

**KES Co., Ltd.**

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Report No.:

KES-EM-22T0153-R1

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EMC TEST REPORT

Test Report No. : KES-EM-22T0153-R1
Date of Issue : Feb. 24, 2023
Product name : NETWORK CAMERA
Model/Type No. : QND-7012R
Variant Model : QND-7022R, QND-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. 14, 2022
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Jae Won, 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
Jan. 27, 2022	KES-EM-22T0153	Issued
Feb. 24, 2023	KES-EM-22T0153-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	1/3" CMOS
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
Max. Framerate	H.265/H.264: Max. 30fps at 4M all resolutions, MJPEG: Max. 15fps
Min. Illumination	Color: 0.15Lux (F2.0, 1/30sec) B/W: 0Lux (IR LED On)
Video Out	CVBS: 1.0Vpp/75Ω composite, 720x480(N), 720x576(P) for installation

Lens

Focal Length (Zoom Ratio)	2.8mm fixed focal
Max. Aperture Ratio	F2.0
Angular Field of View	H: 107.5, V: 59.7, D: 122.0
Focus Control	Fixed

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, SSDR
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
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, Handover

Network

Ethernet	RJ-45 (10/100BASE-T)
Video Compression	H.265/H.264: Main/High, MJPEG

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Smart Codec	Manual (5ea area), 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, 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
Application Programming Interface	ONVIF Profile S/G/T, SUNAPI (HTTP API)

General

Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Edge Storage	Micro SD/SDHC/SDXC 1slot 128GB
Memory	512MB RAM, 256MB Flash

Environmental & Electrical

Operating Temperature / Humidity	-10C~+55C (+14F~+131F) / Less than 95% RH
Storage Temperature / Humidity	-30C~+60C (-22F~+140F) / Less than 95% RH
Input Voltage	PoE (IEEE802.3af, Class3), 12VDC
Power Consumption	PoE: Max 7.9W, typical 6.1W 12VDC: Max 7.1W, typical 5.1W

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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

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	QND-7012R	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Adapter	2ACB022F	-	Channel Well Technology (Guangzhou) Co., Ltd.	-
PoE Adapter	PT-PSE109GBRO-AH	PT1850221049	Dongguan PROCET Network Technology Co.,Ltd	-
Notebook	Latitude 5300	8C47BE45C060	DELL INC.	-
Notebook Adapter	HA65NM130	-	Chicony Power Technology(Suzhou)Co., Ltd.	-
Alarm	-	-	-	-
Button Alarm	-	-	-	-
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)	DC Jack	Adapter	DC Jack	1.6	U
	Alarm IN	Button Alarm	Alarm OUT	3.0	U
	Alarm OUT	Alarm	Alarm IN	3.0	U
	Slot	Micro SD Card	Slot	-	-
	RJ-45	Notebook	RJ-45	3.0	U
Notebook	DC Jack	Notebook Adapter	DC Jack	1.3	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 Adapter	RJ-45 (PoE)	3.0	U
	Alarm IN	Button Alarm	Alarm OUT	3.0	U
	Alarm OUT	Alarm	Alarm IN	3.0	U
	Slot	Micro SD Card	Slot	-	-
PoE Adapter	RJ-45 (LAN)	Notebook	RJ-45 (LAN)	3.0	U
Notebook	DC Jack	Notebook Adapter	DC Jack	1.3	U

* Unshielded=U, Shielded=S

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1.7 EUT Operating Mode(s)

Test Mode	operating
Operation mode	Web Viewer and Ping Test to check the display and network status, press the button alarm, and confirm that the alarm and LED come on in the Web Viewer. After the test, the video saved in the Micro SD Card was tested while confirming.

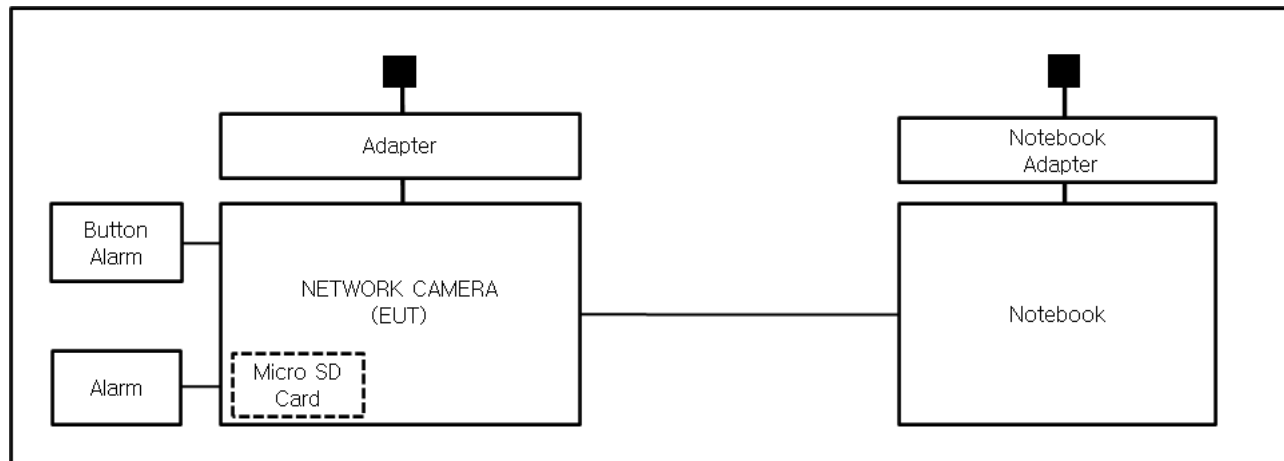
EUT Test operating S/W		
Name	Version	Manufacture Company
Web Viewer	-	Hanwha Vision Co., Ltd

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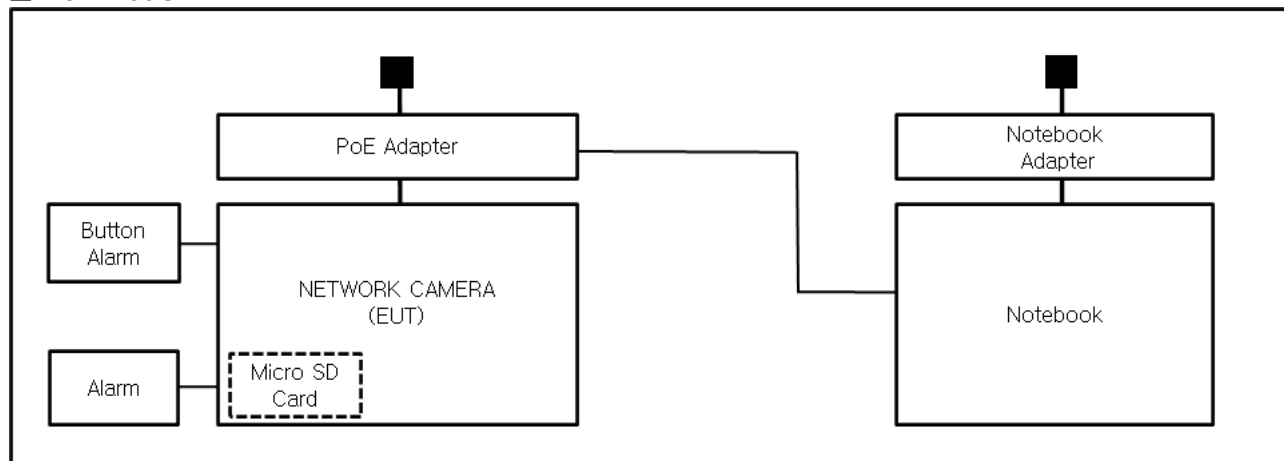
1.8 Configuration

■ AC Main
 □ DC Main

■ DC Mode



■ PoE Mode



1.9 Remarks when standards applied

The VIDEO port is not used as it is not 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:

☒ **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. 14, 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: (22,7 ± 0,1) °C

Relative Humidity: (43,6 ± 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

Jan. 14, 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: (23,0 ± 0,1) °C

Relative Humidity: (44,0 ± 0,1) % R.H.

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

Test Results

The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

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2.3 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Jan. 14, 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: (22,9 ± 0,1) °C

Relative Humidity: (42,9 ± 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.

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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.:

QND-7012R

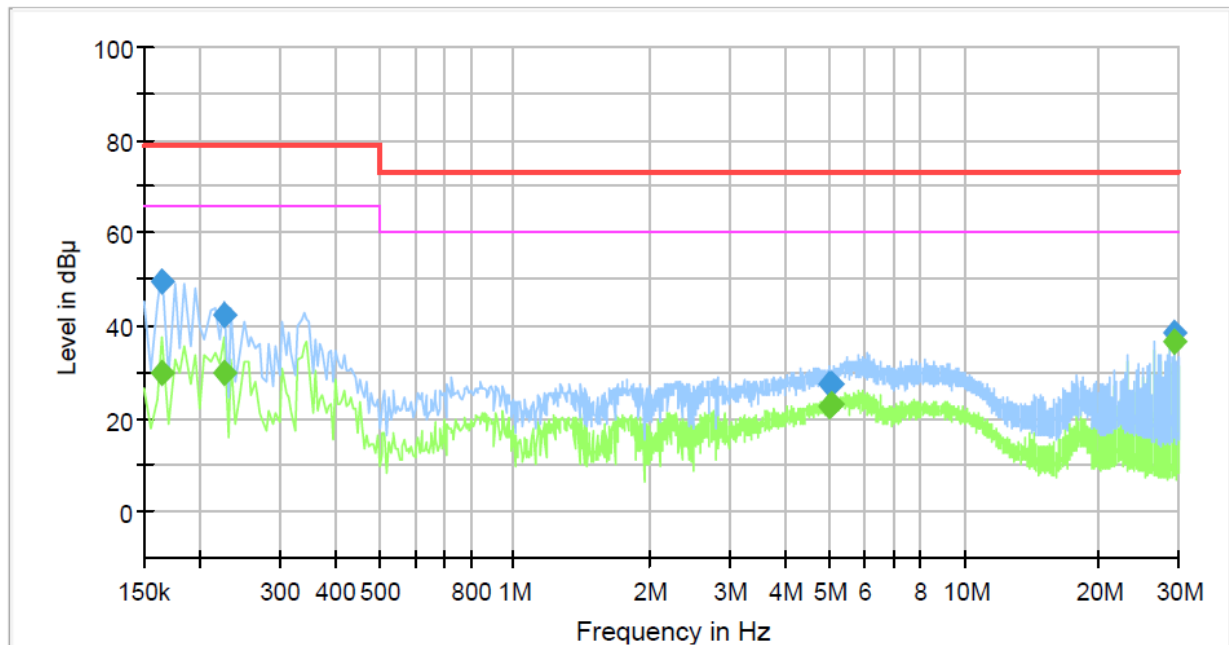
Phase:

DC_L1

Mode:

Operator Name:

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	---	29.81	66.00	36.19	1000.0	9.000	L1	19.5
0.165000	49.42	---	79.00	29.58	1000.0	9.000	L1	19.5
0.225000	---	29.96	66.00	36.04	1000.0	9.000	L1	19.5
0.225000	42.40	---	79.00	36.60	1000.0	9.000	L1	19.5
5.015000	---	22.81	60.00	37.19	1000.0	9.000	L1	19.7
5.015000	27.50	---	73.00	45.50	1000.0	9.000	L1	19.7
5.055000	---	22.97	60.00	37.03	1000.0	9.000	L1	19.7
5.055000	27.54	---	73.00	45.46	1000.0	9.000	L1	19.7
29.235000	---	36.64	60.00	23.36	1000.0	9.000	L1	20.4
29.235000	38.52	---	73.00	34.48	1000.0	9.000	L1	20.4

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NEUTRAL LINE

Common Information

Test Description:

Model No.:

Phase:

Mode:

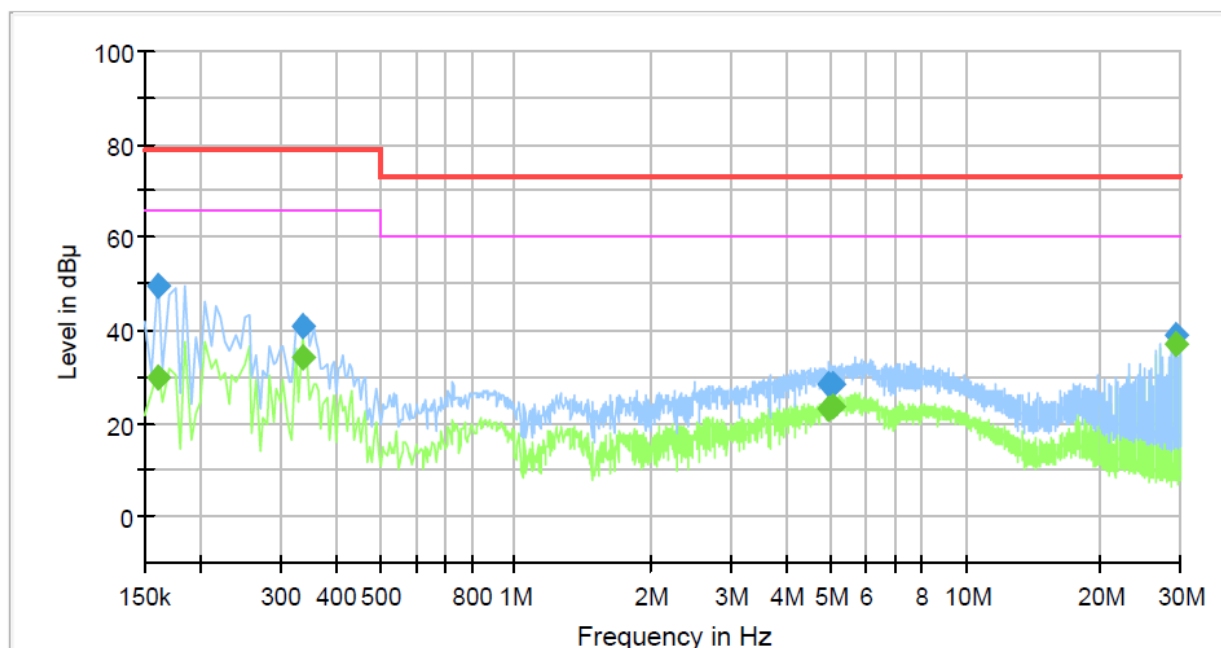
Operator Name:

Conducted Emission

QND-7012R

DC_N

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	29.81	66.00	36.19	1000.0	9.000	N	19.4
0.160000	49.56	---	79.00	29.44	1000.0	9.000	N	19.4
0.335000	---	34.27	66.00	31.73	1000.0	9.000	N	19.6
0.335000	41.00	---	79.00	38.00	1000.0	9.000	N	19.6
4.985000	---	23.24	60.00	36.76	1000.0	9.000	N	19.7
4.985000	28.27	---	73.00	44.73	1000.0	9.000	N	19.7
5.060000	---	23.45	60.00	36.55	1000.0	9.000	N	19.7
5.060000	28.66	---	73.00	44.34	1000.0	9.000	N	19.7
29.235000	---	37.24	60.00	22.76	1000.0	9.000	N	20.4
29.235000	39.10	---	73.00	33.90	1000.0	9.000	N	20.4

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PoE Mode
HOT LINE
Common Information

Test Description:

Conducted Emission

Model No.:

QND-7012R

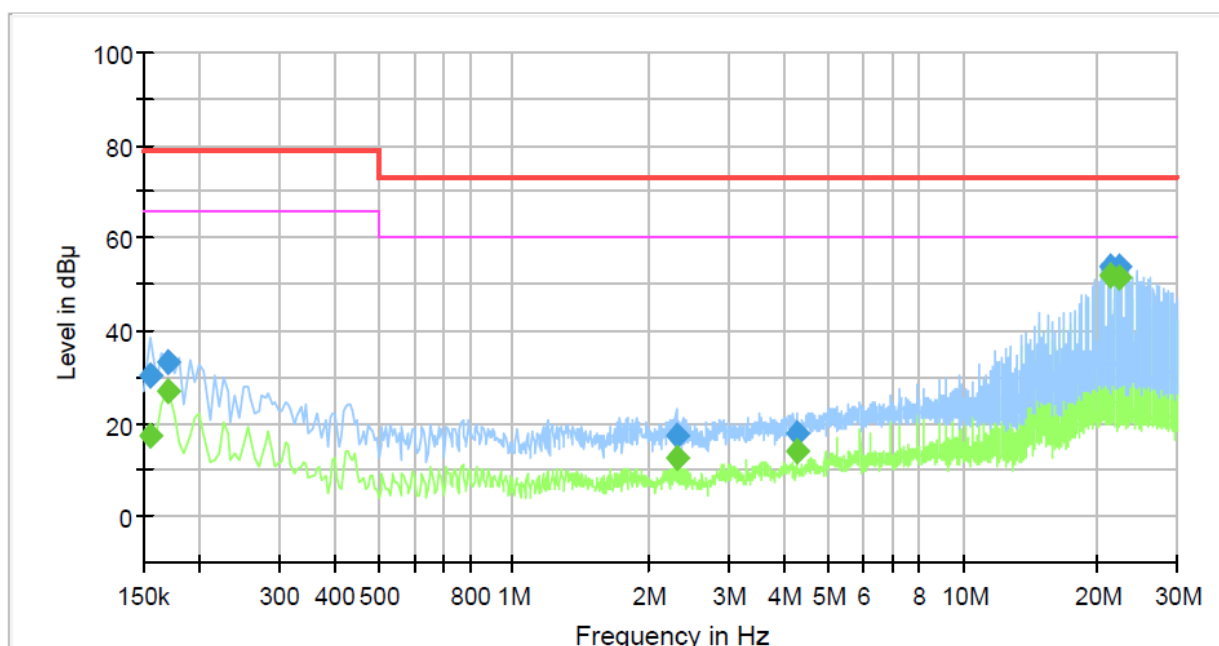
Phase:

PoE_L1

Mode:

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	---	17.15	66.00	48.85	1000.0	9.000	L1	19.5
0.155000	30.37	---	79.00	48.63	1000.0	9.000	L1	19.5
0.170000	---	27.19	66.00	38.81	1000.0	9.000	L1	19.5
0.170000	33.10	---	79.00	45.90	1000.0	9.000	L1	19.5
2.300000	---	12.41	60.00	47.59	1000.0	9.000	L1	20.3
2.300000	17.18	---	73.00	55.82	1000.0	9.000	L1	20.3
4.270000	---	14.25	60.00	45.75	1000.0	9.000	L1	19.9
4.270000	17.90	---	73.00	55.10	1000.0	9.000	L1	19.9
21.360000	---	52.05	60.00	7.95	1000.0	9.000	L1	20.2
21.360000	54.11	---	73.00	18.89	1000.0	9.000	L1	20.2
22.345000	---	51.26	60.00	8.74	1000.0	9.000	L1	20.2
22.345000	53.73	---	73.00	19.27	1000.0	9.000	L1	20.2

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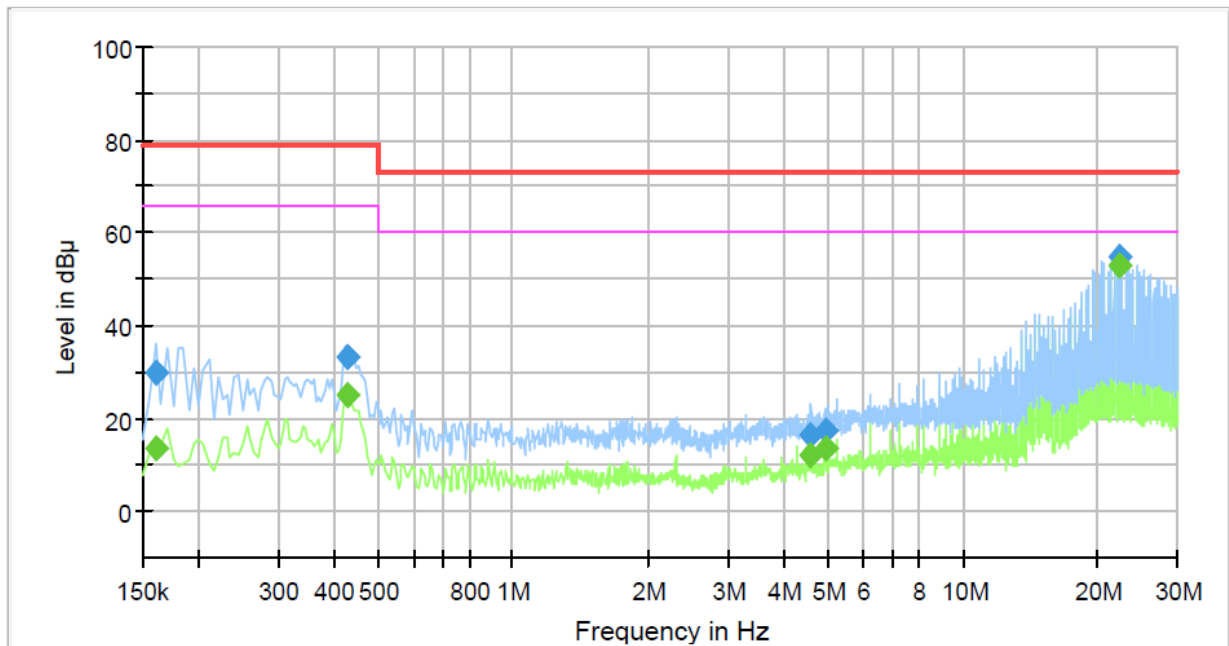
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NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	QND-7012R
Phase:	PoE_N
Mode:	
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	---	13.40	66.00	52.60	1000.0	9.000	N	19.4
0.160000	29.66	---	79.00	49.34	1000.0	9.000	N	19.4
0.430000	---	25.20	66.00	40.80	1000.0	9.000	N	19.7
0.430000	33.40	---	79.00	45.60	1000.0	9.000	N	19.7
4.600000	---	11.92	60.00	48.08	1000.0	9.000	N	19.8
4.600000	16.38	---	73.00	56.62	1000.0	9.000	N	19.8
4.930000	---	13.49	60.00	46.51	1000.0	9.000	N	19.7
4.930000	17.48	---	73.00	55.52	1000.0	9.000	N	19.7
22.345000	---	52.90	60.00	7.10	1000.0	9.000	N	20.2
22.345000	54.69	---	73.00	18.31	1000.0	9.000	N	20.2

◆ 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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Report No.:

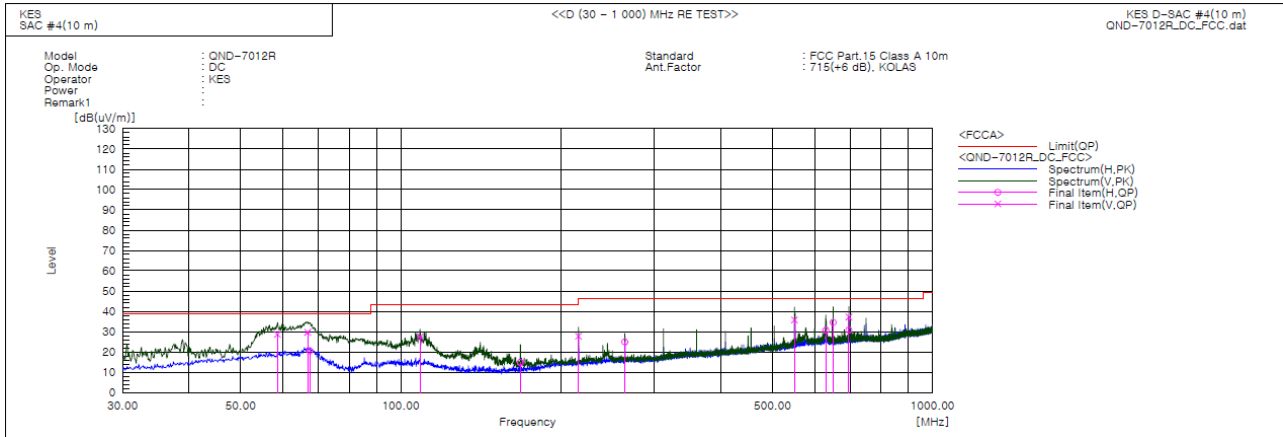
KES-EM-22T0153-R1

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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	58.615	V	50.3	-21.6	28.7	39.0	10.3	142.0	2.0	
2	66.860	V	53.4	-23.7	29.7	39.0	9.3	146.0	144.0	
3	67.466	H	44.4	-23.9	20.5	39.0	18.5	393.0	127.0	
4	108.813	V	49.8	-22.2	27.6	43.5	15.9	142.0	114.0	
5	167.861	H	39.1	-24.2	14.9	43.5	28.6	192.0	71.0	
6	215.876	V	48.2	-20.4	27.8	43.5	15.7	111.0	294.0	
7	263.891	H	43.7	-18.8	24.9	46.5	21.6	194.0	165.0	
8	550.041	V	45.9	-10.1	35.8	46.5	10.7	148.0	2.0	
9	630.188	H	38.9	-8.2	30.7	46.5	15.8	194.0	306.0	
10	650.073	H	42.7	-8.1	34.6	46.5	11.9	394.0	207.0	
11	695.649	V	44.7	-7.5	37.2	46.5	9.3	112.0	28.0	
12	695.935	H	38.3	-7.5	30.8	46.5	15.7	119.0	82.0	

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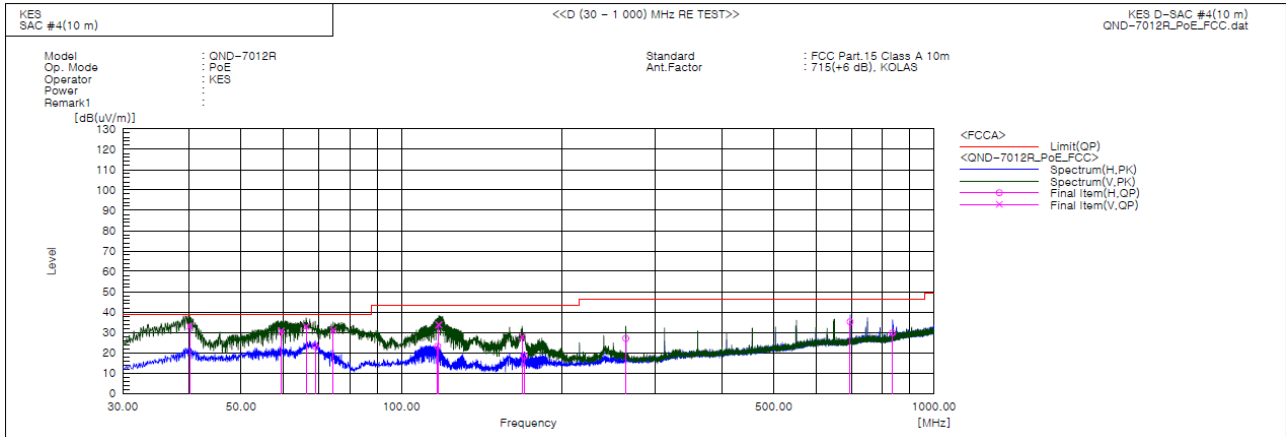
3701, 40, Simin-daero 365beon-gil,
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PoE Mode



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	40.064	V	55.5	-22.4	33.1	39.0	5.9	124.0	116.0	
2	59.464	V	52.4	-21.7	30.7	39.0	8.3	115.0	86.0	
3	66.254	V	56.3	-23.5	32.8	39.0	6.2	146.0	78.0	
4	68.921	H	47.4	-24.3	23.1	39.0	15.9	193.0	188.0	
5	74.499	V	57.7	-26.6	31.1	39.0	7.9	142.0	242.0	
6	116.936	H	46.5	-23.3	23.2	43.5	20.3	193.0	162.0	
7	117.543	V	57.2	-23.5	33.7	43.5	9.8	119.0	160.0	
8	168.468	V	52.0	-24.2	27.8	43.5	15.7	112.0	209.0	
9	170.165	H	42.5	-24.1	18.4	43.5	25.1	394.0	46.0	
10	263.891	H	45.8	-18.8	27.0	46.5	19.5	195.0	72.0	
11	695.905	H	42.7	-7.5	35.2	46.5	11.3	111.0	128.0	
12	835.343	H	35.8	-6.0	29.8	46.5	16.7	121.0	222.0	

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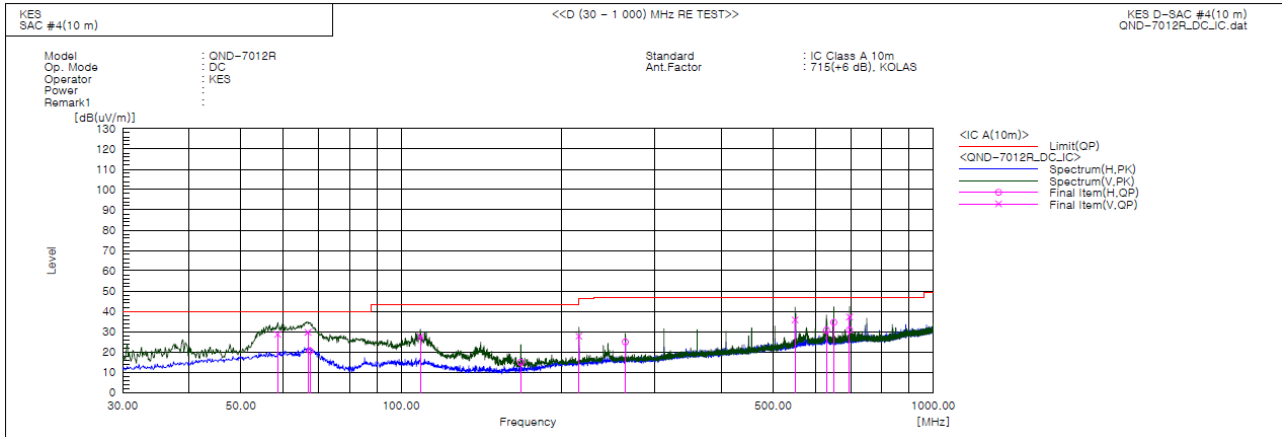
Report No.:

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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	58.615	V	50.3	-21.6	28.7	40.0	11.3	142.0	2.0	
2	66.860	V	53.4	-23.7	29.7	40.0	10.3	146.0	144.0	
3	67.466	H	44.4	-23.9	20.5	40.0	19.5	393.0	127.0	
4	108.813	V	49.8	-22.2	27.6	43.5	15.9	142.0	114.0	
5	167.861	H	39.1	-24.2	14.9	43.5	28.6	192.0	71.0	
6	215.876	V	48.2	-20.4	27.8	43.5	15.7	111.0	294.0	
7	263.891	H	43.7	-18.8	24.9	47.0	22.1	194.0	165.0	
8	550.041	V	45.9	-10.1	35.8	47.0	11.2	148.0	2.0	
9	630.188	H	38.9	-8.2	30.7	47.0	16.3	194.0	306.0	
10	650.073	H	42.7	-8.1	34.6	47.0	12.4	394.0	207.0	
11	695.649	V	44.7	-7.5	37.2	47.0	9.8	112.0	28.0	
12	695.935	H	38.3	-7.5	30.8	47.0	16.2	119.0	82.0	

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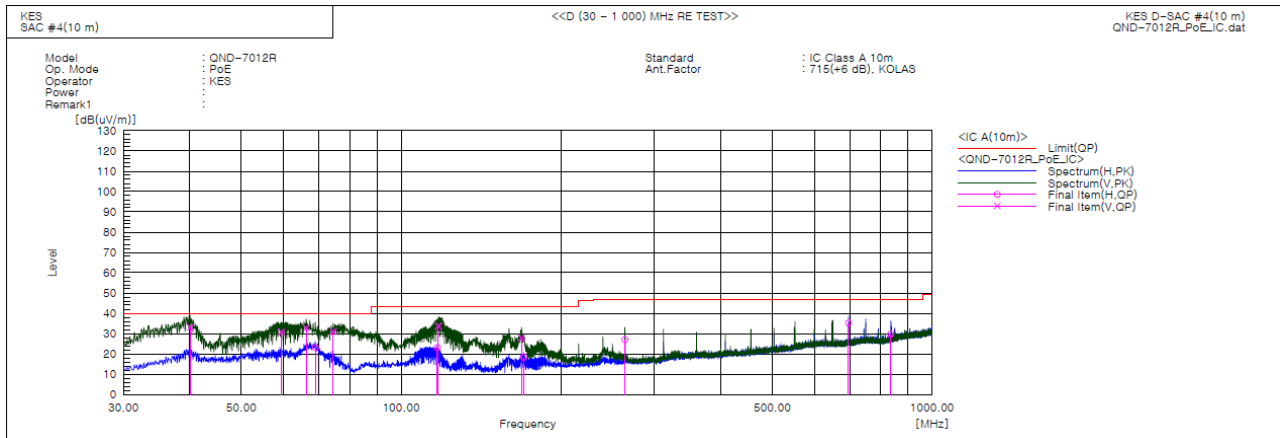
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PoE Mode



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	40.064	V	55.5	-22.4	33.1	40.0	6.9	124.0	116.0	
2	59.464	V	52.4	-21.7	30.7	40.0	9.3	115.0	86.0	
3	66.254	V	56.3	-23.5	32.8	40.0	7.2	146.0	78.0	
4	68.921	H	47.4	-24.3	23.1	40.0	16.9	193.0	188.0	
5	74.499	V	57.7	-26.6	31.1	40.0	8.9	142.0	242.0	
6	116.936	H	46.5	-23.3	23.2	43.5	20.3	193.0	162.0	
7	117.543	V	57.2	-23.5	33.7	43.5	9.8	119.0	160.0	
8	168.468	V	52.0	-24.2	27.8	43.5	15.7	112.0	209.0	
9	170.165	H	42.5	-24.1	18.4	43.5	25.1	394.0	46.0	
10	263.891	H	45.8	-18.8	27.0	47.0	20.0	195.0	72.0	
11	695.905	H	42.7	-7.5	35.2	47.0	11.8	111.0	128.0	
12	835.343	H	35.8	-6.0	29.8	47.0	17.2	121.0	222.0	

◆ Calculation – SAC #4(10 m)

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

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

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

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

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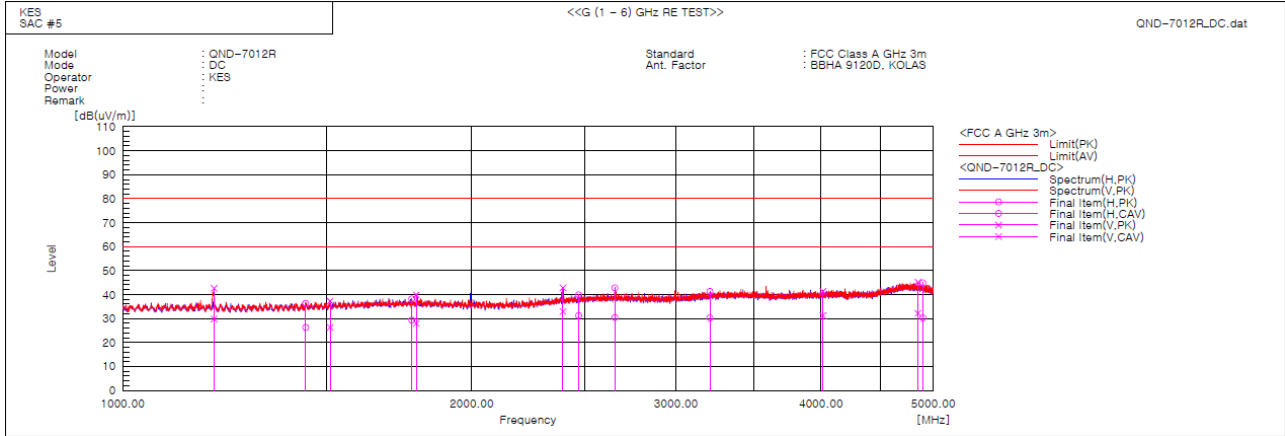
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Radiated Electric Field Emissions(Above 1 GHz)

■ 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	1198.749	V	49.5	36.8	-6.9	42.6	29.9	80.0	60.0	37.4	30.1	398.0	199.4	
2	1438.114	H	41.9	31.9	-5.6	36.3	26.3	80.0	60.0	43.7	33.7	196.8	77.1	
3	1509.314	V	42.6	31.6	-5.3	37.3	26.3	80.0	60.0	42.7	33.7	149.8	191.0	
4	1775.043	H	42.4	33.5	-4.2	38.2	29.3	80.0	60.0	41.8	30.7	398.4	251.9	
5	1791.142	V	44.1	32.2	-4.2	39.9	28.0	80.0	60.0	40.1	32.0	102.1	193.3	
6	2396.248	V	44.9	34.9	-2.0	42.9	32.9	80.0	60.0	37.1	27.1	103.4	98.7	
7	2473.125	H	41.6	33.0	-1.7	39.9	31.3	80.0	60.0	40.1	28.7	397.0	172.3	
8	2656.878	H	43.7	31.3	-0.9	42.8	30.4	80.0	60.0	37.2	29.6	197.4	272.7	
9	3208.197	H	40.8	29.8	0.5	41.3	30.3	80.0	60.0	38.7	29.7	395.0	83.6	
10	4014.375	V	39.2	29.2	2.1	41.3	31.3	80.0	60.0	38.7	28.7	100.7	195.1	
11	4849.334	V	39.8	26.8	5.4	45.2	32.2	80.0	60.0	34.8	27.8	399.0	255.0	
12	4897.343	H	39.2	24.6	5.7	44.9	30.3	80.0	60.0	35.1	29.7	391.0	113.1	

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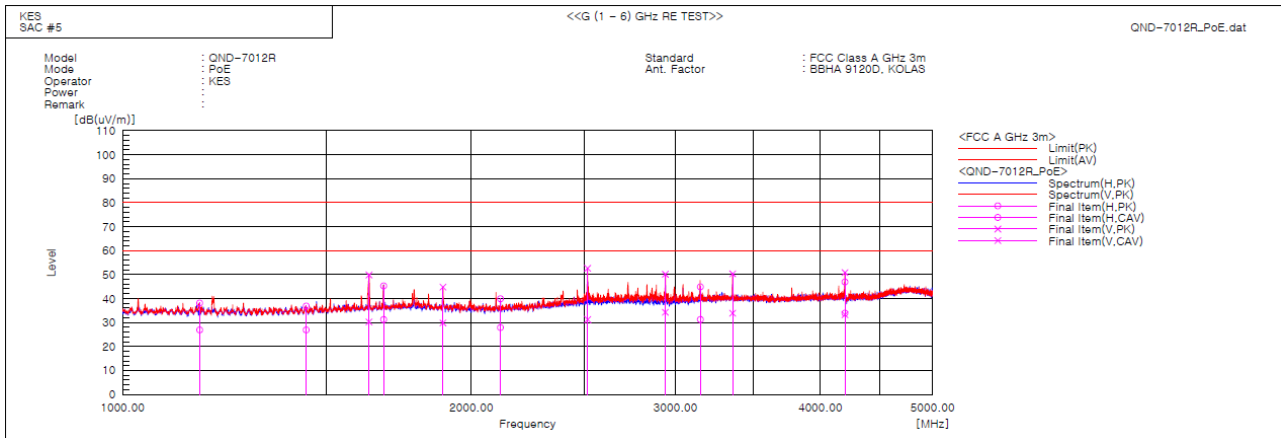
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PoE Mode



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	1165.647	H	45.2	34.0	-7.1	38.1	26.9	80.0	60.0	41.9	33.1	194.9	242.6	
2	1440.042	H	42.5	32.5	-5.6	36.9	26.9	80.0	60.0	43.1	33.1	389.4	241.4	
3	1631.250	V	54.7	35.1	-4.8	49.9	30.3	80.0	60.0	30.1	29.7	149.7	351.7	
4	1680.124	H	49.9	35.9	-4.6	45.3	31.3	80.0	60.0	34.7	28.7	100.1	19.4	
5	1889.377	V	48.6	33.7	-3.8	44.8	29.9	80.0	60.0	35.2	30.1	149.7	356.2	
6	2118.755	H	43.0	31.0	-3.1	39.9	27.9	80.0	60.0	40.1	32.1	200.1	227.7	
7	2519.374	V	54.2	32.8	-1.5	52.7	31.3	80.0	60.0	27.3	28.7	149.7	253.1	
8	2939.372	V	50.2	34.3	0.0	50.2	34.3	80.0	60.0	29.8	25.7	100.8	165.6	
9	3151.879	H	44.4	30.8	0.5	44.9	31.3	80.0	60.0	35.1	28.7	105.7	179.6	
10	3360.452	V	49.7	33.3	0.6	50.3	33.9	80.0	60.0	29.7	26.1	108.9	320.8	
11	4200.782	H	44.1	31.1	2.8	46.9	33.9	80.0	60.0	33.1	26.1	100.8	358.4	
12	4201.053	V	48.1	30.5	2.8	50.9	33.3	80.0	60.0	29.1	26.7	100.7	23.3	

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



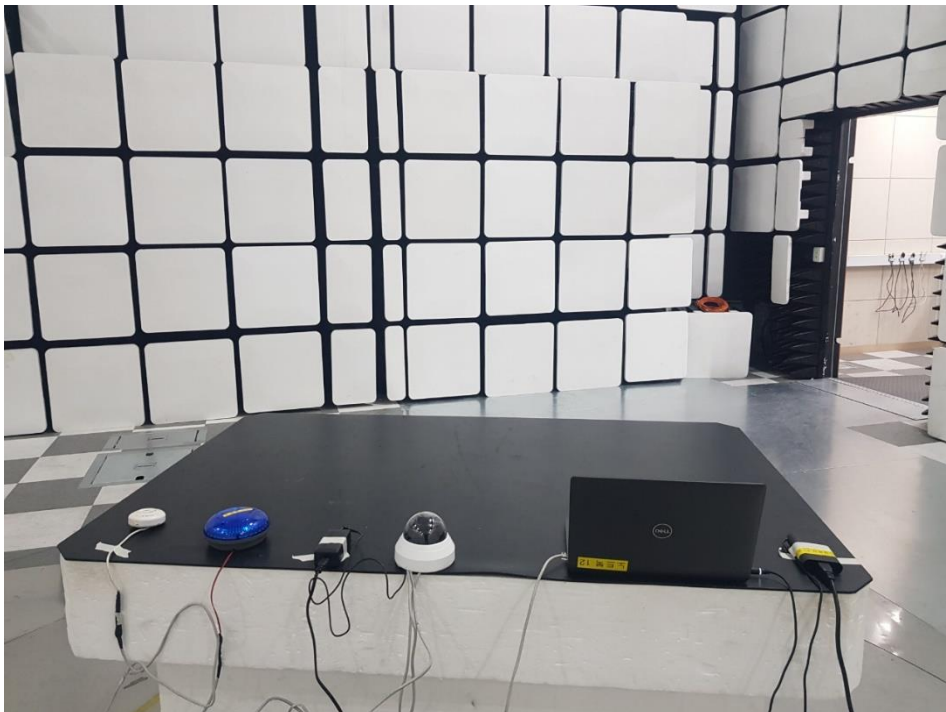
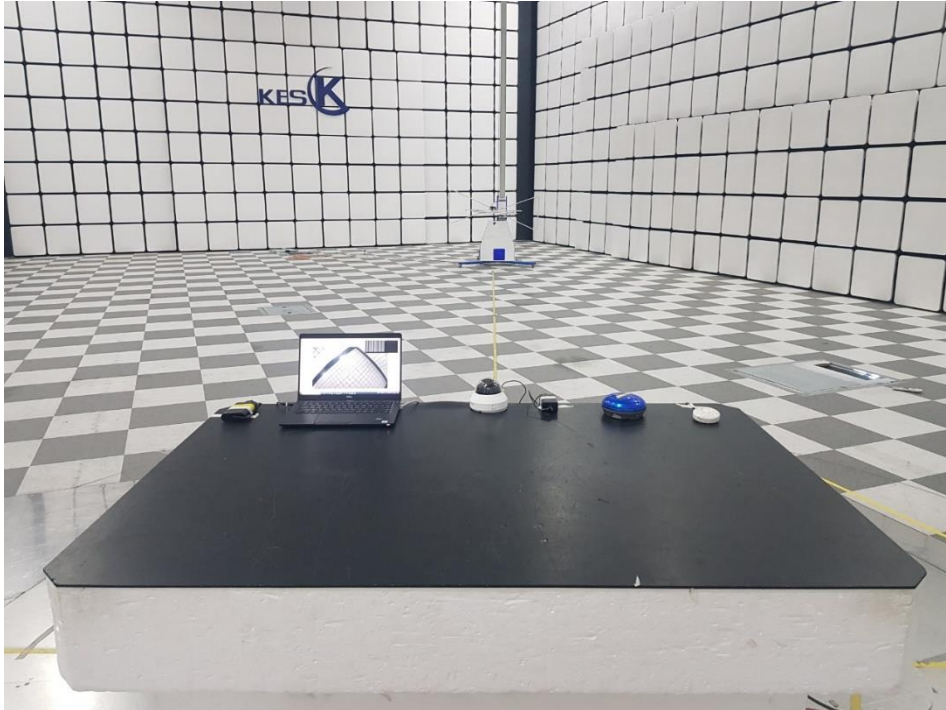
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■ PoE Mode



Radiated Electric Field Emissions(Below 1 GHz)

■ DC Mode



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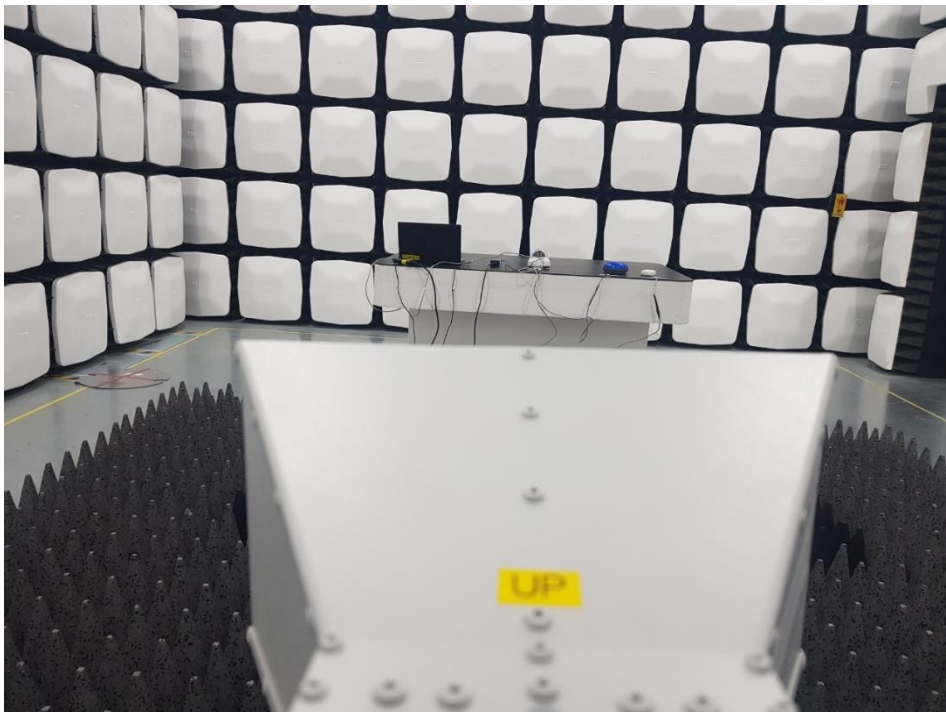
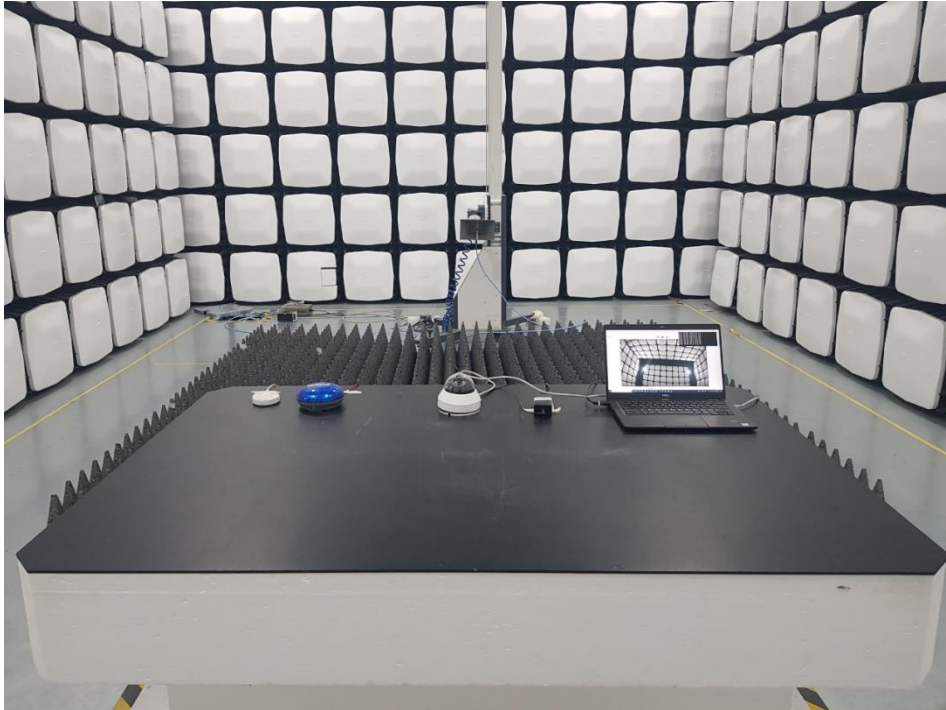
■ PoE Mode



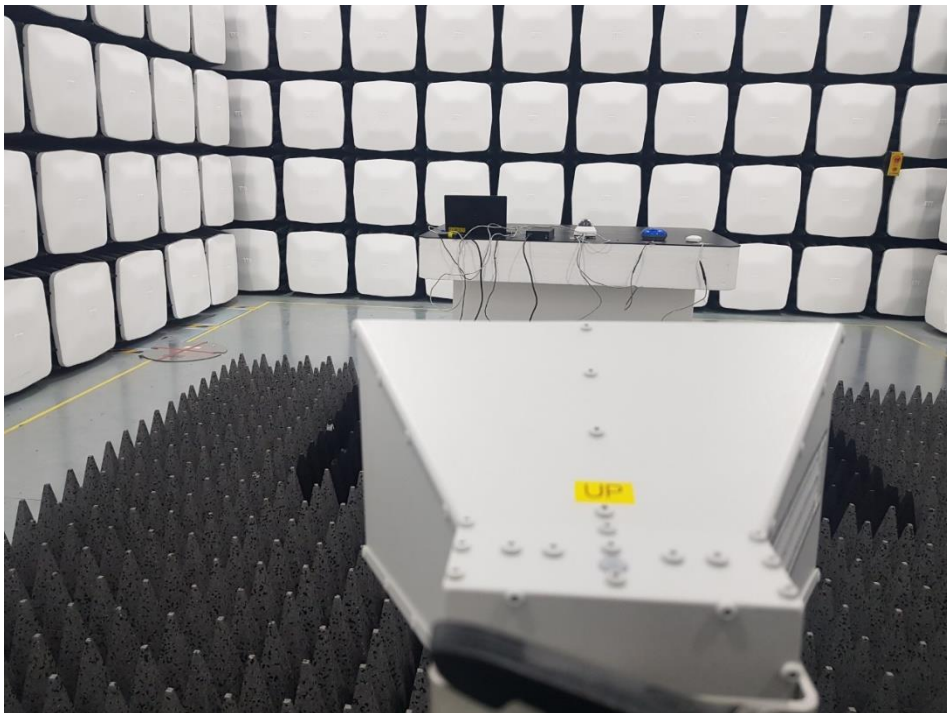
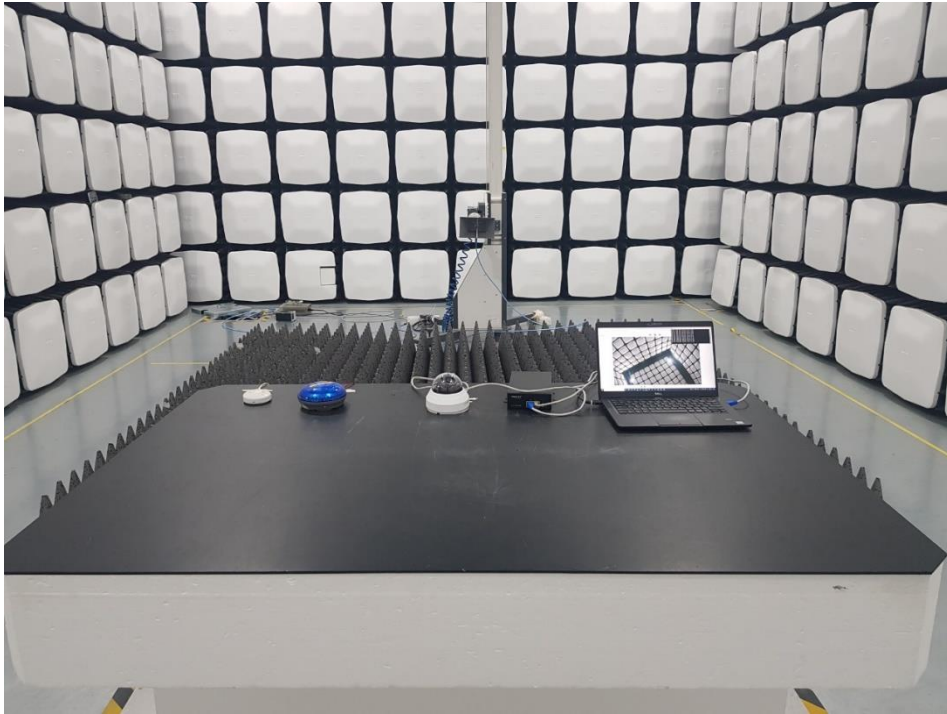
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Radiated Electric Field Emissions(Above 1 GHz)

■ DC Mode



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EUT External Photographs

(Top)



(Bottom)



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EUT Internal Photographs

(Internal View)

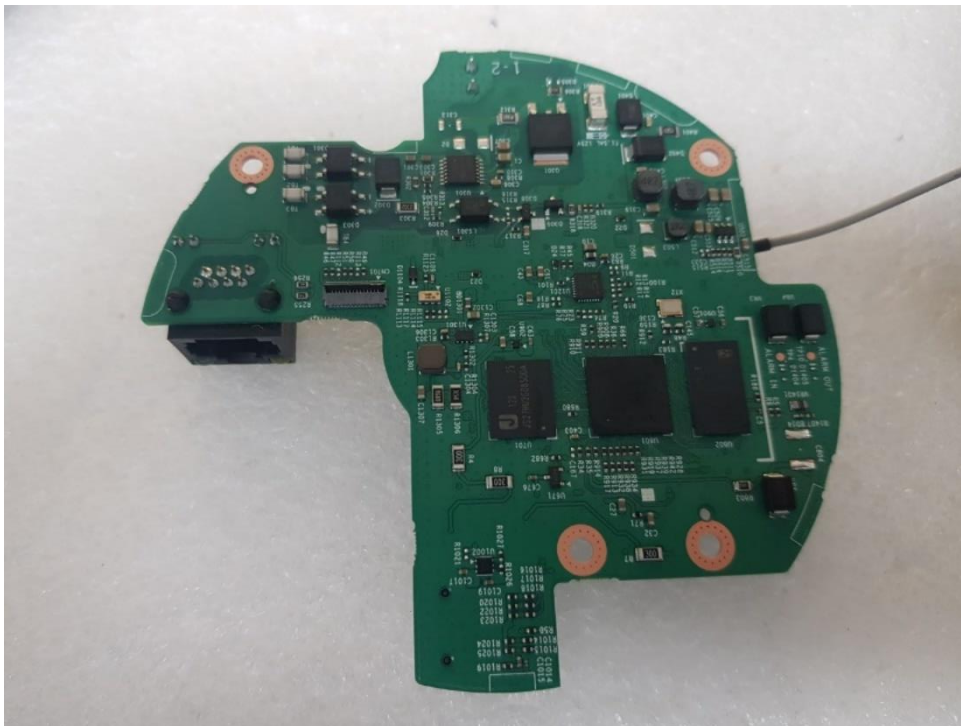


EUT Internal View – Main Board

(Top)



(Bottom)



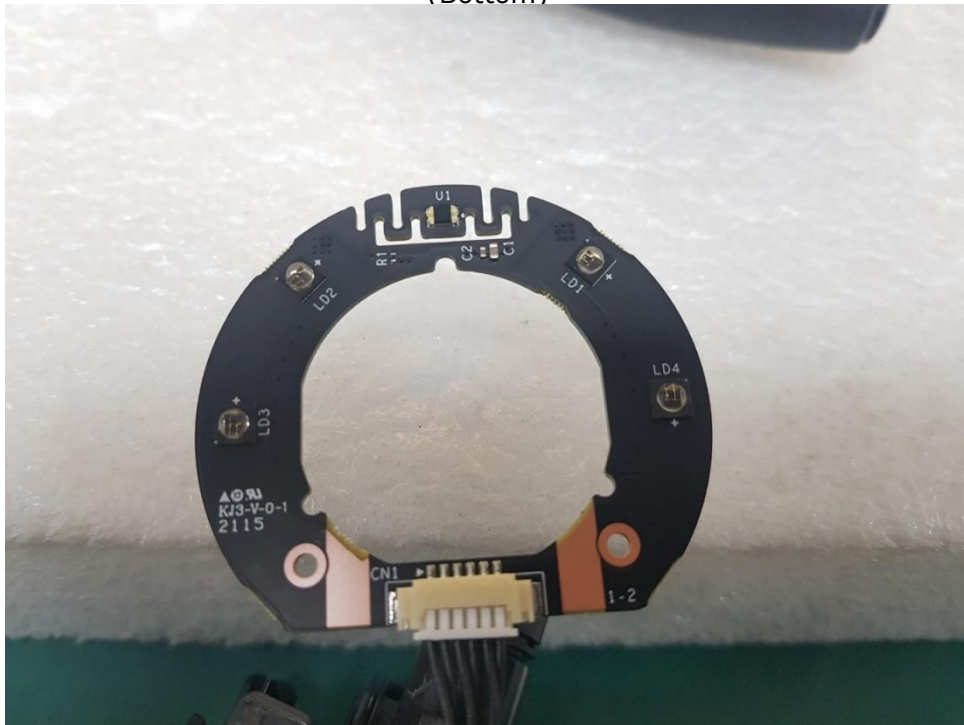
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EUT Internal View – Sub Board

(Top)



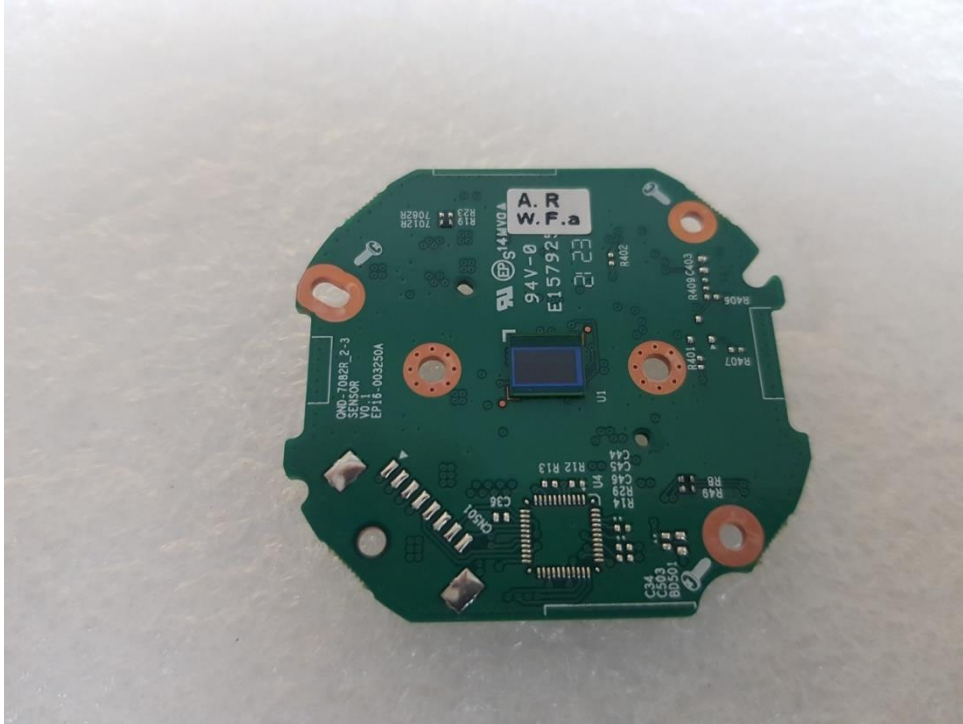
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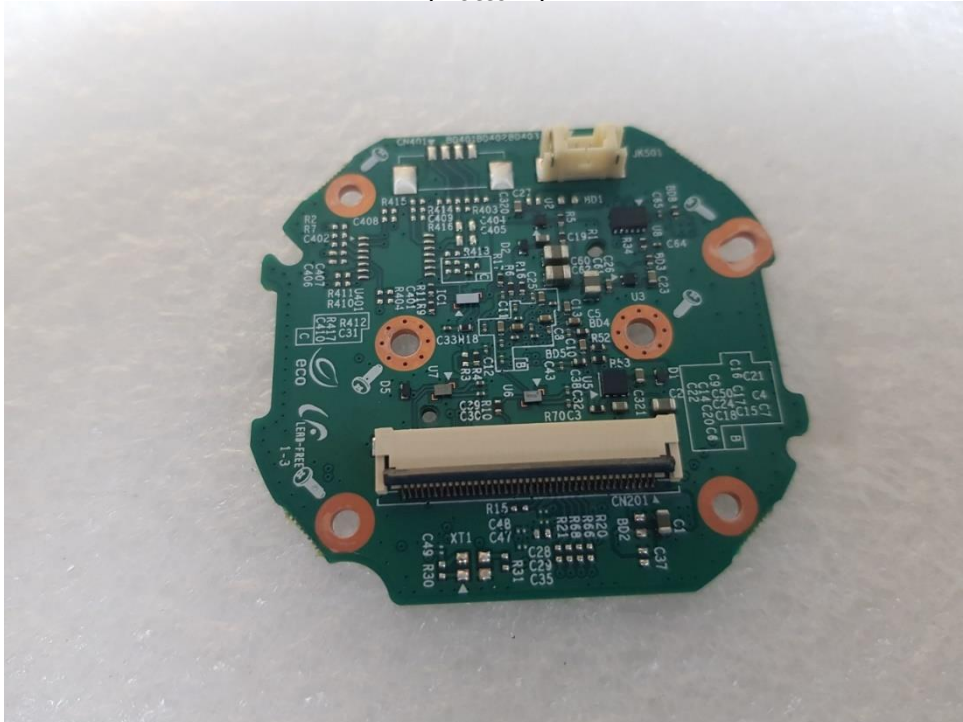
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EUT Internal View – Camera Board

(Top)



(Bottom)



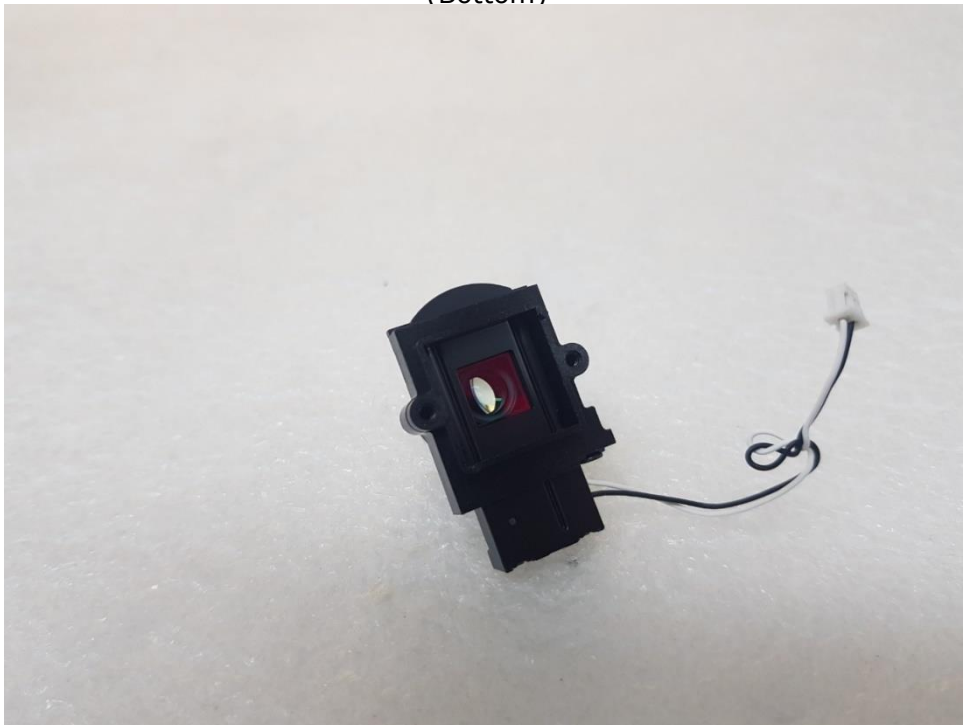
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EUT Internal View – Lens

(Top)

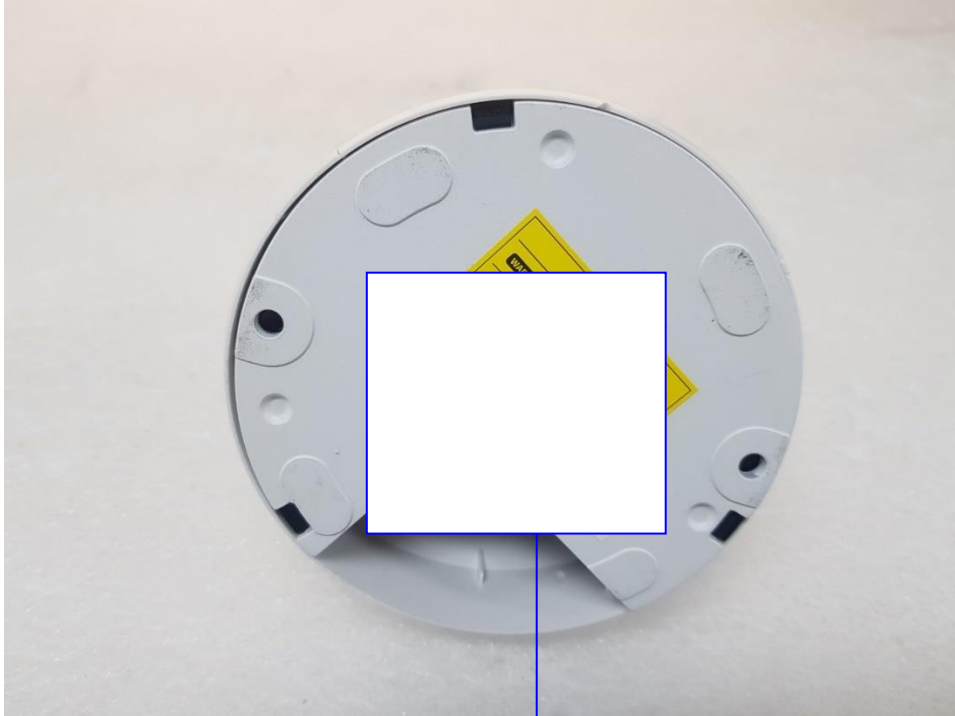


(Bottom)



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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.