



KES Co., Ltd.

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Report No.:

KES-EM-22T0173-R1

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EMC TEST REPORT

Test Report No. : KES-EM-22T0173-R1
Date of Issue : Feb. 24, 2023
Product name : NETWORK CAMERA
Model/Type No. : QNV-7012R
Variant Model : QNV-7022R, QNV-7032R
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 : Jan. 14, 2022
Test date : Jan. 20, 2022 ~ Jan. 21, 2022
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Dae Soo, Kim
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

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

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REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Feb. 04, 2022	KES-EM-22T0173	Issued
Feb. 24, 2023	KES-EM-22T0173-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:

Video		Preset Accuracy	None
Imaging Device	1/3" CMOS	Operational	
Resolution	2560 x 1440, 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, 320 x 240	Camera Title	Displayed up to 85 characters
Max. Framerate	H.265/H.264 : Max. 30fps at 4M all resolutions, MJPEG : Max. 15fps	Direction Indicator	None
NETD	None	Day & Night	Auto(ICR)
Pixel Size	None	Backlight Compensation	BLC, WDR, SDR
Min. Illumination	Color : 0.15Lux (F2.0, 1/30sec) B/W : 0Lux (IR LED On) (TBD)	Wide Dynamic Range	120dB
Video Out	CVBS : 1.0 Vpp/75Ω composite, 720x480(N), 720x576(P) for installation	Digital Noise Reduction	SSNR
Video Transmission Distance	None	Digital Image Stabilization	None
Lens		Defog	None
Focal Length (Zoom Ratio)	2.8mm fixed focal	Motion Detection	4ea, polygonal zones
Max. Aperture Ratio	F2.0	Privacy Masking	6ea, rectangular zones
Angular Field of View	H : 113.8°, V : 61.5°, D : 134.5° (TBD)	Gain Control	Low / Middle / High
Min. Object Distance	None	White Balance	ATW / AWC / Manual / Indoor / Outdoor
Focus Control	Fixed	LDC	Support
Lens Type	None	Electronic Shutter Speed	Minimum/Maximum/Anti flicker (1/5~1/12,000sec)
Mount Type	None	Digital PTZ	None
Optional Lens	None	Video Rotation	Flip, Mirror, Hallway view(90°/270°)
Pan / Tilt / Rotate		Analytics	Defocus detection, Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line
Pan / Tilt / Rotate Range	0° ~ 350° / 0° ~ 67° / 0° ~ 355°	Business Intelligence	None
Pan Range	None	Serial Interface	None
Pan Speed	None	Alarm I/O	Input 1ea / Output 1ea
Tilt Range	None	Alarm Triggers	Analytics, Network disconnect, Alarm input
Tilt Speed	None	Alarm Events	File upload via FTP and e-mail, Notification via e-mail, SD/SDHC/SDXC or NAS recording at event triggers, Alarm output, Handover
Rotate Range	None	Audio In	Built-in MIC
Sequence	None	Audio Out	None
		IR Viewable Length	20m (65.62ft)

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IR Illuminator (Optional)	None	Application Programming Interface	ONVIF Profile S/G/T, SUNAPI (HTTP API)
Water Removal	None	General	
Auto Tracking	None	Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Coaxial Protocol	None	Web Viewer	
Color Palettes	None	Edge Storage	Micro SD/SDHC/SDXC 1slot 128GB
Radiometry		Memory	512MB RAM, 256MB Flash
Temperature Detect Range	None	Environmental & Electrical	
Temperature Accuracy	None	Operating Temperature / Humidity	-10°C~+55°C (+14°F~+131°F) / Less than 95% RH (TBD)
Temperature Detection	None	Storage Temperature / Humidity	-30°C~+60°C (-22°F~+140°F) / Less than 95% RH (TBD)
Additional	None	Certification	
Network		Input Voltage	PoE(IEEE802.3af, Class3), 12VDC
Ethernet	RJ-45 (10/100BASE-T)	Power Consumption	PoE: Max 7.4W, typical 6W 12VDC: Max 6.4W, typical 5.1W (TBD)
Video Compression	H.265/H.264 : Main/High, MJPEG	Mechanical	
Audio Compression	G.711 u-law / G.726 Selectable G.726(ADPCM) 8KHz, G.711 8KHz, G.726 16Kbps, 24Kbps, 32Kbps, 40Kbps	Color / Material	White / Plastic
Smart Codec	Manual (Sea area), WiseStreamII	RAL Code	RAL9003
Video Quality Adjustment	H.265/H.264 : Target bitrate level control, MJPEG : Quality level control	Product Dimensions / Weight	Ø110.0 x 86.0mm (Ø4.33 x 3.39"), 255g (0.562 lb)
Bitrate Control	H.264/H.265 : CBR or VBR MJPEG : VBR		
Streaming	Unicast (6 users) / Multicast Multiple streaming (Up to 3 profiles)		
Protocol	IPv4, IPv6, 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, LLDP		
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access Log 802.1X Authentication		

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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 (AC/DC Adapter Input Power)
- ☒ AC 120 V, 60 Hz (PoE Adapter Input Power)

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	QNV-7012R	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Adapter	FSP060-DIBAN2	H00000669	Zhonghan Electronics(Shenzhen) Co., Ltd.	-
PoE INJECTOR	PT-PSE109GBRO-AH	-	Dongguan PROCET Network Technology Co.,Ltd	-
Notebook	LG15N54	410NZGK015231	LG	-
Notebook Adapter	ADP-90WH B	84ZW19F1663	DELTA ELECTRONICS(JIANGSU) LTD.	-
Alarm	SIP-1201DD D0	-	SAMSUNG TECHWIN CO., LTD.	-
Button alarm	-	-	-	-
MIC	MP1000	-	-	-
Micro SD Card	-	-	Transcend	16 GB



1.6 External I/O Cabling

■ DC Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (EUT)	RJ-45	Notebook	RJ-45	3.0	U
	Alarm OUT	Alarm	Alarm IN	3.0	U
	Alarm IN	Button alarm	Alarm OUT	3.0	U
	Audio IN	MIC	Audio IN	1.4	U
	SLOT	Micro SD Card	SLOT	-	-

* Unshielded=U, Shielded=S

■ PoE Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (EUT)	RJ-45 (PoE)	PoE INJECTOR	RJ-45 (PoE)	3.0	U
	Alarm OUT	Alarm	Alarm IN	3.0	U
	Alarm IN	Button alarm	Alarm OUT	3.0	U
	Audio IN	MIC	Audio IN	1.4	U
	SLOT	Micro SD Card	SLOT	-	-
Notebook	RJ-45 (LAN)	PoE INJECTOR	RJ-45 (LAN)	2.5	U

* Unshielded=U, Shielded=S

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1.7 EUT Operating Mode(s)

Test Mode	operating
OP	the test was conducted while checking the camera video output from the laptop and making sure that they operate normally while performing a ping test. micro sd card : after testing, check if the recording is normally done on the micro sd card

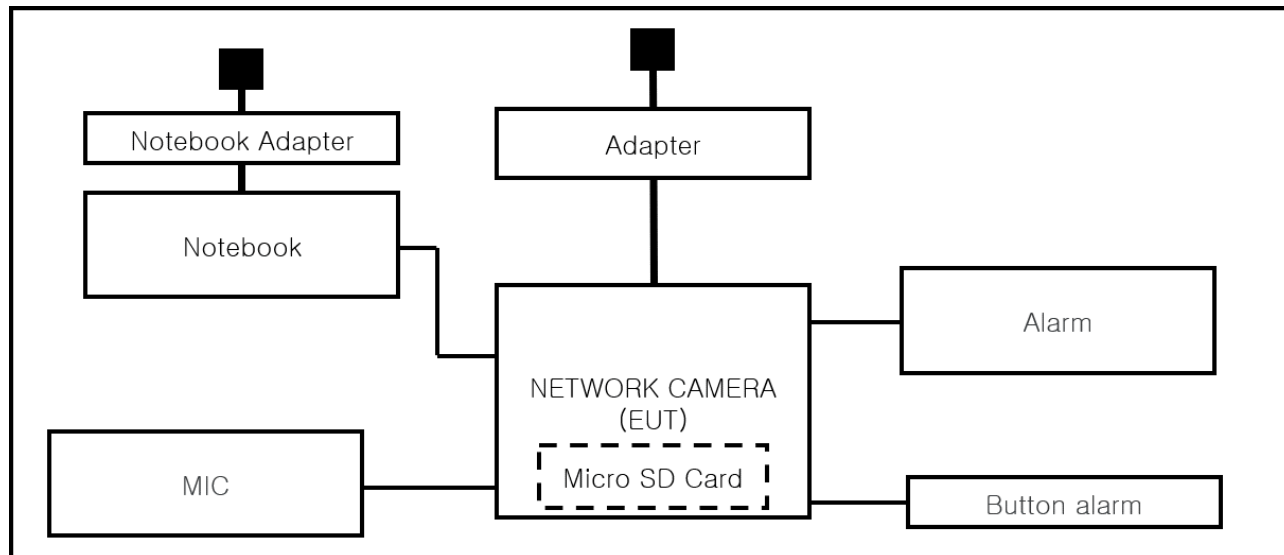
EUT Test operating S/W		
Name	Version	Manufacture Company
Web Viewer	-	Hanwha Vision Co., Ltd

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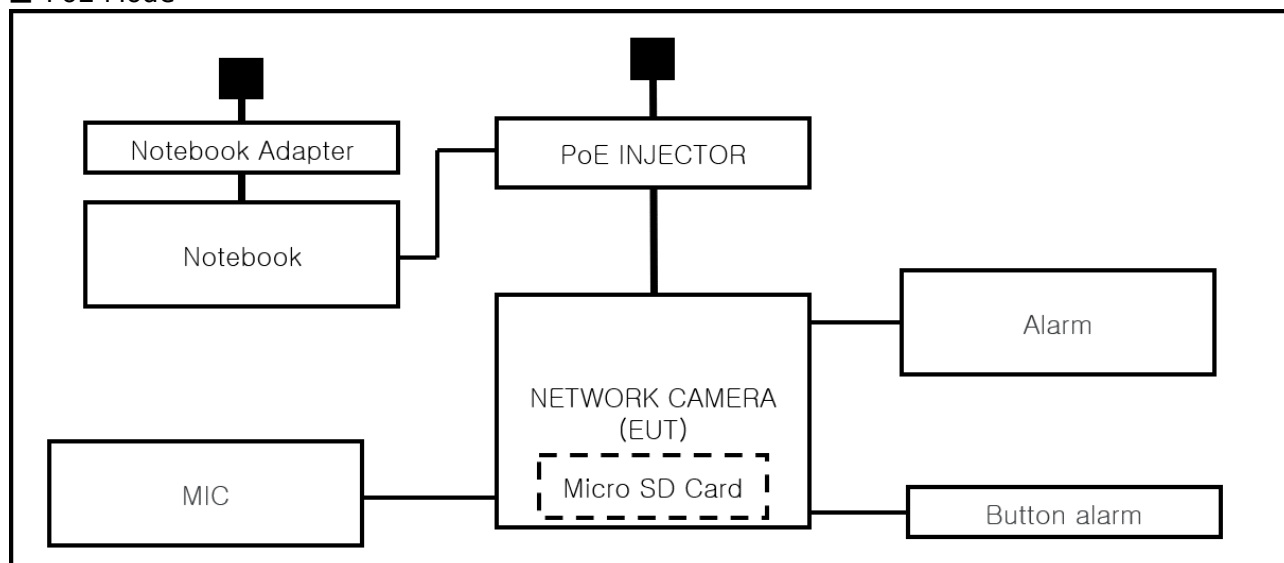
1.8 Configuration

■ AC Main
 □ DC Main

■ DC Mode



■ PoE Mode



1.9 Remarks when standards applied

VIDEO port are for administrator use and are excluded from testing.

1.10 Calibration Details of Equipment Used for Measurement

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

1.11 Test Facility

The measurement facility is located at 473-21, Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea, 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:

☒ **47 CFR Part 15, Subpart B**

☐ CISPR 22:2009 +A1:2010

☐ Class A

☐ Class B

☒ ANSI C63.4a-2017

☒ Class A

☐ Class B

☒ **IC Regulation ICES-003 Issue 7**

☐ CAN/CSA-CISPR 32:17

☐ Class A

☐ Class B

☒ ANSI C63.4a-2017

☒ Class A

☐ Class B



2.1 Conducted Emissions at Mains Power Ports

Test Date

Jan. 20, 2022

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	12, 28, 2022
☒	LISN	ENV216	R & S	101787	12, 27, 2022
☒	LISN	ESH2-Z5	R & S	100450	12, 27, 2022
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 27, 2022

Test Conditions

Temperature: (22,1 ± 0,2) °C

Relative Humidity: (42,9 ± 0,0) % 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

Jan. 20, 2022

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, 24, 2022
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	12, 08, 2022
☒	ATTENUATOR	8491A	HP	32173	03, 10, 2022

Test Conditions

Temperature: (22,5 ± 0,2) °C

Relative Humidity: (42,7 ± 0,2) % R.H.

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

Test Results

The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

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2.3 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Jan. 21, 2022

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
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 11, 2022
☒	PREAMPLIFIER	8449B	HP	3008A00538	06, 21, 2022

Test Conditions

Temperature: (21,7 ± 0,0) °C

Relative Humidity: (45,8 ± 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

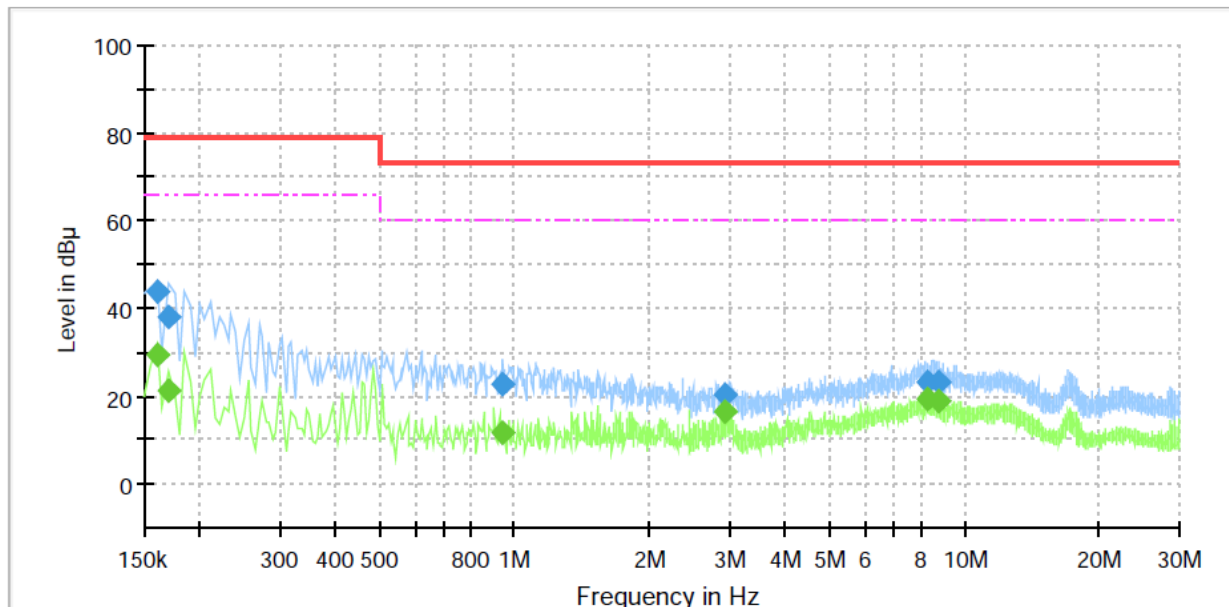
Conducted Emissions at Mains Power Ports

■ DC Mode

HOT LINE

Common Information

Test Description:	Conducted Emission
Model No.:	QNV-7012R
Phase:	DC
Mode:	H
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	29.46	66.00	36.54	1000.0	9.000	L1	19.5
0.160000	43.57	---	79.00	35.43	1000.0	9.000	L1	19.5
0.170000	---	21.18	66.00	44.82	1000.0	9.000	L1	19.5
0.170000	37.95	---	79.00	41.05	1000.0	9.000	L1	19.5
0.940000	---	11.77	60.00	48.23	1000.0	9.000	L1	20.1
0.940000	22.69	---	73.00	50.31	1000.0	9.000	L1	20.1
2.935000	---	16.54	60.00	43.46	1000.0	9.000	L1	20.2
2.935000	20.19	---	73.00	52.81	1000.0	9.000	L1	20.2
8.270000	---	19.10	60.00	40.90	1000.0	9.000	L1	19.7
8.270000	23.33	---	73.00	49.67	1000.0	9.000	L1	19.7
8.755000	---	18.64	60.00	41.36	1000.0	9.000	L1	19.7
8.755000	22.95	---	73.00	50.05	1000.0	9.000	L1	19.7

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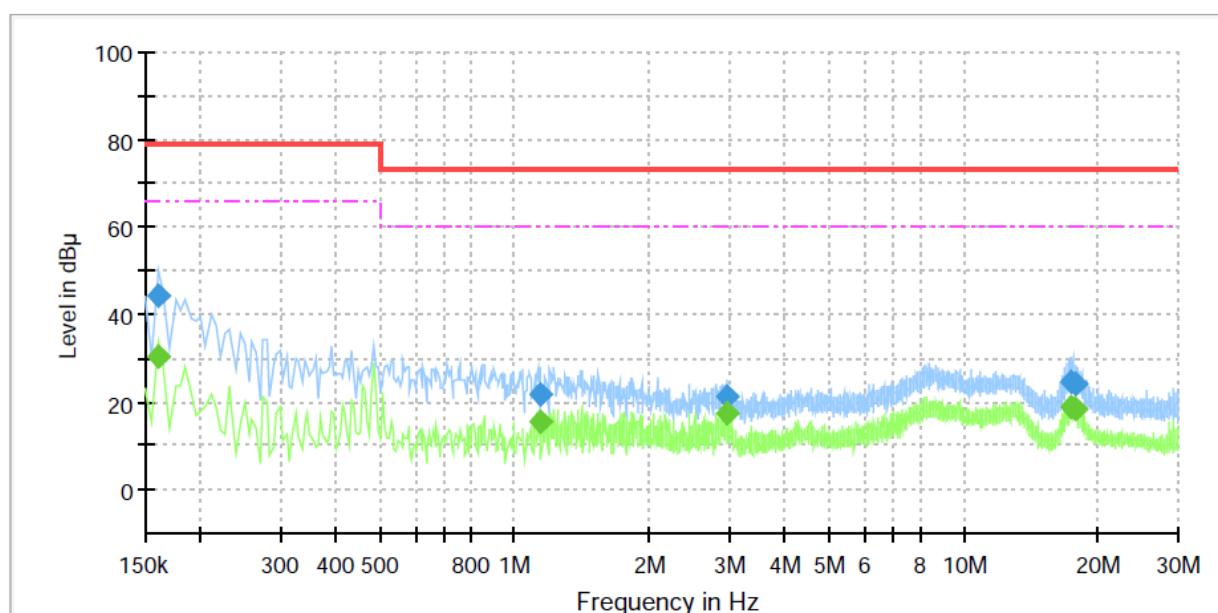
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NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	QNV-7012R
Phase:	DC
Mode:	N
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	30.15	66.00	35.85	1000.0	9.000	N	19.4
0.160000	44.13	---	79.00	34.87	1000.0	9.000	N	19.4
1.135000	---	15.47	60.00	44.53	1000.0	9.000	N	20.1
1.135000	21.71	---	73.00	51.29	1000.0	9.000	N	20.1
2.980000	---	17.54	60.00	42.46	1000.0	9.000	N	20.2
2.980000	21.33	---	73.00	51.67	1000.0	9.000	N	20.2
17.380000	---	18.76	60.00	41.24	1000.0	9.000	N	20.0
17.380000	24.47	---	73.00	48.53	1000.0	9.000	N	20.0
17.730000	---	18.51	60.00	41.49	1000.0	9.000	N	20.0
17.730000	24.05	---	73.00	48.95	1000.0	9.000	N	20.0

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PoE Mode
HOT LINE
Common Information

Test Description:

Model No.:

Phase:

Mode:

Operator Name:

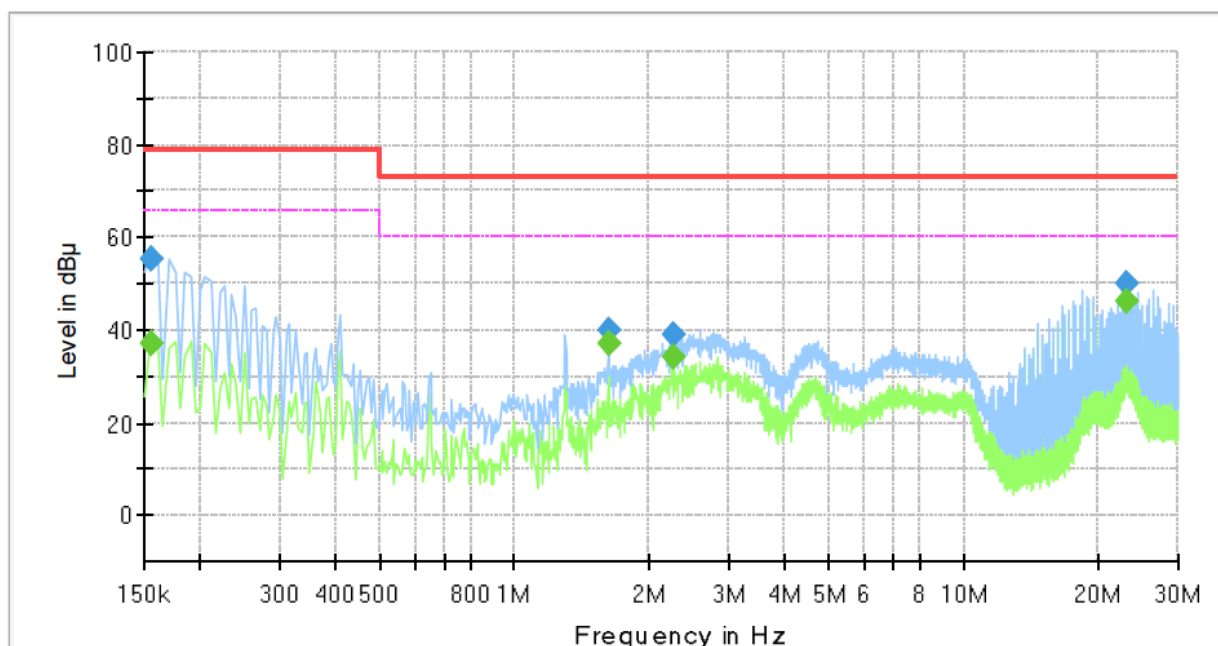
Conducted Emission

QNV-7012R

H

PoE

KES


Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	36.86	66.00	29.14	1000.0	9.000	L1	19.5
0.155000	55.36	---	79.00	23.64	1000.0	9.000	L1	19.5
1.620000	---	37.00	60.00	23.00	1000.0	9.000	L1	20.3
1.620000	39.82	---	73.00	33.18	1000.0	9.000	L1	20.3
2.270000	---	34.18	60.00	25.82	1000.0	9.000	L1	20.3
2.270000	38.91	---	73.00	34.09	1000.0	9.000	L1	20.3
23.130000	---	46.37	60.00	13.63	1000.0	9.000	L1	20.2
23.130000	49.93	---	73.00	23.07	1000.0	9.000	L1	20.2

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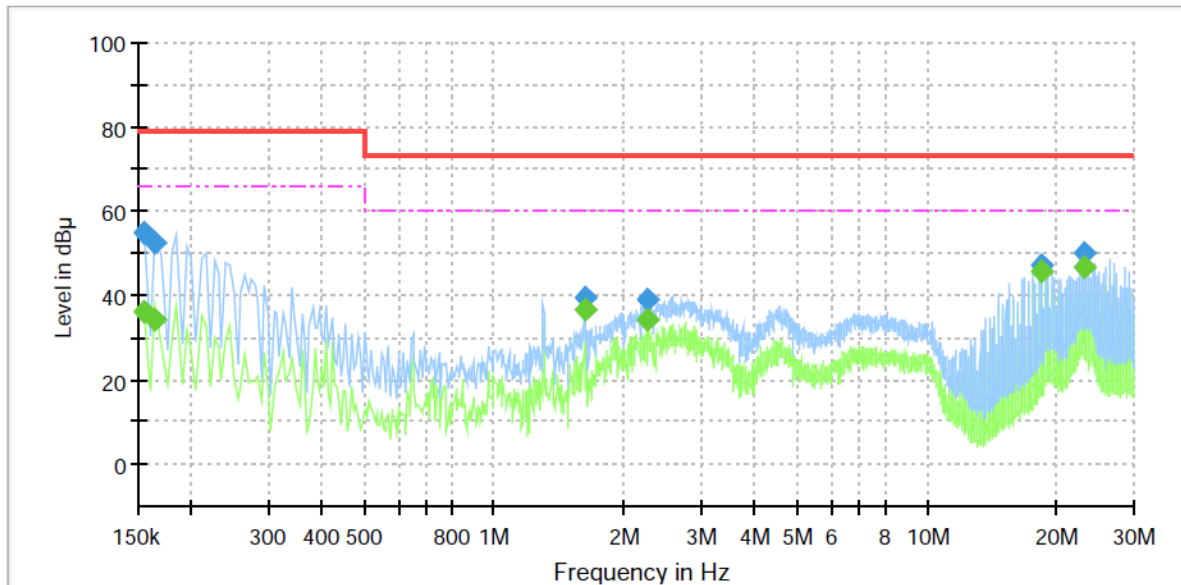
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NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	QNV-7012R
Phase:	N
Mode:	PoE
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	35.94	66.00	30.06	1000.0	9.000	N	19.4
0.155000	54.72	---	79.00	24.28	1000.0	9.000	N	19.4
0.165000	---	34.02	66.00	31.98	1000.0	9.000	N	19.4
0.165000	52.59	---	79.00	26.41	1000.0	9.000	N	19.4
1.620000	---	36.80	60.00	23.20	1000.0	9.000	N	20.3
1.620000	39.64	---	73.00	33.36	1000.0	9.000	N	20.3
2.270000	---	34.08	60.00	25.92	1000.0	9.000	N	20.3
2.270000	38.77	---	73.00	34.23	1000.0	9.000	N	20.3
18.470000	---	45.82	60.00	14.18	1000.0	9.000	N	20.1
18.470000	47.38	---	73.00	25.62	1000.0	9.000	N	20.1
23.130000	---	46.45	60.00	13.55	1000.0	9.000	N	20.2
23.130000	49.99	---	73.00	23.01	1000.0	9.000	N	20.2

◆ 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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Report No.:

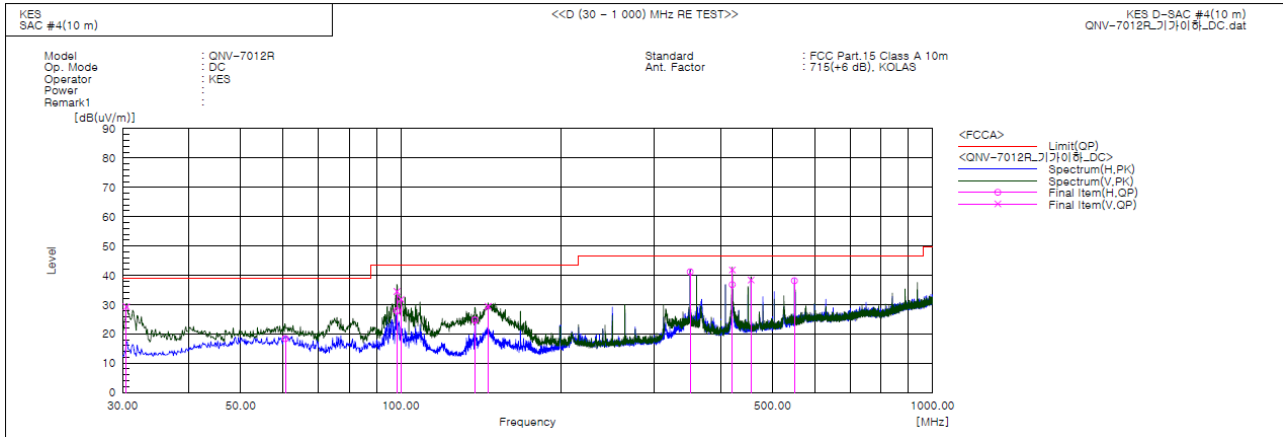
KES-EM-22T0173-R1

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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	30.485	V	54.3	-25.0	29.3	39.0	9.7	117.0	244.0	
2	60.676	H	40.4	-22.0	18.4	39.0	20.6	379.0	349.0	
3	98.385	V	57.1	-22.6	34.5	43.5	9.0	103.0	68.0	
4	98.385	H	50.5	-22.6	27.9	43.5	15.6	391.0	306.0	
5	100.083	V	54.2	-22.4	31.8	43.5	11.7	106.0	37.0	
6	137.913	H	50.1	-25.4	24.7	43.5	18.8	346.0	337.0	
7	146.036	V	54.7	-25.3	29.4	43.5	14.1	114.0	259.0	
8	349.979	H	56.4	-15.2	41.2	46.5	5.3	292.0	262.0	
9	419.940	V	55.4	-13.6	41.8	46.5	4.7	124.0	105.0	
10	419.940	H	50.4	-13.6	36.8	46.5	9.7	295.0	192.0	
11	455.830	V	51.1	-12.7	38.4	46.5	8.1	117.0	218.0	
12	550.041	H	48.2	-10.1	38.1	46.5	8.4	292.0	170.0	

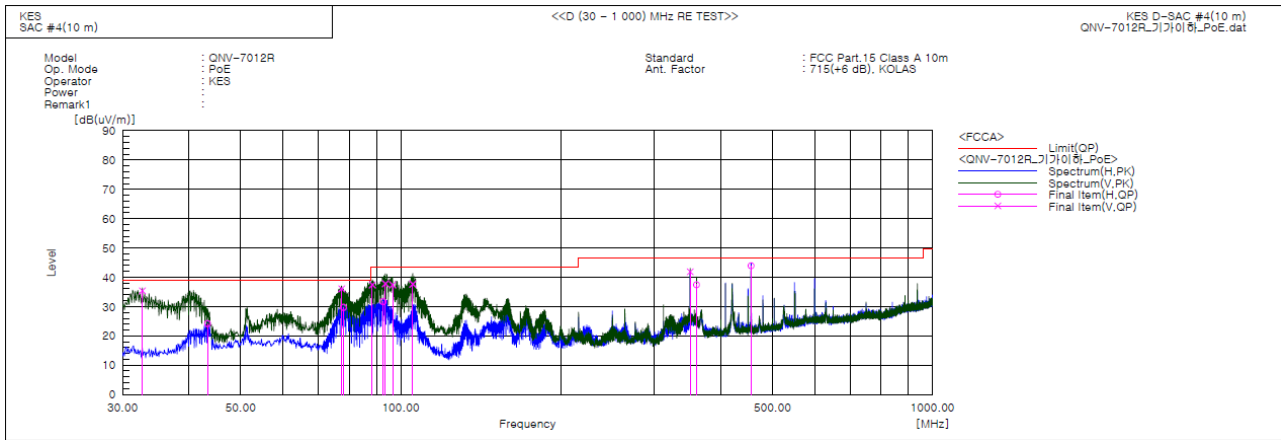
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PoE Mode



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	32.668	V	60.0	-24.6	35.4	39.0	3.6	103.0	42.0	
2	43.338	H	45.7	-21.5	24.2	39.0	14.8	352.0	18.0	
3	77.409	V	63.4	-27.3	36.1	39.0	2.9	177.0	161.0	
4	78.015	H	57.1	-27.4	29.7	39.0	9.3	325.0	142.0	
5	88.443	V	61.9	-24.5	37.4	43.5	6.1	124.0	120.0	
6	92.686	H	55.3	-23.6	31.7	43.5	11.8	313.0	282.0	
7	93.535	V	61.4	-23.6	37.8	43.5	5.7	113.0	86.0	
8	96.566	V	60.4	-23.0	37.4	43.5	6.1	108.0	87.0	
9	105.296	V	60.0	-22.3	37.7	43.5	5.8	105.0	124.0	
10	349.979	V	57.1	-15.2	41.9	46.5	4.6	111.0	172.0	
11	359.921	H	52.4	-15.0	37.4	46.5	9.1	269.0	8.0	
12	455.830	H	56.6	-12.7	43.9	46.5	2.6	397.0	57.0	



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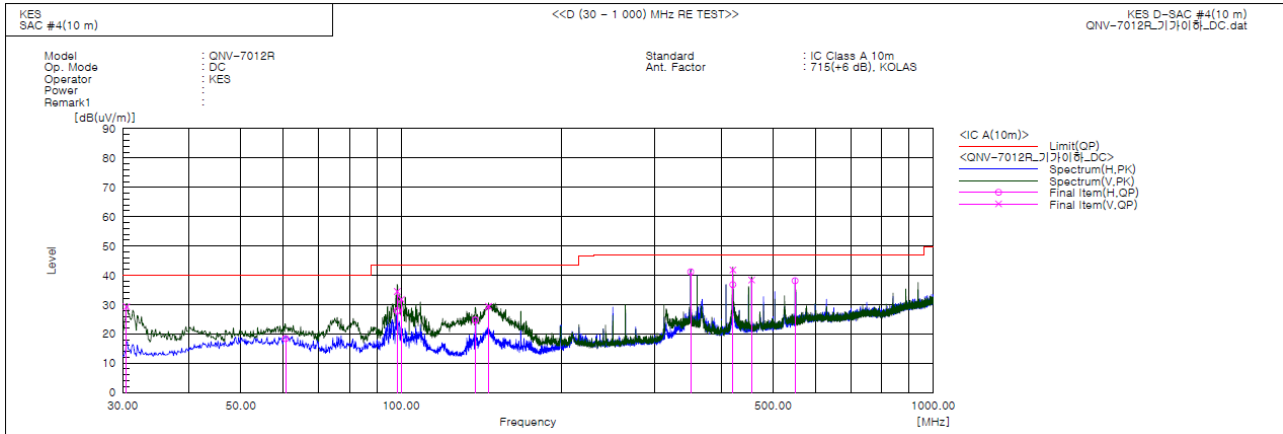
Report No.:

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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	30.485	V	54.3	-25.0	29.3	40.0	10.7	117.0	244.0	
2	60.676	H	40.4	-22.0	18.4	40.0	21.6	379.0	349.0	
3	98.385	V	57.1	-22.6	34.5	43.5	9.0	103.0	68.0	
4	98.385	H	50.5	-22.6	27.9	43.5	15.6	391.0	306.0	
5	100.083	V	54.2	-22.4	31.8	43.5	11.7	106.0	37.0	
6	137.913	H	50.1	-25.4	24.7	43.5	18.8	346.0	337.0	
7	146.036	V	54.7	-25.3	29.4	43.5	14.1	114.0	259.0	
8	349.979	H	56.4	-15.2	41.2	47.0	5.8	292.0	262.0	
9	419.940	V	55.4	-13.6	41.8	47.0	5.2	124.0	105.0	
10	419.940	H	50.4	-13.6	36.8	47.0	10.2	295.0	192.0	
11	455.830	V	51.1	-12.7	38.4	47.0	8.6	117.0	218.0	
12	550.041	H	48.2	-10.1	38.1	47.0	8.9	292.0	170.0	

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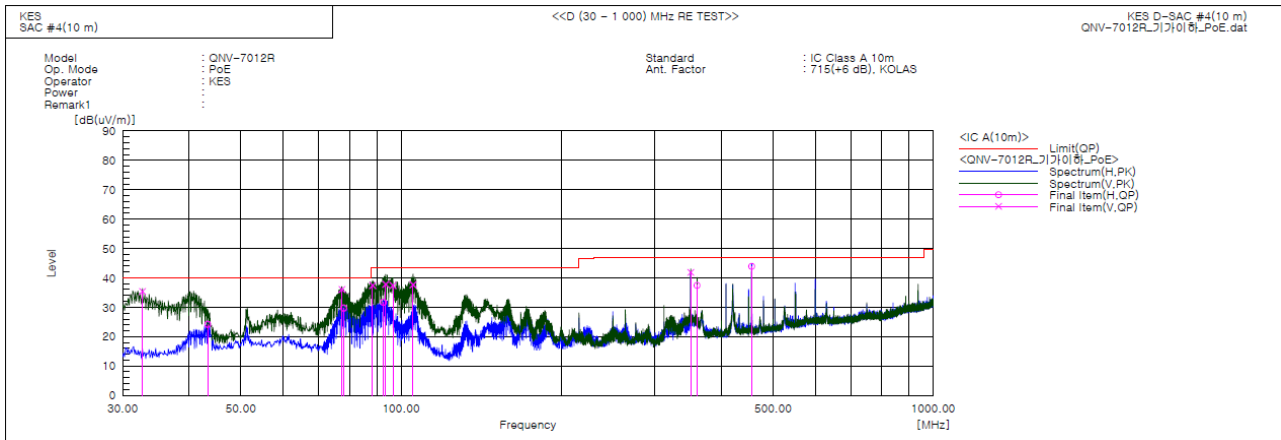
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■ PoE Mode



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	32.668	V	60.0	-24.6	35.4	40.0	4.6	103.0	42.0	
2	43.338	H	45.7	-21.5	24.2	40.0	15.8	352.0	18.0	
3	77.409	V	63.4	-27.3	36.1	40.0	3.9	177.0	161.0	
4	78.015	H	57.1	-27.4	29.7	40.0	10.3	325.0	142.0	
5	88.443	V	61.9	-24.5	37.4	43.5	6.1	124.0	120.0	
6	92.686	H	55.3	-23.6	31.7	43.5	11.8	313.0	282.0	
7	93.535	V	61.4	-23.6	37.8	43.5	5.7	113.0	86.0	
8	96.566	V	60.4	-23.0	37.4	43.5	6.1	108.0	87.0	
9	105.296	V	60.0	-22.3	37.7	43.5	5.8	105.0	124.0	
10	349.979	V	57.1	-15.2	41.9	47.0	5.1	111.0	172.0	
11	359.921	H	52.4	-15.0	37.4	47.0	9.6	269.0	8.0	
12	455.830	H	56.6	-12.7	43.9	47.0	3.1	397.0	57.0	

◆ 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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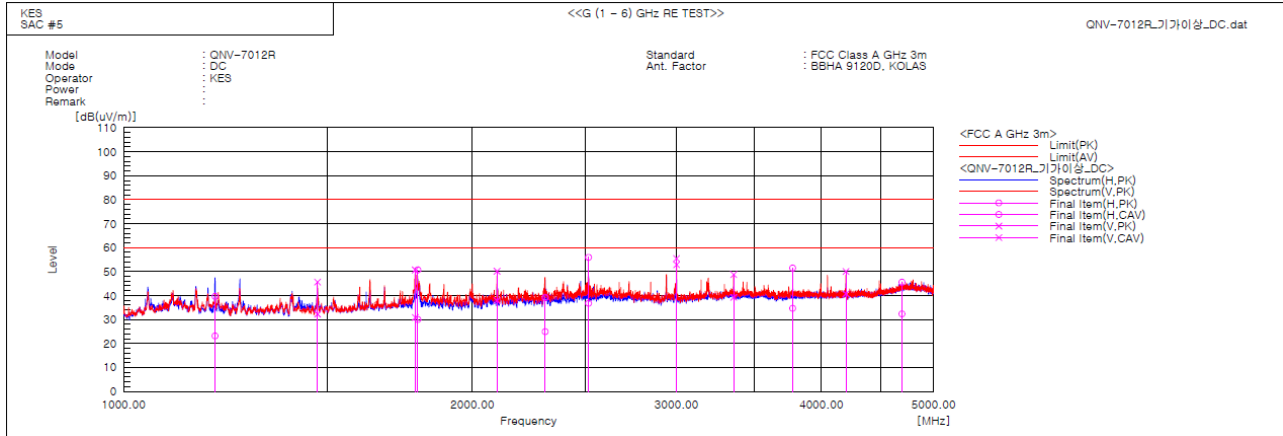
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Radiated Electric Field Emissions(Above 1 GHz)

■ 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	46.6	30.1	-6.9	39.7	23.2	80.0	60.0	40.3	36.8	377.0	348.3	
2	1470.062	V	51.2	37.8	-5.5	45.7	32.3	80.0	60.0	34.3	27.7	149.0	16.0	
3	1785.087	V	54.9	35.1	-4.2	50.7	30.9	80.0	60.0	29.3	29.1	104.0	46.1	
4	1794.375	H	54.9	34.2	-4.2	50.7	30.0	80.0	60.0	29.3	30.0	308.0	45.7	
5	2100.005	V	53.4	41.1	-3.2	50.2	37.9	80.0	60.0	29.8	22.1	121.0	93.8	
6	2310.624	H	41.5	27.4	-2.4	39.1	25.0	80.0	60.0	40.9	35.0	293.0	319.8	
7	2519.375	H	57.4	38.3	-1.5	55.9	36.8	80.0	60.0	24.1	23.2	341.0	47.0	
8	2999.884	V	55.4	52.8	0.1	55.5	52.9	80.0	60.0	24.5	7.1	152.0	292.9	
9	3360.706	V	48.2	38.7	0.6	48.8	39.3	80.0	60.0	31.2	20.7	105.0	192.7	
10	3779.100	H	50.2	33.4	1.3	51.5	34.7	80.0	60.0	28.5	25.3	297.0	15.9	
11	4200.010	V	47.4	38.1	2.7	50.1	40.8	80.0	60.0	29.9	19.2	122.0	243.6	
12	4695.625	H	40.8	27.6	4.8	45.6	32.4	80.0	60.0	34.4	27.6	398.0	248.7	

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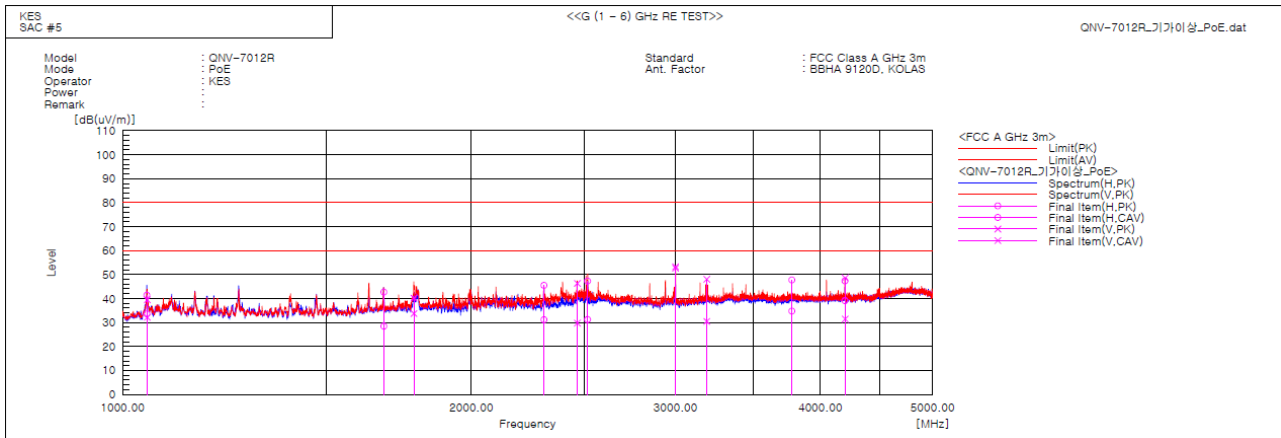
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PoE Mode



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	1049.375	H	49.1	41.3	-7.7	41.4	33.6	80.0	60.0	38.6	26.4	341.0	240.0	
2	1050.081	V	47.2	39.9	-7.7	39.5	32.2	80.0	60.0	40.5	27.8	107.0	40.8	
3	1680.421	H	47.3	33.1	-4.6	42.7	28.5	80.0	60.0	37.3	31.5	298.0	350.0	
4	1783.750	V	44.4	38.0	-4.2	40.2	33.8	80.0	60.0	39.8	26.2	153.0	356.4	
5	2310.025	H	47.9	33.6	-2.4	45.5	31.2	80.0	60.0	34.5	28.8	299.0	269.1	
6	2467.931	V	48.1	31.5	-1.7	46.4	29.8	80.0	60.0	33.6	30.2	113.0	249.1	
7	2519.375	H	48.8	32.8	-1.5	47.3	31.3	80.0	60.0	32.7	28.7	127.0	24.7	
8	2999.837	V	53.2	52.6	0.1	53.3	52.7	80.0	60.0	26.7	7.3	171.0	288.2	
9	3192.551	V	47.6	30.0	0.5	48.1	30.5	80.0	60.0	31.9	29.5	108.0	224.7	
10	3780.468	H	46.5	33.5	1.3	47.8	34.8	80.0	60.0	32.2	25.2	366.0	15.9	
11	4200.106	H	44.6	36.3	2.8	47.4	39.1	80.0	60.0	32.6	20.9	329.0	15.9	
12	4201.324	V	45.8	28.7	2.8	48.6	31.5	80.0	60.0	31.4	28.5	120.0	236.5	

Calculation

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

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

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

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

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Test Setup Photos and Configuration

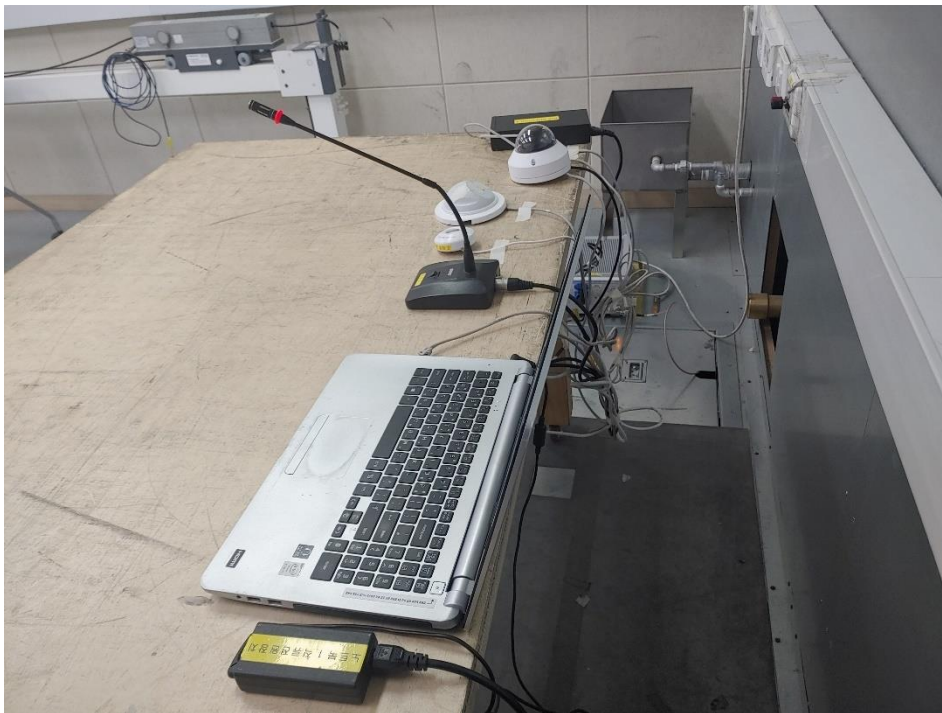
Conducted Emissions at Mains Power Ports

■ DC Mode



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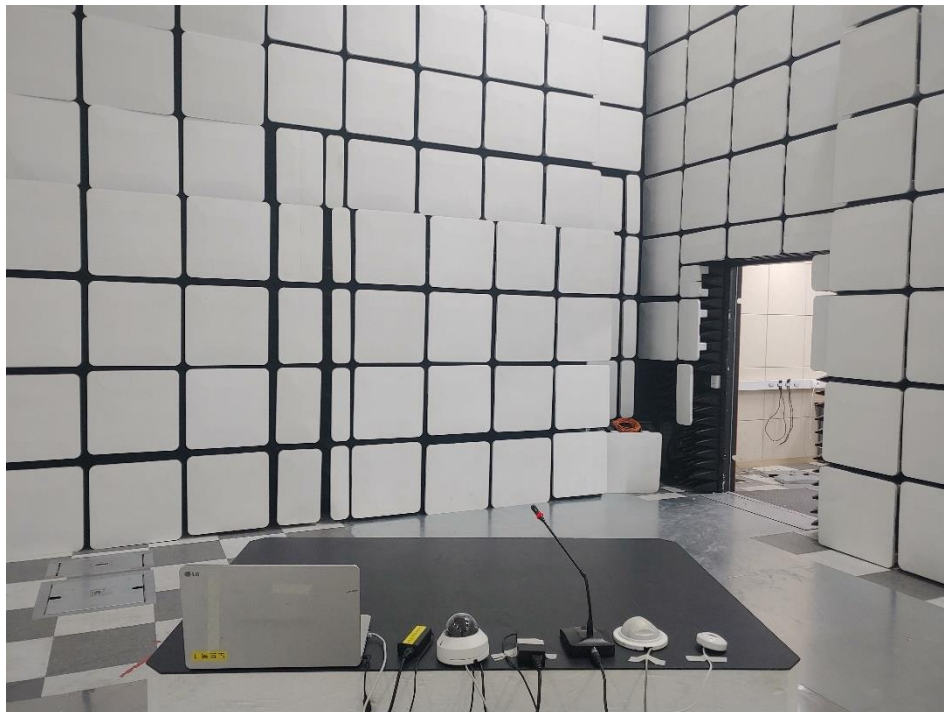
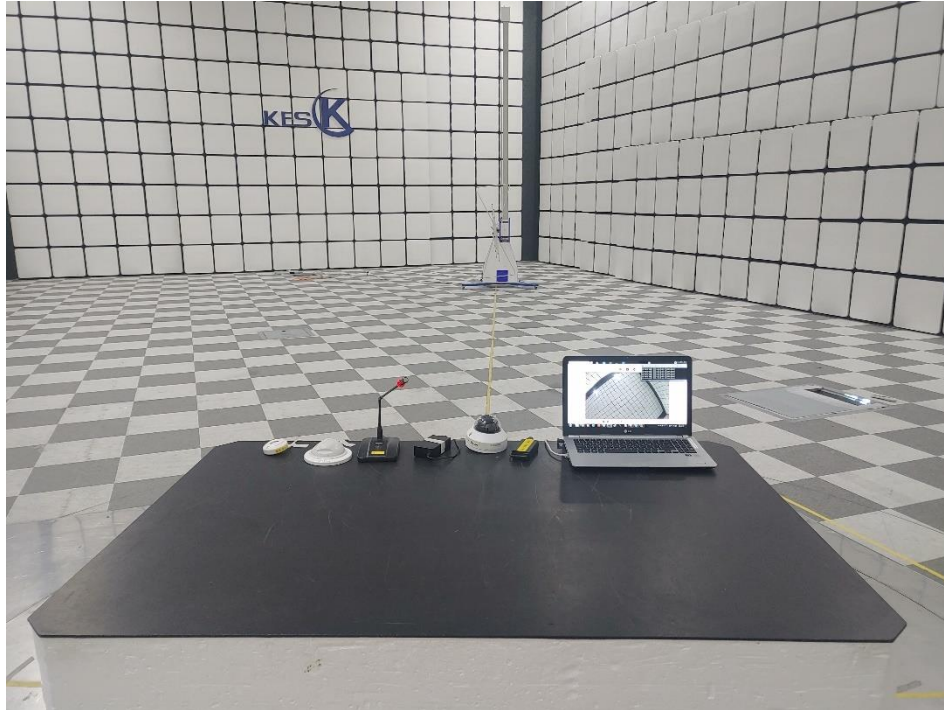
■ PoE Mode



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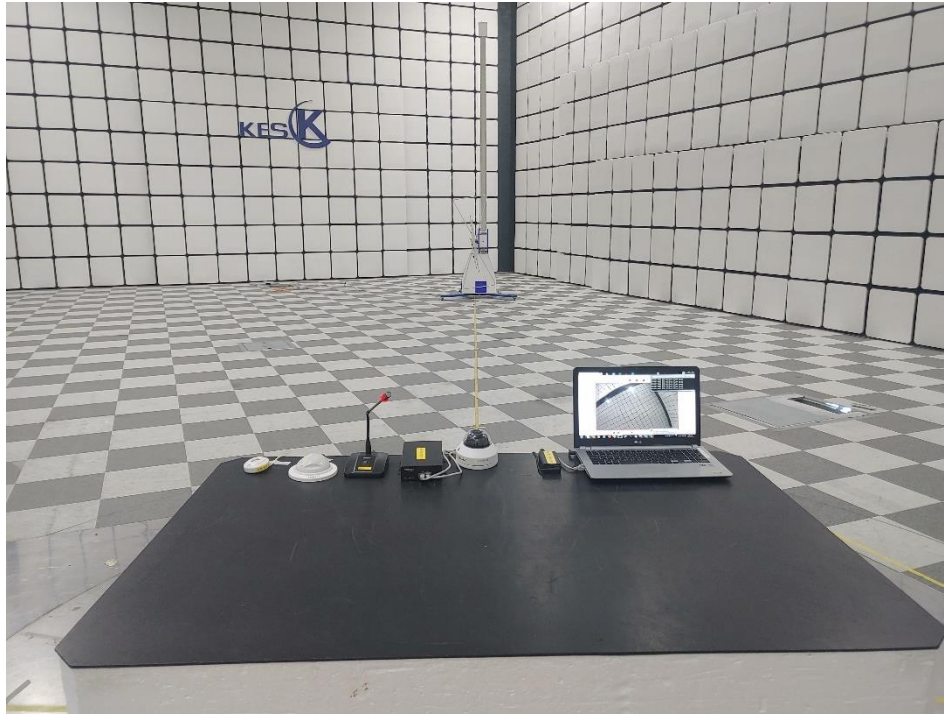
Radiated Electric Field Emissions(Below 1 GHz)

■ DC Mode



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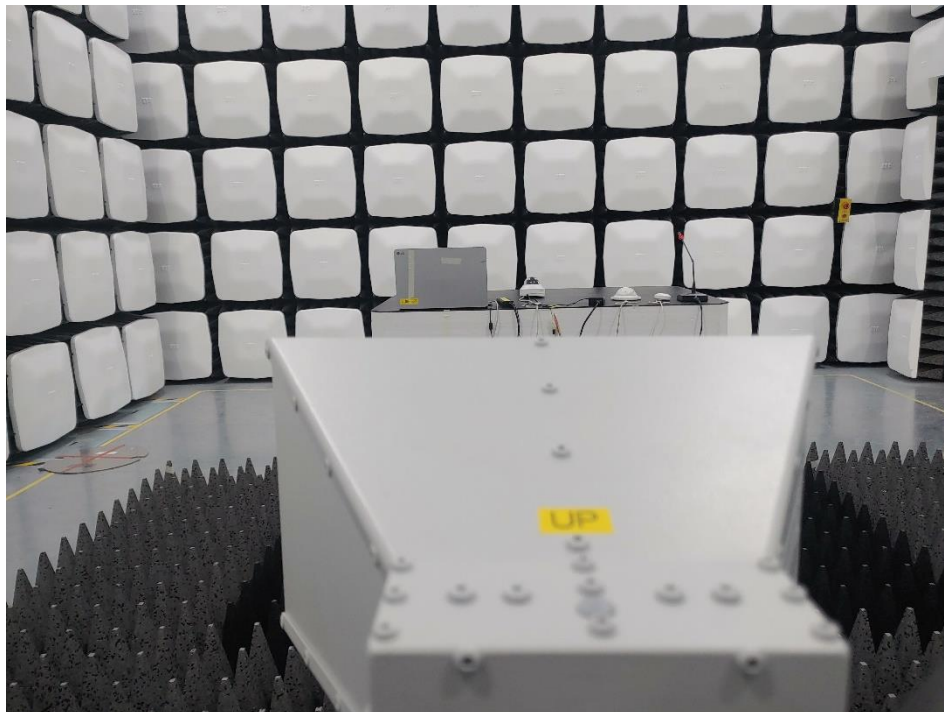
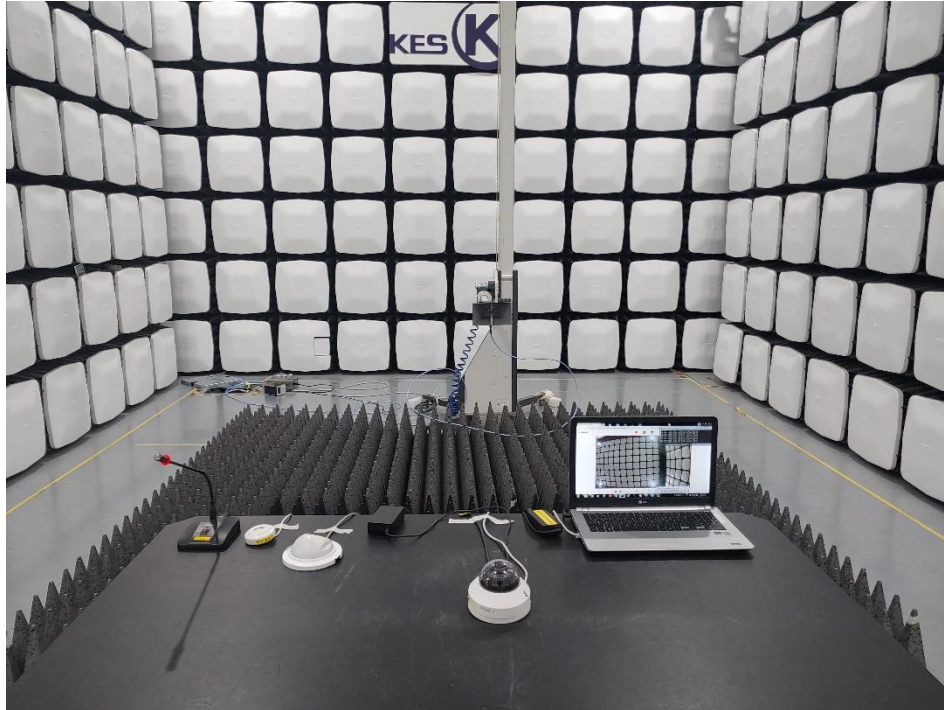
■ PoE Mode



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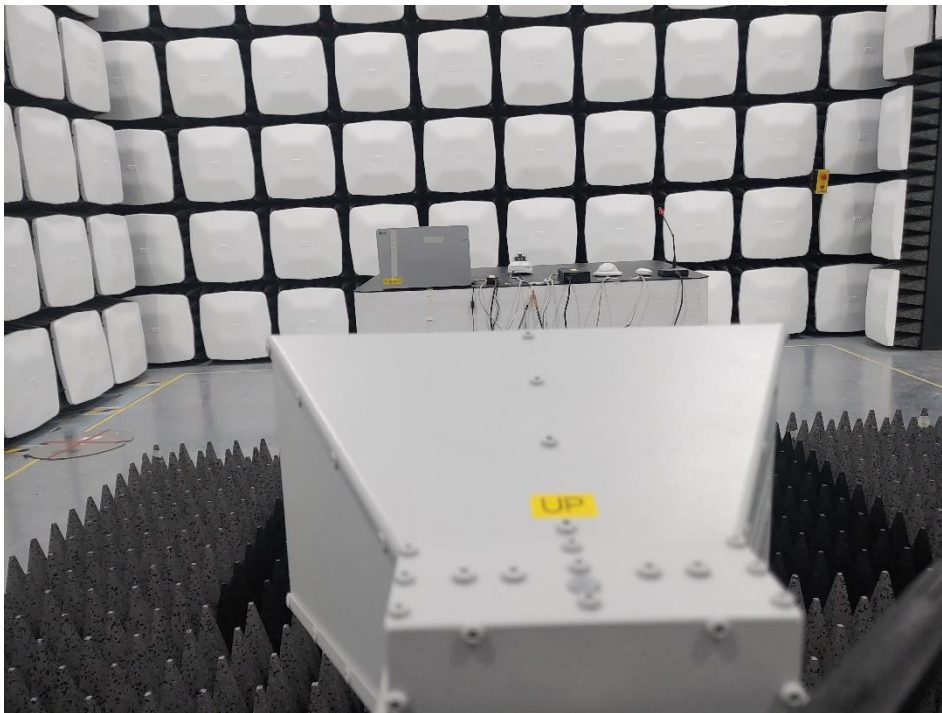
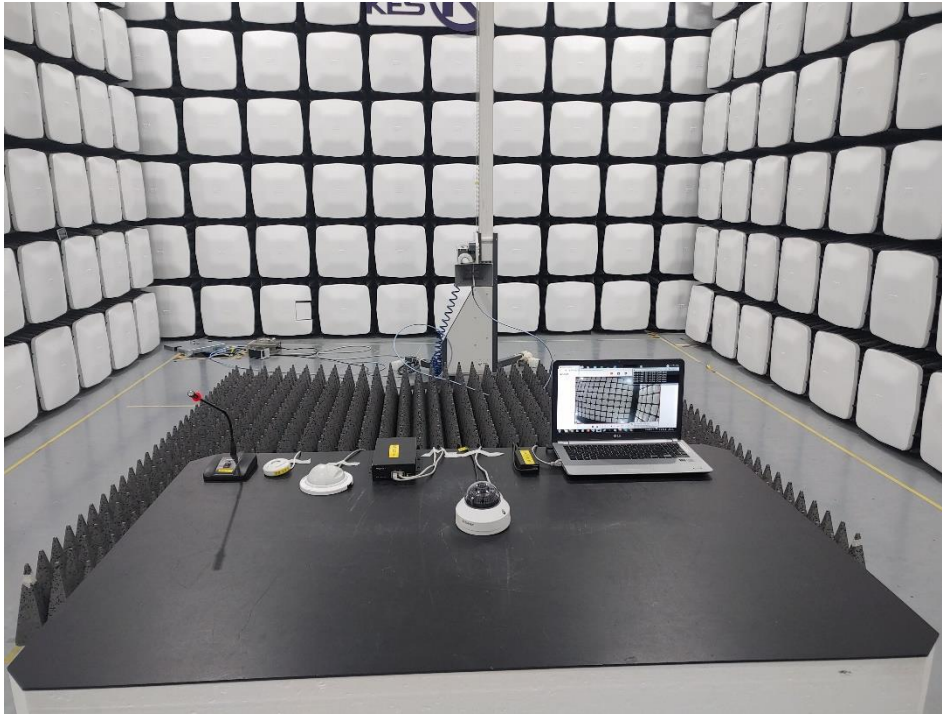
Radiated Electric Field Emissions(Above 1 GHz)

■ DC Mode



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■ PoE Mode



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EUT External Photographs

(Top)



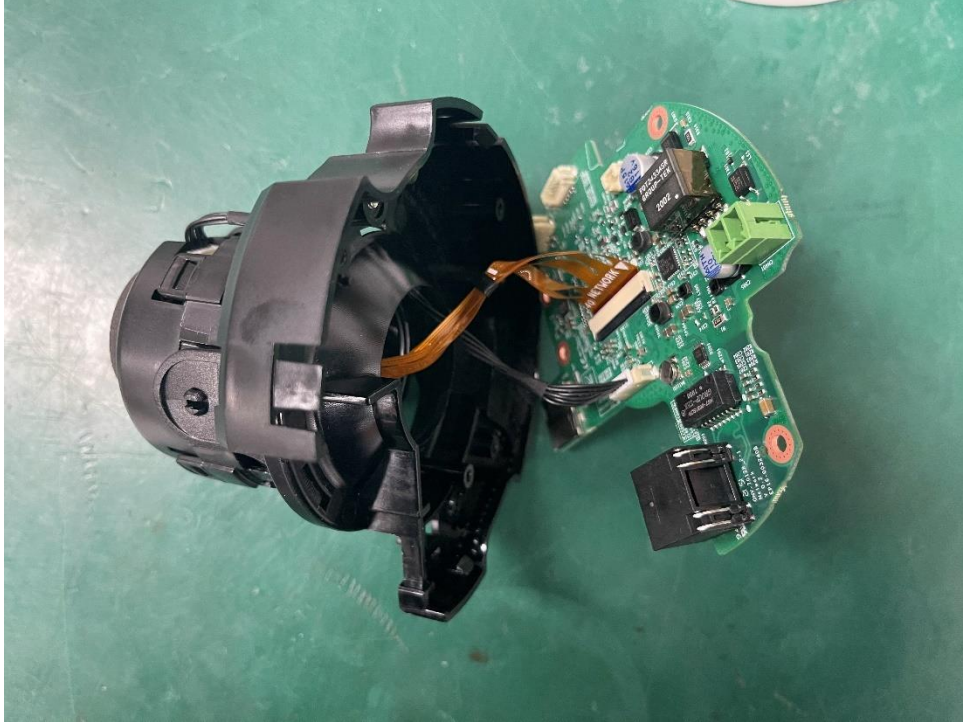
(Bottom)



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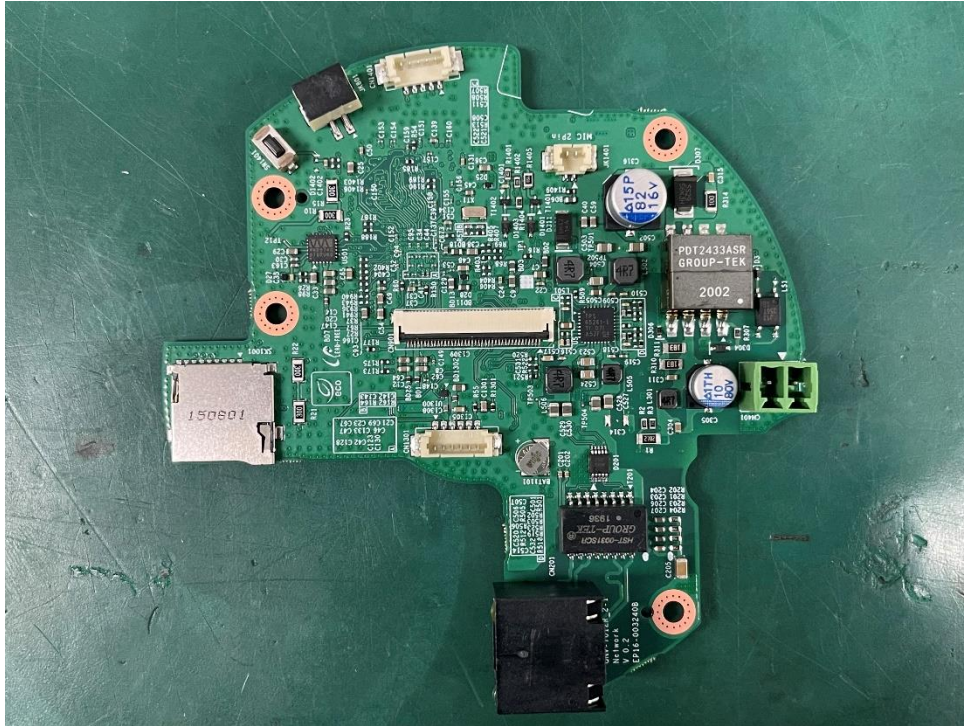
EUT Internal Photographs

(Internal View)

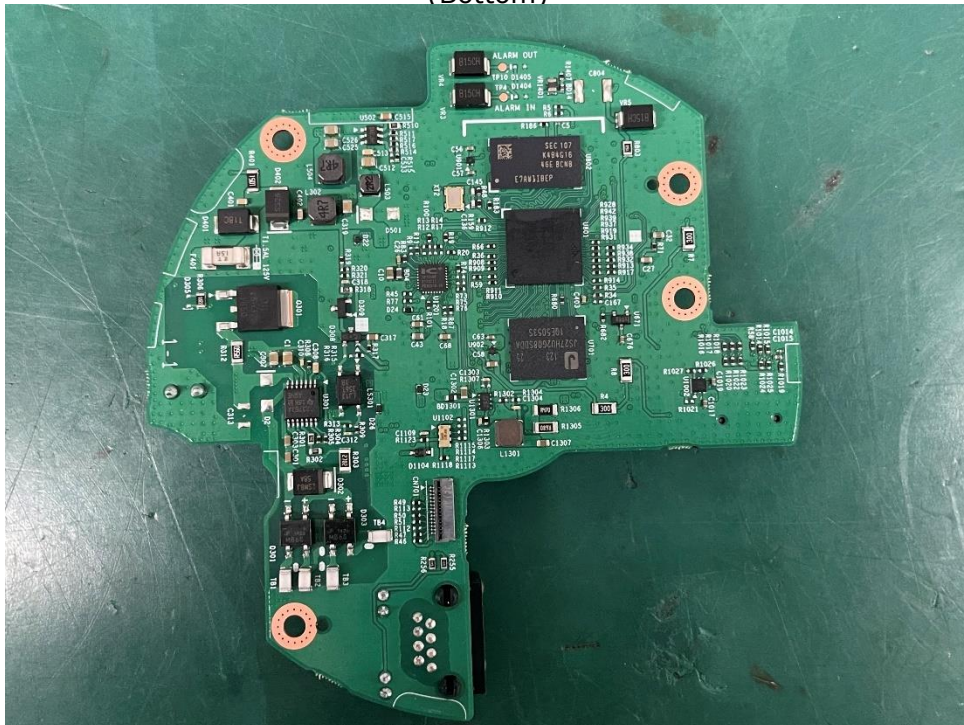


EUT Internal View – Board 1

(Top)



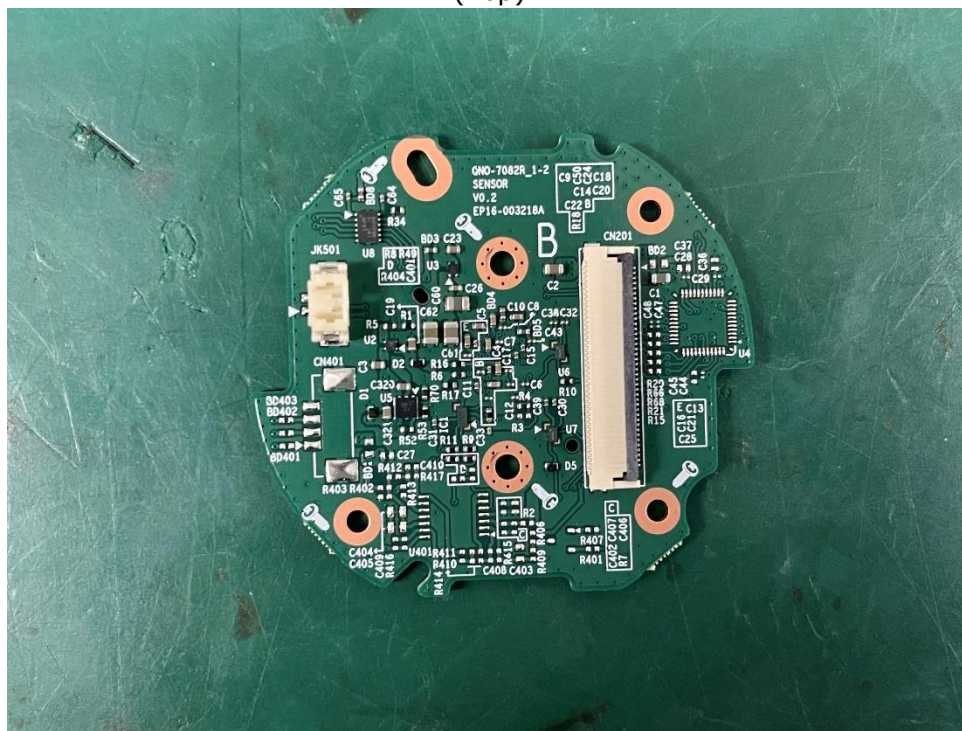
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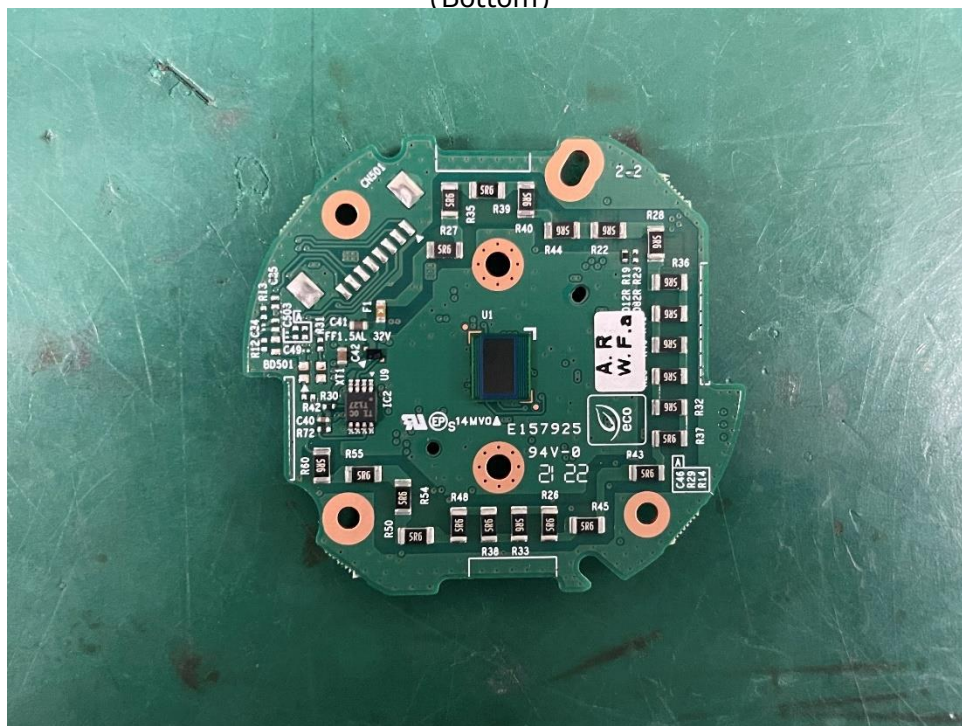
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EUT Internal View – Board 2

(Top)



(Bottom)



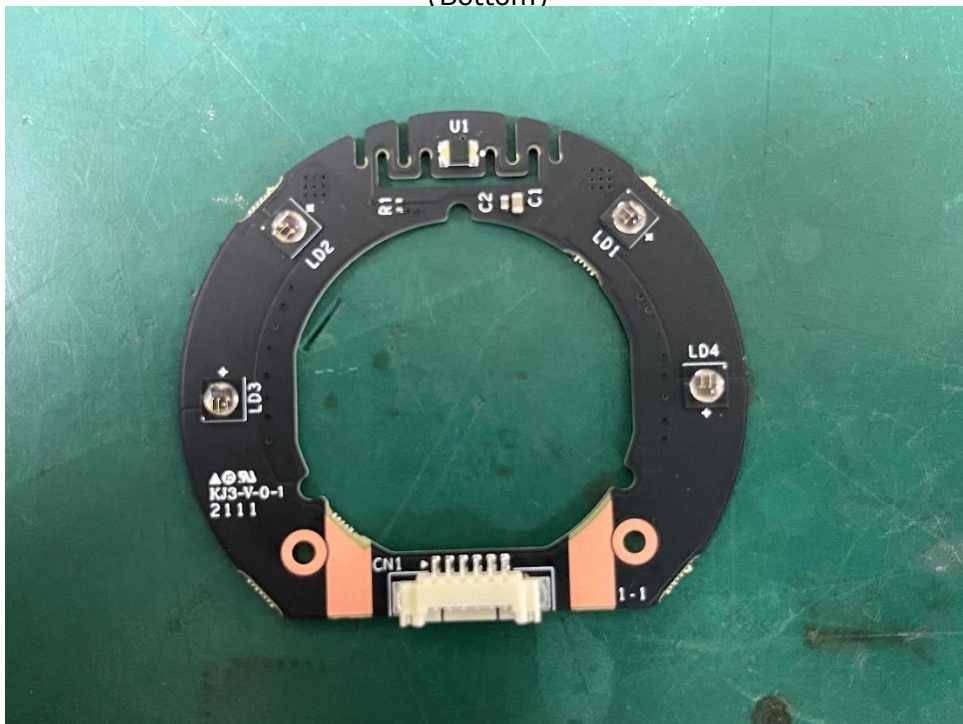
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EUT Internal View – Board 3

(Top)



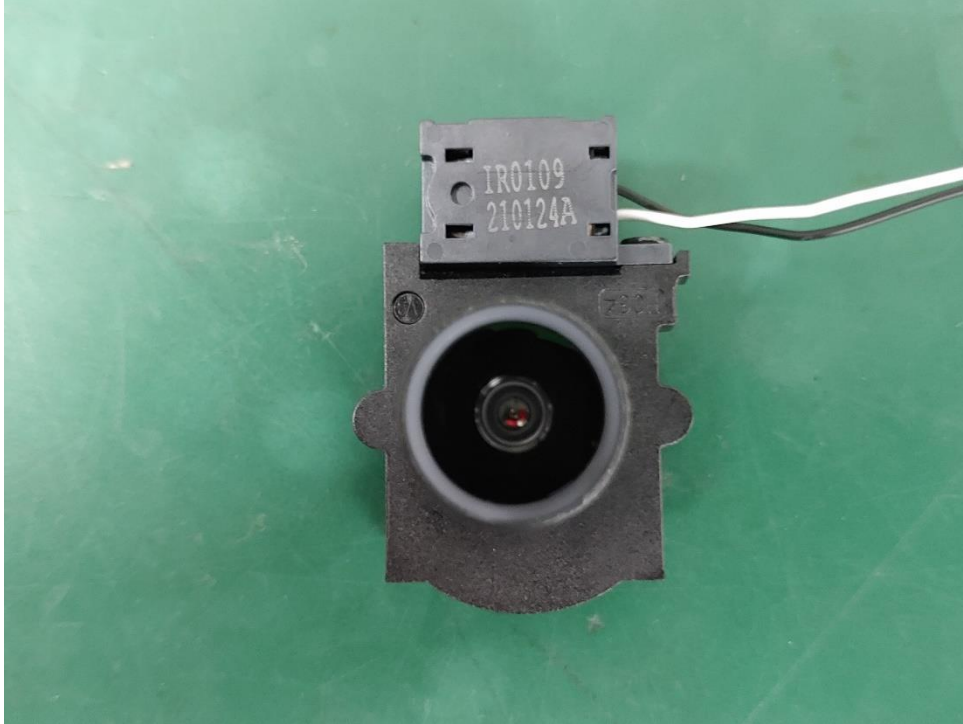
(Bottom)



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EUT Internal View – Lens

(Top)

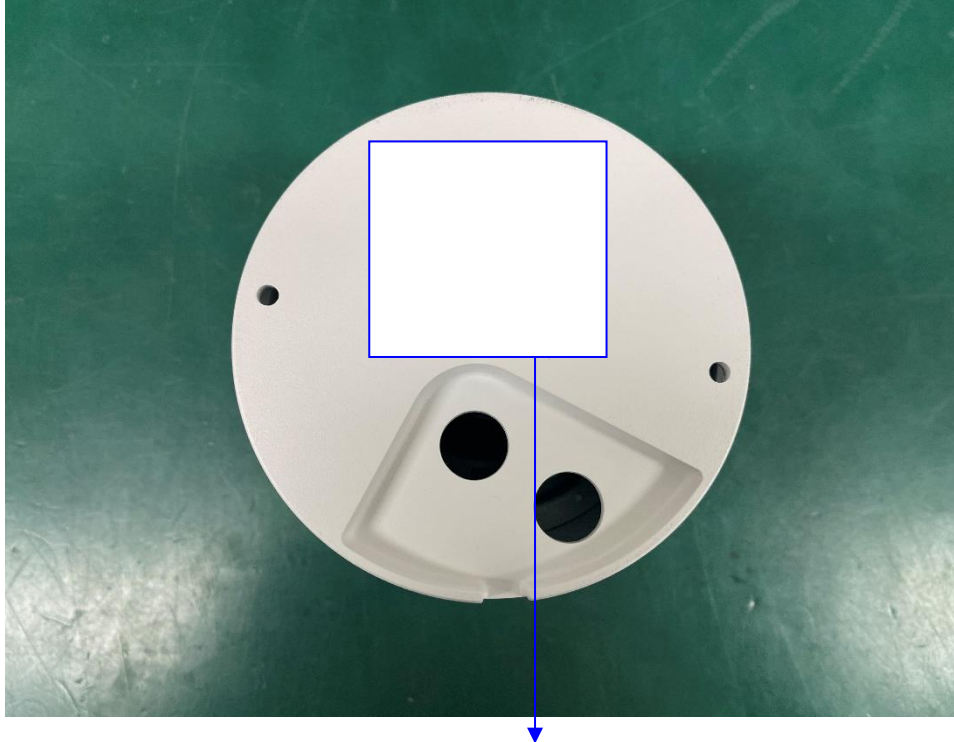


(Bottom)



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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.