

**KES Co., Ltd.**

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www.kes.co.kr

Report No.:

KES-EM-21T0936-R1

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EMC TEST REPORT

Test Report No. : KES-EM-21T0936-R1

Date of Issue : Feb. 24, 2023

Product name : NETWORK CAMERA

Model/Type No. : QNV-6082R

Variant Model : QNV-6072R, QNV-6082RA, QNV-6072R1, QNV-6082R1,
QNV-6073R, QNV-6083R

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. 27, 2021

Test date : Sep. 01, 2021 ~ Sep. 02, 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
Oct. 05, 2021	KES-EM-21T0936	Issued
Feb. 24, 2023	KES-EM-21T0936-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	
Imaging Device	1/2.8" 2MP CMOS
Resolution	1920x1080, 1280x960, 1280x720, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360
Max. Framerate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 15fps/12fps(60Hz/50Hz)
Min. Illumination	Color: 0.03Lux(F1.6, 1/30sec) BW: 0Lux(IR LED on)
Video Out	CVBS: 1.0Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation
Lens	
Focal Length (Zoom Ratio)	3.2~10mm(3.1x) motorized varifocal
Max. Aperture Ratio	F1.6(Wide)~F2.9(Tele)
Angular Field of View	H: 109.0°(Wide)~33.2°(Tele) / V: 57.4°(Wide)~18.7°(Tele) / D: 132.0°(Wide)~38.0°(Tele)
Focus Control	Simple focus
Lens Type	DC auto iris
Pan / Tilt / Rotate	
Pan / Tilt / Rotate Range	0°~350° / 0°~67° / 0°~355°
Operational	
Camera Title	Displayed up to 85 characters
Day & Night	Auto(ICR)
Backlight Compensation	BLC, WDR, SDR
Wide Dynamic Range	120dB
Digital Noise Reduction	SSNR
Motion Detection	4ea, polygonal zones
Privacy Masking	6ea, rectangular zones
Gain Control	Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor
LDC	Support
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (1/5~1/12,000sec)
Video Rotation	Flip, Mirror, Hallway view(90°/270°)
Analytics	Defocus detection, Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line
Alarm I/O	Input 1ea / Output 1ea
Alarm Triggers	Analytics, Network disconnect, Alarm input
Alarm Events	File upload via FTP and e-mail Notification via e-mail SD/SDHC/SDXC or NAS recording at event triggers Alarm output
Audio In	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm
IR Viewable Length	30m(98.42ft)

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Network	
Ethernet	RJ-45(10/100BASE-T)
Video Compression	H.265/H.264: Main/High, MJPEG
Audio Compression	G.711 u-law /G.726 Selectable G.726(ADPCM) 8KHz, G.711 8KHz G.726: 16Kbps, 24Kbps, 32Kbps, 40Kbps
Smart Codec	WiseStream II
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, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access log 802.1X Authentication(EAP-TLS, EAP-LEAP)
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet open platform
General	
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch
Web Viewer	Supported OS: Windows 7, 8.1, 10, Mac OSx10.12, 10.13, 10.14 Recommended Browser: Google Chrome Supported Browser: MS Explore11, MS Edge, Mozilla Firefox(Window 64bit only), Apple Safari(Mac OSxonly)
Edge Storage	Micro SD/SDHC/SDXC 1slot 128GB
Memory	512MB RAM, 256MB Flash
Environmental & Electrical	
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	-30°C ~ +60°C(-22°F ~ +140°F) / Less than 90% RH
Certification	IP66, IK10
Input Voltage	PoE(IEEE802.3af, Class3), 12VDC
Power Consumption	PoE: Max 7.70W, typical 6.00W 12VDC: Max 6.50W, typical 5.10W
Mechanical	
Color / Material	White / Aluminum
RAL Code	RAL9003
Product Dimensions / Weight	Ø137.0x106.1mm(Ø5.39x4.18"), 710g(1.57 lb)

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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

Addition of derivative models for place of sale management

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	QNV-6082R	-	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	-	-	-	-
Alarm2 Adaptor	TY-2000	-	Taeyoung Electronics	-
Alarm2 Relay	-	-	-	-
Headset	K550	-	Britz®	-
Micro SD Card	-	-	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 Card	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
	2 Pin	Adaptor	2 Pin	1.6	U
Notebook	DC Jack	Notebook Adaptor	DC Jack	1.7	U
Alarm2 Relay	2 Pin	Alarm2	2 Pin	0.2	U
	2 Pin	Alarm2 Adaptor	2 Pin	2.0	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 Card	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
Notebook	RJ-45 (LAN)	PoE Adaptor	RJ-45 (LAN)	3.0	U
Notebook	DC Jack	Notebook Adaptor	DC Jack	1.7	U
Alarm2 Relay	2 Pin	Alarm2	2 Pin	0.2	U
	2 Pin	Alarm2 Adaptor	2 Pin	2.0	U

* Unshielded=U, Shielded=S

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1.7 EUT Operating Mode(s)

Test Mode	operating
DC	EUT Monitoring, Ping Test
PoE	

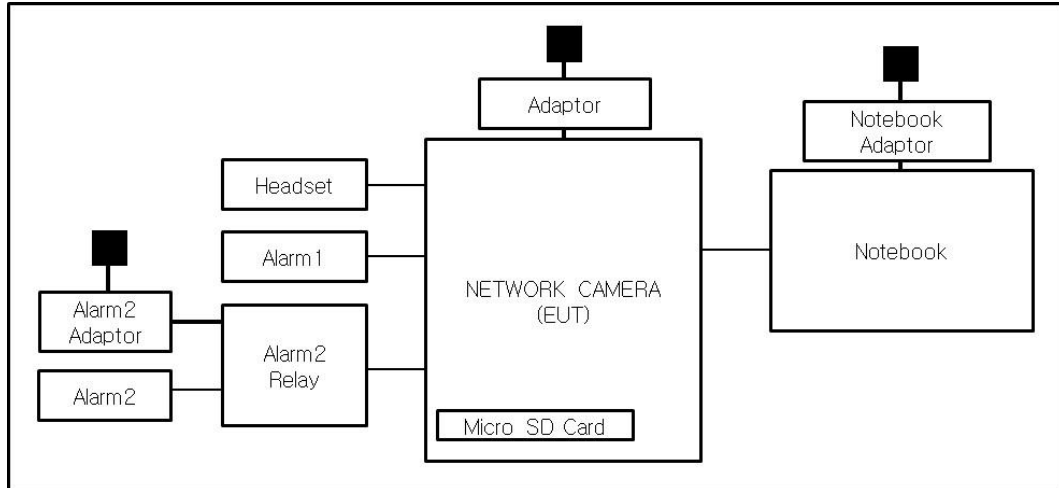
EUT Test operating S/W		
Name	Version	Manufacture Company
Web Viewer	-	Hanwha Vision Co., Ltd

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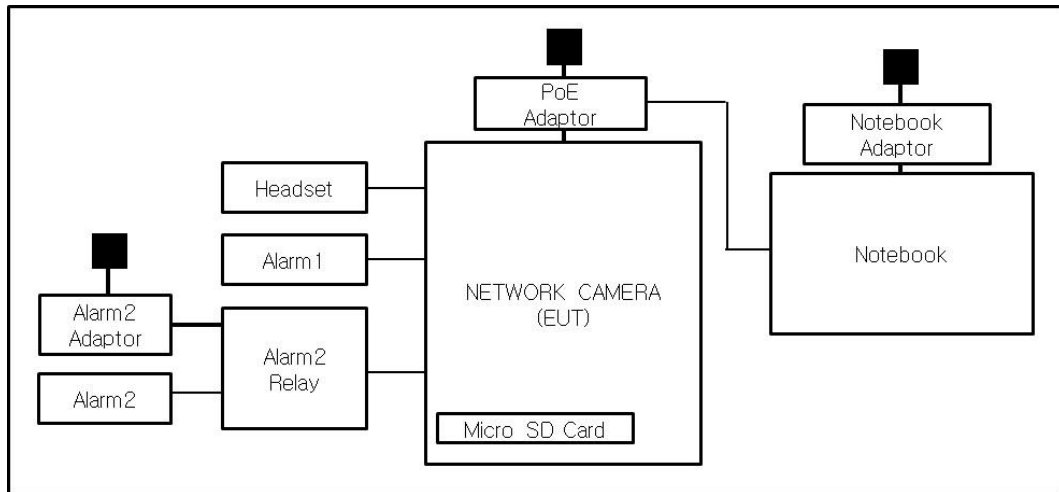
1.8 Configuration

■ AC Main
 □ DC Main

■ DC Mode



■ PoE Mode



1.9 Remarks when standards applied

N/A

1.10 Calibration Details of Equipment Used for Measurement

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

1.11 Test Facility

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

1.12 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
KOREA	RRA	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KR0100
International	KOLAS	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KT489
USA	FCC	3 m & 10 m Semi-Anechoic Chamber Conducted test site to perform FCC Part 15/18 measurements.	 KR0100
Canada	ISED	3 m & 10 m Semi-Anechoic Chamber and Conducted test site	 23298
JAPAN	VCCI	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site)	 C-20136, T-20137, R-20181, G-20176
Europe	TÜV SÜD	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 CARAT 001633 0004

2.0 Test Regulations

The emissions tests were performed according to following regulations:

☐ **EMC – Directive 2014/30/EU**

☐ EN 61000-6-3:2011

☐ EN 61000-6-1:2007

☐ EN 61000-6-4:2007 +A1:2011

☐ EN 61000-6-2:2005

☐ EN 55011:2007 +A1:2010

☐ Group 1
☐ Class A

☐ Group 2
☐ Class B

☐ EN 55014-1:2006 +A2:2011

☐ EN 55014-2:1997 +A2:2008

☐ EN 55015:2013

☐ EN 55032:2015

☐ Class A

☐ Class B

☐ EN 55024:2010

☐ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013



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- | | | |
|---|---|----------------------------------|
| ☐ 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

Sep. 01, 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: (24,6 ± 0,1) °C

Relative Humidity: (50,2 ± 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

RemarksSee Appendix A for test data.

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2.2 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Sep. 01, 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: (24,3 ± 0,2) °C

Relative Humidity: (49,5 ± 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.



2.3 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Sep. 02, 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: (24,8 ± 0,1) °C

Relative Humidity: (50,0 ± 0,1) % 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.

APPENDIX A – TEST DATA

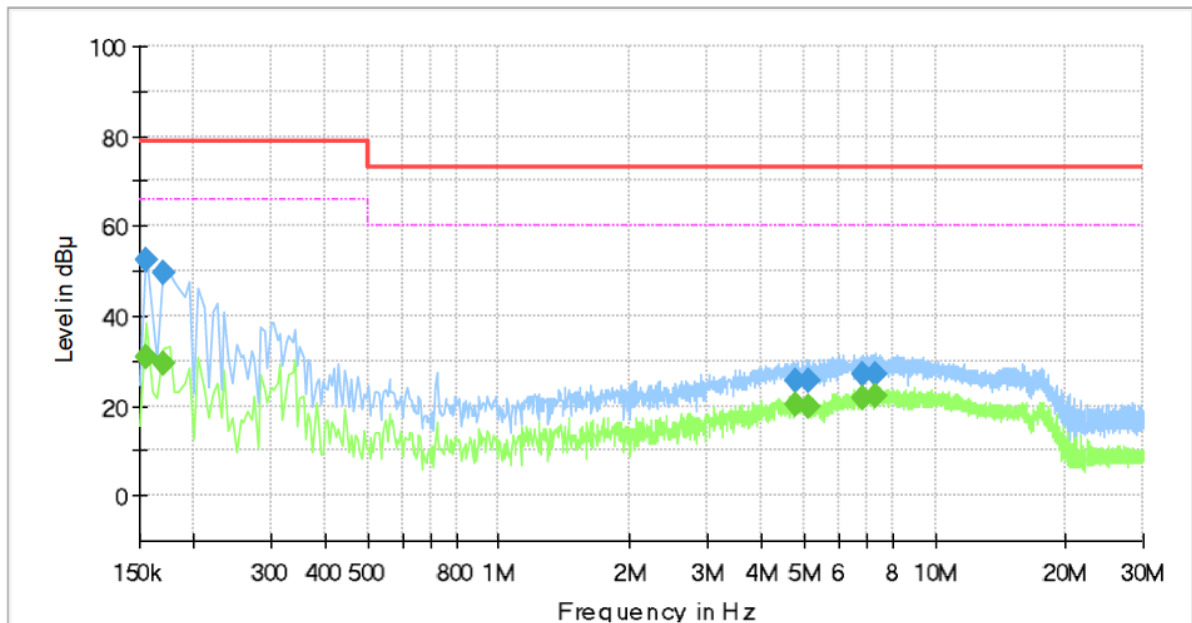
Conducted Emissions at Mains Power Ports

■ DC Mode

HOT LINE

Common Information

Test Description:	Conducted Emission
Model No.:	QNV-6082R
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)
0.155000	52.29	---	79.00	26.71	1000.0	9.000	L1	19.5
0.155000	---	30.68	66.00	35.32	1000.0	9.000	L1	19.5
0.170000	---	29.30	66.00	36.70	1000.0	9.000	L1	19.5
0.170000	49.39	---	79.00	29.61	1000.0	9.000	L1	19.5
4.785000	---	20.23	60.00	39.77	1000.0	9.000	L1	19.7
4.785000	25.62	---	73.00	47.38	1000.0	9.000	L1	19.7
5.125000	---	19.98	60.00	40.02	1000.0	9.000	L1	19.7
5.125000	25.42	---	73.00	47.58	1000.0	9.000	L1	19.7
6.825000	---	21.79	60.00	38.21	1000.0	9.000	L1	19.5
6.825000	26.85	---	73.00	46.15	1000.0	9.000	L1	19.5
7.270000	---	22.08	60.00	37.92	1000.0	9.000	L1	19.6
7.270000	27.01	---	73.00	45.99	1000.0	9.000	L1	19.6

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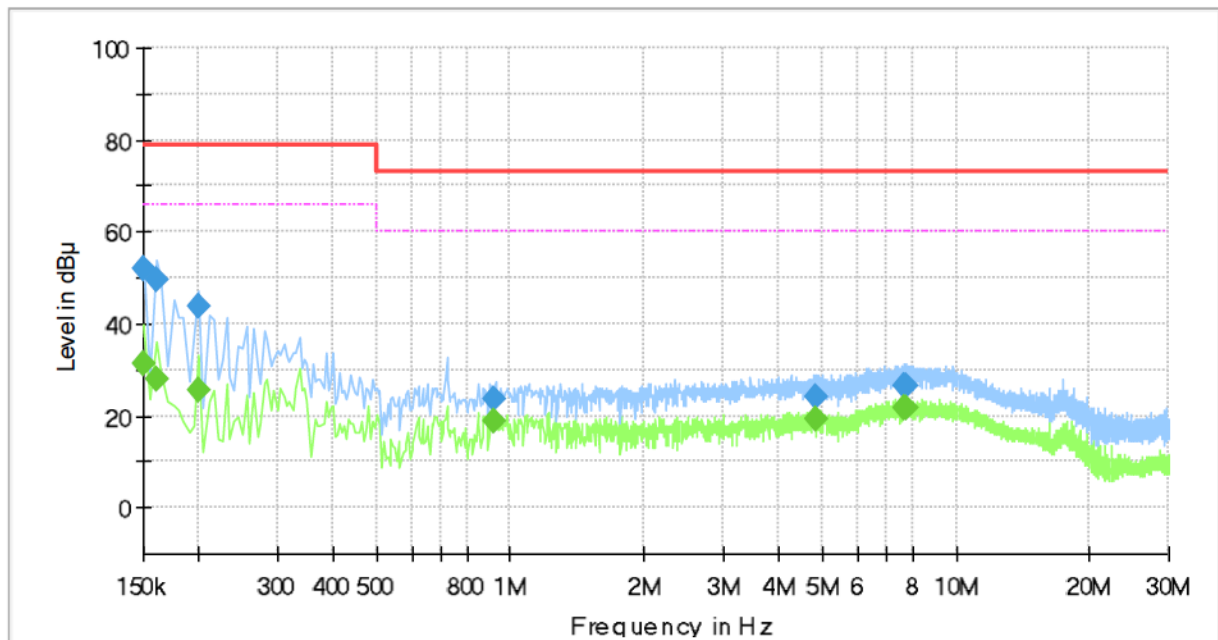
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NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	QNV-6082R
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)
0.150000	52.00	---	79.00	27.00	1000.0	9.000	N	19.4
0.150000	---	31.20	66.00	34.80	1000.0	9.000	N	19.4
0.160000	49.40	---	79.00	29.60	1000.0	9.000	N	19.4
0.160000	---	27.78	66.00	38.22	1000.0	9.000	N	19.4
0.200000	43.81	---	79.00	35.19	1000.0	9.000	N	19.5
0.200000	---	25.31	66.00	40.69	1000.0	9.000	N	19.5
0.920000	---	19.05	60.00	40.95	1000.0	9.000	N	20.1
0.920000	23.53	---	73.00	49.47	1000.0	9.000	N	20.1
4.835000	---	19.10	60.00	40.90	1000.0	9.000	N	19.7
4.835000	24.30	---	73.00	48.70	1000.0	9.000	N	19.7
7.640000	26.36	---	73.00	46.64	1000.0	9.000	N	19.6
7.640000	---	21.58	60.00	38.42	1000.0	9.000	N	19.6
7.710000	26.43	---	73.00	46.57	1000.0	9.000	N	19.6
7.710000	---	21.54	60.00	38.46	1000.0	9.000	N	19.6

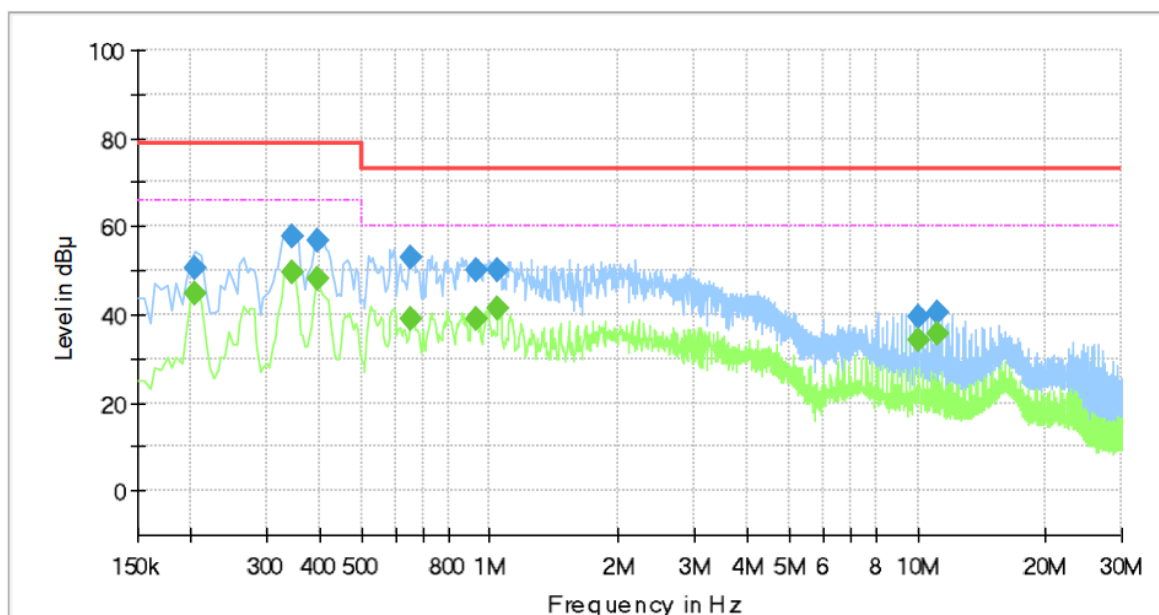
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PoE Mode
HOT LINE
Common Information

Test Description:	Conducted Emission
Model No.:	QNV-6082R
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)
0.205000	---	44.93	66.00	21.07	1000.0	9.000	L1	19.5
0.205000	50.69	---	79.00	28.31	1000.0	9.000	L1	19.5
0.345000	---	49.69	66.00	16.31	1000.0	9.000	L1	19.6
0.345000	57.79	---	79.00	21.21	1000.0	9.000	L1	19.6
0.395000	56.85	---	79.00	22.15	1000.0	9.000	L1	19.7
0.395000	---	47.89	66.00	18.11	1000.0	9.000	L1	19.7
0.650000	---	38.81	60.00	21.19	1000.0	9.000	L1	19.9
0.650000	52.75	---	73.00	20.25	1000.0	9.000	L1	19.9
0.925000	---	38.85	60.00	21.15	1000.0	9.000	L1	20.1
0.925000	50.25	---	73.00	22.75	1000.0	9.000	L1	20.1
1.045000	50.00	---	73.00	23.00	1000.0	9.000	L1	20.1
1.045000	---	41.26	60.00	18.74	1000.0	9.000	L1	20.1
10.060000	---	34.16	60.00	25.84	1000.0	9.000	L1	19.9
10.060000	39.64	---	73.00	33.36	1000.0	9.000	L1	19.9
11.180000	---	35.83	60.00	24.17	1000.0	9.000	L1	20.0
11.180000	40.43	---	73.00	32.57	1000.0	9.000	L1	20.0

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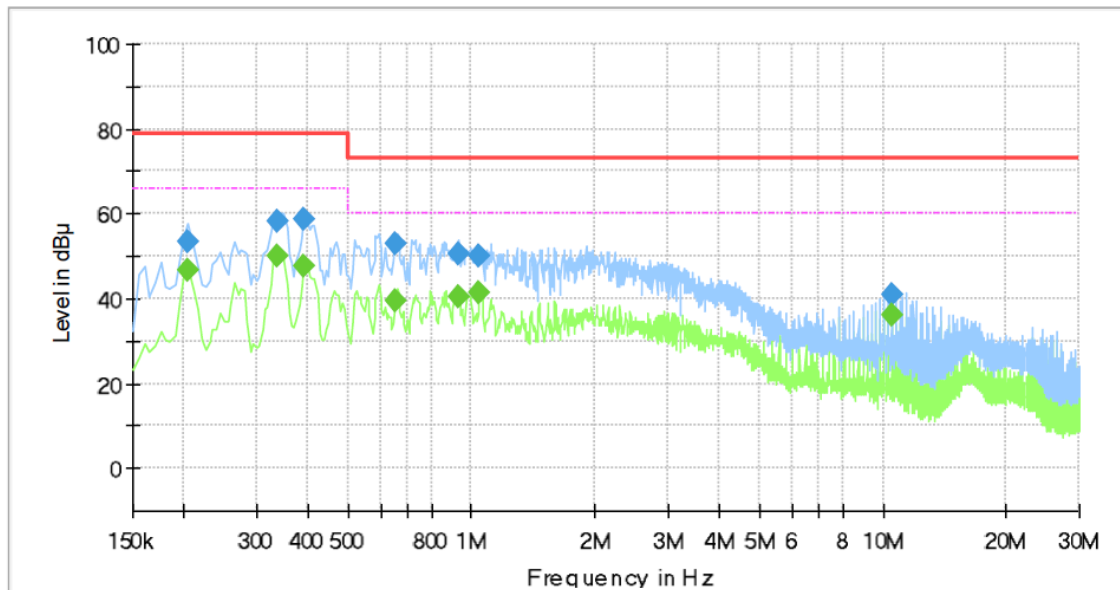
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NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	QNV-6082R
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)
0.205000	---	46.50	66.00	19.50	1000.0	9.000	N	19.5
0.205000	53.34	---	79.00	25.66	1000.0	9.000	N	19.5
0.335000	---	50.04	66.00	15.96	1000.0	9.000	N	19.6
0.335000	58.26	---	79.00	20.74	1000.0	9.000	N	19.6
0.390000	58.85	---	79.00	20.15	1000.0	9.000	N	19.6
0.390000	---	47.51	66.00	18.49	1000.0	9.000	N	19.6
0.650000	---	39.32	60.00	20.68	1000.0	9.000	N	19.9
0.650000	52.97	---	73.00	20.03	1000.0	9.000	N	19.9
0.930000	---	40.34	60.00	19.66	1000.0	9.000	N	20.1
0.930000	50.52	---	73.00	22.48	1000.0	9.000	N	20.1
1.045000	50.18	---	73.00	22.82	1000.0	9.000	N	20.1
1.045000	---	41.40	60.00	18.60	1000.0	9.000	N	20.1
10.505000	40.93	---	73.00	32.07	1000.0	9.000	N	20.0
10.505000	---	36.31	60.00	23.69	1000.0	9.000	N	20.0

◆ Calculation

$$\text{QuasiPeak [dBuV]} / \text{CAverage [dBuV]} = \text{Reading Value [dBuV]} + \text{Corr. [dB]}$$

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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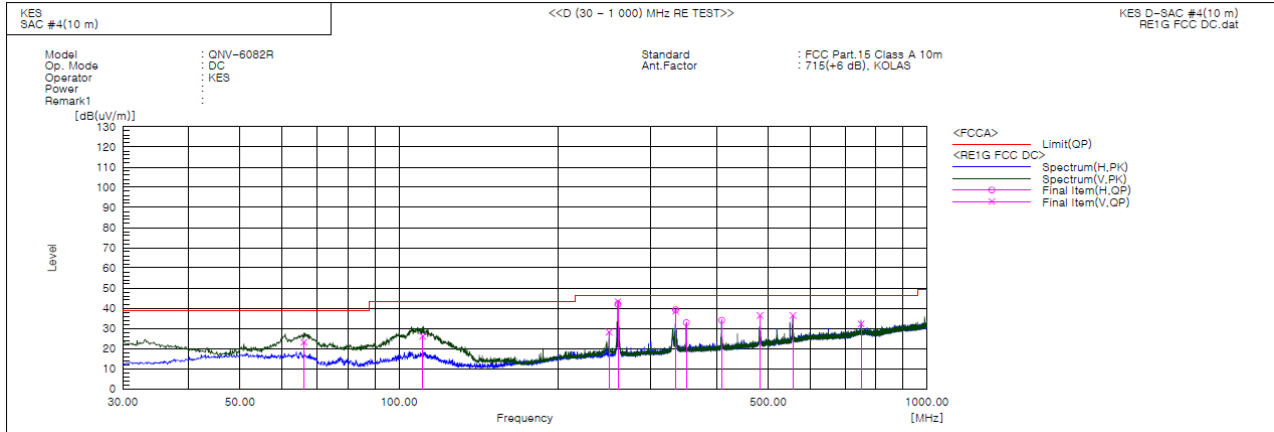
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Radiated Electric Field Emissions(Below 1 GHz)

- 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	66.108	V	46.8	-23.6	23.2	39.0	15.8	301.0	97.0	
2	110.915	V	48.5	-22.4	26.1	43.5	17.4	256.0	207.0	
3	250.003	V	47.2	-19.1	28.1	46.5	18.4	148.0	207.0	
4	259.871	V	62.2	-18.9	43.3	46.5	3.2	100.0	281.0	
5	259.882	H	60.9	-18.9	42.0	46.5	4.5	400.0	8.0	
6	334.129	H	55.2	-15.9	39.3	46.5	7.2	201.0	263.0	
7	334.122	V	54.4	-15.9	38.5	46.5	8.0	100.0	316.0	
8	350.000	H	48.1	-15.3	32.8	46.5	13.7	189.0	255.0	
9	408.367	H	48.1	-14.1	34.0	46.5	12.5	228.0	108.0	
10	482.628	V	48.5	-12.1	36.4	46.5	10.1	255.0	14.0	
11	556.876	V	46.4	-10.0	36.4	46.5	10.1	357.0	156.0	
12	749.986	V	38.0	-5.7	32.3	46.5	14.2	142.0	108.0	

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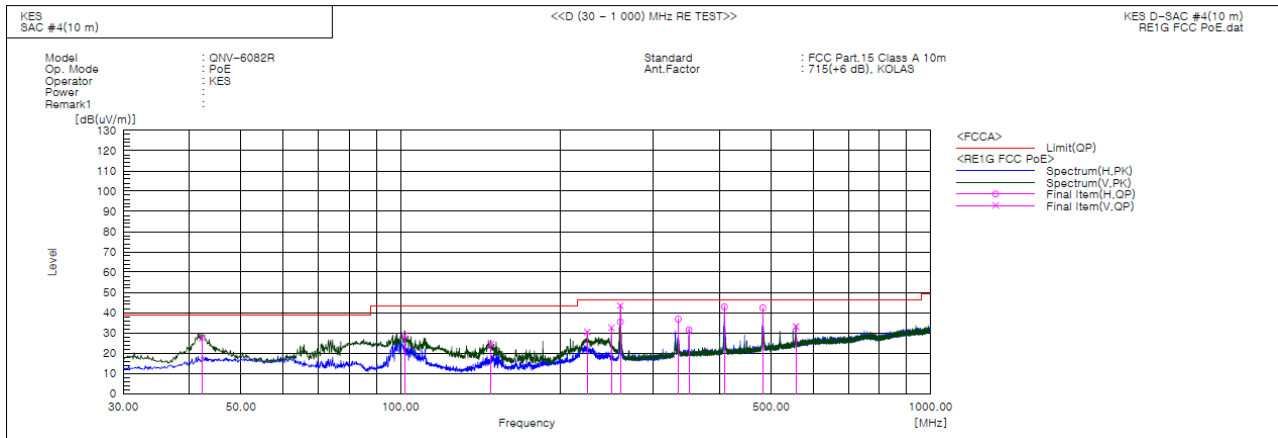
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■ PoE Mode



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	42.268	V	49.4	-21.9	27.5	39.0	11.5	141.0	82.0	
2	101.907	V	51.3	-22.5	28.8	43.5	14.7	109.0	86.0	
3	148.125	V	49.7	-25.2	24.5	43.5	19.0	225.0	108.0	
4	225.001	V	50.4	-20.0	30.4	46.5	16.1	114.0	131.0	
5	249.997	V	51.6	-19.1	32.5	46.5	14.0	100.0	153.0	
6	259.877	H	54.3	-18.9	35.4	46.5	11.1	327.0	41.0	
7	259.880	V	62.4	-18.9	43.5	46.5	3.0	100.0	353.0	
8	334.124	H	52.7	-15.9	36.8	46.5	9.7	400.0	246.0	
9	350.009	H	46.7	-15.3	31.4	46.5	15.1	268.0	259.0	
10	408.380	H	56.9	-14.1	42.8	46.5	3.7	202.0	76.0	
11	482.616	H	54.5	-12.1	42.4	46.5	4.1	197.0	98.0	
12	556.877	V	43.1	-10.0	33.1	46.5	13.4	309.0	205.0	

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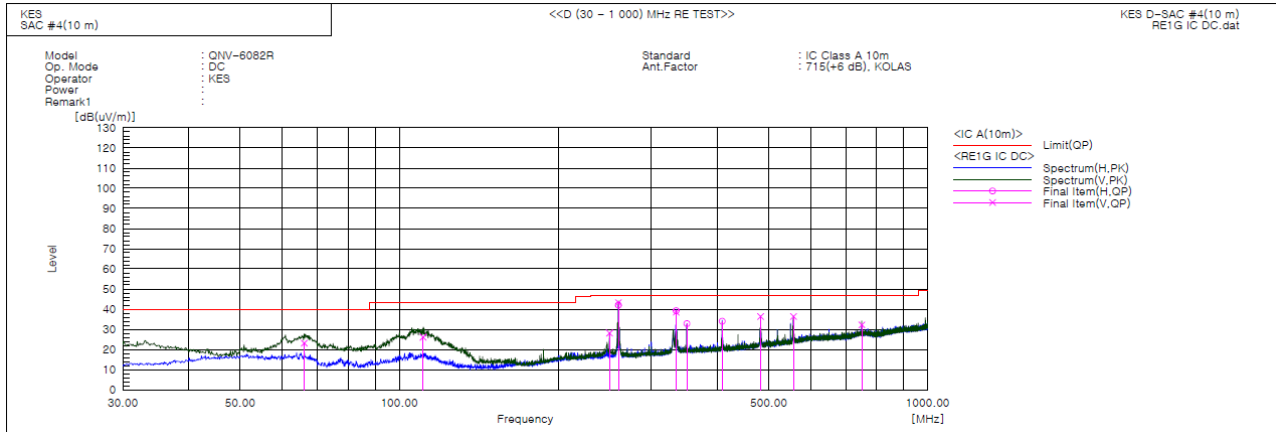
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- IC Regulation ICES-003 Issue 7

■ 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	66.108	V	46.8	-23.6	23.2	40.0	16.8	301.0	97.0	
2	110.915	V	48.5	-22.4	26.1	43.5	17.4	256.0	207.0	
3	250.003	V	47.2	-19.1	28.1	47.0	18.9	148.0	207.0	
4	259.871	V	62.2	-18.9	43.3	47.0	3.7	100.0	281.0	
5	259.882	H	60.9	-18.9	42.0	47.0	5.0	400.0	8.0	
6	334.129	H	55.2	-15.9	39.3	47.0	7.7	201.0	263.0	
7	334.122	V	54.4	-15.9	38.5	47.0	8.5	100.0	316.0	
8	350.000	H	48.1	-15.3	32.8	47.0	14.2	189.0	255.0	
9	408.367	H	48.1	-14.1	34.0	47.0	13.0	228.0	108.0	
10	482.628	V	48.5	-12.1	36.4	47.0	10.6	255.0	14.0	
11	556.876	V	46.4	-10.0	36.4	47.0	10.6	357.0	156.0	
12	749.986	V	38.0	-5.7	32.3	47.0	14.7	142.0	108.0	

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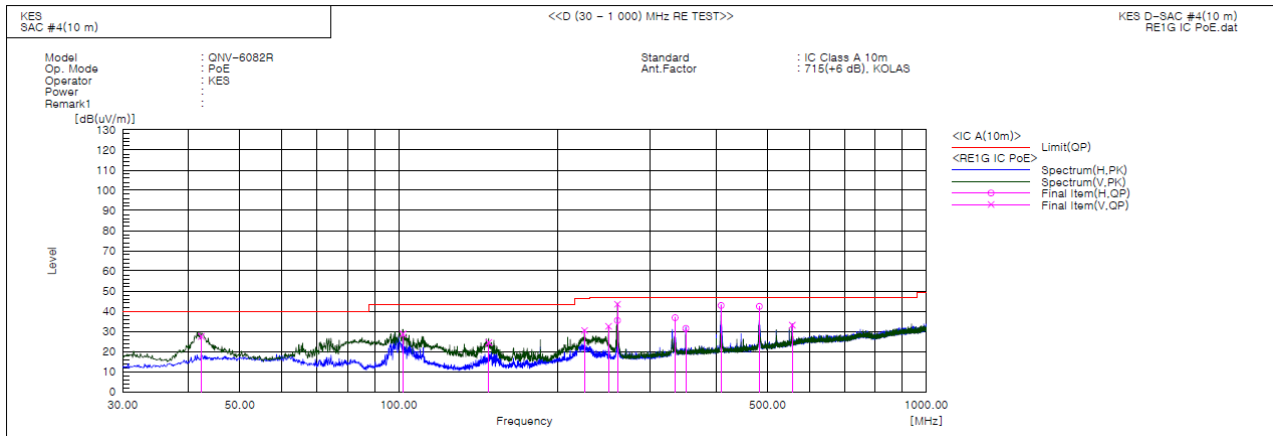
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PoE Mode



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	42.268	V	49.4	-21.9	27.5	40.0	12.5	141.0	82.0	
2	101.907	V	51.3	-22.5	28.8	43.5	14.7	109.0	86.0	
3	148.125	V	49.7	-25.2	24.5	43.5	19.0	225.0	108.0	
4	225.001	V	50.4	-20.0	30.4	46.4	16.0	114.0	131.0	
5	249.997	V	51.6	-19.1	32.5	47.0	14.5	100.0	153.0	
6	259.877	H	54.3	-18.9	35.4	47.0	11.6	327.0	41.0	
7	259.880	V	62.4	-18.9	43.5	47.0	3.5	100.0	353.0	
8	334.124	H	52.7	-15.9	36.8	47.0	10.2	400.0	246.0	
9	350.009	H	46.7	-15.3	31.4	47.0	15.6	268.0	259.0	
10	408.380	H	56.9	-14.1	42.8	47.0	4.2	202.0	76.0	
11	482.616	H	54.5	-12.1	42.4	47.0	4.6	197.0	98.0	
12	556.877	V	43.1	-10.0	33.1	47.0	13.9	309.0	205.0	

◆ 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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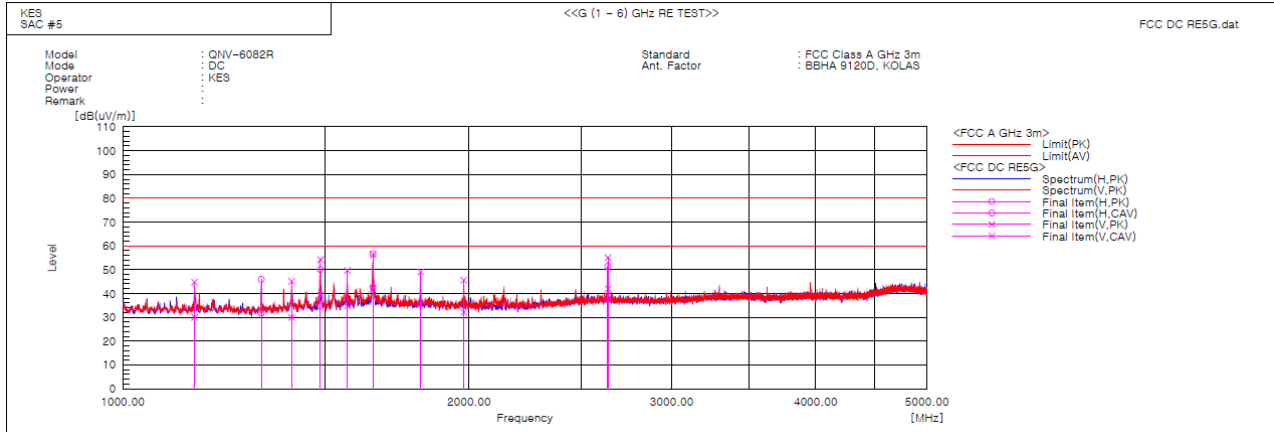
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Radiated Electric Field Emissions(Above 1 GHz)

■ 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	1154.375	V	51.9	37.1	-7.1	44.8	30.0	80.0	60.0	35.2	30.0	102.4	30.0	
2	1319.375	H	52.3	38.1	-6.3	46.0	31.8	80.0	60.0	34.0	28.2	277.1	169.9	
3	1401.875	V	50.9	35.8	-5.8	45.1	30.0	80.0	60.0	34.9	30.0	102.1	28.3	
4	1484.375	H	55.5	40.2	-5.4	50.1	34.8	80.0	60.0	29.9	25.2	400.0	125.5	
5	1485.000	V	59.6	44.7	-5.4	54.2	39.3	80.0	60.0	25.8	20.7	196.6	341.9	
6	1566.875	V	54.8	39.8	-5.1	49.7	34.7	80.0	60.0	30.3	25.3	100.3	339.5	
7	1650.000	V	61.0	46.8	-4.7	56.3	42.1	80.0	60.0	23.7	17.9	111.6	269.9	
8	1650.000	H	61.4	47.4	-4.7	56.7	42.7	80.0	60.0	23.3	17.3	267.3	195.5	
9	1815.000	V	53.1	39.5	-4.0	49.1	35.5	80.0	60.0	30.9	24.5	200.5	20.4	
10	1978.125	V	49.2	35.6	-3.5	45.7	32.1	80.0	60.0	34.3	27.9	131.2	339.1	
11	2639.375	H	52.4	38.9	-1.0	51.4	37.9	80.0	60.0	28.6	22.1	399.4	351.9	
12	2640.000	V	56.1	43.0	-1.0	55.1	42.0	80.0	60.0	24.9	18.0	204.1	15.6	

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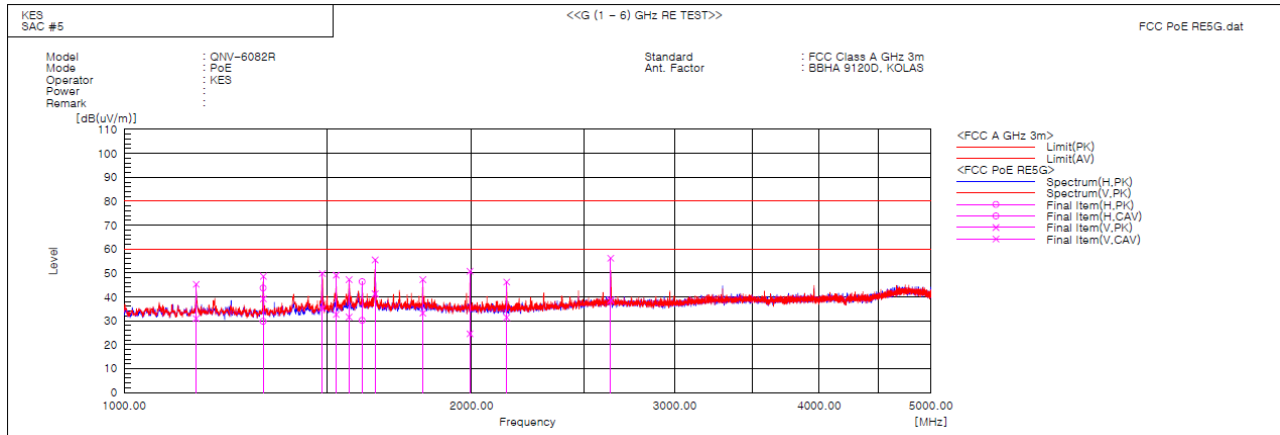
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PoE Mode



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1154.375	V	52.4	38.1	-7.1	45.3	31.0	80.0	60.0	34.7	29.0	114.1	353.6	
2	1319.375	H	50.0	36.1	-6.3	43.7	29.8	80.0	60.0	36.3	30.2	286.4	56.3	
3	1320.000	V	54.9	45.5	-6.3	48.6	39.2	80.0	60.0	31.4	20.8	100.0	22.5	
4	1484.375	V	55.2	40.6	-5.4	49.8	35.2	80.0	60.0	30.2	24.8	201.2	335.1	
5	1526.250	V	54.3	37.9	-5.2	49.1	32.7	80.0	60.0	30.9	27.3	151.6	343.4	
6	1565.625	V	52.3	36.7	-5.1	47.2	31.6	80.0	60.0	32.8	26.4	100.0	337.9	
7	1607.500	H	51.3	35.1	-4.9	46.4	30.2	80.0	60.0	33.6	29.8	389.9	5.5	
8	1650.000	V	60.2	46.0	-4.7	55.5	41.3	80.0	60.0	24.5	18.7	108.3	331.1	
9	1814.375	V	51.2	37.2	-4.0	47.2	33.2	80.0	60.0	32.8	26.8	201.5	26.5	
10	1993.125	V	54.1	28.0	-3.4	50.7	24.6	80.0	60.0	29.3	35.4	198.7	204.4	
11	2144.375	V	49.2	34.4	-3.0	46.2	31.4	80.0	60.0	33.8	28.6	226.3	26.4	
12	2639.375	V	57.2	39.7	-1.0	56.2	38.7	80.0	60.0	23.8	21.3	100.0	14.8	

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

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Radiated Electric Field Emissions(Below 1 GHz)

■ DC Mode



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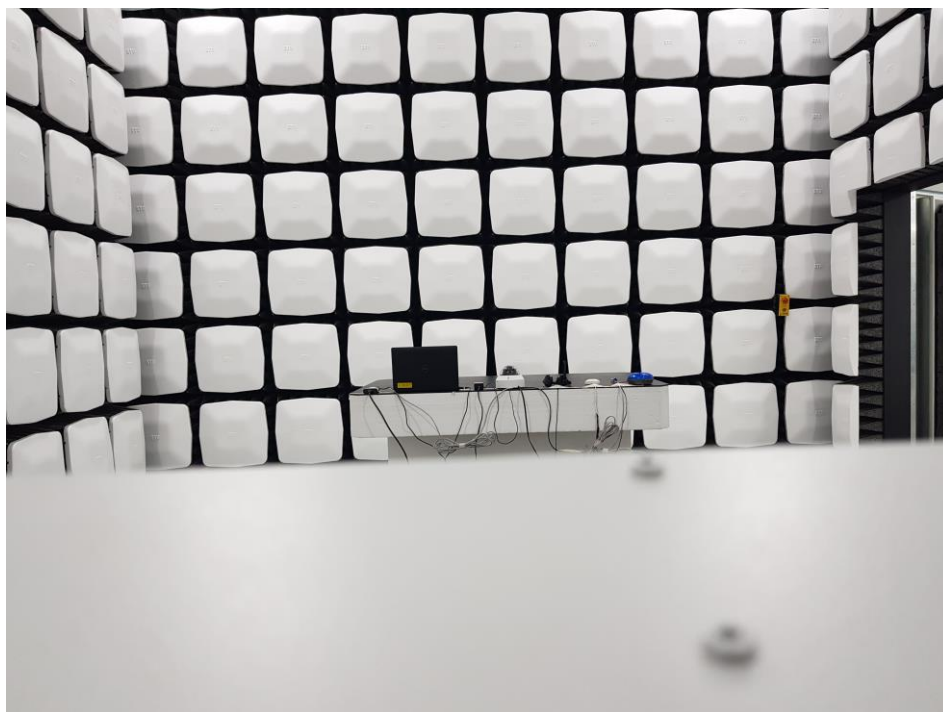
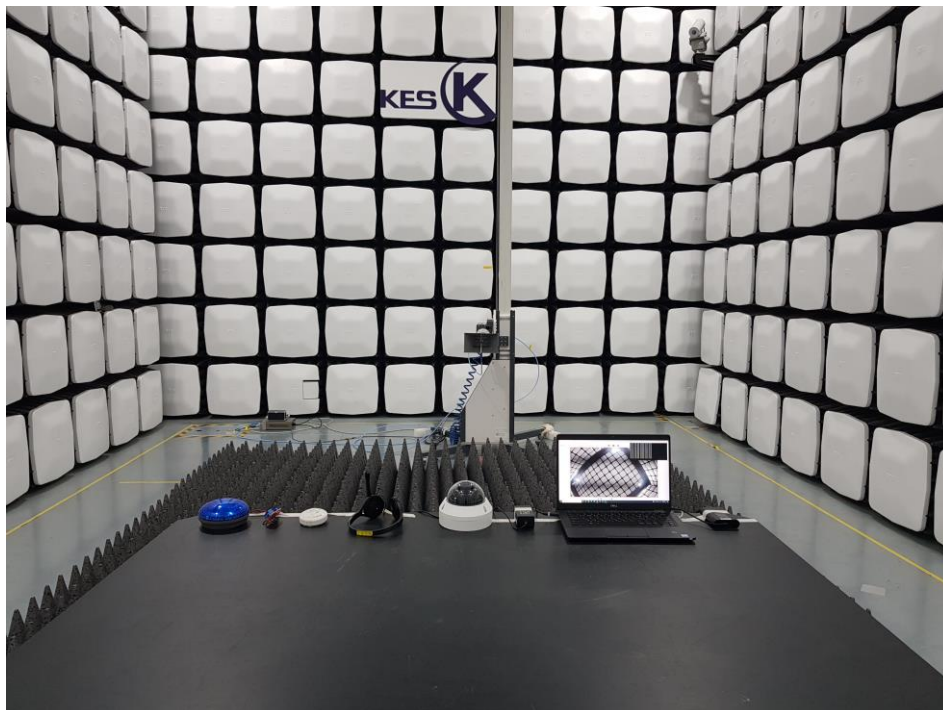
■ PoE Mode



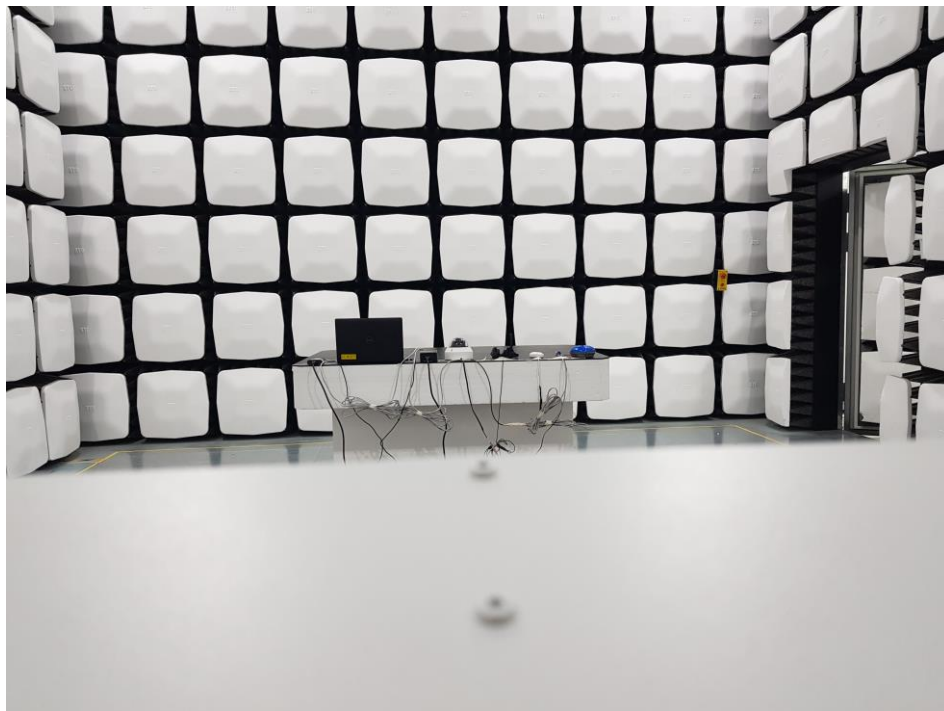
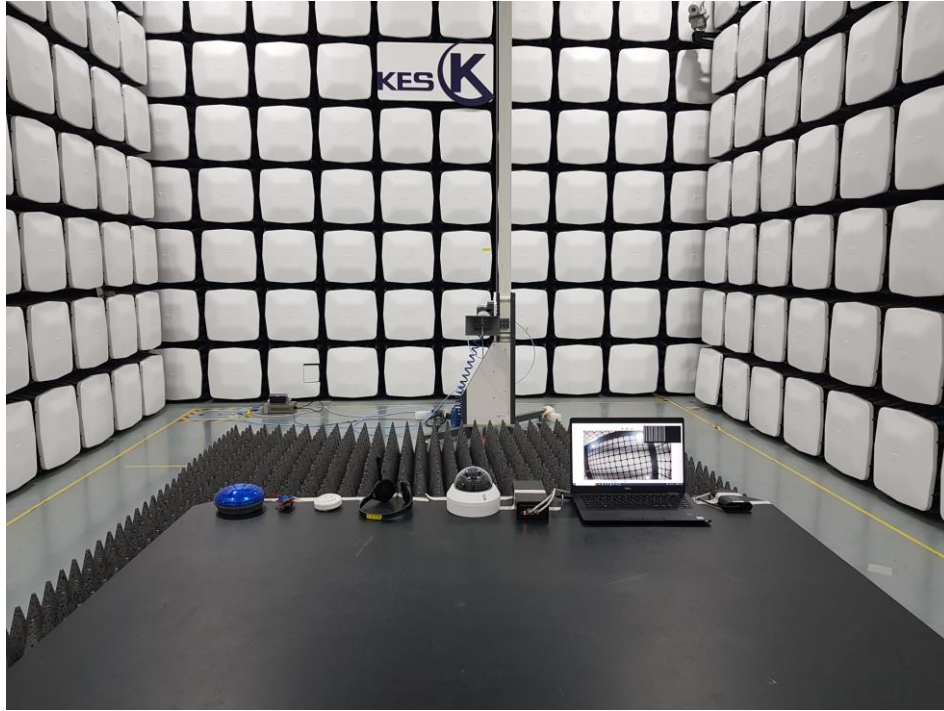
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Radiated Electric Field Emissions(Above 1 GHz)

■ DC Mode



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■ PoE Mode

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EUT External Photographs

(Top)



(Bottom)



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EUT Internal Photographs

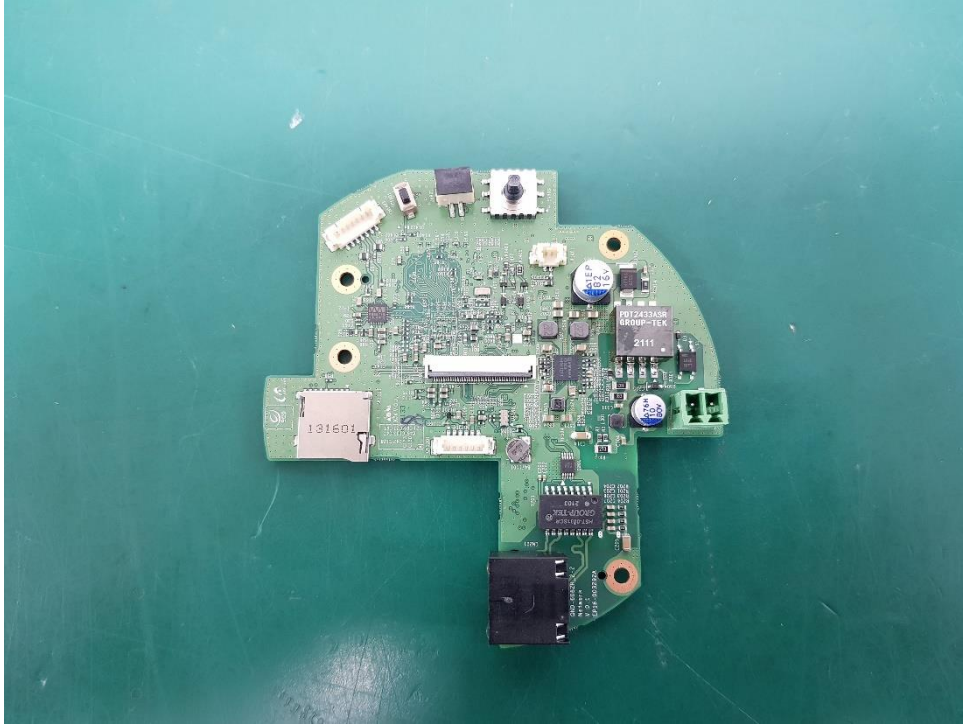
(Internal View)



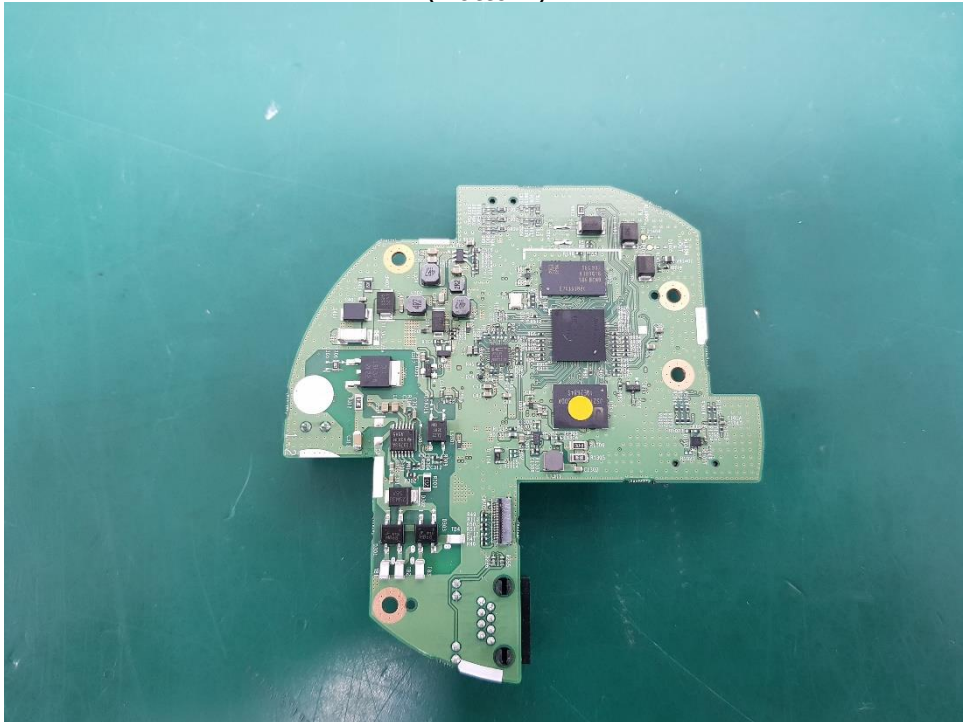
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EUT Internal View – Main Board

(Top)



(Bottom)



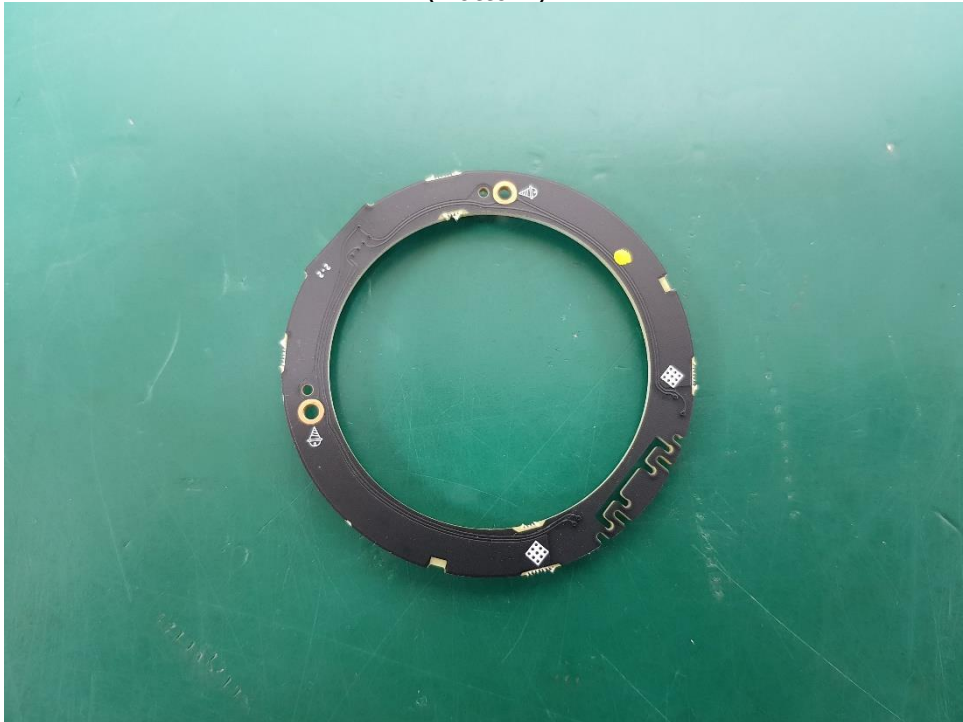
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EUT Internal View – SUB Board 1

(Top)



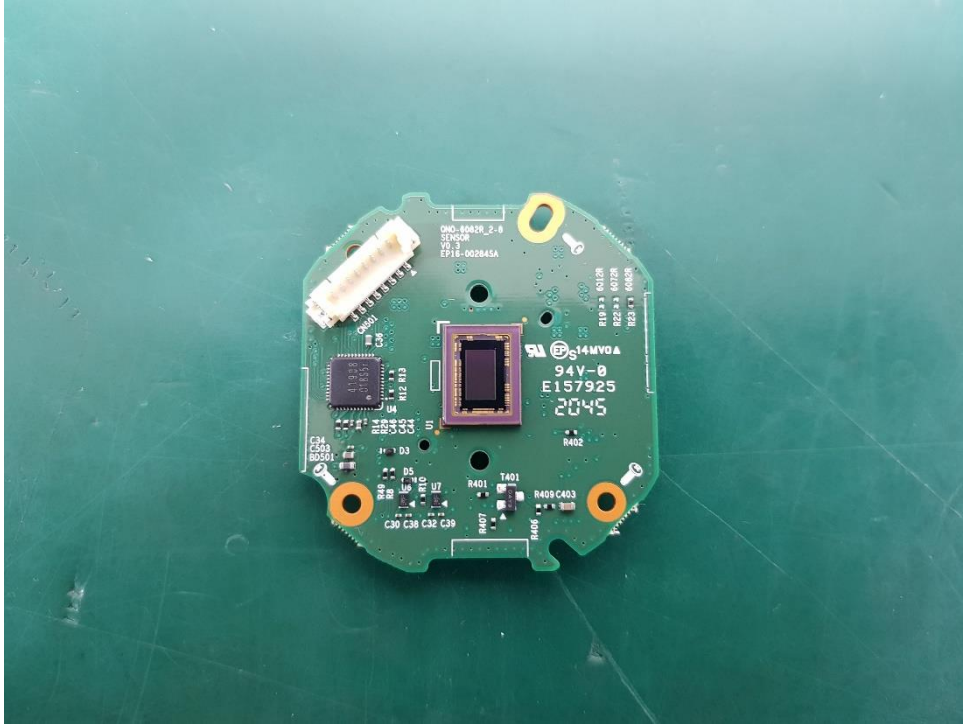
(Bottom)



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EUT Internal View – SUB Board 2

(Top)



(Bottom)



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EUT Internal View – Lens

(Top)

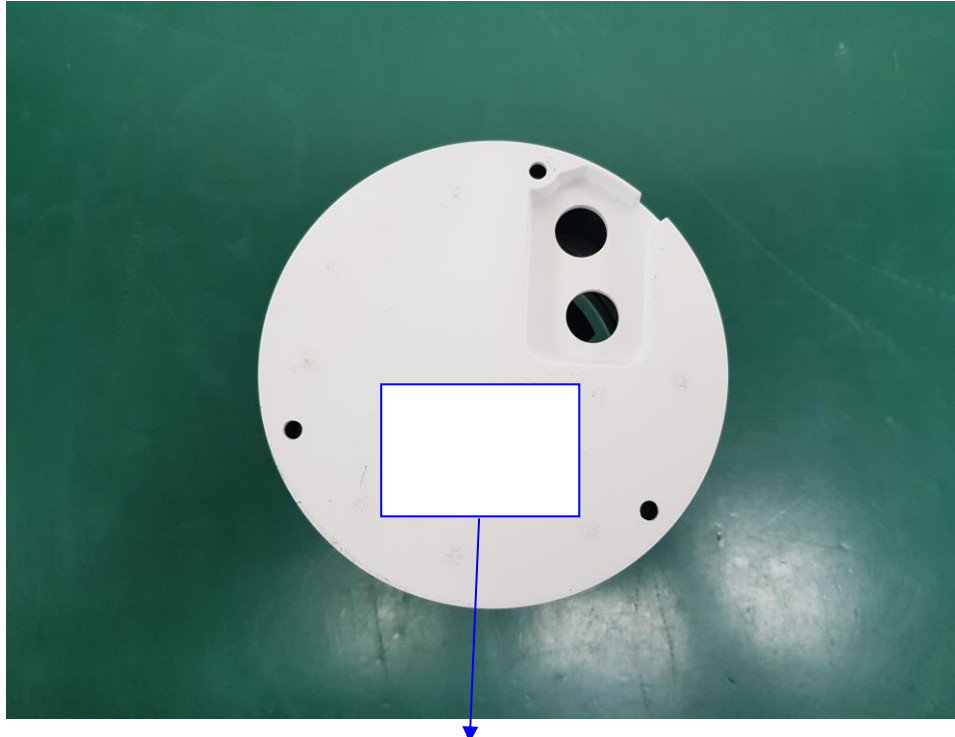


(Bottom)



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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.