# EMC TEST REPORT For VCCI

| | | |
|---|---|---|
| Test Report No. | : | KES-E1-16T0646 |
| Date of Issue | : | Dec, 14, 2016 |
| Product name | : | NETWORK CAMERA |
| Model/Type No. | : | XNV-6010N |
| Variant Model | : | - |
| Applicant | : | Hanwha Techwin Co., Ltd. |
| Applicant Address | : | Changwon-daero, Seongsan-gu Changwon-si, Gyeongsangnam-do |
| Manufacturer | : | Tianjin Samsung Techwin Opto-Electronic Co.,Ltd. |
| Manufacturer Address | : | No.11 Weiliu Rd,Micro-Electronic Industrial Park, TEDA,Tianjin,300385,People's Republic of China |
| Date of Receipt | : | Nov, 30, 2016 |
| Test date | : | Dec, 06, 2016 |
| Test Results | : | ☒ **In Compliance** ☐ **Not in Compliance** |

*Tested by*

Jin Bae Lee
EMC Test Engineer

*Reviewed by*

Dong-Hun, Jang
EMC Technical Manager

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

# REPORT REVISION HISTORY

| Date | Test Report No. | Revision History |
|---|---|---|
| Dec. 14, 2016 | KES-E1-16T0646 | Issued |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

***This report shall not be reproduced except in full, without the written approval of KES Co., Ltd. This document Sep be altered or revised by KES Co., Ltd. personnel only, and shall be noted in the revision section of the document. Any alteration of this document not carried out by KES Co., Ltd. will constitute fraud and shall nullify the document.***

# TABLE OF CONTENTS

1.0 General Product Description ..... 4
1.1 Test Voltage & Frequency ..... 7
1.2 Variant Model Differences ..... 7
1.3 Device Modifications ..... 7
1.4 Equipment Under Test ..... 7
1.5 Support Equipments ..... 7
1.6 External I/O Cabling ..... 8
1.7 EUT Operating Mode(s) ..... 9
1.8 Configuration ..... 10
1.9 Calibration Details of Equipment Used for Measurement ..... 11
1.10 Test Facility ..... 11
1.11 Laboratory Accreditations and Listings ..... 11
2.0 Test Regulations ..... 12
2.1 Conducted Emissions Mains Power Ports ..... 14
2.2 Conducted Emissions at Telecommunication Ports ..... 15
2.3 Radiated Electric Field Emissions(Below 1 ㎓) ..... 16
2.4 Radiated Electric Field Emissions(Above 1 ㎓) ..... 17
APPENDIX A – TEST DATA ..... 18
Conducted Emissions at Mains Power Ports ..... 18
Conducted Emissions at Telecommunication Ports ..... 20
Radiated Electric Field Emissions(Below 1 ㎓) ..... 24
Radiated Electric Field Emissions(Above 1 ㎓) ..... 25
Test Setup Photos and Configuration ..... 33
Conducted Voltage Emissions ..... 33
Conducted Telecommunication Emissions ..... 34
Radiated Electric Field Emissions(Below 1 ㎓) ..... 36
Radiated Electric Field Emissions(Above 1 ㎓) ..... 38
EUT External Photographs ..... 40
EUT Internal Photographs ..... 41

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

# 1.0 General Product Description

## Main Specifications of EUT are:

| | |
|---|---|
| **Video** | |
| Imaging Device | 1/2.8" 2M CMOS (IMX291) |
| Total Pixels | 1945(H) x 1109(V) 2.16M |
| Effective Pixels | 1945(H) x 1097(V) 2.13M |
| Scanning System | Progressive Scan |
| Min. Illumination | Color : 0.07 lux (TBD) |
| S / N Ratio | 50dB |
| Video Out | CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P), for installation<br>USB : Micro USB type B, 1920 x 1080(TBD), for installation |
| **Lens** | |
| Focal Length (Zoom Ratio | 2.5mm Fixed |
| Max. Aperture Ratio | F2.0 |
| Angular Field of View | H: 139°, V:73°, D: 167° |
| Min. Object Distance | 0.4m |
| Focus Control | Manual |
| Lens Type | Fixed |
| Mount Type | Board-in type(M12) |
| **Pan / Tilt / Rotate** | |
| Pan / Tilt / Rotate range | 0° ~ 354° / 0° ~ 85°(TBD) / 0° ~ 355° |
| **Operational** | |
| IR LED | - |
| Viewable Length | - |
| Camera Title | Off / On (Displayed up to 55 characters)<br>- W/W : English/Numeric/Special Characters<br>- China : English/Numeric/Special/Chinese Characters<br>- Common : Multi-line (Max 6), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto Scale by Resolution |
| Day & Night | Auto (ICR) / Color / B/W / External / Schedule |
| Backlight Compensation | Off / BLC / HLC(Masking/Dimming), WDR(Seamless transition TBD) |
| Wide Dynamic Range | 150dB(TBD) |
| Contrast Enhancement | SSDR (Off / On) |
| Digital Noise Reduction | SSNR5 (2D+3D Noise Filter) (Off / On) |
| Digital Image Stabilization | Off / On |
| Defog | Auto(input from fog&Dust detection) / Manual / Off |
| Motion Detection | Yes(8ea, 4point Polygonal zones) |
| Privacy Masking | Off / On (32ea, polygonal zones)<br>- Color : Grey/Green/Red/Blue/Black/White<br>- Mosaic |
| Gain Control | Off / Low / Middle / High |
| White Balance | ATW / AWC / Manual / Indoor / Outdoor((included Mercury & Sodium) |
| Contrast | level adjustment |
| LDC | On/Off (5 levels with Min/Max) |
| Electronic Shutter Speed | Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec →TBD) |
| Digital PTZ | 24X, 'Digital PTZ(Preset, Group) |
| Flip / Mirror | Flip : On/Off<br>Mirror : On/Off<br>Hallway view : 90°/270° |
| Intelligent Video Analytics | Tampering, Loitering, Directional Detection, Defocus Detection, Fog&Dust Detection, Virtual Line, Enter/Exit, Appear / Disappear, Audio Detection, Motion Detection, Digital Auto Tracking, Sound Classification, Heatmap, People counting, Queue management |
| Alarm I/O | Input 1ea / Output 1ea |
| Remote Control Interface | - |
| RS-485 Protocol | - |

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

| | |
|---|---|
| Alarm Triggers | Alarm Input, Motion Detection, Intelligent Video Analytics, Network Disconnect |
| Alarm events | File upload via FTP, E-Mail<br>Notification via E-Mail<br>local storage(SD/SDHC/SDXC) or NAS recording at Event Triggers<br>External output<br>DPTZ preset |
| Audio In | Selectable (Mic IN/Line IN), Built-in MIC. Max output level : 1Vrms<br>Supply voltage: 2.5VDC(4mA), Input impedance: approx. 2K Ohm |
| Audio out | Line out, Max output level: 1 Vrms |
| Fan / Heater | - |
| Pixel Counter | Support |
| **Network** | |
| Ethernet | RJ-45 (10/100BASE-T) |
| Video Compression Forma | H.265/H.264 (MPEG-4 Part 10/AVC) : Main/Baseline/High , Motion JPEG |
| Resolution | 1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x450, 720x576, 640x480, 640x360, 320x240, 320x180 |
| Max. Framerate | H.265/H.264 : Max. 60fps at all resolutions<br>Motion JPEG : Max. 30fps |
| Smart Codec | Manual Mode (area-based : 5EA) |
| Video Quality Adjustment | H.264/H.265 : Target Bitrate Level Control<br>MJPEG : Target Bitrate Level Control |
| Bitrate Control Method | H.264/H.265 : CBR or VBR, ※ WiseStream 멀도항목으로 분리<br>MJPEG : VBR |
| Streaming Capability | Multiple Streaming (Up to 10 Profiles) |
| Audio Compression Forma | 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 8/16/32/48KHz |
| Audio Communication | Bi-dierctional (2-Way) |
| IP | IPv4, IPv6 |
| Protocol | TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour |
| Security | HTTPS(SSL) Login Authentication<br>Digest Login Authentication<br>IP Address Filtering<br>User access Log<br>802.1X Authentication (EAP-TLS, EAP-LEAP)<br>- Streaming Encryption 기능구현 |
| Streaming Method | Streaming Method |
| Max. User Access | 20 users at Unicast Mode(TBD) |
| Edge Storage | SD/SDHC/SDXC 2slot (up to 512 GB)<br>- Continuous recording(1'st slot to 2'nd slot)<br>- (TBD) Redundant recording<br>- Motion Images recorded in the SD/SDHC/SDXC memory card can be downloaded.<br>NAS(Network Attached Storage)<br>Local PC for Instant Recording |
| Application Programming I | ONVIF Profile S/G<br>SUNAPI(HTTP API)<br>Open Platform |
| Webpage Language | English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Denish, Portuguese, Czech, Polish, Turkish, Rumanian, Serbian, Dutch, Croatia, Hungary, Greek, Norsk, Finnish |

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

| | |
|---|---|
| Web Viewer | Supported OS: Windows 7, 8, 10, Mac OS X 10.8. 10.9. 10.10. 10.11<br>**Non-plugin Webviewer**<br>Supported Browser: Google Chrome 47, MS Edge 20<br>Support Codec :<br>Video : H.264, MJPEG (MAX 1M 15FPS)<br>Audio : G.711<br>**Plug-in Webviewer**<br>Supported Browser : MS Explore 11 , Mozilla Firefox 43 ,<br>Apple Safari 9 * Mac OS X only |
| Central Management Soft | SmartViewer, SSM |
| **Environmental** | |
| Operating Temperature / Humidity | -30°C ~ +55°C (-22°F ~ +131°F) / Less than 90% RH<br>*Start up should be done at above -20°C |
| Storage Temperature / Humidity | -30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH |
| Ingress Protection | IP67(TBD), IP66 |
| Vandal Resistance | IK10 |
| **Electrical** | |
| Input Voltage / Current | DC12V,PoE(IEEE802.3af,Class3) |
| Power Consumption | TBD |
| **Mechanical** | |
| Color / Material | Ivory / Metal |
| Dimension (WxHxD) | ϕ120 x H92 |
| Weight | TBD |

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

## 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 ☐ 100 Vac ☐ 110 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 | XNV-6010N | - | Tianjin Samsung Techwin Opto-Electronic Co.,Ltd. | E.U.T |

## 1.5 Support Equipments

| Description | Model Number | Serial Number | Manufacturer | Remarks |
|---|---|---|---|---|
| POE Adapter | PD-3001GC/AC | RD9356082016964200 | Power Dsine | - |
| Notebook | X56K | HN11N5151FJ0045W | HANSUNG | - |
| Notebook Adapter | A12-120P1A | F180271552011758 | CHICONY POWER TECHNOLOGY CO.,LTD. | - |
| Phone | A1530 | - | APPLE | - |
| MIC | CMK-303 | - | CAMAC | 1.7 m |
| Speaker | BR10000A CUVE | - | BEIJING EDIFIER HI-TECH GROUP. | 1.6 m |
| Alarm | - | - | - | - |

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

## 1.6 External I/O Cabling

- DC 12 V Mode

| Start | | END | | Cable Spec. | |
|---|---|---|---|---|---|
| **Description** | **I/O Port** | **Description** | **I/O Port** | **Length** | **Shield** |
| NETWORK CAMERA (E.U.T) | RJ-45 | Notebook | RJ-45 | 3.0 | U |
| | 7 Pin | MIC | 3.5 ㎜ | 1.7 | U |
| | | Speaker | 3.5 ㎜ | 1.6 | U |
| | | Alarm | 2 pin | 2.5 | U |
| Notebook | Audio in | Phone | Audio out | 1.7 | - |

- PoE Mode

| Start | | END | | Cable Spec. | |
|---|---|---|---|---|---|
| **Description** | **I/O Port** | **Description** | **I/O Port** | **Length** | **Shield** |
| NETWORK CAMERA (E.U.T) | RJ-45 (POE) | POE Adapter | RJ-45 (POE) | 3.0 | U |
| | 7 Pin | MIC | 3.5 ㎜ | 1.7 | U |
| | | Speaker | 3.5 ㎜ | 1.6 | U |
| | | Alarm | 2 pin | 2.5 | U |
| Notebook | Audio in | Phone | Audio out | 1.7 | U |
| | RJ-45 (DATA) | POE Adapter | RJ-45 (DATA) | 3.0 | U |

* Unshielded = U, Shielded = S

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

## 1.7 EUT Operating Mode(s)

| operating |
|---|
| E.U.T Monitoring , Ping test, 1 kHz |

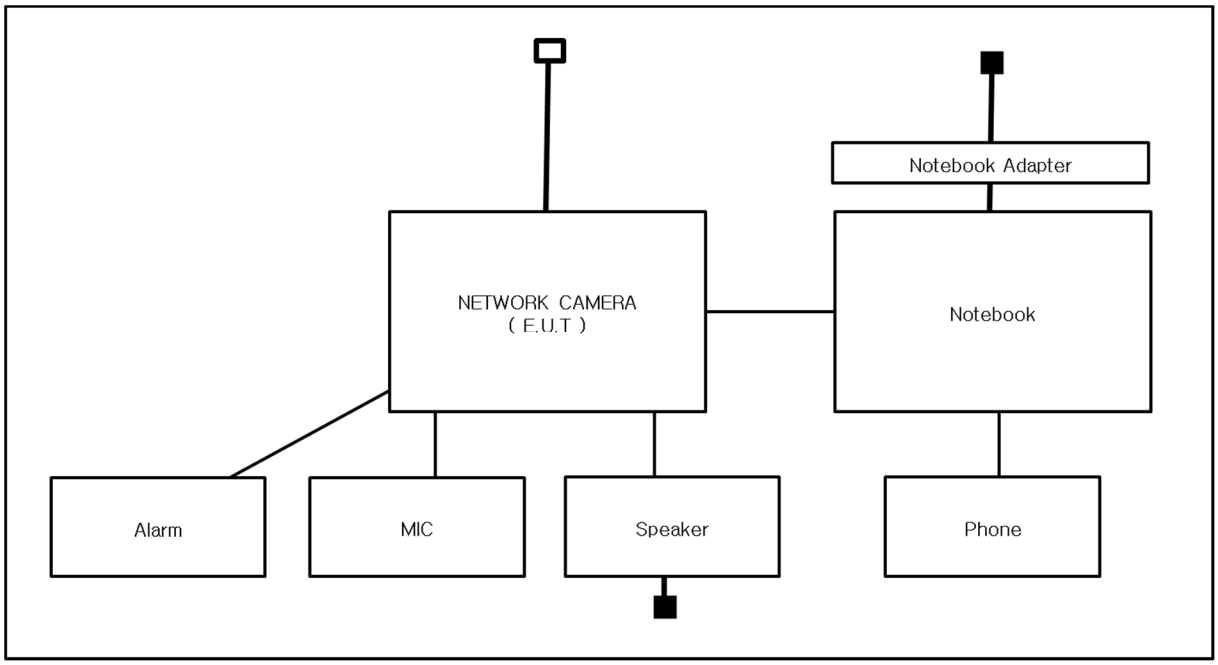
| E.U.T Test operating S/W | | |
|---|---|---|
| Name | Version | Manufacture Company |
| SmartViewer | - | Hanwha Techwin Co., Ltd. |

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

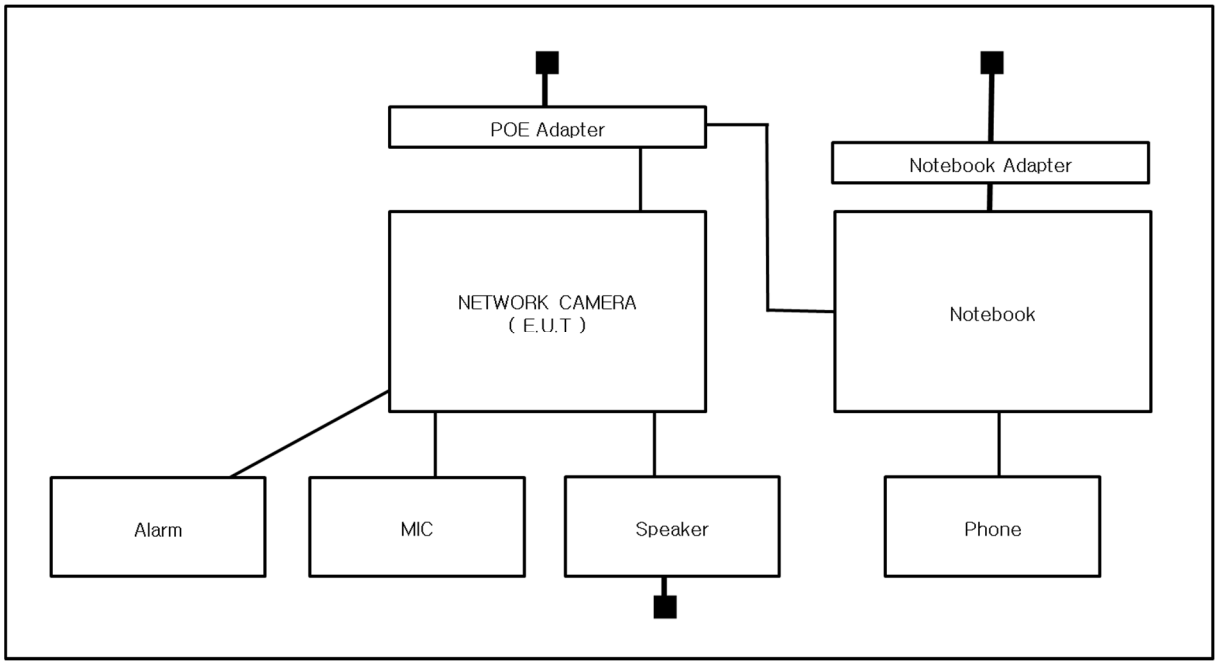
## 1.8 Configuration

■ AC 24 V Main
□ DC 12 V Main

- DC 12 V Mode




- PoE Mode




This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

## 1.9 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.

## 1.10 Test Facility

The measurement facility is located at 473-21 Gayeo-ro, Yeoju-si, Gyeonggi-do, 12658, Korea. The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22.

## 1.11 Laboratory Accreditations and Listings

| Country | Agency | Scope of Accreditation | Logo |
|---|---|---|---|
| USA | **FCC** | 3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements. | |
| 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-4308, C-4798, T-2311, G-914 |
| KOREA | **MSIP** | EMI (10 meter Open Area Test Site and two conducted sites)<br>Radio(3 & 10 meter Open Area Test Sites and one conducted site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions) | KR0100 |
| Canada | **IC** | 3 & 10 meter Open Area Test Sites and one conducted site | 4769B-1 |
| Europe | **CE** | EMI (10 meter Open Area Test Site and two conducted sites)<br>Radio(3 & 10 meter Open Area Test Sites and one conducted site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions) | |
| International | **KOLAS** | EMI (10 meter Open Area Test Site and two conducted sites)<br>Radio(3 & 10 meter Open Area Test Sites and one conducted site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions) | KOREA LABORATORY ACCREDITATION SCHEME KOLAS TESTING NO. 489 |

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

# 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 61547 :2009

☐ EN 55022:2010 ☐ Class A ☐ Class B

☐ EN 55024:2010 +A1:2015

☐ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

☒ **VCCI V-3 / 2015.04** ☒ Class A ☐ Class B

☐ **AS/NZS CISPR22:2009 +A1:2010** ☐ Class A ☐ Class B

☐ **47 CFR Part 15, Subpart B**

- ☐ CISPR 22:2009 +A1:2010 ☐ Class A ☐ Class B
- ☐ ANSI C63.4-2009

☐ **IC Regulation ICES-003 : 2016**

- ☐ CAN/CSA CISPR 22-10 ☐ Class A ☐ Class B
- ☐ ANSI C63.4-2014

☐ **RE– Directive 2014/53/EU**

☐ EN 301 489-1 V1.9.2

- ☐ Equipment for fixed use
- ☐ Equipment for vehicular use
- ☐ Equipment for portable use

☐ EN 301 489-3 V1.6.1

☐ EN 301 489-17 V2.2.1

☐ EN 60945:2002

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

# 2.1 Conducted Emissions Mains Power Ports

**Test Date**
N/A

**Test Location**
Electro wave Shieldroom

**Test Equipment**

| Used | Description | Model Number | Manufacturer | Serial Number | Cal. Due |
|---|---|---|---|---|---|
| ☐ | EMI Test Receiver | ESR3 | R & S | 101783 | 05, 03, 2017 |
| ☐ | LISN | ENV216 | R & S | 101137 | 02, 04, 2017 |
| ☐ | LISN | ENV216 | R & S | 101786 | 05, 02, 2017 |
| ☐ | Electro wave Shieldroom | - | SEMITEC | - | - |
| ☐ | EMI Test S/W | EMC32 | R & S | 9.12.00 | - |

**Test Conditions**
Temperature: ℃
Relative Humidity: %

**Frequency Range of Measurement**
150 ㎑ to 30 ㎒

**Instrument Settings**
IF Band Width: 9 ㎑

**Test Results**
The requirements are:

☐ PASS
☐ NOT PASS
☒ NOT APPLICABLE

**Remarks**
N/A Because the E.U.T power is 12 v (dc) power and PoE, limits are not specified.

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

## 2.2 Conducted Emissions at Telecommunication Ports

**Test Date**
Dec, 06, 2016

**Test Location**
Electro wave Shieldroom

**Test Equipment**

| Used | Description | Model Number | Manufacturer | Serial Number | Cal. Due |
|---|---|---|---|---|---|
| ☒ | EMI Test Receiver | ESR3 | R & S | 101783 | 05, 03, 2017 |
| ☒ | LISN | ENV216 | R & S | 101137 | 02, 04, 2017 |
| ☒ | LISN | ENV216 | R & S | 101786 | 05, 02, 2017 |
| ☒ | 8-Wire ISN CAT3 | CAT3 8158 | Schwarzbeck Mess | 8158-0019 | 04, 01, 2017 |
| ☒ | 8-Wire ISN CAT5 | CAT5 8158 | Schwarzbeck Mess | 8158-0030 | 04, 01, 2017 |
| ☐ | 8-Wire ISN CAT6 | NTFM 8158 | Schwarzbeck Mess | 8158-0029 | 08, 11, 2017 |
| ☒ | Electro wave Shieldroom | - | SEMITEC | - | - |
| ☒ | EMI Test S/W | EMC32 | R & S | 9.12.00 | - |

**Test Conditions**
Temperature: 16,9 ℃
Relative Humidity: 45,3 %

**Frequency Range of Measurement**
150 ㎑ to 30 ㎒

**Instrument Settings**
IF Band Width: 9 ㎑

**Test Results**
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

**Remarks**
See Appendix A for test data.

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

# 2.3 Radiated Electric Field Emissions(Below 1 ㎓)

**Test Date**
Dec, 06, 2016

**Test Location**
☐ Open Area Test Site #1 ☒ Open Area Test Site #2

**Test Equipment**

| Used | Description | Model Number | Manufacturer | Serial Number | Cal. Due |
|---|---|---|---|---|---|
| ☒ | EMI TEST Receiver | ESR3 | R&S | 101781 | 05, 03, 2017 |
| ☒ | Trilog-Broadband ANT | VULB 9163 | Schwarzbeck | 9163-713 | 05, 15, 2018 |
| ☒ | OATS | - | KES | - | - |
| ☒ | Antenna Mast | - | DAEIL EMC | - | - |
| ☒ | Turn Table | - | DAEIL EMC | - | - |
| ☒ | EMI Test S/W | N/A | N/A | N/A | N/A |

**Test Conditions**
Temperature: 4,4 ℃
Relative Humidity: 39,0 %

**Frequency Range of Measurement**
30 ㎒ to 1 ㎓

**Instrument Settings**
IF Band Width: 120 ㎑

**Test Results**
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

**Remarks**
See Appendix A for test data.

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

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

**Test Date**
Dec, 06, 2016

**Test Location**
Semi Anechoic Chamber #2

**Test Equipment**

| Used | Description | Model Number | Manufacturer | Serial Number | Cal. Due |
|---|---|---|---|---|---|
| ☒ | EMI Test Receiver | ESU26 | R&S | 100552 | 04, 24, 2017 |
| ☒ | Broadband Coaxial Preamplifier | BBV 9718 | Schwarzbeck Mess - Elektronik | 9718-246 | 10, 24, 2017 |
| ☒ | DOUBLE RIDGED HORN ANTENNA | SAS-571 | A.H.SYSTEM,INC | 781 | 05, 07, 2017 |
| ☒ | Semi Anechoic Chamber #2 | - | SEMITEC | - | - |
| ☒ | Antenna Mast | - | AUDIX | - | - |
| ☒ | Turn Table | - | AUDIX | - | - |
| ☒ | EMI Test S/W | e3 | AUDIX | 8.083b | - |

**Test Conditions**
Temperature: 16,9 ℃
Relative Humidity: 45,3 %

**Frequency Range of Measurement**
1 ㎓ to 6 ㎓

**Instrument Settings**
IF Band Width: 1 ㎒

**Test Results**
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

**Remarks**
See Appendix A for test data.

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

# APPENDIX A – TEST DATA

## Conducted Emissions at Mains Power Ports

### [HOT]

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)

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

**[NEUTRAL]**

N/A

♦ Calculation
QuasiPeak[㏈uV] / CAverage [㏈uV] = Reading Value[㏈uV] + Corr. [㏈]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.
Corr. : Correction values (LISN FACTOR+ Cable Loss)

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

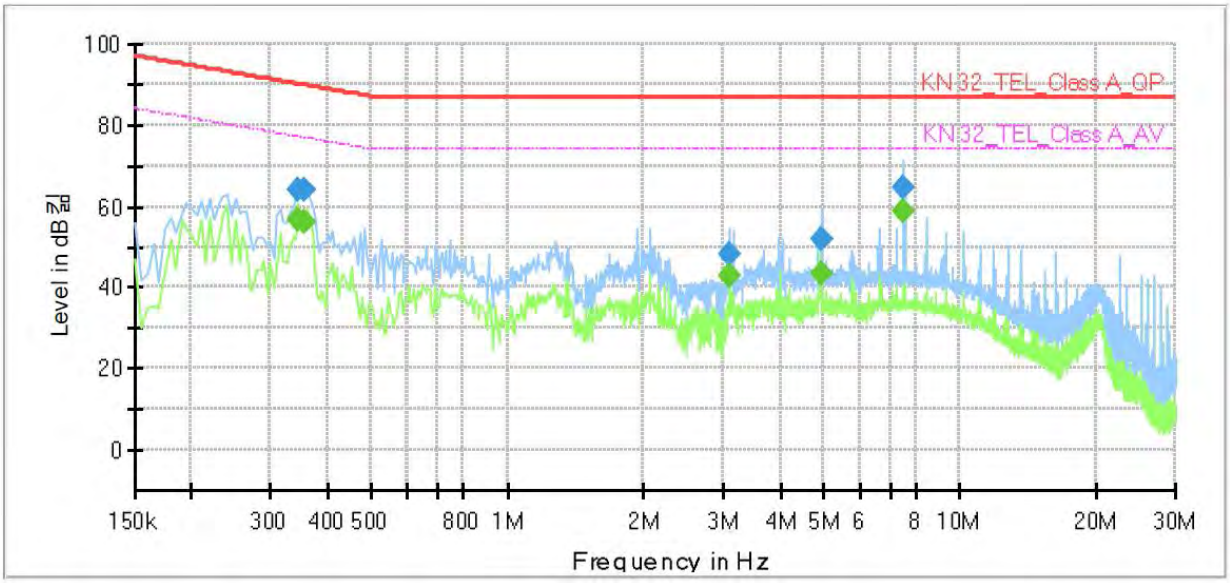
## Conducted Emissions at Telecommunication Ports

- DC 12 V Mode

**[10 Mbps]**

## Common Information

| | |
|---|---|
| Test Description: | Telecommunication Emission |
| Model No.: | XNV-6010N |
| Mode | DC 12V_10M |
| Operator Name: | KES |




## Final_Result

| Frequency (MHz) | QuasiPeak (dBµV) | CAverage (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 0.345000 | --- | 56.59 | 77.08 | 20.49 | 1000.0 | 9.000 | Single Line | 10.1 |
| 0.345000 | 63.92 | --- | 90.08 | 26.16 | 1000.0 | 9.000 | Single Line | 10.1 |
| 0.355000 | --- | 56.36 | 76.84 | 20.48 | 1000.0 | 9.000 | Single Line | 10.1 |
| 0.355000 | 63.95 | --- | 89.84 | 25.89 | 1000.0 | 9.000 | Single Line | 10.1 |
| 3.100000 | --- | 42.65 | 74.00 | 31.35 | 1000.0 | 9.000 | Single Line | 10.2 |
| 3.100000 | 48.02 | --- | 87.00 | 38.98 | 1000.0 | 9.000 | Single Line | 10.2 |
| 4.940000 | --- | 43.45 | 74.00 | 30.55 | 1000.0 | 9.000 | Single Line | 10.1 |
| 4.940000 | 52.07 | --- | 87.00 | 34.93 | 1000.0 | 9.000 | Single Line | 10.1 |
| 7.500000 | --- | 58.73 | 74.00 | 15.27 | 1000.0 | 9.000 | Single Line | 10.0 |
| 7.500000 | 64.48 | --- | 87.00 | 22.52 | 1000.0 | 9.000 | Single Line | 10.0 |

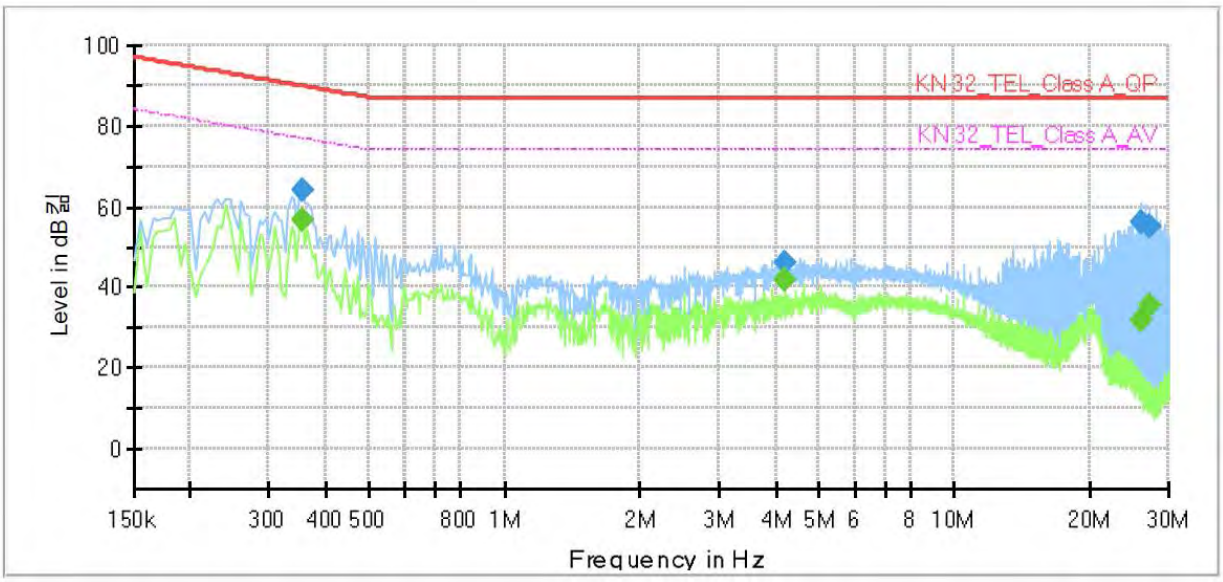
♦ Calculation
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.
Corr. : Correction values (ISN FACTOR+ Cable Loss)

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

**[100 Mbps]**

## Common Information

| | |
|---|---|
| Test Description: | Telecommunication Emission |
| Model No.: | XNV-6010N |
| Mode | DC 12V_100M |
| Operator Name: | KES |




## Final_Result

| Frequency (MHz) | QuasiPeak (dBµV) | CAverage (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 0.355000 | --- | 56.55 | 76.84 | 20.29 | 1000.0 | 9.000 | Single Line | 9.6 |
| 0.355000 | 64.07 | --- | 89.84 | 25.77 | 1000.0 | 9.000 | Single Line | 9.6 |
| 4.200000 | --- | 42.07 | 74.00 | 31.93 | 1000.0 | 9.000 | Single Line | 9.6 |
| 4.200000 | 46.08 | --- | 87.00 | 40.92 | 1000.0 | 9.000 | Single Line | 9.6 |
| 25.955000 | --- | 31.57 | 74.00 | 42.43 | 1000.0 | 9.000 | Single Line | 9.5 |
| 25.955000 | 55.97 | --- | 87.00 | 31.03 | 1000.0 | 9.000 | Single Line | 9.5 |
| 27.060000 | --- | 35.44 | 74.00 | 38.56 | 1000.0 | 9.000 | Single Line | 9.5 |
| 27.060000 | 55.17 | --- | 87.00 | 31.83 | 1000.0 | 9.000 | Single Line | 9.5 |

♦ 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)

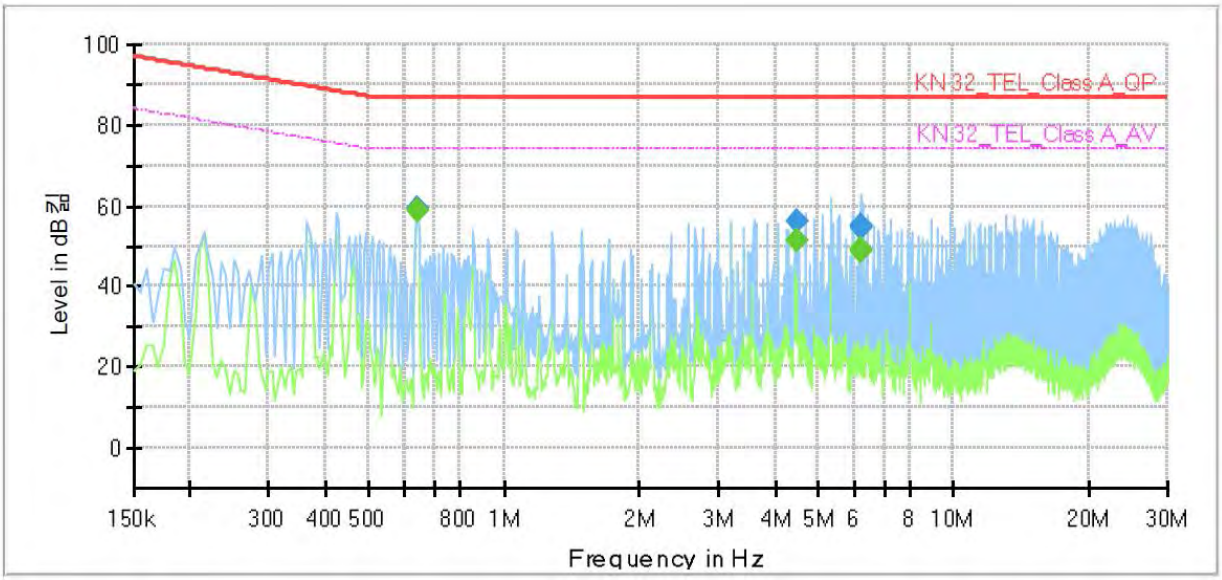
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

- PoE Mode

**[10 Mbps]**

## Common Information

| | |
|---|---|
| Test Description: | Telecommunication Emission |
| Model No.: | XNV-6010N |
| Mode | POE_10M |
| Operator Name: | KES |




## Final_Result

| Frequency (MHz) | QuasiPeak (dBµV) | CAverage (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 0.640000 | --- | 58.97 | 74.00 | 15.03 | 1000.0 | 9.000 | Single Line | 10.1 |
| 0.640000 | 59.18 | --- | 87.00 | 27.82 | 1000.0 | 9.000 | Single Line | 10.1 |
| 4.480000 | --- | 51.54 | 74.00 | 22.46 | 1000.0 | 9.000 | Single Line | 10.1 |
| 4.480000 | 56.13 | --- | 87.00 | 30.87 | 1000.0 | 9.000 | Single Line | 10.1 |
| 6.195000 | --- | 49.36 | 74.00 | 24.64 | 1000.0 | 9.000 | Single Line | 10.1 |
| 6.195000 | 54.98 | --- | 87.00 | 32.02 | 1000.0 | 9.000 | Single Line | 10.1 |
| 6.255000 | --- | 48.88 | 74.00 | 25.12 | 1000.0 | 9.000 | Single Line | 10.1 |
| 6.255000 | 54.46 | --- | 87.00 | 32.54 | 1000.0 | 9.000 | Single Line | 10.1 |

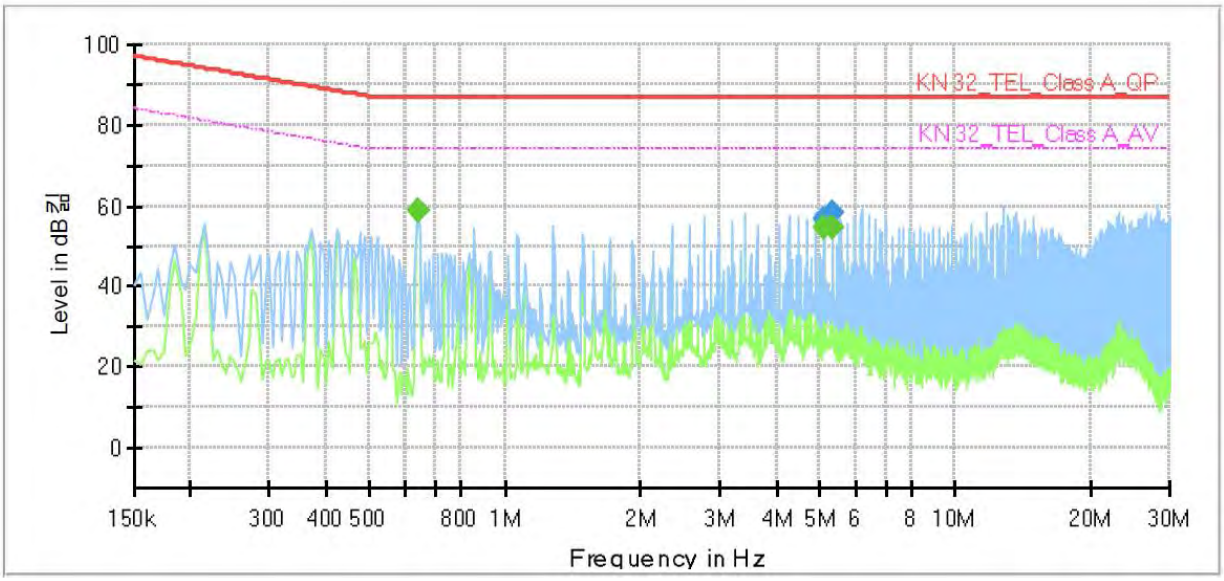
♦ Calculation
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.
Corr. : Correction values (ISN FACTOR+ Cable Loss)

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

**[100 Mbps]**

## Common Information

| | |
|---|---|
| Test Description: | Telecommunication Emission |
| Model No.: | XNV-6010N |
| Mode | POE_100M |
| Operator Name: | KES |




## Final_Result

| Frequency (MHz) | QuasiPeak (dBµV) | CAverage (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 0.640000 | --- | 58.78 | 74.00 | 15.22 | 1000.0 | 9.000 | Single Line | 9.6 |
| 0.640000 | 58.99 | --- | 87.00 | 28.01 | 1000.0 | 9.000 | Single Line | 9.6 |
| 5.120000 | --- | 54.64 | 74.00 | 19.36 | 1000.0 | 9.000 | Single Line | 9.6 |
| 5.120000 | 56.63 | --- | 87.00 | 30.37 | 1000.0 | 9.000 | Single Line | 9.6 |
| 5.335000 | --- | 54.47 | 74.00 | 19.53 | 1000.0 | 9.000 | Single Line | 9.6 |
| 5.335000 | 58.32 | --- | 87.00 | 28.68 | 1000.0 | 9.000 | Single Line | 9.6 |

♦ 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)

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

## Radiated Electric Field Emissions(Below 1 ㎓)

- DC 12 V Mode

| Frequency | Amplitude | ANT Polar. | ANT. Height | Correction Factor | | Corrected Amplitude | Applicable Limit | Margin |
|---|---|---|---|---|---|---|---|---|
| [㎒] | [dBμV] | (H/V) | [m] | ANT. [dB/m] | Cable [dB] | [dBμV/m] | [dBμV/m] | [dB] |
| 51.27 | 11.78 | V | 1.00 | 13.79 | 2.11 | 27.68 | 40.00 | 12.32 |
| 225.83 | 8.80 | H | 3.62 | 11.87 | 4.43 | 25.10 | 40.00 | 14.90 |
| 334.52 | 7.09 | V | 1.18 | 14.18 | 5.49 | 26.76 | 47.00 | 20.24 |
| 398.10 | 8.87 | H | 3.29 | 15.66 | 6.15 | 30.68 | 47.00 | 16.32 |
| 449.82 | 7.14 | V | 1.24 | 16.40 | 6.80 | 30.34 | 47.00 | 16.66 |
| 464.77 | 7.68 | H | 3.78 | 16.61 | 6.86 | 31.15 | 47.00 | 15.85 |
| 600.58 | 6.15 | V | 1.00 | 19.30 | 7.83 | 33.28 | 47.00 | 13.72 |

* H : Horizontal, V : Vertical

♦ Calculation
Corrected Amplitude [㏈uV] = Amplitude[㏈uV] + Correction Factor [㏈]
Corrected Amplitude : The Final Value, Amplitude : Reading Value,
Correction Factor : ANT FACTOR + Cable loss

- PoE Mode

| Frequency | Amplitude | ANT Polar. | ANT. Height | Correction Factor | | Corrected Amplitude | Applicable Limit | Margin |
|---|---|---|---|---|---|---|---|---|
| [㎒] | [dBμV] | (H/V) | [m] | ANT. [dB/m] | Cable [dB] | [dBμV/m] | [dBμV/m] | [dB] |
| 66.16 | 8.39 | H | 3.72 | 10.84 | 2.33 | 21.56 | 40.00 | 18.44 |
| 221.34 | 8.42 | V | 1.45 | 11.77 | 4.37 | 24.56 | 40.00 | 15.44 |
| 250.87 | 6.18 | H | 3.92 | 12.43 | 4.73 | 23.34 | 47.00 | 23.66 |
| 461.61 | 7.70 | H | 4.00 | 16.56 | 6.85 | 31.11 | 47.00 | 15.89 |
| 484.82 | 9.01 | V | 1.34 | 16.89 | 6.94 | 32.84 | 47.00 | 14.16 |
| 680.33 | 13.44 | V | 1.00 | 19.62 | 8.38 | 41.44 | 47.00 | 5.56 |

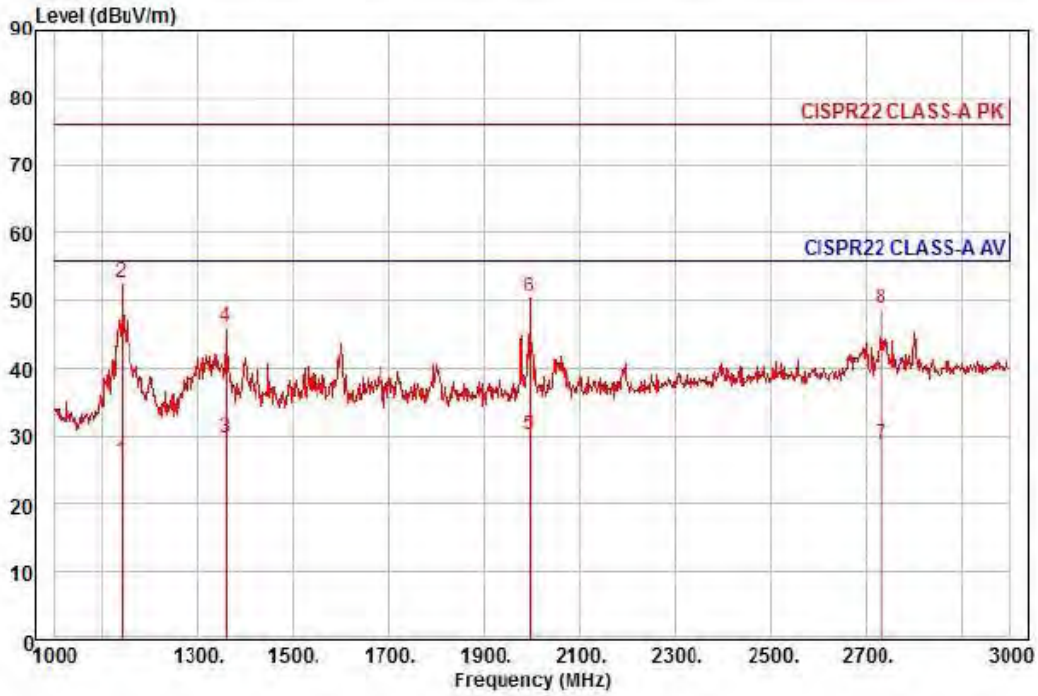
* H : Horizontal, V : Vertical

♦ Calculation
Corrected Amplitude [㏈uV] = Amplitude[㏈uV] + Correction Factor [㏈]
Corrected Amplitude : The Final Value, Amplitude : Reading Value,
Correction Factor : ANT FACTOR + Cable loss

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

## Radiated Electric Field Emissions(Above 1 ㎓)

- DC 12 V Mode




Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
Mode : DC 12 V
Memo : 1 ~ 3 GHz

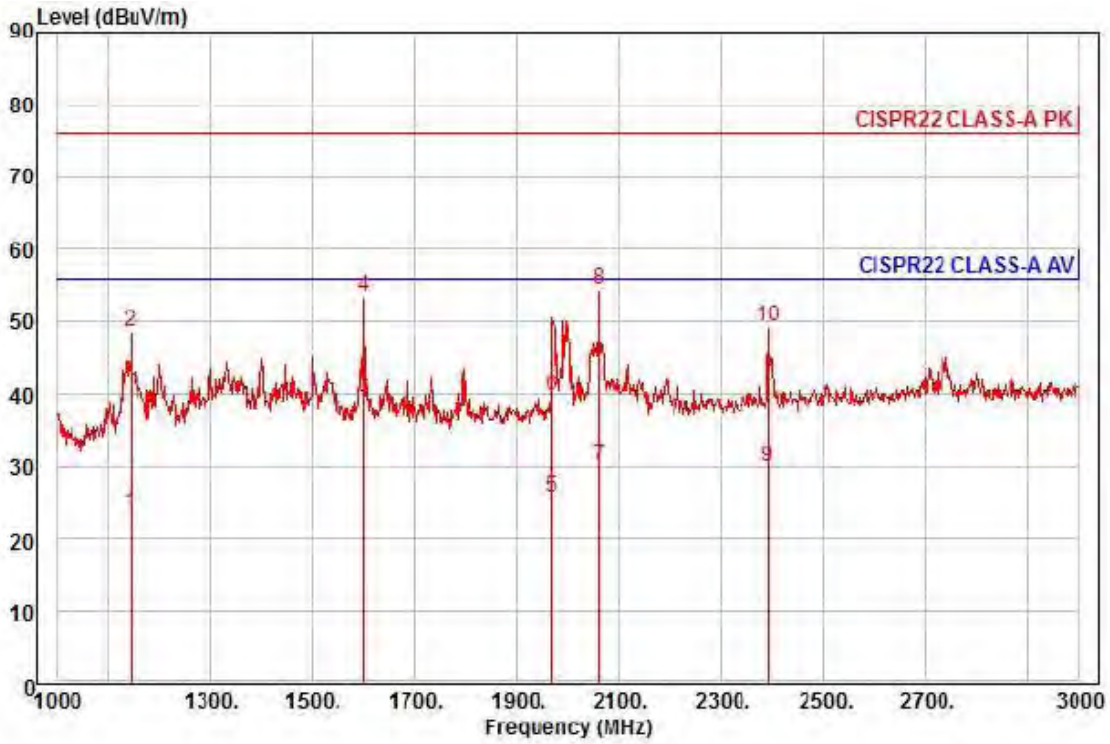
| | Freq | Read Level | Ant Factor | Cable Loss | Preamp Factor | TPos | Limit Line | Over Limit | Pol/Phase | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | deg | dBuV/m | dB | | |
| 1 | 1140.00 | 34.64 | 24.47 | 6.94 | 39.75 | 208 | 56.00 | -29.70 | horizontal | Average |
| 2 pp | 1140.00 | 60.99 | 24.47 | 6.94 | 39.75 | 208 | 76.00 | -23.35 | horizontal | Peak |
| 3 | 1360.00 | 35.96 | 25.34 | 7.61 | 39.23 | 29 | 56.00 | -26.32 | horizontal | Average |
| 4 | 1360.00 | 52.47 | 25.34 | 7.61 | 39.23 | 29 | 76.00 | -29.81 | horizontal | Peak |
| 5 av | 1996.00 | 32.26 | 27.86 | 9.33 | 39.41 | 20 | 56.00 | -25.96 | horizontal | Average |
| 6 | 1996.00 | 52.68 | 27.86 | 9.33 | 39.41 | 20 | 76.00 | -25.54 | horizontal | Peak |
| 7 | 2732.00 | 27.87 | 29.67 | 11.07 | 39.80 | 335 | 56.00 | -27.19 | horizontal | Average |
| 8 | 2732.00 | 47.81 | 29.67 | 11.07 | 39.80 | 335 | 76.00 | -27.25 | horizontal | Peak |

♦ Calculation

Over Limit [㏈] = (Read Level[㏈uV] + Ant Factor[㏈/m] + Cable Loss [㏈] − Preamp Factor [㏈]) − Limit Line[㏈uV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor, Cable Loss : Cable loss, Preamp Factor : Preamp Factor

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.




Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
Mode : DC 12 V
Memo : 1 ~ 3 GHz

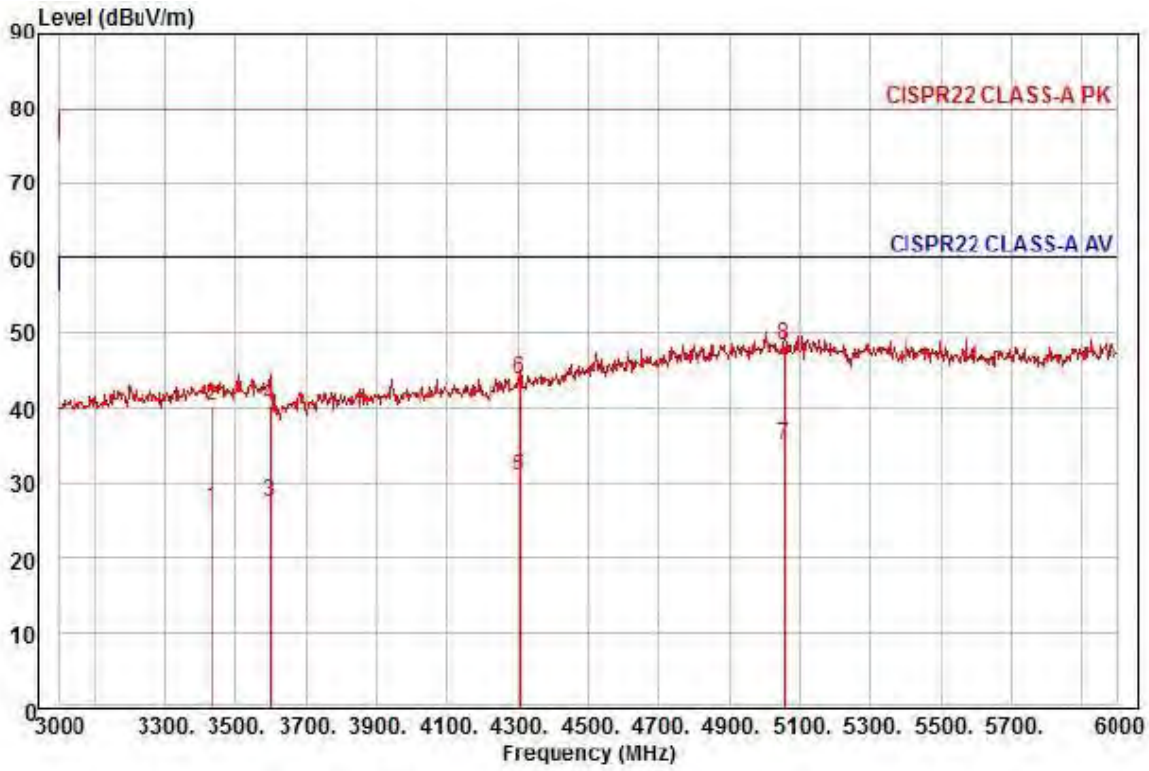
| | Freq | Read Level | Ant Factor | Cable Loss | Preamp Factor | TPos | Limit Line | Over Limit | Pol/Phase | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | deg | dBuV/m | dB | | |
| 1 | 1144.00 | 31.86 | 24.48 | 6.95 | 39.74 | 351 | 56.00 | -32.45 | vertical | Average |
| 2 | 1144.00 | 56.90 | 24.48 | 6.95 | 39.74 | 351 | 76.00 | -27.41 | vertical | Peak |
| 3 pp | 1600.00 | 44.01 | 26.29 | 8.31 | 39.22 | 48 | 56.00 | -16.61 | vertical | Average |
| 4 | 1600.00 | 58.11 | 26.29 | 8.31 | 39.22 | 48 | 76.00 | -22.51 | vertical | Peak |
| 5 | 1970.00 | 28.12 | 27.76 | 9.26 | 39.40 | 0 | 56.00 | -30.26 | vertical | Average |
| 6 | 1970.00 | 42.01 | 27.76 | 9.26 | 39.40 | 0 | 76.00 | -36.37 | vertical | Peak |
| 7 | 2060.00 | 32.14 | 28.03 | 9.48 | 39.41 | 326 | 56.00 | -25.76 | vertical | Average |
| 8 pk | 2060.00 | 56.45 | 28.03 | 9.48 | 39.41 | 326 | 76.00 | -21.45 | vertical | Peak |
| 9 | 2392.00 | 30.14 | 28.84 | 10.30 | 39.42 | 28 | 56.00 | -26.14 | vertical | Average |
| 10 | 2392.00 | 49.57 | 28.84 | 10.30 | 39.42 | 28 | 76.00 | -26.71 | vertical | Peak |

♦ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] – Preamp Factor [dB]) – Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor, Cable Loss : Cable loss, Preamp Factor : Preamp Factor

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

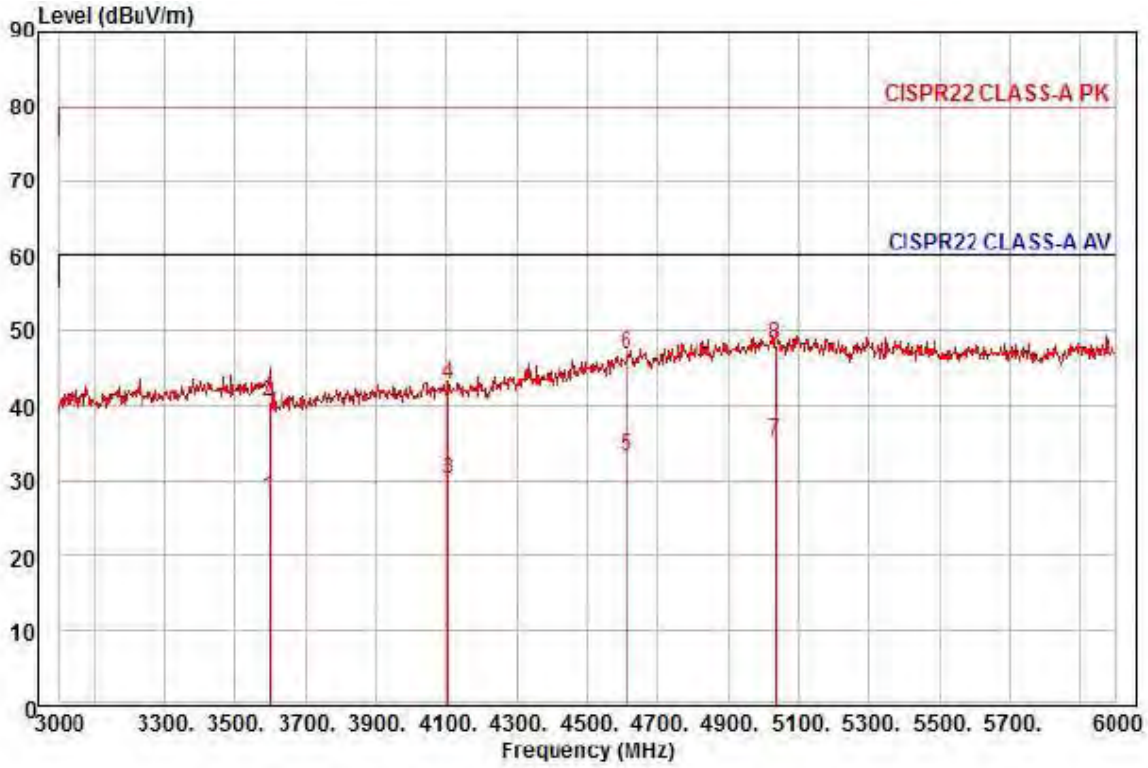



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
Mode : DC 12 V
Memo : 3 ~ 6 GHz

| | Freq | Read Level | Ant Factor | Cable Loss | Preamp Factor | TPos | Limit Line | Over Limit | Pol/Phase | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | deg | dBuV/m | dB | | |
| 1 | 3435.00 | 23.97 | 31.06 | 12.51 | 40.78 | 230 | 60.00 | -33.24 | horizontal | Average |
| 2 | 3435.00 | 37.49 | 31.06 | 12.51 | 40.78 | 230 | 80.00 | -39.72 | horizontal | Peak |
| 3 | 3597.00 | 24.31 | 31.33 | 12.80 | 40.85 | 334 | 60.00 | -32.41 | horizontal | Average |
| 4 | 3597.00 | 36.95 | 31.33 | 12.80 | 40.85 | 334 | 80.00 | -39.77 | horizontal | Peak |
| 5 | 4305.00 | 23.74 | 33.75 | 14.11 | 40.74 | 70 | 60.00 | -29.14 | horizontal | Average |
| 6 | 4305.00 | 36.71 | 33.75 | 14.11 | 40.74 | 70 | 80.00 | -36.17 | horizontal | Peak |
| 7 pp | 5058.00 | 22.50 | 37.60 | 15.43 | 40.37 | 299 | 60.00 | -24.84 | horizontal | Average |
| 8 pk | 5058.00 | 35.65 | 37.60 | 15.43 | 40.37 | 299 | 80.00 | -31.69 | horizontal | Peak |

♦ Calculation
Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] – Preamp Factor [dB]) – Limit Line[dBuV]
Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.




Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
Mode : DC 12 V
Memo : 3 ~ 6 GHz

| | Freq | Read Level | Ant Factor | Cable Loss | Preamp Factor | TPos | Limit Line | Over Limit | Pol/Phase | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | deg | dBuV/m | dB | | |
| 1 | 3597.00 | 24.35 | 31.33 | 12.80 | 40.85 | 51 | 60.00 | -32.37 | vertical | Average |
| 2 | 3597.00 | 37.25 | 31.33 | 12.80 | 40.85 | 51 | 80.00 | -39.47 | vertical | Peak |
| 3 | 4104.00 | 24.41 | 32.60 | 13.76 | 40.71 | 343 | 60.00 | -29.94 | vertical | Average |
| 4 | 4104.00 | 37.20 | 32.60 | 13.76 | 40.71 | 343 | 80.00 | -37.15 | vertical | Peak |
| 5 | 4611.00 | 23.86 | 35.50 | 14.68 | 40.66 | 233 | 60.00 | -26.62 | vertical | Average |
| 6 | 4611.00 | 37.20 | 35.50 | 14.68 | 40.66 | 233 | 80.00 | -33.28 | vertical | Peak |
| 7 pp | 5037.00 | 22.53 | 37.65 | 15.39 | 40.33 | 216 | 60.00 | -24.76 | vertical | Average |
| 8 pk | 5037.00 | 35.32 | 37.65 | 15.39 | 40.33 | 216 | 80.00 | -31.97 | vertical | Peak |

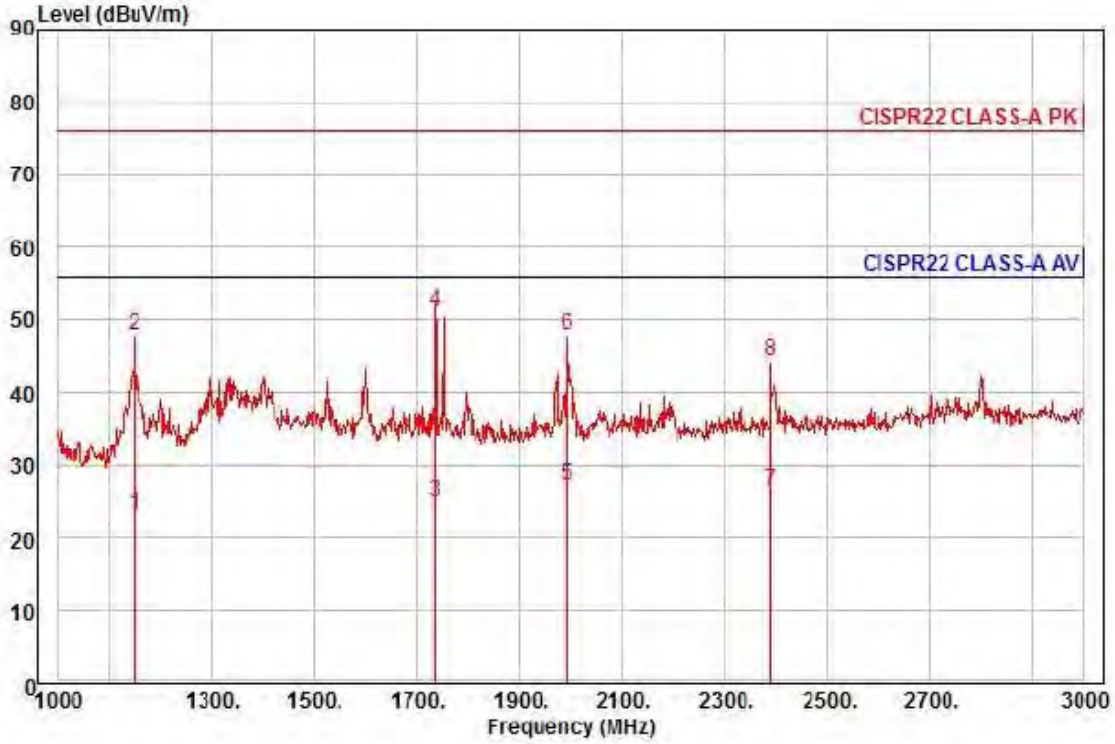
♦ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] – Preamp Factor [dB]) – Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor, Cable Loss : Cable loss, Preamp Factor : Preamp Factor

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

- PoE Mode




```
Site      : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
         : RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project   :
Model     : XNV-6010N
Mode      : POE
Memo      : 1 ~ 3 GHz
```

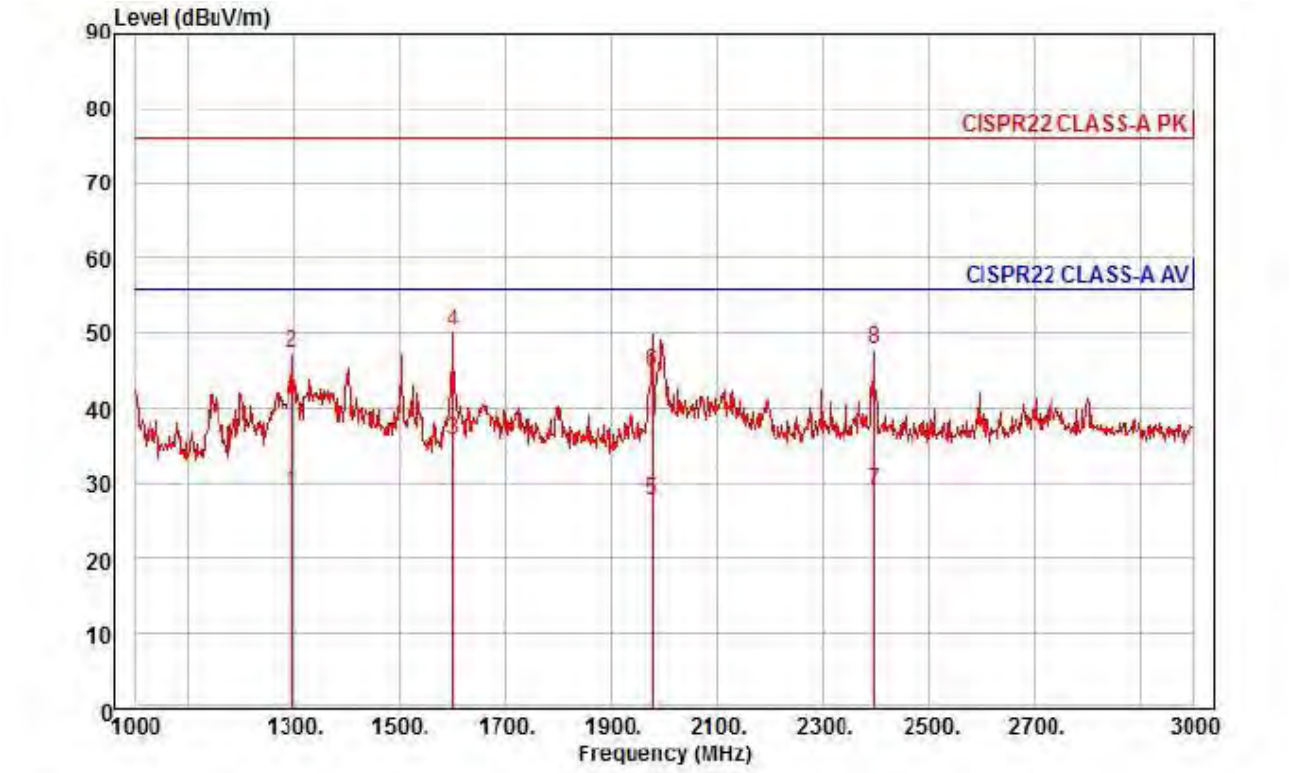
| | Freq | Read Level | Ant Factor | Cable Loss | Preamp Factor | TPos | Limit Line | Over Limit | Pol/Phase | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | deg | dBuV/m | dB | | |
| 1 | 1148.00 | 31.54 | 24.50 | 6.97 | 39.73 | 68 | 56.00 | -32.72 | horizontal | Average |
| 2 | 1148.00 | 56.12 | 24.50 | 6.97 | 39.73 | 68 | 76.00 | -28.14 | horizontal | Peak |
| 3 | 1736.00 | 28.81 | 26.83 | 8.66 | 39.29 | 282 | 56.00 | -30.99 | horizontal | Average |
| 4 pp | 1736.00 | 54.96 | 26.83 | 8.66 | 39.29 | 282 | 76.00 | -24.84 | horizontal | Peak |
| 5 av | 1994.00 | 29.39 | 27.86 | 9.32 | 39.41 | 177 | 56.00 | -28.84 | horizontal | Average |
| 6 | 1994.00 | 50.12 | 27.86 | 9.32 | 39.41 | 177 | 76.00 | -28.11 | horizontal | Peak |
| 7 | 2390.00 | 26.81 | 28.84 | 10.30 | 39.42 | 291 | 56.00 | -29.47 | horizontal | Average |
| 8 | 2390.00 | 44.69 | 28.84 | 10.30 | 39.42 | 291 | 76.00 | -31.59 | horizontal | Peak |

♦ Calculation

Over Limit [㏈] = (Read Level[㏈uV] + Ant Factor[㏈/m] + Cable Loss [㏈] – Preamp Factor [㏈]) – Limit Line[㏈uV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor, Cable Loss : Cable loss, Preamp Factor : Preamp Factor

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.




Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
Mode : POE
Memo : 1 ~ 3 GHz

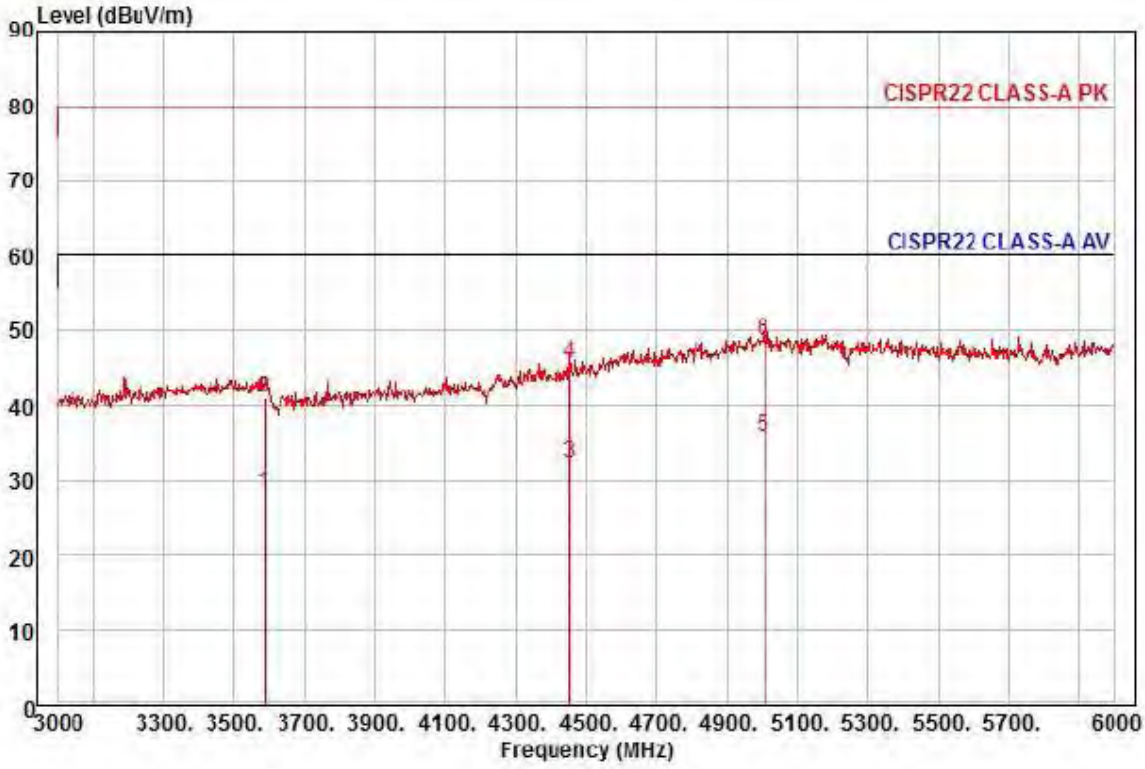
| | Freq | Read Level | Ant Factor | Cable Loss | Preamp Factor | TPos | Limit Line | Over Limit | Pol/Phase | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | deg | dBuV/m | dB | | |
| 1 | 1296.00 | 35.57 | 25.09 | 7.42 | 39.38 | 115 | 56.00 | -27.30 | vertical | Average |
| 2 | 1296.00 | 54.10 | 25.09 | 7.42 | 39.38 | 115 | 76.00 | -28.77 | vertical | Peak |
| 3 pp | 1600.00 | 40.46 | 26.29 | 8.31 | 39.22 | 334 | 56.00 | -20.16 | vertical | Average |
| 4 pk | 1600.00 | 54.87 | 26.29 | 8.31 | 39.22 | 334 | 76.00 | -25.75 | vertical | Peak |
| 5 | 1978.00 | 30.11 | 27.79 | 9.28 | 39.40 | 134 | 56.00 | -28.22 | vertical | Average |
| 6 | 1978.00 | 47.18 | 27.79 | 9.28 | 39.40 | 134 | 76.00 | -31.15 | vertical | Peak |
| 7 | 2398.00 | 29.13 | 28.86 | 10.32 | 39.42 | 32 | 56.00 | -27.11 | vertical | Average |
| 8 | 2398.00 | 48.12 | 28.86 | 10.32 | 39.42 | 32 | 76.00 | -28.12 | vertical | Peak |

♦ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] – Preamp Factor [dB]) – Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor, Cable Loss : Cable loss, Preamp Factor : Preamp Factor

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.




Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
Mode : POE
Memo : 3 ~ 6 GHz

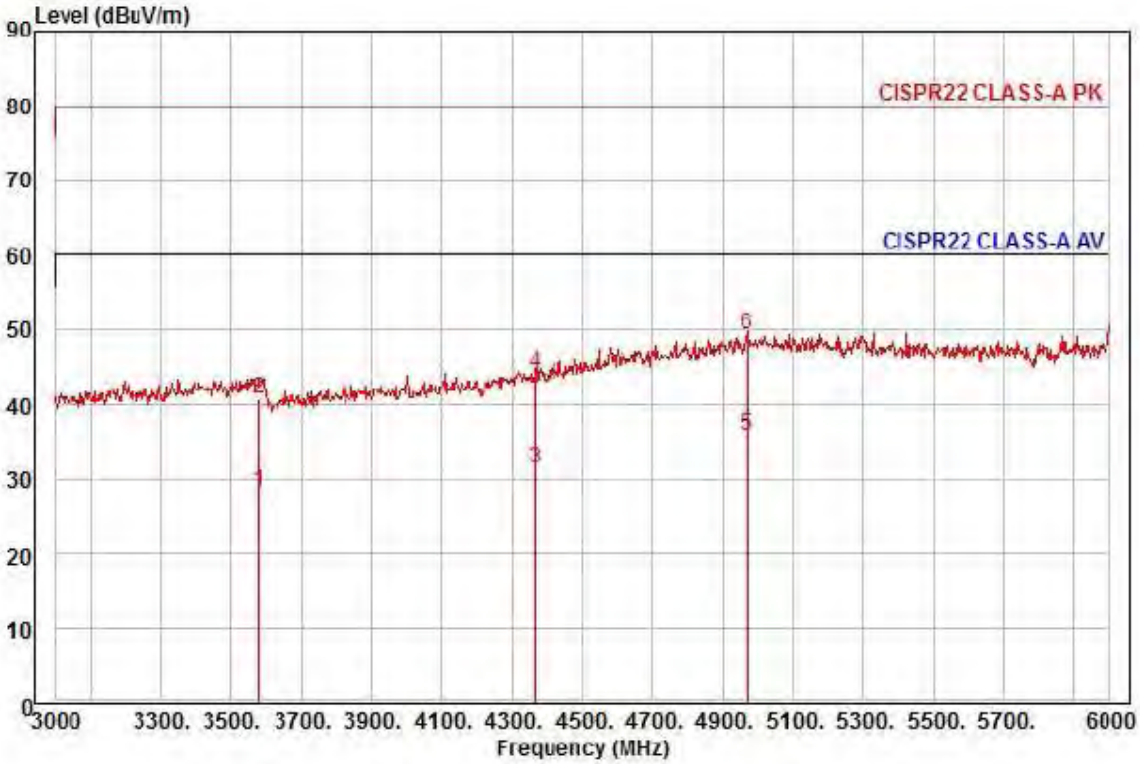
| | Freq | Read Level | Ant Factor | Cable Loss | Preamp Factor | TPos | Limit Line | Over Limit | Pol/Phase | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | deg | dBuV/m | dB | | |
| 1 | 3585.00 | 24.91 | 31.31 | 12.78 | 40.85 | 356 | 60.00 | -31.85 | horizontal | Average |
| 2 | 3585.00 | 37.60 | 31.31 | 12.78 | 40.85 | 356 | 80.00 | -39.16 | horizontal | Peak |
| 3 | 4455.00 | 24.17 | 34.61 | 14.38 | 40.76 | 251 | 60.00 | -27.60 | horizontal | Average |
| 4 | 4455.00 | 37.34 | 34.61 | 14.38 | 40.76 | 251 | 80.00 | -34.43 | horizontal | Peak |
| 5 pp | 5004.00 | 22.99 | 37.71 | 15.32 | 40.28 | 59 | 60.00 | -24.26 | horizontal | Average |
| 6 pk | 5004.00 | 35.72 | 37.71 | 15.32 | 40.28 | 59 | 60.00 | -31.53 | horizontal | Peak |

♦ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] – Preamp Factor [dB]) – Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor, Cable Loss : Cable loss, Preamp Factor : Preamp Factor

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.




Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : XNV-6010N
Mode : POE
Memo : 3 ~ 6 GHz

| | Freq | Read Level | Ant Factor | Cable Loss | Preamp Factor | TPos | Limit Line | Over Limit | Pol/Phase | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | deg | dBuV/m | dB | | |
| 1 | 3579.00 | 24.97 | 31.30 | 12.77 | 40.85 | 311 | 60.00 | -31.81 | vertical | Average |
| 2 | 3579.00 | 37.40 | 31.30 | 12.77 | 40.85 | 311 | 80.00 | -39.38 | vertical | Peak |
| 3 | 4365.00 | 23.83 | 34.09 | 14.21 | 40.75 | 6 | 60.00 | -28.62 | vertical | Average |
| 4 | 4365.00 | 36.64 | 34.09 | 14.21 | 40.75 | 6 | 80.00 | -35.81 | vertical | Peak |
| 5 pp | 4968.00 | 23.25 | 37.54 | 15.28 | 40.30 | 109 | 60.00 | -24.23 | vertical | Average |
| 6 pk | 4968.00 | 36.74 | 37.54 | 15.28 | 40.30 | 109 | 80.00 | -30.74 | vertical | Peak |

♦ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] – Preamp Factor [dB]) – Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor, Cable Loss : Cable loss, Preamp Factor : Preamp Factor

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

# Test Setup Photos and Configuration

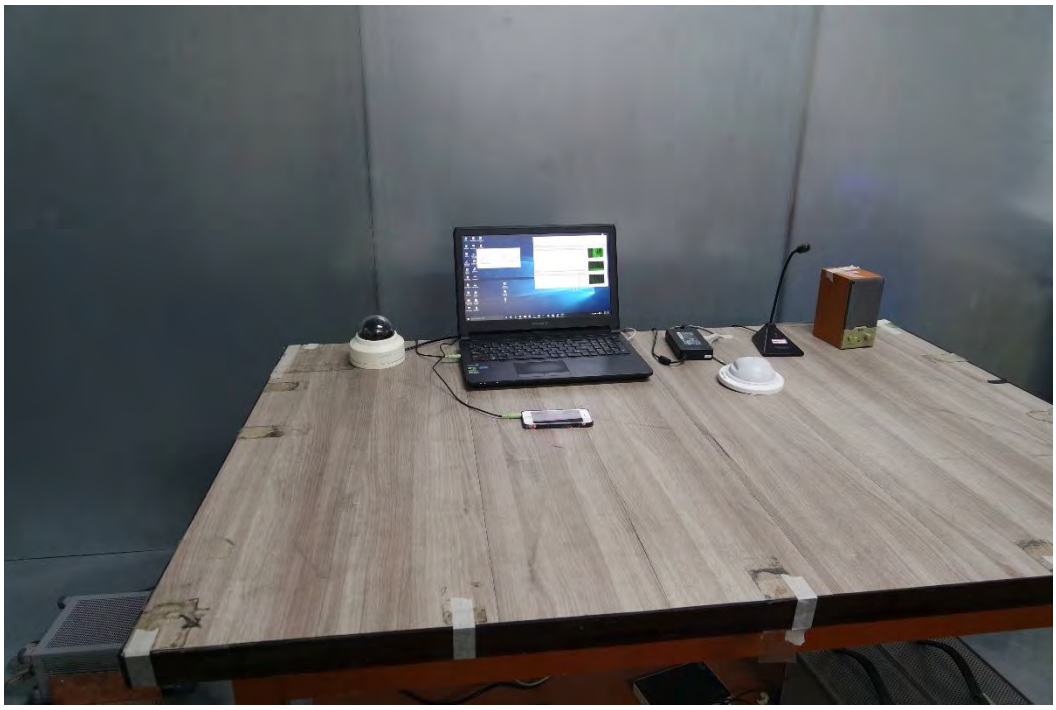
## Conducted Voltage Emissions

N/A

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

## Conducted Telecommunication Emissions

- DC 12 V Mode





This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

- PoE Mode





This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

## Radiated Electric Field Emissions(Below 1 ㎓)

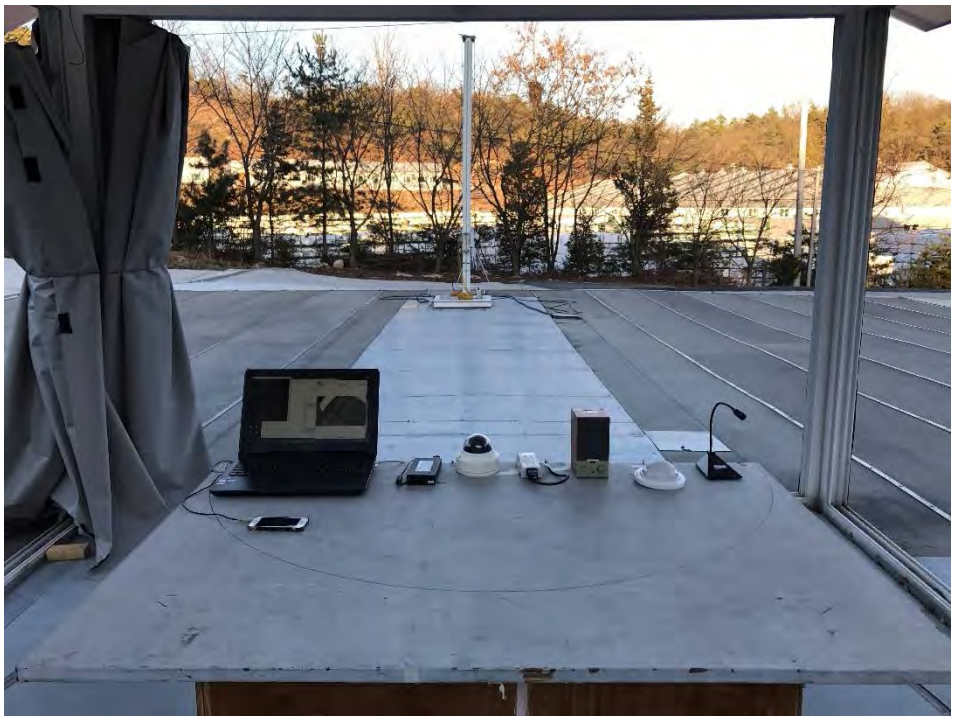
- DC 12 V Mode

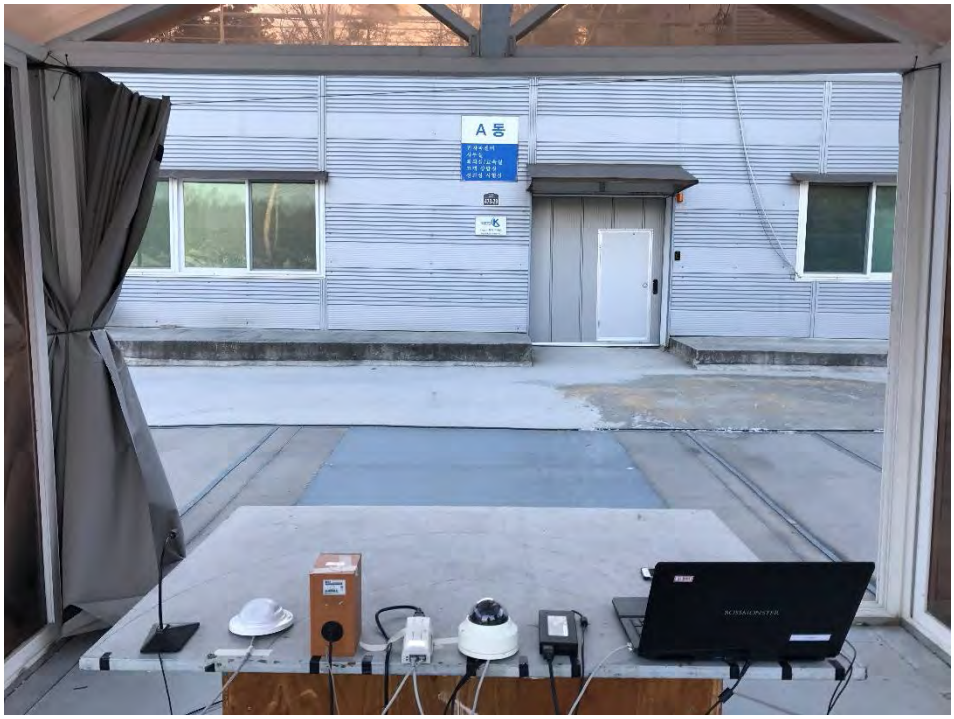





This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

- PoE Mode



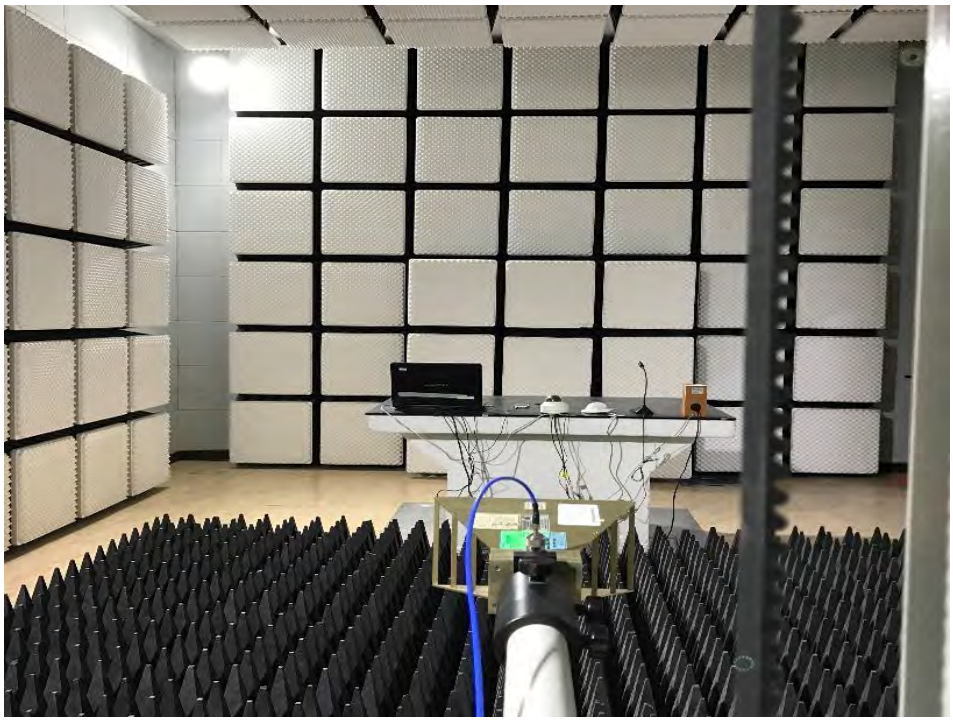



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

## Radiated Electric Field Emissions(Above 1 ㎓)

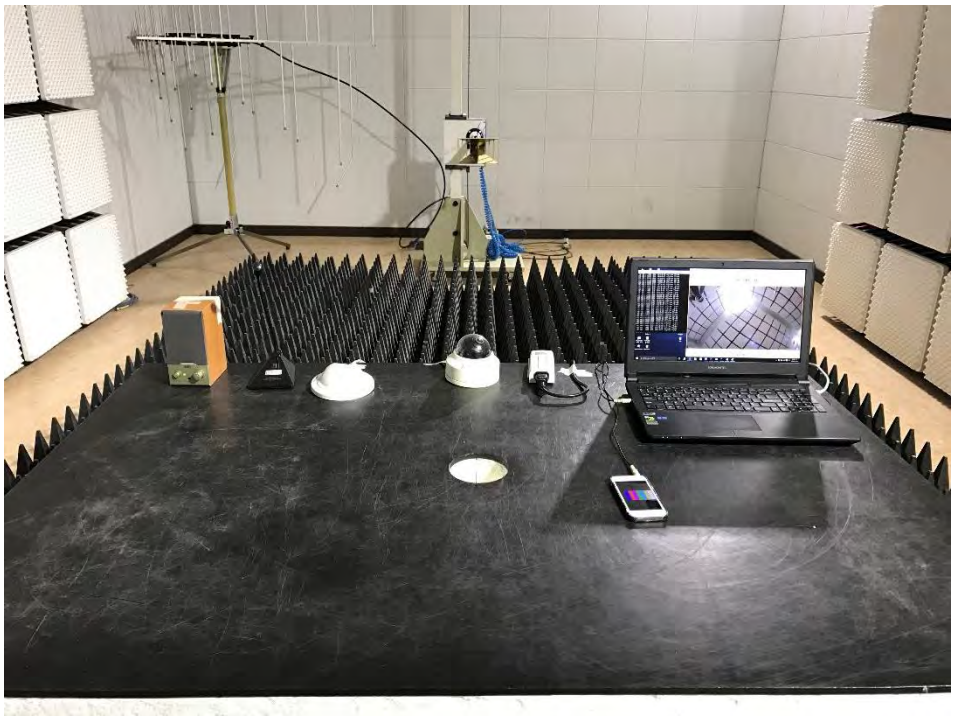
- DC 12 V Mode

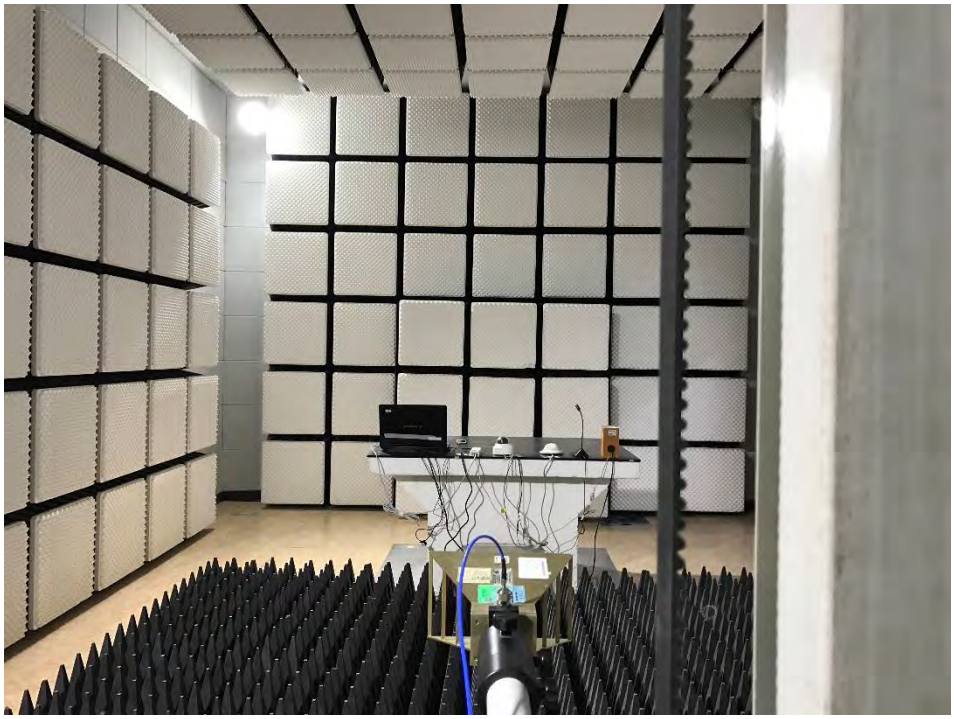




This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

- PoE Mode





This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

# EUT External Photographs

(Top)



(Bottom)



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

# EUT Internal Photographs

(Internal View)



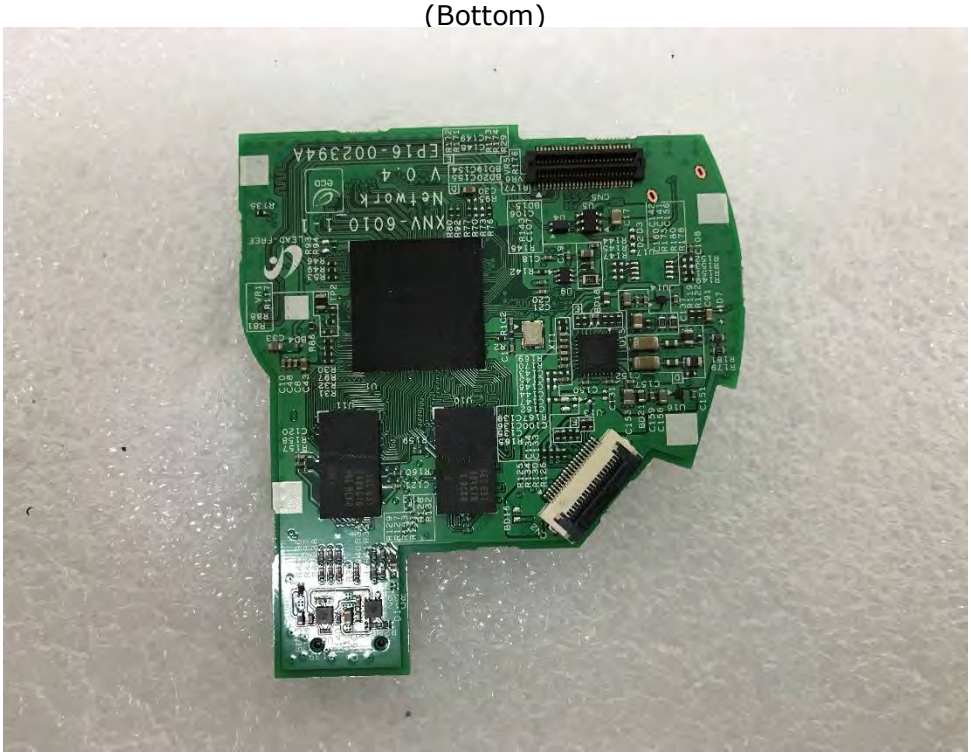
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

# EUT Internal View – board 1

(Top)



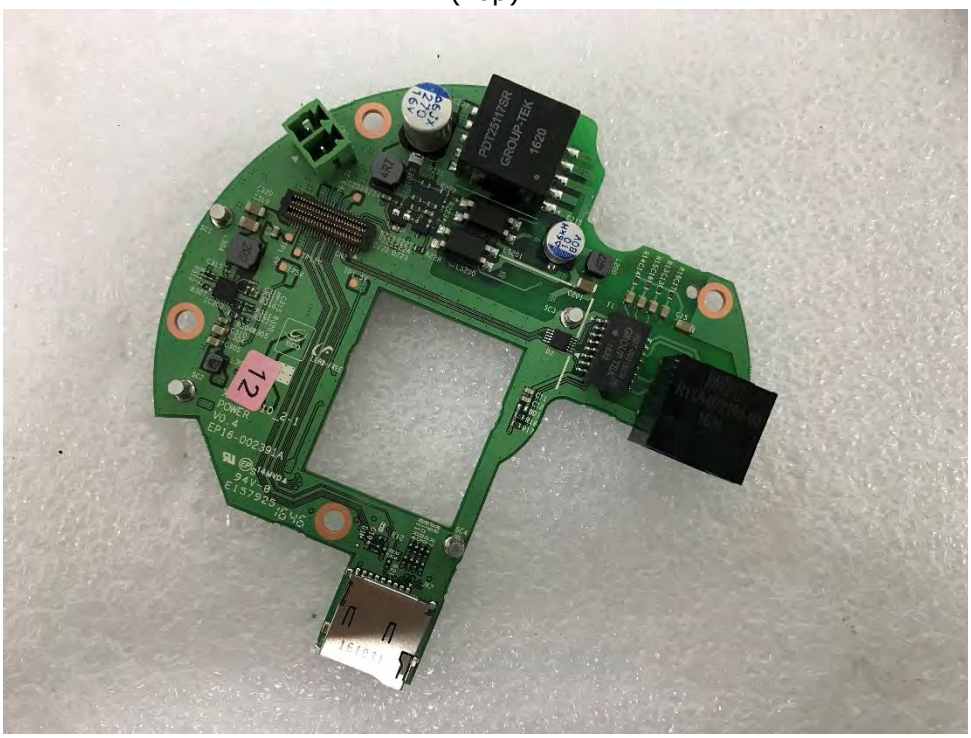
(Bottom)



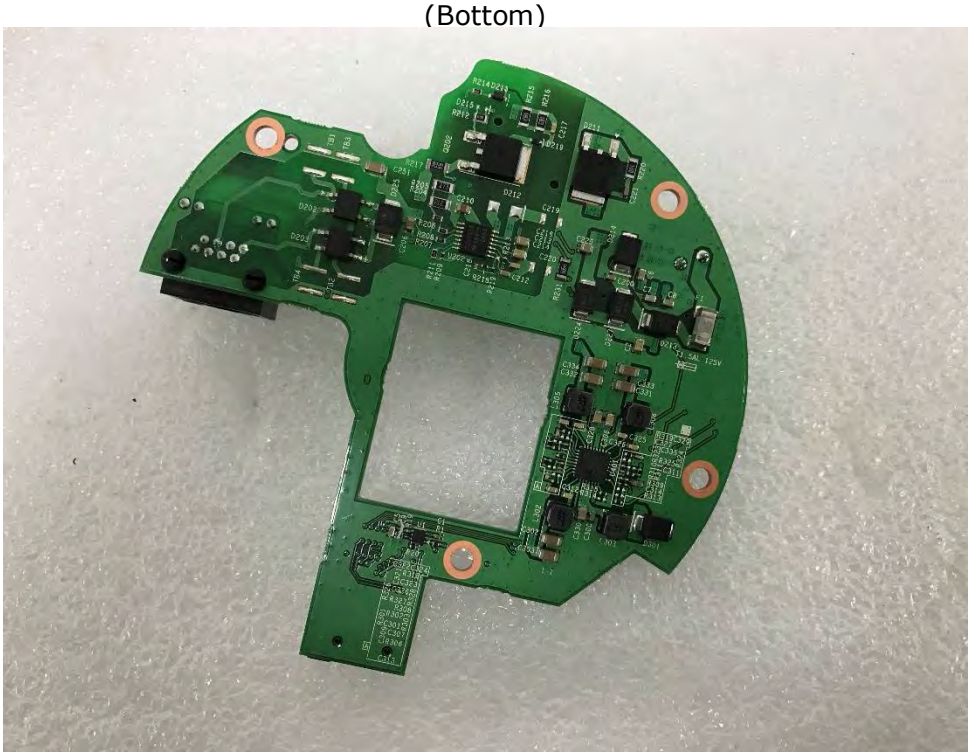
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

# EUT Internal View – board 2

(Top)



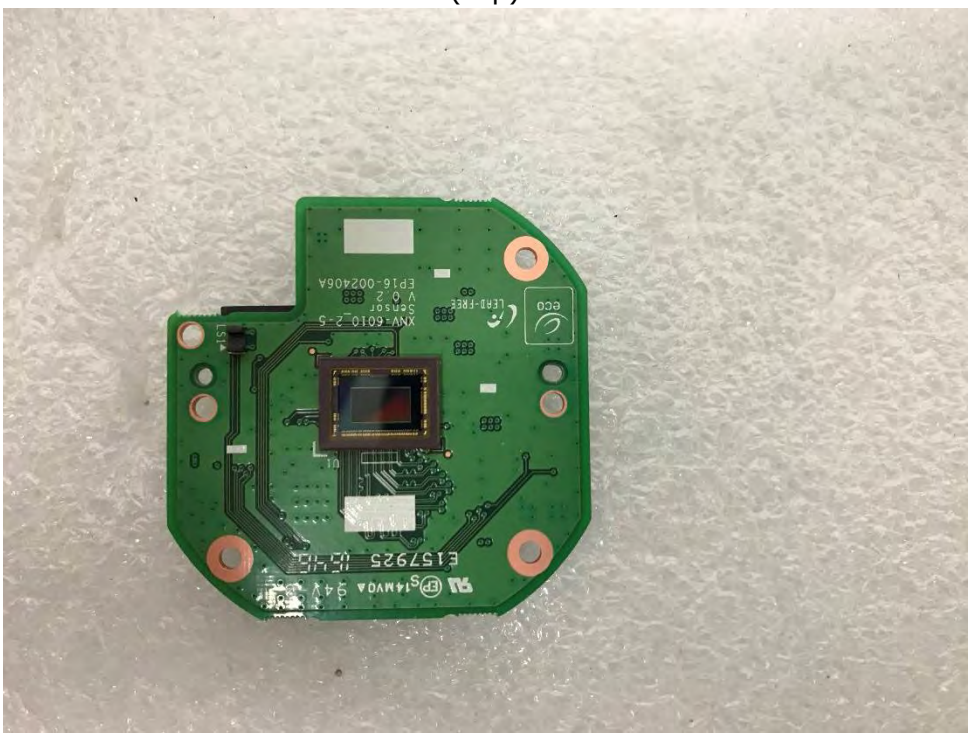
(Bottom)



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

# EUT Internal View – board 3

(Top)



(Bottom)



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.