



TEST REPORT

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 W5500-EVB-Pico2
- Kind of Product iEthernet Module
- Variant Model Name -

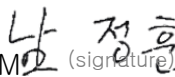

4. Date of Receipt : 2024. 08. 05

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.

| | | |
|-------------|---|---|
| Affirmation | Tested by JEONG HOON, NAME  (signature) | Technical Manager YONG MIN, PARK  (signature) |
|-------------|---|---|

08. 28, 2024

EMC Labs Co., Ltd.



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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

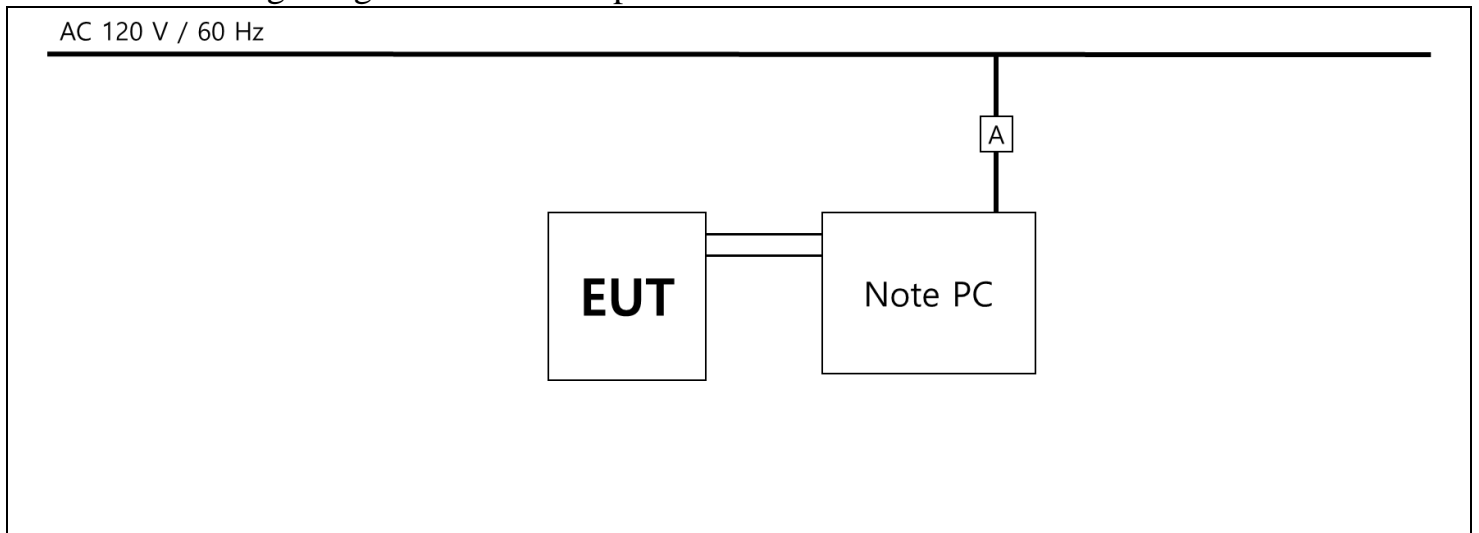
Model Name: Clium Cleaner Fit V1

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 | - | - | <input checked="" type="checkbox"/> |
| EMI TEST RECEIVER | ESW44 | Rohde&Schwarz | 101952 | 2025.03.14 | <input checked="" type="checkbox"/> |
| Controllers | CO3000-4port | Innco Systems GmbHRE | CO3000/ 1061/ 42111117/P | - | <input checked="" type="checkbox"/> |
| Antenna Masts | MA4640/800-XP-ET | Innco Systems GmbHRE | - | - | <input checked="" type="checkbox"/> |
| Turn tables | DS2000-S-1t | Innco Systems GmbHRE | - | - | <input checked="" type="checkbox"/> |
| Bi-Log ANT. | VULB 9160 | Schwarzbeck | 3260 | 2025.02.03 | <input checked="" type="checkbox"/> |
| Amplifier | PO-LS960 | PANOPTICS | PL181004 | 2025.01.08 | <input checked="" type="checkbox"/> |

[Above 1GHz]

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

4.1.3 Test data

* Receiving Antenna Mode : Horizontal, Vertical

* 3 m Chamber

* Note : Reading = Test Receiver meter,

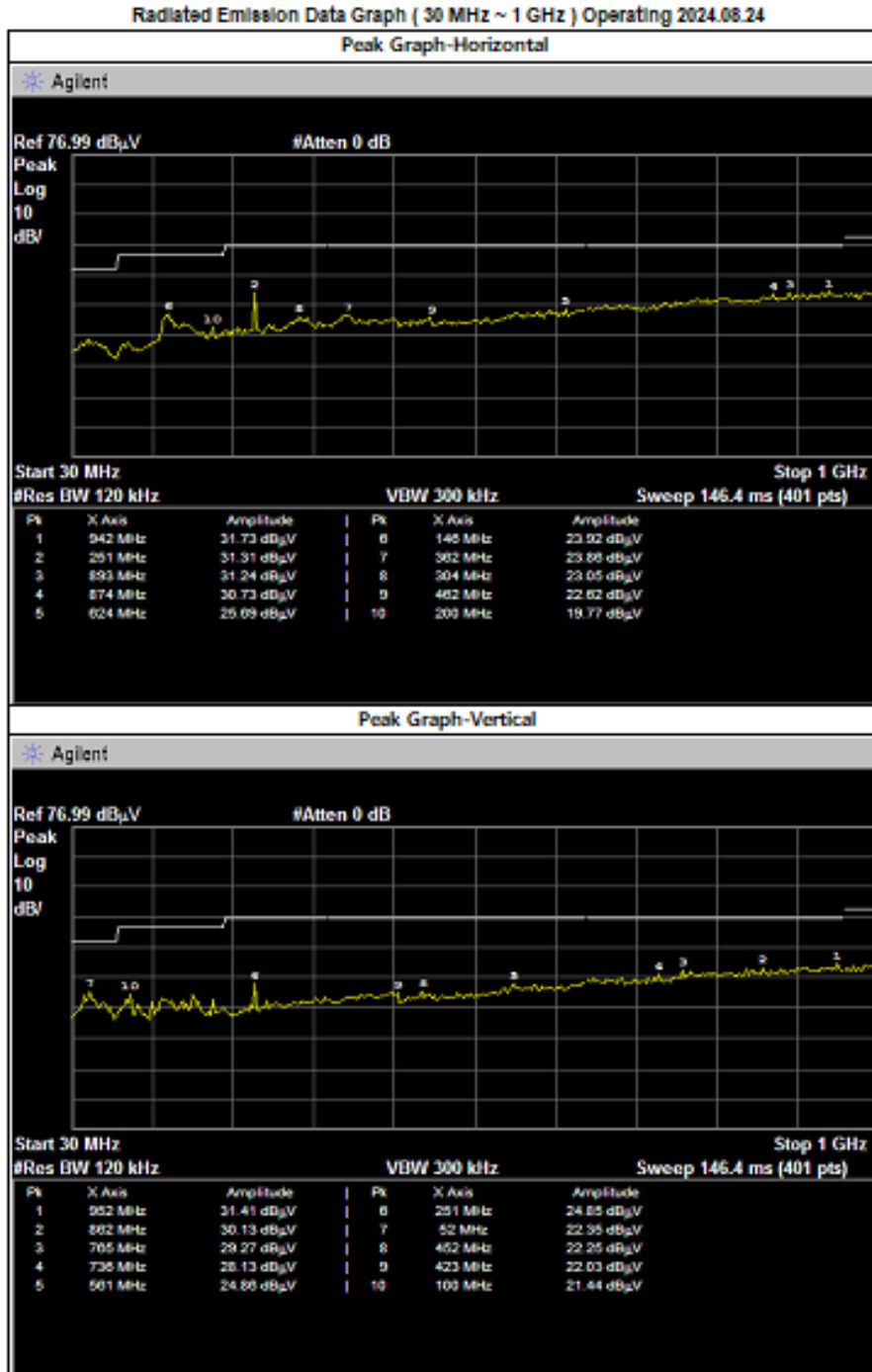
Pol.= Polarization → H = Horizontal, V = Vertical

Result [dB($\mu\text{V}/\text{m}$)] = Reading [dB(μV)] + 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 : iEthernet Module
 모델명 : W5500-EVB-Pico2
 제조사 : (주)위즈네트
 접수번호 : KR0140-2024-08_2385

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

A

| Frequency [MHz] | Total Reading [dB μ V/m] | Pol. | Height [m] | angle [°] | Quasi-Peak [dB μ V/m] | Correction | | | Limits [dB μ V/m] | Result [dB μ V/m] | Margin [dB] |
|----------------------|--------------------------------------|------|-----------------|----------------|--------------------------------|---------------------|-----------------|--------------------|----------------------------|----------------------------|------------------|
| | | | | | | Antenna [dB/m] | Cable [dB] | Amp Gain [dB] | | | |
| 51.49 | 48.50 | V | 1.0 | 340 | (25.14) | 13.70 | 2.59 | 41.43 | 39.0 | 23.36 | 15.64 |
| 99.56 | 51.60 | V | 1.1 | 159 | (28.69) | 8.50 | 3.98 | 41.17 | 43.5 | 22.91 | 20.59 |
| 250.12 | 47.10 | H | 3.2 | 117 | (15.65) | 17.90 | 7.20 | 40.75 | 46.4 | 31.45 | 14.95 |
| 422.57 | 38.20 | V | 1.4 | 102 | (15.17) | 16.14 | 9.76 | 41.07 | 46.4 | 23.03 | 23.37 |
| 623.78 | 35.60 | H | 3.6 | 46 | (9.09) | 20.16 | 12.88 | 42.12 | 46.4 | 26.51 | 19.89 |
| 941.58 | 35.80 | H | 4.0 | 25 | (3.09) | 23.78 | 16.33 | 43.19 | 46.4 | 32.71 | 13.69 |

* 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

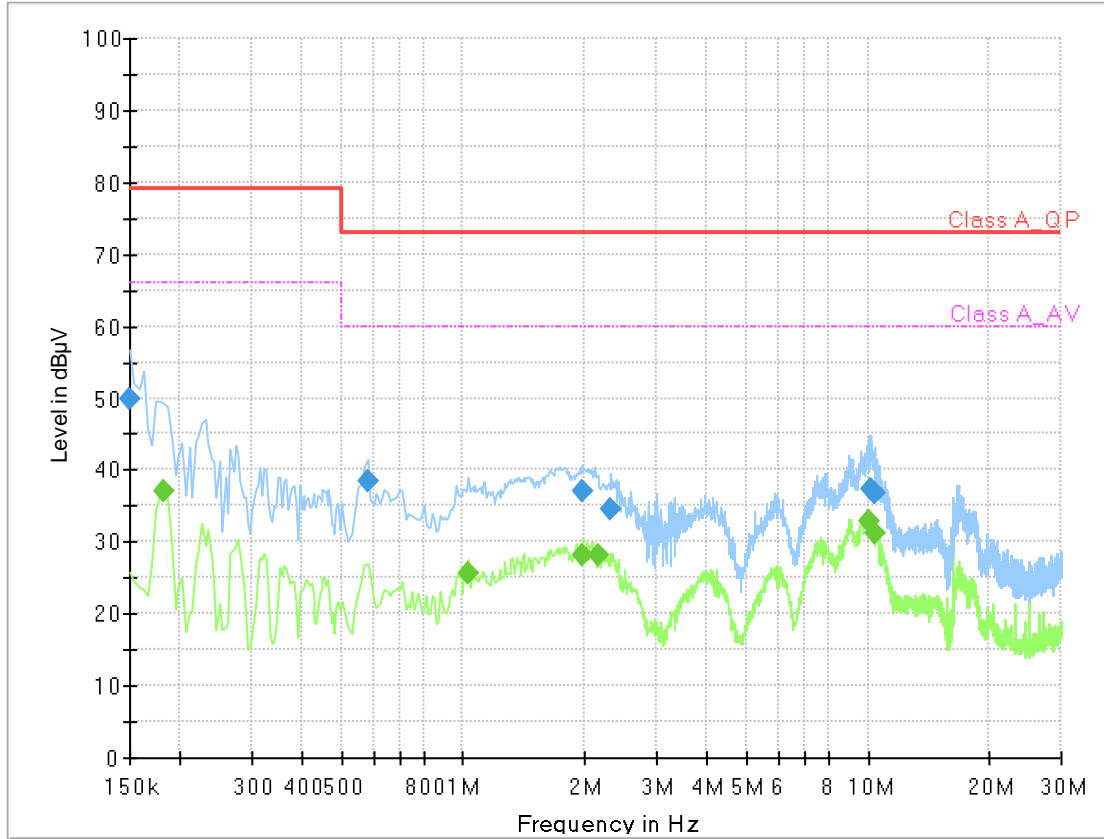
| Equipment | Model | Manufacturer | Serial or Firmware (No./Ver.) | Next Cal. Date | Used |
|----------------------|--------------------|---------------|-------------------------------|----------------|-------------------------------------|
| MEASUREMENT SOFTWARE | EMC32 VER 10.60.15 | Rohde&Schwarz | - | - | <input checked="" type="checkbox"/> |
| Test Receiver | ESR7 | Rohde&Schwarz | 101616 | 2025.06.27 | <input checked="" type="checkbox"/> |
| LISN | ENV216 | Rohde&Schwarz | 100409 | 2025.01.08 | <input checked="" type="checkbox"/> |
| LISN | 3825-2 | EMCO | 8901-1458 | 2025.01.04 | <input type="checkbox"/> |
| PULSE LIMITER | EPL-30 | lignex 1 | - | 2025.01.04 | <input checked="" type="checkbox"/> |

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

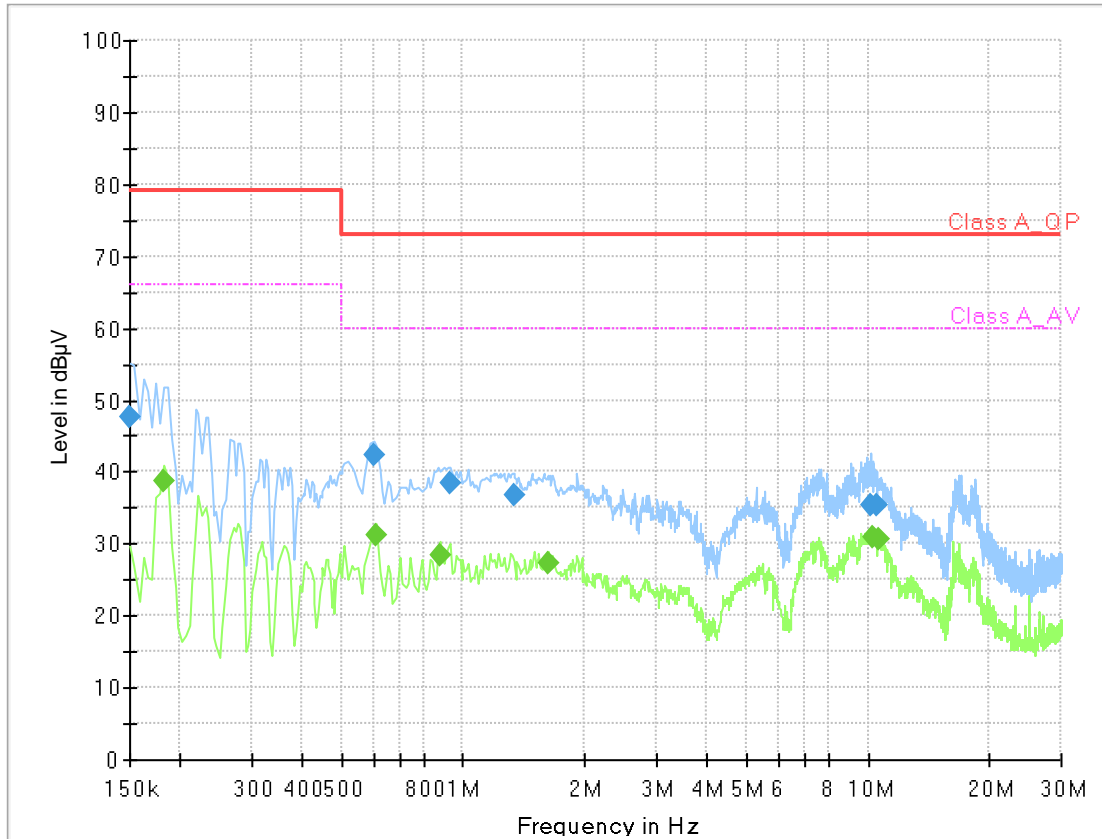
[HOT] – [Operating]



Final_Result

| Frequency (MHz) | QuasiPeak (dBµV) | CAverage (dBµV) | Limit (dBµV) | Margin (dB) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|------|------------|
| 0.150 | 49.99 | --- | 79.00 | 29.01 | 9 | L1 | 20.7 |
| 0.182 | --- | 36.93 | 66.00 | 29.07 | 9 | L1 | 20.9 |
| 0.580 | 38.39 | --- | 73.00 | 34.61 | 9 | L1 | 20.8 |
| 1.030 | --- | 25.64 | 60.00 | 34.36 | 9 | L1 | 20.1 |
| 1.960 | 36.93 | --- | 73.00 | 36.07 | 9 | L1 | 20.0 |
| 1.970 | --- | 28.15 | 60.00 | 31.85 | 9 | L1 | 20.0 |
| 2.150 | --- | 28.05 | 60.00 | 31.95 | 9 | L1 | 20.0 |
| 2.320 | 34.44 | --- | 73.00 | 38.56 | 9 | L1 | 20.0 |
| 10.080 | --- | 32.82 | 60.00 | 27.18 | 9 | L1 | 20.1 |
| 10.130 | 37.44 | --- | 73.00 | 35.56 | 9 | L1 | 20.1 |
| 10.400 | --- | 31.21 | 60.00 | 28.79 | 9 | L1 | 20.1 |
| 10.400 | 36.78 | --- | 73.00 | 36.22 | 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 | 47.62 | --- | 79.00 | 31.38 | 9 | N | 20.8 |
| 0.182 | --- | 38.79 | 66.00 | 27.21 | 9 | N | 21.0 |
| 0.600 | 42.22 | --- | 73.00 | 30.78 | 9 | N | 20.8 |
| 0.610 | --- | 31.13 | 60.00 | 28.87 | 9 | N | 20.7 |
| 0.880 | --- | 28.28 | 60.00 | 31.72 | 9 | N | 20.0 |
| 0.930 | 38.42 | --- | 73.00 | 34.58 | 9 | N | 20.1 |
| 1.330 | 36.74 | --- | 73.00 | 36.26 | 9 | N | 20.0 |
| 1.620 | --- | 27.42 | 60.00 | 32.58 | 9 | N | 20.0 |
| 10.160 | 35.35 | --- | 73.00 | 37.65 | 9 | N | 20.2 |
| 10.280 | --- | 30.80 | 60.00 | 29.20 | 9 | N | 20.2 |
| 10.490 | 35.48 | --- | 73.00 | 37.52 | 9 | N | 20.2 |
| 10.690 | --- | 30.51 | 60.00 | 29.49 | 9 | N | 20.2 |

* Test Result

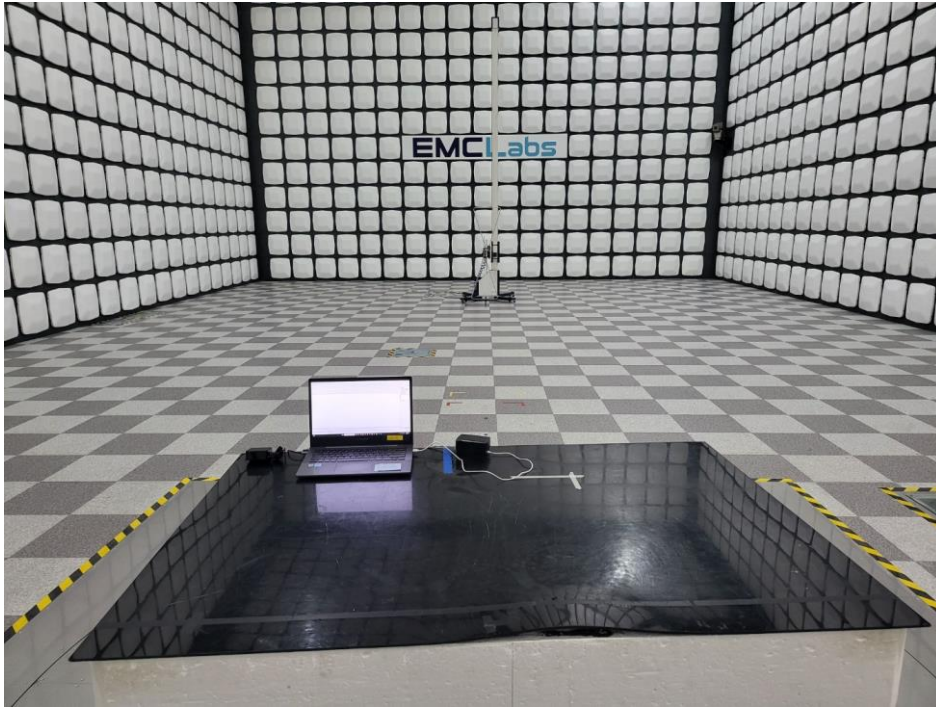
Complied

Not complied

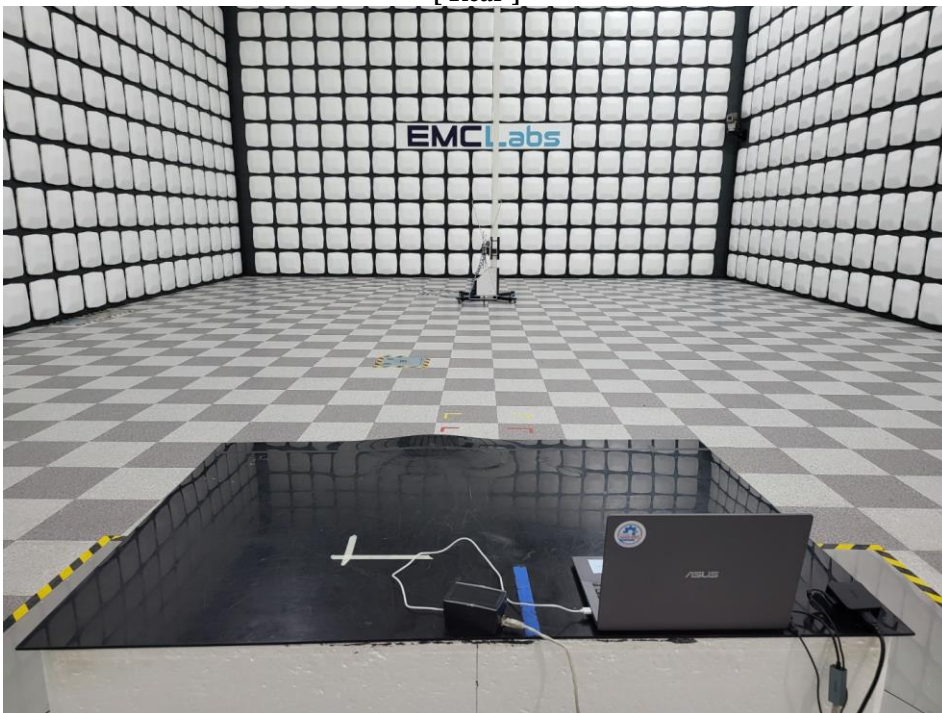
5. Test photographs

Radiated Emission (Below 1GHz)

[Front]

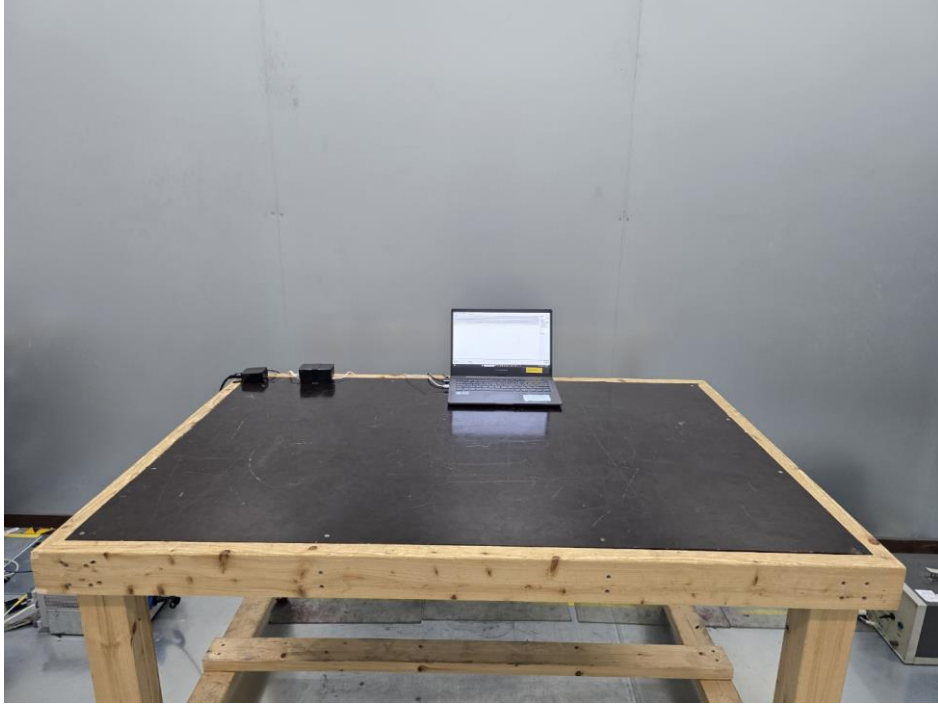


[Rear]



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-