Report No: WD-EI-R-250198-A0

V

IC Test Report

Issued date: Jun. 27, 2025 Project No.: 24Q122002

Product : Panel PC

Model: MTA-1010W

Applicant : Vecow Co., Ltd

Address: 3F, No. 10, Jiankang Rd., Zhonghe Dist., New Taipei City 23586, Taiwan

Report No: WD-EI-R-250198-A0

According to

ICES-003: 2020 Issue 7, Class A

ANSI C63.4: 2014 ANSI C63.4a: 2017

Authorized Signatory : Ketty / Ken Huang



Wendell Industrial Co., Ltd Wendell EMC & RF Laboratory

Add: 5F-1, No. 188, Baoqiao Road, Xindian District, New Taipei City 23145, Taiwan R.O.C.

Table of Contents

1	Certif	ication	. 5
1.1	Sur	nmary of Result	. 6
2	Labor	ratory Information	. 7
2.1	Me	asurement Facility	. 7
2.2	Me	asurement Uncertainty	. 8
	.2.1 .2.2	Conducted Emission Measurement Radiated Emission Measurement	
3	Gener	al Information	.9
3.1	Des	cription of Equipment Under Test	9
3.2		cription of Measurement Modes 1	
3.3		cription of Operating Condition1	
3.4		scription of Associated Equipment	
3.5	Col	nfiguration of Equipment Under Test1	12
4	Emiss	ion Measurement1	13
-			
4.1		nducted Emission Measurement 1	
	Со		13
4.	Со	nducted Emission Measurement1	13 13
4. 4.	Co 1.1	aducted Emission Measurement 1 Limit of Conducted Emission Measurement 1 Measurement Instrument 1 Measurement Procedure 1	13 13 14 15
4. 4. 4.	Con 1.1 1.2	aducted Emission Measurement 1 Limit of Conducted Emission Measurement 1 Measurement Instrument 1 Measurement Procedure 1 Deviation from Standard 1	13 13 14 15 15
4. 4. 4. 4. 4.	Con 1.1 1.2 1.3 1.4 1.5	aducted Emission Measurement 1 Limit of Conducted Emission Measurement 1 Measurement Instrument 1 Measurement Procedure 1 Deviation from Standard 1 Measurement Configuration 1	13 13 14 15 15 16
4. 4. 4. 4. 4. 4.	Con 1.1 1.2 1.3 1.4 1.5 1.6	aducted Emission Measurement 1 Limit of Conducted Emission Measurement 1 Measurement Instrument 1 Measurement Procedure 1 Deviation from Standard 1 Measurement Configuration 1 Measurement Result 1	13 14 15 15 16 17
4. 4. 4. 4. 4. 4.	Con 1.1 1.2 1.3 1.4 1.5 1.6 1.7	aducted Emission Measurement 1 Limit of Conducted Emission Measurement 1 Measurement Instrument 1 Measurement Procedure 1 Deviation from Standard 1 Measurement Configuration 1 Measurement Result 1 Photographs of Measurement Configuration 1	13 14 15 15 16 17 19
4. 4. 4. 4. 4. 4.	Con 1.1 1.2 1.3 1.4 1.5 1.6 1.7	aducted Emission Measurement 1 Limit of Conducted Emission Measurement 1 Measurement Instrument 1 Measurement Procedure 1 Deviation from Standard 1 Measurement Configuration 1 Measurement Result 1	13 14 15 15 16 17 19
4. 4. 4. 4. 4. 4. 4. 4. 4. 2.	Con 1.1 1.2 1.3 1.4 1.5 1.6 1.7	aducted Emission Measurement 1 Limit of Conducted Emission Measurement 1 Measurement Instrument 1 Measurement Procedure 1 Deviation from Standard 1 Measurement Configuration 1 Measurement Result 1 Photographs of Measurement Configuration 1	13 13 14 15 15 16 17 19 20
4. 4. 4. 4. 4. 4. 4. 4. 2. 4. 2. 4.	Con 1.1 1.2 1.3 1.4 1.5 1.6 1.7 Rad	nducted Emission Measurement1Limit of Conducted Emission Measurement1Measurement Instrument1Measurement Procedure1Deviation from Standard1Measurement Configuration1Measurement Result1Photographs of Measurement Configuration1diated Emission Measurement2	13 13 14 15 15 16 17 19 20
4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.	Con 1.1 1.2 1.3 1.4 1.5 1.6 1.7 Rad 2.1 2.2 2.3	nducted Emission Measurement 1 Limit of Conducted Emission Measurement 1 Measurement Instrument 1 Measurement Procedure 1 Deviation from Standard 1 Measurement Configuration 1 Measurement Result 1 Photographs of Measurement Configuration 1 Itimit of Radiated Emission Measurement 2 Limit of Radiated Emission Measurement 2 Measurement Instrument 2 Measurement Procedure 2	13 13 14 15 15 16 17 19 20 22 23
4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4	Con 1.1 1.2 1.3 1.4 1.5 1.6 1.7 Rac 2.1 2.2 2.3 2.4	nducted Emission Measurement1Limit of Conducted Emission Measurement1Measurement Instrument1Measurement Procedure1Deviation from Standard1Measurement Configuration1Measurement Result1Photographs of Measurement Configuration1diated Emission Measurement2Limit of Radiated Emission Measurement2Measurement Instrument2Deviation from Standard2	13 13 14 15 16 17 19 20 22 23 23
4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4	Con 1.1 1.2 1.3 1.4 1.5 1.6 1.7 Rac 2.1 2.2 2.3 2.4 2.5	nducted Emission Measurement 1 Limit of Conducted Emission Measurement 1 Measurement Instrument 1 Measurement Procedure 1 Deviation from Standard 1 Measurement Configuration 1 Measurement Result 1 Photographs of Measurement 1 Itiated Emission Measurement 2 Limit of Radiated Emission Measurement 2 Measurement Instrument 2 Measurement Instrument 2 Measurement Configuration 2 Limit of Radiated Emission Measurement 2 Measurement Instrument 2 Measurement Procedure 2 Measurement Configuration 2 Measurement Configuration 2 Measurement Instrument 2 Measurement Procedure 2 Measurement Configuration 2 Measurement Configuration 2	13 13 14 15 16 17 19 20 22 23 24
4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4	Con 1.1 1.2 1.3 1.4 1.5 1.6 1.7 Rac 2.1 2.2 2.3 2.4	nducted Emission Measurement1Limit of Conducted Emission Measurement1Measurement Instrument1Measurement Procedure1Deviation from Standard1Measurement Configuration1Measurement Result1Photographs of Measurement Configuration1diated Emission Measurement2Limit of Radiated Emission Measurement2Measurement Instrument2Deviation from Standard2	13 13 14 15 16 17 19 20 23 24 25





History of this test report

Report No. Issue date		Description		
WD-EI-R-250198-A0	Jun. 27, 2025	Initial Issue		

Declaration

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us.



History of supplementary report

Report No.	Issue date	Description
WD-EI-R-250198-A0	Jun. 27, 2025	Original report

Declaration

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us.

1 Certification

Product:	Panel PC
Brand Name:	Vecow
Model:	MTA-1010W
Series Model:	MTA-1XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Applicant:	Vecow Co., Ltd
Tested:	Jun. 13 ~ Jun. 17, 2025
Standard:	ICES-003: 2020 Issue 7, Class A
	ANSI C63.4: 2014
	ANSI C63.4a: 2017

The above equipment (Model: MTA-1010W) has been tested by **Wendell EMC & RF Laboratory**, and found compliance with the requirement of the above standards. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Please note that the measurement uncertainty are provided for informational purpose only and are not used in determining the Pass/Fail results.



1.1 Summary of Result

The EUT has been tested according to the following specifications:

Emission							
Standard	Test Item	Limit	Result	Remark			
ICES-003	Conducted disturbance at mains power ports	Class A	Pass	Meets the requirements			
ICLS-005	Radiated disturbance	Class A	Pass	Meets the requirements			

Note: Test record contained in the referenced test report relate only to the EUT sample and test item.



V

2 Laboratory Information

2.1 Measurement Facility

Conducted disturbance at main power port test

W01: 5F-1, No.188, Baoqiao Rd., Xindian Dist., New Taipei City 23145, Taiwan (R.O.C)

Conducted disturbance at main power port and Radiated disturbance (9*6*6 Chamber) test

W08: No.119, Wugong 3rd Rd., Wugu Dist., New Taipei City 248, Taiwan (R.O.C)

ACCREDITATIONS

The laboratories are accredited and approved by the TAF according to ISO/IEC 17025.

2.2 Measurement Uncertainty

The measurement instrumentation uncertainty is evaluated according to CISPR 16-4-2.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Wendell EMC & RF Laboratory U_{lab} is less than U_{cispr} , therefore compliance or non-compliance with a disturbance limit shall be determined in the following manner.

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

Please note that the measurement uncertainty (U_{lab}) is provided for informational purpose only and is not used in determining the Pass/Fail results.

2.2.1 Conducted Emission Measurement

Test Site	Frequency Range	dB (U _{lab})	Note
W01-CE	150 kHz ~ 30 MHz	2.84	LISN
W08-CE	150 kHz ~ 30 MHz	2.72	LISN

2.2.2 Radiated Emission Measurement

Test Site	Frequency Range	Ant	dB (U _{lab})	Note
	30 MHz ~ 200 MHz	V	3.50	N/A
	30 MHz ~ 200 MHz	Н	2.96	N/A
	200 MHz ~ 1000 MHz	V	5.09	N/A
	200 MHz ~ 1000 MHz	Н	3.41	N/A
	1 GHz ~ 6 GHz	V	4.37	N/A
W08-966-1	1 GHz ~ 6 GHz	Н	4.30	N/A
	6 GHz ~ 18 GHz	V	4.49	N/A
	6 GHz ~ 18 GHz	Н	4.60	N/A
	18 GHz ~ 40 GHz		4.44	N/A
	18 GHz ~ 40 GHz	Н	4.44	N/A



3 General Information

3.1 Description of Equipment Under Test

Product	Panel PC
Brand	Vecow
Model	MTA-1010W
Series Model	MTA-1XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Applicant	Vecow Co., Ltd
Received Date	Mar. 25, 2025
EUT Power Rating	24Vdc (from adapter)
Model Differences	The models are electrically identical, different models no. are for marketing purpose. The series model information is provided by client.
Operating System	Ubuntu 22.04.1 LTS
Data Cable Supplied	N/A
Accessory Device	N/A
I/O Port	Please refer to the User's Manual

Note:

1. <u>The EUT uses the follow adapter:</u>

Adapter (support unit only)				
Brand	MEAN WELL			
Model	GST160A24			
Input Power	100-240Vac, 2.0A, 50/60Hz			
Output Power	24Vdc, 6.67A			
Power line	Input: 1.8m non-shielded cable Output: 1m non-shielded cable with 1 core			

2. The EUT contains following components.

Item	Brand	Model	Spec.	Qty.
CPU	NXP	i.MX 8M PLUS	1.8GHz	1
Memory	Kingston	4 EMMC32G-TX29	32G	1

3. The EUT's highest operating frequency is 1.8GHz. Therefore the radiated emission is tested up to 9GHz.



3.2 Description of Measurement Modes

Test results are presented in the report as below.

Test Mode	Measurement Condition				
	Conducted Emission Measurement				
-	- AC-DC Adapter mode				
	Radiated Emission 30MHz ~ 1GHz Measurement				
- AC-DC Adapter mode					
	Radiated Emission above 1GHz Measurement				
-	AC-DC Adapter mode				

3.3 Description of Operating Condition

- a. Placed the EUT on the test table.
- b. Prepare PC to act as a communication partner and placed it outside of testing area.
- c. The EUT was connected to the PC with LAN cable.
- d. The communication partner sent data to EUT by command "ping" via LAN.
- e. The EUT read / write data with Micro SD card.
- f. The EUT run test program "BurnIN.exe" to enable all functions.
- g. The EUT sent H message to monitor and displayed on screen.
- h. The microphone sent voice signal to EUT.
- i. The EUT sent voice signal to earphone.



3.4 Description of Associated Equipment

Item	Equipment	Brand	Model No.	Serial No.	FCC ID	Data Cable	Power Cable	Remark
1	Desktop PC	DELL	D19M	N/A	PPD-QCNFA 335	15m CAT.6A shielded LAN cable	AC: 1.8m non-shielded cable	-
2	Desktop PC	DELL	D24M	N/A	PD93165NG	15m CAT.6A shielded LAN cable	AC: 1.8m non-shielded cable	-
3	4K Monitor	HP	HP 27f 4k Display	3CM01935TF	FCC SDoC Approved	1.5m shielded HDMI cable with 2 cores	AC: 1.8m non-shielded cable DC: 1.4m non-shielded cable with 1 core	-
4	Keyboard	DELL	KB216t	CN-0W33XP-L 0300 -7C1-15UP	FCC SDoC Approved	1.5m non-shielded USB cable	N/A	-
5	Mouse	DELL	MS116	CN-0DV0RH- L0300 -7C1-15UP	FCC SDoC Approved	1.5m non-shielded USB cable	N/A	-
6	Earphone & Microphone	Avier	AEP-MM	N/A	N/A	1.2m non-shielded Audio cable	N/A	-
7	Micro SD Card	N/A	N/A	N/A	N/A	N/A	N/A	Supplied by client
8	RS232 Loop Cable	N/A	N/A	N/A	N/A	0.2m non-shielded cable	N/A	Supplied by client

The EUT has been conducted testing with other necessary accessories or support units.

Note: 1. The core(s) is(are) originally attached to the cable(s).

2. Item 1-2 acted as communication partners to transfer data.

Report No: WD-EI-R-250198-A0

V

3.5 Configuration of Equipment Under Test



V

4 Emission Measurement

4.1 Conducted Emission Measurement

4.1.1 Limit of Conducted Emission Measurement

	Class A (dBµV)		Class B (dBµV)		
Frequency (MHz)	Quasi-peak (dBµV)	Average (dBµV)	Quasi-peak (dBµV)	Average (dBµV)	
0.15 to 0.5	79	66	66 to 56*	56 to 46*	
0.5 to 5	73	60	56	46	
5 to 30	73	60	60	50	

* Decreases with the logarithm of the frequency.

Note: 1. The lower limit shall apply at the transition frequencies.

2. Detector function in the form: QP = Quasi Peak, AVG = Average

3. The test result calculated as following: Measurement Value = Reading Level + Correct Factor Correct Factor = LISN Factor + Cable Loss + Transient Limiter (If use) Margin Level = Measurement Value – Limit Value



	Test Site: W01-CE							
Item	Equipment	Manufacturer	Model	Meter No.	Calibration Date			
1	TWO-LINE V-NETWORK	R&S	ENV216	CT-1-025-1	Apr. 26, 2025			
2	Pulse limiter	R&S	ESH3-Z2	CT-2-015	Apr. 23, 2025			
3	EMI Test Receiver	R&S	ESCI	CT-1-024	Apr. 18, 2025			
4	Artificial Mains Network (AMN)	SCHWARZBECK	NSLK 8127	CT-1-104-1	Apr. 26, 2025			
5	RF Cable	MVE	200200.400LL .500A	CT-9-101	Apr. 23, 2025			
6	50ohm Termination	N/A	N/A	CT-1-065-1	Apr. 26, 2025			
7	Measurement Software	EZ-EMC	Ver: EMC-CON 3A1	CT-3-012	No calibration request			

4.1.2 Measurement Instrument

Note: 1. The calibration interval of the above test instruments is 12 months.

	Test Site: W08-CE							
Item	Equipment	Manufacturer	Model	Meter No.	Calibration Date			
1	TWO-LINE V-NETWORK	R&S	ENV216	CT-1-025-2	May 25, 2025			
2	RF Cable	EMCI	EMCCFD300- BM-BM-5000	CT-1-107-2	May 21, 2025			
3	EMI Test Receiver	R&S	ESR3	CT-1-103	May 20, 2025			
4	Artificial Mains Network (AMN)	SCHWARZBECK	NSLK 8127 RC	CT-1-104-1R C	May 25, 2025			
5	Transient Limiter	Electro-Metrics	EM-7600	CT-1-026	May 21, 2025			
6	50ohm Termination	N/A	N/A	CT-1-109-1	May 26, 2025			
7	Measurement Software	EZ-EMC	Ver: EMC-CON 3A1	CT-3-012	No calibration request			

Note: 1. The calibration interval of the above test instruments is 12 months.

4.1.3 Measurement Procedure

- a. The table-top equipment under test was placed 0.8 meter height wooden table from the horizontal ground plane with EUT being connected to power source through a line impedance stabilization network (LISN). The floor-standing equipment under test and all cables shall be insulated from the ground plane by up to 12 mm of insulating material if required. The LISN at least be 0.8 meter from nearest chassis of equipment under test.
- b. The line impedance stabilization network (LISN) provides 50 ohm/50uH of coupling impedance for the measuring instrument. All associated equipment powered from additional LISN(s).
- c. Interrelating cables that hang closer than 0.4 meter to the ground plane shall be folded back and forth in the center forming a bundle. All I/O cables were positioned to simulate typical usage.
- d. Interconnect cabling or wiring shall be connected to one of each type of functional port of the equipment under test, and each cable or wire shall be terminated in a device typical of actual usage. Where there are multiple ports all of the same type, additional connecting cables or wires shall be added to the equipment under test to determine the effect these cables or wires have on emission from the equipment under test.
- e. The EMI test receiver connected to the line impedance stabilization network (LISN) powering the equipment. The measurements shall be limited to the operating ranges of voltage and frequency as specified for the equipment under test, having regard to the supply voltage and frequency for the intended market of the equipment under test.
- f. The EMI test receiver scanned from 150kHz to 30MHz for emissions in each of modes. A scan was taken on both power lines, Line and Neutral, recording at least six highest emission amplitude.
- g. The equipment under test and cable configuration of the above highest emission amplitude were recorded

4.1.4 Deviation from Standard

No deviation



V

4.1.5 Measurement Configuration

< Table-Top equipment under test >



< Floor-Standing equipment under test >



Note: Please refer to 4.1.7 for the actual test configuration.



4.1.6 Measurement Result

Test Voltage	120Vac, 60Hz	Frequency Range	0.15 ~ 30 MHz
Environmental Conditions	23.2°C, 43% RH	6dB Bandwidth	9 kHz
Test Date	2025/06/17	Phase	L
Tested by	Wayne Yang	Test Site	W08-CE
 100.0 dBu∀			
90			
80			Class A Conduction(QP)
70			
60			Class A Conduction(AVG)
50			www.matura
			hun why why man a
30 V W	M	method www.www.www.www.www.www.	¥ ⁰ ¥ ²
20	Muly your war and the second	¥	
10			
0.0			
	0.5 (MH:	z) 5	30.000

No.	Frequency (MHz)	Reading Level (dBµV)	Correct Factor (dB)	Measurement (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.1508	37.93	9.82	47.75	79.00	-31.25	QP
2	0.1508	26.67	9.82	36.49	66.00	-29.51	AVG
3	0.1790	32.19	9.82	42.01	79.00	-36.99	QP
4	0.1790	23.53	9.82	33.35	66.00	-32.65	AVG
5	0.4020	22.38	9.83	32.21	79.00	-46.79	QP
6	0.4020	18.06	9.83	27.89	66.00	-38.11	AVG
7	4.7500	16.82	9.99	26.81	73.00	-46.19	QP
8	4.7500	10.57	9.99	20.56	60.00	-39.44	AVG
9	16.3758	28.27	10.25	38.52	73.00	-34.48	QP
10	16.3758	18.31	10.25	28.56	60.00	-31.44	AVG
11	22.0458	31.69	10.36	42.05	73.00	-30.95	QP
12	22.0458	19.71	10.36	30.07	60.00	-29.93	AVG

Remark: 1. QP = Quasi Peak, AVG = Average
2. Correct Factor = LISN Factor + Cable Loss + Transient Limiter (If use)
3. Measurement Value = Reading Level + Correct Factor
4. Margin Level = Measurement Value - Limit Value

Report No: WD-EI-R-250198-A0

Test Voltage	120Vac, 60Hz	Frequency Range	0.15 ~ 30 MHz
Environmental Conditions	23.2°C, 43% RH	6dB Bandwidth	9 kHz
Test Date	2025/06/17	Phase	Ν
Tested by	Wayne Yang	Test Site	W08-CE



No.	Frequency (MHz)	Reading Level (dBµV)	Correct Factor (dB)	Measurement (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.1602	37.22	9.82	47.04	79.00	-31.96	QP
2	0.1602	30.30	9.82	40.12	66.00	-25.88	AVG
3	0.4107	23.12	9.82	32.94	79.00	-46.06	QP
4	0.4107	20.69	9.82	30.51	66.00	-35.49	AVG
5	1.2338	12.67	9.85	22.52	73.00	-50.48	QP
6	1.2338	6.46	9.85	16.31	60.00	-43.69	AVG
7	10.0817	22.65	10.11	32.76	73.00	-40.24	QP
8	10.0817	15.03	10.11	25.14	60.00	-34.86	AVG
9	16.8727	27.04	10.24	37.28	73.00	-35.72	QP
10	16.8727	15.45	10.24	25.69	60.00	-34.31	AVG
11	21.5076	27.32	10.34	37.66	73.00	-35.34	QP
12	21.5076	15.37	10.34	25.71	60.00	-34.29	AVG

Remark: 1. QP = Quasi Peak, AVG = Average

2. Correct Factor = LISN Factor + Cable Loss + Transient Limiter (If use)

Measurement Value = Reading Level + Correct Factor
 Margin Level = Measurement Value - Limit Value

Ś



4.1.7 Photographs of Measurement Configuration





4.2 Radiated Emission Measurement

4.2.1 Limit of Radiated Emission Measurement

Radiated Frequency Range 30 MHz to 1000 MHz

	ICES-003 Radiated Emissions Limits					
Frequency range (MHz)	Class A (3m) Quasi-peak (dBµV/m)	Class A (10m) Quasi-peak (dBµV/m)	Class B (3m) Quasi-peak (dBµV/m)	Class B (10m) Quasi-peak (dBµV/m)		
30 - 88	50	40	40	30		
88 - 216	54	43.5	43.5	33.1		
216 - 230	56.9	46.4	46	35.6		
230 - 960	57	47	47	37		
960 - 1000	60	49.5	54	43.5		

Note: 1. The lower limit shall apply at the transition frequency.

2. Detector function in the form: PK = Peak, QP = Quasi Peak, AVG = Average

3. The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss (Antenna to Pre-Amplifier) -

Pre-Amplifier Gain + Cable Loss (Pre-Amplifier to Receiver)

Margin Level = Measurement Value - Limit Value



Radiated Frequency Range above 1 GHz

ICES-003 Radiated Emissions Limits					
Frequency range (GHz)	Class A (3m) (dBµV/m)		Class B (3m) (dBµV/m)		
(0112)	Peak	Average	Peak	Average	
1 - 40	80	60	74	54	

Note: 1. The lower limit shall apply at the transition frequency.

Detector function in the form: PK = Peak, QP = Quasi Peak, AVG = Average
 The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss (Antenna to Pre-Amplifier) -

Pre-Amplifier Gain + Cable Loss (Pre-Amplifier to Receiver)

Margin Level = Measurement Value - Limit Value

Frequency Range (For unintentional radiators)

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 40GHz, whichever is lower



4.2.2 Measurement Instrument

	Test Site: W08-966-1						
Item	Equipment	Manufacturer	Model	Meter No.	Calibration Date		
1	Horn Antenna	Schwarzbeck	BBHA 9120D	CT-9-031	Jul. 29, 2024		
2	Horn Antenna	Schwarzbeck	BBHA 9170	CT-9-032	Aug. 15, 2024		
3	TRILOG Broadband Antenna with 6 dB Attenuator	Schwarzbeck & MVE	VULB 9168 & MVE2251-06	CT-1-096-1	Apr. 29, 2025		
4	Spectrum Analyzer	Agilent	E4407B	CT-1-003(1)	May 06, 2025		
5	EXA Signal Analyzer	Keysight	N9010A	CT-1-093	Aug. 18, 2024		
6	EMI Test Receiver	Keysight	N9038A	CT-9-007	May 06, 2025		
7	Preamplifier	EM	EMC330	CT-9-024	May 06, 2025		
8	Preamplifier	SGH & MCL	SGH118 & BW-S15W2+	CT-9-071	May 06, 2025		
9	Preamplifier	EMCI	EMC184045SE	CT-9-013	Aug. 16, 2024		
10	Test Cable	EMCI	EMCCFD400-NM- NM-1000	CT-1-132	May 07, 2025		
11	Test Cable	PEWC	CFD400NL-LW-N M-NM-3000	CT-1-141	May 07, 2025		
12	Test Cable	EMCI	EMCCFD400-NM- NM-15000	CT-1-133	May 07, 2025		
13	Test Cable	EMCI	EMC104-SM-35M- 600	CT-1-134	May 07, 2025		
14	Test Cable	MVE	280280.LL266.140 0	CT-9-106	May 07, 2025		
15	Test Cable	EMCI	EMC102-KM-KM- 600	CT-1-136	Aug. 21, 2024		
16	Test Cable	MVE	140140.LL404.700	CT-9-100	May 07, 2025		
17	Measurement Software	EZ-EMC	Ver :WD-03A1-1	CT-3-012	No calibration request		

Note: 1. The calibration interval of the above test instruments is 12 months.

4.2.3 Measurement Procedure

- a. The table-top equipment under test was placed on the top of a turntable 0.8 meters above the ground at 3 m 966 chamber. The floor-standing equipment under test and all cables shall be insulated from the ground plane by up to 12 mm of insulating material if required. The turntable was rotated 360 degrees to determine the position of the highest radiation emissions.
- b. The height of the antenna shall vary between 1 m to 4 m. Both vertical and horizontal polarizations of the antenna were set to make the measurement.
- c. The EUT was set up as per the test configuration to simulate typical usage per the user's manual. All I/O cables were positioned to simulate typical usage.
- d. Interconnect cabling or wiring shall be connected to one of each type of functional port of the equipment under test, and each cable or wire shall be terminated in a device typical of actual usage. Where there are multiple ports all of the same type, additional connecting cables or wires shall be added to the equipment under test to determine the effect these cables or wires have on emission from the equipment under test.
- e. The initial step in collecting radiated emission data is a spectrum mode scanning the measurement frequency range.

Below 1GHz:

Reading in which marked as QP means measurements by using receiver mode with detector setting in RBW = 120 kHz.

If the spectrum mode measured peak value compliance with and lower than QP Limit, the equipment under test shall be deemed to meet QP Limits.

Above 1GHz:

Reading in which marked as Peak & AVG means measurements by using spectrum mode with setting in RBW = 1 MHz.

If the spectrum mode measured value compliance with the Peak Limits and lower than AVG Limits, the equipment under test shall be deemed to meet both Peak and AVG Limits.

f. Emission frequency and amplitude were recorded, recording at least six highest emissions. The equipment under test and cable configuration of the above highest emission amplitude were recorded.

4.2.4 Deviation from Standard

No deviation



4.2.5 Measurement Configuration

< Radiated Emissions Frequency: 30 MHz to 1000 MHz >



< Radiated Emissions Frequency: above 1GHz >



Note:

- (1) Please refer to the 4.2.7 for the actual test configuration.
- (2) Detector function in the form: PK = Peak, QP = Quasi Peak, AVG = Average
- (3) The test result calculated as following: Measurement Value = Reading Level + Correct Factor Correct Factor = Antenna Factor + Cable Loss - Pre-Amplifier Gain (if use) Margin Level = Measurement Value - Limit Value



4.2.6 Measurement Result

Test Voltage	120Vac, 60Hz	Frequency Range	30 ~ 1000 MHz
Environmental Conditions	24°C, 48% RH	6dB Bandwidth	120 kHz
Test Date	2025/06/14	Test Distance	3m
Tested by	Karwin Kao	Polarization	Vertical
Test Site	W08-966-1		

80.0 dBuV/m



No.	Frequency (MHz)	Reading Level (dBµV)	Correct Factor (dB/m)	Measurement (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Table Degree (degree)	Antenna Height (cm)	Detector
1	34.8500	57.33	-10.86	46.47	50.00	-3.53	360	100	QP
2	49.4000	52.51	-9.36	43.15	50.00	-6.85	272	100	QP
3	125.0600	58.57	-11.72	46.85	54.00	-7.15	184	100	QP
4	296.7500	58.94	-8.56	50.38	57.00	-6.62	360	181	QP
5	593.5700	54.04	-0.59	53.45	57.00	-3.55	182	200	QP
6	874.8700	43.58	4.29	47.87	57.00	-9.13	135	200	QP

Remark: 1. QP = Quasi Peak

2. Correct Factor = Antenna Factor + Cable Loss (Antenna to Pre-Amplifier) - Pre-Amplifier Gain +

2. Contect l'actor – Antenna l'actor – Cable Loss (Antenna l' Cable Loss (Pre-Amplifier to Receiver) 3. Measurement Value = Reading Level + Correct Factor 4. Margin Level = Measurement Value - Limit Value

Test Voltage	120Vac, 60Hz	Frequency Range	30 ~ 1000 MHz
Environmental Conditions	24°C, 48% RH	6dB Bandwidth	120 kHz
Test Date	2025/06/14	Test Distance	3m
Tested by	Karwin Kao	Polarization	Horizontal
Test Site	W08-966-1		



No.	Frequency (MHz)	Reading Level (dBµV)	Correct Factor (dB/m)	Measurement (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Table Degree (degree)	Antenna Height (cm)	Detector
1	125.0600	59.52	-11.72	47.80	54.00	-6.20	42	200	QP
2	199.7500	58.63	-12.51	46.12	54.00	-7.88	226	100	QP
3	296.7500	60.22	-8.56	51.66	57.00	-5.34	344	100	QP
4	375.3200	52.53	-6.34	46.19	57.00	-10.81	135	100	QP
5	600.3600	50.36	-0.30	50.06	57.00	-6.94	229	100	QP
6	891.3600	48.76	4.54	53.30	57.00	-3.70	155	100	QP

Remark: 1. QP = Quasi Peak

2. Correction Factor = Antenna Factor + Cable Loss (Antenna to Pre-Amplifier) - Pre-Amplifier Gain +

2. Conection Pactor – Amerina Pactor + Cable Loss (Antenna Cable Loss (Pre-Amplifier to Receiver) 3. Measurement Value = Reading Level + Correct Factor 4. Margin Level = Measurement Value - Limit Value

Test Voltage 120Vac, 60Hz **Frequency Range** 1 ~ 9 GHz Environmental 24°C, 48% RH **6dB Bandwidth** 1MHz Conditions 3m **Test Date** 2025/06/13 **Test Distance** Tested by Karwin Kao **Polarization** Vertical **Test Site** W08-966-1





No.	Frequency (MHz)	Reading Level (dBµV)	Correct Factor (dB/m)	Measurement (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Table Degree (degree)	Antenna Height (cm)	Detector
1	1120.000	69.35	-19.66	49.69	80.00	-30.31	45	100	peak
2	1120.000	59.86	-19.66	40.20	60.00	-19.80	45	100	AVG
3	1200.000	76.91	-19.12	57.79	80.00	-22.21	36	100	peak
4	1200.000	66.31	-19.12	47.19	60.00	-12.81	36	100	AVG
5	1480.000	66.48	-18.31	48.17	80.00	-31.83	209	100	peak
6	1480.000	56.74	-18.31	38.43	60.00	-21.57	209	100	AVG
7	1780.000	69.38	-18.22	51.16	80.00	-28.84	177	100	peak
8	1780.000	59.29	-18.22	41.07	60.00	-18.93	177	100	AVG
9	2960.000	57.36	-13.12	44.24	80.00	-35.76	199	100	peak
10	2960.000	47.12	-13.12	34.00	60.00	-26.00	199	100	AVG
11	5400.000	54.81	-7.92	46.89	80.00	-33.11	139	100	peak
12	5400.000	44.68	-7.92	36.76	60.00	-23.24	139	100	AVG

Remark: 1. peak = Peak, AVG = Average 2. Correct Factor = Antenna Factor + Cable Loss (Antenna to Pre-Amplifier) - Pre-Amplifier Gain +

Cable Loss (Pre-Amplifier to Receiver)

3. Measurement Value = Reading Level + Correct Factor 4. Margin Level = Measurement Value - Limit Value

Test Voltage 120Vac, 60Hz **Frequency Range** 1 ~ 9 GHz Environmental 24°C, 48% RH **6dB Bandwidth** 1MHz Conditions 3m **Test Date** 2025/06/13 **Test Distance** Tested by Karwin Kao **Polarization** Horizontal **Test Site** W08-966-1

100.0 dBuV/m



No.	Frequency (MHz)	Reading Level (dBµV)	Correct Factor (dB/m)	Measurement (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Table Degree (degree)	Antenna Height (cm)	Detector
1	1200.000	75.34	-19.12	56.22	80.00	-23.78	101	100	peak
2	1200.000	63.78	-19.12	44.66	60.00	-15.34	101	100	AVG
3	1400.000	66.24	-18.06	48.18	80.00	-31.82	147	100	peak
4	1400.000	54.19	-18.06	36.13	60.00	-23.87	147	100	AVG
5	1480.000	67.51	-18.31	49.20	80.00	-30.80	151	100	peak
6	1480.000	55.68	-18.31	37.37	60.00	-22.63	151	100	AVG
7	1780.000	65.75	-18.22	47.53	80.00	-32.47	34	100	peak
8	1780.000	53.22	-18.22	35.00	60.00	-25.00	34	100	AVG
9	2080.000	62.14	-16.16	45.98	80.00	-34.02	201	100	peak
10	2080.000	50.87	-16.16	34.71	60.00	-25.29	201	100	AVG
11	5400.000	54.68	-7.92	46.76	80.00	-33.24	185	100	peak
12	5400.000	42.29	-7.92	34.37	60.00	-25.63	185	100	AVG

Remark: 1. peak = Peak, AVG = Average 2. Correct Factor = Antenna Factor + Cable Loss (Antenna to Pre-Amplifier) - Pre-Amplifier Gain +

Cable Loss (Pre-Amplifier to Receiver)

3. Measurement Value = Reading Level + Correct Factor 4. Margin Level = Measurement Value - Limit Value





