



MOBILE DEVICES BUSINESS

**PRODUCT SAFETY AND COMPLIANCE
EMC LABORATORY**

EMC TEST REPORT

Test Report Number – 24833-1JBP

Report Date – December 16, 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', written over a light blue rectangular background.

Name: Albert J. Patapack

Title: EMC Engineer

Date: December 16, 2011

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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
Equipment List	5
Measurement Procedures and Data	6

Test Report Details

Tests Performed By:	ADR Testing Service Location Code: ADR LV Motorola Mobility Inc 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: 109O-1
Tests Requested By:	Motorola Mobility Inc. 600 North US Hwy 45 Libertyville, IL 60048
Product Type:	Cellular Phone
Signaling Capability:	GSM 850/900/1800/1900, WCDMA 1700/1900/2100 HSDPA, HSUPA, EDGE, GPRS, Bluetooth, 802.11b/802.11g/802.11n
FCC ID:	IHDT56NA1
Serial Numbers:	LJRL280021
Testing Complete Date:	November 11, 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 SNN5875A 1820mAH 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 and Cable Configurations

The EUT was tested in a configuration as specified by ANSI C63.4 2003 Standard requirements.

Equipment List

Manufacturer	Equipment Type	Model No.	Serial Number	Calibration Due Date
Rohde & Schwarz	Receiver	ESI26	838786/010	12/21/2012
Rohde & Schwarz	Receiver	ESIB40	100226	3/30/2012
A. H. Systems	DRG Horn Antenna	SAS 200/571	365	8/24/2012
ETS	Log-Periodic Antenna	3148	1189	1/19/2012
ETS	Biconical Antenna	3110B	3370	1/19/2012
Agilent	Microwave Preamplifier	8449B	3008A01442	9/22/2012
Attenuator	Weinschel	AS-6	6675	NCR
Attenuator	Weinschel	AS-6	6677	NCR
ETS	LISN	3810/2NM	00023630	9/02/2012
ETS	LISN	3810/2NM	2179	9/02/2012
ETS	Loop Antenna	6507	00049471	2/17/2012
Rohde & Schwarz	Receiver	ESU40	100268	7/13/2012
Hewlett Packard	Laptop Computer	8440P	CND04111C8	NA
Hewlett Packard	Monitor	HP2311X	CNT101X68Q	NA
Dell	Mouse	M-UVDEL1	HCJ43516737	NA

Note that the power meter and microwave preamplifier are on a two-year calibration cycle. All other equipment is on a one-year calibration cycle. 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.

The HP 8440P Laptop Computer, HP Monitor and the Dell Mouse 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. Initially, for all radiated emissions, the antenna mast is varied from 1 to 4 meters and the turntable is rotated 360 degrees to obtain a maximum reading on the spectrum analyzer using the peak detector function. The final radiated emissions are then measured using an EMI receiver employing a CISPR quasi-peak detector function below 1000MHz and an average detector function above 1000MHz. Above 1000MHz, the EMI receiver VBW and RBW are both set to 1MHz. 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 test is performed with the EUT connected to a laptop computer using a USB data cable. The USB data cable is 1 m in length. The USB and the display ports of the computer were populated. The EUT was communicating with the laptop computer continuously.

Additional EUT information:

Processor Speed – Up to 1.2GHz

Xtal – 32.768kHz, 24.576MHz

TCXO – 19.2MHz

Memory Size – 512mb LPDDR2, 4GB eMMC

Video Resolution – 480x640 pixel display, Max 720p capture

Video Clock – Max PCLK is 153MHz

Refresh rate – 30 frames per sec

Testing was conducted up to and including 6GHz.

Measurement Results

Radiated emissions were measured from 9 kHz to 30 MHz and all emissions were 20 dB below the limit.

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.
37.32	31.78	12.8	11.9	7.1	40	8.2	99	96	VERT
41.12	24.26	5.96	11.2	7.1	40	15.7	124	301	VERT
52.56	27.36	10.41	9.7	7.3	40	12.6	102	54	VERT
69.56	23.44	6.67	9.3	7.5	40	16.6	99	76	VERT
139.52	41.38	21.61	11.7	8.1	43.5	2.1	100	36	VERT
214.52	33.47	14.78	10.2	8.5	43.5	10	100	167	HORI
283.48	23.02	1.40	12.7	8.9	46	23	236	167	VERT
288.00	28.25	6.61	12.7	8.9	46	17.8	248	160	VERT
352.72	21.53	-2.04	14.3	9.3	46	24.5	240	160	VERT
357.96	21.44	-2.28	14.4	9.3	46	24.6	150	151	VERT
422.76	22.76	-2.28	15.3	9.7	46	23.2	250	334	VERT
633.64	28.40	-1.99	19.8	10.6	46	17.6	235	138	VERT
714.08	30.64	-1.76	21.5	10.9	46	15.4	231	55	HORI
783.68	30.88	-1.43	21.2	11.1	46	15.1	250	160	VERT
910.80	33.94	-1.22	23.7	11.5	46	12.1	133	356	HORI

Average Measurements 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.
1002.0	36.07	34.72	23.3	22.0	54	17.9	137	181	VERT
1002.1	36.36	35.01	23.3	22.0	54	17.6	136	190	VERT
1133.9	34.94	32.92	23.9	21.9	54	19.1	129	208	VERT
1145.4	34.57	32.49	24.0	21.9	54	19.4	165	166	VERT
1194.2	34.76	32.4	24.3	21.9	54	19.2	235	184	VERT
1288.3	34.82	32.04	24.6	21.9	54	19.2	213	110	HORI
1475.3	34.24	31.20	24.8	21.8	54	19.8	222	163	HORI
1491.3	34.32	31.22	24.9	21.8	54	19.7	165	144	HORI
1593.3	38.18	34.54	25.3	21.7	54	15.8	99	3	VERT
3242.1	40.75	28.48	31.8	19.5	54	13.3	245	77	VERT
3941.2	40.79	26.75	32.2	18.1	54	13.2	250	214	VERT
3945.6	40.83	26.77	32.2	18.1	54	13.2	151	270	HORI
3973.5	40.94	26.80	32.2	18.1	54	13.1	133	155	VERT
5250.1	42.63	25.33	33.9	16.6	54	11.4	150	13	HORI
5534.6	43.00	25.52	33.7	16.2	54	11.0	99	106	VERT
5721.3	43.31	25.53	33.7	15.9	54	10.7	150	299	VERT
5852.5	44.28	25.60	34.4	15.7	54	9.7	201	334	VERT
5911.3	44.63	25.45	34.8	15.6	54	9.4	235	170	VERT
5971.1	45.22	25.70	35.1	15.5	54	8.8	145	245	HORI
5986.7	45.18	25.59	35.1	15.5	54	8.8	150	119	VERT

Peak Radiated Data for Emissions Above 1GHz					
Frequency MHz	Level dB μ V/m	Angle deg	Height cm	Pol.	Limit 74dB μ V/m
1000	57.25	183	100	VER	Pass
1002.00	55.88	183	100	VER	Pass
1004.01	45.83	136	200	VER	Pass
1132.26	51.52	194	100	VER	Pass
1134.27	52.65	191	100	VER	Pass
1144.29	53.49	179	200	VER	Pass
1146.29	47.35	136	200	VER	Pass
1192.38	51.62	164	200	VER	Pass
1194.39	49.84	130	100	HOR	Pass
1196.39	50.66	165	100	HOR	Pass
1286.57	50.41	132	200	HOR	Pass
1288.58	49.21	137	100	VER	Pass
1290.58	46.03	122	200	HOR	Pass
1474.95	51.48	143	200	HOR	Pass
1476.95	49.46	122	200	VER	Pass
1490.98	49.79	136	200	VER	Pass
1492.99	51.40	141	200	HOR	Pass
1593.19	53.72	349	100	VER	Pass
1595.19	51.05	36	200	VER	Pass
3238.48	52.46	357	200	HOR	Pass
3242.48	53.39	77	200	VER	Pass
3939.88	53.92	192	200	VER	Pass
3943.89	52.13	324	100	VER	Pass
3947.90	53.77	256	200	HOR	Pass
3971.94	52.97	64	100	VER	Pass
3975.95	53.38	173	100	VER	Pass
5246.49	53.93	43	100	VER	Pass
5250.50	55.69	35	100	HOR	Pass
5531.06	55.77	88	100	VER	Pass
5535.07	54.91	157	200	HOR	Pass
5719.44	55.96	293	100	VER	Pass
5723.45	54.84	223	100	VER	Pass
5851.70	56.76	316	200	VER	Pass
5855.71	55.38	43	100	HOR	Pass
5907.82	57.74	174	200	VER	Pass
5911.82	55.28	118	200	VER	Pass
5967.94	56.76	260	200	HOR	Pass
5971.94	56.43	230	100	VER	Pass
5967.94	56.76	260	200	HOR	Pass
5971.94	56.43	230	100	VER	Pass
5991.98	56.57	137	100	HOR	Pass

AC LINE CONDUCTED EMISSIONS**Measurement Procedure**

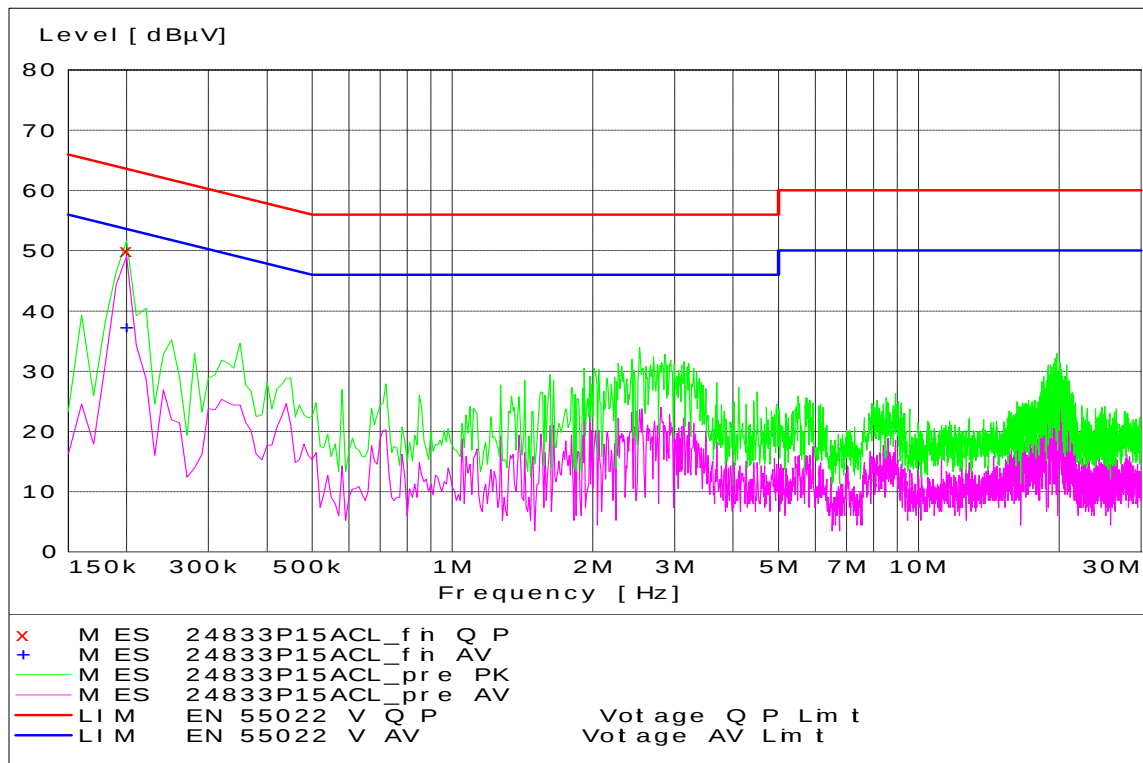
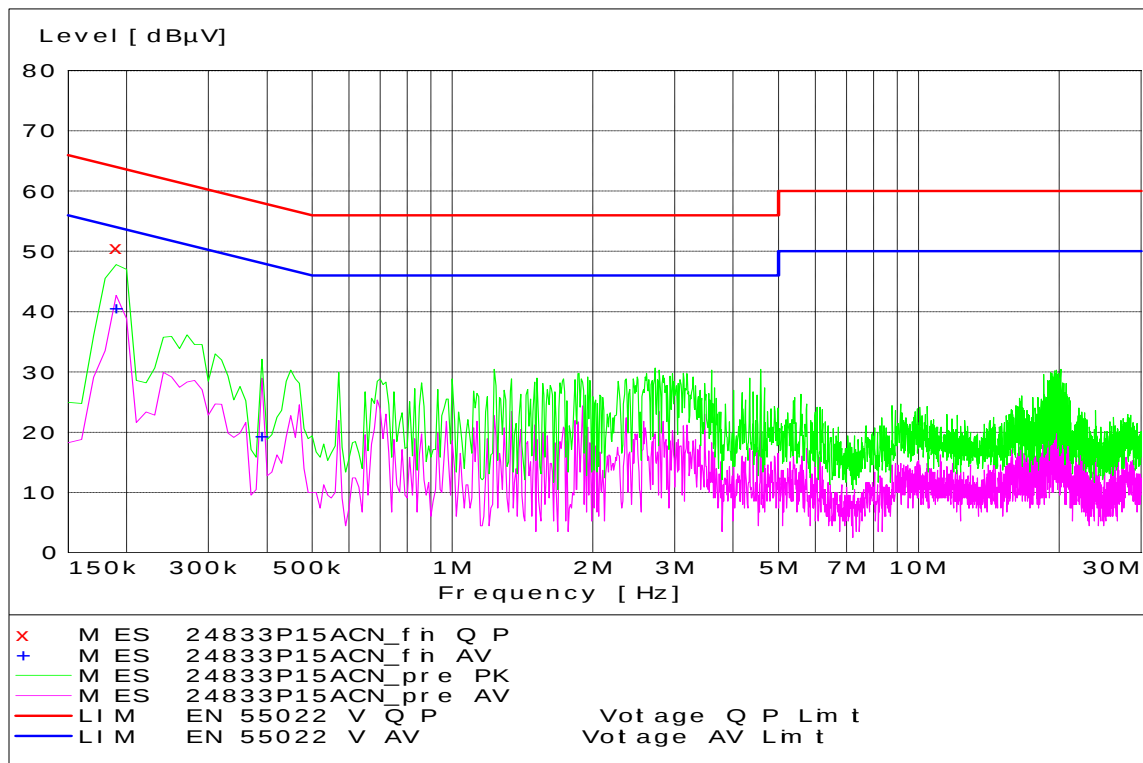
Measured levels of ac power line conducted emission shall be the radio-noise voltage from the line probe or across the 50 Ω LISN port, where permitted, terminated into a 50 Ω noise meter, or where permitted or required, the radio-noise current on the power line sensed by a current probe.

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 a 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 test is performed with the EUT connected to a laptop computer using a USB data cable. The USB data cable is 1 m in length. The USB and the display ports of the computer were populated. The EUT was communicating with the laptop computer continuously.

Measurement Results**Tx Mode - Line Coupling****Tx Mode - Neutral Coupling**

End of Test Report