

EMC TEST REPORT For RCM

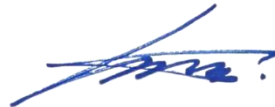
Test Report No. : KES-E1-19T0230-R1
Date of Issue : Feb. 24, 2023
Product name : Network Camera
Model/Type No. : QNO-8030R
Variant Model : QNO-8020R, QNO-8010R
Applicant : Hanwha Vision Co., Ltd
Applicant Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si,
Gyeonggi-do, Republic of Korea
Manufacturer : 1. HANWHA VISION VIETNAM COMPANY LIMITED
2. D-TECH CO.,LTD.
Manufacturer Address : 1. Lot O-2, Que Vo Industrial Zone extended area,
Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam
2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do,
Korea (Suwon Industrial Complex)
Date of Receipt : Apr. 04, 2019
Test date : Apr. 10, 2019
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by



Young Ho, Lee
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 |
|---------------|-------------------|---|
| Apr. 16, 2019 | KES-E1-19T0230 | Issued |
| Feb. 24, 2023 | KES-E1-19T0230-R1 | Change of applicant and delete and change of manufacturer |
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1.0 General Product Description

Main Specifications of EUT are:

| Video | |
|-----------------------------|--|
| Imaging Device | 1/2.8" 5MP CMOS |
| Effective Pixels | 2592(H)x1944(V) |
| NETD | None |
| Pixel Size | None |
| Min. Illumination | Color: 0.2Lux(F2.0, 1/30sec) (TBD) BW: 0Lux(IR LED on) |
| Video Out | CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation |
| Lens | |
| Focal Length (Zoom Ratio) | 6.0mm fixed focal |
| Max. Aperture Ratio | F2.0 |
| Angular Field of View | H: 49.4°/ V: 37.4°/ D: 61.0° |
| Min. Object Distance | None |
| Focus Control | Fixed |
| Lens Type | None |
| Mount Type | None |
| Optional Lens | None |
| Pan / Tilt / Rotate | |
| Pan / Tilt / Rotate Range | None |
| Pan Range | None |
| Pan Speed | None |
| Tilt Range | None |
| Tilt Speed | None |
| Rotate Range | None |
| Sequence | None |
| Preset Accuracy | None |
| Azimuth | None |
| Auto Tracking | None |
| Operational | |
| IR Viewable Length | 30m(98.42ft) |
| Camera Title | Displayed up to 85 characters |
| Day & Night | Auto(ICR) |
| Backlight Compensation | BLC, WDR, SSSDR |
| Wide Dynamic Range | 120dB |
| Digital Noise Reduction | SSNR |
| Digital Image Stabilization | None |
| Defog | None |
| Motion Detection | 4ea, polygonal zones |
| Privacy Masking | 6ea, rectangular zones |
| Gain Control | Low / Middle / High |
| White Balance | ATW / AWC / Manual / Indoor / Outdoor |
| LDC | Support |
| Electronic Shutter Speed | Minimum / Maximum / Anti flicker (1/5~1/12,000sec) |
| Digital PTZ | None |
| Video Rotation | Flip, Mirror, Hallway view(90°/270°) |
| Analytics | Defocus detection, Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line |
| Business Intelligence | None |
| Serial Interface | None |
| Alarm I/O | Input 1ea / Output 1ea |
| Alarm Triggers | Analytics, Network disconnect, Alarm input |
| Alarm Events | File upload via FTP and e-mail Notification via e-mail SD/SDHC/SDXC or NAS recording at event triggers Alarm output |
| Audio In | None |
| Audio Out | None |

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| | |
|-----------------------------------|---|
| IR Illuminator (Optional) | None |
| Wiper | None |
| Coaxial Protocol | None |
| Video Transmission Distance | None |
| Radiometry | |
| Temperature detect range | None |
| Temperature accuracy | None |
| Temperature detection | None |
| Additional | None |
| Network | |
| Ethernet | RJ-45(10/100BASE-T) |
| Video Compression | H.265/H.264: Main/High, MJPEG |
| Resolution | 2592x1944, 2592x1464, 2560x1920, 2560x1440, 1920 x 1080, 1280 x 960, 1280 x 720, 800 x 600, 800 x 448, 720 x 576, 720 x 480, 640 x 480, 640 x 360 |
| Max. Framerate | H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 15fps/12fps(60Hz/50Hz) |
| Smart Codec | WiseStreamII |
| Video Quality Adjustment | H.264/H.265: Target bitrate level control MJPEG: Quality level control |
| Bitrate Control | H.264/H.265: CBR or VBR MJPEG: VBR |
| Streaming | Unicast(6 users) / Multicast Multiple streaming (Up to 3 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, UPnP, Bonjour, LLDP |
| 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 1slot 256GB (TBD) |
| 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 |
| 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 | 512MB RAM, 256MB Flash |
| Environmental | |
| Operating Temperature / Humidity | -30°C ~ +55°C (-22°F ~ +131°F) / Less than 90% RH |
| Storage Temperature / Humidity | -30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH |
| Certification | IP66, IK10 |
| Electrical | |
| Input Voltage | PoE(IEEE802.3af, Class3) |
| Power Consumption | TBD |
| Mechanical | |
| Color / Material | Dark grey / Aluminum |
| RAL Code | None |
| Product dimensions / weight | Ø70.0x246.0mm(Ø4.33x3.39"), TBD |
| Conduit hole | |
| Hanging mount(Dome) | |
| Skin cover(Dome) | |
| Weather cap(Dome) | |
| Power module | |
| Backbox | |

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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 ☐ 240 Vac ☐ 100 Vac ☐ 24 Vac ☐ 12 Vdc ☒ PoE

Frequency ☐ 50 Hz ☐ 60 Hz ☐ Hz

1.2 Variant Model Differences

- Add models for vendor-specific management models

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

| Description | Model Number | Serial Number | Manufacturer | Remarks |
|----------------|--------------|---------------|---|---------|
| Network Camera | QNO-8030R | - | HANWHA VISION VIETNAM COMPANY LIMITED | EUT |

1.5 Support Equipments

| Description | Model Number | Serial Number | Manufacturer | Remarks |
|---------------------|--------------|-----------------|----------------------------------|---------|
| PoE Adapter | POE36U-1AT-R | - | PHIHONG | - |
| Notebook | NT730U3E | JJRE91CF200065A | Samsung Electronics Co., Ltd. | - |
| Notebook Adapter | PA-1600-66 | AD-6019P | LITEON | - |
| Micro SD Card | - | - | SanDisk | - |
| Alarm | - | - | - | - |

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 (PoE) | PoE Adapter | RJ-45 (PoE) | 3.0 | U |
| | SLOT | Micro SD Card | SLOT | - | - |
| | Alarm IN | Alarm | Alarm OUT | 3.0 | U |
| PoE Adapter | RJ-45 (DATA) | Notebook | RJ-45 (DATA) | 3.0 | U |

* Unshielded=U, Shielded=S

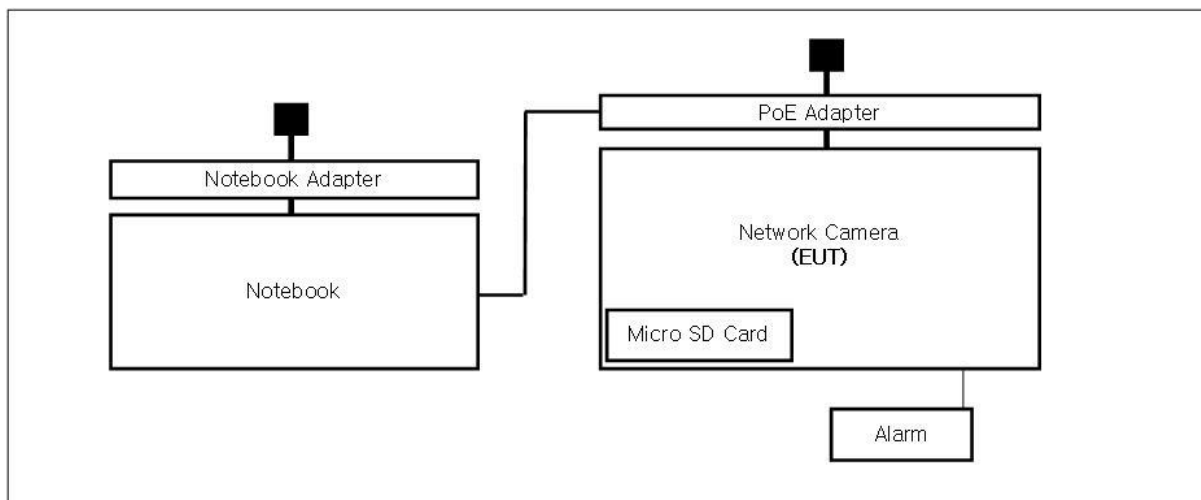
1.7 EUT Operating Mode(s)

| Test mode | operating |
|-----------|---------------------------|
| PoE | EUT Monitoring, Ping Test |

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

1.8 Configuration

■ AC Main
 □ DC Main



1.9 Remarks when standards applied

N/A







1.10 Calibration Details of Equipment Used for Measurement

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

1.11 Test Facility

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

1.12 Laboratory Accreditations and Listings

| Country | Agency | Scope of Accreditation | Logo |
|---------------|---------|---|--|
| KOREA | RRA | EMI (3 m & 10 m Semi-Anechoic Chamber 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 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 |
| JAPAN | VCCI | EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) |  C-20136, T-20137, R-20181, G-20176 |
| Europe | TÜV SÜD | EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions) |  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



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-
- | | | |
|--|---|----------------------------------|
| <input type="checkbox"/> VCCI-CISPR 32:2016 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input checked="" type="checkbox"/> AS/NZS CISPR32:2015 | <input checked="" type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| | | |
| <input 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 type="checkbox"/> ANSI C63.4-2009 | | |
| | | |
| <input 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 type="checkbox"/> ANSI C63.4-2014 | | |
| | | |
| <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

N/A

Test Location

Electro wave Shieldroom #6

Test Equipment

| Used | Description | Model Number | Manufacturer | Serial Number | Cal. Due |
|--------------------------|-------------------|--------------|--------------|---------------|--------------|
| <input type="checkbox"/> | EMI Test S/W | EMC32 | R & S | 9.12.00 | - |
| <input type="checkbox"/> | EMI TEST RECEIVER | ESR3 | R & S | 101781 | 04, 25, 2019 |
| <input type="checkbox"/> | LISN | ENV216 | R & S | 101787 | 01, 04, 2020 |
| <input type="checkbox"/> | LISN | ESH2-Z5 | R & S | 100450 | 04, 25, 2019 |
| <input type="checkbox"/> | PULSE LIMITER | ESH3-Z2 | R & S | 101915 | 11, 26, 2019 |

Test Conditions

Temperature:

°C

Relative Humidity:

% 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

It is not tested apply because it is powered by PoE

2.2 Conducted Emissions at Telecommunication Ports

Test Date

Apr. 10, 2019

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 | 101781 | 04, 25, 2019 |
| <input checked="" type="checkbox"/> | LISN | ENV216 | R & S | 101787 | 01, 04, 2020 |
| <input checked="" type="checkbox"/> | LISN | ESH2-Z5 | R & S | 100450 | 04, 25, 2019 |
| <input checked="" type="checkbox"/> | PULSE LIMITER | ESH3-Z2 | R & S | 101915 | 11, 26, 2019 |
| <input checked="" type="checkbox"/> | 8-WIRE ISN CAT3,5 | ENY81 | R & S | 100174 | 01, 07, 2020 |

Test Conditions

Temperature: 22,6 °C
Relative Humidity: 41,5 % 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.

2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Apr. 10, 2019

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, 09, 2020 |
| <input checked="" type="checkbox"/> | AMPLIFIER | SCU 01 | R & S | 100603 | 11, 26, 2019 |
| <input checked="" type="checkbox"/> | TRILOG-BROADBAND ANTENNA | VULB9163 | Schwarzbeck | 715 | 11, 29, 2020 |
| <input checked="" type="checkbox"/> | ATTENUATOR | 8491A | HP | 32173 | 03, 11, 2020 |

Test Conditions

Temperature: 23,3 °C
Relative Humidity: 43,1 % R.H.

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

2.4 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Apr. 10, 2019

Test Location

SEMI ANECHOIC CHAMBER #3

Test Equipment

| Used | Description | Model Number | Manufacturer | Serial Number | Cal. Due |
|-------------------------------------|----------------------------|--------------|------------------|---------------|--------------|
| <input checked="" type="checkbox"/> | EMI Test S/W | EP5/RE | TOYO Corporation | 6.0.0 | - |
| <input checked="" type="checkbox"/> | EMI TEST RECEIVER | ESR7 | R & S | 101190 | 08, 06, 2019 |
| <input checked="" type="checkbox"/> | PREAMPLIFIER | 8449B | AGILENT | 3008A01967 | 05, 31, 2019 |
| <input type="checkbox"/> | ATTENUATOR | 8491A | HP | 35496 | 03, 11, 2020 |
| <input checked="" type="checkbox"/> | DOUBLE RIDGED HORN ANTENNA | SAS-571 | A.H.SYSTEM,INC | 781 | 03, 12, 2021 |

Test Conditions

Temperature: 22,8 °C
Relative Humidity: 41,1 % R.H.

Frequency Range of Measurement

1 GHz to 6 GHz

Instrument Settings

IF Band Width: 1 MHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.



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APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

HOT LINE

N/A

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NEUTRAL LINE

N/A

◆ 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))

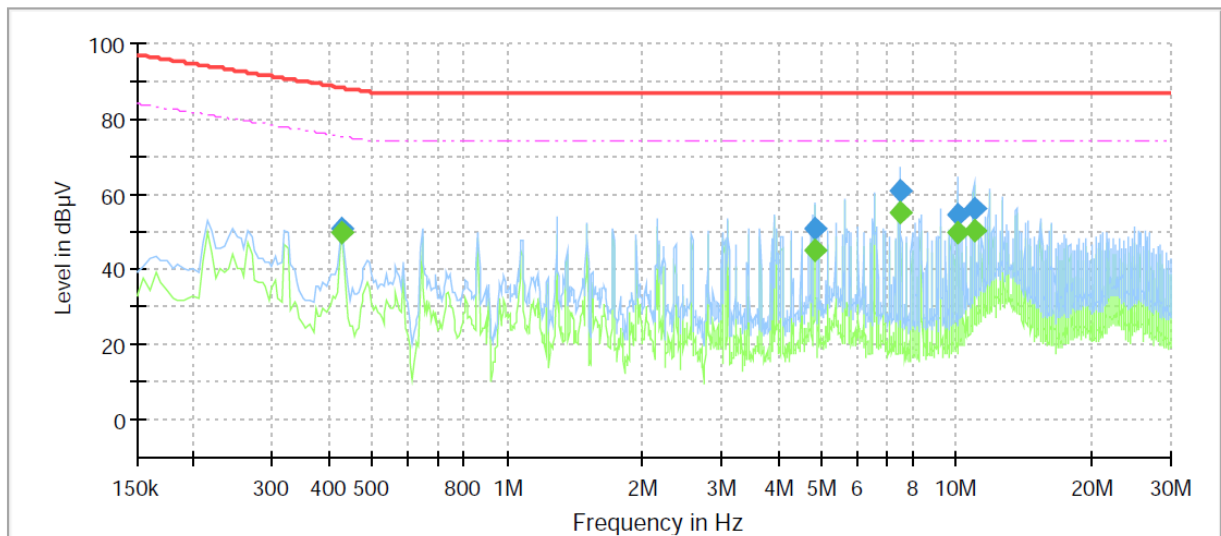
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Conducted Emissions at Telecommunication Ports

[10 Mbps]

Common Information

| | |
|-------------------|----------------------------|
| Test Description: | Telecommunication Emission |
| Model No.: | QNO-8030R |
| Mode | 10 Mbps |
| Operator Name: | KES |

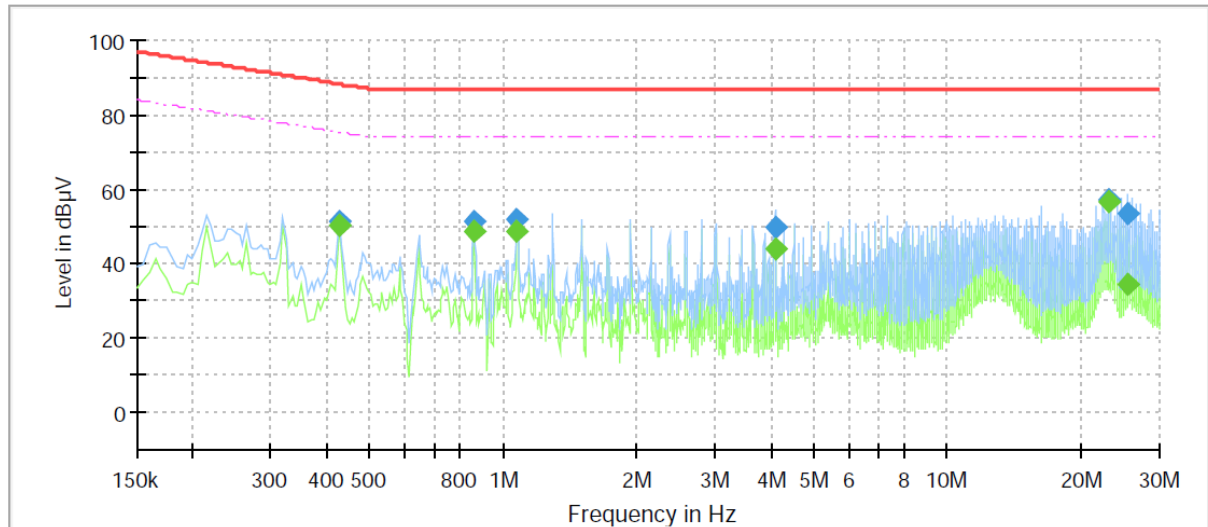


Final Result

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|-------------|------------|
| 0.430000 | 50.68 | --- | 88.25 | 37.57 | 1000.0 | 9.000 | Single Line | 19.8 |
| 0.430000 | --- | 49.75 | 75.25 | 25.50 | 1000.0 | 9.000 | Single Line | 19.8 |
| 4.835000 | 51.05 | --- | 87.00 | 35.95 | 1000.0 | 9.000 | Single Line | 19.7 |
| 4.835000 | --- | 45.18 | 74.00 | 28.82 | 1000.0 | 9.000 | Single Line | 19.7 |
| 7.495000 | 60.72 | --- | 87.00 | 26.28 | 1000.0 | 9.000 | Single Line | 19.8 |
| 7.495000 | --- | 54.88 | 74.00 | 19.12 | 1000.0 | 9.000 | Single Line | 19.8 |
| 10.110000 | 54.67 | --- | 87.00 | 32.33 | 1000.0 | 9.000 | Single Line | 19.9 |
| 10.110000 | --- | 49.79 | 74.00 | 24.21 | 1000.0 | 9.000 | Single Line | 19.9 |
| 10.925000 | --- | 50.52 | 74.00 | 23.48 | 1000.0 | 9.000 | Single Line | 19.9 |
| 10.925000 | 56.31 | --- | 87.00 | 30.69 | 1000.0 | 9.000 | Single Line | 19.9 |

[100 Mbps] Common Information

| | |
|-------------------|----------------------------|
| Test Description: | Telecommunication Emission |
| Model No.: | QNO-8030R |
| Mode | 100 Mbps |
| Operator Name: | KES |



Final Result

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|-------------|------------|
| 0.430000 | --- | 50.15 | 75.25 | 25.10 | 1000.0 | 9.000 | Single Line | 19.7 |
| 0.430000 | 51.21 | --- | 88.25 | 37.04 | 1000.0 | 9.000 | Single Line | 19.7 |
| 0.860000 | --- | 48.70 | 74.00 | 25.30 | 1000.0 | 9.000 | Single Line | 19.6 |
| 0.860000 | 51.22 | --- | 87.00 | 35.78 | 1000.0 | 9.000 | Single Line | 19.6 |
| 1.075000 | --- | 48.95 | 74.00 | 25.05 | 1000.0 | 9.000 | Single Line | 19.6 |
| 1.075000 | 51.62 | --- | 87.00 | 35.38 | 1000.0 | 9.000 | Single Line | 19.6 |
| 4.090000 | --- | 44.16 | 74.00 | 29.84 | 1000.0 | 9.000 | Single Line | 19.6 |
| 4.090000 | 49.98 | --- | 87.00 | 37.02 | 1000.0 | 9.000 | Single Line | 19.6 |
| 23.130000 | --- | 56.66 | 74.00 | 17.34 | 1000.0 | 9.000 | Single Line | 20.3 |
| 23.130000 | 57.24 | --- | 87.00 | 29.76 | 1000.0 | 9.000 | Single Line | 20.3 |
| 25.340000 | --- | 34.37 | 74.00 | 39.63 | 1000.0 | 9.000 | Single Line | 20.3 |
| 25.340000 | 53.34 | --- | 87.00 | 33.66 | 1000.0 | 9.000 | Single Line | 20.3 |

◆ Calculation

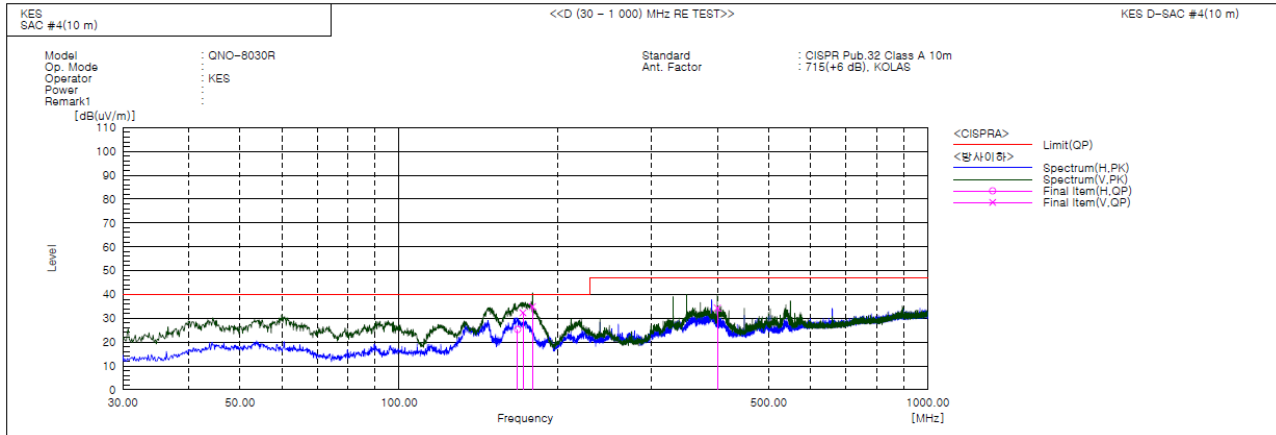
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

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 | 167.619 | H | 49.9 | -24.6 | 25.3 | 40.0 | 14.7 | 400.0 | 151.0 | |
| 2 | 171.499 | V | 56.7 | -24.4 | 32.3 | 40.0 | 7.7 | 100.0 | 279.0 | |
| 3 | 178.788 | V | 58.9 | -24.0 | 34.9 | 40.0 | 5.1 | 153.0 | 2.0 | |
| 4 | 400.055 | V | 49.6 | -15.3 | 34.3 | 47.0 | 12.7 | 100.0 | 197.0 | |

◆ Calculation

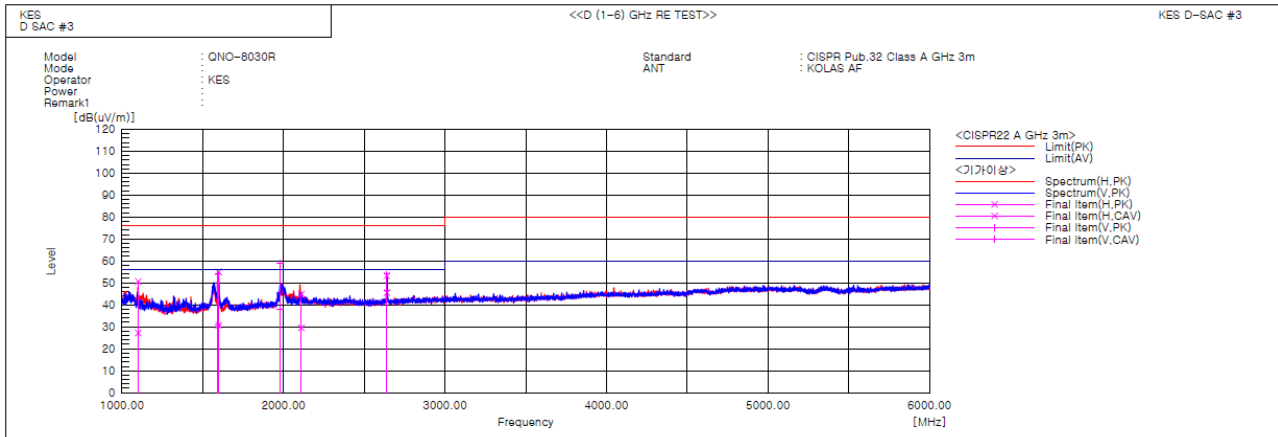
Result(QP) [dB(μV/m)] = (Reading(QP)[dB(μV)] + c.f[dB(1/m)])

Margin(QP)[dB] = Limit[dB(μV/m)] - Result(QP) [dB(μV/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 (P) [MHz] | 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)] | Margin PK [dB] | Margin CAV [dB] | Height [cm] | Angle [deg] | Remark |
|-----|------------------------|---------------------------|----------------------------|------------------|----------------------------|-----------------------------|---------------------------|----------------------|-----------------------|----------------|----------------|--------|
| 1 | 1100.010 H | 57.6 | 34.0 | -6.9 | 50.7 | 27.1 | 76.0 | 25.3 | 28.9 | 100.0 | 214.9 | |
| 2 | 1594.220 V | 59.3 | 35.9 | -5.0 | 54.3 | 30.9 | 76.0 | 21.7 | 25.1 | 100.0 | 245.9 | |
| 3 | 1597.450 H | 60.1 | 35.7 | -5.0 | 55.1 | 30.7 | 76.0 | 20.9 | 25.3 | 100.0 | 149.6 | |
| 4 | 1980.152 V | 60.9 | 39.8 | -1.8 | 59.1 | 38.0 | 76.0 | 16.9 | 18.0 | 100.0 | 330.5 | |
| 5 | 2109.928 H | 46.3 | 30.8 | -1.3 | 45.0 | 29.5 | 76.0 | 31.0 | 26.5 | 100.0 | 341.2 | |
| 6 | 2640.120 H | 53.0 | 45.3 | 0.3 | 53.3 | 45.6 | 76.0 | 22.7 | 10.4 | 100.0 | 294.4 | |
| 7 | 2640.300 V | 53.7 | 46.2 | 0.3 | 54.0 | 46.5 | 76.0 | 22.0 | 9.5 | 100.0 | 63.2 | |

◆ Calculation

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

Margin(PK/CAV)[dB] = Limit[dB(μ V/m)] - Result(PK/CAV) [dB(μ V/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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Report No.:
KES-E1-19T0230-R1
Page (22) of (31)

Test Setup Photos and Configuration

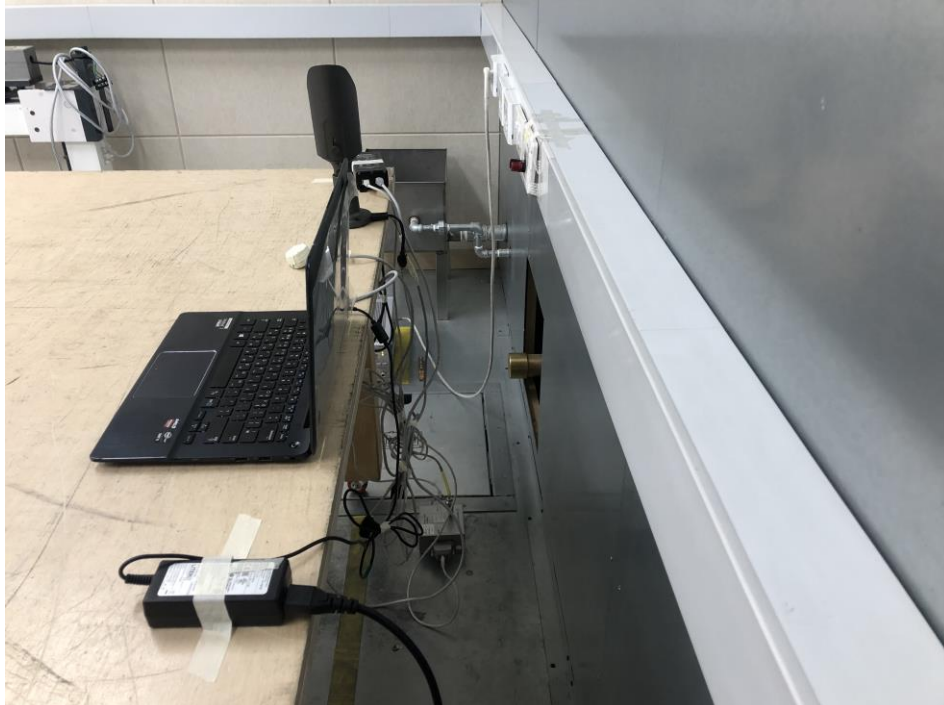
Conducted Voltage Emissions

N/A

N/A

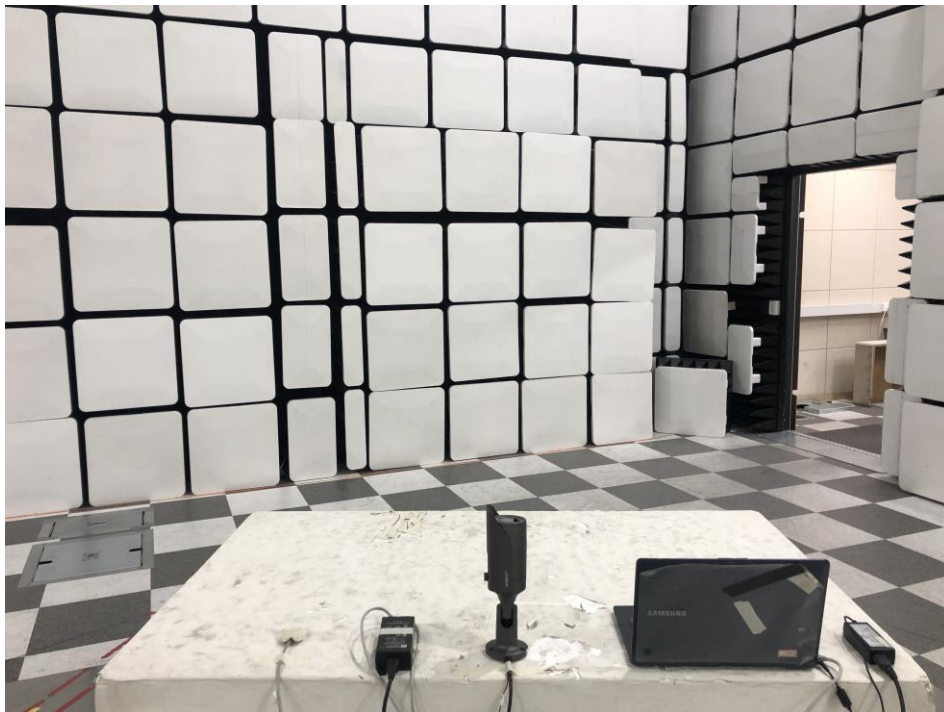
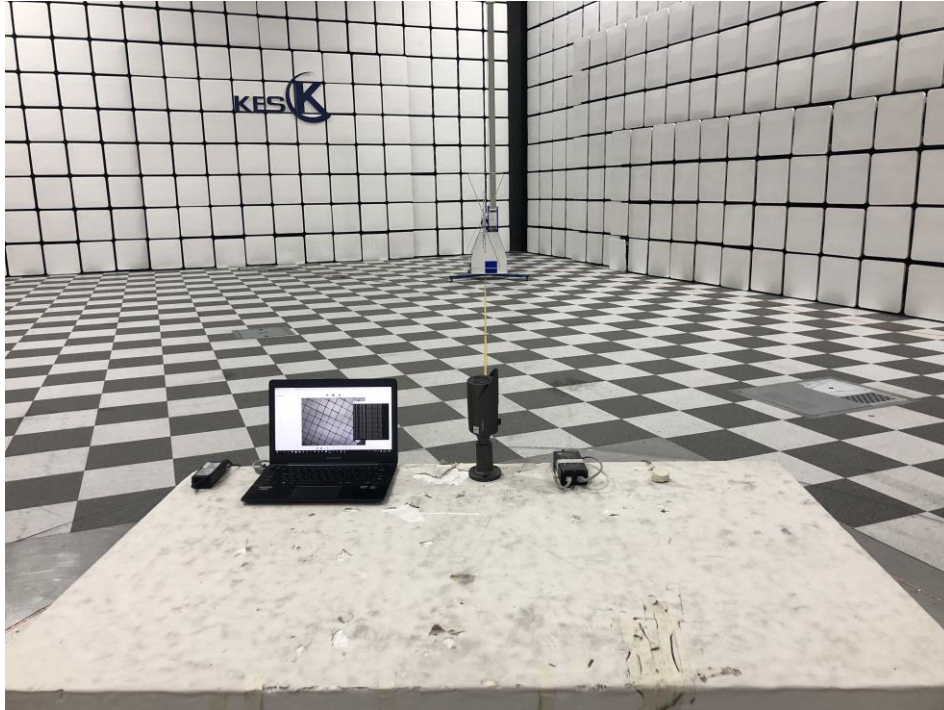
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Conducted Telecommunication Emissions



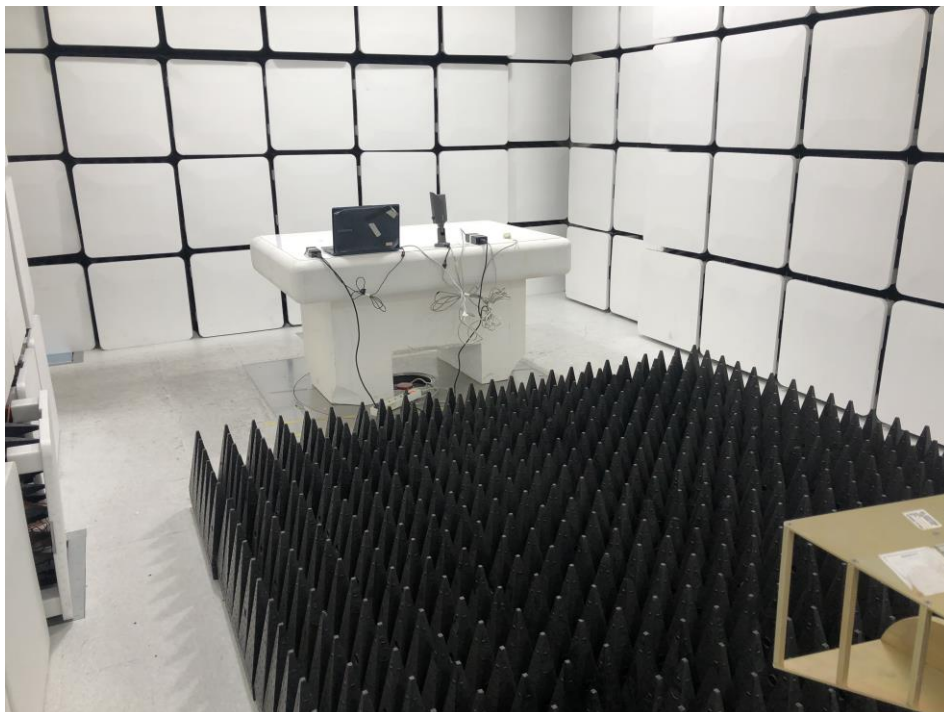
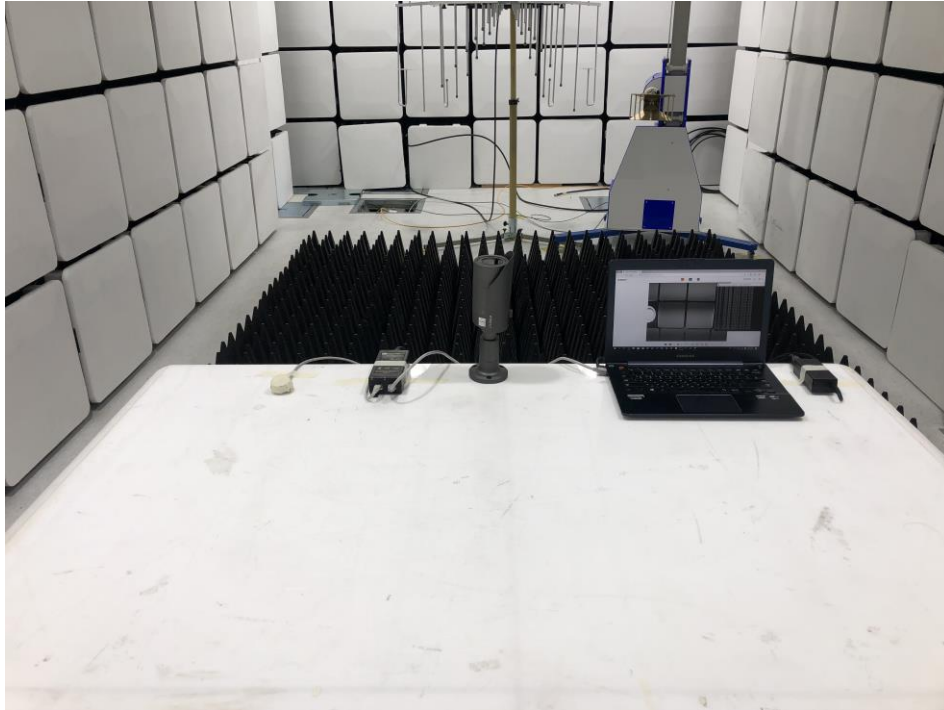
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Radiated Electric Field Emissions(Below 1 GHz)



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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)



EUT Internal View – Board 1

(Top)



(Bottom)



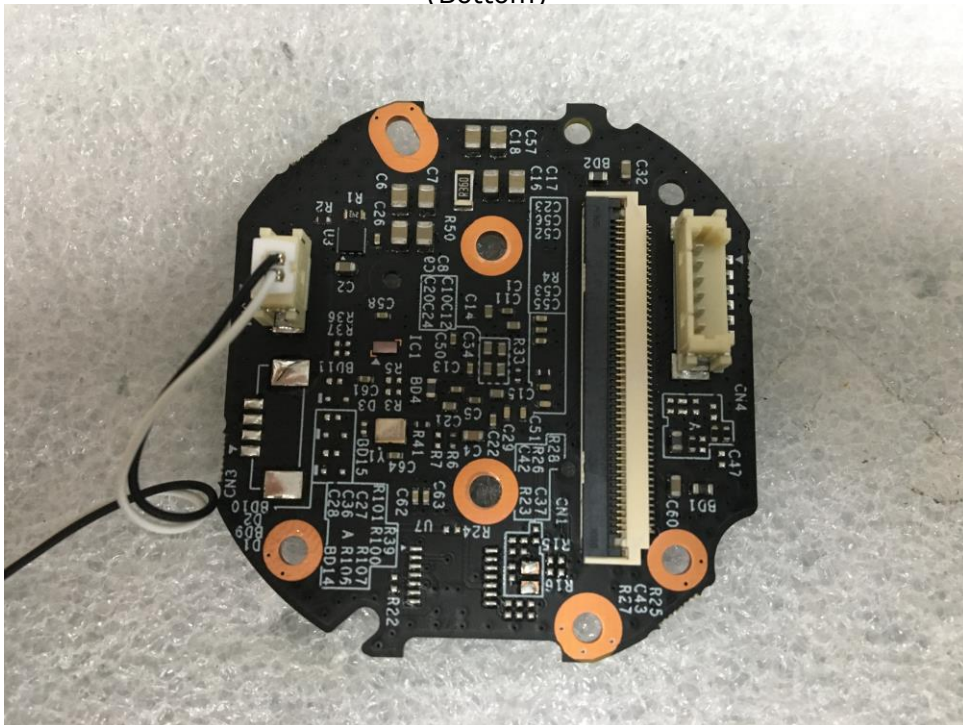
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EUT Internal View – Board 2

(Top)



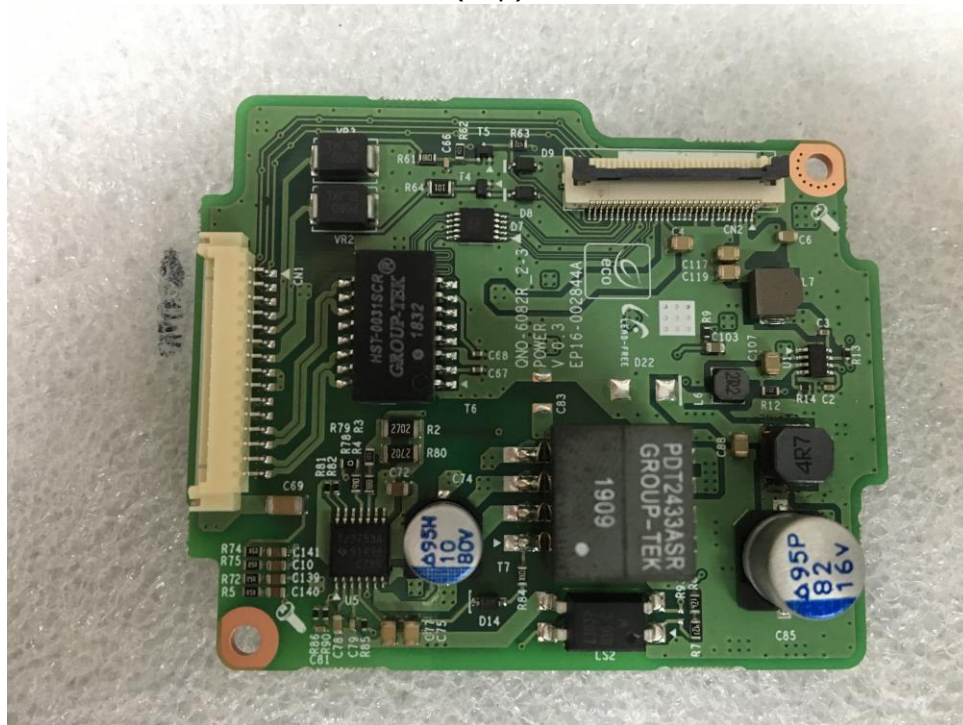
(Bottom)



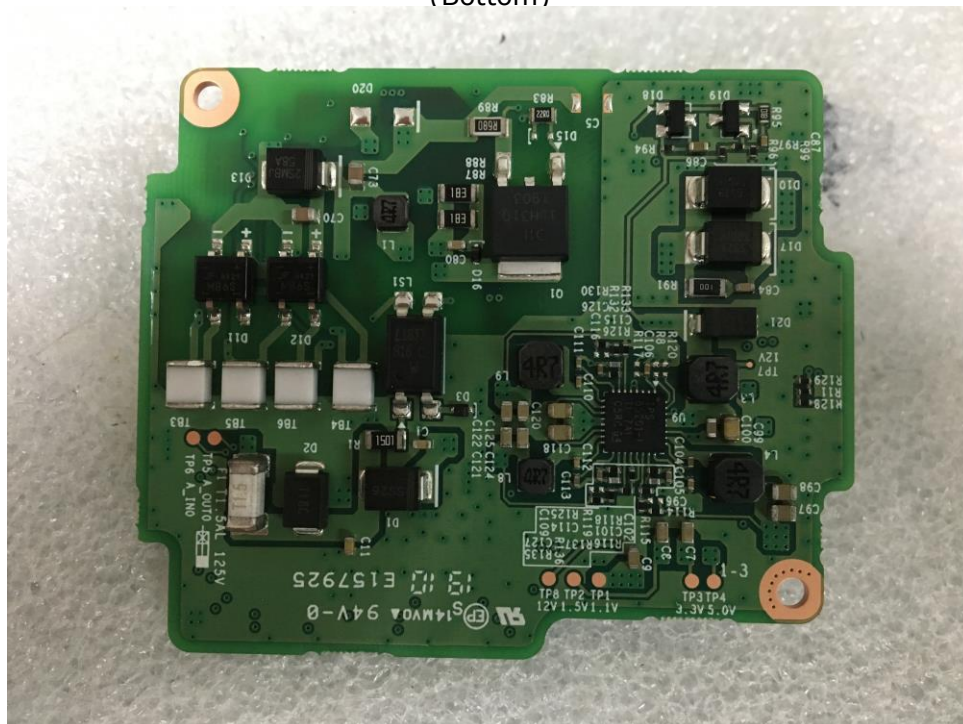
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EUT Internal View – Board 3

(Top)



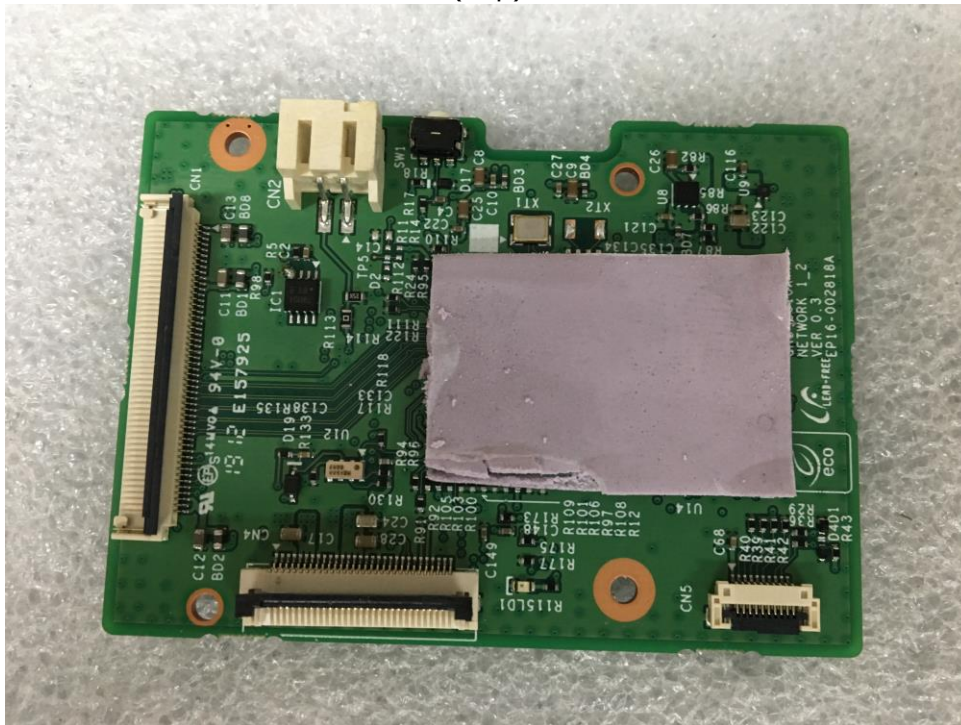
(Bottom)



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EUT Internal View – Board 4

(Top)



(Bottom)



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