



**SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch**

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Report No.: SZEM160900814801
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TEST REPORT

Application No.: SZEM1609008148BA
Applicant: Flashbay Electronics
Address of Applicant: Bldg b & C Xi Feng Cheng IND Zone, No.2 FuYuan Road He Ping, Village, FuYong Town, ShenZhen
Factory: Flashbay Electronics
Address of Factory: Bldg b & C Xi Feng Cheng IND Zone, No.2 FuYuan Road He Ping, Village, FuYong Town, ShenZhen
Equipment Under Test (EUT):
EUT Name: Core Power Bank
Model No.: Core, LUX (LUX Power Bank), Maple (Maple Power Bank) ♣
♣ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Standards: AS/NZS CISPR 32:2013
Date of Receipt: 2016-09-23
Date of Test: 2016-09-27
Date of Issue: 2016-09-30

Test Result :	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.



Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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2 Test Summary

Item	Standard	Method	Class	Result
Conducted Disturbance at Mains Terminals (150kHz-30MHz)	AS/NZS CISPR 32:2013	AS/NZS CISPR 32:2013	Class B	Pass
Radiated Disturbance (30MHz-1GHz)	AS/NZS CISPR 32:2013	AS/NZS CISPR 32:2013	Class B	Pass

Declaration of EUT Family Grouping:

Model No.: Core, LUX (LUX Power Bank), Maple (Maple Power Bank)

Only the model Core was tested, since the electrical circuit design, PCB layout, components used and internal wiring were identical for the above models, with only difference being of color, decoration and model No..



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4.3 Standards Applicable for Testing

Table 1 : Tests Carried Out Under AS/NZS CISPR 32:2013

Method	Item	Status
AS/NZS CISPR 32:2013	Conducted Disturbance at Mains Terminals (150kHz-30MHz)	√
AS/NZS CISPR 32:2013	Conducted Disturbance at Telecommunication Port (150kHz-30MHz)	×
AS/NZS CISPR 32:2013	Conducted Disturbance at Antenna Terminals (30MHz-1GHz)	×
AS/NZS CISPR 32:2013	Radiated Disturbance(30MHz-1GHz)	√
AS/NZS CISPR 32:2013	Radiated Disturbance(above 1GHz)	×
AS/NZS CISPR 32:2013	Conducted Disturbance at Antenna Terminals (30MHz-2.15GHz)	×

- × Indicates that the test is not applicable
√ Indicates that the test is applicable



4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong,
China 518057

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

•CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

• FCC – Registration No.: 556682

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

• Industry Canada (IC)

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Conducted Disturbance at Mains Terminals(150kHz-30MHz)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	Shielding Room	ChangZhou ZhongYu	GB-88	SEM001-06	2016-05-13	2017-05-13
2	LISN	Rohde & Schwarz	ENV216	SEM007-01	2015-10-09	2016-10-09
3	LISN	ETS-LINDGREN	3816/2	SEM007-02	2016-04-25	2017-04-25
4	EMI Test Receiver	Rohde & Schwarz	ESC1	SEM004-02	2016-04-25	2017-04-25

Radiated Disturbance(30MHz-1GHz)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	3m Semi- Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2016-05-13	2017-05-13
2	EMI Test Receiver	Agilent Technologies	N9038A	SEM004-05	2015-10-09	2016-10-09
3	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2014-11-01	2017-11-01
4	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2016-04-25	2017-04-25

General used equipment						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	Humidity/ Temperature Indicator	Shang Hai Meteorological Industry Factory	ZJ1-2B	SEL0101	2015-10-12	2016-10-12
2	Humidity/ Temperature Indicator	Shang Hai Meteorological Industry Factory	ZJ1-2B	SEL0102	2015-10-12	2016-10-12
3	Humidity/ Temperature Indicator	Shang Hai Meteorological Industry Factory	ZJ1-2B	SEL0103	2015-10-12	2016-10-12
4	Barometer	Chang Chun Meteorological Industry Factory	DYM3	SEL0088	2016-04-25	2017-04-25

6 Emission Test Results

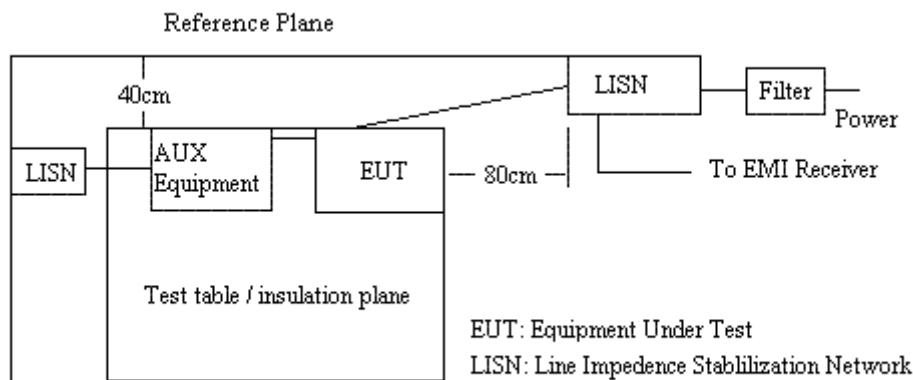
6.1 Conducted Disturbance at Mains Terminals(150kHz-30MHz)

Test Requirement:	AS/NZS CISPR 32:2013
Test Method:	AS/NZS CISPR 32:2013
Frequency Range:	150kHz to 30MHz
Limit:	
0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

6.1.1 E.U.T. Operation

Operating Environment:					
Temperature:	25.0 °C	Humidity:	56 % RH	Atmospheric Pressure:	1005 mbar
Pretest these mode to find the worst case:	a: Charge mode, keep EUT being charged with adapter. c: Charge and discharge mode, keep EUT being charged with adapter and discharging to the resistor.				
The worst case for final test:	c: Charge and discharge mode, keep EUT being charged with adapter and discharging to the resistor.				

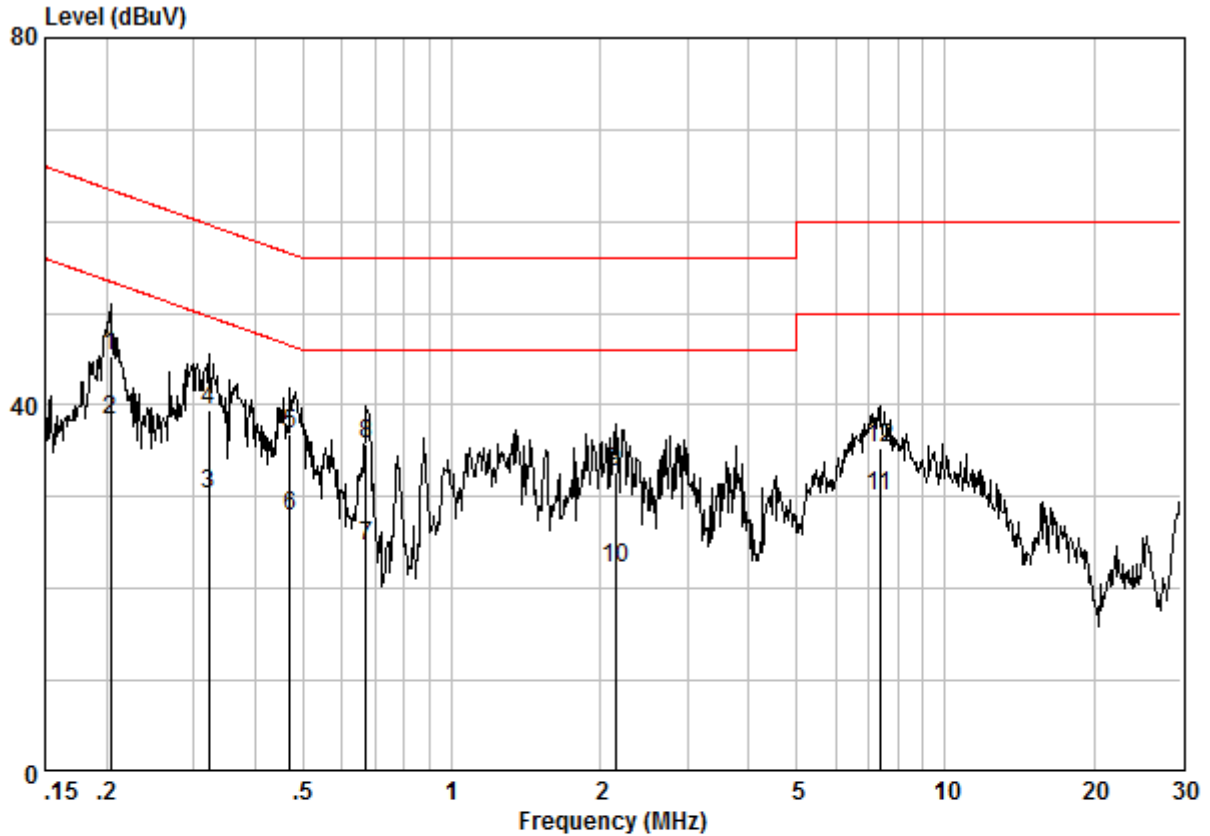
6.1.2 Test Setup



6.1.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

Mode:c;Line:Live Line

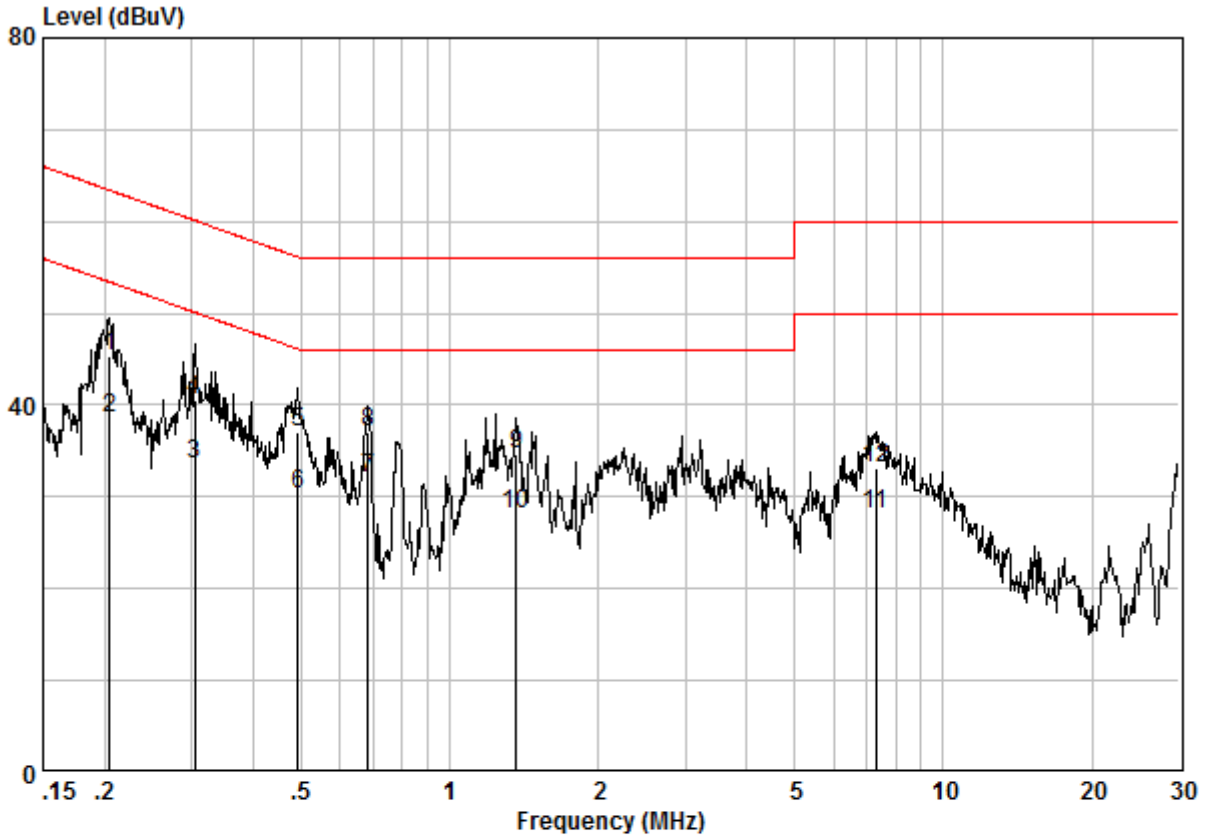


Site : Shielding Room
 Condition : CE LINE
 Job No. : 8148BA
 Mode : c

	Freq	Cable Loss	LISN Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 @	0.20396	0.02	9.60	35.75	45.37	63.45	-18.08	QP
2 @	0.20396	0.02	9.60	28.72	38.34	53.45	-15.11	AVERAGE
3 @	0.32169	0.02	9.59	20.66	30.27	49.66	-19.39	AVERAGE
4 @	0.32169	0.02	9.59	29.89	39.50	59.66	-20.16	QP
5 @	0.47110	0.02	9.59	27.23	36.85	56.49	-19.65	QP
6 @	0.47110	0.02	9.59	18.28	27.90	46.49	-18.60	AVERAGE
7 @	0.67187	0.02	9.61	14.97	24.61	46.00	-21.39	AVERAGE
8 @	0.67187	0.02	9.61	26.03	35.67	56.00	-20.33	QP
9 @	2.144	0.03	9.63	23.01	32.68	56.00	-23.32	QP
10 @	2.144	0.03	9.63	12.50	22.16	46.00	-23.84	AVERAGE
11 @	7.368	0.09	9.68	20.30	30.07	50.00	-19.93	AVERAGE
12 @	7.368	0.09	9.68	25.53	35.30	60.00	-24.70	QP



Mode:c;Line:Neutral Line



Site : Shielding Room
Condition : CE NEUTRAL
Job No. : 8148BA
Mode : c

	Freq	Cable Loss	LISN Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 @	0.20505	0.02	9.62	35.63	45.27	63.40	-18.13	QP
2 @	0.20505	0.02	9.62	28.96	38.60	53.40	-14.80	AVERAGE
3 @	0.30509	0.02	9.62	23.93	33.57	50.10	-16.53	AVERAGE
4 @	0.30509	0.02	9.62	30.96	40.60	60.10	-19.50	QP
5 @	0.49150	0.02	9.63	27.44	37.09	56.14	-19.05	QP
6 @	0.49150	0.02	9.63	20.69	30.33	46.14	-15.81	AVERAGE
7 @	0.68263	0.02	9.63	22.34	31.99	46.00	-14.01	AVERAGE
8 @	0.68263	0.02	9.63	27.33	36.98	56.00	-19.02	QP
9 @	1.367	0.03	9.64	25.05	34.72	56.00	-21.28	QP
10 @	1.367	0.03	9.64	18.39	28.06	46.00	-17.94	AVERAGE
11 @	7.290	0.09	9.75	18.22	28.05	50.00	-21.95	AVERAGE
12 @	7.290	0.09	9.75	23.23	33.06	60.00	-26.94	QP



6.2 Radiated Disturbance(30MHz-1GHz)

Test Requirement: AS/NZS CISPR 32:2013
 Test Method: AS/NZS CISPR 32:2013
 Frequency Range: 30MHz to 1GHz
 Limit:
 30MHz-230MHz 40 dB(μV/m) quasi-peak
 230MHz-1GHz 47 dB(μV/m) quasi-peak
 Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

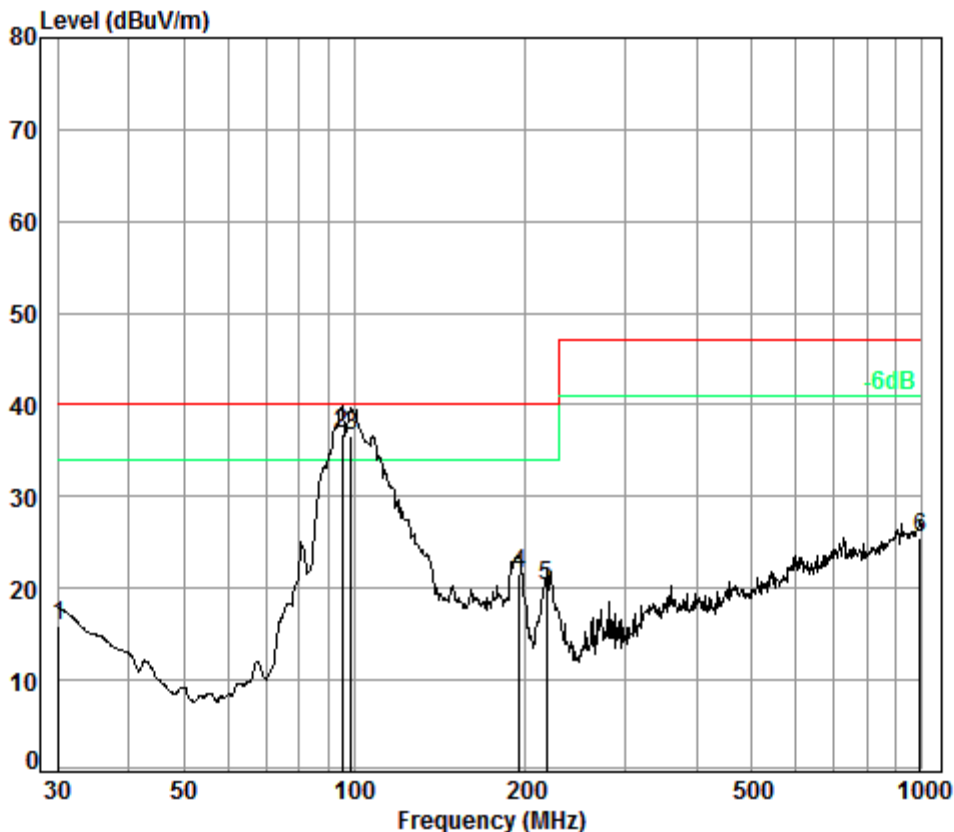
6.2.1 E.U.T. Operation

Operating Environment:						
Temperature:	25.0 °C	Humidity:	50 % RH	Atmospheric Pressure:	1005	mbar
Pretest these mode to find the worst case:	a: Charge mode, keep EUT being charged with adapter. b: Discharge mode, keep EUT discharging to the resistor. c: Charge and discharge mode, keep EUT being charged with adapter and discharging to the resistor.					
The worst case for final test:	b: Discharge mode, keep EUT discharging to the resistor.					

6.2.2 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

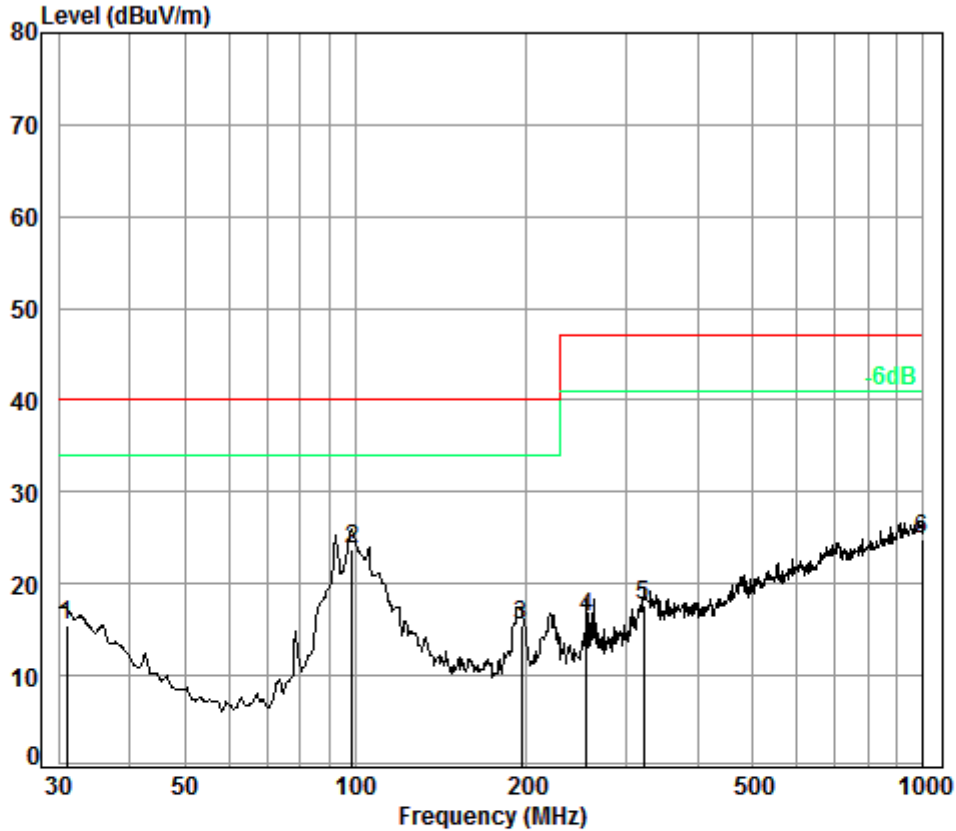
Mode:b;Polarization:Horizontal



Condition: 3m HORIZONTAL
 Job No. : 8148BA
 Test mode: b

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Limit Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	30.21	0.60	18.86	27.40	23.76	15.82	40.00	-24.18
2 pp	95.09	1.15	8.96	27.30	54.12	36.93	40.00	-3.07
3	98.83	1.19	9.07	27.30	53.62	36.58	40.00	-3.42
4	195.14	1.39	10.15	26.87	36.97	21.64	40.00	-18.36
5	218.31	1.51	11.09	26.80	34.43	20.23	40.00	-19.77
6	989.54	3.69	23.93	26.54	24.32	25.40	47.00	-21.60

Mode:b;Polarization:Vertical



Condition: 3m VERTICAL
 Job No. : 8148BA
 Test mode: b

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Limit Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	30.96	0.60	18.36	27.40	23.95	15.51	40.00	-24.49
2 pp	98.83	1.19	9.07	27.30	40.89	23.85	40.00	-16.15
3	195.82	1.39	10.16	26.87	30.86	15.54	40.00	-24.46
4	255.62	1.70	12.32	26.70	28.96	16.28	47.00	-30.72
5	322.19	1.97	14.67	26.72	27.79	17.71	47.00	-29.29
6	996.50	3.70	24.04	26.51	23.53	24.76	47.00	-22.24

7 Photographs

7.1 Conducted Disturbance at Mains Terminals(150kHz-30MHz) Test Setup



7.2 Radiated Disturbance(30MHz-1GHz) Test Setup



7.3 EUT Constructional Details

