




# TEST REPORT

For FCC Part15B

Report No. ....: **CHEW22090125** Report verification: 

Project No. ....: **SHT2208193404EW**

FCC ID.....: **2ASRT-NPX320**

Applicant's name.....: **Screeneo Innovation SA**

Address.....: Route de Lully 5C, 1131 Tolochenaz, Switzerland

Product Name .....: **Digital Projector**

Trade Mark .....: PHILIPS

Model No. ....: NeoPix 320

Listed Model(s) .....: NPX320

Standard .....: **47 CFR FCC Part 15 Subpart B**

Date of receipt of test sample.....: Aug.22, 2022

Date of testing.....: Aug.22, 2022- Sep.26, 2022

Date of issue.....: Sep.27, 2022

Result.....: **Pass**

Compiled by  
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Testing Laboratory Name .....: **Shenzhen Huatongwei International Inspection Co., Ltd.**

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*The test report merely corresponds to the test sample.*

## Contents

<b>1.</b>	<b><u>TEST STANDARDS AND REPORT VERSION .....</u></b>	<b><u>3</u></b>
1.1.	Test Standards	3
1.2.	Report version information	3
<b>2.</b>	<b><u>TEST DESCRIPTION .....</u></b>	<b><u>4</u></b>
<b>3.</b>	<b><u>SUMMARY.....</u></b>	<b><u>5</u></b>
3.1.	Client Information	5
3.2.	Product Description	5
3.3.	Testing Laboratory Information	5
<b>4.</b>	<b><u>TEST CONFIGURATION.....</u></b>	<b><u>6</u></b>
4.1.	Descriptions of test mode	6
4.2.	Configuration of Tested System	6
4.3.	Support unit used in test configuration and system	7
4.4.	Environmental conditions	7
4.5.	Statement of the measurement uncertainty	7
4.6.	Equipments Used during the Test	8
<b>5.</b>	<b><u>TEST CONDITIONS AND RESULTS .....</u></b>	<b><u>9</u></b>
5.1.	Conducted Emissions	9
5.2.	Radiated Emissions	11
<b>6.</b>	<b><u>TEST SETUP PHOTOS .....</u></b>	<b><u>16</u></b>
<b>7.</b>	<b><u>EXTERNAL AND INTERNAL PHOTOS .....</u></b>	<b><u>17</u></b>

# **1. TEST STANDARDS AND REPORT VERSION**

## **1.1. Test Standards**

The tests were performed according to following standards:

[47 CFR FCC Part 15 Subpart B](#) - Unintentional Radiators

[ANSI C63.4: 2014](#) – American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz

## **1.2. Report version information**

Revision No.	Date of issue	Description
N/A	2022-09-27	Original

## 2. TEST DESCRIPTION

Section	Test Item	Section in CFR 47	Result #1	Test Engineer
5.1	Conducted Emissions	15.107(a)	PASS	Junman Wang
5.2	Radiated Emissions	15.109(a)	PASS	Dongyang Wu

Note:

#1: The test result does not include measurement uncertainty value

### 3. SUMMARY

#### 3.1. Client Information

Applicant:	Screeneo Innovation SA
Address:	Route de Lully 5C, 1131 Tolochenaz, Switzerland
Manufacturer:	Screeneo Innovation SA
Address:	Route de Lully 5C, 1131 Tolochenaz, Switzerland

#### 3.2. Product Description

Main unit information:	
Product Name:	Digital Projector
Trade Mark:	PHILIPS
Model No.:	NeoPix 320
Listed Model(s):	NPX320
Power supply:	AC 100-240V from AC power
Hardware version:	1.0.0
Software version:	1.0.0

#### 3.3. Testing Laboratory Information

Laboratory Name	Shenzhen Huatongwei International Inspection Co., Ltd.	
Laboratory Location	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China	
Connect information:	Tel: 86-755-26715499 E-mail: <a href="mailto:cs@szhtw.com.cn">cs@szhtw.com.cn</a> <a href="http://www.szhtw.com.cn">http://www.szhtw.com.cn</a>	
Qualifications	Type	Accreditation Number
	FCC	762235

## 4. TEST CONFIGURATION

### 4.1. Descriptions of test mode

Test mode	Description
Video Playing mode	Keep the EUT in Video Playing status
Data exchange mode	Keep the EUT in Data exchange with PC status

Pre-scan above all test mode, found below test mode which it was worse case mode, so only show the test data for worse case mode on the test report

Test Item	Test mode for worse case
Conducted Emissions	Data exchange mode
Radiated Emissions	Data exchange mode

### 4.2. Configuration of Tested System

Test mode	Configuration
Data exchange mode	<pre> graph TD     PC[PC] --- Printer[Printer]     PC --- EUT[EUT]     PC --- Monitor[Monitor]     PC --- Keyboard[Keyboard]     PC --- Mouse[Mouse] </pre>
Video Playing mode	<pre> graph LR     AC[AC Adapter] --- EUT[EUT] </pre>

### 4.3. Support unit used in test configuration and system

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Item	Equipment	Manufacturer	Model No.	FCC ID / FCC SDoC	Data Cable	Power Cord
1	PC	DELL	OptiPlex 3020 MT	FCC SDoC	N/A	Unshielded 1.8m
2	Monitor	DELL	E1912Hf	FCC SDoC	N/A	Unshielded 1.8m
3	Keyboard	DELL	SK8115	FCC SDoC	Unshielded, 1.5m	N/A
4	Mouse	DELL	MS111-T	FCC SDoC	Unshielded, 1.5m	N/A
5	Printer	EPSON	L101	FCC SDoC	N/A	Unshielded 1.8m

### 4.4. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35°C
Relative Humidity:	30~60 %
Air Pressure:	950~1050mba

### 4.5. Statement of the measurement uncertainty

Test Items	Measurement Uncertainty
Conducted emission	3.25dB
Radiated emission	<1GHz: 4.22dB >1GHz: 5.06ppm

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

#### 4.6. Equipments Used during the Test

● Conducted Emission							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Shielded Room	Albatross projects	HTWE0114	N/A	N/A	2018/09/28	2023/09/27
●	EMI Test Receiver	R&S	HTWE0111	ESCI	101247	2022/08/30	2023/08/29
●	Artificial Mains	SCHWARZBECK	HTWE0113	NNLK 8121	573	2022/08/29	2023/08/28
●	Pulse Limiter	R&S	HTWE0193	ESH3-Z2	101447	2022/08/29	2023/08/28
●	RF Connection Cable	HUBER+SUHNER	HTWE0113-02	ENVIROFLEX_142	EF-NM-BNCM-2M	2022/09/17	2023/09/16
●	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A

● Radiated Emission-6th test site							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	HTWE0127	SAC-3m-02	C11121	2018/09/30	2023/09/29
●	EMI Test Receiver	R&S	HTWE0099	ESCI	100900	2022/08/30	2023/08/29
●	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0119	VULB9163	546	2020/04/28	2023/04/27
●	Pre-Amplifier	SCHWARZBECK	HTWE0295	BBV 9742	N/A	2021/11/05	2022/11/04
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-01	N/A	N/A	2022/02/25	2023/02/24
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-02	SUCOFLEX104	501184/4	2022/02/25	2023/02/24
●	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A

● Radiated emission-7th test site							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	HTWE0122	SAC-3m-01	C11121	2018/09/27	2023/09/26
●	Spectrum Analyzer	R&S	HTWE0098	FSP40	100597	2022/08/25	2023/08/24
●	Horn Antenna	SCHWARZBECK	HTWE0126	9120D	1011	2020/04/01	2023/03/31
●	Broadband Pre-amplifier	SCHWARZBECK	HTWE0201	BBV 9718	9718-248	2022/02/28	2023/02/27
●	RF Connection Cable	HUBER+SUHNER	HTWE0126-01	RE-7-FH	N/A	2022/03/04	2023/03/03
●	Test Software	Audix	N/A	E3	N/A	N/A	N/A



## 5. TEST CONDITIONS AND RESULTS

### 5.1. Conducted Emissions

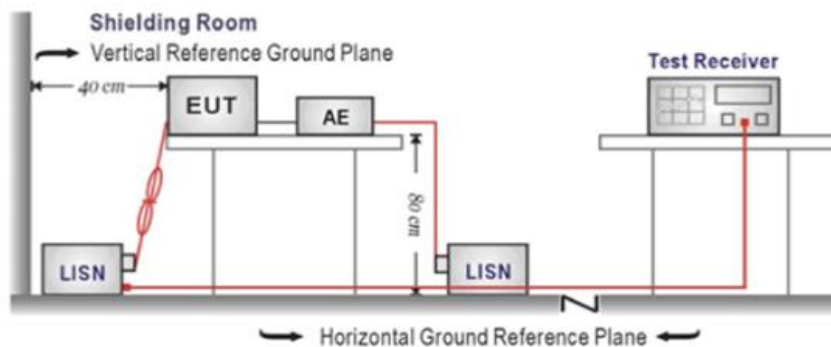
#### LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.107:

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\* Decreases with the logarithm of the frequency.

#### TEST CONFIGURATION



#### TEST PROCEDURE

1. The EUT was setup according to ANSI C63.4:2014
2. The EUT was placed on a plat form of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50ohm / 50uH coupling impedance for the measuring equipment.
4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

#### TEST MODE:

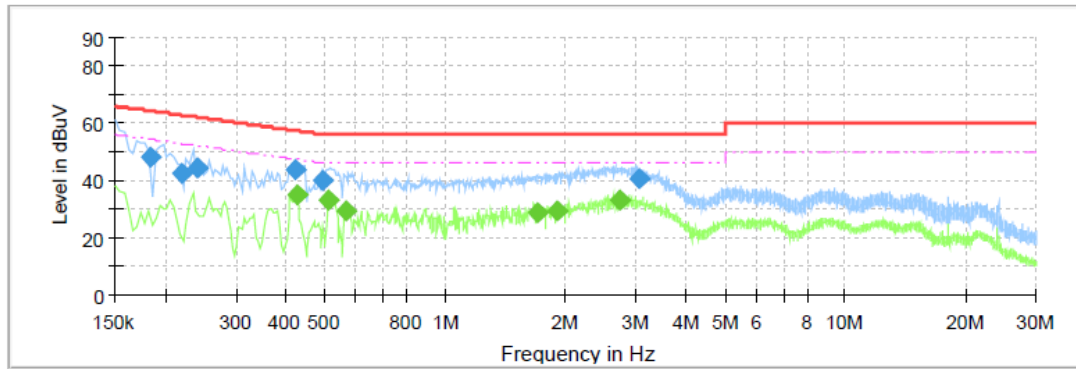
Please refer to the clause 3.3

#### TEST RESULTS

Passed       Not Applicable

Test Line:

L

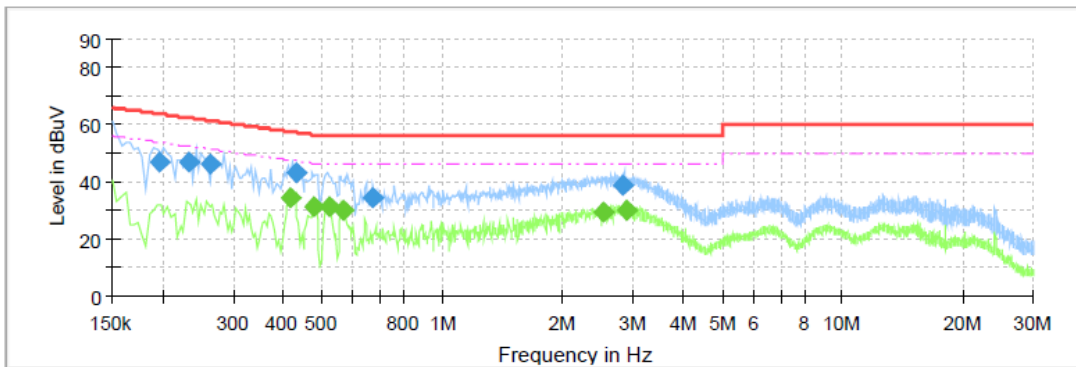


**Final Result**

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.183500	48.25	---	64.33	16.07	L1	10.1
0.219500	42.57	---	62.84	20.27	L1	10.1
0.239500	44.60	---	62.11	17.51	L1	10.1
0.423500	44.05	---	57.38	13.33	L1	10.1
0.427500	---	35.05	47.30	12.25	L1	10.1
0.495500	39.98	---	56.08	16.10	L1	10.1
0.511500	---	33.10	46.00	12.90	L1	10.1
0.563500	---	29.15	46.00	16.85	L1	10.1
1.695500	---	28.71	46.00	17.29	L1	10.1
1.915500	---	29.60	46.00	16.40	L1	10.1
2.739500	---	32.87	46.00	13.13	L1	10.2
3.052500	40.87	---	56.00	15.13	L1	10.2

Test Line:

N



**Final Result**

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.195500	47.04	---	63.80	16.76	N	10.1
0.231500	47.14	---	62.40	15.25	N	10.1
0.263500	46.01	---	61.32	15.31	N	10.1
0.415500	---	34.68	47.54	12.85	N	10.1
0.431500	43.36	---	57.22	13.86	N	10.1
0.475500	---	31.26	46.42	15.16	N	10.1
0.523500	---	31.10	46.00	14.90	N	10.1
0.563500	---	29.72	46.00	16.28	N	10.1
0.671500	34.21	---	56.00	21.79	N	10.2
2.516500	---	29.42	46.00	16.58	N	10.1
2.835500	38.45	---	56.00	17.55	N	10.1
2.879500	---	29.87	46.00	16.13	N	10.1

## 5.2. Radiated Emissions

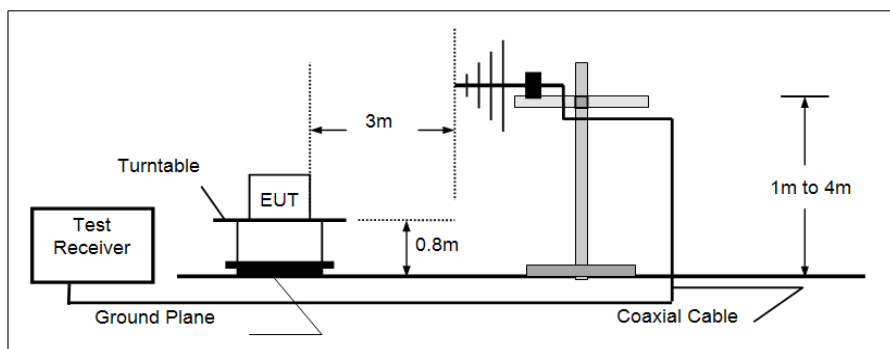
### LIMIT

#### FCC CFR Title 47 Part 15 Subpart B Section 15.109

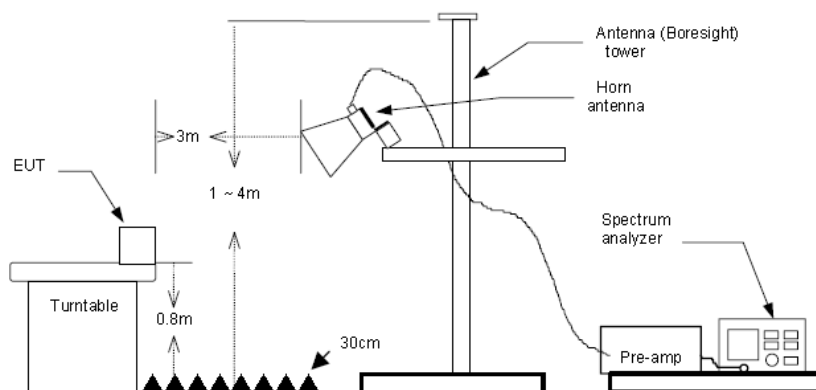
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

### TEST CONFIGURATION

#### ➤ 30MHz ~ 1GHz



#### ➤ Above 1GHz



### TEST PROCEDURE

- The EUT was tested according to ANSI C63.4:2014.
- The EUT is placed on a turn table which is 0.8 meter above ground.
- The turn table is rotated 360 degrees to determine the position of the maximum emission level.
- The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
- The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna.
- Use the following spectrum analyzer settings
  - Span shall wide enough to fully capture the emission being measured;
  - Below 1GHz,  
RBW=120KHz, VBW=300KHz, Sweep=auto, Detector function=peak, Trace=max hold;  
If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
  - From 1GHz to 5th harmonic, RBW=1MHz, VBW=3MHz

**TEST MODE:**

Please refer to the clause 3.3

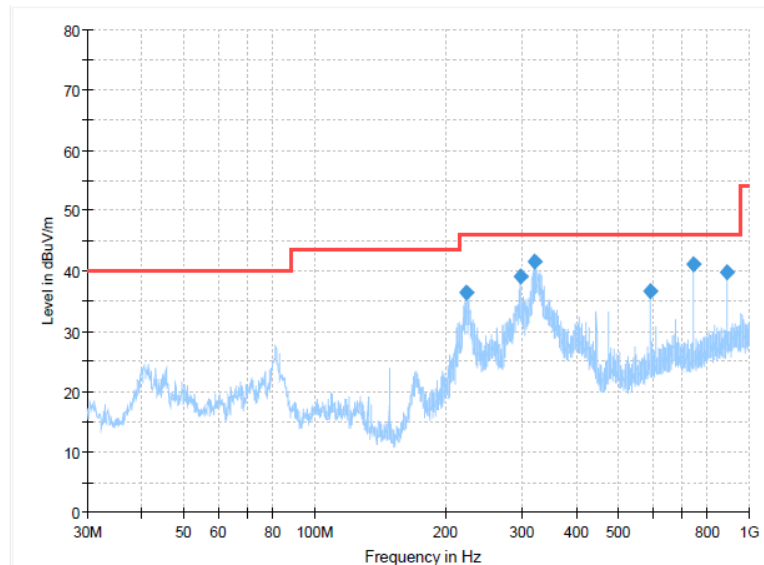
**TEST RESULTS**

**Passed**       **Not Applicable**

Note: Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor  
The emission levels of frequency above 6GHz are very lower than limit and not show in test report.

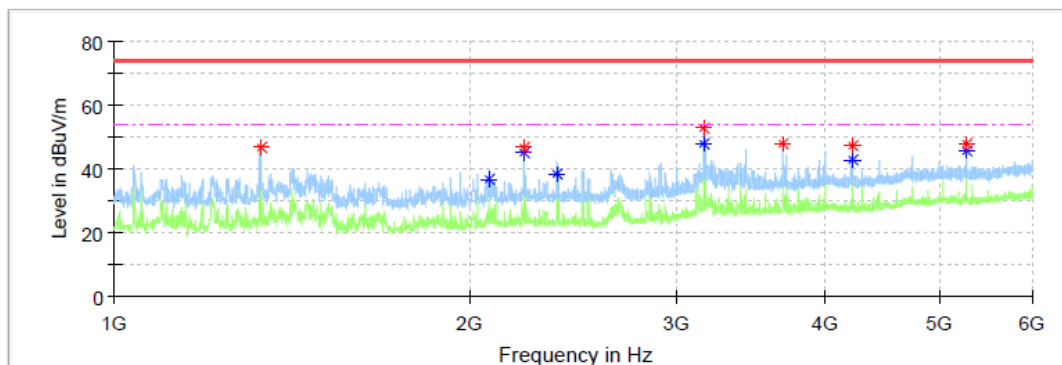
Polarization:

Horizontal



**Final Result**

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
222.787500	36.53	46.00	9.47	100.0	H	269.0	-10.1
296.992500	39.07	46.00	6.93	100.0	H	210.0	-7.5
320.393750	41.59	46.00	4.41	100.0	H	210.0	-6.8
594.055000	36.60	46.00	9.40	100.0	H	0.0	0.6
742.586250	41.19	46.00	4.81	100.0	H	115.0	3.1
891.117500	39.82	46.00	6.18	100.0	H	233.0	6.3

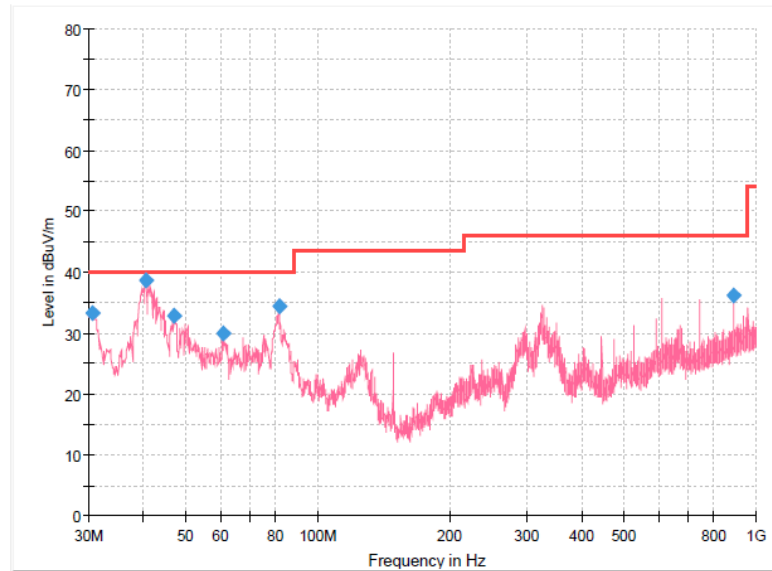


**Critical Freqs**

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2078.750000	---	36.89	54.00	17.11	150.0	H	5.0	-5.6
1331.250000	46.66	---	74.00	27.34	150.0	H	107.0	-6.7
4220.000000	47.21	---	74.00	26.79	150.0	H	246.0	2.2
5275.625000	---	45.57	54.00	8.43	150.0	H	260.0	5.8
5275.625000	47.92	---	74.00	26.08	150.0	H	260.0	5.8
4220.625000	---	42.90	54.00	11.10	150.0	H	287.0	2.2
2376.250000	---	38.60	54.00	15.40	150.0	H	301.0	-4.5
3165.000000	52.54	---	74.00	21.46	150.0	H	301.0	-2.2
3165.000000	---	47.63	54.00	6.37	150.0	H	301.0	-2.2
3692.500000	47.99	---	74.00	26.01	150.0	H	329.0	-0.5
2227.500000	46.40	---	74.00	27.60	150.0	H	343.0	-4.5
2227.500000	---	44.73	54.00	9.27	150.0	H	343.0	-4.5

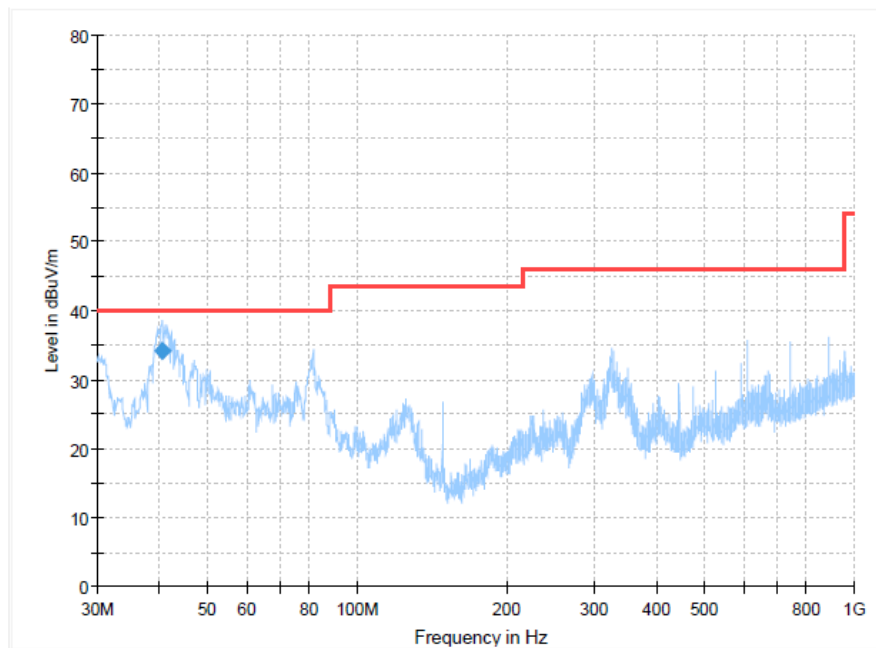
Polarization:

Vertical



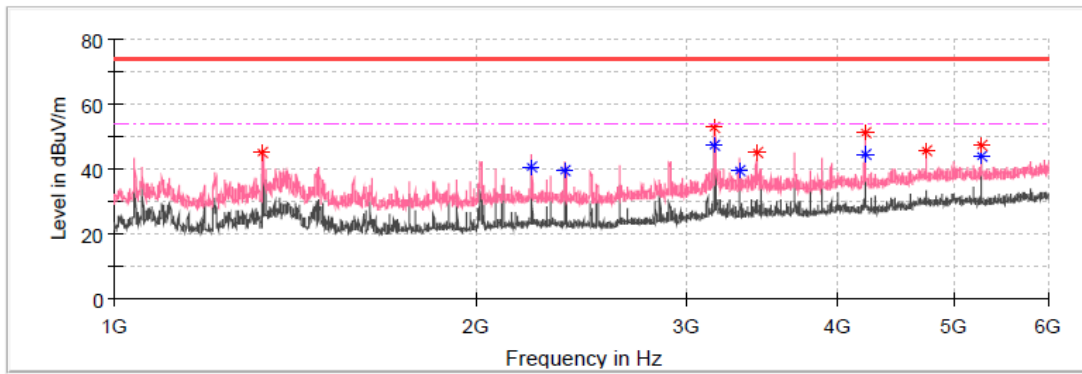
**Final Result**

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.606250	33.34	40.00	6.66	100.0	V	122.0	-12.5
40.670000	38.68	40.00	1.32	100.0	V	10.0	-9.7
47.096250	32.82	40.00	7.18	100.0	V	50.0	-9.3
61.040000	30.04	40.00	9.96	100.0	V	0.0	-10.3
81.652500	34.38	40.00	5.62	100.0	V	170.0	-15.3
891.117500	36.19	46.00	9.81	100.0	V	339.0	6.3



**Final Result**

Frequency (MHz)	QuasiPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
40.650000	34.30	40.00	5.70	100.0	V	209.0	-9.7

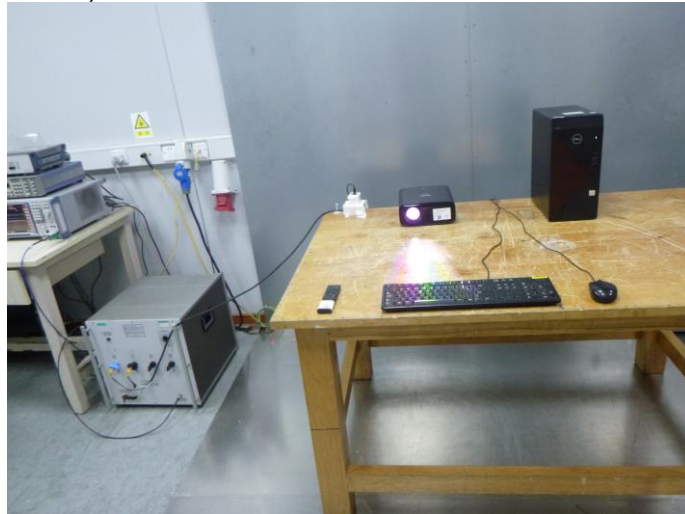


### Critical Freqs

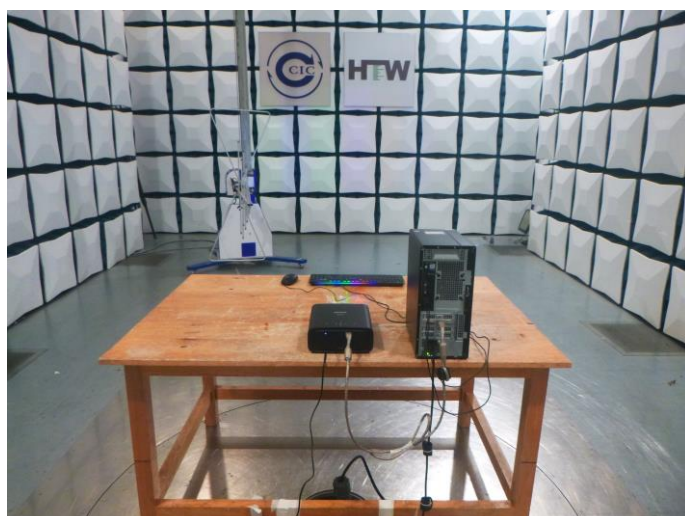
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2227.500000	---	40.80	54.00	13.20	150.0	V	0.0	-4.5
1328.750000	45.19	---	74.00	28.81	150.0	V	23.0	-6.7
2376.250000	---	39.67	54.00	14.33	150.0	V	37.0	-4.5
4219.375000	51.34	---	74.00	22.66	150.0	V	175.0	2.2
3428.125000	44.94	---	74.00	29.06	150.0	V	258.0	-1.4
4220.625000	---	44.32	54.00	9.68	150.0	V	272.0	2.2
4748.125000	45.40	---	74.00	28.60	150.0	V	272.0	5.3
5275.625000	---	43.65	54.00	10.35	150.0	V	286.0	5.8
5275.625000	47.35	---	74.00	26.65	150.0	V	286.0	5.8
3165.000000	---	47.10	54.00	6.90	150.0	V	314.0	-2.2
3165.625000	52.90	---	74.00	21.10	150.0	V	314.0	-2.2
3322.500000	---	39.47	54.00	14.53	150.0	V	328.0	-2.1

## 6. TEST SETUP PHOTOS

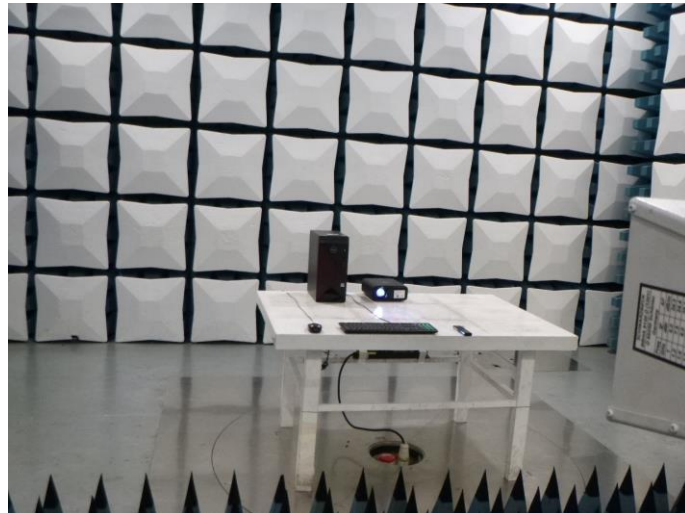
### Conducted Emissions (AC Mains)



### Radiated Emissions







## **7. EXTERNAL AND INTERNAL PHOTOS**

Refer to the test report No.: CHTEW22090121

-----End of Report-----