



STC Test Report

Date : 2013-05-02

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No. : HM168519

Applicant (LEE001): Leapfrog Enterprises, Inc.
6401 Hollis Street, Suite 150, Emeryville, CA 94608-1070

Manufacturer: Leapfrog Enterprises, Inc.
Units 1601-03, 12-13, 16/F Office Tower Two The
Harbourfront, 18-22 Tak Fung Street, Hung Hom, Kowloon,
Hong Kong.

Description of Sample(s): Submitted sample(s) said to be
Product: LeapPad Ultra (Rio)
Brand Name: LeapFrog
Model Number: 33200

Date Sample(s) Received: 2013-03-18

Date Tested: 2013-03-28 to 2013-04-03

Investigation Requested: FCC Part 15 Subpart B

Conclusion(s): The submitted product COMPLIED with the requirements of
Federal Communications Commission [FCC] Rules and
Regulations Part 15. The tests were performed in accordance
with the standards described above and on Section 2.2 in this
Test Report.

Remark(s): For additional model(s) details, see page 3.

Dr. LEE Kam Chuen,
Authorized Signatory
ElectroMagnetic Compatibility Department
For and on behalf of
The Hong Kong Standards and Testing Centre Ltd

The Hong Kong Standards and Testing Centre Ltd.

10 Dai Wang Street, Taipo Industrial Estate, N.T., Hong Kong

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1.0 General Details

1.1 Equipment Under Test [EUT] Description of Sample(s)

Product: LeapPad Ultra (Rio)
Manufacturer: Leapfrog Enterprises, Inc.
Units 1601-03, 12-13, 16/F Office Tower Two The Harbourfront,
18-22 Tak Fung Street, Hung Hom, Kowloon, Hong Kong.
Brand Name: LeapFrog
Model Number: 33200
Additional Model Number(s): 33300, 83333, 83334, 83335, 83336, 83337, 83338, 974-00890,
974-00891, 974-00892, 974-00893
Rating: 117Va.c. / 3.7Vd.c. (rechargeable battery x 1)
The AC/DC Adaptor used for the tests was provided by the
applicant with the following details: Two pins (Live / Neutral) only
adaptor, Model Number: 690-11330, Input: 100V-240Va.c.
50/60Hz 0.2A, Output: 5Vd.c. 1.5A 7.5VA

1.1.1 Description of EUT Operation

The Equipment Under Test (EUT) is a Leapfrog Enterprises, Inc. LeapPad Ultra (Rio). The test of EUT was conducted under play mode, charging mode and download mode.

1.2 Date of Order

2013-03-18

1.3 Submitted Sample(s):

1 sample

1.4 Test Duration

2013-03-28 to 2013-04-03

1.5 Country of Origin

China

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2.0 Technical Details

2.1 Investigations Requested

Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2012 and ANSI C63.4: 2009 for FCC DoC.

2.2 Test Standards and Results Summary Tables

EMISSION Results Summary					
Test Condition	Test Requirement	Test Method	Class / Severity	Test Result	
				Pass	Failed
Radiated Emissions, 30MHz to 1GHz	FCC 47CFR 15.109	ANSI C63.4:2009	Class B	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Conducted Emissions on AC, 0.15MHz to 30MHz	FCC 47CFR 15.107	ANSI C63.4:2009	Class B	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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3.0 Test Results

3.1 Emission

3.1.1 Radiated Emissions (30MHz to 1GHz)

Test Requirement: FCC 47CFR 15.109

Test Method: ANSI C63.4: 2009

Test Date: 2013-04-02

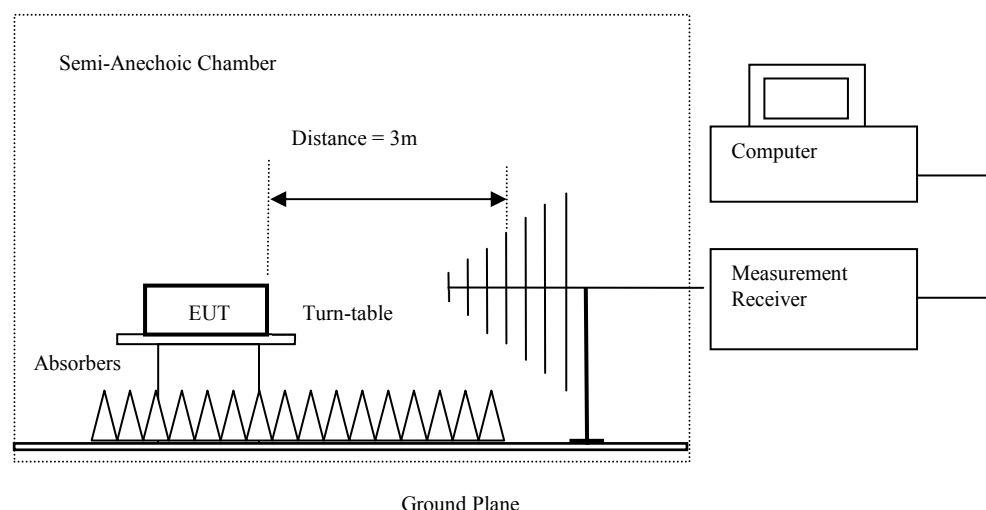
Mode of Operation: Play mode / Charging mode / Download mode

Test Method:

The sample was placed 0.8m above the ground plane of Semi-anechoic chamber*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

*: Semi-anechoic chamber located on the G/F of HKSTC with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 607756.

Test Setup:



Absorbers placed on top of the ground plane are for measurements above 1000MHz only.

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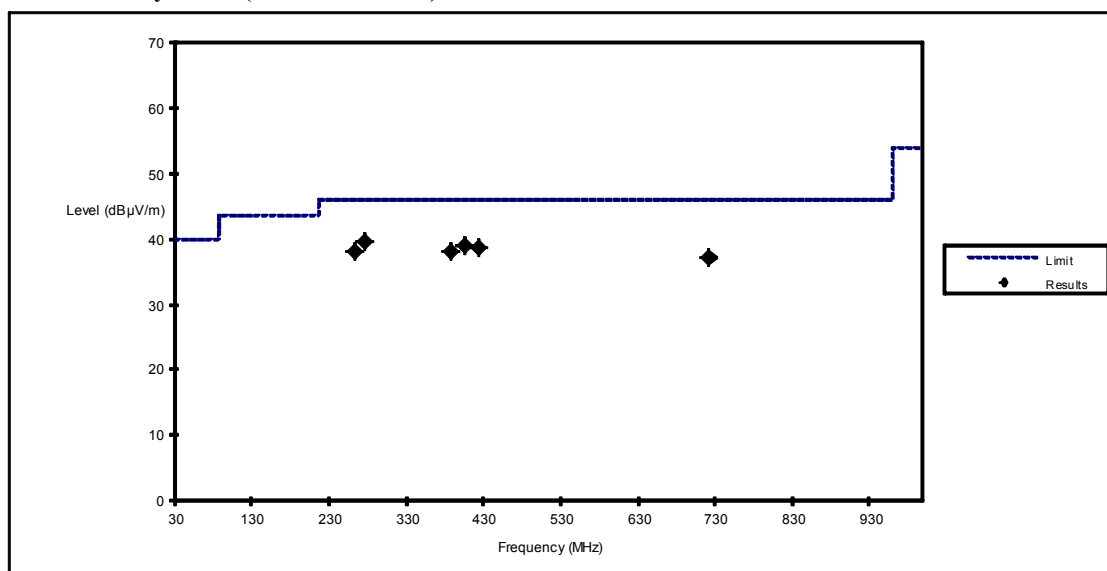
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Limits for Radiated Emissions [FCC 47 CFR 15.109 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits	
	[$\mu\text{V/m}$]	[dB $\mu\text{V/m}$]
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Results of Play mode (30MHz – 1GHz) – 3.7Vd.c.: PASS



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Results of Play mode (30MHz – 1GHz) – 3.7Vd.c.: PASS

Radiated Emissions					
Quasi-Peak					
Emission	E-Field	Level	Limit	Level	Limit
Frequency	Polarity	@3m	@3m	@3m	@3m
MHz		dB μ V/m	dB μ V/m	μ V/m	μ V/m
263.2	Horizontal	38.1	46.0	80.4	200
277.5	Horizontal	39.5	46.0	94.4	200
388.5	Horizontal	38.2	46.0	81.3	200
405.0	Horizontal	39.1	46.0	90.2	200
425.2	Horizontal	38.7	46.0	86.1	200
721.2	Horizontal	37.2	46.0	72.4	200

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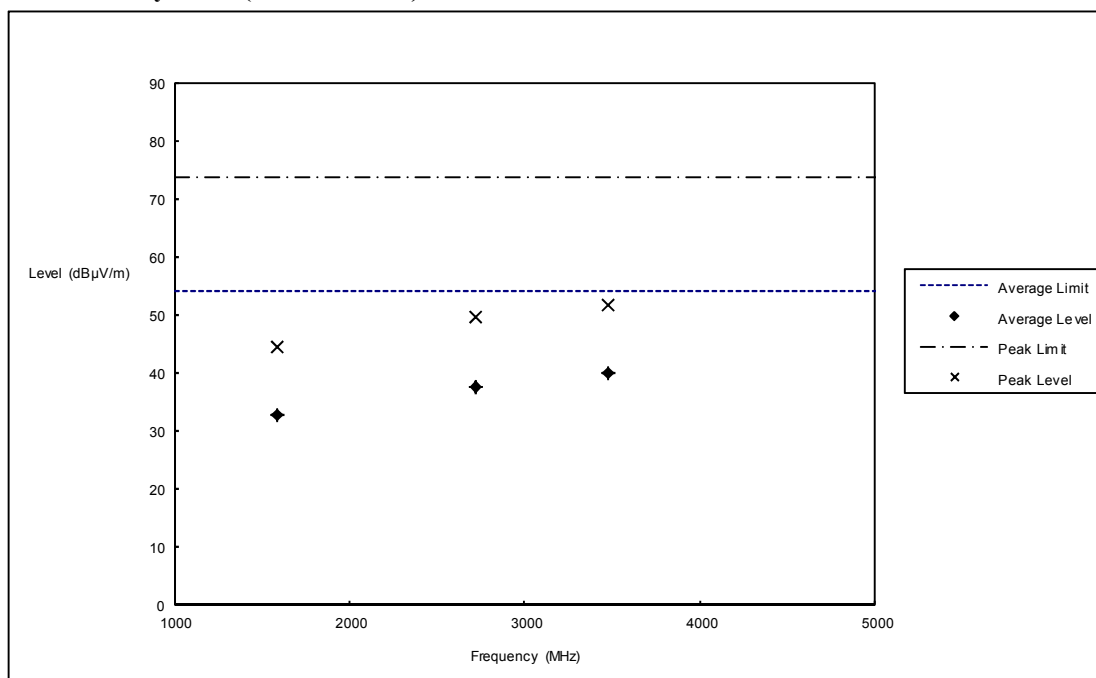
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Results of Play mode (1GHz – 5GHz) – 3.7Vd.c.: PASS



Results of Play mode (1GHz – 5GHz) – 3.7Vd.c.: PASS

Radiated Emissions					
Peak Value					
Emission Frequency	E-Field Polarity	Level @3m	Limit @3m	Level @3m	Limit @3m
GHz		dBµV/m	dBµV/m	µV/m	µV/m
1.59	Horizontal	44.4	74.0	166.0	5000
2.72	Horizontal	49.7	74.0	305.5	5000
3.48	Horizontal	51.6	74.0	380.2	5000

Radiated Emissions					
Average Value					
Emission Frequency	E-Field Polarity	Level @3m	Limit @3m	Level @3m	Limit @3m
GHz		dBµV/m	dBµV/m	µV/m	µV/m
1.59	Horizontal	32.9	54.0	44.2	500
2.72	Horizontal	37.5	54.0	75.0	500
3.48	Horizontal	39.9	54.0	98.9	500

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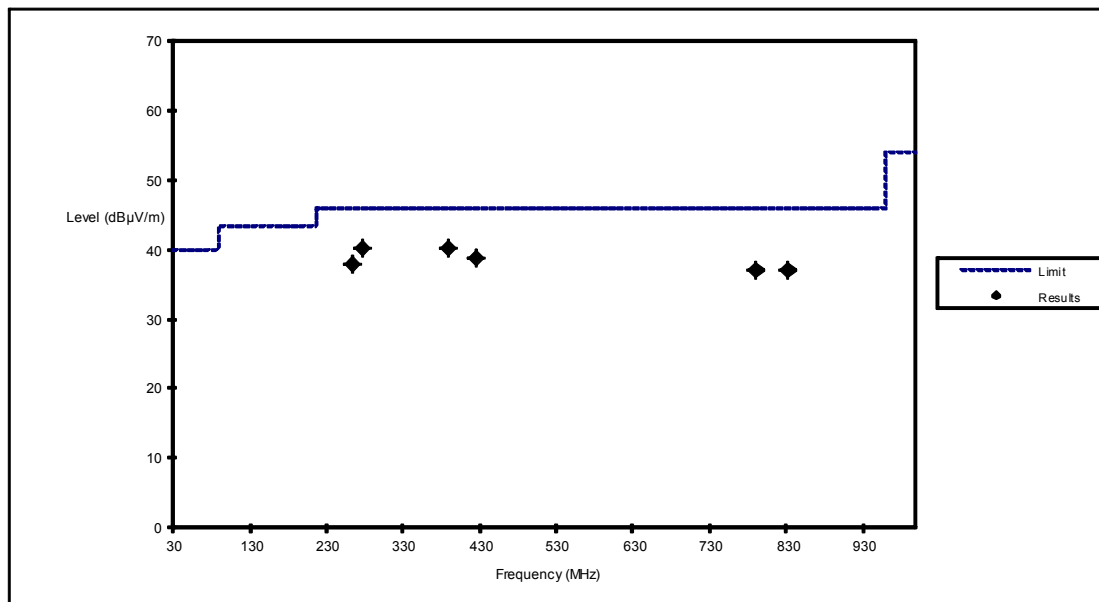
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Results of Play mode (30MHz – 1GHz) – 117Va.c.: PASS



Results of Play mode (30MHz – 1GHz) – 117Va.c.: PASS

Radiated Emissions					
Quasi-Peak					
Emission Frequency	E-Field Polarity	Level @3m	Limit @3m	Level @3m	Limit @3m
MHz		dBμV/m	dBμV/m	μV/m	μV/m
263.2	Horizontal	38.0	46.0	79.4	200
277.5	Horizontal	40.3	46.0	103.5	200
388.5	Horizontal	40.1	46.0	101.2	200
425.2	Horizontal	38.9	46.0	88.1	200
789.7	Horizontal	37.1	46.0	71.6	200
832.5	Horizontal	37.0	46.0	70.8	200

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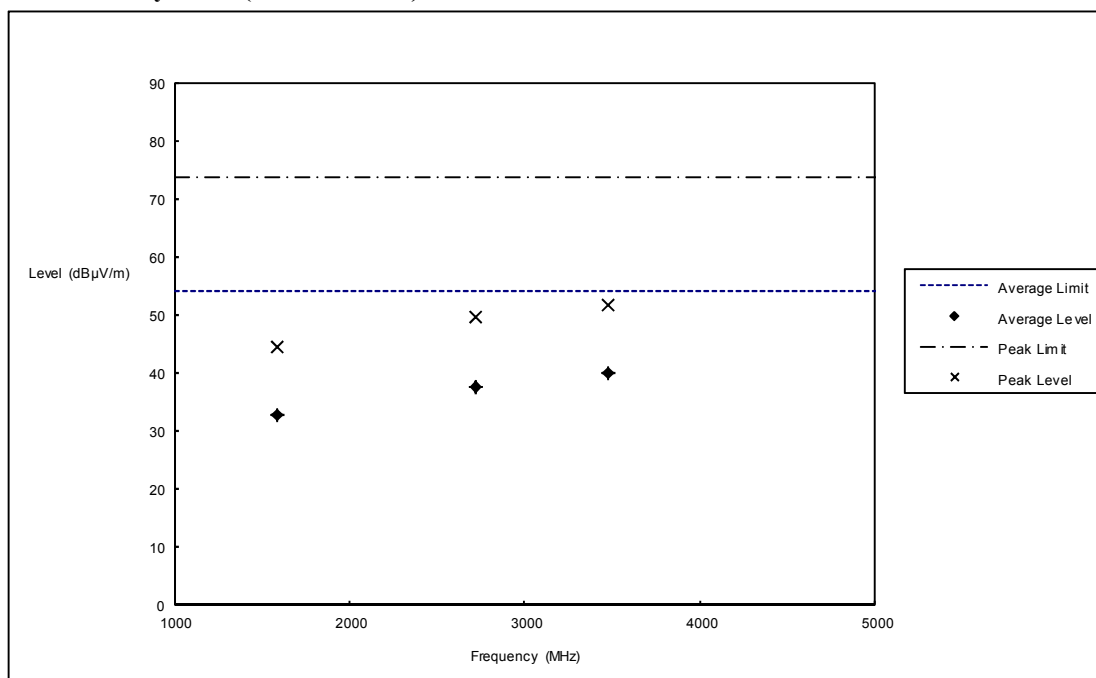
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Results of Play mode (1GHz – 5GHz) – 117Va.c.: PASS



Results of Play mode (1GHz – 5GHz) – 117Va.c.: PASS

Radiated Emissions					
Peak Value					
Emission Frequency	E-Field Polarity	Level @3m	Limit @3m	Level @3m	Limit @3m
GHz		dBμV/m	dBμV/m	μV/m	μV/m
1.59	Horizontal	44.4	74.0	166.0	5000
2.72	Horizontal	49.7	74.0	305.5	5000
3.48	Horizontal	51.6	74.0	380.2	5000

Radiated Emissions					
Average Value					
Emission Frequency	E-Field Polarity	Level @3m	Limit @3m	Level @3m	Limit @3m
GHz		dBμV/m	dBμV/m	μV/m	μV/m
1.59	Horizontal	32.9	54.0	44.2	500
2.72	Horizontal	37.5	54.0	75.0	500
3.48	Horizontal	39.9	54.0	98.9	500

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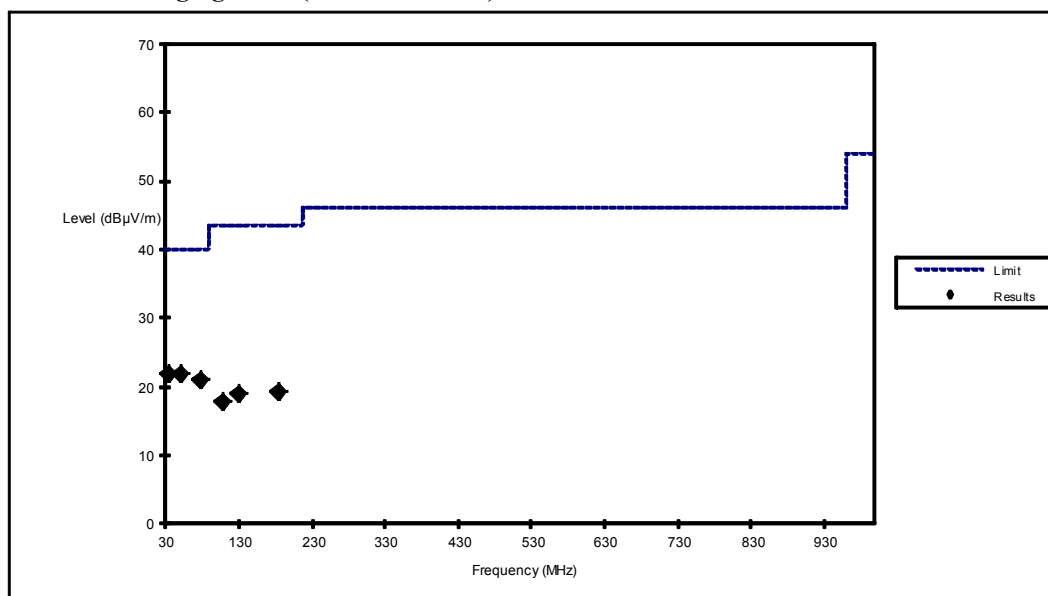
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Results of Charging mode (30MHz – 1GHz) – 117Va.c: PASS



Results of Charging mode (30MHz – 1GHz) – 117Va.c.: PASS

Radiated Emissions					
Quasi-Peak					
Emission Frequency MHz	E-Field Polarity	Level @3m dBμV/m	Limit @3m dBμV/m	Level @3m μV/m	Limit @3m μV/m
35.0	Vertical	22.0	40.0	12.6	100
51.8	Vertical	21.8	40.0	12.3	100
78.6	Vertical	21.0	40.0	11.2	100
107.9	Horizontal	17.9	43.5	7.9	150
130.2	Horizontal	19.0	43.5	8.9	150
183.2	Horizontal	19.3	43.5	9.2	150

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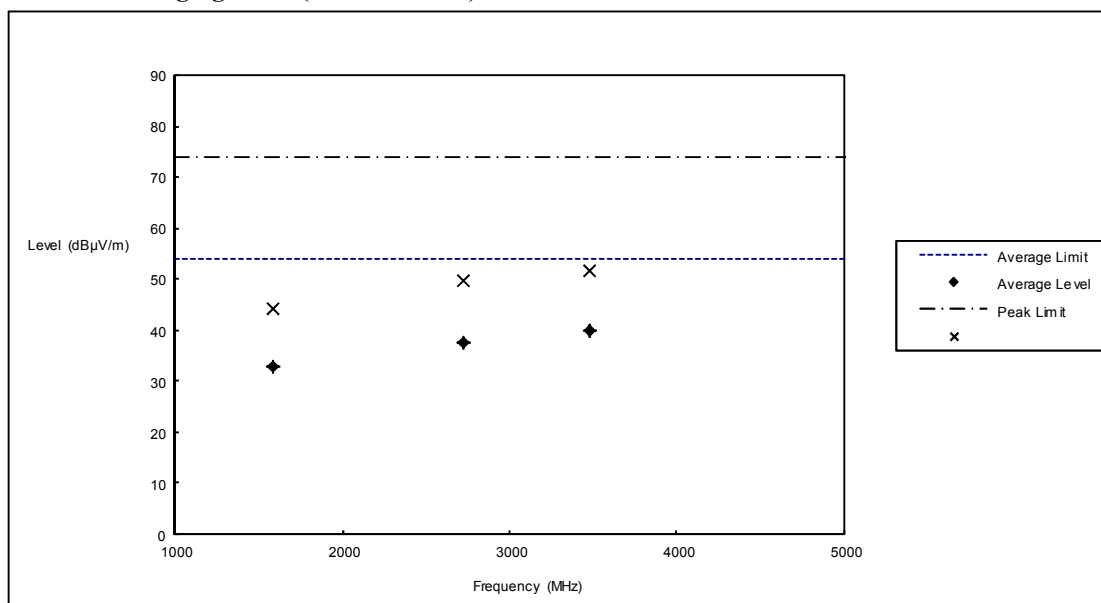
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Results of Charging mode (1GHz – 5GHz) – 117Va.c.: PASS



Results of Charging mode (1GHz – 5GHz) – 117Va.c.: PASS

Radiated Emissions					
Peak Value					
Emission Frequency	E-Field Polarity	Level @3m	Limit @3m	Level @3m	Limit @3m
GHz		dBµV/m	dBµV/m	µV/m	µV/m
1.59	Horizontal	44.4	74.0	166.0	5000
2.72	Horizontal	49.7	74.0	305.5	5000
3.48	Horizontal	51.6	74.0	380.2	5000

Radiated Emissions					
Average Value					
Emission Frequency	E-Field Polarity	Level @3m	Limit @3m	Level @3m	Limit @3m
GHz		dBµV/m	dBµV/m	µV/m	µV/m
1.59	Horizontal	32.9	54.0	44.2	500
2.72	Horizontal	37.5	54.0	75.0	500
3.48	Horizontal	39.9	54.0	98.9	500

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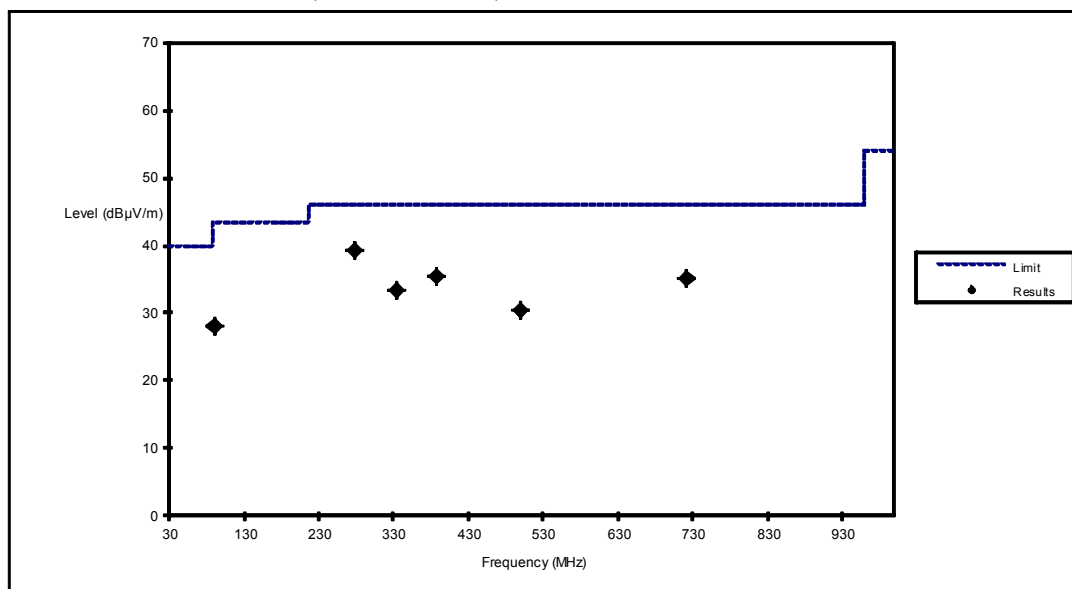
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Results of Download mode (30MHz – 1GHz) –117Va.c.: PASS



Results of Download mode (30MHz – 1GHz) –117Va.c.: PASS

Radiated Emissions					
Quasi-Peak					
Emission Frequency	E-Field Polarity	Level @3m	Limit @3m	Level @3m	Limit @3m
MHz		dBμV/m	dBμV/m	μV/m	μV/m
89.8	Horizontal	28.0	43.5	25.1	150
277.5	Horizontal	39.2	46.0	91.2	200
333.0	Horizontal	33.5	46.0	47.3	200
388.5	Horizontal	35.4	46.0	58.9	200
499.5	Horizontal	30.5	46.0	33.5	200
721.4	Horizontal	35.0	46.0	56.2	200

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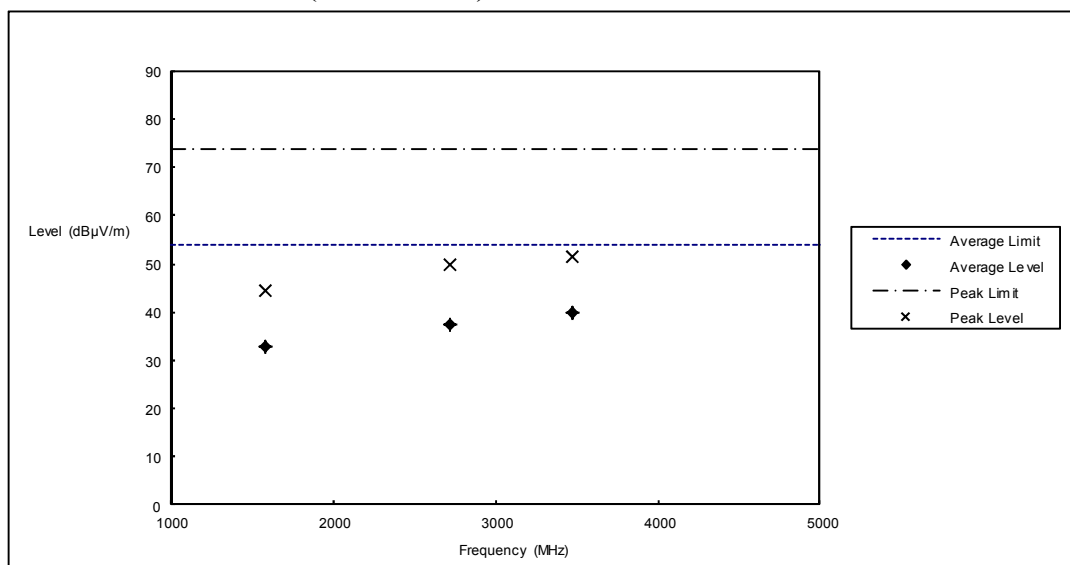
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Results of Download mode (1GHz – 5GHz) –117Va.c.: PASS



Results of Download mode (1GHz – 5GHz) –117Va.c.: PASS

Radiated Emissions					
Peak Value					
Emission Frequency	E-Field Polarity	Level @3m	Limit @3m	Level @3m	Limit @3m
GHz		dBμV/m	dBμV/m	μV/m	μV/m
1.59	Horizontal	44.4	74.0	166.0	5000
2.72	Horizontal	49.7	74.0	305.5	5000
3.48	Horizontal	51.6	74.0	380.2	5000

Radiated Emissions					
Average Value					
Emission Frequency	E-Field Polarity	Level @3m	Limit @3m	Level @3m	Limit @3m
GHz		dBμV/m	dBμV/m	μV/m	μV/m
1.59	Horizontal	32.9	54.0	44.2	500
2.72	Horizontal	37.5	54.0	75.0	500
3.48	Horizontal	39.9	54.0	98.9	500

Remarks:

Calculated measurement uncertainty (30MHz – 1GHz): 4.9dB
(1GHz – 6GHz): 4.02dB
(6GHz – 18GHz): 4.03dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

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3.1.2 Conducted Emissions (0.15MHz to 30MHz)

Test Requirement: FCC 47CFR 15.107

Test Method: ANSI C63.4: 2009

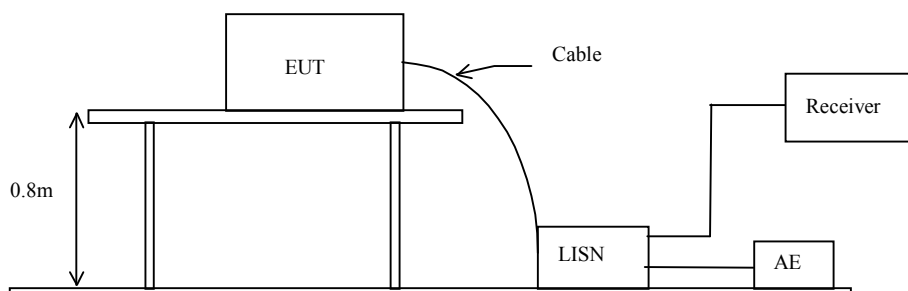
Test Date: 2013-03-28

Mode of Operation: Play mode / Charging mode / Download mode (connected to PC)

Test Method:

The test was performed in accordance with ANSI C63.4: 2009, with the following: an initial measurement was performed in peak and average detection mode on the live line, any emissions recorded within 30dB of the relevant limit line were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

Test Setup:



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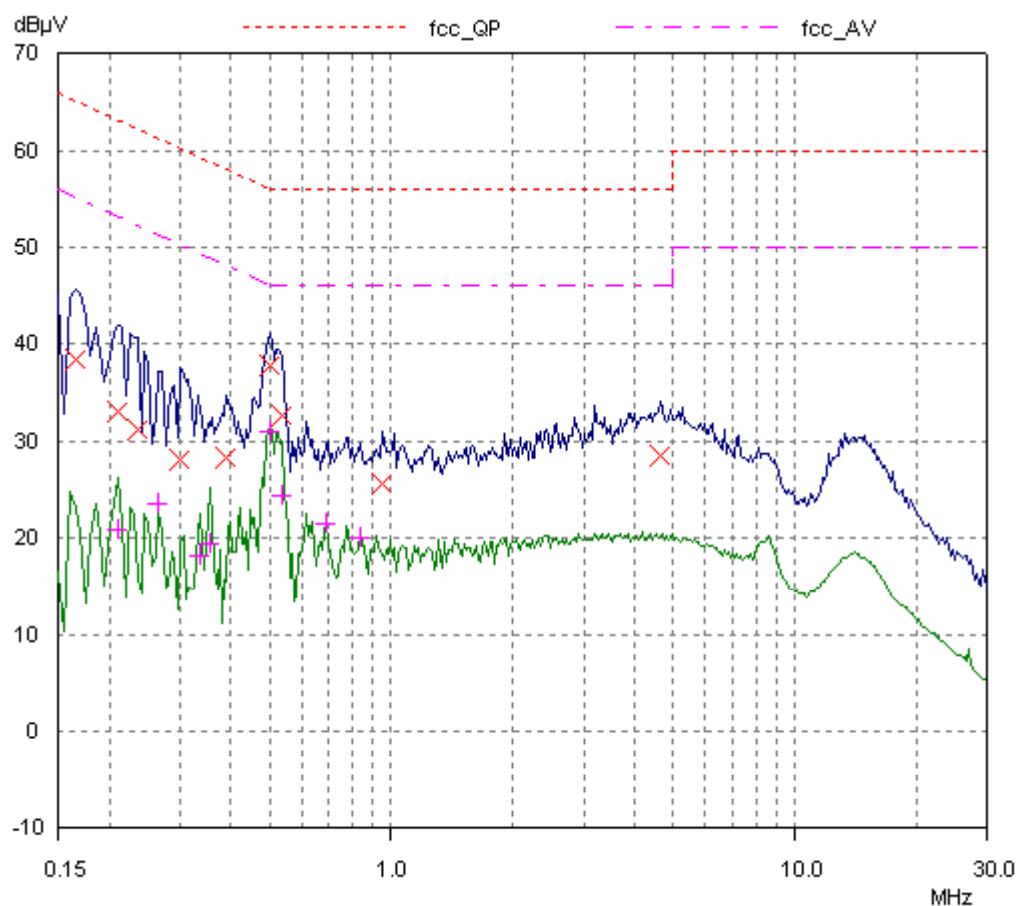
Limit for Conducted Emissions (FCC 47 CFR 15.107):

Frequency Range [MHz]	Quasi-Peak Limits [dBμV]	Average [dBμV]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

* Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

Results of Play mode - Live: PASS



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Results of Play mode - Live: PASS

Conductor	Frequency	Quasi-peak		Average	
		Level	Limit	Level	Limit
Live or Neutral	MHz	dB μ V	dB μ V	dB μ V	dB μ V
Live	0.165	38.4	65.2	-*-	-*-
Live	0.210	33.0	63.2	20.8	53.2
Live	0.235	31.1	62.3	-*-	-*-
Live	0.265	-*-	-*-	23.5	51.3
Live	0.300	28.0	60.2	-*-	-*-
Live	0.335	-*-	-*-	18.3	49.3
Live	0.355	-*-	-*-	19.5	48.8
Live	0.390	28.4	58.1	-*-	-*-
Live	0.500	37.7	56.0	31.1	46.0
Live	0.535	32.7	56.0	24.4	46.0
Live	0.685	-*-	-*-	21.6	46.0
Live	0.835	-*-	-*-	20.0	46.0
Live	0.950	25.6	56.0	-*-	-*-
Live	4.615	28.4	56.0	-*-	-*-

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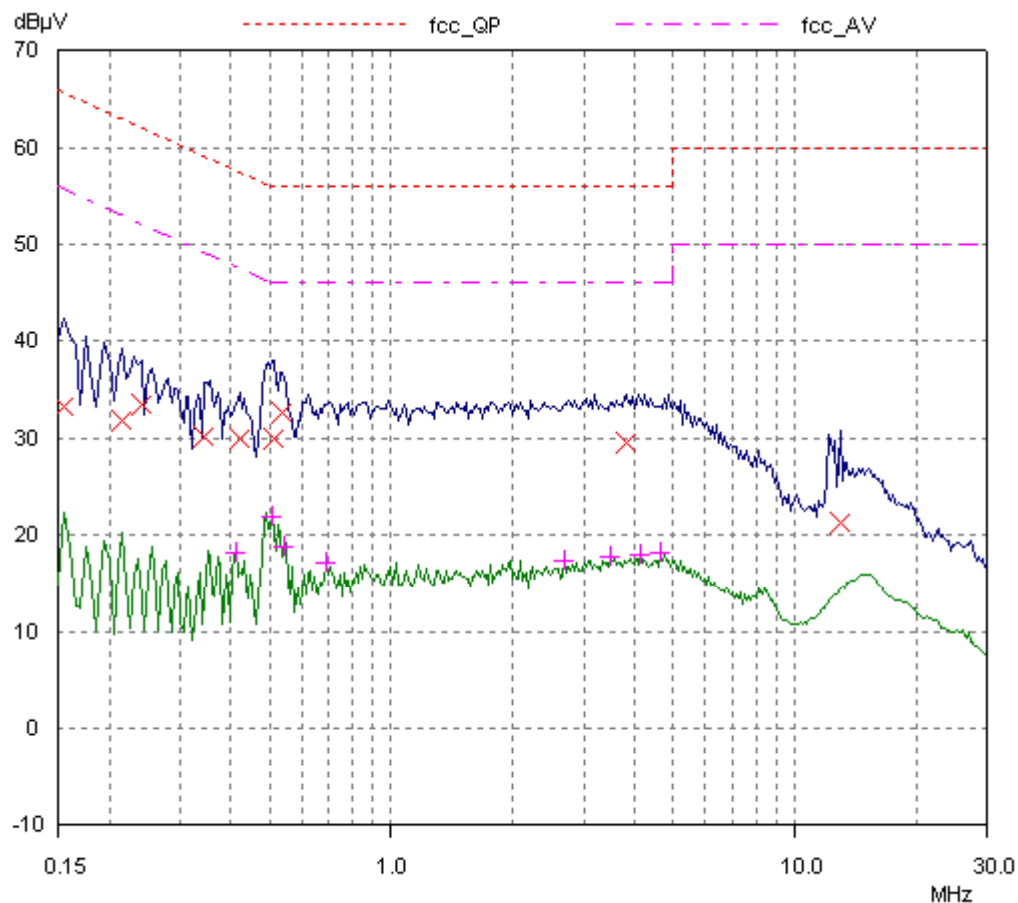
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Results of Play mode - Neutral: PASS



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Results of Play mode - Neutral: PASS

Conductor	Frequency	Quasi-peak		Average	
		Level	Limit	Level	Limit
Live or Neutral	MHz	dB μ V	dB μ V	dB μ V	dB μ V
Neutral	0.155	33.2	65.7	-*-	-*-
Neutral	0.215	31.8	63.0	-*-	-*-
Neutral	0.240	33.5	62.1	-*-	-*-
Neutral	0.345	30.1	59.1	-*-	-*-
Neutral	0.410	-*-	-*-	18.3	47.7
Neutral	0.420	29.9	57.5	-*-	-*-
Neutral	0.505	-*-	-*-	21.9	46.0
Neutral	0.510	30.0	56.0	-*-	-*-
Neutral	0.535	32.7	56.0	-*-	-*-
Neutral	0.545	-*-	-*-	18.9	46.0
Neutral	0.685	-*-	-*-	17.2	46.0
Neutral	0.680	-*-	-*-	17.4	46.0
Neutral	2.680	-*-	-*-	17.4	46.0
Neutral	3.475	-*-	-*-	17.7	46.0
Neutral	3.805	29.6	56.0	-*-	-*-
Neutral	4.120	-*-	-*-	18.0	46.0
Neutral	4.615	-*-	-*-	18.2	46.0
Neutral	12.955	21.4	60.0	-*-	-*-

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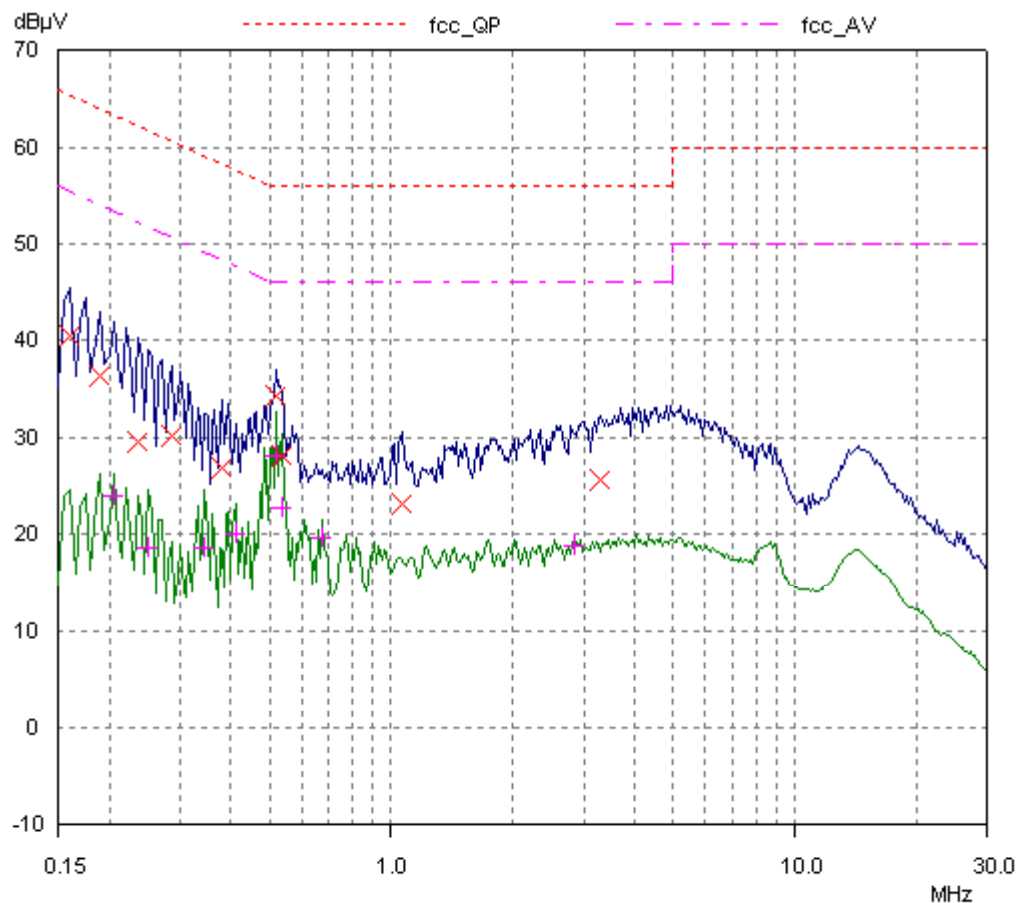
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Results of Charging mode - Live: PASS



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Results of Charging mode - Live: PASS

Conductor	Frequency	Quasi-peak		Average	
		Level	Limit	Level	Limit
Live or Neutral	MHz	dB μ V	dB μ V	dB μ V	dB μ V
Live	0.160	40.5	65.5	-*-	-*-
Live	0.190	36.4	64.0	-*-	-*-
Live	0.205	-*-	-*-	23.9	53.4
Live	0.235	29.6	62.3	-*-	-*-
Live	0.250	-*-	-*-	18.6	51.8
Live	0.285	30.1	60.7	-*-	-*-
Live	0.345	-*-	-*-	18.7	49.1
Live	0.380	26.9	58.3	-*-	-*-
Live	0.410	-*-	-*-	20.0	47.7
Live	0.520	34.3	56.0	28.0	46.0
Live	0.535	28.1	56.0	22.8	46.0
Live	0.675	-*-	-*-	19.6	46.0
Live	1.060	23.2	56.0	-*-	-*-
Live	2.830	-*-	-*-	18.8	46.0
Live	3.310	25.6	56.0	-*-	-*-

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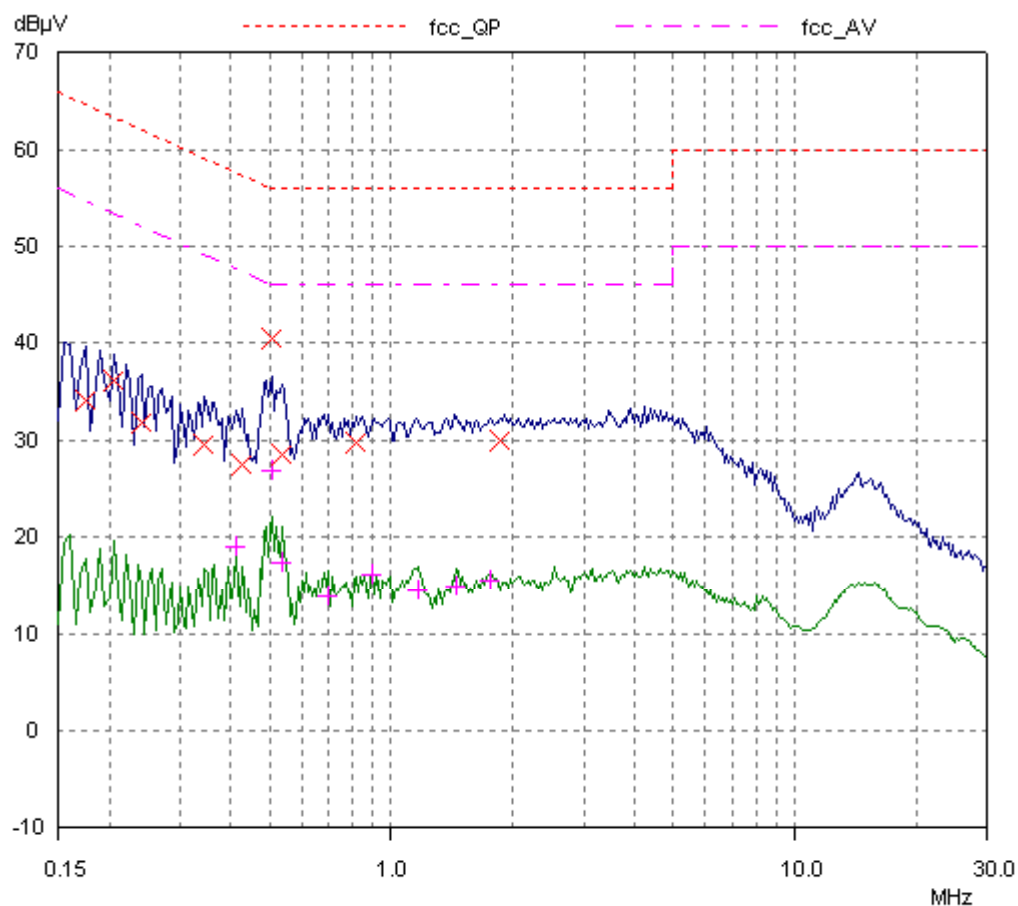
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Results of Charging mode - Neutral: PASS



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Results of Charging mode - Neutral: PASS

Conductor	Frequency	Quasi-peak		Average	
		Level	Limit	Level	Limit
Live or Neutral	MHz	dB μ V	dB μ V	dB μ V	dB μ V
Neutral	0.175	34.0	64.7	-*-	-*-
Neutral	0.205	36.1	63.4	-*-	-*-
Neutral	0.240	31.8	62.1	-*-	-*-
Neutral	0.345	29.6	59.1	-*-	-*-
Neutral	0.410	-*-	-*-	19.1	47.7
Neutral	0.425	27.5	57.4	-*-	-*-
Neutral	0.505	40.4	56.0	26.9	46.0
Neutral	0.535	28.5	56.0	17.4	46.0
Neutral	0.695	-*-	-*-	13.9	46.0
Neutral	0.820	29.8	56.0	-*-	-*-
Neutral	0.900	-*-	-*-	16.1	46.0
Neutral	1.165	-*-	-*-	14.4	46.0
Neutral	1.450	-*-	-*-	15.0	46.0
Neutral	1.750	-*-	-*-	15.5	46.0
Neutral	1.870	30.0	56.0	-*-	-*-

Remark:

Calculated measurement uncertainty (150kHz – 30MHz): 3.25dB

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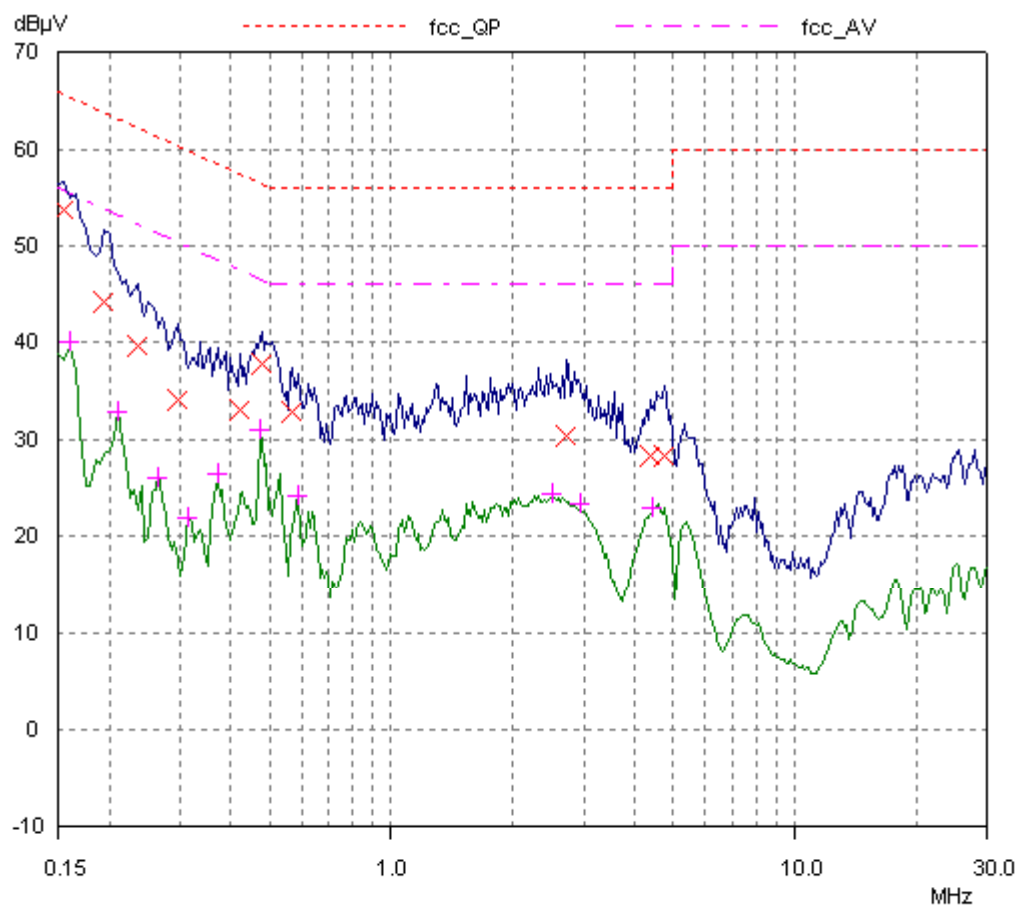
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Results of Download mode - Live: PASS



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Results of Download mode - Live: PASS

Conductor	Frequency	Quasi-peak		Average	
		Level	Limit	Level	Limit
Live or Neutral	MHz	dB μ V	dB μ V	μ V	μ V
Live	0.155	53.8	65.7	-*-	-*-
Live	0.160	-*-	-*-	40.1	55.5
Live	0.195	44.3	63.8	-*-	-*-
Live	0.210	-*-	-*-	32.8	53.2
Live	0.235	39.6	62.3	-*-	-*-
Live	0.265	-*-	-*-	26.1	51.3
Live	0.295	34.1	60.4	-*-	-*-
Live	0.315	-*-	-*-	21.9	49.8
Live	0.370	-*-	-*-	26.4	48.5
Live	0.420	33.1	57.5	-*-	-*-
Live	0.475	-*-	-*-	30.9	46.4
Live	0.480	37.9	56.3	-*-	-*-
Live	0.570	32.9	56.0	-*-	-*-
Live	0.585	-*-	-*-	24.1	46.0
Live	2.500	-*-	-*-	24.5	46.0
Live	2.710	30.3	56.0	-*-	-*-
Live	2.935	-*-	-*-	23.3	46.0
Live	4.375	28.3	56.0	-*-	-*-
Live	4.420	-*-	-*-	23.0	46.0
Live	4.750	28.3	56.0	-*-	-*-

Remark:

Calculated measurement uncertainty (150kHz – 30MHz): 3.25dB

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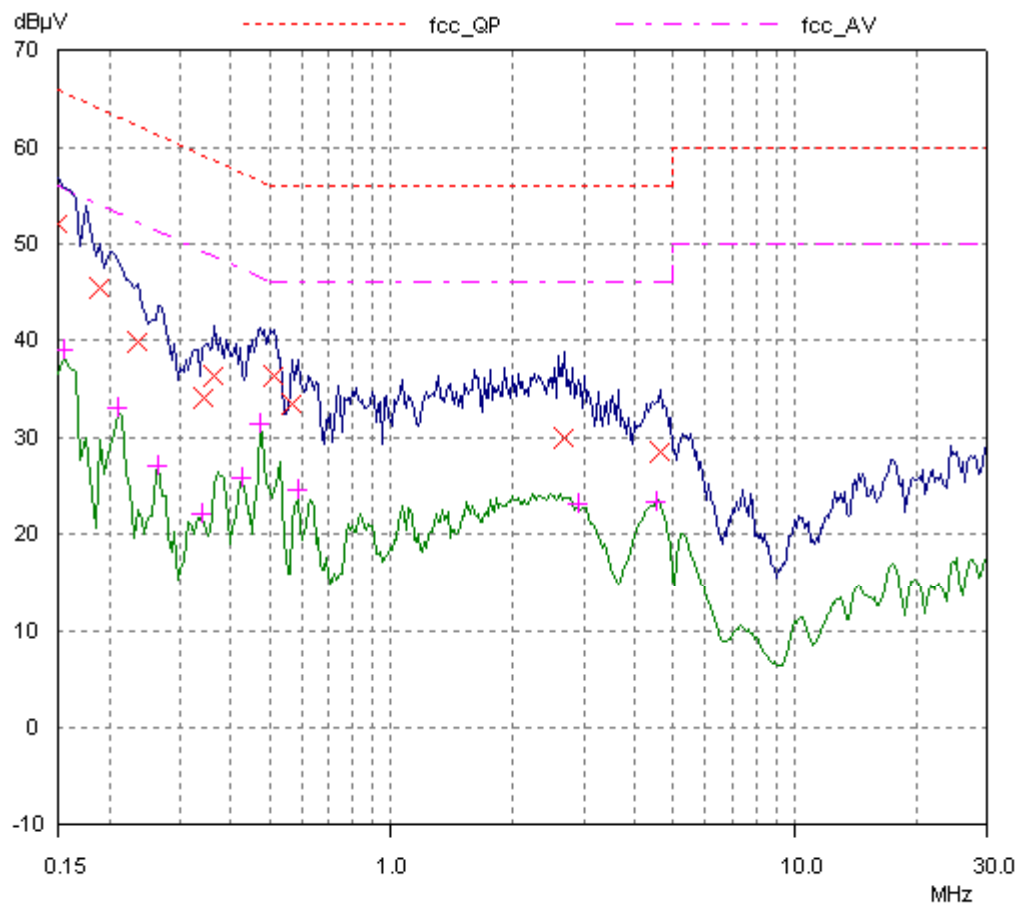
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Results of Download mode - Neutral: PASS



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Results of Download mode - Neutral: PASS

Conductor	Frequency	Quasi-peak		Average	
		Level	Limit	Level	Limit
Live or Neutral	MHz	dB μ V	dB μ V	dB μ V	dB μ V
Neutral	0.150	52.1	66.0	-*-	-*-
Neutral	0.155	-*-	-*-	39.1	55.7
Neutral	0.190	45.4	64.0	-*-	-*-
Neutral	0.210	-*-	-*-	33.2	53.2
Neutral	0.235	39.9	62.3	-*-	-*-
Neutral	0.265	-*-	-*-	27.1	51.3
Neutral	0.340	-*-	-*-	22.1	49.2
Neutral	0.345	34.0	59.1	-*-	-*-
Neutral	0.365	36.3	58.6	-*-	-*-
Neutral	0.425	-*-	-*-	25.8	47.4
Neutral	0.475	-*-	-*-	31.4	46.4
Neutral	0.510	36.4	56.0	-*-	-*-
Neutral	0.570	33.4	56.0	-*-	-*-
Neutral	0.585	-*-	-*-	24.6	46.0
Neutral	2.680	30.0	56.0	-*-	-*-
Neutral	2.920	-*-	-*-	23.2	46.0
Neutral	4.555	-*-	-*-	23.4	46.0
Neutral	4.630	28.5	56.0	-*-	-*-

Remark:

Calculated measurement uncertainty (150kHz – 30MHz): 3.25dB

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APPENDIX A

LIST OF MEASUREMENT EQUIPMENT

Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM299	DOUBLE-RIDGED WAVEGUIDE HORN ANTENNA	ETS-LINDGREN	3115	00114120	2012/01/25	2014/01/25
EM215	MULTIDEVICE CONTROLLER	EMCO	2090	00024676	N/A	N/A
EM216	MINI MAST SYSTEM	EMCO	2075	00026842	N/A	N/A
EM217	ELECTRIC POWERED TURNTABLE	EMCO	2088	00029144	N/A	N/A
EM218	ANECHOIC CHAMBER	ETS-LINDGREN	FACT-3	--	2012/10/25	2013/10/25
EM174	BICONILOG ANTENNA	EMCO	3142B	1671	2012/05/31	2014/05/31
EM229	EMI TEST RECEIVER	R&S	ESIB40	100248	2013/05/07	2014/05/07
EM022	LOOP ANTENNA	EMCO	6502	1189-2424	2011/09/14	2013/09/14

Line Conducted

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM197	LISN	EMCO	4825/2	1193	2012/05/16	2013/05/16
EM181	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB7	100072	2013/05/07	2014/05/07
EM179	IMPULSE LIMITER	ROHDE & SCHWARZ	ESH3-Z2	357-8810.52/54	2013/01/27	2014/01/27
EM154	SHIELDING ROOM	SIEMENS MATSUSHITA COMPONENTS	N/A	803-740-057-99A	2012/02/03	2017/02/03

Remarks:-

CM Corrective Maintenance
N/A Not Applicable or Not Available
TBD To Be Determined

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Appendix B

Ancillary Equipment

ITEM NO.	DESCRIPTION	MODEL NO.	FCC ID	REMARK
1	COMPUTER	T400	---	PRODUCT ID: 6474728 S/N: R8-GGWGR-09/11
2	LENOVO MONITOR	L1711pC	---	RESOLUTION:1280X1024(DURING TESTING) 1.4M UNSHIEDED POWER CORD CONNECTED TO THE COMPUTER 1.8M SHIEDED CABLE CONNECTED TO THE COMPUTER S/N: VNB NBHP
3	HEADPHONE	---	---	12CM HEADPHONE CABLE

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