



MOBILE DEVICES BUSINESS

**PRODUCT SAFETY AND COMPLIANCE
EMC LABORATORY**

EMC TEST REPORT

Test Report Number – 22642-1 Supplement

Report Date – January 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: Albert J. Patapack

Title: EMC Engineer

Date: January 22, 2009

This report must not be reproduced, except in full, without written approval from this laboratory.

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

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: 1090-1

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

Product Type: Cellular Phone

Signaling Capability: GSM 1900, Bluetooth

FCC ID: IHDT6KH1

Serial Numbers: TLU3110072

Testing Complete Date: December 12, 2008

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	838786/010	2/28/2009
Rohde Schwarz	Receiver	ESI26	100001	6/03/2009
ETS	DRG Horn Antenna	3115	6222	5/02/2009
A.H. Systems	DRG Horn Antenna	SAS 200/571	265	1/18/09
ETS	Log-Periodic Antenna	3148	1188	7/30/2009
ETS	Biconical Antenna	3110B	3370	7/29/2009
Attenuator	Weinschel	AS-6	6675	6/13/2009
Attenuator	Weinschel	AS-6	6677	6/17/2009
ETS	LISN	3810/2NM	2179	1/23/2009
ETS	LISN	3810/2NM	00023630	1/23/2009
Dell	Laptop Computer	M20	NA	NA
Iomega	Zip Drive	Z250S	P9HM1992CK	NA
Olympus	Camera	D-600L	4020727	NA

All testing was performed using equipment that was within calibration at the time that the test was performed. No equipment listed in the table above was used after the specified calibration due date. If, during the course of product testing, a piece of equipment went out of calibration and that piece of equipment was needed to complete product testing, a similar piece of calibrated equipment was substituted. If a substitution was made, that new piece of equipment would be listed in the above table along with the piece that was removed from service. 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.

Note: Worst Case emissions reported.

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.
39.16	26.84	7.91	11.0	8.0	40	13.2	128	151	VERT
70.16	28.76	11.71	8.6	8.4	40	11.2	120	221	VERT
79.56	25.46	7.52	9.3	8.7	40	14.5	235	239	VERT
192.4	35.07	9.34	15.7	10.0	43.5	8.4	120	25	VERT
320.64	45.21	18.89	15.1	11.2	46	0.8	100	258	HORI
903.16	37.21	-1.32	24.0	14.6	46	8.8	400	158	HORI
932.56	37.70	-1.27	24.2	14.7	46	8.3	384	182	HORI
951.64	37.48	-1.27	23.9	14.8	46	8.5	190	321	HORI

Above 1 GHz

Frequency MHz	Level dBμV/m	Measured dBμV	Transd dB	Gain dB	Limit dBμV/m	Margin dB	Height cm	Angle deg	Pol.
1118.3	39.88	33.22	23.9	17.3	54	14.1	239	326	VERT
1118.6	41.89	35.22	23.9	17.3	54	12.1	222	332	VERT
1122.1	40.20	33.50	24	17.3	54	13.8	239	332	VERT
1122.7	42.92	36.22	24	17.3	54	11.1	384	342	VERT
1126.2	42.78	36.04	24	17.3	54	11.2	385	356	VERT
1126.3	42.81	36.08	24	17.3	54	11.2	375	359	VERT
1128.5	41.21	34.46	24	17.2	54	12.8	208	333	VERT
1130.6	42.48	35.71	24	17.2	54	11.5	380	359	VERT
1487.5	37.08	29.39	24.6	16.9	54	16.9	119	272	VERT
1505.2	37.35	29.44	24.8	16.9	54	16.7	380	267	HORI
1511.5	36.86	29.11	24.6	16.9	54	17.1	137	194	VERT
1512.5	37.26	29.33	24.8	16.9	54	16.7	379	162	HORI
1963.8	39.47	27.79	27.5	15.9	54	14.5	230	72	HORI
1991.9	39.82	27.60	28.1	15.8	54	14.2	380	186	HORI
1995.5	39.93	27.64	28.1	15.8	54	14.1	369	110	HORI

Peak Radiated Data for Emissions Above 1GHz

Frequency MHz	Level dBμV/m	Angle deg	Height cm	Pol.
1116.232465	52.35	328	200	VER
1118.236473	54.07	330	200	VER
1120.240481	53	328	200	VER
1122.244489	54.11	342	400	VER
1124.248497	51.92	340	400	VER
1126.252505	55.51	346	400	VER
1128.256513	55.05	330	200	VER
1130.260521	54.92	360	400	VER
1132.264529	48.61	287	100	VER
1486.973948	53.99	260	100	VER
1488.977956	50.16	239	300	VER
1503.006012	51.05	200	100	VER
1505.01002	50.27	155	400	HOR
1507.014028	52.61	269	400	HOR
1511.022044	52.66	200	100	VER
1513.026052	53.52	155	400	HOR
1961.923848	50.42	348	400	VER
1963.927856	51.91	94	200	HOR
1989.97996	50.9	138	400	VER
1991.983968	52.44	180	400	HOR
1993.987976	52.25	89	400	HOR
1995.991984	51.5	120	100	HOR
1997.995992	51.9	196	400	HOR

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 .

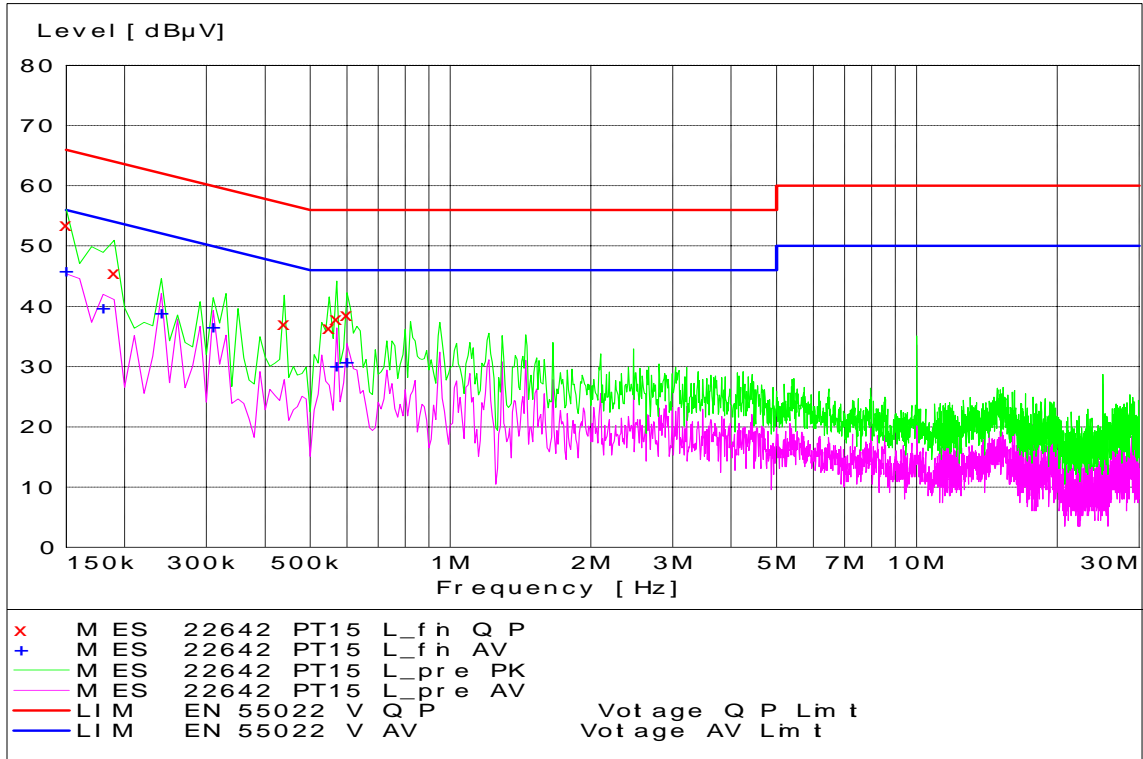
Detectors - Quasi Peak and Average Detector

Test Setup

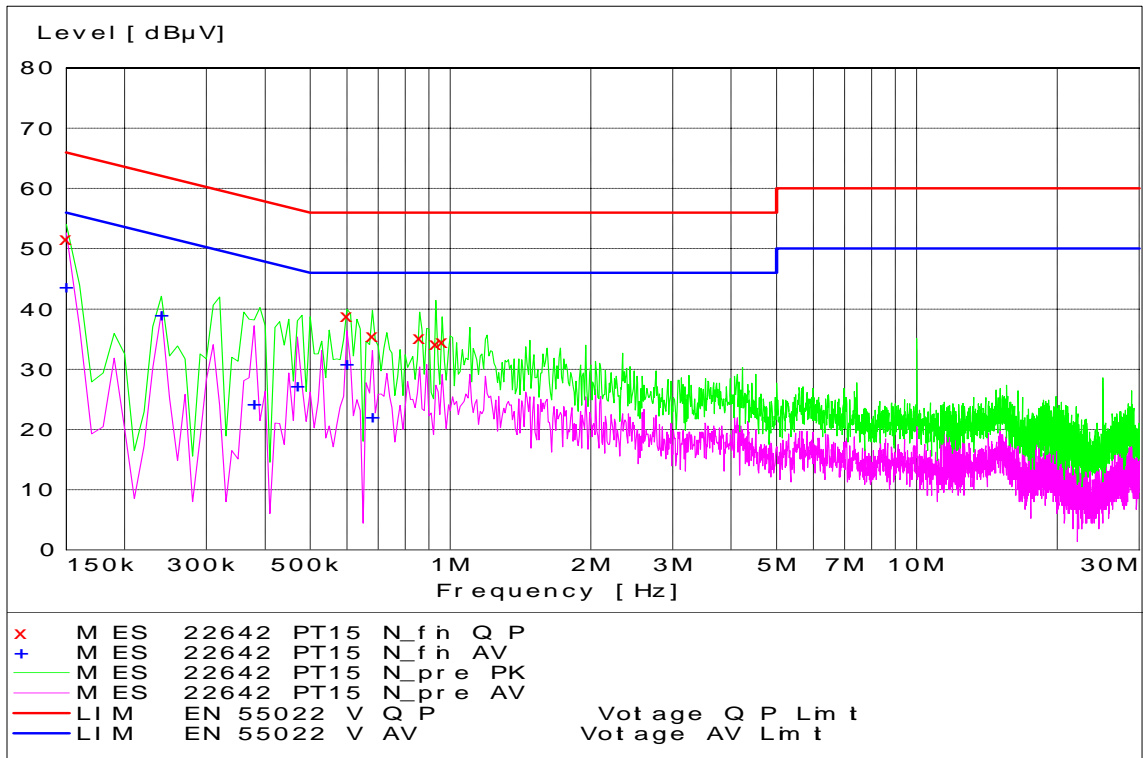
The EUT and the host equipment were setup according to the procedures in ANSI C63.4-2003. The EUT was connected to a laptop computer using a USB data cable. The USB data cable is 1 m in length. The parallel and the serial ports of the computer were populated. The EUT was communicating with the laptop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

Measurement Results

See attached:



Pt 15 - Tx Mode - Line Coupling



Pt 15 - Tx Mode - Neutral Coupling

End of Test Report