

FCC SDoC TEST REPORT

Report No.: DDT-B21111107-1E02

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Equipment under Test	:	LCD Monitor
Model No.	:	**PD32***** ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Trade Mark	:	N/A

Issued By: Tianjin Dongdian Testing Service Co., Ltd.

Address: Building D-1, No. 19, Weishi Road, Microelectronics Industrial Park, Development Area, Tianjin, China.

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REPORT

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Test Report Declare

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Equipment Under Test	:	LCD Monitor
Model No.	:	**PD32***** ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Trade Mark	:	N/A

Test Standard Used:

ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B

We Declare:

The equipment described above is tested and assessed by Tianjin Dongdian Testing Service Co., Ltd. and in the configuration assessed the equipment complied with the standards specified above. The tested and assessed results are contained in this test report and Tianjin Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these assessments.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No.:	DDT-B21111107-1E02		
Date of Receipt:	Nov. 11, 2021	Date of Test:	Nov. 18, 2021 ~ Nov. 25, 2021

Prepared By:

May Zhang

May Zhang/Engineer

Approved By:

Aaron Zhang

Aaron Zhang/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Tianjin Dongdian Testing Service Co., Ltd.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Dec. 09, 2021	

1. Summary of test results

Description of Test Item	Standard	Result
Conducted emission at AC mains terminals	ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B	PASS
Radiated emission	ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B	PASS

2. General test information

2.1 Description of EUT

EUT* Name	: LCD Monitor
Model Number	: **PD32***** ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Model Differences	: All models difference is in sale marketing.
Serial Number	: N/A
EUT function description	: Please refer to user manual of this device
Power supply	: 100-240V 50/60Hz
Test Voltage	: 110V 60Hz
EUT Class	: Class B
Maximum work frequency	: 1279.77 MHz

Note: EUT is the ab. of equipment under test.

2.2 Accessories of EUT

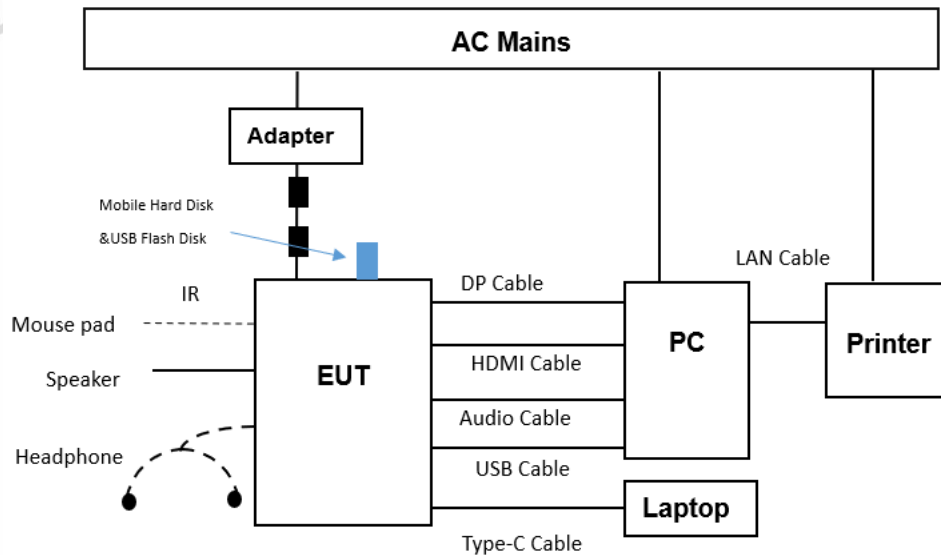
Description of Accessories	Manufacturer	Model number	Description	Remark
Adapter	DELTA	ADP-330CB B	N/A	N/A
Adapter	Lite-On	PA-1331-99	N/A	N/A
AC Cable	N/A	N/A	Length: 1.5m/1.8m, Unshielded	N/A
HDMI Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
DP Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
Type-C Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
AUDIO Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
USB Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A

2.3 Test peripherals

Device	Manufacturer	Model No.	Serial No.	Remark
Desktop PC	HP	TPC-W058-MT	8CG0321Q58	N/A
Desktop PC	Samsung	DM700T6A-A99	JVTG98EJ2C004QX	N/A
Desktop PC	Samsung	DM700T6A-A99	JVTG98EJ2C0087L	N/A
Laptop	HP	HP ProBook 455R G6	5CD0122F5D	N/A
Keyboard	DELL	N/A	N/A	N/A
Mouse	DELL	N/A	N/A	N/A
Printer	SAMSUNG	CLP-365W/SEE	Z8DLBABC200070K	N/A
Speaker	JBL	GO2+	N/A	N/A
Headphone	N/A	N/A	N/A	N/A

Mouse pad	N/A	N/A	N/A	N/A
Mobile hard disk	N/A	N/A	N/A	N/A
USB flash disk	N/A	N/A	N/A	N/A

2.4 Block diagram EUT configuration for test



■ Ferrite Core
■ Terminal

2.5 EUT operating mode(s)

Mode1: HDMI1	Connect HDMI cable from PC's HDMI port to EUT's HDMI1 Port. The test signal is scrolling 'H' with 1kHz audio playing.
Mode2: HDMI2	Connect HDMI cable from PC's HDMI port to EUT's HDMI2 Port. The test signal is scrolling 'H' with 1kHz audio playing.
Mode3: DP	Connect DP cable from PC's DP port to EUT's DP Port. The test signal is scrolling 'H' with 1kHz audio playing.
Mode4: Type-C	Connect Type-C cable from PC's Type-C port to EUT's Type-C Port. The test signal is scrolling 'H' with 1kHz audio playing.

2.6 Deviations of test standard

No Deviation.

2.7 Test laboratory

Tianjin Dongdian Testing Service Co., Ltd.

Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.

Tel: +86-22-58038033, <http://www.ddttest.com>, Email: ddt@dgddt.com

NVLAP (National Voluntary Laboratory Accreditation Program) CODE: 500036-0

CNAS (China National Accreditation Service for Conformity Assessment) CODE: L13402

FCC Designation Number: CN5004; FCC Test Firm Registration Number: 368676

ISED (Innovation, Science and Economic Development Canada) Company Number: 27768

Conformity Assessment Body Identifier: CN0125

VCCI Facility Registration Number: C-20089, T-20093, R-20125, G-20122

2.8 Measurement uncertainty

Test Item	Uncertainty
Conducted disturbance at mains terminals	3.4dB (150KHz-30MHz)
Uncertainty for Radiation Emission test (30MHz-1GHz)	5.2 dB (Antenna Polarize: H)
	5.2 dB (Antenna Polarize: V)
Uncertainty for Radiation disturbance test (1GHz to 6GHz)	5.0dB(1-6GHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3. Conducted Emission

3.1 General information

Test date	Nov. 18, 2021	Test engineer	Sam	
Climate condition	Ambient temperature	23.8±1℃	Relative humidity	34±1%
	Atmospheric pressure	101.4±0.2 kPa		
Test place	Shield Room 2#			

3.2 Test Equipment

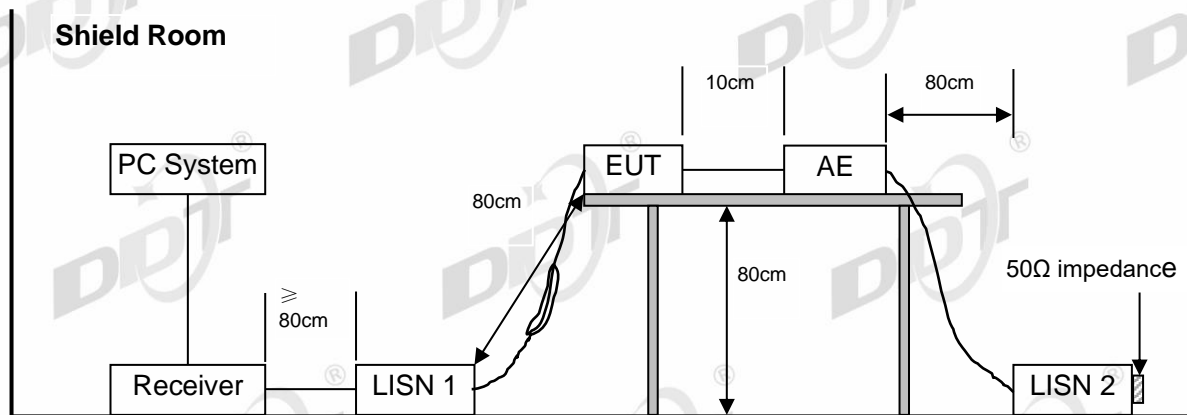
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Test Receiver	R&S	ESCI	101397	Mar. 03, 2021	1 Year
LISN 1	R&S	ENV216	101122	Mar. 31, 2021	1 Year
LISN 2	R&S	ENV216	101254	Mar. 17, 2021	1 Year
Test software	TOYO	EP5/CE	V 5.4.40	N/A	N/A

3.3 Reference Standard

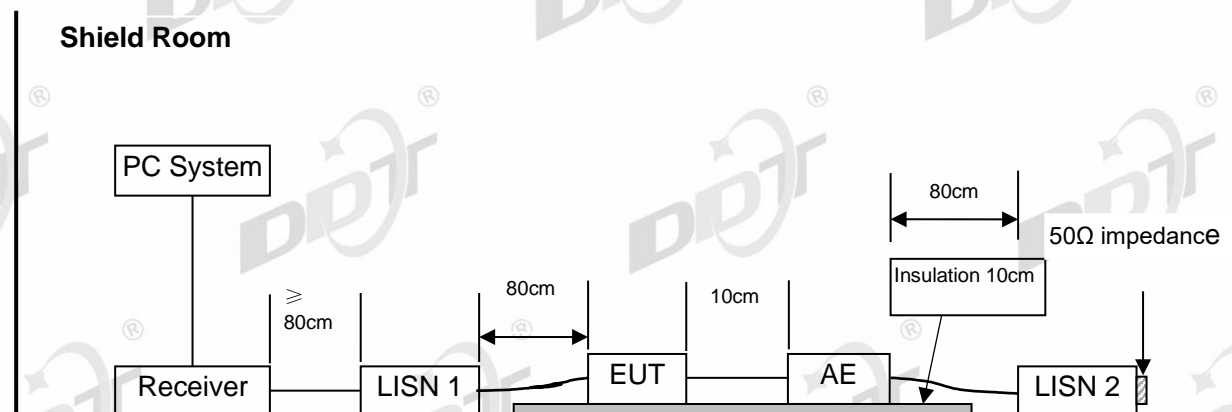
ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B

3.4 Block Diagram of Test Setup

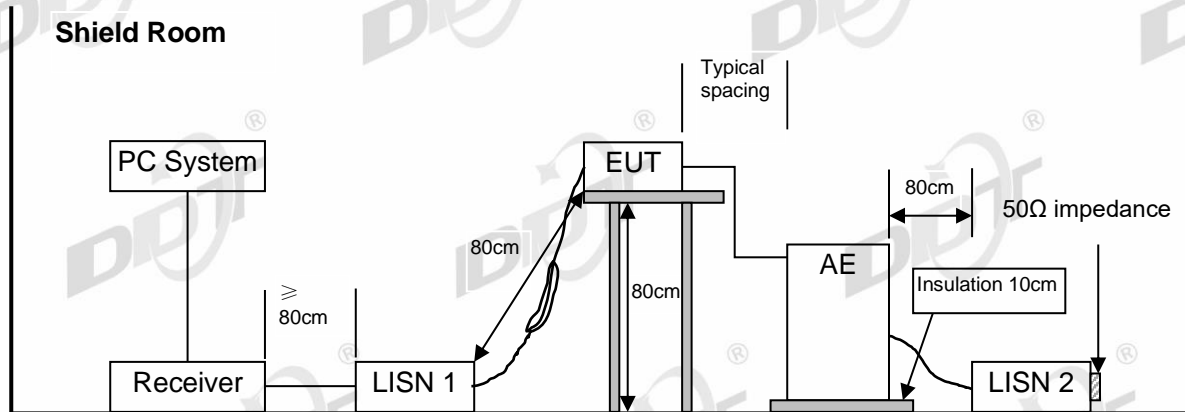
For table-top equipment



For floor standing equipment



Shield Room



Class A

Frequency			Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz	~	500kHz	79	66
500kHz	~	30MHz	73	60

Frequency ®			Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz	~	500kHz	66 ~ 56*	56 ~ 46*
500kHz	~	5MHz	56	46
5MHz	~	30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm (table-top device)/0.1m (floor stand device) above the ground plane.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.5 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 KHz.

The EUT with following test modes were pre-tested:

Adapter: ADP-330CB B

No.	Operation Mode	Cable Length	Resolution
1.	Mode 1 HDMI1	1.8m	3840*2160@144Hz
2.		1.8m	3840*2160@60Hz
3.		1.8m	1920*1080@60Hz
4.		1.8m	800*600@60Hz
5.	Mode 2 HDMI2	1.5m	3840*2160@144Hz
6.		1.5m	3840*2160@60Hz
7.		1.5m	1920*1080@60Hz
8.		1.5m	800*600@60Hz
9.	Mode 3 DP	1.8m	3840*2160@144Hz
10.		1.8m	3840*2160@60Hz
11.		1.8m	1920*1080@60Hz
12.		1.8m	800*600@60Hz
13.	Mode 4 Type-C	1.5m	Worst case from above
14. *		1.8m	3840*2160@144Hz
15.		1.8m	3840*2160@60Hz
16.		1.8m	1920*1080@60Hz
17.		1.8m	800*600@60Hz
18.		1.8m	Full Load
19.		1.5m	Worst case from above
20.	Type-C 3840*2160@144Hz with 1.5m power cord		
* Means the worst test mode.			

Adapter: PA-1331-99

No.	Operation Mode	Cable Length	Resolution
1.	Mode 1 HDMI1	1.8m	3840*2160@144Hz
2.		1.8m	3840*2160@60Hz
3.		1.8m	1920*1080@60Hz
4.		1.8m	800*600@60Hz
5.	Mode 2 HDMI2	1.5m	3840*2160@144Hz
6.		1.5m	3840*2160@60Hz
7.		1.5m	1920*1080@60Hz
8.		1.5m	800*600@60Hz
9.	Mode 3 DP	1.8m	3840*2160@144Hz
10.		1.8m	3840*2160@60Hz
11.		1.8m	1920*1080@60Hz
12.		1.8m	800*600@60Hz
13.	Mode 4 Type-C	1.5m	Worst case from above
14.		1.8m	3840*2160@144Hz
15.		1.8m	3840*2160@60Hz
16.		1.8m	1920*1080@60Hz
17.		1.8m	800*600@60Hz
18.		1.8m	Full Load
19.		1.5m	Worst case from above
20. *	HDMI2 3840*2160@144Hz with 1.5m power cord		
* Means the worst test mode.			

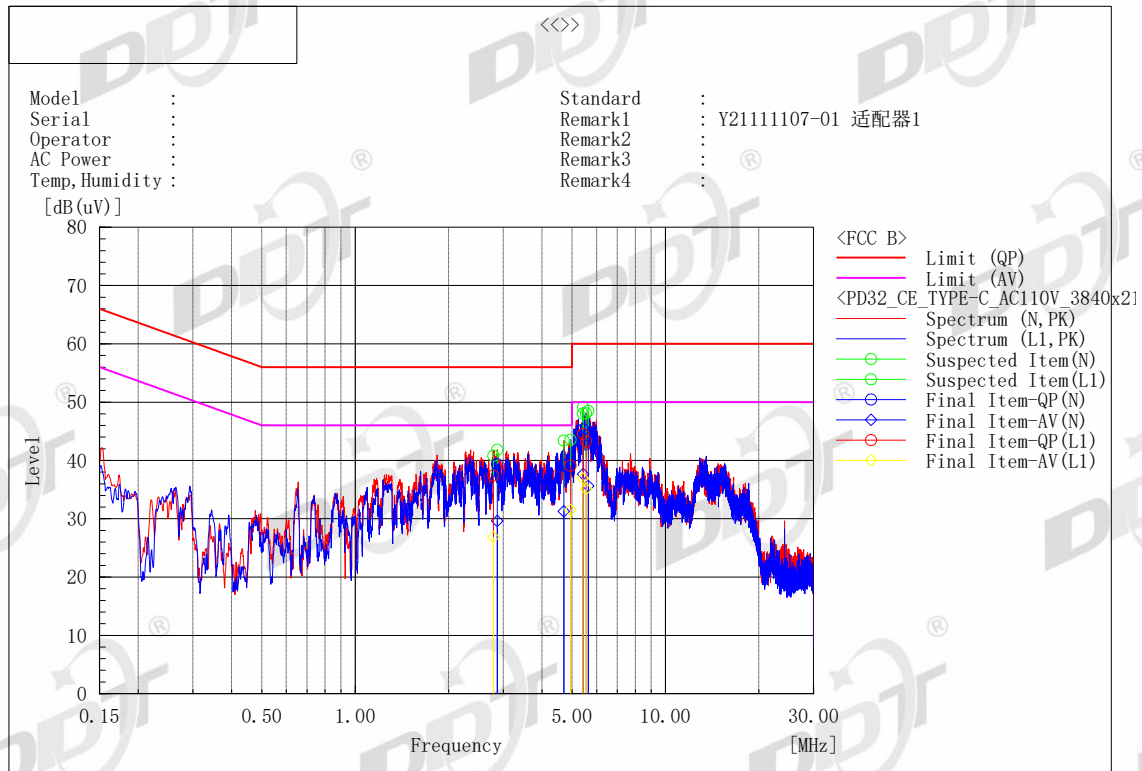
3.7 Test Result

PASS. (See below detailed test result)

Note 1: All emissions not reported below are too low against the prescribed limits.

Adapter: ADP-330CB B

Operating Mode 4: Type-C IN



Final Result

--- N Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c. f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	5.42653	35.4	27.7	9.9	45.3	37.6	60.0	50.0	14.7	12.4
2	5.63975	34.4	25.7	9.9	44.3	35.6	60.0	50.0	15.7	14.4
3	4.69963	29.2	21.4	9.9	39.1	31.3	56.0	46.0	16.9	14.7
4	2.87164	29.5	19.7	9.9	39.4	29.6	56.0	46.0	16.6	16.4

--- L1 Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c. f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	5.55037	33.5	25.3	9.8	43.3	35.1	60.0	50.0	16.7	14.9
2	5.42405	34.8	27.1	9.8	44.6	36.9	60.0	50.0	15.4	13.1
3	4.94379	29.3	21.7	9.8	39.1	31.5	56.0	46.0	16.9	14.5
4	2.79096	27.6	17.0	9.8	37.4	26.8	56.0	46.0	18.6	19.2

Note1) Level (Quasi-Peak and/or C/Average) = Meter Reading + Factor

Note2) Line = Polarity of input power (Live or Neutral)

N : Abbreviation of Neutral Polarity, L1 : Abbreviation of Live Polarity,

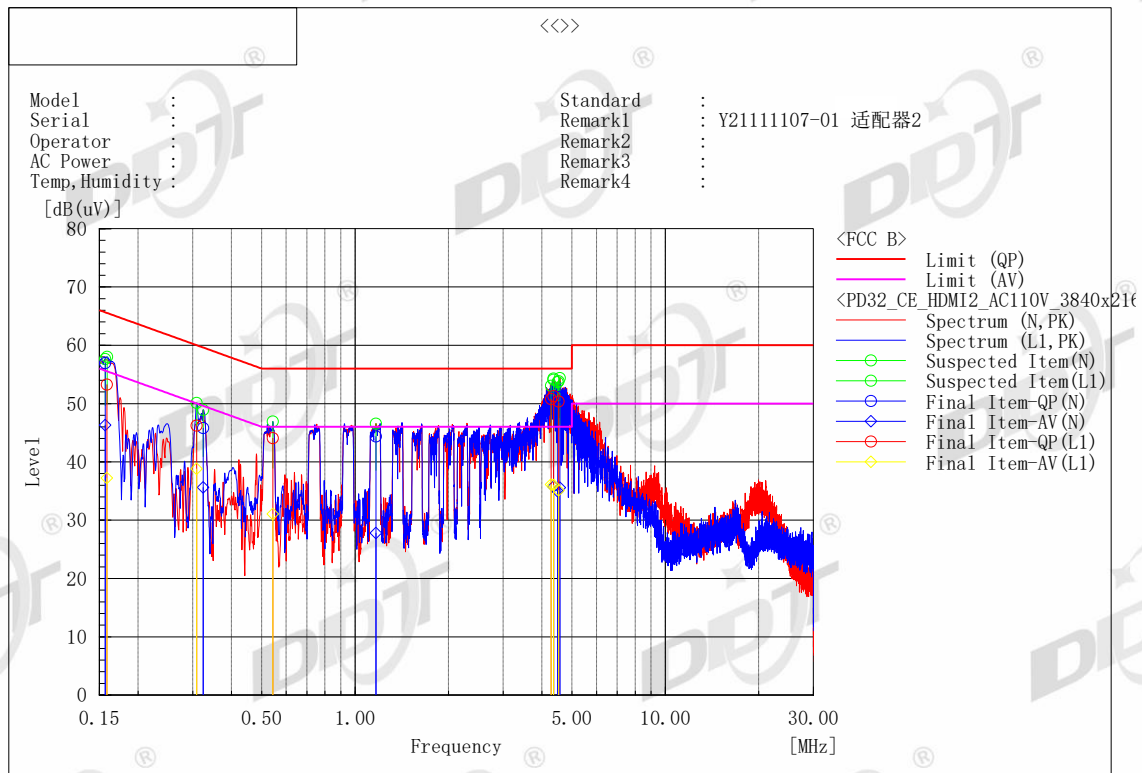
Note3) Factor = LISN Insertion Loss + Cable Loss

Note4) Margin = Limit – Level (Quasi-Peak and/or C/Average)

Note5) C/Average : Abbreviation of CISPR Average

Adapter: PA-1331-99

Operating Mode 2: HDMI2 IN



Final Result

--- N Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c. f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	4.57228	41.2	25.7	9.9	51.1	35.6	56.0	46.0	4.9	10.4
2	4.35931	41.3	25.8	9.9	51.2	35.7	56.0	46.0	4.8	10.3
3	4.50022	41.2	25.0	9.9	51.1	34.9	56.0	46.0	4.9	11.1
4	0.15659	47.2	36.6	9.7	56.9	46.3	65.6	55.6	8.7	9.3
5	1.16786	34.5	18.0	9.8	44.3	27.8	56.0	46.0	11.7	18.2
6	0.3242	36.1	25.9	9.7	45.8	35.6	59.6	49.6	13.8	14.0

--- L1 Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c. f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	4.36348	41.5	26.2	9.8	51.3	36.0	56.0	46.0	4.7	10.0
2	4.53267	40.6	25.3	9.8	50.4	35.1	56.0	46.0	5.6	10.9
3	4.28678	41.0	26.3	9.8	50.8	36.1	56.0	46.0	5.2	9.9
4	0.15868	43.6	27.5	9.7	53.3	37.2	65.5	55.5	12.2	18.3
5	0.54342	34.4	21.4	9.7	44.1	31.1	56.0	46.0	11.9	14.9
6	0.30877	36.5	29.1	9.7	46.2	38.8	60.0	50.0	13.8	11.2

Note1) Level (Quasi-Peak and/or C/Average) = Meter Reading + Factor

Note2) Line = Polarity of input power (Live or Neutral)

N : Abbreviation of Neutral Polarity, L1 : Abbreviation of Live Polarity,

Note3) Factor = LISN Insertion Loss + Cable Loss

Note4) Margin = Limit – Level (Quasi-Peak and/or C/Average)

Note5) C/Average : Abbreviation of CISPR Average

4. Radiated Emissions

4.1 General information

Below 1GHz:

Test date	Nov. 24, 2021	Test engineer	Sam	
Climate condition	Ambient temperature	21.8±1℃	Relative humidity	23±1%
	Atmospheric pressure	101.7±0.2kPa		
Test place	10m Chamber			

Above 1GHz:

Test date	Nov. 25, 2021	Test engineer	Sam	
Climate condition	Ambient temperature	22.8±1℃	Relative humidity	20±1%
	Atmospheric pressure	102.1±0.2kPa		
Test place	10m Chamber			

4.2 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	R&S	ESCI	101024	Mar. 03, 2021	1 Year
EMI Test Receiver	R&S	ESCI	101030	May 15, 2021	1 Year
Bilog Antenna	TESEQ	CBL6112D	29068	Oct. 12, 2020	2 Year
Bilog Antenna	TESEQ	CBL6112D	29069	Oct. 12, 2020	2 Year
Amplifier	Sonoma	310N	300913	Mar. 03, 2021	1 Year
Amplifier	Sonoma	310N	300914	Mar. 03, 2021	1 Year
Ant Mast	Innco	MA4000	N/A	N/A	N/A
Ant Mast	Innco	MA4000	N/A	N/A	N/A
Mast Controller	Innco	CO2000	N/A	N/A	N/A
RF Selector 4CH	TOYO	NS4904N	Selector1	N/A	N/A
RF Selector 4CH	TOYO	NS4904N	Selector2	N/A	N/A
Test software	TOYO	EP5/RE	V 5.7.10	N/A	N/A
EMI Test Receiver	R&S	ESU26	100244	Mar. 04, 2021	1 Year
Double Ridged Horn Antenna	TESEQ	BHA 9118	31754	Oct. 12, 2021	2 Year
Pre-amplifier	TOYO	TPA0108-40	1409	Mar. 02, 2021	1 Year
Test software	TOYO	EP5/RE	V 5.7.10	N/A	N/A

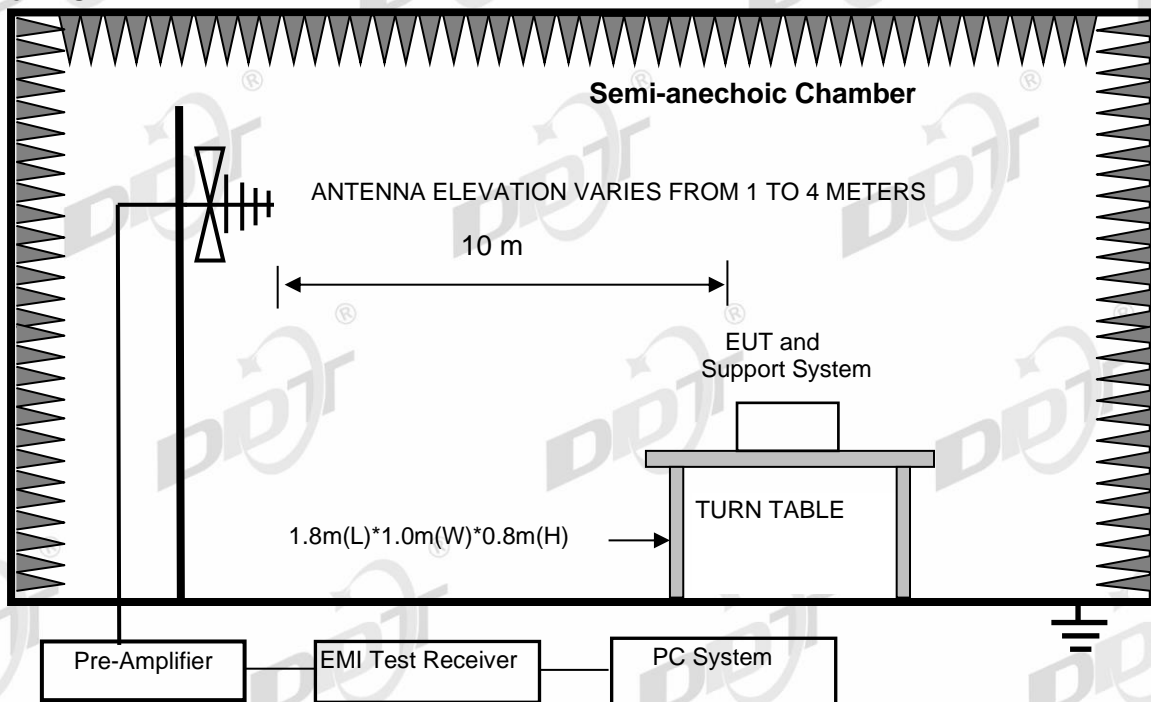
Notes. N/A means Not applicable.

4.3 Reference Standard

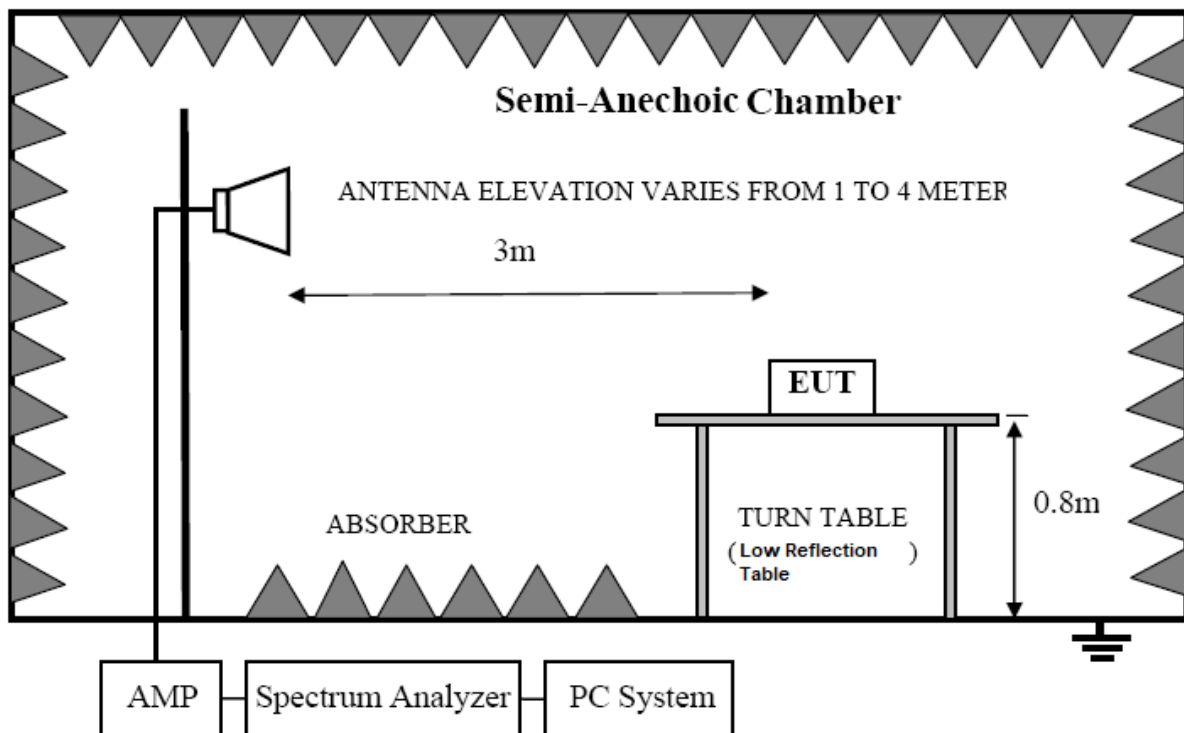
ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B

4.4 Block diagram of test setup

Below 1GHz



Above 1GHz



4.5 Limits

Class A

Frequency (MHz)	Distance (Meters)	Field Strengths Limits dB(μ V)/m
30--88	10	39
88--216	10	43.5
216--960	10	46.5
960-1000	10	49.5
Above 1000	3	80.0(Peak), 60.0(Average)

Class B

Frequency (MHz)	Distance (Meters)	Field Strengths Limits dB(μ V)/m
30--88	10	30.0
88--216	10	33.5
216--960	10	36.0
960-1000	10	44.0
Above 1000	3	74.0(Peak), 54.0(Average)

Note: (1) The smaller limit shall apply at the cross point between two frequency bands.

4.6 Test Procedure

Procedure of Preliminary Test

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm (table-top device)/0.1m (floor stand device) above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.5 and test equipment as described in clause 4.2 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.

Mains cables, telephone lines or other connections to auxiliary equipment located outside the test are shall drape to the floor, be fitted with ferrite clamps or ferrite tubes placed on the floor at the point where the cable reaches the floor and then routed to the place where they leave the turntable. No extension cords shall be used to mains receptacle.

The antenna was placed at 10 meters (for 30MHz – 1GHz) and 3 meters (for above 1 GHz) away from the EUT as stated in ANSI C63.4. The antenna connected to the Spectrum Analyzer via a cable and at times a pre-amplifier would be used.

The Analyzer / Receiver quickly scanned from 30MHz to 1GHz and 1GHz to 6GHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.

The test mode(s) described in clause 2.5 were scanned during the preliminary test:

After the preliminary scan, we found the test mode producing the highest emission level. The EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for the final test.

Procedure of Final Test

EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test.

The Analyzer / Receiver scanned from 30MHz to 1GHz and 1GHz to 6GHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.

Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and only Q.P. reading is presented.

For emissions from 30MHz to 1GHz, Quasi-Peak values were measured with EMI Receiver and the bandwidth of Receiver is 120 KHz.

For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz

The test data of the worst-case condition(s) was recorded.

The EUT with following test modes were pre-tested:

For frequency range 30MHz ~ 1GHz:

Adapter: ADP-330CB B

No.	Operation Mode	Cable Length	Resolution
1. *	Mode 1 HDMI1	1.8m	3840*2160@144Hz
2.		1.8m	3840*2160@60Hz
3.		1.8m	1920*1080@60Hz
4.		1.8m	800*600@60Hz
5.	Mode 2 HDMI2	1.5m	3840*2160@144Hz
6.		1.5m	3840*2160@60Hz
7.		1.5m	1920*1080@60Hz
8.		1.5m	800*600@60Hz
9.	Mode 3 DP	1.8m	3840*2160@144Hz
10.		1.8m	3840*2160@60Hz
11.		1.8m	1920*1080@60Hz
12.		1.8m	800*600@60Hz
13.		1.5m	Worst case from above
14.	Mode 4 Type-C	1.8m	3840*2160@144Hz
15.		1.8m	3840*2160@60Hz
16.		1.8m	1920*1080@60Hz
17.		1.8m	800*600@60Hz
18.		1.8m	Full Load
19.		1.5m	Worst case from above
20.	HDMI1 3840*2160@144Hz with 1.5m power cord		
21.	HDMI1 1920*1080@60Hz with headphone		
22.	HDMI1 1920*1080@60Hz without headphone		

* Means the worst test mode.

For frequency range 30MHz ~ 1GHz:

Adapter: PA-1331-99

No.	Operation Mode	Cable Length	Resolution
1. *	Mode 1 HDMI1	1.8m	3840*2160@144Hz
2.		1.8m	3840*2160@60Hz
3.		1.8m	1920*1080@60Hz
4.		1.8m	800*600@60Hz
5.	Mode 2 HDMI2	1.5m	3840*2160@144Hz
6.		1.5m	3840*2160@60Hz
7.		1.5m	1920*1080@60Hz
8.		1.5m	800*600@60Hz
9.	Mode 3 DP	1.8m	3840*2160@144Hz
10.		1.8m	3840*2160@60Hz
11.		1.8m	1920*1080@60Hz
12.		1.8m	800*600@60Hz
13.		1.5m	Worst case from above
14.	Mode 4 Type-C	1.8m	3840*2160@144Hz
15.		1.8m	3840*2160@60Hz
16.		1.8m	1920*1080@60Hz
17.		1.8m	800*600@60Hz
18.		1.8m	Full Load
19.		1.5m	Worst case from above
20.	HDMI1 3840*2160@144Hz with 1.5m power cord		
21.	HDMI1 1920*1080@60Hz with headphone		
22.	HDMI1 1920*1080@60Hz without headphone		

* Means the worst test mode.

For frequency range above 1GHz:

Adapter: ADP-330CB B

No.	Operation Mode	Cable Length	Resolution
1. *	Mode 1 HDMI1	1.8m	3840*2160@144Hz
2.		1.8m	3840*2160@60Hz
3.		1.8m	1920*1080@60Hz
4.		1.8m	800*600@60Hz
5.	Mode 2 HDMI2	1.5m	3840*2160@144Hz
6.		1.5m	3840*2160@60Hz
7.		1.5m	1920*1080@60Hz
8.		1.5m	800*600@60Hz
9.	Mode 3 DP	1.8m	3840*2160@144Hz
10.		1.8m	3840*2160@60Hz
11.		1.8m	1920*1080@60Hz
12.		1.8m	800*600@60Hz
13.	Mode 4 Type-C	1.5m	Worst case from above
14.		1.8m	3840*2160@144Hz
15.		1.8m	3840*2160@60Hz
16.		1.8m	1920*1080@60Hz
17.		1.8m	800*600@60Hz
18.		1.8m	Full Load
19.		1.5m	Worst case from above
20.	HDMI1 3840*2160@144Hz with 1.5m power cord		
21.	HDMI1 1920*1080@60Hz with headphone		
22.	HDMI1 1920*1080@60Hz without headphone		

* Means the worst test mode.

Adapter: PA-1331-99

No.	Operation Mode	Cable Length	Resolution
1. *	Mode 1 HDMI1	1.8m	3840*2160@144Hz
2.		1.8m	3840*2160@60Hz
3.		1.8m	1920*1080@60Hz
4.		1.8m	800*600@60Hz
5.	Mode 2 HDMI2	1.5m	3840*2160@144Hz
6.		1.5m	3840*2160@60Hz
7.		1.5m	1920*1080@60Hz
8.		1.5m	800*600@60Hz
9.	Mode 3 DP	1.8m	3840*2160@144Hz
10.		1.8m	3840*2160@60Hz
11.		1.8m	1920*1080@60Hz
12.		1.8m	800*600@60Hz
13.	Mode 4 Type-C	1.5m	Worst case from above
14.		1.8m	3840*2160@144Hz
15.		1.8m	3840*2160@60Hz
16.		1.8m	1920*1080@60Hz
17.		1.8m	800*600@60Hz
18.		1.8m	Full Load
19.		1.5m	Worst case from above
20.	HDMI1 3840*2160@144Hz with 1.5m power cord		
21.	HDMI1 1920*1080@60Hz with headphone		
22.	HDMI1 1920*1080@60Hz without headphone		

* Means the worst test mode.

4.7 Test result

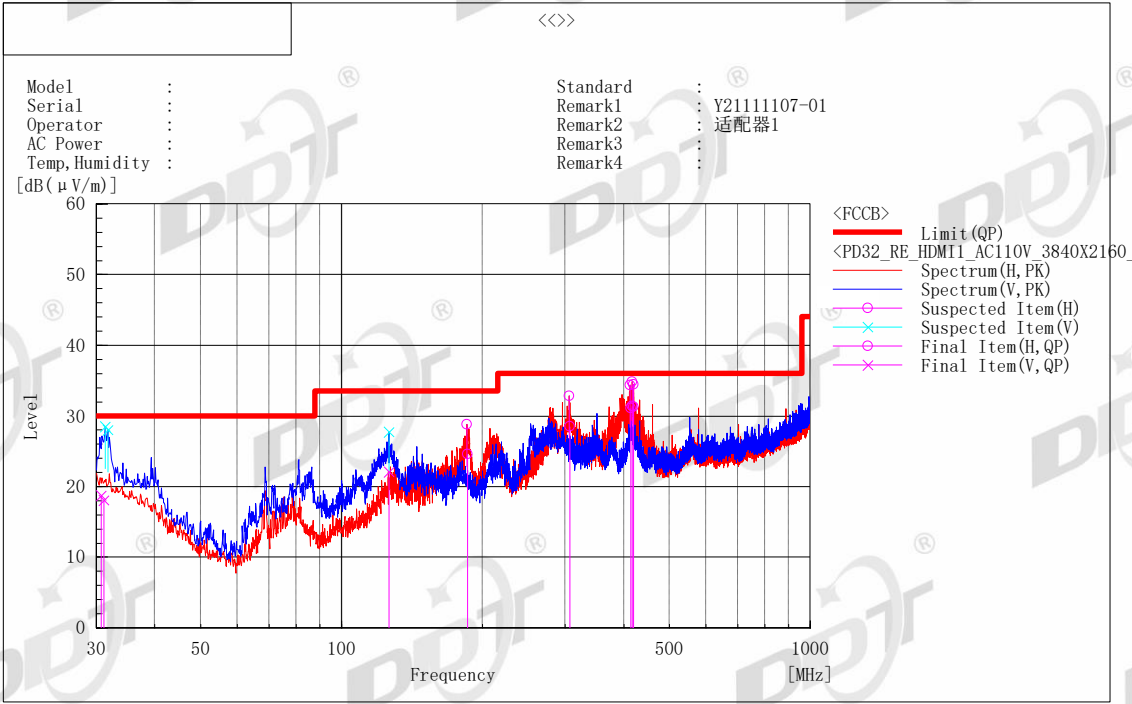
PASS. (See below detailed test result)

Note: All emissions not reported below are too low against the prescribed limits.

30MHz ~ 1GHz

Adapter: ADP-330CB B

Operating Mode 1: HDMI1 IN



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c. f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]	System	Remark
1	185.640	H	38.4	-13.8	24.6	33.5	8.9	372.0	156.8	1	
2	416.564	H	36.3	-4.9	31.4	36.0	4.6	274.0	196.1	1	
3	419.071	H	36.2	-4.9	31.3	36.0	4.7	223.0	200.0	1	
4	413.638	H	35.9	-4.8	31.1	36.0	4.9	216.0	201.2	1	
5	126.229	V	33.2	-11.1	22.1	33.5	11.4	175.0	312.4	2	
6	306.637	H	37.2	-8.7	28.5	36.0	7.5	208.0	54.3	1	
7	30.705	V	24.1	-5.3	18.8	30.0	11.2	116.0	24.4	2	
8	31.139	V	23.7	-5.6	18.1	30.0	11.9	116.0	173.4	2	

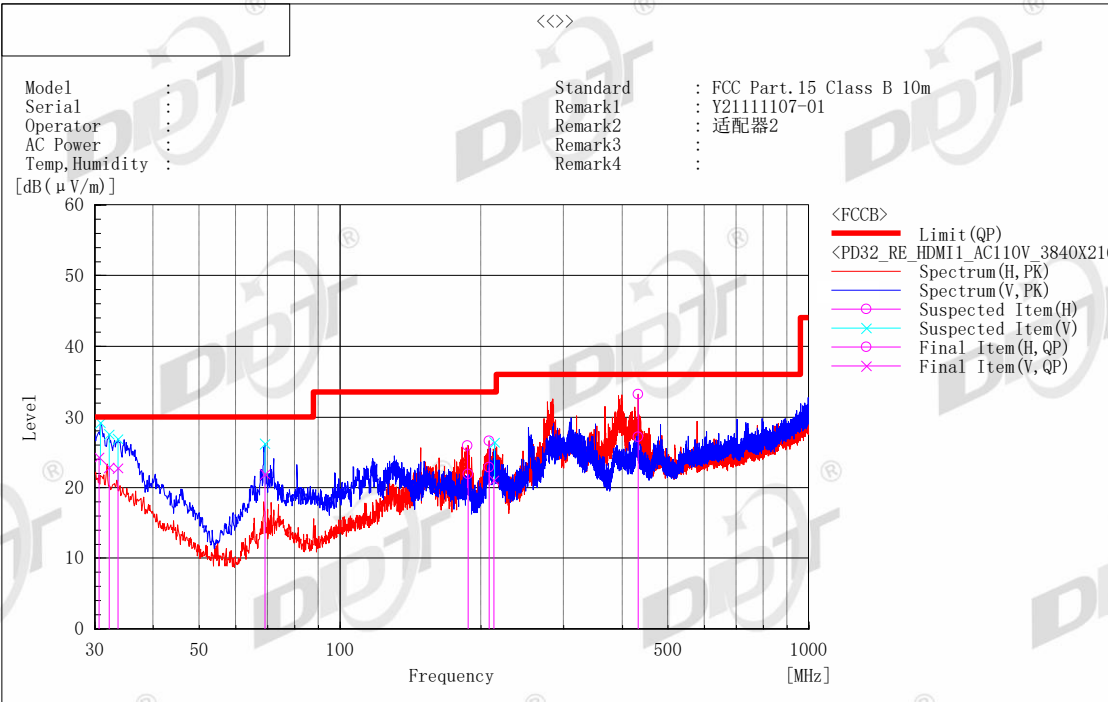
Note) Receiving antenna polarization : Horizontal and/or Vertical

Test Distance : 10 m, Antenna Height : 1 m to 4 m

Level QP (Quasi-Peak) = Reading QP + Factor (Antenna Factor + Cable Loss - Amp. Gain)

Margin QP (Quasi-Peak) = Limit - Level QP

30MHz ~ 1GHz
Adapter: PA-1331-99
Operating Mode 1: HDMI1 IN



Final Result

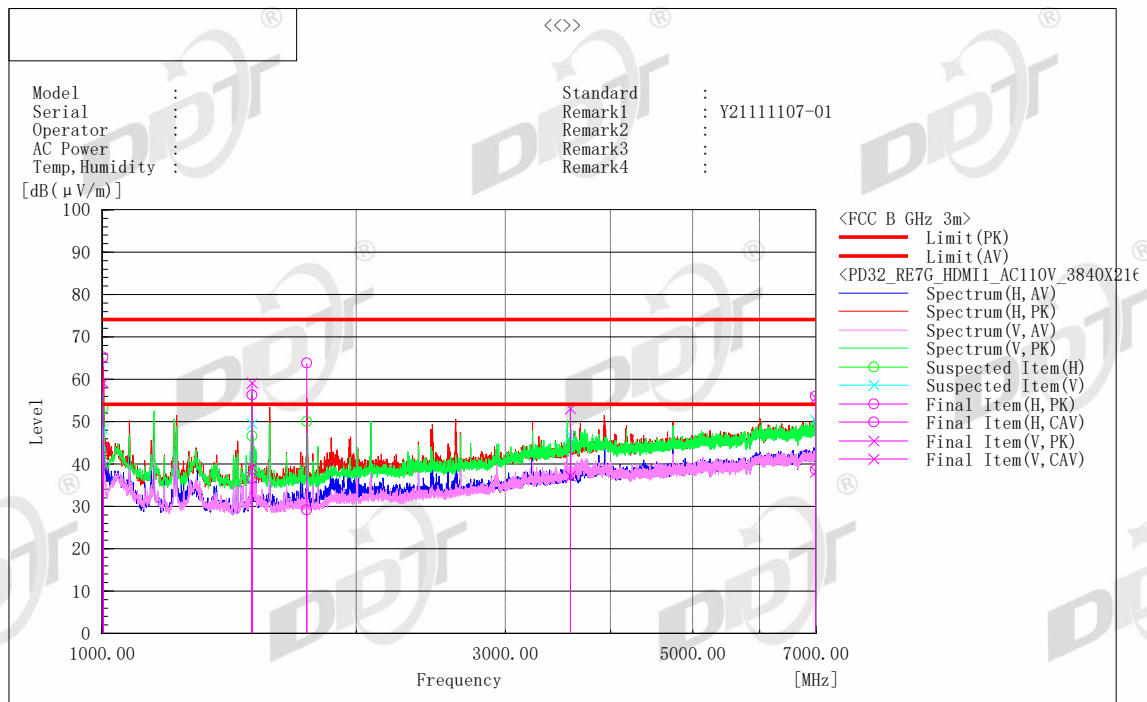
No.	Frequency [MHz]	(P)	Reading QP [dB (μV)]	c. f [dB (1/m)]	Result QP [dB (μV/m)]	Limit QP [dB (μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]	System	Remark
1	30.586	V	29.5	-5.2	24.3	30.0	5.7	165.0	231.5	2	
2	32.216	V	29.3	-6.4	22.9	30.0	7.1	184.0	359.9	2	
3	33.621	V	29.6	-6.8	22.8	30.0	7.2	153.0	359.9	2	
4	207.784	H	36.6	-13.7	22.9	33.5	10.6	326.0	78.4	1	
5	213.231	V	34.0	-12.9	21.1	33.5	12.4	129.0	65.9	2	
6	69.223	V	39.0	-17.1	21.9	30.0	8.1	216.0	81.2	2	
7	431.751	H	32.2	-5.0	27.2	36.0	8.8	231.0	179.0	1	
8	187.311	H	35.8	-13.9	21.9	33.5	11.6	326.0	135.2	1	

Note) Receiving antenna polarization : Horizontal and/or Vertical
Test Distance : 10 m, Antenna Height : 1 m to 4 m
Level QP (Quasi-Peak) = Reading QP + Factor (Antenna Factor + Cable Loss - Amp. Gain)
Margin QP (Quasi-Peak) = Limit - Level QP

Above 1GHz

Adapter: ADP-330CB B

Operating Mode 1: HDMI1 IN



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [°]
1	6987.283	V	59.2	41.8	-3.6	55.6	38.2	74.0	54.0	18.4	15.8	173.0	129.9
2	6988.900	H	59.6	42.2	-3.6	56.0	38.6	74.0	54.0	18.0	15.4	162.0	133.2
3	1002.859	H	84.2	62.7	-19.0	65.2	43.7	74.0	54.0	8.8	10.3	188.0	160.7
4	1746.834	H	80.5	45.8	-16.7	63.8	29.1	74.0	54.0	10.2	24.9	132.0	211.4
5	1505.057	V	75.9	55.9	-16.8	59.1	39.1	74.0	54.0	14.9	14.9	126.0	214.9
6	1002.333	V	78.2	58.5	-19.0	59.2	39.5	74.0	54.0	14.8	14.5	153.0	332.5
7	1504.776	H	73.1	53.4	-16.8	56.3	36.6	74.0	54.0	17.7	17.4	122.0	228.6
8	3584.207	V	62.3	46.3	-9.2	53.1	37.1	74.0	54.0	20.9	16.9	127.0	185.7

Note1) (P) : Abbreviation of Antenna Polarity

Note2) Reading PK / C/AV : Received raw Peak / C/Average signal

Note3) Factor = Antenna factor + Cable loss – Amplifier gain

Note4) Level PK / C/AV = Reading PK / C/AV + Factor, Real signal Peak / C/Average level

Note5) Margin PK / C/AV = Limit – Level PK / C/AV

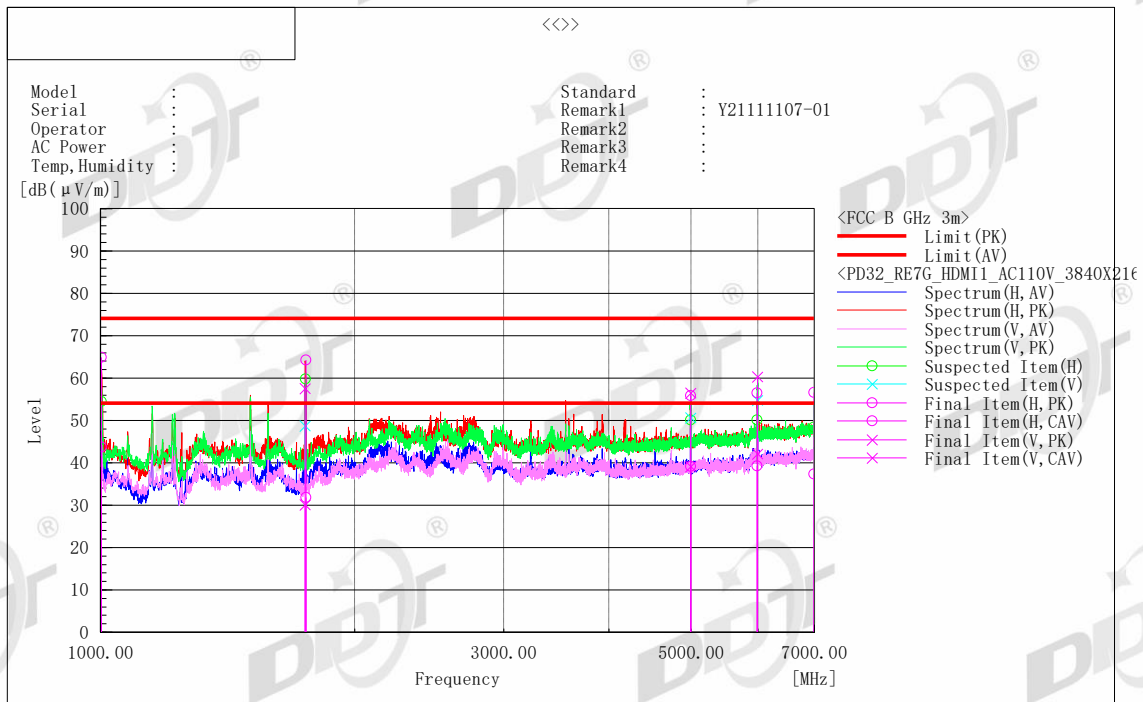
PK : Abbreviation of Peak

C/AV : Abbreviation of CISPR Average

Above 1GHz

Adapter: PA-1331-99

Operating Mode 1: HDMI1 IN



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [°]
1	1750.125	H	81.0	48.5	-16.7	64.3	31.8	74.0	54.0	9.7	22.2	162.0	332.5
2	5998.061	V	64.4	46.2	-4.1	60.3	42.1	74.0	54.0	13.7	11.9	162.0	0.0
3	1003.059	H	83.9	62.7	-19.0	64.9	43.7	74.0	54.0	9.1	10.3	197.0	160.9
4	4998.442	V	62.6	45.3	-6.1	56.5	39.2	74.0	54.0	17.5	14.8	178.0	140.4
5	4994.334	H	62.0	45.3	-6.1	55.9	39.2	74.0	54.0	18.1	14.8	121.0	143.4
6	5986.118	H	60.7	43.5	-4.2	56.5	39.3	74.0	54.0	17.5	14.7	126.0	289.6
7	1746.903	V	74.2	46.8	-16.7	57.5	30.1	74.0	54.0	16.5	23.9	137.0	336.0
8	6990.078	H	60.2	40.9	-3.6	56.6	37.3	74.0	54.0	17.4	16.7	127.0	313.5

Note1) (P) : Abbreviation of Antenna Polarity

Note2) Reading PK / C/AV : Received raw Peak / C/Average signal

Note3) Factor = Antenna factor + Cable loss – Amplifier gain

Note4) Level PK / C/AV = Reading PK / C/AV + Factor, Real signal Peak / C/Average level

Note5) Margin PK / C/AV = Limit – Level PK / C/AV

PK : Abbreviation of Peak

C/AV : Abbreviation of CISPR Average

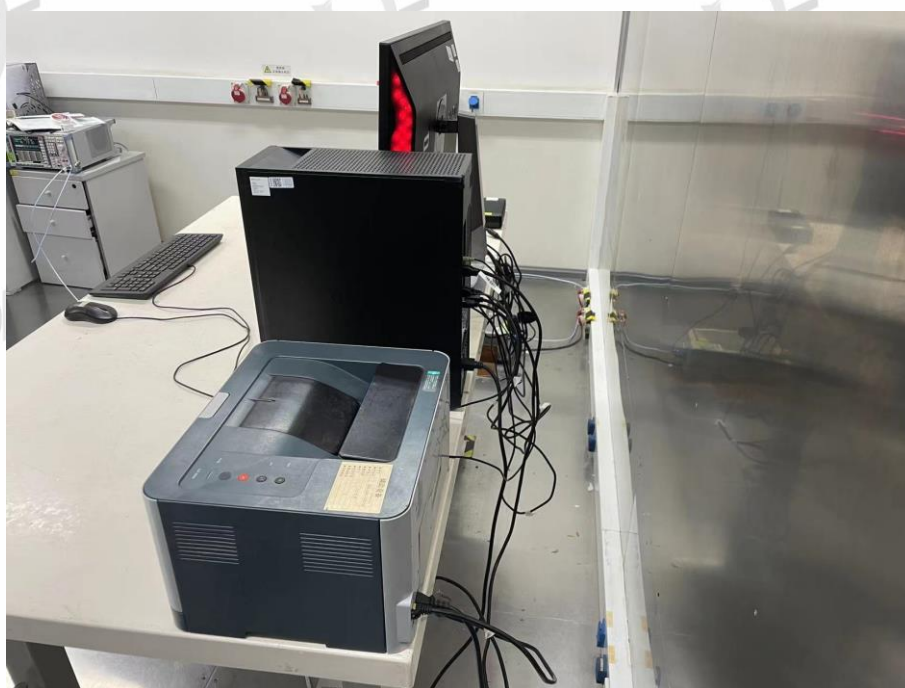
5. Test Setup Photos

5.1 Conducted emission at the mains ports

Adapter: ADP-330CB B

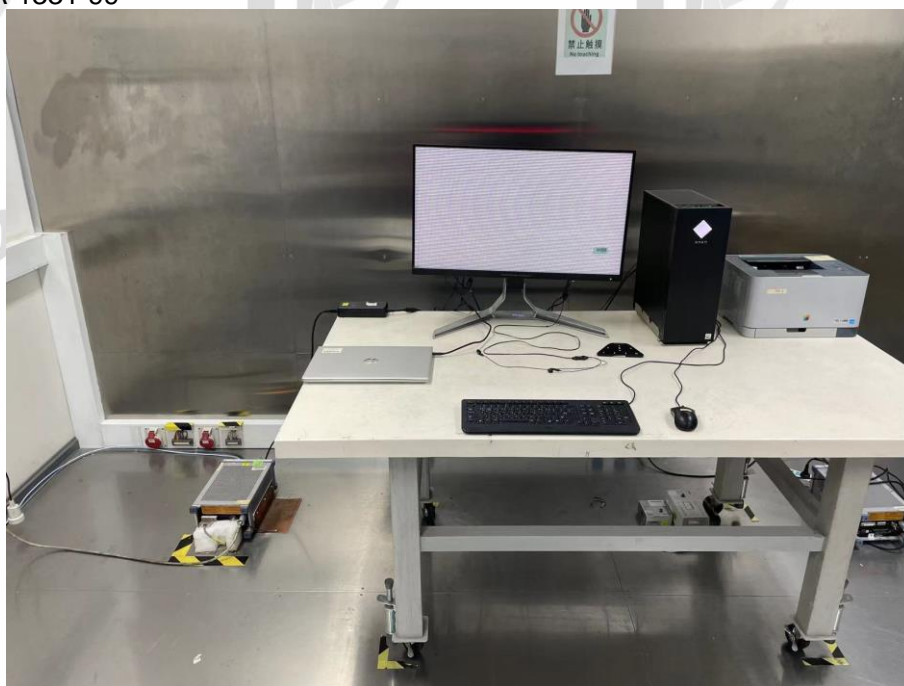


[Front]

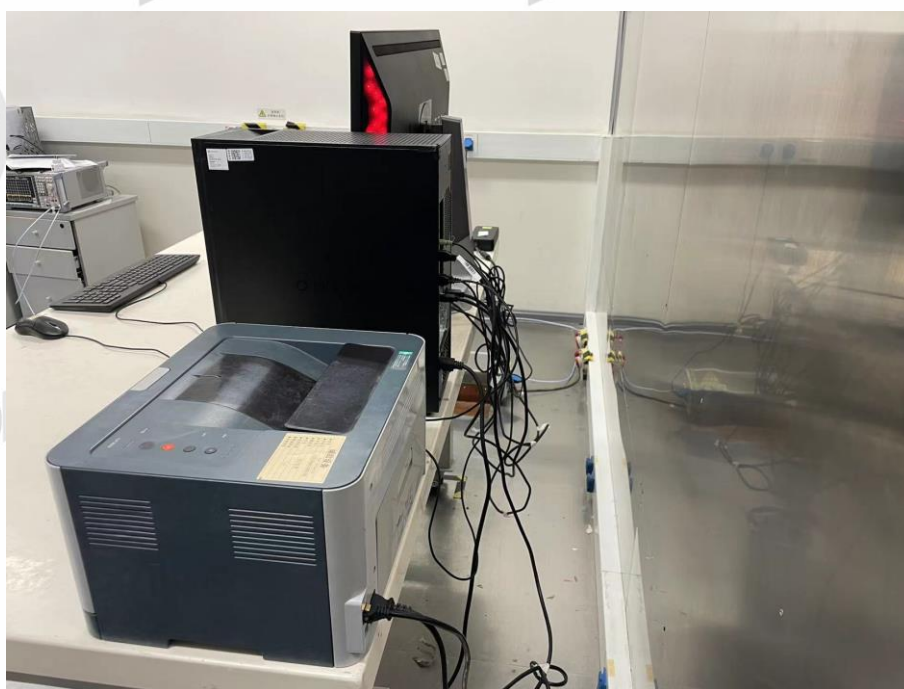


[Rear]

Adapter: PA-1331-99



[Front]



[Rear]

5.2 Radiated emission

Adapter: ADP-330CB B



[Front]

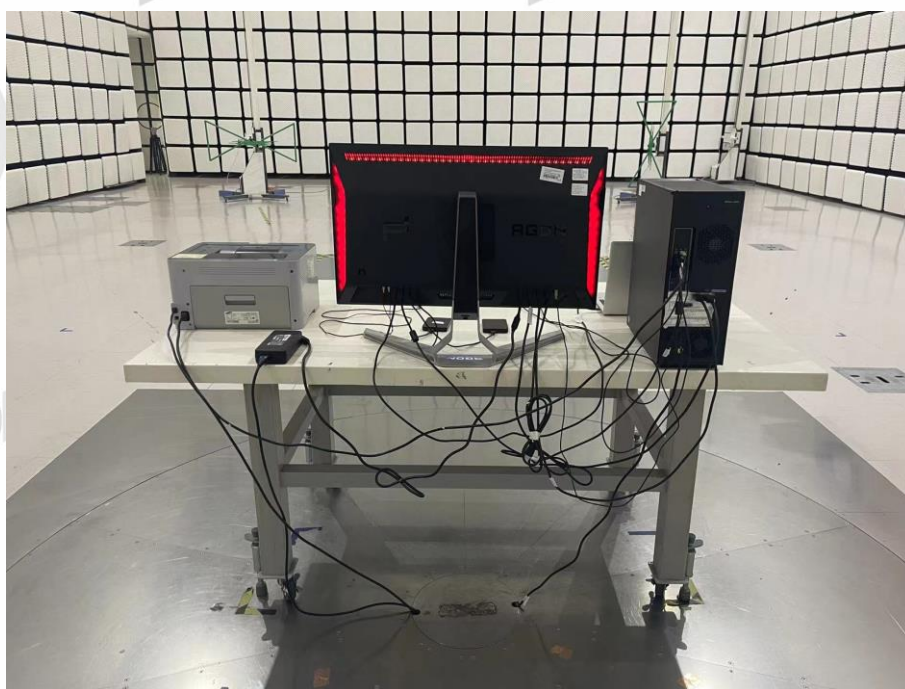


[Rear]

Adapter: PA-1331-99



[Front]

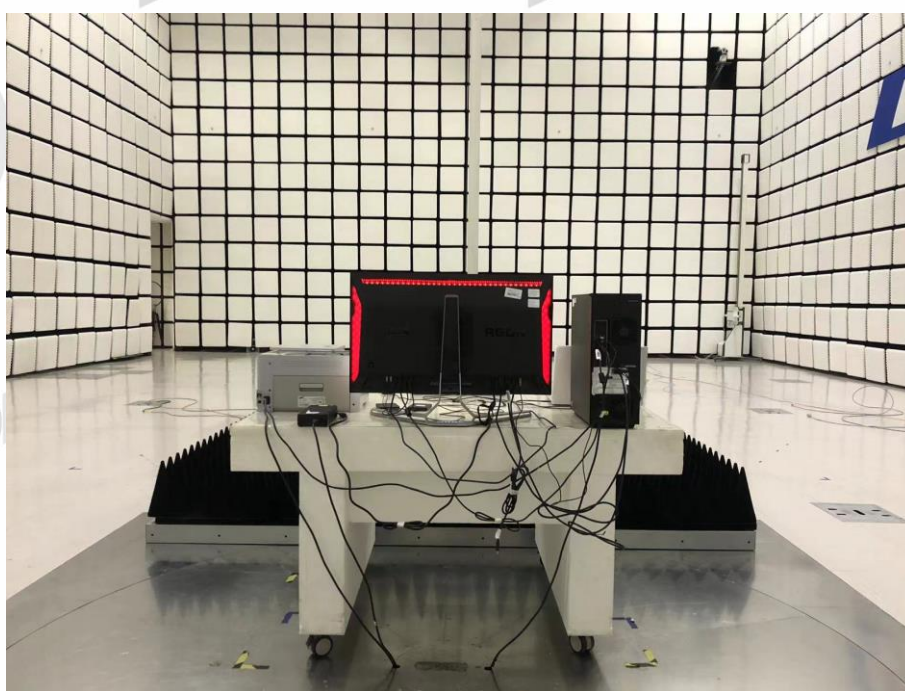


[Rear]

Adapter: ADP-330CB B



[Front]

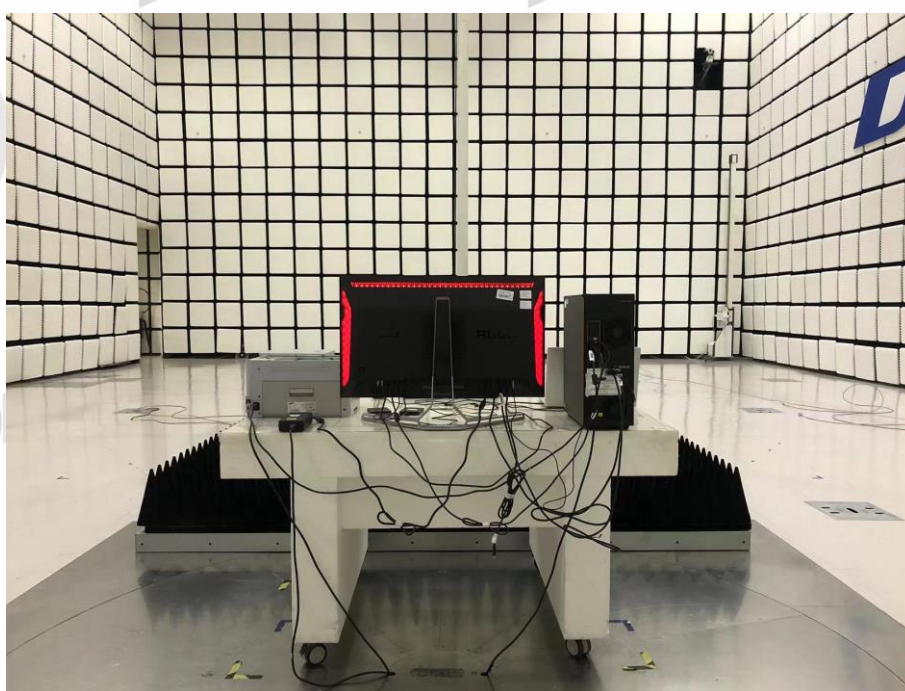


[Rear]

Adapter: PA-1331-99



[Front]



[Rear]

Annex I

Regulatory Statement and Label Marking Advice for the FCC SDoC

1. Marking Suggested for the label:

Trade Name and model number

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2. Statement suggested for the User Manual:

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

Notes: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note: If shielded cables or special accessories are required for compliance, a statement must be included which instructs the user to employ them, for example, Shielded cables must be used with this unit to ensure compliance with the Class B FCC limits.

END OF REPORT