TEST REPORT

EMCLabs
100, Jangjateo-ro, Hobeop-myeon,
Icheon-si, Gyeonggi-do, 17396, Korea
Tel: 031-637-8898 / Fax: 0505-116-8895

Test Report

1. Client

- Name : WIZNET Co., Ltd.
- Address : 5F Humax Village, 216, Hwangsaeul-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

2. Use of Report : FCC

3. Sample Description :

- Model : W5100S-EVB-Pico2
- Kind of Product : iEthernet Module
- Variant Model Name : -

4. Date of Receipt : 2024. 08. 05

5. Date of Test : 2024. 08. 24 ~ 2024. 08. 26

6. Test Method : FCC part 15 subpart A, Class A / IC

7. Test Results : Complied

※ The results shown in this test report are the results of testing the samples provided.
※ This test report is prepared according to the requirements of ISO / IEC 17025.

	Tested by	Technical Manager
Affirmation	JEONG HOON, NAM 남정훈 (signature)	YONG MIN, PARK (signature)

08. 28, 2024

EMC Labs Co., Ltd. (seal)

[Contents]

1. Laboratory Information

Address

EMC Labs Co., Ltd.

Laboratory : 100, Jangjateo-ro, Hobeop-myeon, Icheon-si, Gyeonggi-do, 17396, Korea
Telephone Number : +82-31-637-8895
Facsimile Number : +82-505-116-8895

SITE MAP

2. Equipment Under Test

2.1 General Information

☒ Table-Top ☐ Floor – Standing

☐ Table-Top & Floor-Standing (combination)

2.2 Configuration of the equipment under test

Equipment	Model	Manufacturer	Serial No.
Note PC	P5440F	ASUSTek Computer Inc.	-
Adapter (Note PC)	ADP-65GD	ASUSTek Computer Inc.	-

Type	Description	Connection	Spec.	Length (m)
USB	Type-C	Note PC	USB	1.0
USB	LAN	Note PC	LAN	3.0

2.3 EUT Description

The following features describe EUT represented by this report

Test Voltage : AC 120 V / 60 Hz

EUT Highest operating frequency: Below 108 MHz

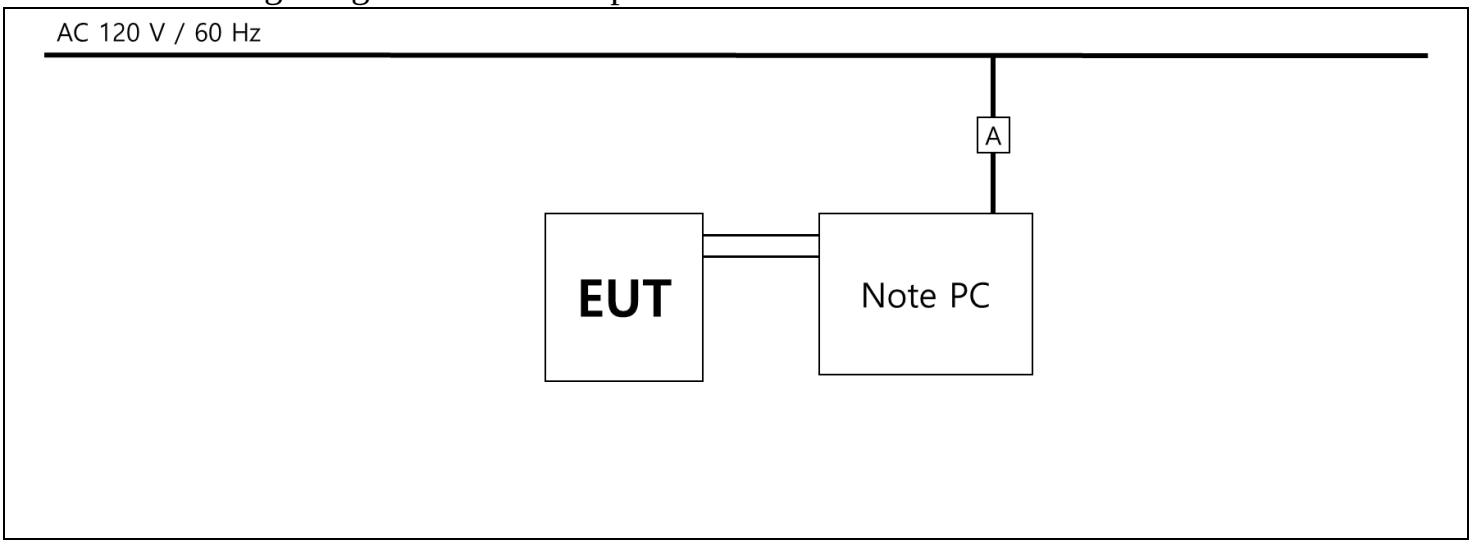
Model Name: Clium Cleaner Fit V1

2.4 Operating Conditions

The equipment under test was operated during the measurement under following

Test mode	Normal Operating
1	The EUT power was turned on and tested after checking the operation status through the Note PC.

2.5 The drawing of general test setup



2.6 Variant Model

Variant model name	Differences from the basic mode
-	-

3. Summary

In the above configuration tested, The EUT complied with the requirement of the specification

3.1 Modification to the E.U.T.

- No modifications to the EUT were necessary to comply.

3.2 Standards & results

FCC Part 15 Subpart A (Class A)
ANSI C63.4 – 2014, ANSI C63.4a – 2017

Test items	Test method	Result
Radiated Emission	FCC part 15 subpart A ANSI C63.4 – 2014 ANSI C63.4a – 2017	Pass
Conducted Emission	FCC part 15 subpart A ANSI C63.4 – 2014 ANSI C63.4a – 2017	Pass

4. Test results

4.1 Radiated emission

Environmental Conditions

Temperature	(°C) - Semi anechoic chamber (3m)
	(22.3 °C) - Fully anechoic chamber(10m)
Humidity	(% R.H.) - Semi anechoic chamber (3m)
	(45 % R.H.) - Fully anechoic chamber(10m)
Test Area	Semi anechoic chamber (3m) – Below 1GHz
	Fully anechoic chamber(10m) – Above 1GHz
Test date	0000.00.00 - Semi anechoic chamber (3m)
	2024.08.24 - Fully anechoic chamber(10m)

4.1.1 Measurement procedure

The test was done at a 3 m fully anechoic chamber test site with a quasi-peak detector.
EUT was placed on a non-metallic table height of 0.8 m above the reference ground plane.
They were folded back and forth forming a bundle 0.3 m to 0.4 m long and were hanged at a 0.4 m height to the ground plane.
Cables connected to EUT were fixed to cause maximum emission.
Test was made with the antenna positioned in both the horizontal and vertical planes of polarization.
The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

4.1.2 Used equipments

[Below 1GHz]

Equipment	Model no	Manufacturer	Serial no.	Next cal. date	Used
MEASUREMENT SOFTWARE	EMC32 VER 10.60.15	Rohde&Schwarz	-	-	☐
EMI TEST RECEIVER	ESW44	Rohde&Schwarz	101952	2025.03.14	☒
Controllers	CO3000-4port	Innco Systems GmbHRE	CO3000/ 1061/ 42111117/P	-	☒
Antenna Masts	MA4640/800-XP-ET	Innco Systems GmbHRE	-	-	☒
Turn tables	DS2000-S-1t	Innco Systems GmbHRE	-	-	☒
Bi-Log ANT.	VULB 9160	Schwarzbeck	3260	2025.02.03	☒
Amplifier	PO-LS960	PANOPTICS	PL181004	2025.01.08	☒

[Above 1GHz]

Equipment	Model no	Manufacturer	Serial no.	Next cal. date	Used
MEASUREMENT SOFTWARE	EMC32 VER 10.60.15	Rohde&Schwarz	-	-	☐
EMI TEST RECEIVER	ESW44	Rohde&Schwarz	101952	2025.03.14	☐
Controllers	CO3000-4port	Innco Systems GmbHRE	CO3000/ 1061/ 42111117/P	-	☐
Antenna Masts	MA4640/800-XP-ET	Innco Systems GmbHRE	-	-	☐
Turn tables	DS2000-S-1t	Innco Systems GmbHRE	-	-	☐
Horn ANT	BBHA9120D	Schwarzbeck	974	2024.11.30	☐
Amplifier	TK-PA18H	TESTEK	220104-L	2025.05.27	☐

4.1.3 Test data

* Receiving Antenna Mode : Horizontal, Vertical

* 3 m Chamber

* Note : Reading = Test Receiver meter,

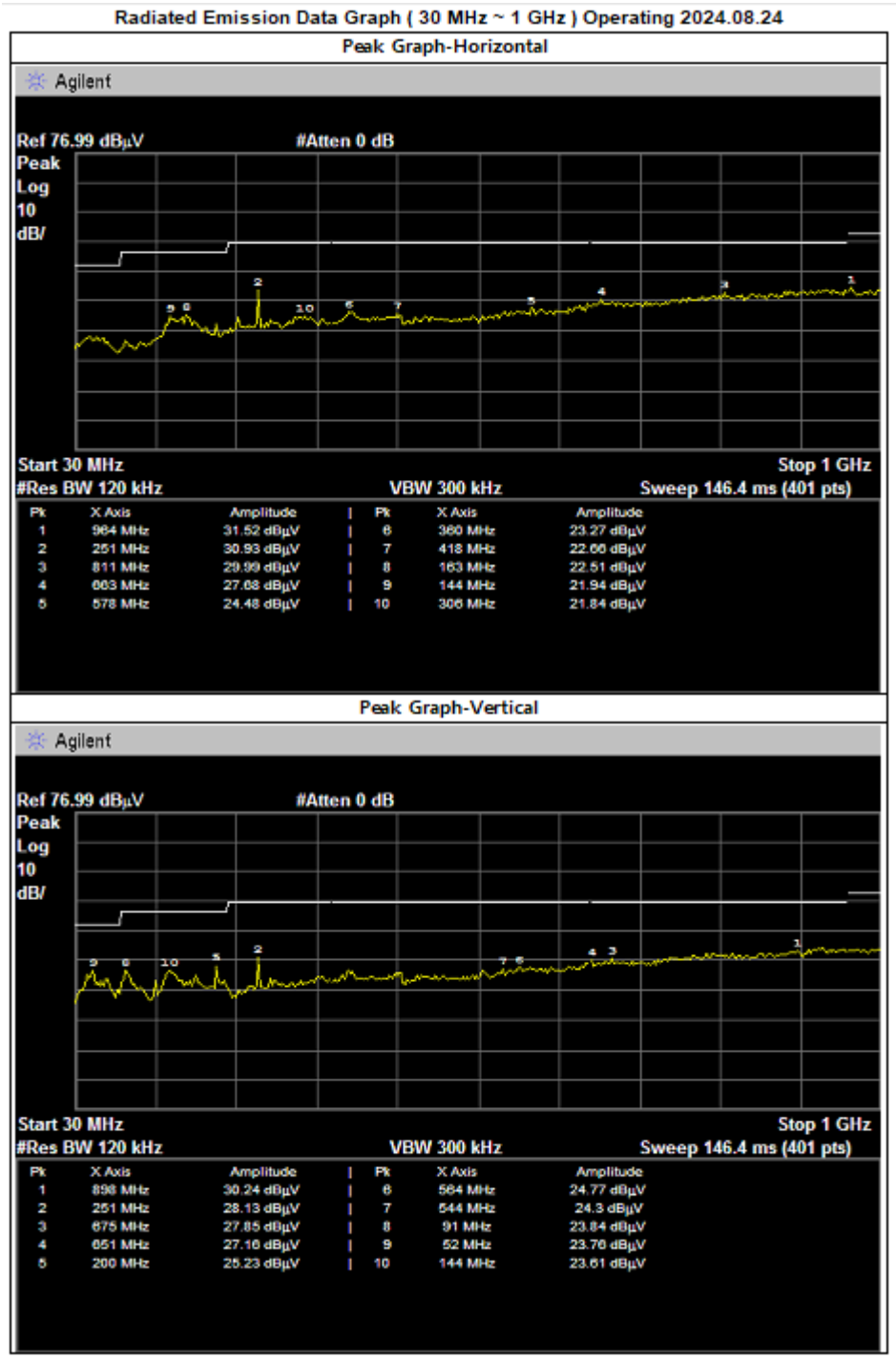
Pol.= Polarization → H = Horizontal, V = Vertical

Result [dB(㎶/m)] = Reading [dB(㎶)] + Antenna factor [dB/m] + Cable Loss [dB] – Amp Gain [dB]

If, in accordance with §15.33 of this part, measurements must be performed above 1000 MHz, compliance above 1000 MHz shall be demonstrated with the emission limit in paragraph (a) or (b) of this section, as appropriate. Measurements above 1000 MHz may be performed at the distance specified in the CISPR 32 publications for measurements below 1000 MHz provided the limits in paragraphs (a) and (b) of this section are extrapolated to the new measurement distance using an inverse linear distance extrapolation factor (20 dB/decade)

4.1.4 Test Result

[Below 1GHz] – [Operating]



* Test Result

☒ Complied ☐ Not complied

제품명 : KR0140-2024-08_2384
모델명 : iEthernet Module
제조사 : W5100S-EVB-Pico2
접수번호 : KR0140-2024-08_2384

측정일 : 2024.08.24
모 드 : Operating
시험원 : 남 정 훈 (서명)

A

Frequency [MHz]	Total Reading [dBμV/m]	Pol.	Height [m]	angle [°]	Quasi-Peak [dBμV/m]	Correction			Limits [dBμV/m]	Result [dBμV/m]	Margin [dB]
						Antenna [dB/m]	Cable [dB]	Amp Gain [dB]			
51.71	49.10	V	1.0	139	(25.14)	13.70	2.59	41.43	39.0	23.96	15.04
90.45	48.30	V	1.0	142	(23.60)	13.80	3.82	41.22	43.5	24.70	18.80
143.27	47.50	V	1.4	310	(22.92)	13.10	5.09	41.11	43.5	24.58	18.92
250.49	47.10	H	3.2	46	(15.65)	17.90	7.20	40.75	46.4	31.45	14.95
810.27	29.50	H	3.8	108	1.04	28.60	15.02	42.58	46.4	30.54	15.86
963.15	35.40	H	4.0	227	(3.04)	23.70	16.56	43.29	49.5	32.36	17.14

* Test Result

☒ Complied ☐ Not complied

[Above 1GHz]

- Not applicable because the highest frequency of EUT is less than 108 MHz.

* Test Result

☐ Complied ☒ Not complied

4.2 Conducted Emission

Environmental Conditions

Temperature	(22.5 °C)
Humidity	(45 % R.H.)
Test Area	Conducted Room
Test date	2024.08.26

4.2.1 Limits of conducted emission measurement

Frequency [MHz]	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66-56 *	58-46*
0.5 - 5	73	60	56	46
5 - 30	73	60	60	50

*The limit decreases linearly with the logarithm of frequency.

4.2.2 Measurement procedure

Mains

The measurements were performed in a shielded room. EUT was placed on a non-metallic table height of 0.8 m above the reference ground plane. The rear of table was located 0.4 m to the vertical conducted plane. EUT was power through the LISN, which was bonded to the ground plane. The LISN power was filtered. Each EUT power lead, except ground (safety) lead, was individually connected through a LISN to input power source. All I.O cables are positioned to simulate typical actual usage according to the test standard. Both lines of power cord, hot and neutral, were measured.

4.2.3 Used equipments

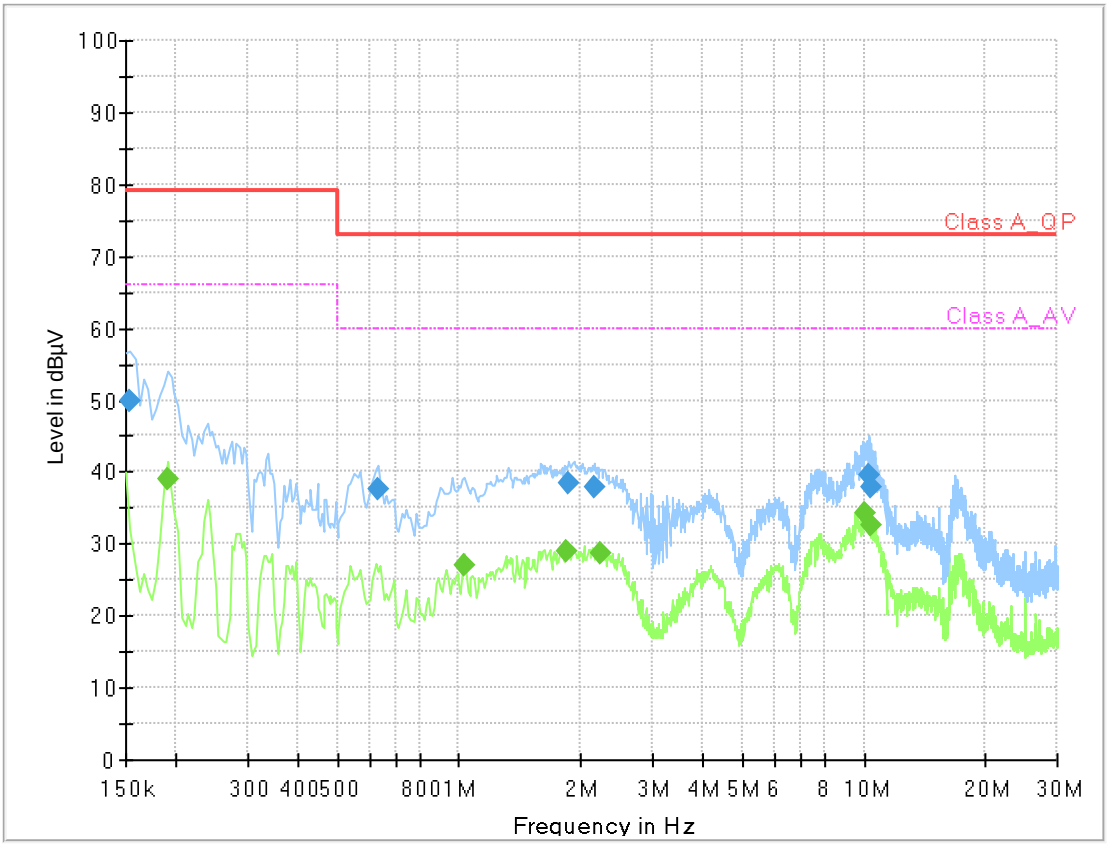
Equipment	Model	Manufacturer	Serial or Firmware (No./Ver.)	Next Cal. Date	Used
MEASUREMENT SOFTWARE	EMC32 VER 10.60.15	Rohde&Schwarz	-	-	☒
Test Receiver	ESR7	Rohde&Schwarz	101616	2025.06.27	☒
LISN	ENV216	Rohde&Schwarz	100409	2025.01.08	☒
LISN	3825-2	EMCO	8901-1458	2025.01.04	☐
PULSE LIMITER	EPL-30	lignex1	-	2025.01.04	☒

4.2.4 Test data

• Note. QP = Quasi-Peak, AV= Average , • Loss = LISN Loss + Cable Loss, • Measurement time : 1 s

4.2.5 Test Result

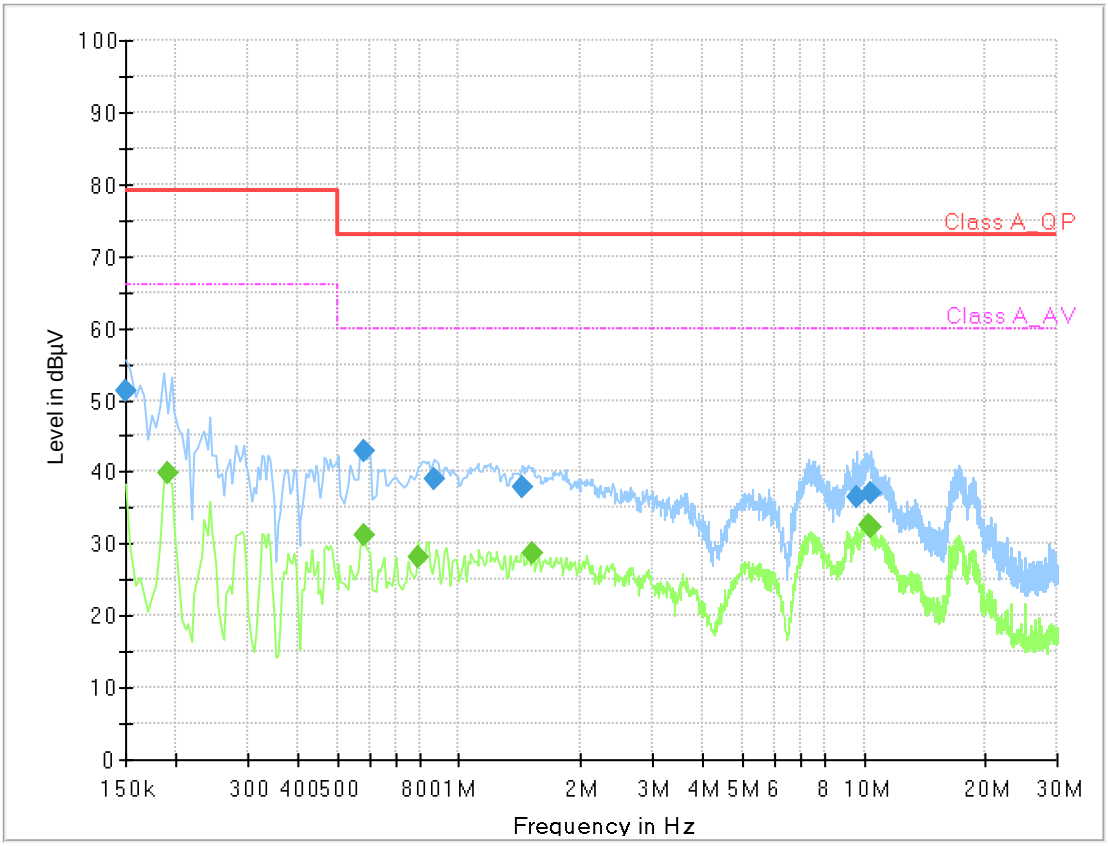
[HOT] – [Operating]



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.154	49.97	---	79.00	29.03	9	L1	20.8
0.190	---	39.12	66.00	26.88	9	L1	20.9
0.630	37.73	---	73.00	35.27	9	L1	20.5
1.030	---	26.89	60.00	33.11	9	L1	20.1
1.840	---	28.88	60.00	31.12	9	L1	20.0
1.870	38.54	---	73.00	34.46	9	L1	20.0
2.160	37.92	---	73.00	35.08	9	L1	20.0
2.230	---	28.80	60.00	31.20	9	L1	20.0
10.060	---	34.23	60.00	25.77	9	L1	20.1
10.250	39.66	---	73.00	33.34	9	L1	20.1
10.440	---	32.70	60.00	27.30	9	L1	20.1
10.450	37.85	---	73.00	35.15	9	L1	20.1

[NEUTRAL] – [Operating]



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.150	51.33	---	79.00	27.67	9	N	20.8
0.190	---	39.90	66.00	26.10	9	N	20.9
0.580	---	31.25	60.00	28.75	9	N	20.8
0.580	42.80	---	73.00	30.20	9	N	20.8
0.790	---	28.12	60.00	31.88	9	N	20.0
0.870	38.98	---	73.00	34.02	9	N	20.0
1.430	37.91	---	73.00	35.09	9	N	20.0
1.520	---	28.62	60.00	31.38	9	N	20.0
9.630	36.56	---	73.00	36.44	9	N	20.1
10.330	---	32.71	60.00	27.29	9	N	20.2
10.400	---	32.26	60.00	27.74	9	N	20.2
10.400	37.06	---	73.00	35.94	9	N	20.2

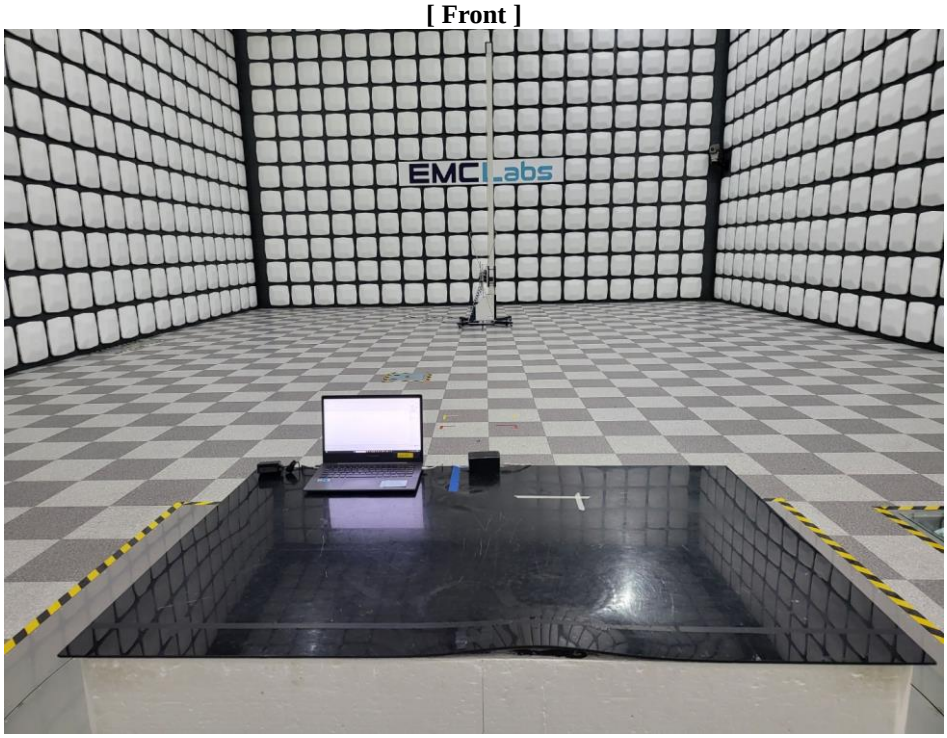
* Test Result

☒ Complied ☐ Not complied

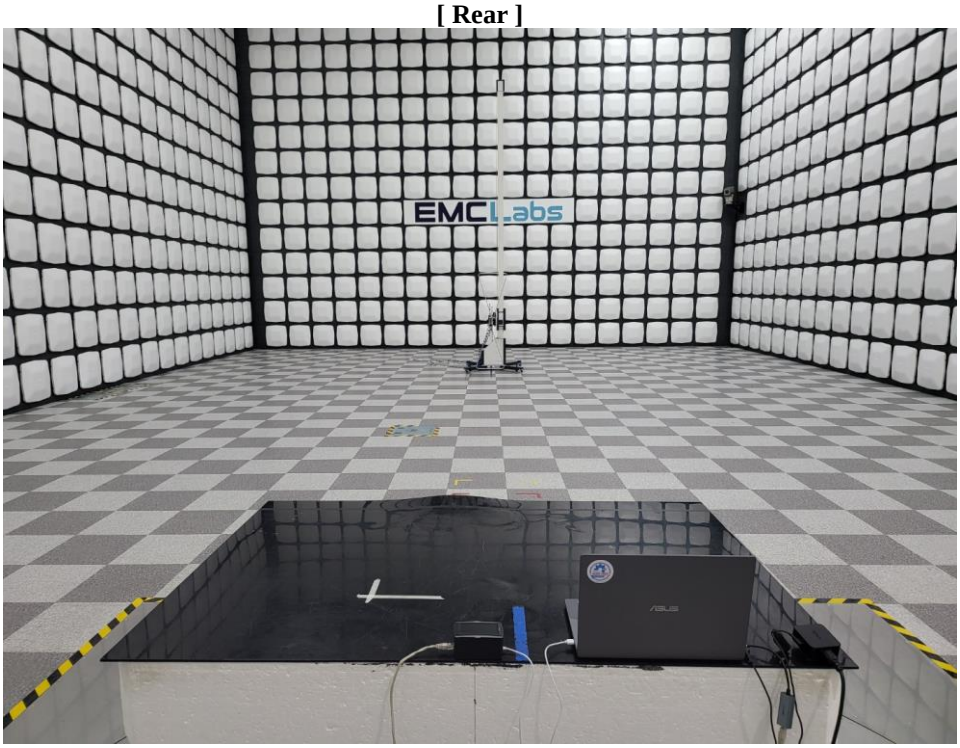
5. Test photographs

Radiated Emission (Below 1GHz)

[Front]

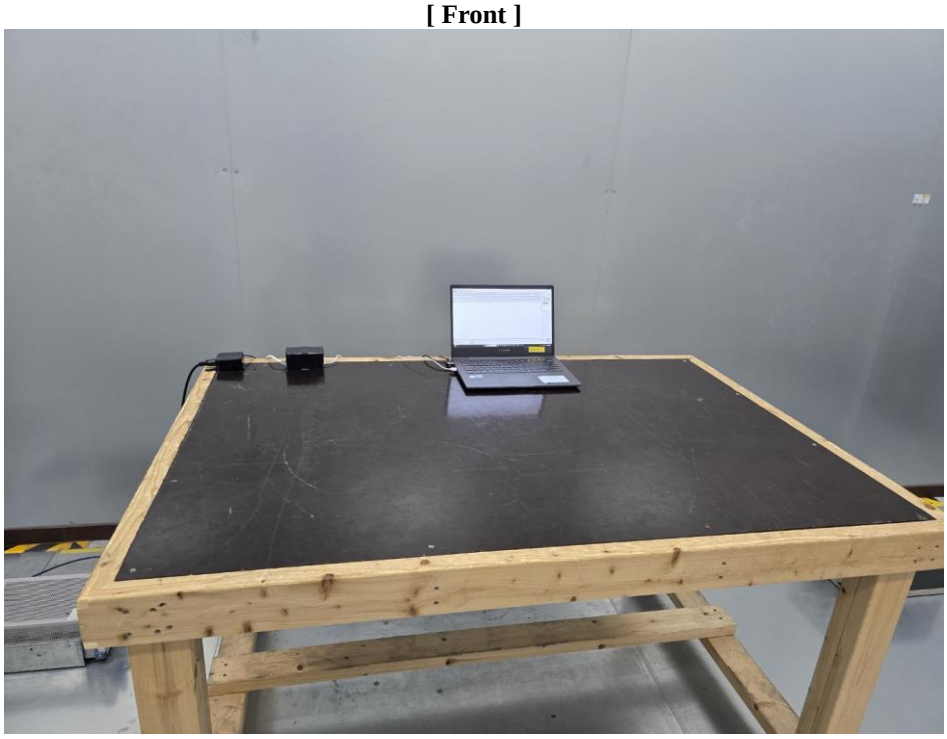


[Rear]

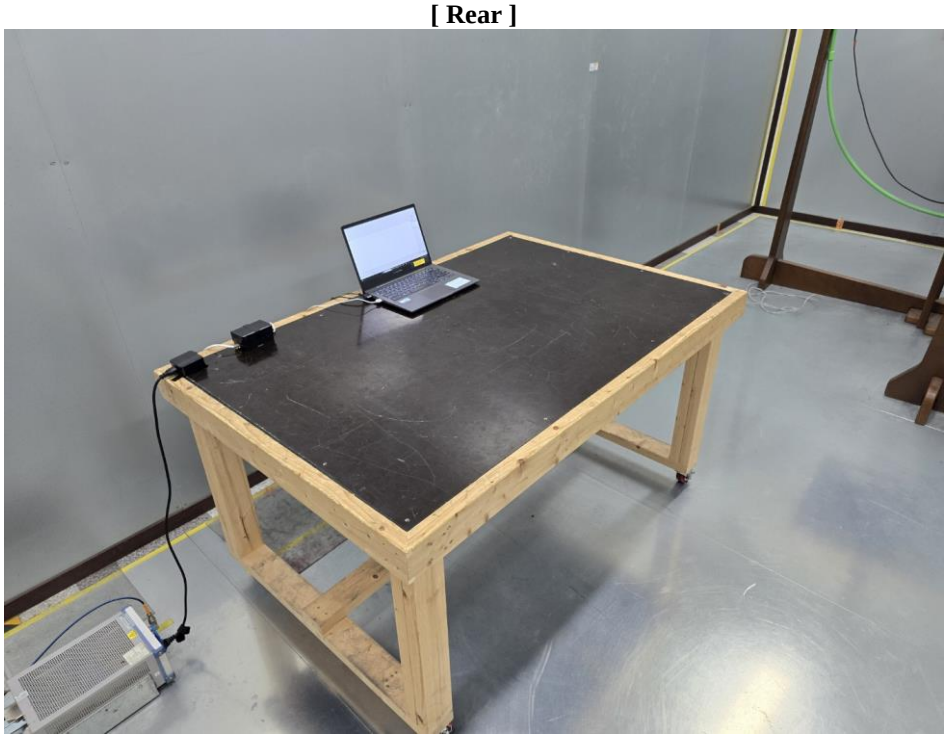


Conducted Emission (Main Power)

[Front]



[Rear]



6. E.U.T. photographs

[Front View]

[Rear View]

[Inside View]

[Port_View #1]

[Port_View #2]

[Board_Front #1]

[Board_Rear #1]

[Board_Front #2]

[Board_Rear #2]

[Battery]

[Board_Front #3]

[Board_Rear #4]

[Board_Front #4]

[Board_Front #4]

[BT antenna #1]

[BT antenna #2]

[DIP]

[MEAH antenna]

-THE END-