



MOBILE DEVICES BUSINESS

**PRODUCT SAFETY AND COMPLIANCE
EMC LABORATORY**

EMC TEST REPORT

Test Report Number – 21541-1 Supplement

Report Date – February 18, 2008

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: February 18, 2008

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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: IC3908-1

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

Signaling Capability: CDMA 800, CDMA 1900, EV-EO Rev0, Bluetooth

FCC ID : IHDT56JH1

Serial Numbers: 80D36724, 80E1DB33, 8015F830,
 80443F01, 80D1F0E8

Testing Complete Date: February 3, 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	3/19/2008
Rohde Schwarz	Receiver	ESI40	100001	5/02/2008
A.H. Systems Inc.	DRG Horn Antenna	SAS 200/571	365	5/24/2008
ETS	Log-Periodic Antenna	3148	1188	6/18/2008
ETS	Biconical Antenna	3110B	3370	3/15/2008
Attenuator	Weinschel	AS-6	6675	1/31/2008
Attenuator	Weinschel	AS-6	7074	7/23/2008
Attenuator	Weinschel	AS-6	6677	6/21/2008
ETS	LISN	3810/2NM	62907	5/02/2008
ETS	LISN	3810/2NM	62912	5/02/2008
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.
38.4	26.35	7.82	10.7	7.9	40	13.7	100	51	VERT
67.96	28.1	11.71	7.8	8.6	40	11.9	100	205	VERT
68.6	28.75	12.35	7.8	8.6	40	11.2	100	221	VERT
69.52	26.73	10.25	7.9	8.6	40	13.3	123	259	VERT
73.4	24.93	8.01	8.2	8.7	40	15.1	150	184	VERT
147.28	37.55	14.35	13.1	10.1	43.5	5.9	100	190	VERT
261.84	36.06	11.5	13.2	11.3	46	9.9	127	177	HORI
309.96	38.53	12.1	14.6	11.8	46	7.5	100	250	HORI
320.64	44.97	17.83	15.2	11.9	46	1	100	260	HORI
352.72	40.56	12.88	15.5	12.1	46	5.4	100	238	HORI
938.12	39.41	-0.7	24.1	16.0	46	6.6	352	57	HORI
940.88	39.5	-0.61	24.1	16.0	46	6.5	100	79	HORI
949.64	39.32	-0.7	24	16.0	46	6.7	250	321	HORI
950	39.33	-0.7	24	16.0	46	6.7	196	323	HORI
954.4	39.48	-0.7	24.1	16.1	46	6.5	100	201	HORI
956.72	39.52	-0.61	24	16.1	46	6.5	100	257	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.
1120.4	32.46	26.46	24.8	18.8	53.9	21.4	150	327	VERT
1130.1	32.5	26.38	24.9	18.7	53.9	21.4	355	359	VERT
1510.6	33.69	25.21	25.1	16.6	53.9	20.2	174	281	VERT
1952.6	36.85	24.25	27.4	14.8	53.9	17	124	17	HORI
1996.2	36.72	24.14	27.2	14.6	53.9	17.2	250	260	VERT

Peak Radiated Data for Emissions Above 1GHz

Frequency MHz	Level dBµV/m	Angle deg	Height cm	Pol.
1118.236473	48.06	335	200	VER
1120.240481	47.89	340	200	VER
1122.244489	48.1	342	400	VER
1128.256513	47.25	65	400	VER
1130.260521	48.3	351	400	VER
1132.264529	44.38	122	200	VER
1509.018036	52.76	276	200	VER
1511.022044	50.57	276	200	VER
1951.903808	49.47	26	100	HOR
1953.907816	49	339	300	VER
1995.991984	48.25	193	100	HOR
1997.995992	49.17	276	300	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 .

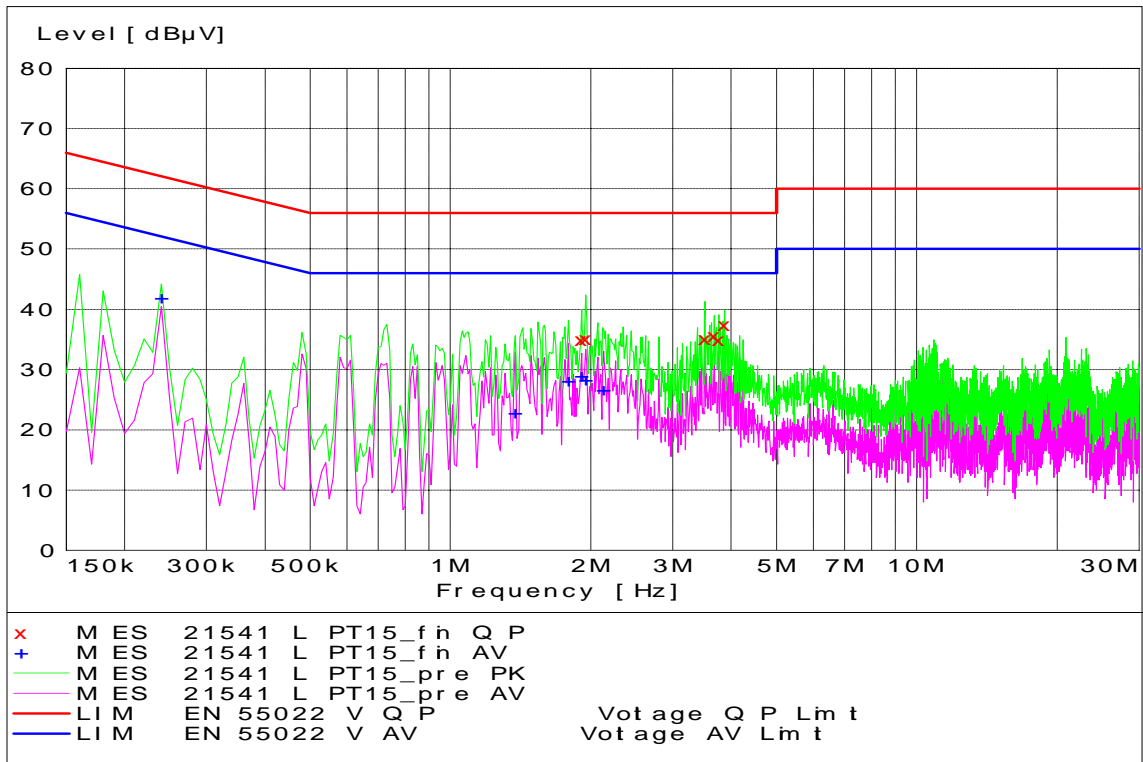
Detectors - Quasi Peak and Average Detector

Test Setup

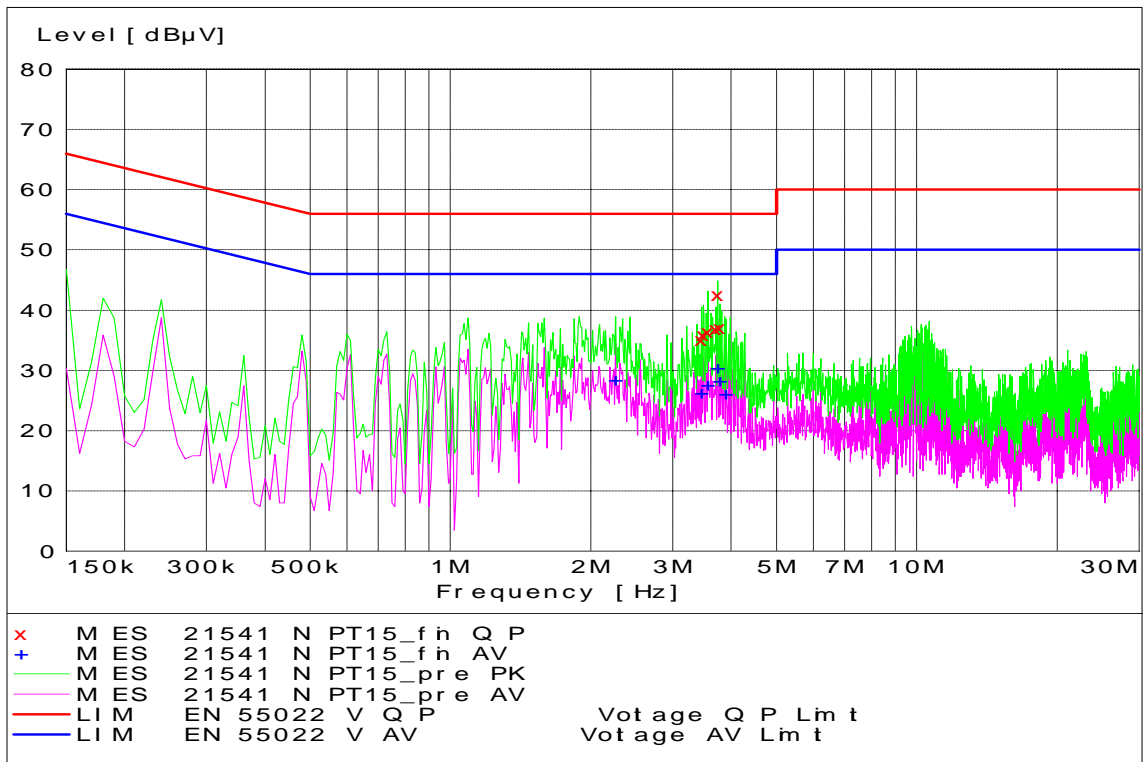
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Measurement Results

See attached:



Pt 15 - Tx Mode - Line Coupling



Pt 15 - Tx Mode - Neutral Coupling

End of Test Report