



## EMC TEST REPORT

Test Report No. : KES-EM-21T0511  
Date of Issue : Jun. 30, 2021  
Product name : NETWORK CAMERA  
Model/Type No. : XND-9083RV  
Variant Model : -  
Applicant : Hanwha Techwin Co., Ltd.  
Applicant Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si,  
Gyeonggi-do, Republic of Korea  
Manufacturer : 1. HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.  
2. D-TECH CO.,LTD.  
Manufacturer Address : 1. Lot O-2, Que Vo Industrial Zone extended area,  
Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam  
2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do,  
Korea (Suwon Industrial Complex)  
Equipment authorization : **Supplier's Declaration of Conformity**  
Date of Receipt : Jun. 03, 2021  
Test date : Jun. 19, 2021 ~ Jun. 20, 2021  
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Min Seong, Kim  
EMC Test Engineer

Reviewed by

Dong-Hun, Jang  
EMC Technical Manager

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

**KES Co., Ltd.**

3701, 40, Simin-daero 365beon-gil,  
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea  
Tel: +82-31-425-6200 / Fax: +82-31-424-0450  
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**REPORT REVISION HISTORY**

| Date          | Test Report No. | Revision History |
|---------------|-----------------|------------------|
| Jun. 30, 2021 | KES-EM-21T0511  | Issued           |
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3701, 40, Simin-daero 365beon-gil,  
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea  
Tel: +82-31-425-6200 / Fax: +82-31-424-0450  
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## 1.0 General Product Description

### Main Specifications of EUT are:

| Video                       |                                                                                                                                                                                     |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Imaging Device              | 1/1.8" progressive CMOS                                                                                                                                                             |
| Resolution                  | 3840x2160, 3328x1872, 3072x1728, 2592x1944, 2688x1520, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240 |
| Max. Framerate              | H.265/H.264: Max. 30fps/25fps(60Hz/50Hz)<br>MJPEG: Max. 15fps/12fps(60Hz/50Hz)                                                                                                      |
| NETD                        | None                                                                                                                                                                                |
| Pixel Size                  | None                                                                                                                                                                                |
| Min. Illumination           | (TBD)<br>Color: 0.04Lux(F1.3, 1/30sec)<br>BW: 0.004Lux(F1.3, 1/30sec), 0Lux(IR LED on)                                                                                              |
| Video Out                   | CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation<br>USB: Micro USB Type B, 1280x720 for installation                                                         |
| Video Transmission Distance | None                                                                                                                                                                                |
| Lens                        |                                                                                                                                                                                     |
| Focal Length (Zoom Ratio)   | 4.4~9.3mm(2.1x) motorized varifocal                                                                                                                                                 |
| Max. Aperture Ratio         | F1.3                                                                                                                                                                                |
| Angular Field of View       | H : 112.1°(Wide)~47.5°(Tele)<br>V : 58.0°(Wide)~26.6°(Tele)<br>D : 137.5°(Wide)~54.6°(Tele)                                                                                         |
| Min. Object Distance        | 0.5m(1.64ft)                                                                                                                                                                        |
| Focus Control               | Simple focus, Manual                                                                                                                                                                |
| Lens Type                   | P-iris(IR corrected)                                                                                                                                                                |
| Mount Type                  | None                                                                                                                                                                                |
| Optional Lens               | None                                                                                                                                                                                |
| Pan / Tilt / Rotate         |                                                                                                                                                                                     |
| Pan / Tilt / Rotate Range   | 0°~360° / -45°~85° / 0°~355°(TBD)                                                                                                                                                   |
| Pan Range                   | None                                                                                                                                                                                |
| Pan Speed                   | None                                                                                                                                                                                |
| Tilt Range                  | None                                                                                                                                                                                |
| Tilt Speed                  | None                                                                                                                                                                                |
| Rotate Range                | None                                                                                                                                                                                |
| Sequence                    | None                                                                                                                                                                                |
| Preset Accuracy             | None                                                                                                                                                                                |
| Operational                 |                                                                                                                                                                                     |
| Camera Title                | Displayed up to 85 characters                                                                                                                                                       |
| Direction Indicator         | None                                                                                                                                                                                |
| Day & Night                 | Auto(ICR)                                                                                                                                                                           |
| Backlight Compensation      | BLC, HLC, WDR, SSDR                                                                                                                                                                 |
| Wide Dynamic Range          | extremeWDR (120dB)                                                                                                                                                                  |
| Digital Noise Reduction     | WiseNR II (Based on AI engine), SSNR V                                                                                                                                              |
| Digital Image Stabilization | Support(built-in gyro sensor)                                                                                                                                                       |
| Defog                       | Support                                                                                                                                                                             |
| Motion Detection            | 8ea, 8point Polygonal zones                                                                                                                                                         |
| Privacy Masking             | 32ea, Quadrangle zones<br>- Color : Gray, Green, Red, Blue, Black, White<br>- Mosaic                                                                                                |

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|                           |                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gain Control              | Support                                                                                                                                                                                                                                                                                                                                                                     |
| White Balance             | ATW / Narrow ATW / AWC / Manual / Indoor / Outdoor                                                                                                                                                                                                                                                                                                                          |
| LDC                       | Support (Fill/stretch mode)                                                                                                                                                                                                                                                                                                                                                 |
| Electronic Shutter Speed  | Minimum / Maximum / Anti flicker (2~1/12,000sec)<br>Auto prefer shutter control(Based on AI engine)                                                                                                                                                                                                                                                                         |
| Digital PTZ               | Support                                                                                                                                                                                                                                                                                                                                                                     |
| Video Rotation            | Flip, Mirror, Hallway view(90°/270°)                                                                                                                                                                                                                                                                                                                                        |
| Analytics                 | - Analytics events based on AI engine(NPU) : Object detection<br>(Person/Face/Vehicle(car/truck/bus/bicycle/motorcycle/Licence plate), IVA (Virtual line/Area, Enter/Exit, Loitering, direction, intrusion)<br>- Analytics events : Defocus detection, Motion detection, Tampering, Fog detection, Audio detection, Sound classification, Shock detection, Appear/Disappear |
| Business Intelligence     | Based on AI engine(NPU) : People counting, Queue management, Heatmap                                                                                                                                                                                                                                                                                                        |
| Serial Interface          | None                                                                                                                                                                                                                                                                                                                                                                        |
| Alarm I/O                 | 2 configurable I/O ports, DC 12V output(Max. 50mA)                                                                                                                                                                                                                                                                                                                          |
| Alarm Triggers            | Analytics, Network disconnect, Alarm input, App event, Time schedule                                                                                                                                                                                                                                                                                                        |
| Alarm Events              | When alarm trigger occurred<br>- File upload(image) : e-mail/FTP<br>- Notification : e-mail<br>- Recording : SD/SDHC/SDXC or NAS recording at event triggers<br>- Alarm output<br>- Handover(PTZ preset, Send message by HTTP/HTTPS/TCP)<br>- Audio clip playback<br>- PTZ preset                                                                                           |
| Audio In                  | Selectable(mic in/line in/built-in MIC)<br>Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm                                                                                                                                                                                                                                                                             |
| Audio Out                 | Line out, Max.output level: 1Vrms                                                                                                                                                                                                                                                                                                                                           |
| IR Viewable Length        | WiseIR 50m(164.04ft)(TBD)                                                                                                                                                                                                                                                                                                                                                   |
| IR Illuminator (Optional) | None                                                                                                                                                                                                                                                                                                                                                                        |
| Water Removal             | None                                                                                                                                                                                                                                                                                                                                                                        |
| Auto Tracking             | None                                                                                                                                                                                                                                                                                                                                                                        |
| Coaxial Protocol          | None                                                                                                                                                                                                                                                                                                                                                                        |
| Color Palettes            | None                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Radiometry</b>         |                                                                                                                                                                                                                                                                                                                                                                             |
| Temperature Detect Range  | None                                                                                                                                                                                                                                                                                                                                                                        |
| Temperature Accuracy      | None                                                                                                                                                                                                                                                                                                                                                                        |
| Temperature Detection     | None                                                                                                                                                                                                                                                                                                                                                                        |
| Additional                | None                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Network</b>            |                                                                                                                                                                                                                                                                                                                                                                             |
| Ethernet                  | Metal shielded RJ-45(10/100/1000BASE-T)                                                                                                                                                                                                                                                                                                                                     |
| Video Compression         | H.265/H.264: Main/High, MJPEG                                                                                                                                                                                                                                                                                                                                               |
| 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                                                                                                                                                                                                                                          |
| Smart Codec               | Manual(5ea area), WiseStream II, WiseStream III(Based on AI engine)                                                                                                                                                                                                                                                                                                         |
| 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, 3 virtual channel support)                                                                                                                                                                                                                                                                           |
| 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, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)                                                                                                                                                                  |

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|                                       |                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Security                              | TPM 2.0 (TPM 1.2 level 2)<br>HTTPS(SSL) Login Authentication<br>Digest Login Authentication<br>IP Address Filtering<br>User access log<br>802.1X Authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2)<br>Device Certificate(Hanwha Techwin Root CA, pre-installed)<br>Secure by default certificate(TBD)<br>Secure OS/Boot/Storage, Verify firmware forgery |
| Application Programming Interface     | ONVIF Profile S/G/T<br>SUNAPI(HTTP API)<br>Wisenet open platform                                                                                                                                                                                                                                                                                            |
| <b>General</b>                        |                                                                                                                                                                                                                                                                                                                                                             |
| Webpage Language                      | English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Greek, Hungarian                                                                                                                                                                                                         |
| Web Viewer                            | None                                                                                                                                                                                                                                                                                                                                                        |
| Edge Storage                          | Micro SD/SDHC/SDXC 2slot Max. 1TB (512GB * 2)                                                                                                                                                                                                                                                                                                               |
| Memory                                | 4GB RAM, 512MB Flash                                                                                                                                                                                                                                                                                                                                        |
| <b>Environmental &amp; Electrical</b> |                                                                                                                                                                                                                                                                                                                                                             |
| Operating Temperature / Humidity      | -25 °C ~ 50 °C(-13°F ~ +122°F)<br>* Maximum temperature : +55°C (intermittent)<br>less than 95% RH(non-condensing)<br>Humidity control /w GORE vent                                                                                                                                                                                                         |
| Storage Temperature / Humidity        | -50°C ~ +60°C(-58°F ~ +140°F) / Less than 90% RH                                                                                                                                                                                                                                                                                                            |
| Certification                         | IP52/IK10                                                                                                                                                                                                                                                                                                                                                   |
| Input Voltage                         | PoE+(IEEE802.3at, Class4), 12VDC                                                                                                                                                                                                                                                                                                                            |
| Power Consumption                     | TBD<br>Power redundancy failover                                                                                                                                                                                                                                                                                                                            |
| <b>Mechanical</b>                     |                                                                                                                                                                                                                                                                                                                                                             |
| Color / Material                      | White / Aluminum<br>Hard-coated dome bubble                                                                                                                                                                                                                                                                                                                 |
| RAL Code                              | RAL9003                                                                                                                                                                                                                                                                                                                                                     |
| Product Dimensions / Weight           | Ø160x125mm(6.30x4.92"), 1.6kg(3.53 lb) (TBD)                                                                                                                                                                                                                                                                                                                |
| Compatible Conduit hole / Gangbox     | 1/2" (M20)<br>single, double, 4" octagon, 4" square                                                                                                                                                                                                                                                                                                         |
| Hanging Mount (Dome)                  | SBP-167HMMW                                                                                                                                                                                                                                                                                                                                                 |
| Skin Cover (Dome)                     | None                                                                                                                                                                                                                                                                                                                                                        |
| Weather Cap (Dome)                    | None                                                                                                                                                                                                                                                                                                                                                        |
| Power Module                          | None                                                                                                                                                                                                                                                                                                                                                        |
| Backbox                               | None                                                                                                                                                                                                                                                                                                                                                        |
| <b>DORI (EN62676-4 standard)</b>      |                                                                                                                                                                                                                                                                                                                                                             |
| Detect (25PPM/ 8PPF)                  | Wide: 51.7m(169.64ft) / Tele: 174.5m(572.64ft)                                                                                                                                                                                                                                                                                                              |
| Observe (63PPM/ 19PPF)                | Wide: 20.7m(67.85ft) / Tele: 69.8m(229.06ft)                                                                                                                                                                                                                                                                                                                |
| Recognize (125PPM/ 38PPF)             | Wide: 10.3m(33.93ft) / Tele: 34.9m(114.53ft)                                                                                                                                                                                                                                                                                                                |
| Identify (250PPM/ 76PPF)              | Wide: 5.2m(16.96ft) / Tele: 17.5m(57.26ft)                                                                                                                                                                                                                                                                                                                  |

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## 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      ☒ PoE

## 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 |
|----------------|--------------|---------------|------------------------------------------------|---------|
| NETWORK CAMERA | XND-9083RV   | -             | HANWHA TECHWIN<br>SECURITY VIETNAM<br>CO.,LTD. | EUT     |

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## 1.5 Support Equipments

| Description      | Model Number         | Serial Number | Manufacturer                                  | Remarks |
|------------------|----------------------|---------------|-----------------------------------------------|---------|
| AC / DC Adapter  | 2ACB022F             | -             | Channel Well Technology (Guangzhou) Co., Ltd. | -       |
| PoE Injector     | PT-PSE109GBRO-AH     | PT1850221049  | Dongguan PROCET Network Technology Co.,Ltd    | -       |
| Notebook         | P89F                 | -             | Wistron Infocom (Chengdu) Company Limited     | -       |
| Notebook Adapter | LA240PM190           | -             | LITE-ON TECHNOLOGY (CHANGZHOU)CO., LTD.       | -       |
| Speaker          | BR1000A Cuve Black 2 | -             | DONGGUAN EDIFIER TECHNOLOGY Co., Ltd          | -       |
| MIC              | MP1000               | -             | -                                             | -       |
| Alarm            | SIP-1201DD D0        | -             | SAMSUNG TECHWIN CO., LTD.                     | -       |
| Button Alarm     | -                    | -             | -                                             | -       |
| Micro SD Card    | -                    | -             | SanDisk                                       | 16 GB   |
| Smart Phone      | SM-N950N             | R39JB0C3FB    | Samsung Electronics Co., Ltd.                 | -       |

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## 1.6 External I/O Cabling

### ■ DC Mode

| Start                |           | END           |                   | Cable Spec. |        |
|----------------------|-----------|---------------|-------------------|-------------|--------|
| Description          | I/O Port  | Description   | I/O Port          | Length      | Shield |
| NETWORK CAMERA (EUT) | RJ-45     | Notebook      | RJ-45             | 3.0         | S      |
|                      | Audio Out | Speaker       | Line-Out (3.5 mm) | 1.4         | U      |
|                      | Audio In  | MIC           | XLR               | 1.4         | U      |
|                      | Alarm Out | Alarm         | Alarm In          | 3.0         | U      |
|                      | Alarm In  | Button Alarm  | Alarm Out         | 3.0         | U      |
|                      | SLOT      | Micro SD Card | SLOT              | -           | -      |
| Notebook             | 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 |
| NETWORK CAMERA (EUT) | RJ-45 (PoE) | PoE Injector  | RJ-45 (PoE)       | 3.0         | S      |
|                      | Audio Out   | Speaker       | Line-Out (3.5 mm) | 1.4         | U      |
|                      | Audio In    | MIC           | XLR               | 1.4         | U      |
|                      | Alarm Out   | Alarm         | Alarm In          | 3.0         | U      |
|                      | Alarm In    | Button Alarm  | Alarm Out         | 3.0         | U      |
|                      | SLOT        | Micro SD Card | SLOT              | -           | -      |
| Notebook             | RJ-45 (LAN) | PoE Injector  | RJ-45 (LAN)       | 2.0         | S      |
|                      | 3.5 mm      | Smart Phone   | 3.5 mm            | 1.0         | U      |

\* Unshielded=U, Shielded=S

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## 1.7 EUT Operating Mode(s)

### ■ DC / PoE Mode

| Test Mode | operating                                  |
|-----------|--------------------------------------------|
| Operation | Monitoring EUT Using Web Viewer, Ping Test |

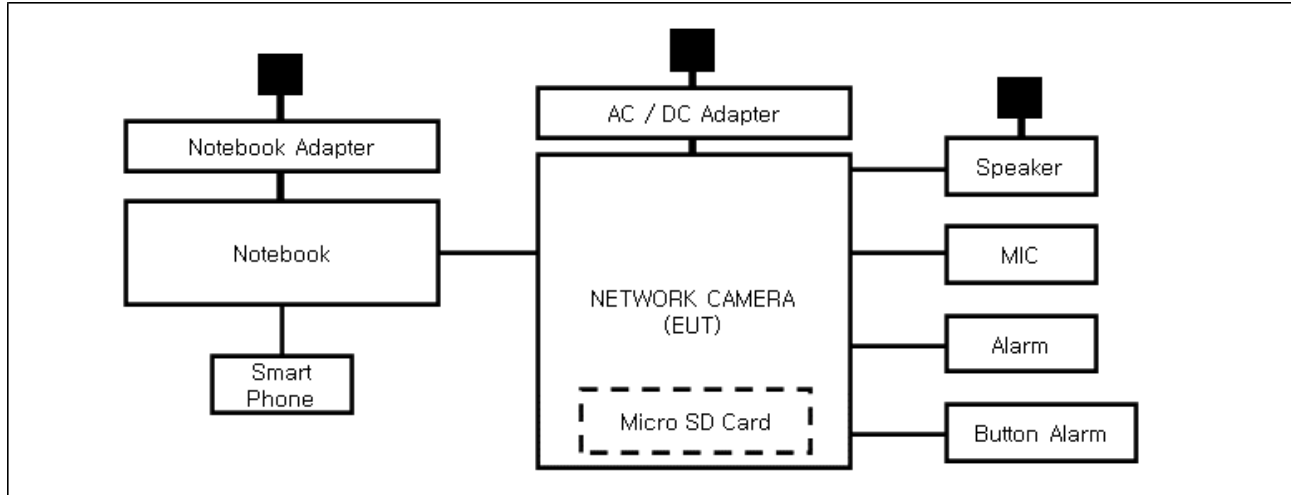
| EUT Test operating S/W |         |                     |
|------------------------|---------|---------------------|
| Name                   | Version | Manufacture Company |
| Web Viewer             | -       | -                   |

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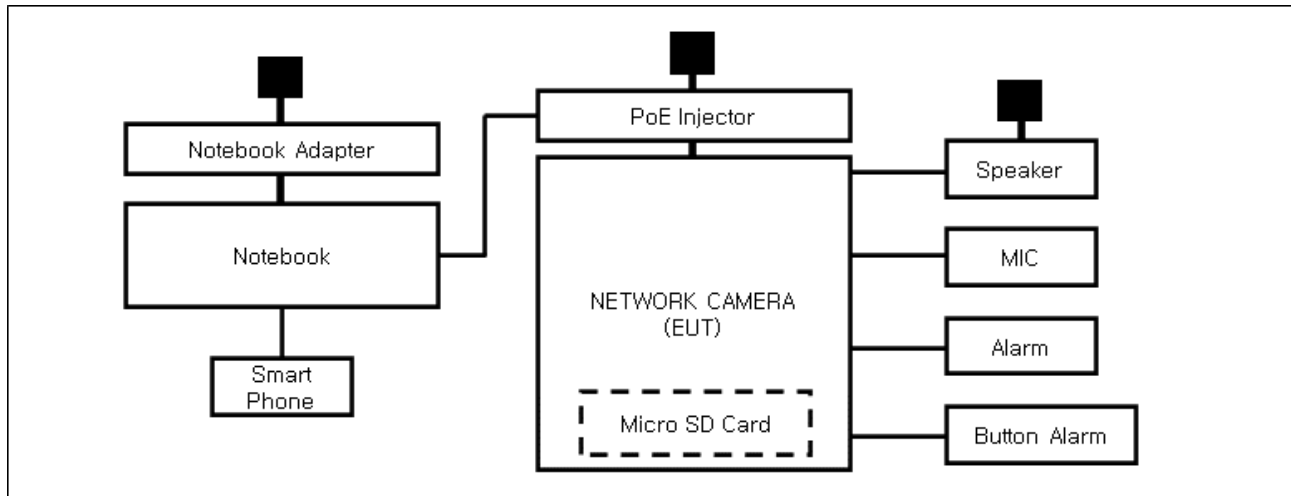
## 1.8 Configuration

■ AC Main  
 □ DC Main

### ■ DC Mode



### ■ PoE Mode



## 1.9 Remarks when standards applied

USB Port, VIDEO Port are for administrator use only and excluded from testing.

## 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. The sites are constructed in conformance with the requirements of ANSI C63.4:2014 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 ,<br>10 m Open Area and conducted test site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS,<br>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,<br>Magnetic, Dips and interruptions)                                                   | <br>KT489                                 |
| USA           | FCC     | 3 m & 10 m Semi-Anechoic Chamber, 10 m Open Area and 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>23298-1                               |
| JAPAN         | VCCI    | Mains Ports Conducted Interference Measurement, Telecommunication Ports Conducted Disturbance Measurement and Radiation 10 meter site, Facility for measuring radiated disturbance above 1 GHz | <br>R-20056, C-20036,<br>T-20040, G-20057 |
| Europe        | TÜV SÜD | EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area and conducted test site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS,<br>Magnetic, Dips and interruptions)                                    | <br>CARAT 001633 0004                     |



## 2.0 Test Regulations

The emissions tests were performed according to following regulations:

☐ **EMC – Directive 2014/30/EU**

☐ EN 61000-6-3:2011

☐ EN 61000-6-1:2007

☐ EN 61000-6-4:2007 +A1:2011

☐ EN 61000-6-2:2005

☐ EN 55011:2007 +A1:2010

☐ Group 1  
☐ Class A

☐ Group 2  
☐ Class B

☐ EN 55014-1:2006 +A2:2011

☐ EN 55014-2:1997 +A2:2008

☐ EN 55015:2013

☐ EN 55032:2015

☐ Class A

☐ Class B

☐ EN 55024:2010

☐ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013



**KES Co., Ltd.**

3701, 40, Simin-daero 365beon-gil,  
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea  
Tel: +82-31-425-6200 / Fax: +82-31-424-0450  
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- |                                                                           |                                             |                                  |
|---------------------------------------------------------------------------|---------------------------------------------|----------------------------------|
| <input type="checkbox"/> <b>VCCI-CISPR 32:2016</b>                        | <input type="checkbox"/> Class A            | <input type="checkbox"/> Class B |
| <input type="checkbox"/> <b>AS/NZS CISPR32:2015</b>                       | <input type="checkbox"/> Class A            | <input type="checkbox"/> Class B |
| <input checked="" type="checkbox"/> <b>47 CFR Part 15, Subpart B</b>      |                                             |                                  |
| <input type="checkbox"/> CISPR 22:2009 +A1:2010                           | <input type="checkbox"/> Class A            | <input type="checkbox"/> Class B |
| <input checked="" type="checkbox"/> ANSI C63.4-2017                       | <input checked="" type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input checked="" type="checkbox"/> <b>IC Regulation ICES-003 Issue 7</b> |                                             |                                  |
| <input checked="" type="checkbox"/> CAN/CSA CISPR 32:17                   | <input checked="" type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> ANSI C63.4-2017                                  | <input type="checkbox"/> Class A            | <input type="checkbox"/> Class B |
| <input type="checkbox"/> <b>RE- Directive 2014/53/EU</b>                  |                                             |                                  |
| <input type="checkbox"/> EN 301 489-1 V1.9.2                              |                                             |                                  |
| <input type="checkbox"/> Equipment for fixed use                          |                                             |                                  |
| <input type="checkbox"/> Equipment for vehicular use                      |                                             |                                  |
| <input type="checkbox"/> Equipment for portable use                       |                                             |                                  |
| <input type="checkbox"/> EN 301 489-3 V1.6.1                              |                                             |                                  |
| <input type="checkbox"/> EN 301 489-17 V2.2.1                             |                                             |                                  |
| <input type="checkbox"/> EN 60945:2002                                    |                                             |                                  |

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## 2.1 Conducted Emissions at Mains Power Ports

### Test Date

Jun. 19, 2021

### 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        | 01, 15, 2022 |
| <input checked="" type="checkbox"/> | LISN              | ENV216       | R & S        | 101787        | 12, 29, 2021 |
| <input checked="" type="checkbox"/> | LISN              | ESH2-Z5      | R & S        | 100450        | 12, 29, 2021 |
| <input checked="" type="checkbox"/> | PULSE LIMITER     | ESH3-Z2      | R & S        | 101915        | 12, 29, 2021 |

### Test Conditions

Temperature: (24,6 ± 0,1) °C

Relative Humidity: (47,2 ± 0,2) % 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. 19, 2021

### 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        | 04, 01, 2022 |
| <input checked="" type="checkbox"/> | AMPLIFIER                | SCU 01       | R & S            | 100603        | 11, 25, 2021 |
| <input checked="" type="checkbox"/> | TRILOG-BROADBAND ANTENNA | VULB9163     | Schwarzbeck      | 715           | 12, 08, 2022 |
| <input checked="" type="checkbox"/> | ATTENUATOR               | 8491A        | HP               | 32173         | 03, 10, 2022 |

### Test Conditions

Temperature: (23,6 ± 0,1) °C  
Relative Humidity: (46,7 ± 0,2) % 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. 20, 2021

### Test Location

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        | 04, 01, 2022 |
| <input checked="" type="checkbox"/> | PREAMPLIFIER      | 8449B        | AGILENT          | 3008A01742    | 12, 29, 2021 |
| <input type="checkbox"/>            | ATTENUATOR        | 8491A        | HP               | 35496         | 03, 10, 2022 |
| <input checked="" type="checkbox"/> | HORN ANTENNA      | BBHA 9120D   | SCHWARZBECK      | 9120D-1802    | 12, 14, 2021 |

### Test Conditions

Temperature: (23,5 ± 0,3) °C

Relative Humidity: (47,3 ± 0,5) % R.H.

### Frequency Range of Measurement

1 GHz to 5 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.



## KES Co., Ltd.

3701, 40, Simin-daero 365beon-gil,  
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea  
Tel: +82-31-425-6200 / Fax: +82-31-424-0450  
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## APPENDIX A – TEST DATA

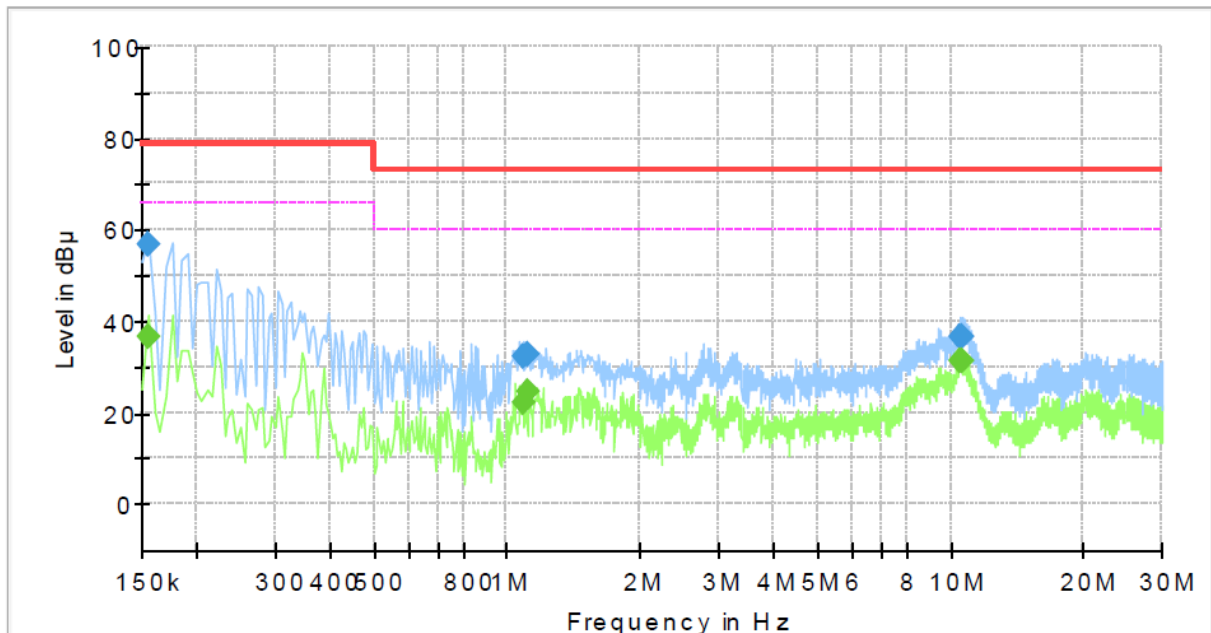
### Conducted Emissions at Mains Power Ports

■ DC Mode

HOT LINE

### Common Information

|                   |                    |
|-------------------|--------------------|
| Test Description: | Conducted Emission |
| Model No.:        | XND-9083RV         |
| Phase:            | H                  |
| 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        | ---              | 36.41           | 66.00        | 29.59       | 1000.0          | 9.000           | L1   | 19.4       |
| 0.155000        | 56.85            | ---             | 79.00        | 22.15       | 1000.0          | 9.000           | L1   | 19.4       |
| 1.090000        | ---              | 21.99           | 60.00        | 38.01       | 1000.0          | 9.000           | L1   | 20.1       |
| 1.090000        | 32.10            | ---             | 73.00        | 40.90       | 1000.0          | 9.000           | L1   | 20.1       |
| 1.120000        | ---              | 24.67           | 60.00        | 35.33       | 1000.0          | 9.000           | L1   | 20.1       |
| 1.120000        | 32.61            | ---             | 73.00        | 40.39       | 1000.0          | 9.000           | L1   | 20.1       |
| 10.470000       | ---              | 31.15           | 60.00        | 28.85       | 1000.0          | 9.000           | L1   | 19.9       |
| 10.470000       | 36.66            | ---             | 73.00        | 36.34       | 1000.0          | 9.000           | L1   | 19.9       |
| 10.690000       | ---              | 31.12           | 60.00        | 28.88       | 1000.0          | 9.000           | L1   | 19.9       |
| 10.690000       | 36.70            | ---             | 73.00        | 36.30       | 1000.0          | 9.000           | L1   | 19.9       |

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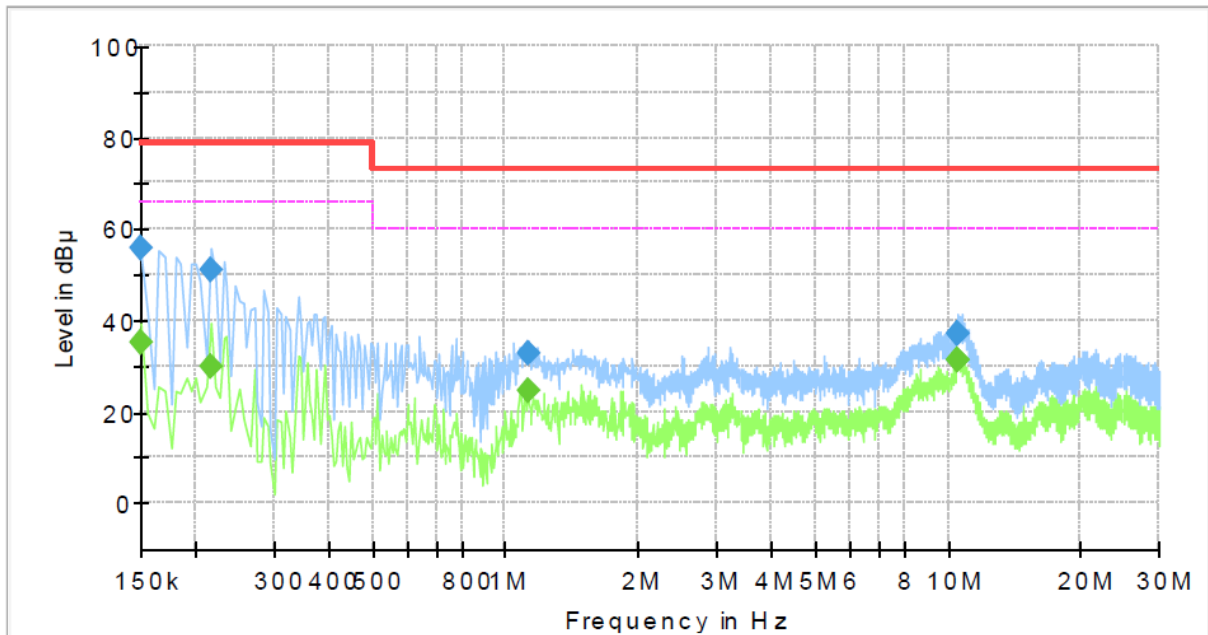
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Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea  
Tel: +82-31-425-6200 / Fax: +82-31-424-0450  
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### NEUTRAL LINE

## Common Information

Test Description: Conducted Emission  
Model No.: XND-9083RV  
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        | ---              | 34.95           | 66.00        | 31.05       | 1000.0          | 9.000           | N    | 19.4       |
| 0.150000        | 55.84            | ---             | 79.00        | 23.16       | 1000.0          | 9.000           | N    | 19.4       |
| 0.215000        | ---              | 30.01           | 66.00        | 35.99       | 1000.0          | 9.000           | N    | 19.4       |
| 0.215000        | 51.16            | ---             | 79.00        | 27.84       | 1000.0          | 9.000           | N    | 19.4       |
| 1.125000        | ---              | 24.42           | 60.00        | 35.58       | 1000.0          | 9.000           | N    | 20.1       |
| 1.125000        | 32.94            | ---             | 73.00        | 40.06       | 1000.0          | 9.000           | N    | 20.1       |
| 10.550000       | ---              | 31.49           | 60.00        | 28.51       | 1000.0          | 9.000           | N    | 19.9       |
| 10.550000       | 37.16            | ---             | 73.00        | 35.84       | 1000.0          | 9.000           | N    | 19.9       |
| 10.560000       | ---              | 31.35           | 60.00        | 28.65       | 1000.0          | 9.000           | N    | 19.9       |
| 10.560000       | 37.02            | ---             | 73.00        | 35.98       | 1000.0          | 9.000           | N    | 19.9       |

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3701, 40, Simin-daero 365beon-gil,  
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea  
Tel: +82-31-425-6200 / Fax: +82-31-424-0450  
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### ■ PoE Mode

### HOT LINE

## Common Information

Test Description:

Model No.:

Phase:

Mode:

Operator Name:

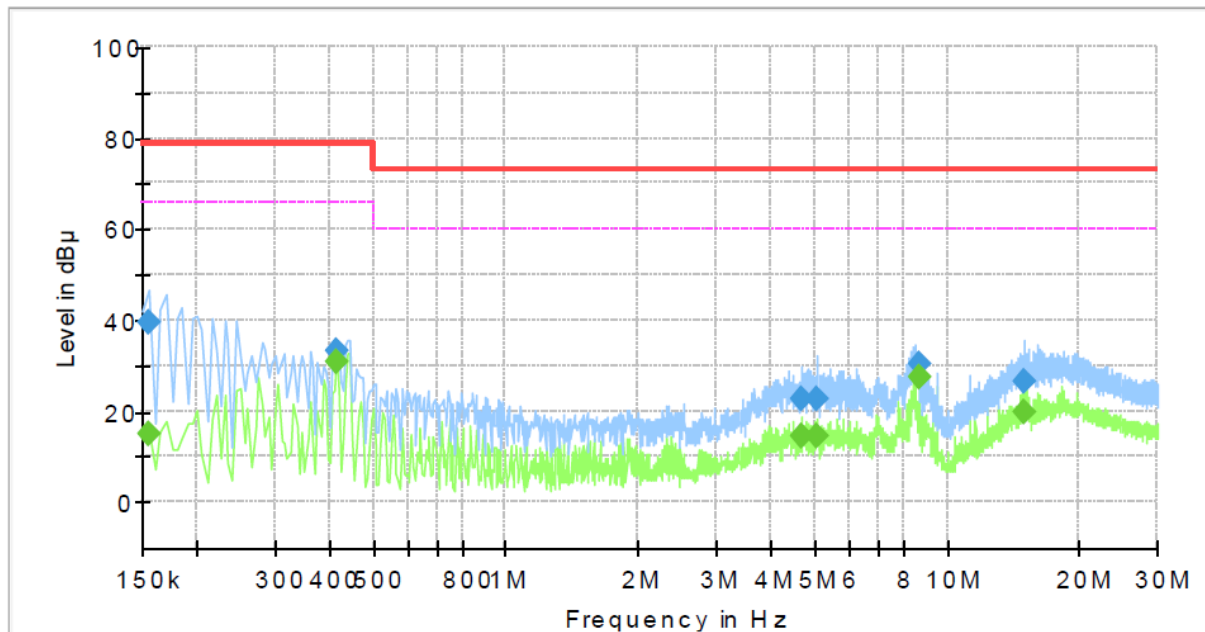
Conducted Emission

XND-9083RV

H

PoE

KES



## Final Result

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|------|------------|
| 0.155000        | ---              | 14.99           | 66.00        | 51.01       | 1000.0          | 9.000           | L1   | 19.4       |
| 0.155000        | 39.47            | ---             | 79.00        | 39.53       | 1000.0          | 9.000           | L1   | 19.4       |
| 0.415000        | ---              | 30.97           | 66.00        | 35.03       | 1000.0          | 9.000           | L1   | 19.6       |
| 0.415000        | 33.30            | ---             | 79.00        | 45.70       | 1000.0          | 9.000           | L1   | 19.6       |
| 4.695000        | ---              | 14.43           | 60.00        | 45.57       | 1000.0          | 9.000           | L1   | 19.7       |
| 4.695000        | 22.76            | ---             | 73.00        | 50.24       | 1000.0          | 9.000           | L1   | 19.7       |
| 5.055000        | ---              | 14.33           | 60.00        | 45.67       | 1000.0          | 9.000           | L1   | 19.6       |
| 5.055000        | 22.61            | ---             | 73.00        | 50.39       | 1000.0          | 9.000           | L1   | 19.6       |
| 8.665000        | ---              | 27.50           | 60.00        | 32.50       | 1000.0          | 9.000           | L1   | 19.7       |
| 8.665000        | 30.31            | ---             | 73.00        | 42.69       | 1000.0          | 9.000           | L1   | 19.7       |
| 15.045000       | ---              | 19.60           | 60.00        | 40.40       | 1000.0          | 9.000           | L1   | 19.9       |
| 15.045000       | 26.48            | ---             | 73.00        | 46.52       | 1000.0          | 9.000           | L1   | 19.9       |

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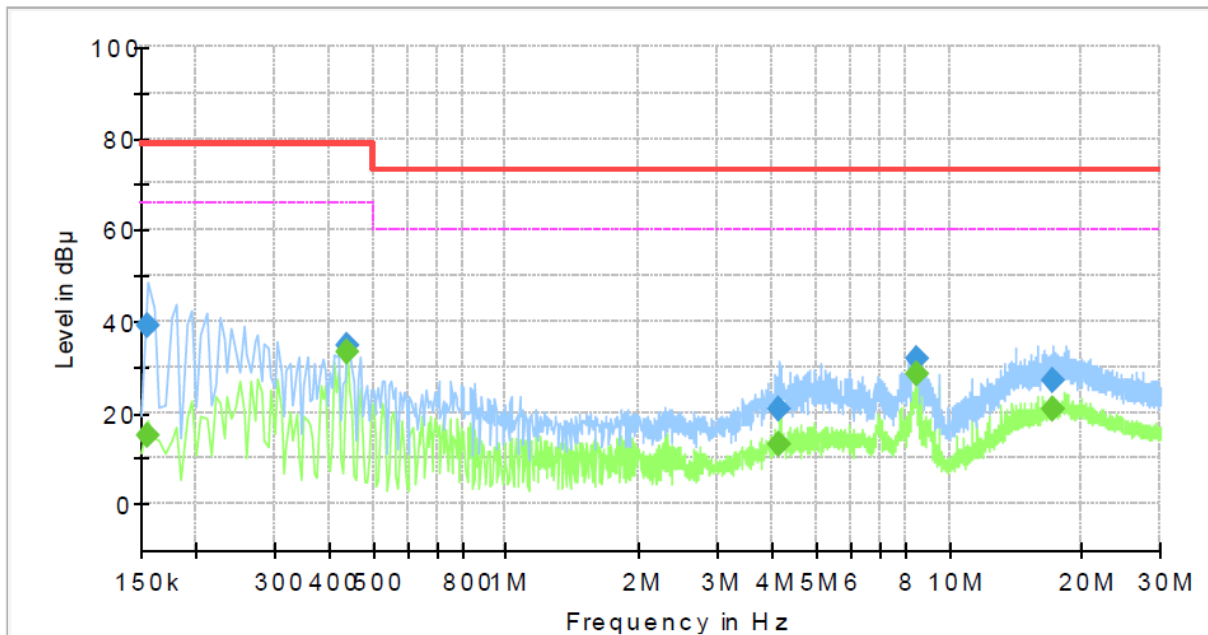
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## NEUTRAL LINE

### Common Information

|                   |                    |
|-------------------|--------------------|
| Test Description: | Conducted Emission |
| Model No.:        | XND-9083RV         |
| Phase:            | N                  |
| Mode:             | PoE                |
| 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        | ---              | 14.97           | 66.00        | 51.03       | 1000.0          | 9.000           | N    | 19.4       |
| 0.155000        | 39.14            | ---             | 79.00        | 39.86       | 1000.0          | 9.000           | N    | 19.4       |
| 0.440000        | ---              | 33.29           | 66.00        | 32.71       | 1000.0          | 9.000           | N    | 19.6       |
| 0.440000        | 34.64            | ---             | 79.00        | 44.36       | 1000.0          | 9.000           | N    | 19.6       |
| 4.150000        | ---              | 13.27           | 60.00        | 46.73       | 1000.0          | 9.000           | N    | 19.8       |
| 4.150000        | 20.98            | ---             | 73.00        | 52.02       | 1000.0          | 9.000           | N    | 19.8       |
| 8.495000        | ---              | 28.29           | 60.00        | 31.71       | 1000.0          | 9.000           | N    | 19.7       |
| 8.495000        | 31.82            | ---             | 73.00        | 41.18       | 1000.0          | 9.000           | N    | 19.7       |
| 17.160000       | ---              | 20.70           | 60.00        | 39.30       | 1000.0          | 9.000           | N    | 19.9       |
| 17.160000       | 26.77            | ---             | 73.00        | 46.23       | 1000.0          | 9.000           | N    | 19.9       |

#### ◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

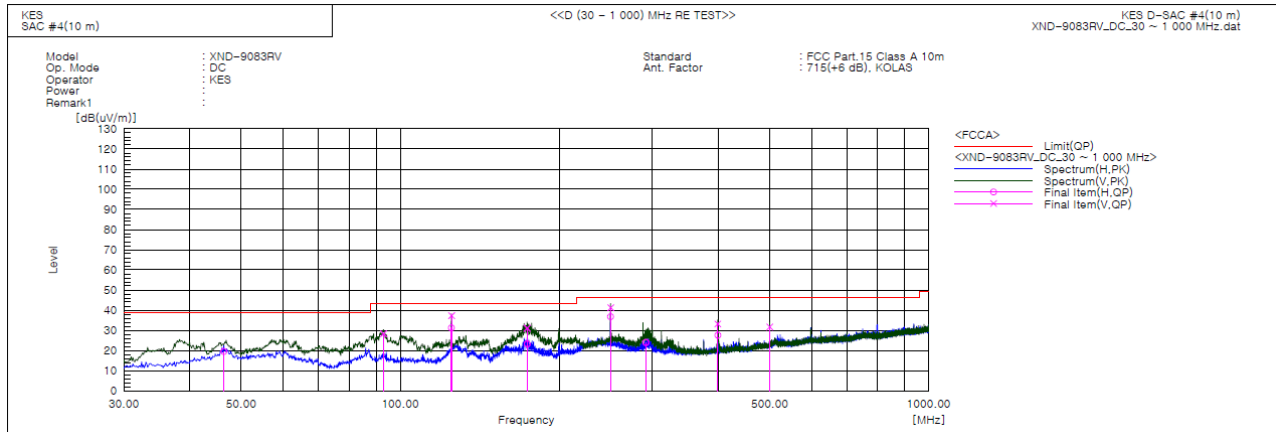
Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))



## Radiated Electric Field Emissions(Below 1 GHz)

- 47 CFR Part 15, Subpart B

■ DC Mode



### Final Result

| No. | Frequency [MHz] | (P) | Reading QP [dB(uV)] | c.f [dB(1/m)] | Result QP [dB(uV/m)] | Limit QP [dB(uV/m)] | Margin QP [dB] | Height [cm] | Angle [deg] | Remark |
|-----|-----------------|-----|---------------------|---------------|----------------------|---------------------|----------------|-------------|-------------|--------|
| 1   | 46.369          | H   | 40.8                | -21.3         | 19.5                 | 39.0                | 19.5           | 400.0       | 28.0        |        |
| 2   | 92.929          | V   | 52.1                | -23.8         | 28.3                 | 43.5                | 15.2           | 100.0       | 296.0       |        |
| 3   | 124.939         | H   | 56.1                | -24.8         | 31.3                 | 43.5                | 12.2           | 336.0       | 321.0       |        |
| 4   | 125.071         | V   | 62.1                | -24.8         | 37.3                 | 43.5                | 6.2            | 112.0       | 303.0       |        |
| 5   | 173.803         | V   | 55.0                | -23.9         | 31.1                 | 43.5                | 12.4           | 100.0       | 13.0        |        |
| 6   | 173.924         | H   | 47.1                | -23.8         | 23.3                 | 43.5                | 20.2           | 364.0       | 120.0       |        |
| 7   | 249.948         | H   | 55.9                | -19.1         | 36.8                 | 46.5                | 9.7            | 400.0       | 66.0        |        |
| 8   | 250.108         | V   | 60.4                | -19.1         | 41.3                 | 46.5                | 5.2            | 109.0       | 353.0       |        |
| 9   | 291.536         | H   | 42.2                | -18.2         | 24.0                 | 46.5                | 22.5           | 314.0       | 128.0       |        |
| 10  | 398.721         | V   | 47.5                | -14.3         | 33.2                 | 46.5                | 13.3           | 100.0       | 220.0       |        |
| 11  | 398.964         | H   | 41.9                | -14.3         | 27.6                 | 46.5                | 18.9           | 332.0       | 257.0       |        |
| 12  | 499.965         | V   | 43.3                | -11.6         | 31.7                 | 46.5                | 14.8           | 117.0       | 209.0       |        |

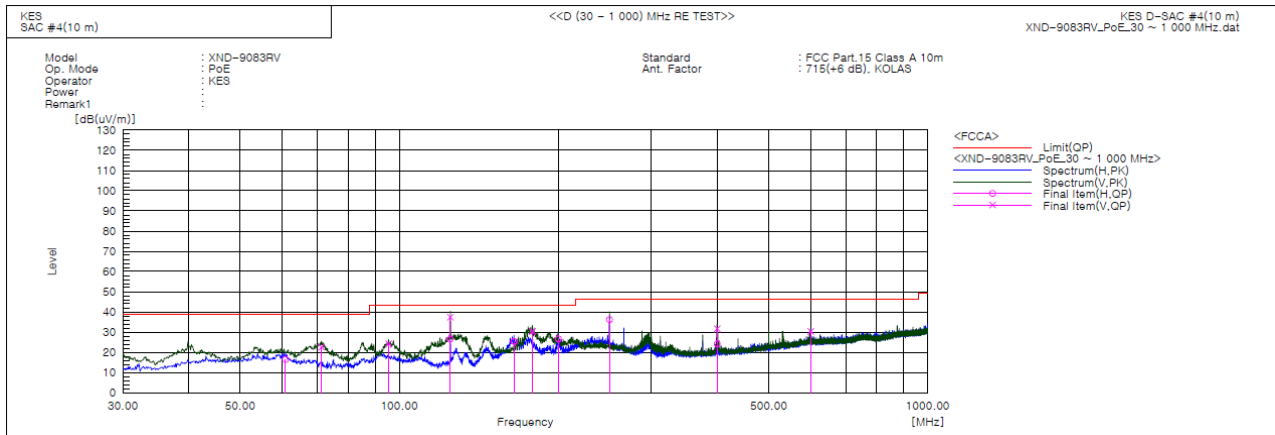


## KES Co., Ltd.

3701, 40, Simin-daero 365beon-gil,  
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea  
Tel: +82-31-425-6200 / Fax: +82-31-424-0450  
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### ■ PoE Mode



### 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   | 60.919             | H   | 38.7                      | -22.2            | 16.5                       | 39.0                      | 22.5                 | 369.0          | 176.0          |        |
| 2   | 71.225             | V   | 47.9                      | -25.4            | 22.5                       | 39.0                      | 16.5                 | 145.0          | 280.0          |        |
| 3   | 95.475             | V   | 47.7                      | -23.4            | 24.3                       | 43.5                      | 19.2                 | 100.0          | 288.0          |        |
| 4   | 124.896            | H   | 51.4                      | -24.8            | 26.6                       | 43.5                      | 16.9                 | 377.0          | 188.0          |        |
| 5   | 124.939            | V   | 62.2                      | -24.8            | 37.4                       | 43.5                      | 6.1                  | 100.0          | 96.0           |        |
| 6   | 164.951            | H   | 49.7                      | -24.3            | 25.4                       | 43.5                      | 18.1                 | 339.0          | 116.0          |        |
| 7   | 178.531            | V   | 53.8                      | -23.5            | 30.3                       | 43.5                      | 13.2                 | 108.0          | 358.0          |        |
| 8   | 200.114            | H   | 47.4                      | -20.7            | 26.7                       | 43.5                      | 16.8                 | 400.0          | 124.0          |        |
| 9   | 249.948            | H   | 55.3                      | -19.1            | 36.2                       | 46.5                      | 10.3                 | 338.0          | 29.0           |        |
| 10  | 399.449            | V   | 46.0                      | -14.3            | 31.7                       | 46.5                      | 14.8                 | 133.0          | 175.0          |        |
| 11  | 399.691            | H   | 38.5                      | -14.3            | 24.2                       | 46.5                      | 22.3                 | 400.0          | 207.0          |        |
| 12  | 600.239            | V   | 38.8                      | -8.5             | 30.3                       | 46.5                      | 16.2                 | 132.0          | 228.0          |        |

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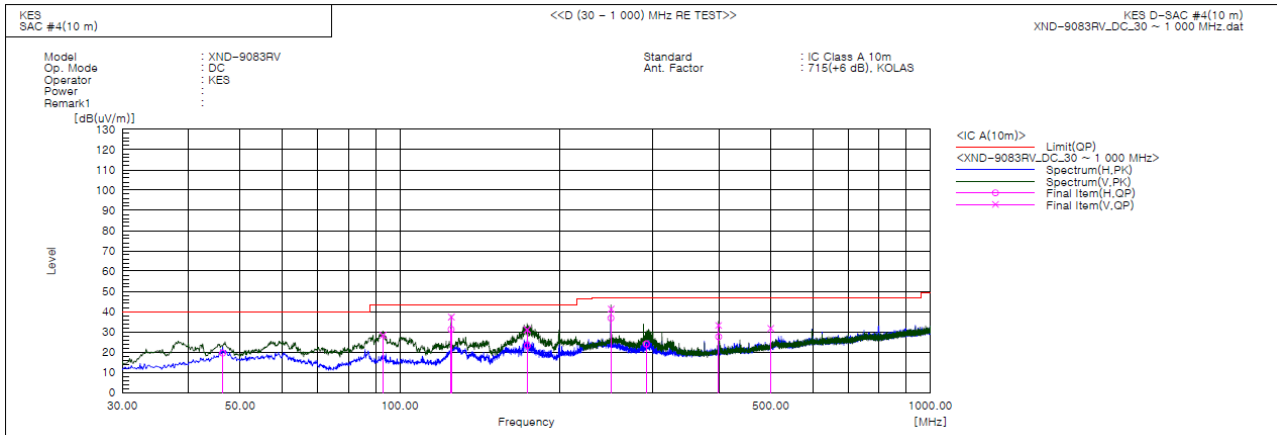
Report No.:

KES-EM-21T0511

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### - IC Regulation ICES-003 Issue 7

#### ■ DC Mode



#### Final Result

| No. | Frequency [MHz] | (P) | Reading QP [dB(uV)] | c.f [dB(1/m)] | Result QP [dB(uV/m)] | Limit QP [dB(uV/m)] | Margin QP [dB] | Height [cm] | Angle [deg] | Remark |
|-----|-----------------|-----|---------------------|---------------|----------------------|---------------------|----------------|-------------|-------------|--------|
| 1   | 46.369          | H   | 40.8                | -21.3         | 19.5                 | 40.0                | 20.5           | 400.0       | 28.0        |        |
| 2   | 92.929          | V   | 52.1                | -23.8         | 28.3                 | 43.5                | 15.2           | 100.0       | 296.0       |        |
| 3   | 124.939         | H   | 56.1                | -24.8         | 31.3                 | 43.5                | 12.2           | 336.0       | 321.0       |        |
| 4   | 125.071         | V   | 62.1                | -24.8         | 37.3                 | 43.5                | 6.2            | 112.0       | 303.0       |        |
| 5   | 173.803         | V   | 55.0                | -23.9         | 31.1                 | 43.5                | 12.4           | 100.0       | 13.0        |        |
| 6   | 173.924         | H   | 47.1                | -23.8         | 23.3                 | 43.5                | 20.2           | 364.0       | 120.0       |        |
| 7   | 249.948         | H   | 55.9                | -19.1         | 36.8                 | 47.0                | 10.2           | 400.0       | 66.0        |        |
| 8   | 250.108         | V   | 60.4                | -19.1         | 41.3                 | 47.0                | 5.7            | 109.0       | 353.0       |        |
| 9   | 291.536         | H   | 42.2                | -18.2         | 24.0                 | 47.0                | 23.0           | 314.0       | 128.0       |        |
| 10  | 398.721         | V   | 47.5                | -14.3         | 33.2                 | 47.0                | 13.8           | 100.0       | 220.0       |        |
| 11  | 398.964         | H   | 41.9                | -14.3         | 27.6                 | 47.0                | 19.4           | 332.0       | 257.0       |        |
| 12  | 499.965         | V   | 43.3                | -11.6         | 31.7                 | 47.0                | 15.3           | 117.0       | 209.0       |        |

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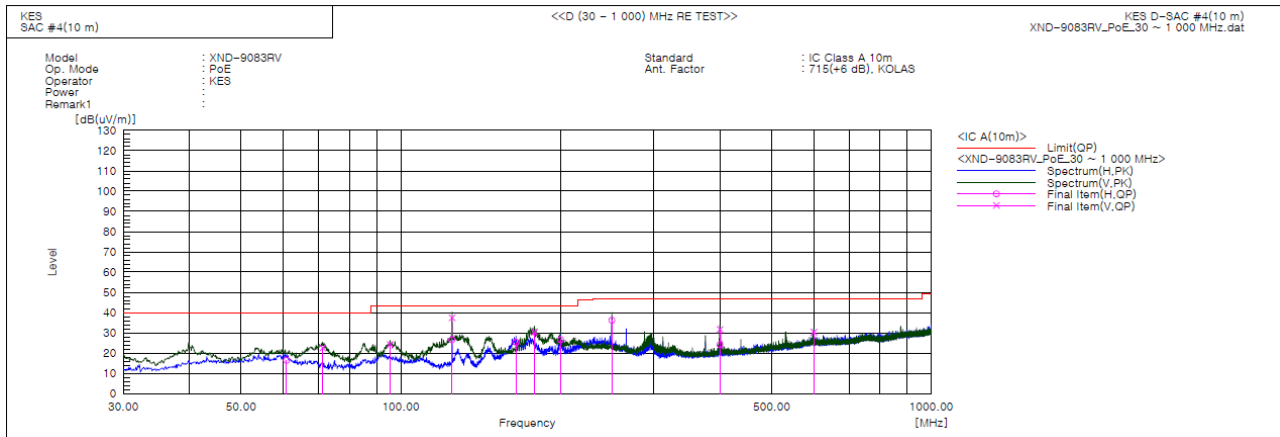
3701, 40, Simin-daero 365beon-gil,  
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea  
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### PoE Mode



### Final Result

| No. | Frequency [MHz] | (P) | Reading QP [dB(uV)] | c.f [dB(1/m)] | Result QP [dB(uV/m)] | Limit QP [dB(uV/m)] | Margin QP [dB] | Height [cm] | Angle [deg] | Remark |
|-----|-----------------|-----|---------------------|---------------|----------------------|---------------------|----------------|-------------|-------------|--------|
| 1   | 60.919          | H   | 38.7                | -22.2         | 16.5                 | 40.0                | 23.5           | 369.0       | 176.0       |        |
| 2   | 71.225          | V   | 47.9                | -25.4         | 22.5                 | 40.0                | 17.5           | 145.0       | 280.0       |        |
| 3   | 95.475          | V   | 47.7                | -23.4         | 24.3                 | 43.5                | 19.2           | 100.0       | 288.0       |        |
| 4   | 124.896         | H   | 51.4                | -24.8         | 26.6                 | 43.5                | 16.9           | 377.0       | 188.0       |        |
| 5   | 124.939         | V   | 62.2                | -24.8         | 37.4                 | 43.5                | 6.1            | 100.0       | 96.0        |        |
| 6   | 164.951         | H   | 49.7                | -24.3         | 25.4                 | 43.5                | 18.1           | 339.0       | 116.0       |        |
| 7   | 178.531         | V   | 53.8                | -23.5         | 30.3                 | 43.5                | 13.2           | 108.0       | 358.0       |        |
| 8   | 200.114         | H   | 47.4                | -20.7         | 26.7                 | 43.5                | 16.8           | 400.0       | 124.0       |        |
| 9   | 249.948         | H   | 55.3                | -19.1         | 36.2                 | 47.0                | 10.8           | 338.0       | 29.0        |        |
| 10  | 399.449         | V   | 46.0                | -14.3         | 31.7                 | 47.0                | 15.3           | 133.0       | 175.0       |        |
| 11  | 399.691         | H   | 38.5                | -14.3         | 24.2                 | 47.0                | 22.8           | 400.0       | 207.0       |        |
| 12  | 600.239         | V   | 38.8                | -8.5          | 30.3                 | 47.0                | 16.7           | 132.0       | 228.0       |        |

### ◆ Calculation – SAC #4(10 m)

Result(QP) [dB( $\mu$ V/m)] = (Reading(QP)[dB( $\mu$ V)] + c.f[dB(1/m)])

Margin(QP)[dB] = Limit[dB( $\mu$ V/m)] - Result(QP) [dB( $\mu$ 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

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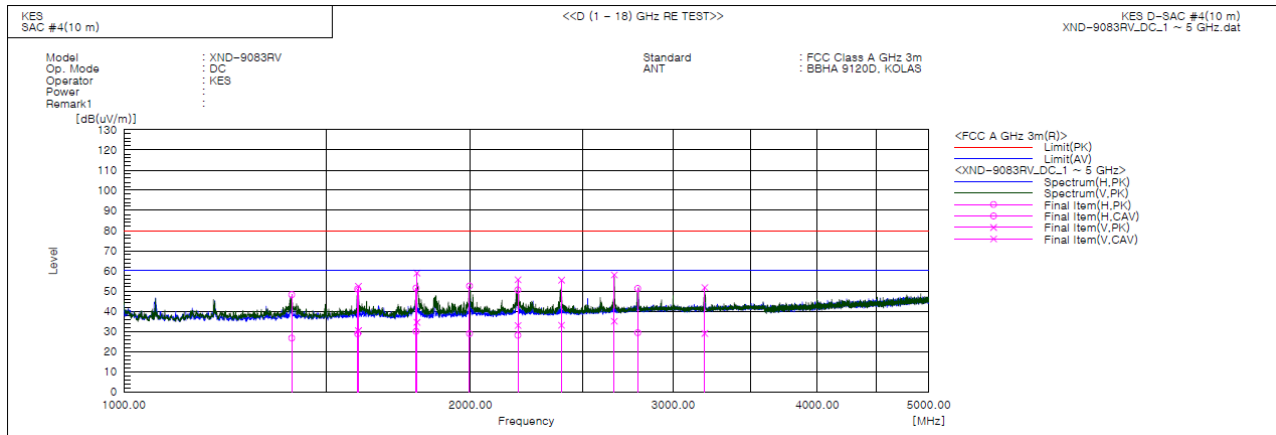
Report No.:

KES-EM-21T0511

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## Radiated Electric Field Emissions(Above 1 GHz)

### 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   | 1398.780        | H   | 51.2                | 29.7                 | -3.0          | 48.2                 | 26.7                  | 80.0                | 60.0                | 31.8           | 33.3            | 317.0       | 65.0        |        |
| 2   | 1595.440        | H   | 53.0                | 30.8                 | -2.0          | 51.0                 | 28.8                  | 80.0                | 60.0                | 29.0           | 31.2            | 358.0       | 355.0       |        |
| 3   | 1598.215        | V   | 54.4                | 32.3                 | -2.0          | 52.4                 | 30.3                  | 80.0                | 60.0                | 27.6           | 29.7            | 146.0       | 4.0         |        |
| 4   | 1793.665        | H   | 52.7                | 31.2                 | -1.2          | 51.5                 | 30.0                  | 80.0                | 60.0                | 28.5           | 30.0            | 348.0       | 327.0       |        |
| 5   | 1796.710        | V   | 60.0                | 35.6                 | -1.1          | 58.9                 | 34.5                  | 80.0                | 60.0                | 21.1           | 25.5            | 144.0       | 294.0       |        |
| 6   | 1996.045        | H   | 52.7                | 29.1                 | -0.2          | 52.5                 | 28.9                  | 80.0                | 60.0                | 27.5           | 31.1            | 368.0       | 336.0       |        |
| 7   | 2198.710        | H   | 49.9                | 27.3                 | 0.7           | 50.6                 | 28.0                  | 80.0                | 60.0                | 29.4           | 32.0            | 400.0       | 355.0       |        |
| 8   | 2199.090        | V   | 54.9                | 32.2                 | 0.7           | 55.6                 | 32.9                  | 80.0                | 60.0                | 24.4           | 27.1            | 174.0       | 343.0       |        |
| 9   | 2398.560        | V   | 53.6                | 31.2                 | 1.8           | 55.4                 | 33.0                  | 80.0                | 60.0                | 24.6           | 27.0            | 100.0       | 287.0       |        |
| 10  | 2666.005        | V   | 55.0                | 32.0                 | 3.0           | 58.0                 | 35.0                  | 80.0                | 60.0                | 22.0           | 25.0            | 138.0       | 160.0       |        |
| 11  | 2793.480        | H   | 47.7                | 25.7                 | 3.6           | 51.3                 | 29.3                  | 80.0                | 60.0                | 28.7           | 30.7            | 339.0       | 359.0       |        |
| 12  | 3194.000        | V   | 46.8                | 24.0                 | 5.0           | 51.8                 | 29.0                  | 80.0                | 60.0                | 28.2           | 31.0            | 100.0       | 32.0        |        |

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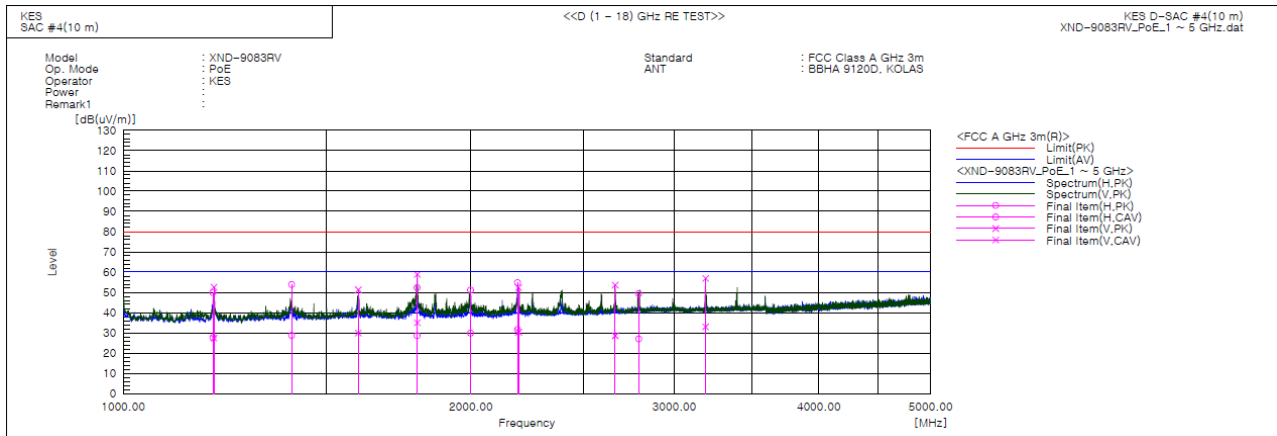
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Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea  
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KES-EM-21T0511

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### 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   | 1195.790        | H   | 54.1                | 31.9                 | -4.2          | 49.9                 | 27.7                  | 80.0                | 60.0                | 30.1           | 32.3            | 367.0       | 253.0       |        |
| 2   | 1197.855        | V   | 56.8                | 31.6                 | -4.2          | 52.6                 | 27.4                  | 80.0                | 60.0                | 27.4           | 32.6            | 100.0       | 3.0         |        |
| 3   | 1398.990        | H   | 56.9                | 31.8                 | -3.0          | 53.9                 | 28.8                  | 80.0                | 60.0                | 26.1           | 31.2            | 335.0       | 35.0        |        |
| 4   | 1597.540        | V   | 53.3                | 31.9                 | -2.0          | 51.3                 | 29.9                  | 80.0                | 60.0                | 28.7           | 30.1            | 173.0       | 331.0       |        |
| 5   | 1796.415        | H   | 53.4                | 29.7                 | -1.1          | 52.3                 | 28.6                  | 80.0                | 60.0                | 27.7           | 31.4            | 400.0       | 304.0       |        |
| 6   | 1797.045        | V   | 60.0                | 36.1                 | -1.1          | 58.9                 | 35.0                  | 80.0                | 60.0                | 21.1           | 25.0            | 132.0       | 295.0       |        |
| 7   | 1998.035        | H   | 51.3                | 30.1                 | -0.2          | 51.1                 | 29.9                  | 80.0                | 60.0                | 28.9           | 30.1            | 313.0       | 244.0       |        |
| 8   | 2194.570        | H   | 54.1                | 30.9                 | 0.7           | 54.8                 | 31.6                  | 80.0                | 60.0                | 25.2           | 28.4            | 341.0       | 177.0       |        |
| 9   | 2199.350        | V   | 51.7                | 29.6                 | 0.7           | 52.4                 | 30.3                  | 80.0                | 60.0                | 27.6           | 29.7            | 166.0       | 295.0       |        |
| 10  | 2666.075        | V   | 50.6                | 25.6                 | 3.0           | 53.6                 | 28.6                  | 80.0                | 60.0                | 26.4           | 31.4            | 173.0       | 109.0       |        |
| 11  | 2794.085        | H   | 45.8                | 23.4                 | 3.6           | 49.4                 | 27.0                  | 80.0                | 60.0                | 30.6           | 33.0            | 348.0       | 22.0        |        |
| 12  | 3191.500        | V   | 51.9                | 28.0                 | 5.0           | 56.9                 | 33.0                  | 80.0                | 60.0                | 23.1           | 27.0            | 156.0       | 109.0       |        |

### 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



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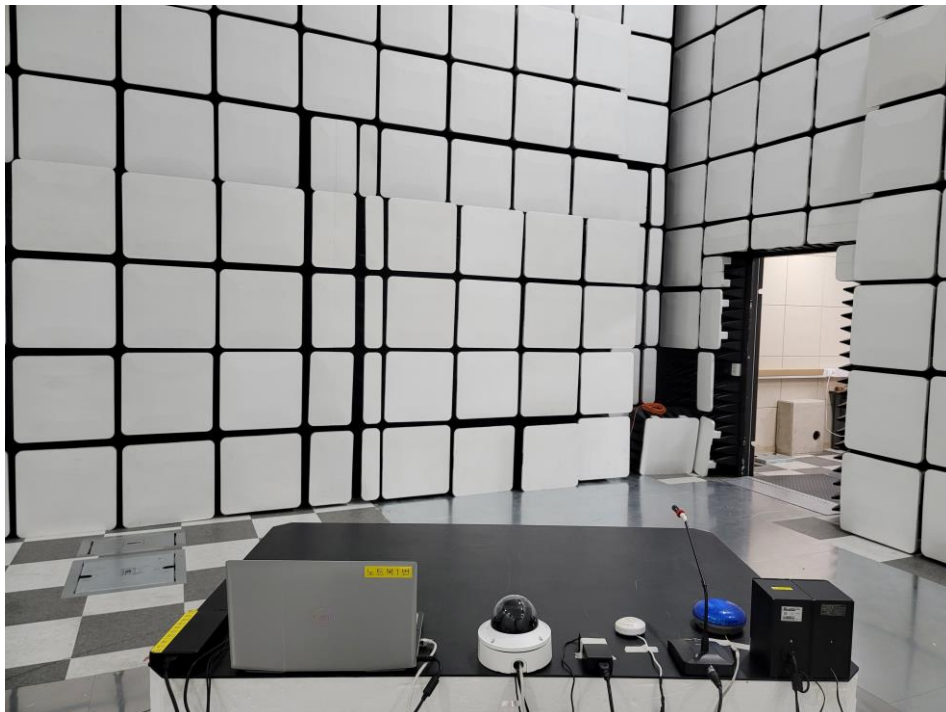
■ PoE Mode



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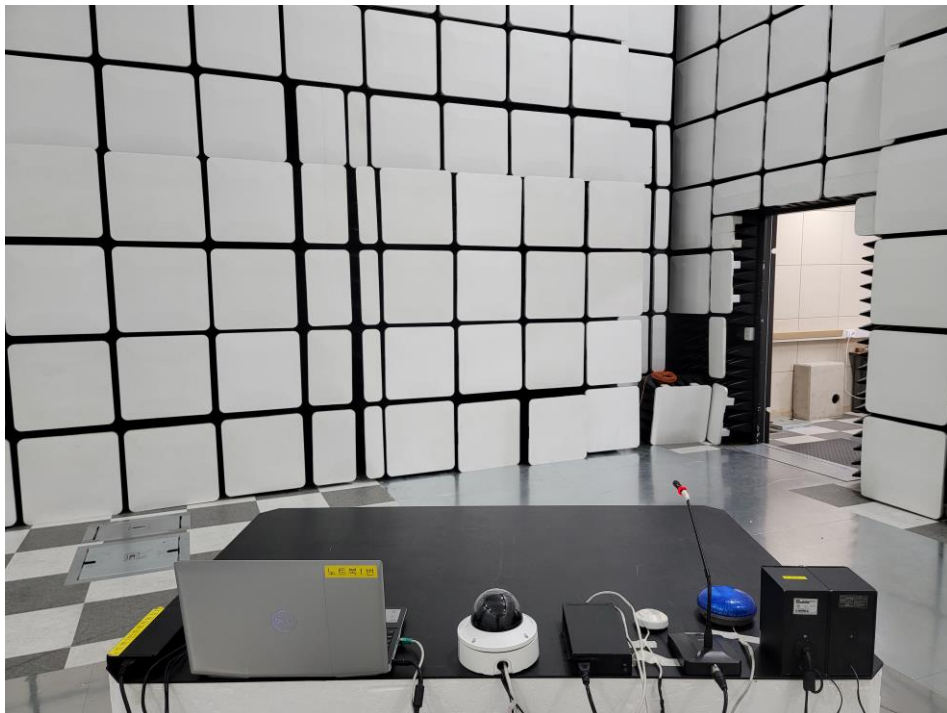
## Radiated Electric Field Emissions(Below 1 GHz)

### ■ DC Mode



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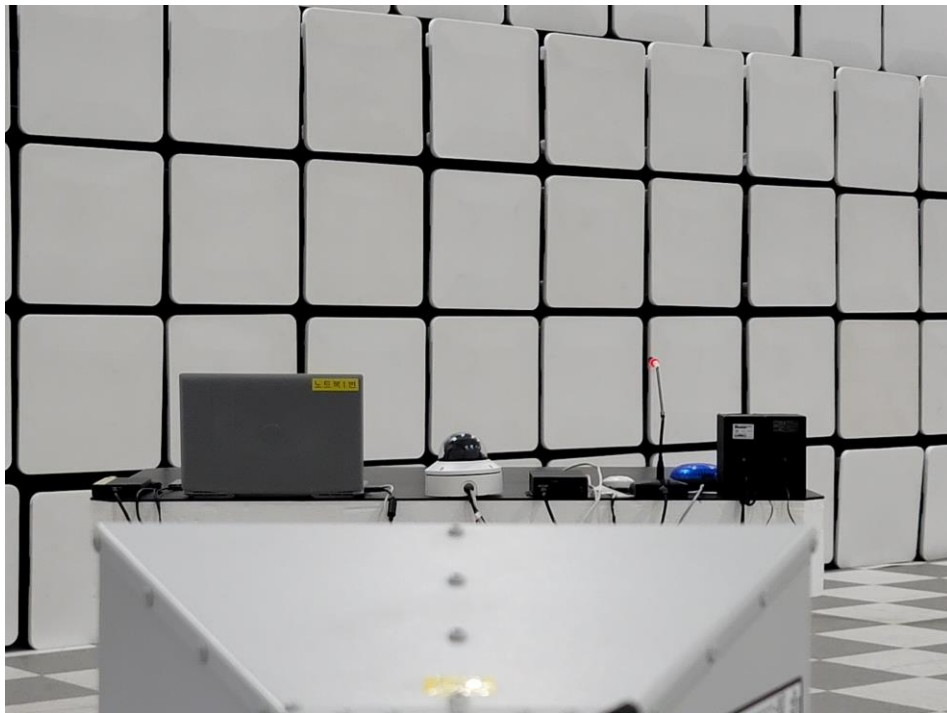
## Radiated Electric Field Emissions(Above 1 GHz)

### ■ DC Mode



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■ PoE Mode



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## EUT External Photographs

(Top)



(Bottom)



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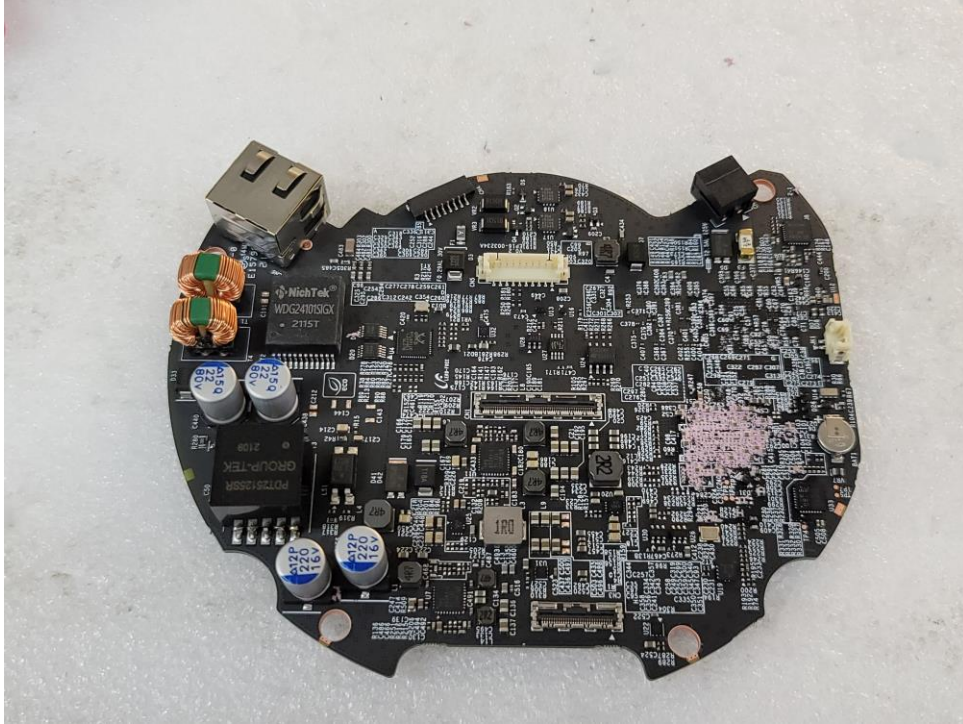
## EUT Internal Photographs

(Internal View)

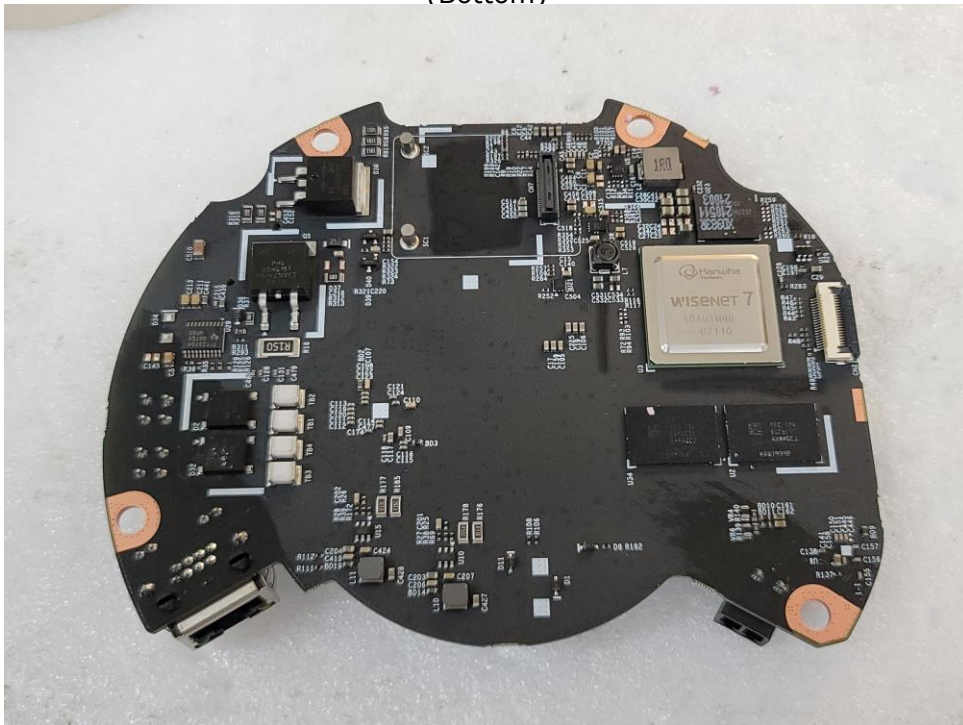


## EUT Internal View – Main Board

(Top)



(Bottom)



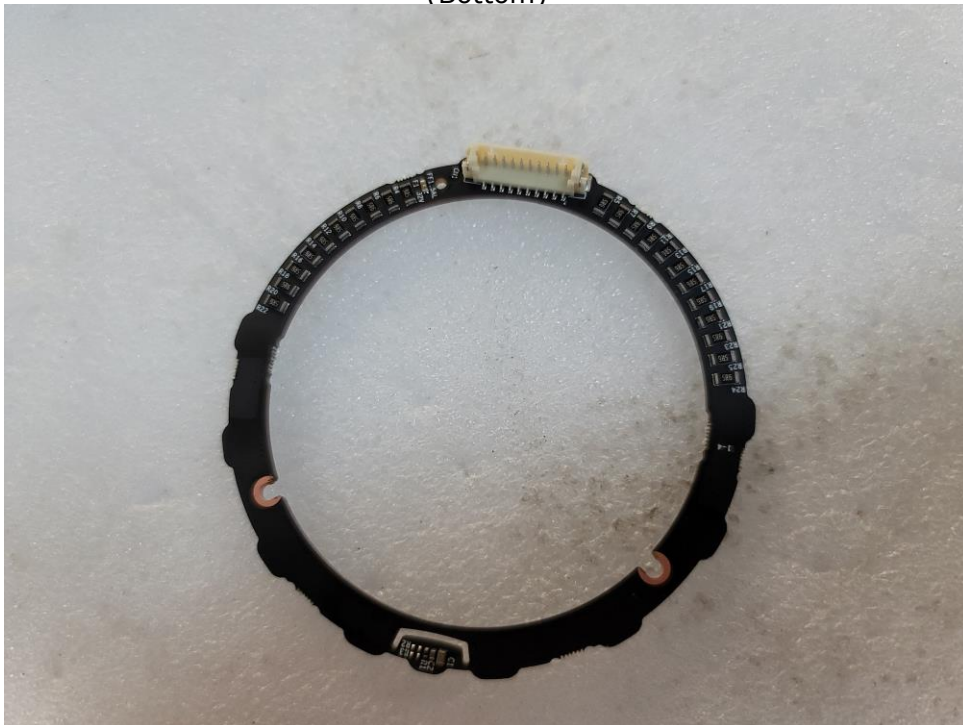
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## EUT Internal View – IR LED Board

(Top)



(Bottom)



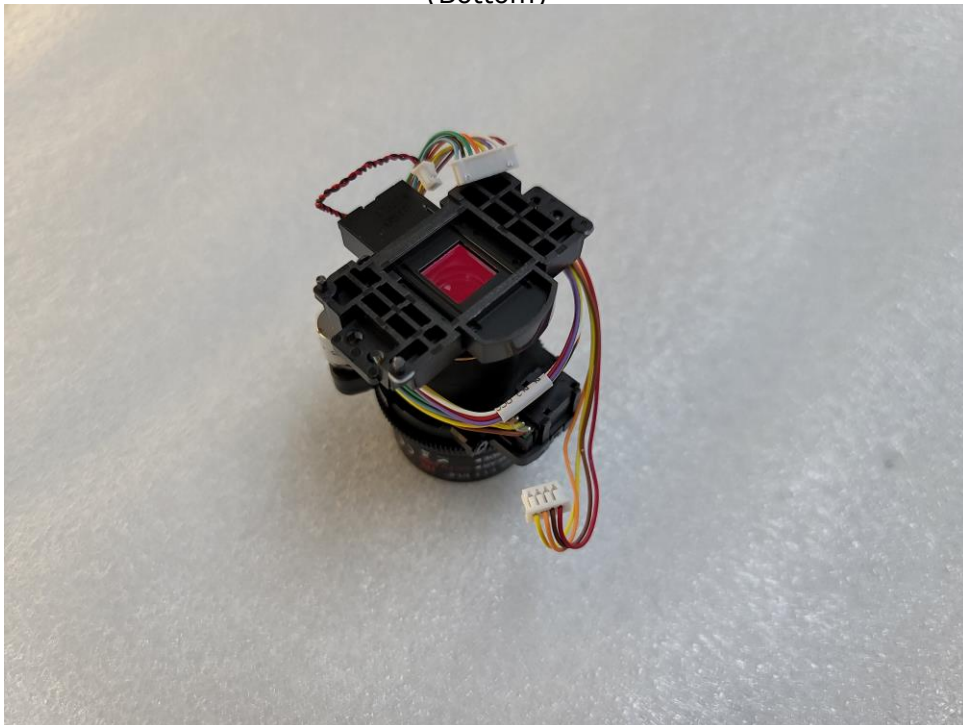
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## EUT Internal View – Lens

(Top)



(Bottom)



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## EUT Internal View – Module Board

(Top)



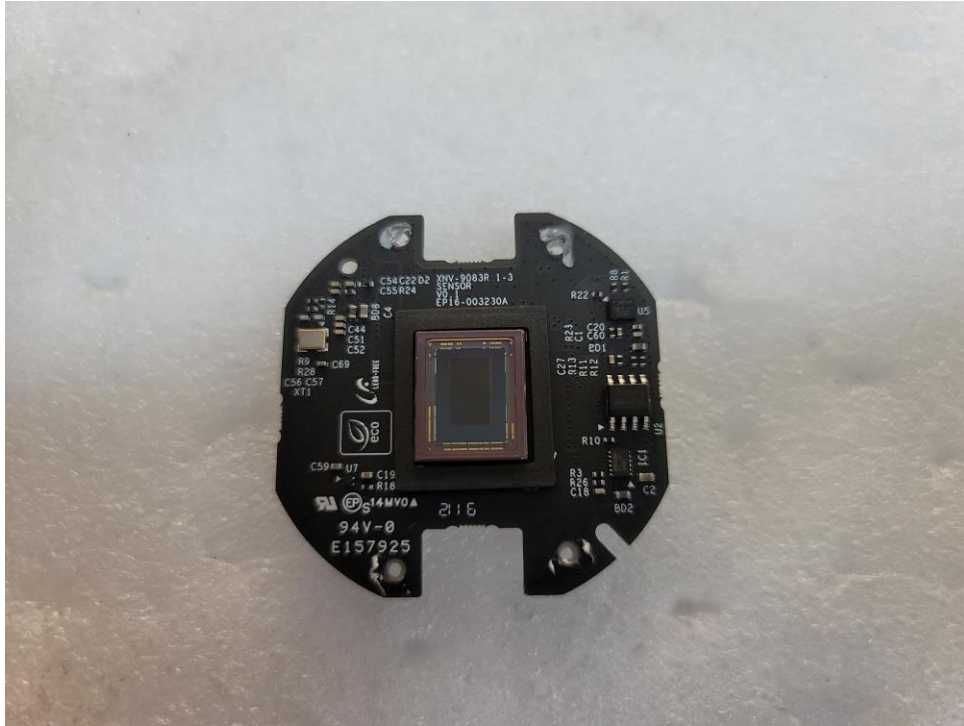
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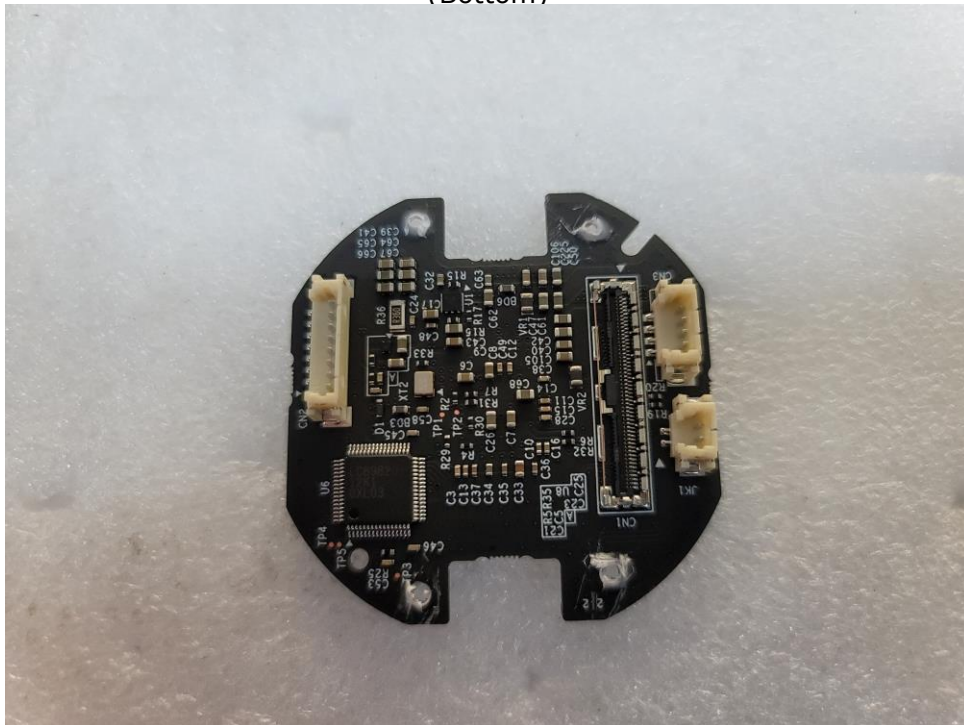
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## EUT Internal View – SENSOR Board

(Top)



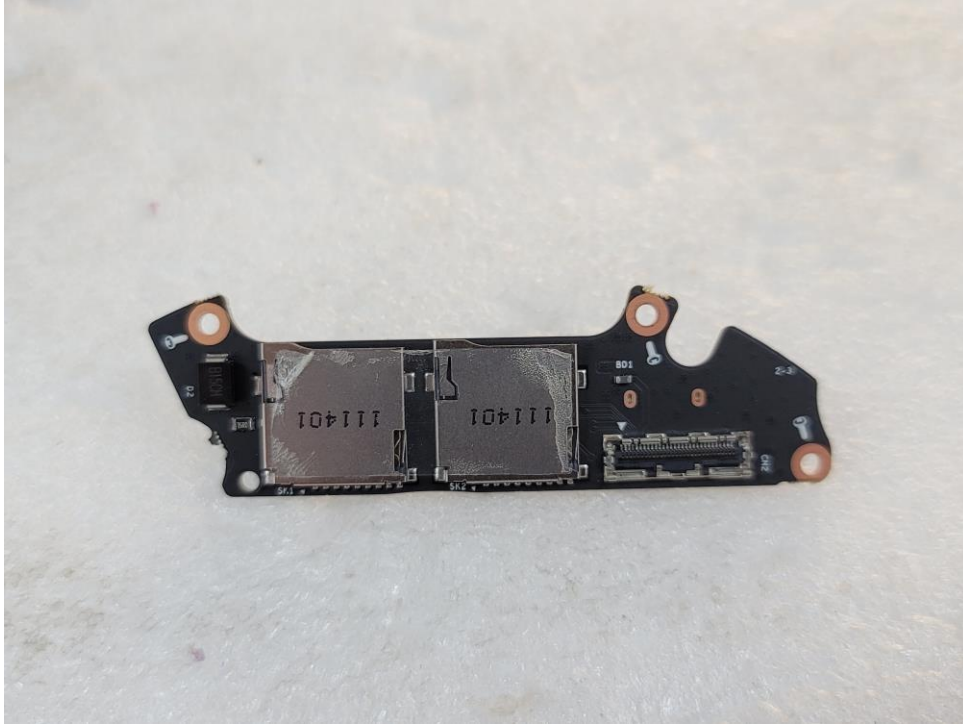
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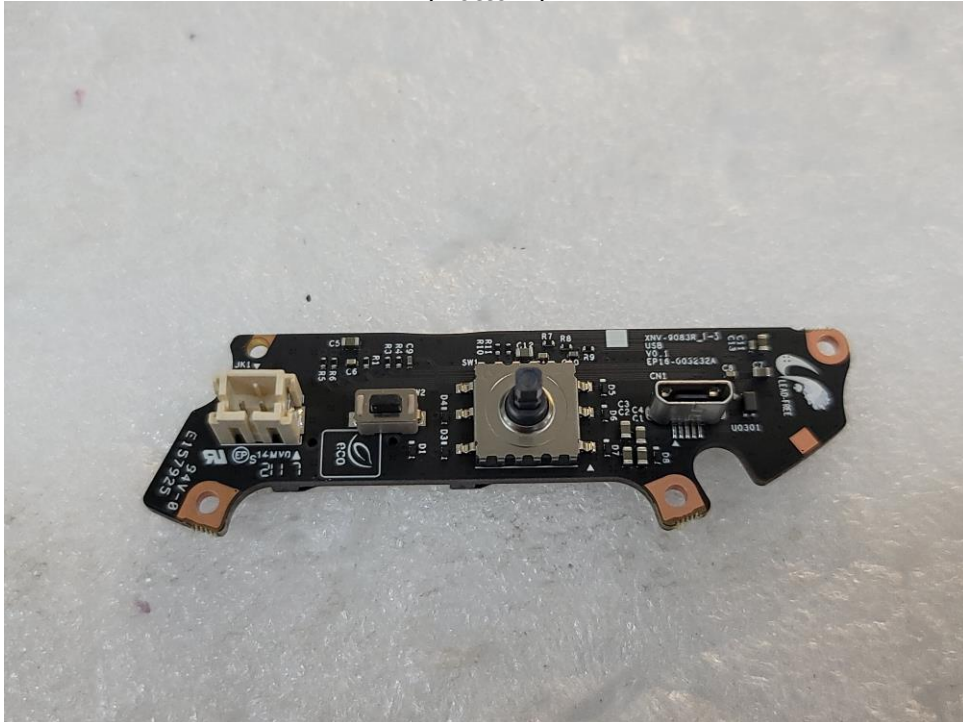
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## EUT Internal View – USB Board

(Top)



(Bottom)



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## Label Photographs



CAN ICES-3(A) / NMB-3(A)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

This device complies with Industry Canada license-exempt RSS standard(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.