



# TEST REPORT



Report No. : KES-EM252055

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**KES Co., Ltd.**

#3002, #3503, #3701, 40, Simin-daero365beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Republic of Korea  
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## 1. Client

Applicant : Hanwha Vision Co., Ltd

Applicant Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

## 2. Sample Description

Product name : LENS MODULE

Model/Type No. : SLA-F2480VA

Variant Model : -

Manufacturer : 1. HANWHA VISION VIETNAM COMPANY LIMITED  
2. D-TECH CO.,LTD.

Manufacturer Address : 1. Lot O-2, Que Vo Industrial Zone extended Area, Nam Son Ward, Bac Ninh City, Bac Ninh Province, Vietnam  
2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do, Korea (Suwon Industrial Complex)

3. Date of Receipt : Jun. 09, 2025

4. Test date : Jun. 14, 2025 ~ Jun. 15, 2025

5. Date of Issue : Jun. 24, 2025

6. Test Results : In Compliance

*Tested by*

*Reviewed by*

---

Hyo Jin, Kim  
EMC Test Engineer

---

Dong Hun, Jang  
EMC Technical Manager

This test report is not related to KS Q ISO/IEC 17025 and KOLAS.

KES-QP16-F01(00-23-01-01)

KES Co., Ltd.

The authenticity of this test report can be found on the verification page of our website ([www.kes.co.kr](http://www.kes.co.kr))



REPORT REVISION HISTORY

| Date          | Test Report No. | Revision History |
|---------------|-----------------|------------------|
| Jun. 24, 2025 | KES-EM252055    | Issued           |
|               |                 |                  |
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1.0 General Product Description

Main Specifications of EUT are:

| Division                             |             | Specificity                |
|--------------------------------------|-------------|----------------------------|
| Internal highest operating frequency |             | 3 000 MHz                  |
| Power                                | Rated Power | DC 5 V                     |
|                                      | Test Power  | AC 120 V, 60 Hz            |
| Ports                                | I/O Port    | RJ-12 1 EA                 |
|                                      | Unused Port | N/A                        |
| Components                           |             | Main Body 1 EA, Cable 1 EA |



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|                                       |                                                                                                                                                                                                                        |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Video</b>                          |                                                                                                                                                                                                                        |
| Imaging Device                        | 1/2.8" CMOS                                                                                                                                                                                                            |
| Resolution                            | None                                                                                                                                                                                                                   |
| Max. Framerate                        | None                                                                                                                                                                                                                   |
| NETD                                  | None                                                                                                                                                                                                                   |
| Pixel Size                            | None                                                                                                                                                                                                                   |
| Video Out                             | None                                                                                                                                                                                                                   |
| Video Transmission Distance           | None                                                                                                                                                                                                                   |
| <b>Lens</b>                           |                                                                                                                                                                                                                        |
| Focal Length (Zoom Ratio)             | 2.45mm fixed focal                                                                                                                                                                                                     |
| Optical Zoom                          | None                                                                                                                                                                                                                   |
| Max. Aperture Ratio                   | F2.0                                                                                                                                                                                                                   |
| Angular Field of View                 | H: 123°, V: 91°, D: 159°                                                                                                                                                                                               |
| Min. Object Distance                  | 0.5m(1.64ft)                                                                                                                                                                                                           |
| Focus Control                         | Fixed                                                                                                                                                                                                                  |
| Lens Type                             | None                                                                                                                                                                                                                   |
| Mount Type                            | RJ12 connected with main unit                                                                                                                                                                                          |
| Optional Lens                         | None                                                                                                                                                                                                                   |
| <b>Environmental &amp; Electrical</b> |                                                                                                                                                                                                                        |
| Operating Temperature / Humidity      | -10°C~+55°C(+14°F~+131°F) / 0~95%RH(non-condensing)                                                                                                                                                                    |
| Storage Temperature / Humidity        | -50°C~+60°C(-58°F~+140°F) / 0~90% RH                                                                                                                                                                                   |
| Wind Load                             | None                                                                                                                                                                                                                   |
| EPA(Effective Projected Area)         | None                                                                                                                                                                                                                   |
| Certification                         | None                                                                                                                                                                                                                   |
| Input Voltage                         | DC 5V/0.25A                                                                                                                                                                                                            |
| Power Consumption                     | 1.25W                                                                                                                                                                                                                  |
| <b>Mechanical</b>                     |                                                                                                                                                                                                                        |
| Color / Material                      | Black / Plastic, Metal                                                                                                                                                                                                 |
| RAL Code                              | RAL9005                                                                                                                                                                                                                |
| Product Dimensions / Weight           | Lens: 30(W)x24.7(H)x45mm(1.18x0.97x1.77"), 46.1g(0.1lb)<br>Cable: 8m(26.2ft)                                                                                                                                           |
| Compatible Conduit hole / Gang        | None                                                                                                                                                                                                                   |
| <b>Certifications &amp; Standards</b> |                                                                                                                                                                                                                        |
| Network                               | None                                                                                                                                                                                                                   |
| EMC                                   | FCC 47 CFR 15 Subpart B Class A<br>ICES-3(A)/NMB-3(A)<br>CE/UKCA<br>- EN 55032 Class A, EN 50130-4, EN 61000-3-2, EN 61000-3-3<br>VCCI CISPR 32 Class A<br>RCM AS/NZS CISPR 32 Class A<br>KS C 9832 Class A, KS C 9835 |
| Safety                                | UL 62368-1, CAN/CSA C22.2 NO. 62368-1                                                                                                                                                                                  |
| Video                                 | None                                                                                                                                                                                                                   |



## 1.1 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

☒ AC 120 V, 60 Hz

## 1.2 Variant Model Differences

Not applicable

## 1.3 Device Modifications

Not applicable

## 1.4 Equipment Under Test

| Description | Model Number | Serial Number | Manufacturer                          | Remarks |
|-------------|--------------|---------------|---------------------------------------|---------|
| LENS MODULE | SLA-F2480VA  | -             | HANWHA VISION VIETNAM COMPANY LIMITED | EUT     |

## 1.5 Support Equipments

| Description            | Model Number  | Serial Number | Manufacturer                                  | Remarks |
|------------------------|---------------|---------------|-----------------------------------------------|---------|
| NETWORK CAMERA Adapter | 2ACB022F      | -             | Channel Well Technology (Guangzhou) Co., Ltd. | -       |
| NETWORK CAMERA         | PNM-C20000QB  | -             | HANWHA VISION VIETNAM COMPANY LIMITED         | -       |
| Laptop                 | LG15U56       | 605NZ8J002174 | LG Electronics Inc.                           | -       |
| Laptop Adatper         | ADS-65AI-19-3 | EAY65689605   | SHENZHEN HONOR ELECTRONIC CO.,LTD.            | -       |

## 1.6 External I/O Cabling

| Start             |          | END                    |          | Cable Spec. |        |
|-------------------|----------|------------------------|----------|-------------|--------|
| Description       | I/O Port | Description            | I/O Port | Length      | Shield |
| LENS MODULE (EUT) | RJ-12    | NETWORK CAMERA         | RJ-12    | 8.0         | S      |
| Laptop            | DC Jack  | Laptop Apapter         | DC Jack  | 1.4         | S      |
|                   | RJ-45    | NETWORK CAMERA         | RJ-45    | 1.5         | U      |
| NETWORK CAMERA    | DC IN    | NETWORK CAMERA Adapter | 2 Pin    | 1.2         | U      |

\* Unshielded=U, Shielded=S

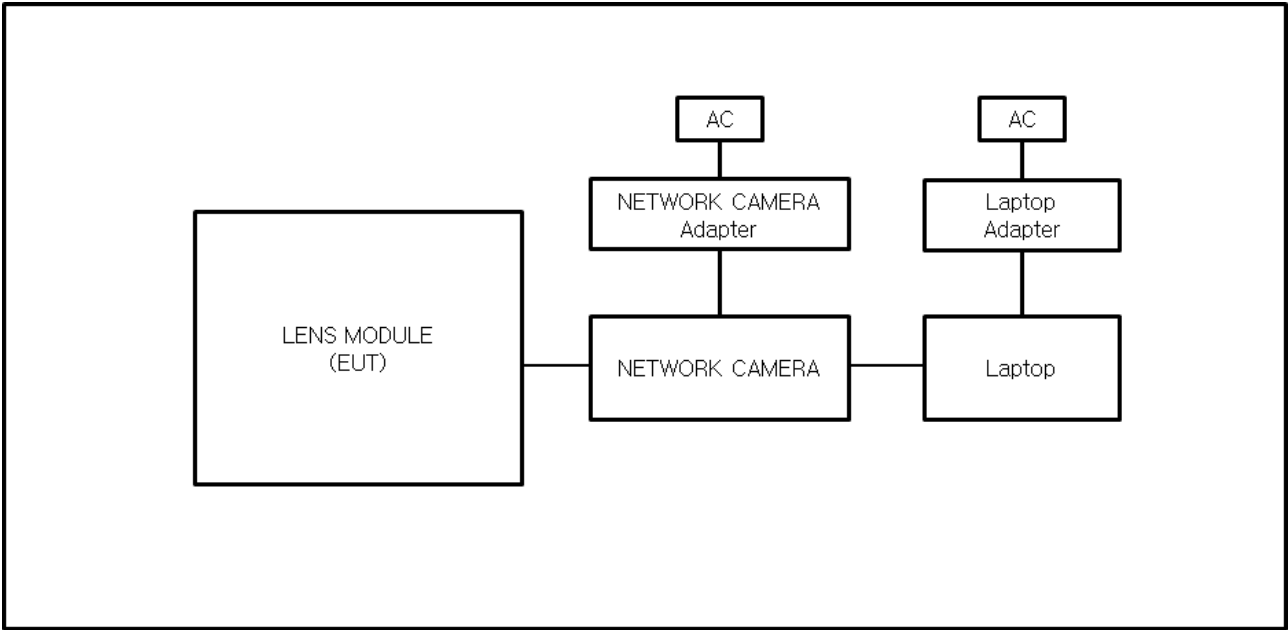


1.7 EUT Operating Mode(s)

- Check the network behavior of the EUT with the laptop's ping test.
- View images of the camera through the Web Viewer.

| EUT Test operating S/W |         |                                       |
|------------------------|---------|---------------------------------------|
| Name                   | Version | Manufacture Company                   |
| Web Viewer             | -       | HANWHA VISION VIETNAM COMPANY LIMITED |

1.8 Configuration





## 1.9 Remarks when standards applied

N/A

## 1.10 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less.

## 1.11 Test Facility

The measurement facility is located at 473-21, Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea, Republic of. The sites are constructed in conformance with the requirements of ANSI C63.4a-2017 and CISPR 16-1-4:2019

## 1.12 Measurement Procedure

### - Conducted Emissions

The conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak mode (or peak mode if applicable). The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. If the conducted emission exceed the average limit with the instrument set to the quasi-peak mode, the measurements are made in the average mode. The emission spectrum was scanned from 150 kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limits were measured and have been recorded. Quasi-peak readings are distinguished with a "QP".

### - Radiated Electric Field Emissions

The test was done at a SEMI ANECHOIC CHAMBER with quasi-peak detector. The final test data was measured using a Quasi-Peak detector below 1 GHz at 10 m or 3 m distance and a Peak and Average detector above 1 GHz at 3 m distance. Test was proceeded worst case test mode and cable configuration.

Measurements were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height was varied from 1 m to 4 m and the EUT was rotated 360° to find the maximum emitting point for each frequency.

Measurement procedures was In accordance with ANSI C63.4-2014 7.3.3, 7.3.4, 8.3.1.1, 8.3.1.2, 8.3.2.1, 8.3.2.2



### 1.13 Laboratory Accreditations and Listings

| Country       | Agency  | Scope of Accreditation                                                                                                                  | Logo                                                                                                                           |
|---------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| KOREA         | RRA     | EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions) | <br>KR0100                                  |
| International | KOLAS   | EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions) | <br>KT489                                   |
| USA           | FCC     | 3 m & 10 m Semi-Anechoic Chamber<br>Conducted test site to perform FCC Part 15/18 measurements.                                         | <br>KR0100                                  |
| Canada        | ISED    | 3 m & 10 m Semi-Anechoic Chamber and Conducted test site                                                                                | <br>23298                                  |
| JAPAN         | VCCI    | EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site)                                                                          | <br>C-20136, T-20137,<br>R-20181, G-20176 |
| Europe        | TÜV SÜD | EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions) | <br>CARAT 001633 0008                     |



## 2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ **47 CFR Part 15, Subpart B**

☐ CISPR 22:2009 +A1:2010

☐ Class A

☐ Class B

☒ ANSI C63.4a-2017

☒ Class A

☐ Class B

☒ **IC Regulation ICES-003 Issue 7**

☐ CAN/CSA-CISPR 32:17

☐ Class A

☐ Class B

☒ ANSI C63.4a-2017

☒ Class A

☐ Class B





## 2.1 Conducted Emissions at Mains Power Ports

### Test Date

Jun. 14, 2025

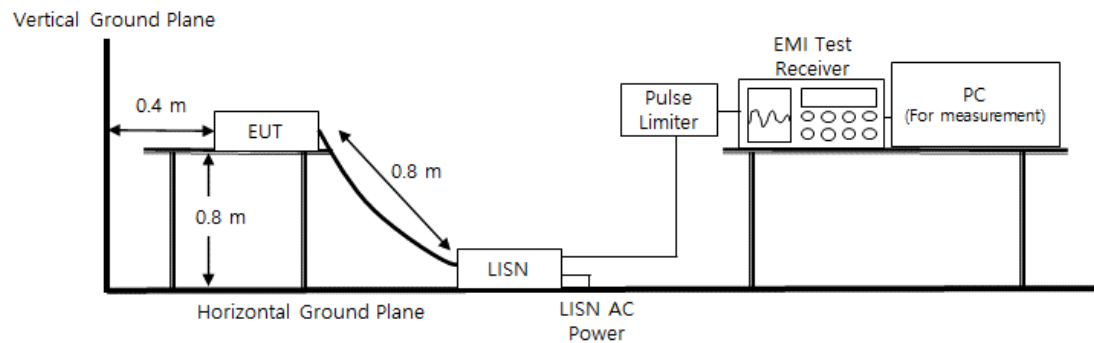
### Test Location

Electro wave Shieldroom #6

### Test Equipment

| Used                                | Description              | Model Number | Manufacturer | Serial Number | Cal. Due     | calibration interval |
|-------------------------------------|--------------------------|--------------|--------------|---------------|--------------|----------------------|
| <input checked="" type="checkbox"/> | EMI Test S/W             | EMC32        | R & S        | 9.12.00       | -            | -                    |
| <input checked="" type="checkbox"/> | EMI TEST RECEIVER        | ESR3         | R & S        | 101783        | 11, 06, 2025 | 1 Year               |
| <input checked="" type="checkbox"/> | LISN                     | ENV216       | R & S        | 101786        | 01, 09, 2026 | 1 Year               |
| <input checked="" type="checkbox"/> | ARTIFICIAL MAINS NETWORK | ESH2-Z5      | R & S        | 100450        | 11, 06, 2025 | 1 Year               |
| <input checked="" type="checkbox"/> | PULSE LIMITER            | ESH3-Z2      | R & S        | 101915        | 11, 06, 2025 | 1 Year               |

### Diagram of test setup





### Test Conditions

Temperature: (23,4 ± 0,1) °C  
Relative Humidity: (46,5 ± 0,1) % R.H.

### Frequency Range of Measurement

150 kHz to 30 MHz

### Instrument Settings

IF Band Width: 9 kHz

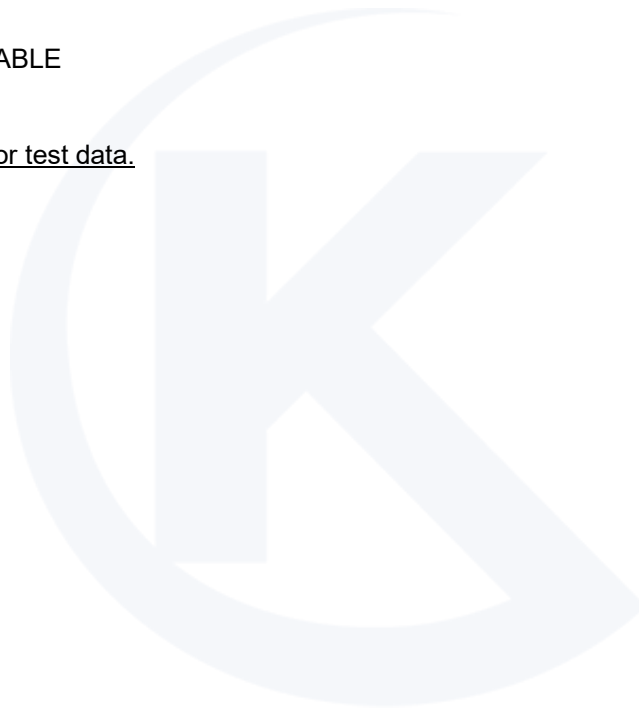
### Test Results

The requirements are:

- ☒ PASS
- ☐ NOT PASS
- ☐ NOT APPLICABLE

### Remarks

See Appendix A for test data.





## 2.2 Radiated Electric Field Emissions(Below 1 GHz)

### Test Date

Jun. 14, 2025

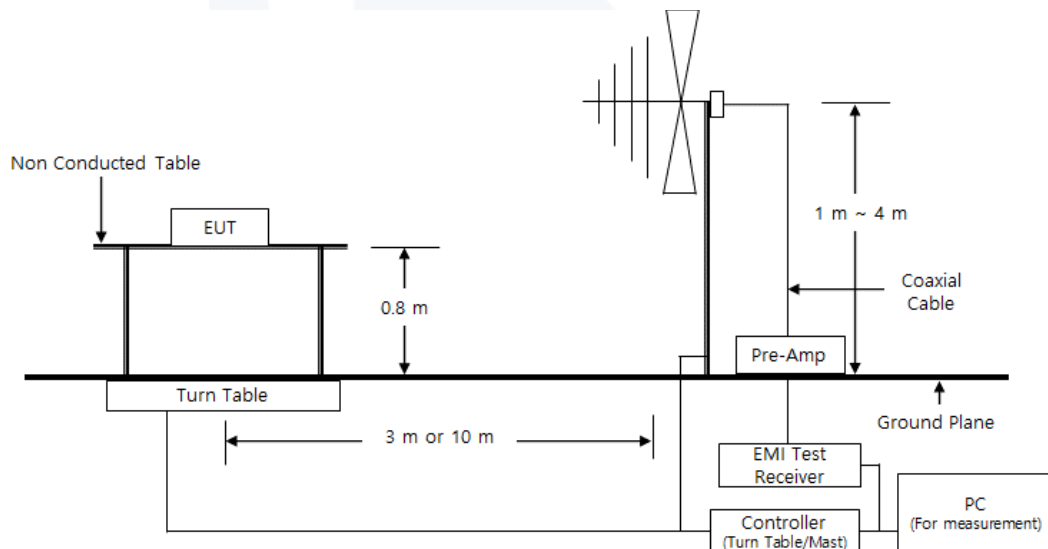
### Test Location

☐ OPEN AREA TEST SITE #2☒ SEMI ANECHOIC CHAMBER #4(10m)

### Test Equipment

| Used                                | Description       | Model Number | Manufacturer     | Serial Number | Cal. Due     | calibration interval |
|-------------------------------------|-------------------|--------------|------------------|---------------|--------------|----------------------|
| <input checked="" type="checkbox"/> | EMI Test S/W      | EP5/RE       | TOYO Corporation | 6.0.0         | -            | -                    |
| <input checked="" type="checkbox"/> | EMI TEST RECEIVER | ESU26        | R & S            | 100551        | 02, 13, 2026 | 1 Year               |
| <input checked="" type="checkbox"/> | AMPLIFIER         | SCU 01       | R & S            | 100603        | 11, 06, 2025 | 1 Year               |
| <input checked="" type="checkbox"/> | BILOG ANTENNA     | VULB 9168    | SCHWARZBECK      | 9168-461      | 05, 09, 2026 | 2 Year               |
| <input checked="" type="checkbox"/> | ATTENUATOR        | 6806.17.A    | HUBER+SUHNER     | -             | 02, 13, 2026 | 1 Year               |

### Diagram of test setup





### Test Conditions

Temperature: (23,4 ± 0,1) °C  
Relative Humidity: (46,1 ± 0,1) % R.H.

### Frequency Range of Measurement

30 MHz to 1 GHz

### Instrument Settings

IF Band Width: 120 kHz

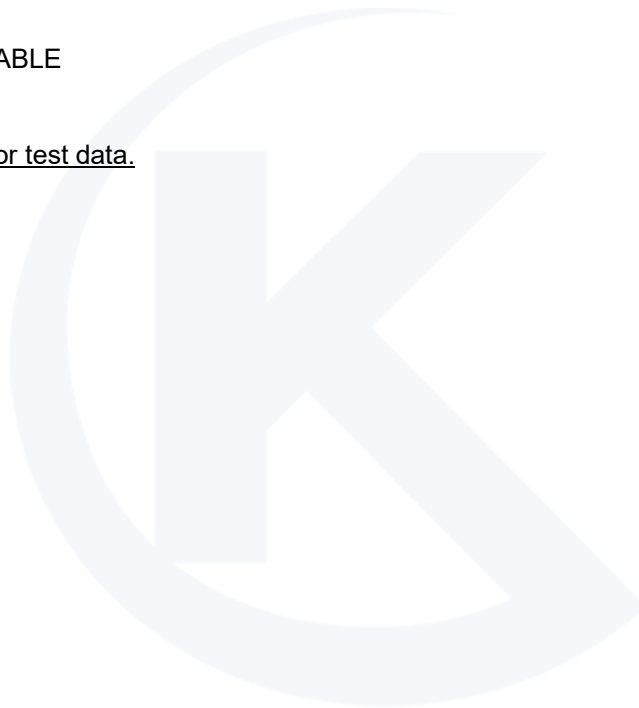
### Test Results

The requirements are:

- ☒ PASS
- ☐ NOT PASS
- ☐ NOT APPLICABLE

### Remarks

See Appendix A for test data.





## 2.3 Radiated Electric Field Emissions(Above 1 GHz)

### Test Date

Jun. 15, 2025

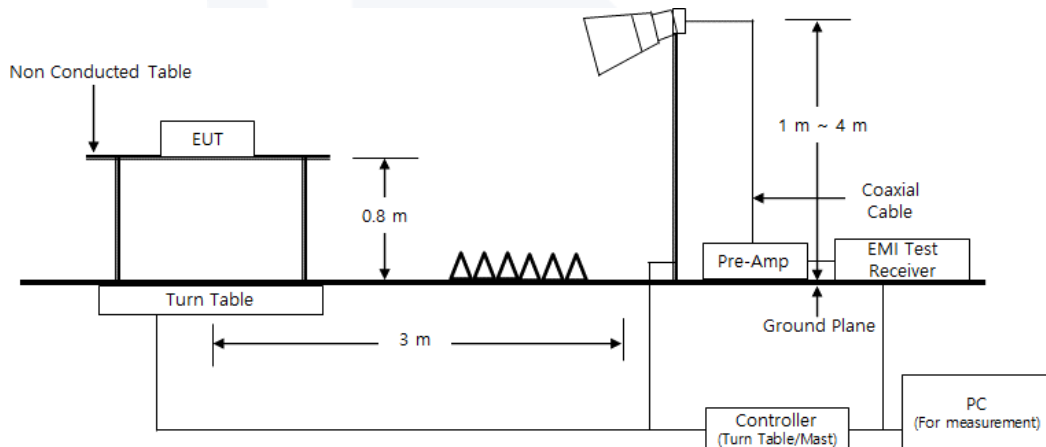
### Test Location

SEMI ANECHOIC CHAMBER #5

### Test Equipment

| Used                                | Description       | Model Number | Manufacturer     | Serial Number | Cal. Due     | calibration interval |
|-------------------------------------|-------------------|--------------|------------------|---------------|--------------|----------------------|
| <input checked="" type="checkbox"/> | EMI Test S/W      | ES10/RE      | TOYO Corporation | 2022.01.000   | -            | -                    |
| <input checked="" type="checkbox"/> | EMI TEST RECEIVER | ESU26        | Rohde & Schwarz  | 100552        | 02, 13, 2026 | 1 Year               |
| <input checked="" type="checkbox"/> | HORN ANTENNA      | BBHA 9120D   | SCHWARZBECK      | 9120D-1802    | 11, 04, 2025 | 1 Year               |
| <input checked="" type="checkbox"/> | PREAMPLIFIER      | 8449B        | HP               | 3008A00538    | 04, 30, 2025 | 1 Year               |
| <input checked="" type="checkbox"/> | ATTENUATOR        | 8491B        | HP               | 23094         | 02, 13, 2026 | 1 Year               |

### Diagram of test setup





### Test Conditions

Temperature:  $(23,1 \pm 0,1)^{\circ}\text{C}$   
Relative Humidity:  $(46,1 \pm 0,1) \% \text{ R.H.}$

### Frequency Range of Measurement

1 GHz to 18 GHz

### Instrument Settings

IF Band Width: 1 MHz

### Test Results

The requirements are:

- ☒ PASS
- ☐ NOT PASS
- ☐ NOT APPLICABLE

### Remarks

- See Appendix A for test data.
- The Average of the test data is the cispr average result.



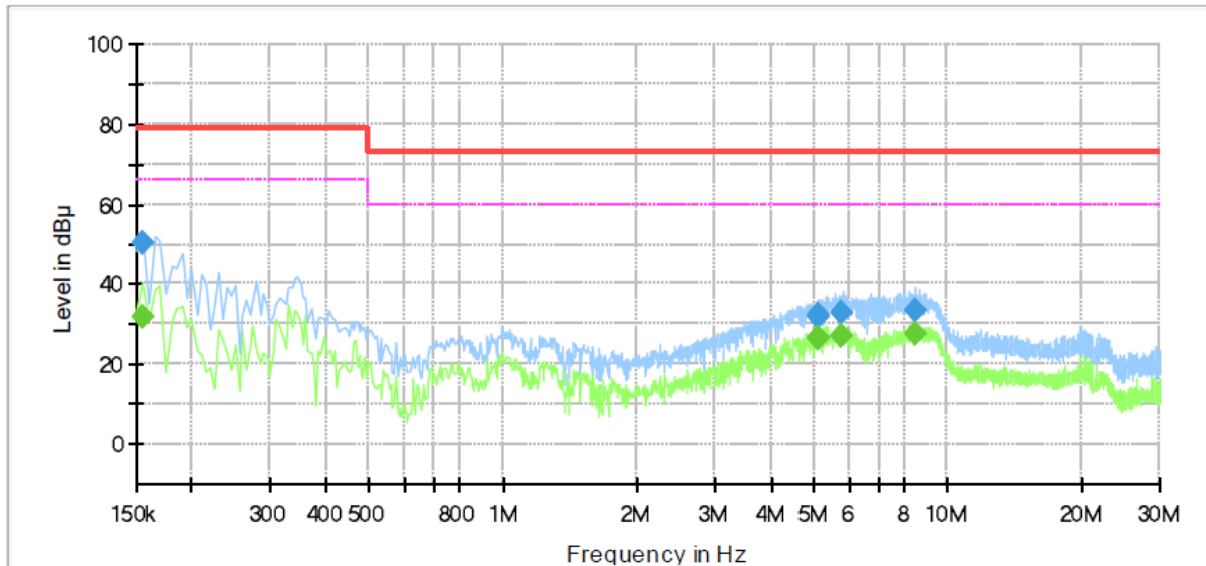
## APPENDIX A – TEST DATA

### Conducted Emissions at Mains Power Ports

HOT LINE

#### Common Information

Test Description: Conducted Emission  
Job No.: KES-EM252055  
Phase: L  
Mode:  
Operator Name: KES



#### Final\_Result

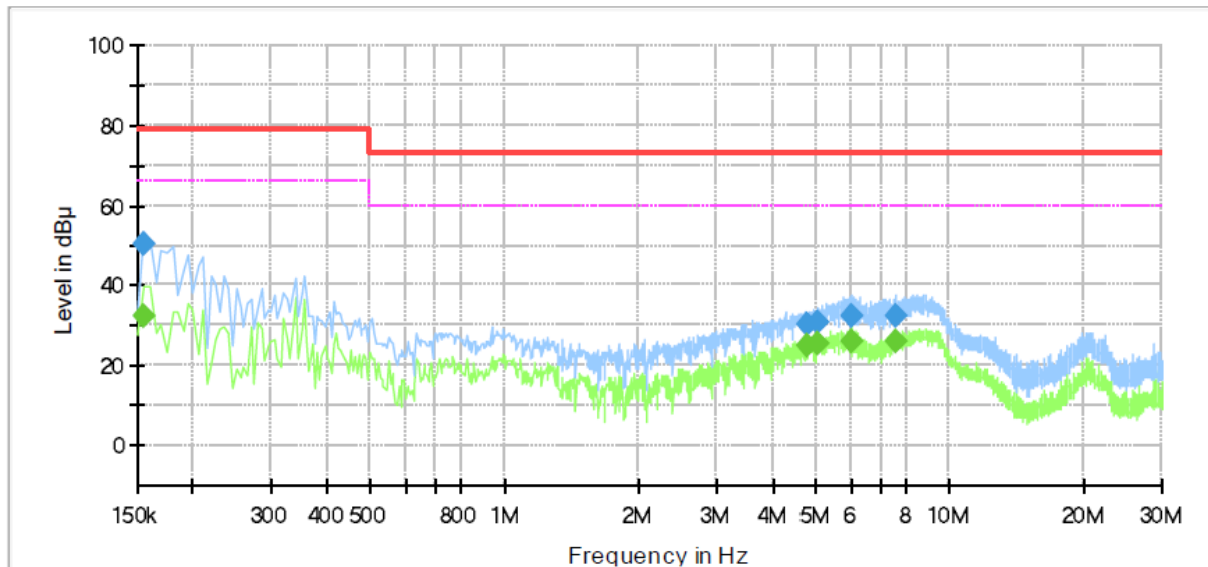
| Frequency (MHz) | QuasiPeak (dB $\mu$ V) | CAverage (dB $\mu$ V) | Limit (dB $\mu$ V) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------------|-----------------------|--------------------|-------------|-----------------|-----------------|------|------------|
| 0.155000        | ---                    | 31.96                 | 66.00              | 34.04       | 1000.0          | 9.000           | L1   | 19.5       |
| 0.155000        | 50.47                  | ---                   | 79.00              | 28.53       | 1000.0          | 9.000           | L1   | 19.5       |
| 5.085000        | ---                    | 26.66                 | 60.00              | 33.34       | 1000.0          | 9.000           | L1   | 19.9       |
| 5.085000        | 32.04                  | ---                   | 73.00              | 40.96       | 1000.0          | 9.000           | L1   | 19.9       |
| 5.090000        | ---                    | 26.56                 | 60.00              | 33.44       | 1000.0          | 9.000           | L1   | 19.9       |
| 5.090000        | 32.12                  | ---                   | 73.00              | 40.88       | 1000.0          | 9.000           | L1   | 19.9       |
| 5.745000        | ---                    | 26.88                 | 60.00              | 33.12       | 1000.0          | 9.000           | L1   | 19.9       |
| 5.745000        | 33.06                  | ---                   | 73.00              | 39.94       | 1000.0          | 9.000           | L1   | 19.9       |
| 8.410000        | ---                    | 27.64                 | 60.00              | 32.36       | 1000.0          | 9.000           | L1   | 20.0       |
| 8.410000        | 33.26                  | ---                   | 73.00              | 39.74       | 1000.0          | 9.000           | L1   | 20.0       |



## NEUTRAL LINE

## Common Information

Test Description: Conducted Emission  
Job No.: KES-EM252055  
Phase: N  
Mode:  
Operator Name: KES



## Final\_Result

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|------|------------|
| 0.155000        | ---              | 32.05           | 66.00        | 33.95       | 1000.0          | 9.000           | N    | 19.5       |
| 0.155000        | 50.30            | ---             | 79.00        | 28.70       | 1000.0          | 9.000           | N    | 19.5       |
| 4.800000        | ---              | 24.76           | 60.00        | 35.24       | 1000.0          | 9.000           | N    | 19.9       |
| 4.800000        | 30.21            | ---             | 73.00        | 42.79       | 1000.0          | 9.000           | N    | 19.9       |
| 5.060000        | ---              | 25.22           | 60.00        | 34.78       | 1000.0          | 9.000           | N    | 19.9       |
| 5.060000        | 30.86            | ---             | 73.00        | 42.14       | 1000.0          | 9.000           | N    | 19.9       |
| 6.005000        | ---              | 25.87           | 60.00        | 34.13       | 1000.0          | 9.000           | N    | 19.9       |
| 6.005000        | 32.43            | ---             | 73.00        | 40.57       | 1000.0          | 9.000           | N    | 19.9       |
| 7.585000        | ---              | 25.89           | 60.00        | 34.11       | 1000.0          | 9.000           | N    | 20.0       |
| 7.585000        | 32.20            | ---             | 73.00        | 40.80       | 1000.0          | 9.000           | N    | 20.0       |

## ◆ Calculation

QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

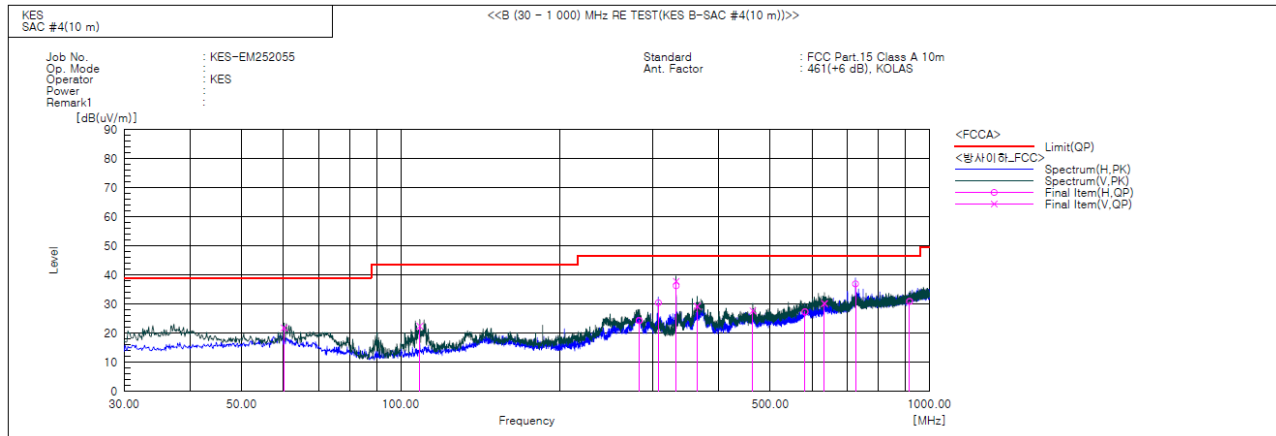
QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

**Radiated Electric Field Emissions(Below 1 GHz)**

- 47 CFR Part 15, Subpart B

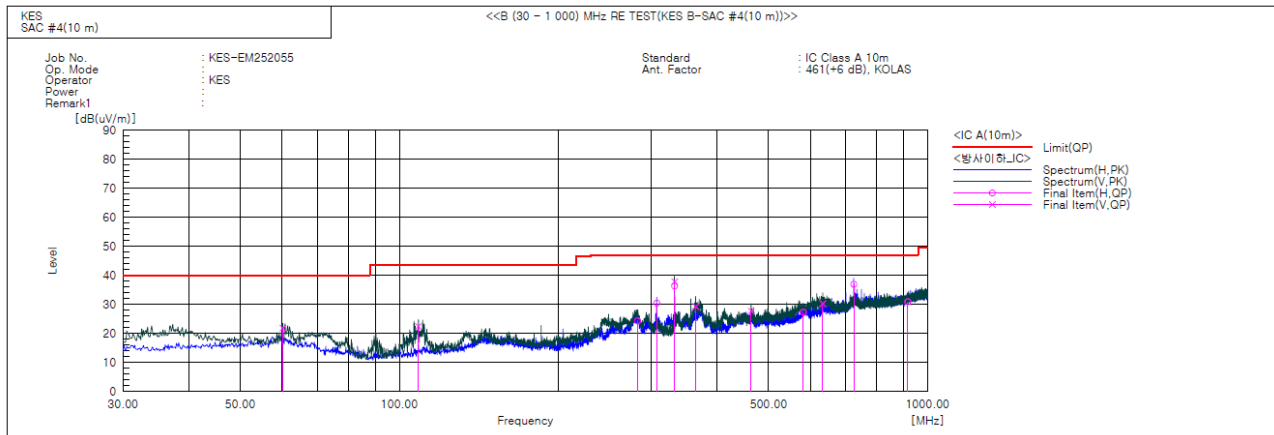
**Final Result**

| No. | Frequency<br>[MHz] | (P) | Reading<br>QP<br>[dB(μV)] | c.f<br>[dB(1/m)] | Result<br>QP<br>[dB(μV/m)] | Limit<br>QP<br>[dB(μV/m)] | Margin<br>QP<br>[dB] | Height<br>[cm] | Angle<br>[deg] | Remark |
|-----|--------------------|-----|---------------------------|------------------|----------------------------|---------------------------|----------------------|----------------|----------------|--------|
| 1   | 60.191             | V   | 43.1                      | -21.3            | 21.8                       | 39.0                      | 17.2                 | 168.0          | 80.0           |        |
| 2   | 108.691            | V   | 46.0                      | -23.6            | 22.4                       | 43.5                      | 21.1                 | 127.0          | 181.0          |        |
| 3   | 282.564            | H   | 42.0                      | -17.7            | 24.3                       | 46.5                      | 22.2                 | 374.0          | 247.0          |        |
| 4   | 307.133            | H   | 47.1                      | -16.7            | 30.4                       | 46.5                      | 16.1                 | 315.0          | 228.0          |        |
| 5   | 331.835            | H   | 52.3                      | -16.0            | 36.3                       | 46.5                      | 10.2                 | 374.0          | 124.0          |        |
| 6   | 331.941            | V   | 53.8                      | -16.0            | 37.8                       | 46.5                      | 8.7                  | 151.0          | 329.0          |        |
| 7   | 363.923            | V   | 44.3                      | -15.0            | 29.3                       | 46.5                      | 17.2                 | 106.0          | 107.0          |        |
| 8   | 463.348            | V   | 38.7                      | -11.0            | 27.7                       | 46.5                      | 18.8                 | 142.0          | 170.0          |        |
| 9   | 581.930            | H   | 35.0                      | -7.7             | 27.3                       | 46.5                      | 19.2                 | 319.0          | 42.0           |        |
| 10  | 633.340            | V   | 36.6                      | -6.4             | 30.2                       | 46.5                      | 16.3                 | 143.0          | 173.0          |        |
| 11  | 725.155            | H   | 41.2                      | -4.3             | 36.9                       | 46.5                      | 9.6                  | 377.0          | 23.0           |        |
| 12  | 917.308            | H   | 32.2                      | -1.3             | 30.9                       | 46.5                      | 15.6                 | 333.0          | 153.0          |        |



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## Final Result

| No. | Frequency<br>[MHz] | (P) | Reading<br>QP<br>[dB(μV)] | c.f<br>[dB(1/m)] | Result<br>QP<br>[dB(μV/m)] | Limit<br>QP<br>[dB(μV/m)] | Margin<br>QP<br>[dB] | Height<br>[cm] | Angle<br>[deg] | Remark |
|-----|--------------------|-----|---------------------------|------------------|----------------------------|---------------------------|----------------------|----------------|----------------|--------|
| 1   | 60.191             | V   | 43.1                      | -21.3            | 21.8                       | 40.0                      | 18.2                 | 168.0          | 80.0           |        |
| 2   | 108.691            | V   | 46.0                      | -23.6            | 22.4                       | 43.5                      | 21.1                 | 127.0          | 181.0          |        |
| 3   | 282.564            | H   | 42.0                      | -17.7            | 24.3                       | 47.0                      | 22.7                 | 374.0          | 247.0          |        |
| 4   | 307.133            | H   | 47.1                      | -16.7            | 30.4                       | 47.0                      | 16.6                 | 315.0          | 228.0          |        |
| 5   | 331.835            | H   | 52.3                      | -16.0            | 36.3                       | 47.0                      | 10.7                 | 374.0          | 124.0          |        |
| 6   | 331.941            | V   | 53.8                      | -16.0            | 37.8                       | 47.0                      | 9.2                  | 151.0          | 329.0          |        |
| 7   | 363.923            | V   | 44.3                      | -15.0            | 29.3                       | 47.0                      | 17.7                 | 106.0          | 107.0          |        |
| 8   | 463.348            | V   | 38.7                      | -11.0            | 27.7                       | 47.0                      | 19.3                 | 142.0          | 170.0          |        |
| 9   | 581.930            | H   | 35.0                      | -7.7             | 27.3                       | 47.0                      | 19.7                 | 319.0          | 42.0           |        |
| 10  | 633.340            | V   | 36.6                      | -6.4             | 30.2                       | 47.0                      | 16.8                 | 143.0          | 173.0          |        |
| 11  | 725.155            | H   | 41.2                      | -4.3             | 36.9                       | 47.0                      | 10.1                 | 377.0          | 23.0           |        |
| 12  | 917.308            | H   | 32.2                      | -1.3             | 30.9                       | 47.0                      | 16.1                 | 333.0          | 153.0          |        |

## ◆ Calculation

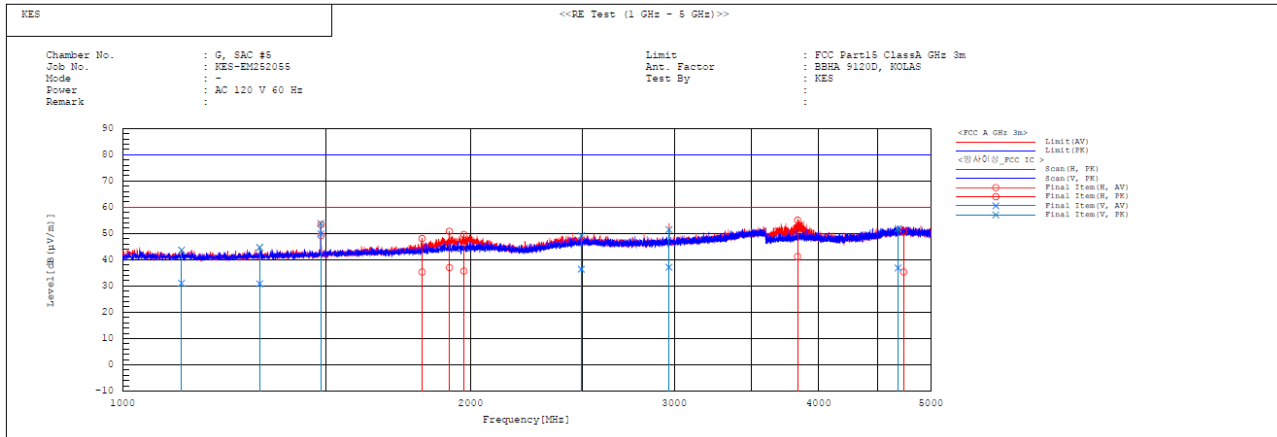
$$\text{Result(QP)} [\text{dB}(\mu\text{V/m})] = (\text{Reading(QP)} [\text{dB}(\mu\text{V})] + \text{c.f} [\text{dB}(1/\text{m})])$$
$$\text{Margin(QP)} [\text{dB}] = \text{Limit} [\text{dB}(\mu\text{V/m})] - \text{Result(QP)} [\text{dB}(\mu\text{V/m})]$$

Reading(QP) : Reading value, Result(QP) : Reading value + Factor value

Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss – Preamp Factor), Margin: Margin value

**Radiated Electric Field Emissions(Above 1 GHz)**

- (1 ~ 5) GHz

**Final Result**

| No. | Frequency [MHz] | Pol | Reading AV [dB (μV)] | Reading PK [dB (μV)] | c.f. [dB (1/m)] | Result PK [dB (μV/m)] | Limit AV [dB (μV/m)] | Limit PK [dB (μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] | Remark |
|-----|-----------------|-----|----------------------|----------------------|-----------------|-----------------------|----------------------|----------------------|----------------|----------------|-------------|-------------|--------|
| 1   | 1125.241        | V   | 32.1                 | 44.7                 | -1.0            | 43.7                  | 60.0                 | 80.0                 | 28.9           | 36.3           | 113.0       | 145.9       |        |
| 2   | 1314.402        | V   | 30.8                 | 44.6                 | 0.1             | 44.7                  | 60.0                 | 80.0                 | 29.1           | 35.3           | 142.0       | 191.3       |        |
| 3   | 1484.241        | V   | 48.9                 | 52.8                 | 1.0             | 53.8                  | 60.0                 | 80.0                 | 10.1           | 26.2           | 136.0       | 323.4       |        |
| 4   | 1484.633        | H   | 48.2                 | 52.4                 | 1.0             | 53.4                  | 60.0                 | 80.0                 | 10.8           | 26.6           | 255.0       | 337.7       |        |
| 5   | 1815.631        | H   | 33.0                 | 45.8                 | 2.3             | 48.1                  | 60.0                 | 80.0                 | 24.7           | 31.9           | 199.0       | 349.0       |        |
| 6   | 1917.721        | H   | 34.4                 | 48.2                 | 2.6             | 50.8                  | 60.0                 | 80.0                 | 23.0           | 29.2           | 179.0       | 349.0       |        |
| 7   | 1973.512        | H   | 32.9                 | 46.8                 | 2.8             | 49.6                  | 60.0                 | 80.0                 | 24.3           | 30.4           | 261.0       | 342.7       |        |
| 8   | 2493.606        | V   | 31.4                 | 44.1                 | 5.0             | 49.1                  | 60.0                 | 80.0                 | 23.6           | 30.9           | 161.0       | 85.1        |        |
| 9   | 2969.784        | V   | 30.8                 | 45.2                 | 6.3             | 51.5                  | 60.0                 | 80.0                 | 22.9           | 28.5           | 121.0       | 209.9       |        |
| 10  | 3835.721        | H   | 32.7                 | 46.6                 | 8.5             | 55.1                  | 60.0                 | 80.0                 | 18.8           | 24.9           | 207.0       | 194.0       |        |
| 11  | 4685.661        | V   | 25.4                 | 40.3                 | 11.5            | 51.8                  | 60.0                 | 80.0                 | 23.1           | 28.2           | 129.0       | 143.4       |        |
| 12  | 4738.088        | H   | 23.7                 | 39.1                 | 11.6            | 50.7                  | 60.0                 | 80.0                 | 24.7           | 29.3           | 228.0       | 332.3       |        |



- (5 ~ 18) GHz

- PK

| Frequency<br>(MHz) | Reading<br>PK (dBuV) | Polarization | Height<br>( m ) | ANT Factor<br>(dB) | Cable Loss<br>(dB) | Preamp<br>Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
|--------------------|----------------------|--------------|-----------------|--------------------|--------------------|--------------------------|--------------------|-------------------|----------------|
| 6 340.512          | 38.600               | H            | 1.000           | 34.470             | 8.950              | 34.340                   | 47.680             | 80.000            | 32.320         |
| 6 788.553          | 39.900               | V            | 1.000           | 35.440             | 9.470              | 34.710                   | 50.100             | 80.000            | 29.900         |
| 7 925.112          | 40.100               | V            | 1.000           | 36.840             | 10.270             | 34.000                   | 53.210             | 80.000            | 26.790         |
| 8 821.622          | 40.100               | H            | 1.000           | 38.320             | 10.710             | 34.180                   | 54.950             | 80.000            | 25.050         |

- CISPR AV

| Frequency<br>(MHz) | Reading<br>CISPR AV<br>(dBuV) | Polarization | Height<br>( m ) | ANT Factor<br>(dB) | Cable Loss<br>(dB) | Preamp<br>Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
|--------------------|-------------------------------|--------------|-----------------|--------------------|--------------------|--------------------------|--------------------|-------------------|----------------|
| 6 134.512          | 25.700                        | H            | 1.000           | 33.280             | 8.930              | 33.740                   | 34.170             | 60.000            | 25.830         |
| 6 788.553          | 26.800                        | V            | 1.000           | 35.440             | 9.470              | 34.710                   | 37.000             | 60.000            | 23.000         |
| 7 925.112          | 27.200                        | V            | 1.000           | 36.840             | 10.270             | 34.000                   | 40.310             | 60.000            | 19.690         |
| 8 821.622          | 26.800                        | H            | 1.000           | 38.320             | 10.710             | 34.180                   | 41.650             | 60.000            | 18.350         |

◆ Calculation

Result(PK/CAV) [dB(μV/m)] = (Reading(PK/CAV)[dB(μV)] + c.f[dB(1/m)])

Margin(PK/CAV)[dB] = Limit[dB(μV/m)] - Result(PK/CAV) [dB(μV/m)]

Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

Limit(PK/CAV) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value



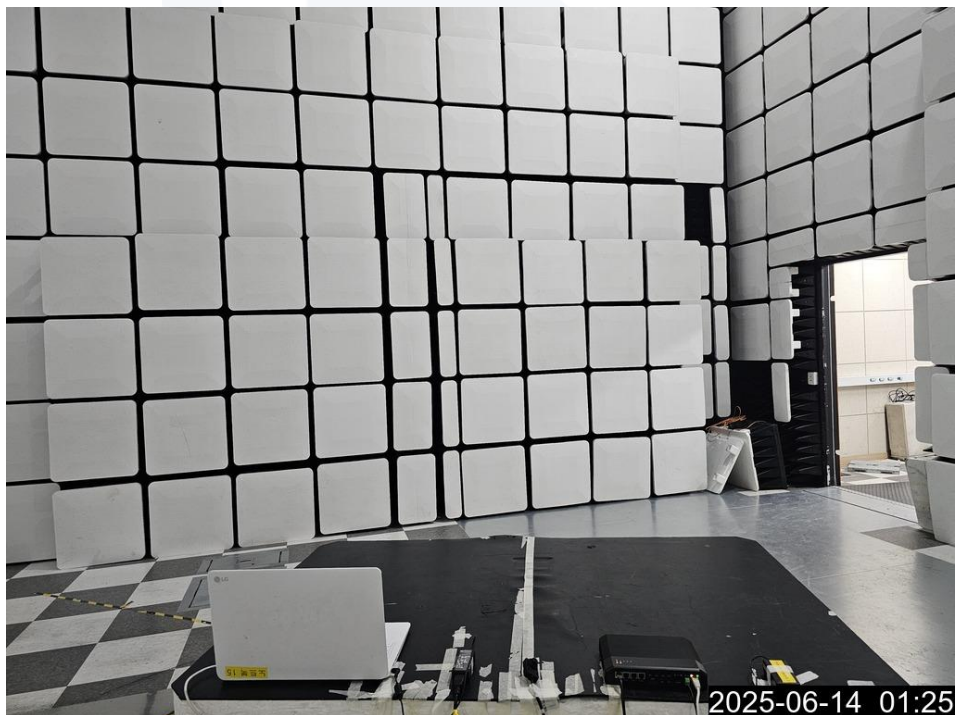
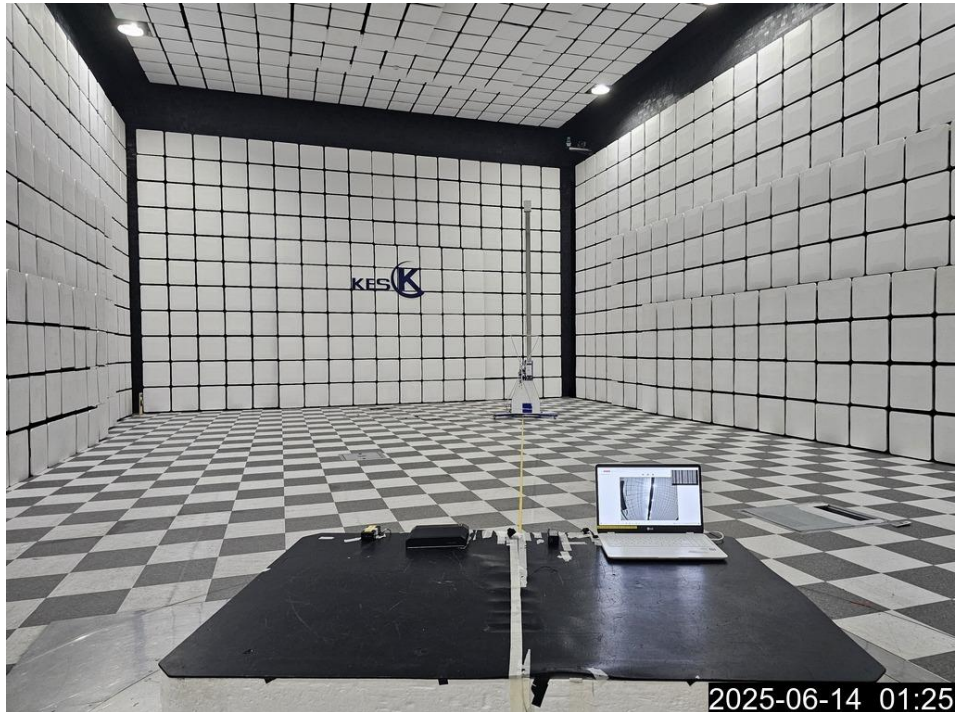
## Test Setup Photos and Configuration

### Conducted Emissions at Mains Power Ports



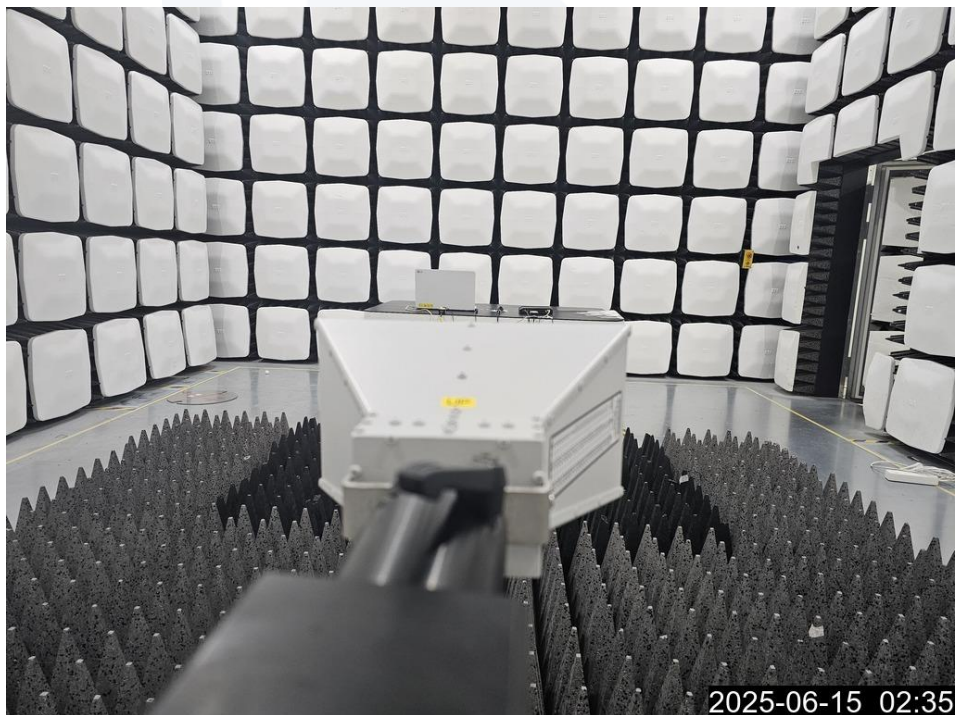
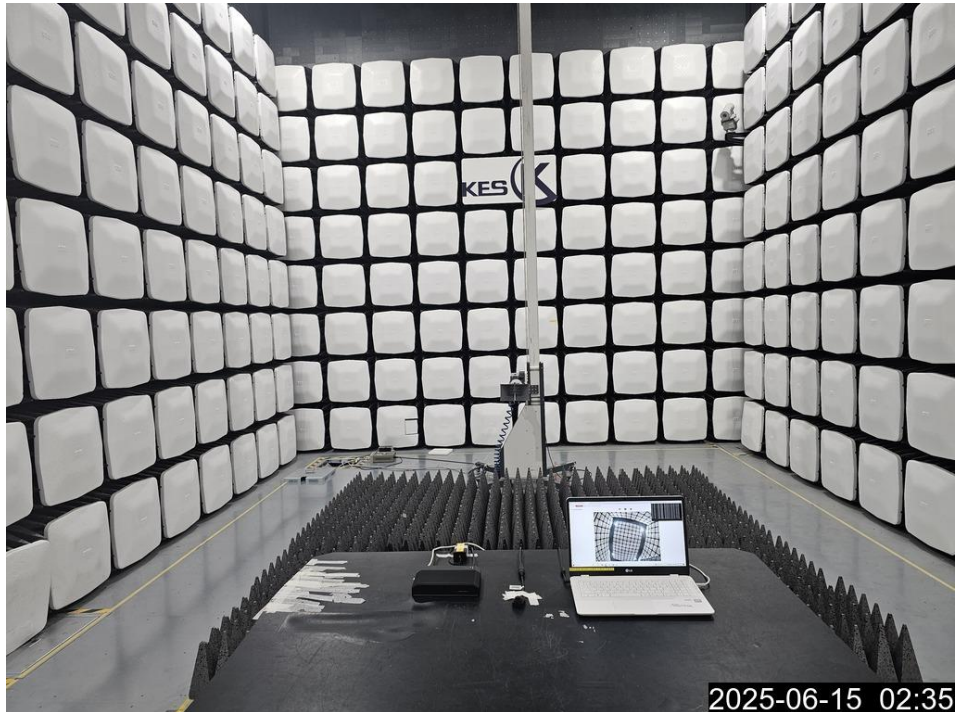


## Radiated Electric Field Emissions(Below 1 GHz)





## Radiated Electric Field Emissions(Above 1 GHz)





## EUT External Photographs

(Top)



(Bottom)





(Component)





## EUT Internal Photographs

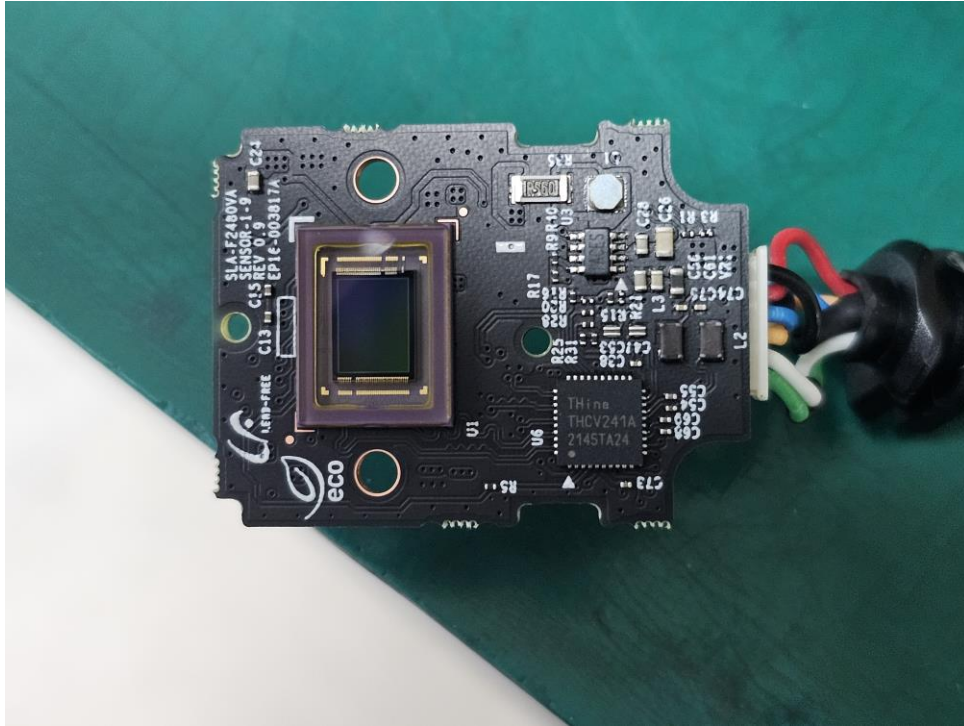
(Internal View)



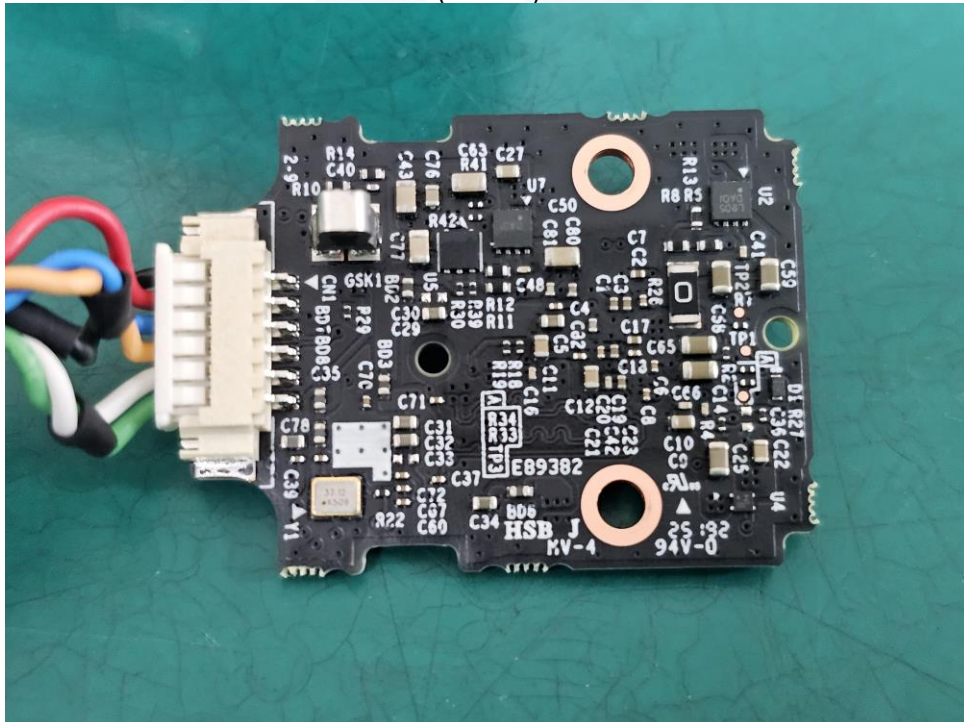


## EUT Internal View – Board

(Top)



(Bottom)





### Label Photographs

#### FCC Label



LENS MODULE

SLA-F2480VA

#### IC Label

### CAN ICES-003(A) / NMB-003(A)

This device complies with ICES-003 Canada Rules Operation is subject to the following two conditions:  
(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

The End.