



MOBILE DEVICES BUSINESS

**PRODUCT SAFETY AND COMPLIANCE
EMC LABORATORY**

EMC TEST REPORT

Test Report Number – 24388-1 Supplement

Report Date – March 24, 2011

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:

A handwritten signature in black ink, reading 'Albert J. Patapack'.

Name: Albert J. Patapack

Title: EMC Engineer

Date: March 24, 2011

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Test Report Details

Tests Performed By: Motorola Mobility 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
FCC Registration Number: 316588
Industry Canada Number: 1090

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

Product Type: Cellular Phone

Signaling Capability: WCDMA 850/1900, GSM 850/1900,
HSUPA, HSDPA, EDGE, GPRS, Bluetooth,
802.11b/802.11g/802.11n

FCC ID: IHDT56MW1

Serial Numbers: 353635040003317

Testing Complete Date: March 24, 2011

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, RSS-210 Issue 8

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

All testing for this report was performed with a fully charged Model SNN5843A 1390mAH 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	04/08/2011
Rohde & Schwarz	Receiver	ESIB26	100001	09/23/2011
ETS	DRG Horn Antenna	3115	6222	10/02/2010
ETS	DRG Horn Antenna	SAS 200/571	265	9/09/2011
ETS	Log-Periodic Antenna	3148	1188	2/02/2011
ETS	Log-Periodic Antenna	3148	1189	1/19/2012
ETS	Biconical Antenna	3110B	3370	10/02/2010
ETS	Biconical Antenna	3110B	3370	1/19/2012
Agilent	Microwave Preamplifier	8449B	3008A00535	10/05/2011
Attenuator	Weinschel	AS-6	6675	NCR
Attenuator	Weinschel	AS-6	6677	NCR
ETS	LISN	3810/2NM	0023630	10/5/2010
ETS	LISN	3810/2	00062907	9/08/2011
ETS	LISN	3810/2NM	2179	10/6/2010
ETS	LISN	3810/2	00062912	9/08/2011
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.

Field Strength (dBuV/m) = EMI Receiver Level (dBuV) + Cable Loss (dB) - Amplifier Gain (dB) + 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.

Additional EUT information:

Processor Speed – Up to 1GHz

Xtal – 32.8KHz, 19.2MHz

TCXO – 26MHz

Memory Size – 512MB LPDDR2 SDRAM, 8 GB eMMC

Video Resolution – 540x960 (qHD)

Video Clock - 250MHz

Refresh rate – 60Hz

Testing was conducted up to and including 5GHz.

Measurement Results

Operating Mode – Rx Mode, Data Transfer Mode.

Notes: 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.
39.08	30.32	12.33	10.9	7.1	40	9.7	100	159	VERT
71.28	30.10	14.11	8.5	7.5	40	9.9	100	181	VERT
76.00	31.91	15.66	8.7	7.5	40	8.1	132	179	VERT
80.24	30.02	13.37	9	7.6	40	10.0	100	88	VERT
81.76	30.03	13.13	9.3	7.6	40	10.0	100	159	VERT
129.16	31.80	11.58	12.2	8	43.5	11.7	100	118	VERT
134.52	33.51	13.17	12.3	8	43.5	10.0	100	128	VERT
200.00	33.33	14.02	10.9	8.4	43.5	10.2	150	132	HORI
309.92	37.04	13.49	14.5	9.1	46	9.0	101	252	HORI
320.64	43.21	19.16	14.9	9.1	46	2.8	98	264	HORI
352.68	38.98	14.33	15.3	9.3	46	7.0	100	244	HORI
365.04	42.16	17.08	15.7	9.4	46	3.8	186	181	VERT
384.76	38.76	13.38	15.9	9.5	46	7.2	100	171	HORI
499.68	32.89	4.70	18	10.2	46	13.1	100	48	VERT
600.00	38.81	8.41	19.9	10.5	46	7.2	250	337	HORI
856.68	33.08	-0.32	22.1	11.3	46	12.9	228	302	VERT
927.80	35.38	-0.27	24.1	11.5	46	10.6	99	271	HORI

Above 1 GHz

Frequency MHz	Level dB μ V/m	Measured dB μ V	Transd dB	Gain dB	Limit dB μ V/m	Margin dB	Height cm	Angle deg	Pol.
1062.2	30.20	29.61	23.4	22.8	54	23.8	146	128	HORI
1128.1	30.19	29.22	23.6	22.6	54	23.8	213	326	VERT
1487.5	30.63	27.43	24.6	21.4	54	23.4	119	275	VERT
1511.8	31.03	27.74	24.6	21.3	54	23.0	226	283	VERT
1971.4	34.82	26.84	27.8	19.8	54	19.2	100	75	HORI
1993.3	35.11	26.70	28.1	19.7	54	18.9	100	129	HORI
2491.7	37.52	27.55	28.7	18.7	54	16.5	100	307	VERT
3019.0	38.14	25.41	30.5	17.7	54	15.9	178	160	VERT
3060.8	38.58	25.46	30.8	17.6	54	15.4	150	52	VERT
3133.9	38.72	25.03	31.2	17.5	54	15.3	100	143	VERT
3179.6	38.90	25.00	31.3	17.4	54	15.1	100	22	HORI
3274.6	38.58	24.64	31.2	17.2	54	15.4	249	47	VERT
3866.0	38.83	23.75	31.1	16.1	54	15.2	150	237	VERT
3919.6	39.02	23.59	31.4	16.0	54	15.0	150	97	VERT
3953.5	39.03	23.51	31.4	15.9	54	15.0	250	235	HORI
4202.4	38.75	23.00.0	31.3	15.5	54	15.2	100	7	HORI
4402.4	39.91	23.18	32	15.2	54	14.1	192	100	VERT
4615.9	40.30	22.83	32.4	15.0	54	13.7	100	90	HORI
4788.9	40.94	22.64	33.0	14.7	54	13.1	130	133	VERT
4865.8	41.38	22.86	33.1	14.6	54	12.6	250	195	VERT
4925.2	41.44	22.63	33.3	14.5	54	12.6	150	141	HORI
4949.4	41.67	22.73	33.4	14.5	54	12.3	196	95	VERT
4963.0	41.98	22.95	33.5	14.5	54	12.0	150	250	VERT
4980.4	42.03	23.06	33.4	14.4	54	12.0	209	90	HORI
4997.1	42.42	23.16	33.7	14.4	54	11.6	146	166	VERT

Peak Radiated Data for Emissions Above 1GHz				
Frequency MHz	Level dBμV/m	Angle deg	Height cm	Pol.
1060.12	43.57	321	200	VER
1062.12	47.05	147	100	HOR
1064.13	46.40	334	200	VER
1126.25	48.31	334	200	VER
1128.26	46.38	339	200	VER
1130.26	47.27	330	200	VER
1486.97	43.66	241	100	VER
1488.98	48.09	274	100	VER
1509.02	48.47	93	100	VER
1511.02	48.95	277	200	VER
1513.03	46.58	283	200	VER
1969.94	46.06	194	200	VER
1971.94	47.26	97	100	HOR
1973.95	47.20	97	100	HOR
1991.98	47.31	132	100	HOR
1993.99	45.83	360	200	VER
1995.99	46.13	55	200	HOR
2488.98	49.25	303	100	VER
2492.98	50.24	310	100	VER
3018.04	50.69	157	200	VER
3022.04	49.26	76	100	VER
3058.12	50.52	64	200	VER
3062.12	49.51	312	100	VER
3130.26	50.29	39	200	HOR
3134.27	51.16	165	100	VER
3174.35	49.56	305	200	HOR
3178.36	51.12	0	100	HOR
3270.54	49.98	252	100	HOR
3274.55	49.76	315	200	VER
3278.55	51.00	46	200	VER
3863.73	50.98	215	200	VER
3867.74	50.17	215	200	VER
3915.83	50.55	160	100	VER
3919.84	49.72	41	200	HOR
3923.85	51.17	119	200	VER
3951.90	50.57	353	100	VER
3955.91	51.16	253	200	HOR
4200.40	49.97	22	100	HOR
4202.40	50.11	96	200	HOR
4204.41	52.32	0	100	HOR
4400.80	51.40	86	200	HOR

Peak Radiated Data for Emissions Above 1GHz (cont)				
4402.81	52.54	94	200	VER
4404.81	51.56	111	100	VER
4613.23	52.37	121	200	VER
4615.23	53.15	104	100	HOR
4617.23	51.31	3	100	HOR
4787.58	52.85	137	100	VER
4789.58	53.45	129	100	VER
4863.73	52.66	248	200	HOR
4865.73	53.87	210	200	VER
4867.74	52.99	341	200	HOR
4923.85	53.84	163	200	HOR
4925.85	52.12	270	100	VER
4947.89	53.81	78	200	VER
4949.89	53.05	313	100	VER
4961.92	53.99	264	200	VER
4963.93	53.64	234	200	HOR
4979.962	53.63	164	100	HOR
4981.96	54.25	112	200	HOR
4995.99	53.13	208	100	HOR
4997.99	53.88	165	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 .

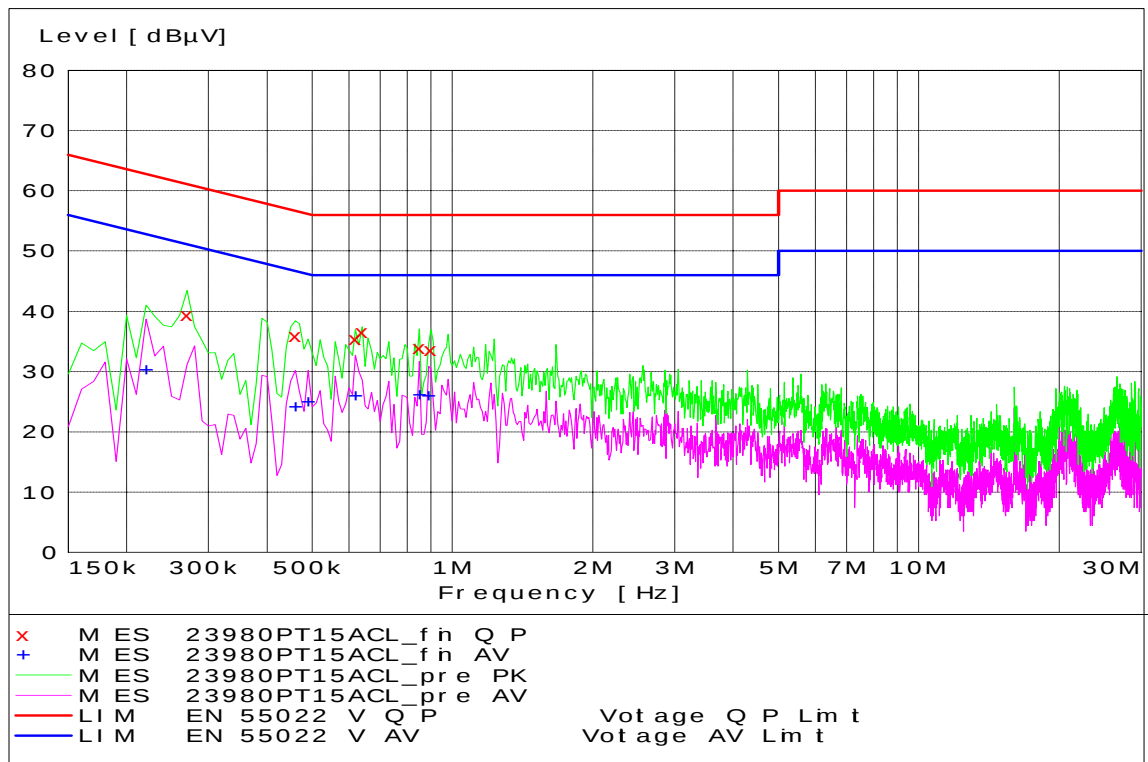
Detectors - Quasi Peak and Average Detector

Test Setup

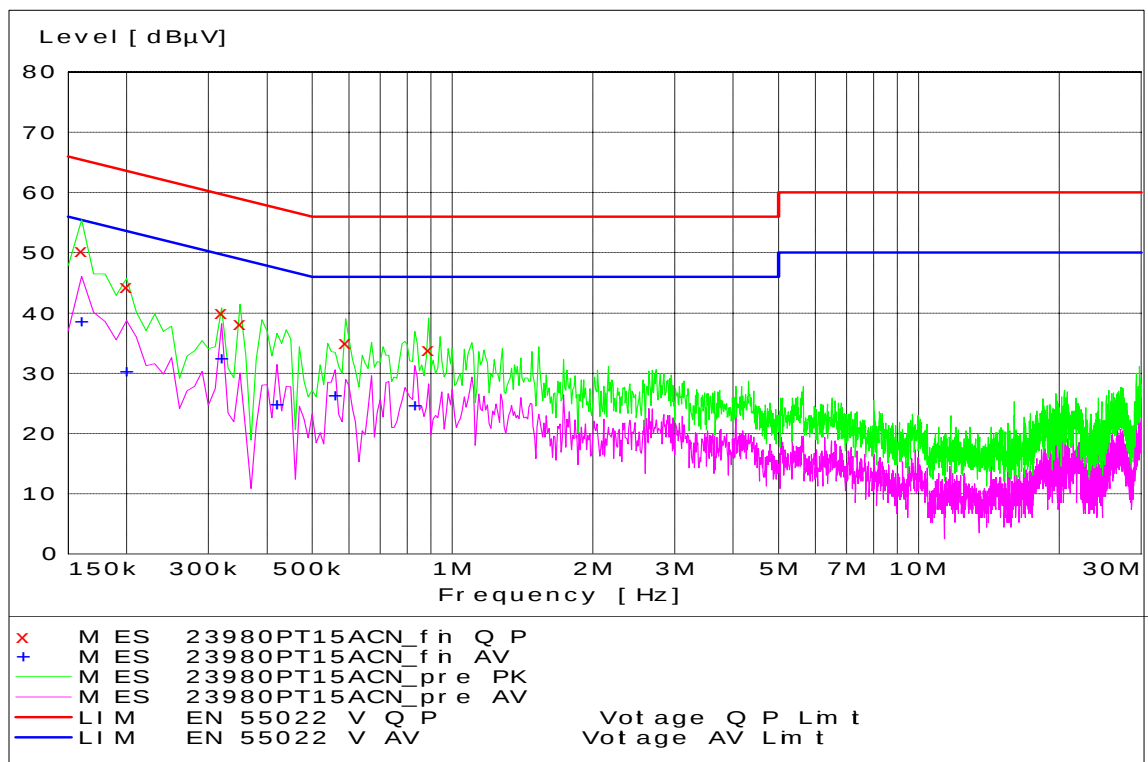
The EUT and the host equipment were setup according to the procedures in ANSI C63.4-2003. The EUT was connected to a laptop computer using a USB data cable. The USB data cable is 1 m in length. The parallel and the serial ports of the computer were populated. The EUT was communicating with the laptop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

Measurement Results

See attached:



Tx Mode - Line Coupling



Tx Mode - Neutral Coupling

End of Test Report