



**MOBILE DEVICES BUSINESS**

**PRODUCT SAFETY AND COMPLIANCE  
EMC LABORATORY**

**EMC TEST REPORT**

**Test Report Number** – 23127-1 Supplement

**Report Date** – June 22, 2009

The test results contained herein relate only to the model(s) identified. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics.

As the responsible EMC Engineer, I hereby declare that the equipment tested as specified in this report conforms to the requirements indicated.

Signature: 

Name: Thanigaiselvan Palaniswami

Title: EMC Engineer

Date: June 19, 2009

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THIS REPORT MUST NOT BE USED TO CLAIM PRODUCT ENDORSEMENT BY A2LA OR ANY AGENCY OF THE U.S. GOVERNMENT.

A2LA Certificate Number: 2518-02

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## Test Report Details

Tests Performed By: Motorola Mobile Devices business (MDb)  
Product Safety and Compliance Group  
600 North US Hwy 45  
Libertyville, IL 60048  
PH (847) 523-6167 Fax (847) 523-4538  
Motorola MDb FRN: 0004321311  
FCC Registration Number: 316588  
Industry Canada Number: IC1090-1

Tests Requested By: Motorola Inc.  
Mobile Devices business  
600 North US Hwy 45  
Libertyville, IL 60048

Product Type: Cellular Phone

Signaling Capability: CDMA 800 & 1900, CDMA 1X/EVDO Rel A 800  
& 1900, Bluetooth

FCC ID: IHDT56KR1

Serial Numbers: 80418CA3, 80A98DEC

Testing Complete Date: June 19, 2009

## Applicable Standards

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47:

  X   Part 15 Subpart B – Unintentional Radiators

Applicable Standards: ANSI 63.4 2003

**Summary of Testing**

Test #	Test Name	Pass/Fail
1	Field Strength of Spurious Emissions from Unintentional Radiators	Pass
2	AC Line Conducted Emissions	Pass

Test #	Test Name	Margin with respect to the Limit
1	Field Strength of Spurious Emissions from Unintentional Radiators	see results
2	AC Line Conducted Emissions	see results

The margin with respect to the limit is the minimum margin for all modes and bands.

**General and Special Conditions**

The EUT was tested using a fully charged battery.

All testing was done in an indoor controlled environment. The temperature and the relative humidity were maintained within the ANSI C63.4 2003 Standard requirements during the entire duration of testing.

Equipment List

Manufacturer	Equipment Type	Model No.	Serial Number	Calibration Due Date
Rohde Schwarz	Receiver	ESIB40	100226	1/30/10
Rohde Schwarz	Receiver	ESI26	100001	6/03/09
Rohde Schwarz	Receiver	ESI26	838786/010	5/01/10
A.H. Systems	DRG Horn Antenna	SAS 200/571	365	12/23/09
ETS	Log-Periodic Antenna	3148	1188	7/30/09
ETS	Biconical Antenna	3110B	3370	7/29/09
Agilent	Microwave Preamplifier	8449B	3008A01442	2/25/10
Attenuator	Weinschel	AS-6	6675	NCR
Attenuator	Weinschel	AS-6	6677	NCR
ETS	LISN	3810/2NM	00062907	12/10/09
ETS	LISN	3810/2NM	00062912	12/10/09
Dell	Laptop Computer	M20	NA	NA
Iomega	Zip Drive	Z250S	P9HM1992CK	NA
Olympus	Camera	D-600L	4020727	NA

All equipment is on a one-year calibration cycle.

All test equipment was within their calibration date during the time of testing. When equipment went out of calibration during testing it was replaced using a similar piece of calibrated equipment. All these equipments are listed in the equipment list.

The Dell M20 Laptop Computer, Iomega Z250S Zip Drive and the Olympus D-600L Camera are labeled as DoC.

## **Measurement Procedures and Data**

### **FIELD STRENGTH OF EMISSIONS FROM UNINTENTIONAL RADIATORS**

#### **Measurement Procedure**

The equipment under test is placed inside the semi-anechoic chamber on a wooden table on the turntable center. For each radiated emission, the antenna mast is raised and lowered from 1 to 4 meters and the turntable is rotated 360 degrees to obtain a maximum peak reading on the spectrum analyzer. The final radiated emissions are then measured using an EMI receiver employing a CISPR quasi-peak detector function below 1000 MHz and an average detector function above 1000 MHz. This is repeated for both horizontal and vertical polarizations of the receive antenna.

The field strength of each radiated emission is calculated by correcting the EMI receiver level for cable loss, amplifier gain and antenna correction factors.

$$\text{Field Strength (dBuV/m)} = \text{EMI Receiver Level (dBuV)} + \text{Cable Loss (dB)} - \text{Amplifier Gain (dB)} + \text{Antenna Correction Factor (1/m)}$$

#### **Test Setup**

The EUT and the host equipment were setup according to the procedures in ANSI C63.4-2003. The EUT was connected to a laptop computer using a USB data cable. The USB data cable is 1 m in length. The parallel and the serial ports of the computer were populated. The EUT was communicating with the laptop computer continuously.

**Measurement Results**

Operating Mode – Rx Mode, Data Transfer Mode.

Notes: Worst Case emissions reported.

30 MHz – 1000 MHz

Frequency	Level	Measured	Transd	Cables	Limit	Margin	Height	Angle	Pol.
MHz	dBuV/m	dBuV	dB	dB	dBuV/m	dB	cm	deg	
39.2	33.7	15.83	11	6.9	40	6.3	100	113	VERT
39.28	33.28	15.43	10.9	6.9	40	6.7	114	126	VERT
69.96	35.64	19.73	8.6	7.3	40	4.4	100	236	VERT
70.84	37.92	21.99	8.6	7.3	40	2.1	100	238	VERT
70.92	37.73	21.8	8.6	7.3	40	2.3	100	264	VERT
71.16	37.98	22.02	8.6	7.3	40	2	100	246	VERT
320.64	44.7	20.52	15.1	9	46	1.3	100	261	HORI
384.76	42.81	17.57	15.9	9.3	46	3.2	100	182	HORI
865.52	33.72	-0.46	23.1	11.1	46	12.3	100	277	HORI
923.36	35.2	-0.46	24.4	11.3	46	10.8	142	229	HORI
946.92	34.84	-0.46	24	11.3	46	11.2	133	268	HORI
959.36	35.06	-0.32	24	11.4	46	10.9	182	184	HORI

Above 1 GHz

Frequency	Level	Measured	Transd	Gain	Limit	Margin	Height	Angle	Pol.
MHz	dBuV/m	dBuV	dB	dB	dBuV/m	dB	cm	deg	
1063.3	30.57	34.39	23.6	27.4	54	23.4	146	328	VERT
1122	32.14	35.6	23.8	27.3	54	21.9	150	334	VERT
1127	36.56	39.99	23.8	27.2	54	17.4	191	336	VERT
1130.1	36.11	39.53	23.8	27.2	54	17.9	192	337	VERT
1500.2	32.71	33.92	25	26.2	54	21.3	100	84	VERT
1511.4	31.08	32.19	25.1	26.2	54	22.9	150	238	VERT

Peak Radiated Data for Emissions Above 1GHz

Frequency	Level	Angle	Height	Pol.
MHz	dBuV/m	deg	cm	
1062.124	49.27	326	100	VER
1122.244	48.71	336	200	VER
1126.253	50.6	339	200	VER
1130.261	49.96	339	200	VER
1498.998	48.22	106	100	VER
1513.026	51.19	231	100	VER

## **AC LINE CONDUCTED EMISSIONS**

### **Measurement Procedure**

Measured levels of ac power line conducted emission shall be the radio-noise voltage from the line probe or across the 50  $\Omega$  LISN port, where permitted, terminated into a 50  $\Omega$  noise meter, or where permitted or required, the radio-noise current on the power line sensed by a current probe.

All radio-noise voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord or calibrated extension cord by the use of mating plugs and receptacles on the EUT and LISN. Equipment shall be tested with power cords that are normally supplied using an LISN, the 50  $\Omega$  measuring port is terminated by a 50  $\Omega$  radio-noise meter or a 50  $\Omega$  resistive load. All other ports are terminated in 50  $\Omega$ .

Detectors - Quasi Peak and Average Detector

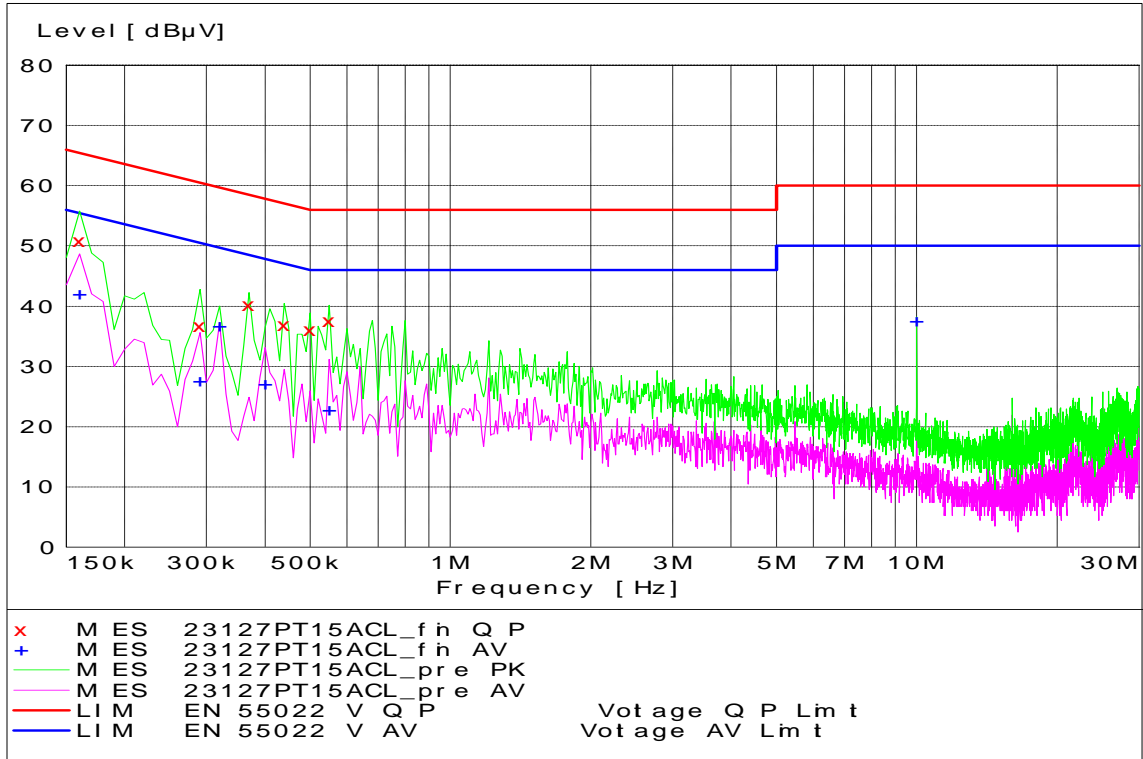
### **Test Setup**

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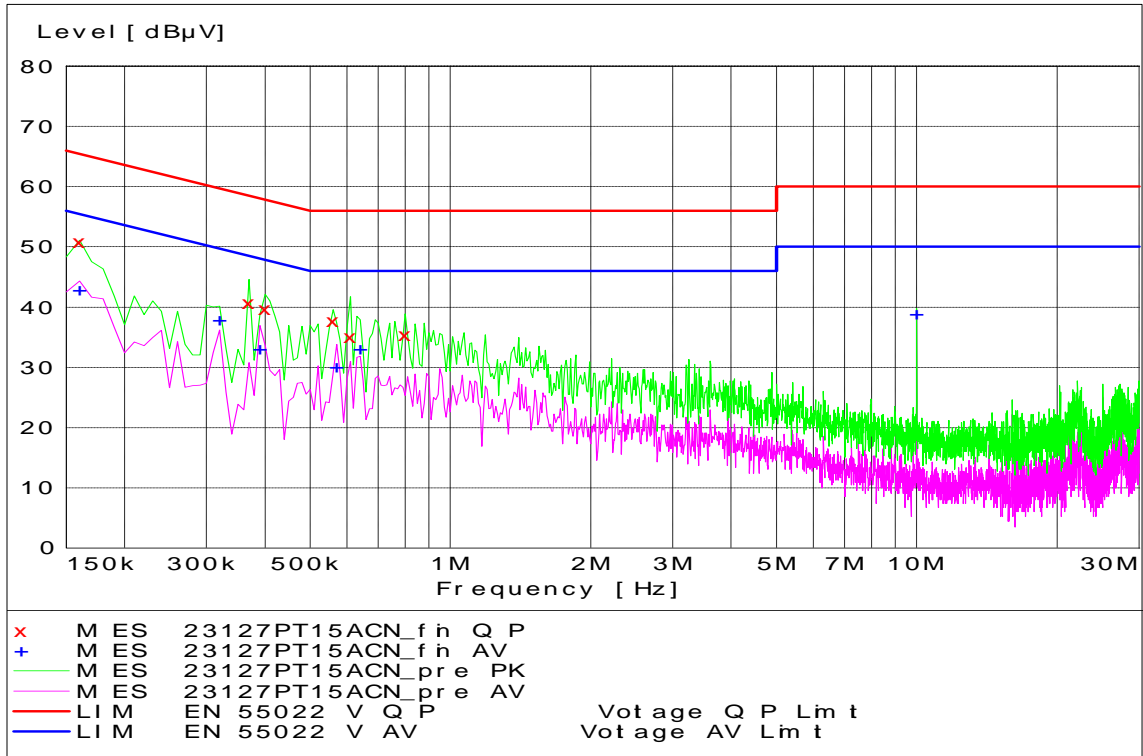
### **Measurement Results**

See attached:

### AC LINE COMPUTER PERIPHERAL - Tx Mode - Line Coupling



### AC LINE COMPUTER PERIPHERAL - Tx Mode - Neutral Coupling



**End of Test Report**