13.559679	-0.0023673	13.559621	-0.0027950	13.559670	-0.0024336	13.559613	-0.0028540



#### 4.3 20dB BANDWIDTH

#### 4.3.1 LIMITS OF 20dB BANDWIDTH MEASUREMENT

The 20dB bandwidth shall be specified in operating frequency band.

#### 4.3.2 TEST INSTRUMENTS

Same as Item 4.1.2.

#### 4.3.3 TEST PROCEDURE

The bandwidth of the fundamental frequency was measured by spectrum analyzer with 1kHz RBW and 1kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

#### 4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.3.5 TEST SETUP

Same as Item 4.1.5.

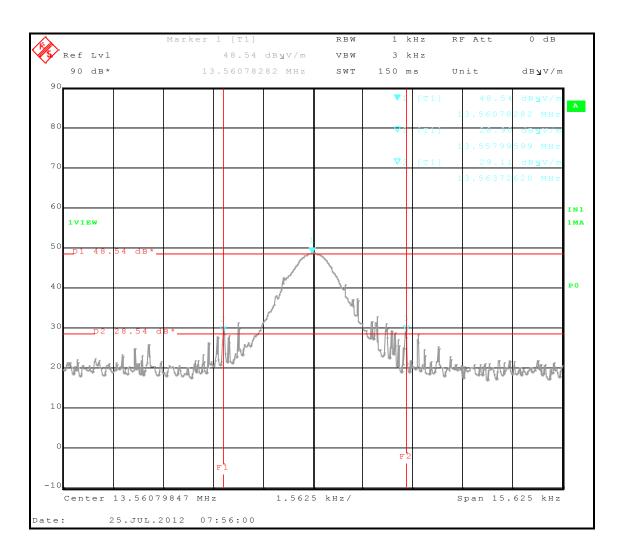
#### 4.3.6 EUT OPERATING CONDITION

Same as Item 4.1.6.



#### 4.3.7 TEST RESULTS

20dBc point (Low)	20dBc point (High)	Operating frequency band (MHz)	PASS/FAIL	
13.55799599 MHz	13.56372620 MHz	13.553~13.567	PASS	





A D T
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:

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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 are made to the EUT by the lab during the test.

--- END ---

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