



MOBILE DEVICES BUSINESS

**PRODUCT SAFETY AND COMPLIANCE
EMC LABORATORY**

EMC TEST REPORT

Test Report Number – 19720-1 Supplement

Report Date – December 19, 2006

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: Albert J. Patapack

Title: EMC Engineer

Date: December 19, 2006

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A2LA Certificate Number: 1651-01

Table of Contents

<u>Description</u>	<u>Page</u>
Test Report Details	3
Applicable Standards	3
Summary of Testing	4
General and Special Conditions	4
Equipment and Cable Configuration	5
Measurement Procedures and Data	6

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: IC3908-1

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

Signaling Capability: CDMA 800, CDMA 1900, Bluetooth

FCC ID : IHDT56HC1

Serial Numbers: 80D9E0F6, 805CE168, 80A64C02,
807F3D2B, 80EB7C49, 80C68034

Testing Complete Date: December 19, 2006

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 with an average temperature of 22° C and relative humidity of 50%.

Equipment List

Manufacturer	Equipment Type	Model No.	Serial Number	Calibration Due Date
Rohde Schwarz	Receiver	ESI26	100001	3/08/07
Rohde Schwarz	Receiver	ESI40	100226	6/05/07
A.H. Systems Inc.	DRG Horn Antenna	SAS 200/571	365	5/12/07
ETS	Log-Periodic Antenna	3148	1188	6/05/07
ETS	Biconical Antenna	3110B	3370	3/03/07
Attenuator	Weinschel	AS-6	6675	1/06/07
Attenuator	Weinschel	AS-6	7075	06/29/07
ETS	LISN	3810/2NM	00062907	5/10/07
ETS	LISN	3810/2NM	00062912	5/10/07
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.

The Dell M20 Laptop Computer, the 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.

30 MHz – 1000 MHz

Frequency MHz	Level dBµV/m	Measured dBµV	Transd dB	Cables dB	Limit dBµV/m	Margin dB	Height cm	Angle deg	Pol.
35.44	33.53	13.49	12.2	7.8	40	6.5	100	240	VERT
39.16	34.97	15.59	11.5	7.9	40	5	100	113	VERT
71.88	35.17	17.5	9	8.7	40	4.8	100	244	VERT
75.92	37.02	18.77	9.5	8.8	40	3	100	272	VERT
79.68	34.04	15.51	9.7	8.8	40	6	100	267	VERT
878.88	38.79	-0.46	23.5	15.8	46	7.2	150	20	HORI
904.68	39.27	-0.36	23.7	15.9	46	6.7	100	333	HORI
940.88	38.44	-0.36	22.8	16.0	46	7.6	100	188	VERT

Above 1 GHz

Frequency MHz	Level dBµV/m	Measured dBµV	Transd dB	Gain dB	Limit dBµV/m	Margin dB	Height cm	Angle deg	Pol.
1118.9	37.84	22.81	23.8	8.8	53.9	16.1	145	279	VERT
1168.0	36.35	20.69	24.1	8.4	53.9	17.5	131	98	VERT
1512.6	37.62	19.77	25.4	7.6	53.9	16.3	130	132	VERT
1948.8	41.69	19.73	28.1	6.2	53.9	12.2	245	201	HORI
1982.5	42.16	19.48	28.6	6	53.9	11.7	169	20	HORI
1988.0	41.8	19.41	28.3	5.9	53.9	12.1	130	181	VERT
1994.0	41.91	19.48	28.4	6	53.9	12	131	198	VERT
1994.8	41.96	19.53	28.4	6	53.9	11.9	148	200	VERT

Notes: Worst Case emissions reported.

Peak Radiated Data for Emissions Above 1GHz

Frequency MHz	Level dBµV/m	Angle deg	Height cm	Pol.
1118.236473	53.05	272	100	VER
1120.240481	51.00	351	100	VER
1166.332665	51.78	92	100	VER
1168.336673	53.07	92	100	VER
1511.022044	49.25	39	100	VER
1513.026052	53.87	154	100	VER
1947.895792	53.45	180	200	HOR
1949.899800	52.41	78	100	HOR
1981.963928	53.32	25	200	HOR
1983.967936	53.19	4	100	VER
1987.975952	52.81	109	100	HOR
1989.979960	53.97	159	100	VER
1993.987976	53.45	242	200	HOR
1995.991984	53.72	222	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 Ω LISN port, where permitted, terminated into a 50 Ω 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 Ω measuring port is terminated by a 50 Ω radio-noise meter or a 50 Ω resistive load. All other ports are terminated in 50 Ω .

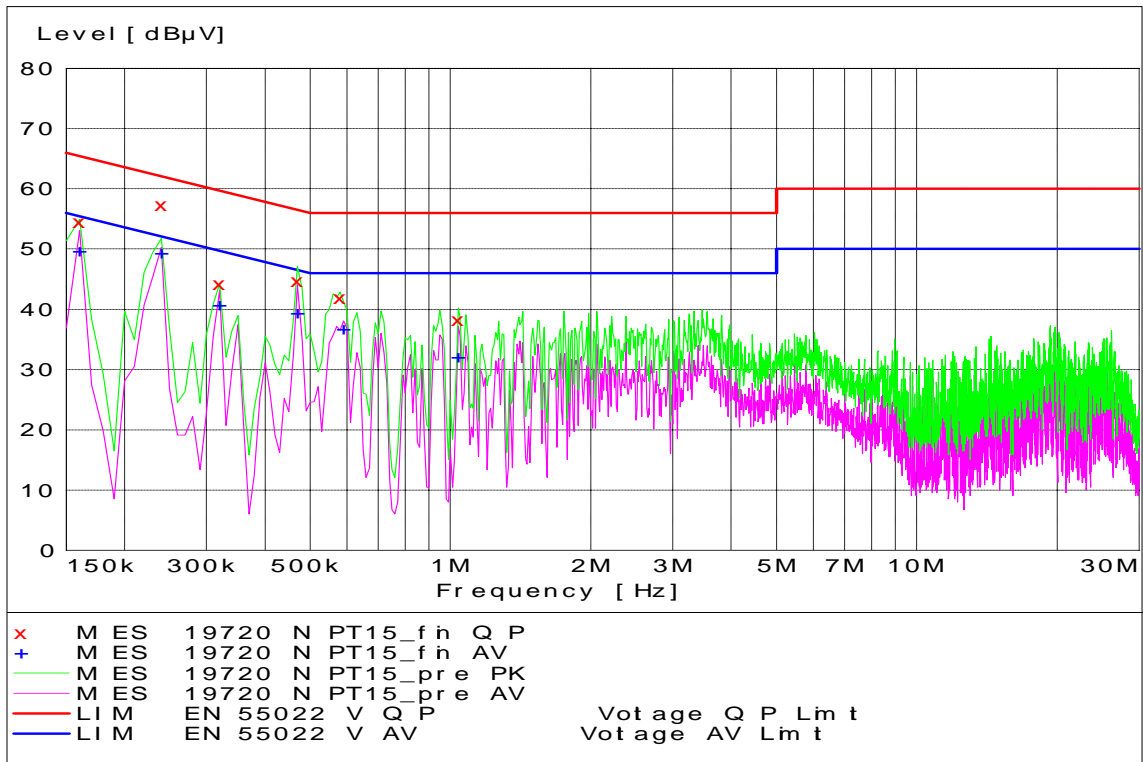
Detectors - Quasi Peak and Average Detector

Test Setup

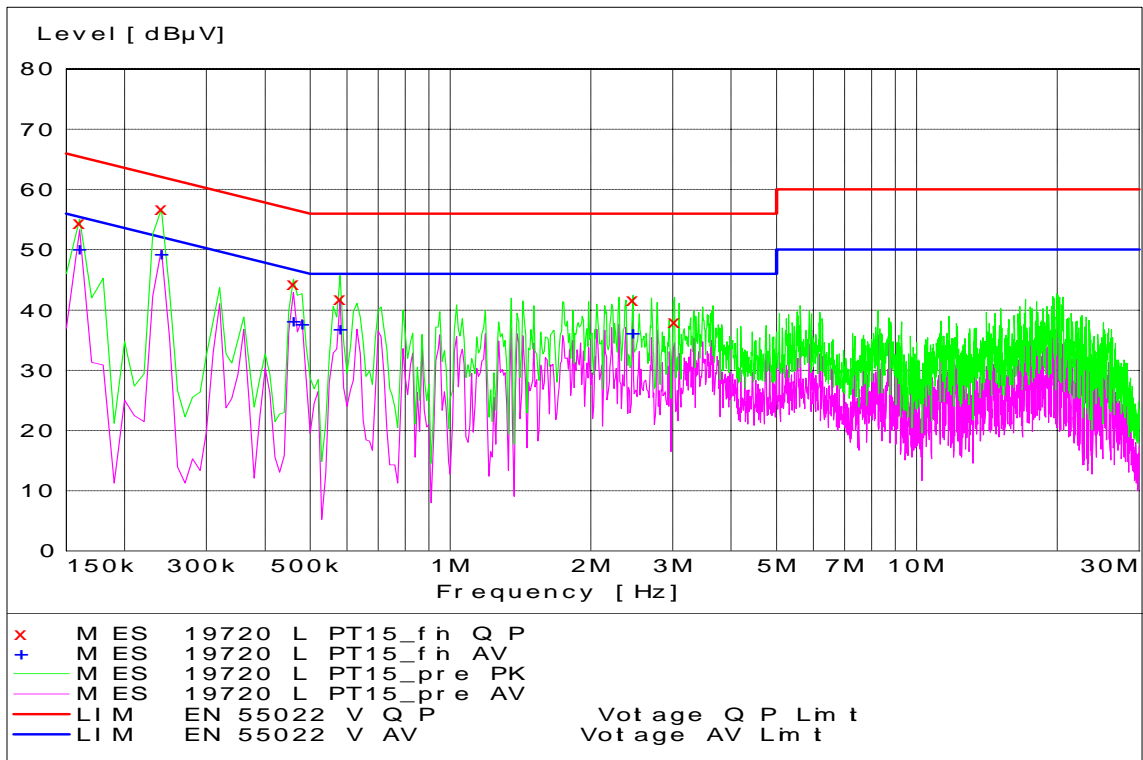
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Measurement Results

See attached:



AC LINE COMPUTER PERIPHERAL (NEUTRAL)



AC LINE COMPUTER PERIPHERAL (LINE)

End of Test Report