



KES Co., Ltd.

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Report No.:
KES-EM-20T0365
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EMC TEST REPORT

Test Report No. : KES-EM-20T0365
Date of Issue : Jun. 18, 2020
Product name : NETWORK CAMERA
Model/Type No. : XNP-6400RW
Variant Mode : -
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. 05, 2020
Test date : Jun. 12, 2020
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.

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REPORT REVISION HISTORY

| Date | Test Report No. | Revision History |
|---------------|-----------------|------------------|
| Jun. 18, 2020 | KES-EM-20T0365 | Issued |
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1.0 General Product Description

Main Specifications of EUT are:

| | |
|-----------------------------|---|
| Video | |
| Imaging Device | 1/2.8" 2MP CMOS |
| Effective Pixels | 1944(H)x1212(V) |
| Min. Illumination | Color: 0.05Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On) |
| Video Out | None |
| Lens | |
| Focal Length (Zoom Ratio) | 4.25~170mm(40x) zoom |
| Max. Aperture Ratio | F1.6(Wide)~F4.95(Tele) |
| Angular Field of View | H: 65.66°(Wide)~1.88°(Tele) / V: 39.40°(Wide)~1.09°(Tele) |
| Min. Object Distance | Wide: 1.5m(4.92ft), Tele: 3m(9.84ft) |
| Focus Control | Oneshot AF, Focus save |
| Lens Type | DC auto iris |
| Pan / Tilt / Rotate | |
| Pan Range | 360° Endless |
| Pan Speed | Max. 500°/sec, Manual: 0.024°/sec~250°/sec |
| Tilt Range | 110°(-20°~90°) |
| Tilt Speed | Max. 350°/sec, Manual: 0.024°/sec~250°/sec |
| Sequence | Preset(300ea), Swing, Group(6ea), Trace, Tour, Auto Run, Schedule, Preset trace recording |
| Preset Accuracy | ±0.1° |
| Azimuth | Support |
| Auto Tracking | Object auto tracking(Person/Vehicle) |
| Operational | |
| IR Viewable Length | 300m(984.25ft) |
| Camera Title | Displayed up to 85 characters, Direction Indicator |
| Day & Night | Auto(ICR)/Color/BW/Schedule |
| Backlight Compensation | BLC, HLC, WDR |
| Wide Dynamic Range | 150 dB |
| Digital Noise Reduction | SSNRV |
| Digital Image Stabilization | Support(built-in gyro sensor) |
| Defog | Support |
| Motion Detection | 8ea, 8point polygonal zones |
| Privacy Masking | 32ea, rectangular Support - Color: Grey/Green/Red/Blue/Black/White - Mosaic |
| Gain Control | Low / Middle / High |
| White Balance | ATW / AWC / Manual / Indoor / Outdoor |
| LDC | None |
| Electronic Shutter Speed | Minimum / Maximum / Anti flicker (2~1/12,000sec) |
| Video Rotation | Flip, Mirror |
| Analytics | Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Shock detection * Audio detection, Sound classification(with NW I/O Box) |
| Business Intelligence | None |
| Serial Interface | None |
| Alarm I/O | None |
| Alarm Triggers | Analytics, Network disconnect * Alarm input(with NW I/O Box) |
| Alarm Events | File upload via FTP and e-mail Notification via e-mail SD/SDHC/SDXC or NAS recording at event triggers PTZ Preset * Alarm output(with NW I/O Box) |
| Audio In | None |
| Audio Out | None |
| Wiper | Support |

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| | |
|--|--|
| Network | |
| Ethernet | RJ-45(10/100BASE-T) |
| Video Compression | H.265/H.264,MJPEG |
| Resolution | 1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240 |
| Max. Framerate | H.265/H.264: Max. 60fps/50fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz) |
| Smart Codec | Manual(5ea area), WiseStreamII |
| Video Quality Adjustment | H.264/H.265: Target bitrate level control MJPEG: Target bitrate level control |
| Bitrate Control | H.264/H.265: CBR or VBR MJPEG: VBR |
| Streaming | Unicast(20 users) / Multicast (128 user) Multiple streaming(Up to 10 profiles) |
| Audio Compression | None |
| 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,LLDP, SRTP |
| Security | HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access log 802.1X Authentication(EAP-TLS, EAP-LEAP) Device certificate(Hanwha Techwin Root CA) |
| Edge Storage | Micro SD/SDHC/SDXC 2slot 1TB |
| Application Programming Interface | ONVIF Profile S/G/T SUNAPI(HTTP API) 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 Recommended Browser: Google Chrome Supported Browser: MS Explore11, MS Edge, Mozilla Firefox(Window 64bit only), Apple Safari(Mac OS X only) |
| Memory | 4GB RAM, 512MB Flash |
| Environmental | |
| Operating Temperature / Humidity (TBD) | -40°C~+60°C (-40°F ~ +140°F) / Less than 95% RH(Non-condensing) Maximum Temperature : +60°C(+140°F), □ □ □ within 8 hours Absolute maximum(According to NEMA TS2, 2.2.7):+74°C → TBD |
| Storage Temperature / Humidity | -50°C~+60°C (-58°F~+140°F) / Less than 95% RH(Non-condensing) |
| Certification | IP66, IK10(Camera body only→TBD), NEMA4X |
| Electrical | |
| Input Voltage(TBD) | HPoE(IEEE802.3bt, Class7, Type4). TBD(Power Class) |
| Power Consumption(TBD) | Typ.20W, Max.35W Camera only |
| Mechanical | |
| Color / Material | White, Black / Aluminum + Polycarbonate + ASA (Sun shield) + Tempered glass (Window) |
| RAL Code | White : RAL 9003 / Black : RAL 9005 |
| Product dimensions / weight | ∅184.9 x 318.8mm / 5.4Kg |
| Conduit hole | None |
| Hanging mount(Dome) | None |
| Skin cover(Dome) | None |
| Weather cap(Dome) | None |
| Power module | None |
| Backbox | None |

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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.

Voltage 230 Vac 120 Vac 24 Vac 12 Vdc PoE

Frequency 50 Hz 60 Hz Hz

1.2 Variant Model Differences

Not applicable

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

| Description | Model Number | Serial Number | Manufacturer | Remarks |
|--------------------|--------------------|---------------|--|---------|
| NETWORK CAMERA | XNP-6400RW | - | HANWHA TECHWIN SECURITY VIETNAM CO.,LTD. | EUT |
| Fiber PoE Injector | PT-PSE109GBRO-AH-S | - | Dongguan PROCET Network Technology Co.,Ltd | EUT |

1.5 Support Equipments

| Description | Model Number | Serial Number | Manufacturer | Remarks |
|--------------------|--------------|---------------|---|---------|
| Notebook 1 | P95G001 | 8KM8HT2 | Wistron Infocom (Chengdu) Company Limited | - |
| Notebook 1 Adapter | LA65NS2-01 | - | LITE-ON TECHNOLOGY (CHANGZHOU)CO.,LTD. | - |
| Micro SD Card | - | - | SanDisk | 8 GB |
| PoE Switch | GS728TPP | - | NETGEAR | - |
| Notebook 2 | LG15N54 | 410NZGK015231 | LG Electronics Co., Ltd. | - |
| Notebook 2 Adapter | ADP-90WH B | 84ZW19F1663 | DELTA ELECTRONICS (JIANGSU) LTD. | - |

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1.6 External I/O Cabling

| Start | | END | | Cable Spec. | |
|--------------------------|----------|--------------------------|----------|-------------|--------|
| Description | I/O Port | Description | I/O Port | Length | Shield |
| NETWORK CAMERA (EUT) | RJ-45 | Fiber PoE Injector (EUT) | PoE | 1.0 | S |
| | SLOT | Micro SD Card | SLOT | - | - |
| Fiber PoE Injector (EUT) | LAN | Notebook 1 | RJ-45 | 3.0 | S |
| | SFP | PoE Switch | SFP | 10.0 | U |
| PoE Switch | LAN | Notebook 2 | RJ-45 | 1.0 | S |

* Unshielded=U, Shielded=S

1.7 EUT Operating Mode(s)

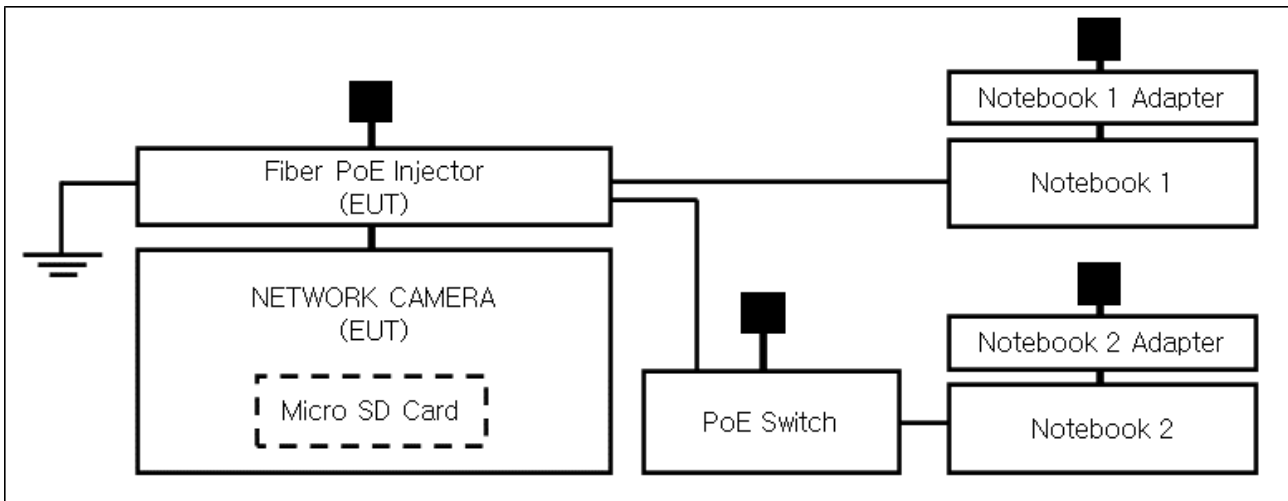
| Test mode | operating |
|----------------|--|
| Operation mode | checked that the camera video output was working properly in the web viewer and used the ping test to verify that the network behavior was working properly. |

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

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1.8 Configuration

■ AC Main
 □ DC Main



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1.9 Remarks when standards applied

N/A







1.10 Calibration Details of Equipment Used for Measurement

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

1.11 Test Facility

The measurement facility is located at 473-21 Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea. The sites are constructed in conformance with the requirements of ANSI C63.4:2014 and CISPR 16-1-4:2012

1.12 Laboratory Accreditations and Listings

| Country | Agency | Scope of Accreditation | Logo |
|---------------|---------|--|--|
| KOREA | RRA | EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions) |  KR0100 |
| International | KOLAS | EMI (3 m & 10 m Semi-Anechoic Chamber , and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions) |  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. |  KR0100 |
| Canada | ISED | 3 m & 10 m Semi-Anechoic Chamber and Conducted test site |  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 |  R-20056, C-20036, T-20040, G-20057 |
| Europe | TÜV SÜD | EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions) |  CARAT 001633 0003 |

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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 Group 2
 Class A 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



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- | | | |
|---|---|----------------------------------|
| <input type="checkbox"/> VCCI -CISPR 32:2016 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> AS/NZS CISPR32:2015 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input checked="" type="checkbox"/> 47 CFR Part 15, Subpart B | | |
| <input type="checkbox"/> CISPR 22:2009 +A1:2010 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input checked="" type="checkbox"/> ANSI C63.4-2014 | <input checked="" type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input checked="" type="checkbox"/> IC Regulation ICES-003 : 2016 | | |
| <input type="checkbox"/> CAN/CSA CISPR 22-10 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input checked="" type="checkbox"/> ANSI C63.4-2014 | <input checked="" type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> RE- Directive 2014/53/EU | | |
| <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. 12, 2020

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, 20, 2021 |
| <input checked="" type="checkbox"/> | LISN | ENV216 | R & S | 101787 | 01, 02, 2021 |
| <input checked="" type="checkbox"/> | LISN | ESH2-Z5 | R & S | 100450 | 01, 02, 2021 |
| <input checked="" type="checkbox"/> | PULSE LIMITER | ESH3-Z2 | R & S | 101915 | 01, 02, 2021 |

Test Conditions

Temperature: 23,5 °C
Relative Humidity: 48,1 % R.H.

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Results

The requirements are:

- PASS
- NOT PASS
- NOT APPLICABLE

Remarks

See Appendix A for test data.

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2.2 Radiated Electric Field Emissions(Below 1 GHz)

Test Date
Jun. 12, 2020

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

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, 2021 |
| <input checked="" type="checkbox"/> | AMPLIFIER | SCU 01 | R & S | 100603 | 11, 25, 2020 |
| <input checked="" type="checkbox"/> | TRILOG-BROADBAND ANTENNA | VULB9163 | Schwarzbeck | 715 | 11, 29, 2020 |
| <input checked="" type="checkbox"/> | ATTENUATOR | 8491A | HP | 32173 | 03, 10, 2021 |

Test Conditions
Temperature: 23,5 °C
Relative Humidity: 48,9 % 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.

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2.3 Radiated Electric Field Emissions(Above 1 GHz)

Test Date
Jun. 12, 2020

Test Location
SEMI ANECHOIC CHAMBER #4(10 m)

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, 06, 2020 |
| <input checked="" type="checkbox"/> | PREAMPLIFIER | 8449B | AGILENT | 3008A01967 | 04, 20, 2021 |
| <input type="checkbox"/> | ATTENUATOR | 8491A | HP | 35496 | 03, 10, 2021 |
| <input checked="" type="checkbox"/> | DOUBLE RIDGED HORN ANTENNA | SAS-571 | A.H.SYSTEM,INC | 781 | 03, 11, 2021 |

Test Conditions
Temperature: 23,5 °C
Relative Humidity: 48,9 % 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.

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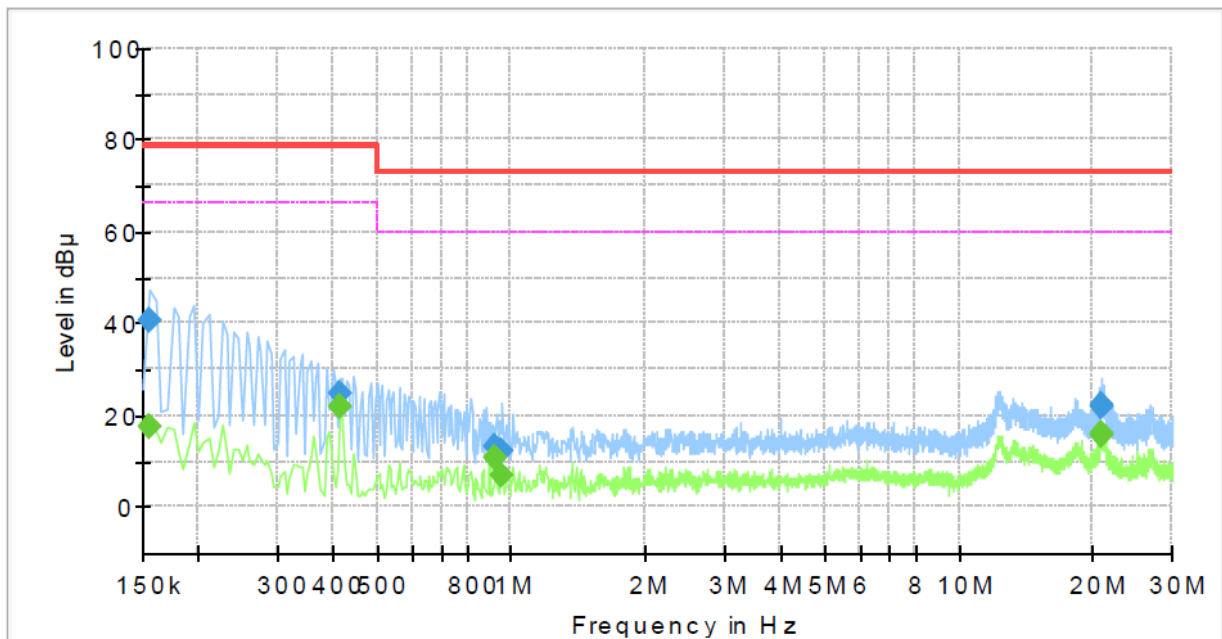
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

HOT LINE

Common Information

| | |
|-------------------|--------------------|
| Test Description: | Conducted Emission |
| Model No.: | XNP-6400RW |
| Phase: | - |
| Mode: | H |
| Operator Name: | KES |



Final Result

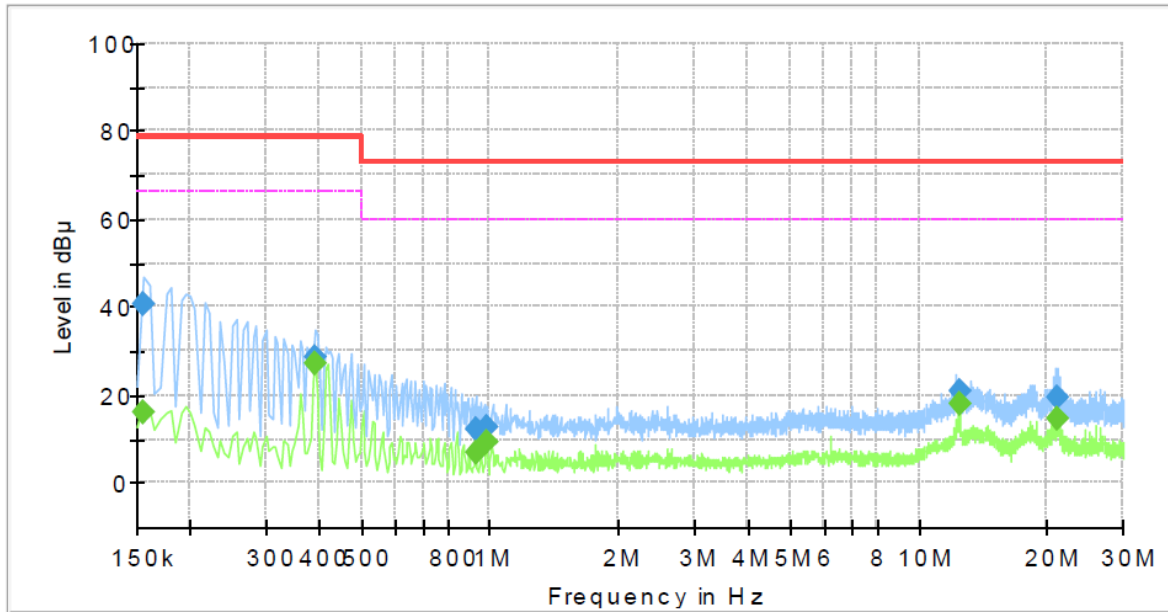
| Frequency (MHz) | QuasiPeak (dBµV) | CAverage (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|------|------------|
| 0.155000 | --- | 17.31 | 66.00 | 48.69 | 1000.0 | 9.000 | L1 | 19.5 |
| 0.155000 | 40.71 | --- | 79.00 | 38.29 | 1000.0 | 9.000 | L1 | 19.5 |
| 0.415000 | --- | 22.06 | 66.00 | 43.94 | 1000.0 | 9.000 | L1 | 19.6 |
| 0.415000 | 24.91 | --- | 79.00 | 54.09 | 1000.0 | 9.000 | L1 | 19.6 |
| 0.920000 | --- | 10.87 | 60.00 | 49.13 | 1000.0 | 9.000 | L1 | 19.7 |
| 0.920000 | 13.28 | --- | 73.00 | 59.72 | 1000.0 | 9.000 | L1 | 19.7 |
| 0.955000 | --- | 7.04 | 60.00 | 52.96 | 1000.0 | 9.000 | L1 | 19.7 |
| 0.955000 | 12.08 | --- | 73.00 | 60.92 | 1000.0 | 9.000 | L1 | 19.7 |
| 20.885000 | --- | 15.54 | 60.00 | 44.46 | 1000.0 | 9.000 | L1 | 20.2 |
| 20.885000 | 22.06 | --- | 73.00 | 50.94 | 1000.0 | 9.000 | L1 | 20.2 |
| 20.930000 | --- | 15.83 | 60.00 | 44.17 | 1000.0 | 9.000 | L1 | 20.2 |
| 20.930000 | 22.34 | --- | 73.00 | 50.66 | 1000.0 | 9.000 | L1 | 20.2 |

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NEUTRAL LINE

Common Information

| | |
|-------------------|--------------------|
| Test Description: | Conducted Emission |
| Model No.: | XNP-6400RW |
| Phase: | - |
| Mode: | N |
| 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 | --- | 15.87 | 66.00 | 50.13 | 1000.0 | 9.000 | N | 19.5 |
| 0.155000 | 40.61 | --- | 79.00 | 38.39 | 1000.0 | 9.000 | N | 19.5 |
| 0.390000 | --- | 27.22 | 66.00 | 38.78 | 1000.0 | 9.000 | N | 19.6 |
| 0.390000 | 28.47 | --- | 79.00 | 50.53 | 1000.0 | 9.000 | N | 19.6 |
| 0.925000 | --- | 6.65 | 60.00 | 53.35 | 1000.0 | 9.000 | N | 19.7 |
| 0.925000 | 12.00 | --- | 73.00 | 61.00 | 1000.0 | 9.000 | N | 19.7 |
| 0.980000 | --- | 9.23 | 60.00 | 50.77 | 1000.0 | 9.000 | N | 19.7 |
| 0.980000 | 12.50 | --- | 73.00 | 60.50 | 1000.0 | 9.000 | N | 19.7 |
| 12.500000 | --- | 17.79 | 60.00 | 42.21 | 1000.0 | 9.000 | N | 20.1 |
| 12.500000 | 20.93 | --- | 73.00 | 52.07 | 1000.0 | 9.000 | N | 20.1 |
| 21.060000 | --- | 14.57 | 60.00 | 45.43 | 1000.0 | 9.000 | N | 20.3 |
| 21.060000 | 19.53 | --- | 73.00 | 53.47 | 1000.0 | 9.000 | N | 20.3 |

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

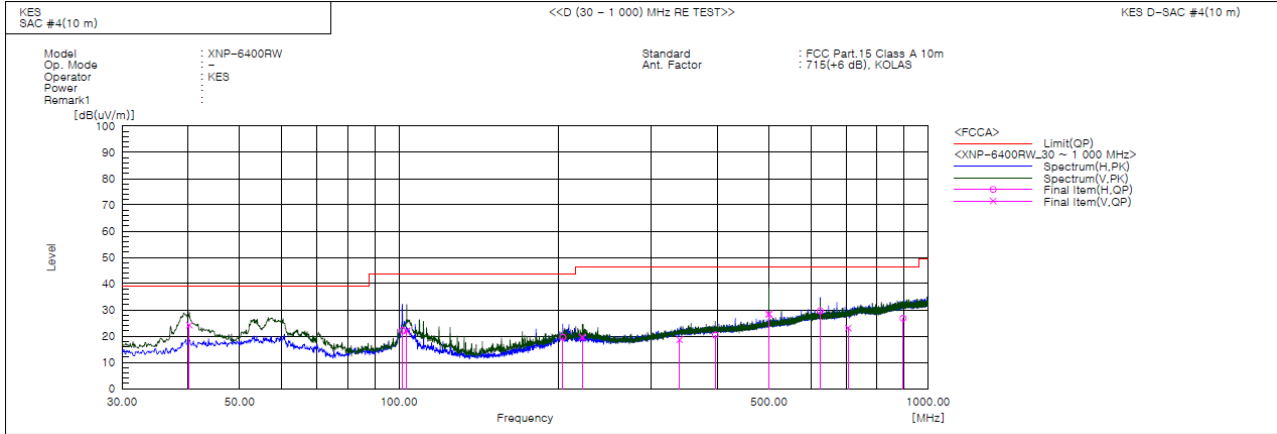
Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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Radiated Electric Field Emissions(Below 1 GHz)



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 | 40.185 | V | 47.2 | -23.0 | 24.2 | 39.0 | 14.8 | 121.0 | 281.0 | |
| 2 | 101.538 | H | 44.8 | -22.6 | 22.2 | 43.5 | 21.3 | 338.0 | 85.0 | |
| 3 | 103.478 | V | 44.6 | -22.6 | 22.0 | 43.5 | 21.5 | 100.0 | 252.0 | |
| 4 | 203.994 | H | 41.2 | -21.6 | 19.6 | 43.5 | 23.9 | 400.0 | 273.0 | |
| 5 | 222.060 | V | 40.2 | -20.6 | 19.6 | 46.5 | 26.9 | 117.0 | 155.0 | |
| 6 | 339.066 | V | 35.4 | -16.7 | 18.7 | 46.5 | 27.8 | 117.0 | 182.0 | |
| 7 | 396.054 | H | 35.8 | -15.4 | 20.4 | 46.5 | 26.1 | 283.0 | 270.0 | |
| 8 | 499.965 | V | 41.1 | -12.9 | 28.2 | 46.5 | 18.3 | 288.0 | 46.0 | |
| 9 | 500.017 | V | 41.5 | -12.9 | 28.6 | 46.5 | 17.9 | 101.0 | 46.0 | |
| 10 | 625.095 | H | 39.3 | -9.6 | 29.7 | 46.5 | 16.8 | 189.0 | 242.0 | |
| 11 | 706.090 | V | 31.8 | -8.7 | 23.1 | 46.5 | 23.4 | 230.0 | 226.0 | |
| 12 | 896.453 | H | 32.5 | -5.7 | 26.8 | 46.5 | 19.7 | 228.0 | 297.0 | |

◆ Calculation – SAC #4(10 m)

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

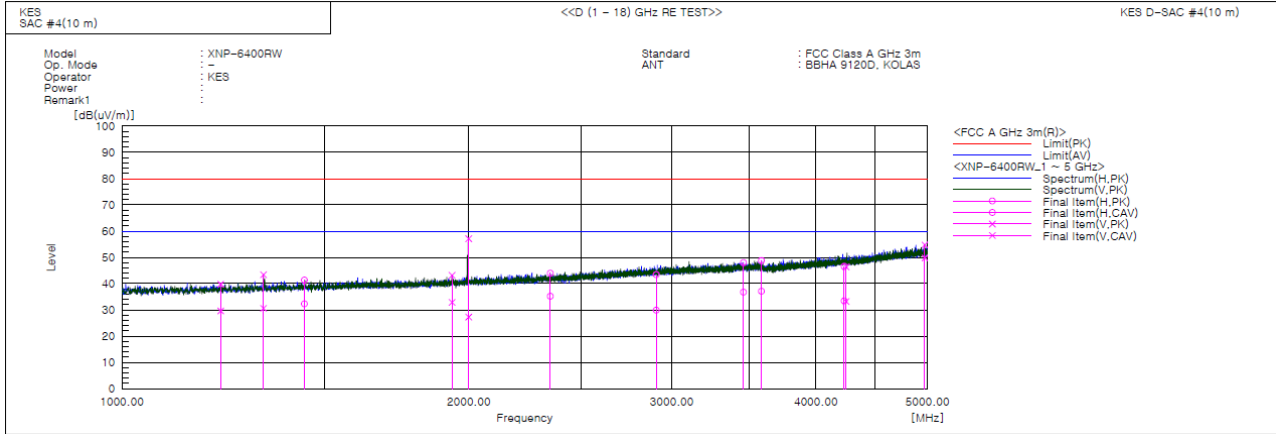
$$\text{Margin(QP)}[\text{dB}] = \text{Limit}[\text{dB}(\mu\text{V}/\text{m})] - \text{Result(QP)} [\text{dB}(\mu\text{V}/\text{m})]$$

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

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



Radiated Electric Field Emissions(Above 1 GHz)



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 | 1218.000 | V | 43.7 | 33.5 | -3.9 | 39.8 | 29.6 | 80.0 | 60.0 | 40.2 | 30.4 | 100.0 | 257.0 | |
| 2 | 1326.500 | V | 46.7 | 33.9 | -3.3 | 43.4 | 30.6 | 80.0 | 60.0 | 36.6 | 29.4 | 172.0 | 249.0 | |
| 3 | 1439.500 | H | 44.1 | 35.0 | -2.7 | 41.4 | 32.3 | 80.0 | 60.0 | 38.6 | 27.7 | 375.0 | 333.0 | |
| 4 | 1933.500 | V | 43.6 | 33.3 | -0.4 | 43.2 | 32.9 | 80.0 | 60.0 | 36.8 | 27.1 | 127.0 | 50.0 | |
| 5 | 1999.195 | V | 57.3 | 27.4 | -0.1 | 57.2 | 27.3 | 80.0 | 60.0 | 22.8 | 32.7 | 100.0 | 302.0 | |
| 6 | 2353.000 | H | 42.5 | 33.7 | 1.5 | 44.0 | 35.2 | 80.0 | 60.0 | 36.0 | 24.8 | 274.0 | 233.0 | |
| 7 | 2907.370 | H | 39.1 | 25.6 | 4.3 | 43.4 | 29.9 | 80.0 | 60.0 | 36.6 | 30.1 | 360.0 | 205.0 | |
| 8 | 3461.000 | H | 42.0 | 30.8 | 6.0 | 48.0 | 36.8 | 80.0 | 60.0 | 32.0 | 23.2 | 228.0 | 264.0 | |
| 9 | 3587.500 | H | 42.6 | 30.9 | 6.2 | 48.8 | 37.1 | 80.0 | 60.0 | 31.2 | 22.9 | 242.0 | 5.0 | |
| 10 | 4233.105 | H | 37.2 | 24.1 | 9.3 | 46.5 | 33.4 | 80.0 | 60.0 | 33.5 | 26.6 | 100.0 | 204.0 | |
| 11 | 4249.220 | V | 37.1 | 23.9 | 9.3 | 46.4 | 33.2 | 80.0 | 60.0 | 33.6 | 26.8 | 100.0 | 134.0 | |
| 12 | 4971.500 | V | 41.8 | 36.8 | 13.0 | 54.8 | 49.8 | 80.0 | 60.0 | 25.2 | 10.2 | 107.0 | 257.0 | |

◆ Calculation

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

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

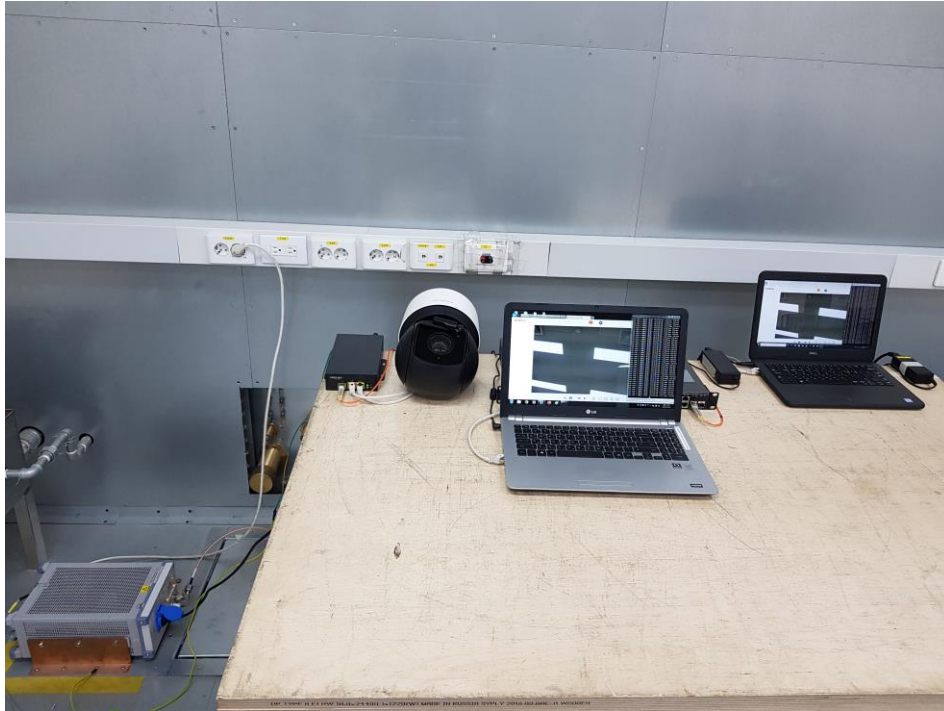
Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

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

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Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports



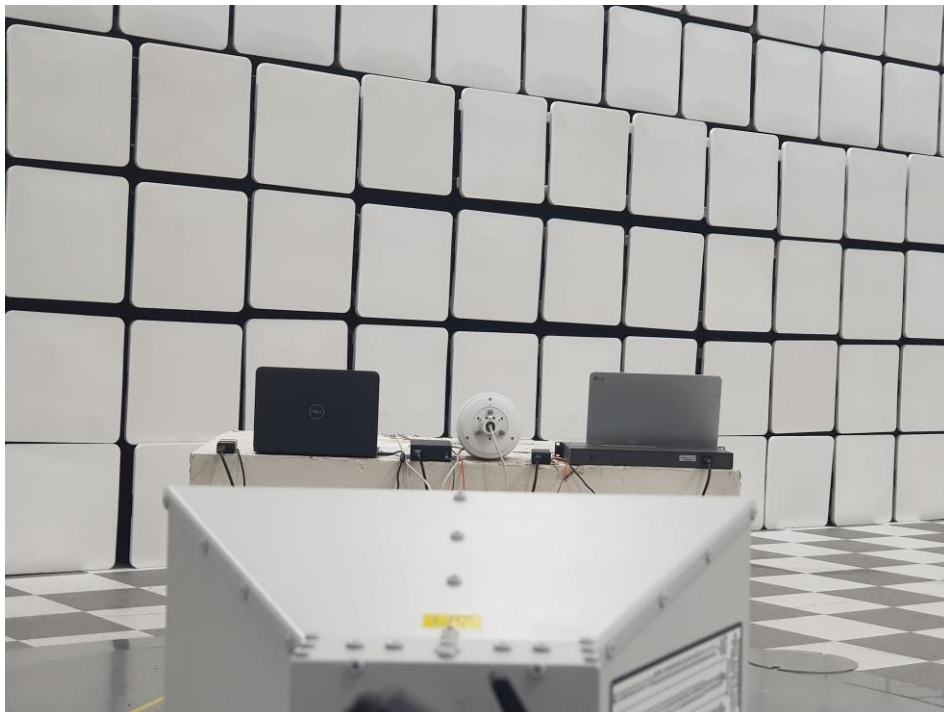
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



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EUT External Photographs

(Top)



(Bottom)



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EUT Internal Photographs

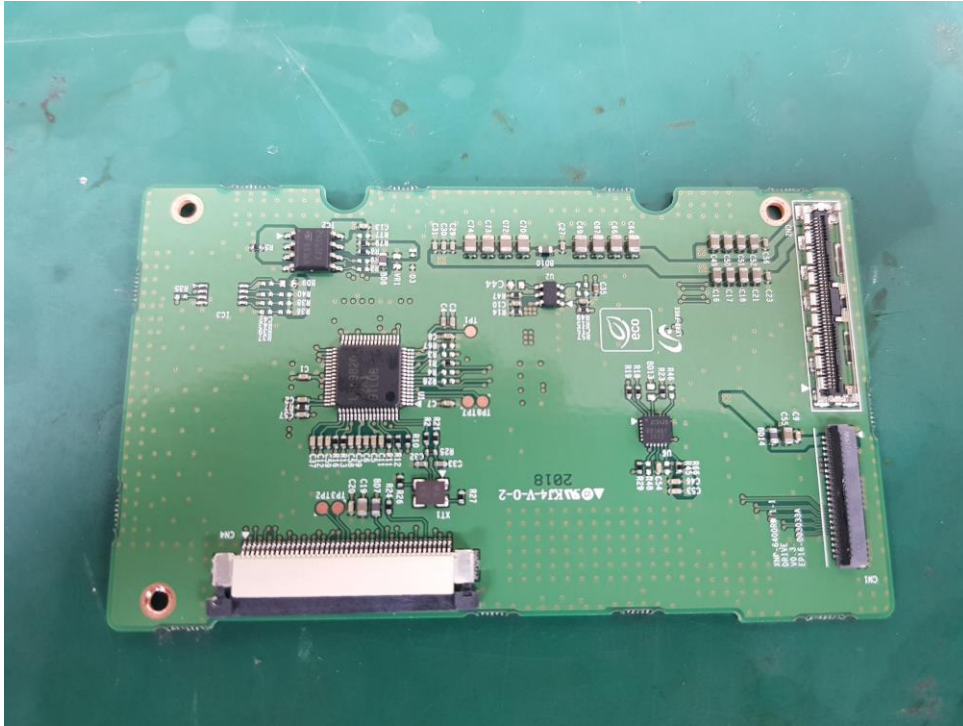
(Internal View)



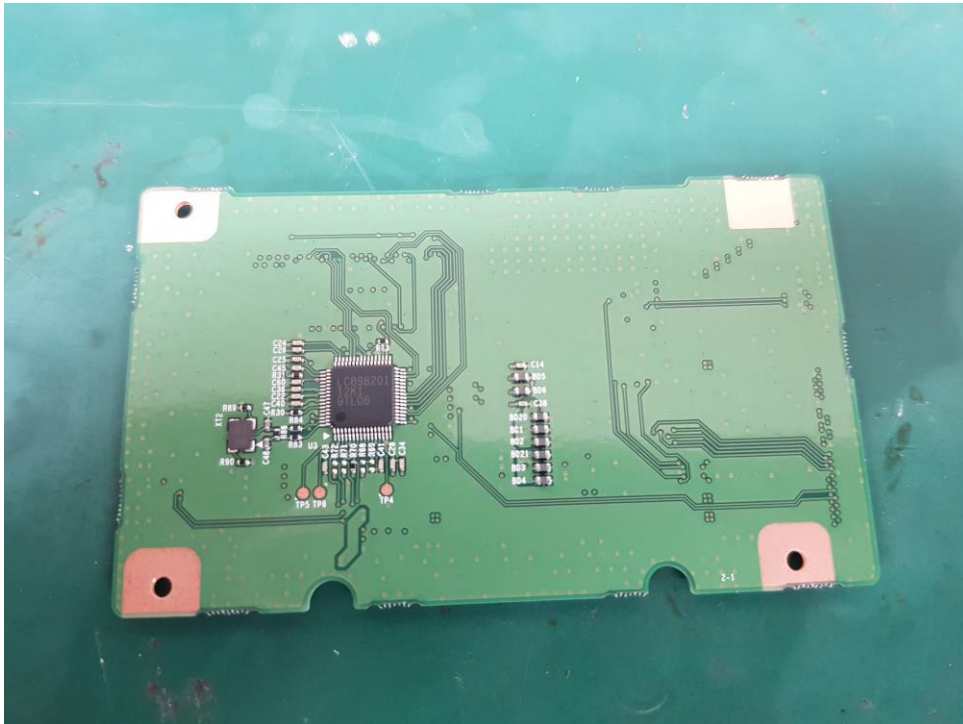
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EUT Internal View – DRIVE Board

(Top)



(Bottom)



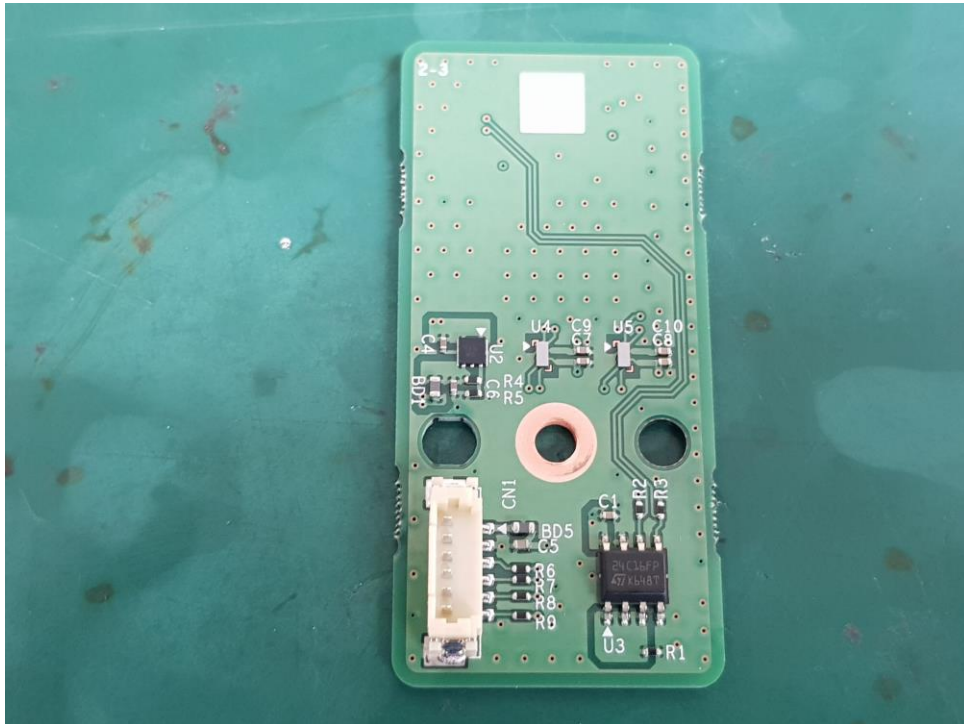
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EUT Internal View – HALL Board

(Top)



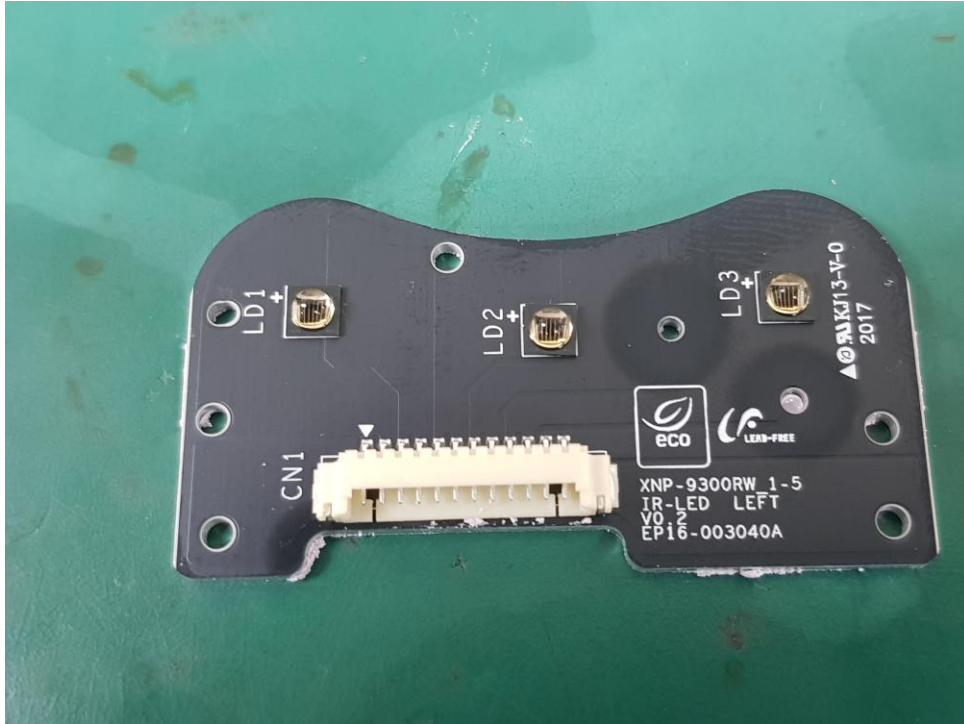
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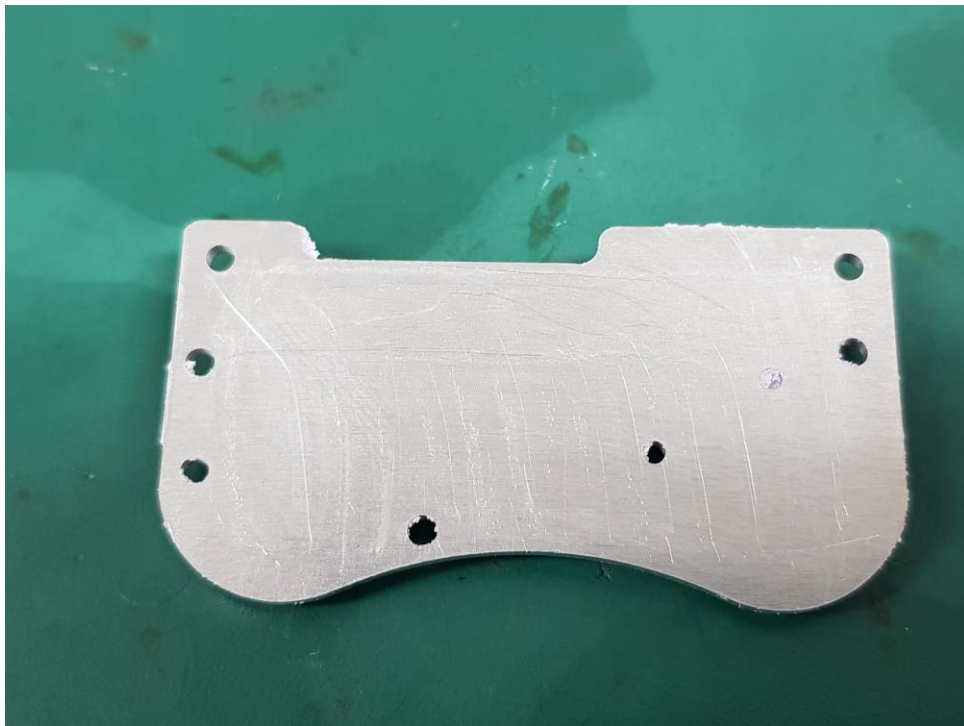
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EUT Internal View – IR-LED LEFT Board

(Top)



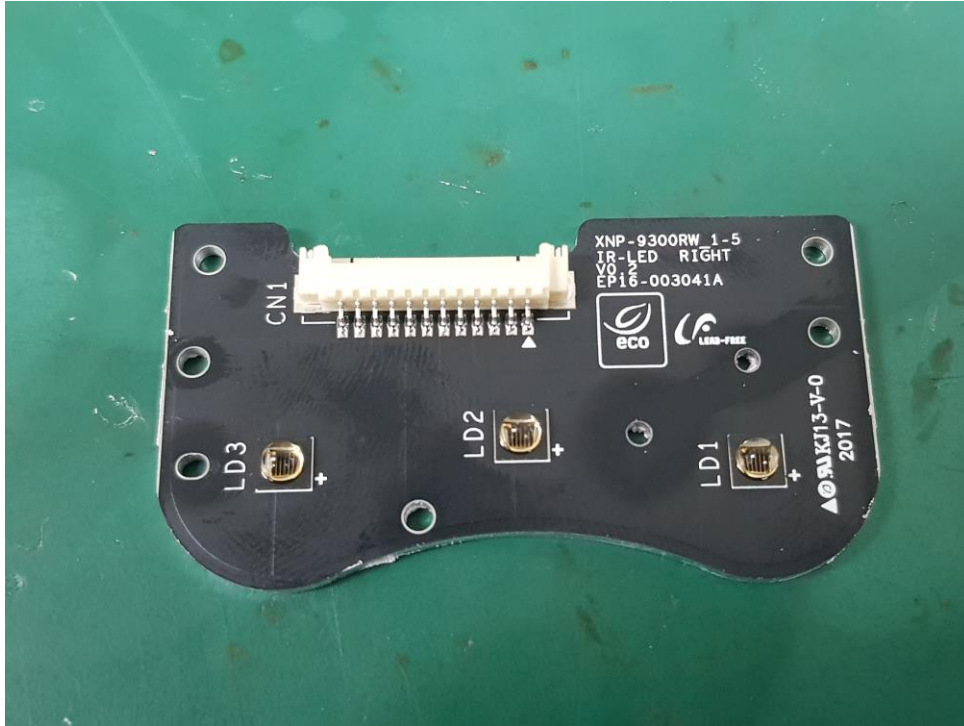
(Bottom)



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EUT Internal View – IR-LED RIGHT Board

(Top)



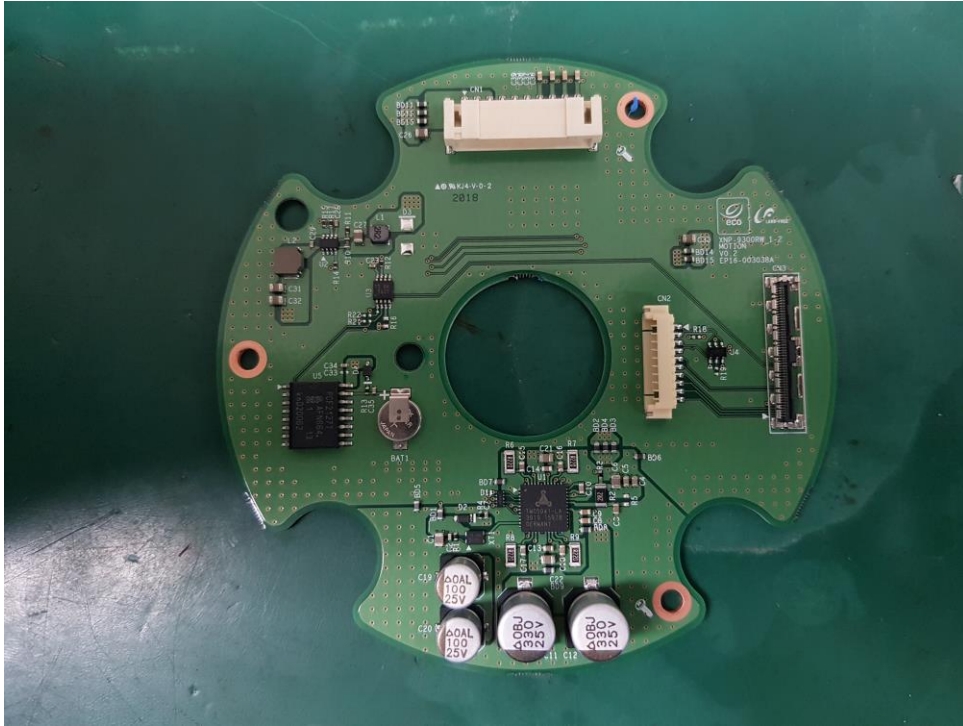
(Bottom)



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EUT Internal View – MOTION Board

(Top)



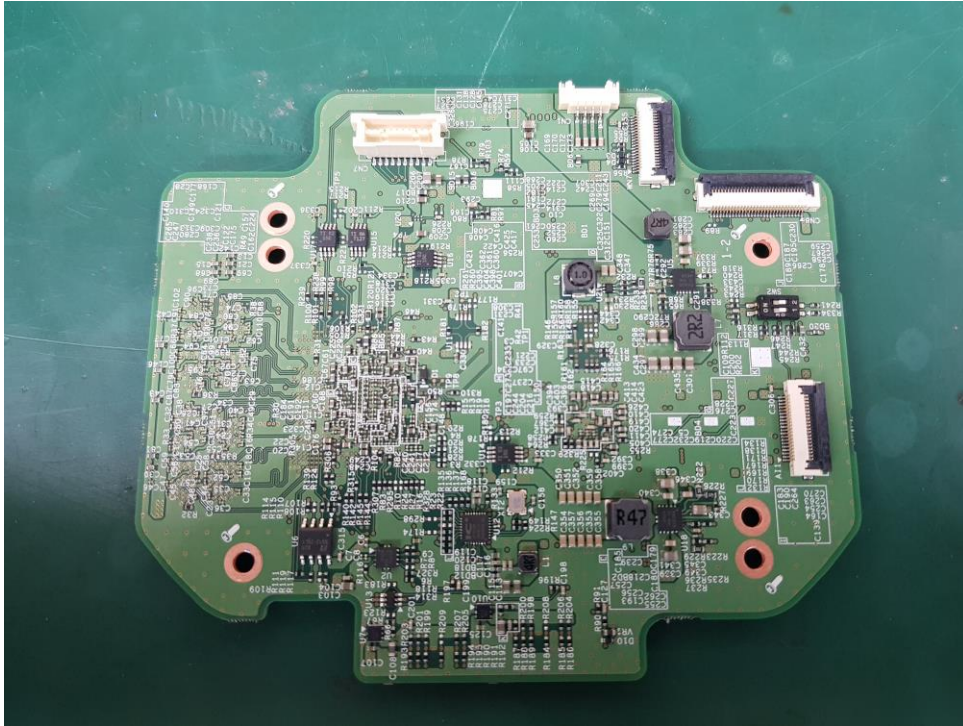
(Bottom)



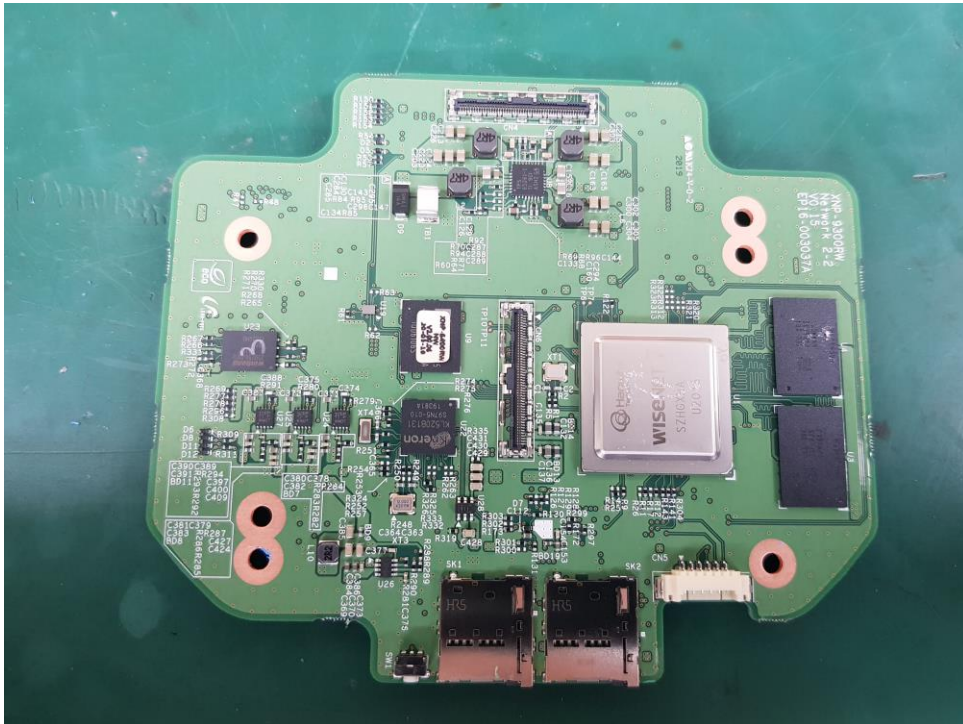
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EUT Internal View – NETWORK Board

(Top)



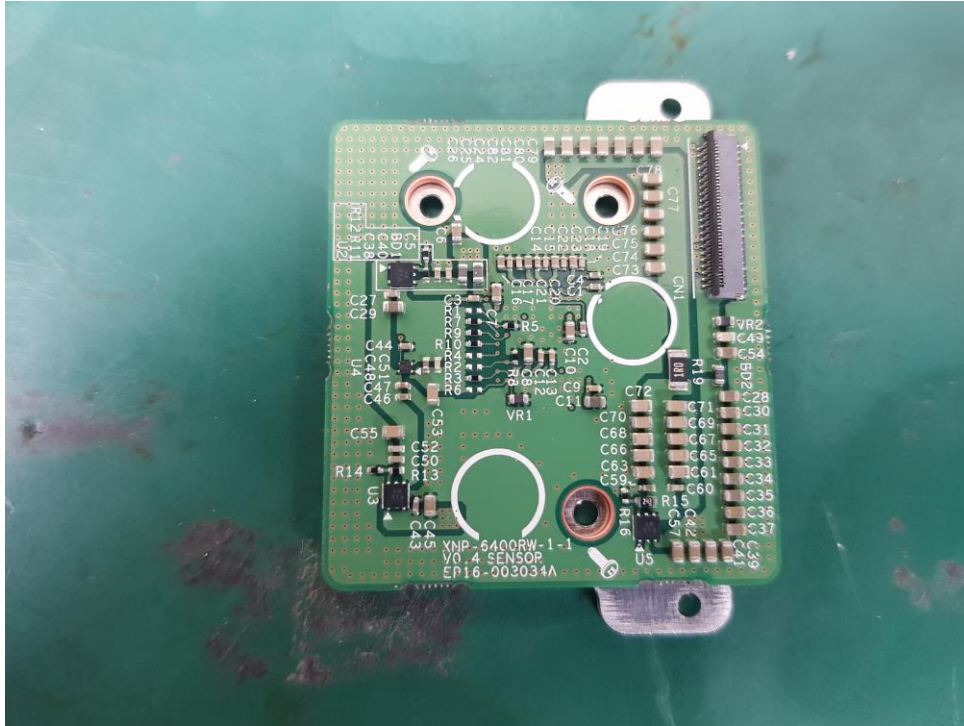
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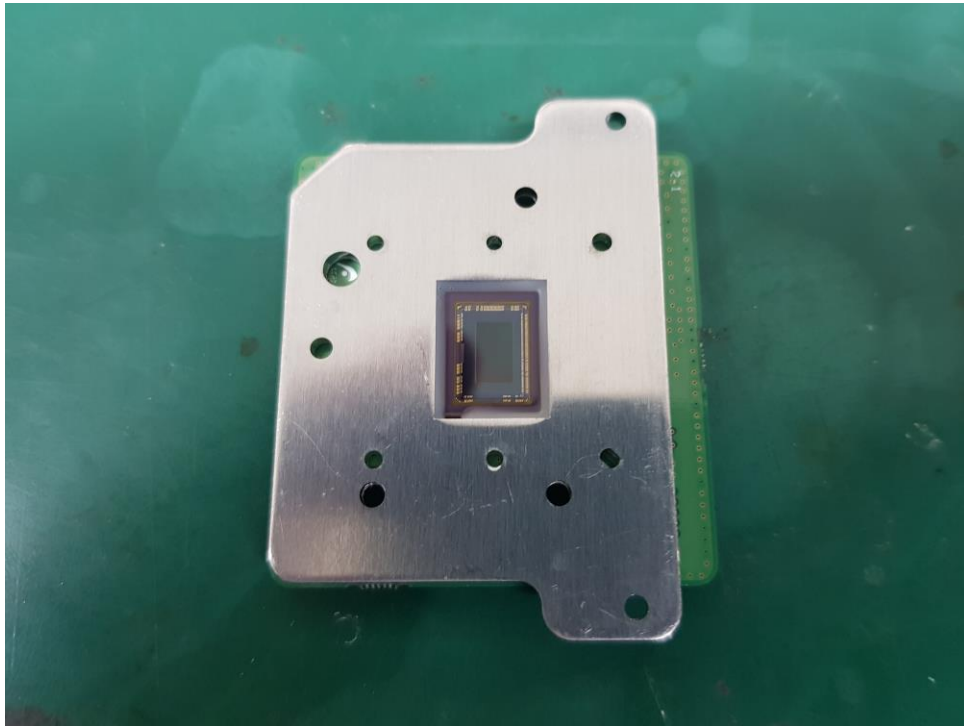
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EUT Internal View – SENSOR Board

(Top)



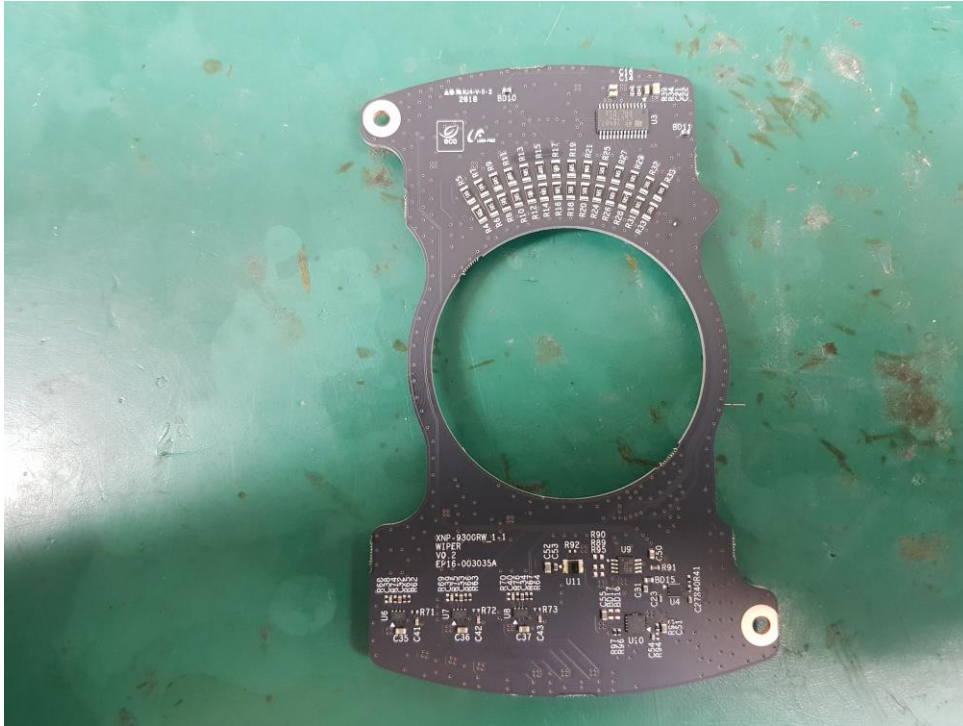
(Bottom)



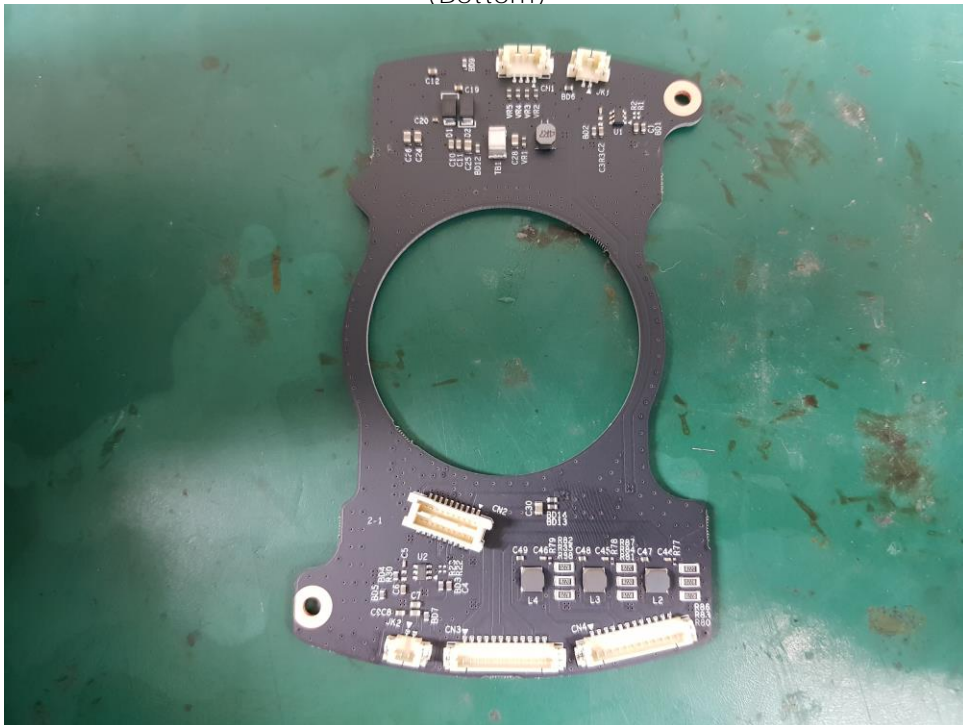
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EUT Internal View – WI PER Board

(Top)



(Bottom)



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EUT Internal View – LENS

(Top)



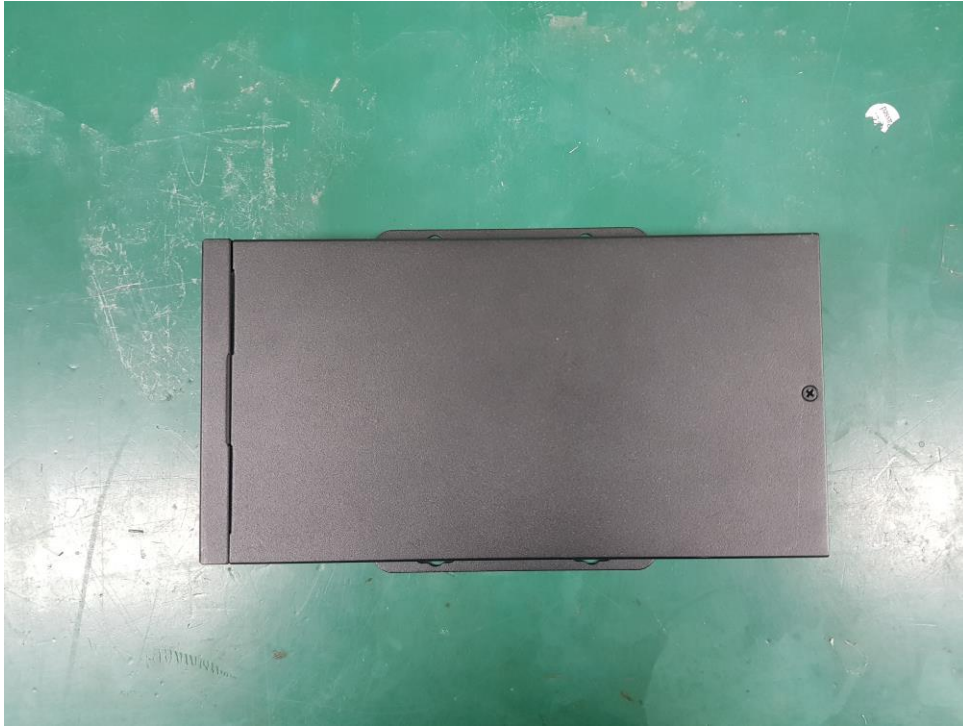
(Bottom)



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EUT Internal View – Fiber PoE Injector

(Top)

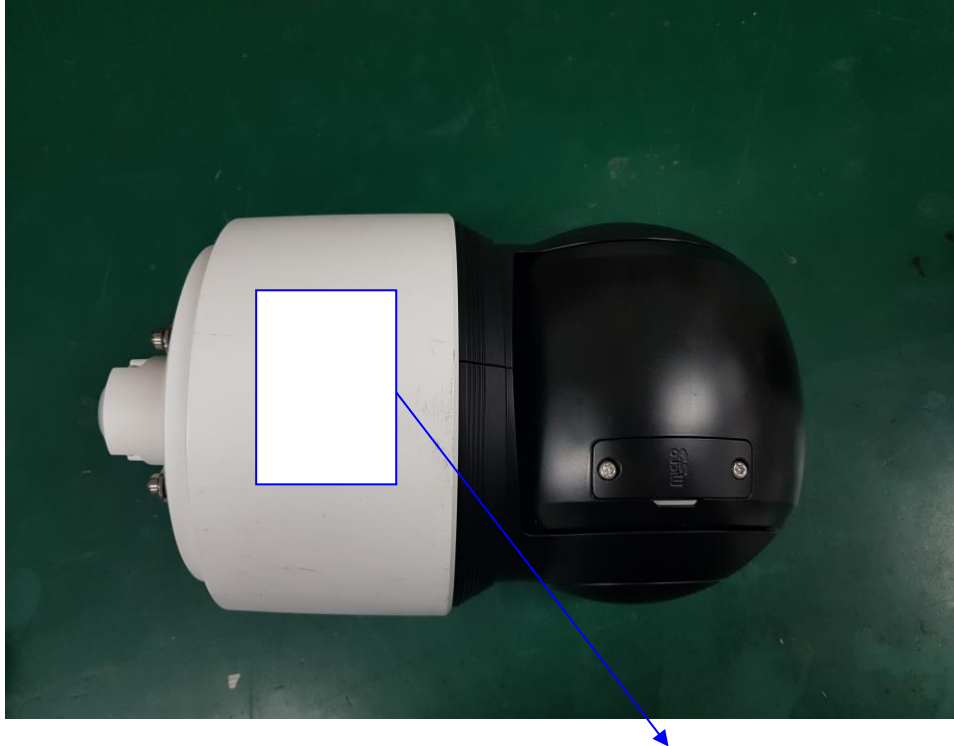


(Bottom)



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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.