



MOBILE DEVICES BUSINESS

**PRODUCT SAFETY AND COMPLIANCE
EMC LABORATORY**

EMC TEST REPORT

Test Report Number – 20067-1 Supplement

Report Date – February 27, 2007

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 27, 2007

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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, Bluetooth

FCC ID : IHDT5HD1

Serial Numbers: 142180FA, 142180FB

Testing Complete Date: February 27, 2007

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	7075	6/29/07
Attenuator	Weinschel	AS-6	7074	6/29/07
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.

Notes: Worst Case emissions reported.

30 MHz – 1000 MHz

Frequency MHz	Level dB μ V/m	Measured dB μ V	Transd dB	Cables dB	Limit dB μ V/m	Margin dB	Height cm	Angle deg	Pol.
30.16	36.47	15.18	13.5	7.8	40	3.5	100	88	VERT
30.68	36.73	15.60	13.3	7.8	40	3.3	100	110	VERT
30.72	36.69	15.59	13.3	7.8	40	3.3	100	231	VERT
31.12	36.92	15.82	13.3	7.8	40	3.1	100	172	VERT
31.20	36.73	15.67	13.3	7.8	40	3.3	100	170	VERT
31.44	35.42	14.43	13.2	7.8	40	4.6	100	269	VERT
34.72	38.87	18.74	12.3	7.8	40	1.1	100	193	VERT
34.88	39.10	18.96	12.3	7.8	40	0.9	100	256	VERT
35.16	39.28	19.24	12.2	7.8	40	0.7	100	132	VERT
35.24	39.28	19.24	12.2	7.8	40	0.7	100	169	VERT
35.68	38.30	18.26	12.2	7.8	40	1.7	100	152	VERT
138.80	41.37	19.09	12.3	9.9	43.5	2.1	137	257	HORI
196.36	39.59	13.82	15.2	10.6	43.5	3.9	150	228	HORI
261.80	40.27	16.05	12.9	11.3	46	5.7	100	200	HORI
319.00	39.91	13.07	14.9	11.9	46	6.1	224	213	VERT
366.44	43.14	15.55	15.3	12.3	46	2.9	100	191	HORI
433.08	38.84	8.72	17.1	13.0	46	7.2	100	314	HORI
600.00	41.61	7.48	19.9	14.2	46	4.4	190	15	HORI
871.92	38.69	-0.41	23.3	15.8	46	7.3	250	67	HORI
893.60	39.15	-0.36	23.6	15.9	46	6.8	100	223	HORI
918.80	39.86	-0.41	24.3	15.9	46	6.1	214	358	HORI
957.76	39.67	-0.27	23.8	16.1	46	6.3	304	359	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.
1118.2	41.03	26	23.8	8.8	53.9	12.9	214	268	VERT
1123.0	39.33	24.24	23.8	8.7	53.9	14.6	357	341	VERT
1126.9	39.97	24.81	23.9	8.7	53.9	13.9	233	277	VERT
1130.4	41.38	26.16	23.9	8.7	53.9	12.5	206	273	VERT
1165.1	36.67	21.10	24.1	8.5	53.9	17.2	141	113	VERT
1488.4	37.70	19.96	25.4	7.6	53.9	16.2	281	188	VERT
1499.1	38.09	20.29	25.4	7.6	53.9	15.8	261	193	VERT
1504.7	38.12	20.30	25.4	7.6	53.9	15.8	384	184	VERT
1505.6	38.27	20.44	25.4	7.6	53.9	15.6	214	25	VERT
1510.9	37.99	20.14	25.4	7.6	53.9	15.9	250	31	VERT
1512.4	38.23	20.06	25.7	7.6	53.9	15.7	274	206	HORI
1512.7	38.21	20.36	25.4	7.6	53.9	15.7	385	235	VERT
1966.3	41.92	19.55	28.4	6	53.9	12.0	178	285	HORI
1971.9	41.65	19.48	28.1	6	53.9	12.2	266	236	VERT
1981.4	41.75	19.46	28.3	6	53.9	12.1	265	74	VERT
1988.8	42.14	19.35	28.7	5.9	53.9	11.8	261	212	HORI

Peak Radiated Data for Emissions Above 1GHz

Frequency MHz	Level dB μ V/m	Angle deg	Height cm	Pol.
1116.23	51.74	345	400	VER
1118.24	53.83	274	200	VER
1122.24	53.73	345	400	VER
1124.29	52.61	336	300	VER
1126.25	54.14	271	200	VER
1128.26	52.33	2	300	VER
1130.26	54.41	283	200	VER
1132.26	49.75	340	300	VER
1164.33	53.07	98	100	VER
1166.33	47.91	156	200	HOR
1486.97	51.66	183	300	VER
1488.98	56.01	183	300	VER
1498.99	52.77	270	400	VER
1501.00	54.13	183	300	VER
1503.01	54.33	186	400	VER
1505.01	53.19	354	200	VER
1507.01	54.78	21	200	VER
1509.02	54.84	30	300	VER
1511.02	53.91	234	400	VER
1513.03	57.01	210	300	HOR
1965.93	53.78	307	200	HOR
1967.94	52.96	325	200	VER
1969.94	52.86	188	300	HOR
1971.94	53.41	104	300	HOR
1973.95	53.73	255	300	VER
1979.96	53.1	360	100	VER
1981.96	53.98	66	300	VER
1987.98	54	198	300	HOR
1989.98	52.94	265	400	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 .

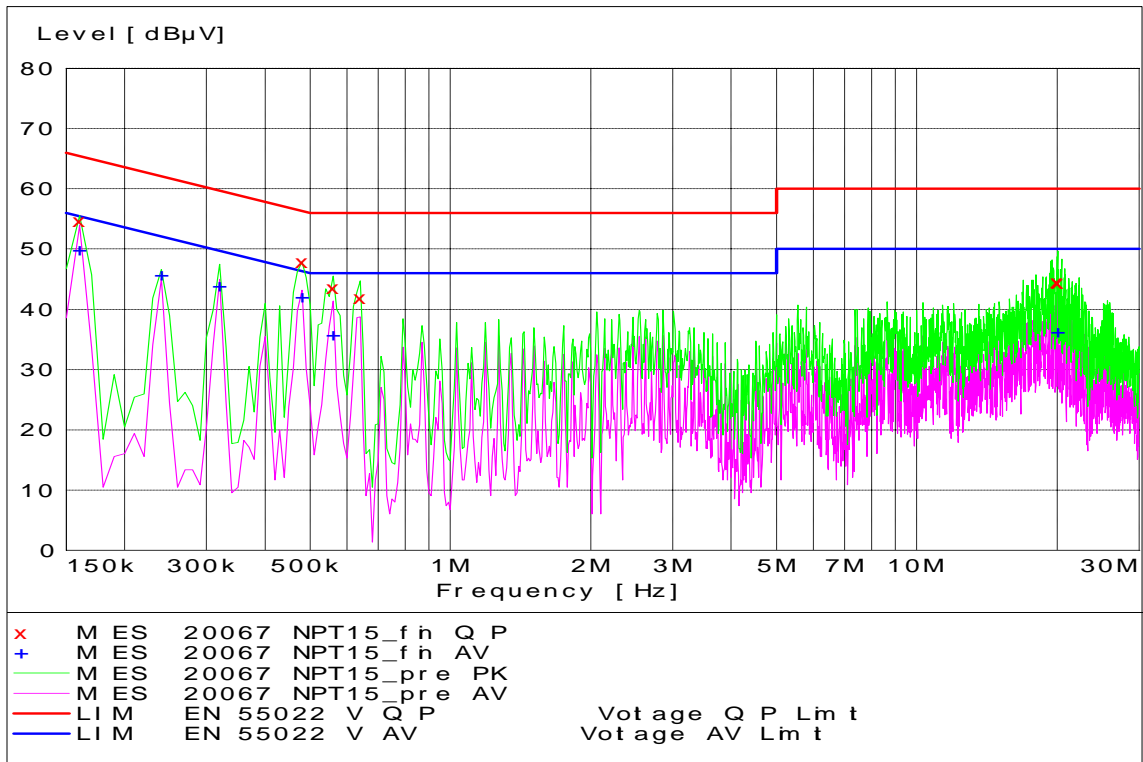
Detectors - Quasi Peak and Average Detector

Test Setup

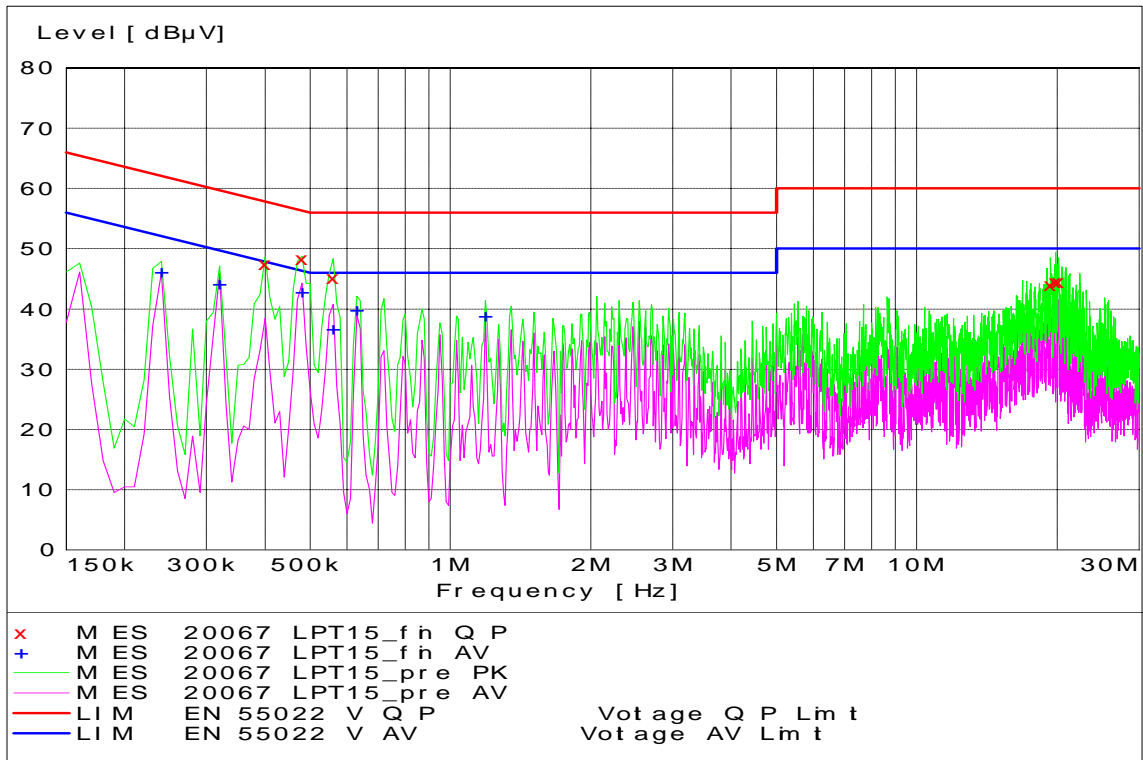
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Measurement Results

See attached:



AC LINE COMPUTER PERIPHERAL (NEUTRAL)



AC LINE COMPUTER PERIPHERAL (LINE)

End of Test Report