



# TEST REPORT



Report No. : KES-EM-22T0685-R2  
Page 1 / 50

**KES Co., Ltd.**  
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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 : NETWORK THERMAL CAMERA  
Model/Type No. : TNO-4040TR  
Variant Model : TNO-4030TR, TNO-L4030TR, TNO-L4040TR  
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 : Mar. 26, 2024

4. Test date : Jul. 24, 2022 ~ Jul. 25, 2022

5. Date of Issue : Mar. 27, 2024

6. Test Results : In Compliance

*Tested by*

*Reviewed by*

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Min Seong, Kim  
EMC Test Engineer

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Dong Hun, Jang  
EMC Technical Manager

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

**REPORT REVISION HISTORY**

| Date          | Test Report No.   | Revision History                                                        |
|---------------|-------------------|-------------------------------------------------------------------------|
| Aug. 08, 2022 | KES-EM-22T0685    | Issued                                                                  |
| Feb. 24, 2023 | KES-EM-22T0685-R1 | Change the Applicant and manufacturer at the request of the customer.   |
| Mar. 27, 2024 | KES-EM-22T0685-R2 | Reissuance due to product name change and addition of derivative models |
|               |                   |                                                                         |
|               |                   |                                                                         |
|               |                   |                                                                         |
|               |                   |                                                                         |
|               |                   |                                                                         |
|               |                   |                                                                         |
|               |                   |                                                                         |

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## TABLE OF CONTENTS

|                                                      |                                                            |    |
|------------------------------------------------------|------------------------------------------------------------|----|
| 1.0                                                  | General Product Description.....                           | 4  |
| 1.1                                                  | Test Voltage & Frequency .....                             | 6  |
| 1.2                                                  | Variant Model Differences .....                            | 6  |
| 1.3                                                  | Device Modifications .....                                 | 6  |
| 1.4                                                  | Equipment Under Test .....                                 | 6  |
| 1.5                                                  | Support Equipments .....                                   | 7  |
| 1.6                                                  | External I/O Cabling.....                                  | 8  |
| 1.7                                                  | EUT Operating Mode(s).....                                 | 10 |
| 1.8                                                  | Configuration.....                                         | 11 |
| 1.9                                                  | Remarks when standards applied .....                       | 13 |
| 1.10                                                 | Calibration Details of Equipment Used for Measurement..... | 13 |
| 1.11                                                 | Test Facility .....                                        | 13 |
| 1.12                                                 | Laboratory Accreditations and Listings .....               | 14 |
| 2.0                                                  | Test Regulations .....                                     | 15 |
| 2.1                                                  | Conducted Emissions Mains Power Ports.....                 | 16 |
| 2.2                                                  | Conducted Emissions at Telecommunication Ports.....        | 17 |
| 2.3                                                  | Radiated Electric Field Emissions(Below 1 GHz).....        | 18 |
| 2.4                                                  | Radiated Electric Field Emissions(Above 1 GHz) .....       | 19 |
| APPENDIX A – TEST DATA .....                         |                                                            | 20 |
| Conducted Emissions at Mains Power Ports .....       |                                                            | 20 |
| Conducted Emissions at Telecommunication Ports ..... |                                                            | 24 |
| Radiated Electric Field Emissions(Below 1 GHz) ..... |                                                            | 27 |
| Radiated Electric Field Emissions(Above 1 GHz).....  |                                                            | 30 |
| Test Setup Photos and Configuration.....             |                                                            | 33 |
| Conducted Emissions at Mains Power Ports .....       |                                                            | 33 |
| Conducted Emissions at Telecommunication Ports ..... |                                                            | 34 |
| Radiated Electric Field Emissions(Below 1 GHz) ..... |                                                            | 36 |
| Radiated Electric Field Emissions(Above 1 GHz).....  |                                                            | 38 |
| EUT External Photographs.....                        |                                                            | 40 |
| EUT Internal Photographs.....                        |                                                            | 41 |



## 1.0 General Product Description

Main Specifications of EUT are:

|                             | TNO-4030TR                                                                                                                                                                              | TNO-4040TR                      | TNO-4041TR                                                                |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------------------------------------------------------------------|
| VIDEO                       |                                                                                                                                                                                         |                                 |                                                                           |
| Imaging Device              | Uncooled micro bolometer                                                                                                                                                                |                                 |                                                                           |
| Effective Pixels            | None                                                                                                                                                                                    |                                 |                                                                           |
| NETD                        | < 50mK                                                                                                                                                                                  |                                 |                                                                           |
| Pixel Size                  | 17μm                                                                                                                                                                                    |                                 |                                                                           |
| Min. Illumination           | None                                                                                                                                                                                    |                                 |                                                                           |
| LENS                        |                                                                                                                                                                                         |                                 |                                                                           |
| Focal Length (Zoom Ratio)   | 13mm fixed focal                                                                                                                                                                        | 19mm fixed focal                |                                                                           |
| Max. Aperture Ratio         | F1.0                                                                                                                                                                                    |                                 |                                                                           |
| Angular Field of View       | H : 48.6° / V : 36.4 / D : 61.6°                                                                                                                                                        | H : 32° / V : 24.3° / D : 39.2° |                                                                           |
| Min. Object Distance        | 5m (16.40ft)                                                                                                                                                                            | 11m (36.09ft)                   |                                                                           |
| Focus Control               | Fixed                                                                                                                                                                                   |                                 |                                                                           |
| OPERATIONAL                 |                                                                                                                                                                                         |                                 |                                                                           |
| Camera Title                | Displayed up to 85 characters                                                                                                                                                           |                                 |                                                                           |
| Digital Image Stabilization | Support (Built-in gyro sensor)                                                                                                                                                          |                                 |                                                                           |
| Motion Detection            | 8ea, 8point polygonal zones                                                                                                                                                             |                                 |                                                                           |
| Privacy Masking             | 32ea, polygonal zones<br>- Color : Grey / Green / Red / Blue / Black / White<br>- Mosaic                                                                                                |                                 |                                                                           |
| Video Rotation              | Flip, Mirror, Hallway view (90°/270°)                                                                                                                                                   |                                 | Flip, Mirror                                                              |
| Analytics                   | Directional detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Temperature dtection, Sound classification, Shock detection |                                 |                                                                           |
| Serial Interface            | -                                                                                                                                                                                       |                                 | RS-485 (Samsung-T, Pelco-D/P, Panasonic, Bosch, AD, GE, Vicon, Honeywell) |
| Alarm I / O                 | Input 1ea / Output 2ea                                                                                                                                                                  |                                 |                                                                           |
| Alarm Triggers              | Analytics, Network disconnect, Alarm input                                                                                                                                              |                                 |                                                                           |
| Alarm events                | File upload via FTP and e-mail<br>Notification via e-mail<br>SD/SDHC/SDXC or NAS recording at event triggers<br>Alarm output<br>Handover                                                |                                 |                                                                           |
| Audio In                    | Selectable (mic in/line in)<br>Supply voltage : 2.5VDC (4mA), Input impedance : 2K Ohm                                                                                                  |                                 |                                                                           |
| Audio out                   | Line out, Max.output level : 1Vrms                                                                                                                                                      |                                 |                                                                           |
| RADIOMETRY                  |                                                                                                                                                                                         |                                 |                                                                           |
| Temperature detect range    | -20°C~130°C (-4°F~266°F)                                                                                                                                                                |                                 |                                                                           |
| Temperature accuracy        | ±5°C(≤100°C), ±20%(>100°C)                                                                                                                                                              |                                 |                                                                           |
| Temperature detection       | 3ea rectangular                                                                                                                                                                         |                                 |                                                                           |
| Additional                  | Hybrid palettes, Spot temperature reading                                                                                                                                               |                                 |                                                                           |
| NETWORK                     |                                                                                                                                                                                         |                                 |                                                                           |
| Ethernet                    | RJ-45 (10/100BASE-T)                                                                                                                                                                    |                                 |                                                                           |
| Video Compression           | H.265/H.264: Main/Baseline/High, MJPEG                                                                                                                                                  |                                 |                                                                           |
| Resolution                  | 640 x 480, 640 x 360, 320 x 240                                                                                                                                                         |                                 |                                                                           |
| Max. Framerate              | H.265/H.264 : Max. 30fps/25fps (60Hz/50Hz)<br>MJPEG : Max. 30fps/25fps (60Hz/50Hz)                                                                                                      |                                 |                                                                           |
| Smart Codec                 | Manual (5ea area), WiseStream II                                                                                                                                                        |                                 |                                                                           |



|                                   | TNO-4030TR                                                                                                                                                                                                               | TNO-4040TR | TNO-4041TR                                    |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------------------|
| Video Quality Adjustment          | H.264/H.265 : Target bitrate level control<br>MJPEG : Target bitrate level control                                                                                                                                       |            |                                               |
| Bitrate Control                   | H.264/H.265 : CBR or VBR<br>MJPEG : VBR                                                                                                                                                                                  |            |                                               |
| Streaming                         | Unicast (20 users) / Multicast<br>Multiple streaming (Up to 10 profiles)                                                                                                                                                 |            |                                               |
| Audio Compression                 | G.711 u-law /G.726 Selectable<br>G.726 (ADPCM) 8KHz, G.711 8KHz<br>G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps<br>AAC-LC : 48Kbps at 16KHz                                                                                    |            |                                               |
| Protocol                          | IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour                                      |            |                                               |
| Security                          | HTTPS (SSL) login authentication<br>Digest login authentication<br>IP address filtering<br>User access log<br>802.1X authentication (EAP-TLS, EAP-LEAP)                                                                  |            |                                               |
| Edge Storage                      | Micro SD/SDHC/SDXC 1slot 256GB                                                                                                                                                                                           |            |                                               |
| Application Programming Interface | ONVIF Profile S/G/T<br>SUNAPI (HTTP API)<br>Wisenet open platform                                                                                                                                                        |            |                                               |
| Webpage Language                  | English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek                                                                      |            |                                               |
| Web Viewer                        | Supported OS : Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12<br>Recommended Browser : Google Chrome<br>Supported Browser : MS Explorer11, MS Edge, Mozilla Firefox (Windows 64bit only), Apple Safari (Mac OS X only) |            |                                               |
| Memory                            | 1024MB RAM, 256MB Flash                                                                                                                                                                                                  |            |                                               |
| ENVIRONMENTAL                     |                                                                                                                                                                                                                          |            |                                               |
| Operating Temperature / Humidity  | -40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH                                                                                                                                                                        |            |                                               |
| Storage Temperature / Humidity    | -50°C ~ +60°C (-58°F ~ +140°F) / Less than 90% RH                                                                                                                                                                        |            |                                               |
| Certification                     | IP66, IK10, NEMA4X                                                                                                                                                                                                       |            |                                               |
| ELECTRICAL                        |                                                                                                                                                                                                                          |            |                                               |
| Input Voltage                     | PoE (IEEE802.3af, Class3), 24VAC, 12VDC                                                                                                                                                                                  |            |                                               |
| Power Consumption                 | PoE : Max. 10W, typical 8.6W<br>12VDC : Max. 9W, typical 7.5W<br>24VAC : Max. 10.5W, typical 8.9W                                                                                                                        |            |                                               |
| MECHANICAL                        |                                                                                                                                                                                                                          |            |                                               |
| Color / Material                  | White / Aluminium                                                                                                                                                                                                        |            |                                               |
| RAL Code                          | RAL9003                                                                                                                                                                                                                  |            |                                               |
| Product dimensions / weight       | Φ101.97x401.8mm (4.01x15.82") / 3,124g (6.89lb)                                                                                                                                                                          |            | Φ101.97x309mm (4.01x12.17") / 2,452g (5.41lb) |

\* The latest product information / specification can be found at [hanwha-security.co.uk](http://hanwha-security.co.uk)

\* Design and specifications are subject to change without notice.

\* Wisenet is the proprietary brand of Hanwha Techwin.



## 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 100 V, 60 Hz

☒ PoE

## 1.2 Variant Model Differences

TNO-4030TR, TNO-L4030TR

- A derivative model to the classification of customers simple.

TNO-L4040TR

- Only the difference between the basic model and SW  
(change the number of image frames 30 → 8)

## 1.3 Device Modifications

Not applicable

## 1.4 Equipment Under Test

| Description    | Model Number | Serial Number | Manufacturer                                | Remarks |
|----------------|--------------|---------------|---------------------------------------------|---------|
| Thermal Camera | TNO-4040TR   | -             | HANWHA VISION<br>VIETNAM COMPANY<br>LIMITED | EUT     |



## 1.5 Support Equipments

| Description      | Model Number  | Serial Number | Manufacturer                                    | Remarks |
|------------------|---------------|---------------|-------------------------------------------------|---------|
| AC/AC Adapter    | -             | -             | -                                               | -       |
| AC/DC Adapter    | 2ACB022F      | -             | ChAnnel Well Technology<br>(Guangzhou) Co.,Ltd. | -       |
| PoE Adapter      | MA-INJ-4      | -             | CHANGZHOU WUJIN<br>HONGGUANG RADIO CO,<br>LTD.  | -       |
| Notebook         | Latitude 5300 | 8C47BE45C060  | DELL INC.                                       | -       |
| Notebook Adapter | HA65NM130     | -             | Chicony Power<br>Technology(Suzhou)Co.,Ltd      | -       |
| Micro SD Card    | -             | -             | SanDisk                                         | 32 GB   |
| Headset          | K550          | -             | Britz®                                          | -       |
| Alarm            | PRO-SL        | -             | SENSOR PRO                                      | -       |
| Button Alarm     | -             | -             | -                                               | -       |
| Smart Phone      | SM-N950N      | R39JB0C3FB    | SAMSUNG                                         | -       |



## 1.6 External I/O Cabling

■ AC Mode

| Start                |                  | END              |                    | Cable Spec. |        |
|----------------------|------------------|------------------|--------------------|-------------|--------|
| Description          | I/O Port         | Description      | I/O Port           | Length      | Shield |
| Thermal Camera (EUT) | 2 Pin            | AC/AC Adapter    | Line-Out (2 Pin)   | 1.0         | U      |
|                      | RJ-45            | Notebook         | RJ-45              | 3.0         | U      |
|                      | SLOT             | Micro SD Card    | SLOT               | -           | -      |
|                      | MIC (3.5 mm)     | Headset          | XLR                | 2.0         | U      |
|                      | Speaker (3.5 mm) |                  | Line-Out (3.5 mm)  | 1.6         | U      |
|                      | 2 Pin            | Alarm            | Line-Out (2 Pin)   | 3.0         | U      |
|                      | 2 Pin            | Button Alarm     | Line-Out (2 Pin)   | 3.0         | U      |
| Notebook             | DC Jack          | Notebook Adapter | Line-Out (DC Jack) | 1.0         | U      |
|                      | 3.5 mm           | Smart Phone      | 3.5 mm             | 1.0         | U      |

\* Unshielded=U, Shielded=S



## ■ DC Mode

| Start                |                  | END              |                    | Cable Spec. |        |
|----------------------|------------------|------------------|--------------------|-------------|--------|
| Description          | I/O Port         | Description      | I/O Port           | Length      | Shield |
| Thermal Camera (EUT) | 2 Pin            | AC/DC Adapter    | Line-Out (2 Pin)   | 1.0         | U      |
|                      | RJ-45            | Notebook         | RJ-45              | 3.0         | U      |
|                      | SLOT             | Micro SD Card    | SLOT               | -           | -      |
|                      | MIC (3.5 mm)     | Headset          | XLR                | 2.0         | U      |
|                      | Speaker (3.5 mm) |                  | Line-Out (3.5 mm)  | 1.6         | U      |
|                      | 2 Pin            | Alarm            | Line-Out (2 Pin)   | 3.0         | U      |
|                      | 2 Pin            | Button Alarm     | Line-Out (2 Pin)   | 3.0         | U      |
| Notebook             | DC Jack          | Notebook Adapter | Line-Out (DC Jack) | 1.0         | U      |
|                      | 3.5 mm           | Smart Phone      | 3.5 mm             | 1.0         | U      |

\* Unshielded=U, Shielded=S



## ■ PoE Mode

| Start                |                  | END              |                    | Cable Spec. |        |
|----------------------|------------------|------------------|--------------------|-------------|--------|
| Description          | I/O Port         | Description      | I/O Port           | Length      | Shield |
| Thermal Camera (EUT) | RJ-45 (PoE)      | PoE Adapter      | RJ-45 (PoE)        | 3.0         | U      |
|                      | SLOT             | Micro SD Card    | SLOT               | -           | -      |
|                      | MIC (3.5 mm)     | Headset          | XLR                | 2.0         | U      |
|                      | Speaker (3.5 mm) |                  | Line-Out (3.5 mm)  | 1.6         | U      |
|                      | 2 Pin            | Alarm            | Line-Out (2 Pin)   | 3.0         | U      |
|                      | 2 Pin            | Button Alarm     | Line-Out (2 Pin)   | 3.0         | U      |
| Notebook             | RJ-45            | PoE Adapter      | RJ-45 (DATA)       | 1.0         | U      |
|                      | DC Jack          | Notebook Adapter | Line-Out (DC Jack) | 1.0         | U      |
|                      | 3.5 mm           | Smart Phone      | 3.5 mm             | 1.0         | U      |

\* Unshielded=U, Shielded=S

## 1.7 EUT Operating Mode(s)

| Test Mode | operating                                                                                                                                                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operation | <ul style="list-style-type: none"> <li>- By connecting to the Web Viewer, checking the video output of EUT and performing a ping test, it was confirmed that the network function is operating normally.</li> <li>- After the test, the Micro SD Card was checked to see if it was recorded normally.</li> </ul> |

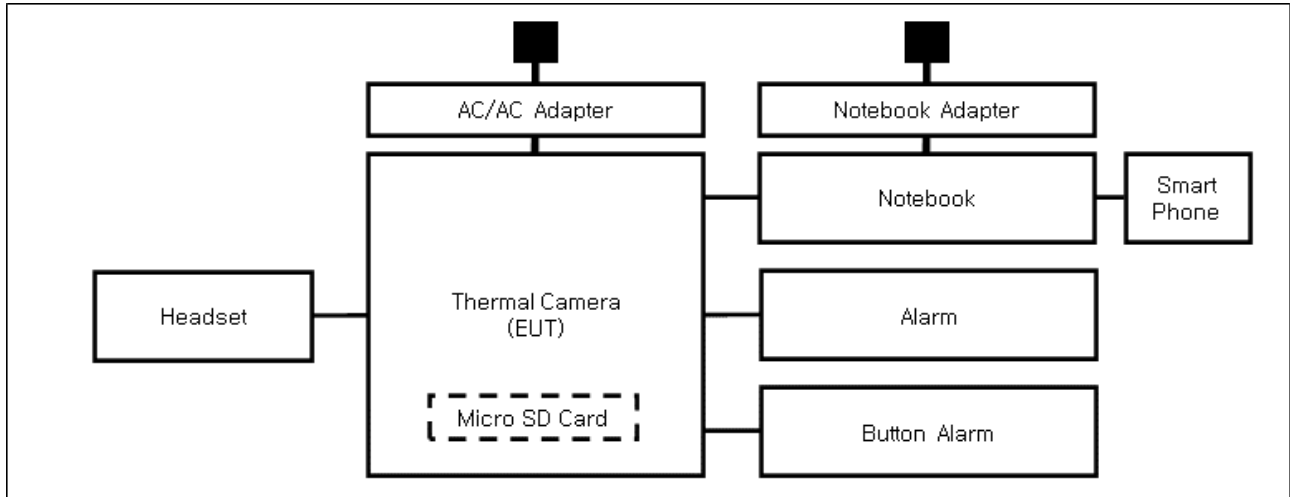
| EUT Test operating S/W |         |                        |
|------------------------|---------|------------------------|
| Name                   | Version | Manufacture Company    |
| Web Viewer             | -       | Hanwha Vision Co., Ltd |



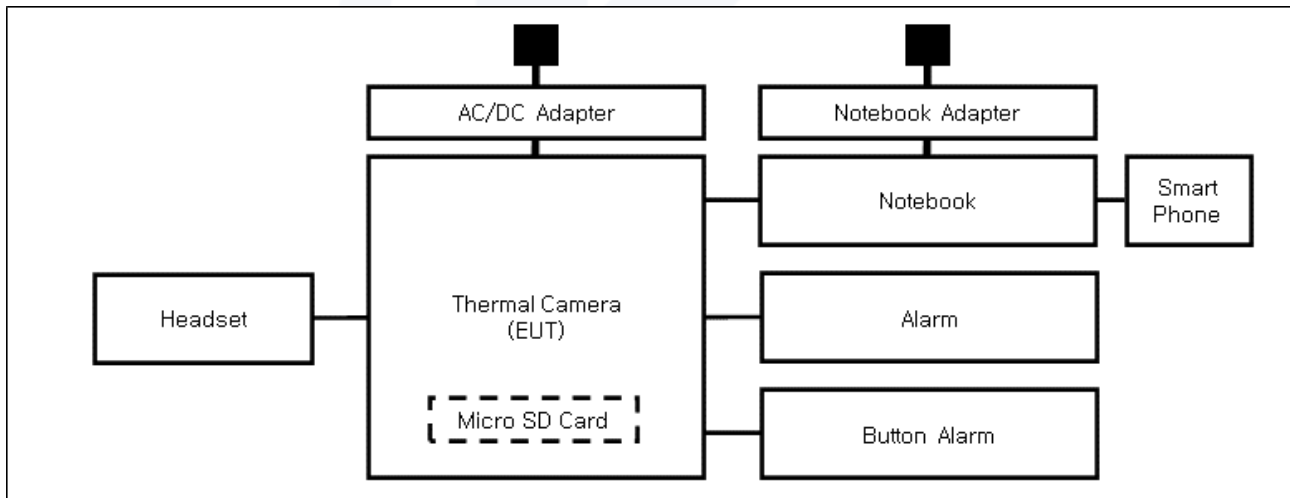
## 1.8 Configuration

■ AC Main  
□ DC Main

### ■ AC Mode

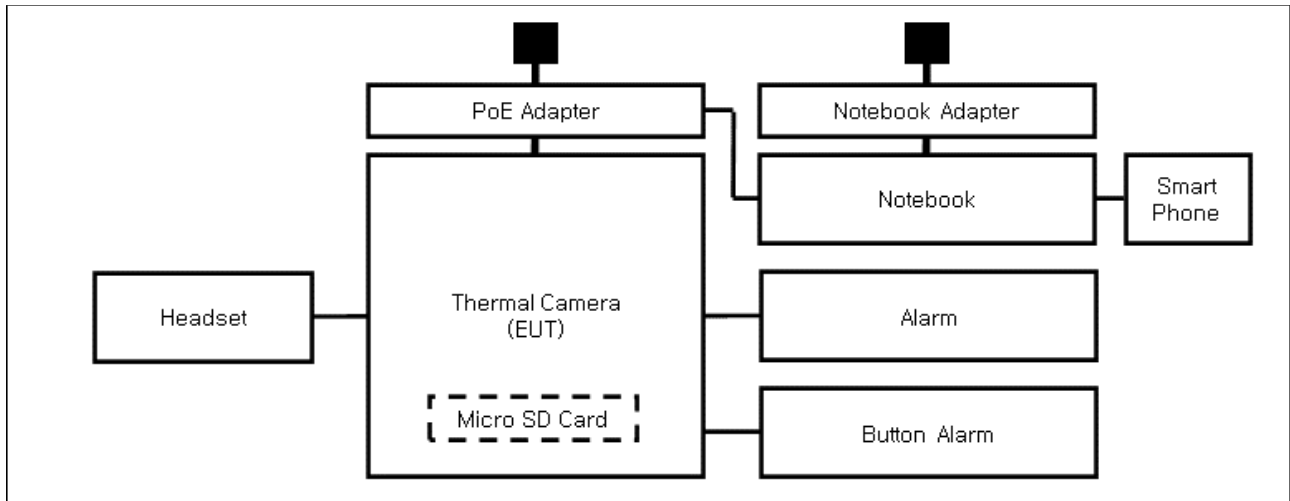


### ■ DC Mode





■ PoE Mode





## 1.9 Remarks when standards applied

- VIDEO port and USB port were excluded from testing because it is the management port.
- PoE port is considered to be wired network port, so power-related test items are excluded.

## 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, Yeoju-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 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 0004                     |



## 2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ **VCCI-CISPR 32:2016**

☒ Class A

☐ Class B





## 2.1 Conducted Emissions Mains Power Ports

**Test Date**

Jul. 24, 2022

**Test Location**

Electro wave Shieldroom #6

**Test Equipment**

| Used                                | Description       | Model Number | Manufacturer | Serial Number | Cal. Due     |
|-------------------------------------|-------------------|--------------|--------------|---------------|--------------|
| <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        | 12, 28, 2022 |
| <input checked="" type="checkbox"/> | LISN              | ENV216       | R & S        | 101787        | 12, 27, 2022 |
| <input checked="" type="checkbox"/> | LISN              | ESH2-Z5      | R & S        | 100450        | 12, 27, 2022 |
| <input checked="" type="checkbox"/> | PULSE LIMITER     | ESH3-Z2      | R & S        | 101915        | 12, 27, 2022 |

**Test Conditions**

Temperature: (24,5 ± 0,2) °C  
Relative Humidity: (45,2 ± 0,3) % 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 Conducted Emissions at Telecommunication Ports

**Test Date**

Jul. 24, 2022

**Test Location**

Electro wave Shieldroom #6

**Test Equipment**

| Used                                | Description       | Model Number | Manufacturer | Serial Number | Cal. Due     |
|-------------------------------------|-------------------|--------------|--------------|---------------|--------------|
| <input checked="" type="checkbox"/> | EMI Test SW       | EMC32        | R & S        | 9.12.00       | -            |
| <input checked="" type="checkbox"/> | EMI TEST RECEIVER | ESR3         | R & S        | 101783        | 12, 28, 2022 |
| <input checked="" type="checkbox"/> | LISN              | ENV216       | R & S        | 101787        | 12, 27, 2022 |
| <input checked="" type="checkbox"/> | LISN              | ESH2-Z5      | R & S        | 100450        | 12, 27, 2022 |
| <input checked="" type="checkbox"/> | PULSE LIMITER     | ESH3-Z2      | R & S        | 101915        | 12, 27, 2022 |
| <input checked="" type="checkbox"/> | 8-WIRE ISN CAT3,5 | ENY81        | R & S        | 100174        | 12, 28, 2022 |
| <input type="checkbox"/>            | ISN               | ISN S8       | SCHWARZBECK  | ISN-S8-0019   | 03, 07, 2023 |

**Test Conditions**

Temperature: (24,5 ± 0,2) °C

Relative Humidity: (45,2 ± 0,3) % 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.- For Ethernet interfaces, measurements are required at the highest data rate supported by the interface.



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

**Test Date**

Jul. 24, 2022

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

| Used                                | Description              | Model Number | Manufacturer     | Serial Number | Cal. Due     |
|-------------------------------------|--------------------------|--------------|------------------|---------------|--------------|
| <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        | 03, 31, 2023 |
| <input checked="" type="checkbox"/> | AMPLIFIER                | SCU 01       | R & S            | 100603        | 11, 24, 2022 |
| <input checked="" type="checkbox"/> | TRILOG-BROADBAND ANTENNA | VULB9163     | Schwarzbeck      | 715           | 12, 08, 2022 |
| <input checked="" type="checkbox"/> | ATTENUATOR               | 8491A        | HP               | 32173         | 03, 08, 2023 |

**Test Conditions**

Temperature: (25,0 ± 0,2) °C

Relative Humidity: (45,3 ± 0,4) % 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.



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

**Test Date**

Jul. 25, 2022

**Test Location**

SEMI ANECHOIC CHAMBER #3

**Test Equipment**

| Used                                | Description                | Model Number | Manufacturer     | Serial Number | Cal. Due     |
|-------------------------------------|----------------------------|--------------|------------------|---------------|--------------|
| <input checked="" type="checkbox"/> | EMI Test S/W               | EP5/RE       | TOYO Corporation | 6.0.0         | -            |
| <input checked="" type="checkbox"/> | EMI TEST RECEIVER          | ESR7         | R & S            | 101190        | 08, 03, 2022 |
| <input checked="" type="checkbox"/> | PREAMPLIFIER               | 8449B        | AGILENT          | 3008A01967    | 04, 01, 2023 |
| <input checked="" type="checkbox"/> | DOUBLE RIDGED HORN ANTENNA | SAS-571      | A.H.SYSTEM,INC   | 781           | 03, 03, 2023 |

**Test Conditions**

Temperature: (24,7 ± 0,2) °C

Relative Humidity: (44,8 ± 0,5) % R.H.

**Frequency Range of Measurement**

1 GHz to 6 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.



## APPENDIX A – TEST DATA

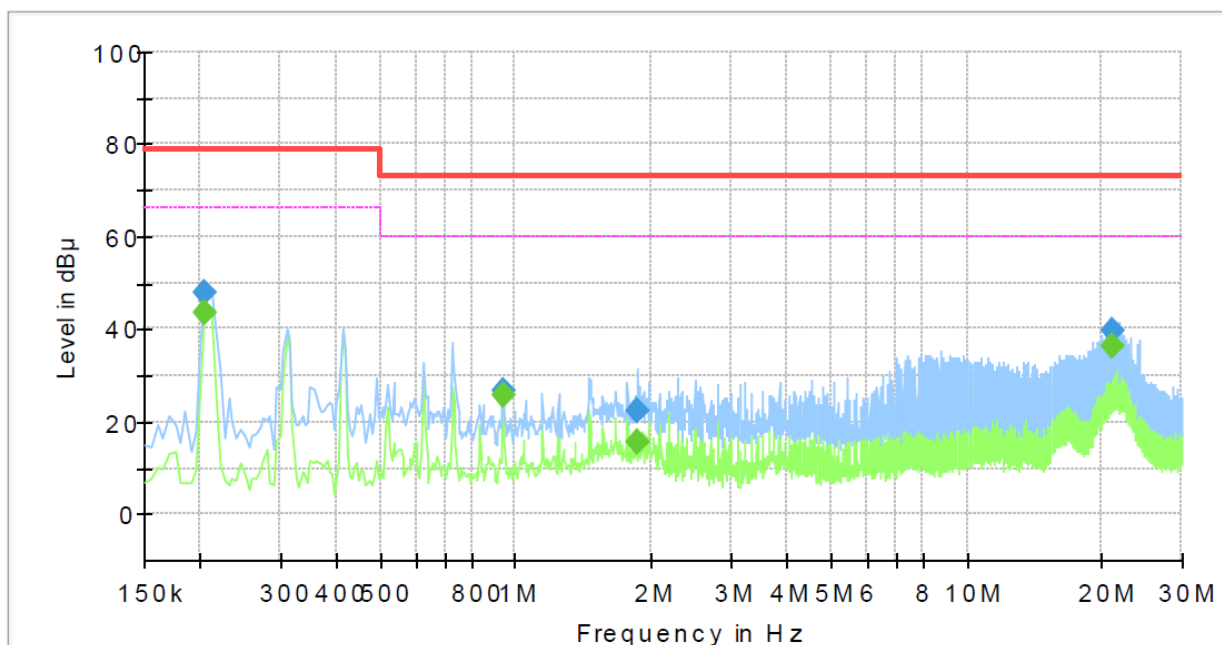
### Conducted Emissions at Mains Power Ports

■ AC Mode

HOT LINE

### Common Information

Test Description: Conducted Emission  
Model No.: TNO-4040TR  
Phase: L1  
Mode: AC  
Operator Name: KES



### Final\_Result

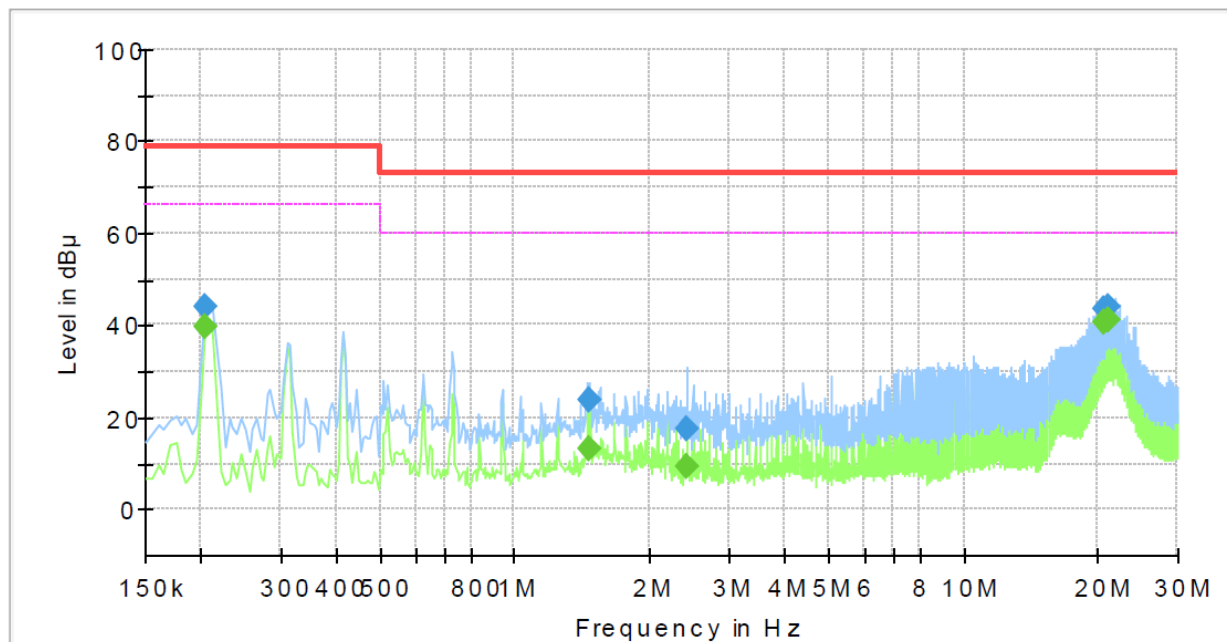
| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|------|------------|
| 0.205000        | ---              | 43.43           | 66.00        | 22.57       | 1000.0          | 9.000           | L1   | 19.4       |
| 0.205000        | 48.10            | ---             | 79.00        | 30.90       | 1000.0          | 9.000           | L1   | 19.4       |
| 0.935000        | ---              | 25.74           | 60.00        | 34.26       | 1000.0          | 9.000           | L1   | 20.1       |
| 0.935000        | 26.56            | ---             | 73.00        | 46.44       | 1000.0          | 9.000           | L1   | 20.1       |
| 1.865000        | ---              | 15.40           | 60.00        | 44.60       | 1000.0          | 9.000           | L1   | 20.3       |
| 1.865000        | 22.27            | ---             | 73.00        | 50.73       | 1000.0          | 9.000           | L1   | 20.3       |
| 21.175000       | ---              | 36.10           | 60.00        | 23.90       | 1000.0          | 9.000           | L1   | 20.1       |
| 21.175000       | 39.78            | ---             | 73.00        | 33.22       | 1000.0          | 9.000           | L1   | 20.1       |



## NEUTRAL LINE

**Common Information**

Test Description: Conducted Emission  
Model No.: TNO-4040TR  
Phase: N  
Mode: AC  
Operator Name: KES

**Final Result**

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|------|------------|
| 0.205000        | ---              | 39.62           | 66.00        | 26.38       | 1000.0          | 9.000           | N    | 19.4       |
| 0.205000        | 43.92            | ---             | 79.00        | 35.08       | 1000.0          | 9.000           | N    | 19.4       |
| 1.465000        | ---              | 13.33           | 60.00        | 46.67       | 1000.0          | 9.000           | N    | 20.2       |
| 1.465000        | 23.85            | ---             | 73.00        | 49.15       | 1000.0          | 9.000           | N    | 20.2       |
| 2.420000        | ---              | 9.21            | 60.00        | 50.79       | 1000.0          | 9.000           | N    | 20.3       |
| 2.420000        | 17.51            | ---             | 73.00        | 55.49       | 1000.0          | 9.000           | N    | 20.3       |
| 20.660000       | ---              | 40.84           | 60.00        | 19.16       | 1000.0          | 9.000           | N    | 20.2       |
| 20.660000       | 43.63            | ---             | 73.00        | 29.37       | 1000.0          | 9.000           | N    | 20.2       |
| 21.075000       | ---              | 41.38           | 60.00        | 18.62       | 1000.0          | 9.000           | N    | 20.2       |
| 21.075000       | 44.21            | ---             | 73.00        | 28.79       | 1000.0          | 9.000           | N    | 20.2       |

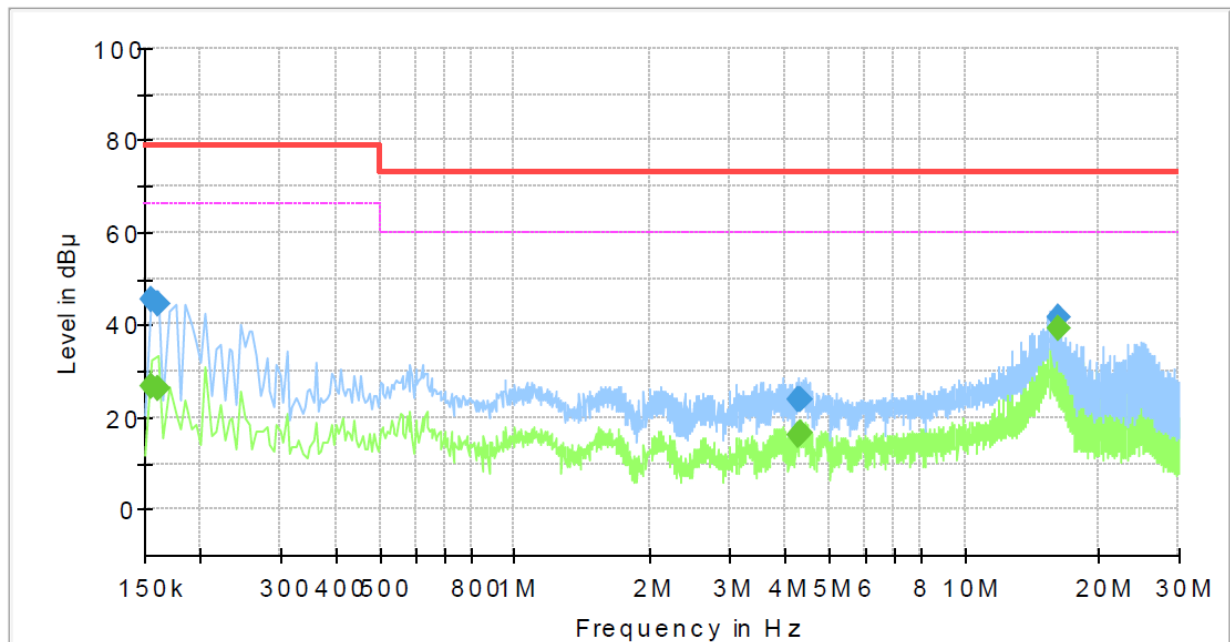


■ DC Mode

HOT LINE

## Common Information

Test Description: Conducted Emission  
Model No.: TNO-4040TR  
Phase: L1  
Mode: DC  
Operator Name: KES



## Final Result

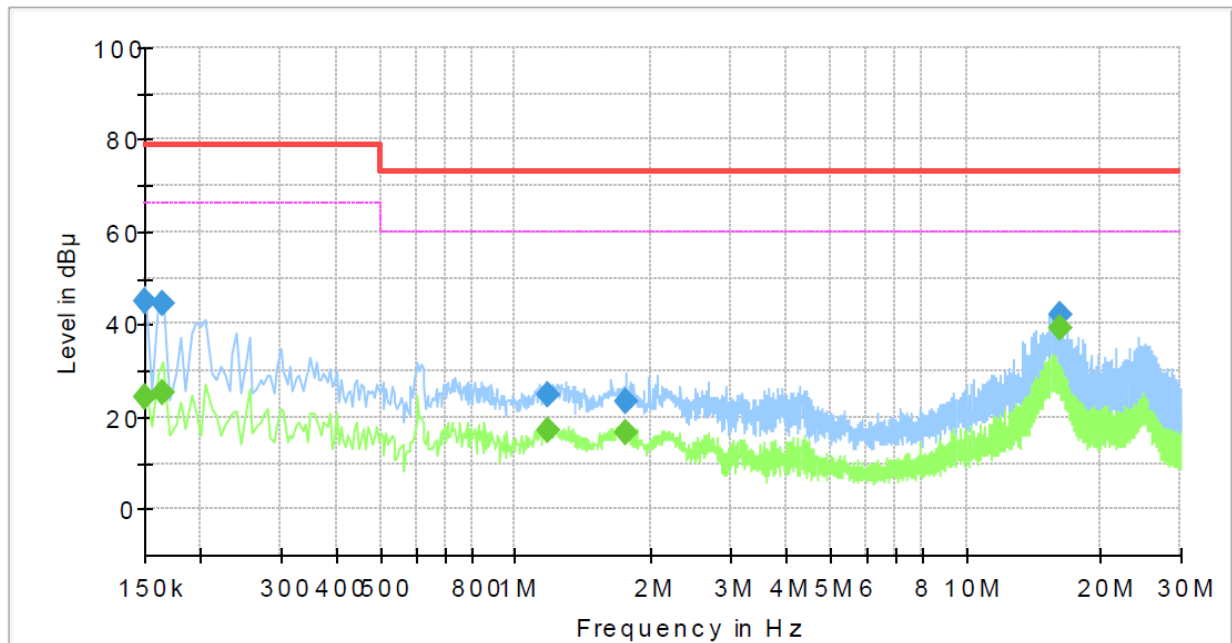
| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|------|------------|
| 0.155000        | ---              | 26.44           | 66.00        | 39.56       | 1000.0          | 9.000           | L1   | 19.4       |
| 0.155000        | 45.50            | ---             | 79.00        | 33.50       | 1000.0          | 9.000           | L1   | 19.4       |
| 0.160000        | ---              | 25.98           | 66.00        | 40.02       | 1000.0          | 9.000           | L1   | 19.4       |
| 0.160000        | 44.48            | ---             | 79.00        | 34.52       | 1000.0          | 9.000           | L1   | 19.4       |
| 4.290000        | ---              | 16.15           | 60.00        | 43.85       | 1000.0          | 9.000           | L1   | 19.8       |
| 4.290000        | 23.87            | ---             | 73.00        | 49.13       | 1000.0          | 9.000           | L1   | 19.8       |
| 4.330000        | ---              | 16.53           | 60.00        | 43.47       | 1000.0          | 9.000           | L1   | 19.8       |
| 4.330000        | 23.96            | ---             | 73.00        | 49.04       | 1000.0          | 9.000           | L1   | 19.8       |
| 16.230000       | ---              | 39.02           | 60.00        | 20.98       | 1000.0          | 9.000           | L1   | 19.9       |
| 16.230000       | 41.66            | ---             | 73.00        | 31.34       | 1000.0          | 9.000           | L1   | 19.9       |



## NEUTRAL LINE

**Common Information**

Test Description: Conducted Emission  
Model No.: TNO-4040TR  
Phase: N  
Mode: DC  
Operator Name: KES

**Final Result**

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|------|------------|
| 0.150000        | ---              | 24.42           | 66.00        | 41.58       | 1000.0          | 9.000           | N    | 19.4       |
| 0.150000        | 45.22            | ---             | 79.00        | 33.78       | 1000.0          | 9.000           | N    | 19.4       |
| 0.165000        | ---              | 25.04           | 66.00        | 40.96       | 1000.0          | 9.000           | N    | 19.4       |
| 0.165000        | 44.72            | ---             | 79.00        | 34.28       | 1000.0          | 9.000           | N    | 19.4       |
| 1.175000        | ---              | 16.88           | 60.00        | 43.12       | 1000.0          | 9.000           | N    | 20.1       |
| 1.175000        | 24.50            | ---             | 73.00        | 48.50       | 1000.0          | 9.000           | N    | 20.1       |
| 1.760000        | ---              | 16.36           | 60.00        | 43.64       | 1000.0          | 9.000           | N    | 20.3       |
| 1.760000        | 23.23            | ---             | 73.00        | 49.77       | 1000.0          | 9.000           | N    | 20.3       |
| 16.230000       | ---              | 39.38           | 60.00        | 20.62       | 1000.0          | 9.000           | N    | 19.9       |
| 16.230000       | 41.99            | ---             | 73.00        | 31.01       | 1000.0          | 9.000           | N    | 19.9       |

## ◆ 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))

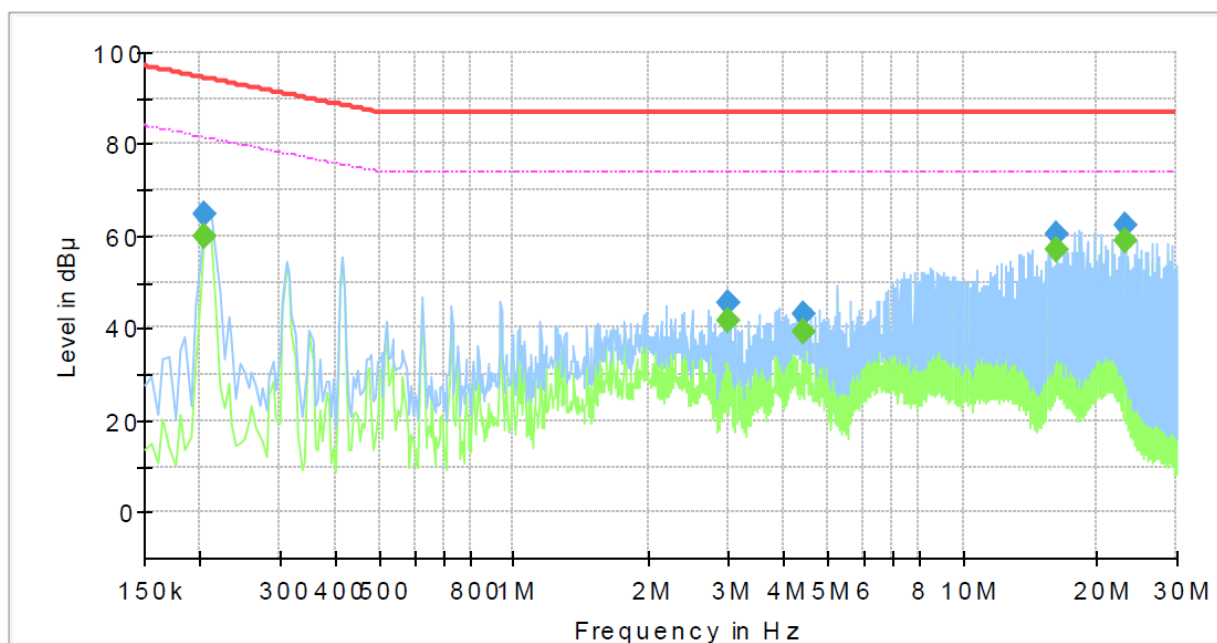
**Conducted Emissions at Telecommunication Ports**

■ AC Mode

[100 Mbps]

**Common Information**

Test Description: Telecommunication Emission  
Model No.: TNO-4040TR  
Mode : AC  
Speed : 100 Mbps  
Operator Name: KES

**Final\_Result**

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line        | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|-------------|------------|
| 0.205000        | ---              | 60.11           | 81.41        | 21.30       | 1000.0          | 9.000           | Single Line | 19.7       |
| 0.205000        | 64.76            | ---             | 94.41        | 29.65       | 1000.0          | 9.000           | Single Line | 19.7       |
| 3.010000        | ---              | 41.51           | 74.00        | 32.49       | 1000.0          | 9.000           | Single Line | 20.0       |
| 3.010000        | 45.72            | ---             | 87.00        | 41.28       | 1000.0          | 9.000           | Single Line | 20.0       |
| 4.410000        | ---              | 39.39           | 74.00        | 34.61       | 1000.0          | 9.000           | Single Line | 19.6       |
| 4.410000        | 42.93            | ---             | 87.00        | 44.07       | 1000.0          | 9.000           | Single Line | 19.6       |
| 16.230000       | ---              | 56.99           | 74.00        | 17.01       | 1000.0          | 9.000           | Single Line | 19.7       |
| 16.230000       | 60.44            | ---             | 87.00        | 26.56       | 1000.0          | 9.000           | Single Line | 19.7       |
| 23.130000       | ---              | 58.89           | 74.00        | 15.11       | 1000.0          | 9.000           | Single Line | 20.1       |
| 23.130000       | 62.23            | ---             | 87.00        | 24.77       | 1000.0          | 9.000           | Single Line | 20.1       |

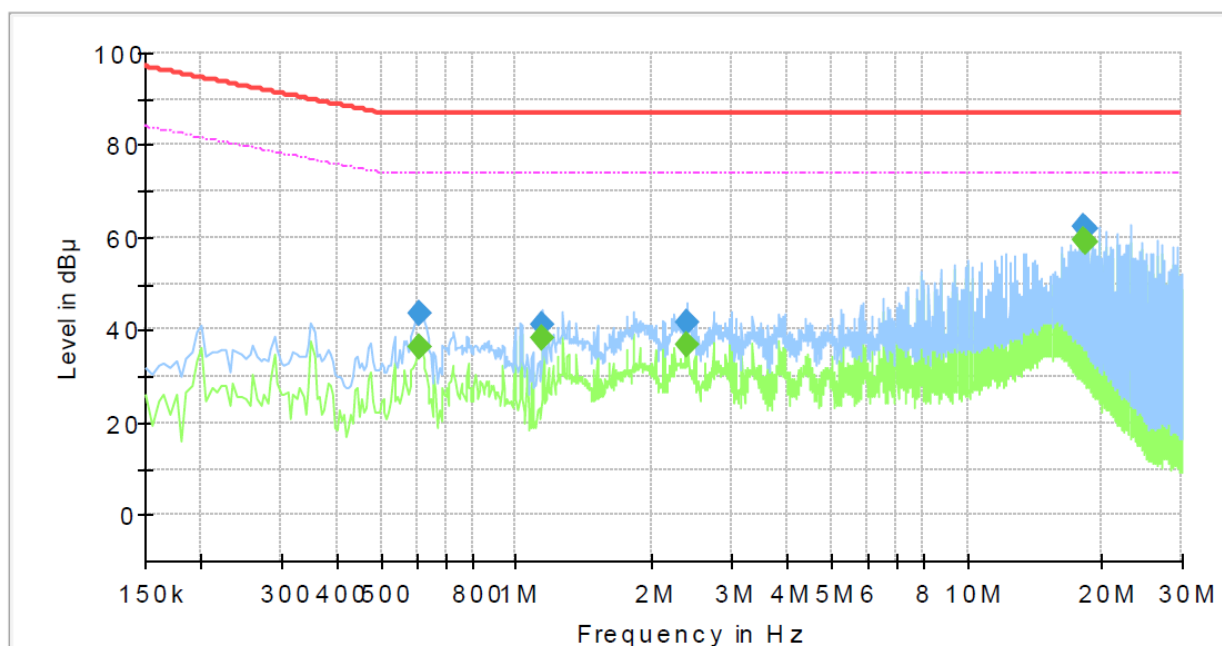


■ DC Mode

[100 Mbps]

## Common Information

Test Description: Telecommunication Emission  
Model No.: TNO-4040TR  
Mode : DC  
Speed : 100 Mbps  
Operator Name: KES



## Final Result

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line        | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|-------------|------------|
| 0.610000        | ---              | 36.49           | 74.00        | 37.51       | 1000.0          | 9.000           | Single Line | 19.8       |
| 0.610000        | 43.54            | ---             | 87.00        | 43.46       | 1000.0          | 9.000           | Single Line | 19.8       |
| 1.145000        | ---              | 38.35           | 74.00        | 35.65       | 1000.0          | 9.000           | Single Line | 20.0       |
| 1.145000        | 41.31            | ---             | 87.00        | 45.69       | 1000.0          | 9.000           | Single Line | 20.0       |
| 2.395000        | ---              | 36.68           | 74.00        | 37.32       | 1000.0          | 9.000           | Single Line | 20.1       |
| 2.395000        | 41.84            | ---             | 87.00        | 45.16       | 1000.0          | 9.000           | Single Line | 20.1       |
| 18.245000       | ---              | 59.50           | 74.00        | 14.50       | 1000.0          | 9.000           | Single Line | 19.8       |
| 18.245000       | 62.40            | ---             | 87.00        | 24.60       | 1000.0          | 9.000           | Single Line | 19.8       |
| 18.305000       | ---              | 58.82           | 74.00        | 15.18       | 1000.0          | 9.000           | Single Line | 19.8       |
| 18.305000       | 61.72            | ---             | 87.00        | 25.28       | 1000.0          | 9.000           | Single Line | 19.8       |

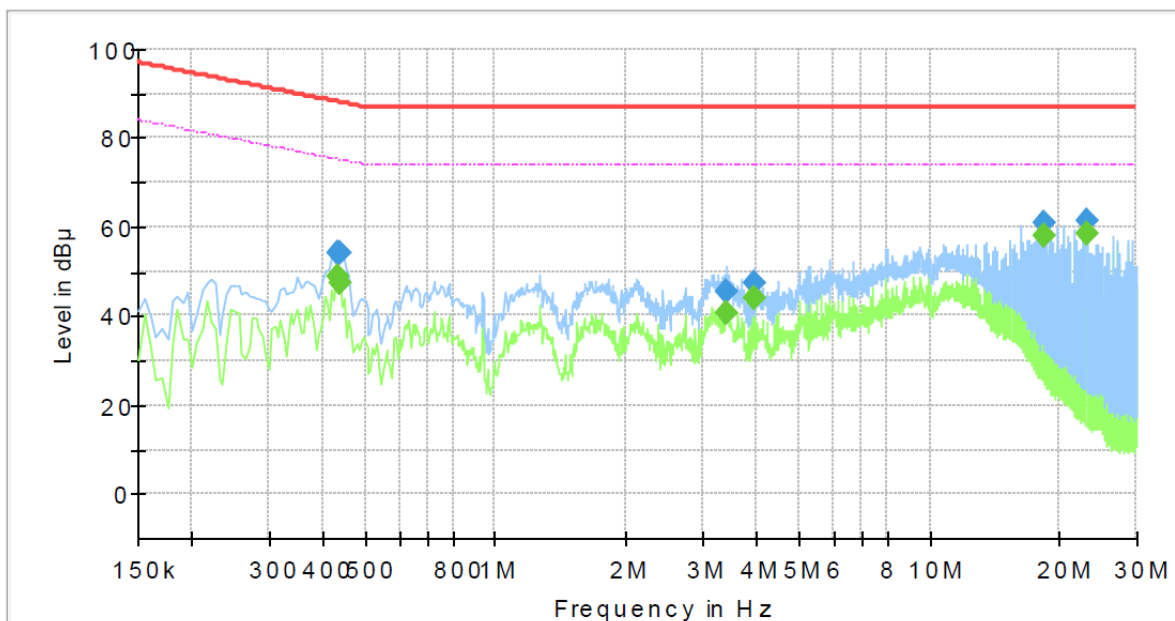


## ■ PoE Mode

[100 Mbps]

**Common Information**

Test Description: Telecommunication Emission  
Model No.: TNO-4040TR  
Mode : PoE  
Speed : 100 Mbps  
Operator Name: KES

**Final Result**

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line        | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|-------------|------------|
| 0.435000        | ---              | 48.86           | 75.16        | 26.30       | 1000.0          | 9.000           | Single Line | 19.7       |
| 0.435000        | 54.30            | ---             | 88.16        | 33.86       | 1000.0          | 9.000           | Single Line | 19.7       |
| 0.440000        | ---              | 47.23           | 75.06        | 27.83       | 1000.0          | 9.000           | Single Line | 19.7       |
| 0.440000        | 54.15            | ---             | 88.06        | 33.91       | 1000.0          | 9.000           | Single Line | 19.7       |
| 3.400000        | ---              | 40.50           | 74.00        | 33.50       | 1000.0          | 9.000           | Single Line | 19.9       |
| 3.400000        | 45.47            | ---             | 87.00        | 41.53       | 1000.0          | 9.000           | Single Line | 19.9       |
| 3.955000        | ---              | 43.94           | 74.00        | 30.06       | 1000.0          | 9.000           | Single Line | 19.7       |
| 3.955000        | 47.32            | ---             | 87.00        | 39.68       | 1000.0          | 9.000           | Single Line | 19.7       |
| 18.305000       | ---              | 58.12           | 74.00        | 15.88       | 1000.0          | 9.000           | Single Line | 19.8       |
| 18.305000       | 60.93            | ---             | 87.00        | 26.07       | 1000.0          | 9.000           | Single Line | 19.8       |
| 23.130000       | ---              | 58.33           | 74.00        | 15.67       | 1000.0          | 9.000           | Single Line | 20.1       |
| 23.130000       | 61.35            | ---             | 87.00        | 25.65       | 1000.0          | 9.000           | Single Line | 20.1       |

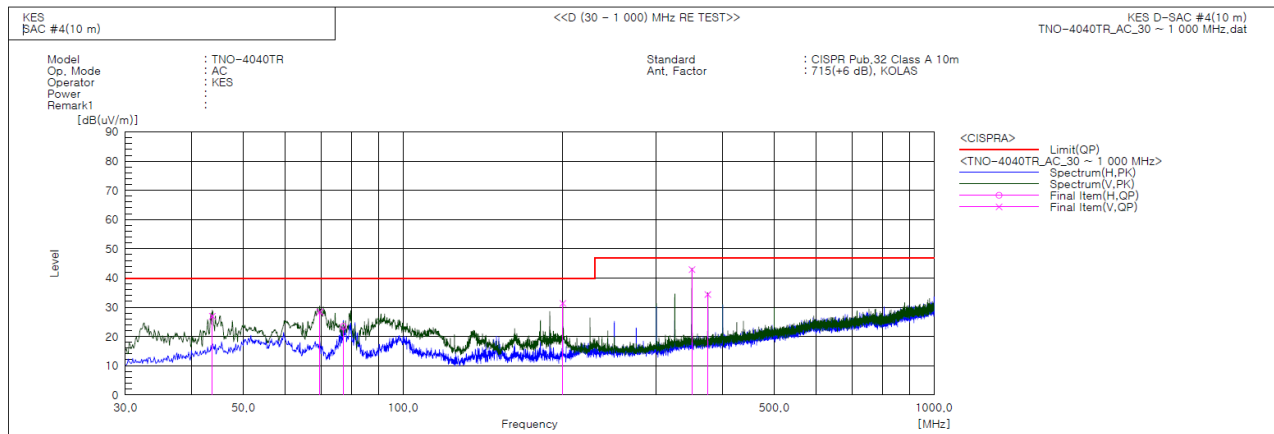
## ◆ Calculation

$$\text{QuasiPeak [dBuV]} / \text{CAverage [dBuV]} = \text{Reading Value [dBuV]} + \text{Corr. [dB]}$$

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

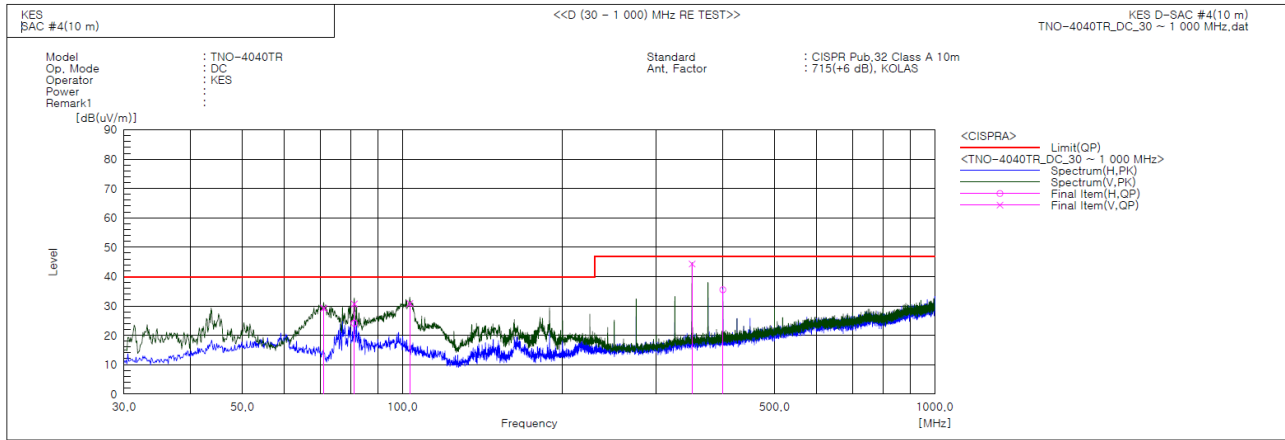
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

**Radiated Electric Field Emissions(Below 1 GHz)****■ AC Mode****Final Result**

| No. | Frequency<br>[MHz] | (P) | Reading<br>QP<br>[dB(uV)] | c.f<br>[dB(1/m)] | Result<br>QP<br>[dB(uV/m)] | Limit<br>QP<br>[dB(uV/m)] | Margin<br>QP<br>[dB] | Height<br>[cm] | Angle<br>[deg] | Remark |
|-----|--------------------|-----|---------------------------|------------------|----------------------------|---------------------------|----------------------|----------------|----------------|--------|
| 1   | 43.701             | V   | 48.5                      | -21.6            | 26.9                       | 40.0                      | 13.1                 | 130.0          | 16.0           |        |
| 2   | 69.649             | V   | 53.1                      | -24.7            | 28.4                       | 40.0                      | 11.6                 | 121.0          | 69.0           |        |
| 3   | 77.166             | H   | 50.8                      | -27.4            | 23.4                       | 40.0                      | 16.6                 | 368.0          | 278.0          |        |
| 4   | 199.993            | V   | 52.3                      | -21.0            | 31.3                       | 40.0                      | 8.7                  | 113.0          | 160.0          |        |
| 5   | 349.979            | V   | 58.2                      | -15.3            | 42.9                       | 47.0                      | 4.1                  | 100.0          | 289.0          |        |
| 6   | 374.956            | V   | 49.2                      | -14.8            | 34.4                       | 47.0                      | 12.6                 | 100.0          | 324.0          |        |



## ■ DC Mode

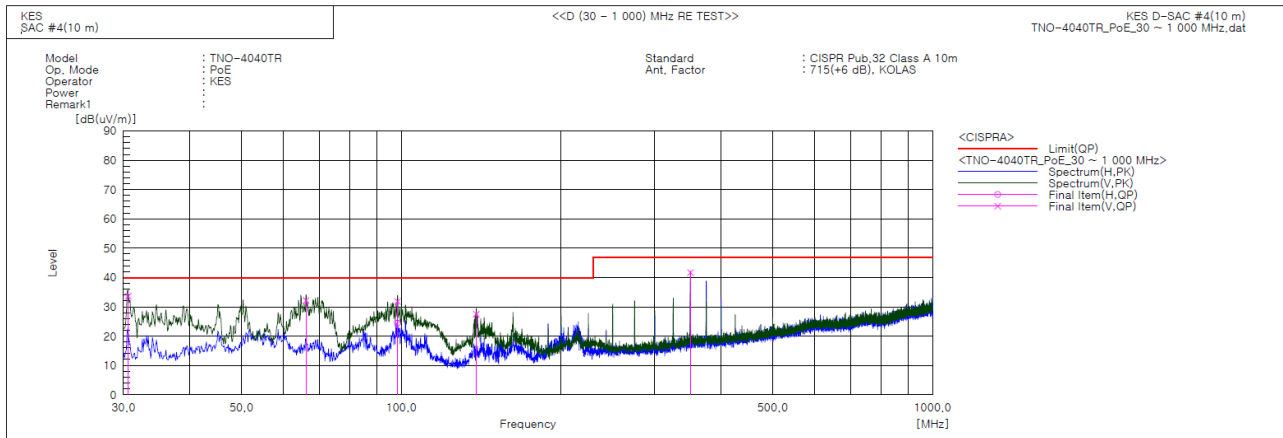


## Final Result

| No. | Frequency<br>[MHz] | (P) | Reading<br>QP<br>[dB(uV)] | c.f<br>[dB(1/m)] | Result<br>QP<br>[dB(uV/m)] | Limit<br>QP<br>[dB(uV/m)] | Margin<br>QP<br>[dB] | Height<br>[cm] | Angle<br>[deg] | Remark |
|-----|--------------------|-----|---------------------------|------------------|----------------------------|---------------------------|----------------------|----------------|----------------|--------|
| 1   | 71.104             | V   | 54.5                      | -25.3            | 29.2                       | 40.0                      | 10.8                 | 124.0          | 204.0          |        |
| 2   | 81.163             | V   | 58.3                      | -27.6            | 30.7                       | 40.0                      | 9.3                  | 116.0          | 296.0          |        |
| 3   | 81.168             | H   | 51.7                      | -27.6            | 24.1                       | 40.0                      | 15.9                 | 331.0          | 151.0          |        |
| 4   | 103.235            | V   | 53.4                      | -22.5            | 30.9                       | 40.0                      | 9.1                  | 100.0          | 50.0           |        |
| 5   | 349.979            | V   | 59.6                      | -15.3            | 44.3                       | 47.0                      | 2.7                  | 100.0          | 213.0          |        |
| 6   | 400.055            | H   | 49.7                      | -14.2            | 35.5                       | 47.0                      | 11.5                 | 336.0          | 113.0          |        |



## ■ PoE Mode



## Final Result

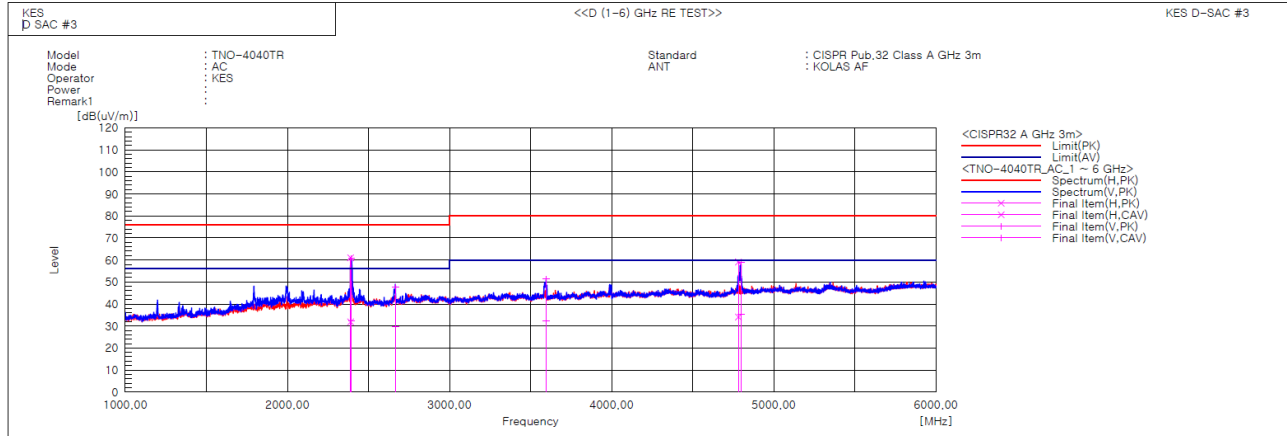
| No. | Frequency<br>[MHz] | (P) | Reading<br>QP<br>[dB(uV)] | c.f<br>[dB(1/m)] | Result<br>QP<br>[dB(uV/m)] | Limit<br>QP<br>[dB(uV/m)] | Margin<br>QP<br>[dB] | Height<br>[cm] | Angle<br>[deg] | Remark |
|-----|--------------------|-----|---------------------------|------------------|----------------------------|---------------------------|----------------------|----------------|----------------|--------|
| 1   | 30.606             | V   | 58.9                      | -25.2            | 33.7                       | 40.0                      | 6.3                  | 100.0          | 34.0           |        |
| 2   | 66.133             | V   | 55.8                      | -23.6            | 32.2                       | 40.0                      | 7.8                  | 137.0          | 242.0          |        |
| 3   | 98.383             | V   | 54.5                      | -22.7            | 31.8                       | 40.0                      | 8.2                  | 121.0          | 170.0          |        |
| 4   | 98.385             | H   | 47.1                      | -22.7            | 24.4                       | 40.0                      | 15.6                 | 376.0          | 332.0          |        |
| 5   | 138.398            | V   | 53.0                      | -25.5            | 27.5                       | 40.0                      | 12.5                 | 135.0          | 270.0          |        |
| 6   | 349.979            | V   | 57.0                      | -15.3            | 41.7                       | 47.0                      | 5.3                  | 100.0          | 34.0           |        |

## ◆ Calculation

Corrected Amplitude [dBuV] = Amplitude[dBuV] + Correction Factor [dB]

Corrected Amplitude : The Final Value, Amplitude : Reading Value,

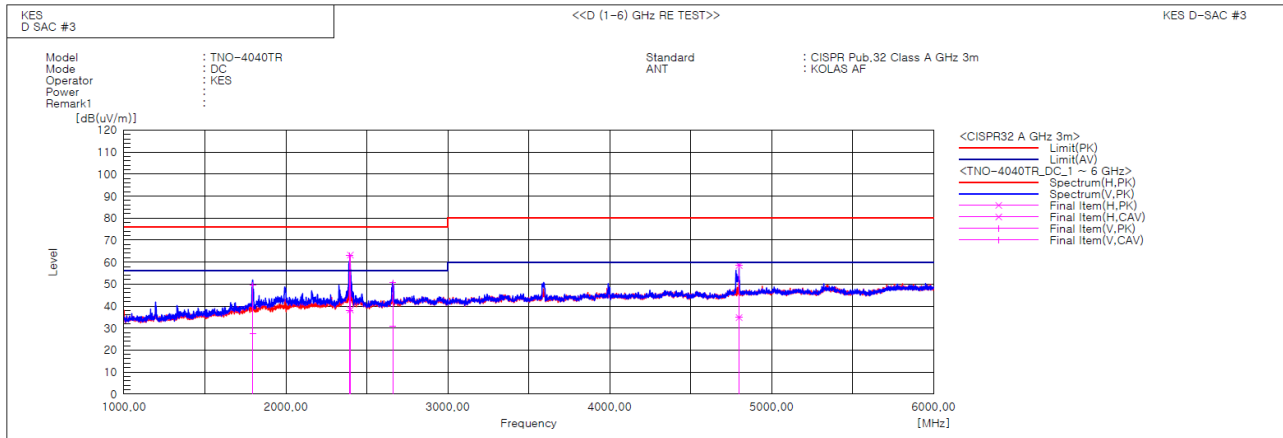
Correction Factor : ANT FACTOR + Cable loss

**Radiated Electric Field Emissions(Above 1 GHz)****■ AC Mode****Final Result**

| No. | Frequency [MHz] | (P) | Reading PK [dB(μV)] | Reading CAV [dB(μV)] | c.f [dB(1/m)] | Result PK [dB(μV/m)] | Result CAV [dB(μV/m)] | Limit PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Margin PK [dB] | Margin CAV [dB] | Height [cm] | Angle [deg] | Remark |
|-----|-----------------|-----|---------------------|----------------------|---------------|----------------------|-----------------------|---------------------|---------------------|----------------|-----------------|-------------|-------------|--------|
| 1   | 2389.480        | H   | 59.8                | 30.7                 | 1.2           | 61.0                 | 31.9                  | 76.0                | 56.0                | 15.0           | 24.1            | 100.0       | 139.7       |        |
| 2   | 2395.109        | V   | 59.5                | 31.1                 | 1.2           | 60.7                 | 32.3                  | 76.0                | 56.0                | 15.3           | 23.7            | 100.0       | 337.3       |        |
| 3   | 2666.118        | V   | 46.2                | 28.5                 | 1.3           | 47.5                 | 29.8                  | 76.0                | 56.0                | 28.5           | 26.2            | 100.0       | 6.2         |        |
| 4   | 3595.152        | V   | 47.1                | 28.0                 | 4.2           | 51.3                 | 32.2                  | 80.0                | 60.0                | 28.7           | 27.8            | 100.0       | 357.4       |        |
| 5   | 4781.943        | H   | 51.6                | 26.6                 | 7.5           | 59.1                 | 34.1                  | 80.0                | 60.0                | 20.9           | 25.9            | 100.0       | 124.5       |        |
| 6   | 4797.446        | V   | 51.2                | 27.7                 | 7.6           | 58.8                 | 35.3                  | 80.0                | 60.0                | 21.2           | 24.7            | 100.0       | 4.0         |        |



## ■ DC Mode

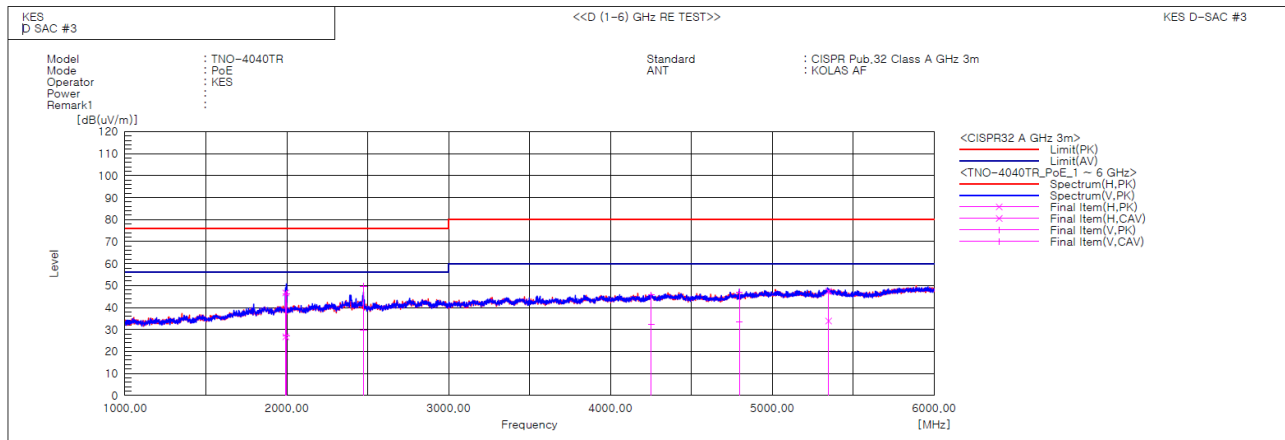


## Final Result

| No. | Frequency [MHz] | (P) | Reading PK [dB(uV)] | Reading CAV [dB(uV)] | c.f [dB(1/m)] | Result PK [dB(uV/m)] | Result CAV [dB(uV/m)] | Limit PK [dB(uV/m)] | Limit AV [dB(uV/m)] | Margin PK [dB] | Margin CAV [dB] | Height [cm] | Angle [deg] | Remark |
|-----|-----------------|-----|---------------------|----------------------|---------------|----------------------|-----------------------|---------------------|---------------------|----------------|-----------------|-------------|-------------|--------|
| 1   | 1795.070        | V   | 51.6                | 29.7                 | -2.2          | 49.4                 | 27.5                  | 76.0                | 56.0                | 26.6           | 28.5            | 100.0       | 37.6        |        |
| 2   | 2392.113        | V   | 61.8                | 36.7                 | 1.2           | 63.0                 | 37.9                  | 76.0                | 56.0                | 13.0           | 18.1            | 100.0       | 30.4        |        |
| 3   | 2398.010        | H   | 62.0                | 37.1                 | 1.2           | 63.2                 | 38.3                  | 76.0                | 56.0                | 12.8           | 17.7            | 100.0       | 137.5       |        |
| 4   | 2660.236        | V   | 49.3                | 29.5                 | 1.3           | 50.6                 | 30.8                  | 76.0                | 56.0                | 25.4           | 25.2            | 100.0       | 355.5       |        |
| 5   | 4799.011        | V   | 51.1                | 27.3                 | 7.6           | 58.7                 | 34.9                  | 80.0                | 60.0                | 21.3           | 25.1            | 100.0       | 357.8       |        |
| 6   | 4799.314        | H   | 50.9                | 27.2                 | 7.6           | 58.5                 | 34.8                  | 80.0                | 60.0                | 21.5           | 25.2            | 100.0       | 122.3       |        |



## ■ PoE Mode



## Final Result

| No. | Frequency [MHz] | (P) | Reading PK [dB(uV)] | Reading CAV [dB(uV)] | c.f [dB(1/m)] | Result PK [dB(uV/m)] | Result CAV [dB(uV/m)] | Limit PK [dB(uV/m)] | Limit AV [dB(uV/m)] | Margin PK [dB] | Margin CAV [dB] | Height [cm] | Angle [deg] | Remark |
|-----|-----------------|-----|---------------------|----------------------|---------------|----------------------|-----------------------|---------------------|---------------------|----------------|-----------------|-------------|-------------|--------|
| 1   | 1993.132        | H   | 47.8                | 27.8                 | -1.1          | 46.7                 | 26.7                  | 76.0                | 56.0                | 29.3           | 29.3            | 100.0       | 42.1        |        |
| 2   | 1997.336        | V   | 47.3                | 27.9                 | -1.0          | 46.3                 | 26.9                  | 76.0                | 56.0                | 29.7           | 29.1            | 100.0       | 11.1        |        |
| 3   | 2473.015        | V   | 48.7                | 28.5                 | 1.0           | 49.7                 | 29.5                  | 76.0                | 56.0                | 26.3           | 26.5            | 100.0       | 177.1       |        |
| 4   | 4252.206        | V   | 39.5                | 26.1                 | 6.2           | 45.7                 | 32.3                  | 80.0                | 60.0                | 34.3           | 27.7            | 100.0       | 22.3        |        |
| 5   | 4796.031        | V   | 39.4                | 26.0                 | 7.6           | 47.0                 | 33.6                  | 80.0                | 60.0                | 33.0           | 26.4            | 100.0       | 107.7       |        |
| 6   | 5348.008        | H   | 38.0                | 24.5                 | 9.4           | 47.4                 | 33.9                  | 80.0                | 60.0                | 32.6           | 26.1            | 100.0       | 307.0       |        |

## ◆ Calculation

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

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

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

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



## Test Setup Photos and Configuration

### Conducted Emissions at Mains Power Ports

#### ■ DC Mode





## Conducted Emissions at Telecommunication Ports

### ■ DC Mode





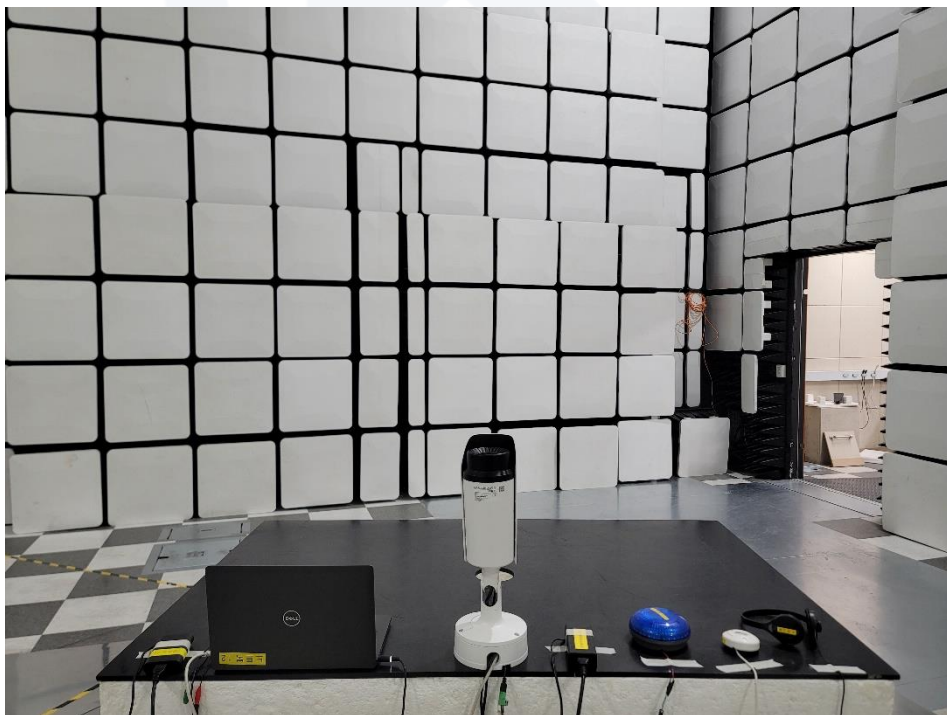
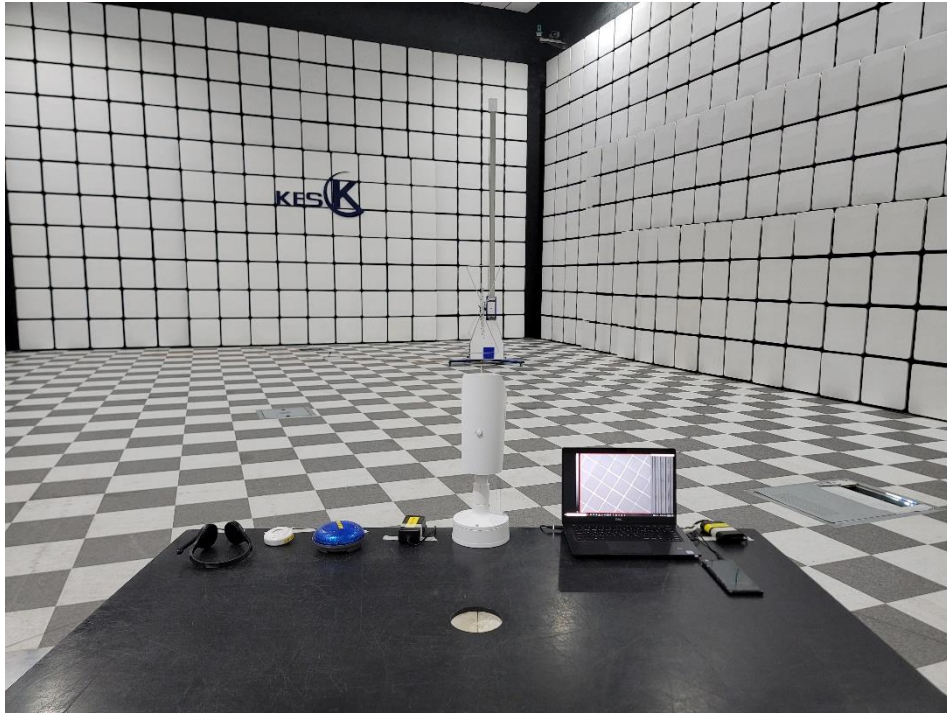
■ PoE Mode





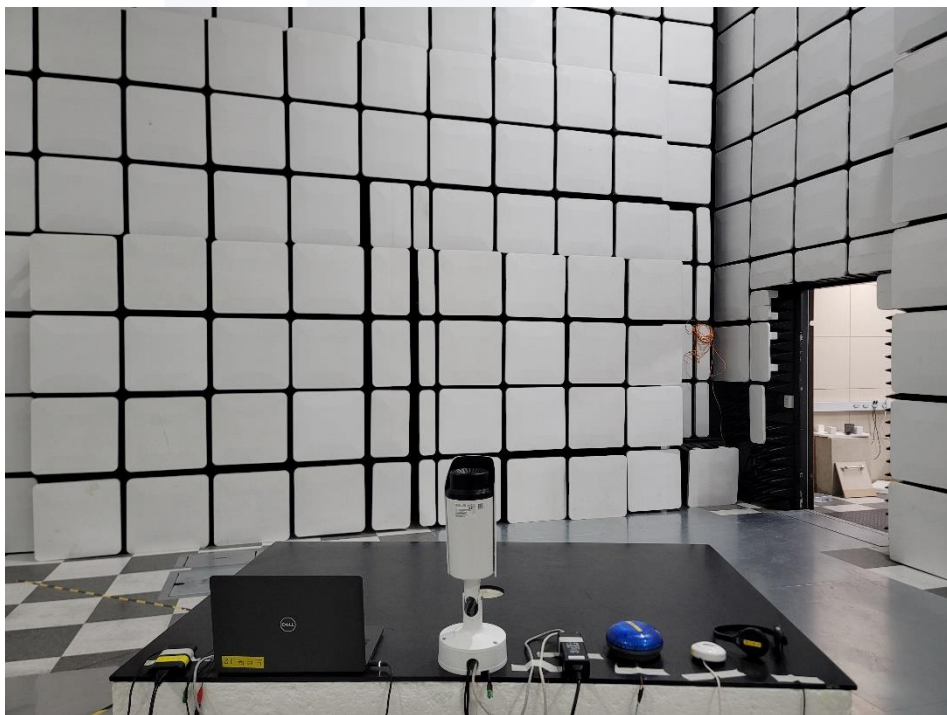
## Radiated Electric Field Emissions(Below 1 GHz)

### ■ DC Mode





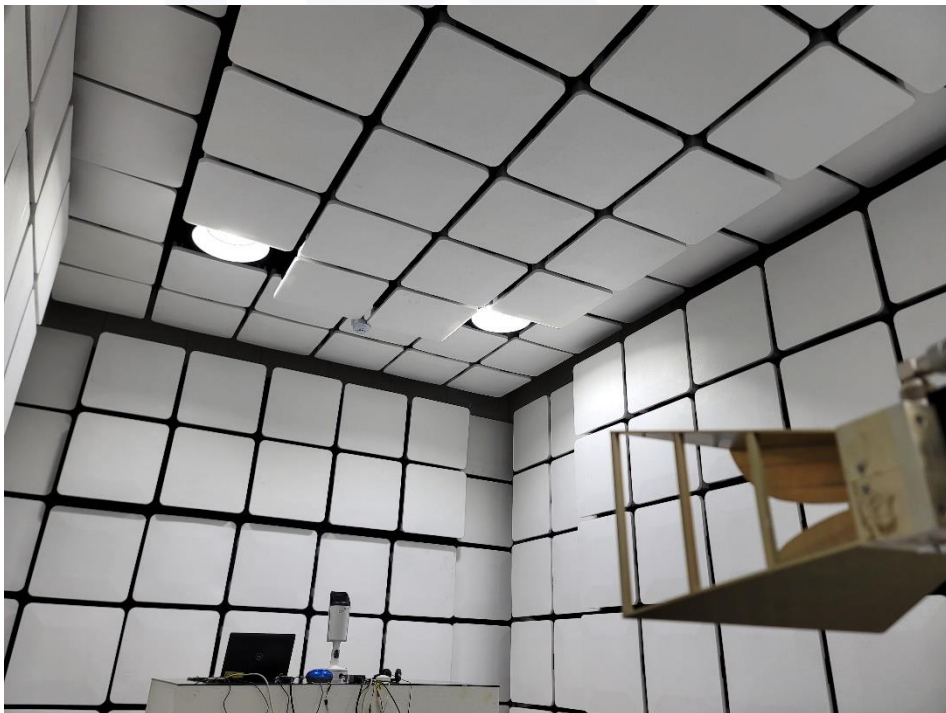
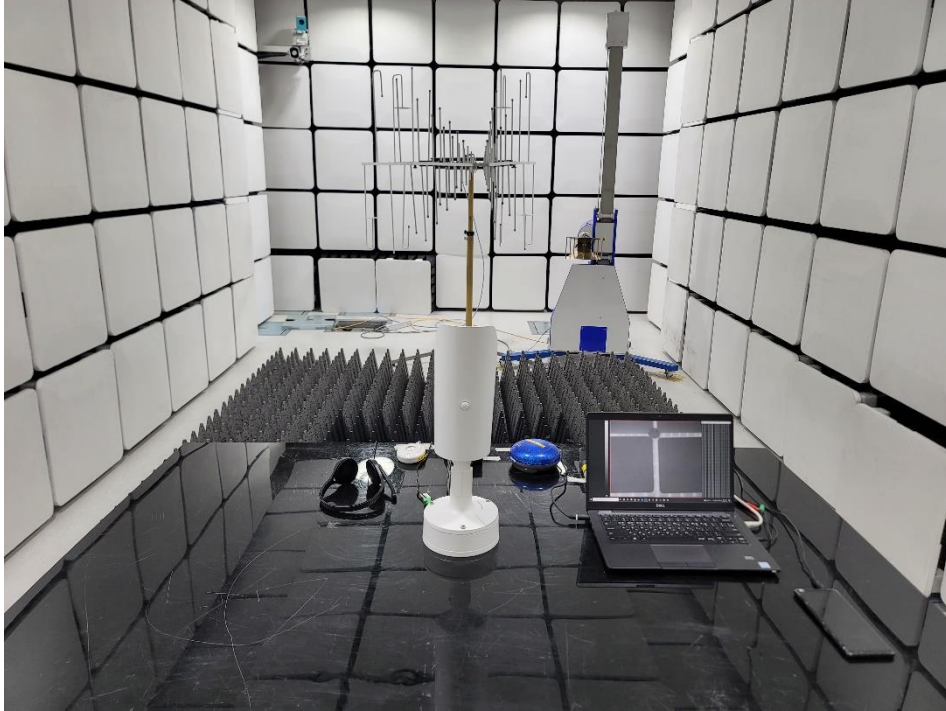
■ PoE Mode





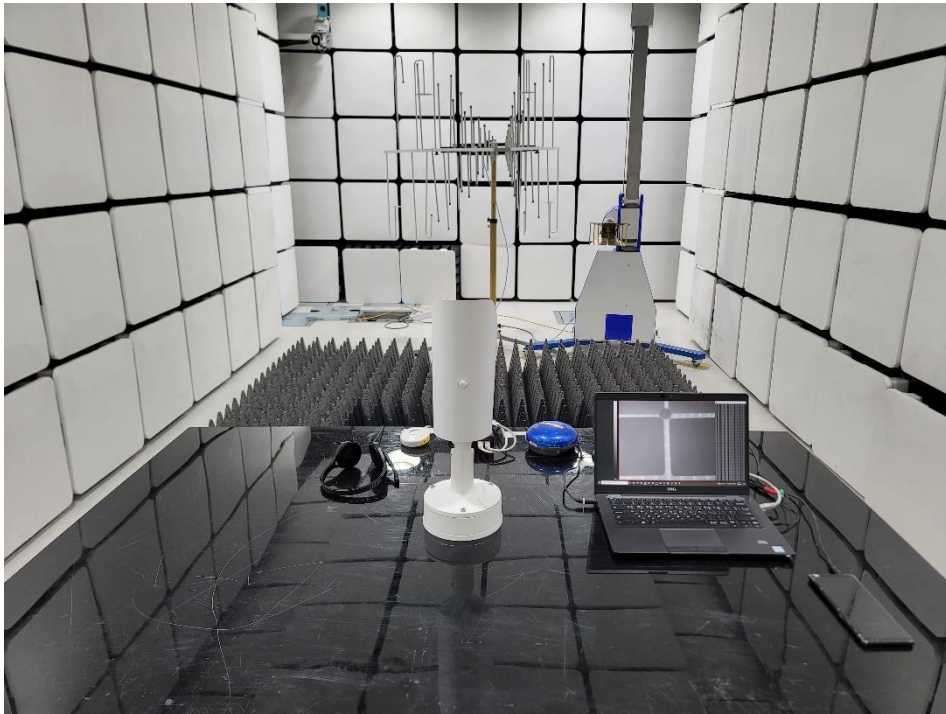
## Radiated Electric Field Emissions(Above 1 GHz)

■ DC Mode





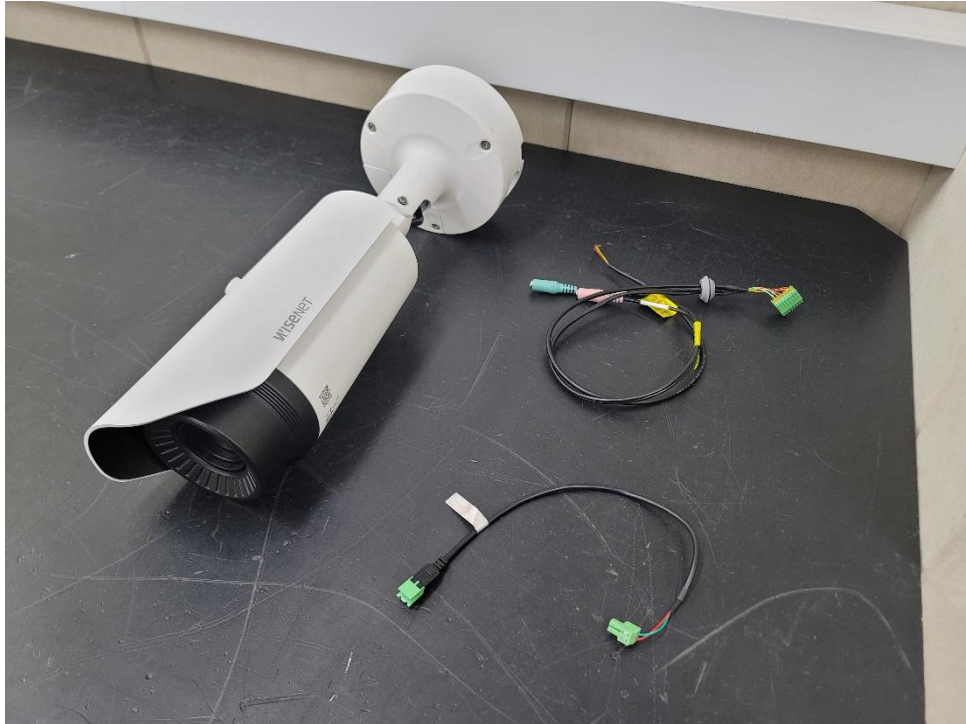
■ PoE Mode





## EUT External Photographs

(Top)



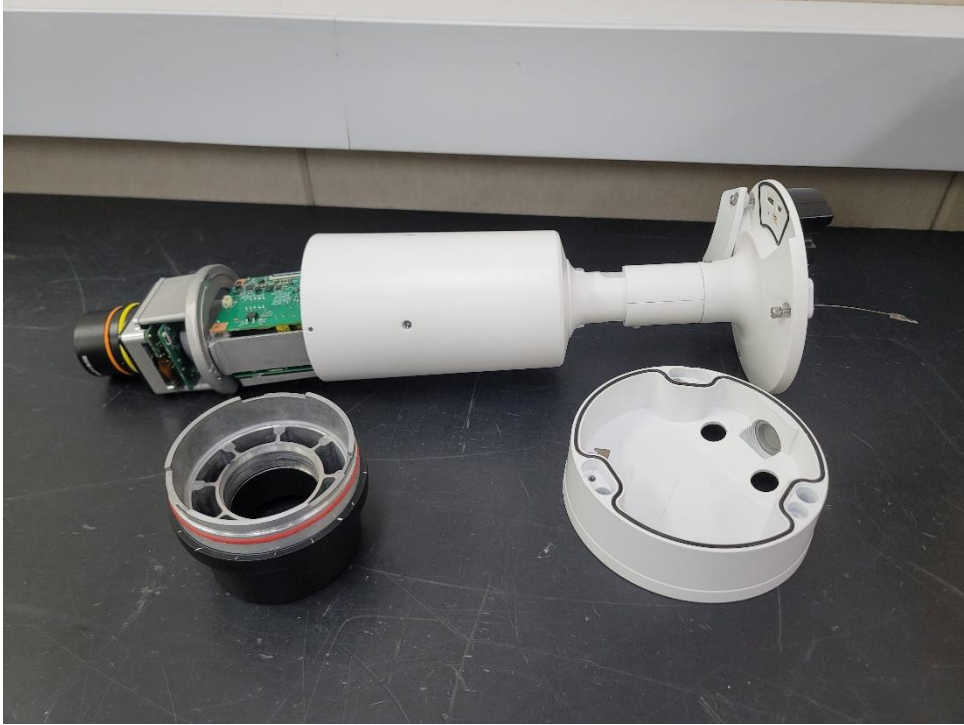
(Bottom)





## EUT Internal Photographs

(Internal View)





## EUT Internal View – NUC Board

(Top)



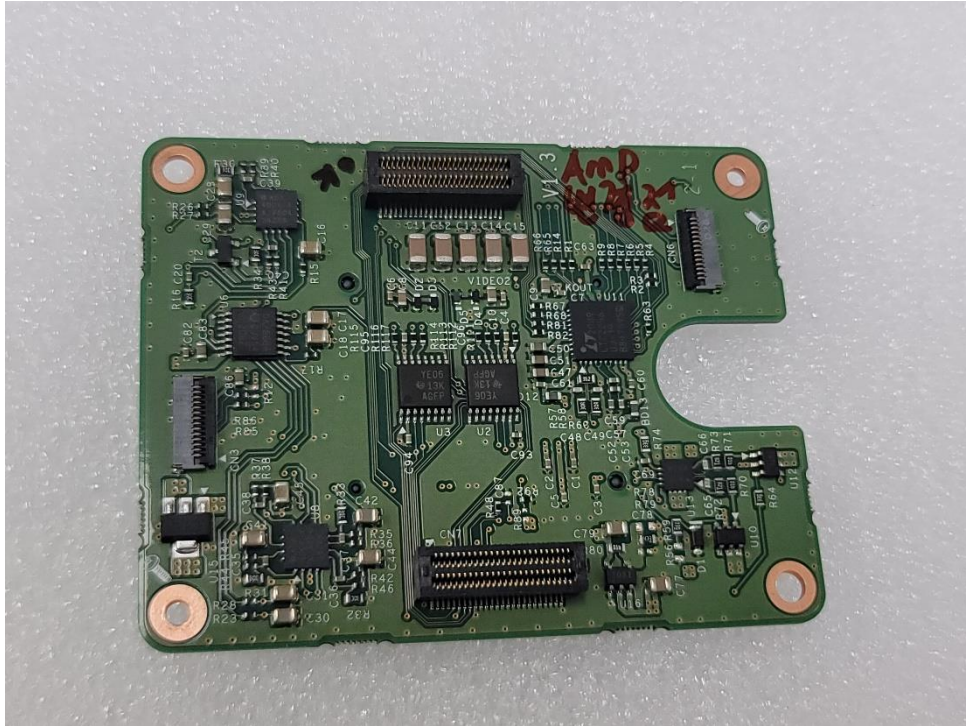
(Bottom)



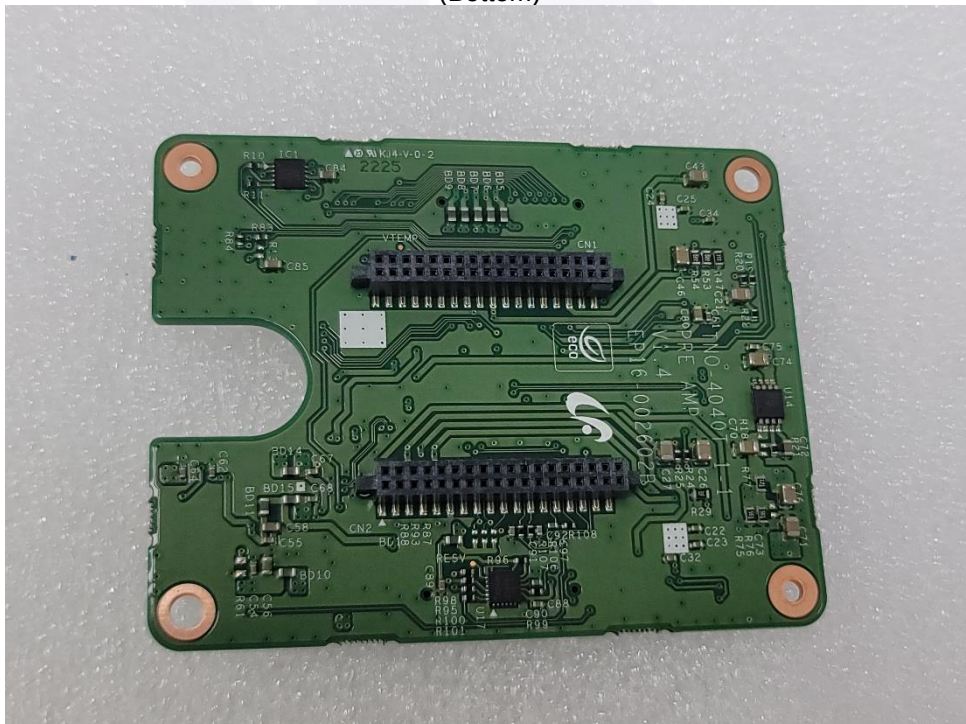


## EUT Internal View – PRE AMP Board

(Top)



(Bottom)



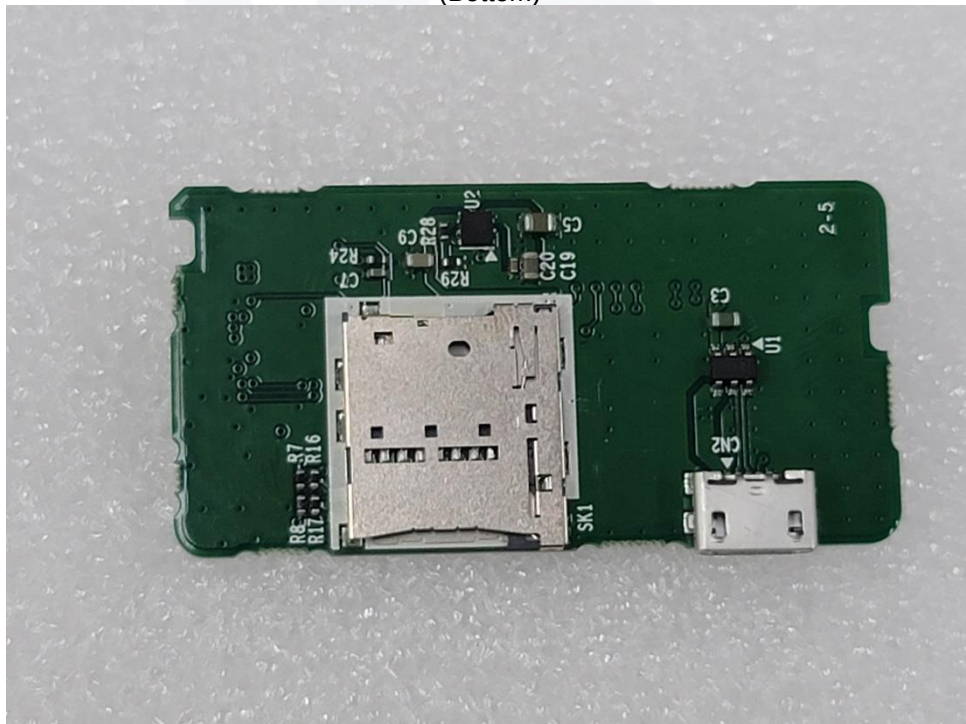


## EUT Internal View – SD Card Board

(Top)



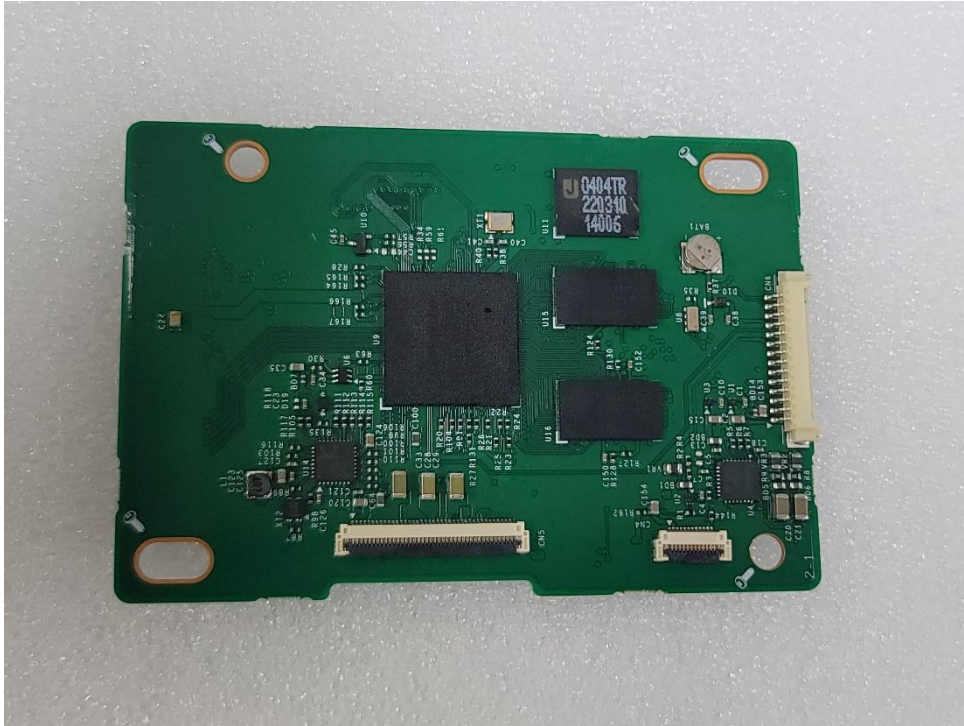
(Bottom)



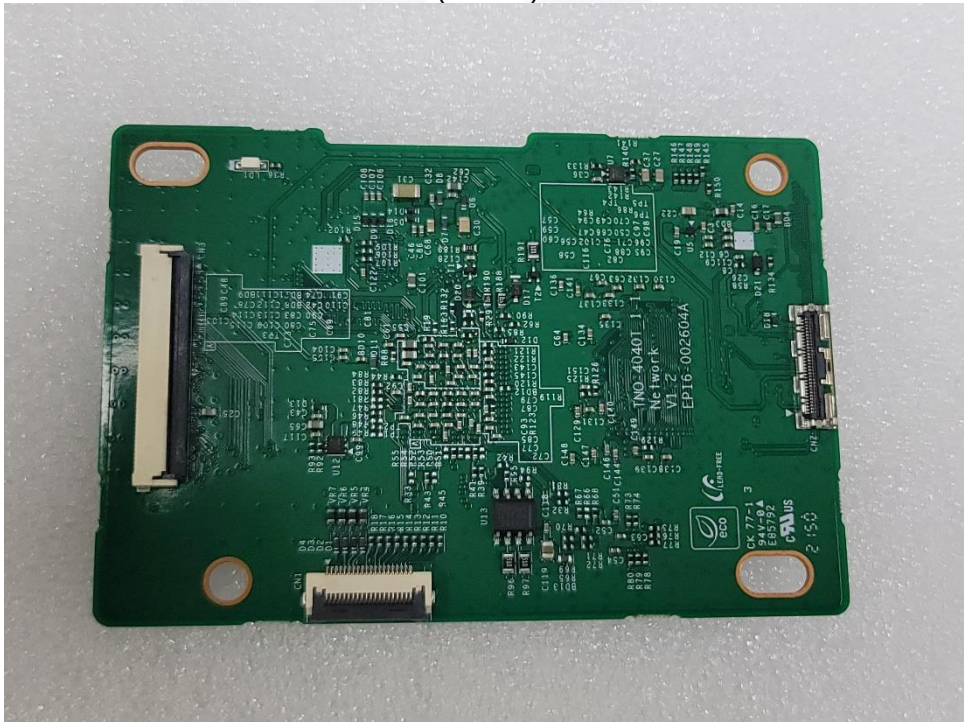


## EUT Internal View – Network Board

(Top)



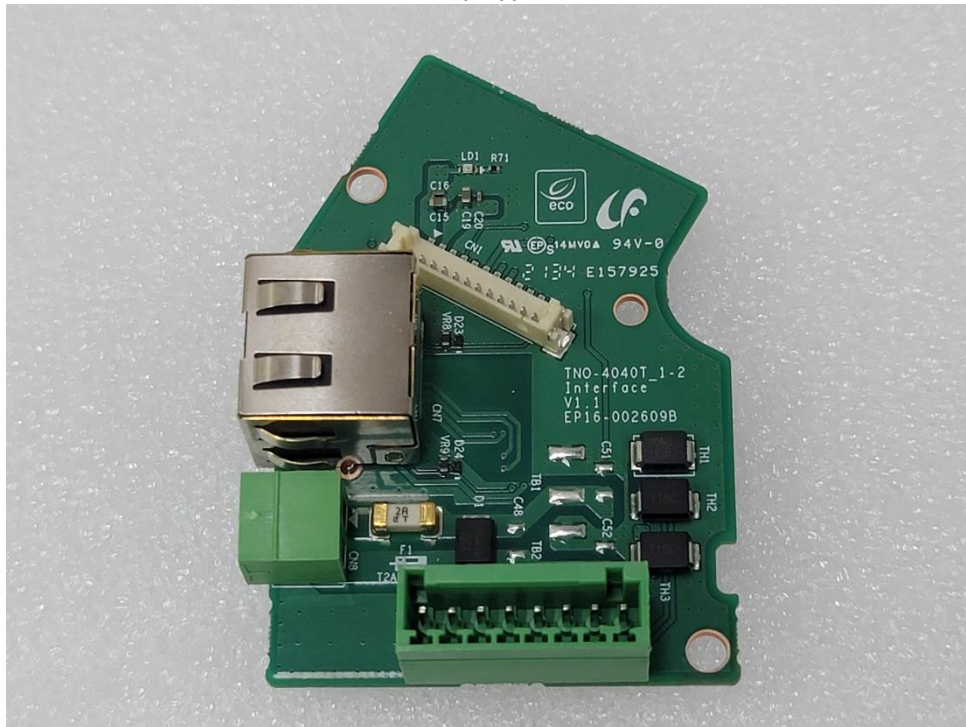
(Bottom)



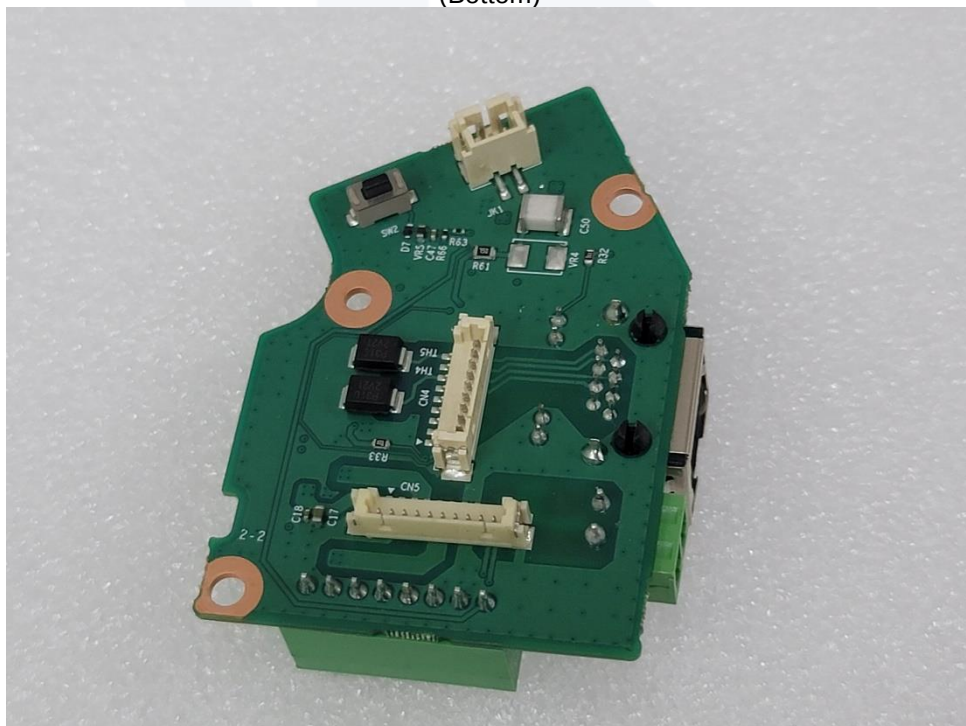


## EUT Internal View – Interface Board

(Top)



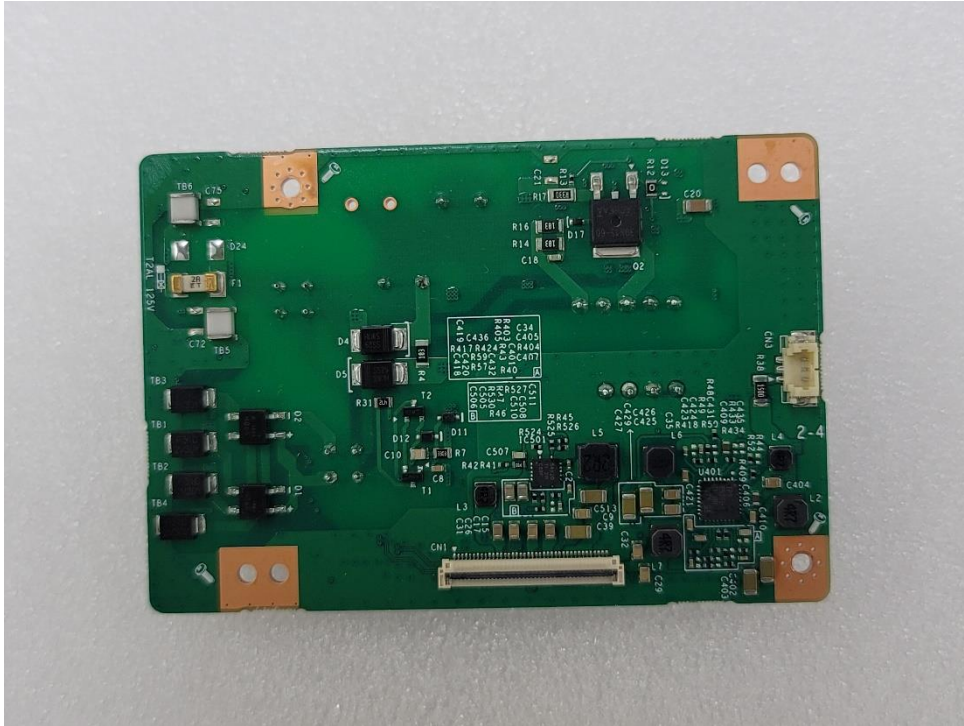
(Bottom)





## EUT Internal View – Power Board

(Top)



(Bottom)





### EUT Internal View – Lens

(Top)



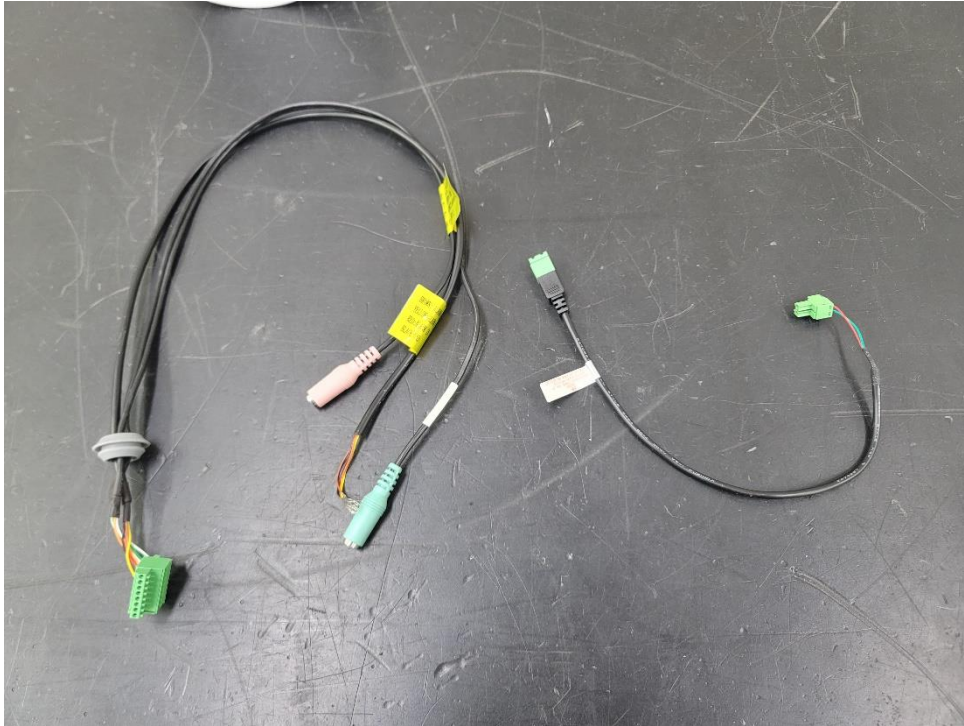
(Bottom)



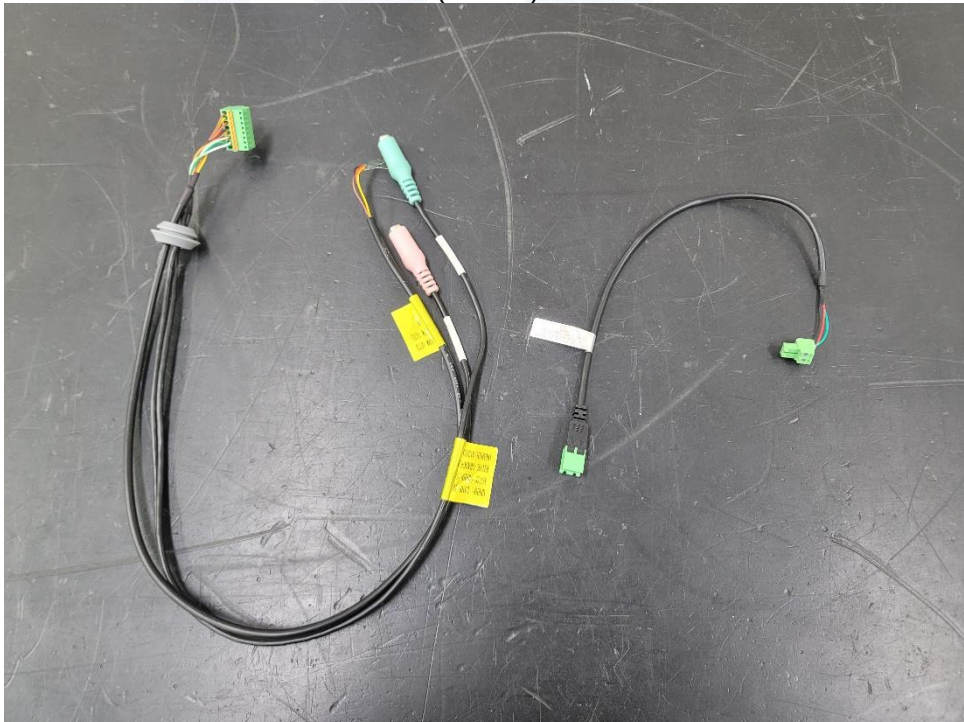


## EUT Internal View – Cable

(Top)



(Bottom)





### Label Photographs



この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A