

**KES Co., Ltd.**

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www.kes.co.kr

Report No.:

KES-EM-21T0907-R1

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EMC TEST REPORT

Test Report No. : KES-EM-21T0907-R1
Date of Issue : Feb. 24, 2023
Product name : NETWORK CAMERA
Model/Type No. : XNV-8040R
Variant Model : -
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)
Equipment authorization : **Supplier's Declaration of Conformity**
Date of Receipt : Aug. 18, 2021
Test date : Aug. 24, 2021 ~ Aug. 27, 2021
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Dong Il, 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
Sep. 29, 2021	KES-EM-21T0907	Issued
Feb. 24, 2023	KES-EM-21T0907-R1	Change the Applicant and manufacturer at the request of the customer

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1.0 General Product Description

Main Specifications of EUT are:

XNV-8040R	
Video	
Imaging Device	1/1.8" 8M CMOS
Total Pixels	3096(H) x 2094(V)
Effective Pixels	2616(H) x 1976(V)
Scanning System	Progressive Scan
Min. Illumination	Color : 0.2 lux(F1.6, 1/30sec) B/W : 0 Lux (IR LED On)
S / N Ratio	50dB
Video Out	CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P), for installation USB : Micro USB type B, 1280x720, for installation
Lens	
Focal Length (Zoom Ratio)	7.0mm Fixed
Max. Aperture Ratio	F1.6
Angular Field of View	H: 50.7°, V: 37.8°, D: 63.8°
Min. Object Distance	0.4m
Focus Control	Manual
Lens Type	Fixed
Mount Type	Board-in type
Pan / Tilt / Rotate	
Pan / Tilt / Rotate range	0° ~ 354° / 0° ~ 67° / 0° ~ 355°
Operational	
IR Viewable Length	30m(98.43ft)
Camera Title	Off / On (Displayed up to 85 characters) - W/W : English/Numeric/Special Characters - China : English/Numeric/Special/Chinese Characters - Common : Multi-line (Max 5), 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
Wide Dynamic Range	120dB
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 detection) / Manual / Off
Motion Detection	Off/ On(8ea, 8point Polygonal zones), Handover
Privacy Masking	Off / On (32ea, polygonal zones) - Color : Grey/Green/Red/Blue/Black/White - 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)
Digital PTZ	24X, Digital PTZ(Preset, Group)
Flip / Mirror	Flip : On/Off Mirror : On/Off Hallway view : 90°/270°
Video & Audio Analytics	Tampering, Loitering, Directional Detection, Defocus Detection, Fog&Dust Detection, Virtual Line, Enter/Exit, Appear / Disappear, Audio Detection, Face Detection, Motion Detection, Digital Auto Tracking, Sound Classification, People counting, Heat map, Queue management
Alarm I/O	Input 1ea / Output 1ea
Alarm Triggers	Alarm Input, Motion Detection, Video & Audio Analytics, Network Disconnect
Alarm events	File upload via FTP, E-Mail Notification via E-Mail local storage(SD/SDHC/SDXC) or NAS recording at Event Triggers External output DPTZ preset
Audio In	Selectable (Mic IN/Line IN) Supply voltage: 2.5VDC(4mA), Input impedance: approx. 2K Ohm
Audio out	Line out, Max output level: 1 Vrms

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Pixel Counter	Support
Network	
Ethernet	RJ-45 (10/100BASE-T)
Video Compression Format	H.265/H.264 (MPEG-4 Part 10/AVC) : Main/Baseline/High , Motion JPEG
Resolution	2560 x 1920, 2560 x 1440, 1920 x 1080, 1600 x 1200, 1280 x 1024, 1280 x 960 1280 x 720, 1024 x 768, 800 x 600, 800 x 448, 720 x 576, 720 x 480, 640 x 480, 640 x 360, 320 x 240
Max. Framerate	H.265/H.264 : Max. 30fps at all resolutions Motion JPEG : Max. 30fps
Smart Codec	Manual Mode (area-based : 5EA)
WiseStream II	Support
Video Quality Adjustment	H.264/H.265 : Target Bitrate Level Control MJPEG : Target Bitrate Level Control
Bitrate Control Method	H.264/H.265 : CBR or VBR MJPEG : VBR
Streaming Capability	Multiple Streaming (Up to 10 Profiles)
Audio Compression Format	G.711 u-law / G.726 Selectable G.726 (ADPCM) 8KHz, G.711 8KHz G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps AAC-LC : 48Kbps at 8/16/32/48KHz
Audio Communication	Bi-directional (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, UFP, Bonjour
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access Log 802.1X Authentication (EAP-TLS, EAP-LEAP)
Streaming Method	Unicast / Multicast
Max. User Access	20 users at Unicast Mode
Edge Storage	SD/SDHC/SDXC 2slot (up to 512 GB) - Continuous recording(1'st slot to 2'nd slot) - Motion Images recorded in the SD/SDHC/SDXC memory card can be downloaded. NAS(Network Attached Storage) Local PC for Instant Recording
Application Programming	ONVIF Profile S/G SUNAPI(HTTP API) 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 Non-plugin Webviewer Supported Browser: Google Chrome 54, MS Edge 38, Mozilla Firefox 49(Window 64bit only) , Apple Safari 9 (Mac OS X only) Plug-in Webviewer Supported Browser : MS Explore 11, Apple Safari 9 (Mac OS X only)
Central Management Software	SmartViewer, SSM
Environmental	
Operating Temperature / Humidity	-30°C ~ +55°C (-22°F ~ +131°F) / Less than 90% RH *Start up should be done at above -20°C
Storage Temperature / Humidity	-50°C ~ +80°C (-22°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP67, IP66
Vandal Resistance	IK10
Electrical	
Input Voltage / Current	DC12V,PoE(IEEE802.3af,Class3)
Power Consumption	Max. 8W(12VDC), Max. 9W(PoE)
Mechanical	
Color / Material	Ivory / Metal
Dimension (WxHxD)	Ø120xH97.5mm(Ø4.72" x 3.84")

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1.1 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

☒ AC 120 V, 60 Hz ☒ PoE

1.2 Variant Model Differences

Not applicable

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	XNV-8040R	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Adaptor	2ACB022F	-	Channel Well Technology (Guangzhou) Co., Ltd.	-
PoE Adaptor	PSE156G	-	-	-
Notebook	Latitude 5300	8C47BE45C060	Wistron Infocom (Chengdu) Company Limited	-
Notebook Adaptor	HA65NM130	-	Chicony Power Technology(Suzhou)Co., Ltd.	-
Alarm1	-	-	-	-
Alarm2	-	-	-	-
Smartphone	TG-L800S	-	TG&Company Co., Ltd.	-
Headset	K550	-	Britz®	-
Micro SD Card1	-	-	Sandisk	8 GB
Micro SD Card2	-	-	Sandisk	8 GB

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1.6 External I/O Cabling

■ DC Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (EUT)	RJ-45 (LAN)	Notebook	RJ-45 (LAN)	3.0	U
	Micro SD Slot	Micro SD Card1	Micro SD Slot	-	-
	Micro SD Slot	Micro SD Card2	Micro SD Slot	-	-
	2 Pin	Alarm1	2 Pin	3.0	U
	2 Pin	Alarm2	2 Pin	3.0	U
	3.5 mm	Headset	3.5 mm	1.7	U
	3.5 mm			1.7	U
	2 Pin	Adaptor	2 Pin	1.6	U
Notebook	3.5 mm	Smartphone	3.5 mm	1.0	U
	DC Jack	Notebook Adaptor	DC Jack	1.7	U

* Unshielded=U, Shielded=S

■ PoE Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (EUT)	RJ-45 (PoE)	PoE Adaptor	RJ-45 (PoE)	3.0	U
	Micro SD Slot	Micro SD Card1	Micro SD Slot	-	-
	Micro SD Slot	Micro SD Card2	Micro SD Slot	-	-
	2 Pin	Alarm1	2 Pin	3.0	U
	2 Pin	Alarm2	2 Pin	3.0	U
	3.5 mm	Headset	3.5 mm	1.7	U
	3.5 mm			1.7	U
Notebook	RJ-45 (LAN)	PoE Adaptor	RJ-45 (LAN)	3.0	U
	3.5 mm	Smartphone	3.5 mm	1.0	U
	DC Jack	Notebook Adaptor	DC Jack	1.7	U

* Unshielded=U, Shielded=S

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1.7 EUT Operating Mode(s)

Test Mode	operating
DC Mode	EUT Monitoring, Ping Test
PoE Mode	

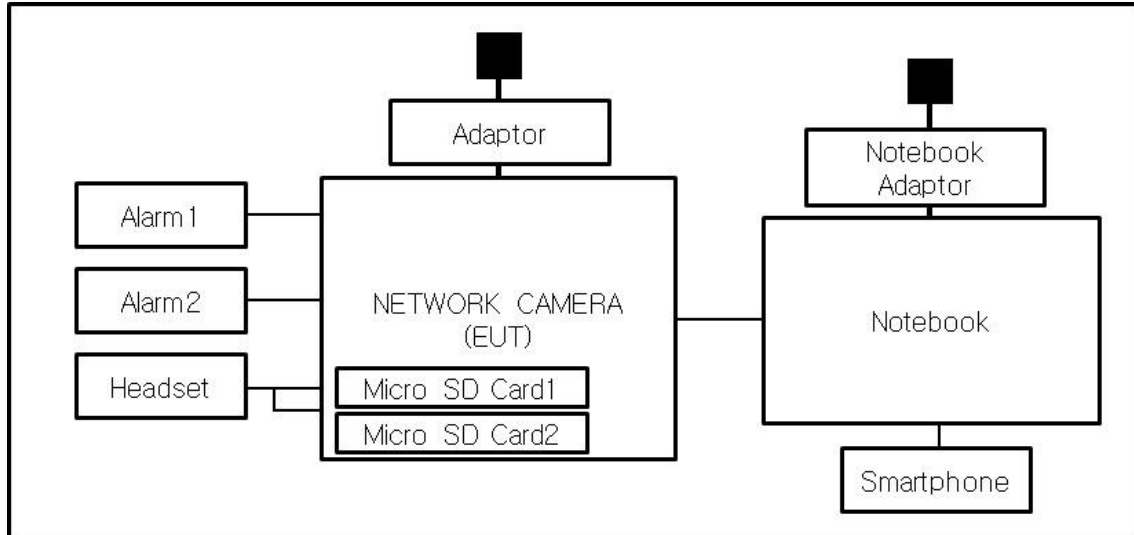
EUT Test operating S/W		
Name	Version	Manufacture Company
Web Viewer	-	Hanwha Vision Co., Ltd

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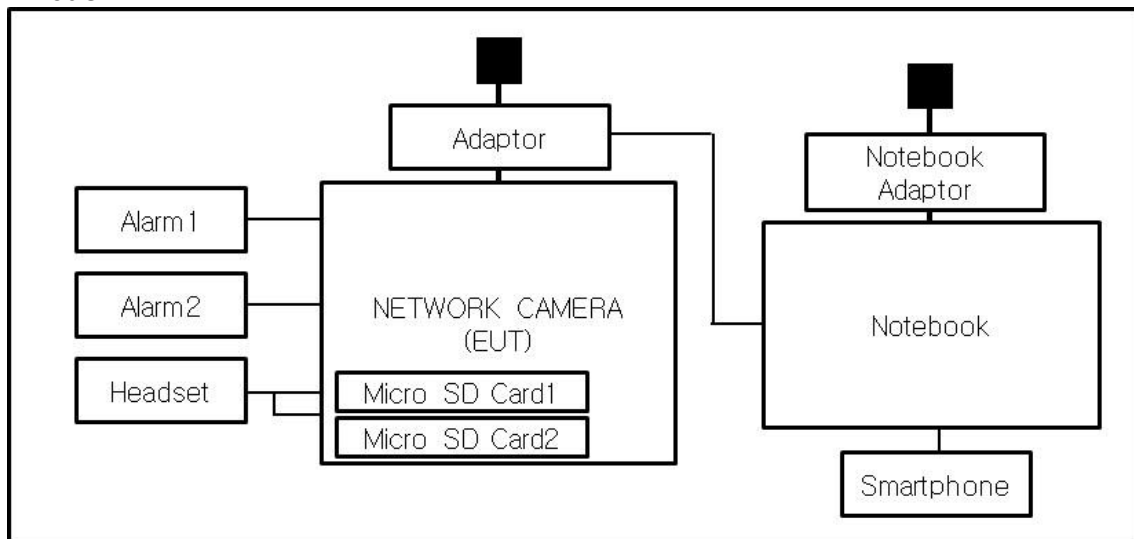
1.8 Configuration

■ AC Main
 □ DC Main

■ DC Mode



■ PoE Mode



1.9 Remarks when standards applied

USB ports, VIDEO ports are not used and have not been tested.

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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☐ **VCCI-CISPR 32:2016**

☐ Class A

☐ Class B

☐ **AS/NZS CISPR32:2015**

☐ Class A

☐ Class B

☒ **47 CFR Part 15, Subpart B**

☐ CISPR 22:2009 +A1:2010

☐ Class A

☐ Class B

☒ ANSI C63.4-2017

☒ Class A

☐ Class B

☒ **IC Regulation ICES-003 Issue 7**

☒ CAN/CSA CISPR 32-17

☒ Class A

☐ Class B

☐ ANSI C63.4-2017

☐ Class A

☐ Class B

☐ **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

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2.1 Conducted Emissions at Mains Power Ports

Test Date

Aug. 24, 2021

Test Location

Electro wave Shieldroom #6

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EMC32	R & S	9.12.00	-
☒	EMI TEST RECEIVER	ESR3	R & S	101783	01, 15, 2022
☒	LISN	ENV216	R & S	101787	12, 29, 2021
☒	LISN	ESH2-Z5	R & S	100450	12, 29, 2021
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 29, 2021

Test Conditions

Temperature: (24,3 ± 0,1) °C

Relative Humidity: (49,3 ± 0,1) % 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.



2.2 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Aug. 24, 2021

Test Location

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

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
☒	EMI TEST RECEIVER	ESU26	R & S	100551	04, 01, 2022
☒	AMPLIFIER	SCU 01	R & S	100603	11, 25, 2021
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	12, 08, 2022
☒	ATTENUATOR	8491A	HP	32173	03, 10, 2022

Test Conditions

Temperature: (24,0 ± 0,2) °C
Relative Humidity: (48,6 ± 0,2) % R.H.

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

Test Results

The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

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2.3 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Aug. 27, 2021

Test Location

SEMI ANECHOIC CHAMBER #5

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.120	-
☒	EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100552	04, 01, 2022
☒	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	12, 14, 2021
☒	PREAMPLIFIER	8449B	HP	3008A00538	06, 21, 2022

Test Conditions

Temperature: (24,3 ± 0,2) °C

Relative Humidity: (49,5 ± 0,2) % 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

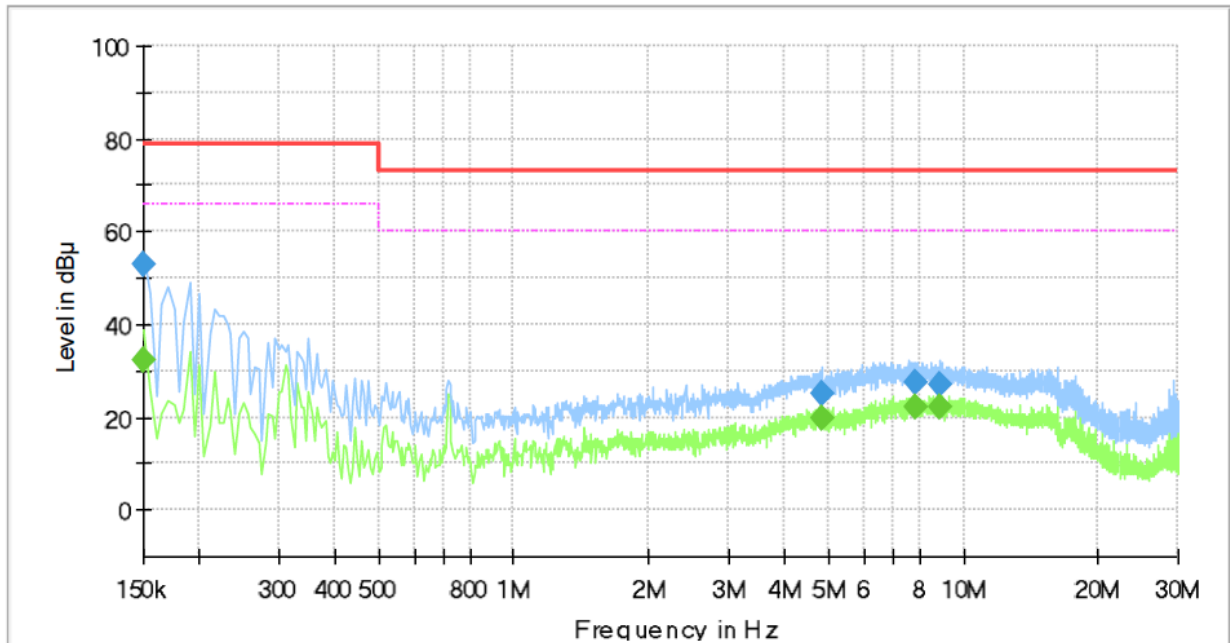
Conducted Emissions at Mains Power Ports

■ DC Mode

HOT LINE

Common Information

Test Description:	Conducted Emission
Model No.:	XNV-8040R
Phase:	L1
Mode:	DC
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	32.21	66.00	33.79	1000.0	9.000	L1	19.4
0.150000	52.94	---	79.00	26.06	1000.0	9.000	L1	19.4
4.845000	---	19.99	60.00	40.01	1000.0	9.000	L1	19.7
4.845000	25.23	---	73.00	47.77	1000.0	9.000	L1	19.7
7.815000	---	22.37	60.00	37.63	1000.0	9.000	L1	19.6
7.815000	27.33	---	73.00	45.67	1000.0	9.000	L1	19.6
8.835000	---	22.36	60.00	37.64	1000.0	9.000	L1	19.8
8.835000	27.21	---	73.00	45.79	1000.0	9.000	L1	19.8

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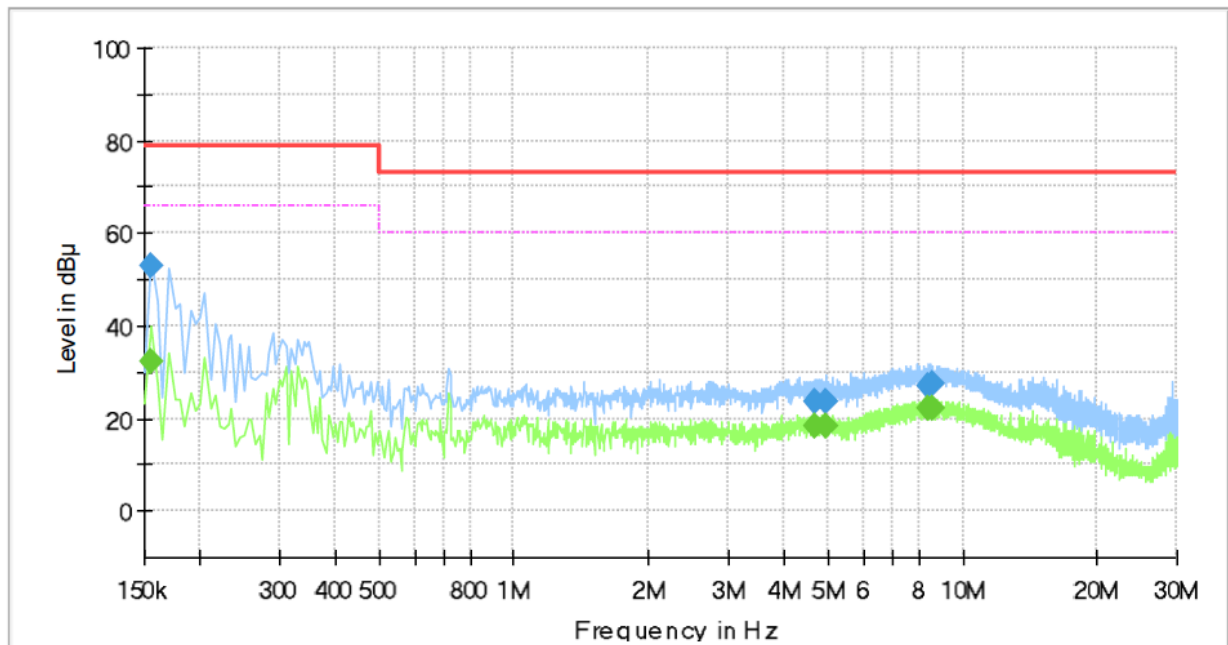
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

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NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	XNV-8040R
Phase:	N
Mode:	DC
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	32.36	66.00	33.64	1000.0	9.000	N	19.4
0.155000	53.00	---	79.00	26.00	1000.0	9.000	N	19.4
4.700000	---	18.47	60.00	41.53	1000.0	9.000	N	19.7
4.700000	23.82	---	73.00	49.18	1000.0	9.000	N	19.7
4.975000	---	18.44	60.00	41.56	1000.0	9.000	N	19.7
4.975000	23.61	---	73.00	49.39	1000.0	9.000	N	19.7
8.405000	---	21.99	60.00	38.01	1000.0	9.000	N	19.7
8.405000	26.99	---	73.00	46.01	1000.0	9.000	N	19.7
8.565000	---	22.27	60.00	37.73	1000.0	9.000	N	19.7
8.565000	27.28	---	73.00	45.72	1000.0	9.000	N	19.7

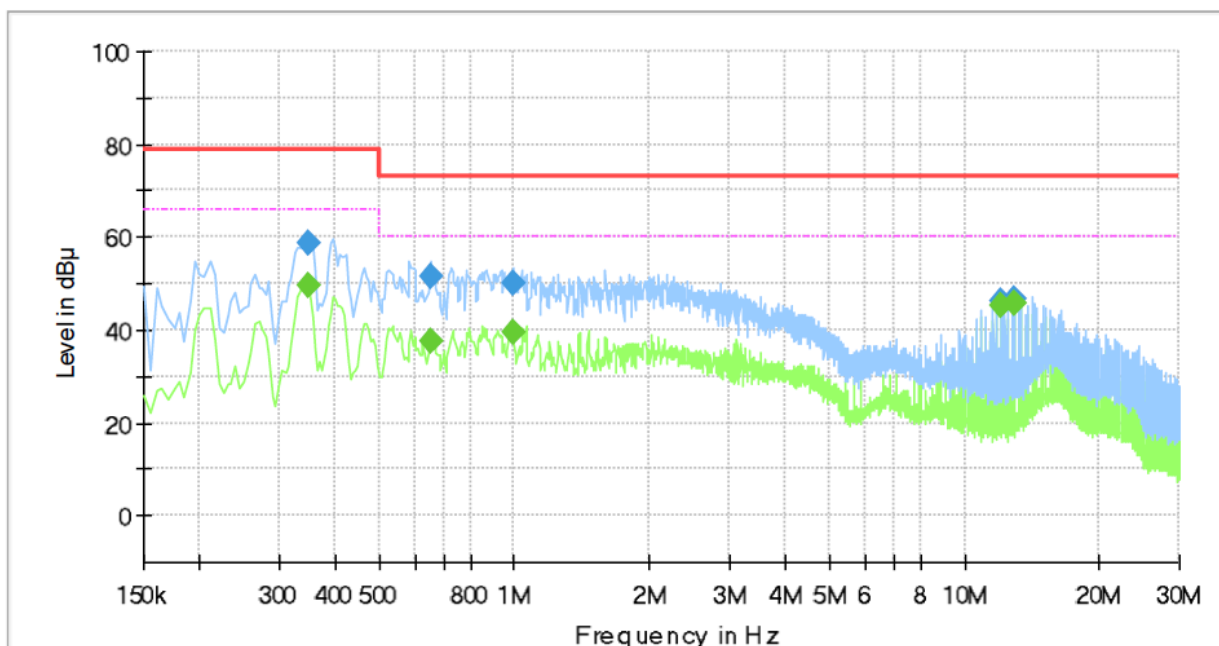
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PoE Mode
HOT LINE
Common Information

Test Description:	Conducted Emission
Model No.:	XNV-8040R
Phase:	L1
Mode:	PoE
Operator Name:	KES


Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.350000	---	49.39	66.00	16.61	1000.0	9.000	L1	19.6
0.350000	58.48	---	79.00	20.52	1000.0	9.000	L1	19.6
0.650000	---	37.57	60.00	22.43	1000.0	9.000	L1	19.9
0.650000	51.42	---	73.00	21.58	1000.0	9.000	L1	19.9
0.995000	---	39.51	60.00	20.49	1000.0	9.000	L1	20.1
0.995000	50.16	---	73.00	22.84	1000.0	9.000	L1	20.1
12.035000	---	45.02	60.00	14.98	1000.0	9.000	L1	20.0
12.035000	46.32	---	73.00	26.68	1000.0	9.000	L1	20.0
12.945000	---	45.90	60.00	14.10	1000.0	9.000	L1	20.0
12.945000	46.73	---	73.00	26.27	1000.0	9.000	L1	20.0

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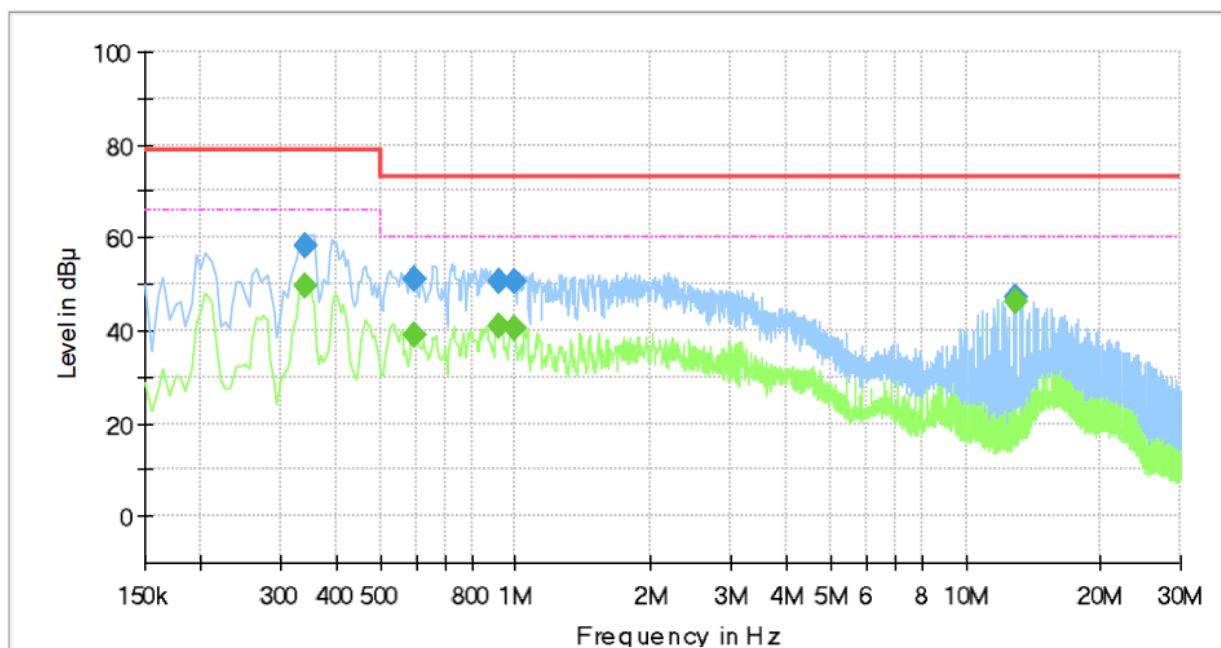
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NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	XNV-8040R
Phase:	N
Mode:	PoE
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.340000	---	49.76	66.00	16.24	1000.0	9.000	N	19.6
0.340000	58.20	---	79.00	20.80	1000.0	9.000	N	19.6
0.595000	---	38.95	60.00	21.05	1000.0	9.000	N	19.8
0.595000	51.09	---	73.00	21.91	1000.0	9.000	N	19.8
0.915000	---	40.77	60.00	19.23	1000.0	9.000	N	20.1
0.915000	50.56	---	73.00	22.44	1000.0	9.000	N	20.1
0.990000	---	40.32	60.00	19.68	1000.0	9.000	N	20.1
0.990000	50.59	---	73.00	22.41	1000.0	9.000	N	20.1
12.945000	---	46.05	60.00	13.95	1000.0	9.000	N	20.0
12.945000	46.95	---	73.00	26.05	1000.0	9.000	N	20.0

◆ 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 (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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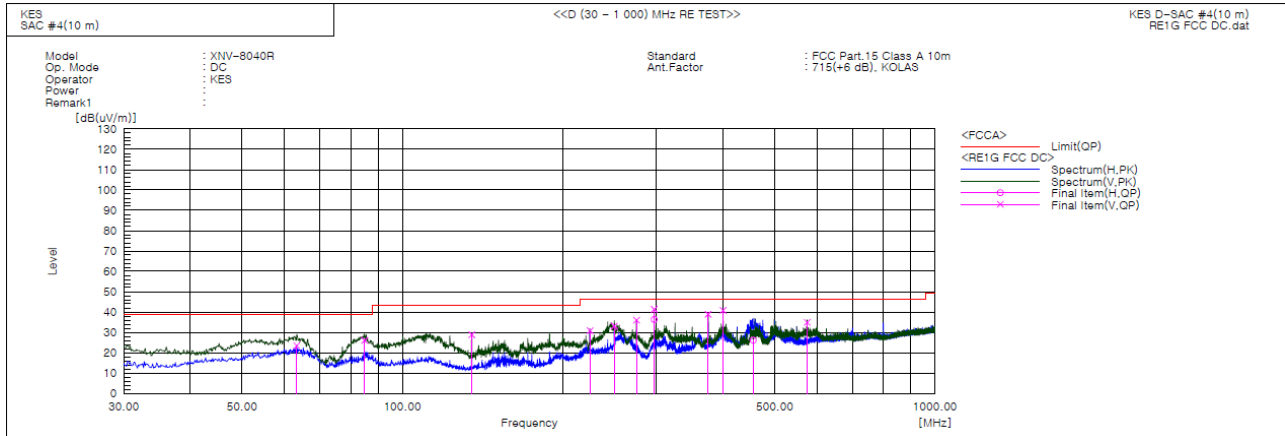
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Radiated Electric Field Emissions(Below 1 GHz)

- 47 CFR Part 15, Subpart B

■ DC Mode



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	63.332	V	46.2	-22.8	23.4	39.0	15.6	204.0	304.0	
2	84.905	V	52.3	-26.2	26.1	39.0	12.9	161.0	353.0	
3	135.003	V	54.2	-25.3	28.9	43.5	14.6	102.0	89.0	
4	225.008	V	50.9	-20.0	30.9	46.5	15.6	139.0	183.0	
5	250.016	V	52.3	-19.1	33.2	46.5	13.3	310.0	85.0	
6	275.002	V	54.6	-18.6	36.0	46.5	10.5	149.0	229.0	
7	297.004	H	54.3	-18.0	36.3	46.5	10.2	400.0	275.0	
8	297.004	V	59.4	-18.0	41.4	46.5	5.1	100.0	9.0	
9	375.003	V	53.7	-14.8	38.9	46.5	7.6	100.0	345.0	
10	400.001	V	55.0	-14.2	40.8	46.5	5.7	100.0	345.0	
11	455.694	H	39.0	-12.9	26.1	46.5	20.4	348.0	212.0	
12	575.011	V	44.1	-9.2	34.9	46.5	11.6	196.0	214.0	

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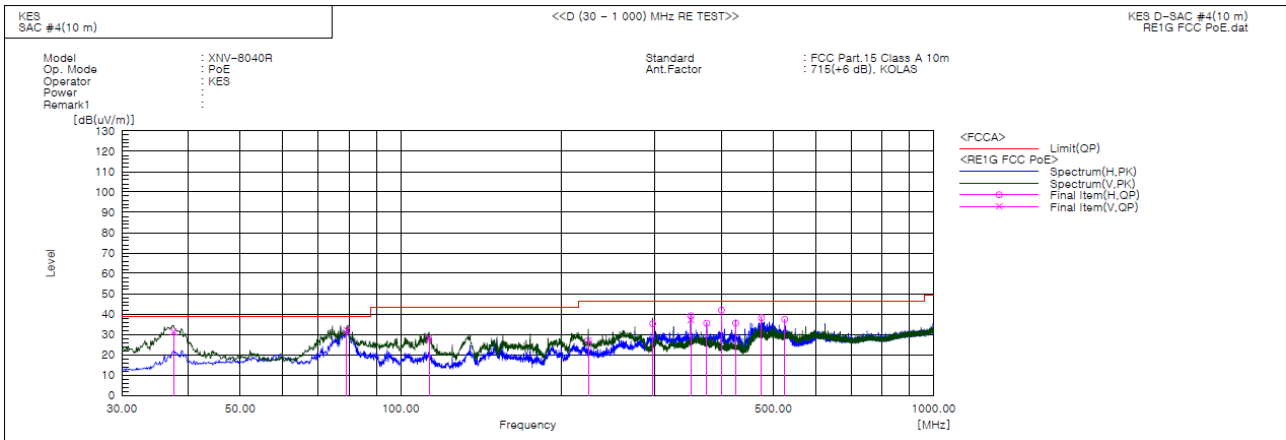
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PoE Mode



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	37.512	V	55.2	-23.9	31.3	39.0	7.7	153.0	135.0	
2	79.255	V	59.7	-27.7	32.0	39.0	7.0	144.0	270.0	
3	113.081	V	50.7	-22.6	28.1	43.5	15.4	100.0	71.0	
4	225.010	V	46.9	-20.0	26.9	46.5	19.6	182.0	357.0	
5	297.008	H	53.2	-18.0	35.2	46.5	11.3	400.0	357.0	
6	350.005	V	52.4	-15.3	37.1	46.5	9.4	100.0	183.0	
7	350.006	H	54.5	-15.3	39.2	46.5	7.3	386.0	10.0	
8	375.002	H	50.3	-14.8	35.5	46.5	11.0	287.0	42.0	
9	400.001	H	56.1	-14.2	41.9	46.5	4.6	199.0	90.0	
10	425.017	H	49.3	-13.7	35.6	46.5	10.9	299.0	15.0	
11	475.013	H	50.5	-12.3	38.2	46.5	8.3	201.0	79.0	
12	525.006	H	48.4	-11.0	37.4	46.5	9.1	211.0	30.0	

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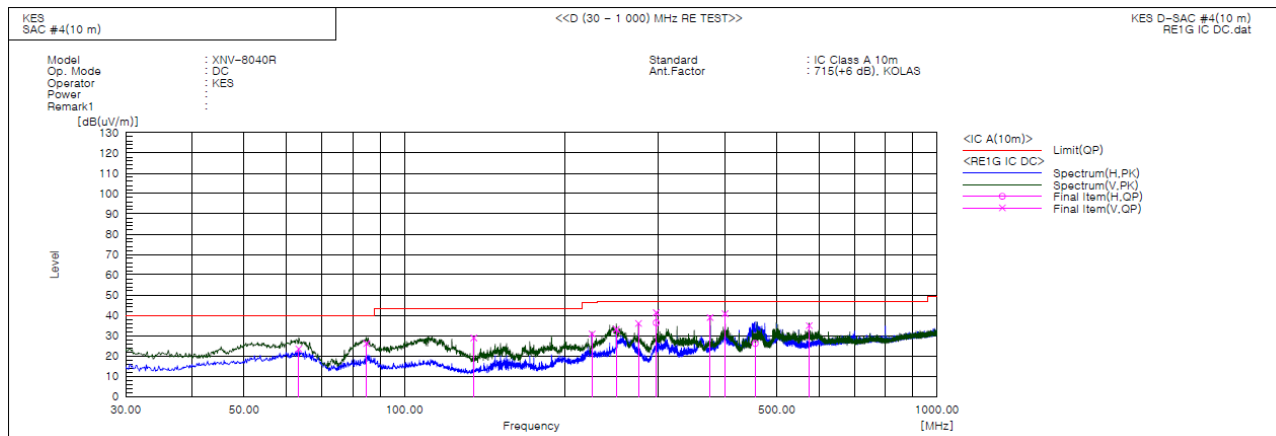
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- IC Regulation ICES-003 Issue 7

■ DC Mode



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	63.332	V	46.2	-22.8	23.4	40.0	16.6	204.0	304.0	
2	84.905	V	52.3	-26.2	26.1	40.0	13.9	161.0	353.0	
3	135.003	V	54.2	-25.3	28.9	43.5	14.6	102.0	89.0	
4	225.008	V	50.9	-20.0	30.9	46.4	15.5	139.0	183.0	
5	250.016	V	52.3	-19.1	33.2	47.0	13.8	310.0	85.0	
6	275.002	V	54.6	-18.6	36.0	47.0	11.0	149.0	229.0	
7	297.004	H	54.3	-18.0	36.3	47.0	10.7	400.0	275.0	
8	297.004	V	59.4	-18.0	41.4	47.0	5.6	100.0	9.0	
9	375.003	V	53.7	-14.8	38.9	47.0	8.1	100.0	345.0	
10	400.001	V	55.0	-14.2	40.8	47.0	6.2	100.0	345.0	
11	455.694	H	39.0	-12.9	26.1	47.0	20.9	348.0	212.0	
12	575.011	V	44.1	-9.2	34.9	47.0	12.1	196.0	214.0	

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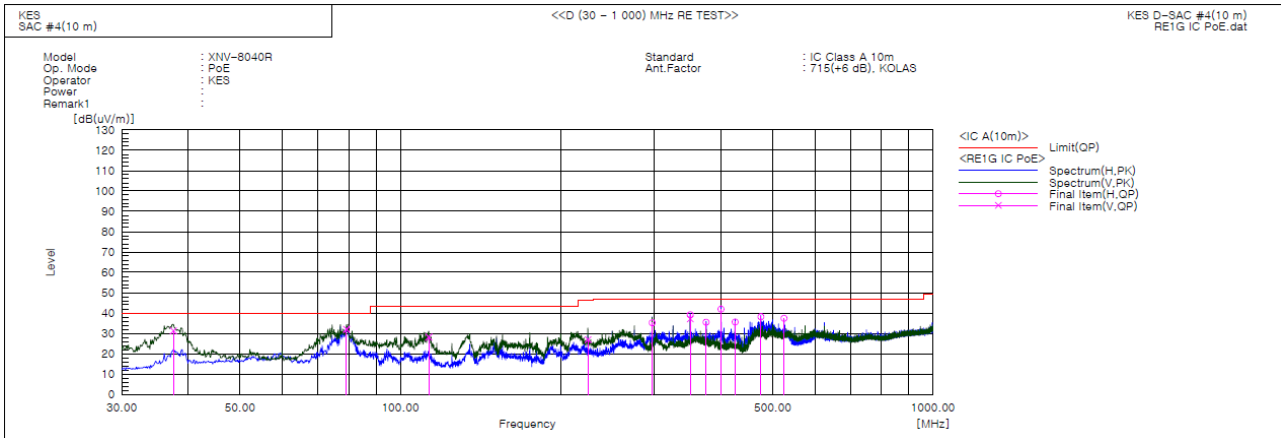
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■ PoE Mode



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	37.512	V	55.2	-23.9	31.3	40.0	8.7	153.0	135.0	
2	79.255	V	59.7	-27.7	32.0	40.0	8.0	144.0	270.0	
3	113.081	V	50.7	-22.6	28.1	43.5	15.4	100.0	71.0	
4	225.010	V	46.9	-20.0	26.9	46.4	19.5	182.0	357.0	
5	297.008	H	53.2	-18.0	35.2	47.0	11.8	400.0	357.0	
6	350.005	V	52.4	-15.3	37.1	47.0	9.9	100.0	183.0	
7	350.006	H	54.5	-15.3	39.2	47.0	7.8	386.0	10.0	
8	375.002	H	50.3	-14.8	35.5	47.0	11.5	287.0	42.0	
9	400.001	H	56.1	-14.2	41.9	47.0	5.1	199.0	90.0	
10	425.017	H	49.3	-13.7	35.6	47.0	11.4	299.0	15.0	
11	475.013	H	50.5	-12.3	38.2	47.0	8.8	201.0	79.0	
12	525.006	H	48.4	-11.0	37.4	47.0	9.6	211.0	30.0	

◆ Calculation - SAC #4(10 m)

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

Margin(QP)[dB] = Limit[dB(μ V/m)] - Result(QP) [dB(μ V/m)]

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

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

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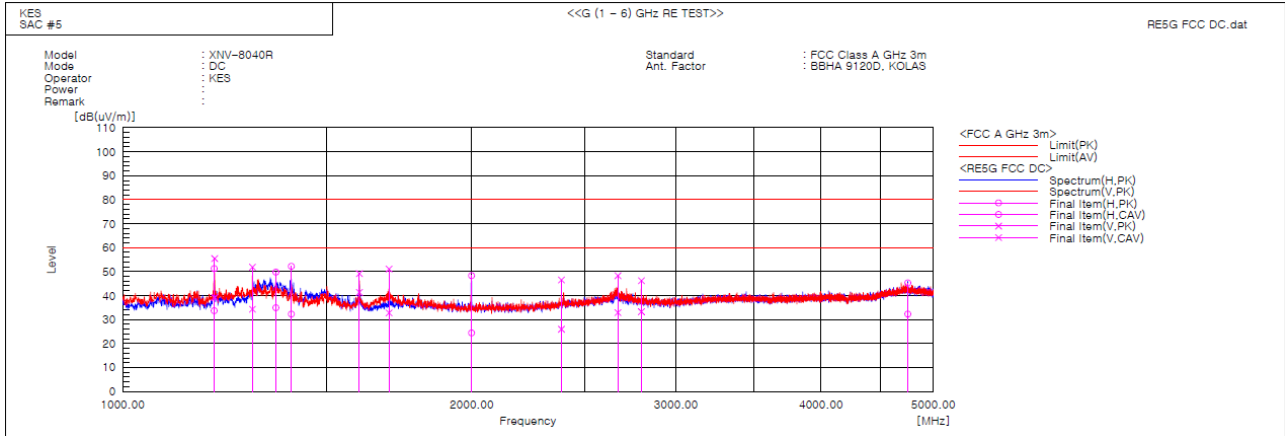
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Radiated Electric Field Emissions(Above 1 GHz)

DC Mode



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1199.375	H	58.2	40.6	-6.9	51.3	33.7	80.0	60.0	28.7	26.3	282.6	342.6	
2	1200.000	V	62.4	46.1	-6.9	55.5	39.2	80.0	60.0	24.5	20.8	120.2	124.2	
3	1293.750	V	58.3	40.7	-6.4	51.9	34.3	80.0	60.0	28.1	25.7	100.0	8.1	
4	1355.625	H	55.9	41.0	-6.1	49.8	34.9	80.0	60.0	30.2	25.1	355.1	342.0	
5	1397.500	H	58.0	38.1	-5.8	52.2	32.3	80.0	60.0	27.8	27.7	396.0	76.9	
6	1600.000	V	54.1	46.3	-4.9	49.2	41.4	80.0	60.0	30.8	18.6	131.4	250.8	
7	1696.875	V	55.6	37.3	-4.5	51.1	32.8	80.0	60.0	28.9	27.2	114.3	10.4	
8	1998.750	H	51.7	27.8	-3.4	48.3	24.4	80.0	60.0	31.7	35.6	207.6	5.7	
9	2388.750	V	48.6	28.1	-2.1	46.5	26.0	80.0	60.0	33.5	34.0	251.3	90.0	
10	2672.500	V	49.2	33.8	-0.9	48.3	32.9	80.0	60.0	31.7	27.1	201.9	58.5	
11	2800.000	V	46.5	33.6	-0.3	46.2	33.3	80.0	60.0	33.8	26.7	149.2	64.3	
12	4753.125	H	40.2	27.2	5.1	45.3	32.3	80.0	60.0	34.7	27.7	310.2	322.8	

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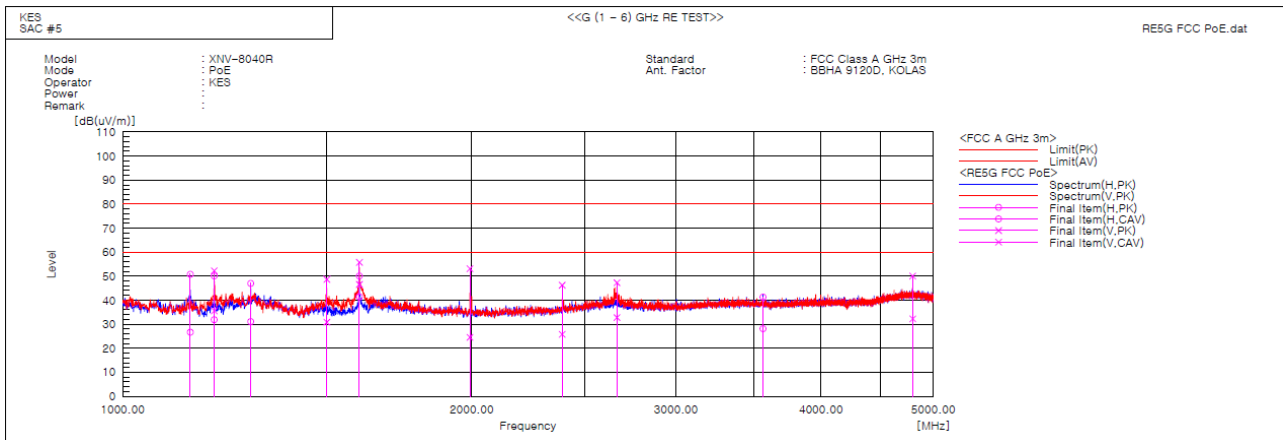
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PoE Mode



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1143.750	H	58.0	33.9	-7.2	50.8	26.7	80.0	60.0	29.2	33.3	368.1	6.1	
2	1199.375	V	59.2	42.5	-6.9	52.3	35.6	80.0	60.0	27.7	24.4	199.4	350.8	
3	1199.375	H	57.0	38.8	-6.9	50.1	31.9	80.0	60.0	29.9	28.1	256.1	142.1	
4	1289.375	H	53.4	37.5	-6.4	47.0	31.1	80.0	60.0	33.0	28.9	400.0	123.5	
5	1499.375	V	54.1	36.3	-5.4	48.7	30.9	80.0	60.0	31.3	29.1	108.7	4.6	
6	1600.000	V	60.7	51.5	-4.9	55.8	46.6	80.0	60.0	24.2	13.4	100.0	343.3	
7	1600.000	H	55.0	46.4	-4.9	50.1	41.5	80.0	60.0	29.9	18.5	193.0	37.9	
8	1992.500	V	56.6	28.1	-3.5	53.1	24.6	80.0	60.0	26.9	35.4	100.0	317.6	
9	2393.125	V	48.4	27.9	-2.1	46.3	25.8	80.0	60.0	33.7	34.2	141.3	82.6	
10	2668.125	V	48.2	33.7	-0.9	47.3	32.8	80.0	60.0	32.7	27.2	131.0	32.8	
11	3565.625	H	40.3	27.2	1.0	41.3	28.2	80.0	60.0	38.7	31.8	200.4	339.2	
12	4798.125	V	44.8	27.0	5.3	50.1	32.3	80.0	60.0	29.9	27.7	114.5	282.7	

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

■ DC Mode



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■ PoE Mode



Radiated Electric Field Emissions(Below 1 GHz)

■ DC Mode



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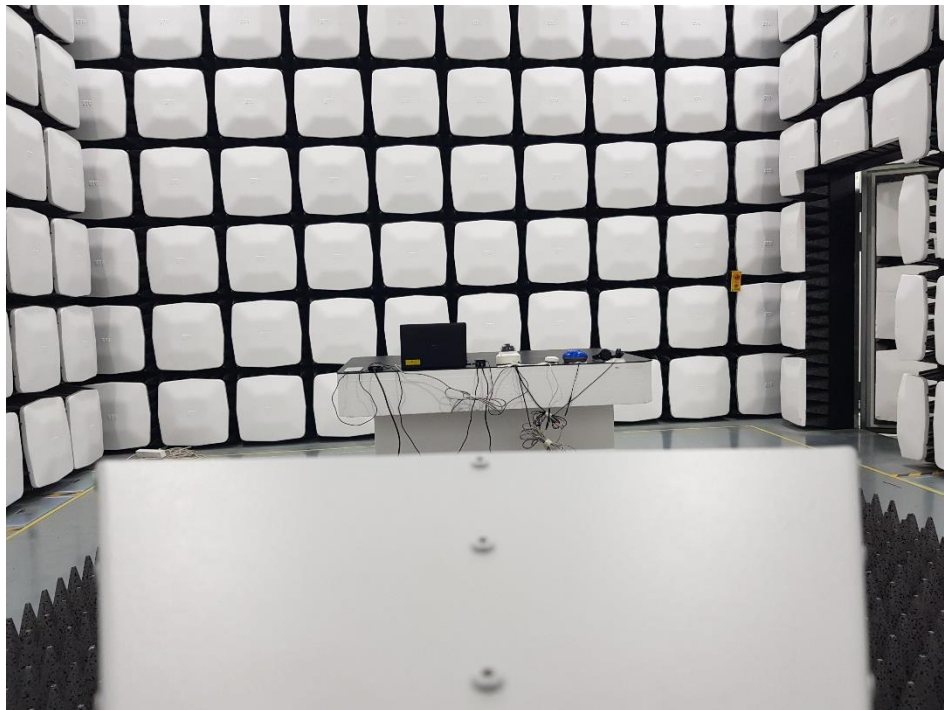
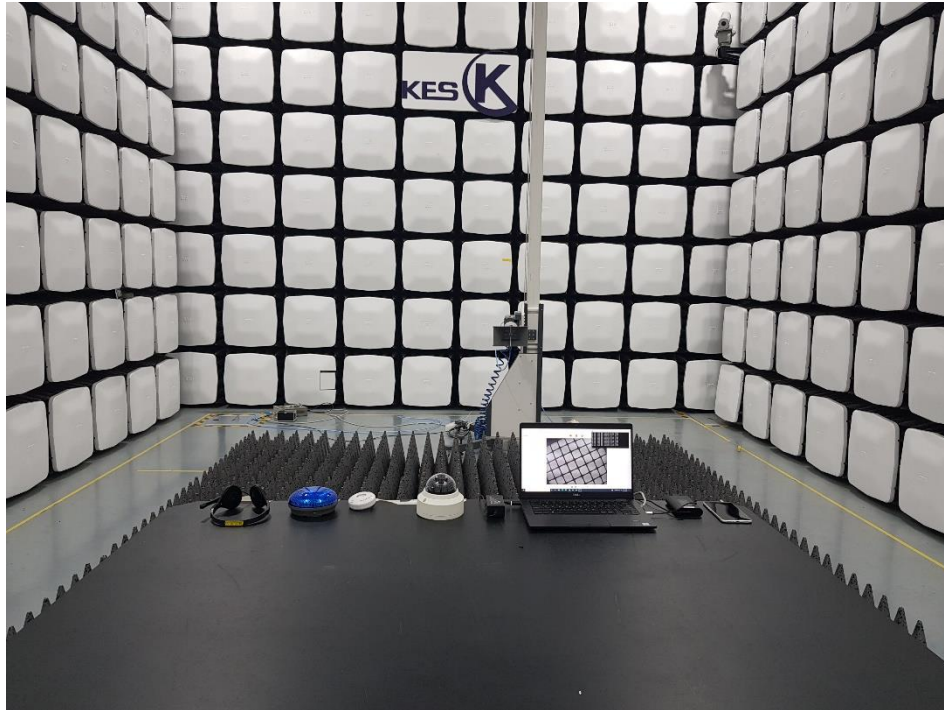
■ PoE Mode



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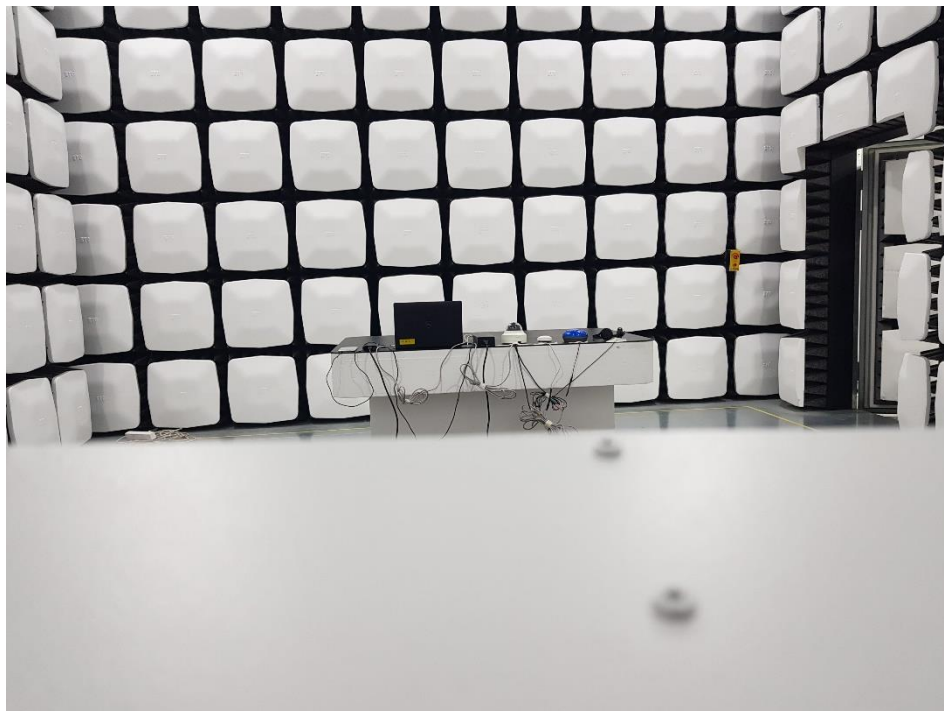
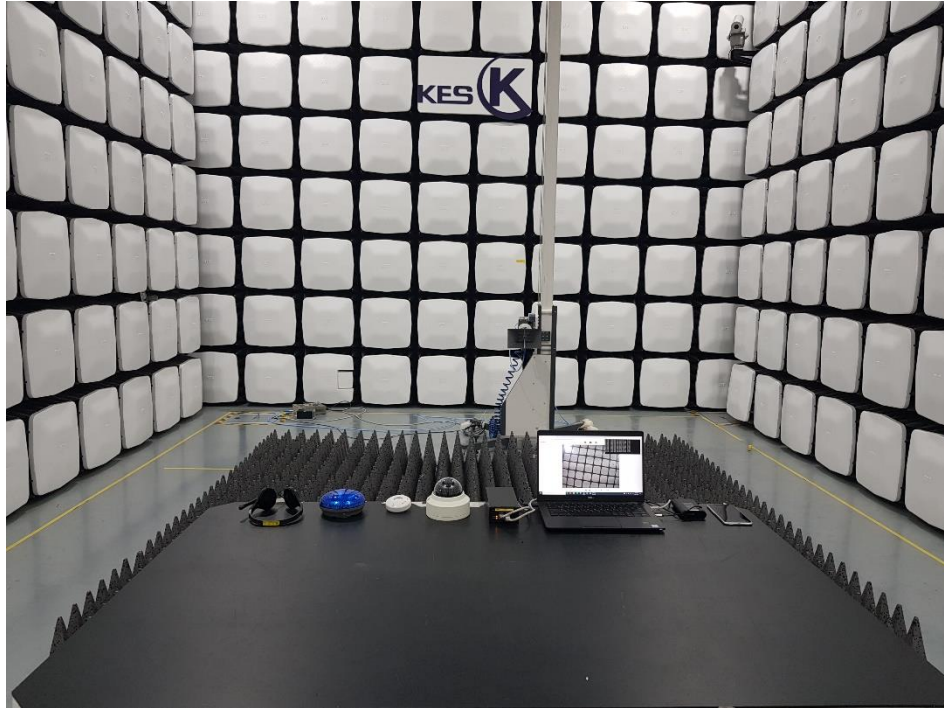
Radiated Electric Field Emissions(Above 1 GHz)

■ DC Mode



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■ PoE Mode



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EUT External Photographs

(Top)



(Bottom)



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EUT Internal Photographs

(Internal View)

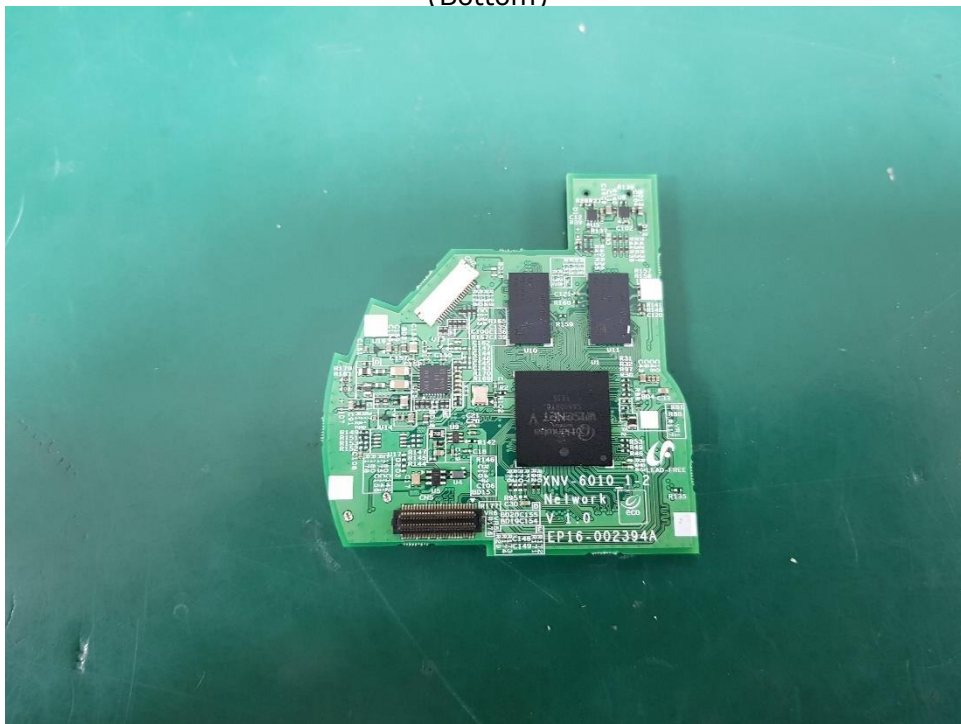


EUT Internal View – Main Board

(Top)



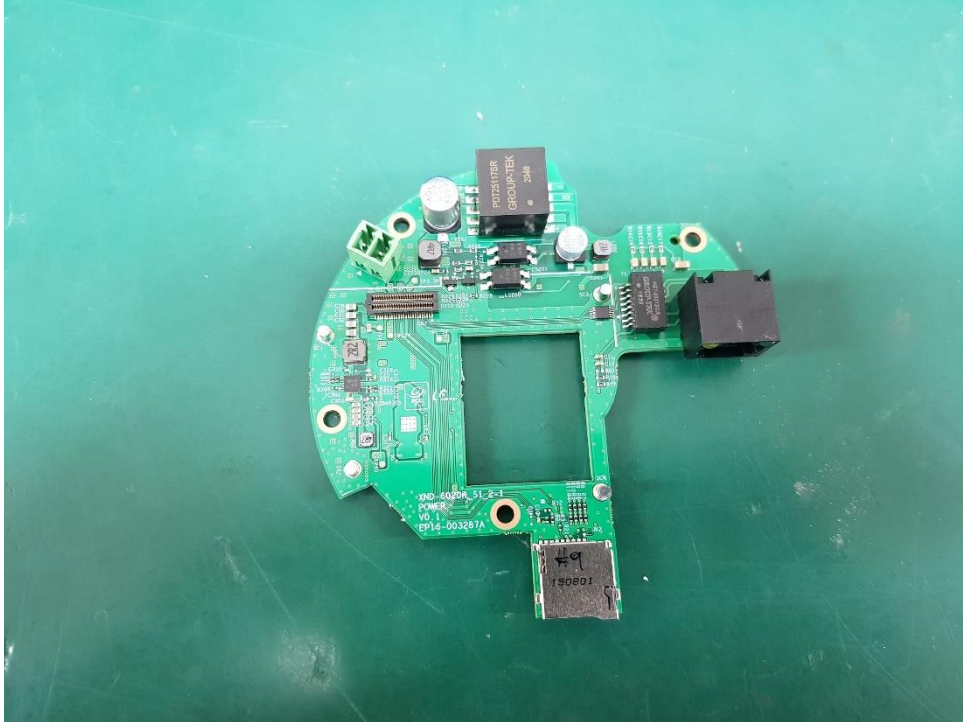
(Bottom)



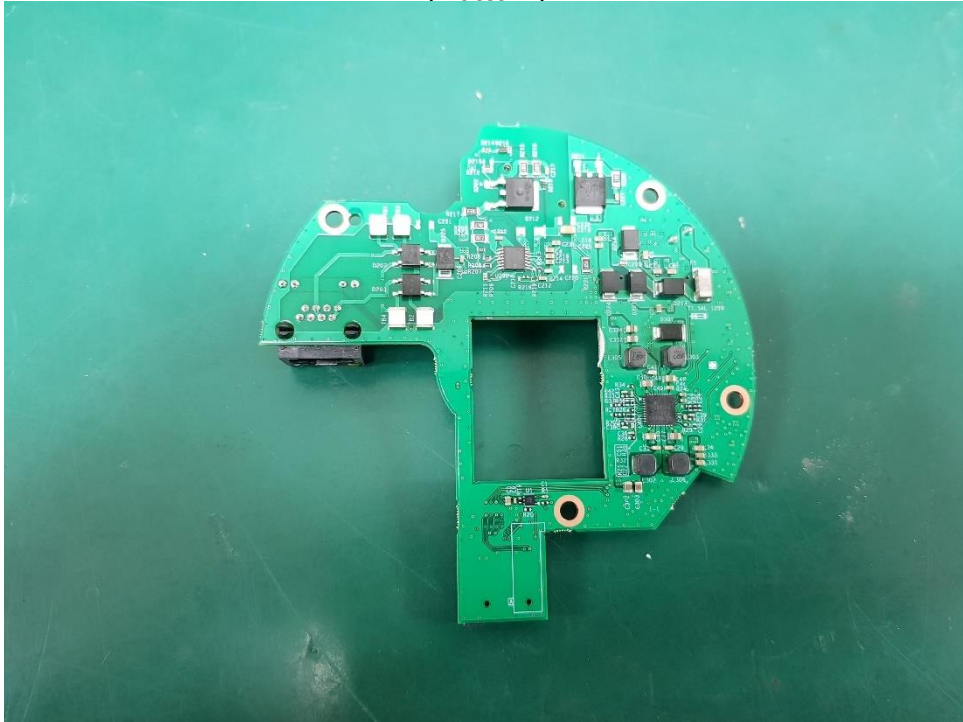
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EUT Internal View – Sub Board 1

(Top)



(Bottom)



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EUT Internal View – Sub Board 2

(Top)



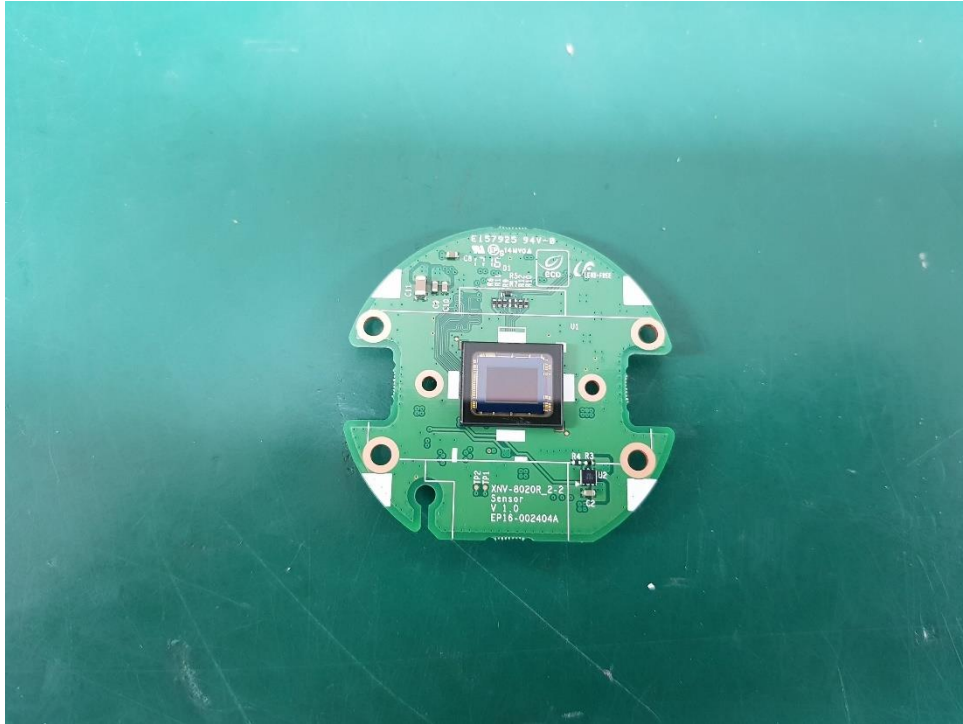
(Bottom)



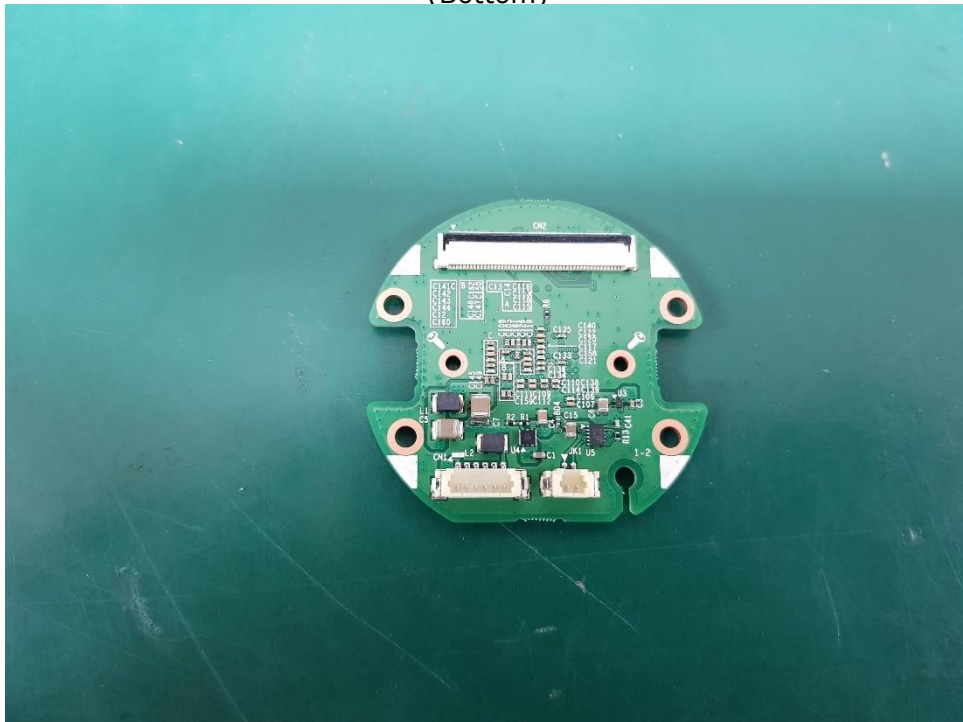
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EUT Internal View – Sub Board 3

(Top)



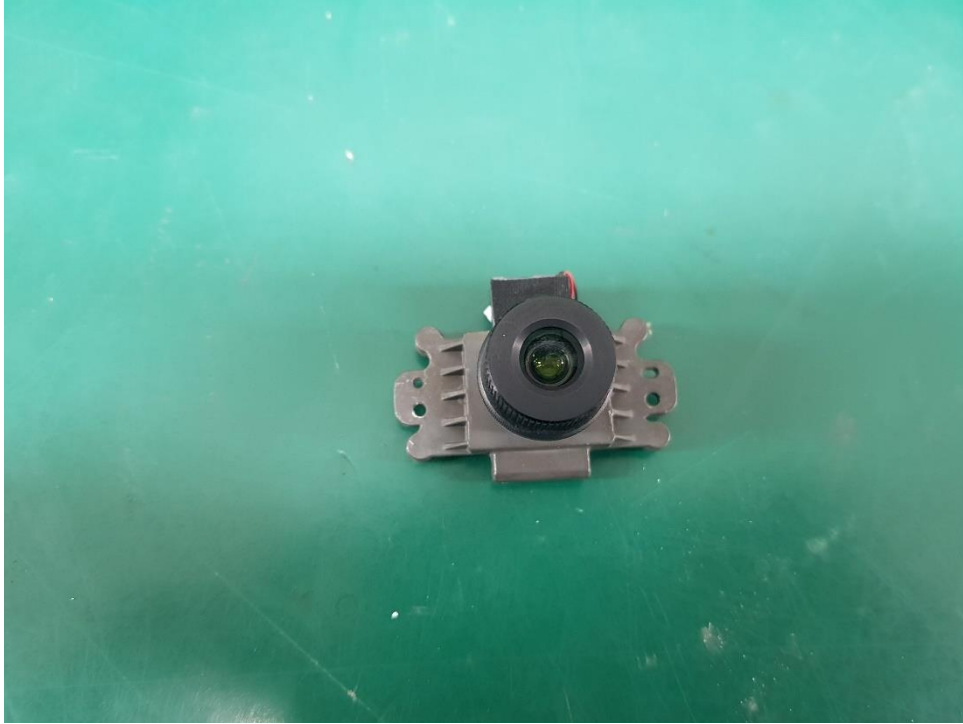
(Bottom)



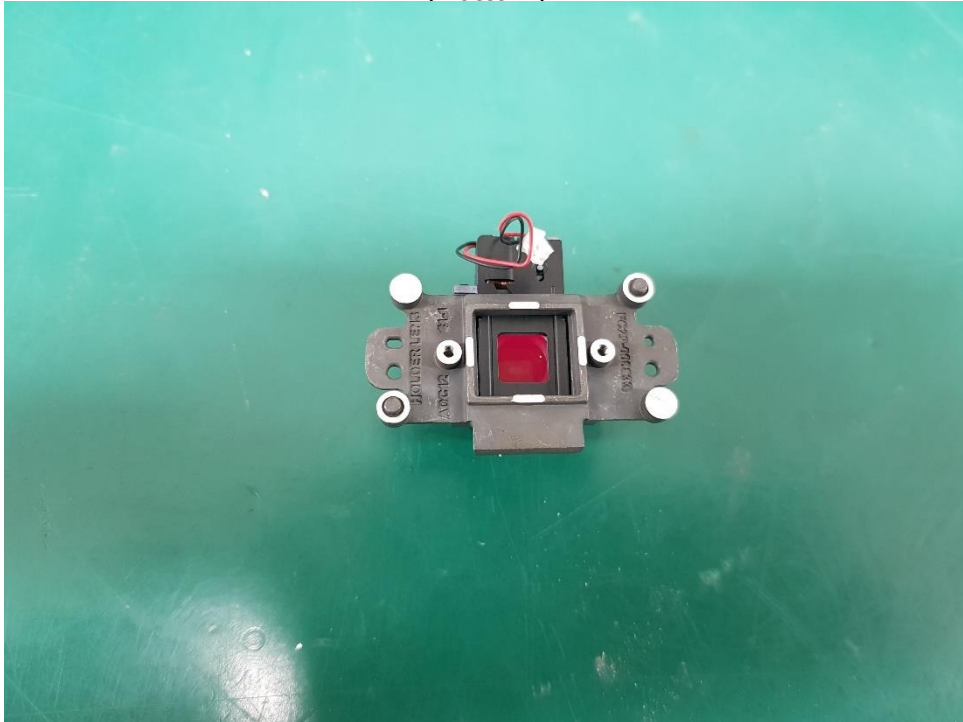
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EUT Internal View – Lens

(Top)

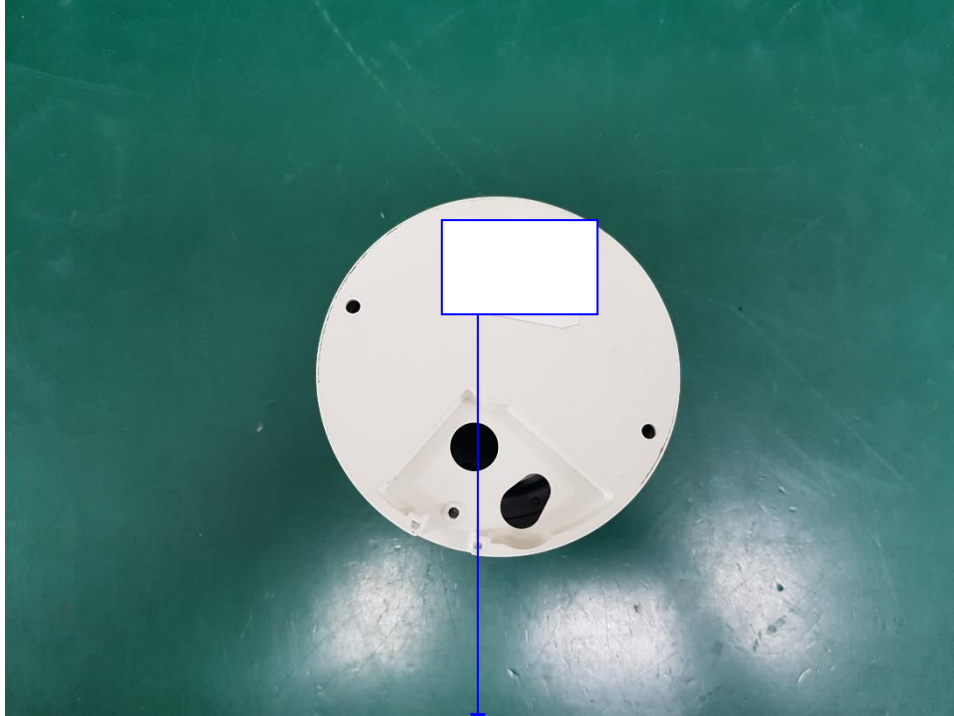


(Bottom)



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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.