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

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

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TEST REPORT

Application No.:	SZEM1706006782CR
Applicant:	Shenzhen J.W. Industries Co., Ltd.
Address of Applicant:	4/F, C6 Building, Hengfeng Industrial Area, Hezhou, Xixiang, Baoan, Shenzhen, China
Manufacturer / Factory:	Shenzhen J.W. Industries Co., Ltd.
Address of Manufacturer / Factory:	4/F, C6 Building, Hengfeng Industrial Area, Hezhou, Xixiang, Baoan, Shenzhen, China
Equipment Under Test (EUT):	
EUT Name:	Wake up light with radio
Model No.:	JW-6638
Standards:	EN 55015:2013 +A1:2015 EN 55032:2015 EN 61000-3-2:2014 EN 61000-3-3:2013 EN 61547:2009 EN 55014-2:2015 EN 55020:2007 +A11:2011
Date of Receipt:	2017-06-30
Date of Test:	2017-07-03 to 2017-07-06
Date of Issue:	2017-07-19
Test Result :	**Pass***

* In the configuration tested, the EUT complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.

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.

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2017-07-19		Original

Authorized for issue by:				
				
		Leo Li /Project Engineer		
				
		Eric Fu /Reviewer		

2 Test Summary

Emission Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Emissions at Mains Terminals (9kHz-30MHz)	EN 55015:2013 +A1:2015	EN 55015:2013 +A1:2015	N/A	Pass
Conducted Emissions at Mains Terminals (150kHz-30MHz)	EN 55032:2015	EN 55032:2015	N/A	Pass
Radiated Emissions (30MHz-1GHz)	EN 55032:2015	EN 55032:2015	N/A	Pass
Radiated Emissions (30MHz-300MHz)	EN 55015:2013 +A1:2015	CISPR 32:2015	N/A	Pass
Radiated Emissions (Magnetic field Induced Current) (9kHz-30MHz)	EN 55015:2013 +A1:2015	EN 55015:2013 +A1:2015	N/A	Pass
Harmonic Current Emission	EN 61000-3-2:2014	EN 61000-3-2:2014	Class C	Pass
Voltage Fluctuations and Flicker	EN 61000-3-3:2013	EN 61000-3-3:2013	Clause 5 of EN 61000-3-3	Pass

N/A: Not applicable

Immunity Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Electrostatic Discharge	EN 55014-2:2015	EN 61000-4-2:2009	4kV Contact Discharge 8kV Air Discharge	Pass
Electrostatic Discharge	EN 61547:2009	EN 61000-4-2:2009	4kV Contact Discharge 8kV Air Discharge	Pass
Electrostatic Discharge	EN 55020:2007 +A11:2011	EN 61000-4-2:2009	4kV Contact Discharge 8kV Air Discharge	Pass
Radiated Immunity (80MHz-1GHz)	EN 61547:2009	EN 61000-4-3:2006 +A1:2008 +A2:2010	3V/m, 80%, 1kHz Amp. Mod.	Pass
Electrical Fast Transients/Burst at Power Port	EN 55014-2:2015	EN 61000-4-4:2012	1kV 5/50ns Tr/Td 5kHz Repetition Frequency	Pass
Electrical Fast Transients/Burst at Power Port	EN 55020:2007 +A11:2011	EN 61000-4-4:2009	1kV 5/50ns Tr/Td 5kHz Repetition Frequency	Pass
Electrical Fast Transients/Burst at Power Port	EN 61547:2009	EN 61000-4-4:2012	1kV 5/50ns Tr/Td 5kHz Repetition Frequency	Pass
Surge at Power Port	EN 61547:2009	EN 61000-4-5:2014	1.2/50μs Tr/Td 0.5kV Line to Line 1kV Line to Ground	Pass
Surge at Power Port	EN 55014-2:2015	EN 61000-4-5:2014	1.2/50μs Tr/Td 1kV Line to Line 2kV Line to Ground	Pass
Conducted Immunity at Power Port (150kHz-80MHz)	EN 61547:2009	EN 61000-4-6:2014	3Vrms (emf),80%,1kHz Amp. Mod.	Pass
Voltage Dips and Interruptions	EN 61547:2009	EN 61000-4-11:2004	0 % UT for 0.5per 70 % UT for 10per UT is Supply Voltage	Pass
Voltage Dips and Interruptions	EN 55014-2:2015	EN 61000-4-11:2004	For 50Hz: 0 % UT for 0.5per 40 % UT for 10per 70 % UT for 25per For 60Hz: 0 % UT for 0.5per 40 % UT	Pass

Immunity Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Immunity at Power Port (150kHz-230MHz)	EN 55014-2:2015	EN 61000-4-6:2014	3Vrms (emf),80%,1kHz Amp. Mod.	Pass

N/A: Not applicable

InternalSource	UpperFrequency
Below 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5 times the highest frequency or 6 GHz, whichever is less

3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply: Adapter model: GQ06-050100-CG
Input: 100-240V~ 50/60Hz 0.3A Max
Output: DC5.0V 1.0A

Test voltage AC 230V/50Hz

Cable: USB cable: 120cm unshielded
Antenna: 100cm unshielded

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conduction emission	3.45dB (9kHz to 150kHz)
		3.0dB (150kHz to 30MHz)
2	Radiated emission	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-6GHz)
3	Radiated Power	3.64dB
4	Radiated Immunity	1.64dB
5	Conducted Immunity	0.96dB
6	ESD	6 %
7	EFT (Electrical Fast Transients)	5 %
8	Surge Immunity	5 %
9	Voltage Dips and Interruptions	4 %
10	Temperature test	1℃
11	Humidity test	3%

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 –Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• 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

4.8 Monitoring of EUT for All Immunity Test

Visual: Monitored the working status of the EUT.

Audio: Monitored the sound of the EUT.

5 Equipment List

Conducted Emissions at Mains Terminals (9kHz-30MHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Shielding Room	ChangZhou ZhongYu	GB-88	SEM001-06	2017-05-10	2018-05-10
Measurement Software	AUDIX	e3 V5.4.1221d	N/A	N/A	N/A
LISN	Rohde & Schwarz	ENV216	SEM007-01	2016-10-09	2017-10-09
LISN	ETS-LINDGREN	3816/2	SEM007-02	2017-04-14	2018-04-13
EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2017-04-14	2018-04-13

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Shielding Room	ChangZhou ZhongYu	GB-88	SEM001-06	2017-05-10	2018-05-10
Measurement Software	AUDIX	e3 V5.4.1221d	N/A	N/A	N/A
LISN	Rohde & Schwarz	ENV216	SEM007-01	2016-10-09	2017-10-09
LISN	ETS-LINDGREN	3816/2	SEM007-02	2017-04-14	2018-04-13
EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2017-04-14	2018-04-13

Radiated Emissions (30MHz-1GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2017-05-10	2018-05-10
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
EMI Test Receiver	Agilent Technologies	N9038A	SEM004-05	2016-10-09	2017-10-09
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2014-11-01	2017-11-01
Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2017-04-14	2018-04-13

Radiated Emissions (30MHz-300MHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2017-05-10	2018-05-10
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
EMI Test Receiver	Agilent Technologies	N9038A	SEM004-05	2016-10-09	2017-10-09
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2014-11-01	2017-11-01
Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2017-04-14	2018-04-13

Radiated Emissions (Magnetic field Induced Current)(9kHz-30MHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Loop Antenna	Beijing Daze	ZN30401	SEM003-09	2017-04-14	2018-04-13
EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-01	2017-04-14	2018-04-13
Measurement Software	AUDIX	e3 V5.4.1221d	N/A	N/A	N/A

Harmonic Current Emission					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
AC Power Source	California Instruments	5001ix	SEM016-02	2017-04-14	2018-04-13
Power Analyzer	California Instruments	PACS-1	SEM016-01	2017-04-14	2018-04-13
Measurement Software	California Instruments	CTS 3.0 V3.2.0.6	N/A	N/A	N/A

Voltage Fluctuations and Flicker					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
AC Power Source	California Instruments	5001ix	SEM016-02	2017-04-14	2018-04-13
Power Analyzer	California Instruments	PACS-1	SEM016-01	2017-04-14	2018-04-13
Measurement Software	California Instruments	CTS 3.0 V3.2.0.6	N/A	N/A	N/A

Electrostatic Discharge					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
ESD Generator	TESEQ AG	NSG 437	SEM019-02	2017-06-08	2018-06-07
ESD Ground Plane	SGS(3m*3m)	N/A	SEN006-01	N/A	N/A

Radiated Immunity						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date (yyyy-mm-dd)**	**Cal. Due date (yyyy-mm-dd)**
1	Fully-Anechoic Chamber 2	Chang Zhou Zhong Shuo	854	SEM001-05	2015-05-13	2018-05-13
2	Power Sensor	Rohde & Schwarz	NRP-Z91	SEM009-08	2017-04-14	2018-04-13
3	Power Sensor	Rohde & Schwarz	NRP-Z91	SEM009-09	2017-04-14	2018-04-13
4	Stacked Log.-Per.-Broadband Antenna (70MHz-10GHz)	Schwarzbeck	STLP 9129	SEM003-25	N/A	N/A
5	Signal Generator (9kHz-6GHz)	Rohde & Schwarz	SMB100A	SEM006-11	2017-04-14	2018-04-13
6	Broadband Amplifier (80MHz-1GHz)	Rohde & Schwarz	BBA150-BC250	SEM005-12	2016-10-09	2017-10-09
7	Broadband Amplifier (800MHz-3GHz)	Rohde & Schwarz	BBA150-D110	SEM005-13	2016-10-09	2017-10-09
8	Broadband Amplifier (2.5GHz-6GHz)	Rohde & Schwarz	BBA150-E60	SEM005-16	2017-05-08	2018-05-07
9	Measurement Software	Rohde & Schwarz	EMC32 V9.25.00	N/A	N/A	N/A

Electrical Fast Transients/Burst at Power Port					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Ultra Compact Simulator	EM TEST	UCS 500N7	SEM018-02	2016-10-10	2017-10-10
Measurement Software	EM TEST	IEC CONTROL V6.0.1	N/A	N/A	N/A

Surge at Power Port					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Ultra Compact Simulator	EM TEST	UCS 500N7	SEM018-02	2016-10-10	2017-10-10
Measurement Software	EM TEST	IEC CONTROL V6.0.1	N/A	N/A	N/A

Conducted Immunity at Power Port (150kHz-80MHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
RF-Generator	SCHAFFNER	NSG 2070	SEM006-01	2016-10-09	2017-10-09
Coupling/Decoupling Network	SCHAFFNER	CDN M016	SEM007-03	2016-10-09	2017-10-09

Voltage Dips and Interruptions					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Ultra Compact Simulator	EM TEST	UCS 500N7	SEM018-02	2016-10-10	2017-10-10
Measurement Software	EM TEST	IEC CONTROL V6.0.1	N/A	N/A	N/A

Conducted Immunity at Power Port (150kHz-230MHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
RF-Generator	SCHAFFNER	NSG 2070	SEM006-01	2016-10-09	2017-10-09
Coupling/Decoupling Network	SCHAFFNER	CDN M016	SEM007-03	2016-10-09	2017-10-09

General used equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2016-10-12	2017-10-12
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2016-10-12	2017-10-12
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2016-10-12	2017-10-12
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2017-04-18	2018-04-18

6 Emission Test Results

6.1 Conducted Emissions at Mains Terminals (9kHz-30MHz)

Test Requirement:	EN 55015:2013 +A1:2015
Test Method:	EN 55015:2013+A1:2015
Frequency Range:	9kHz to 30MHz
Limit:	
0.009MHz – 0.05MHz	110dB(μV) quasi-peak
0.05MHz – 0.15MHz	90dB(μV)-80dB(μV) quasi-peak
0.15MHz – 0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5MHz – 5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5MHz – 30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (200Hz resolution bandwidth) 0.009M to 0.15MHz
	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

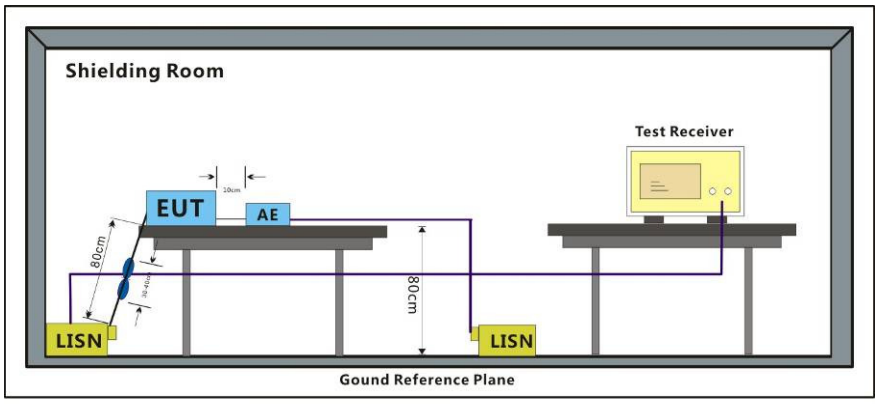
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 55 % RH Atmospheric Pressure: 1005 mbar

Test mode b: Light mode, keep EUT lighting.

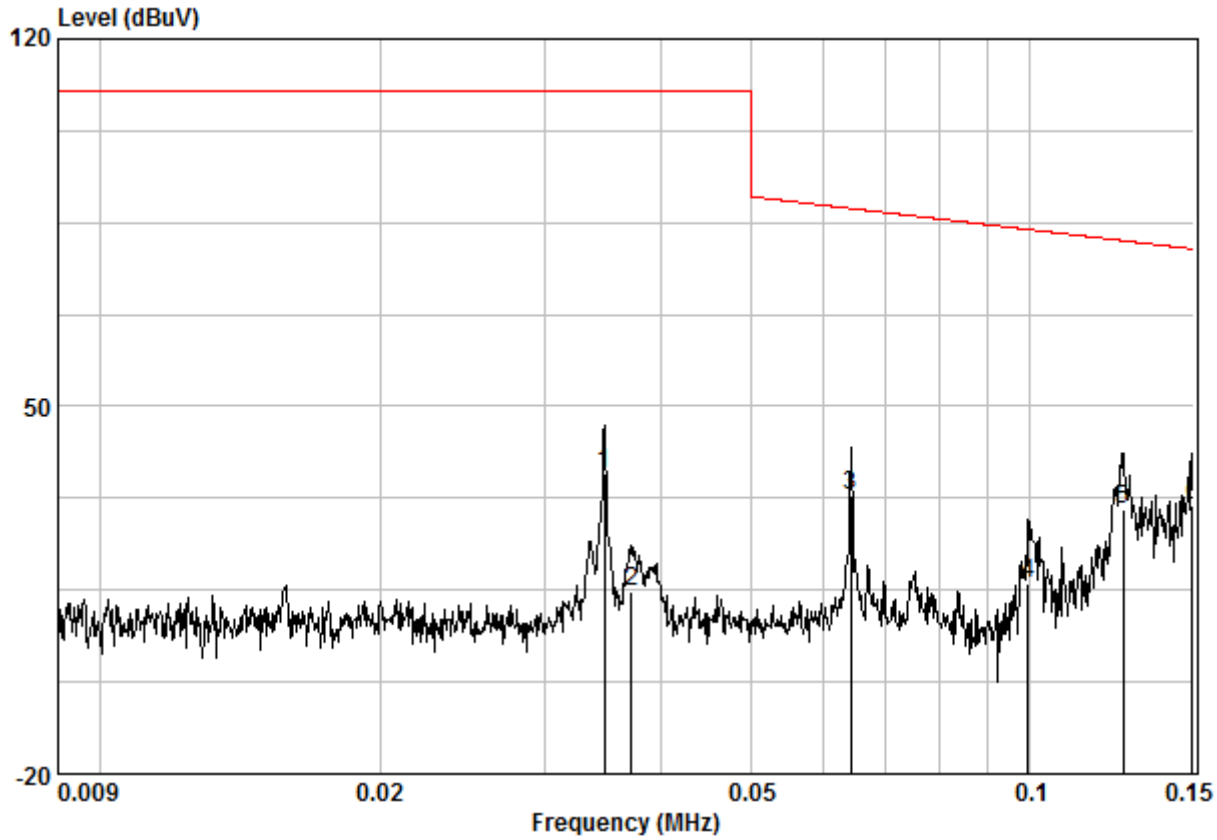
6.1.2 Test Setup Diagram



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.

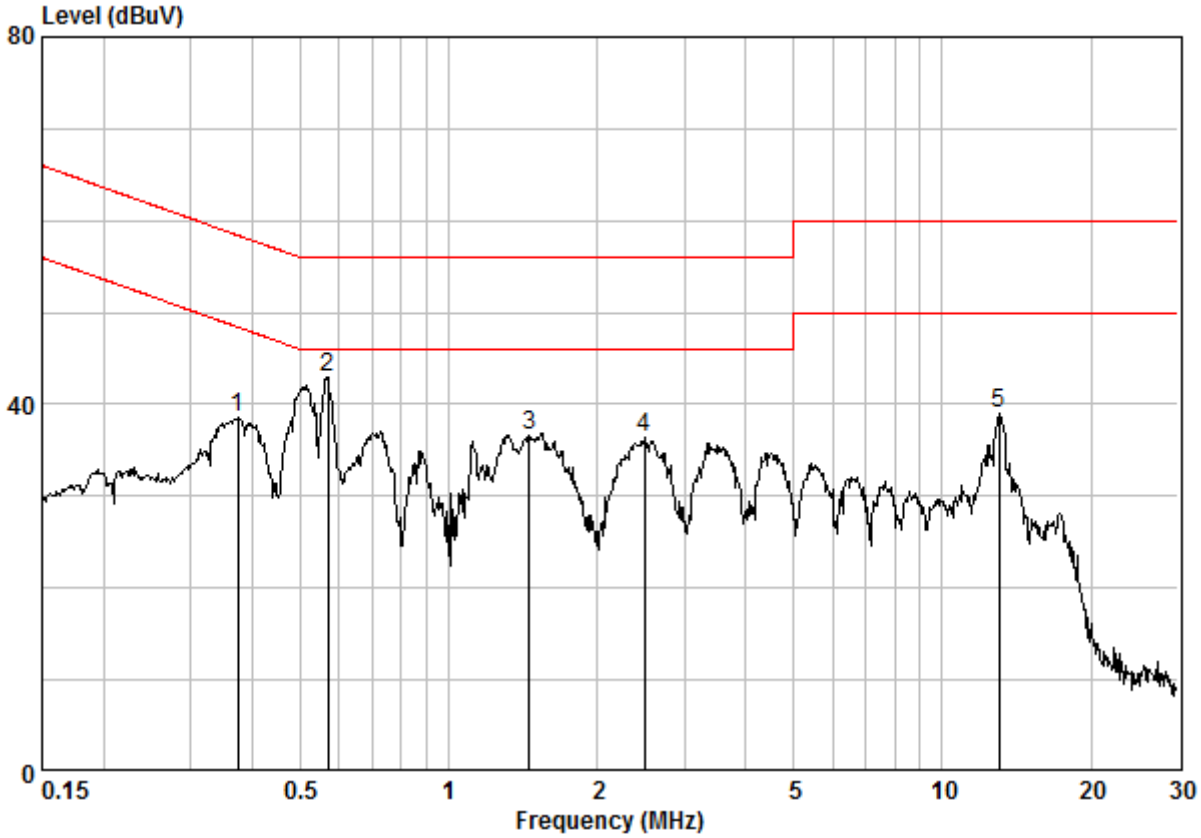
Mode:b; Line:Live Line



Site : Shielding Room
Condition : CE LINE
Job No. : 06782CR
Mode : b

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.03483	0.04	9.80	27.49	37.32	110.00	-72.68	QP
2	0.03726	0.04	9.78	4.88	14.70	110.00	-95.30	QP
3	0.06413	0.04	9.68	23.36	33.08	87.73	-54.66	QP
4	0.09947	0.03	9.65	6.52	16.20	83.74	-67.54	QP
5 @	0.12599	0.02	9.64	20.61	30.28	81.59	-51.31	QP
6 @	0.14958	0.02	9.64	21.34	31.00	80.03	-49.02	QP

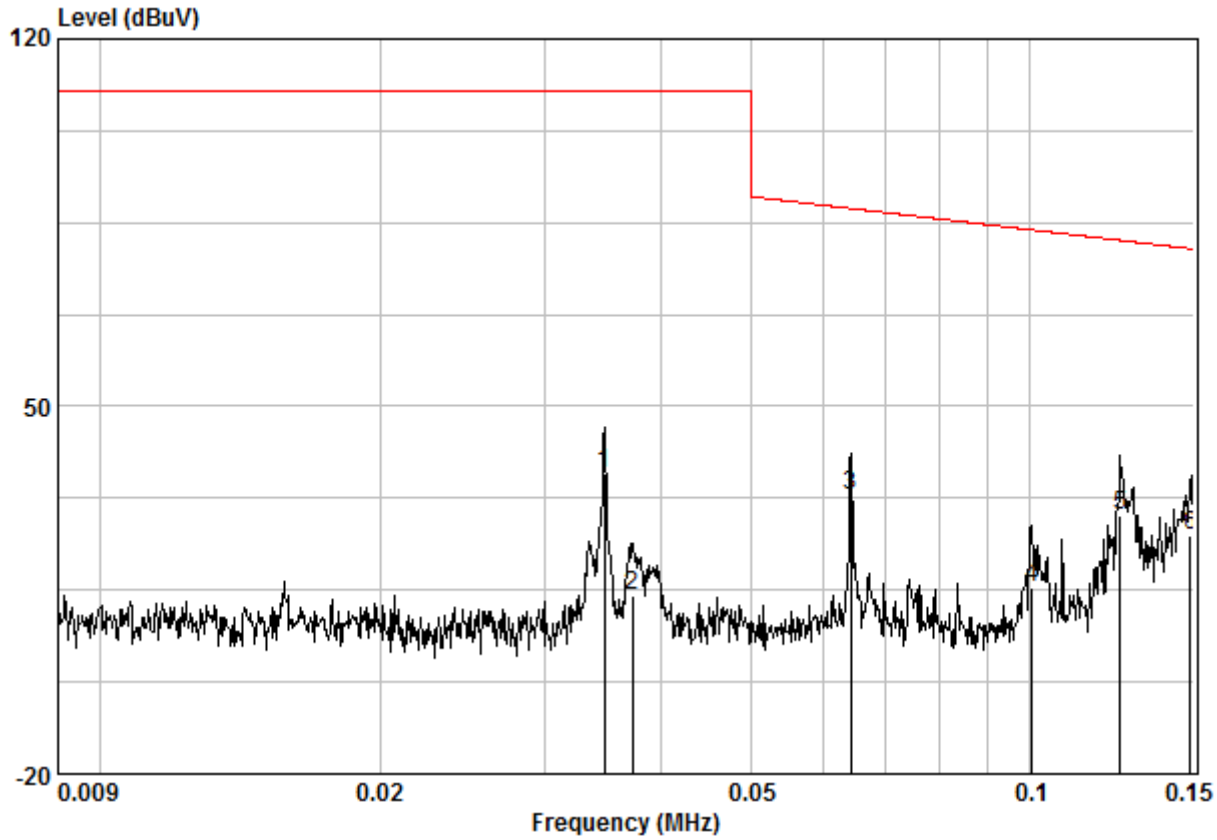
Mode:b; Line:Live Line



Site : Shielding Room
Condition : CE LINE
Job No. : 06782CR
Mode : b

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.37314	0.02	9.64	28.83	38.49	48.43	-9.94	Peak
2 @	0.57010	0.02	9.65	33.30	42.97	46.00	-3.03	Peak
3	1.456	0.03	9.66	27.01	36.70	46.00	-9.30	Peak
4	2.487	0.03	9.68	26.64	36.35	46.00	-9.65	Peak
5	13.057	0.15	9.92	28.90	38.97	50.00	-11.03	Peak

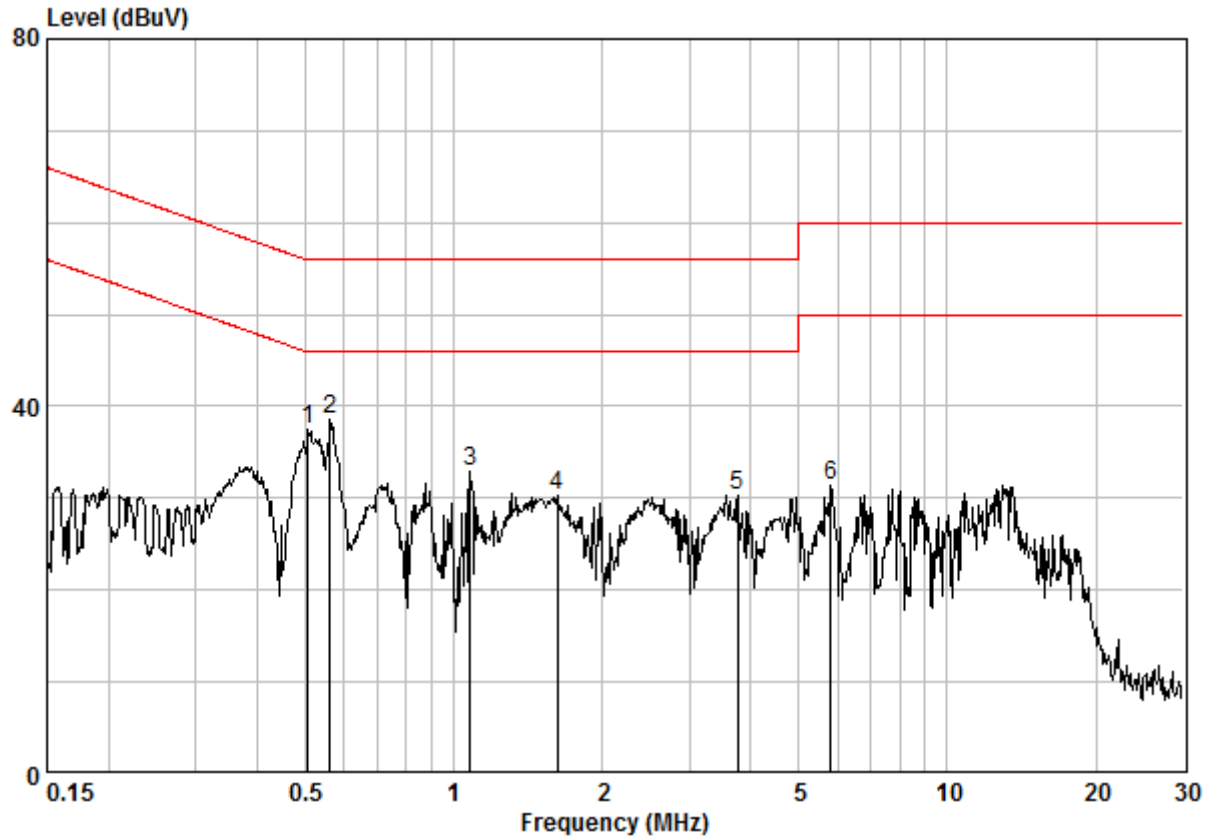
Mode:b; Line:Neutral Line



Site : Shielding Room
Condition : CE NEUTRAL
Job No. : 06782CR
Mode : b

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.03483	0.04	9.80	27.40	37.24	110.00	-72.76	QP
2	0.03737	0.04	9.78	4.12	13.94	110.00	-96.06	QP
3	0.06413	0.04	9.68	23.18	32.89	87.73	-54.84	QP
4	0.10060	0.03	9.64	5.94	15.61	83.64	-68.03	QP
5 @	0.12493	0.02	9.64	19.69	29.35	81.66	-52.32	QP
6	0.14874	0.02	9.64	15.92	25.58	80.08	-54.50	QP

Mode:b; Line:Neutral Line



Site : Shielding Room
Condition : CE NEUTRAL
Job No. : 06782CR
Mode : b

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.50737	0.02	9.63	27.78	37.43	46.00	-8.57	Peak
2 @	0.56111	0.02	9.63	28.89	38.54	46.00	-7.46	Peak
3	1.082	0.03	9.64	23.24	32.91	46.00	-13.09	Peak
4	1.619	0.03	9.65	20.71	30.39	46.00	-15.61	Peak
5	3.759	0.02	9.69	20.65	30.36	46.00	-15.64	Peak
6	5.805	0.05	9.74	21.52	31.31	50.00	-18.69	Peak

6.2 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement: EN 55032:2015

Test Method: EN 55032:2015

Frequency Range: 150kHz to 30MHz

6.2.1 E.U.T. Operation

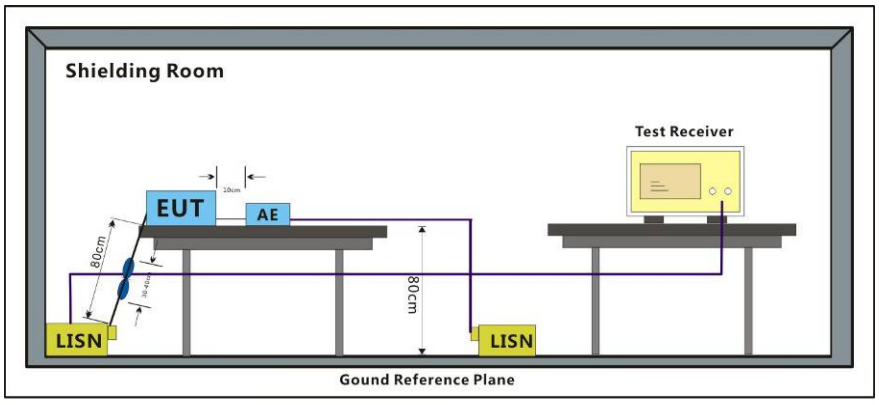
Operating Environment:

Temperature: 25 °C Humidity: 55 % RH Atmospheric Pressure: 1005 mbar

Pretest these mode to find the worst case: a: Alarm mode, keep EUT alarming.
b: Light mode, keep EUT lighting.
c:FM mode, Keep EUT working with external FM signal

The worst case for final test: c:FM mode, Keep EUT working with external FM signal

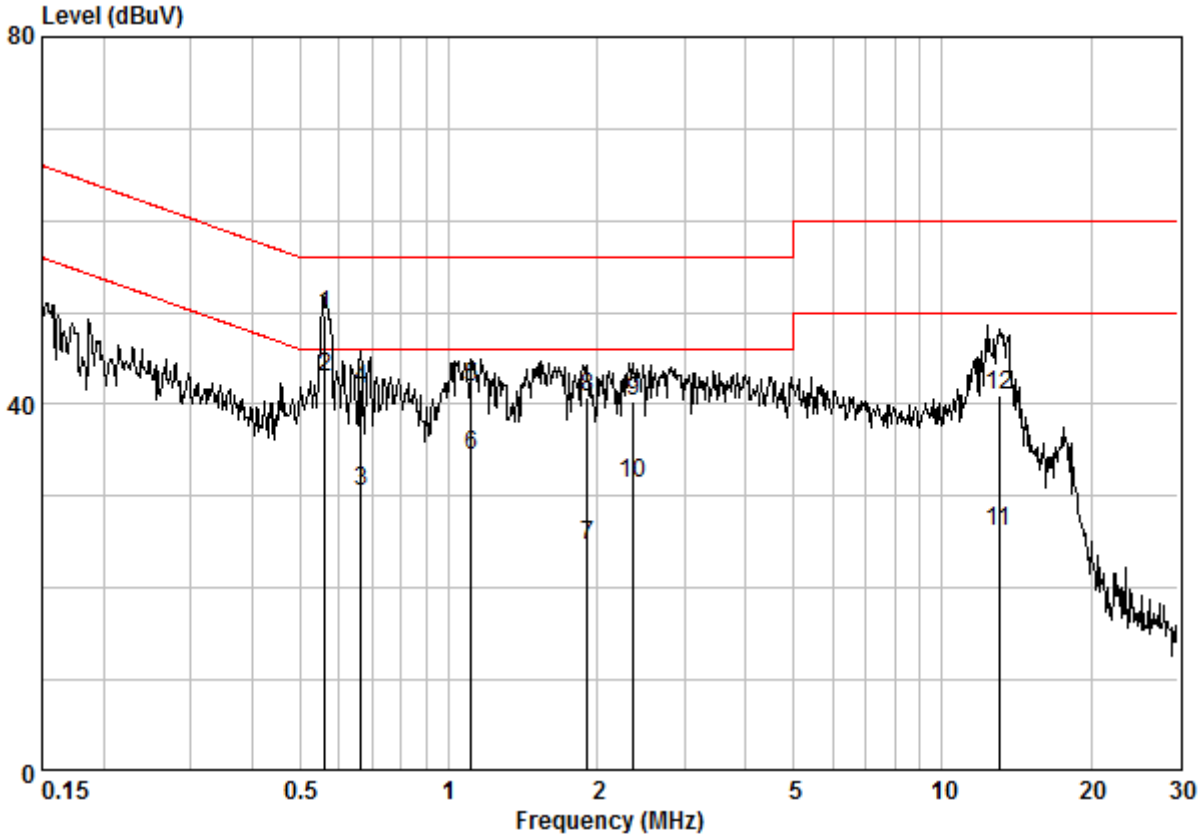
6.2.2 Test Setup Diagram



6.2.3 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.

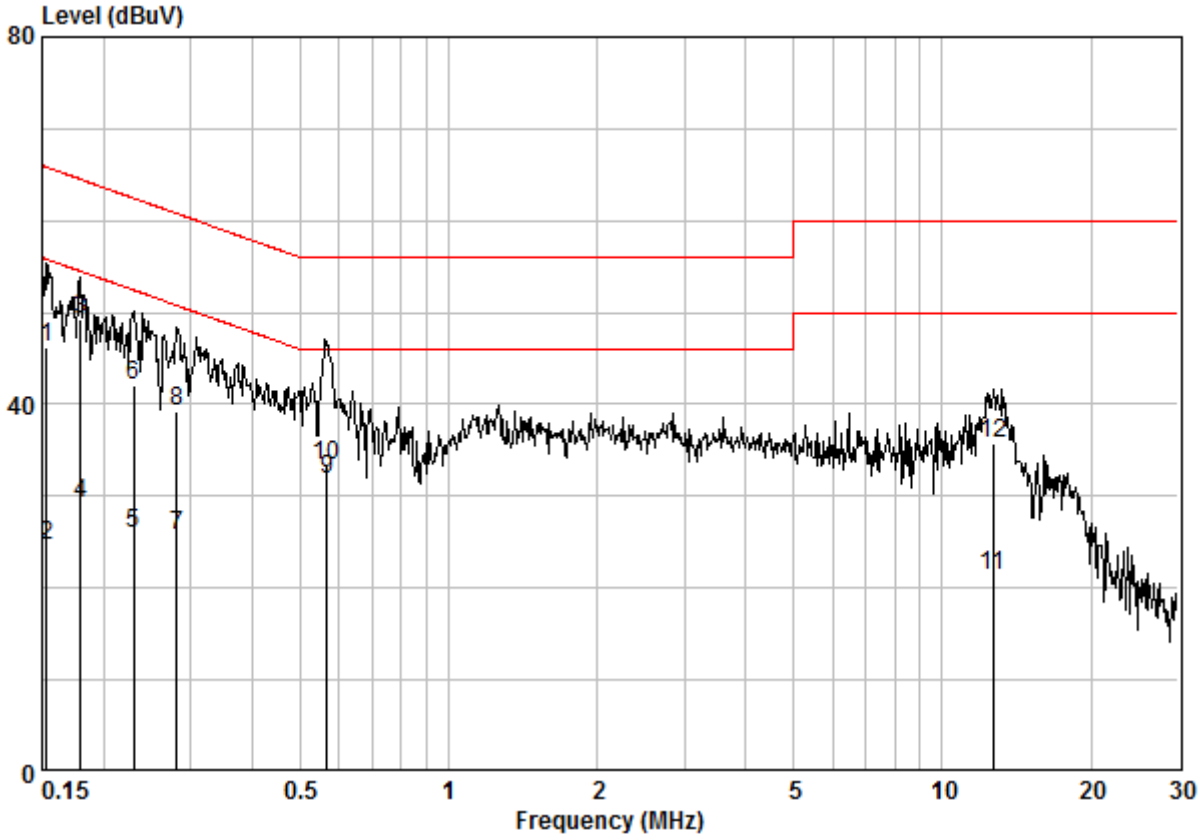
Mode:c; Line:Live Line



Site : Shielding Room
Condition : CE LINE
Job No. : 06782CR
Mode : c

		Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
		MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1		0.56111	0.02	9.65	40.10	49.77	56.00	-6.23	QP
2	@	0.56111	0.02	9.65	33.31	42.97	46.00	-3.03	AVERAGE
3		0.66478	0.02	9.65	20.84	30.51	46.00	-15.49	AVERAGE
4		0.66478	0.02	9.65	31.99	41.66	56.00	-14.34	QP
5		1.111	0.03	9.66	32.07	41.76	56.00	-14.24	QP
6		1.111	0.03	9.66	24.67	34.36	46.00	-11.64	AVERAGE
7		1.908	0.03	9.67	15.00	24.70	46.00	-21.30	AVERAGE
8		1.908	0.03	9.67	31.12	40.82	56.00	-15.18	QP
9		2.371	0.03	9.68	30.60	40.30	56.00	-15.70	QP
10		2.371	0.03	9.68	21.65	31.36	46.00	-14.64	AVERAGE
11		13.057	0.15	9.92	16.05	26.12	50.00	-23.88	AVERAGE
12		13.057	0.15	9.92	30.94	41.01	60.00	-18.99	QP

Mode:c; Line:Neutral Line



Site : Shielding Room
Condition : CE NEUTRAL
Job No. : 06782CR
Mode : c

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.15321	0.02	9.64	36.57	46.23	65.82	-19.59	QP
2	0.15321	0.02	9.64	14.93	24.59	55.82	-31.23	AVERAGE
3	0.17961	0.02	9.63	39.55	49.20	64.50	-15.30	QP
4	0.17961	0.02	9.63	19.55	29.20	54.50	-25.31	AVERAGE
5	0.23040	0.02	9.63	16.29	25.94	52.44	-26.49	AVERAGE
6	0.23040	0.02	9.63	32.45	42.10	62.44	-20.34	QP
7	0.28178	0.02	9.63	16.02	25.67	50.76	-25.10	AVERAGE
8	0.28178	0.02	9.63	29.68	39.33	60.76	-21.43	QP
9	0.56709	0.02	9.63	22.07	31.72	56.00	-24.28	QP
10	0.56709	0.02	9.63	23.74	33.39	46.00	-12.61	AVERAGE
11	12.649	0.15	9.92	11.35	21.41	50.00	-28.59	AVERAGE
12	12.649	0.15	9.92	25.66	35.73	60.00	-24.27	QP

6.3 Radiated Emissions (30MHz-1GHz)

Test Requirement:	EN 55032:2015
Test Method:	EN 55032:2015
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Limit:	
30MHz-1000MHz	60dB(μV/m) quasi-peak Fundamental Local oscillator
30MHz - 300MHz	52dB(μV/m) quasi-peak Harmonics Local oscillator
300MHz -1000MHz	56dB(μV/m) quasi-peak Harmonics Local oscillator
30MHz - 230MHz	40dB(μV/m) quasi-peak Other
230MHz-1000MHz	47dB(μV/m) quasi-peak Other
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

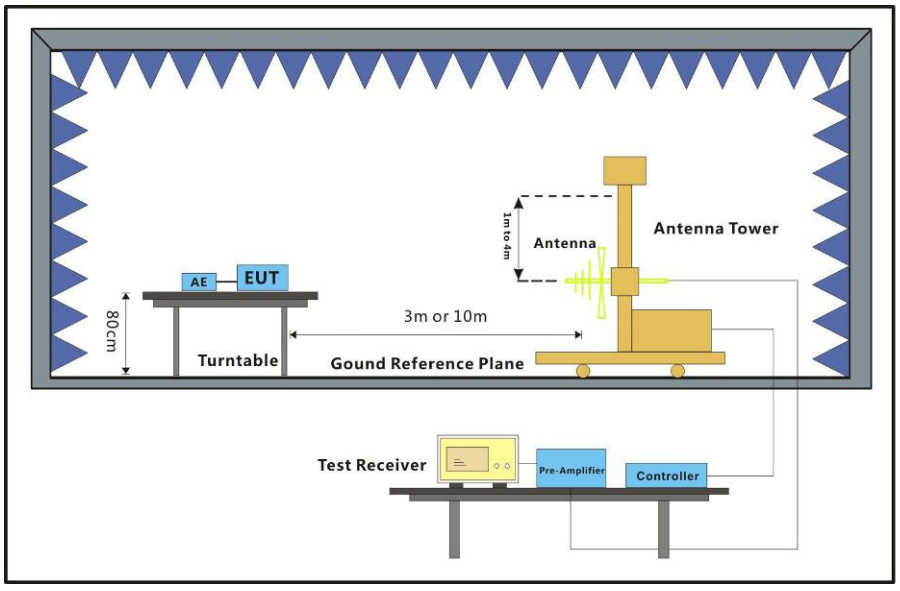
6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C Humidity: 54 % RH Atmospheric Pressure: 1005 mbar

Pretest these mode to find the worst case:	a: Alarm mode, keep EUT alarming. b: Light mode, keep EUT lighting. c:FM mode, Keep EUT working with external FM signal
The worst case for final test:	a: Alarm mode, keep EUT alarming.

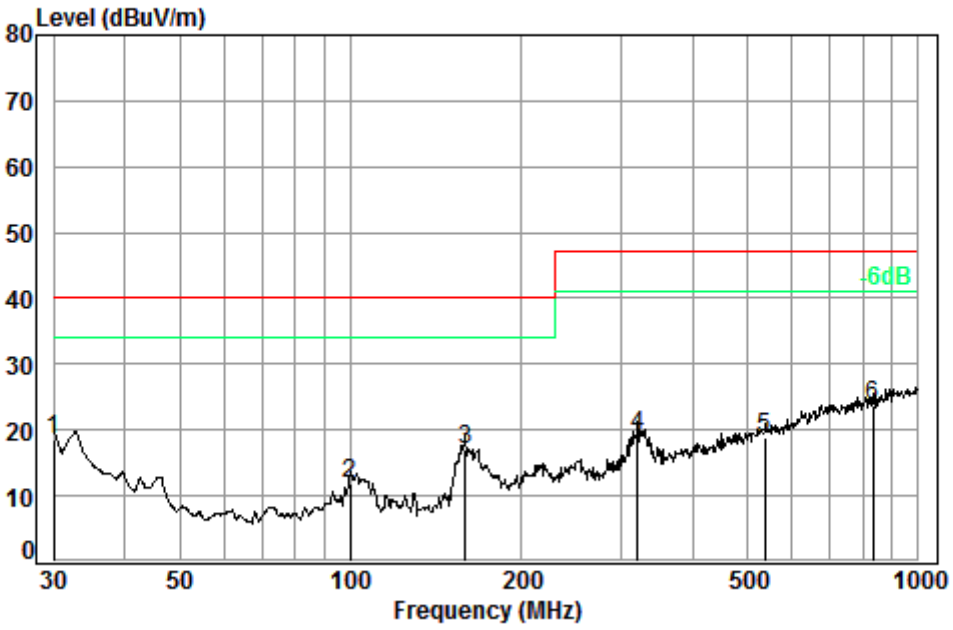
6.3.2 Test Setup Diagram



6.3.3 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.

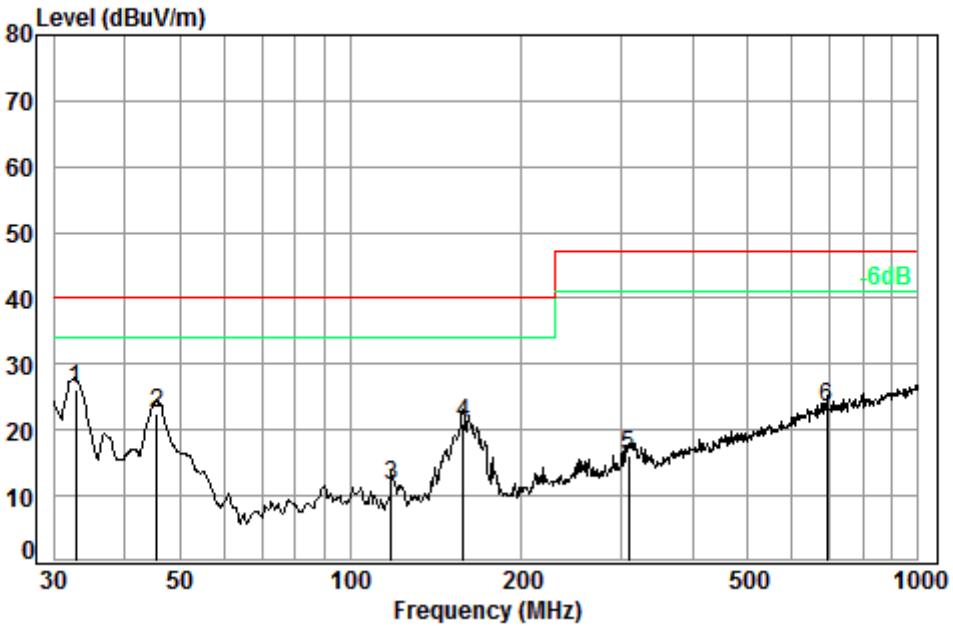
Mode:a; Polarization:Horizontal



Condition: 3m HORIZONTAL
Job No. : 06782CR
Test mode: a

	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 pp	30.00	0.60	18.70	27.36	26.60	18.54	40.00	-21.46
2	99.88	1.20	9.10	27.20	28.63	11.73	40.00	-28.27
3	159.23	1.33	9.55	26.86	33.02	17.04	40.00	-22.96
4	321.06	1.97	14.66	26.56	29.12	19.19	47.00	-27.81
5	537.59	2.64	18.70	27.63	25.24	18.95	47.00	-28.05
6	833.32	3.34	22.40	27.13	24.98	23.59	47.00	-23.41

Mode:a; Polarization:Vertical



Condition: 3m VERTICAL
Job No. : 06782CR
Test mode: a

	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 pp	32.86	0.60	17.10	27.35	35.71	26.06	40.00	-13.94
2	45.53	0.72	10.66	27.30	38.42	22.50	40.00	-17.50
3	118.19	1.25	8.03	27.08	29.50	11.70	40.00	-28.30
4	158.11	1.33	9.49	26.87	37.14	21.09	40.00	-18.91
5	308.91	1.93	14.22	26.46	26.34	16.03	47.00	-30.97
6	689.56	2.88	21.52	27.43	26.35	23.32	47.00	-23.68

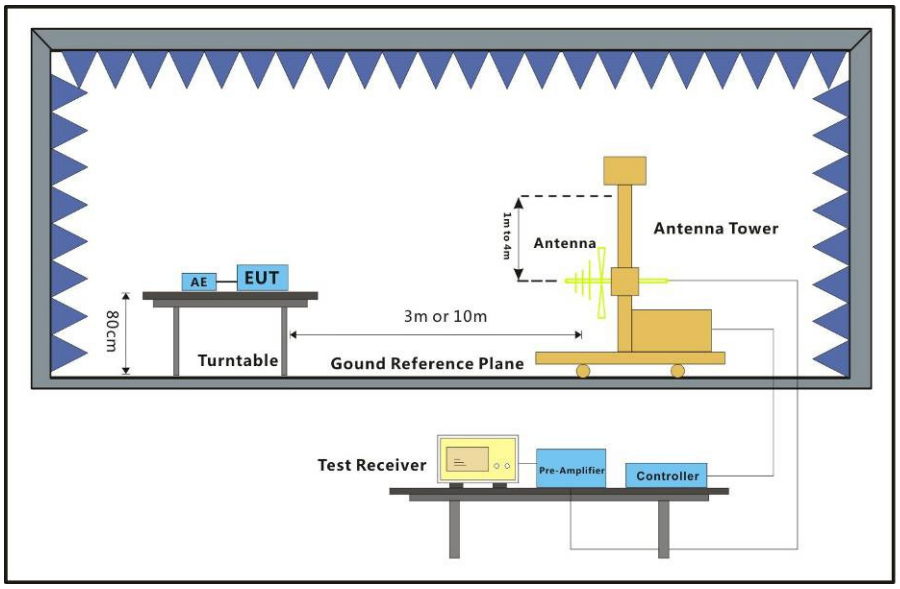
6.4 Radiated Emissions (30MHz-300MHz)

Test Requirement: EN 55015:2013 +A1:2015
Test Method: CISPR 32:2015
Frequency Range: 30MHz to 300MHz
Measurement Distance: 3m
Limit:
30MHz-230MHz 40dB(μV/m) quasi-peak
230MHz-300MHz 47dB(μV/m) quasi-peak
Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to 300MHz

6.4.1 E.U.T. Operation

Operating Environment:
Temperature: 24 °C Humidity: 54 % RH Atmospheric Pressure: 1005 mbar
Test mode b: Light mode, keep EUT lighting.

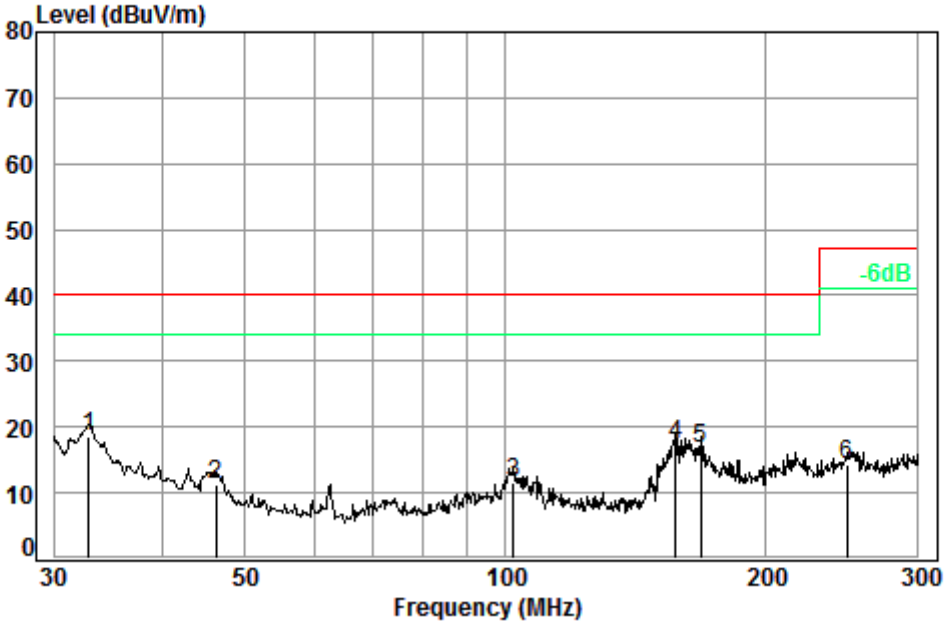
6.4.2 Test Setup Diagram



6.4.3 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.

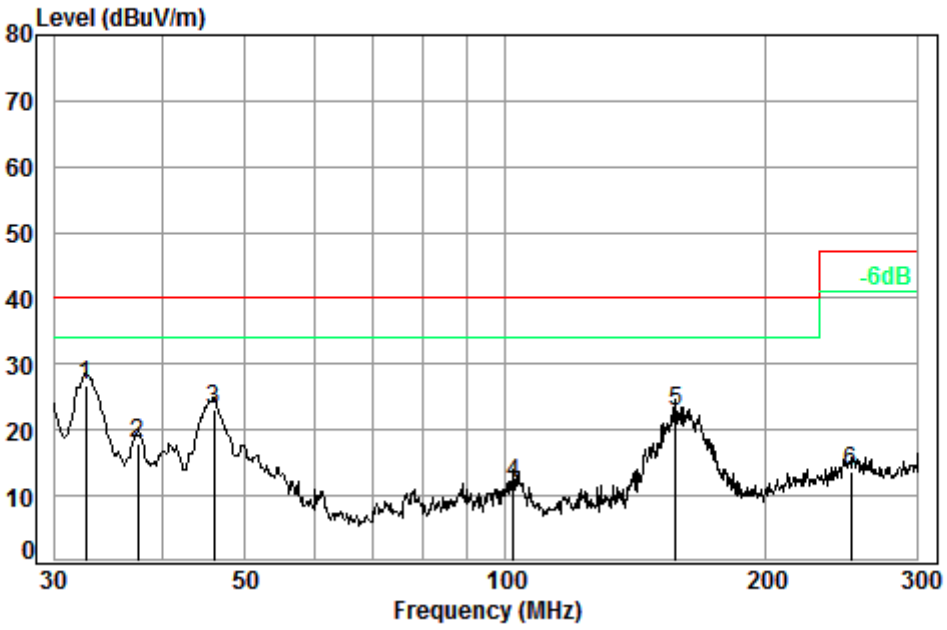
Mode:b; Polarization:Horizontal



Condition: 3m HORIZONTAL
Job No. : 06782CR
Test mode: b

	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 pp	32.97	0.60	17.04	27.34	28.13	18.43	40.00	-21.57
2	46.25	0.73	10.35	27.30	27.42	11.20	40.00	-28.80
3	102.12	1.21	8.99	27.19	28.67	11.68	40.00	-28.32
4	157.08	1.33	9.42	26.87	33.39	17.27	40.00	-22.73
5	167.93	1.35	9.52	26.82	32.58	16.63	40.00	-23.37
6	247.81	1.66	12.23	26.54	26.85	14.20	47.00	-32.80

Mode:b; Polarization:Vertical



Condition: 3m VERTICAL
Job No. : 06782CR
Test mode: b

	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 pp	32.67	0.60	17.21	27.35	36.38	26.84	40.00	-13.16
2	37.59	0.60	14.45	27.33	30.23	17.95	40.00	-22.05
3	45.93	0.72	10.49	27.30	39.07	22.98	40.00	-17.02
4	102.12	1.21	8.99	27.19	28.89	11.90	40.00	-28.10
5	157.08	1.33	9.42	26.87	38.84	22.72	40.00	-17.28
6	250.68	1.68	12.31	26.53	26.36	13.82	47.00	-33.18

6.5 Radiated Emissions (Magnetic field Induced Current)(9kHz-30MHz)

Test Requirement:	EN 55015:2013 +A1:2015
Test Method:	EN 55015:2013+A1:2015
Frequency Range:	9kHz to 30MHz
Limit:	
0.009MHz-0.07MHz	88dB(μA) quasi-peak
0.07MHz-0.15MHz	88dB(μA)-58dB(μA) quasi-peak
0.15MHz-3MHz	58dB(μA)-22dB(μA) quasi-peak
3MHz-30MHz	22dB(μA) quasi-peak
Detector:	Peak for pre-scan (200Hz resolution bandwidth) 0.009M to 0.15MHz
	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

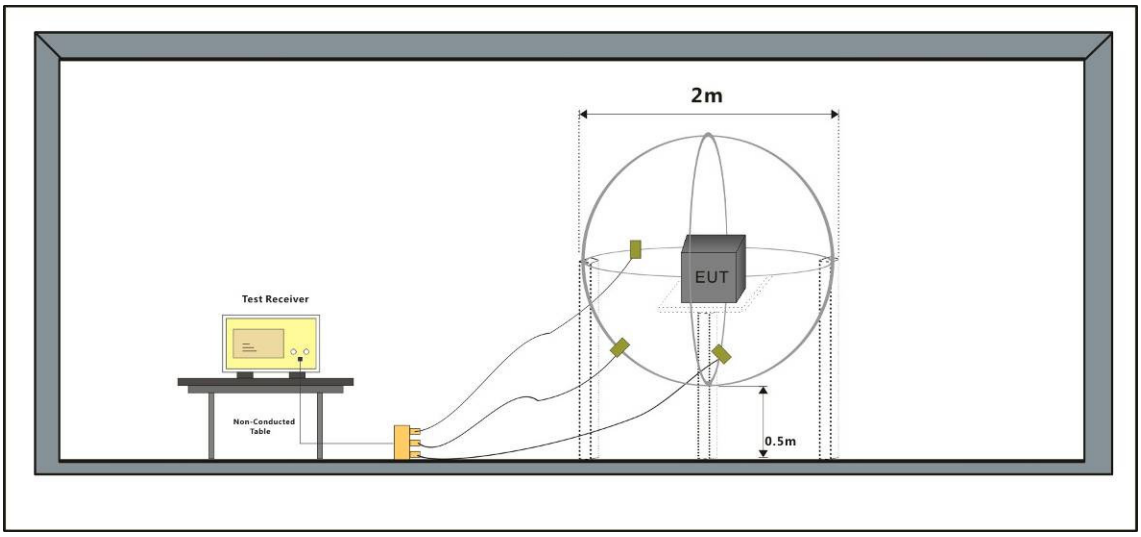
6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1005 mbar

Test mode b: Light mode, keep EUT lighting.

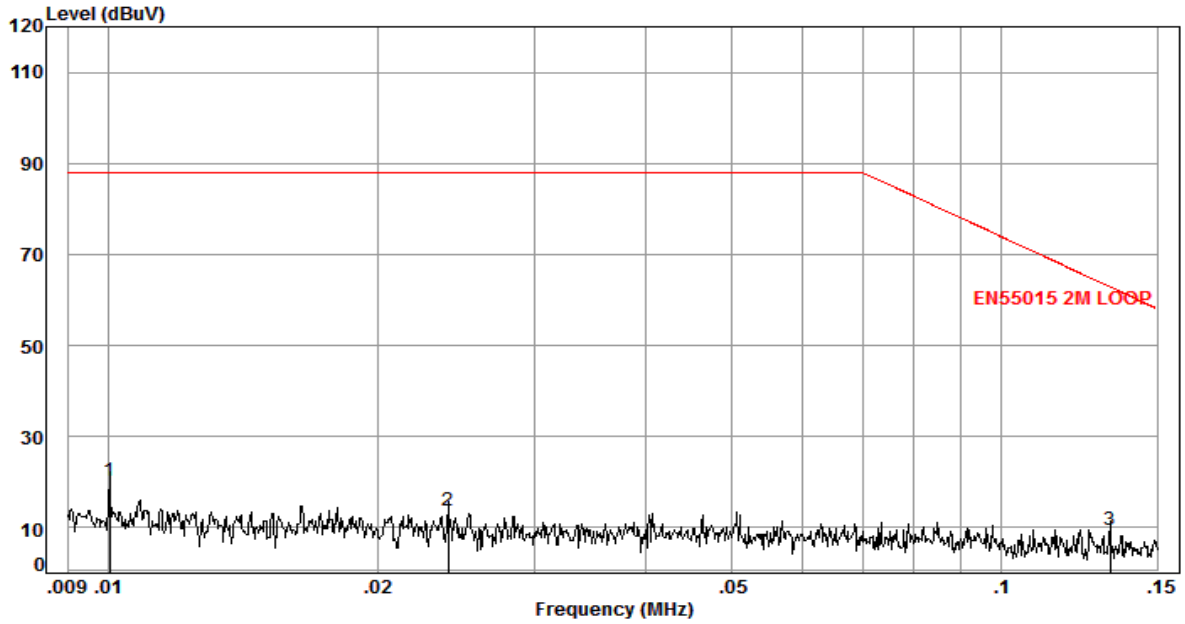
6.5.2 Test Setup Diagram



6.5.3 Measurement Data

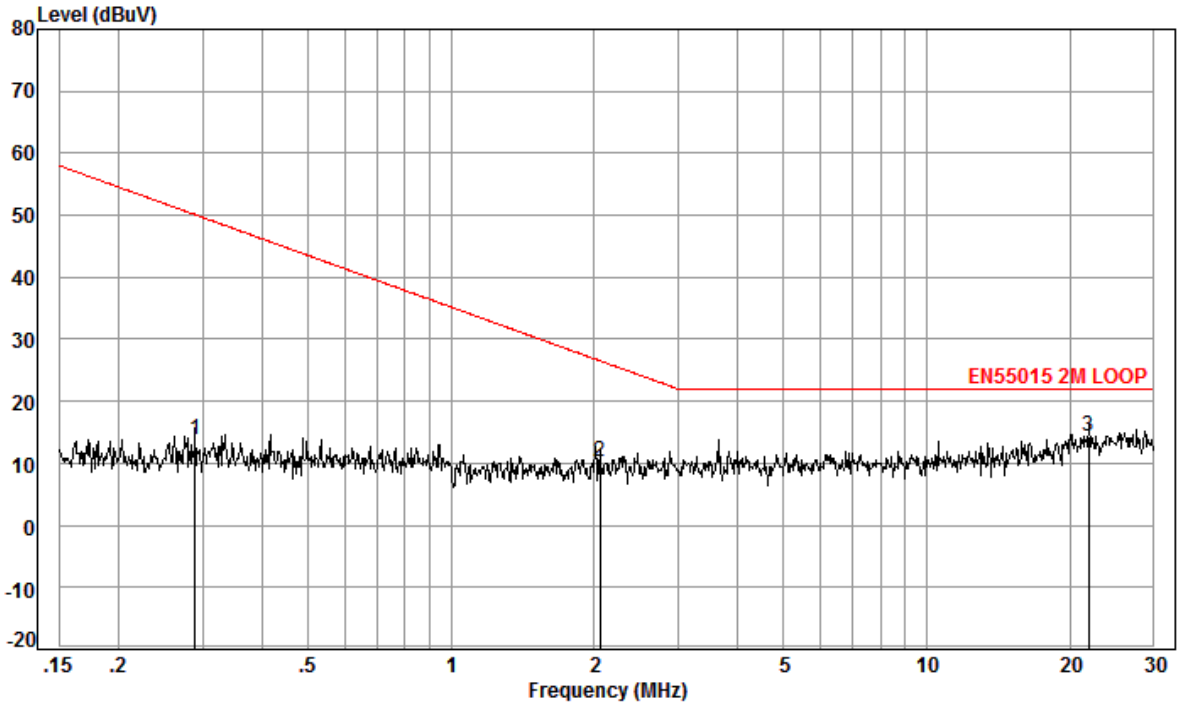
An initial pre-scan was performed in the 2m loop antenna using the spectrum analyser in peak detection mode. The EUT was measured for X(A), Y(B), Z(C) polarities.

Mode:b; Axial:X



Site : Shielding Room
Condition: EN55015 2M LOOP
Job No. : 06782CR
Test Mode: b
: X

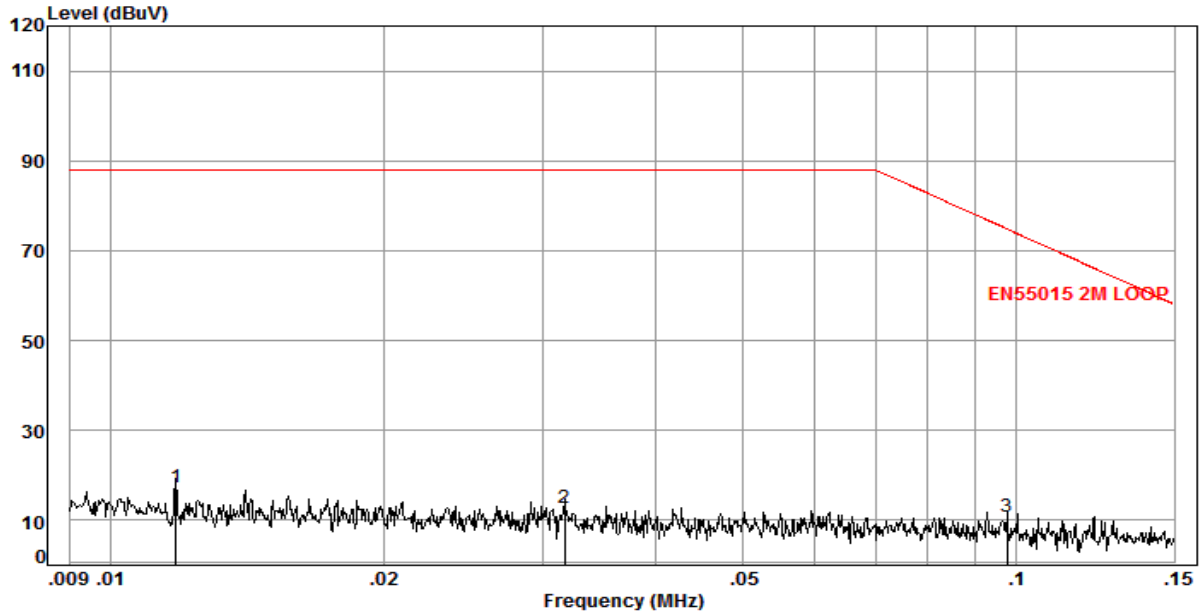
	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.01	0.29	0.00	19.85	20.14	88.00	-67.86	
2	0.02	0.32	0.00	13.48	13.80	88.00	-74.20	
3	0.13	0.33	0.00	8.99	9.32	62.87	-53.55	



Site : Shielding Room
Condition: EN55015 2M LOOP
Job No. : 06782CR
Test Mode: b
: X

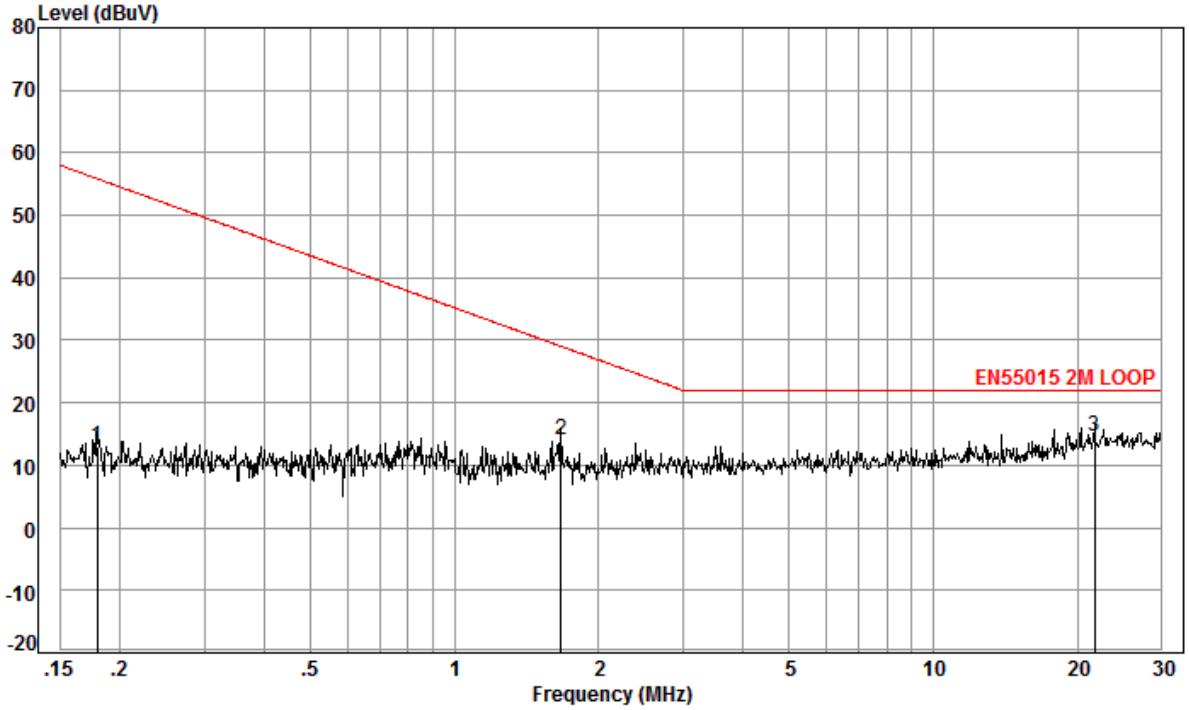
	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.29	0.32	0.00	13.33	13.65	50.10	-36.45	
2	2.05	0.41	0.00	9.75	10.16	26.55	-16.39	
3	21.95	0.80	0.00	13.55	14.35	22.00	-7.65	

Mode:b; Axial:Y



Site : Shielding Room
Condition: EN55015 2M LOOP
Job No. : 06782CR
Test Mode: b
: Y

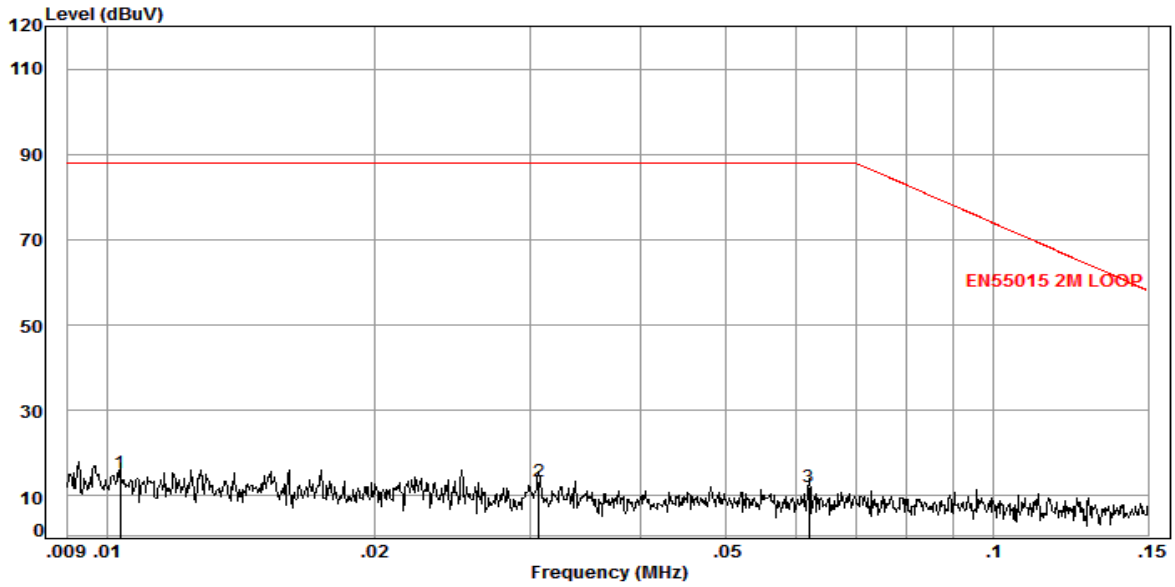
	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.01	0.29	0.00	16.96	17.25	88.00	-70.75	
2	0.03	0.34	0.00	12.27	12.61	88.00	-75.39	
3	0.10	0.32	0.00	10.60	10.92	74.83	-63.91	



Site : Shielding Room
Condition: EN55015 2M LOOP
Job No. : 06782CR
Test Mode: b
: Y

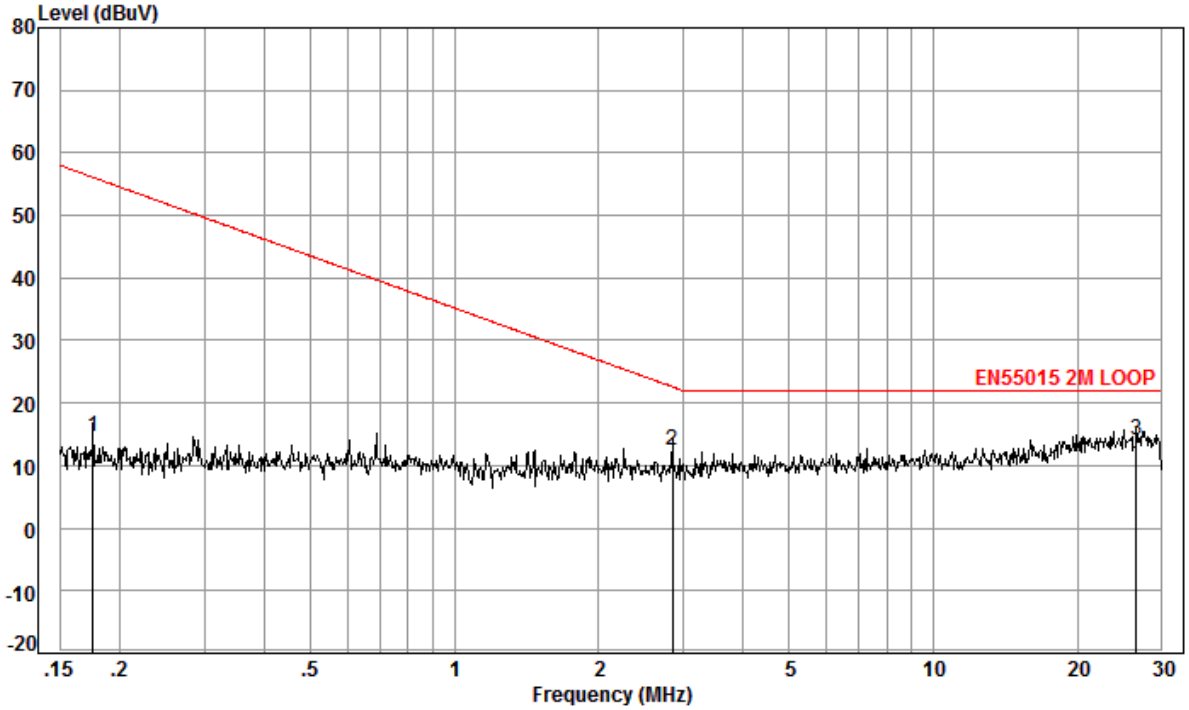
	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.18	0.27	0.00	12.57	12.84	55.84	-43.00	
2	1.67	0.38	0.00	13.63	14.01	29.03	-15.02	
3	21.71	0.79	0.00	13.79	14.58	22.00	-7.42	

Mode:b; Axial:Z



Site : Shielding Room
Condition: EN55015 2M LOOP
Job No. : 06782CR
Test Mode: b
: Z

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.01	0.29	0.00	15.23	15.52	88.00	-72.48	
2	0.03	0.34	0.00	13.20	13.54	88.00	-74.46	
3	0.06	0.33	0.00	11.77	12.10	88.00	-75.90	



Site : Shielding Room
Condition: EN55015 2M LOOP
Job No. : 06782CR
Test Mode: b
: Z

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.18	0.28	0.00	14.39	14.67	56.09	-41.42	
2	2.85	0.47	0.00	11.99	12.46	22.60	-10.14	
3	26.56	0.99	0.00	13.05	14.04	22.00	-7.96	

6.6 Harmonic Current Emission

Test Requirement: EN 61000-3-2:2014

Test Method: EN 61000-3-2:2014

Frequency Range: 100Hz to 2kHz

There is no need for Harmonics test to be performed on this product (rated power is less than 75W) in accordance with EN 61000-3-2:2014.

For further details, please refer to Clause 7 of EN 61000-3-2 which states:

"For the following categories of equipment, limits are not specified in this standard.- equipment with a rated power of 25W or less, other than lighting equipment."

6.7 Voltage Fluctuations and Flicker

Test Requirement: EN 61000-3-3:2013

Test Method: EN 61000-3-3:2013

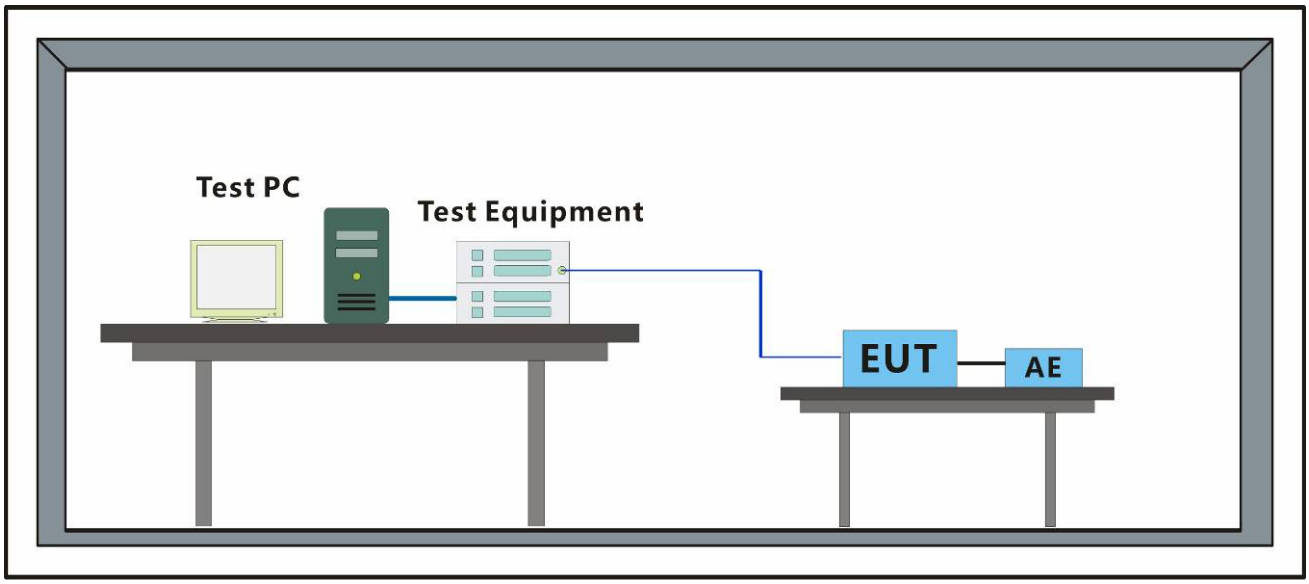
6.7.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1005 mbar

Pretest these mode to find the worst case:	a: Alarm mode, keep EUT alarming. b: Light mode, keep EUT lighting. c:FM mode, Keep EUT working with external FM signal
The worst case for final test:	b: Light mode, keep EUT lighting

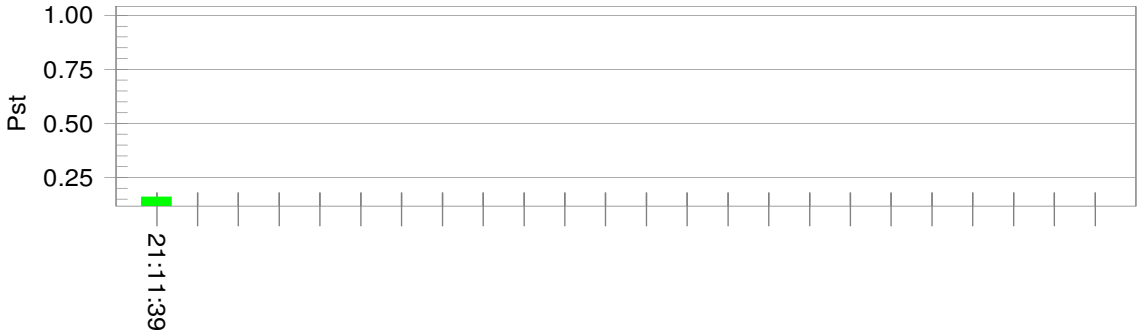
6.7.2 Test Setup Diagram



6.7.3 Measurement Data

Mode:b
Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**



Plt and limit line

Parameter values recorded during the test:

Vrms at the end of test (Volt):	**230.07**			
Highest dt (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Time(mS) > dt:	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.160**	**Test limit:**	**1.000**	**Pass**

7 Immunity Test Results

7.1 Performance Criteria Description in EN 61547:2009

Criterion A During the test no change of the luminous intensity shall be observed and the regulating control, if any, shall operate during the test as intended.

Criterion B During the test the luminous intensity may change to any value. After the test the luminous intensity shall be restored to its initial value within 1 min.

Regulating controls need not function during the test, but after the test the mode of the control shall be the same as before the test provided that during the test no mode changing commands were given.

Criterion C During and after the test any change of the luminous intensity is allowed and the lamp(s) may be extinguished. After the test, within 30 min, all functions shall return to normal if necessary by temporary interruption of the mains supply and/or operating the regulating control.

7.2 Performance Criteria Description in EN 55014-2:2015

Criterion A The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Criterion B The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation and from what the user may reasonably expect from the apparatus if used as intended.

Criterion C Temporary loss of function is allowed, provided the function is self recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

7.3 Performance Criteria Description in EN 55020:2007 +A11:2011

Criterion A

The equipment shall continue to operate as intended during the test.

No change of actual operating state (for example change of channel) is allowed as a result of the application of the test.

The equipment is supposed to operated as intended if the criteria of Evaluation of audio quality and picture quality are fulfilled.

Evaluation of audio quality:

A wanted to unwanted audio signal ratio of ⩾ 40dB at a wanted audio signal level of 50mW. If the S/N ratio is less than 43dB, the performance criterion for audio assessment is the actual S/N minus 3 dB.

Evaluation of video quality:

In the evaluation of picture interference the wanted test signal produces a standard picture and the unwanted signal produces a degradation of the picture. The degradation may be in a number forms such as a superposed pattern, disturbance of synchronization, geometrical distortion, loss of picture contrast, of colour, etc. The criterion of compliance with the requirement is just perceptible degradation by observation.

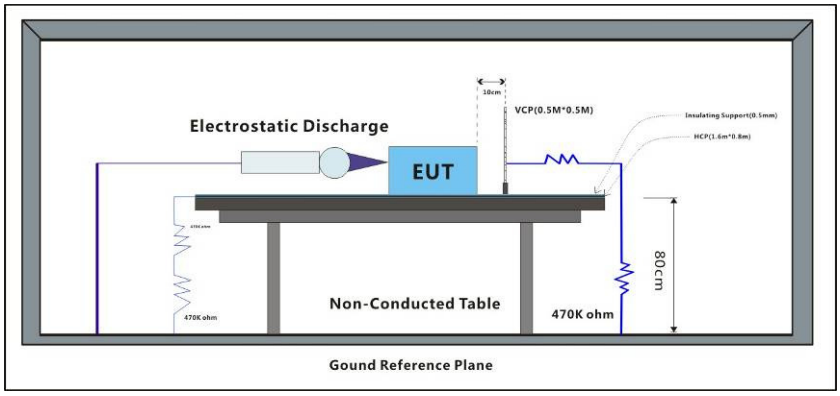
Criterion B

The equipment shall continue to operate as intended after the test. No loss of function is allowed after the test when the apparatus is used as intended, but failures which are recovered automatically but which cause temporary delay in processing, are permissible. No change of actual operating state for example change of channel or stored data and settings is allowed as a result of the test. During the test, degradation of performance is allowed.

7.4 Electrostatic Discharge

Test Requirement: EN 61547:2009
Test Method: EN 61000-4-2:2009
Performance Criterion: B
Discharge Impedance: 330Ω/150pF
Number of Discharge: Minimum 10 times at each test point
Discharge Mode: Single Discharge
Discharge Period: 1 second minimum

7.4.1 Test Setup Diagram



7.4.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1005 mbar

Test mode: b: Light mode, keep EUT lighting.

7.4.3 Test Results:

Observations: Test Point:

1. All insulated enclosure and seams.
2. All accessible metal parts of the enclosure.
3. All side

Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	2,4,8	+	1	A
Air Discharge	2,4,8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

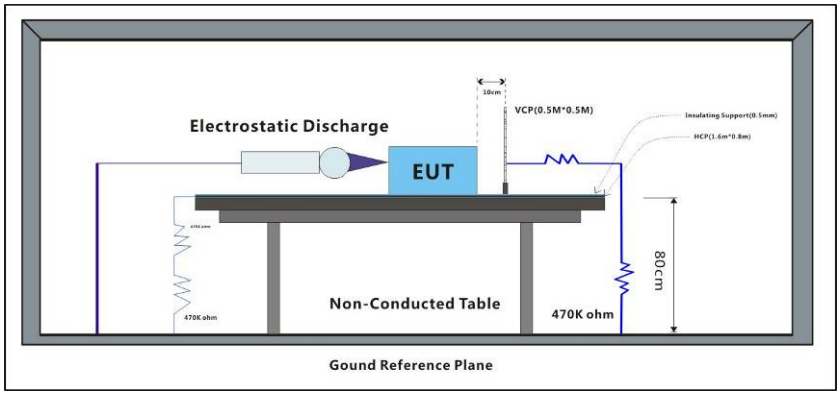
Results:

A: No degradation in the performance of the EUT was observed.

7.5 Electrostatic Discharge

Test Requirement: EN 55014-2:2015
Test Method: EN 61000-4-2:2009
Performance Criterion: B
Discharge Impedance: 330Ω/150pF
Number of Discharge: Minimum 10 times at each test point
Discharge Mode: Single Discharge
Discharge Period: 1 second minimum

7.5.1 Test Setup Diagram



7.5.2 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1005 mbar
Test mode: a: Alarm mode, keep EUT alarming.

7.5.3 Test Results:

Observations: Test Point:

1. All insulated enclosure and seams.
2. All accessible metal parts of the enclosure.
3. All side

Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	8	+	1	A
Air Discharge	8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

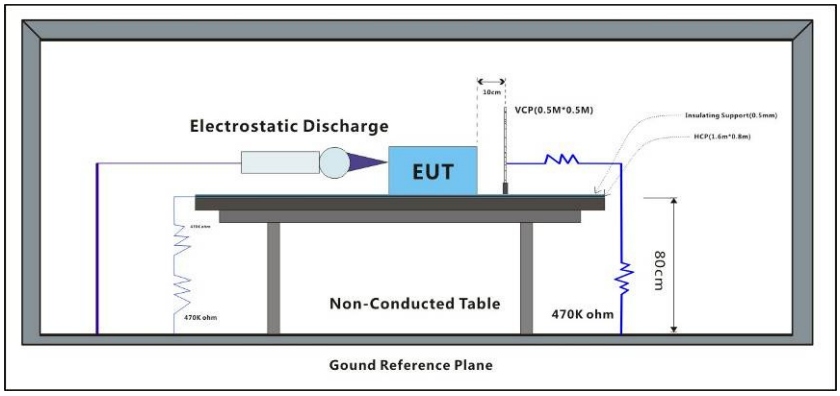
Results:

A: No degradation in the performance of the EUT was observed.

7.6 Electrostatic Discharge

Test Requirement: EN 55020:2007 +A11:2011
Test Method: EN 61000-4-2:2009
Performance Criterion: B
Discharge Impedance: 330Ω/150pF
Number of Discharge: Minimum 10 times at each test point
Discharge Mode: Single Discharge
Discharge Period: 1 second minimum

7.6.1 Test Setup Diagram



7.6.2 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1005 mbar
Test mode: c:FM mode, Keep EUT working with external FM signal

7.6.3 Test Results:

Observations: Test Point:
1. All insulated enclosure and seams.
2. All accessible metal parts of the enclosure.
3. All side

Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	2,4,8	+	1	A
Air Discharge	2,4,8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

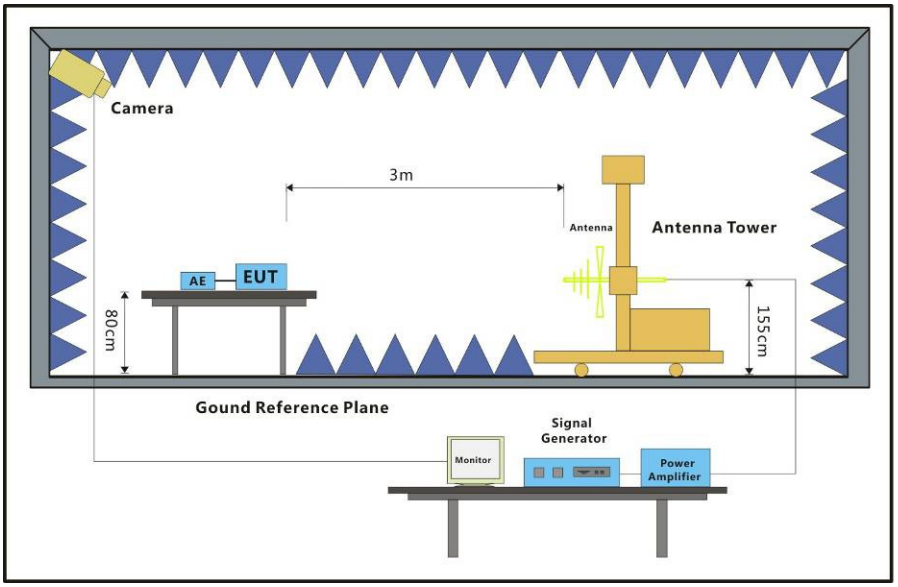
Results:

A: No degradation in the performance of the EUT was observed.

7.7 Radiated Immunity (80MHz-1GHz)

Test Requirement: EN 61547:2009
Test Method: EN 61000-4-3:2006 +A1:2008+A2:2010
Performance Criterion: A
Frequency Range: 80MHz to 1GHz
Antenna Polarisation: Vertical and Horizontal
Modulation 1kHz,80% Amp. Mod,1% increment

7.7.1 Test Setup Diagram



7.7.2 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 54 % RH Atmospheric Pressure: 1005 mbar
Test mode: b: Light mode, keep EUT lighting.

7.7.3 Test Results:

Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-1GHz	3	Front	2s	A
80MHz-1GHz	3	Back	2s	A
80MHz-1GHz	3	Left	2s	A
80MHz-1GHz	3	Right	2s	A
80MHz-1GHz	3	Top	2s	A
80MHz-1GHz	3	Underside	2s	A

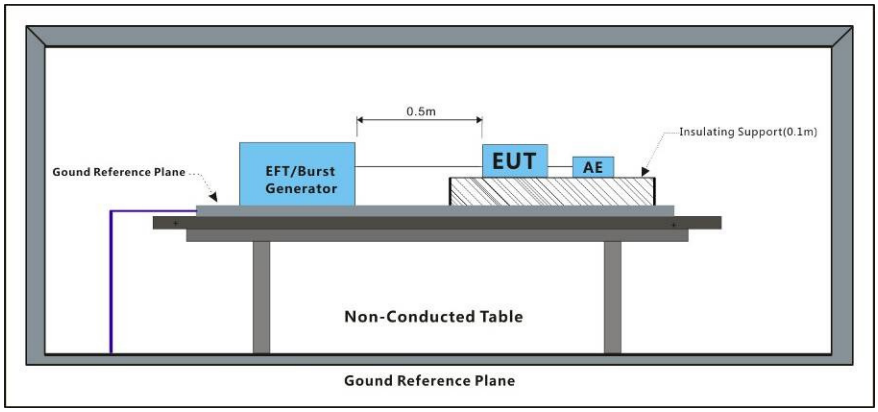
Results:

A: No degradation in the performance of the EUT was observed.

7.8 Electrical Fast Transients/Burst at Power Port

Test Requirement: EN 61547:2009
Test Method: EN 61000-4-4:2012
Performance Criterion: B
Repetition Frequency: 5kHz
Burst Period: 300ms
Test Duration: 2 minute per level & polarity

7.8.1 Test Setup Diagram



7.8.2 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1005 mbar
Test mode: b: Light mode, keep EUT lighting.

7.8.3 Test Results:

Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
AC power port	1	+	CDN	A
AC power port	1	-	CDN	A

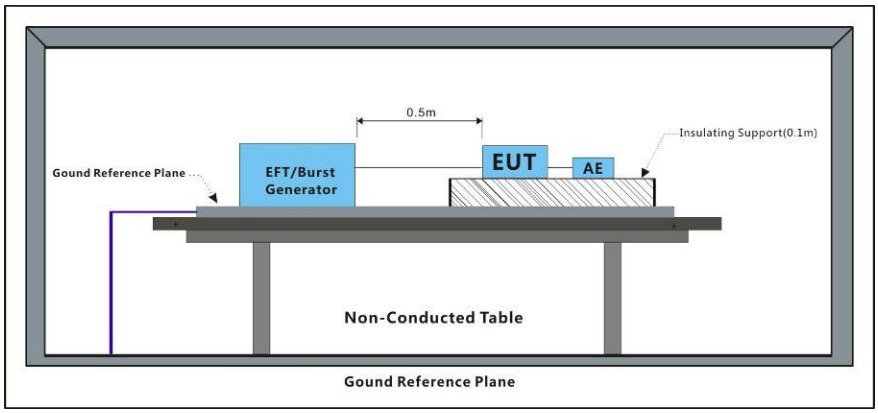
Results:

A: No degradation in the performance of the EUT was observed.

7.9 Electrical Fast Transients/Burst at Power Port

Test Requirement: EN 55020:2007 +A11:201
Test Method: EN 61000-4-4:2009
Performance Criterion: B
Repetition Frequency: 5kHz
Burst Period: 300ms
Test Duration: 2 minute per level & polarity

7.9.1 Test Setup Diagram



7.9.2 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1005 mbar

Test mode: c:FM mode, Keep EUT working with external FM signal

7.9.3 Test Results:

Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
AC power port	1	+	CDN	A
AC power port	1	-	CDN	A

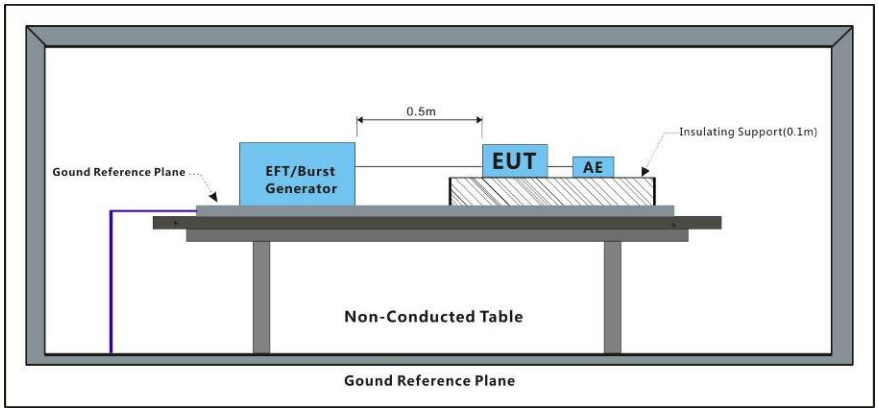
Results:

A: No degradation in the performance of the EUT was observed.

7.10 Electrical Fast Transients/Burst at Power Port

Test Requirement: EN 55014-2:2015
Test Method: EN 61000-4-4:2012
Performance Criterion: B
Repetition Frequency: 5kHz
Burst Period: 300ms
Test Duration: 2 minute per level & polarity

7.10.1 Test Setup Diagram



7.10.2 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1005 mbar
Test mode: a: Alarm mode, keep EUT alarming.

7.10.3 Test Results:

Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
AC power port	1	+	CDN	A
AC power port	1	-	CDN	A

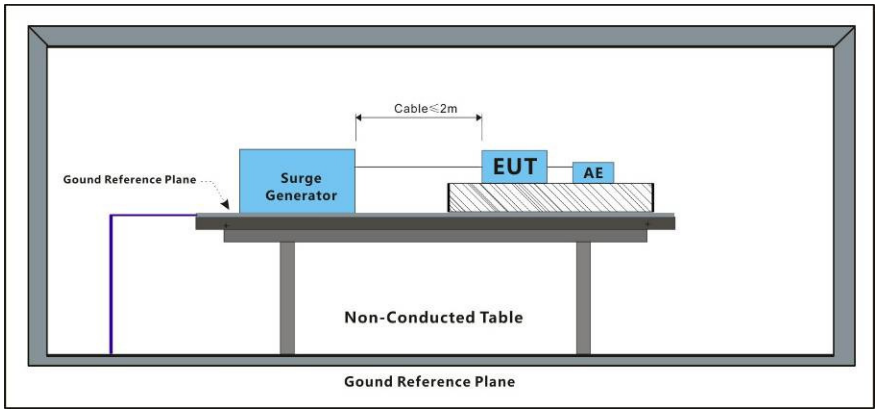
Results:

A: No degradation in the performance of the EUT was observed.

7.11 Surge at Power Port

Test Requirement: EN 55014-2:2015
Test Method: EN 61000-4-5:2014
Performance Criterion: B
Interval: 60s between each surge
No. of surges: 5 positive at 90°, 5 negative at 270°.

7.11.1 Test Setup Diagram



7.11.2 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1005 mbar
Test mode: a: Alarm mode, keep EUT alarming.

7.11.3 Test Results:

Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	1	+	90°	A
L-N	1	-	270°	A

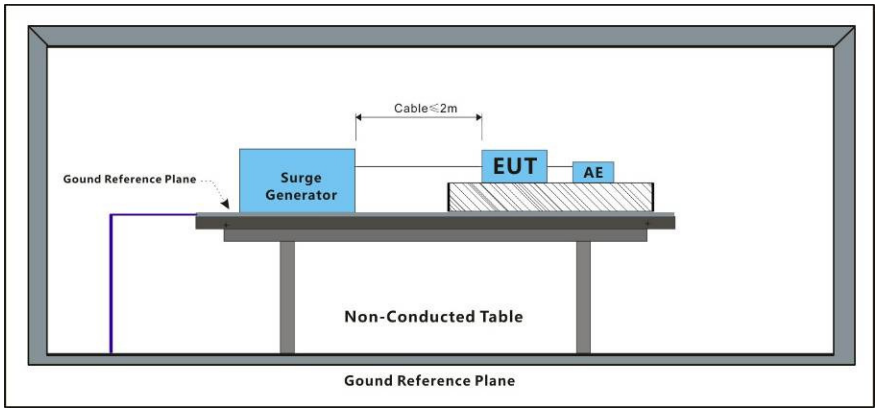
Results:

A: No degradation in the performance of the EUT was observed.

7.12 Surge at Power Port

Test Requirement: EN 61547:2009
Test Method: EN 61000-4-5:2014
Performance Criterion: C
No. of surges: 5 positive at 90°, 5 negative at 270°.

7.12.1 Test Setup Diagram



7.12.2 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1005 mbar
Test mode: b: Light mode, keep EUT lighting.

7.12.3 Test Results:

Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	0.5	+	90°	A
L-N	0.5	-	270°	A

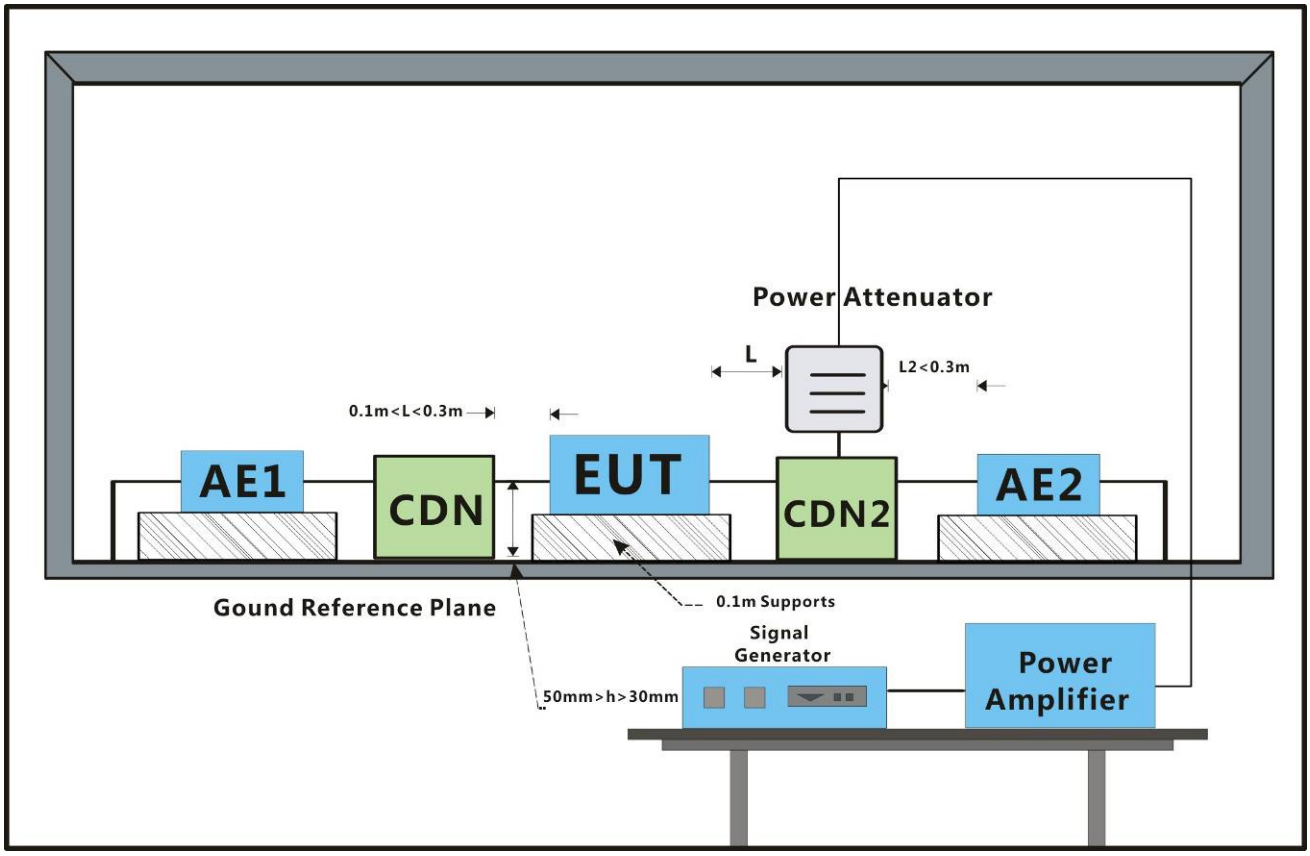
Results:

A: No degradation in the performance of the EUT was observed.

7.13 Conducted Immunity at Power Port (150kHz-80MHz)

Test Requirement: EN 61547:2009
Test Method: EN 61000-4-6:2014
Performance Criterion: A
Frequency Range: 0.15MHz to 80MHz
Modulation: 80%, 1kHz Amplitude Modulation
Step Size 1%

7.13.1 Test Setup Diagram



7.13.2 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1005 mbar
Test mode: b: Light mode, keep EUT lighting.

7.13.3 Test Results:

Cable port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
AC power port	3	CDN	2s	A

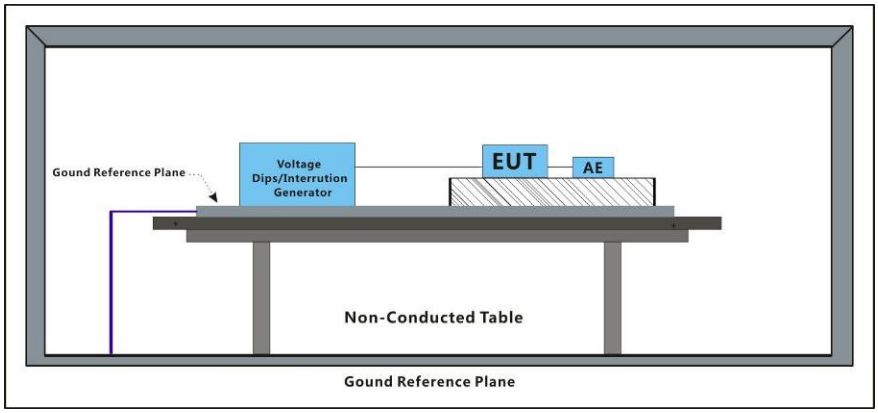
Results:

A: No degradation in the performance of the EUT was observed.

7.14 Voltage Dips and Interruptions

Test Requirement: EN 61547:2009
Test Method: EN 61000-4-11:2004
Performance Criterion: 0% of UT (Supply Voltage) for 0.5 Periods:B; 70 % of UT for 10 Periods:C
No. of Dips / Interruptions: 3 per Level
Time between dropout 10s

7.14.1 Test Setup Diagram



7.14.2 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1005 mbar
Test mode: b: Light mode, keep EUT lighting.

7.14.3 Test Results:

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
0	0°	0.5 Cycles	3	A
0	180°	0.5 Cycles	3	A
70	0°	10 Cycles	3	A
70	180°	10 Cycles	3	A

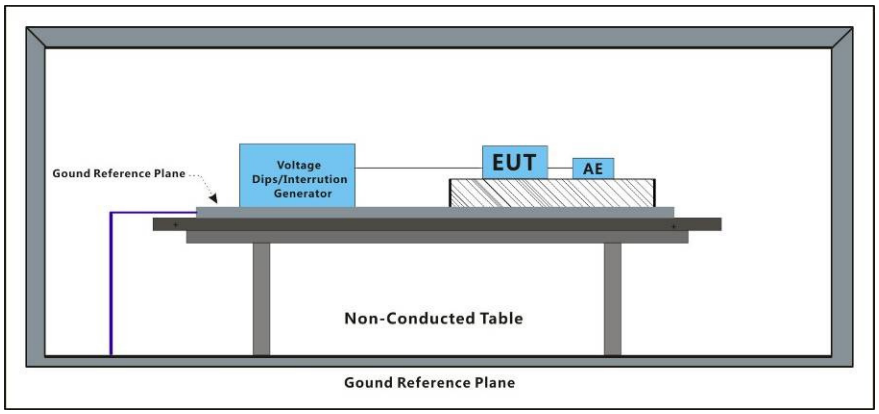
Results:

A: No degradation in the performance of the EUT was observed.

7.15 Voltage Dips and Interruptions

Test Requirement: EN 55014-2:2015
Test Method: EN 61000-4-11:2004
Performance Criterion: For 50Hz:
0% of UT (Rated Voltage) for 0.5 Cycle: C;
40% of UT for 10 Cycle: C;
70% of UT for 25 Cycle: C
For 60Hz:
0% of UT (Rated Voltage) for 0.5 Cycle: C;
40% of UT for 12 Cycle: C;
70% of UT
No. of Dips / Interruptions: 3 per Level
Time between dropout 10s

7.15.1 Test Setup Diagram



7.15.2 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1005 mbar
Test mode: a: Alarm mode, keep EUT alarming.

7.15.3 Test Results:

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
0	0°	0.5 Cycles	3	A
0	180°	0.5 Cycles	3	A
40	0°	10 Cycles	3	A
40	180°	10 Cycles	3	A
70	0°	25 Cycles	3	A
70	180°	25 Cycles	3	A

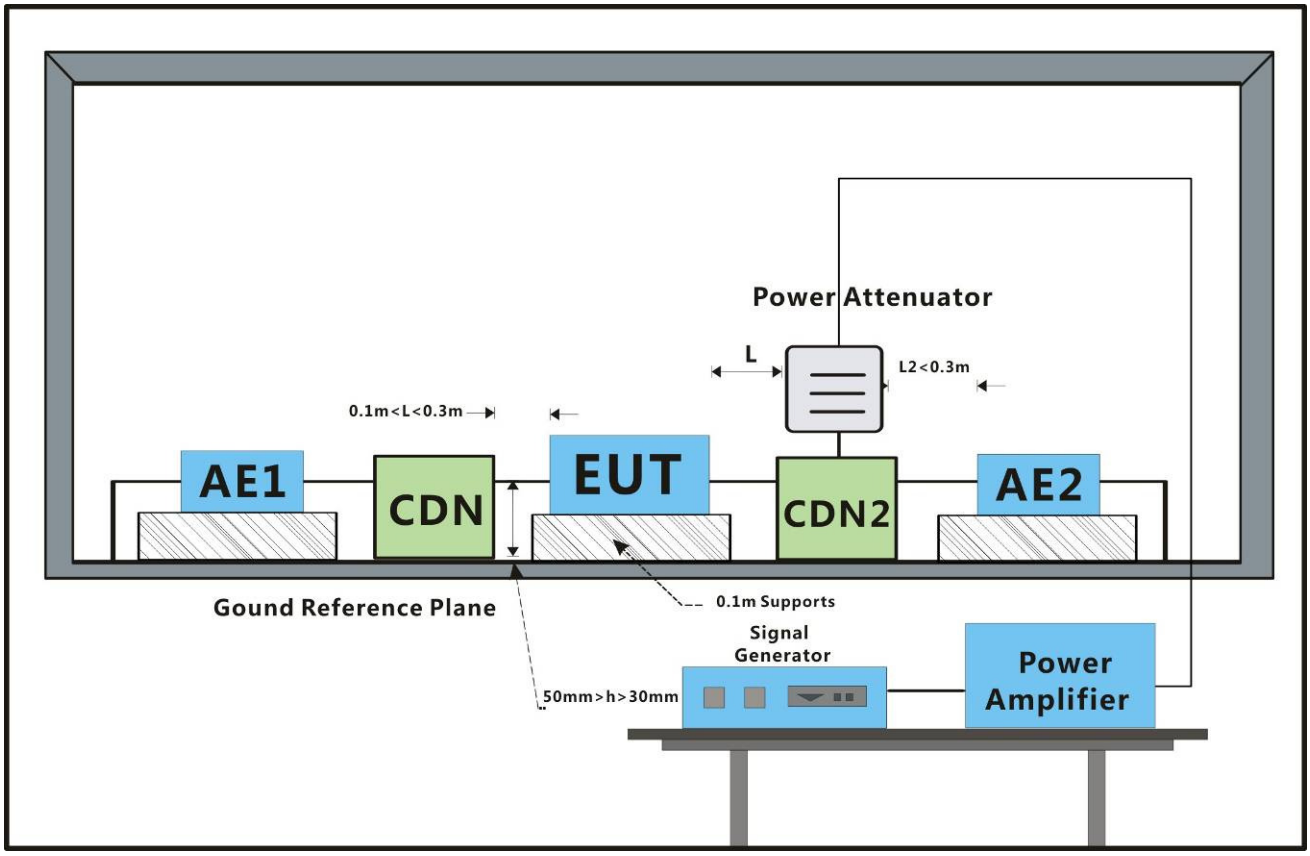
Results:

A: No degradation in the performance of the EUT was observed.

7.16 Conducted Immunity at Power Port (150kHz-230MHz)

Test Requirement: EN 55014-2:2015
Test Method: EN 61000-4-6:2014
Performance Criterion: A
Frequency Range: 0.15MHz to 230MHz
Modulation: 80%, 1kHz Amplitude Modulation
Step Size 1%

7.16.1 Test Setup Diagram



7.16.2 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1005 mbar

Test mode: a: Alarm mode, keep EUT alarming.

7.16.3 Test Results:

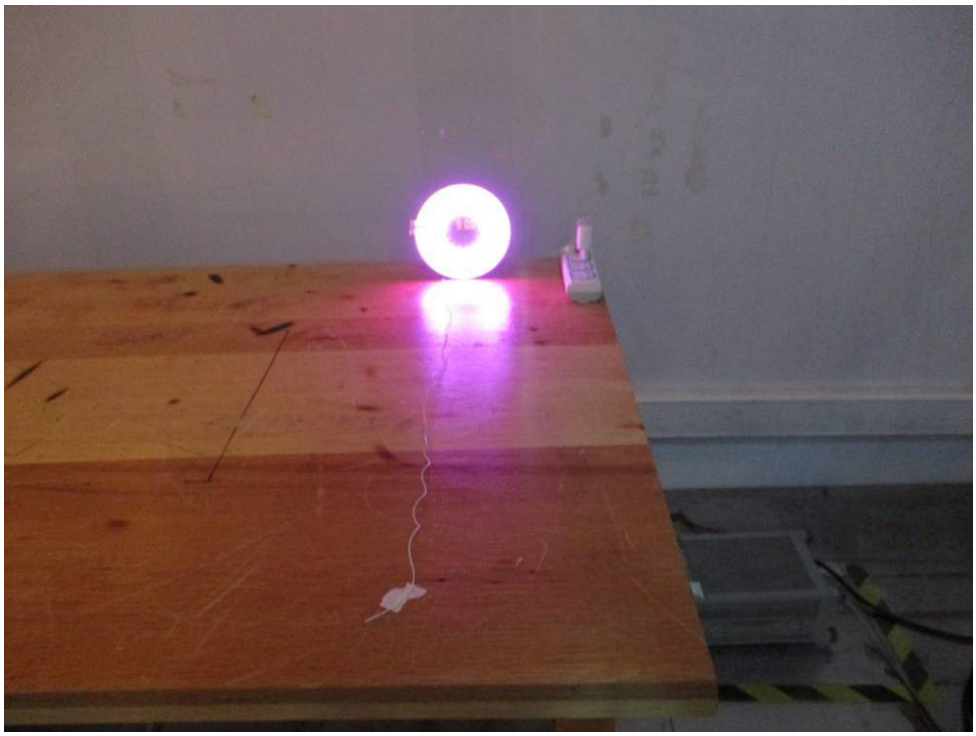
Cable port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
AC power port	3	CDN	2s	A

Results:

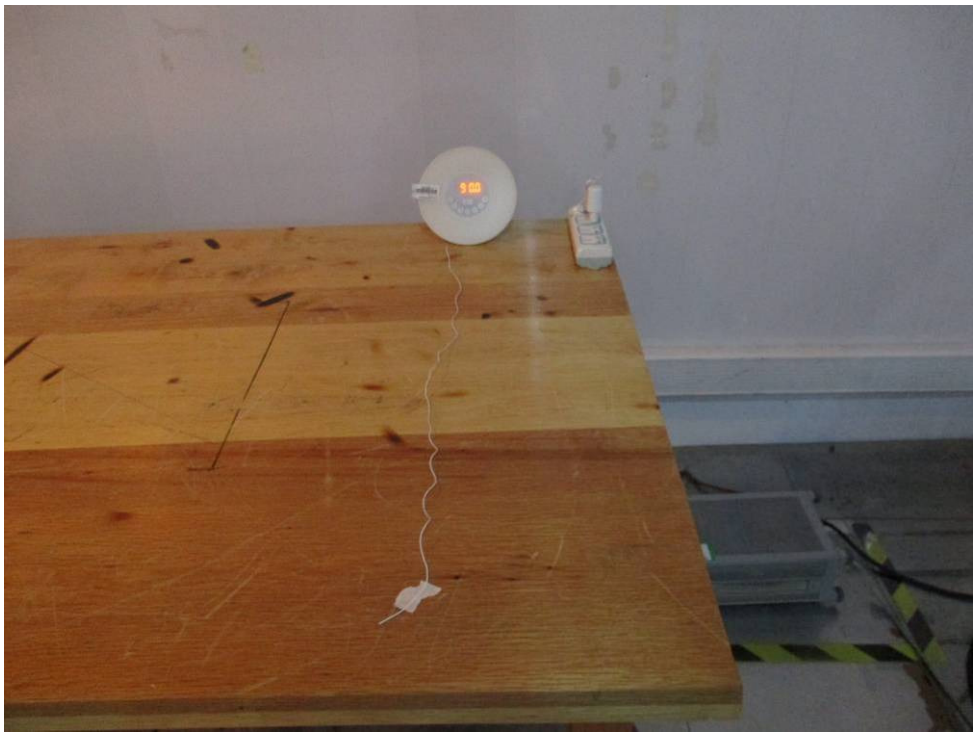
A: No degradation in the performance of the EUT was observed.

8 Photographs

8.1 Conducted Emissions at Mains Terminals (9kHz-30MHz) Test Setup



8.2 Conducted Emissions at Mains Terminals (150kHz-30MHz) Test Setup

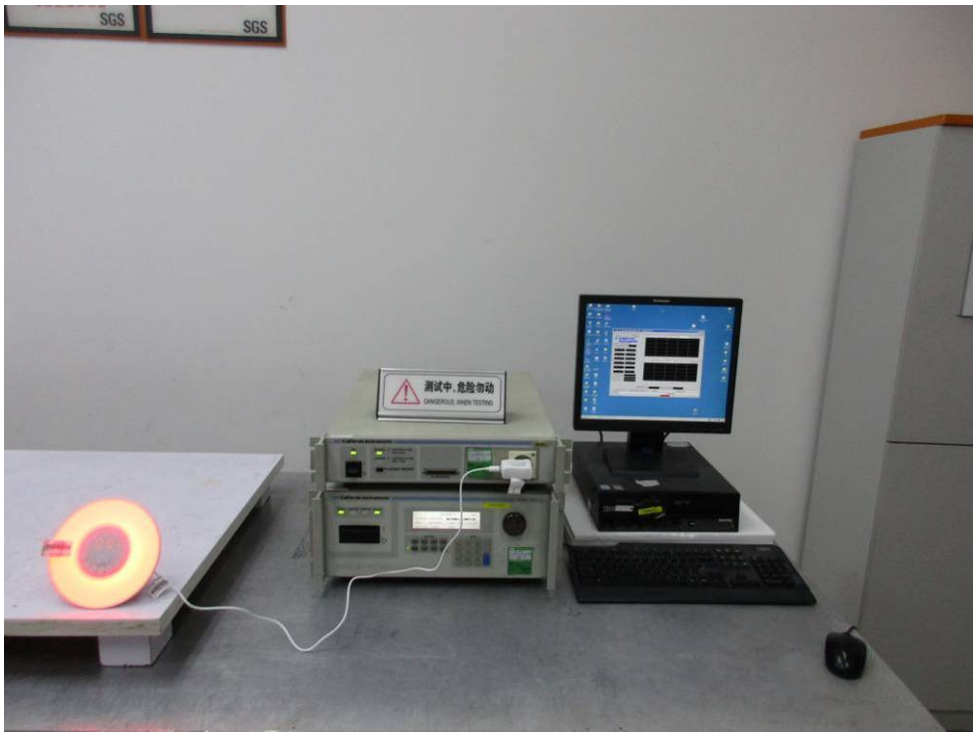


8.3 Radiated Emissions (30MHz-1GHz) Test Setup

8.4 Radiated Emissions (30MHz-300MHz) Test Setup

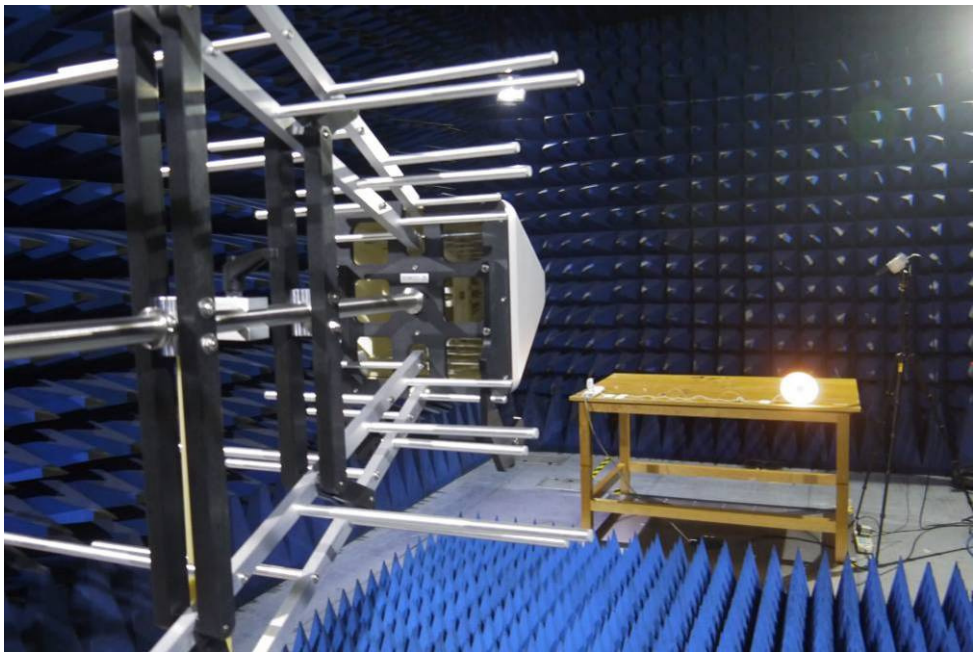
8.5 Radiated Emissions (Magnetic field Induced Current)(9kHz-30MHz) Test Setup

8.6 Voltage Fluctuations and Flicker Test Setup

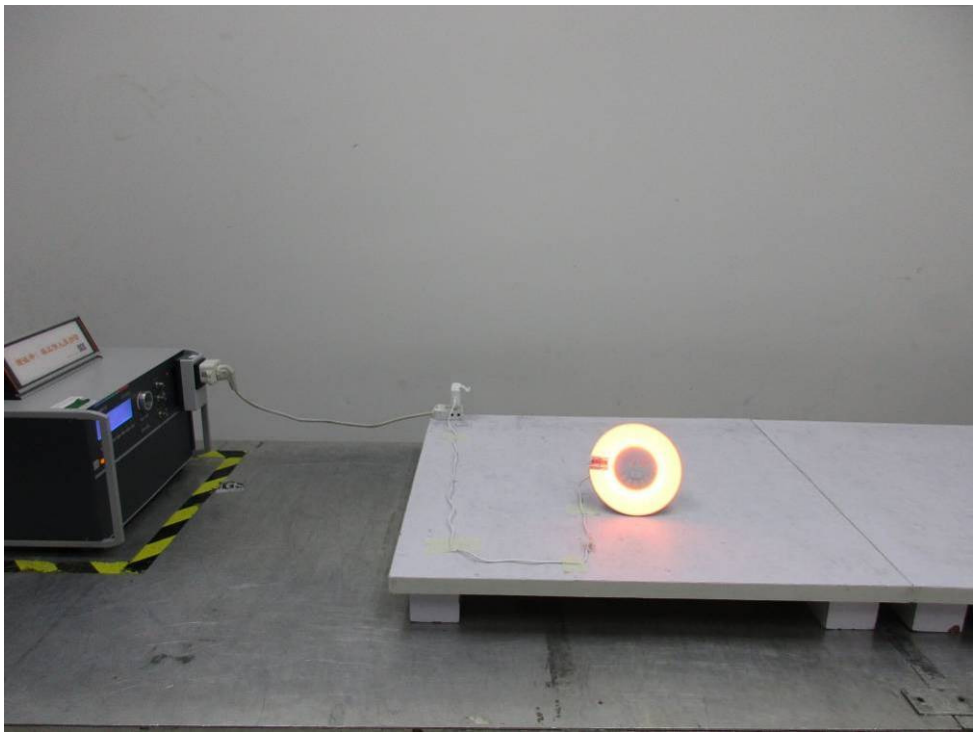


8.7 Electrostatic Discharge Test Setup

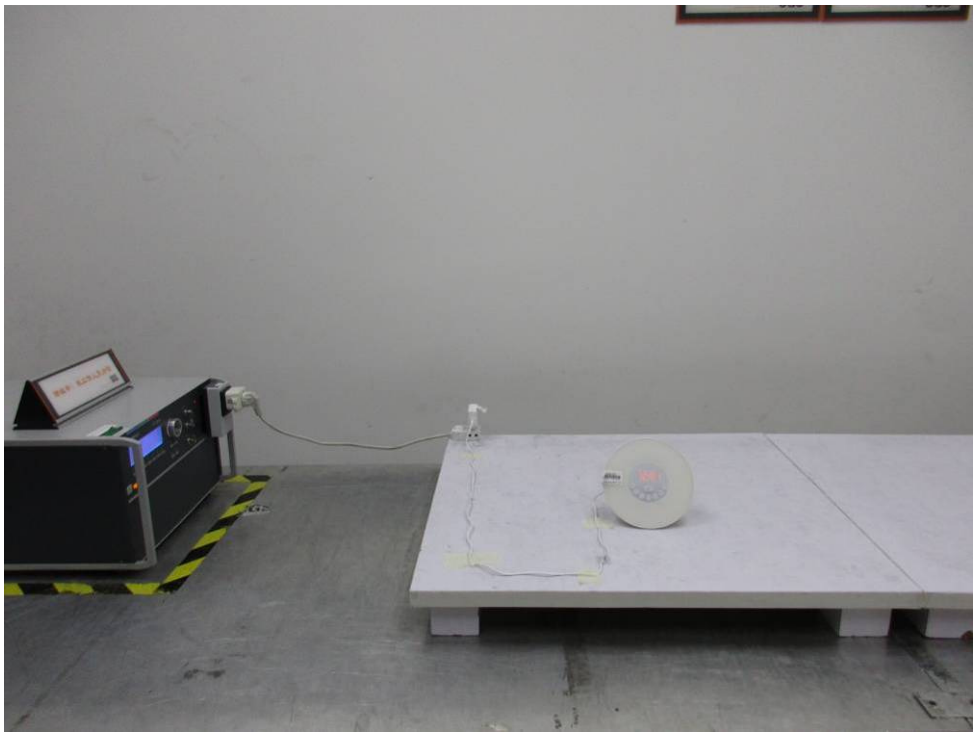
8.8 Radiated Immunity (80MHz-1GHz) Test Setup



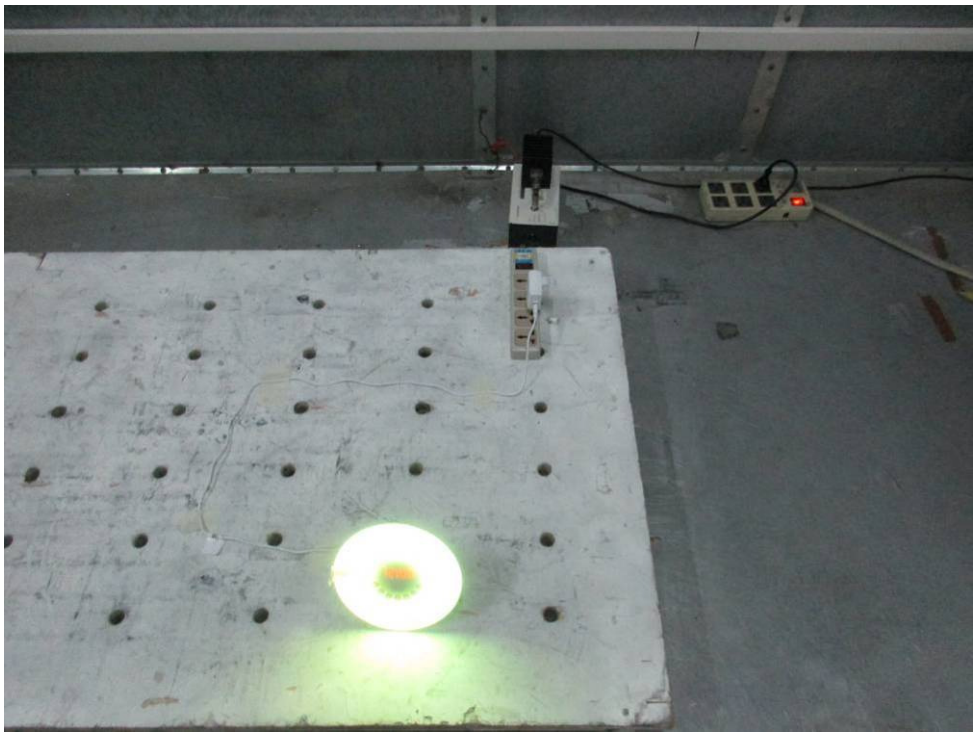
8.9 Electrical Fast Transients/Burst at Power Port Test Setup



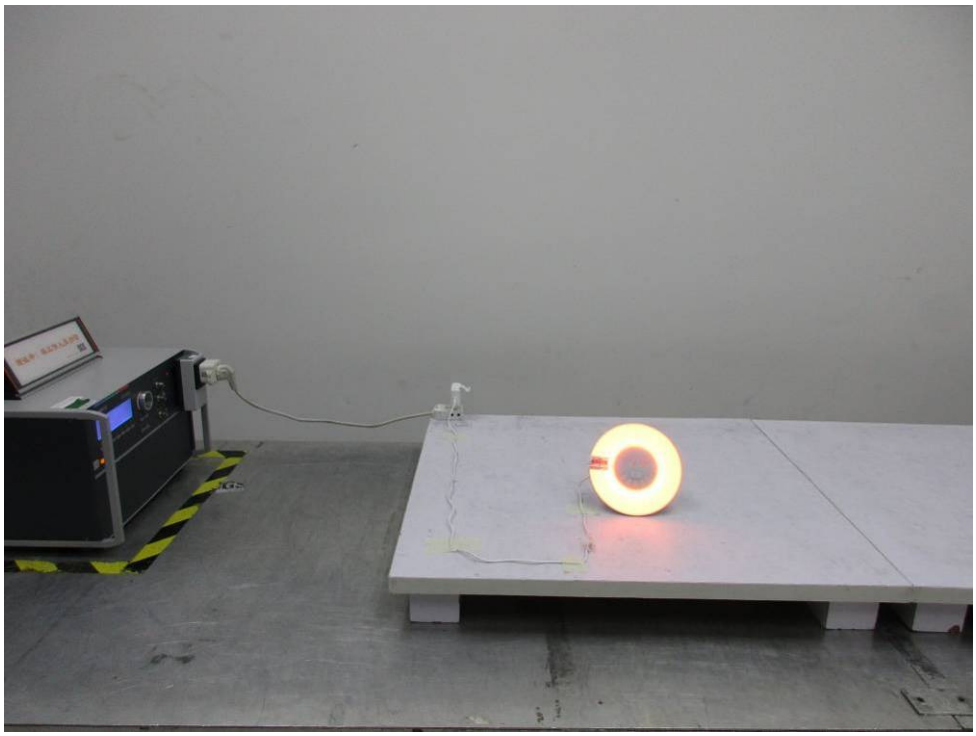
8.10 Surge at Power Port Test Setup



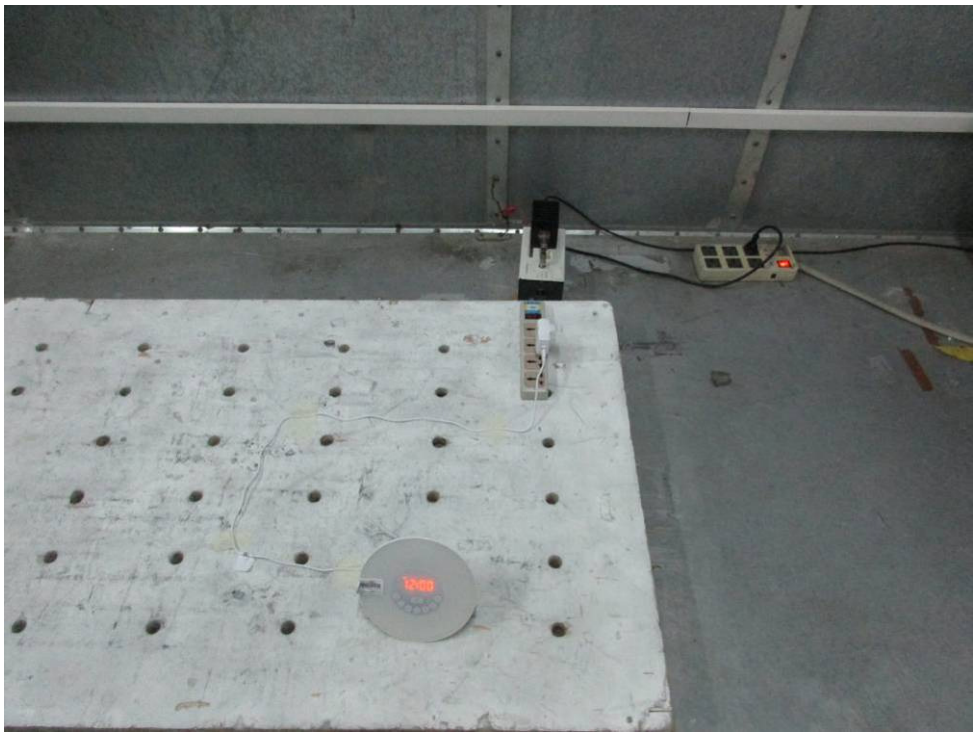
8.11 Conducted Immunity at Power Port (150kHz-80MHz) Test Setup



8.12 Voltage Dips and Interruptions Test Setup



8.13 Conducted Immunity at Power Port (150kHz-230MHz) Test Setup



8.14 EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for SZEM1706006782CR.