

TEST REPORT

Application No.: KSEM2511003181AT

Applicant: ZHEJIANG DAHUA VISION TECHNOLOGY CO.,LTD.

Address of Applicant: No.1399, Binxing Road, Binjiang District, Hangzhou, P.R.China

Manufacturer: ZHEJIANG DAHUA VISION TECHNOLOGY CO.,LTD.

Address of Manufacturer: No.1399, Binxing Road, Binjiang District, Hangzhou, P.R.China

Equipment Under Test (EUT):

EUT Name: Network Video Recorder

Model No.: DHI-NVR5208-8P-EI2; DHI-NVR5216-8P-EI2; DHI-NVR5232-8P-EI2; NVR5208-8P-EI2; NVR5216-8P-EI2; NVR5232-8P-EI2; DHI-NVR52XX-8P-EI2; NVR52XX-8P-EI2(The "xx" can be,04,08,16 and 32 denote different software configuration) ♣

Add Model No.: N520208-8P-FI2

♣ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

Trade Mark: 

Standard(s) : EN 55032: 2015+A11:2020+A1:2020
EN 61000-3-3: 2013+A1:2019+A2:2021
EN IEC 61000-3-2: 2019+A1:2021+A2:2024
EN 50130-4: 2011+A1:2014
EN 55035: 2017+A11:2020

Date of Receipt: 2025-06-18

Date of Test: 2025-06-24 to 2025-06-25

Date of Issue: 2025-11-07

Test Result:
Pass*

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

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Revision Record			
Version	Description	Date	Remark
00	Add Models	2025-11-07	Based on KSEM250600165701

Authorized for issue by:				
Tested By		<i>Kun Gu</i>		
		Kun Gu /Project Engineer		
Approved By		<i>Terry Hou</i>		
		Terry Hou /Reviewer		

2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Power Port (150kHz-30MHz)	EN 55032: 2015+A11:2020+A1:2020	EN 55032: 2015+A11:2020+A1:2020	Class A	Pass
Asymmetric Mode Conducted Emissions(150kHz-30MHz)		EN 55032: 2015+A11:2020+A1:2020	Class A	Pass
Radiated Emissions (30MHz-1GHz)		EN 55032: 2015+A11:2020+A1:2020	Class A	Pass
Radiated Emissions (Above 1GHz)		EN 55032: 2015+A11:2020+A1:2020	Class A	Pass
Voltage Fluctuations and Flicker	EN 61000-3-3: 2013+ A1:2019+A2:2021	EN 61000-3-3: 2013+ A1:2019+A2:2021	Clause 5	Pass
Harmonic Current Emission	EN IEC 61000-3-2: 2019+A1:2021+A2: 2024	EN IEC 61000-3-2: 2019+A1:2021+A2:2024	Class A	Pass

Immunity Part				
Item	Standard	Method	Requirement	Result
Electrostatic Discharge	EN 50130-4: 2011 +A1:2014	EN 61000-4-2:2009	6kV Contact Discharge, 2,4,8kV Air Discharge	Pass
Radiated Immunity(80MHz-2.7GHz)		EN IEC 61000-4-3: 2020	10V/m, 80%, 1kHz sinusoidal Amp. Mod.	Pass
Electrical Fast Transients & Burst at AC Power Port		EN 61000-4-4:2012	2kV, 5/50ns Tr/Td, 100kHz Repetition Frequency	Pass
Electrical Fast Transients & Burst at Signal Port		EN 61000-4-4:2012	1kV, 5/50ns Tr/Td, 100kHz Repetition Frequency	Pass
Surge at AC Power Port		EN 61000-4-5:2014 +A1:2017	1.2/50µs Tr/Td, 0.5,1kV Line to Line, 0.5,1,2kV Line to Ground	Pass
Surge at Signal Port		EN 61000-4-5:2014 +A1:2017	1.2/50µs Tr/Td, 0.5,1kV line-to-ground	Pass
Conducted Immunity at Power Port (150kHz-100MHz)		EN 61000-4-6:2014	10Vrms (emf),80%,1kHz sinusoidal Amp. Mod.	Pass
Conducted Immunity at Signal Port (150kHz-100MHz)		EN 61000-4-6:2014	10Vrms (emf),80%,1kHz sinusoidal Amp. Mod	Pass

Immunity Part				
Item	Standard	Method	Requirement	Result
Mains Supply Voltage Variations	EN 55035: 2017+A11:2020	EN 50130-4:2011+A1:2014	Unom+10%, Unom-15%	Pass
Voltage Dips and Interruptions		EN IEC 61000-4-11:2020	80 % UT for 250per, 70 % UT for 25per, 40 % UT for 10per, 0 % UT for 250per	Pass
Electrostatic Discharge		EN 61000-4-2: 2009	±4kV Contact Discharge; ±2kV, ±4kV, ±8kV Air Discharge	Pass
Radiated Immunity (80MHz-1GHz, 1800MHz, 2600 MHz, 3500MHz, 5000 MHz)		EN IEC 61000-4-3: 2020	3V/m, 80%, 1kHz Amp. Mod.	Pass
Electrical Fast Transients & Burst at AC Power Port		EN 61000-4-4: 2012	1kV; 5/50ns Tr/Td; 5kHz Repetition Frequency	Pass
Electrical Fast Transients & Burst at Signal Port		EN 61000-4-4: 2012	0,5kV; 5/50ns Tr/Td; 5kHz Repetition Frequency	Pass
Surge at AC Power Port		EN 61000-4-5: 2014 +A1: 2017	1,2/50µs Tr/Td; 1KV Line to Line; 2kV Line to Ground	Pass
Surge at Signal Port		EN 61000-4-5: 2014 +A1: 2017	1,2/50µs Tr/Td; 1 kV Lines to Ground, 1,2/50µs Tr/Td; 0,5 kV Shield to Ground	Pass
Conducted Immunity at AC Power Port (150kHz-80MHz)		EN 61000-4-6: 2014	0,15 to 10MHz 3Vrms (emf), 10 to 30MHz 3V to 1Vrms(emf), 30 to 80MHz 1Vrms(emf), 80%, 1kHz Amp. Mod.	Pass
Conducted Immunity at Signal Port (150kHz-80MHz)		EN 61000-4-6: 2014	0,15 to 10MHz 3Vrms (emf), 10 to 30MHz 3V to 1Vrms(emf), 30 to 80MHz 1Vrms(emf), 80%, 1kHz Amp. Mod.	Pass
Power Frequency Magnetic Field		EN 61000-4-8: 2010	50 or 60Hz, 1 A/m	Pass
Voltage Dips and Interruptions		EN IEC 61000-4-11:2020	<5% residual voltage for 0,5cycle, 70% residual voltage for 25cycles, <5% residual voltage for 250cycles	Pass

Note1: There are series models mentioned in this report, and they are the similar in electrical and electronic characters. Only the model DHI-NVR5232-8P-EI2 was tested since their differences are the model number and appearance.

Note2: We add models N520208-8P-FI2 in this report. The new models mentioned in this report are the same as the original models, in Electronic or Electrical characters. Which were already EMC tested in the report KSEM250600165701. So the new models in this report are deemed to fulfil the EMC requirements without testing.

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4 General Information

4.1 Details of E.U.T.

Power supply:	Power Supply1: DPS-200AB-225C Power Supply2: FLXA2191B-0GAA Power Supply3: P1A-N10190-S-F2 Fan1: EF40101B1-1Q08C-S99 Fan2: AG04012UB107B00 100-240VAC,3.5A,50/60Hz Pre-test Voltage:AC230V/50Hz&110V/60Hz Final-test Voltage:AC230V/50Hz
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4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Displayer	LENOVO	T2054pC	/
Displayer	LENOVO	LENOVO	/
Earphone	EDIFIER	K800	/
Earphone	NOKIA	WH-108	/
HDD	SAMSUNG	MU-PA500B	/
Notebook	LENOVO	80H1	/
Notebook	XIAOMI	Pro15	/

4.3 Measurement Uncertainty & Decision Rule

Measurement Uncertainty:

No.	Item	Measurement Uncertainty (U_{LAB}) *	U_{CISPR}
1	Conducted Emission at mains port using AMN	2.4dB (9kHz to 150kHz)	3.8dB (9kHz to 150kHz)
		2.2dB (150kHz to 30MHz)	3.4dB (150kHz to 30MHz)
2	Conducted Emission at telecommunication port using AAN	4.0 dB (150kHz to 30MHz)	5.0dB (150kHz to 30MHz)
3	Radiated Power	3.2dB	4.5dB (30MHz to 300MHz)
4	Radiated Emission (10m)	4.1 dB	6.3dB (30MHz-1GHz)
5	Radiated Emission (3m)	4.6 dB (30MHz-1GHz)	6.3dB (30MHz-1GHz)
		5.0dB (1GHz-6GHz)	5.2dB (1GHz-6GHz)
		5.2dB (6GHz-18GHz)	5.5dB (6GHz-18GHz)
		5.3dB (18GHz-40GHz)	N/A

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Decision Rule:

- CISPR 16-4-2 for emission measurements is as below described.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

U_{LAB} less than U_{CISPR} , therefore:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit.
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.
- For immunity testing no decision rule is applicable.

4.4 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

1.SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).

2.SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).

3. Sample source: sent by customer.

4.5 Test Facility

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

- **A2LA**

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

- **FCC**

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

- **ISED**

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 2324E

- **VCCI**

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Conducted Emissions at Mains Power Port (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMI TEST RECEIVER	R&S	ESCI	KS301195	03/27/2025	03/26/2026
TWO-LINE V-NETWORK	R&S	ENV216	KS301197	04/02/2025	04/01/2026
V (V-LISN)	SCHWARZBECK	NNLK 8129	KS301091	01/15/2025	01/14/2026
Pulse LIMITER	R&S	ESH3-Z2	KUS1902E001	12/05/2024	12/04/2025
Software	Faratronic	E3 v 3A1	N/A	N/A	N/A

Asymmetric Mode Conducted Emissions(150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMI TEST RECEIVER	R&S	ESCI	KS301101	02/19/2025	02/18/2026
TWO-LINE V-NETWORK	R&S	ENV216	KS301197	04/02/2025	04/01/2026
V (V-LISN)	SCHWARZBECK	NNLK 8129	KS301091	01/15/2025	01/14/2026
Pulse LIMITER	R&S	ESH3-Z2	KUS1902E001	12/05/2024	12/04/2025
CISPR22 FOUR BALANCED TELECOM PARIS ISN	FCC	FCC-TLISN-T2-02	KS301144	04/03/2025	04/02/2026
COUPLING AND DECOUPLING NETWORK	TESEQ	ISN ST08	KS301171	12/05/2024	12/04/2025
IMPEDANCE STABILIZATION NETWORK	TESEQ	ISN T800	KS301185	09/30/2024	09/29/2025
IMPEDANCE STABILIZATION NETWORK	TESEQ	ISN T8-CAT6	KS301285	09/30/2024	09/29/2025
RF CURRENT PROBE	FCC	F-65A	CZ301012	12/05/2024	12/04/2025
Software	Faratronic	E3 v 3A1	N/A	N/A	N/A

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMI Test Receiver	R&S	ESCI	KS301196	08/01/2024	07/31/2025
Antenna	TESEQ	CBL 6112D	KUS1806E006	03/23/2025	03/22/2026
Software	Faratronic	E3 v 3A1	N/A	N/A	N/A

Radiated Emissions (Above 1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Spectrum Analyzer	R&S	FSU26	KS301206	03/27/2025	03/26/2026
Preamplifier	PANSHAN TECHNOLOGY	LNA:1~18G	KSEM010-2	12/06/2024	12/05/2025

Horn-antenna	SCHWARZBECK	BBHA9120D	KS301079	03/23/2025	03/22/2026
Software	Faratronic	E3 v 3A1	N/A	N/A	N/A

Voltage Fluctuations and Flicker

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Harmonic & Flicker Tester	SCHAFFNER	CCN 1000-1	KS301033	08/06/2024	08/05/2025
AC Power Source	SCHAFFNER	NSG 1007	KS301087	08/01/2024	07/31/2025
Software	TESEQ	CTS4-v 4.24.0	N/A	N/A	N/A
Harmonic/Flicker Analyzer	KIKUSUI	KHA3000	KUS2009M002-1	02/27/2025	02/26/2026
Line Impedance Network	KIKUSUI	SPEC71116	KUS2009M002-1	02/27/2025	02/26/2026
Switcher	KIKUSUI	SPEC71092	KUS2009M002-2	02/18/2025	02/17/2026
AC Power Supply(Master)	KIKUSUI	PCR24000WE 2	KUS2009M002-3	02/18/2025	02/17/2026
AC Power Supply(Slave)	KIKUSUI	PCR24000WE 2	KUS2009M002-4	02/18/2025	02/17/2026
Software	KIKUSUI	HarmoCapture 3-vv 2.5.2.00	N/A	N/A	N/A

Harmonic Current Emission

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Harmonic & Flicker Tester	SCHAFFNER	CCN 1000-1	KS301033	08/06/2024	08/05/2025
AC Power Source	SCHAFFNER	NSG 1007	KS301087	08/01/2024	07/31/2025
Software	TESEQ	CTS4-v 4.24.0	N/A	N/A	N/A
Harmonic/Flicker Analyzer	KIKUSUI	KHA3000	KUS2009M002-1	02/27/2025	02/26/2026
Line Impedance Network	KIKUSUI	SPEC71116	KUS2009M002-1	02/27/2025	02/26/2026
Switcher	KIKUSUI	SPEC71092	KUS2009M002-2	02/18/2025	02/17/2026
AC Power Supply(Master)	KIKUSUI	PCR24000WE 2	KUS2009M002-3	02/18/2025	02/17/2026
AC Power Supply(Slave)	KIKUSUI	PCR24000WE 2	KUS2009M002-4	02/18/2025	02/17/2026
Software	KIKUSUI	HarmoCapture 3-vv 2.5.2.00	N/A	N/A	N/A

Electrostatic Discharge

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
ESD Simulator	EM TEST	DITO 509030	KS301147	02/06/2025	02/05/2026

Radiated Immunity(80MHz-2.7GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Synthesized Signal Generator	AGILENT	83732B	KS301183	01/15/2025	01/14/2026
Laser probe interface	AR Worldwide	FI7000	KS301193-2	N.C.R	N.C.R
E-Field Sensor	AR Worldwide	FL7006 100K-6G	KS301193-1	03/13/2025	03/12/2026
Amplifier Research (80~1000MHz 150w)	AR Worldwide	150W1000M1	KS301139	08/01/2024	07/31/2025
Amplifier Research (1~6GHz 50w)	AR Worldwide	50S1G6M1	KS301231	N.C.R	N.C.R
Dual Directional Coupler (1-11G)	AR Worldwide	C1-A47NFNF 35dB	KS301193-5	N.C.R	N.C.R
Dual Directional Coupler (80~1000MHz 400w)	AR Worldwide	DC6180	KS301193-6	N.C.R	N.C.R
RF POWER METER	BOONTON	4232A-01	KS301022	03/18/2025	03/17/2026
POWER SENSOR	BOONTON	51085	H3010235-1	03/18/2025	03/17/2026
POWER SENSOR	BOONTON	51085	H3010235-2	03/18/2025	03/17/2026
Antenna	AR Worldwide	TP1000A	CZ301029	N.C.R	N.C.R
Software	AR	emc ware-v 3.2.0.4	N/A	N/A	N/A

Electrical Fast Transients & Burst at AC Power Port					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMC Immunity Tester	EMC PARTNER	Transient2000	KS301188-1	08/01/2024	07/31/2025
Coupling Network	EMC PARTNER	CN-EFT1000	KS301188-3	08/01/2024	07/31/2025
Burst Generator	SANKI	EFT-0404S	KUS2009M002-7	08/02/2024	08/01/2025
Coupling and Decoupling Network	SANKI	CDN-4350	KUS2009M002-8	08/12/2024	08/11/2025

Electrical Fast Transients & Burst at Signal Port					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMC Immunity Tester	EMC PARTNER	Transient2000	KS301188-1	08/01/2024	07/31/2025
Coupling Network	EMC PARTNER	CN-EFT1000	KS301188-3	08/01/2024	07/31/2025
Burst Generator	SANKI	EFT-0404S	KUS2009M002-7	08/02/2024	08/01/2025
Coupling and Decoupling Network	SANKI	CDN-4350	KUS2009M002-8	08/12/2024	08/11/2025

Surge at AC Power Port					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMC Immunity Tester	EMC PARTNER	TRA2006	KS301188-1	08/01/2024	07/31/2025
Coupling and Decoupling Network	EMC PARTNER	CDN-UTP8	KS301188-2	08/01/2024	07/31/2025
Surge Generator	SANKI	LSG-0506S	KUS2009M002-5	08/02/2024	08/01/2025
Coupling and Decoupling Network	SANKI	CDN-5350	KUS2009M002-6	08/12/2024	08/11/2025

Surge at Signal Port					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMC Immunity Tester	EMC PARTNER	TRA2006	KS301188-1	08/01/2024	07/31/2025
Coupling and Decoupling Network	EMC PARTNER	CDN-UTP8	KS301188-2	08/01/2024	07/31/2025
Surge Generator	SANKI	LSG-0506S	KUS2009M002-5	08/02/2024	08/01/2025
Coupling and Decoupling Network	SANKI	CDN-5350	KUS2009M002-6	08/12/2024	08/11/2025

Conducted Immunity at Power Port (150kHz-100MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Test System for Conducted and Radiated Immunity	TESEQ	NSG 4070B	KSZ201705E003	12/05/2024	12/04/2025
Amplifier	TESEQ	SCCXE75	KSZ201705E004	12/05/2024	12/04/2025
EM-Koppelzange	SCHAFFNER	KEMZ 801	CZ301002	12/05/2024	12/04/2025
Attenuator	SHHX	TS2-6-1-A	CZ750027	12/16/2024	12/15/2025
Directional Coupler	HIGH POWER	C21A8	CZ750021	08/01/2024	07/31/2025
CDN (Coupling and Decoupling Network)	SCHAFFNER	CDN M216	CZ301085	02/18/2025	02/17/2026
CDN (Coupling and Decoupling Network)	SCHAFFNER	CDN M316	CZ301025	02/18/2025	02/17/2026
CDN (Coupling and Decoupling Network)	TESEQ	CDN S751	KS301184-2	02/18/2025	02/17/2026
CDN (Coupling and Decoupling Network)	TESEQ	CDN M116	KS301184-1	02/18/2025	02/17/2026
CDN	TESEQ	CDN T2-10S	KS301286	02/18/2025	02/17/2026
CDN	TESEQ	CDN T4-10S	KS301287	02/18/2025	02/17/2026

CDN	3Ctest	CDNRJ45	KS301288	08/01/2024	07/31/2025
Current Clamp	SCHAFFNER	KEMZ-801	CZ301002	12/05/2024	12/04/2025
CDN	TESEQ	CDN M432	KUS2003M001-1	01/16/2025	01/15/2026
CDN	TESEQ	CDN M432-3LN	KUS2003M001-2	01/16/2025	01/15/2026
CDN	TESEQ	CDN M232	KSZ201706E001	03/27/2025	03/26/2026
CDN	TESEQ	CDN M332	KSZ201706E002	02/18/2025	02/17/2026
Software	TESEQ	NSG 4070-v 1.3.0.1	N/A	N/A	N/A

Conducted Immunity at Signal Port (150kHz-100MHz)

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Test System for Conducted and Radiated Immunity	TESEQ	NSG 4070B	KSZ201705E003	12/05/2024	12/04/2025
Amplifier	TESEQ	SCCXE75	KSZ201705E004	12/05/2024	12/04/2025
EM-Koppelzange	SCHAFFNER	KEMZ 801	CZ301002	12/05/2024	12/04/2025
Attenuator	SHHX	TS2-6-1-A	CZ750027	12/16/2024	12/15/2025
Directional Coupler	HIGH POWER	C21A8	CZ750021	08/01/2024	07/31/2025
CDN (Coupling and Decoupling Network)	SCHAFFNER	CDN M216	CZ301085	02/18/2025	02/17/2026
CDN (Coupling and Decoupling Network)	SCHAFFNER	CDN M316	CZ301025	02/18/2025	02/17/2026
CDN (Coupling and Decoupling Network)	TESEQ	CDN S751	KS301184-2	02/18/2025	02/17/2026
CDN (Coupling and Decoupling Network)	TESEQ	CDN M116	KS301184-1	02/18/2025	02/17/2026
CDN	TESEQ	CDN T2-10S	KS301286	02/18/2025	02/17/2026
CDN	TESEQ	CDN T4-10S	KS301287	02/18/2025	02/17/2026
CDN	3Ctest	CDNRJ45	KS301288	08/01/2024	07/31/2025
Current Clamp	SCHAFFNER	KEMZ-801	CZ301002	12/05/2024	12/04/2025
CDN	TESEQ	CDN M432	KUS2003M001-1	01/16/2025	01/15/2026
CDN	TESEQ	CDN M432-3LN	KUS2003M001-2	01/16/2025	01/15/2026
CDN	TESEQ	CDN M232	KSZ201706E001	03/27/2025	03/26/2026
CDN	TESEQ	CDN M332	KSZ201706E002	02/18/2025	02/17/2026
Software	TESEQ	NSG 4070-v 1.3.0.1	N/A	N/A	N/A

Mains Supply Voltage Variations					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMC Immunity Tester	EMC PARTNER	TRA2006	KS301188-1	08/01/2024	07/31/2025
Switcher	KIKUSUI	SPEC71092	KUS2009M002-2	02/18/2025	02/17/2026
AC Power Supply(Master)	KIKUSUI	PCR24000WE 2	KUS2009M002-3	02/18/2025	02/17/2026
AC Power Supply(Slave)	KIKUSUI	PCR24000WE 2	KUS2009M002-4	02/18/2025	02/17/2026
Software	KIKUSUI	Quick Immunity Sequencer 2-v 4.0.3.02	N/A	N/A	N/A

Voltage Dips and Interruptions					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMC Immunity Tester	EMC PARTNER	TRA2006	KS301188-1	08/01/2024	07/31/2025
Switcher	KIKUSUI	SPEC71092	KUS2009M002-2	02/18/2025	02/17/2026
AC Power Supply(Master)	KIKUSUI	PCR24000WE 2	KUS2009M002-3	02/18/2025	02/17/2026
AC Power Supply(Slave)	KIKUSUI	PCR24000WE 2	KUS2009M002-4	02/18/2025	02/17/2026
Software	KIKUSUI	Quick Immunity Sequencer 2-v 4.0.3.02	N/A	N/A	N/A

Electrostatic Discharge					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
ESD Simulator	EM TEST	DITO 509030	KS301147	02/06/2025	02/05/2026

Radiated Immunity (80MHz-1GHz,1800MHz,2600MHz,3500MHz,5000MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Synthesized Signal Generator	AGILENT	83732B	KS301183	01/15/2025	01/14/2026
Laser probe interface	AR Worldwide	FI7000	KS301193-2	N.C.R	N.C.R
E-Field Sensor	AR Worldwide	FL7006 100K-6G	KS301193-1	03/13/2025	03/12/2026
Amplifier Research (80~1000MHz 150w)	AR Worldwide	150W1000M1	KS301139	08/01/2024	07/31/2025
Amplifier Research (1~6GHz 50w)	AR Worldwide	50S1G6M1	KS301231	N.C.R	N.C.R
Dual Directional Coupler (1-11G)	AR Worldwide	C1-A47NFNF 35dB	KS301193-5	N.C.R	N.C.R
Dual Directional Coupler	AR Worldwide	DC6180	KS301193-6	N.C.R	N.C.R

(80~1000MHz 400w)					
RF POWER METER	BOONTON	4232A-01	KS301022	03/18/2025	03/17/2026
POWER SENSOR	BOONTON	51085	H3010235-1	03/18/2025	03/17/2026
POWER SENSOR	BOONTON	51085	H3010235-2	03/18/2025	03/17/2026
Antenna	AR Worldwide	TP1000A	CZ301029	N.C.R	N.C.R
Software	AR	emc ware-v 3.2.0.4	N/A	N/A	N/A

Electrical Fast Transients & Burst at AC Power Port

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMC Immunity Tester	EMC PARTNER	Transient2000	KS301188-1	08/01/2024	07/31/2025
Burst Generator	SANKI	EFT-0404S	KUS2009M002-7	08/02/2024	08/01/2025
Coupling and Decoupling Network	SANKI	CDN-4350	KUS2009M002-8	08/12/2024	08/11/2025

Electrical Fast Transients & Burst at Signal Port

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMC Immunity Tester	EMC PARTNER	Transient2000	KS301188-1	08/01/2024	07/31/2025
Coupling Network	EMC PARTNER	CN-EFT1000	KS301188-3	08/01/2024	07/31/2025
Burst Generator	SANKI	EFT-0404S	KUS2009M002-7	08/02/2024	08/01/2025
Coupling and Decoupling Network	SANKI	CDN-4350	KUS2009M002-8	08/12/2024	08/11/2025

Surge at AC Power Port

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMC Immunity Tester	EMC PARTNER	TRA2006	KS301188-1	08/01/2024	07/31/2025
Surge Generator	SANKI	LSG-0506S	KUS2009M002-5	08/02/2024	08/01/2025
Coupling and Decoupling Network	SANKI	CDN-5350	KUS2009M002-6	08/12/2024	08/11/2025

Surge at Signal Port

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMC Immunity Tester	EMC PARTNER	TRA2006	KS301188-1	08/01/2024	07/31/2025
Coupling and Decoupling Network	EMC PARTNER	CDN-UTP8	KS301188-2	08/01/2024	07/31/2025
Surge Generator	SANKI	LSG-0506S	KUS2009M002-5	08/02/2024	08/01/2025
Coupling and	SANKI	CDN-5350	KUS2009M002	08/12/2024	08/11/2025

Decoupling Network			-6		
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Conducted Immunity at AC Power Port (150kHz-80MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Test System for Conducted and Radiated Immunity	TESEQ	NSG 4070B	KSZ201705E003	12/05/2024	12/04/2025
Amplifier	TESEQ	SCCXE75	KSZ201705E004	12/05/2024	12/04/2025
EM-Koppelzange	SCHAFFNER	KEMZ 801	CZ301002	12/05/2024	12/04/2025
Attenuator	SHHX	TS2-6-1-A	CZ750027	12/16/2024	12/15/2025
Directional Coupler	HIGH POWER	C21A8	CZ750021	08/01/2024	07/31/2025
CDN (Coupling and Decoupling Network)	SCHAFFNER	CDN M216	CZ301085	02/18/2025	02/17/2026
CDN (Coupling and Decoupling Network)	SCHAFFNER	CDN M316	CZ301025	02/18/2025	02/17/2026
CDN (Coupling and Decoupling Network)	TESEQ	CDN M116	KS301184-1	02/18/2025	02/17/2026
CDN	TESEQ	CDN M432	KUS2003M001-1	01/16/2025	01/15/2026
CDN	TESEQ	CDN M432-3LN	KUS2003M001-2	01/16/2025	01/15/2026
CDN	TESEQ	CDN M232	KSZ201706E001	03/27/2025	03/26/2026
CDN	TESEQ	CDN M332	KSZ201706E002	02/18/2025	02/17/2026
Software	TESEQ	NSG 4070-v 1.3.0.1	N/A	N/A	N/A

Conducted Immunity at Signal Port (150kHz-80MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Test System for Conducted and Radiated Immunity	TESEQ	NSG 4070B	KSZ201705E003	12/05/2024	12/04/2025
Amplifier	TESEQ	SCCXE75	KSZ201705E004	12/05/2024	12/04/2025
EM-Koppelzange	SCHAFFNER	KEMZ 801	CZ301002	12/05/2024	12/04/2025
Attenuator	SHHX	TS2-6-1-A	CZ750027	12/16/2024	12/15/2025
Directional Coupler	HIGH POWER	C21A8	CZ750021	08/01/2024	07/31/2025
CDN	TESEQ	CDN T2-10S	KS301286	02/18/2025	02/17/2026
CDN	TESEQ	CDN T4-10S	KS301287	02/18/2025	02/17/2026
CDN	3Ctest	CDNRJ45	KS301288	08/01/2024	07/31/2025
Current Clamp	SCHAFFNER	KEMZ-801	CZ301002	12/05/2024	12/04/2025
Software	TESEQ	NSG 4070-v 1.3.0.1	N/A	N/A	N/A

Power Frequency Magnetic Field					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMC Immunity Tester	EMC PARTNER	TRA2006	KS301188-1	08/01/2024	07/31/2025
Inductive Standard Coil	EMC PARTNER	MF1000-1	KS301188-4	05/06/2025	05/05/2026

Voltage Dips and Interruptions					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMC Immunity Tester	EMC PARTNER	TRA2006	KS301188-1	08/01/2024	07/31/2025
Switcher	KIKUSUI	SPEC71092	KUS2009M002-2	02/18/2025	02/17/2026
AC Power Supply(Master)	KIKUSUI	PCR24000WE2	KUS2009M002-3	02/18/2025	02/17/2026
AC Power Supply(Slave)	KIKUSUI	PCR24000WE2	KUS2009M002-4	02/18/2025	02/17/2026
Software	KIKUSUI	Quick Immunity Sequencer 2-v 4.0.3.02	N/A	N/A	N/A

General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Digital Pressure Meter	Mengde	DYM3	CZ750023	01/14/2025	01/13/2026
Temperature & Humidity Recorder	JDRK	RS-WS-N01-6J	KSEM024-1 KSEM024-2 KSEM024-3 KSEM024-6 KSEM024-7 KSEM024--8 KSEM024--9	03/18/2025	03/17/2026

6 Emission Test Results

6.1 Conducted Emissions at Mains Power Port (150kHz-30MHz)

Test Requirement: EN 55032: 2015+A11:2020+A1:2020

Test Method: EN 55032: 2015+A11:2020+A1:2020

Limit:

0.15MHz-0.5MHz 79dB(μV) quasi-peak, 66dB(μV) average

0.5MHz-30MHz 73dB(μV) quasi-peak, 60dB(μV) average

Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

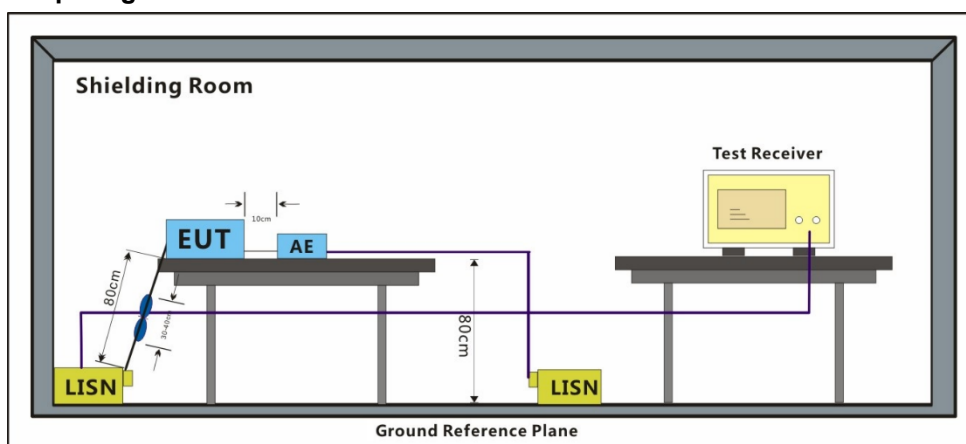
Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

6.1.3 Test Setup Diagram



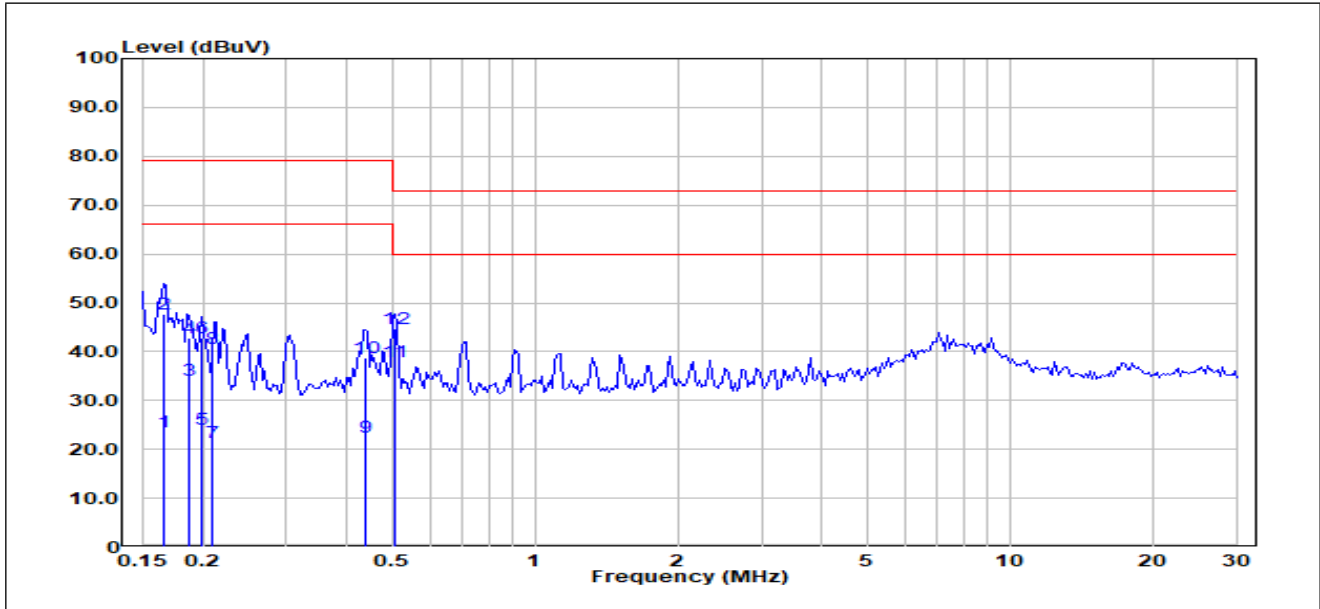
6.1.4 Measurement Procedure and Data

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.

Remark: $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{LISN Factor}$

Test Mode: 00; Line: Live line

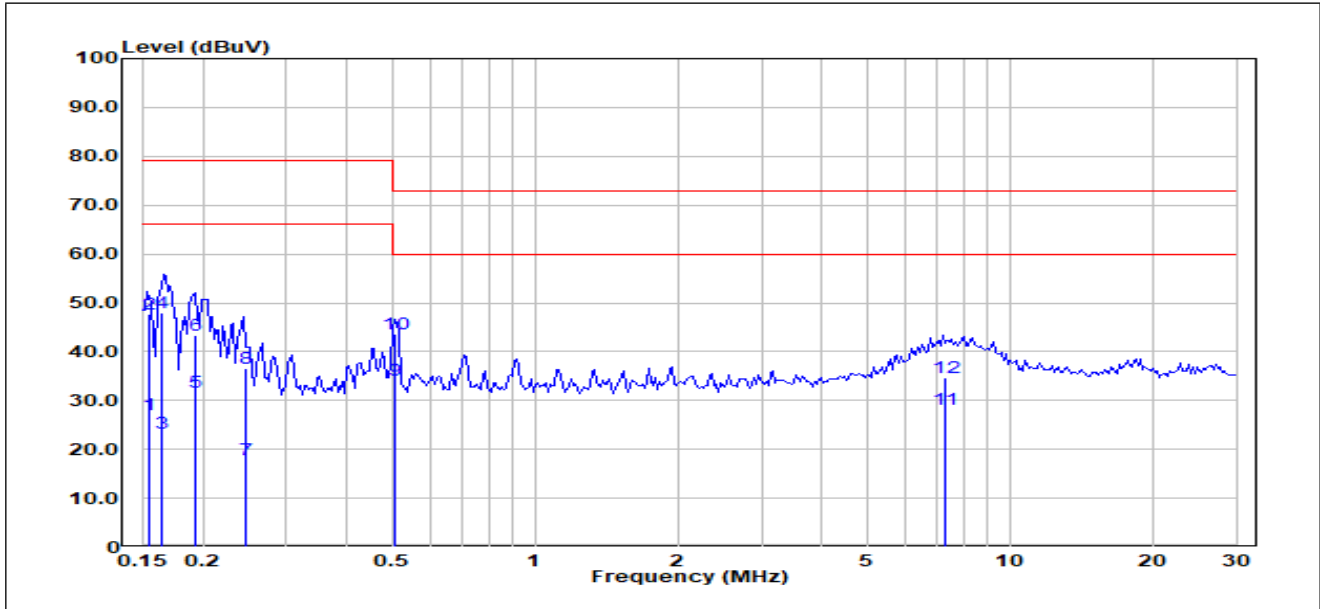
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1660	3.81	19.74	23.55	66.00	-42.45	Average
2	0.1660	28.08	19.74	47.82	79.00	-31.18	QP
3	0.1867	14.55	19.66	34.21	66.00	-31.79	Average
4	0.1867	23.21	19.66	42.87	79.00	-36.13	QP
5	0.1980	4.40	19.62	24.02	66.00	-41.98	Average
6	0.1980	23.26	19.62	42.88	79.00	-36.12	QP
7	0.2085	1.67	19.63	21.30	66.00	-44.70	Average
8	0.2085	21.00	19.63	40.63	79.00	-38.37	QP
9	0.4411	2.86	19.60	22.46	66.00	-43.54	Average
10	0.4411	19.26	19.60	38.86	79.00	-40.14	QP
11	0.5059	18.45	19.55	38.00	60.00	-22.00	Average
12	0.5059	25.27	19.55	44.82	73.00	-28.18	QP

Test Mode: 00; Line: Neutral Line

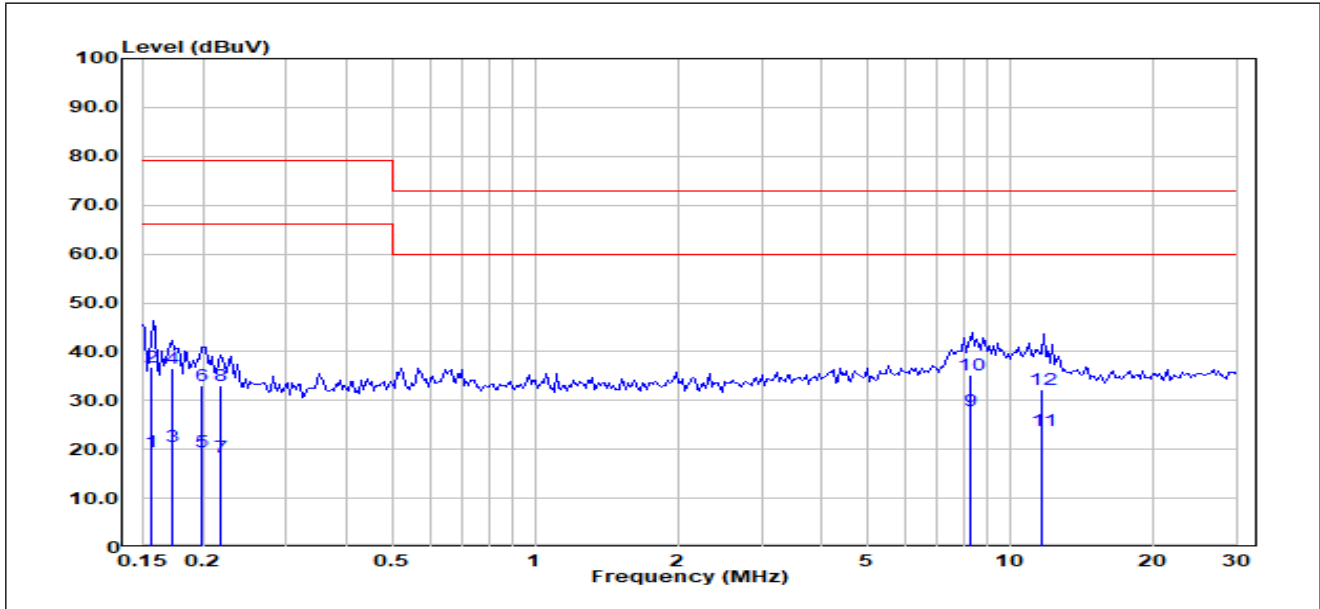
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1544	7.49	19.74	27.23	66.00	-38.77	Average
2	0.1544	27.86	19.74	47.60	79.00	-31.40	QP
3	0.1642	3.66	19.73	23.39	66.00	-42.61	Average
4	0.1642	28.30	19.73	48.03	79.00	-30.97	QP
5	0.1933	12.02	19.69	31.71	66.00	-34.29	Average
6	0.1933	23.55	19.69	43.24	79.00	-35.76	QP
7	0.2454	-1.89	19.66	17.77	66.00	-48.23	Average
8	0.2454	16.96	19.66	36.62	79.00	-42.38	QP
9	0.5060	14.63	19.48	34.11	60.00	-25.89	Average
10	0.5060	24.21	19.48	43.69	73.00	-29.31	QP
11	7.2990	8.49	19.66	28.15	60.00	-31.85	Average
12	7.2990	14.97	19.66	34.63	73.00	-38.37	QP

Test Mode: 01; Line: Live line

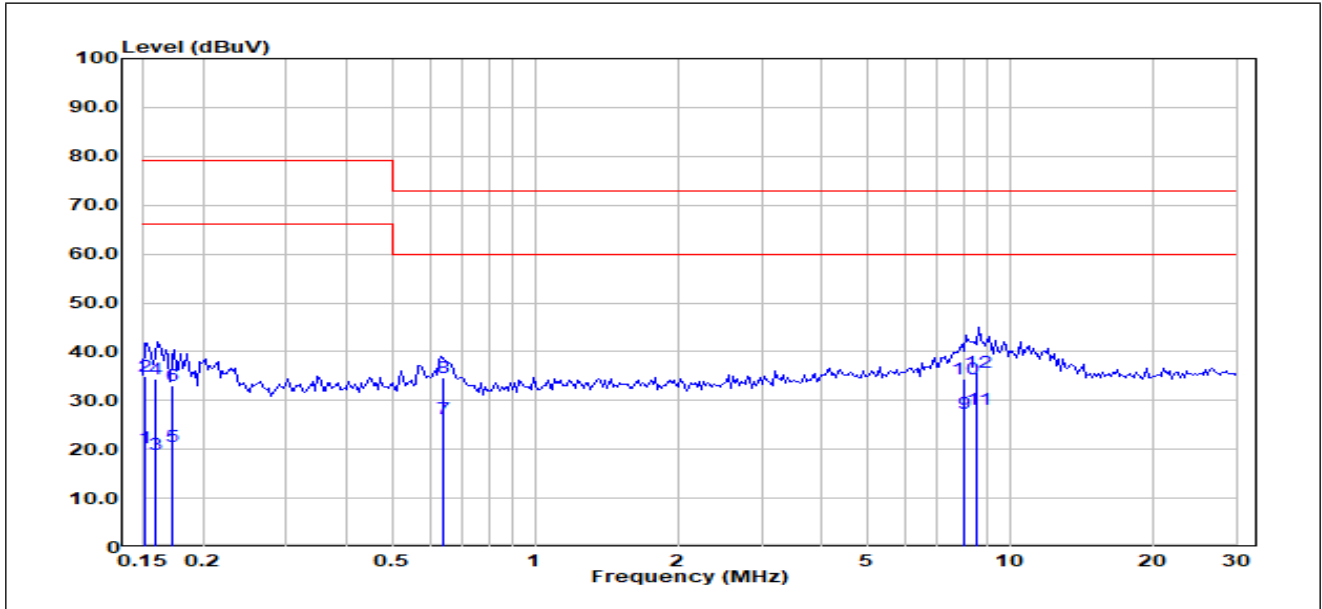
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1563	-0.32	19.78	19.46	66.00	-46.54	Average
2	0.1563	17.00	19.78	36.78	79.00	-42.22	QP
3	0.1729	0.85	19.71	20.56	66.00	-45.44	Average
4	0.1729	16.84	19.71	36.55	79.00	-42.45	QP
5	0.1991	-0.13	19.62	19.49	66.00	-46.51	Average
6	0.1991	13.56	19.62	33.18	79.00	-45.82	QP
7	0.2178	-1.29	19.64	18.35	66.00	-47.65	Average
8	0.2178	13.47	19.64	33.11	79.00	-45.89	QP
9	8.2460	8.35	19.69	28.04	60.00	-31.96	Average
10	8.2460	15.44	19.69	35.13	73.00	-37.87	QP
11	11.7110	4.13	19.71	23.84	60.00	-36.16	Average
12	11.7110	12.57	19.71	32.28	73.00	-40.72	QP

Test Mode: 01; Line: Neutral Line

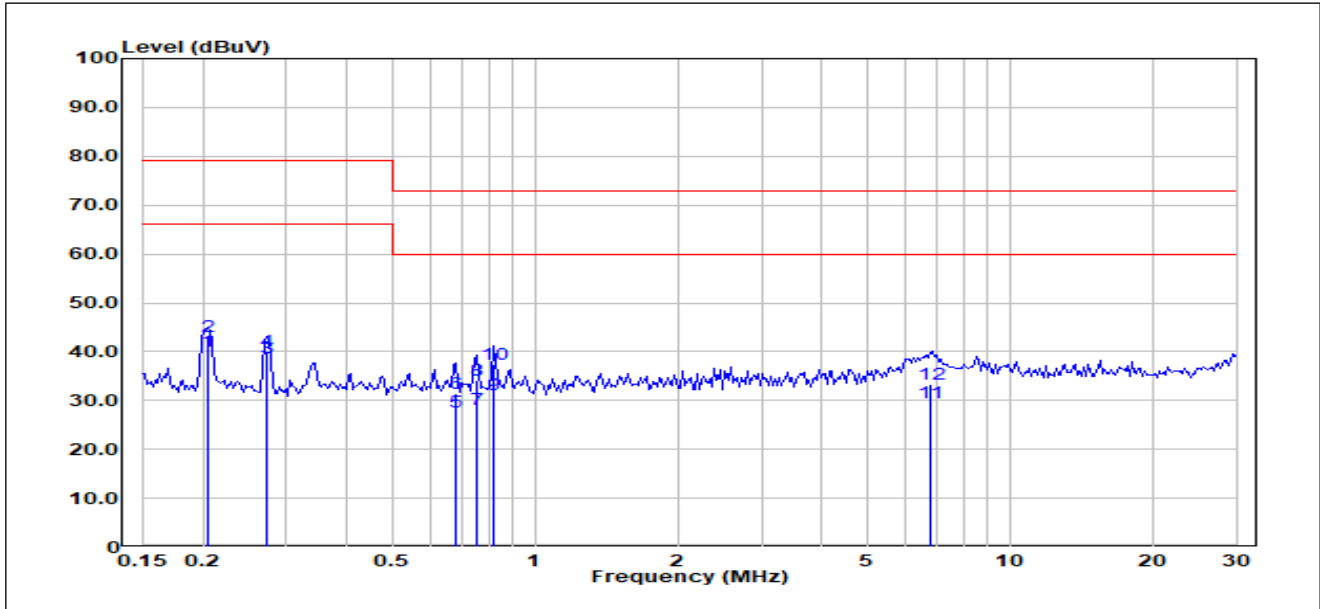
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1515	0.49	19.75	20.24	66.00	-45.76	Average
2	0.1515	15.24	19.75	34.99	79.00	-44.01	QP
3	0.1590	-0.78	19.74	18.96	66.00	-47.04	Average
4	0.1590	14.68	19.74	34.42	79.00	-44.58	QP
5	0.1724	1.01	19.72	20.73	66.00	-45.27	Average
6	0.1724	13.25	19.72	32.97	79.00	-46.03	QP
7	0.6397	6.77	19.48	26.25	60.00	-33.75	Average
8	0.6397	15.16	19.48	34.64	73.00	-38.36	QP
9	8.0420	7.56	19.68	27.24	60.00	-32.76	Average
10	8.0420	14.83	19.68	34.51	73.00	-38.49	QP
11	8.5560	8.54	19.69	28.23	60.00	-31.77	Average
12	8.5560	16.06	19.69	35.75	73.00	-37.25	QP

Test Mode: 02; Line: Live line

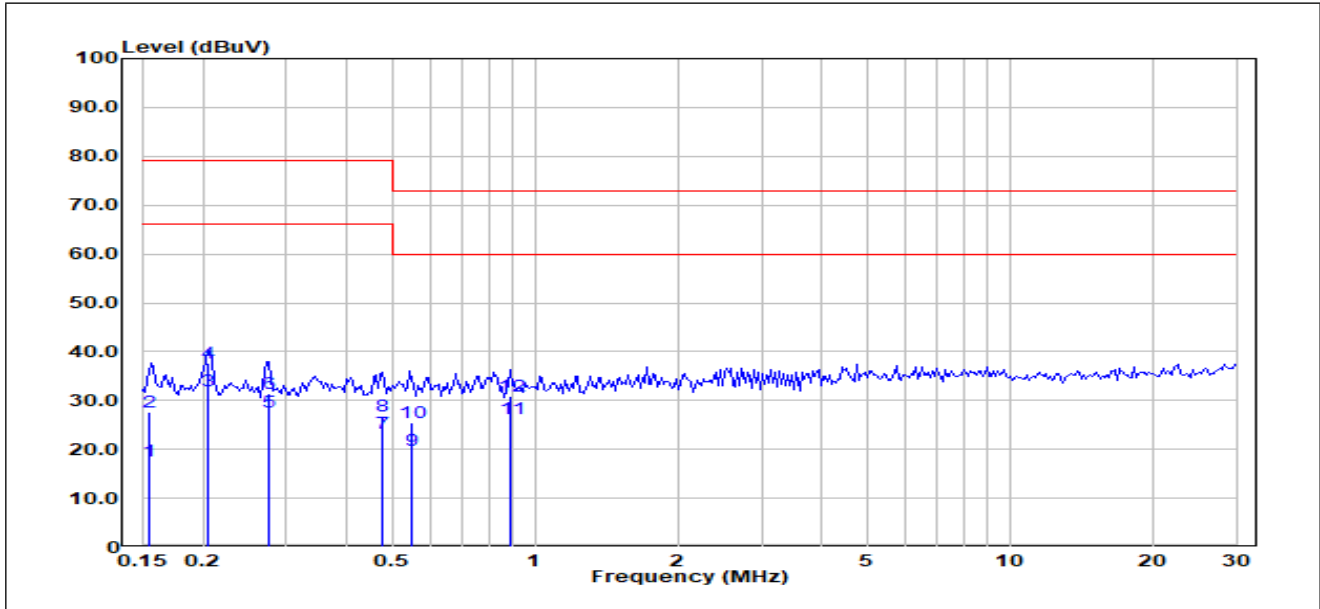
Test Data :



No.	Frequency (MHz)	Reading (dBUV)	Correct Factor(dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Remark
1	0.2046	20.53	19.62	40.15	66.00	-25.85	Average
2	0.2046	23.48	19.62	43.10	79.00	-35.90	QP
3	0.2725	18.96	19.69	38.65	66.00	-27.35	Average
4	0.2725	20.32	19.69	40.01	79.00	-38.99	QP
5	0.6802	8.20	19.56	27.76	60.00	-32.24	Average
6	0.6802	11.78	19.56	31.34	73.00	-41.66	QP
7	0.7513	8.71	19.56	28.27	60.00	-31.73	Average
8	0.7513	14.56	19.56	34.12	73.00	-38.88	QP
9	0.8162	11.55	19.56	31.11	60.00	-28.89	Average
10	0.8162	17.97	19.56	37.53	73.00	-35.47	QP
11	6.8110	9.88	19.72	29.60	60.00	-30.40	Average
12	6.8110	13.61	19.72	33.33	73.00	-39.67	QP

Test Mode: 02; Line: Neutral Line

Test Data :



No.	Frequency (MHz)	Reading (dBUV)	Correct Factor(dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Remark
1	0.1540	-2.06	19.74	17.68	66.00	-48.32	Average
2	0.1540	7.86	19.74	27.60	79.00	-51.40	QP
3	0.2052	12.40	19.68	32.08	66.00	-33.92	Average
4	0.2052	17.88	19.68	37.56	79.00	-41.44	QP
5	0.2741	7.90	19.64	27.54	66.00	-38.46	Average
6	0.2741	11.75	19.64	31.39	79.00	-47.61	QP
7	0.4771	3.87	19.50	23.37	66.00	-42.63	Average
8	0.4771	7.22	19.50	26.72	79.00	-52.28	QP
9	0.5484	0.29	19.48	19.77	60.00	-40.23	Average
10	0.5484	6.02	19.48	25.50	73.00	-47.50	QP
11	0.8901	6.88	19.49	26.37	60.00	-33.63	Average
12	0.8901	11.49	19.49	30.98	73.00	-42.02	QP

6.2 Asymmetric Mode Conducted Emissions(150kHz-30MHz)

Test Requirement: EN 55032: 2015+A11:2020+A1:2020

Test Method: EN 55032: 2015+A11:2020+A1:2020

Limit:

0.15MHz – 0.5MHz 97dB(μV)-87dB(μV) quasi-peak, 84(μV)-74dB(μV) average

0.5MHz – 30MHz 87dB(μV) quasi-peak, 74dB(μV) average

Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

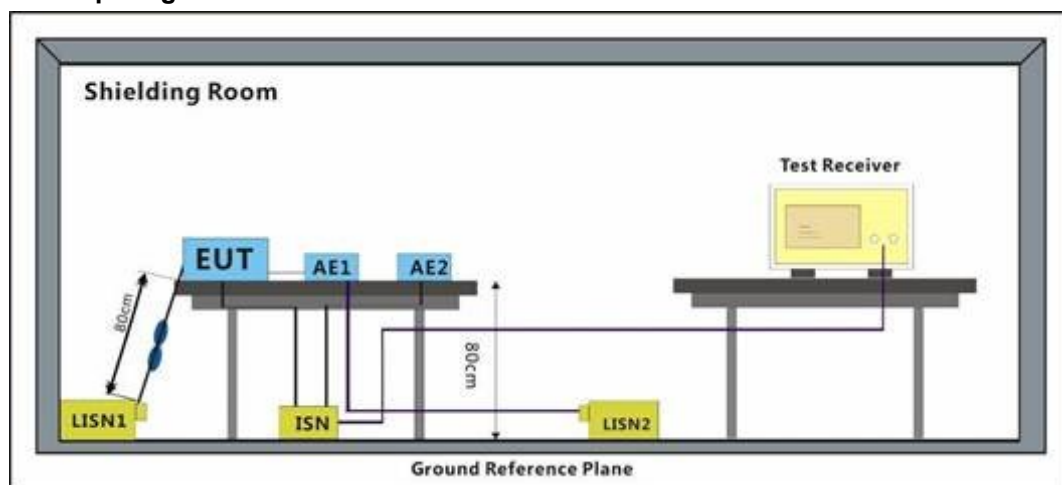
Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

6.2.3 Test Setup Diagram



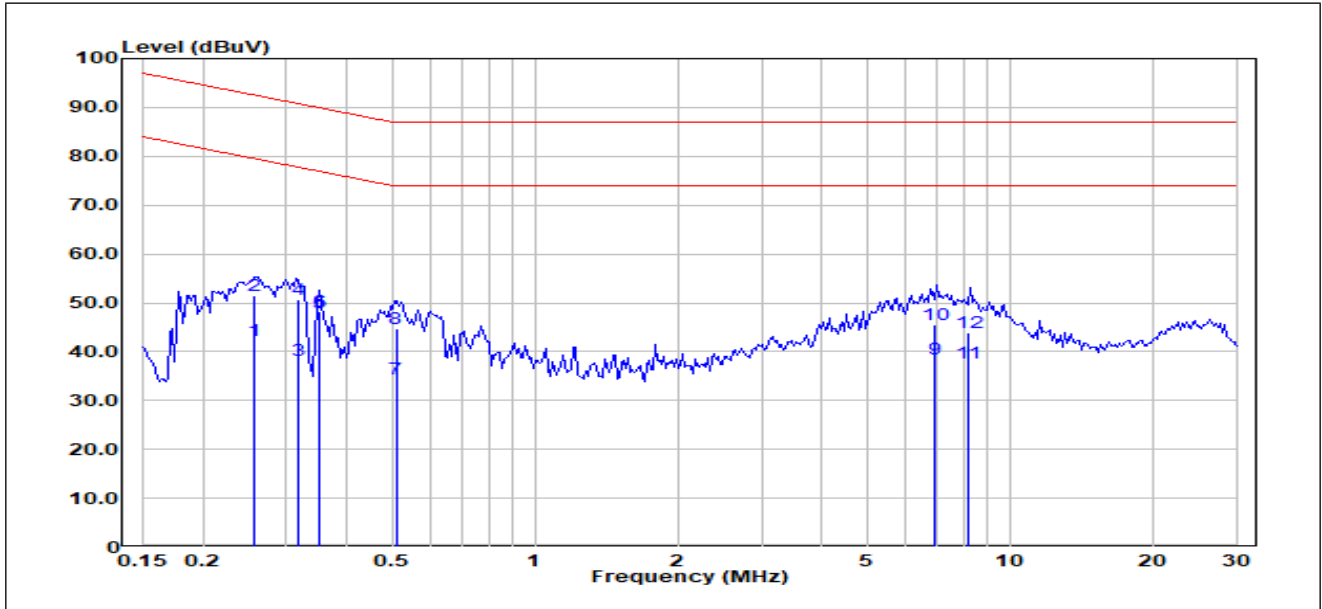
6.2.4 Measurement Procedure and Data

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.

Remark: Level= Read Level+ Cable Loss+ LISN Factor

Test Mode: 00

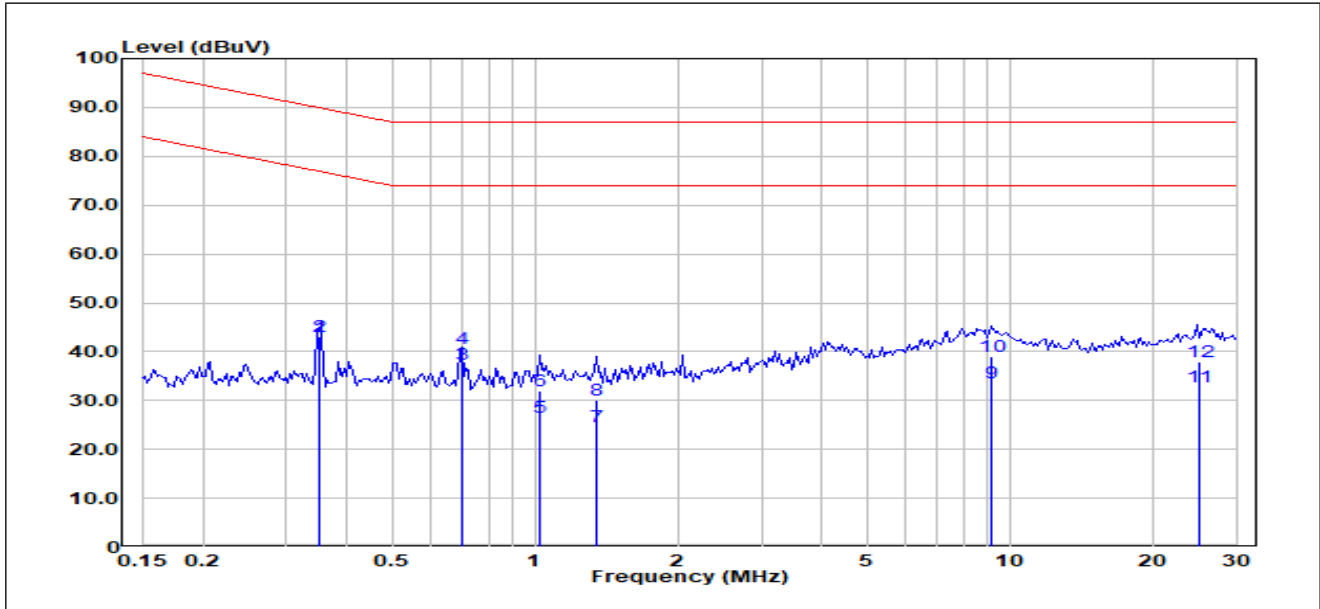
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2558	22.04	20.17	42.21	79.57	-37.36	Average
2	0.2558	31.24	20.17	51.41	92.57	-41.16	QP
3	0.3170	18.08	20.06	38.14	77.78	-39.64	Average
4	0.3170	30.74	20.06	50.80	90.78	-39.98	QP
5	0.3522	28.06	19.96	48.02	76.91	-28.89	Average
6	0.3522	28.24	19.96	48.20	89.91	-41.71	QP
7	0.5099	14.84	19.63	34.47	74.00	-39.53	Average
8	0.5099	25.18	19.63	44.81	87.00	-42.19	QP
9	6.9600	18.36	20.11	38.47	74.00	-35.53	Average
10	6.9600	25.46	20.11	45.57	87.00	-41.43	QP
11	8.1600	17.51	20.17	37.68	74.00	-36.32	Average
12	8.1600	23.73	20.17	43.90	87.00	-43.10	QP

Test Mode: 00

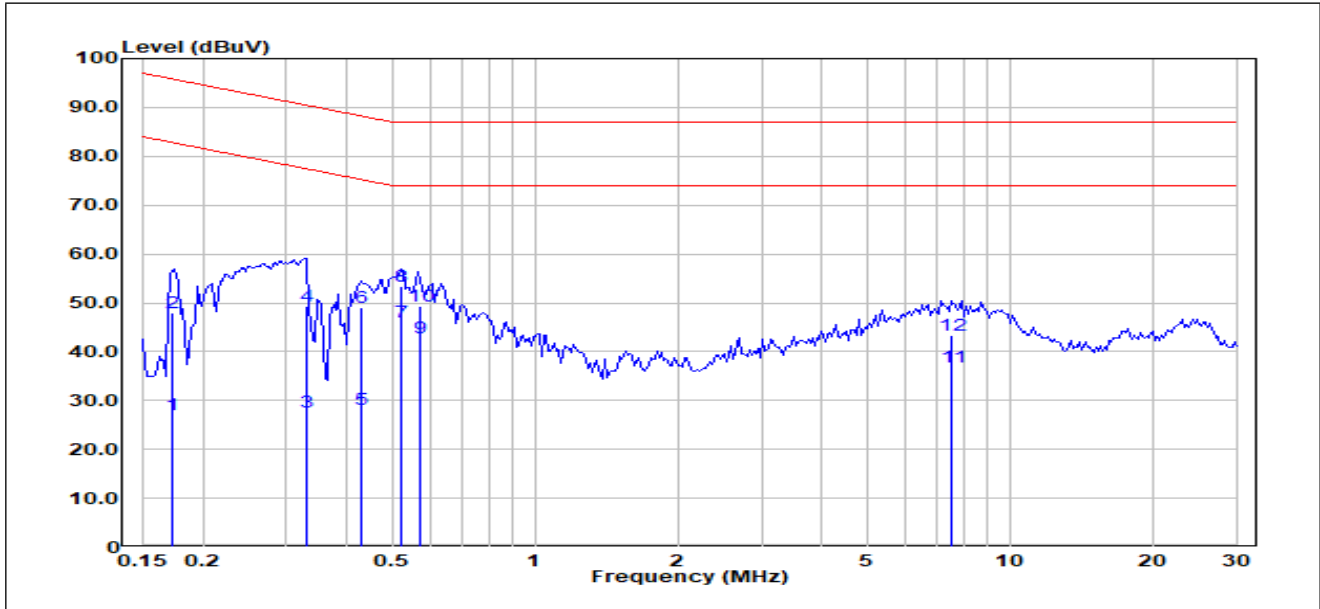
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.3522	22.88	19.96	42.84	76.91	-34.07	Average
2	0.3522	23.03	19.96	42.99	89.91	-46.92	QP
3	0.7025	17.72	19.64	37.36	74.00	-36.64	Average
4	0.7025	21.05	19.64	40.69	87.00	-46.31	QP
5	1.0220	6.77	19.67	26.44	74.00	-47.56	Average
6	1.0220	12.42	19.67	32.09	87.00	-54.91	QP
7	1.3450	4.99	19.76	24.75	74.00	-49.25	Average
8	1.3450	10.32	19.76	30.08	87.00	-56.92	QP
9	9.1530	13.47	20.22	33.69	74.00	-40.31	Average
10	9.1530	18.69	20.22	38.91	87.00	-48.09	QP
11	25.0200	12.42	20.25	32.67	74.00	-41.33	Average
12	25.0200	17.79	20.25	38.04	87.00	-48.96	QP

Test Mode: 01

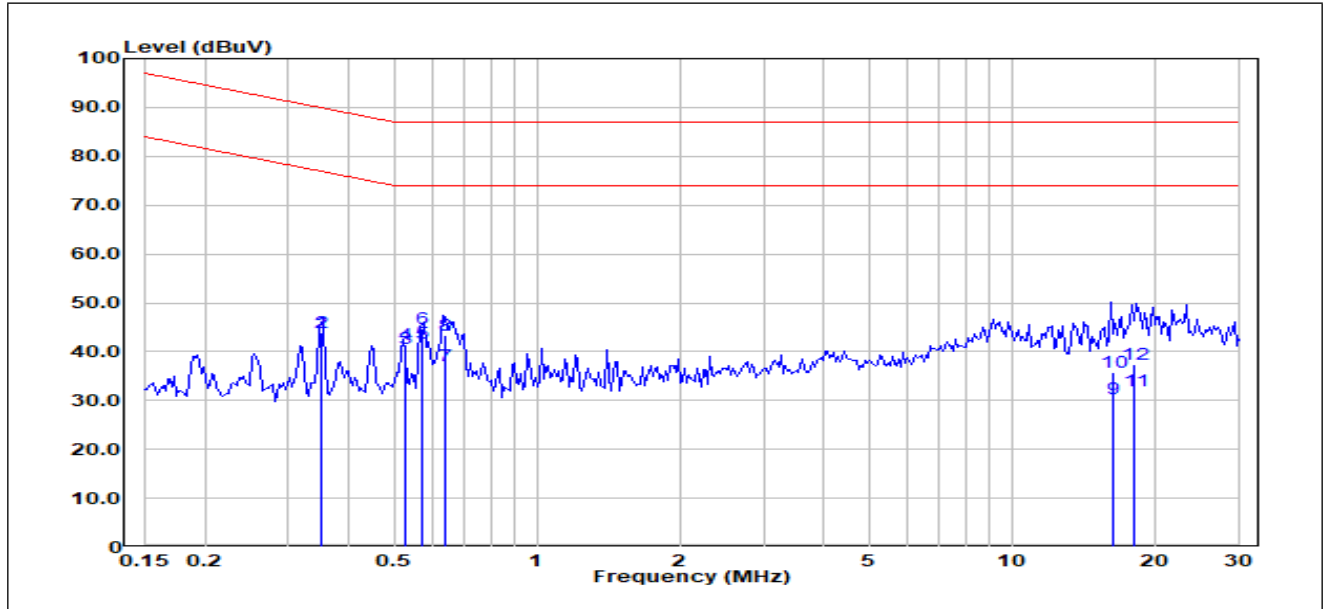
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1729	6.69	20.32	27.01	82.82	-55.81	Average
2	0.1729	27.73	20.32	48.05	95.82	-47.77	QP
3	0.3293	7.63	20.02	27.65	77.47	-49.82	Average
4	0.3293	29.39	20.02	49.41	90.47	-41.06	QP
5	0.4292	8.46	19.77	28.23	75.27	-47.04	Average
6	0.4292	29.25	19.77	49.02	88.27	-39.25	QP
7	0.5243	26.54	19.63	46.17	74.00	-27.83	Average
8	0.5243	33.76	19.63	53.39	87.00	-33.61	QP
9	0.5709	23.21	19.63	42.84	74.00	-31.16	Average
10	0.5709	29.79	19.63	49.42	87.00	-37.58	QP
11	7.5620	16.78	20.14	36.92	74.00	-37.08	Average
12	7.5620	23.29	20.14	43.43	87.00	-43.57	QP

Test Mode: 01

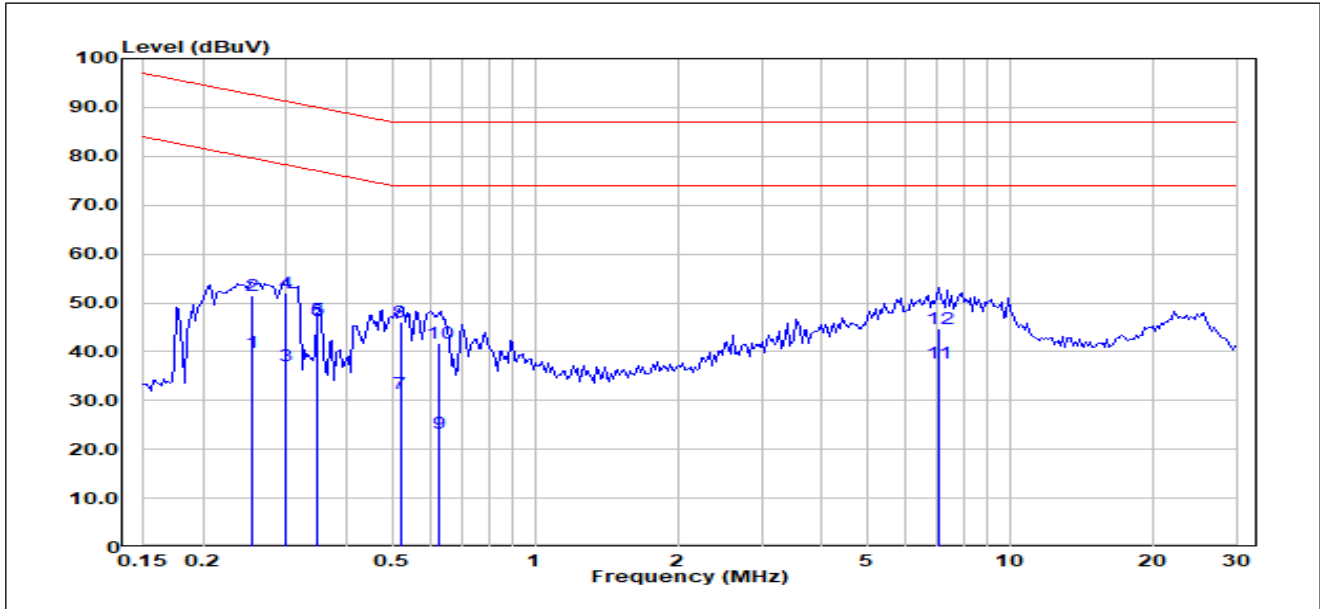
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.3511	23.87	19.96	43.83	76.94	-33.11	Average
2	0.3511	23.98	19.96	43.94	89.94	-46.00	QP
3	0.5259	21.07	19.63	40.70	74.00	-33.30	Average
4	0.5259	21.78	19.63	41.41	87.00	-45.59	QP
5	0.5736	22.19	19.63	41.82	74.00	-32.18	Average
6	0.5736	24.97	19.63	44.60	87.00	-42.40	QP
7	0.6380	17.39	19.64	37.03	74.00	-36.97	Average
8	0.6380	23.77	19.64	43.41	87.00	-43.59	QP
9	16.2830	10.25	20.20	30.45	74.00	-43.55	Average
10	16.2830	15.64	20.20	35.84	87.00	-51.16	QP
11	18.1600	11.84	20.15	31.99	74.00	-42.01	Average
12	18.1600	17.22	20.15	37.37	87.00	-49.63	QP

Test Mode: 02

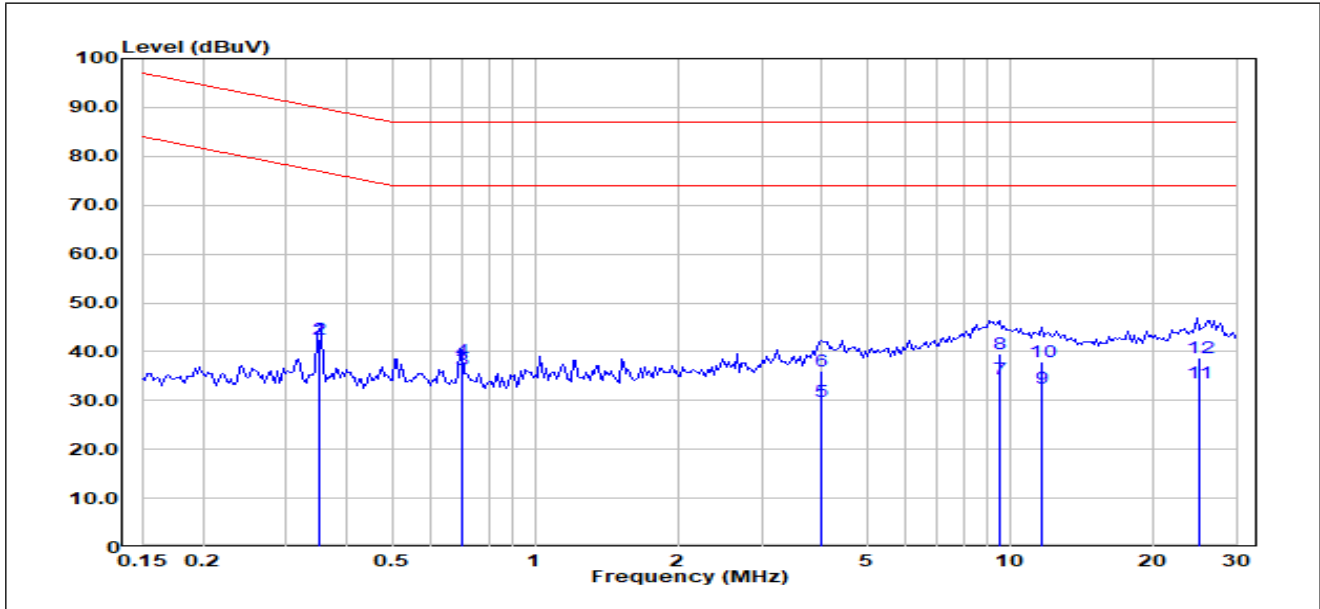
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2537	19.72	20.17	39.89	79.64	-39.75	Average
2	0.2537	31.38	20.17	51.55	92.64	-41.09	QP
3	0.2992	16.93	20.11	37.04	78.27	-41.23	Average
4	0.2992	31.94	20.11	52.05	91.27	-39.22	QP
5	0.3496	26.55	19.97	46.52	76.97	-30.45	Average
6	0.3496	26.47	19.97	46.44	89.97	-43.53	QP
7	0.5204	11.83	19.63	31.46	74.00	-42.54	Average
8	0.5204	26.56	19.63	46.19	87.00	-40.81	QP
9	0.6301	3.77	19.64	23.41	74.00	-50.59	Average
10	0.6301	22.02	19.64	41.66	87.00	-45.34	QP
11	7.0870	17.63	20.11	37.74	74.00	-36.26	Average
12	7.0870	24.74	20.11	44.85	87.00	-42.15	QP

Test Mode: 02

Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.3512	22.53	19.96	42.49	76.93	-34.44	Average
2	0.3512	22.69	19.96	42.65	89.93	-47.28	QP
3	0.7031	16.61	19.64	36.25	74.00	-37.75	Average
4	0.7031	18.46	19.64	38.10	87.00	-48.90	QP
5	4.0200	9.86	19.96	29.82	74.00	-44.18	Average
6	4.0200	15.95	19.96	35.91	87.00	-51.09	QP
7	9.5140	14.13	20.23	34.36	74.00	-39.64	Average
8	9.5140	19.36	20.23	39.59	87.00	-47.41	QP
9	11.7190	12.35	20.25	32.60	74.00	-41.40	Average
10	11.7190	17.80	20.25	38.05	87.00	-48.95	QP
11	24.9850	13.29	20.25	33.54	74.00	-40.46	Average
12	24.9850	18.40	20.25	38.65	87.00	-48.35	QP

6.3 Radiated Emissions (30MHz-1GHz)

Test Requirement: EN 55032: 2015+A11:2020+A1:2020

Test Method: EN 55032: 2015+A11:2020+A1:2020

Limit:

Test Distance: 3m
30MHz-230MHz: 50 dB(μV/m) quasi-peak
230MHz-1GHz: 57 dB(μV/m) quasi-peak
Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

Test Distance: 10m
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
Highest internal frequency (Fx): $F_x \leq 108\text{MHz}$
Highest measured frequency: 1GHz

6.3.1 E.U.T. Operation

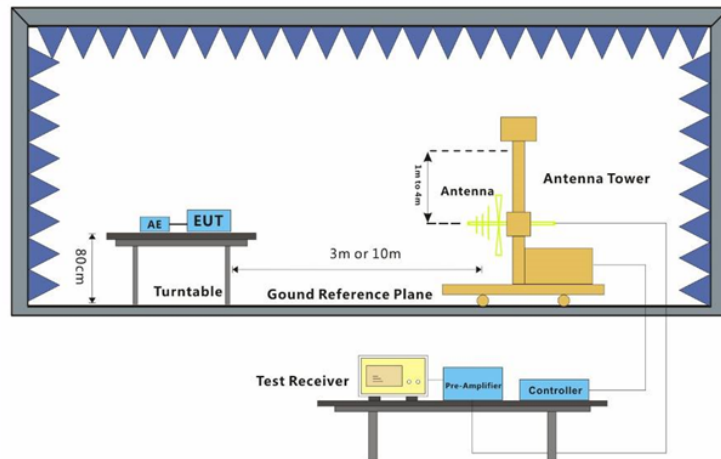
Operating Environment:

Temperature: 25.8 °C Humidity: 46.9 % RH Atmospheric Pressure: 1010 mbar

6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

6.3.3 Test Setup Diagram



6.3.4 Measurement Procedure and Data

Frequency range: 30MHz-1GHz

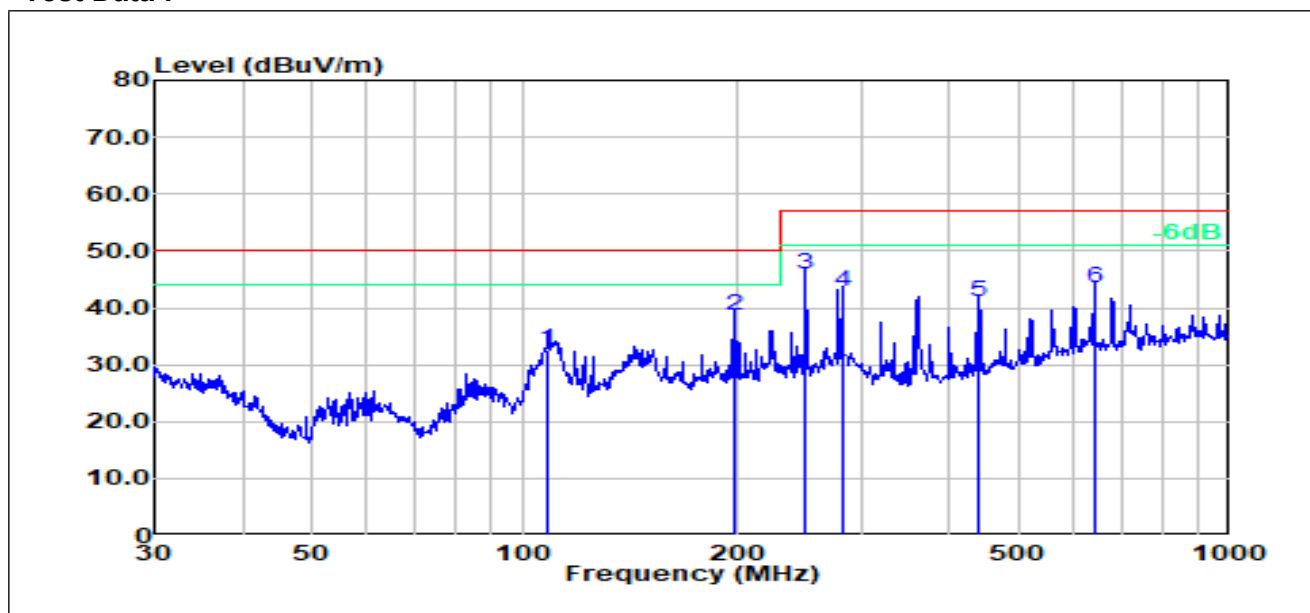
An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

The red line show in graphic is the limit in standard used in this section.

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Test Mode: 00; Polarity: Horizontal

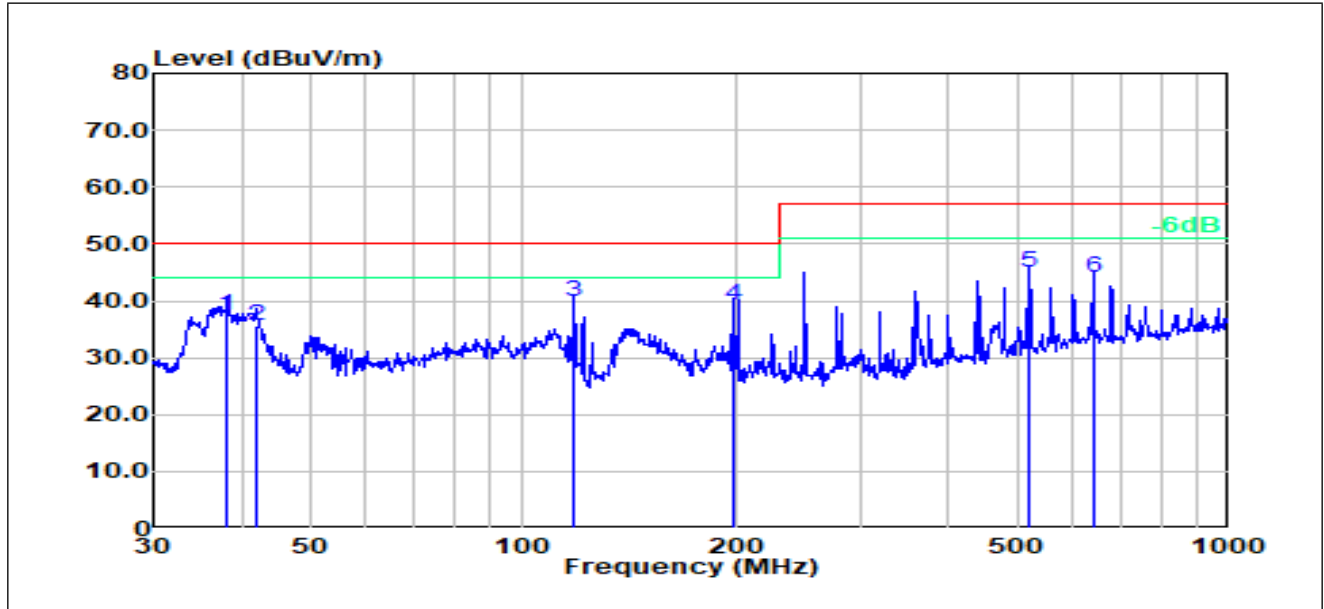
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	108.2670	13.05	19.49	32.54	50.00	-17.46	100	284	QP
2	197.8930	21.47	17.32	38.79	50.00	-11.21	200	0	QP
3	250.3010	25.58	20.24	45.82	57.00	-11.18	100	16	QP
4	281.9950	21.59	21.18	42.77	57.00	-14.23	200	334	QP
5	438.6550	16.23	24.86	41.09	57.00	-15.91	200	193	QP
6	640.6110	14.41	29.09	43.50	57.00	-13.50	100	340	QP

Test Mode: 00; Polarity: Vertical

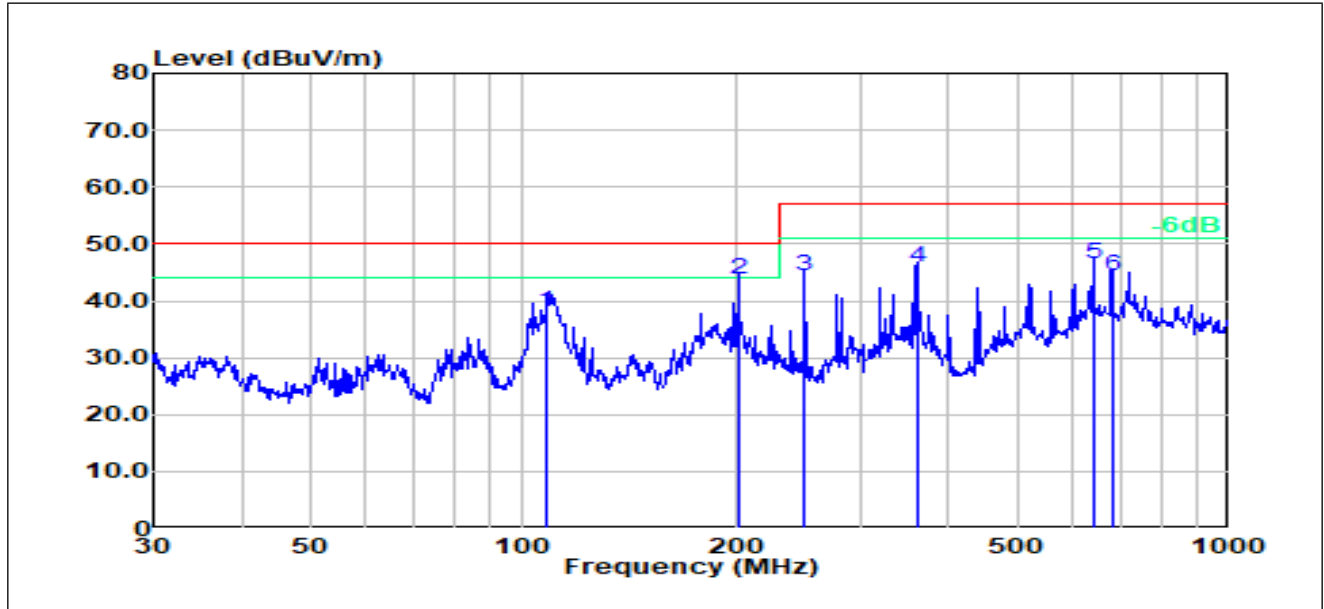
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	38.0780	19.05	18.49	37.54	50.00	-12.46	100	138	QP
2	41.8600	19.04	16.49	35.53	50.00	-14.47	100	81	QP
3	118.1860	19.84	20.16	40.00	50.00	-10.00	100	322	QP
4	197.8930	22.01	17.32	39.33	50.00	-10.67	100	138	QP
5	519.0650	17.65	27.27	44.92	57.00	-12.08	100	0	QP
6	640.6110	14.85	29.09	43.94	57.00	-13.06	100	238	QP

Test Mode: 01; Polarity: Horizontal

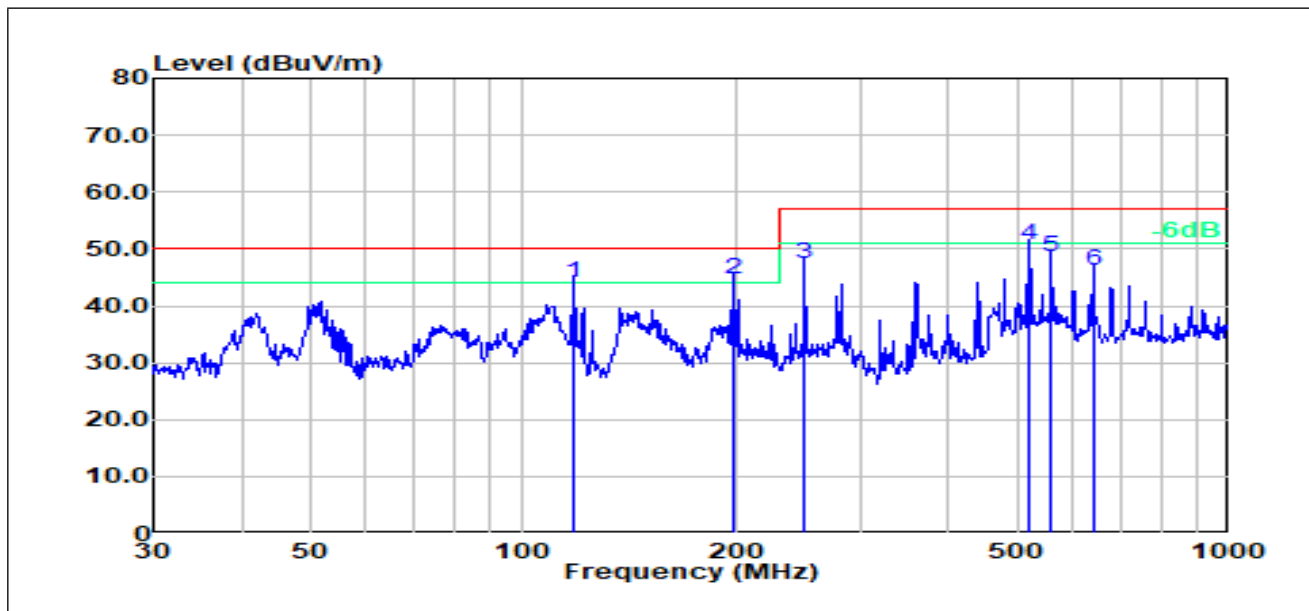
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	108.2670	18.41	19.49	37.90	50.00	-12.10	100	254	QP
2	202.1000	26.61	17.17	43.78	50.00	-6.22	200	360	QP
3	250.3010	24.13	20.24	44.37	57.00	-12.63	100	10	QP
4	361.7140	23.07	22.72	45.79	57.00	-11.21	100	360	QP
5	640.6110	17.32	29.09	46.41	57.00	-10.59	200	333	QP
6	682.3480	15.01	29.51	44.52	57.00	-12.48	100	242	QP

Test Mode: 01; Polarity: Vertical

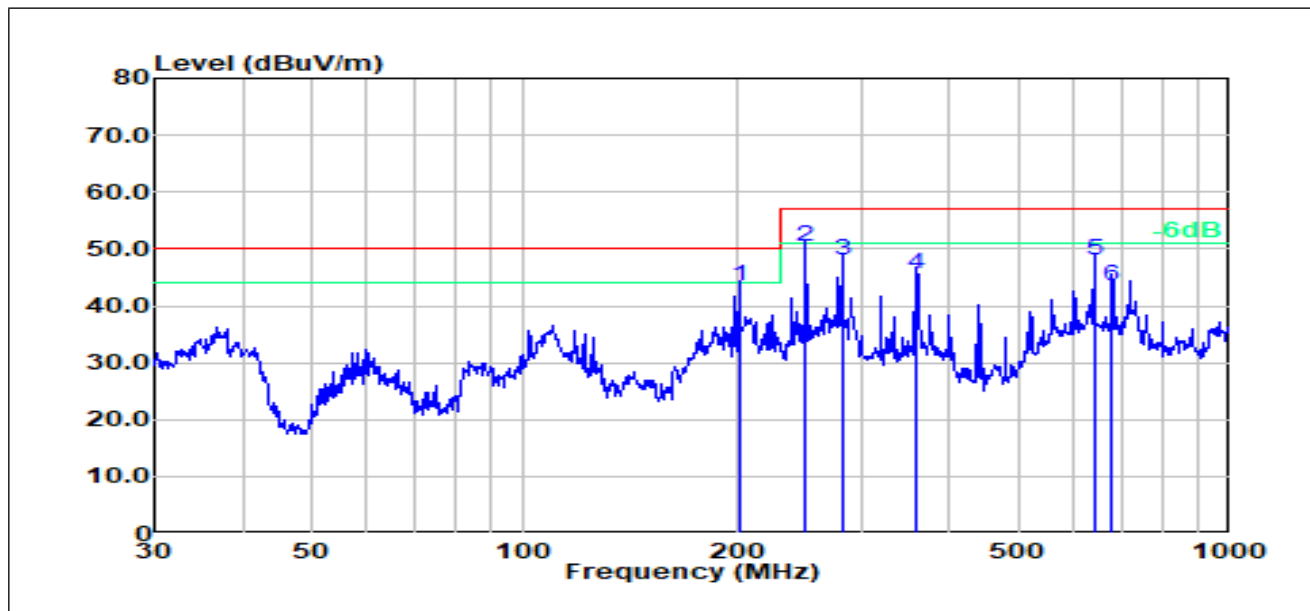
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	118.1862	24.02	20.16	44.18	50.00	-5.82	100	344	QP
2	197.8928	27.31	17.32	44.63	50.00	-5.37	100	159	QP
3	250.3012	27.01	20.24	47.25	57.00	-9.75	100	159	QP
4	519.0649	23.31	27.27	50.58	57.00	-6.42	100	5	QP
5	560.6928	20.36	28.20	48.56	57.00	-8.44	100	46	QP
6	640.6110	17.12	29.09	46.21	57.00	-10.79	100	238	QP

Test Mode: 02; Polarity: Horizontal

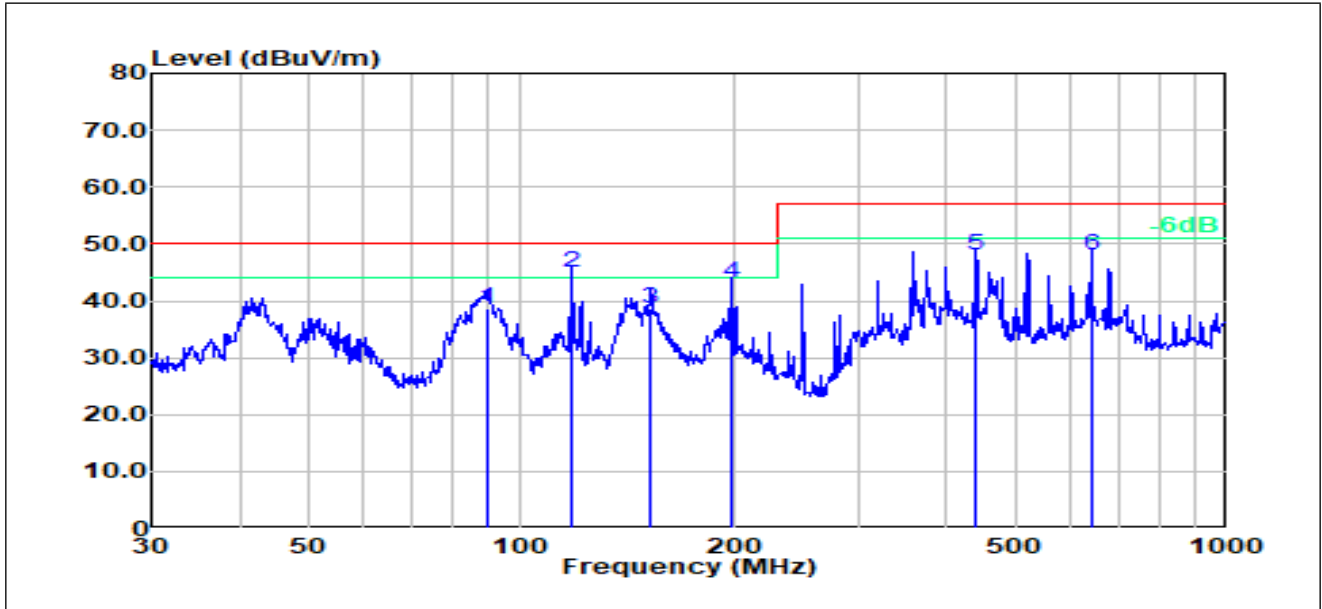
Test Data :



No.	Frequency (MHz)	Reading (dBUV)	Correct Factor(dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	202.1000	26.17	17.17	43.34	50.00	-6.66	100	0	QP
2	250.3010	30.25	20.24	50.49	57.00	-6.51	200	15	QP
3	281.9950	26.79	21.18	47.97	57.00	-9.03	100	334	QP
4	357.9290	23.05	22.55	45.60	57.00	-11.40	100	0	QP
5	640.6110	18.97	29.09	48.06	57.00	-8.94	200	341	QP
6	679.9600	13.47	29.87	43.34	57.00	-13.66	100	242	QP

Test Mode: 02; Polarity: Vertical

Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	89.5900	21.05	17.52	38.57	50.00	-11.43	100	287	QP
2	118.1860	24.75	20.16	44.91	50.00	-5.09	100	0	QP
3	152.6640	20.41	18.32	38.73	50.00	-11.27	100	47	QP
4	197.8930	25.74	17.32	43.06	50.00	-6.94	100	138	QP
5	441.7430	23.36	24.67	48.03	57.00	-8.97	100	349	QP
6	640.6110	19.05	29.09	48.14	57.00	-8.86	100	238	QP

6.4 Radiated Emissions (Above 1GHz)

Test Requirement: EN 55032: 2015+A11:2020+A1:2020

Test Method: EN 55032: 2015+A11:2020+A1:2020

Limit:

1000MHz-6000MHz: 80 dB(μV/m) peak; 60 dB(μV/m) average

Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000MHz to 6000MHz

Highest internal
frequency (Fx):

Highest measured frequency:

$F_x \leq 108\text{MHz}$ 1GHz

$108\text{MHz} < F_x \leq 500\text{MHz}$ 2GHz

$500\text{MHz} < F_x \leq 1\text{GHz}$ 5GHz

$F_x > 1\text{GHz}$ $5 \times F_x$ up to a maximum of 6GHz

6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C

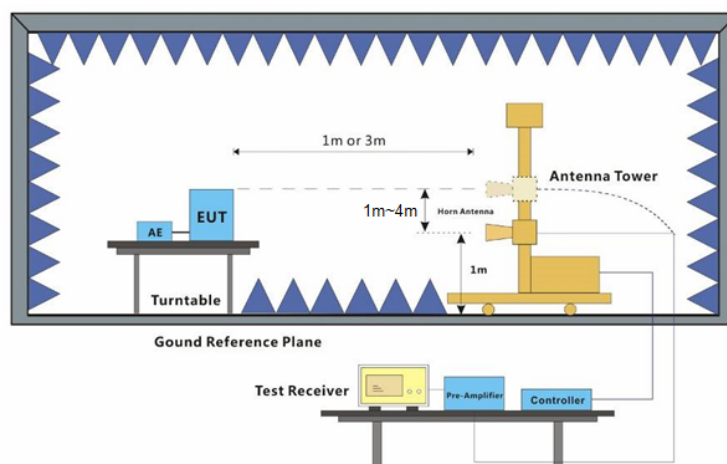
Humidity: 46.9 % RH

Atmospheric Pressure: 1010 mbar

6.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

6.4.3 Test Setup Diagram



6.4.4 Measurement Procedure and Data

Frequency range: Above 1GHz

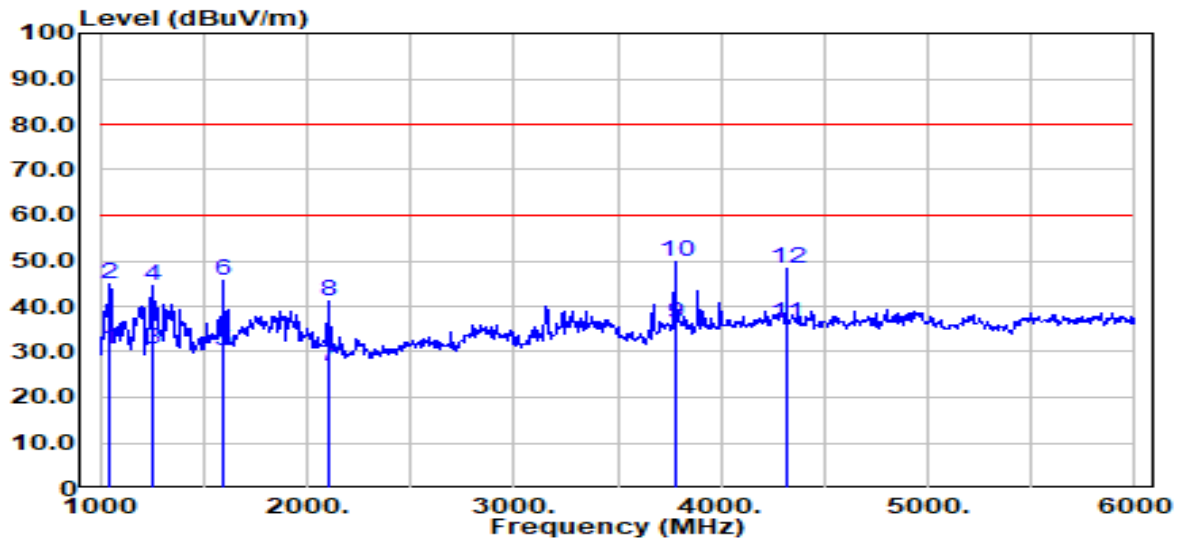
An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

The red line show in graphic is the limit in standard used in this section.

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Test Mode: 00; Polarity: Horizontal

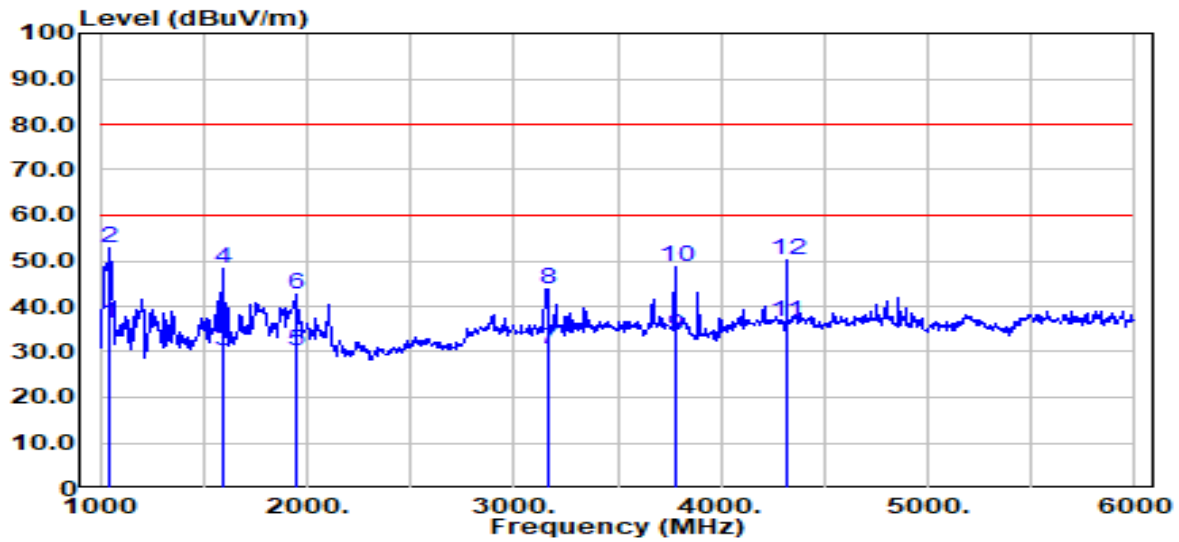
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	1050.0000	55.05	-24.53	30.52	60.00	-29.48	100	58	Average
2	1050.0000	69.25	-24.53	44.72	80.00	-35.28	100	58	Peak
3	1250.0000	54.58	-23.93	30.65	60.00	-29.35	100	34	Average
4	1250.0000	68.34	-23.93	44.41	80.00	-35.59	100	34	Peak
5	1600.0000	53.47	-23.25	30.22	60.00	-29.78	100	329	Average
6	1600.0000	68.77	-23.25	45.52	80.00	-34.48	100	329	Peak
7	2100.0000	47.22	-20.57	26.65	60.00	-33.35	200	123	Average
8	2100.0000	61.60	-20.57	41.03	80.00	-38.97	200	123	Peak
9	3780.0000	51.54	-15.19	36.35	60.00	-23.65	100	37	Average
10	3780.0000	64.95	-15.19	49.76	80.00	-30.24	100	37	Peak
11	4320.0000	50.41	-14.16	36.25	60.00	-23.75	100	34	Average
12	4320.0000	62.63	-14.16	48.47	80.00	-31.53	100	34	Peak

Test Mode: 00; Polarity: Vertical

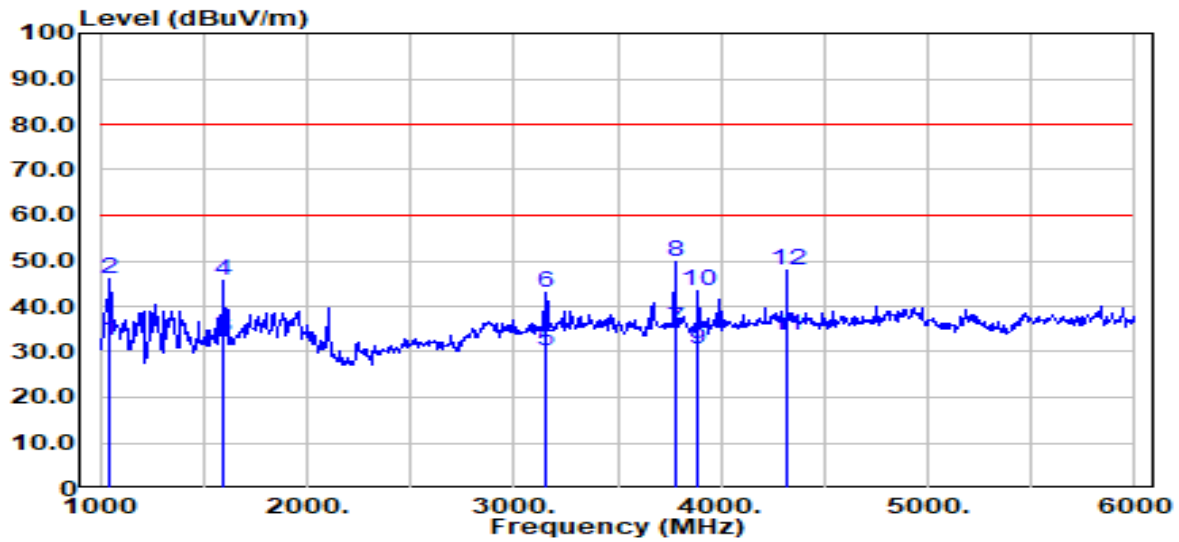
Test Data :



No.	Frequency (MHz)	Reading (dBUV)	Correct Factor(dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	1045.0000	60.83	-24.48	36.35	60.00	-23.65	100	20	Average
2	1045.0000	77.21	-24.48	52.73	80.00	-27.27	100	20	Peak
3	1600.0000	53.47	-23.25	30.22	60.00	-29.78	100	196	Average
4	1600.0000	71.53	-23.25	48.28	80.00	-31.72	100	196	Peak
5	1945.0000	52.01	-21.87	30.14	60.00	-29.86	200	44	Average
6	1945.0000	64.63	-21.87	42.76	80.00	-37.24	200	44	Peak
7	3165.0000	47.81	-17.29	30.52	60.00	-29.48	100	263	Average
8	3165.0000	61.20	-17.29	43.91	80.00	-36.09	100	263	Peak
9	3780.0000	48.84	-15.19	33.65	60.00	-26.35	100	360	Average
10	3780.0000	64.00	-15.19	48.81	80.00	-31.19	100	360	Peak
11	4320.0000	50.68	-14.16	36.52	60.00	-23.48	100	2	Average
12	4320.0000	64.18	-14.16	50.02	80.00	-29.98	100	2	Peak

Test Mode: 01; Polarity: Horizontal

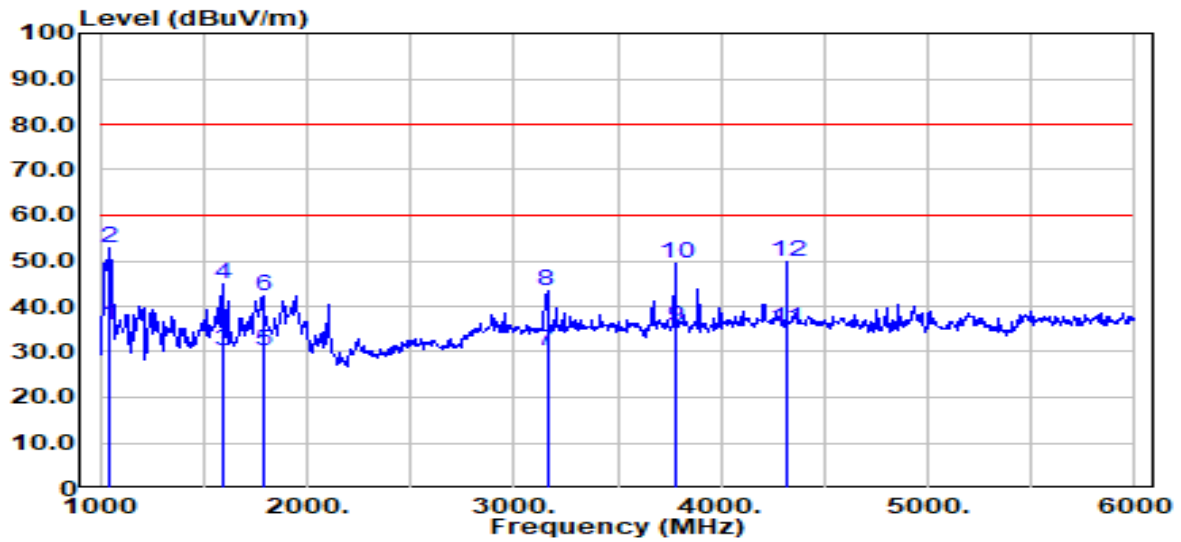
Test Data :



No.	Frequency (MHz)	Reading (dBUV)	Correct Factor(dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	1045.0000	57.00	-24.48	32.52	60.00	-27.48	100	66	Average
2	1045.0000	70.54	-24.48	46.06	80.00	-33.94	100	66	Peak
3	1600.0000	56.27	-23.25	33.02	60.00	-26.98	100	321	Average
4	1600.0000	68.97	-23.25	45.72	80.00	-34.28	100	321	Peak
5	3150.0000	47.65	-17.40	30.25	60.00	-29.75	100	248	Average
6	3150.0000	60.25	-17.40	42.85	80.00	-37.15	100	248	Peak
7	3780.0000	50.45	-15.19	35.26	60.00	-24.74	100	33	Average
8	3780.0000	64.84	-15.19	49.65	80.00	-30.35	100	33	Peak
9	3890.0000	45.51	-15.10	30.41	60.00	-29.59	200	54	Average
10	3890.0000	58.48	-15.10	43.38	80.00	-36.62	200	54	Peak
11	4320.0000	47.67	-14.16	33.51	60.00	-26.49	100	29	Average
12	4320.0000	62.16	-14.16	48.00	80.00	-32.00	100	29	Peak

Test Mode: 01; Polarity: Vertical

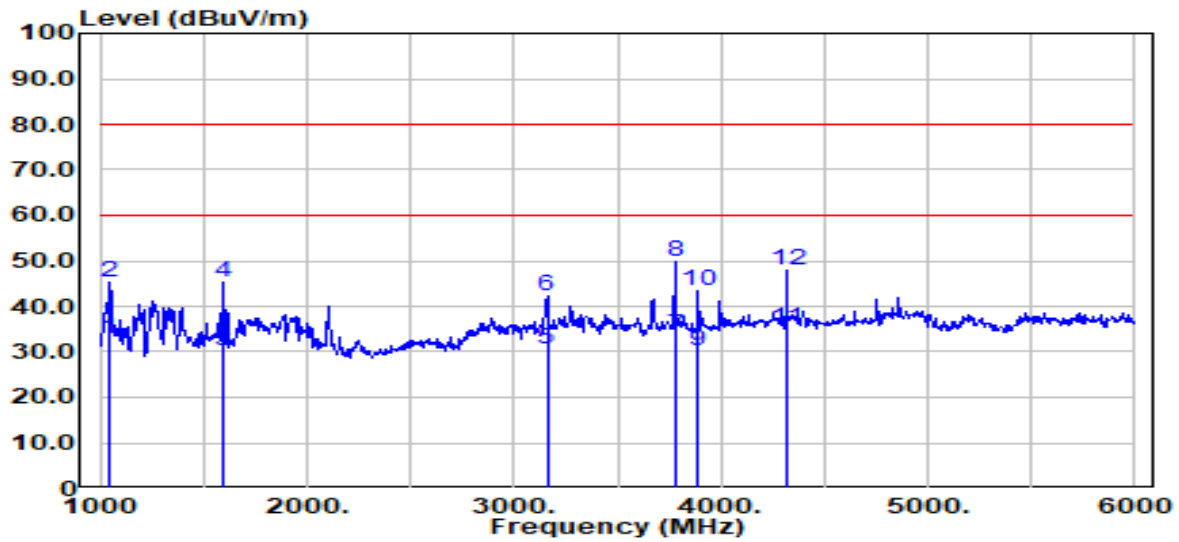
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	1045.0000	60.48	-24.48	36.00	60.00	-24.00	100	15	Average
2	1045.0000	77.21	-24.48	52.73	80.00	-27.27	100	15	Peak
3	1600.0000	53.47	-23.25	30.22	60.00	-29.78	100	186	Average
4	1600.0000	68.16	-23.25	44.91	80.00	-35.09	100	186	Peak
5	1785.0000	52.93	-22.71	30.22	60.00	-29.78	100	340	Average
6	1785.0000	64.93	-22.71	42.22	80.00	-37.78	100	340	Peak
7	3160.0000	47.36	-17.33	30.03	60.00	-29.97	200	262	Average
8	3160.0000	60.69	-17.33	43.36	80.00	-36.64	200	262	Peak
9	3780.0000	50.71	-15.19	35.52	60.00	-24.48	100	1	Average
10	3780.0000	64.58	-15.19	49.39	80.00	-30.61	100	1	Peak
11	4320.0000	49.31	-14.16	35.15	60.00	-24.85	100	1	Average
12	4320.0000	63.79	-14.16	49.63	80.00	-30.37	100	1	Peak

Test Mode: 02; Polarity: Horizontal

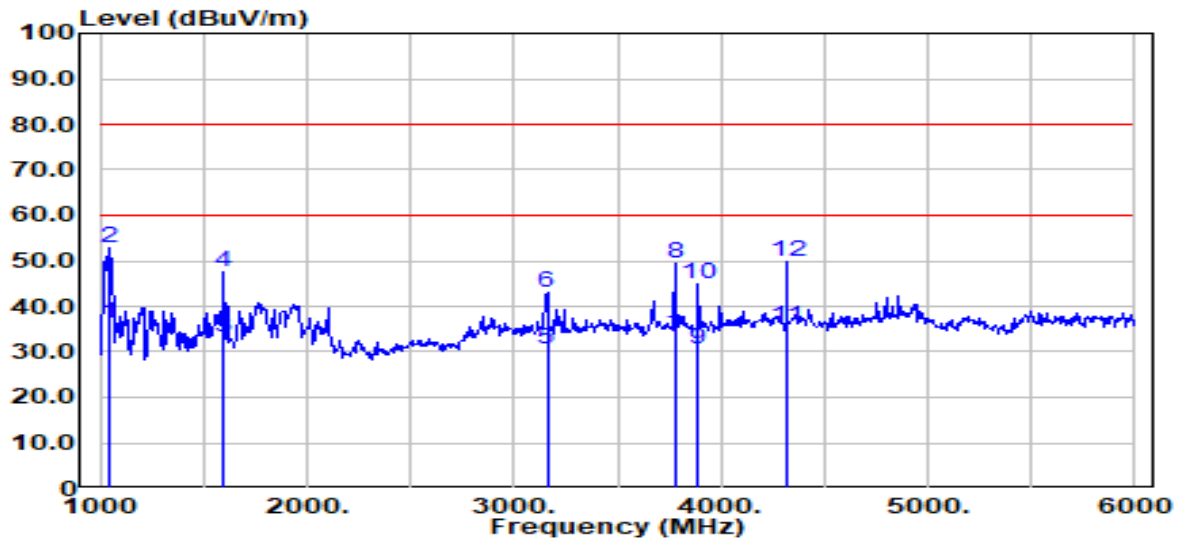
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	1045.0000	57.13	-24.48	32.65	60.00	-27.35	100	68	Average
2	1045.0000	69.69	-24.48	45.21	80.00	-34.79	100	68	Peak
3	1600.0000	53.57	-23.25	30.32	60.00	-29.68	100	322	Average
4	1600.0000	68.44	-23.25	45.19	80.00	-34.81	100	322	Peak
5	3160.0000	47.85	-17.33	30.52	60.00	-29.48	100	261	Average
6	3160.0000	59.64	-17.33	42.31	80.00	-37.69	100	261	Peak
7	3780.0000	48.71	-15.19	33.52	60.00	-26.48	100	53	Average
8	3780.0000	65.14	-15.19	49.95	80.00	-30.05	100	53	Peak
9	3890.0000	45.12	-15.10	30.02	60.00	-29.98	200	53	Average
10	3890.0000	58.46	-15.10	43.36	80.00	-36.64	200	53	Peak
11	4320.0000	49.31	-14.16	35.15	60.00	-24.85	100	33	Average
12	4320.0000	62.03	-14.16	47.87	80.00	-32.13	100	33	Peak

Test Mode: 02; Polarity: Vertical

Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	1045.0000	60.83	-24.48	36.35	60.00	-23.65	100	34	Average
2	1045.0000	77.34	-24.48	52.86	80.00	-27.14	100	34	Peak
3	1600.0000	56.50	-23.25	33.25	60.00	-26.75	100	196	Average
4	1600.0000	70.64	-23.25	47.39	80.00	-32.61	100	196	Peak
5	3160.0000	47.84	-17.33	30.51	60.00	-29.49	200	261	Average
6	3160.0000	60.38	-17.33	43.05	80.00	-36.95	200	261	Peak
7	3780.0000	48.34	-15.19	33.15	60.00	-26.85	100	351	Average
8	3780.0000	64.49	-15.19	49.30	80.00	-30.70	100	351	Peak
9	3890.0000	45.75	-15.10	30.65	60.00	-29.35	100	13	Average
10	3890.0000	60.19	-15.10	45.09	80.00	-34.91	100	13	Peak
11	4320.0000	49.58	-14.16	35.42	60.00	-24.58	100	1	Average
12	4320.0000	64.01	-14.16	49.85	80.00	-30.15	100	1	Peak

6.5 Voltage Fluctuations and Flicker

Test Requirement: EN 61000-3-3: 2013+ A1:2019+A2:2021

Test Method: EN 61000-3-3: 2013+ A1:2019+A2:2021

6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

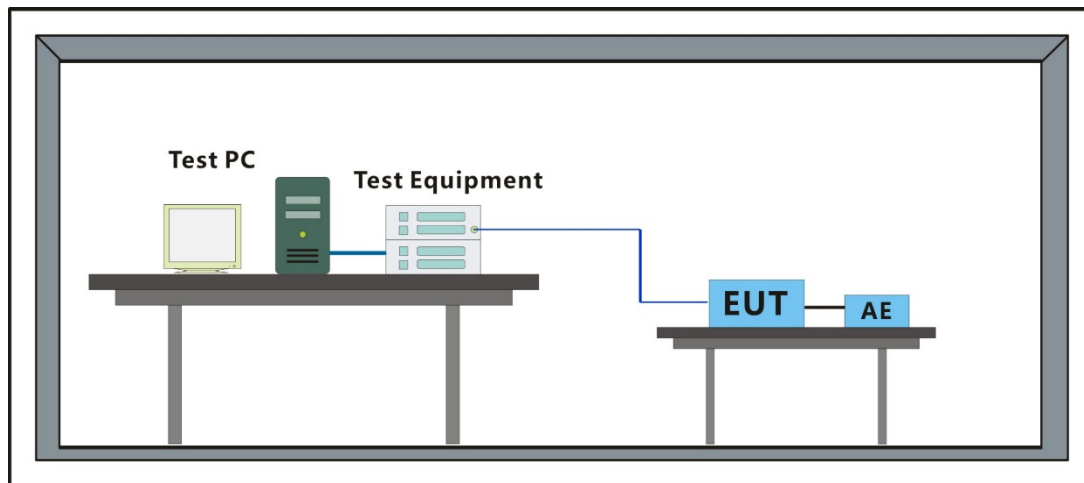
Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

6.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

6.5.3 Test Setup Diagram



6.5.4 Measurement Procedure and Data

00

Parameter values recorded during the test:
Vrms at the end of test (Volt): 228.68
T-max (mS): 0
Highest dc (%): 0.00
Highest dmax (%): 0.00
Highest Pst (10 min. period): 0.066
Highest Plt (2 hr. period): 0.031
Test limit (mS): 500.0 Pass
Test limit (%): 3.30 Pass
Test limit (%): 4.00 Pass
Test limit: 1.000 Pass
Test limit: 0.650 Pass

01

Parameter values recorded during the test:
Vrms at the end of test (Volt): 228.65
T-max (mS): 0
Highest dc (%): 0.00
Highest dmax (%): 0.00
Highest Pst (10 min. period): 0.067
Highest Plt (2 hr. period): 0.034
Test limit (mS): 500.0 Pass
Test limit (%): 3.30 Pass
Test limit (%): 4.00 Pass
Test limit: 1.000 Pass
Test limit: 0.650 Pass

02

Parameter values recorded during the test:
Vrms at the end of test (Volt): 228.71
T-max (mS): 0
Highest dc (%): 0.00
Highest dmax (%): 0.00
Highest Pst (10 min. period): 0.066
Highest Plt (2 hr. period): 0.035
Test limit (mS): 500.0 Pass
Test limit (%): 3.30 Pass
Test limit (%): 4.00 Pass
Test limit: 1.000 Pass
Test limit: 0.650 Pass

6.6 Harmonic Current Emission

Test Requirement: EN IEC 61000-3-2: 2019+A1:2021+A2:2024

Test Method: EN IEC 61000-3-2: 2019+A1:2021+A2:2024

6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

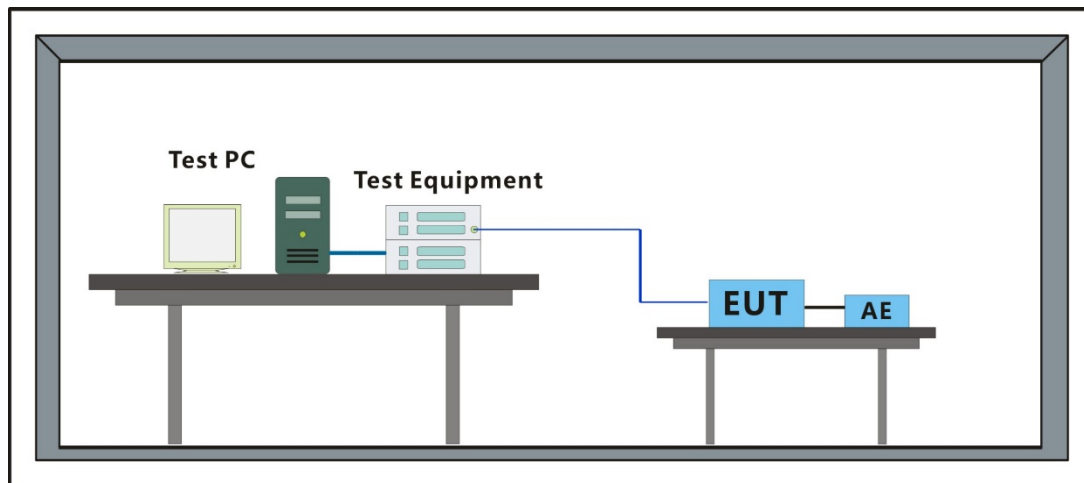
Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

6.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

6.6.3 Test Setup Diagram



6.6.4 Measurement Procedure and Data

Frequency Range: 100Hz to 2kHz

Test Mode: 00

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	N/A	0.002	1.620	N/A	Pass
3	0.034	2.300	1.5	0.036	3.450	1.0	Pass
4	0.001	0.430	N/A	0.001	0.645	N/A	Pass
5	0.007	1.140	0.6	0.008	1.710	0.5	Pass
6	0.001	0.300	N/A	0.001	0.450	N/A	Pass
7	0.007	0.770	0.9	0.007	1.155	0.6	Pass
8	0.000	0.230	N/A	0.000	0.345	N/A	Pass
9	0.005	0.400	1.3	0.005	0.600	0.9	Pass
10	0.000	0.184	N/A	0.000	0.276	N/A	Pass
11	0.005	0.330	1.6	0.005	0.495	1.1	Pass
12	0.000	0.153	N/A	0.000	0.230	N/A	Pass
13	0.004	0.210	N/A	0.005	0.315	N/A	Pass
14	0.000	0.131	N/A	0.000	0.197	N/A	Pass
15	0.003	0.150	N/A	0.003	0.225	N/A	Pass
16	0.000	0.115	N/A	0.000	0.173	N/A	Pass
17	0.003	0.132	N/A	0.003	0.198	N/A	Pass
18	0.000	0.102	N/A	0.000	0.153	N/A	Pass
19	0.002	0.118	N/A	0.002	0.178	N/A	Pass
20	0.000	0.092	N/A	0.000	0.138	N/A	Pass
21	0.002	0.107	N/A	0.002	0.161	N/A	Pass
22	0.000	0.084	N/A	0.000	0.125	N/A	Pass
23	0.002	0.098	N/A	0.002	0.147	N/A	Pass
24	0.000	0.077	N/A	0.000	0.115	N/A	Pass
25	0.002	0.090	N/A	0.002	0.135	N/A	Pass
26	0.000	0.071	N/A	0.001	0.107	N/A	Pass
27	0.002	0.083	N/A	0.002	0.125	N/A	Pass
28	0.001	0.066	N/A	0.001	0.099	N/A	Pass
29	0.002	0.078	N/A	0.002	0.116	N/A	Pass
30	0.000	0.061	N/A	0.001	0.092	N/A	Pass
31	0.001	0.073	N/A	0.002	0.109	N/A	Pass
32	0.001	0.058	N/A	0.001	0.086	N/A	Pass
33	0.001	0.068	N/A	0.001	0.102	N/A	Pass
34	0.000	0.054	N/A	0.000	0.081	N/A	Pass
35	0.001	0.064	N/A	0.001	0.096	N/A	Pass
36	0.000	0.051	N/A	0.000	0.077	N/A	Pass
37	0.001	0.061	N/A	0.001	0.091	N/A	Pass
38	0.000	0.048	N/A	0.000	0.073	N/A	Pass
39	0.001	0.058	N/A	0.001	0.087	N/A	Pass
40	0.000	0.046	N/A	0.000	0.069	N/A	Pass

Test Mode: 00

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.169	0.457	37.03	OK
3	0.437	2.058	21.23	OK
4	0.035	0.457	7.69	OK
5	0.042	0.915	4.57	OK
6	0.077	0.457	16.92	OK
7	0.042	0.686	6.11	OK
8	0.041	0.457	8.92	OK
9	0.025	0.457	5.55	OK
10	0.024	0.457	5.31	OK
11	0.016	0.229	7.16	OK
12	0.013	0.229	5.79	OK
13	0.013	0.229	5.72	OK
14	0.012	0.229	5.20	OK
15	0.007	0.229	2.98	OK
16	0.013	0.229	5.71	OK
17	0.011	0.229	4.63	OK
18	0.014	0.229	6.10	OK
19	0.007	0.229	3.28	OK
20	0.008	0.229	3.48	OK
21	0.010	0.229	4.38	OK
22	0.006	0.229	2.67	OK
23	0.007	0.229	2.85	OK
24	0.006	0.229	2.44	OK
25	0.005	0.229	2.31	OK
26	0.009	0.229	3.76	OK
27	0.005	0.229	2.26	OK
28	0.008	0.229	3.33	OK
29	0.006	0.229	2.77	OK
30	0.006	0.229	2.64	OK
31	0.005	0.229	2.11	OK
32	0.005	0.229	2.29	OK
33	0.004	0.229	1.71	OK
34	0.003	0.229	1.22	OK
35	0.002	0.229	1.09	OK
36	0.003	0.229	1.45	OK
37	0.004	0.229	1.80	OK
38	0.003	0.229	1.21	OK
39	0.004	0.229	1.70	OK
40	0.005	0.229	2.14	OK

Test Mode: 01

Highest parameter values during test:

V_RMS (Volts): 228.74
I_Peak (Amps): 0.579
I_Fund (Amps): 0.122
Power (Watts): 13.4

Frequency(Hz): 50.00
I_RMS (Amps): 0.236
Crest Factor: 2.474
Power Factor: 0.252

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	N/A	0.002	1.620	N/A	Pass
3	0.034	2.300	1.5	0.036	3.450	1.0	Pass
4	0.001	0.430	N/A	0.001	0.645	N/A	Pass
5	0.007	1.140	0.6	0.008	1.710	0.5	Pass
6	0.001	0.300	N/A	0.001	0.450	N/A	Pass
7	0.007	0.770	0.9	0.007	1.155	0.6	Pass
8	0.000	0.230	N/A	0.000	0.345	N/A	Pass
9	0.005	0.400	1.3	0.005	0.600	0.9	Pass
10	0.000	0.184	N/A	0.000	0.276	N/A	Pass
11	0.005	0.330	1.6	0.005	0.495	1.1	Pass
12	0.000	0.153	N/A	0.000	0.230	N/A	Pass
13	0.004	0.210	N/A	0.004	0.315	N/A	Pass
14	0.000	0.131	N/A	0.000	0.197	N/A	Pass
15	0.003	0.150	N/A	0.003	0.225	N/A	Pass
16	0.000	0.115	N/A	0.000	0.173	N/A	Pass
17	0.003	0.132	N/A	0.003	0.198	N/A	Pass
18	0.000	0.102	N/A	0.000	0.153	N/A	Pass
19	0.002	0.118	N/A	0.002	0.178	N/A	Pass
20	0.000	0.092	N/A	0.000	0.138	N/A	Pass
21	0.002	0.107	N/A	0.002	0.161	N/A	Pass
22	0.000	0.084	N/A	0.000	0.125	N/A	Pass
23	0.002	0.098	N/A	0.002	0.147	N/A	Pass
24	0.000	0.077	N/A	0.000	0.115	N/A	Pass
25	0.002	0.090	N/A	0.002	0.135	N/A	Pass
26	0.000	0.071	N/A	0.000	0.107	N/A	Pass
27	0.002	0.083	N/A	0.002	0.125	N/A	Pass
28	0.001	0.066	N/A	0.001	0.099	N/A	Pass
29	0.002	0.078	N/A	0.002	0.116	N/A	Pass
30	0.000	0.061	N/A	0.000	0.092	N/A	Pass
31	0.001	0.073	N/A	0.002	0.109	N/A	Pass
32	0.001	0.058	N/A	0.001	0.086	N/A	Pass
33	0.001	0.068	N/A	0.002	0.102	N/A	Pass
34	0.000	0.054	N/A	0.000	0.081	N/A	Pass
35	0.001	0.064	N/A	0.001	0.096	N/A	Pass
36	0.000	0.051	N/A	0.000	0.077	N/A	Pass
37	0.001	0.061	N/A	0.001	0.091	N/A	Pass
38	0.000	0.048	N/A	0.000	0.073	N/A	Pass
39	0.001	0.058	N/A	0.001	0.087	N/A	Pass
40	0.000	0.046	N/A	0.001	0.069	N/A	Pass

Test Mode: 01

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.157	0.457	34.39	OK
3	0.438	2.059	21.27	OK
4	0.037	0.457	8.12	OK
5	0.042	0.915	4.62	OK
6	0.082	0.457	17.87	OK
7	0.045	0.686	6.63	OK
8	0.043	0.457	9.44	OK
9	0.026	0.457	5.74	OK
10	0.027	0.457	6.01	OK
11	0.019	0.229	8.47	OK
12	0.016	0.229	6.90	OK
13	0.015	0.229	6.54	OK
14	0.014	0.229	6.03	OK
15	0.007	0.229	3.21	OK
16	0.014	0.229	6.01	OK
17	0.012	0.229	5.39	OK
18	0.016	0.229	6.85	OK
19	0.008	0.229	3.67	OK
20	0.009	0.229	3.95	OK
21	0.011	0.229	4.69	OK
22	0.007	0.229	2.86	OK
23	0.007	0.229	3.13	OK
24	0.006	0.229	2.76	OK
25	0.005	0.229	2.40	OK
26	0.009	0.229	3.86	OK
27	0.006	0.229	2.63	OK
28	0.008	0.229	3.34	OK
29	0.007	0.229	3.20	OK
30	0.006	0.229	2.59	OK
31	0.005	0.229	2.32	OK
32	0.005	0.229	2.33	OK
33	0.004	0.229	1.75	OK
34	0.003	0.229	1.30	OK
35	0.002	0.229	1.01	OK
36	0.003	0.229	1.33	OK
37	0.004	0.229	1.76	OK
38	0.002	0.229	1.08	OK
39	0.004	0.229	1.66	OK
40	0.005	0.229	2.02	OK

Test Mode: 02

Highest parameter values during test:

V_RMS (Volts): 228.73
I_Peak (Amps): 0.581
I_Fund (Amps): 0.122
Power (Watts): 13.4

Frequency(Hz): 50.00
I_RMS (Amps): 0.237
Crest Factor: 2.478
Power Factor: 0.250

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	N/A	0.002	1.620	N/A	Pass
3	0.034	2.300	1.5	0.036	3.450	1.1	Pass
4	0.001	0.430	N/A	0.001	0.645	N/A	Pass
5	0.007	1.140	0.6	0.008	1.710	0.4	Pass
6	0.001	0.300	N/A	0.001	0.450	N/A	Pass
7	0.007	0.770	0.9	0.007	1.155	0.6	Pass
8	0.000	0.230	N/A	0.000	0.345	N/A	Pass
9	0.005	0.400	N/A	0.005	0.600	N/A	Pass
10	0.000	0.184	N/A	0.000	0.276	N/A	Pass
11	0.005	0.330	1.6	0.005	0.495	1.1	Pass
12	0.000	0.153	N/A	0.000	0.230	N/A	Pass
13	0.004	0.210	N/A	0.004	0.315	N/A	Pass
14	0.000	0.131	N/A	0.000	0.197	N/A	Pass
15	0.003	0.150	N/A	0.003	0.225	N/A	Pass
16	0.000	0.115	N/A	0.000	0.173	N/A	Pass
17	0.003	0.132	N/A	0.003	0.198	N/A	Pass
18	0.000	0.102	N/A	0.000	0.153	N/A	Pass
19	0.002	0.118	N/A	0.002	0.178	N/A	Pass
20	0.000	0.092	N/A	0.000	0.138	N/A	Pass
21	0.002	0.107	N/A	0.002	0.161	N/A	Pass
22	0.000	0.084	N/A	0.000	0.125	N/A	Pass
23	0.002	0.098	N/A	0.002	0.147	N/A	Pass
24	0.000	0.077	N/A	0.000	0.115	N/A	Pass
25	0.002	0.090	N/A	0.002	0.135	N/A	Pass
26	0.000	0.071	N/A	0.001	0.107	N/A	Pass
27	0.002	0.083	N/A	0.002	0.125	N/A	Pass
28	0.001	0.066	N/A	0.001	0.099	N/A	Pass
29	0.002	0.078	N/A	0.002	0.116	N/A	Pass
30	0.000	0.061	N/A	0.000	0.092	N/A	Pass
31	0.001	0.073	N/A	0.002	0.109	N/A	Pass
32	0.001	0.058	N/A	0.001	0.086	N/A	Pass
33	0.001	0.068	N/A	0.001	0.102	N/A	Pass
34	0.000	0.054	N/A	0.000	0.081	N/A	Pass
35	0.001	0.064	N/A	0.001	0.096	N/A	Pass
36	0.000	0.051	N/A	0.000	0.077	N/A	Pass
37	0.001	0.061	N/A	0.001	0.091	N/A	Pass
38	0.000	0.048	N/A	0.000	0.073	N/A	Pass
39	0.001	0.058	N/A	0.001	0.087	N/A	Pass
40	0.000	0.046	N/A	0.000	0.069	N/A	Pass

Test Mode: 02

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.172	0.457	37.64	OK
3	0.437	2.058	21.23	OK
4	0.037	0.457	8.05	OK
5	0.041	0.915	4.49	OK
6	0.079	0.457	17.19	OK
7	0.047	0.686	6.91	OK
8	0.043	0.457	9.36	OK
9	0.028	0.457	6.13	OK
10	0.028	0.457	6.03	OK
11	0.019	0.229	8.17	OK
12	0.019	0.229	8.18	OK
13	0.016	0.229	7.04	OK
14	0.015	0.229	6.36	OK
15	0.008	0.229	3.40	OK
16	0.014	0.229	6.32	OK
17	0.012	0.229	5.13	OK
18	0.016	0.229	6.90	OK
19	0.008	0.229	3.37	OK
20	0.009	0.229	3.94	OK
21	0.011	0.229	4.92	OK
22	0.006	0.229	2.79	OK
23	0.008	0.229	3.31	OK
24	0.007	0.229	2.92	OK
25	0.006	0.229	2.74	OK
26	0.009	0.229	3.96	OK
27	0.006	0.229	2.60	OK
28	0.008	0.229	3.47	OK
29	0.007	0.229	2.94	OK
30	0.006	0.229	2.62	OK
31	0.006	0.229	2.51	OK
32	0.006	0.229	2.43	OK
33	0.005	0.229	1.99	OK
34	0.003	0.229	1.36	OK
35	0.003	0.229	1.14	OK
36	0.003	0.229	1.52	OK
37	0.004	0.229	1.85	OK
38	0.002	0.229	1.08	OK
39	0.004	0.229	1.63	OK
40	0.005	0.229	1.98	OK

7 Immunity Test Results

Performance Criteria Description in EN 50130-4:2011 +A1:2014

There shall be no damage, malfunction or change of status due to the conditioning. Flickering of an indicator during the application of the discharges is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change.

For further details, please refer to Clause 7.4, 8.4, 9.4, 10.4, 11.4, 12.4 and 13.4, of EN 50130-4.

General Performance Criteria Description in EN 55035: 2017+A11:2020

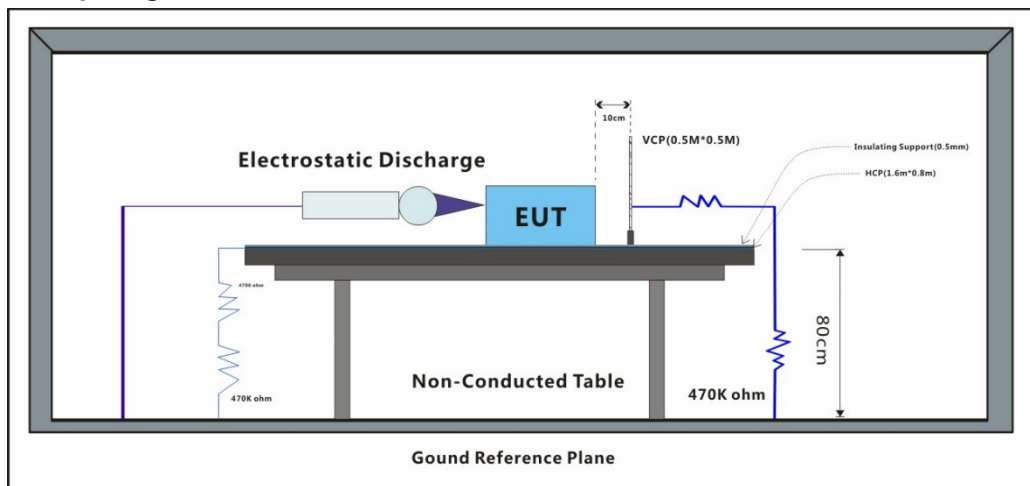
- | | |
|-------------|--|
| Criterion A | The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. 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 by what the user may reasonably expect from the equipment if used as intended. |
| Criterion B | During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test.
After the test, the equipment shall continue to operate as intended without operator intervention; no degradation of performance or loss of function is allowed, below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level (or the permissible performance loss), or recovery time, is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended. |
| Criterion C | Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A reboot or re-start operation is allowed.
Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. |

7.1 Electrostatic Discharge

Test Requirement: EN 50130-4: 2011 +A1:2014

Test Method: EN 61000-4-2:2009

7.1.1 Test Setup Diagram



7.1.2 E.U.T. Operation

Operating Environment:

Temperature: 26.3 °C

Humidity: 48.2 % RH

Atmospheric Pressure: 1010 mbar

7.1.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.1.4 Test Condition and Results:

Number of Discharge: Minimum 10 times at each test point for Air Discharge; Minimum 50 times at each test point for Contact or VCP & HCP Discharge

Discharge Mode: Single Discharge

Discharge Period: 1 second minimum

Test Point 1: All insulated enclosure & seams.

Test Point 2: All accessible metal parts of the enclosure.

Test Point 3: All sides.

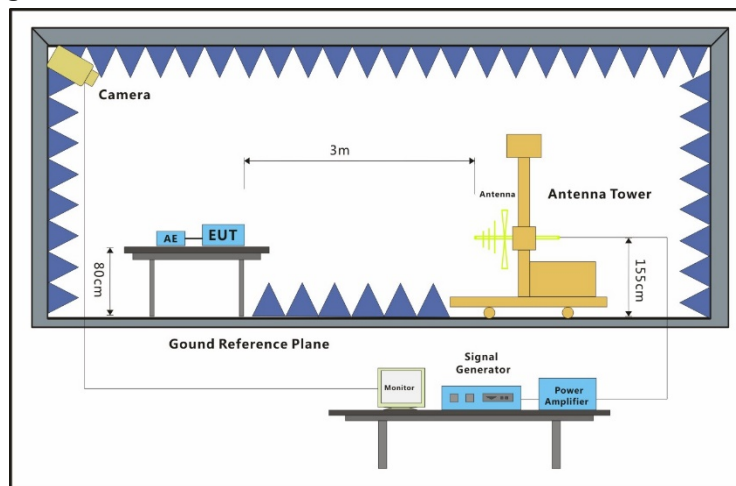
Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	2,4,8	+	1	A
Air Discharge	2,4,8	-	1	A
Contact Discharge	6	+	2	A
Contact Discharge	6	-	2	A
Horizontal Coupling	6	+	3	A
Horizontal Coupling	6	-	3	A
Vertical Coupling	6	+	3	A
Vertical Coupling	6	-	3	A
A: No degradation in the performance of the EUT was observed				

7.2 Radiated Immunity(80MHz-2.7GHz)

Test Requirement: EN 50130-4: 2011 +A1:2014

Test Method: EN IEC 61000-4-3: 2020

7.2.1 Test Setup Diagram



7.2.2 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C

Humidity: 46.9 % RH

Atmospheric Pressure: 1010 mbar

7.2.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).



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7.2.4 Test Condition and Results:

Modulation: 80%, 1 kHz Amplitude Modulation & 0.5s ON 0.5s OFF Pulse Modulation

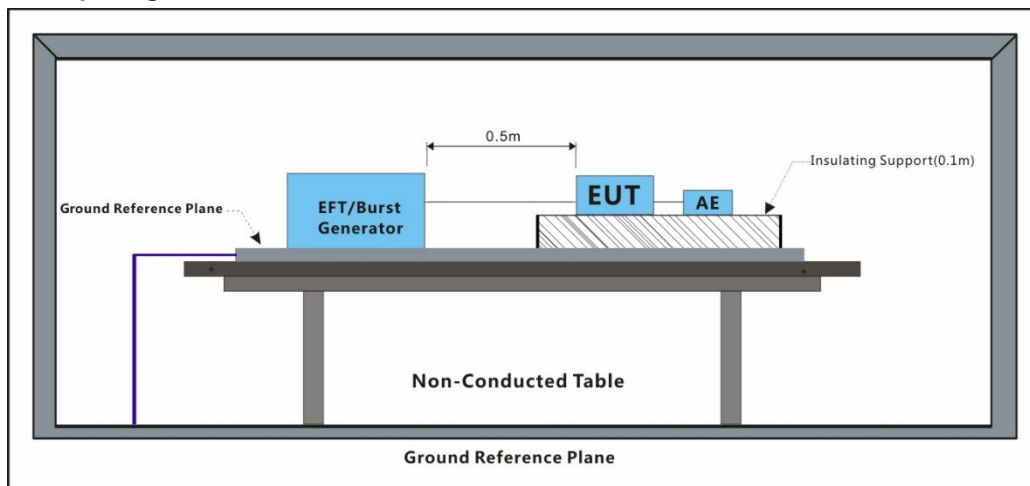
Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-2.7GHz	10	Front	3s	A
80MHz-2.7GHz	10	Back	3s	A
80MHz-2.7GHz	10	Left	3s	A
80MHz-2.7GHz	10	Right	3s	A
80MHz-2.7GHz	10	Top	3s	A
80MHz-2.7GHz	10	Underside	3s	A
A: No degradation in the performance of the EUT was observed				

7.3 Electrical Fast Transients & Burst at AC Power Port

Test Requirement: EN 50130-4: 2011 +A1:2014

Test Method: EN 61000-4-4:2012

7.3.1 Test Setup Diagram



7.3.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.3.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.3.4 Test Condition and Results:

Repetition Frequency: 100kHz

Burst Period: 300ms

Test Duration: 1 minute per level & polarity

Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
AC power port	2	+	CDN	A
AC power port	2	-	CDN	A

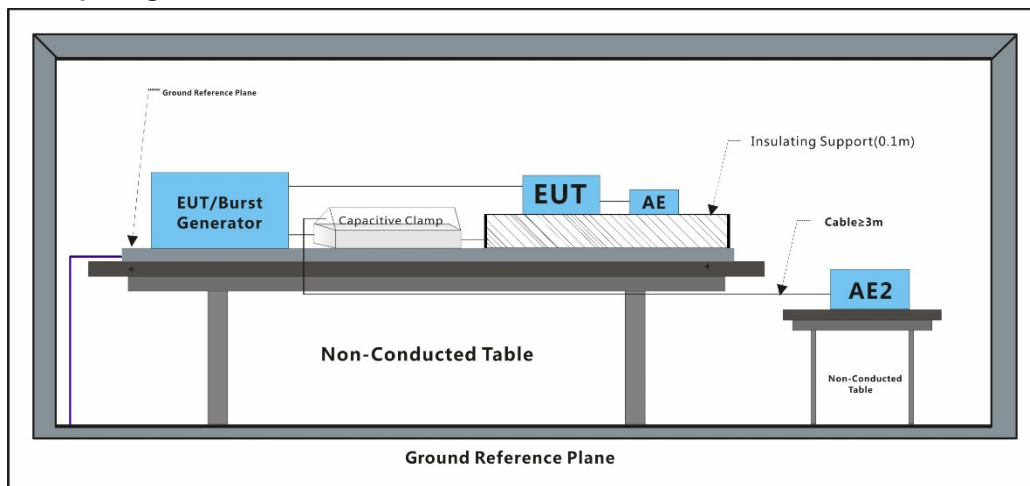
A: No degradation in the performance of the EUT was observed

7.4 Electrical Fast Transients & Burst at Signal Port

Test Requirement: EN 50130-4: 2011 +A1:2014

Test Method: EN 61000-4-4:2012

7.4.1 Test Setup Diagram



7.4.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.4.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.4.4 Test Condition and Results:

Repetition Frequency: 100kHz

Burst Period: 300ms

Test Duration: 1 minute per level & polarity

Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
Signal Port	1	+	Clamp	A
Signal Port	1	-	Clamp	A

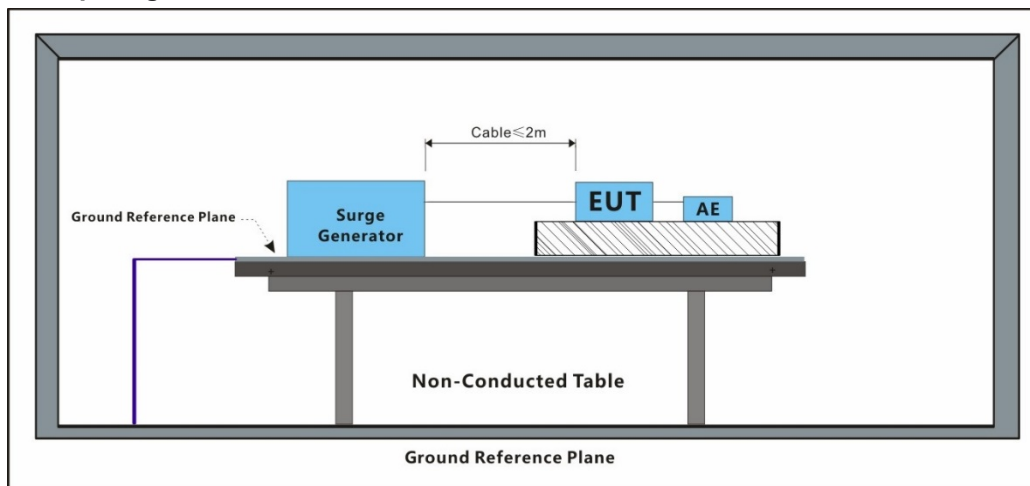
A: No degradation in the performance of the EUT was observed

7.5 Surge at AC Power Port

Test Requirement: EN 50130-4: 2011 +A1:2014

Test Method: EN 61000-4-5:2014 +A1:2017

7.5.1 Test Setup Diagram



7.5.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.5.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.5.4 Test Condition and Results:

Interval: 60s between each surge

No. of surges: 5 positive, 5 negative

Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	0.5,1	+	0°	A
L-N	0.5,1	-	0°	A
L-N	0.5,1	+	90°	A
L-N	0.5,1	-	90°	A
L-N	0.5,1	+	180°	A
L-N	0.5,1	-	180°	A
L-N	0.5,1	+	270°	A
L-N	0.5,1	-	270°	A
L-PE	0.5,1,2	+	0°	A
L-PE	0.5,1,2	-	0°	A
L-PE	0.5,1,2	+	90°	A
L-PE	0.5,1,2	-	90°	A
L-PE	0.5,1,2	+	180°	A
L-PE	0.5,1,2	-	180°	A
L-PE	0.5,1,2	+	270°	A
L-PE	0.5,1,2	-	270°	A
N-PE	0.5,1,2	+	0°	A
N-PE	0.5,1,2	-	0°	A
N-PE	0.5,1,2	+	90°	A
N-PE	0.5,1,2	-	90°	A
N-PE	0.5,1,2	+	180°	A
N-PE	0.5,1,2	-	180°	A
N-PE	0.5,1,2	+	270°	A
N-PE	0.5,1,2	-	270°	A

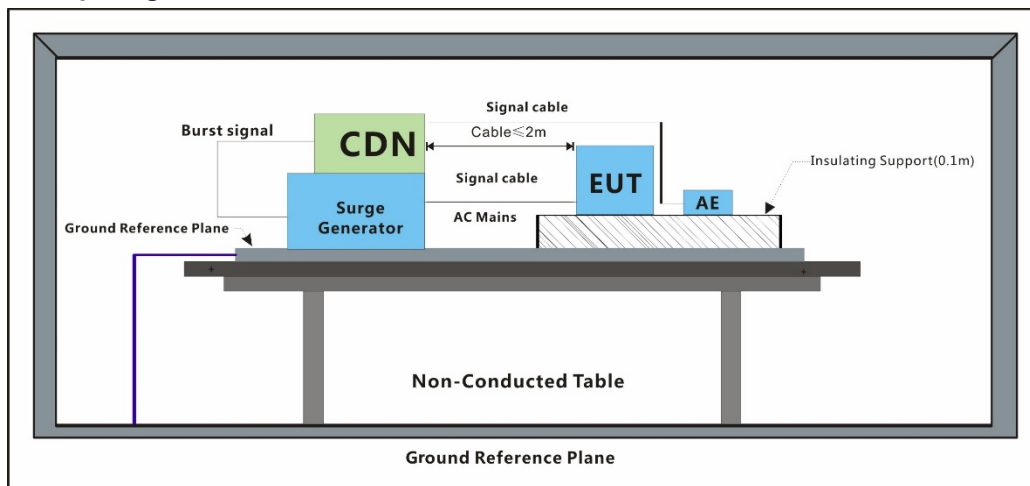
A: No degradation in the performance of the EUT was observed

7.6 Surge at Signal Port

Test Requirement: EN 50130-4: 2011 +A1:2014

Test Method: EN 61000-4-5:2014 +A1:2017

7.6.1 Test Setup Diagram



7.6.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.6.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.6.4 Test Condition and Results:

Interval: 60s between each surge

No. of surges: 5 positive, 5 negative.

Port	Line	Level (kV)	Polarity	Result / Observations
Signal port	Line-Ground	0.5	+	A
Signal port	Line-Ground	0.5	-	A
Signal port	Line-Ground	1	+	A
Signal port	Line-Ground	1	-	A

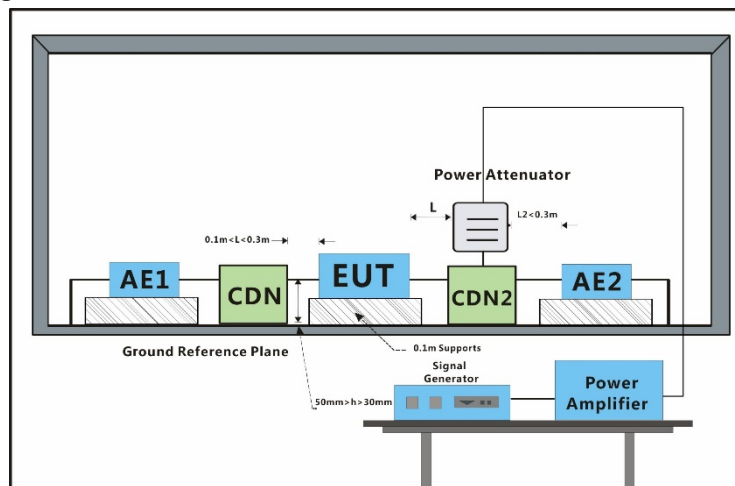
A: No degradation in the performance of the EUT was observed

7.7 Conducted Immunity at Power Port (150kHz-100MHz)

Test Requirement: EN 50130-4: 2011 +A1:2014

Test Method: EN 61000-4-6:2014

7.7.1 Test Setup Diagram



7.7.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.7.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.7.4 Test Condition and Results:

Modulation: 80%, 1 kHz Amplitude Modulation & 0.5s ON 0.5s OFF Pulse Modulation

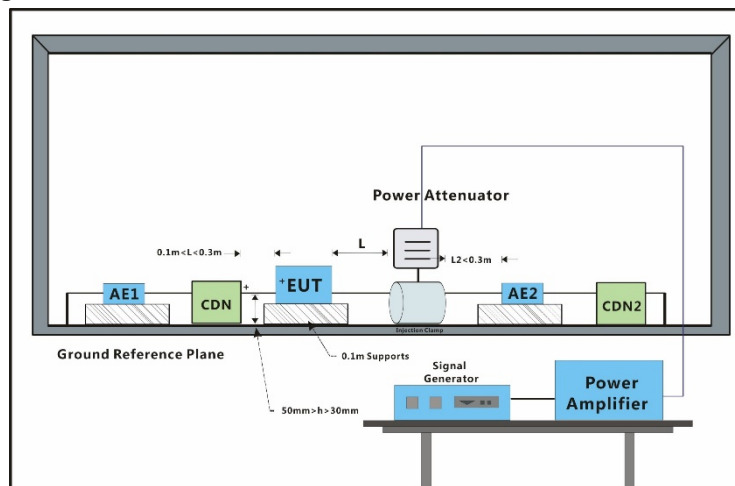
Cable port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
AC power port	10	CDN	3s	A
A: No degradation in the performance of the EUT was observed				

7.8 Conducted Immunity at Signal Port (150kHz-100MHz)

Test Requirement: EN 50130-4: 2011 +A1:2014

Test Method: EN 61000-4-6:2014

7.8.1 Test Setup Diagram



7.8.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.8.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.8.4 Test Condition and Results:

Modulation: 80%, 1 kHz Amplitude Modulation & 0.5s ON 0.5s OFF Pulse Modulation

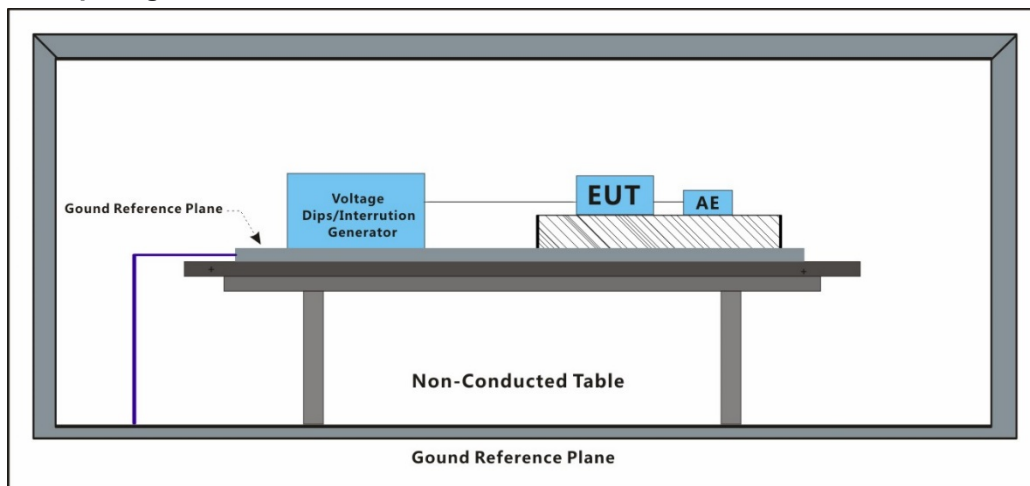
Cable port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
Signal or Control port	10	CDN	3s	A
A: No degradation in the performance of the EUT was observed				

7.9 Mains Supply Voltage Variations

Test Requirement: EN 50130-4: 2011 +A1:2014

Test Method: EN 50130-4:2011+A1:2014

7.9.1 Test Setup Diagram



7.9.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.9.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.9.4 Test Condition and Results:

Voltage max.: AC 264V (Umax: Unom + 10%)

Voltage min.: AC 85V (Umin: Unom - 15%)

Unom Voltage: AC 100-240V

Test phenomenon description for the EUT:

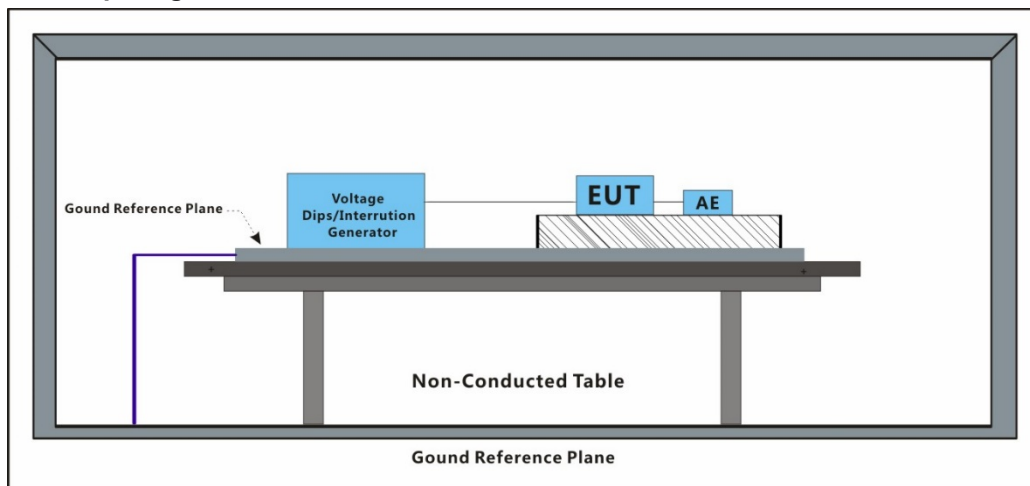
1. The EUT working normal, before the conditioning.
 2. Monitor the EUT during the conditioning period and detected no any changes in states, during the conditioning.
 3. No degradation in the performance of the EUT was observed, after the conditioning.
- A: No degradation in the performance of the EUT was observed

7.10 Voltage Dips and Interruptions

Test Requirement: EN 50130-4: 2011 +A1:2014

Test Method: EN IEC 61000-4-11:2020

7.10.1 Test Setup Diagram



7.10.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.10.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.10.4 Test Condition and Results:

Performance Criterion:

0% of UT (Supply Voltage) for 250 Periods;

40% of UT for 10 Periods;

70% of UT for 25 Periods; 80% of UT for 250 Periods;

No. of Dips / Interruptions: 3 per Level

Time between dropout 10s

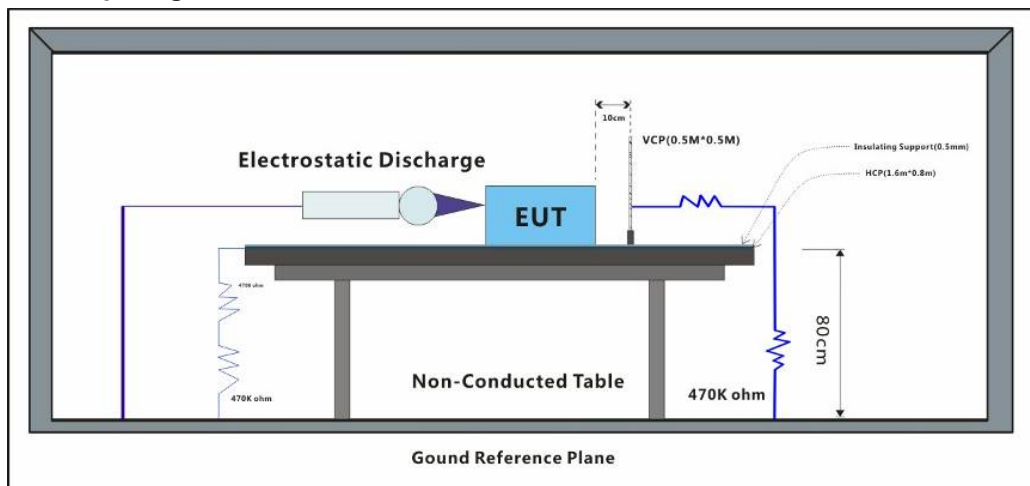
Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
80	0°	250 Cycles	3	A
80	180°	250 Cycles	3	A
70	0°	25 Cycles	3	A
70	180°	25 Cycles	3	A
40	0°	10 Cycles	3	A
40	180°	10 Cycles	3	A
0	0°	250 Cycles	3	B
0	180°	250 Cycles	3	B
A: No degradation in the performance of the EUT was observed B: During the test,the EUT working abnormally. After the test,the EUT automatically recovering working normally.				

7.11 Electrostatic Discharge

Test Requirement: EN 55035: 2017+A11:2020

Test Method: EN 61000-4-2: 2009

7.11.1 Test Setup Diagram



7.11.2 E.U.T. Operation

Operating Environment:

Temperature: 26.3 °C

Humidity: 48.2 % RH

Atmospheric Pressure: 1010 mbar

7.11.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.11.4 Test Condition and Results:

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

Test Point 1: All insulated enclosure & seams.

Test Point 2: All accessible metal parts of the enclosure.

Test Point 3: All sides.

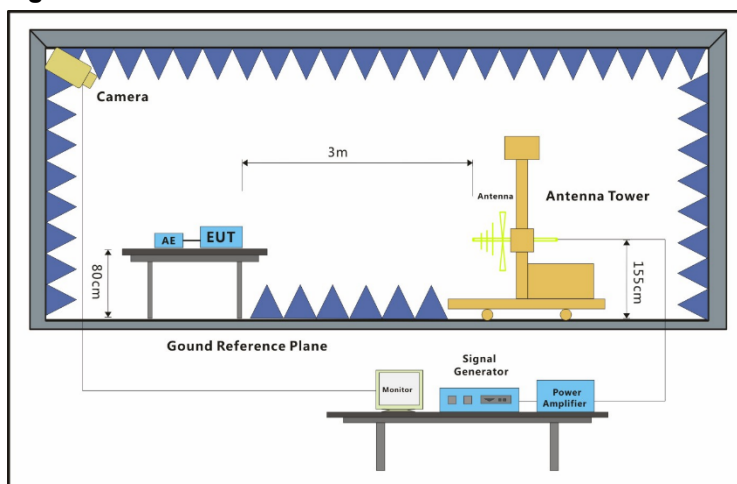
Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	2,4,8	+	1	A
Air Discharge	2,4,8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A
A: No degradation in the performance of the EUT was observed				

7.12 Radiated Immunity (80MHz-1GHz,1800MHz,2600MHz,3500MHz,5000MHz)

Test Requirement: EN 55035: 2017+A11:2020

Test Method: EN IEC 61000-4-3: 2020

7.12.1 Test Setup Diagram



7.12.2 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C

Humidity: 46.9 % RH

Atmospheric Pressure: 1010 mbar

7.12.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.12.4 Test Condition and Results:

Performance Criterion: A

Frequency Range: 80MHz to 1GHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz

Antenna Polarisation: Vertical and Horizontal

Modulation: 1kHz,80% Amp. Mod,1% increment

Test Distance:3m

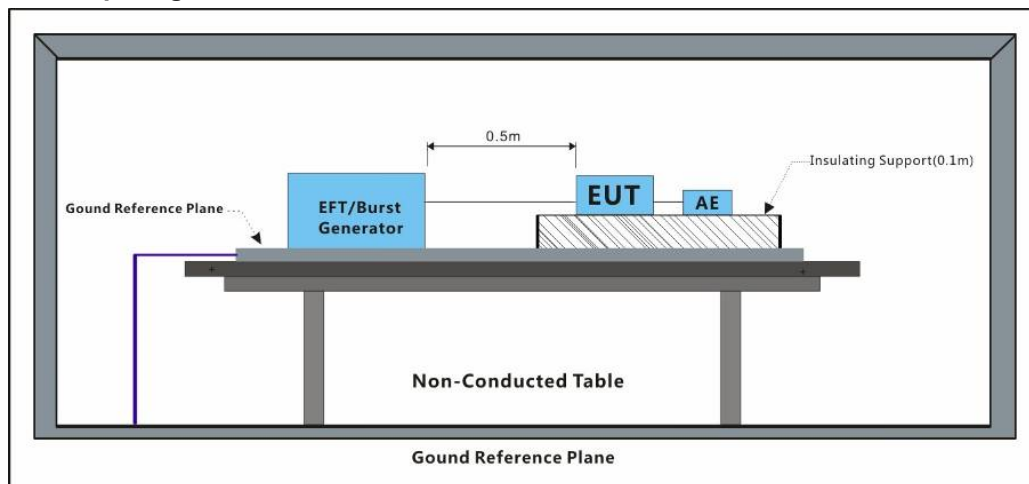
Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-1GHz	3	Front	3s	A
80MHz-1GHz	3	Back	3s	A
80MHz-1GHz	3	Left	3s	A
80MHz-1GHz	3	Right	3s	A
80MHz-1GHz	3	Top	3s	A
80MHz-1GHz	3	Underside	3s	A
1800MHz	3	Front	3s	A
1800MHz	3	Back	3s	A
1800MHz	3	Left	3s	A
1800MHz	3	Right	3s	A
1800MHz	3	Top	3s	A
1800MHz	3	Underside	3s	A
2600MHz	3	Front	3s	A
2600MHz	3	Back	3s	A
2600MHz	3	Left	3s	A
2600MHz	3	Right	3s	A
2600MHz	3	Top	3s	A
2600MHz	3	Underside	3s	A
3500MHz	3	Front	3s	A
3500MHz	3	Back	3s	A
3500MHz	3	Left	3s	A
3500MHz	3	Right	3s	A
3500MHz	3	Top	3s	A
3500MHz	3	Underside	3s	A
5000MHz	3	Front	3s	A
5000MHz	3	Back	3s	A
5000MHz	3	Left	3s	A
5000MHz	3	Right	3s	A
5000MHz	3	Top	3s	A
5000MHz	3	Underside	3s	A
A: No degradation in the performance of the EUT was observed				

7.13 Electrical Fast Transients & Burst at AC Power Port

Test Requirement: EN 55035: 2017+A11:2020

Test Method: EN 61000-4-4: 2012

7.13.1 Test Setup Diagram



7.13.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.13.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.13.4 Test Condition and Results:

Performance Criterion: B

Repetition Frequency: 5kHz

Burst Period: 300ms

Test Duration: 2 minute per level & polarity

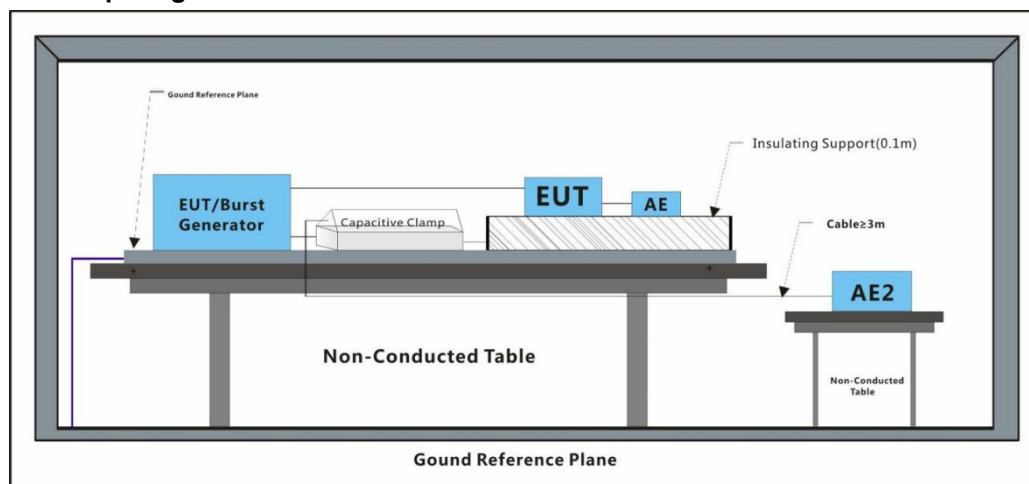
Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
AC power port	1	+	CDN	A
AC power port	1	-	CDN	A
A: No degradation in the performance of the EUT was observed				

7.14 Electrical Fast Transients & Burst at Signal Port

Test Requirement: EN 55035: 2017+A11:2020

Test Method: EN 61000-4-4: 2012

7.14.1 Test Setup Diagram



7.14.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.14.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.14.4 Test Condition and Results:

Performance Criterion: B

Repetition Frequency: 5kHz

Burst Period: 300ms

Test Duration: 2 minute per level & polarity

Port	Level (kV)	Polarity	CDN/Clamp	Result / Observations
Signal port	0.5	+	Clamp	A
Signal port	0.5	-	Clamp	A

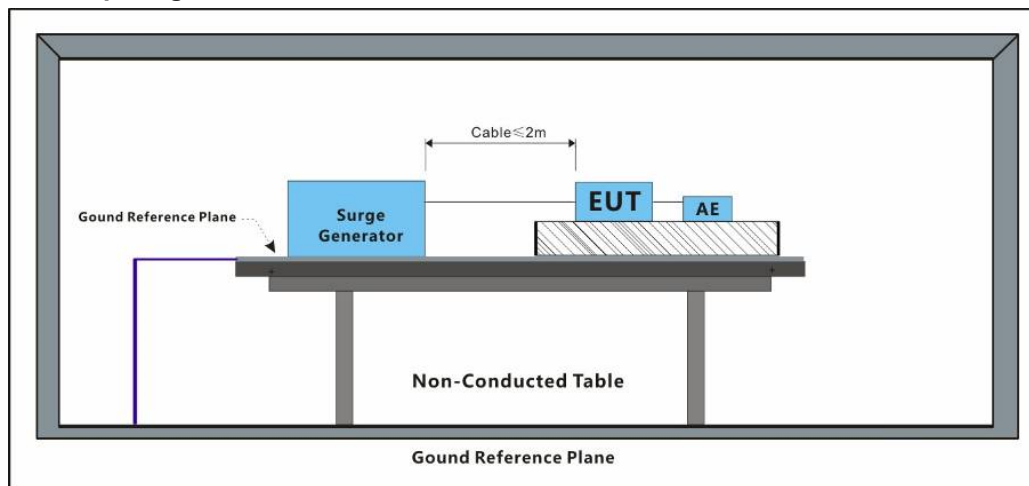
A: No degradation in the performance of the EUT was observed

7.15 Surge at AC Power Port

Test Requirement: EN 55035: 2017+A11:2020

Test Method: EN 61000-4-5: 2014 +A1: 2017

7.15.1 Test Setup Diagram



7.15.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.15.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.15.4 Test Condition and Results:

Performance Criterion: B

Interval: 60s between each surge

Generator source impedance: 2Ω

CDN coupling impedance(Line-to-ground):10Ω

No. of surges:

Five positive pulses line-to-neutral at 90° phase

Five negative pulses line-to-neutral at 270° phase

Five positive pulses line-to-earth at 90° phase

Five negative pulses line-to-earth at 270° phase

Five negative pulses neutral-to-earth at 90° phase

Five positive pulses neutral-to-earth at 270° phase

Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	1	+	90°	A
L-N	1	-	270°	A
L-PE	2	+	90°	A
L-PE	2	-	270°	A
N-PE	2	-	90°	A
N-PE	2	+	270°	A

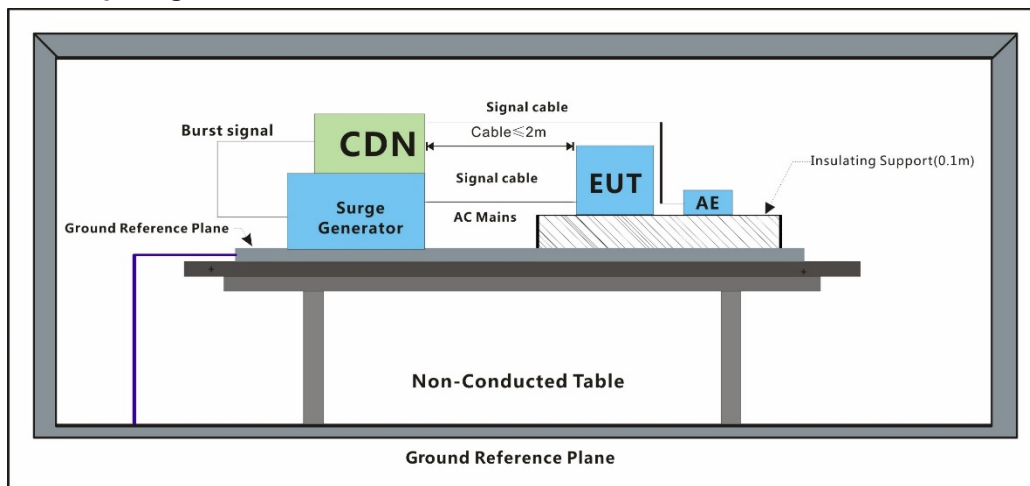
A: No degradation in the performance of the EUT was observed

7.16 Surge at Signal Port

Test Requirement: EN 55035: 2017+A11:2020

Test Method: EN 61000-4-5: 2014 +A1: 2017

7.16.1 Test Setup Diagram



7.16.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.16.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.16.4 Test Condition and Results:

Performance Criterion: B

Interval: 60s between each surge

Generator source impedance: 2Ω

Port	Line	Waveform(μs)	Level (kV)	Polarity	Result / Observations
Signal port	Line-Ground	1,2/50 (8/20)	0.5, 1	+	A
Signal port	Line-Ground	1,2/50 (8/20)	0.5, 1	-	A

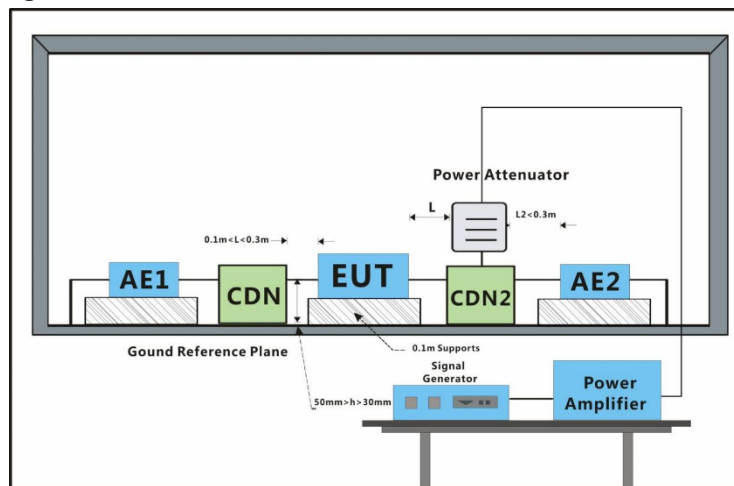
A: No degradation in the performance of the EUT was observed

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

Test Requirement: EN 55035: 2017+A11:2020

Test Method: EN 61000-4-6: 2014

7.17.1 Test Setup Diagram



7.17.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.17.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.17.4 Test Condition and Results:

Performance Criterion: A

Frequency Range: 0.15MHz to 80MHz

Modulation: 80%, 1kHz Amplitude Modulation

Step Size: 1%

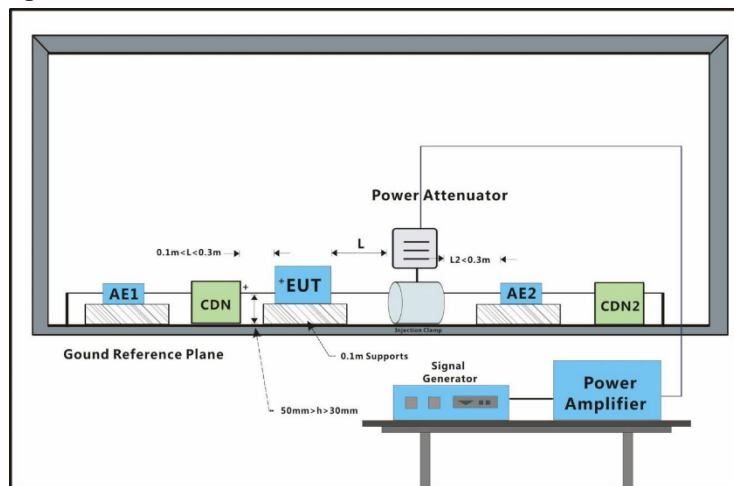
Cable port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
AC power port	3(0.15MHz-10MHz)	CDN	3s	A
AC power port	3 to 1(10MHz-30MHz, Lines)	CDN	3s	A
AC power port	1(30MHz-80MHz)	CDN	3s	A
A: No degradation in the performance of the EUT was observed				

7.18 Conducted Immunity at Signal Port (150kHz-80MHz)

Test Requirement: EN 55035: 2017+A11:2020

Test Method: EN 61000-4-6: 2014

7.18.1 Test Setup Diagram



7.18.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.18.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.18.4 Test Condition and Results:

Performance Criterion: A

Frequency Range: 0.15MHz to 80MHz

Modulation: 80%, 1kHz Amplitude Modulation

Step Size: 1%

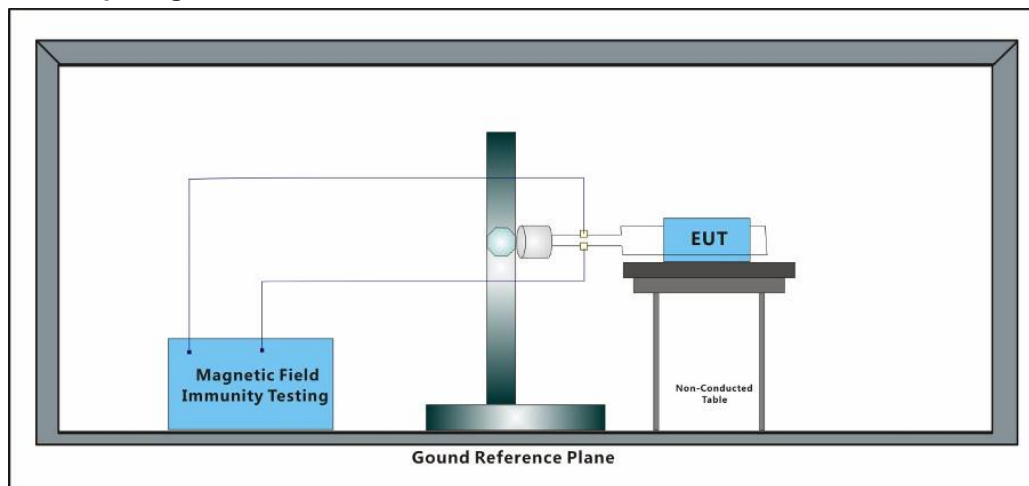
Port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
Signal port	3(0.15MHz-10MHz)	Clamp	3s	A
Signal port	3 to 1(10MHz-30MHz, Lines)	Clamp	3s	A
Signal port	1(30MHz-80MHz)	Clamp	3s	A
A: No degradation in the performance of the EUT was observed				

7.19 Power Frequency Magnetic Field

Test Requirement: EN 55035: 2017+A11:2020

Test Method: EN 61000-4-8: 2010

7.19.1 Test Setup Diagram



7.19.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.19.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.19.4 Test Condition and Results:

Performance Criterion: A

Frequency	Level (A/m)	Axial	Magnetic Field Type	Result / Observations
50Hz	1	X	Continuous filed	A
50Hz	1	Y	Continuous filed	A
50Hz	1	Z	Continuous filed	A

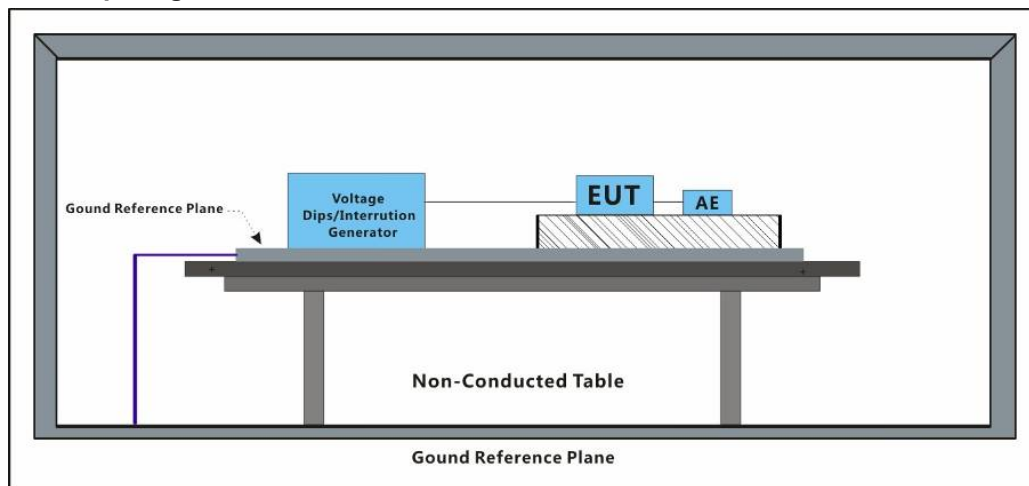
A: No degradation in the performance of the EUT was observed

7.20 Voltage Dips and Interruptions

Test Requirement: EN 55035: 2017+A11:2020

Test Method: EN IEC 61000-4-11:2020

7.20.1 Test Setup Diagram



7.20.2 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

Humidity: 46 % RH

Atmospheric Pressure: 1010 mbar

7.20.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT working normally with power supply1(DPS-200AB-225C)+Fan1(EF40101B1-1Q08C-S99).
Final test	01	Keep EUT working normally with power supply2(FLXA2191B-0GAA)+Fan2(AG04012UB107B00).
Final test	02	Keep EUT working normally with power supply3(P1A-N10190-S-F2)+Fan1(EF40101B1-1Q08C-S99).

7.20.4 Test Condition and Results:

Performance Criterion:

<5% residual voltage for 0.5 Cycle: B

70% residual voltage for 25 Cycles: C

<5% residual voltage for 250 Cycles: C

No. of Dips / Interruptions: 3 per Level

Time between dropout: 10s

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
0	0°	0.5 Cycles	3	A
0	0°	250 Cycles	3	B
70	0°	25 Cycles	3	A

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

B: During the test,the EUT working abnormally.

After the test,the EUT automatically recovering working normally.

8 Test Setup Photo

Conducted Emissions at Mains Power Port (150kHz-30MHz)

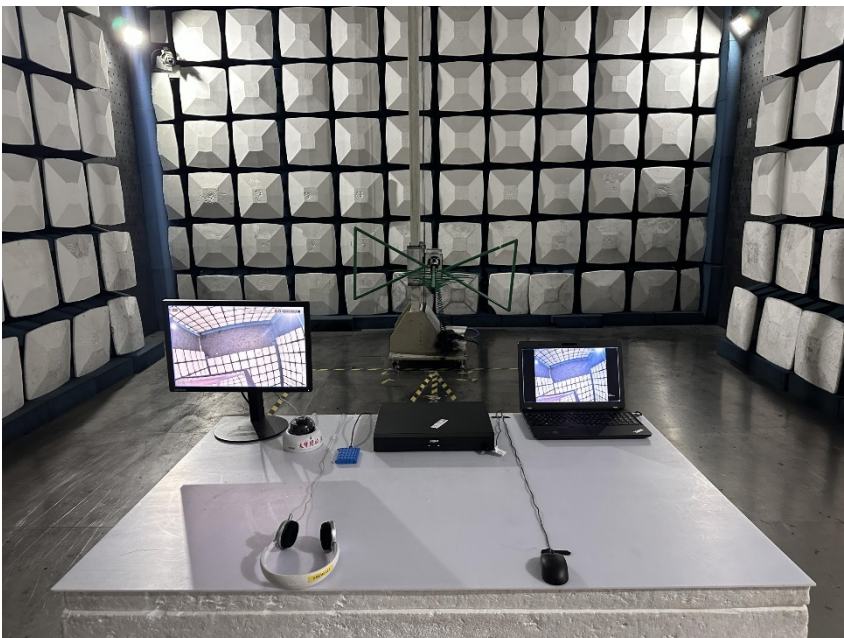


Asymmetric Mode Conducted Emissions(150kHz-30MHz)

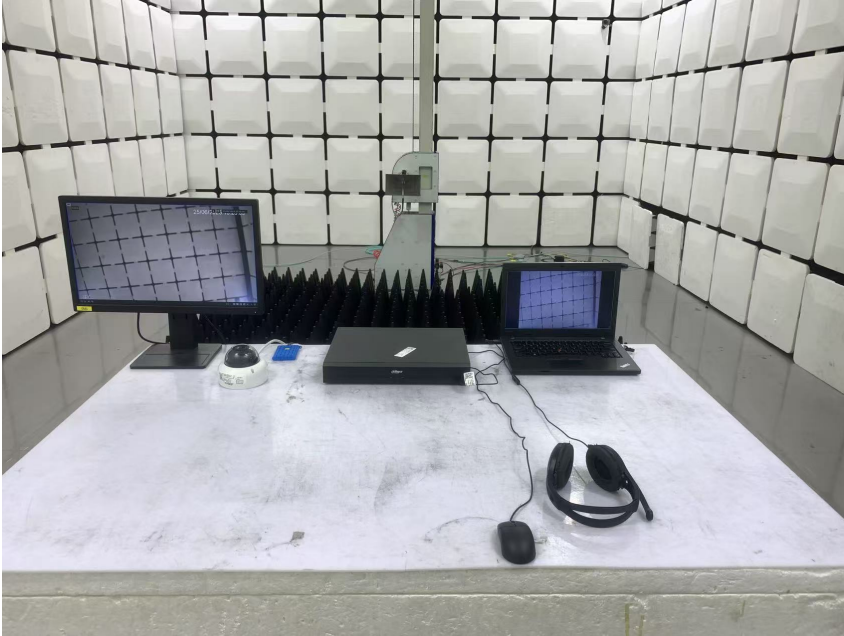




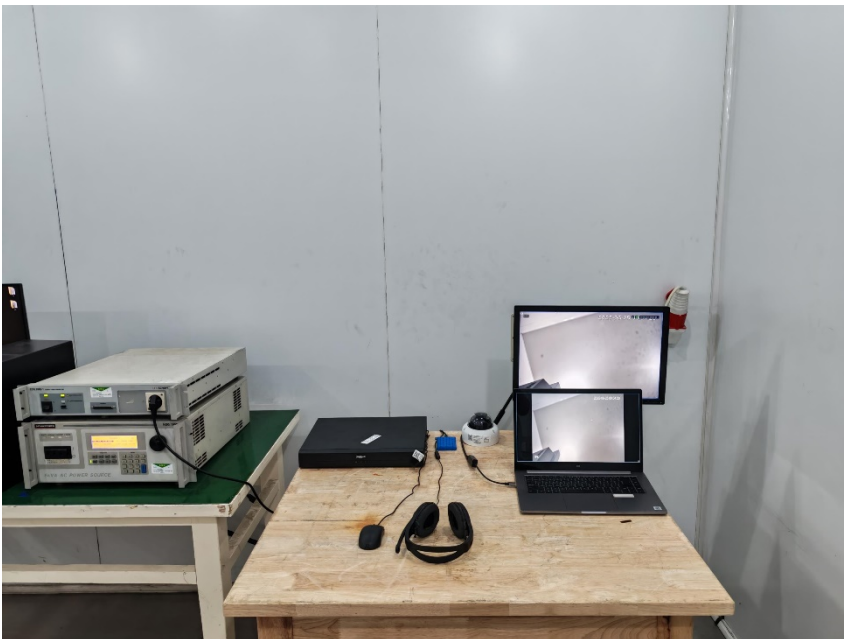
Radiated Emissions (30MHz-1GHz)



Radiated Emissions (Above 1GHz)



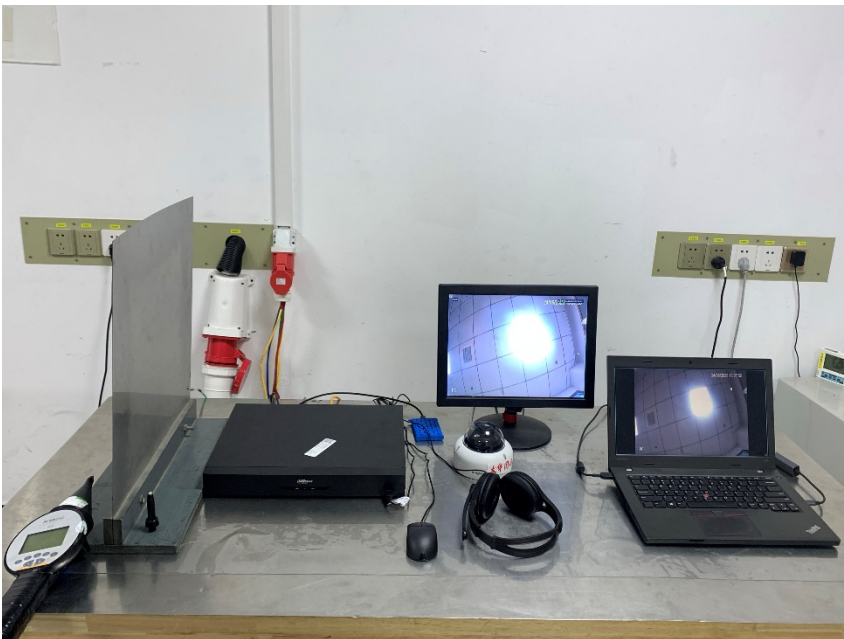
Voltage Fluctuations and Flicker



Harmonic Current Emission



Electrostatic Discharge



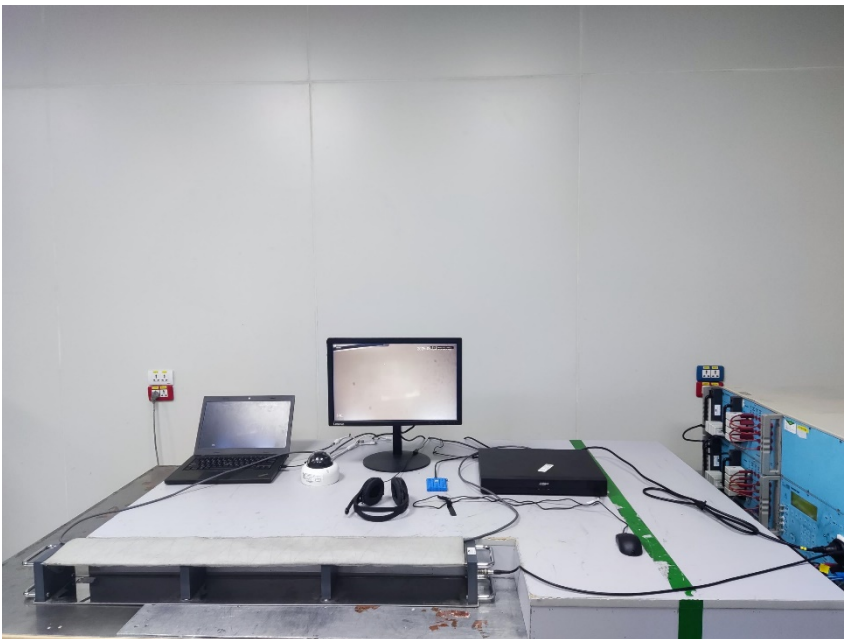
Radiated Immunity(80MHz-2.7GHz)



Electrical Fast Transients & Burst at AC Power Port



Electrical Fast Transients & Burst at Signal Port



Surge at AC Power Port



Surge at Signal Port



Conducted Immunity at Power Port (150kHz-100MHz)



Conducted Immunity at Signal Port (150kHz-100MHz)



Mains Supply Voltage Variations



Voltage Dips and Interruptions



Electrostatic Discharge



Radiated Immunity (80MHz-1GHz,1800MHz,2600MHz,3500MHz,5000MHz)



Electrical Fast Transients & Burst at AC Power Port

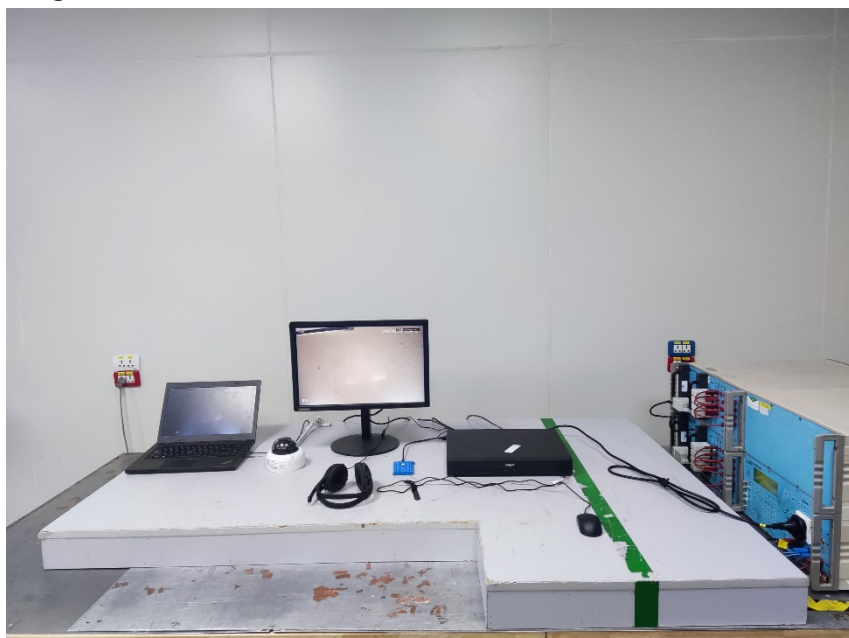


Electrical Fast Transients & Burst at Signal Port





Surge at AC Power Port



Surge at Signal Port



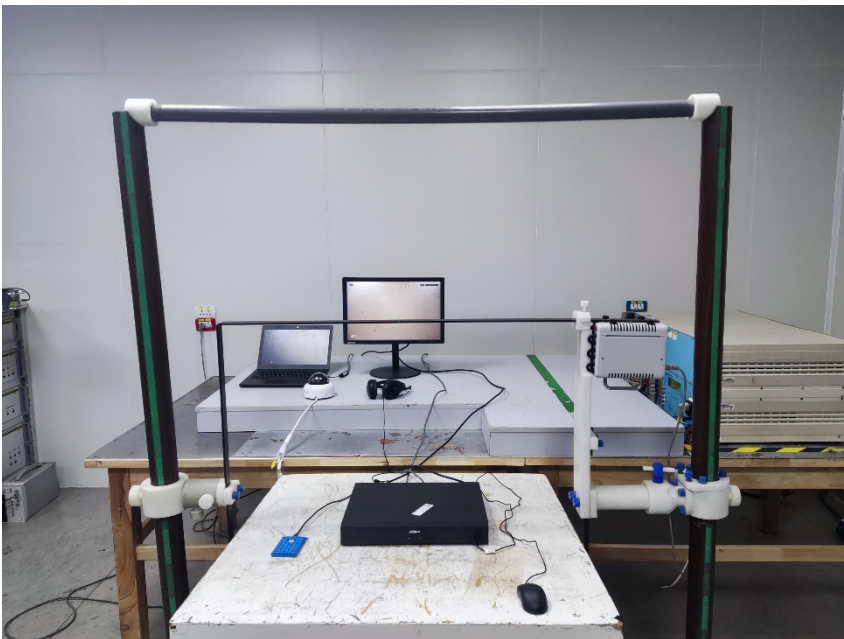
Conducted Immunity at AC Power Port (150kHz-80MHz)



Conducted Immunity at Signal Port (150kHz-80MHz)



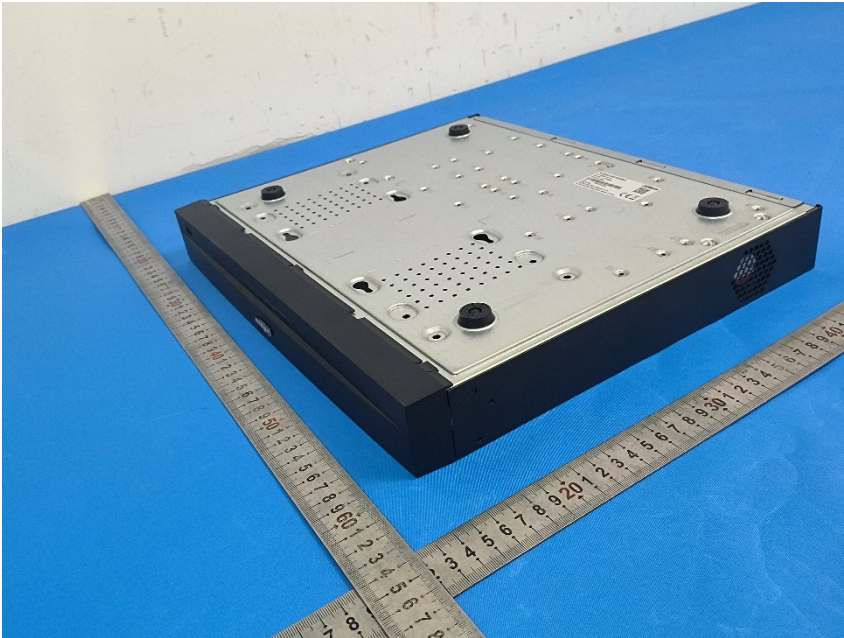
Power Frequency Magnetic Field



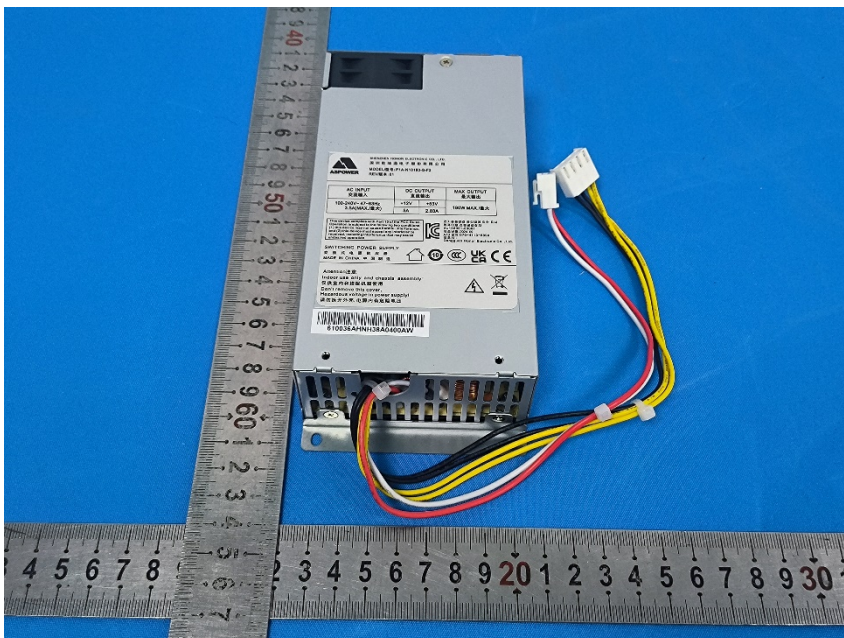
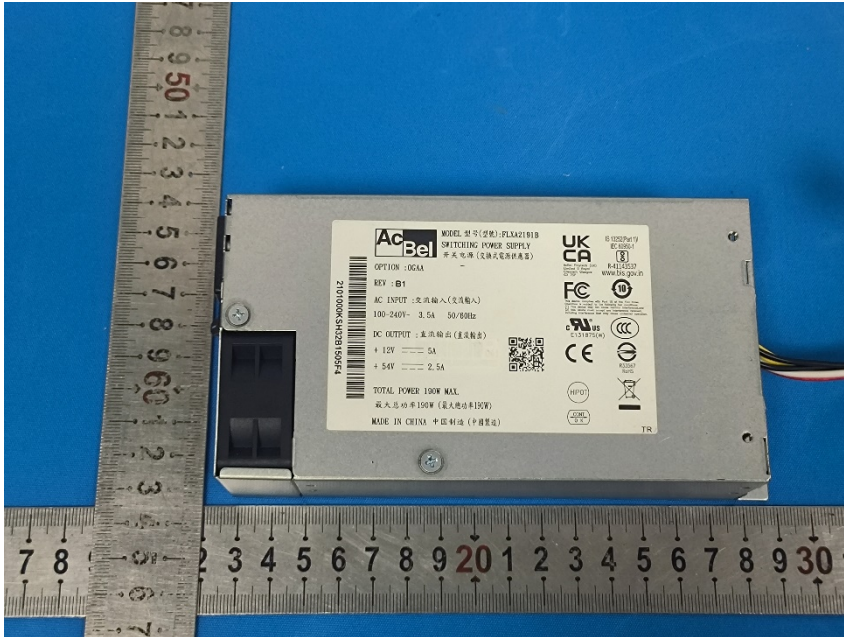
Voltage Dips and Interruptions



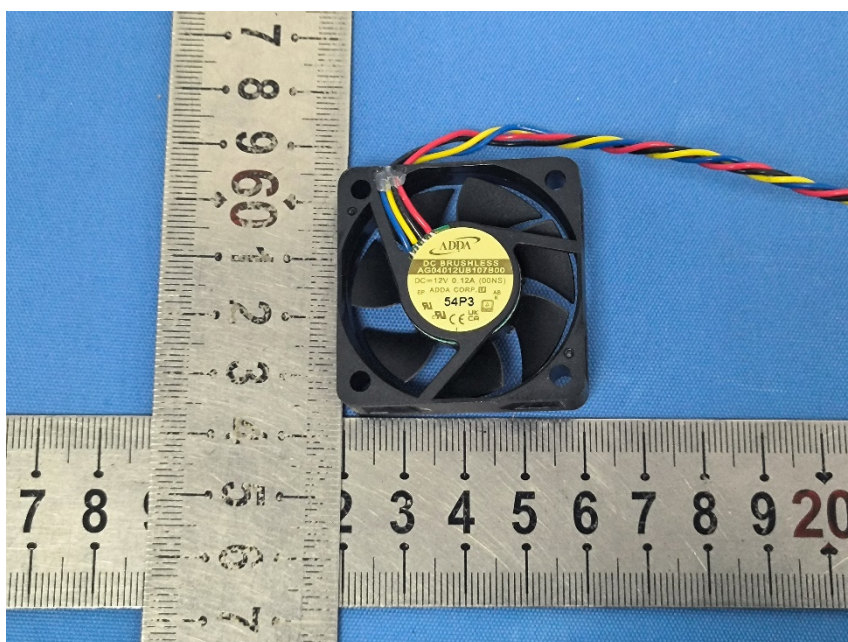
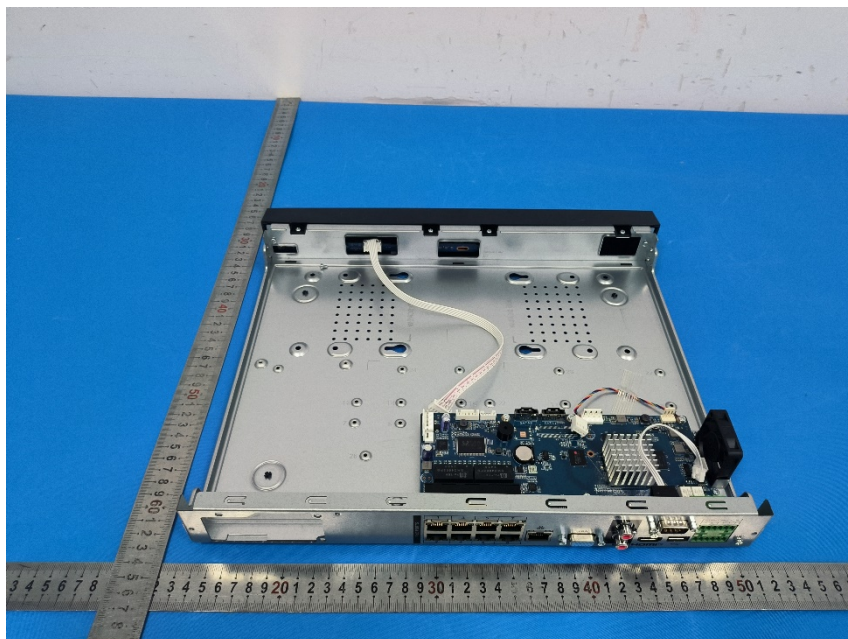
9 EUT Constructional Details (EUT Photos)

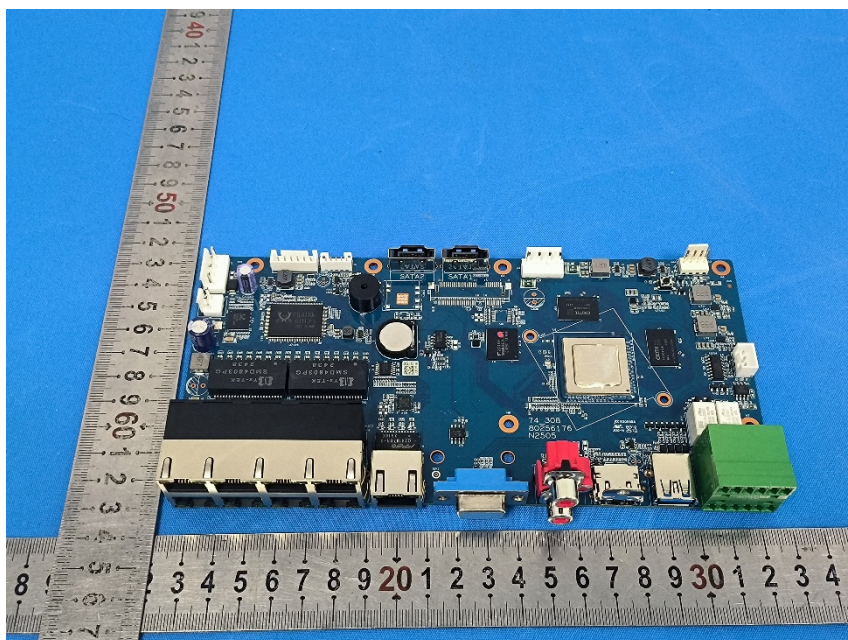
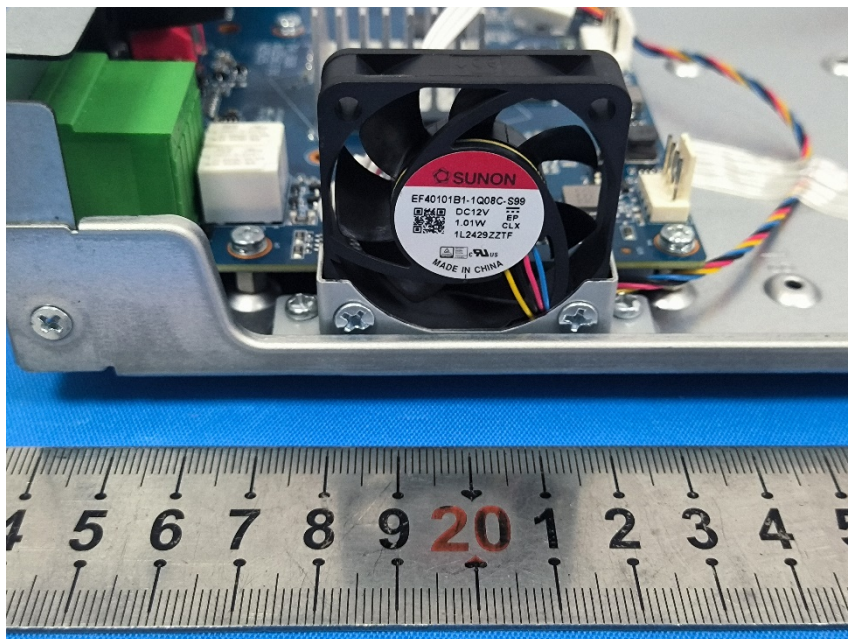


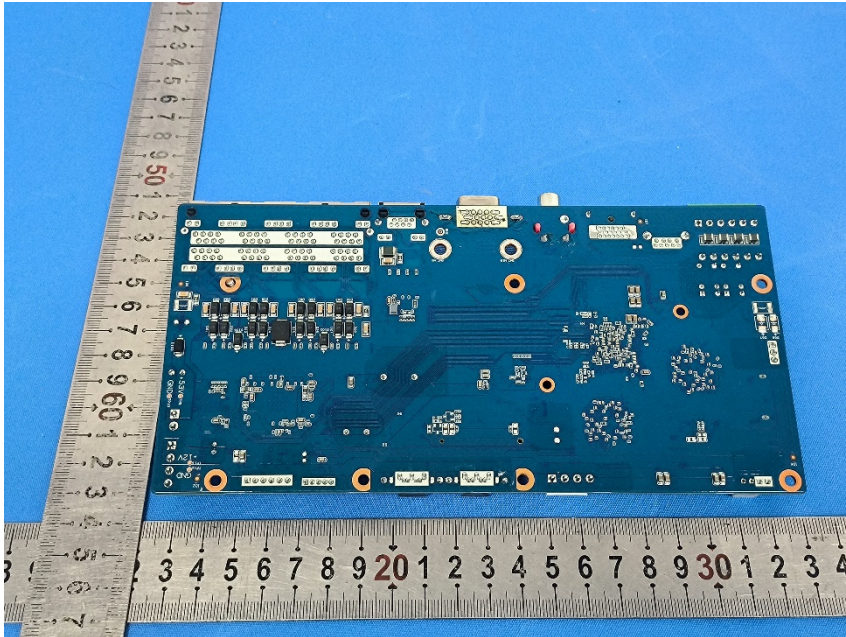


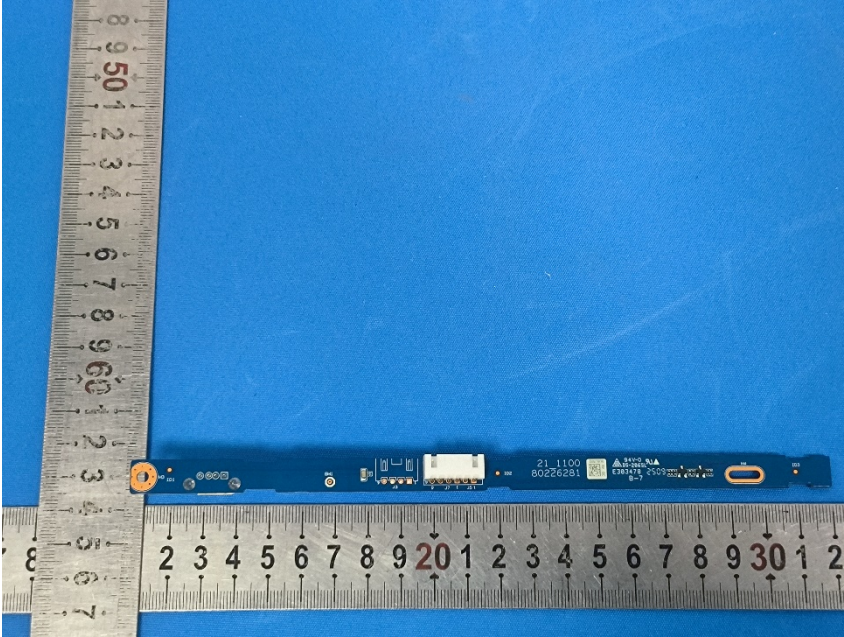












- End of the Report -