



Certificate #4312.01

# TEST REPORT

**Product Name:** LCD Monitor  
**Trade Mark:** AOC  
**Model No.:** C24G42E  
 \*\*C24G4\*\*\*\*\* (The symbol '\*' in the model name can be A to Z, a to z, 0 to 9, '+', ' ', '\', '/' or blank, for marketing use only.)  
**Add. Model No.:**  
**Report Number:** 24121915347EMC-2  
 ICES-003 Issue 7  
**Test Standards:** ANSI C63.4-2014  
 ANSI C63.4a-2017  
**Test Result:** PASS  
**Date of Issue:** January 6, 2025

Prepared for:

**TPV Electronics (Fujian) Co., Ltd.**  
**Rongqiao Economic and Technological Development Zone, Fuqing**  
**City, Fujian Province, P.R. China**

Prepared by:

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**Shenzhen UnionTrust Quality and Technology Co., Ltd.**

**Version**

Version No.	Date	Description
V1.0	January 6, 2025	Original



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## 1. GENERAL INFORMATION

### 1.1 CLIENT INFORMATION

<b>Applicant:</b>	TPV Electronics (Fujian) Co., Ltd.
<b>Address of Applicant:</b>	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China

### 1.2 EUT INFORMATION

#### 1.2.1 General Description of EUT

<b>Product Name:</b>	LCD Monitor
<b>Trade Mark:</b>	AOC
<b>Model No.:</b>	C24G42E
<b>Add. Model No.:</b>	**C24G4***** (The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', '-', '\', '/' or blank, for marketing use only.)
<b>AC Supply:</b>	100-240V~, 50/60Hz
<b>DC Supply:</b>	N/A
<b>Classification of digital devices:</b>	Class B
<b>Highest Internal Frequency:</b>	>108MHz
<b>I/O Port:</b>	1 x AC Port 1 x AUDIO out Port; 2 x HDMI Port; 1 x DP Port
<b>Sample Received Date:</b>	2024-12-19
<b>Sample Tested Date:</b>	2024-12-25 to 2024-12-27
Note: The additional model **C24G4***** (The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', '-', '\', '/' or blank, for marketing use only.) is identical with the test model C24G42E except the model number for marketing purpose.	

**Remark:** The above EUT's information was provided by customer. Please refer to the specifications or user's manual for more detailed description.

#### 1.2.2 Description of Accessories

HDMI Cable	
<b>Description:</b>	HDMI Cable
<b>Cable Type:</b>	Shielded without ferrite
<b>Length:</b>	1.2/1.5/1.8Meter

AC Power Cord	
<b>Description:</b>	AC Power Cord
<b>Cable Type:</b>	Unshielded without ferrite
<b>Length:</b>	1.2/1.5/1.8Meter

DP Cable	
<b>Description:</b>	DP Cable
<b>Cable Type:</b>	Shielded without ferrite
<b>Length:</b>	1.2/1.5/1.8Meter

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### 1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

None

### 1.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT according to the specifications of the manufacturers. It complies with the requirements of the following standards:

- ICES-003 Issue 7**
- ANSI C63.4-2014**
- ANSI C63.4a-2017**

All test items have been performed and recorded as per the above standards

### 1.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested with associated equipment below.

1) Support Equipment

Description	Manufacturer	Model No.	Serial Number	Supplied by
PC	DELL	XPS8900	2015AP3055	UnionTrust
keyboard	DELL	KB212-B	CN-0N291F-715	UnionTrust
mouse	DELL	MS111	CN-011D3V-738	UnionTrust
PC work station	DELL	5820	BEC20190001	UnionTrust
Dummy load	N/A	E214887	N/A	UnionTrust
DVD Player	GIEC	BDP-G4305	N/A	UnionTrust
Earphone	N/A	QTER01JY	N/A	UnionTrust

### 1.6 TEST LOCATION

**Shenzhen UnionTrust Quality and Technology Co., Ltd.**

Address: 16/F, Block A, Building 6th, Baoneng Science and Technology Park, Longhua Street, Longhua District, Shenzhen, China 518109

Telephone: TEL:+86 (0) 755 2823 0888

Fax:E-mail:info@uttlab.com

Tests were sub-contracted. [Radiated Emission (10 m) ]

**GRG Metrology & Test Group Co., Ltd.**

Address: No. 1301 Guanguang Road, Xinlan Community, Guanlan Street, Longhua District, Shenzhen, 518110, People's Republic of China

Telephone: 86-028-86496515

### 1.7 TEST FACILITY

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

**Shenzhen UnionTrust Quality and Technology Co., Ltd.**

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**Shenzhen UnionTrust Quality and Technology Co., Ltd**

**CNAS-Lab Code: L9069**

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

**A2LA-Lab Certificate No.: 4312.01**

Shenzhen UnionTrust Quality and Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

**ISED Wireless Device Testing Laboratories**

CAB identifier: CN0032

**FCC Accredited Lab.**

Designation Number: CN1194

Test Firm Registration Number: 259480

**GRG Metrology & Test Group Co., Ltd.**

**A2LA-Lab Certificate No.: 2861.01**

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

**CNAS-Lab Code: L0446**

**1.8 DEVIATION FROM STANDARDS**

None.

**1.9 ABNORMALITIES FROM STANDARD CONDITIONS**

None.

**1.10 OTHER INFORMATION REQUESTED BY THE CUSTOMER**

None.

**1.11 MEASUREMENT UNCERTAINTY**

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Measurement Uncertainty
1	Conducted emission 9kHz-150kHz	±3.2 dB
2	Conducted emission 150kHz-30MHz	±2.7 dB
3	Radiated emission 9kHz-30MHz	±4.7 dB
4	Radiated emission 30MHz-1GHz	±4.6 dB
5	Radiated emission 1GHz-18GHz	±4.4 dB
6	Radiated emission 18GHz-26GHz	±4.6 dB
7	Radiated emission 26GHz-40GHz	±4.6 dB

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**2. TEST SUMMARY**

Test Cases			
Test Item	Test Requirement	Test Method	Result
Radiated emissions	ICES-003 Issue 7 Section 3.2.2	ANSI C63.4-2014	Pass
Conducted emissions	ICES-003 Issue 7 Section 3.2.1	ANSI C63.4-2014	Pass

**NOTE:**

This report changes the standard to ICES-003 Issue 7 based on report 24121915347EMC-1, After evaluation, all test items (test data) and test photos refer to the previous report no.: 24121915347EMC-1.

### 3. EQUIPMENT LIST

Conducted Emission Test Equipment List					
Equipment	Manufacturer	Model No.	Serial No.	Cal.Date	Cal.Due Date
LISN Artifical Mains Network	ROHDE & SCHWARZ	EVN216	3560.6550.1 2	2024-09-26	2027-09-25
LISN Artifical Mains Network	ETS-Lindgren	3816/2SH	00201088	2024-10-25	2025-10-24
Receiver	ROHDE & SCHWARZ	ESCI3	1166.5950.0 3	2024-10-25	2027-10-24
Shielding room	ETS-Lindgren	843	Euroshiedpn -CT001270-1 246	2024-10-25	2027-10-24
Test Software	EZ-EMC	EZ-CON	Software Version:EMC -CON 3A1.1	--	--
Temp&Humidity Recorder	RenKE	RS-WS-WIFI -6J	30076573	2024-10-28	2025-10-27
Atmospheric pressure gauge	RenKE	RS-QY-WIFI- 2-4-OLED	30071346	2024-10-28	2025-10-27

Radiated Emission - 3M Chamber Test Equipment List					
Equipment	Manufacturer	Model No.	Serial No.	Cal.Date	Cal.Due Date
3 m SAC	ETS-Lindgren	3 m	Euroshiedpn -CT001270-1 317	2023-11-11	2026-11-10
Double-Ridged Waveguide Horn Antenna(Pre-amplifier)	ETS-Lindgren	3117-PA	00201541	2024-04-01	2025-03-31
Pre-amplifier	ETS-Lindgren	00118385	00201874	2024-04-01	2025-03-31
Receiver	ROHDE & SCHWARZ	ESIB26	100114	2024-10-25	2025-10-24
Test Software	Audix	e3	Software Version: 9.160323	--	--
Multi device Controller	ETS-Lindgren	7006-001	00160105	--	--
Temp&Humidity Recorder	RenKE	RS-WS-WIFI -6J	30076573	2024-10-28	2025-10-27
Atmospheric pressure gauge	RenKE	RS-QY-WIFI- 2-4-OLED	30071346	2024-10-28	2025-10-27

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**GRG Metrology & Test Group Co., Ltd.**

Radiated Emission (10m SAC) Test Equipment List						
Use d	Equipment	Manufacturer	Model No.	Serial Number	Cal. Due date	Cal. Interval
<input checked="" type="checkbox"/>	10m SAC	Taihe Mao rui	17.2mX12.1m X8.5m	N/A	2027-10-11	3 year
<input checked="" type="checkbox"/>	EMI Test Receiver	R&S	ESR7	10244	2025-07-24	1 year
<input checked="" type="checkbox"/>	EMI Test Receiver	R&S	ESCI	100145	2024-07-19	1 year
<input checked="" type="checkbox"/>	Bilog Antenna	TESEQ	CBL6143A	26039	2025-06-18	1 year
<input type="checkbox"/>	Bilog Antenna	TESEQ	CBL6143A	32399	2025-08-11	1 year
<input checked="" type="checkbox"/>	Preamplifier	EMEC	EM330	100425	2024-12-29	1 year
<input checked="" type="checkbox"/>	Test Software	FARAD	EZ_EM C	CCS-03 A1	N/A	N/A

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## 4. TEST CONFIGURATION

### 4.1 ENVIRONMENTAL CONDITIONS FOR TESTING

#### 4.1.1 Normal or Extreme Test Conditions

Environment Parameter	Selected Values During Tests		
Test Condition	Ambient		
	Temperature (°C)	Voltage	Relative Humidity (%)
TN/VN	+15 to +35	120V ~60Hz and 240V ~50Hz	20 to 75
<b>Remark:</b>			
1) NV: Normal Voltage; NT: Normal Temperature			

#### 4.1.2 Record of Normal Environment

Test Item	Sample No.	Temp. (°C)	Relative Humidity (%)	Pressure (kPa)
Conducted emissions	S202412194909-ZJA01/1	20.8	41.5	100.3
Radiated emissions(3m)	S202412194909-ZJA01/1	22.1	46.2	100.9
Radiated emissions(10m)	S202412194909-ZJA01/1	20.7	45.0	101.0

## 4.2 TEST MODES

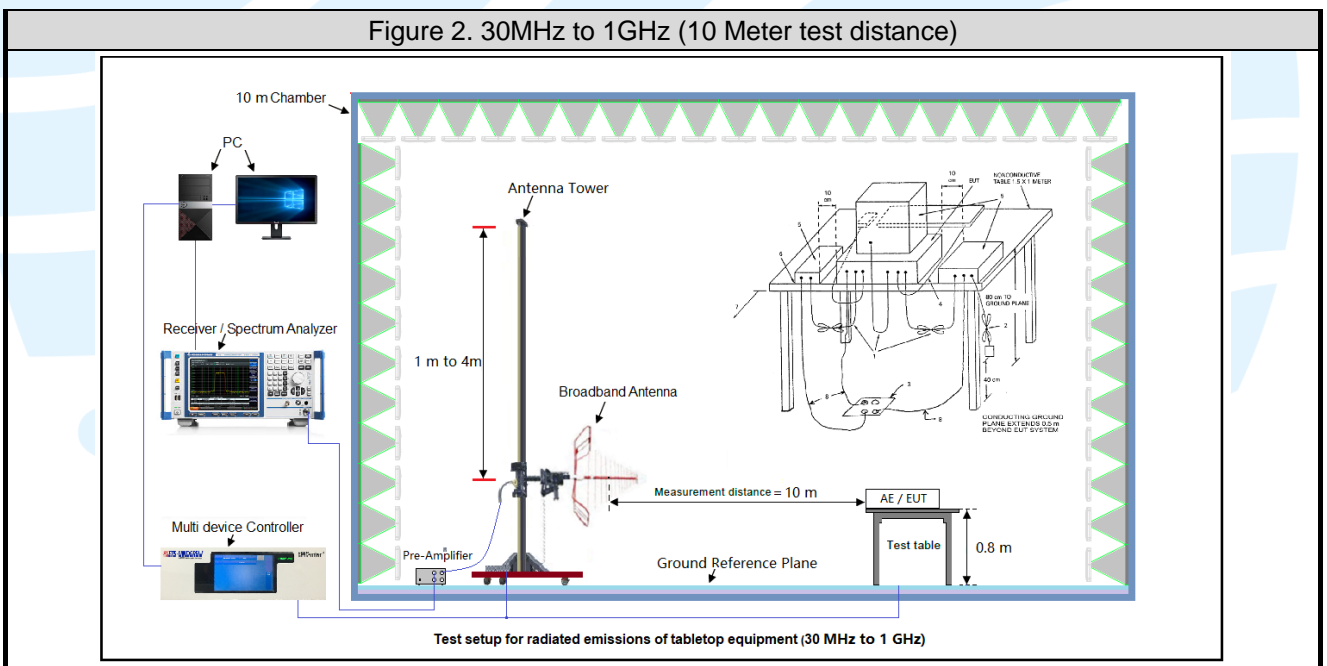
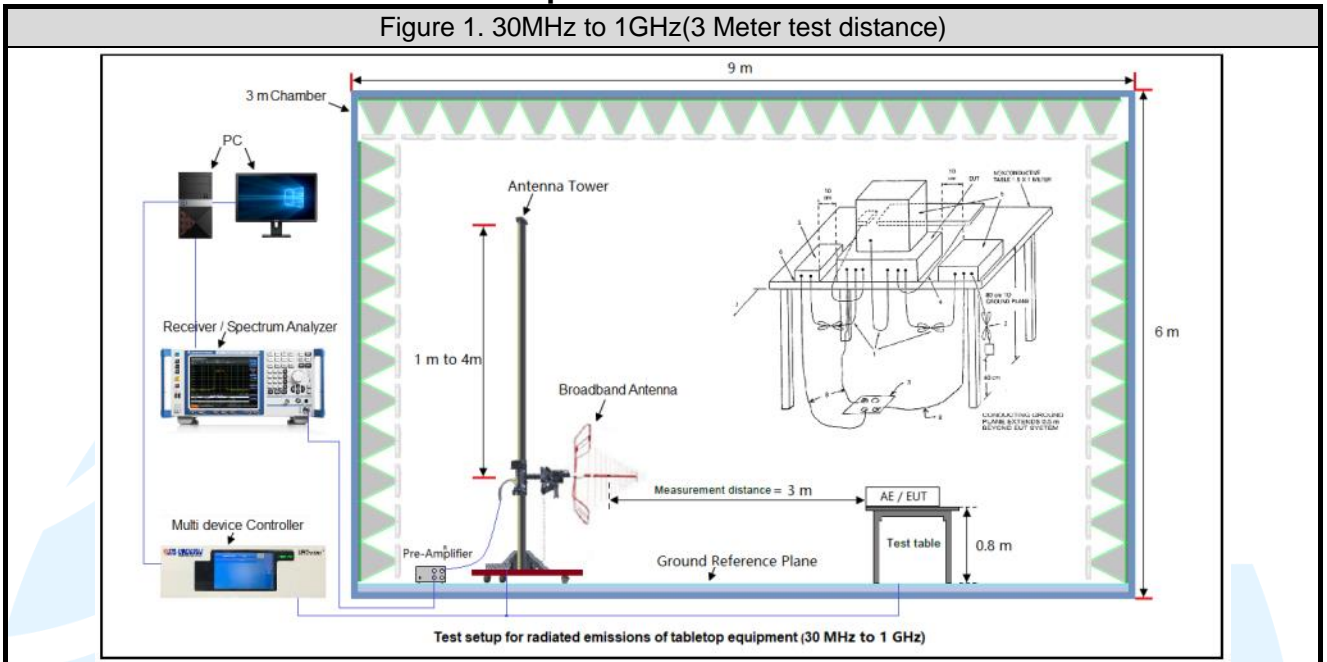
Test Modes									
No.	Test Voltage	Input ports	Input source	Cable Length (Meter)	Pattern	Resolution	Rotatio	Stand Position	Audio
1.	120V~60Hz	HDMI 1	PC	1.8	H Pattern	800*600@60Hz	Landscape	UP	With Earphone
2.			PC	1.8	H Pattern	1280*1024@60Hz	Landscape	UP	With Earphone
3.			PC	1.8	H Pattern	1920*1080@60Hz	Landscape	UP	With Earphone
4. *			PC	1.8	H Pattern	1920*1080@180Hz	Landscape	UP	With Earphone
5.			PC	1.8	BT 471-1	1920*1080@180Hz	Landscape	UP	With Earphone
6.			PC	1.8	H Pattern	1920*1080@180Hz	Landscape	UP	Without Earphone
7.			PC	1.5	H Pattern	1920*1080@180Hz	Landscape	UP	With Earphone
8.			PC	1.2	H Pattern	1920*1080@180Hz	Landscape	UP	With Earphone
9.			DVD	1.8	BT 471-1	--	Landscape	UP	With Earphone
10.			DVD	1.5	BT 471-1	--	Landscape	UP	With Earphone
11.			DVD	1.2	BT 471-1	--	Landscape	UP	Without Earphone
12.		HDMI 2	Worst case from Test mode 1~10						
13.		DP	PC	1.8	H Pattern	800*600@60Hz	Landscape	UP	With Earphone
14.			PC	1.8	H Pattern	1280*1024@60Hz	Landscape	UP	With Earphone
15.			PC	1.8	H Pattern	1920*1080@60Hz	Landscape	UP	With Earphone
16.			PC	1.8	H Pattern	1920*1080@180Hz	Landscape	UP	With Earphone
17.			PC	1.8	H Pattern	1920*1080@180Hz	Landscape	UP	Without Earphone
18.			PC	1.5	H Pattern	1920*1080@180Hz	Landscape	UP	With Earphone
19.			PC	1.2	H Pattern	1920*1080@180Hz	Landscape	UP	With Earphone
20.	Worst case from Test mode 1~19 with 1.5m Power Cord						Landscape	UP	With Earphone
21.	Worst case from Test mode 1~19 with 1.2m Power Cord						Landscape	UP	With Earphone
22.	240V~50Hz	Worst case from Test mode 1~21							

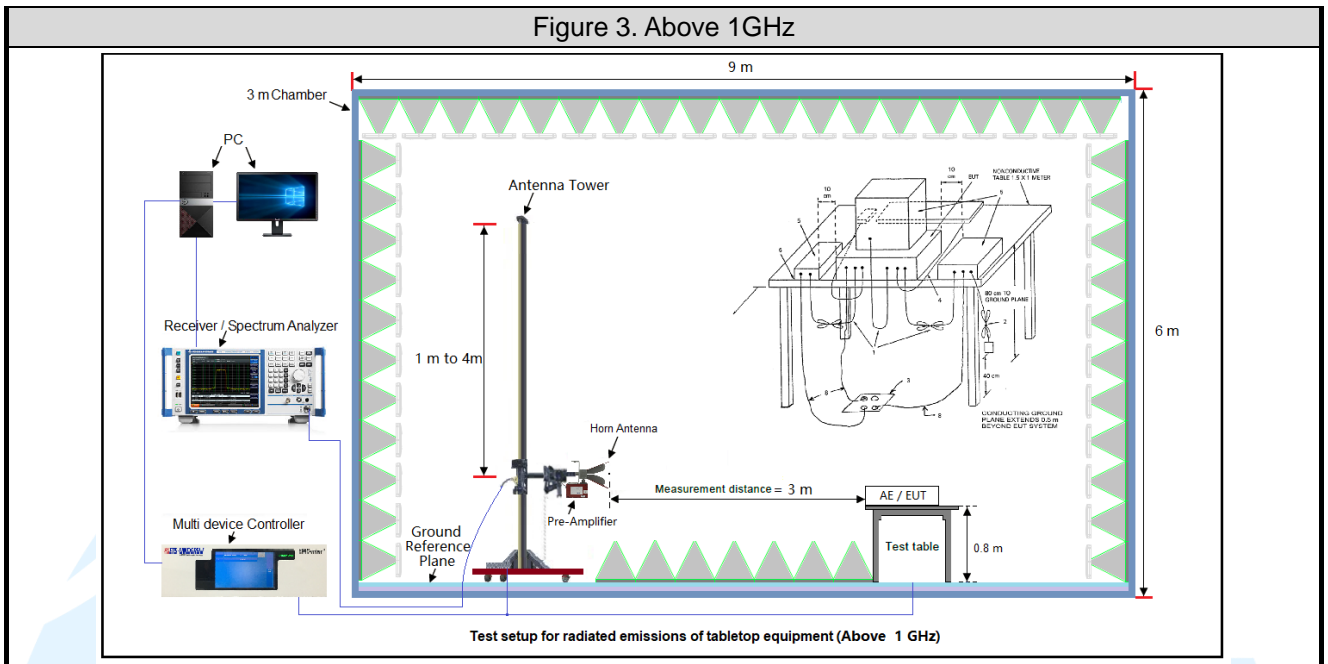
**Note:**

- 1) "\*"Means the worst test mode.
- 2) All test modes are performed at maximum brightness, contrast, and volume.

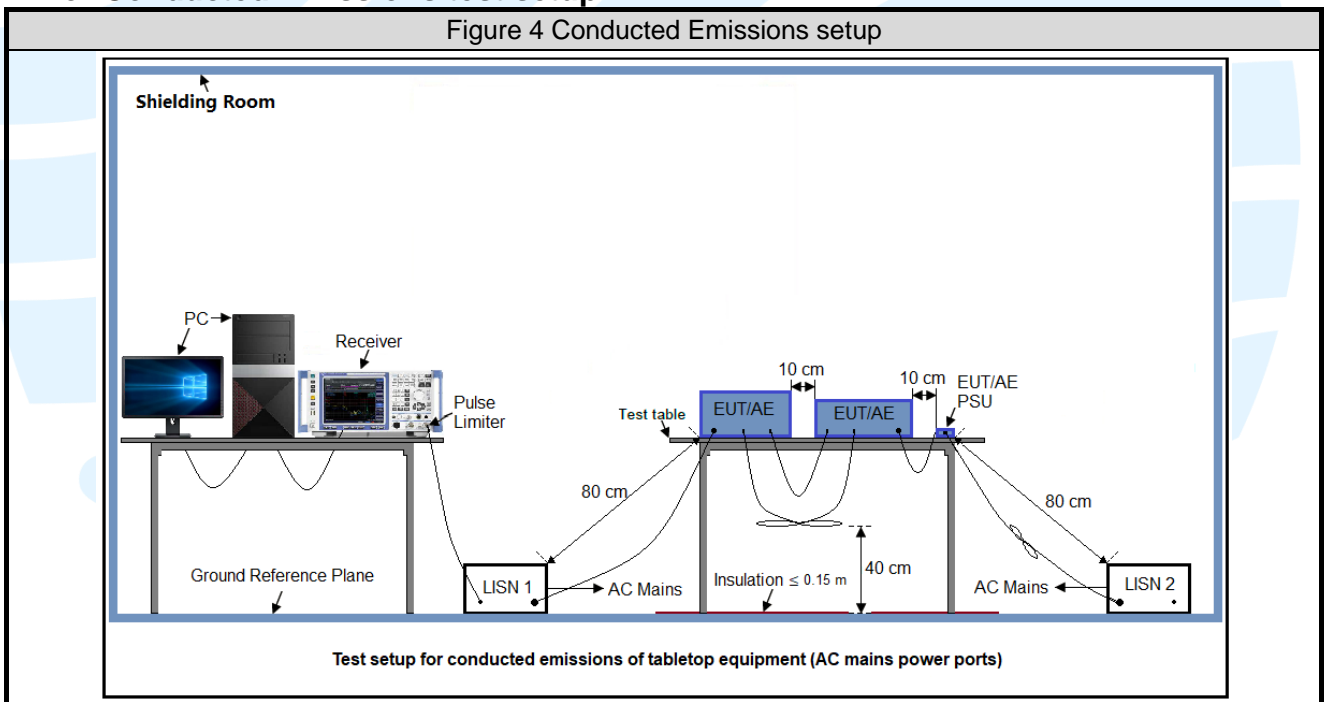
### 4.3 TEST SETUP

#### 4.3.1 For Radiated Emissions test setup





#### 4.3.2 For Conducted Emissions test setup



### 4.4 SYSTEM TEST CONFIGURATION

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000MHz. The resolution is 1 MHz or greater for frequencies above 1000MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic (according to KDB 896810 D02 SDoC FAQ v01r01) of the highest fundamental frequency or to 40 GHz, whichever is lower.

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## 5. REFERENCE DOCUMENTS FOR TESTING

No.	Identity	Document Title
1	ICES-003 Issue 7	Information Technology Equipment (Including Digital Apparatus)
2	ANSI C63.4-2014 ANSI C63.4a-2017	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 40 GHz
3	KDB 174176 D01 Line Conducted FAQ v01r01	AC power-line conducted emission frequency asked questions
4	KDB 896810 D02 SDoC FAQ v01r02	Supplier's Declaration of Conformity frequency asked questions

## 6. EMC REQUIREMENTS SPECIFICATION

### 6.1 CONDUCTED EMISSION

**Test Requirement:** ICES-003 Issue 7 Section 3.2.1

**Test Method:** ANSI C63.4-2014

**Limits:**

Limits for Class B devices

Frequency range (MHz)	Limits (dB(μV))	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50

**Remark:**

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

**Test Setup:** Refer to section 4.3.2 for details.

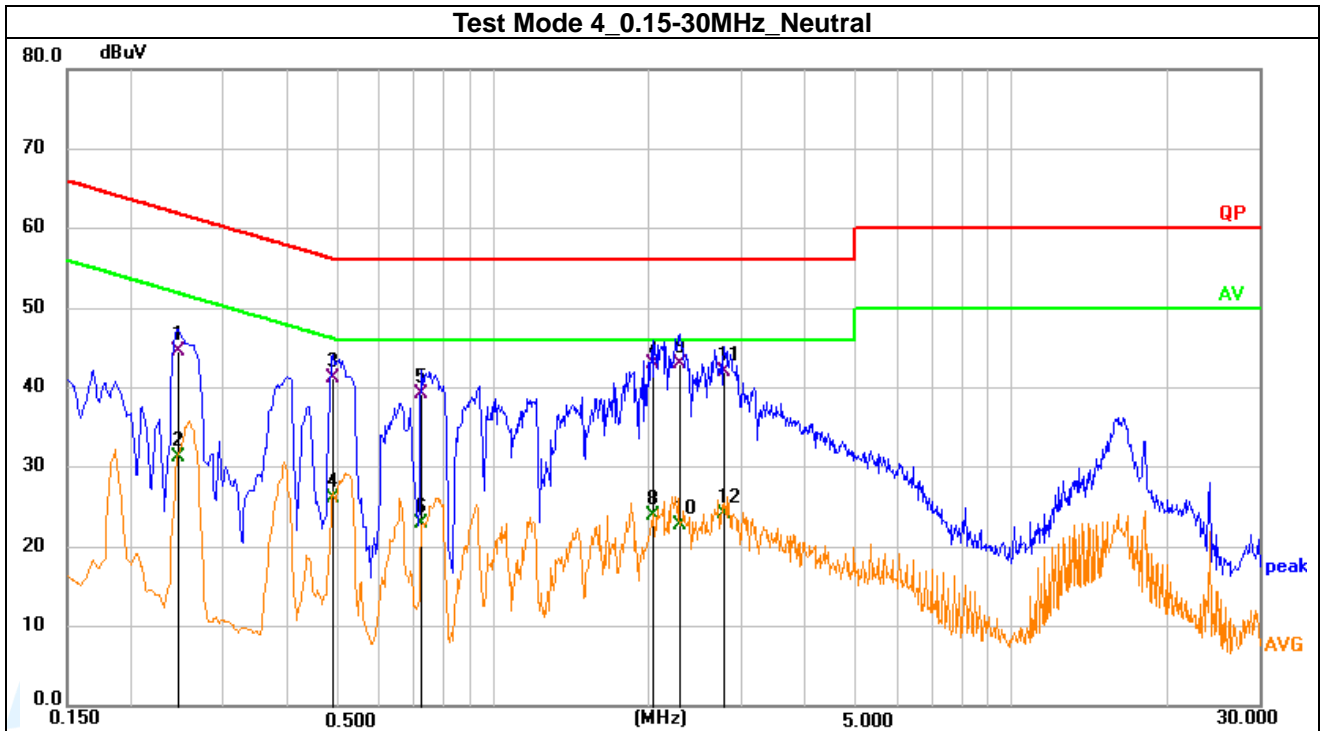
**Test Procedures:**

- 1) The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- 2) The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- 3) For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

**Equipment Used:** Refer to section 3 for details.

**Test Result:** Pass

**The worst measurement data as follows:**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2445	34.79	9.79	44.58	61.94	-17.36	QP
2	0.2445	21.44	9.79	31.23	51.94	-20.71	AVG
3	0.4875	31.38	9.77	41.15	56.21	-15.06	QP
4	0.4875	16.34	9.77	26.11	46.21	-20.10	AVG
5	0.7260	29.52	9.73	39.25	56.00	-16.75	QP
6	0.7260	13.24	9.73	22.97	46.00	-23.03	AVG
7	2.0400	33.30	9.75	43.05	56.00	-12.95	QP
8	2.0400	14.08	9.75	23.83	46.00	-22.17	AVG
9	2.2965	33.27	9.75	43.02	56.00	-12.98	QP
10	2.2965	13.00	9.75	22.75	46.00	-23.25	AVG
11	2.7915	32.27	9.75	42.02	56.00	-13.98	QP
12	2.7915	14.42	9.75	24.17	46.00	-21.83	AVG

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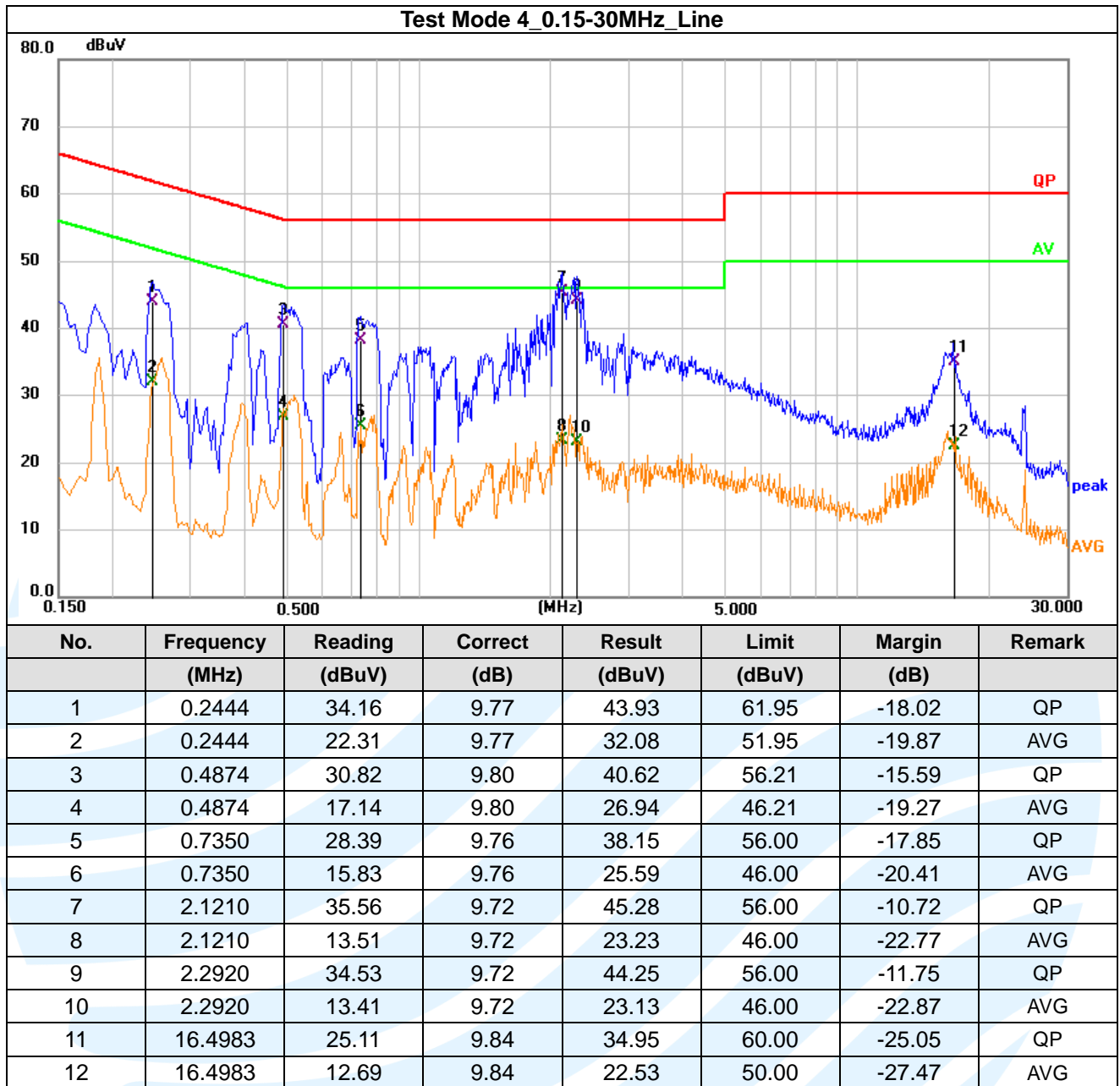
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**Remark:**

1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit
4. An initial pre-scan was performed on the Phase and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.
5. All possible modes of operation were investigated, and testing at two nominal voltages of 240V~50Hz and 120V~60Hz, only the worst case emissions reported.

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## 6.2 RADIATED EMISSION

**Test Requirement:** ICES-003 Issue 7 Clause 3.2.2

**Test Method:** ANSI C63.4-2014

**Receiver Setup:**

Frequency: (f) (MHz)	Detector type	Measurement receiver bandwidth	
		RBW	VBW
30 ≤ f ≤ 1 000	Quasi Peak	120 kHz	300 kHz
f ≥ 1000	Peak	1 MHz	3 MHz
	Average	1 MHz	3 MHz

**Measured frequency range:**

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30.
1.705-108	1000.
108-500	2000.
500-1000	5000.
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

**Limits:**

Limits for Class B devices

Frequency (MHz)	limits at 10m (dBµV/m)	limits at 3m (dBµV/m)		
	QP Detector	QP Detector	PK Detector	AV Detector
30 – 88	30.0	40.0	--	--
88 – 216	33.1	43.5	--	--
216 – 230	35.6	46.0		
230 – 960	37.0	47.0	--	--
960 – 1000	43.5	54.0	--	--
Above 1000	--	--	74.0	54.0

**Remark:**

- The lower limit shall apply at the transition frequencies.
- Emission level (dBµV/m) = 20 log Emission level (µV/m).
- For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

**Test Setup:** Refer to section 4.3.1 for details.

**Test Procedures:**

- From 30 MHz to 1GHz test procedure as below:
  - The Product was placed on the non-conductive turntable 0.8 m above the ground at a chamber.
  - Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
  - For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.
- Above 1GHz test procedure as below:
  - The Product was placed on the non-conductive turntable 0.8 m above the ground at a chamber.
  - Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 1MHz RBW. Record the

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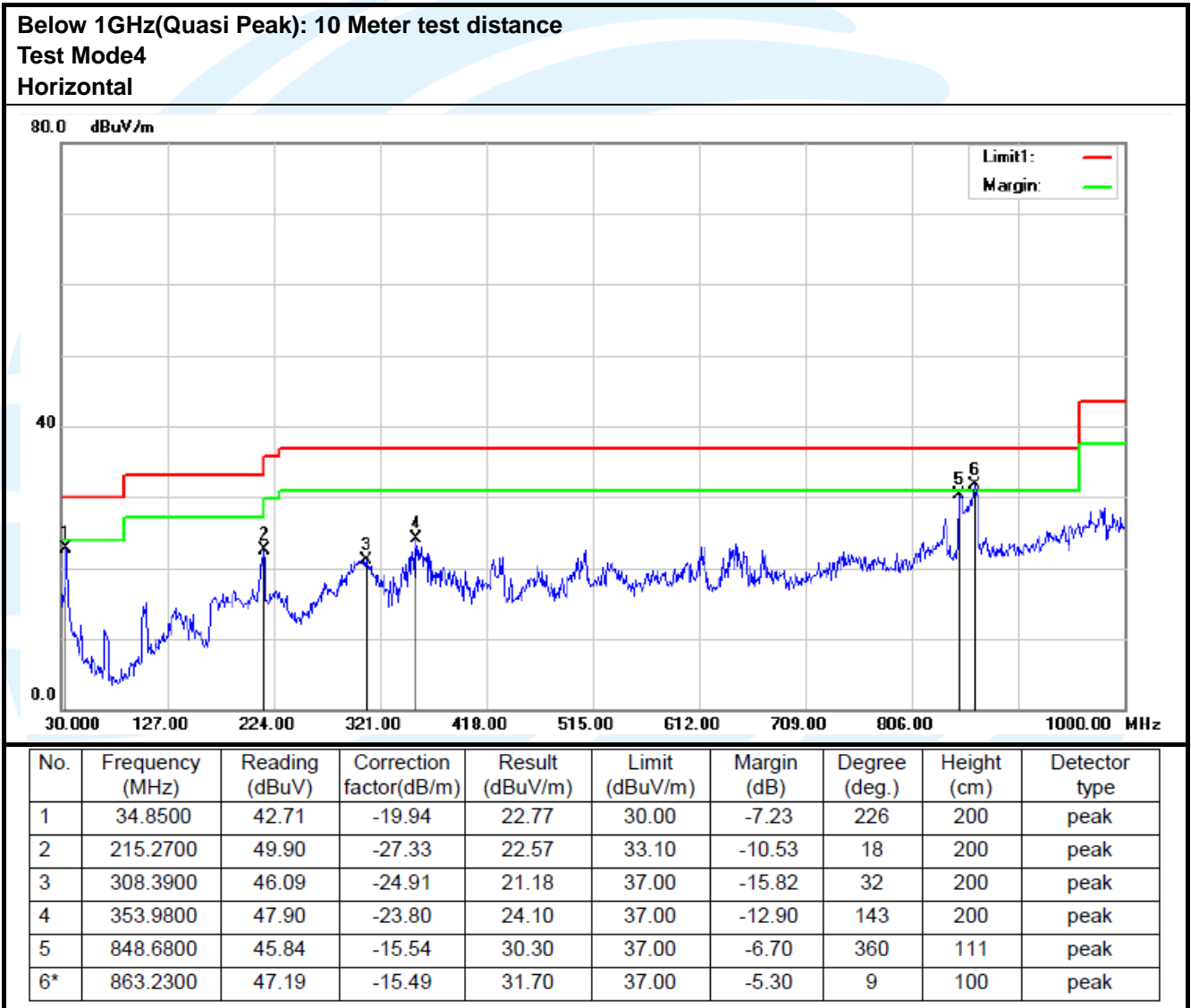
maximum field strength of all the pre-scan process in the full band when the antenna is varied in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.

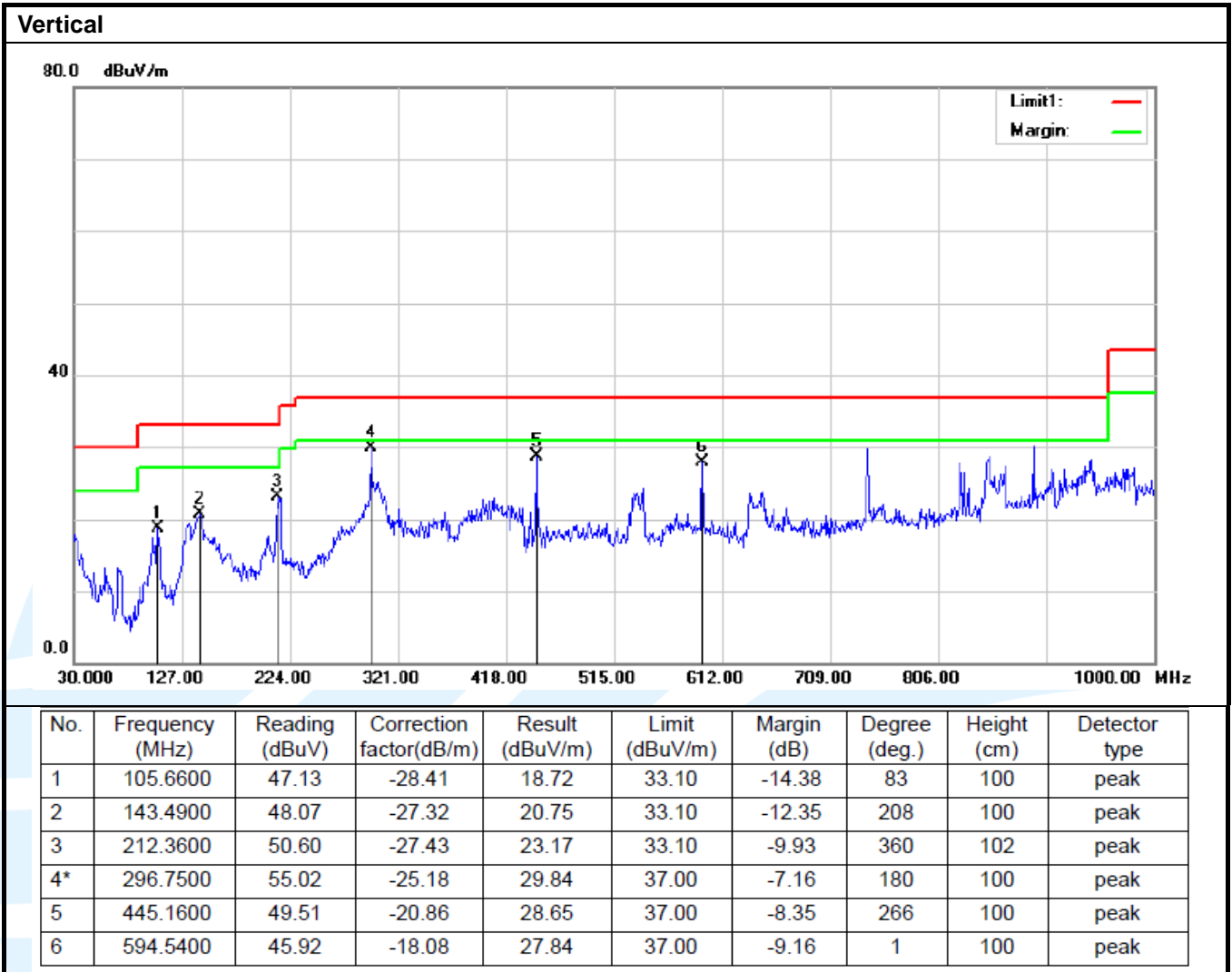
- For each frequency whose maximum record was higher or close to limit, measure its AV value: rotate the turntable from 0 to 360 degrees to find the degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to AV value and specified bandwidth with Maximum Hold Mode, and record the maximum value.

**Equipment Used:** Refer to section 3 for details.

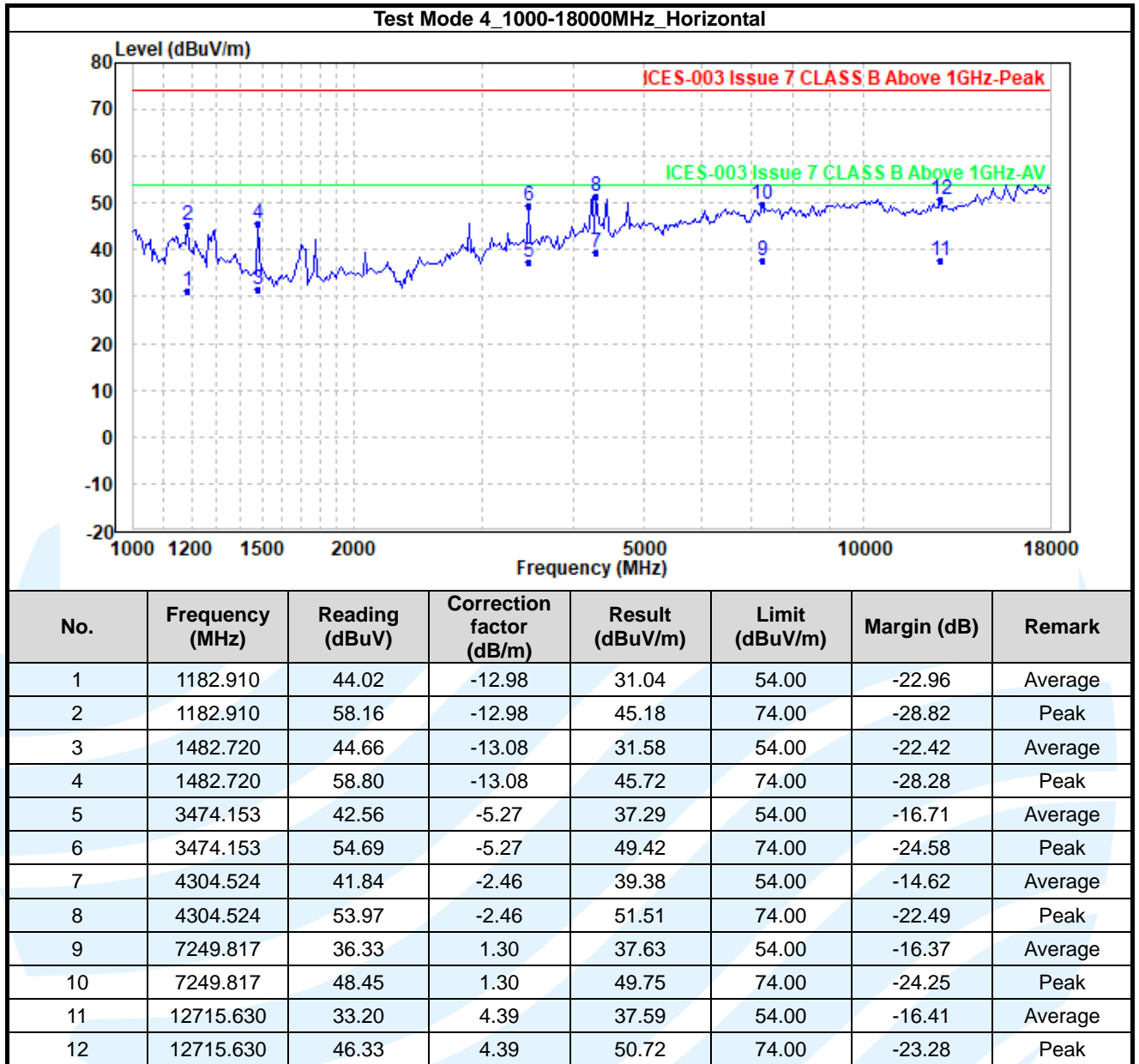
**Test Result:** Pass

**The worst measurement data as follows:**





**Remark:** The testing of Radiated Emissions @10 Meter test distance was performed in GRG Metrology & Test Group Co., Ltd.



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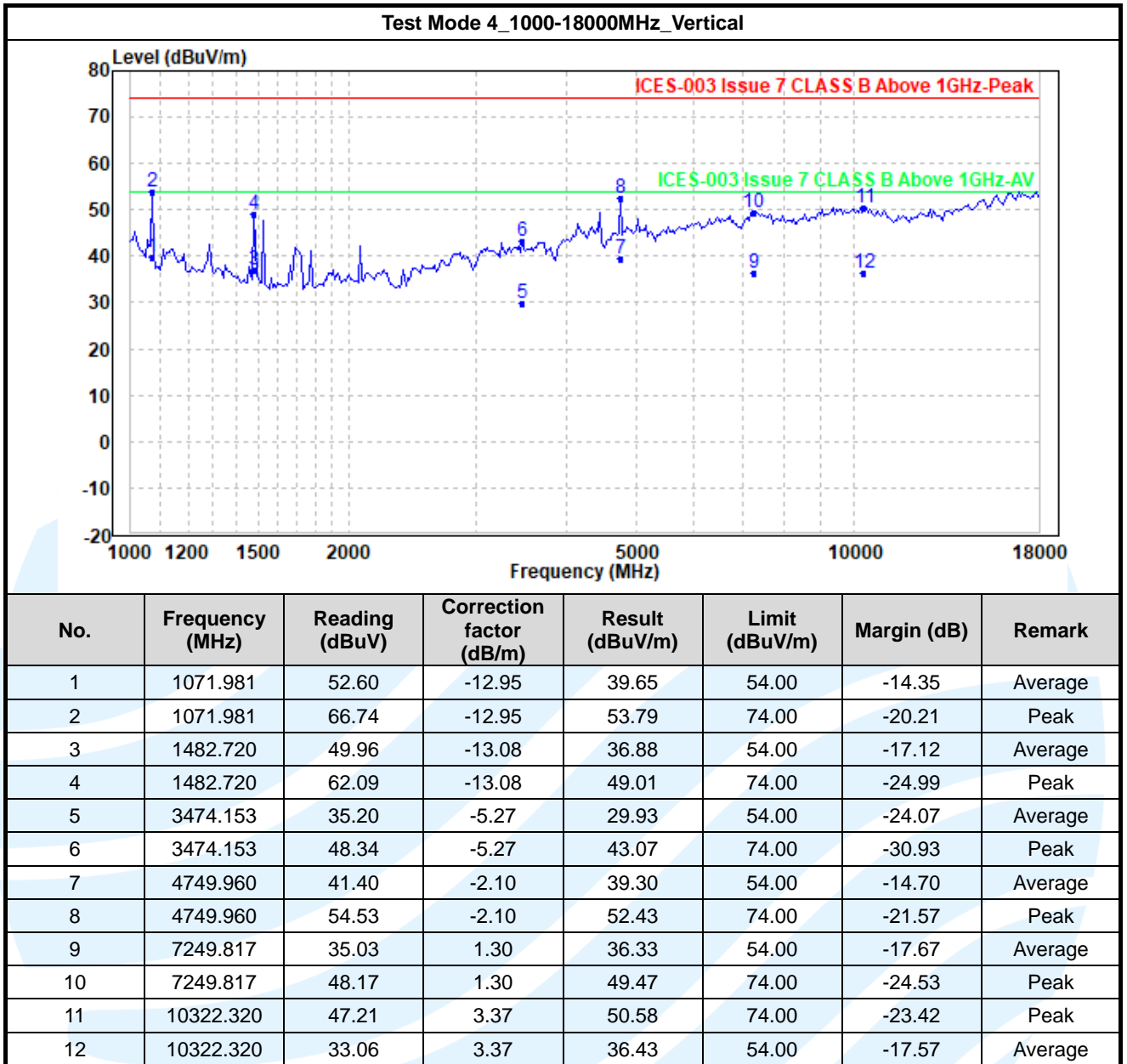
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**Remark:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit
4. All possible modes of operation were investigated, and testing at two nominal voltages of 240V~50Hz and 120V~60Hz, only the worst case emissions reported.

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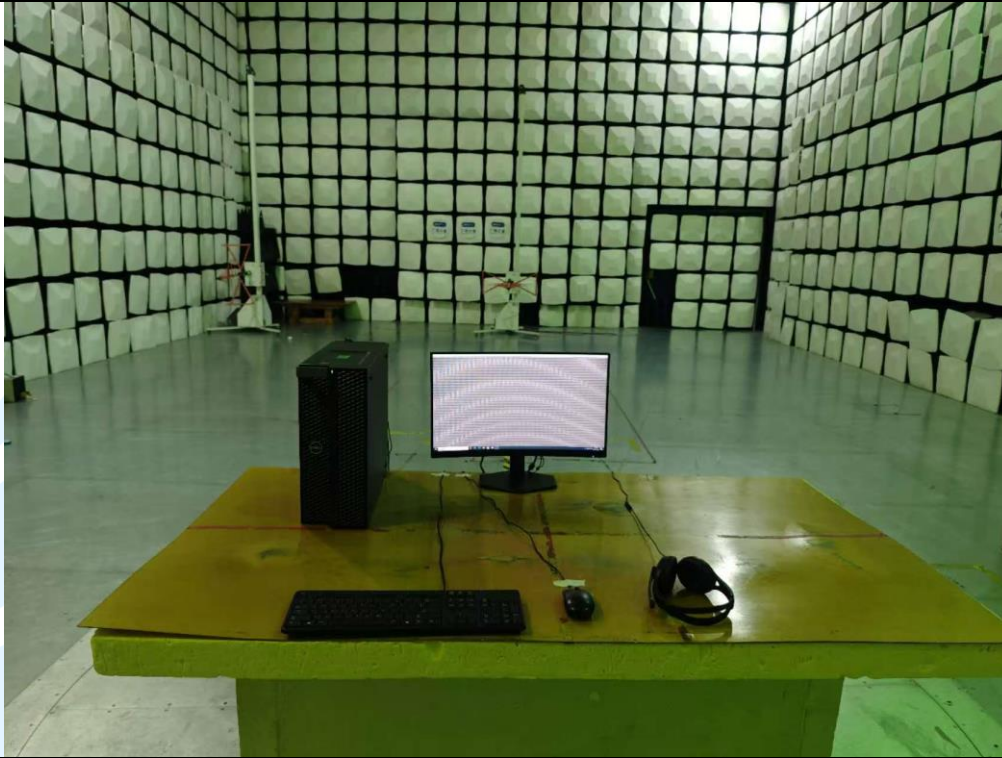
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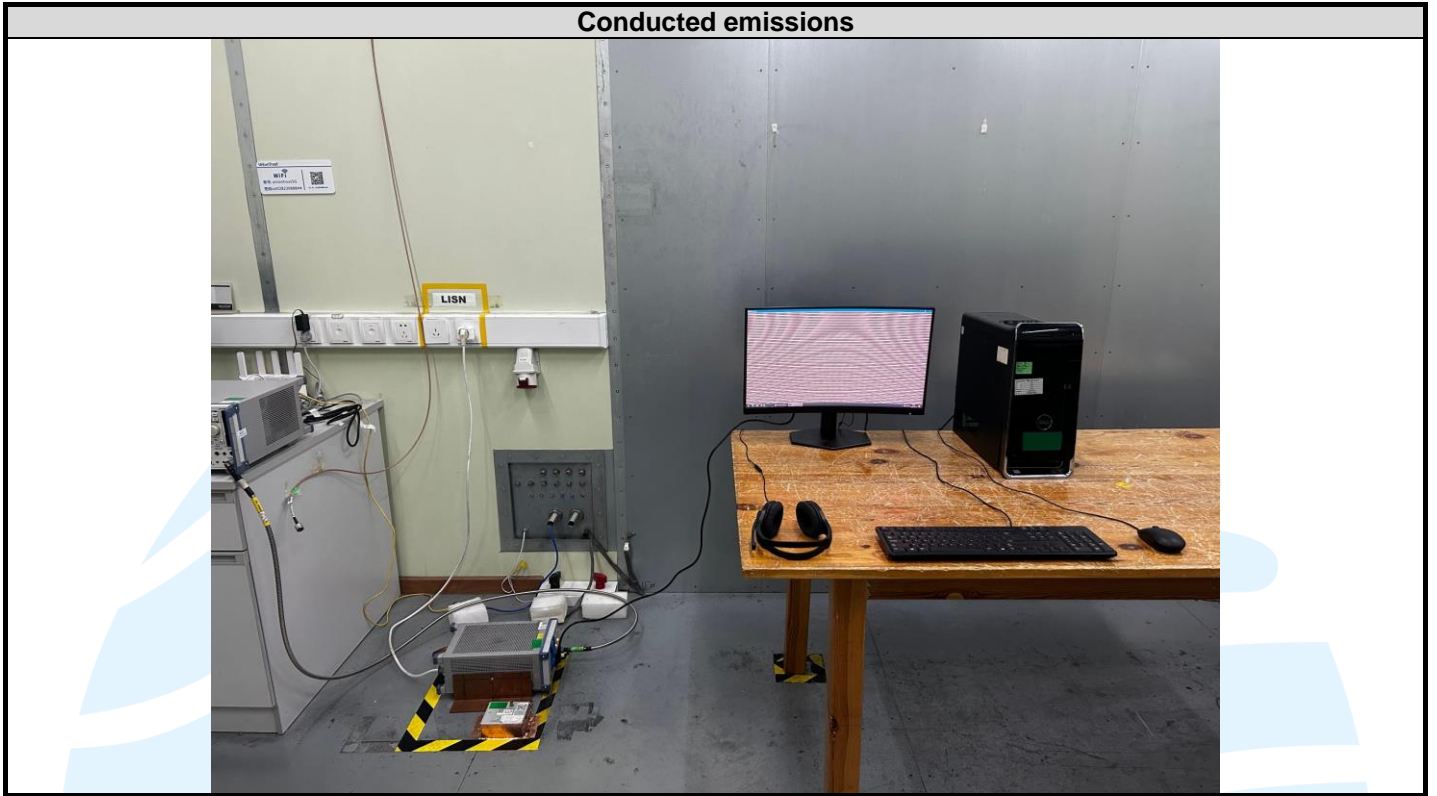


APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

Radiated emissions



Conducted emissions



**APPENDIX 2 PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS**

Refer to Appendix for EUT external and internal photos.

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\*\*\*\*\* End of Report \*\*\*\*\*

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