



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

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TEST REPORT

Application No.: SZEM11704003557BA
Applicant: Flashbay Electronics
Address of Applicant: Blag b & C Xi Feng Cheng IND Zone, No.2 FuYuan Road He Ping, Village, FuYuan Town, ShenZhen
Manufacturer: Flashbay Electronics
Address of Manufacturer: Blag b & C Xi Feng Cheng IND Zone, No.2 FuYuan Road He Ping, Village, FuYuan Town, ShenZhen
Factory: Flashbay Electronics
Address of Factory: Blag b & C Xi Feng Cheng IND Zone, No.2 FuYuan Road He Ping, Village, FuYuan Town, ShenZhen
Equipment Under Test (EUT):
EUT Name: power bank
Model No.: Tour (TR)
Standards: 47 CFR PART 15, Subpart B:2016
Date of Receipt: 2016-04-08 (for original report SZEM160400216201)
Date of Test: 2016-04-11 (for original report SZEM160400216201)
Date of Issue: 2016-04-27 (for original report SZEM160400216201)
2017-05-03 (for new report SZEM1170400355701)

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.

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2 Test Summary

Item	Standard	Method	Class	Result
Conducted Disturbance at Mains Terminals (150kHz-30MHz)	47 CFR PART 15,Subpart B:2016	ANSI C63.4	Class B	Pass
Radiated Disturbance (30MHz-1GHz)	47 CFR PART 15,Subpart B:2016	ANSI C63.4	Class B	Pass

The highest frequency of the internal sources of the EUT	Upper frequency of measurement Range
Below 1.705MHz	30MHz
1.705MHz to 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5th harmonic of the highest frequency or 40GHz, whichever is lower

Remark:

Original model No. in report SZEM160400216201: Card

The model Card was only tested in report SZEM160400216201.

New model No. in report SZEM1170400355701: Tour (TR)

This report was an additional report copied from the report SZEM160400216201, just changed the model No.

Since the electrical circuit design, layout, components used and internal wiring for the model in the report SZEM160400216201 was exactly the same as the model in this report, only the different on model No. and colour, shell.

Additionally, just updated the below standards.

Original report standard

The newest report standard

47 CFR PART 15,Subpart B:2015

47 CFR PART 15,Subpart B:2016

Reviewed the updated standards, all the technical requirements for the EUT are identical between the original and the newest standards' version.

Therefore original data were kept in this report SZEM1170400355701



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4 General Information

4.1 Details of E.U.T.

Power Supply: Input Voltage: DC5V 1A
Output Voltage: DC5V 1A
Battery Capacity: 2500mAh
Cable: USB Cable 1: 30cm Unshielded
USB Cable 2: 3cm Unshielded

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Adapter	Apple	A1357 W010A051	REF. No.SEA0500
Cement Resister	SGS	N/A	REF. No.SEA0600
Micro USB Cable	PHILIPS	SWR2101	REF. No.SEA0700



4.3 Standards Applicable for Testing

Table 1 : Tests Carried Out Under 47 CFR PART 15,Subpart B:2016

Method	Item	Status
ANSI C63.4	Conducted Disturbance at Mains Terminals (150kHz-30MHz)	√
ANSI C63.4	Radiated Disturbance(30MHz-1GHz)	√
ANSI C63.4	Radiated Disturbance(above 1GHz)	×

- × 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)

The 10m Semi-anechoic chambers 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-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	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
1	Shielding Room	ZhongYu Electron	GB-88	SEL0042	2015-05-13	2016-05-13
2	LISN	Rohde & Schwarz	ENV216	SEL0152	2015-10-09	2016-10-09
3	LISN	ETS-LINDGREN	3816/2	SEL0021	2015-05-13	2016-05-13
4	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	EMC0120	2015-08-30	2016-08-30
5	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	EMC0121	2015-08-30	2016-08-30
6	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	EMC0122	2015-08-30	2016-08-30
7	EMI Test Receiver	Rohde & Schwarz	ESCI	SEL0022	2015-05-13	2016-05-13
8	Coaxial Cable	SGS	N/A	SEL0025	2015-05-13	2016-05-13

Radiated Disturbance(30MHz-1GHz)						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
1	10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEL0303	2015-08-01	2016-08-01
2	EMI Test Receiver (9k-3GHz)	Rohde & Schwarz	ESCI	SEL0175	2015-05-13	2016-05-13
3	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
4	Coaxial cable	SGS	N/A	SEL0288	2015-05-13	2016-05-13
5	Coaxial cable	SGS	N/A	SEL0275	2015-05-13	2016-05-13
6	Coaxial cable	SGS	N/A	SEL0274	2015-05-13	2016-05-13
7	Trilog-Broadband Antenna(30M-1GHz)	Schwarzbeck	VULB9168	SEM003-17	2016-01-26	2017-01-26
8	Pre-amplifier	Sonoma Instrument Co	310N	SEL0298	2015-05-13	2016-05-13
9	Loop Antenna	ETS-LINDGREN	6502	SEL0802	2015-08-14	2016-08-14



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General used equipment						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
1	Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEL0101	2015-10-12	2016-10-12
2	Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEL0102	2015-10-12	2016-10-12
3	Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEL0103	2015-10-12	2016-10-12
4	Barometer	Changchun Meteorological Industry Factory	DYM3	SEL0088	2015-05-13	2016-05-13

6 Emission Test Results

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

Test Requirement:	47 CFR PART 15,Subpart B:2016
Test Method:	ANSI C63.4
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: 1015 mbar

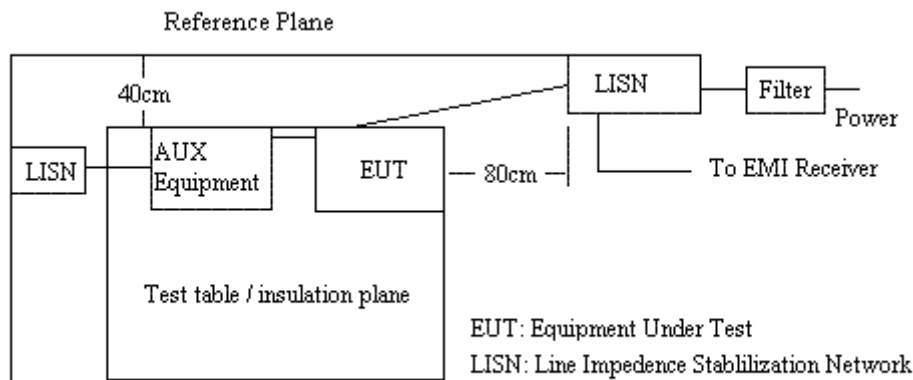
Pretest these mode to find the worst case:

- 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:

- a: Charge mode, keep EUT being charged with adapter.

6.1.2 Test Setup

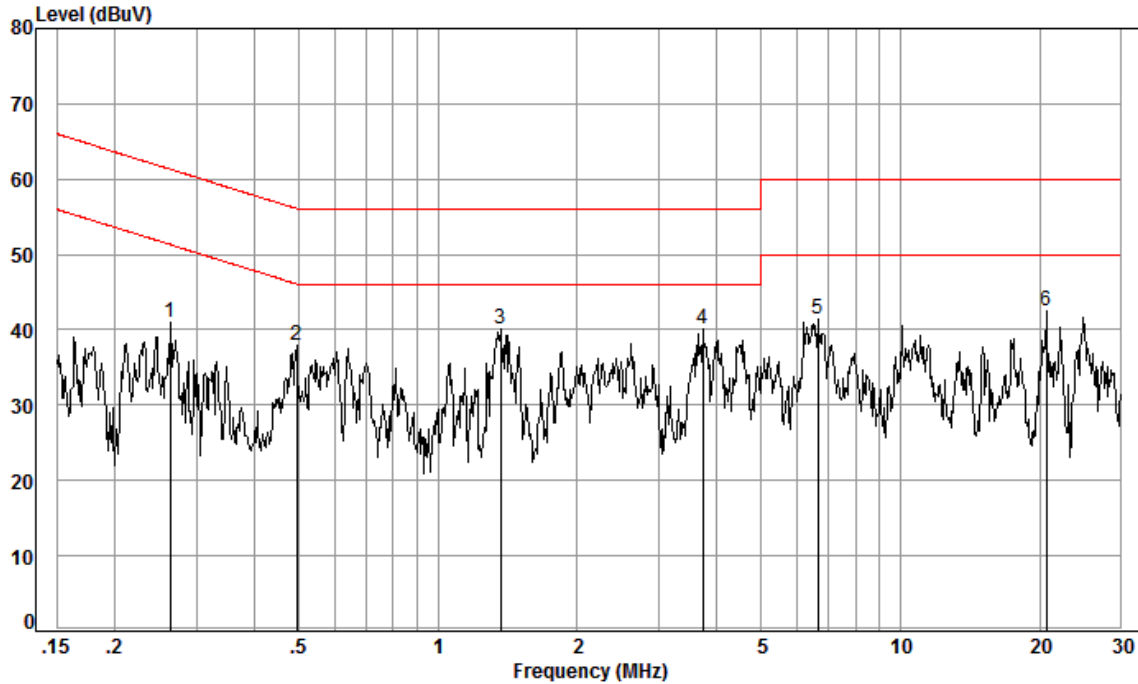


6.1.3 Measurement Data

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:a;Line:Live Line

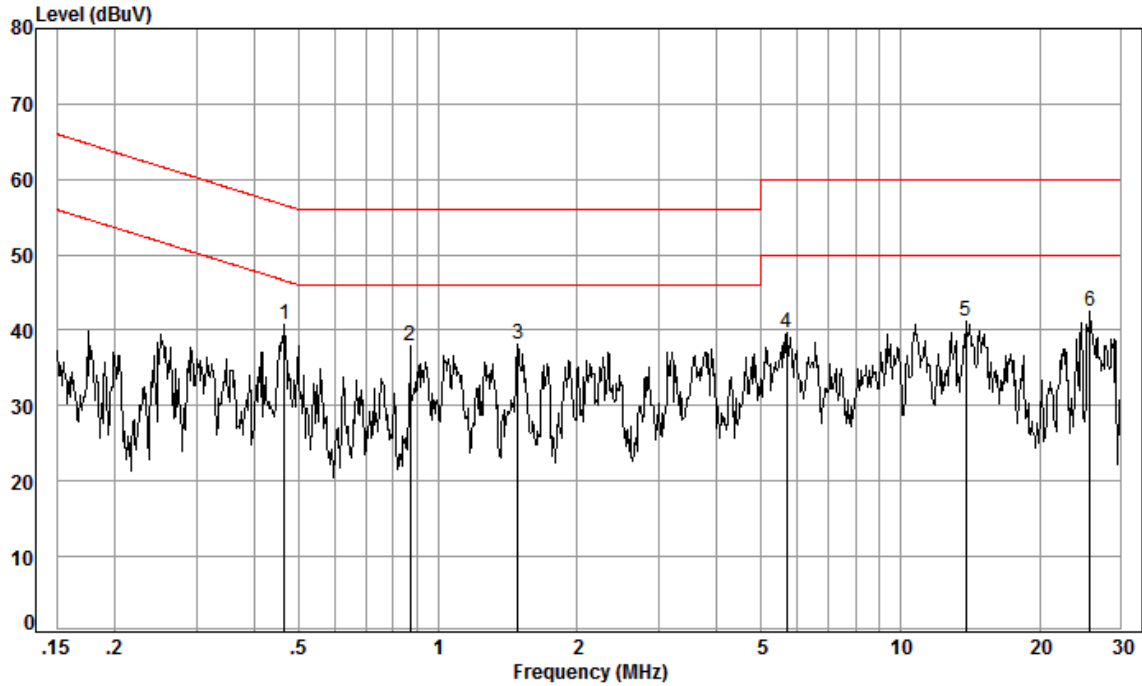


Site : Shielding Room
 Condition: CE Line
 Job No. : 2162BA
 Test Mode: a

	Freq	Cable Loss	LISN Factor	Read Level	Limit Level	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dB	
1	0.26	0.06	9.84	31.02	40.92	51.34	-10.42 Peak
2	0.49	0.05	9.86	28.02	37.93	46.10	-8.17 Peak
3	1.37	0.03	9.92	30.22	40.17	46.00	-5.83 Peak
4	3.74	0.09	10.07	30.04	40.20	46.00	-5.80 Peak
5	6.63	0.21	10.14	31.07	41.42	50.00	-8.58 Peak
6	20.70	1.58	10.24	30.67	42.49	50.00	-7.51 Peak



Mode:a;Line:Neutral Line



Site : Shielding Room
Condition: CE Neutral
Job No. : 2162BA
Test Mode: a

	Freq	Cable Loss	LISN Factor	Read Level	Limit Level	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dB	
1	0.47	0.05	9.88	30.75	40.68	46.58	-5.90 Peak
2	0.87	0.03	10.00	28.00	38.03	46.00	-7.97 Peak
3	1.49	0.04	10.08	28.01	38.13	46.00	-7.87 Peak
4	5.68	0.16	10.13	29.28	39.57	50.00	-10.43 Peak
5	13.84	0.84	10.20	30.09	41.13	50.00	-8.87 Peak
6	25.73	1.93	9.96	30.67	42.56	50.00	-7.44 Peak



6.2 Radiated Disturbance(30MHz-1GHz)

Test Requirement:	47 CFR PART 15,Subpart B:2016
Test Method:	ANSI C63.4
Frequency Range:	30MHz to 1GHz
Limit:	
30MHz -88MHz	29.5(dB μ V/m) quasi-peak
88MHz-216MHz	33.0(dB μ V/m) quasi-peak
216MHz-960MHz	35.6(dB μ V/m) quasi-peak
960MHz-1000MHz	44.4(dB μ V/m) quasi-peak
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to1000MHz

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.0 °C Humidity: 56 % RH Atmospheric Pressure: 1015 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.

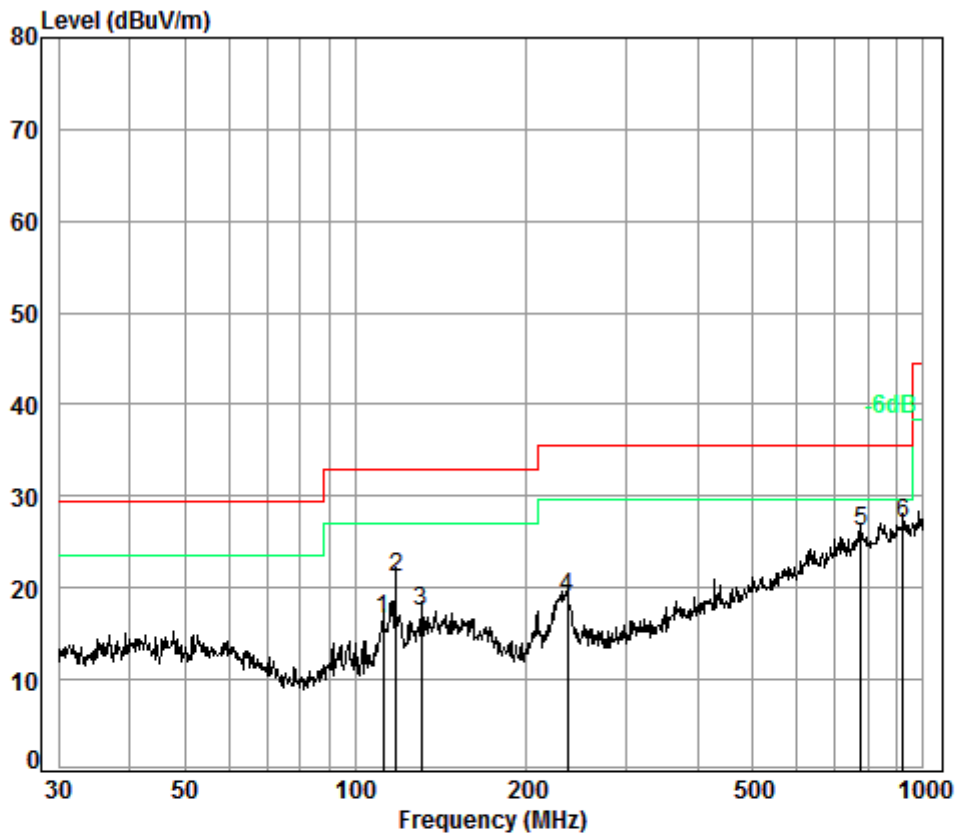
The worst case for final test: c: Charge and discharge mode, keep EUT being charged with adapter and discharging to the resistor.

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:c;Polarization:Horizontal

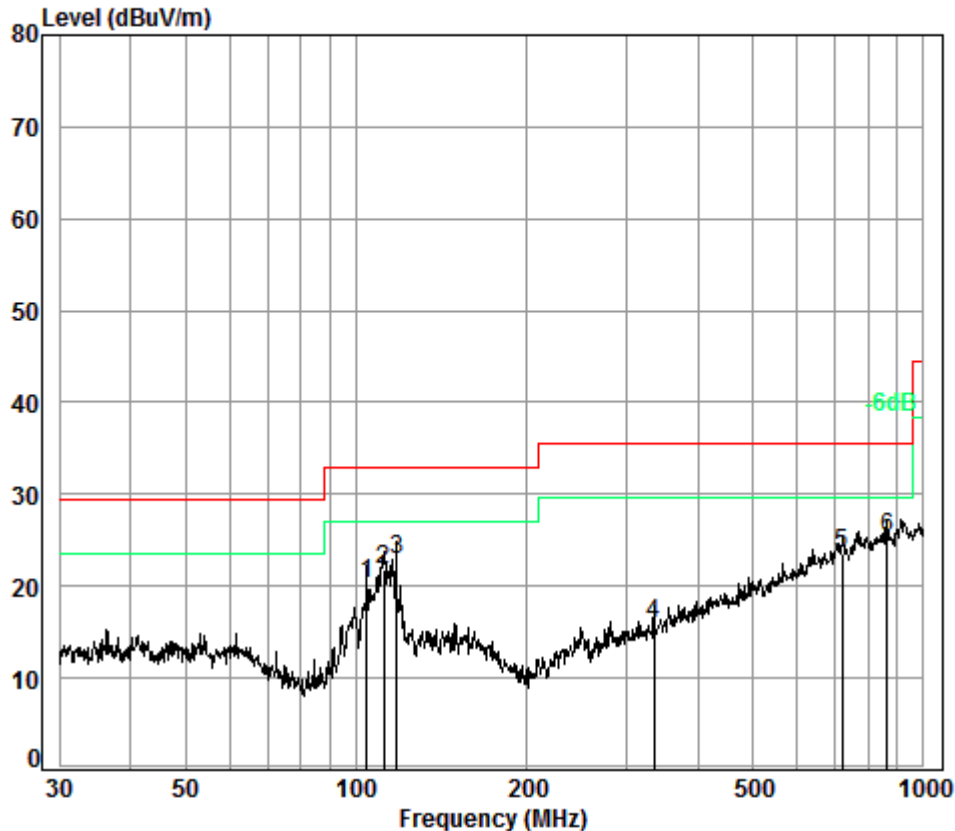


Condition: 10m Horizontal
Job No. : 2162BA
Test Mode: c

	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	111.74	7.26	10.57	32.80	31.53	16.56	33.00	-16.44
2	117.77	7.29	11.25	32.80	35.40	21.14	33.00	-11.86
3	130.38	7.35	12.06	32.80	30.91	17.52	33.00	-15.48
4	236.64	7.78	10.97	32.80	33.11	19.06	35.60	-16.54
5	776.88	9.24	21.07	32.72	28.53	26.12	35.60	-9.48
6 pp	922.52	9.51	22.53	32.60	27.69	27.13	35.60	-8.47



Mode:c;Polarization:Vertical



Condition: 10m Vertical
Job No. : 2162BA
Test Mode: c

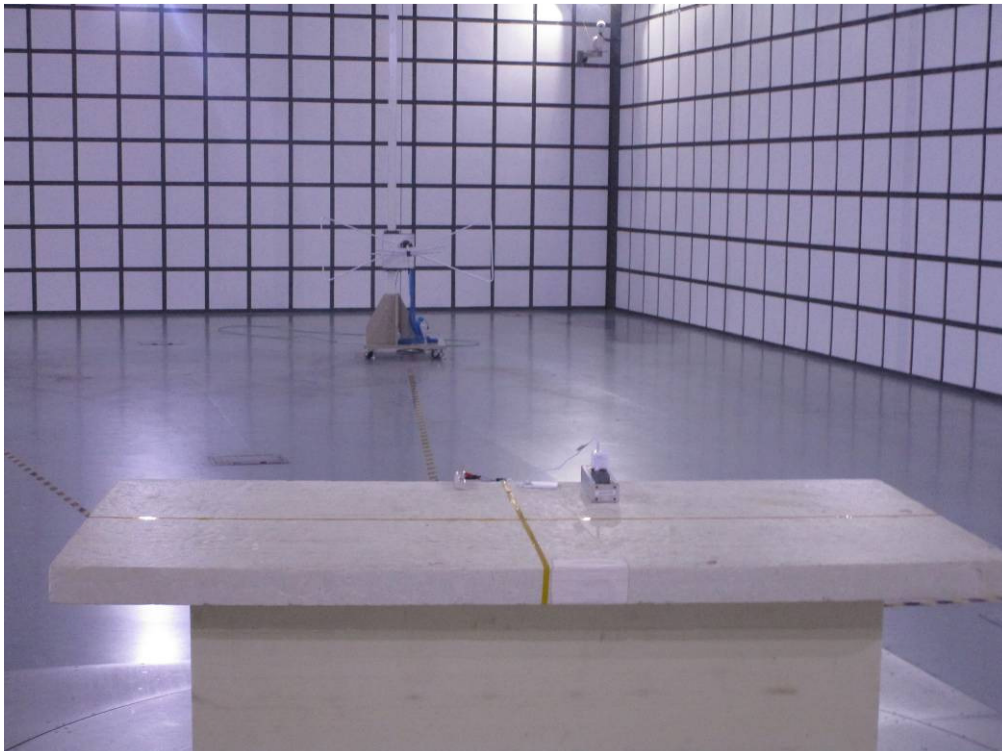
	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	104.54	7.22	9.85	32.80	35.95	20.22	33.00	-12.78
2	111.74	7.26	10.57	32.80	36.68	21.71	33.00	-11.29
3 pp	117.77	7.29	11.25	32.80	37.06	22.80	33.00	-10.20
4	334.86	8.18	13.56	32.76	26.96	15.94	35.60	-19.66
5	719.20	9.20	20.38	32.78	26.74	23.54	35.60	-12.06
6	863.06	9.42	21.75	32.64	26.79	25.32	35.60	-10.28

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



