




# TEST REPORT

Report No. ....: **CHEW2208035401** Report verification : 

Project No. ....: **SHT2208229504EW**

FCC ID..... : **2ASRT-SCN350**

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

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

Test item description ..... : **Digital Projector**

Trade Mark .....: PHILIPS

Model/Type reference.....: Screeneo U4

Listed Model(s) .....: SCN350

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

Date of receipt of test sample.....: Aug. 25, 2022

Date of testing.....: Aug. 26, 2022- Aug. 30, 2022

Date of issue.....: Aug. 31, 2022

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

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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.*

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## 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	2022-08-31	Make difference test on radiated emission, others are the same as report No. CHTEW22010012

## 2. TEST DESCRIPTION

Test Item	Section in CFR 47	Result	Test Engineer
Conducted Emissions	15.107(a)	PASS	Jiongsheng Feng
Radiated Emissions	15.109(a)	PASS	Pan Xie

Note: The measurement uncertainty is not included in the test result.

### 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

Name of EUT:	Digital Projector
Trade Mark:	PHILIPS
Model No.:	ScreeNeo U4
Listed Model(s)	SCN350
Power supply:	DC 20V
Adapter Information 1:	Model:DYS902-200450W Input: AC100-240V, 50/60Hz, 1.5A MAX Output: 20.0Vdc, 4.5A, 90.0W
Adapter Information 2:	Model:YN-90WA200450W1 Input: AC100-240V, 50/60Hz, 1.5A Output: 20.0Vdc, 4.5A, 90.0W
Hardware version:	MAIN_V4
Software version:	1.0.0

#### 3.3. EUT operation mode

Test mode	Describe
HDMI Play	Keep the EUT in HDMI Play status
USB Play	Keep the EUT in USB Play status

Pre-scan above all test mode and each adapter(adapter 1 and adapter 2), Only show HDMI Play mode with adapter 2 for conducted emission and radiated emission, which is the worst case on the report.

## 4. TEST ENVIRONMENT

### 4.1. 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

### 4.2. 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

### 4.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emissions	30~1000MHz	4.36 dB	(1)
Radiated Emissions	1~18GHz	5.10 dB	(1)
Conducted Disturbance	0.15~30MHz	3.00 dB	(1)

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

#### 4.4. 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	2021/9/14	2022/9/13
●	Artificial Mains	SCHWARZBECK	HTWE0113	NNLK 8121	573	2021/9/17	2022/9/16
●	Pulse Limiter	R&S	HTWE0033	ESH3-Z2	100499	2021/9/13	2022/9/12
●	RF Connection Cable	HUBER+SUHNER	HTWE0113-02	ENVIROFLEX_142	EF-NM-BNCM-2M	2021/9/17	2022/9/16
●	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	2022/09/29
●	EMI Test Receiver	R&S	HTWE0099	ESCI	100900	2021/09/14	2022/09/13
●	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	2022/09/26
●	Spectrum Analyzer	R&S	HTWE0098	FSP40	100597	2021/09/13	2022/09/12
●	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 Test

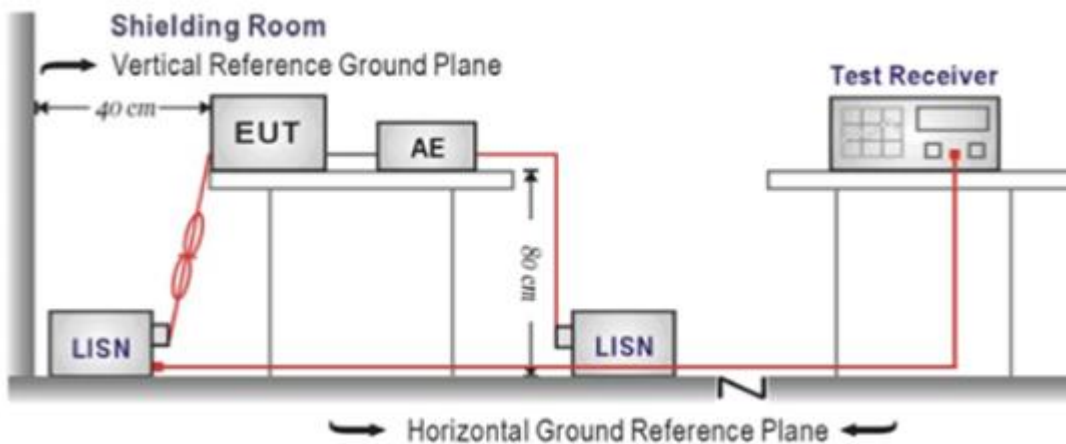
#### LIMIT

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

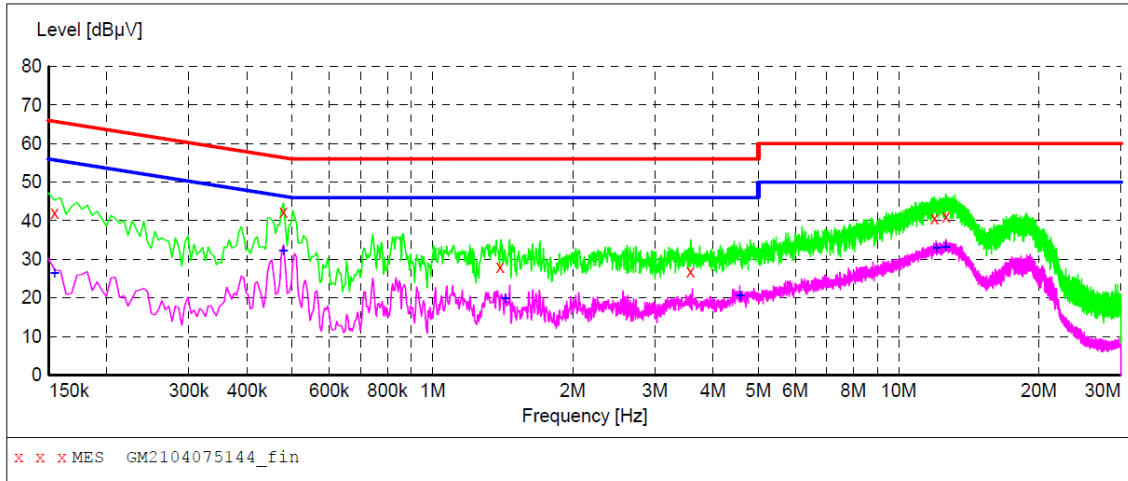
#### TEST RESULTS

Passed       Not Applicable



Test Line:

L



**MEASUREMENT RESULT: "GM2104075144\_fin"**

12/25/2021 10:03PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.154500	42.10	10.2	66	23.7	QP	L1	GND
0.478500	42.40	10.2	56	14.0	QP	L1	GND
1.396500	28.10	10.2	56	27.9	QP	L1	GND
3.574500	27.00	10.2	56	29.0	QP	L1	GND
11.931000	40.70	10.5	60	19.3	QP	L1	GND
12.637500	41.20	10.4	60	18.8	QP	L1	GND

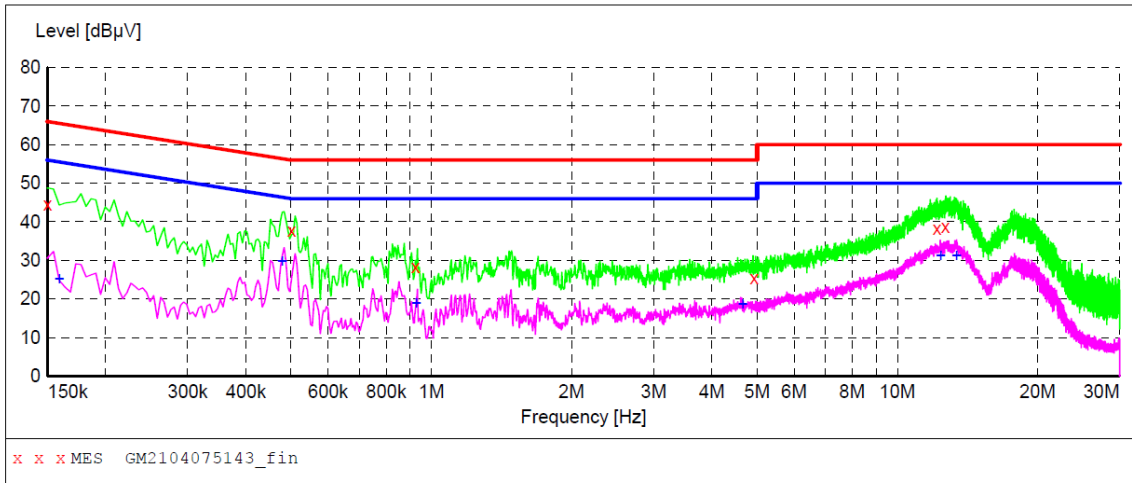
**MEASUREMENT RESULT: "GM2104075144\_fin2"**

12/25/2021 10:03PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.154500	26.30	10.2	56	29.5	AV	L1	GND
0.478500	32.20	10.2	46	14.2	AV	L1	GND
1.432500	19.80	10.2	46	26.2	AV	L1	GND
4.573500	20.70	10.2	46	25.3	AV	L1	GND
12.052500	32.90	10.5	50	17.1	AV	L1	GND
12.615000	33.20	10.4	50	16.8	AV	L1	GND

Test Line:

N



**MEASUREMENT RESULT: "GM2104075143\_fin"**

12/25/2021 10:00PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	44.60	10.2	66	21.4	QP	N	GND
0.501000	37.80	10.2	56	18.2	QP	N	GND
0.924000	28.30	10.2	56	27.7	QP	N	GND
4.924500	25.40	10.2	56	30.6	QP	N	GND
12.156000	38.10	10.5	60	21.9	QP	N	GND
12.660000	38.70	10.4	60	21.3	QP	N	GND

**MEASUREMENT RESULT: "GM2104075143\_fin2"**

12/25/2021 10:00PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.159000	25.30	10.2	56	30.2	AV	N	GND
0.478500	29.80	10.2	46	16.6	AV	N	GND
0.928500	18.80	10.2	46	27.2	AV	N	GND
4.654500	18.70	10.2	46	27.3	AV	N	GND
12.385500	31.20	10.4	50	18.8	AV	N	GND
13.398000	31.20	10.4	50	18.8	AV	N	GND

## 5.2. Radiated Emissions Test

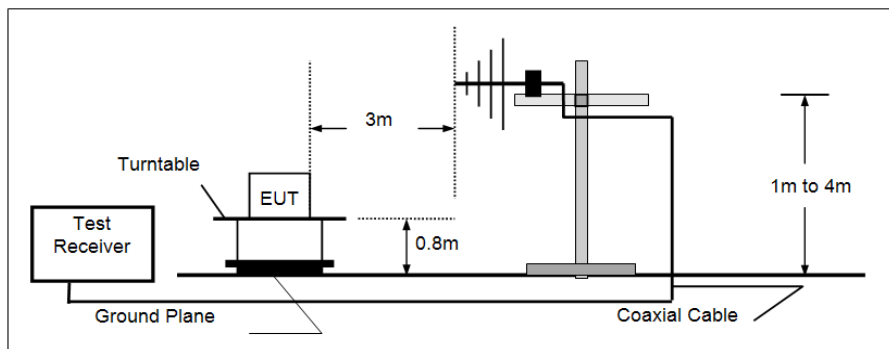
### LIMIT

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

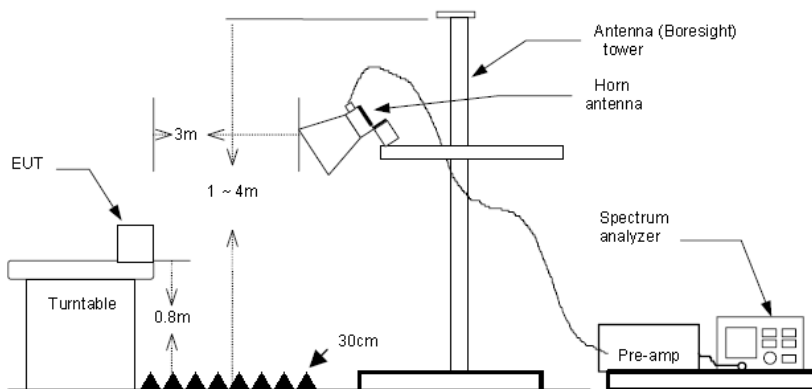
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

### TEST CONFIGURATION

#### ➤ 30MHz ~ 1GHz



#### ➤ Above 1GHz



### TEST PROCEDURE

1. The EUT was tested according to ANSI C63.4:2014.
2. The EUT is placed on a turn table which is 0.8 meter above ground.
3. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
4. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
5. 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.
6. Use the following spectrum analyzer settings
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) 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.
  - (3) From 1GHz to 5th harmonic, RBW=1MHz, VBW=3MHz

**TEST MODE:**

Please refer to the clause 3.3

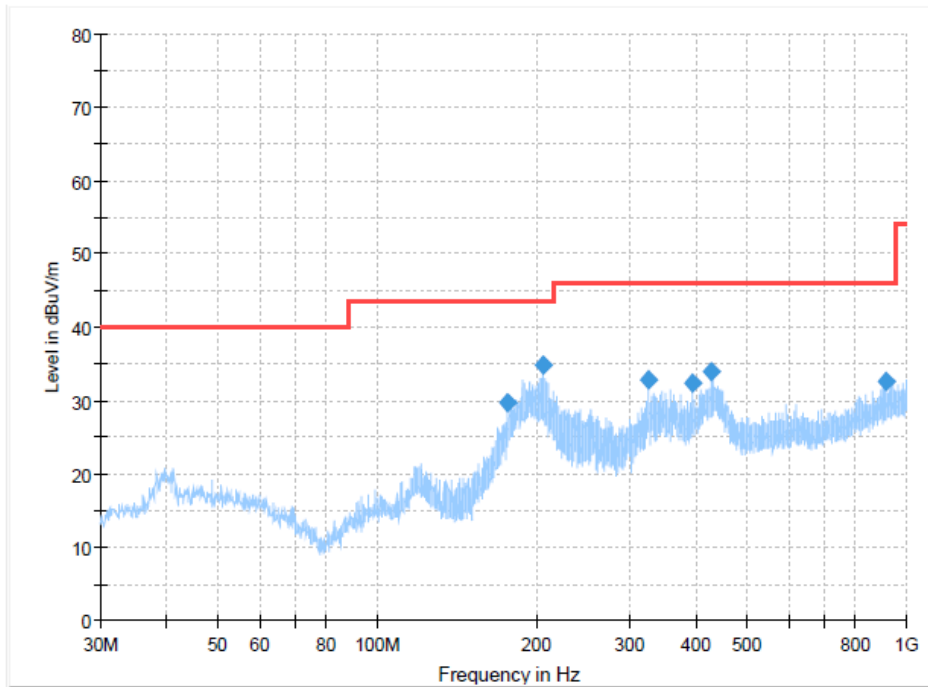
**TEST RESULTS**

**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.

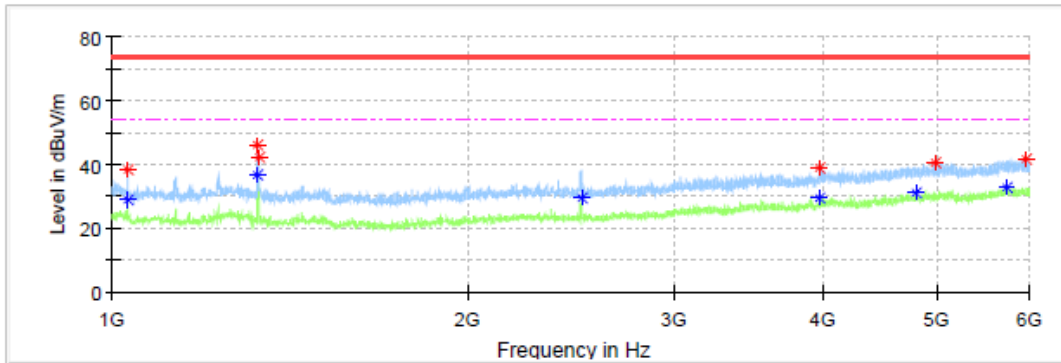
Polarization:

Horizontal



**Final Result**

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
176.348750	29.75	43.50	13.75	100.0	H	0.0	-12.7
205.327500	34.81	43.50	8.69	100.0	H	73.0	-10.1
325.607500	32.82	46.00	13.18	100.0	H	5.0	-6.6
393.507500	32.33	46.00	13.67	100.0	H	120.0	-4.6
429.033750	33.88	46.00	12.12	100.0	H	237.0	-3.7
912.336250	32.68	46.00	13.32	300.0	H	80.0	6.7

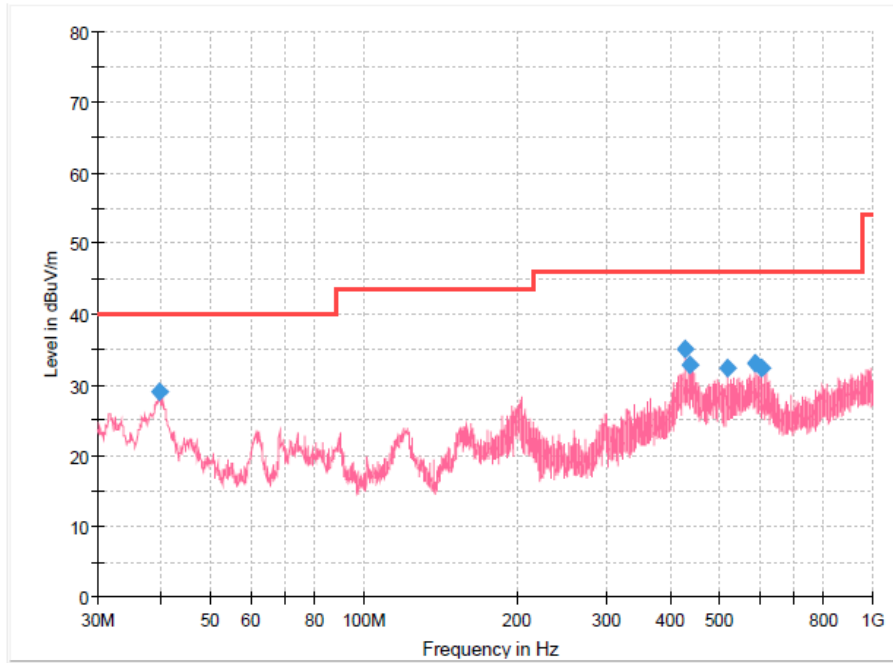


**Critical Freqs**

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1031.250000	---	28.65	54.00	25.35	150.0	H	135.0	-9.9
1031.250000	38.56	---	74.00	35.44	150.0	H	135.0	-9.9
4802.500000	---	31.36	54.00	22.64	150.0	H	135.0	2.2
2498.125000	---	29.42	54.00	24.58	150.0	H	149.0	-7.0
5963.750000	41.77	---	74.00	32.23	150.0	H	233.0	5.5
1329.375000	45.86	---	74.00	28.14	150.0	H	275.0	-8.2
1329.375000	---	36.52	54.00	17.48	150.0	H	275.0	-8.2
5725.625000	---	32.85	54.00	21.15	150.0	H	275.0	4.7
4995.625000	40.68	---	74.00	33.32	150.0	H	317.0	2.9
3979.375000	---	29.59	54.00	24.41	150.0	H	331.0	-1.8
1333.125000	42.23	---	74.00	31.77	150.0	H	345.0	-8.1
3983.750000	38.84	---	74.00	35.16	150.0	H	345.0	-1.8

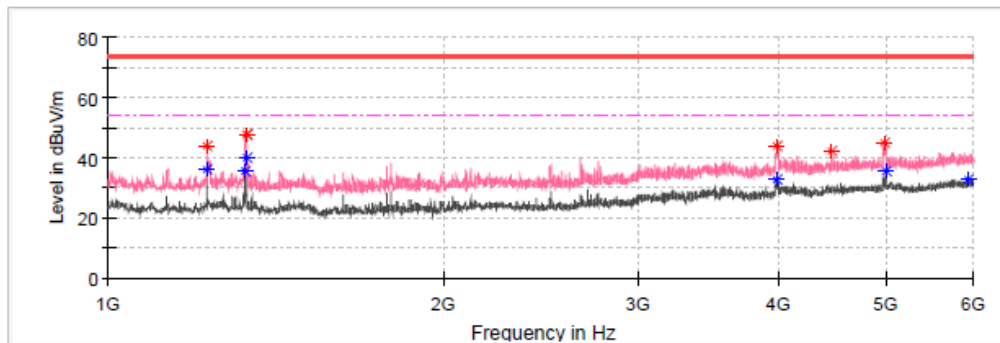
Polarization:

Vertical



**Final Result**

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
39.821250	28.95	40.00	11.05	100.0	V	163.0	-9.8
427.093750	35.15	46.00	10.85	100.0	V	145.0	-3.7
438.976250	32.93	46.00	13.07	100.0	V	152.0	-3.4
519.243750	32.51	46.00	13.49	100.0	V	145.0	-1.4
588.962500	33.11	46.00	12.89	100.0	V	309.0	0.5
604.482500	32.50	46.00	13.50	100.0	V	309.0	0.8



**Critical Freqs**

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1227.500000	---	35.88	54.00	18.12	150.0	V	0.0	-8.9
1227.500000	43.96	---	74.00	30.04	150.0	V	0.0	-8.9
3996.250000	---	33.05	54.00	20.95	150.0	V	0.0	-1.7
1333.125000	47.97	---	74.00	26.03	150.0	V	5.0	-8.1
3999.375000	44.14	---	74.00	29.86	150.0	V	5.0	-1.7
5932.500000	---	33.02	54.00	20.98	150.0	V	5.0	5.5
4993.125000	45.12	---	74.00	28.88	150.0	V	300.0	2.8
4996.875000	---	35.57	54.00	18.43	150.0	V	314.0	2.9
1331.875000	---	39.78	54.00	14.22	150.0	V	343.0	-8.1
1331.875000	47.85	---	74.00	26.15	150.0	V	343.0	-8.1
1328.750000	---	35.70	54.00	18.30	150.0	V	355.0	-8.2
4474.375000	42.13	---	74.00	31.87	150.0	V	355.0	0.2

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