



# Variant FCC Test Report

APPLICANT : Motorola Mobility, Inc.  
EQUIPMENT : Mobile Phone  
BRAND NAME : MOTOROLA  
MODEL NAME : XT530  
GPPD NUMBER : 3057  
FCC ID : IHDT56MY3  
STANDARD : FCC 47 CFR FCC Part 15 Subpart B  
CLASSIFICATION : Certification

This is a variant report which is only valid together with the original test report. The product was received on May 31, 2011 and completely tested on Jun. 08, 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:

Jones Tsai / Manager



## SPORTON INTERNATIONAL INC.

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

SPORTON INTERNATIONAL INC.

TEL : 886-3-327-3456

FAX : 886-3-328-4978

FCC ID : IHDT56MY3

Page Number : 1 of 14

Report Issued Date : Jun. 16, 2011

Report Version : Rev. 01



# TABLE OF CONTENTS

**REVISION HISTORY..... 3**

**SUMMARY OF TEST RESULT ..... 4**

**1. GENERAL DESCRIPTION ..... 5**

    1.1. Applicant..... 5

    1.2. Manufacturer ..... 5

    1.3. Feature of Equipment Under Test..... 5

    1.4. Test Site ..... 6

    1.5. Applied Standards ..... 6

    1.6. Ancillary Equipment List..... 6

**2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST ..... 7**

    2.1. Test Mode ..... 7

    2.2. Connection Diagram of Test System ..... 8

    2.3. Test Software ..... 8

**3. TEST RESULT ..... 9**

    3.1. Test of Radiated Emission Measurement ..... 9

**4. LIST OF MEASURING EQUIPMENT ..... 13**

**5. UNCERTAINTY OF EVALUATION ..... 14**

**APPENDIX A. PRODUCT EQUALITY DECLARATION**

**APPENDIX B. ORIGINAL REPORT**





### SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.109	7.2.3.2	Radiated Emission	< 15.109 limits or < RSS-Gen table 1 limits (Section 6)	PASS	Under limit 5.10 dB at 479.90 MHz

# 1. General Description

## 1.1. Applicant

**Motorola Mobility, Inc.**  
8F., No. 9, Songgao Rd., Taipei 110, Taiwan, R.O.C.

## 1.2. Manufacturer

**Chi Mei Communication Systems, Inc.**  
No. 4, Mingsheng Street, Tucheng District, New Taipei City, 23678, Taiwan

## 1.3. Feature of Equipment Under Test

Product Feature & Specification	
<b>Equipment</b>	Mobile Phone
<b>Brand Name</b>	MOTOROLA
<b>Model Name</b>	XT530
<b>FCC ID</b>	IHDT56MY3
<b>Tx Frequency Range</b>	GSM850 : 824 MHz ~ 849 MHz GSM1900 : 1850 MHz ~ 1910 MHz Bluetooth : 2400 MHz ~ 2483.5 MHz WLAN : 2400 MHz ~ 2483.5 MHz
<b>Rx Frequency Range</b>	GSM850 : 869 MHz ~ 894 MHz GSM1900 : 1930 MHz ~ 1990 MHz Bluetooth : 2400 MHz ~ 2483.5 MHz WLAN : 2400 MHz ~ 2483.5 MHz GPS : 1.57542 GHz
<b>Antenna Type</b>	WWAN : Fixed Internal Antenna WLAN/Bluetooth : PIFA Antenna
<b>HW Version</b>	V3.0
<b>SW Version</b>	V4.170
<b>Type of Modulation</b>	GSM / GPRS : GMSK EDGE : 8PSK Bluetooth (1Mbps) : GFSK Bluetooth EDR (2Mbps) : $\pi/4$ -DQPSK Bluetooth EDR (3Mbps) : 8-DPSK 802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) GPS : BPSK
<b>EUT Stage</b>	Identical Prototype

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 1.4. Test Site

<b>Test Site</b>	SPORTON INTERNATIONAL INC.	
<b>Test Site Location</b>	No. 52, Hwa Ya 1 <sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
<b>Test Site No.</b>	<b>Sporton Site No.</b>	<b>FCC/IC Registration No.</b>
	03CH06-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 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2003
- IC RSS-Gen Issue 3

**Remark:** All test items were verified and recorded according to the standards and without any deviation during the test.

## 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.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	N/A
5.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
6.	LCD Monitor	Lenovo	6135-AB1	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
7.	iPod	Apple	A1199	FCC DoC	Unshielded, 1.2 m	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 (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

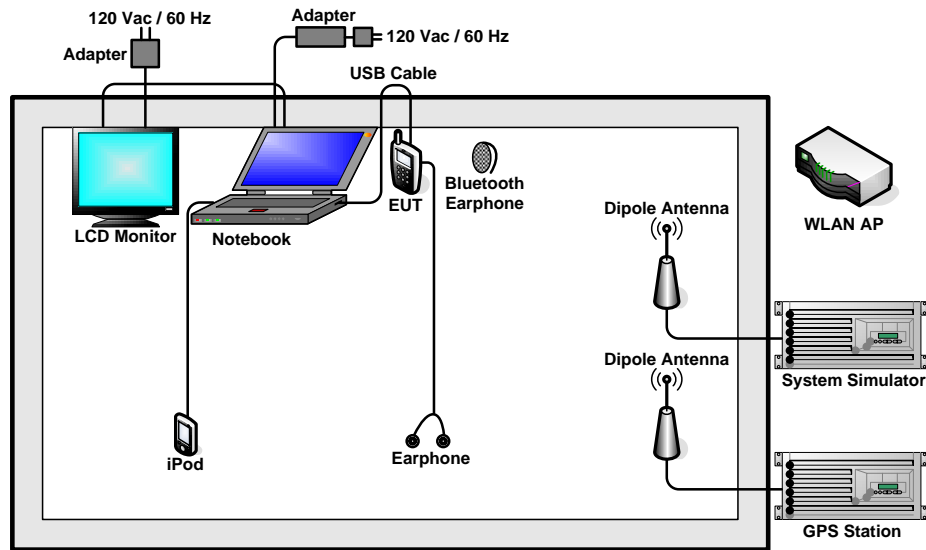
The following tables are showing the test modes as the worst cases and recorded in this report.

Item	EUT Configuration	Test Condition
		EMI RE
1.	Charging Mode (EUT with notebook)	☒

**Abbreviations:** EMI RE 1G: EUT radiated emissions 1GHz

Test Items	EUT Configure Mode	Function Type
Radiated Emissions	1	Mode 1 : GSM1900 Idle + Bluetooth Idle + WLAN Idle + Earphone + GPS Rx + USB Cable (Link with Notebook)

## 2.2. Connection Diagram of Test System



## 2.3. Test Software

The EUT was in GSM idle mode during the testing. The EUT was synchronized to the BCCH, and is in continuous receiving mode by setting system simulator's paging reorganization.

At the same time, the EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

1. Execute the program, "Winthrax", installed in notebook for active sync files transfer with EUT via USB cable.
2. Execute "GPS Test" to make the EUT receive signals from GPS station continuously.

### 3. Test Result

#### 3.1. Test of Radiated Emission Measurement

##### 3.1.1. Limit of Radiated Emission

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

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

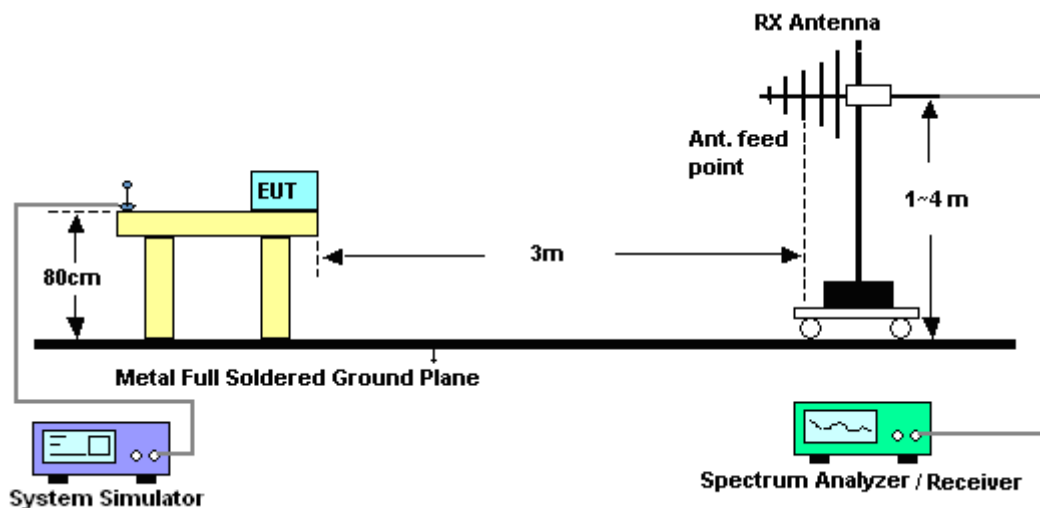
##### 3.1.2. Measuring Instruments

See list of measuring instruments of this test report.

**3.1.3. Test Procedures**

1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported
8. Emission level (dBuV/m) = 20 log Emission level (uV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

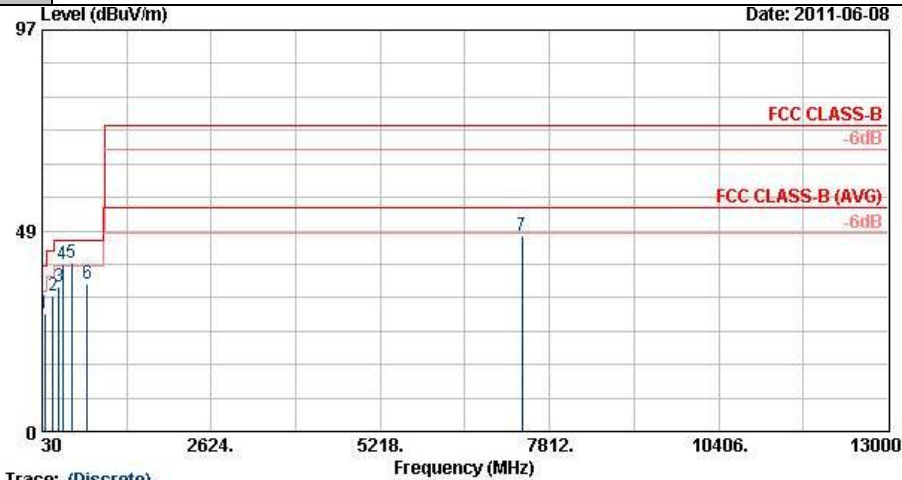
**3.1.4. Test Setup of Radiated Emission**





3.1.5. Test Result of Radiated Emission

Test Mode :	Mode 1	Temperature :	23~24°C
Test Engineer :	Hayden Wu	Relative Humidity :	49~50%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	GSM1900 Idle + Bluetooth Idle + WLAN Idle + Earphone + GPS Rx + USB Cable (Link with Notebook)		

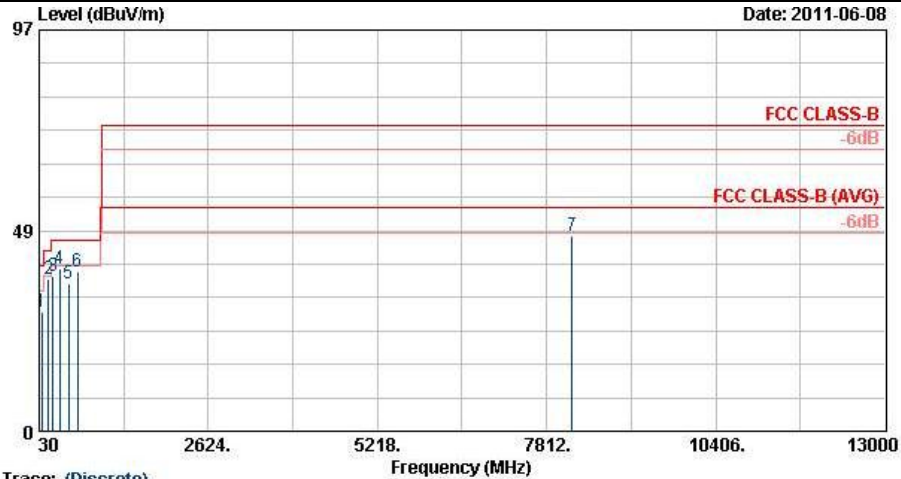


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m HF-ANT\_090824 HORIZONTAL  
 Power : FromSystem  
 Project : FD 142113-02  
 Memo : Mode 1

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	66.99	28.58	-11.42	40.00	52.92	6.34	1.01	31.69	---	---	Peak
2	199.29	32.72	-10.78	43.50	53.36	9.35	1.66	31.65	---	---	Peak
3	284.34	35.07	-10.93	46.00	51.56	13.21	1.99	31.69	---	---	Peak
4 !	344.80	40.34	-5.66	46.00	55.19	14.51	2.21	31.57	---	---	Peak
5 @	479.90	40.90	-5.10	46.00	52.65	17.41	2.60	31.77	100	178	Peak
6	719.30	35.62	-10.38	46.00	44.71	19.66	3.30	32.05	---	---	Peak
7	7388.00	47.23	-26.77	74.00	60.80	36.14	7.23	56.93	100	258	Peak



Test Mode :	Mode 1	Temperature :	23~24°C
Test Engineer :	Hayden Wu	Relative Humidity :	49~50%
Test Distance :	3m	Polarization :	Vertical
Function Type :	GSM1900 Idle + Bluetooth Idle + WLAN Idle + Earphone + GPS Rx + USB Cable (Link with Notebook)		



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m HF-ANT\_090824 VERTICAL  
 Power : FromSystem  
 Project : FD 142113-02  
 Memo : Mode 1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	67.53	28.67	-11.33	40.00	53.02	6.33	1.02	31.69	---	---	Peak
2	172.29	36.71	-6.79	43.50	57.18	9.64	1.57	31.67	---	---	Peak
3	239.79	37.53	-8.47	46.00	55.41	11.97	1.81	31.65	---	---	Peak
4	344.80	39.37	-6.63	46.00	54.22	14.51	2.21	31.57	115	198	Peak
5	479.90	35.78	-10.22	46.00	47.54	17.41	2.60	31.77	---	---	Peak
6	614.30	38.59	-7.41	46.00	48.52	19.20	2.96	32.09	---	---	Peak
7	8206.00	47.16	-26.84	74.00	60.22	36.16	7.38	56.60	112	148	Peak



### 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100057	9KHz-40GHz	Oct. 25, 2010	Oct. 24, 2011	Radiation (03CH06-HY)
EMI TEST RECEIVER	R&S	ESCI 7	100724	9kHz~7GHz	Aug.19, 2010	Aug.19, 2011	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Oct. 31, 2010	Oct. 31, 2011	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz~18GHz	Aug. 02, 2010	Aug. 01, 2011	Radiation (03CH06-HY)
Double Ridge Horn Antenna	Training Research	AH-0801	95119	8GHz~18GHz	Oct. 20, 2010	Oct. 19, 2011	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 18, 2010	Oct. 17, 2011	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz- 26.5GHz	Apr. 14, 2011	Apr. 13, 2012	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9KHz~1GHz	Apr. 14, 2011	Apr. 13, 2012	Radiation (03CH06-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Jul. 28, 2011	Radiation (03CH06-HY)
System Simulator	R&S	CMU200	117995	N/A	Aug. 11, 2010	Aug.10, 2011	Radiation (03CH06-HY)
GPS Station	T&E	GS-50	N/A	N/A	N/A	N/A	Radiation (03CH06-HY)

## 5. Uncertainty of Evaluation

### 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
<b>Combined Standard Uncertainty <math>Uc(y)</math></b>	<b>1.27</b>		
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2Uc(y)</math>)</b>	<b>2.54</b>		

### 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	$\pm 0.10$	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	$\pm 1.70$	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	$\pm 0.50$	Normal (k=2)	0.25	1	0.25
Receiver Correction	$\pm 2.00$	Rectangular	1.15	1	1.15
Antenna Factor Directional	$\pm 1.50$	Rectangular	0.87	1	0.87
Site Imperfection	$\pm 2.80$	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
<b>Combined Standard Uncertainty <math>Uc(y)</math></b>	<b>2.36</b>				
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2Uc(y)</math>)</b>	<b>4.72</b>				



Appendix A. Product Equality Declaration

**Chi Mei Communication System Inc.**

Tel: 886-2-2268-5511; Fax: 886-2-2269-2922

Date: June 14, 2011

**Product Equality Declaration**

We, Chi Mei Communication System Inc., declare on our sole responsibility for the product of XT530 (model name) as below:

The difference between XT530 (900/2100) and XT531 (850/2100) is:

- ◆ WCDMA Band difference : from Band I & V to Band I & VIII.
- ◆ XT531 use Non-OMTP type earphone; XT530 use OMTP type earphone.
- ◆ Schematic is the same with XT531 (850/2100). Only BOM difference listed below.

Reference #	Parent Model XT531 (850/2100)	Current Model XT530 (900/2100)
R811	SR042230230	NA
R1321/R1302	NA	SR000000252
R1320/R1317	SR000000252	NA
U2401	SF25836M0A1	SF1X897M0A1
U2402	SA077704170	SA077705170
U2403	SF2X836M021	S09FP897000
C2414	SR000000452	SI229J20801

Except Listings above, the others are the same as previous version.

Should you have any questions or comments regarding this matter, please have my best attention.

Sincerely yours,

Sylvia Wu  
Chi Mei Communication System Inc.  
Tel: 886-2-2268-5511  
Fax: 886-2-2269-2922  
E-Mail: sylviawu@fih-foxconn.com



## **Appendix B. Original Report**

Please refer to Sporton report number FC142113A as below.