



TEST REPORT

Report No. SST2504E0471

Applicant: Onyx International Inc.
Room 101, Building 4, No. 202 Shiyu Road, Nansha District,
Guangzhou City, Guangdong Province, China

Product Name: Active Stylus

Model: BOOX InkSense, BOOX InkSense Lite,
BOOX InkSense Plus, BOOX InkSense Pro

Trade Mark: BOOX

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

Test Report Form No: SST-RD-7.5-02-E01(A/0)

Date of sample receipt: Apr. 21, 2025

Date of Test: Apr. 21 ~ Apr. 22, 2025

Date of report issued: Apr. 22, 2025

*The equipment complies with the requirements according to the standard(s) or Specification above, it is applicable only to the tested sample identified in the report.

Prepared by:

Reviewed by:

Approved by:



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



*The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Version	Description	Date of Issue
V1.0	Original	Apr. 22, 2025



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1 Test Summary

Test item	Test Requirement	Result	Note
Radiated Emission	EN 55032	PASS	/
Conducted Emission	EN 55032	PASS	/
Asymmetric mode conducted emissions	EN 55032	N/A	/
Disturbance voltage at antenna terminal	EN 55032	N/A	/
Harmonic current emission	EN IEC 61000-3-2	N/A	/
Voltage fluctuations and flicker	EN 61000-3-3	PASS	/
Electrostatic discharge	EN 55035	PASS	/
Power frequency magnetic field	EN 55035	N/A	/
Continuous RF electromagnetic field disturbances	EN 55035	PASS	/
Electrical fast transients	EN 55035	PASS	/
Surges	EN 55035	PASS	/
Radio-frequency continuous conducted	EN 55035	PASS	/
Voltage dips and Voltage interruptions	EN 55035	PASS	/

2 GENERAL INFORMATION

2.1 Client Information

Applicant:	Onyx International Inc.
Address of applicant:	Room 101, Building 4, No. 202 Shiyu Road, Nansha District, Guangzhou City, Guangdong Province, China
Manufacturer:	Onyx International Inc.
Address of Manufacturer:	Room 101, Building 4, No. 202 Shiyu Road, Nansha District, Guangzhou City, Guangdong Province, China
Factory:	Shenzhen Qianfenyi Intelligent Technology Co., LTD
Address of Factory:	Building 2, 2nd floor and 6th and a half floors, Jiuzhou Industrial Park, No. 10 Tongguan Road, Yutang Community, Yutang Street, Guangming District, Shenzhen, Guangdong Province, P.R.China

2.2 Product Description

Product Name:	Active Stylus
Model No.:	BOOX InkSense, BOOX InkSense Lite, BOOX InkSense Plus, BOOX InkSense Pro
Test Model No.:	BOOX InkSense
S/N:	N/A
SW:	V1.1
HW:	V1.1
Power Supply 1:	DC 5V

2.3 Test mode(s)

Mode 1:	Charging mode
Mode 2:	Working mode

Remark: All of the above modes are qualified and show only the worst case.

2.4 Description of Accessories

Manufacturer	Description	Model	Serial Number
Lenovo	ADAPTER	XXC100Ga	/

2.5 Test Facility

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L17883
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2.6 Test Location

All tests were performed at:

Dongguan Qiyang Testing Technology Co., Ltd

One of Room 101, Building 1, No. 19, Tianxin Butterfly 1st Road, Huangjiang Town, Dongguan City, Guangdong Province, China

2.7 Measurement Uncertainty

Item	Uncertainty ($\pm$) (k=2, 95%)
Radiated Emissions(<1GHz)	5.08>30MHz 2.6<30MHz
Radiated Emissions(>1GHz)	4.02<6GHz 4.62>6GHz
Occupied Bandwidth	1.14
Conducted Emissions—AC mains	1.76(9kHz~150KHz) 2.52(150kHz~30MHz)
Conducted Emissions—Telecom	2.64
Harmonic current and voltage Flicker	3.84

3 Test Instruments

Radiated Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
3m Semi- Anechoic Chamber	BOST	966	/	3 years	2023.01.07
Control Room	BOST	333	/	3 years	2023.01.07
Breiband TRILOG Messantenne	Schwarzbeck	VULB 9162	00556	1 year	2025.04.19
Broad-band Horn Antenna	Schwarzbeck	BBHA 9120 D	02783	1 year	2025.04.19
EMI Test Receiver	R&S	ESU8	100372	1 year	2025.04.17
Amplifier (1-18GHz)	TSTPASS	LNA10180G45	TSAM2303003	1 year	2025.04.17
Spectrum Analyzer	keysight	N9020A	MY51280659	1 year	2025.04.17
Amplifier (40G)	RFsystem	TRLA-180400G45B	23060801	1 year	2025.04.18
Broadband Horn Antenna (40G)	Schwarzbeck	BBHA9170	01306	1 year	2025.04.19
Spectrum analyzer	R&S	FSV40-N	101791	1 year	2025.04.17
Loop Antenna	Schwarzbeck	FMZB 1513-60B	1513-60B 044	1 year	2025.04.18
5W 6dB attenuator	/	DC-6GHz	/	Internal calibration	/
Thermohygrometer	KTJ	TA218A	879030	1 year	2025.04.21
EMI Test Software	Tonscend	TS+	V5.0	/	/
Conducted Emission					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
Shielding Room	BOST	854	/	3 year	2023.01.07
EMI Test Receiver	R&S	ESR3	103057	1 year	2025.04.17
LISN	R&S	ENV 216	102832	1 year	2025.04.17
ISN	Schwarzbeck	NTFM 8158	00347	1 year	2025.04.17
ISN	Schwarzbeck	CAT3 8158	00279	1 year	2025.04.17
ISN	Schwarzbeck	CAT5 8158	00524	1 year	2025.04.17
Sensor probe	TCTEST	CSP 9160A	81837	1 year	2025.04.17
High impedance capacitive voltage probe	Schwarzbeck	CVP 9222C	00221	1 year	2025.04.22
Voltage probe	Schwarzbeck	TK 9420	01304	1 year	2025.04.17
Antenna port test assembly	/	DC-3GHz	/	Internal calibration	/
Thermohygrometer	KTJ	TA218A	879036	1 year	2025.04.21
EMI Test Software	Tonscend	TS+	V4.0	/	/

Harmonic/ Flicker					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
Shielding Room	BOST	854	/	3 years	2023.01.07
Harmonic and scintillation test system	LI	AC2000A	556570	1 year	2025.04.17
Thermohygrometer	KTJ	TA218A	879030	1 year	2025.04.21
Conducted Immunity					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
Shielding Room	BOST	543	/	3 years	2023.01.07
Conduction immunity test host	M.O	ES-608	230203	1 year	2025.04.17
CDN	M.O	CDN612M	230202	1 year	2025.04.17
CDN	M.O	CDN613M	230204	1 year	2025.04.17
Clamp	M.O	ES-TS120	230228	1 year	2025.04.17
ATT	M.O	HA6-100	230209	1 year	2025.04.17
CDN	etest	ES-CDN-T8	241022	1 year	2025.02.20
Thermohygrometer	KTJ	TA218A	879032	1 year	2025.04.21
ESD					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
ESD Simulator	M.O	CS230	CS-22001	1 year	2025.04.18
Thermohygrometer	KTJ	TA218A	879034	1 year	2025.04.21
Surge					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
Surge generator combination wave	M.O	CS5511	N551123006	1 year	2025.04.17
Communication surge generator	etest	ES-506AT	250116	1 year	2025.02.20
CDN	etest	ES-CDN-508	241022	1 year	2025.02.20
Thermohygrometer	KTJ	TA218A	879035	1 year	2025.04.21
EFT					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
EFT generator	M.O	CS4511	N451123005	1 year	2025.04.17
Clamp	/	/	/	2 year	2025.04.17
Thermohygrometer	KTJ	TA218A	879035	1 year	2025.04.21

Radiated Immunity					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
3m Semi- Anechoic Chamber	BOST	966	/	3 years	2023.01.07
Shielding Room	BOST	233	/	3 years	2023.01.07
Shielding Room	BOST	333	/	3 years	2023.01.07
Analog signal source	Agilent	N5181A	MY50141993	1 year	2025.04.17
Power meter	Agilent	E4419B	MY50000727	1 year	2025.04.17
Low frequency power amplifier	MPA	MPA-80-1000-250	MPA2303124	1 year	2025.04.17
High frequency power amplifier	MPA	MPA-1000-6000-100	MPA2303150	1 year	2025.04.17
Magnetic field strength probe	PMM	EP-601	PFC2201-20480	1 year	2025.04.18
RF switch	BOST	RF_SW	/	1 year	2025.04.17
Power meter probe	keysight	E9300A	MZ42061918	1 year	2025.04.17
Power meter probe	keysight	E9300A	MY55050026	1 year	2025.04.17
Transmitting antenna	Schwarzbeck	STLP 9129	00240	/	/
Thermohygrometer	KTJ	TA218A	879033	1 year	2025.04.21
Voltage dips					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
Voltage dips tester	M.O	CS1111	N111123006	1 year	2025.04.17
Thermohygrometer	KTJ	TA218A	879035	1 year	2025.04.21
Power-frequency Magnetic Field					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
Shielding Room	BOST	854	/	3 years	2023.01.07
Power frequency magnetic field test system	M.O	CS8100	N810023005	1 year	2025.04.17
Thermohygrometer	KTJ	TA218A	879036	1 year	2025.04.21

4 Emission Test

4.1 Radiated Emission

Limit of Radiated Emission Measurement (Below 1GHz)

Frequency (MHz)	☐ Class A (3m)	☒ Class B (3m)
	Quasi-peak (dB μ V/m)	Quasi-peak (dB μ V/m)
30~230	50.0	40.0
230~1000	57.0	47.0

Note: The lower limit applies at the transition frequency.

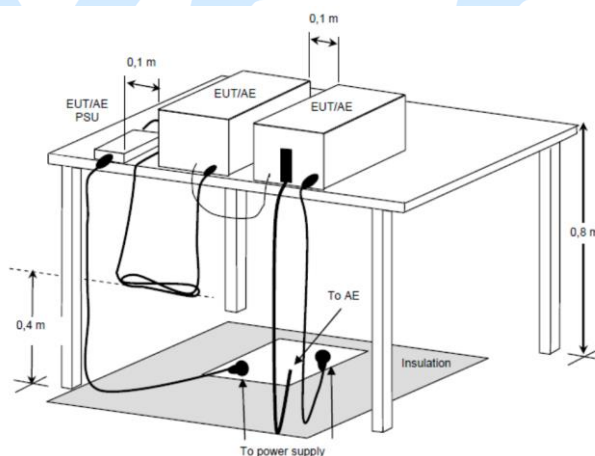
Limit of Radiated Emission Measurement (Above 1GHz)

Frequency (MHz)	☐ Class A (3m)		☒ Class B (3m)	
	Peak (dB μ V/m)	Average (dB μ V/m)	Peak (dB μ V/m)	Average (dB μ V/m)
1000~3000	76.0	56.0	70.0	50.0
3000~6000	80.0	60.0	74.0	54.0

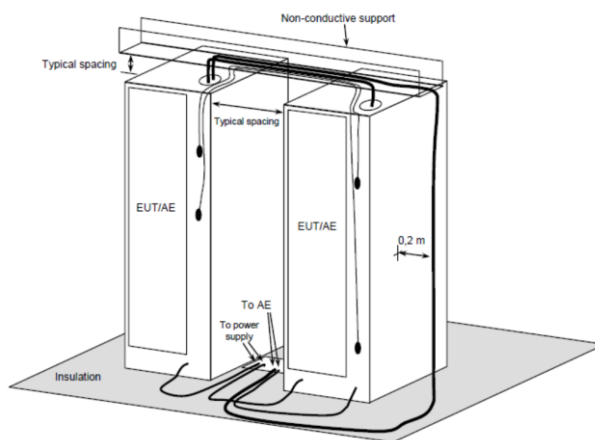
Note: The lower limit applies at the transition frequency.

Block diagram of test setup

For table-top equipment



For floor standing equipment



Test Instruments

Refer to section 3 for details

Test Procedures

The measurement was performed in a 3m semi-anechoic chamber.

The distance from EUT to receiving antenna is 3 meter.

Measurement was performed according to clause 7.3 of CISPR 16-2-3.

Test Frequency Range

Highest internal frequency (F_x)	Highest measured frequency
$F_x \leq 108 \text{ MHz}$	1 GHz
$108 \text{ MHz} < F_x \leq 500 \text{ MHz}$	2 GHz
$500 \text{ MHz} < F_x \leq 1 \text{ GHz}$	5 GHz
$F_x > 1 \text{ GHz}$	$5 \times F_x$ up to a maximum of 6 GHz

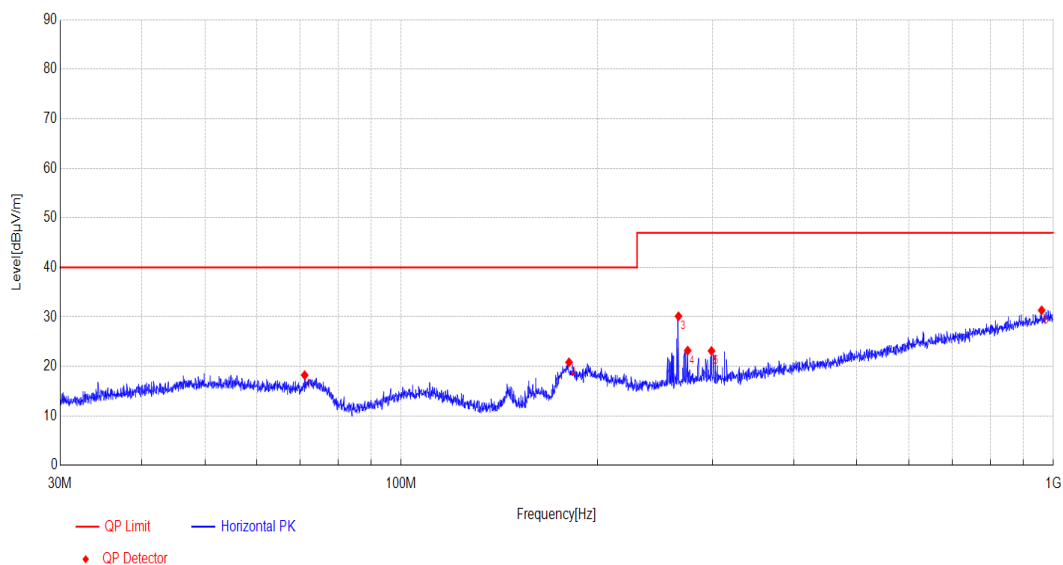
NOTE 1: For FM and TV broadcast receivers, F_x is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.

NOTE 2: For outdoor units of home satellite receiving systems highest measured frequency shall be 18 GHz.

Verdict

PASS

Test Result			
Test mode	Mode 1	Polarity	Horizontal
Test voltage	AC 230V/50Hz	Temp. /Hum.	25℃/60%



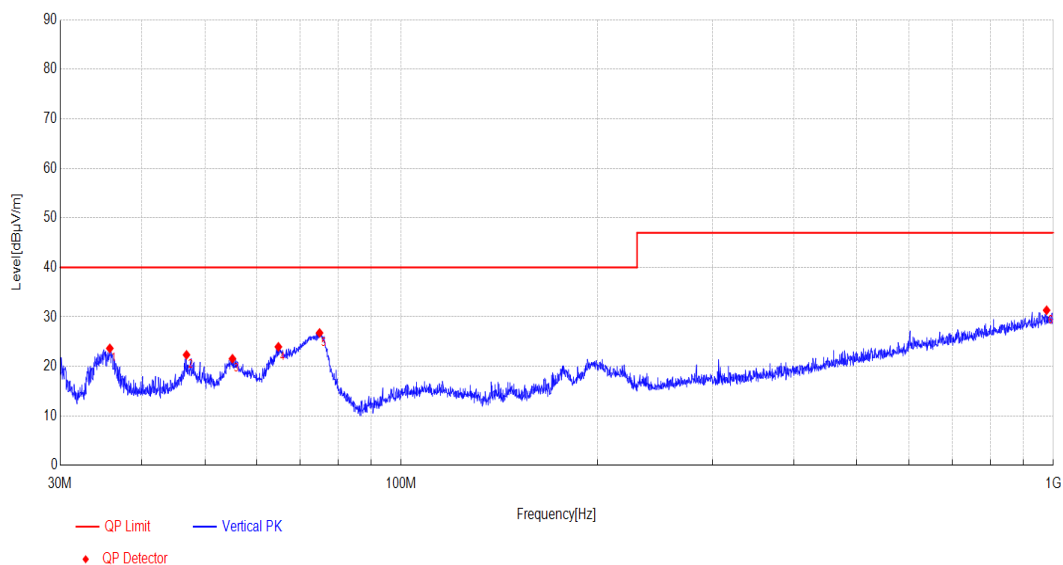
Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity	Verdict
1	71.1273	9.97	18.25	40.00	21.75	200	175	Horizontal	PASS
2	180.8846	11.06	20.83	40.00	19.17	100	81	Horizontal	PASS
3	266.23	14.21	30.14	47.00	16.86	100	132	Horizontal	PASS
4	275.0047	14.50	23.20	47.00	23.80	100	113	Horizontal	PASS
5	299.1438	15.28	23.14	47.00	23.86	100	294	Horizontal	PASS
6	959.6451	25.68	31.33	47.00	15.67	200	304	Horizontal	PASS

Note: Final Level =Receiver Read level + Factor

Factor= Antenna Factor + Cable Loss – Preamplifier Factor

Test Result			
Test mode	Mode 1	Polarity	Vertical
Test voltage	AC 230V/50Hz	Temp. /Hum.	25°C/60%



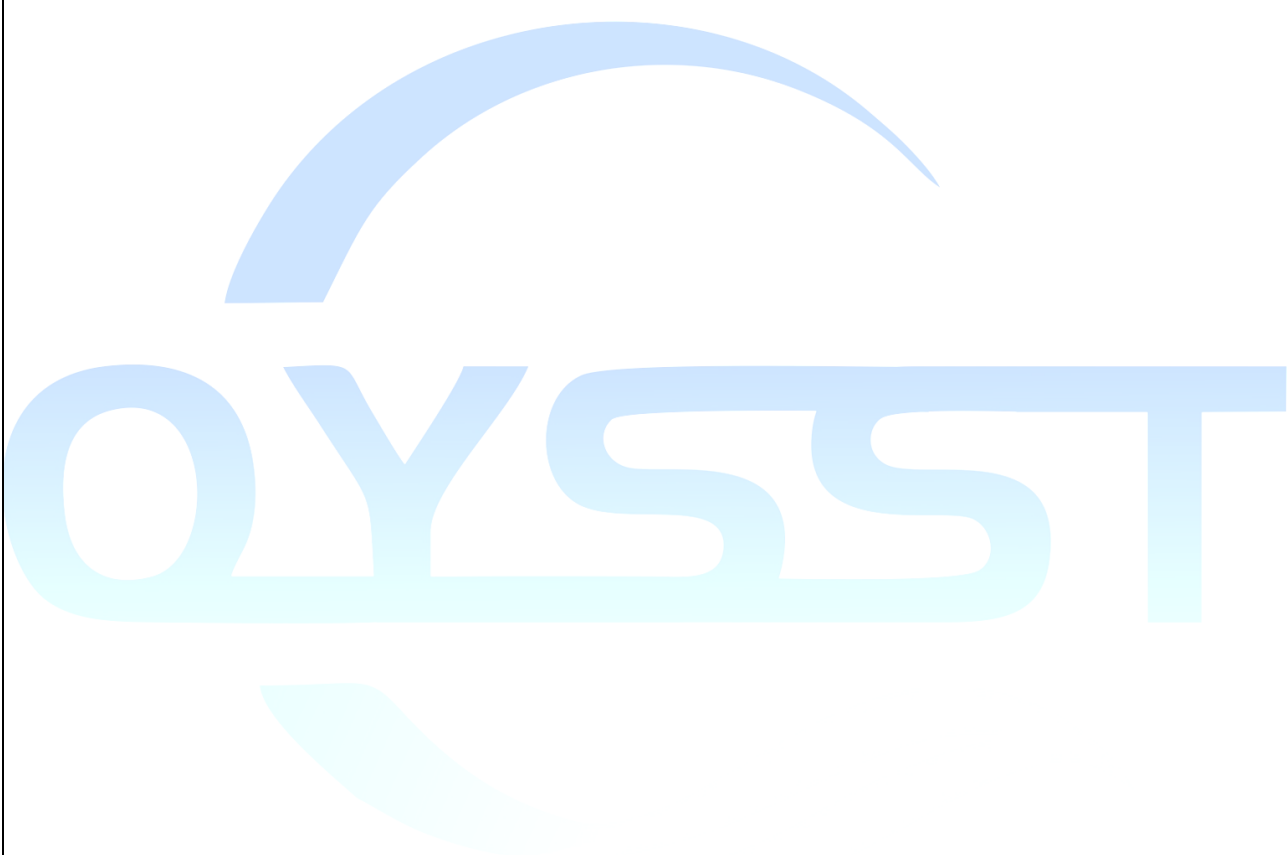
Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity	Verdict
1	35.7475	12.03	23.65	40.00	16.35	100	21	Vertical	PASS
2	46.8661	13.86	22.34	40.00	17.66	100	21	Vertical	PASS
3	55.1156	13.89	21.55	40.00	18.45	100	79	Vertical	PASS
4	64.8172	11.92	23.96	40.00	16.04	100	53	Vertical	PASS
5	74.9676	9.19	26.77	40.00	13.23	100	305	Vertical	PASS
6	976.6144	25.84	31.35	47.00	15.65	100	208	Vertical	PASS

Note: Final Level = Receiver Read level + Factor

Factor = Antenna Factor + Cable Loss – Preamplifier Factor

Above 1-6G :

Test Result			
Test mode		Polarity	Horizontal
Test voltage		Temp. /Hum.	°C/ %
<i>Note: Final Level =Receiver Read level + Factor</i> <i>Factor= Antenna Factor + Cable Loss – Preamplifier Factor</i> 			

Test Result			
Test mode		Polarity	Vertical
Test voltage		Temp. /Hum.	°C/ %
<i>Note: Final Level =Receiver Read level + Factor</i> <i>Factor= Antenna Factor + Cable Loss – Preamplifier Factor</i>			

4.2 Conducted Emissions

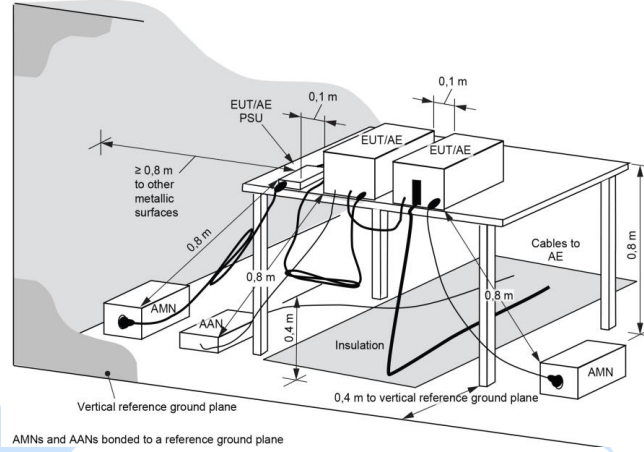
Limit of Conducted Emission(AC mains)				
Frequency (MHz)	☐ Class A (dB μ V)		☒ Class B (dB μ V)	
	Quasi-peak	Average	Quasi-peak	Average
0.15~0.50	79	66	66 to 56	56 to 46
0.50~5.0	73	60	56	46
5.0~30	73	60	60	50

Limit of Conducted Emission(Asymmetric)				
Frequency (MHz)	☐ Class A (dB μ V)		☐ Class B (dB μ V)	
	Quasi-peak	Average	Quasi-peak	Average
0.15~0.50	97 to 87	84 to 74	84 to 74	74 to 64
0.50~30	87	74	74	64

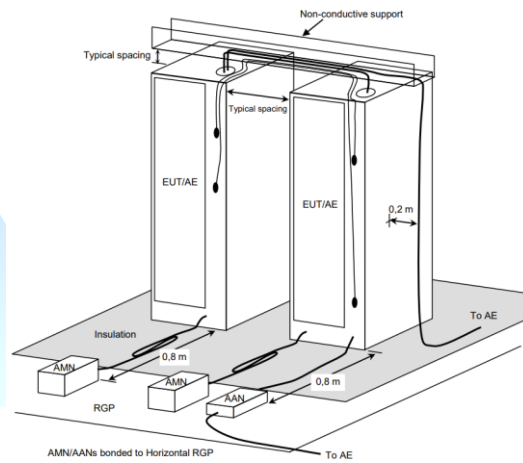
Limit of Conducted Emission(differential voltage emissions)					
Frequency Range (MHz)	Detector type/ bandwidth	Class B limits			Applicability
		Other	Local Oscillator Fundamental	Local Oscillator Harmonics	
30~950	For frequencies ≤ 1 GHz Quasi Peak/ 120 kHz For frequencies ≥ 1 GHz Peak/ 1 MHz	46	46	46	Television receivers, Video recorders, PC TV broadcast receiver tuner cards digital audio receivers
950~2150		46	54	54	
950~2150		46	54	54	
30~300		46	54	50	Frequency modulation audio receivers PC tuner cards
300~1000				52	
30~300		46	66	59	Frequency modulation car radios
300~1000				52	
30~950		46	76	46	RF modulator output ports connect to TV broadcast receiver tuner ports
950~2150			n/a	54	

Block diagram of test set up

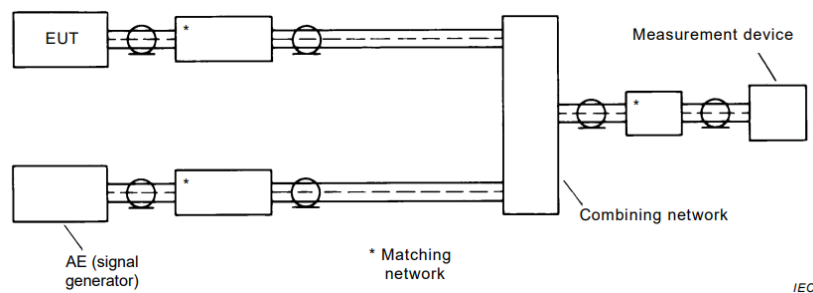
For table-top equipment

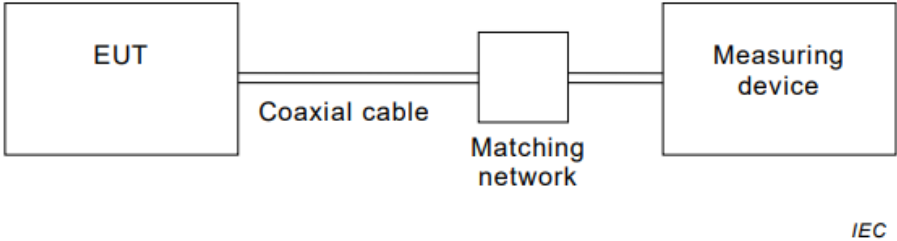


For floor standing equipment



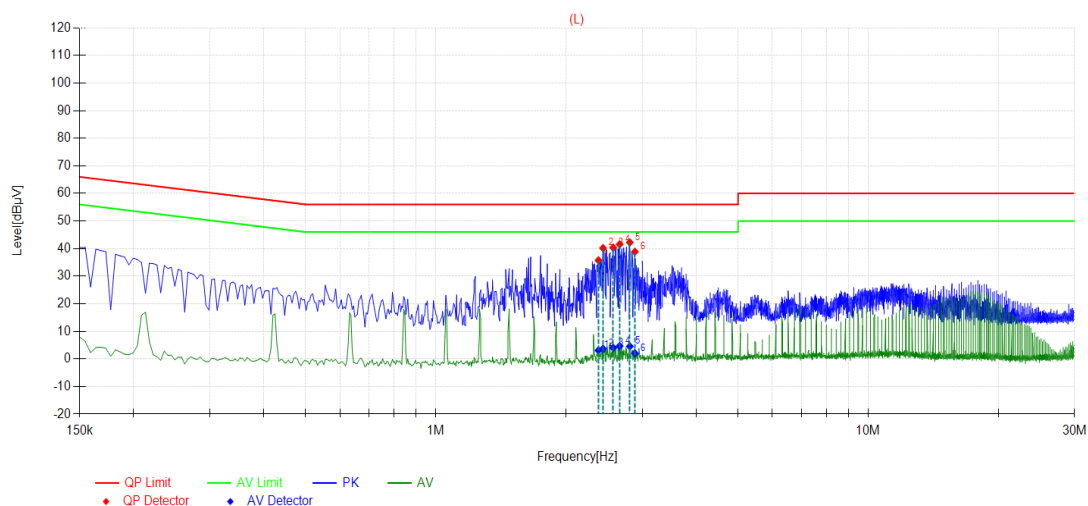
For TV/FM broadcast receiver tuner ports



RF modulator output port	
	
Test Instruments	
Refer to section 3 for details	
Test Procedures	
The measurement was performed in a shield room.	
Measurement was performed according to clause 7 of CISPR 16-2-1.	
Test Frequency Range	
150kHz ~ 30MHz	
Verdict	
PASS	

Test Result

Test mode	Mode 1	Polarity	Line
Test voltage	AC 230V/50Hz	Temp. /Hum.	25°C/56%



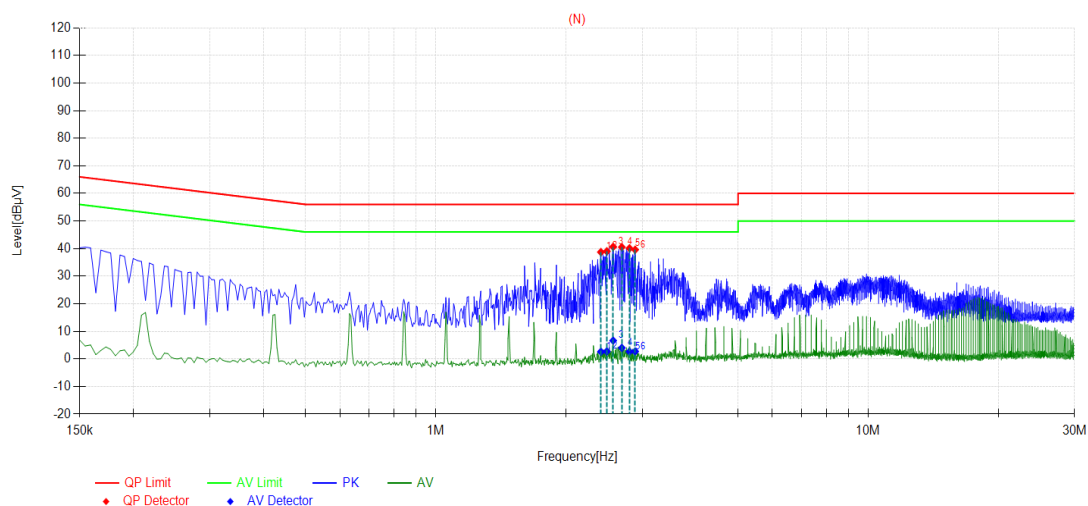
Final Data List

NO.	Freq. [MHz]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Type
1	2.3775	35.73	56.00	20.27	3.11	46.00	42.89	L
2	2.436	40.18	56.00	15.82	3.66	46.00	42.34	L
3	2.571	40.33	56.00	15.67	4.05	46.00	41.95	L
4	2.661	41.51	56.00	14.49	4.69	46.00	41.31	L
5	2.8095	42.24	56.00	13.76	4.56	46.00	41.44	L
6	2.886	38.85	56.00	17.15	3.07	46.00	42.93	L

Note: Final Level = Receiver Read level + Factor
Factor = LISN Factor + Cable Loss

Test Result

Test mode	Mode 1	Polarity	Neutral
Test voltage	AC 230V/50Hz	Temp. /Hum.	25°C/56%



Final Data List

NO.	Freq. [MHz]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Type
1	2.409	38.72	56.00	17.28	2.61	46.00	43.39	N
2	2.4855	39.00	56.00	17.00	2.73	46.00	43.27	N
3	2.571	40.64	56.00	15.36	6.65	46.00	39.35	N
4	2.6925	40.52	56.00	15.48	4.02	46.00	41.98	N
5	2.805	40.11	56.00	15.89	2.66	46.00	43.34	N
6	2.8905	39.58	56.00	16.42	2.71	46.00	43.29	N

Note: Final Level = Receiver Read level + Factor
Factor= LISN Factor + Cable Loss

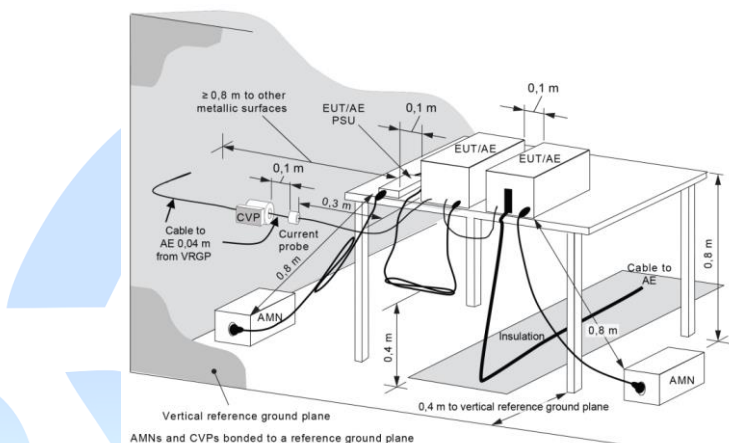
4.3 Asymmetric mode conducted emissions

Limit of Conducted Emission(Asymmetric)

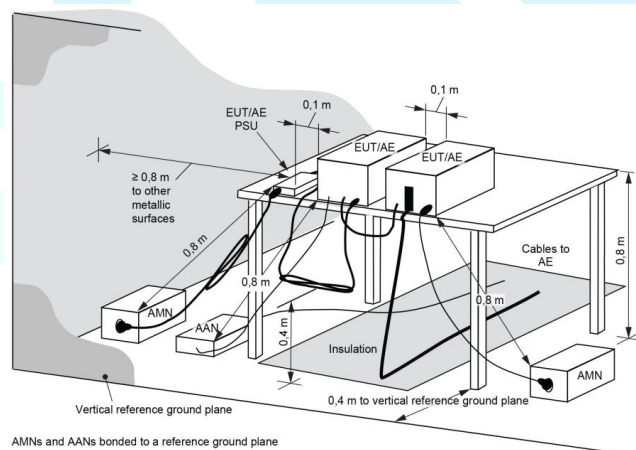
Frequency (MHz)	Class A (dBμV)		Class B (dBμV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15~0.50	97 to 87	84 to 74	84 to 74	74 to 64
0.50~30	87	74	74	64

Block diagram of test set up

Coupling device: CVP and Current probe



Coupling device: ANN



Test Instruments

Refer to section 3 for details

Test Procedures

The measurement was performed in a shield room.

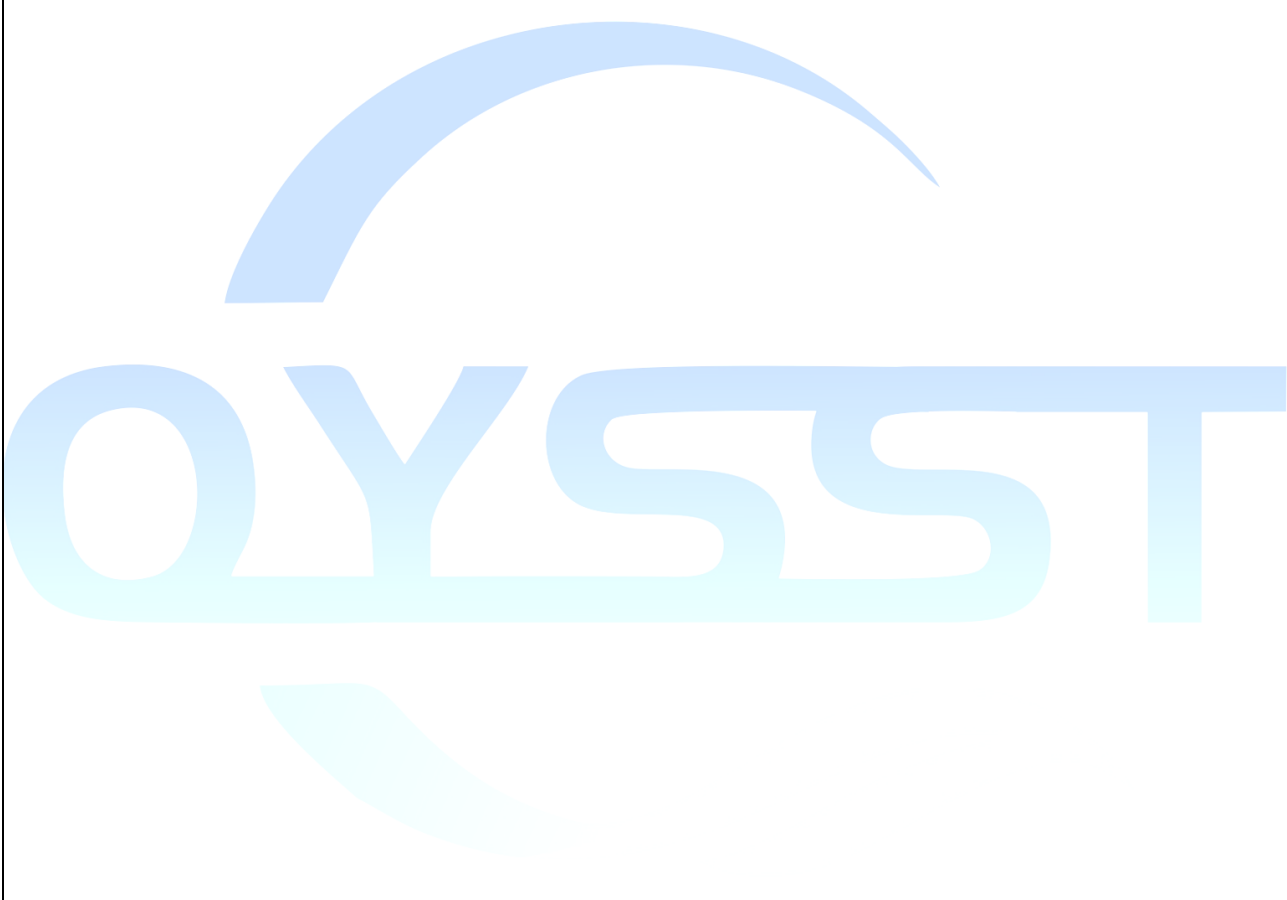
Measurement was performed according to C4.1 of EN 55032.

Test Frequency Range

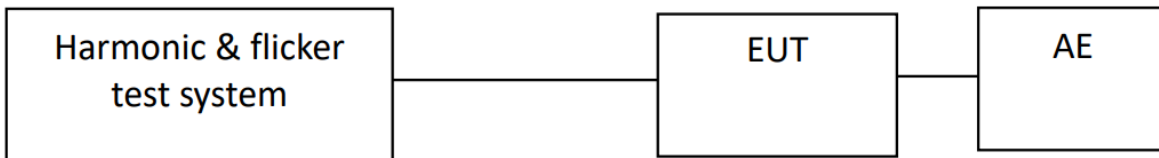
150kHz ~ 30MHz

Verdict

N/A

Test Result			
Test mode		Polarity	
Test voltage		Temp. /Hum.	°C/ %
<i>Note: Final Level =Receiver Read level + Factor</i> <i>Factor= LISN Factor + Cable Loss</i> 			

4.4 Harmonic Emission

Limits
Refer to clause 7 of EN 61000-3-2
Block diagram of test set up
 <pre> graph LR A[Harmonic & flicker test system] --- B[EUT] B --- C[AE] </pre>
Test Instruments
Refer to section 3 for details
Test Procedures
The measurement was performed in a shield room. EUT operated in the mode as mentioned above, and connected to Harmonic/Flicker measuring equipment which was connected to an AC power source. Measurement was performed after EUT operating in static state. Each order harmonics found to meet the relevant limits Remark: For the following categories of equipment, limits are not specified in this standard: -Lighting equipment with a rated power less than but not equal to 5 W; -Equipment with a rated power of 75 W or less, other than lighting equipment; -Professional equipment with a total rated power greater than 1 kW; -Independent phase control dimmers -Limits are not specified for symmetrically controlled heating elements with a controlled active input power less than or equal to 200 W.
Verdict
Not applicable, rating power less than 75W

4.5 Flicker Emission

Limits				
Refer to clause 5 of EN 61000-3-3				
Block diagram of test set up				
Harmonic & flicker test system EUT AE				
Test Instruments				
Refer to section 3 for details				
Test Procedures				
The measurement was performed in a shield room. EUT operated in the mode as mentioned above, and connected to Harmonic/Flicker measuring equipment which was connected to an AC power source. Measurement was performed after EUT operating in static state. Each order harmonics found to meet the relevant limits				
Verdict				
PASS				
Test Result				
Test mode	Mode 1	Temp. /Hum.	26°C/55%	
Test voltage	AC 230V/50Hz			
Result:				
T-max (ms):	0.00	Test limit (ms):	500.00	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.00	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.00	Test limit:	1.00	Pass

5 Immunity Test

5.1 Performance Criteria Description in Clause 8 of EN 55035

General
General performance criteria are defined in 8.2, 8.3 and 8.4. These criteria shall be used during the testing of primary functions where no relevant annex is applicable. When assessing the impact of a disturbance on a function, the assessment should take into consideration the function's performance prior to the application of the disturbance and only identify as failures those changes in performance that are a result of the disturbance.
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.

5.2 Electrostatic discharge

Test Level

Level	Test Voltage (kV, ±)	
	Contact discharge	Air discharge
1	2	2
2	4	4
3	6	8
4	8	15
X	Special	Special

Notes:

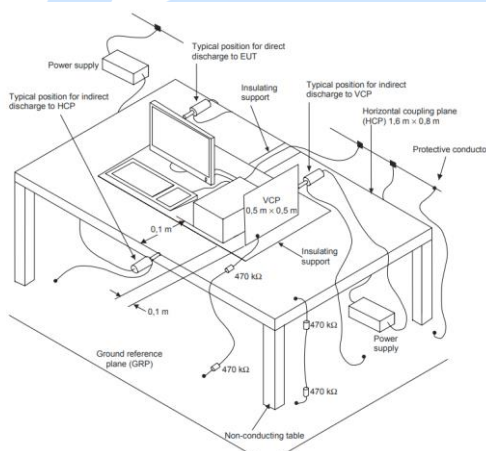
"X" is an open level. The level has to be specified in the dedicated equipment specification. If higher voltages than those shown are specified, special test equipment may be needed.

Performance Criterion

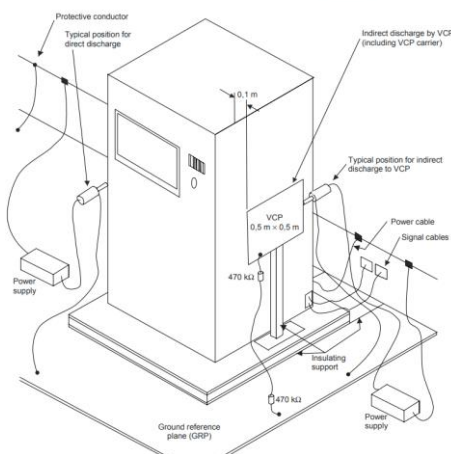
Criterion B

Block diagram of test set up

For table-top equipment



For floor standing equipment



Test Instruments
Refer to section 3 for details
Test Procedures
The measurement was performed in an independence room. Measurement procedures was applied according to EN 61000-4-2, clause 8
Verdict
PASS

Test Result			
Test mode	Mode 1	Temp. /Hum.	23°C/55%
Test voltage	AC 230V/50Hz		
Test Level (KV)	Type of Discharge	Test Position	Criterion
±4	Contact	Metal shell	A
±2, ±4, ±8	Air	Crevice, Port gap	A
±4	HCP	HCP	A
±4	VCP	VCP	A
*Observation: During the EUT test, there will be occasional lagging, but it will return to normal after the test is completed.			

5.3 Continuous RF electromagnetic field disturbances

Test Level

Level	Test Field Strength (V/m)
1	1
2	3
3	10
X	Special

Notes:

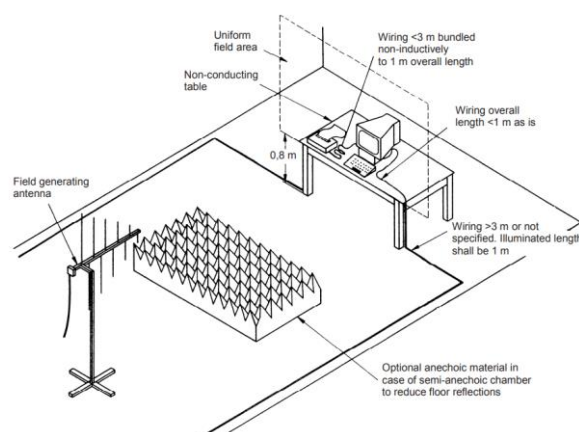
X is an open test level and the associated field strength may be any value. This level may be given in the product standard.

Performance Criterion

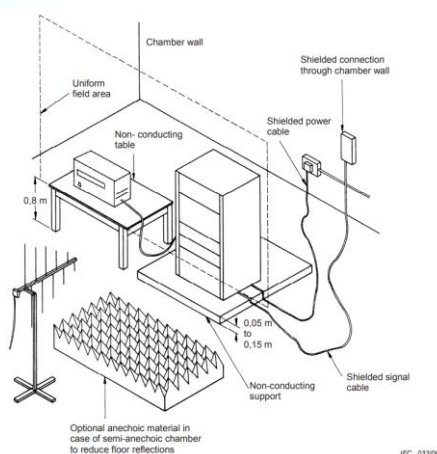
Criterion A

Block diagram of test set up

For table-top equipment



For floor standing equipment



Test Instruments

Refer to section 3 for details

Test Procedures

The measurement was performed in a full-anechoic room.

Measurement procedures was applied according to EN 61000-4-3, clause 8

Verdict

PASS

Test Result

Test mode	Mode 1	Temp. /Hum.	25°C/60%
Test voltage	AC 230V/50Hz		

Test Level (V. rms)	Frequency Range (MHz)	Modulation	Antenna Position	Test Point	Criterion
3	80~1000	1 kHz, 80 % Amp. Mod, 1 % increment	H/V	Front	A
	1800			Rear	
	2600			Left	
	3500			Right	
	5000			Top	

Observation: EUT work as intended, no function loss or disconnection was observed.

Conclusion : EUT meet the requirement of performance criterion A

5.4 Electrical fast transients

Test Levels				
Open circuit output test voltage and repetition frequency of the impulses				
Level	Power ports, earth port (PE)		Signal ports, wired network ports, control ports, DC power input ports	
	Voltage peak (kV)	Repetition Frequency (kHz)	Voltage peak (kV)	Repetition Frequency (kHz)
1	0.5	5	0.25	5/100
2	1	5	0.5	5/100
3	2	5	1	5/100
4	4	2.5	2	5/100
X	Special	Special	Special	Special

Notes:

X is an open test level and the associated field strength may be any value. This level may be given in the product standard.

Performance Criterion				
Criterion B				
Block diagram of test set up				
(A) location for supply line coupling (B) location for signal lines coupling				
Test Instruments				
Refer to section 3 for details				
Test Procedures				
The measurement was performed in an independence room.				
Measurement procedures was applied according to EN 61000-4-4, clause 8				
Verdict				
PASS				

Test Result				
Test mode	Mode 1	Temp. /Hum.	25°C/56%	
Test voltage	AC 230V/50Hz			
Test Level (KV)	Modulation	Coupling	Test Port	Criterion
±1	Rise time=5ns, Duration time=50ns; Burst Duration=15ms, Burst Period=300ms; Repetition Frequency=5KHz	Direct	AC	A
Observation: EUT work as intended, no function loss or disconnection was observed.				

5.5 Surges

Test Levels

Level	Open-circuit test voltage (kV)	
	Line-to-line	Line-to-ground
1	---	0.5
2	0.5	1
3	1	2
4	2	4
X	Special	Special

Notes:

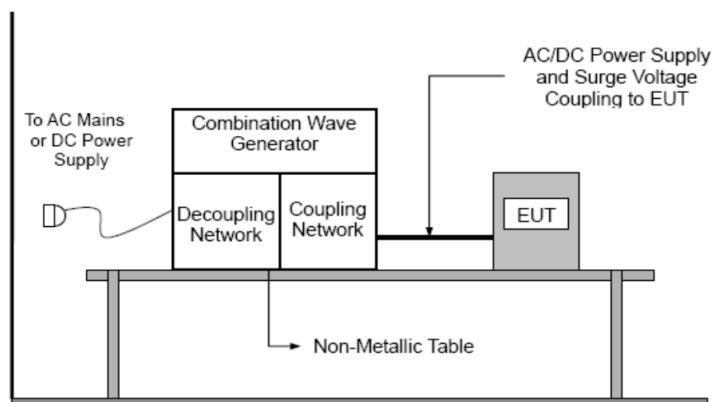
X is an open test level and the associated field strength may be any value. This level may be given in the product standard.

For symmetrical interconnection lines the test can be applied to multiple lines simultaneously with respect to ground, i.e. "lines to ground".

Performance Criterion

Criterion B

Block diagram of test set up



Test Instruments

Refer to section 3 for details

Test Procedures

The measurement was performed in an independence room.

Measurement procedures was applied according to EN 61000-4-5, clause 8

Verdict

PASS

Test Result				
Test mode		Mode 1	Temp. /Hum.	25°C/56%
Test voltage		AC 230V/50Hz		
Test Level (KV)	Test Signal	Phase(deg)	Test Port	Criterion
±1	☒ 1.2/50µs ☐ 10/700µs Test Interval: 60s;	0	Line to Line	A
		90		
±2		180	Line to Earth	N/A
		270		
Observation: EUT work as intended, no function loss or disconnection was observed.				

5.6 Radio-frequency continuous conducted

Test Levels

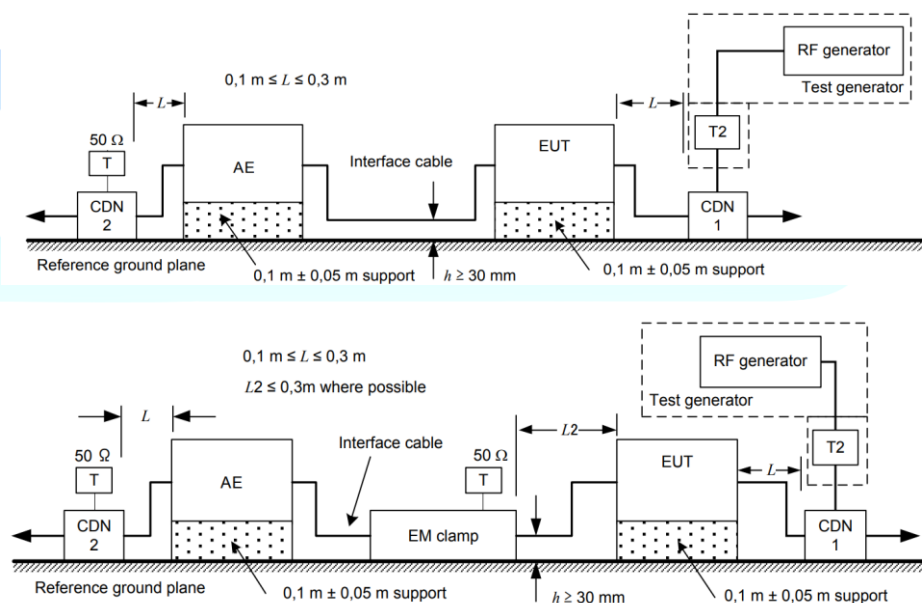
Frequency Range 150kHz to 80MHz		
Level	Voltage level (e.m.f.)	
	U_0 (V)	U_0 dB(uV)
1	1	120
2	3	129.5
3	10	140
X	Special	Special

Notes: X is an open test level and the associated field strength may be any value. This level may be given in the product standard.

Performance Criterion

Criterion A

Block diagram of test set up



T: Termination 50 Ω

T2: Power attenuator (6 dB)

CDN: Coupling and decoupling network

Test Instruments

Refer to section 3 for details

Test Procedures

The measurement was performed in an independence room.

Measurement procedures was applied according to EN 61000-4-6, clause 8

Verdict

PASS

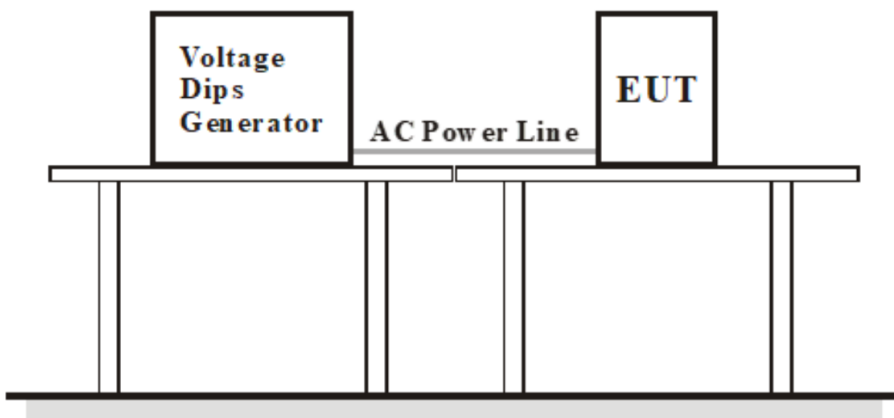
Test Result

Test mode	Mode 1	Temp. /Hum.	25°C/56%
Test voltage	AC 230V/50Hz		

Test Level (V. rms)	Frequency Range (MHz)	Modulation	Inject Position	Test Port	Criterion
3	0.15~10	1 kHz, 80 % Amp. Mod, 1 % increment	CDN	AC	A
3~1	10~30				
1	30~80				

Observation: EUT work as intended, no function loss or disconnection was observed.

5.7 Voltage dips and Voltage interruptions

Test Levels		
Test levels and durations for voltage dips and interruptions		
Level (% Ut)	Voltage dip and short interruptions (% Ut)	Duration (in period)
0	100	0.5
0	100	1
0	100	250
70	30	25
Performance Criterion		
Criterion B & C		
Block diagram of test set up		
		
Test Instruments		
Refer to section 3 for details		
Test Procedures		
The measurement was performed in an independence room. Measurement procedures was applied according to EN 61000-4-11, clause 8		
Verdict		
PASS		

Test Result					
Test mode		Mode 1	Temp. /Hum.	25℃/56%	
Test voltage		AC 230V/50Hz			
Test Level U _T %	Duration (Periods)	Phase angle	No. of dropout	Time between dropout	Criterion
0	0.5	0°, 90°, 180°, 270°	3	10s	A
70	25	0°, 90°, 180°, 270°	3	10s	B
0	250	0°, 90°, 180°, 270°	3	10s	B
*Observation: EUT work as intended, no function loss or disconnection was observed.					

5.8 Power Frequency Magnetic field

Test Levels

Test levels for continuous field	
Level	Magnetic field strength A/m
1	1
2	3
3	10
4	30
5	100
X	Special

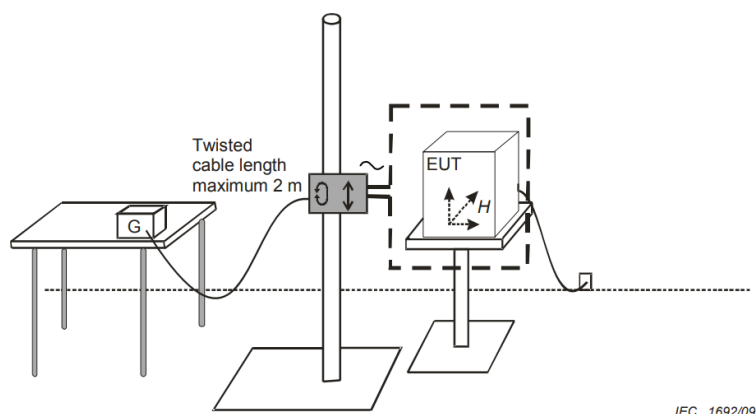
x can be any level, above, below or in-between the other levels. This level can be given in the product specification.

Performance Criterion

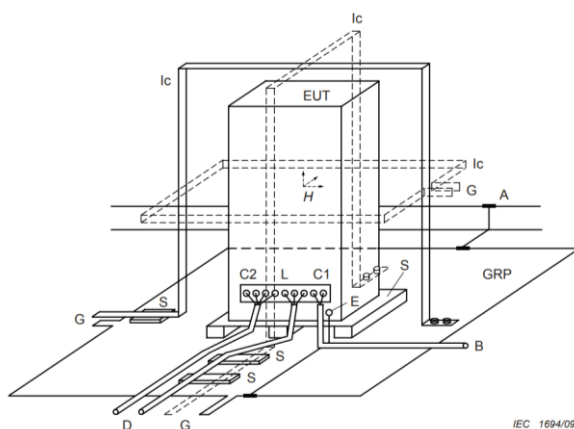
Criterion A

Block diagram of test set up

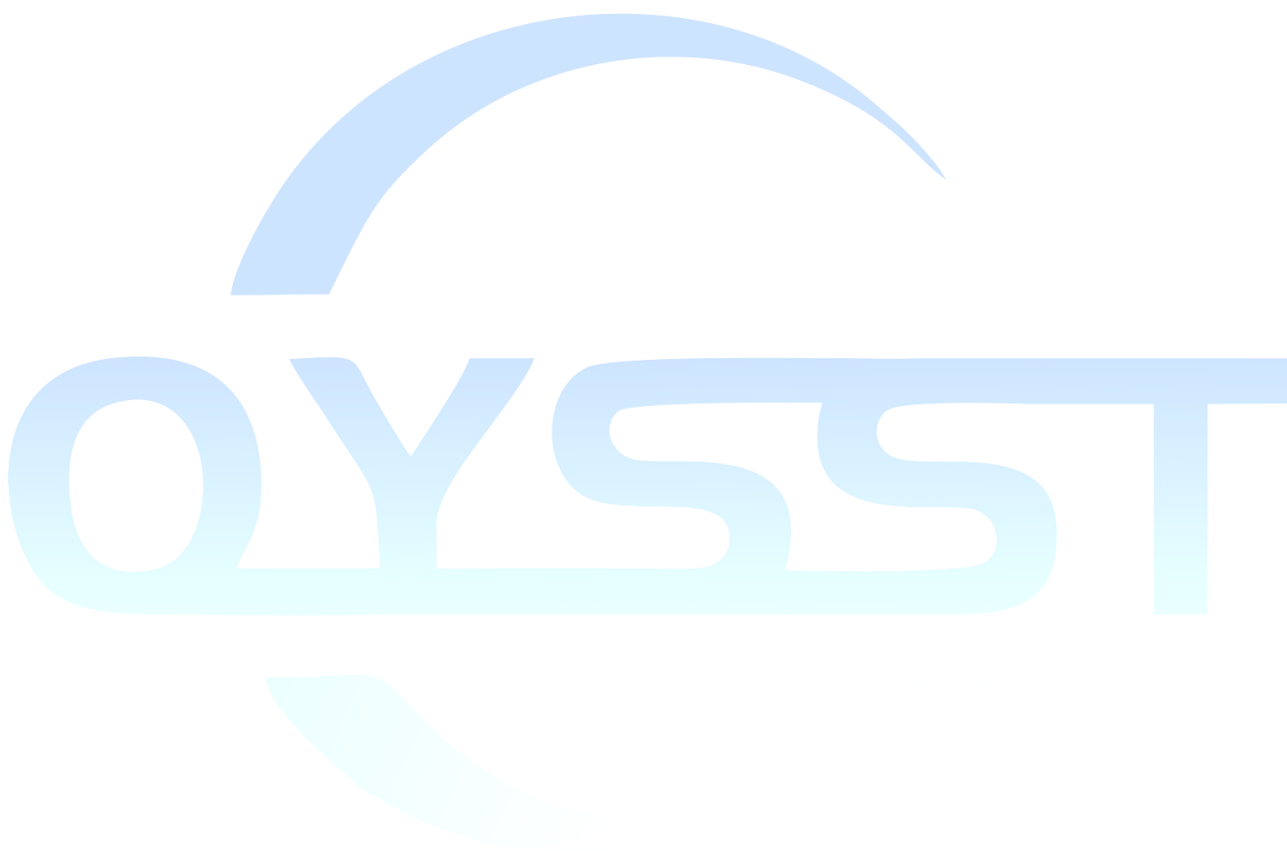
For table-top equipment



For floor standing equipment



Test Instruments
Refer to section 3 for details
Test Procedures
The measurement was performed in an shield room. Measurement procedures was applied according to EN 61000-4-8, clause 8
Verdict
Does not meet the test requirements

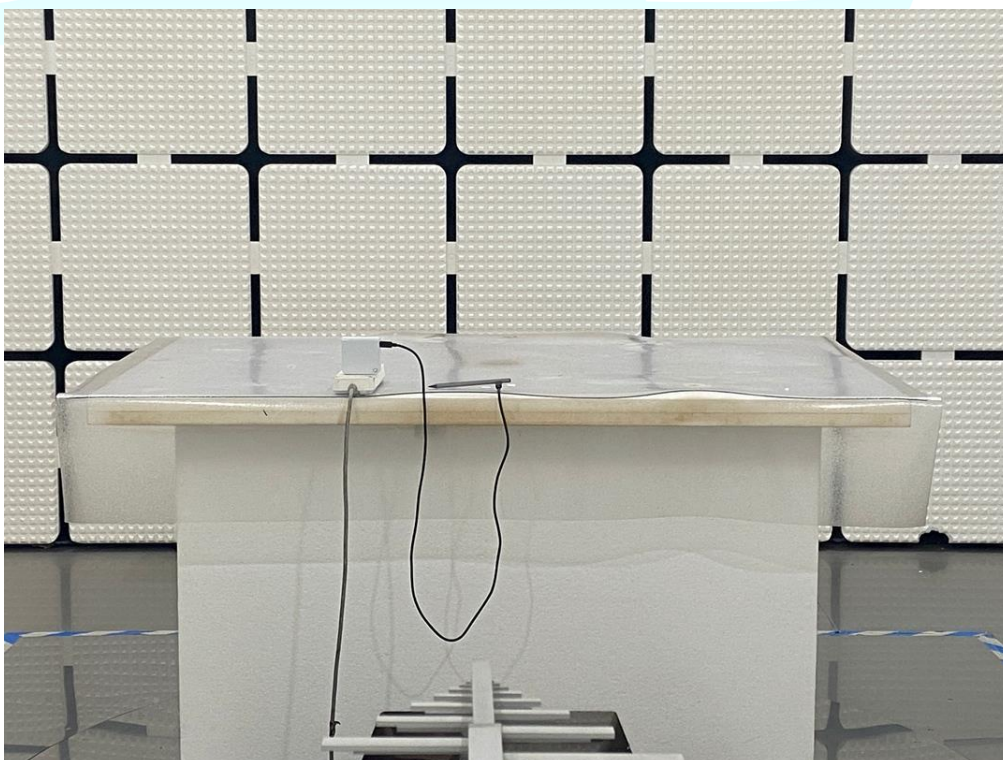


6 Test Setup

CE



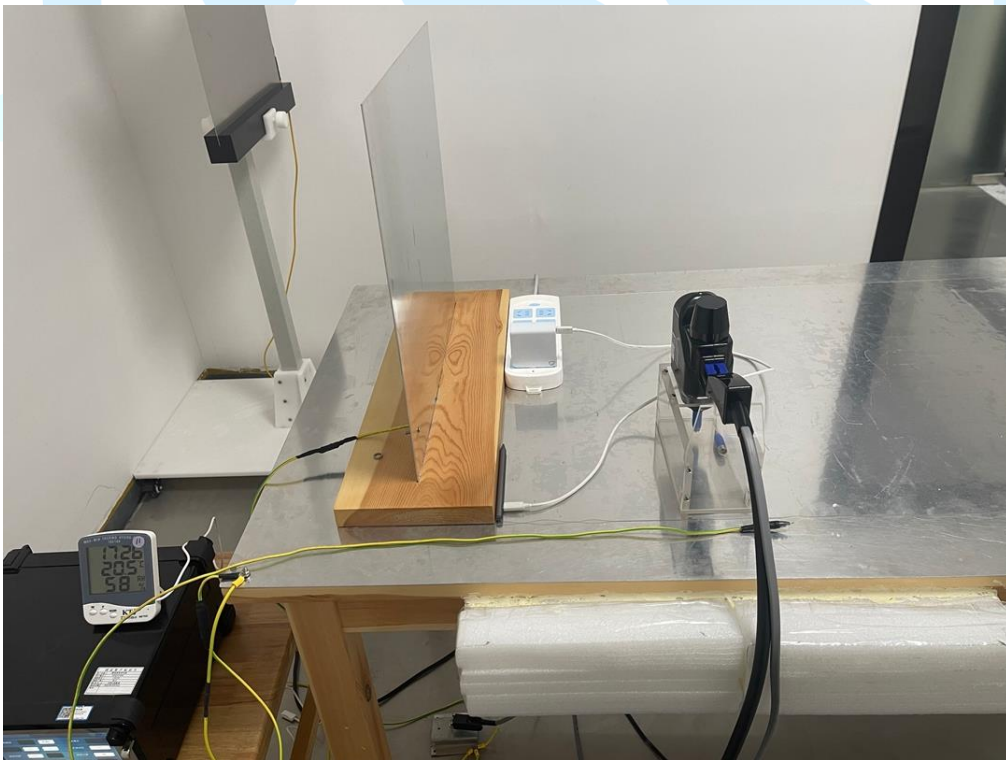
RE



H/F



ESD



EFT



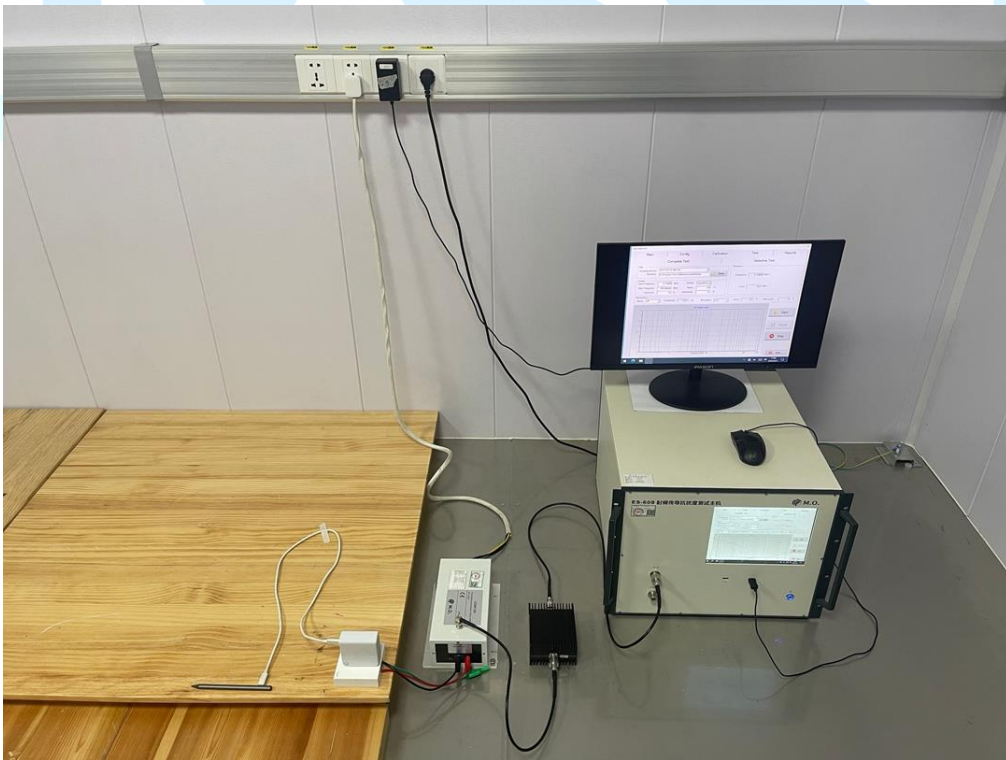
Suger



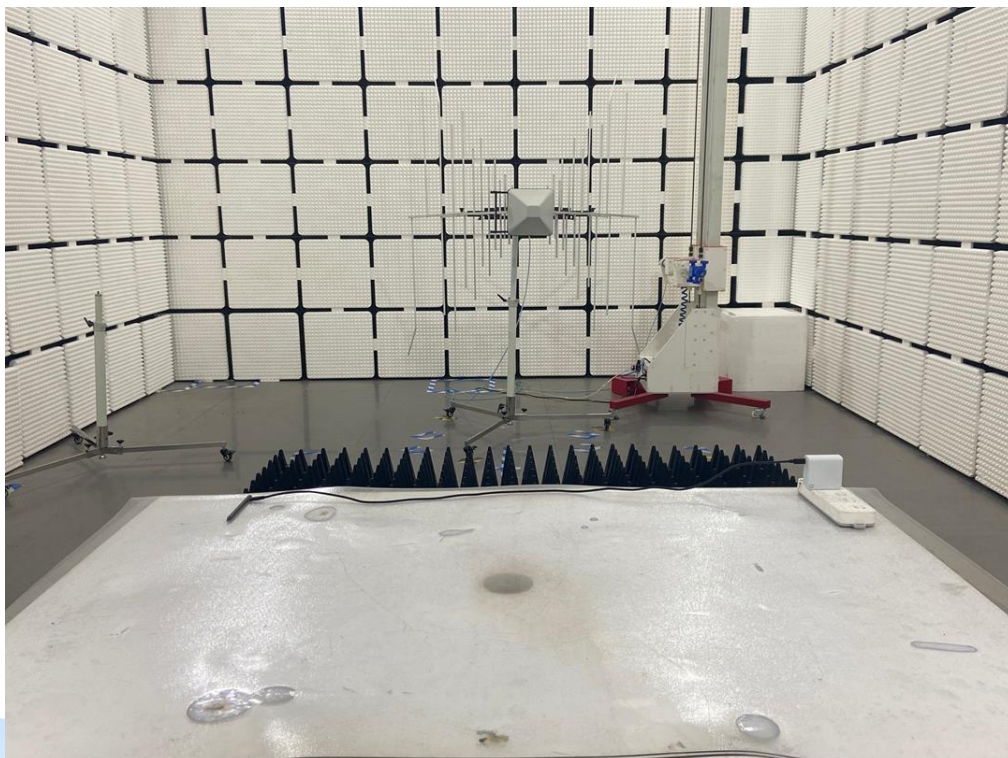
V-dips



CS



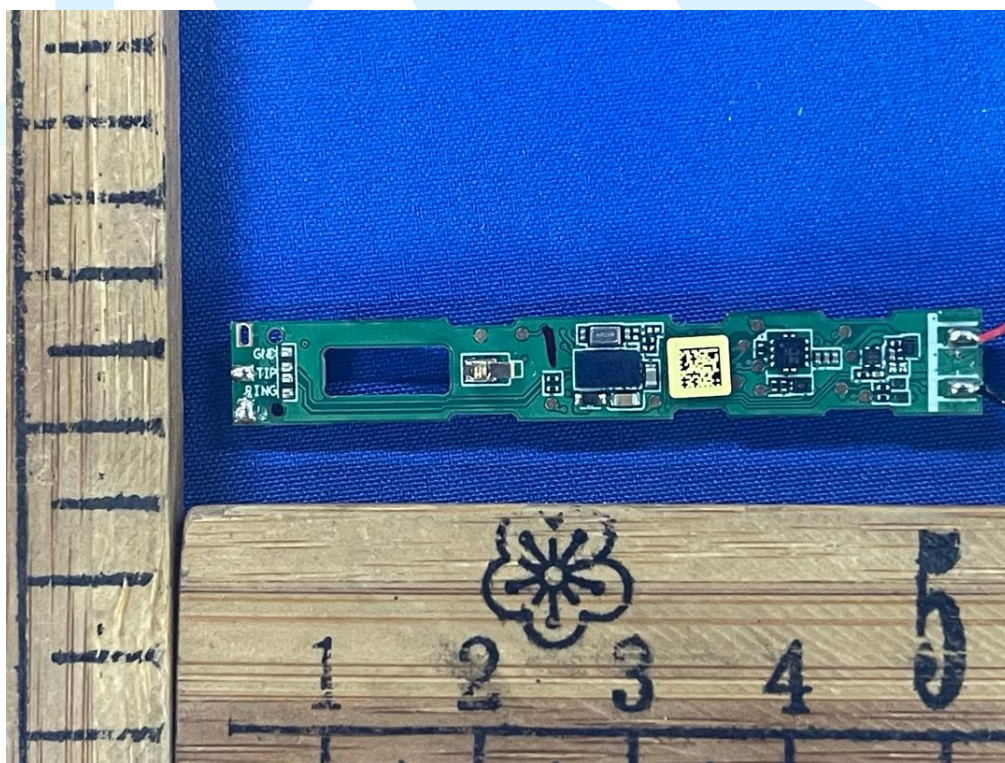
RS

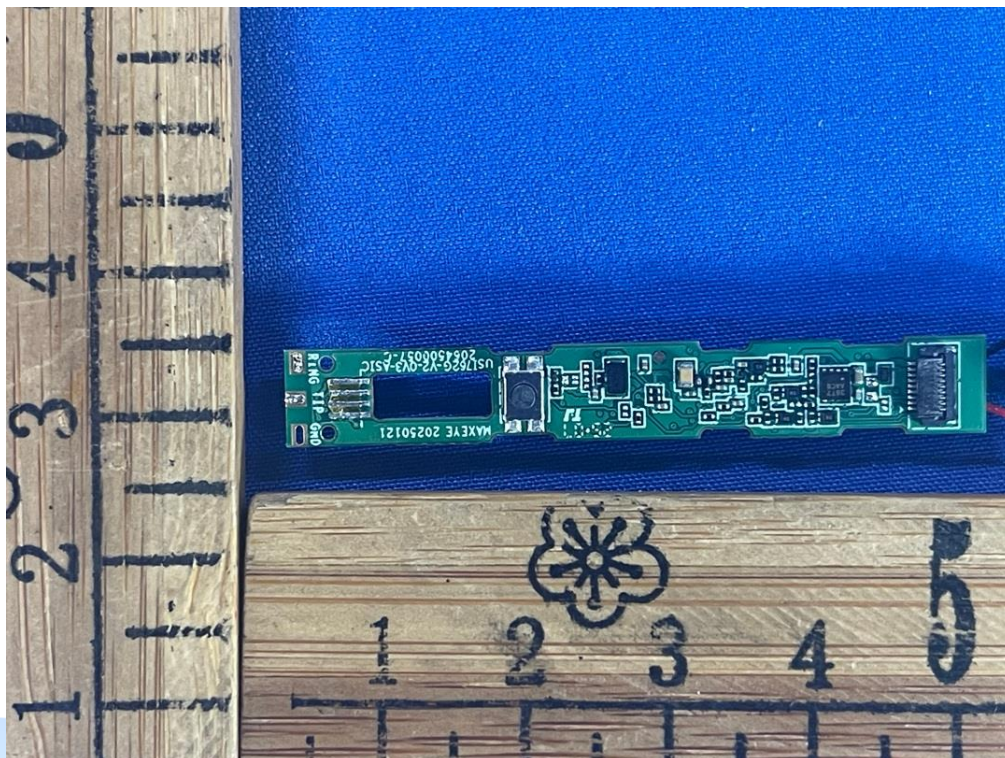


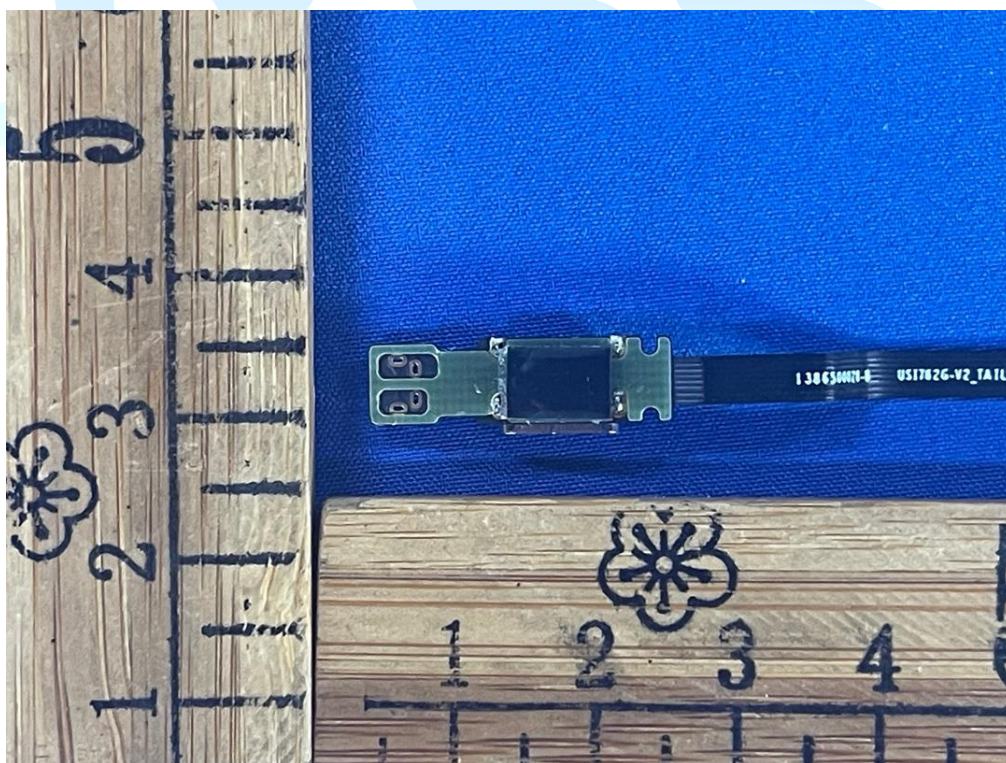
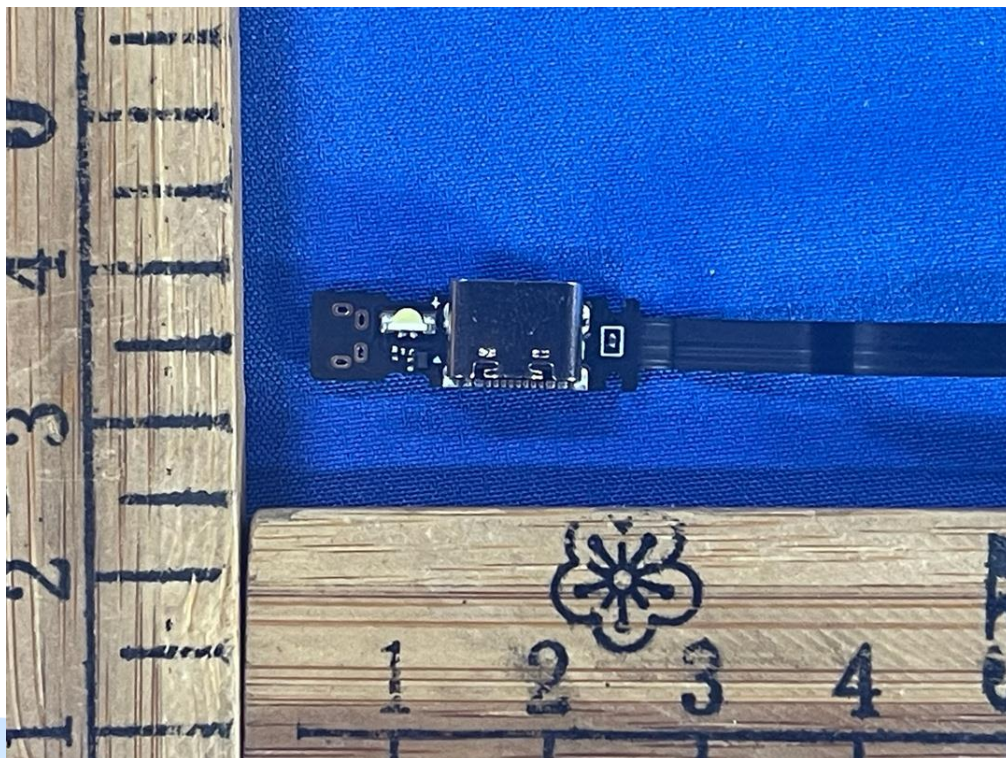
7 EUT Construction Details











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