



# TEST REPORT



Report No. : KES-EM242531

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**KES Co., Ltd.**

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Tel : +82-31-425-6200, Fax : +82-31-341-3838

## 1. Client

Applicant : Hanwha Vision Co., Ltd

Applicant Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

## 2. Sample Description

Product name : NETWORK CAMERA

Model/Type No. : QNO-C8023R

Variant Model : QNO-C8013R

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 Ward, Bac Ninh City, Bac Ninh Province, Vietnam  
2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do, Korea (Suwon Industrial Complex)

3. Date of Receipt : Jul. 24, 2024

4. Test date : Jul. 30, 2024

5. Date of Issue : Aug. 08, 2024

6. Test Results : In Compliance

*Tested by*

*Reviewed by*

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Se Heon, Kim  
EMC Test Engineer

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Seong Min, Choi  
EMC Technical Manager

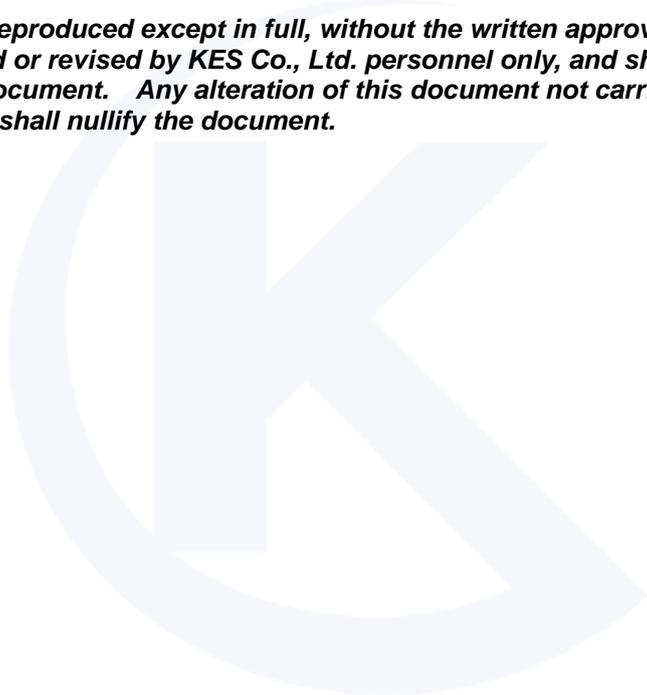
This test report is not related to KS Q ISO/IEC 17025 and KOLAS.



### REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Aug. 08, 2024	KES-EM242531	Issued

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## 1.0 General Product Description

Main Specifications of EUT are:

Highest internal Frequency : 1 866 Mhz

QNO-C8013R	
<b>Video</b>	
Imaging Device	1/2.8" CMOS
Resolution	2592x1944, 2560x1440, 1920x1080, 1280x960, 1280x720, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
Max. Framerate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) (WDR on/off) MJPEG: Max. 30fps(@5MP Max. 5fps)
NETD	None
Pixel Size	None
Min. Illumination	Color: 0.03Lux(F1.6, 1/30sec, 30IRE) BW: 0.003Lux(F1.6, 1/30sec, 30IRE), 0Lux(IR LED on)
Video Out	USB: Micro USB Type B, 1280x720 for installation
Video Transmission Distance	None
<b>Lens</b>	
Focal Length (Zoom Ratio)	3.0mm fixed focal
Optical Zoom	None
Max. Aperture Ratio	F1.6
Angular Field of View	H: 100°/ V: 73°/ D: 129°
Min. Object Distance	0.5m (1.64ft)
Focus Control	Fixed
Lens Type	Fixed IRIS
Mount Type	M12
Optional Lens	None
<b>Pan / Tilt / Rotate</b>	
Pan / Tilt / Rotate Range	0°~360° / 0°~100° / 0°~360°
Pan Range	None
Pan Speed	None
Tilt Range	None
Tilt Speed	None
Rotate Range	None
Sequence	None
Preset Accuracy	None
<b>Operational</b>	
Camera Title	Displayed up to 85 characters
Direction Indicator	None
Day & Night	Auto(ICR)
Backlight Compensation	BLC, WDR, SDR
Wide Dynamic Range	120dB
Digital Noise Reduction	WiseNR II (Based on AI engine) SSNR V
Digital Image Stabilization	None
Defog	None
Motion Detection	8ea, 8point polygonal zones
Privacy Masking	32ea, 4point quadrangle zones - Color: Gray/Green/Red/Blue/Black/White Dynamic Privacy Mask - Mosaic
Gain Control	Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor
LDC	Support
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (1/5~1/25,000sec) Prefer shutter control(Based on AI engine)
Video Rotation	Flip, Mirror, Hallway view(90°/270°)
Analytics	Classified object type: Person/Vehicle(Type:car/bus/truck/motorcycle/bicycle) Attributes: Person(Upper/lower clothes color), Vehicle(Type:car/bus/truck/motorcycle/bicycle and color) Support DetectionShot Analytics events based on AI engine - Motion detection*, Object detection, Virtual line*(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit) Analytics events - Defocus detection, Tampering, Virtual area(Appear/Disappear)  * Some of the video analytics only works with people and vehicle detection.
Business Intelligence	Based on AI engine: People counting, Vehicle counting, Queue management, Heatmap
Serial Interface	None
Alarm I/O	Input 1ea / Output 1ea
Alarm Triggers	Analytics, Network disconnect, Alarm input
Alarm Events	When alarm trigger occurred - File upload(image) : e-mail/FTP - Notification : e-mail - Recording : SD/SDHC/SDXC or NAS recording at event triggers - Alarm output - Handover(PTZ preset, Send message by HTTP/HTTPS/TCP) - Audio clip playback - MQTT: publication
Audio Streaming	None
Audio In	Selectable(mic in/line in)
Audio Out	Line out
Light Type	IR LED (850nm)
Light Viewable Length	20m(65.62ft)→25m(TBD)
IR Viewable Length	None
IR Illuminator (Optional)	None
IR Radiation angle	None
IR LED	None

KES-QP16-F01(00-23-01-01)

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IR Wavelength	long-life 850 nm IR LED
IR Operation	None
Water Removal	None
Auto Tracking	None
Coaxial Protocol	None
Color Palettes	None
<b>Radiometry</b>	
Temperature Detect Range	None
Temperature Accuracy	None
Temperature Detection	None
Additional	None
<b>Network</b>	
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 AAC-LC: 48Kbps at 16KHz
Smart Codec	Manual(Sea area), WiseStreamIII(Based on AI engine)
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 5 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, CDP, SRTP (TCP, UDP Unicast)
SIP support (VoIP, Peer-to-peer)	None
Security	None
Application Programming Inter	ONVIF Profile S/G/T/M SUNAPI(HTTP API)
<b>Security</b>	
OS / Firmware Protect	Secure boot, Signed firmware, Firmware encryption
User authentication	Digest Authentication, Prevent brute-force attack
Network authentication	802.1X Authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2)
Secure Communication	HTTPS, SRTP, WSS(Websocket secure)
Access Control	Access control based on IP address
Data Protect	Authentication information encryption, ZIP compression encryption
Audit	User Access/System/Event log management
Device ID	Device Certificate(Hanwha Private Root CA)
Secure Storage	SDcard partition encrypt
Security Certificate	None
<b>General</b>	
Webpage Language	English, Korean, Simplified Chinese, Traditional Chinese, French, Italian, Spanish, German, Japanese, Russian, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	None
Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB
Memory	2GB RAM, 1GB Flash
<b>Environmental &amp; Electrical</b>	
Operating Temperature / Humid	-30°C~+55°C(-22°F~+131°F) / 0~100% RH * Start up should be done at above -30°C Humidity control /w Air vent
Storage Temperature / Humid	-50°C~+60°C(-58°F~+140°F) / 0~95% RH
Wind Load	None
EPA(Effective Projected Area)	None
Certification	IP66, IK10
Input Voltage	PoE(IEEE802.3af, Class3)
Power Consumption	PoE: Max 8.1W, typical 4.0W
<b>Mechanical</b>	
Color / Material	White / Aluminum
RAL Code	RAL9003
Product Dimensions / Weight	ø93.4x245.8mm(ø3.68x9.68"), 890g(1.96 lb)
Compatible Conduit hole / Gar	Conduit hole : None Gangbox (SBO-090GP) : Single, Double, 4" Octagon (sold separately)
Hanging Mount (Dome)	None
Skin Cover	None
Skin Cover (Dome)	None
Weather Cap (Dome)	None
Power Module	None
Backbox	None
Ceiling Mount (Assy)	None
Wall Mount	None
Pole Mount	None
In-ceiling Mount	None
Parapet Mount	None
Corner Mount	None
Tilt Mount	None
Housing (Box)	None
Cabinet	None
Gang Plate	None
Conduit Adaptor	None
Other Compatible Models	None

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Certifications & Standards	
Network	None
EMC	FCC 47 CFR 15 Subpart B Class A ICES-3(A)/NMB-3(A) CE/UKCA - EN 55032 Class A, EN 50130-4, EN 61000-3-2, EN 61000-3-3 VCCI CISPR 32 Class A RCM AS/NZS CISPR 32 Class A KS C 9832 Class A , KS C 9835
Safety	UL 62368-1, CAN/CSA C22.2 NO. 62368-1 IEC/EN 62471
Environment	IEC/EN 63000 IEC/EN 60529 IP66, IEC/EN 62262 IK10
Video	None
Compatible Models	
Hanging Adaptor	None
Back Box	SBO-140BW
Ceiling Mount (Assy)	None
Ceiling Mount (Single Unit)	None
Wall Mount	None
Wall Mount Adaptor	None
Pole Mount	SBD-140PMW※ Gang Plate(SBO-090GP) needed separately
In-ceiling Mount	None
Corner Mount	SBD-140KMB※ Gang Plate(SBO-090GP) needed separately
Parapet Mount	None
Tilt Mount	None
Cabinet	None
Housing	None
Gang Plate	SBO-090GP
Skin Cover	None
Weather Cap	None
Dome Cover	None
Conduit Adaptor	None
Power Module	None
Interface Box	None
Other Compatible Models	None
DORI (EN62676-4 standard)	
Detect (25PPM/ 8PPF)	43.5m(142.71ft)
Observe (63PPM/ 19PPF)	17.5m(57.09ft)
Recognize (125PPM/ 38PPF)	8.7m(28.54ft)
Identify (250PPM/ 76PPF)	4.3m(14.27ft)
LPR/ANPR/MMCR	
Speed Description	None
Speed limit	None
Min. Forward Distance	None
Max. Forward Distance	None
Max. Horizontal Angle	None
Max. Vertical Angle	None
Horizontal Offset	None
Camera Height	None
Lane Coverage	None
Vehicle Recognition	None
Available Countries	None
Wisenet Road AI LPR/ANPR/MMCR	
Solution	None
Speed Description	None
Lane Coverage	None
Speed limit	None
Min. Forward Distance	None
Max. Forward Distance	None
Max. Horizontal Angle	None
Max. Vertical Angle	None
Horizontal Offset	None
Camera Height	None
Vehicle Recognition	None
Available Countries	None
Ver	
Ver	202407



## 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 Adapter Input Power)

## 1.2 Variant Model Differences

Addition of a simple derivative model due to the difference in fixed lenses  
(No electronics in the lens, same as the base model, no changes in circuitry, appearance, or hardware.)

## 1.3 Device Modifications

Not applicable

## 1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	QNO-C8023R	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT

## 1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Laptop	P95G001	9JM8HT2	DELL INC.	-
Laptop Adapter	HA65NM130	-	Chicony Power Technology(Suzhou)Co.,Ltd.	-
Alarm	-	-	-	-
Button Alarm	-	-	-	-
Micro SD Card	-	-	SanDisk	16 GB
PoE Injector	PT-PSE109GBRO-AH	-	Dongguan PROCET Network Technology Co.,Ltd	-
Headset	K550	-	Britz®	-
Smartphone	SM-N960N	-	Samsung Electronics Co., Ltd.	-



## 1.6 External I/O Cabling

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)	3.5	U
	Audio OUT	Headset	Audio In	2.0	U
	Audio In		Audio OUT	2.0	U
	Alarm OUT	Alarm	Alarm IN	3.5	U
	Alarm IN	Button Alarm	Alarm OUT	3.5	U
	Micro SD Slot	Micor SD Card	Micro SD Slot	-	-
PoE Injector	RJ-45 (LAN)	Laptop	RJ-45 (LAN)	2.0	U
Laptop	DC Jack	Laptop Adapter	DC Jack	1.5	U
	3.5 mm	Smartphone	3.5 mm	1.2	U

\* Unshielded=U, Shielded=S

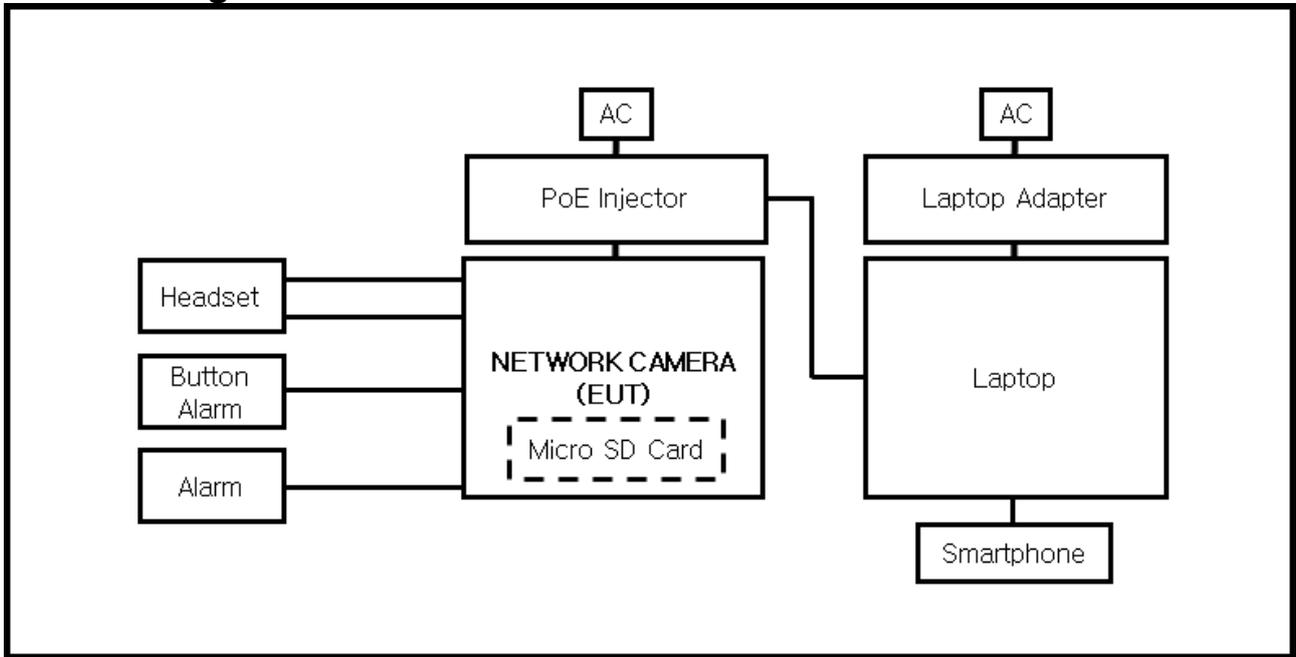
## 1.7 EUT Operating Mode(s)

Test mode	Normal operating	Test Voltages
Operating	<ul style="list-style-type: none"> <li>- Monitoring EUT Using Web Viewer, Ping Test</li> <li>- Check Audio Port Behavior Through Headset</li> <li>- When the Button Alarm is pressed, make sure the Alarm is working</li> <li>- Check the files stored on the Micro SD Card after testing</li> </ul>	AC 120 V, 60 Hz

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



## 1.8 Configuration





**1.9 Remarks when standards applied**

- The USB port was excluded from the test as a port for administrators.

**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 0008



## 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

Jul. 30, 2024

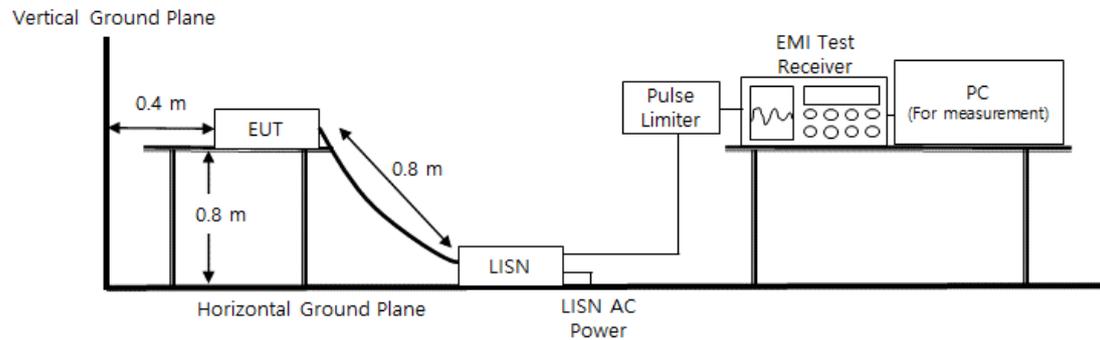
### Test Location

Electro wave Shieldroom #6

### Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	EMC32	R & S	9.12.00	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESR3	R & S	101783	11, 08, 2024
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101787	11, 08, 2024
<input checked="" type="checkbox"/>	LISN	ESH2-Z5	R & S	100450	11, 08, 2024
<input checked="" type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 08, 2024

### Diagram of test setup





**Test Conditions**

Temperature: (25,0 ± 0,0) °C  
Relative Humidity: (50,4 ± 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

Jul. 30, 2024

### Test Location

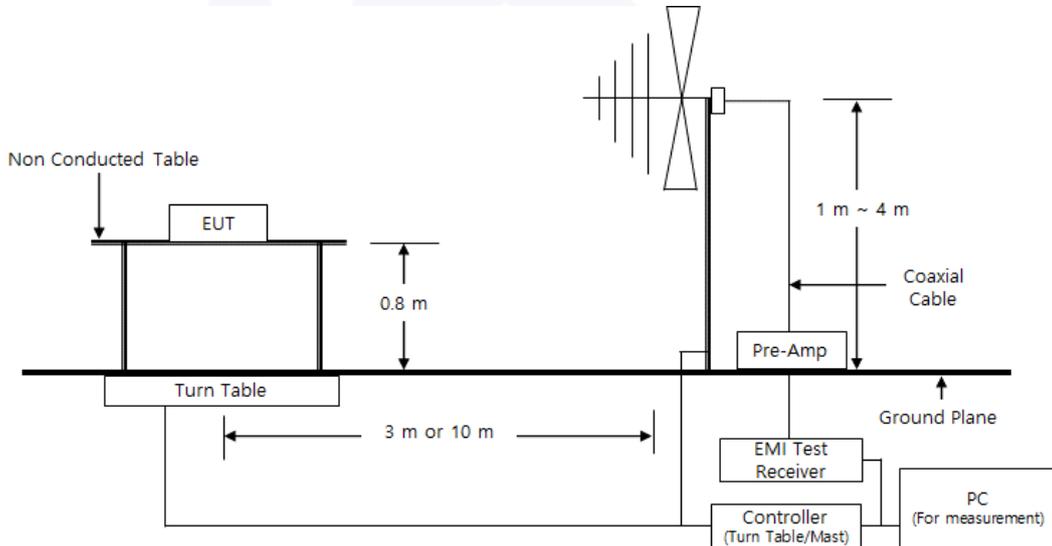
OPEN AREA TEST SITE #2

SEMI ANECHOIC CHAMBER #4(10m)

### Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESU26	R & S	100551	02, 13, 2025
<input checked="" type="checkbox"/>	AMPLIFIER	SCU 01	R & S	100603	11, 08, 2024
<input checked="" type="checkbox"/>	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	11, 17, 2024
<input checked="" type="checkbox"/>	ATTENUATOR	8491A	HP	32173	02, 13, 2025

### Diagram of test setup





**Test Conditions**

Temperature: (24,1 ± 0,1) °C  
Relative Humidity: (46,5 ± 0,1) % R.H.

**Frequency Range of Measurement**

30 MHz to 1 GHz

**Instrument Settings**

IF Band Width: 120 kHz

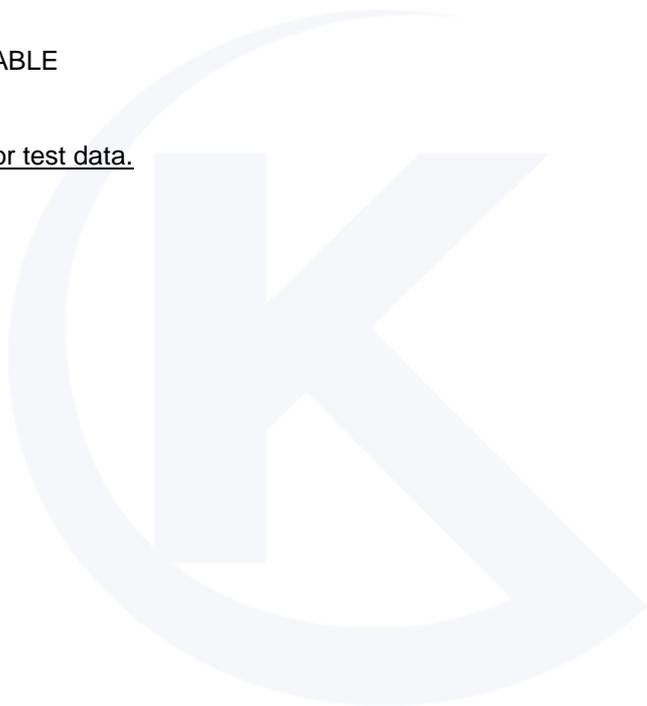
**Test Results**

The requirements are:

- PASS
- NOT PASS
- NOT APPLICABLE

**Remarks**

See Appendix A for test data.





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

### Test Date

Jul. 30, 2024

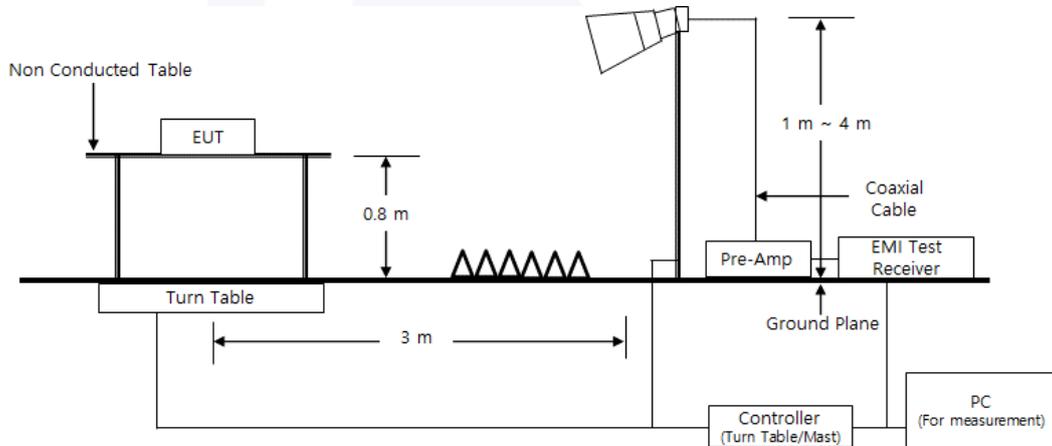
### Test Location

SEMI ANECHOIC CHAMBER #5

### Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	ES10/RE	TOYO Corporation	2022.01.000	-
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100552	02, 13, 2025
<input checked="" type="checkbox"/>	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	11, 03, 2024
<input checked="" type="checkbox"/>	PREAMPLIFIER	8449B	HP	3008A00538	04, 30, 2025
<input checked="" type="checkbox"/>	ATTENUATOR	8491B	HP	23094	02, 13, 2025

### Diagram of test setup





**Test Conditions**

Temperature: (23,5 ± 0,2)°C  
Relative Humidity: (47.7 ± 0,2) % R.H.

**Frequency Range of Measurement**

1 GHz to 6 GHz

**Instrument Settings**

IF Band Width: 1 MHz

**Test Results**

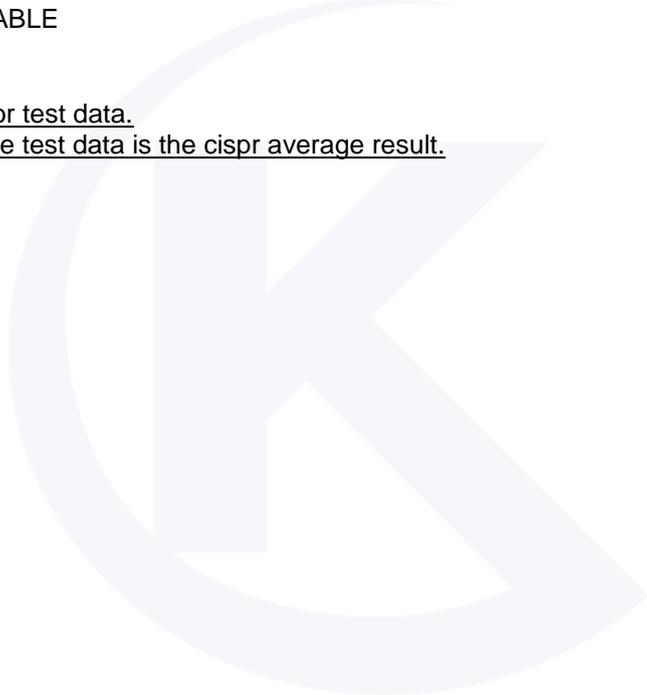
The requirements are:

- PASS
- NOT PASS
- NOT APPLICABLE

**Remarks**

See Appendix A for test data.

The Average of the test data is the cispr average result.





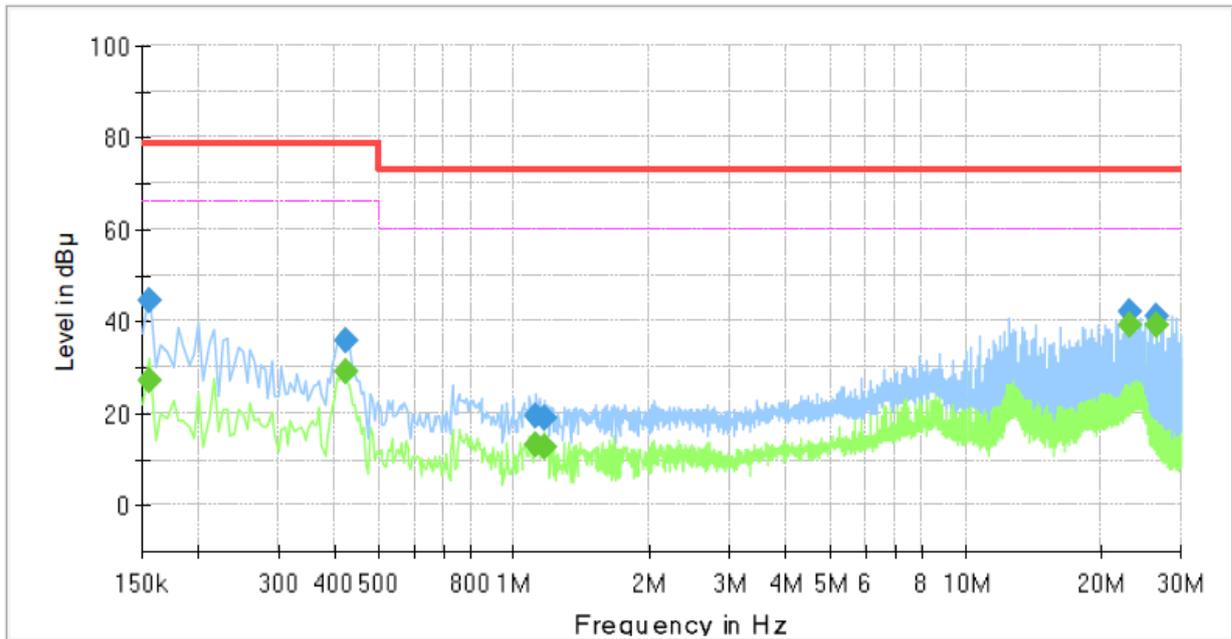
# APPENDIX A – TEST DATA

## Conducted Emissions at Mains Power Ports

HOT LINE

### Common Information

Test Description:	Conducted Emission
Job No.:	KES-EM242531
Phase:	L
Mode:	
Operator Name:	KES



### Final Result

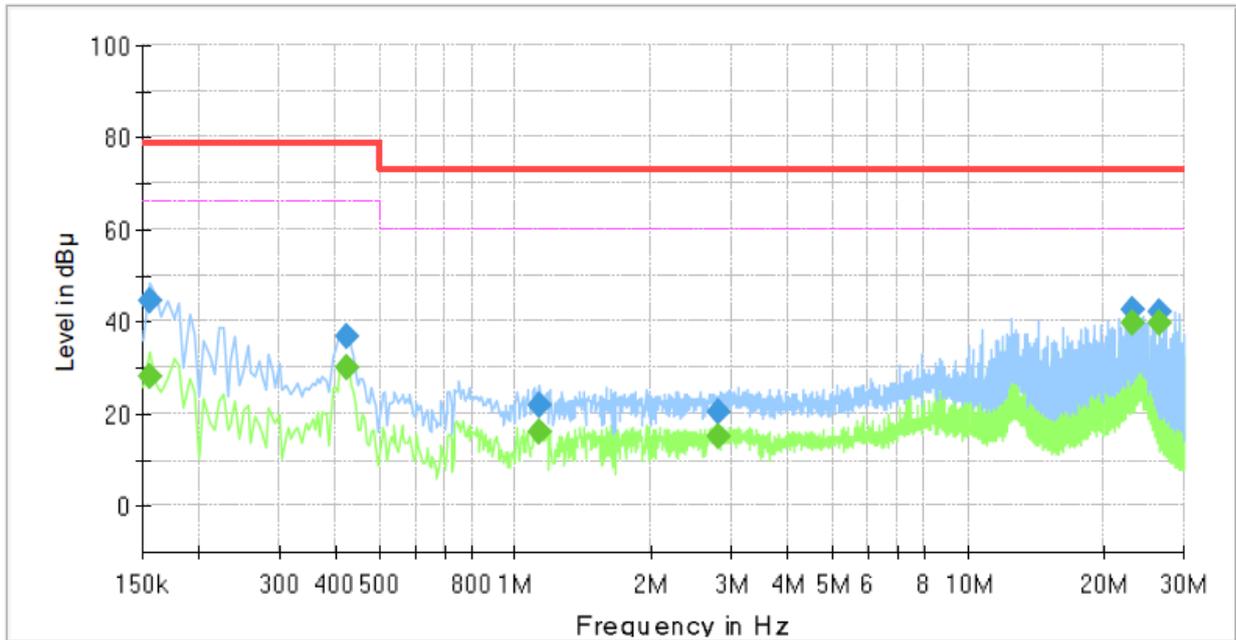
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	27.35	66.00	38.65	1000.0	9.000	L1	19.6
0.155000	44.53	---	79.00	34.47	1000.0	9.000	L1	19.6
0.425000	---	28.87	66.00	37.13	1000.0	9.000	L1	19.6
0.425000	35.98	---	79.00	43.02	1000.0	9.000	L1	19.6
1.120000	---	13.04	60.00	46.96	1000.0	9.000	L1	19.7
1.120000	19.40	---	73.00	53.60	1000.0	9.000	L1	19.7
1.165000	---	12.51	60.00	47.49	1000.0	9.000	L1	19.7
1.165000	19.17	---	73.00	53.83	1000.0	9.000	L1	19.7
23.130000	---	39.32	60.00	20.68	1000.0	9.000	L1	20.5
23.130000	41.98	---	73.00	31.02	1000.0	9.000	L1	20.5
26.610000	---	39.28	60.00	20.72	1000.0	9.000	L1	20.6
26.610000	41.32	---	73.00	31.68	1000.0	9.000	L1	20.6



NEUTRAL LINE

### Common Information

Test Description:	Conducted Emission
Job No.:	KES-EM242531
Phase:	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)
0.155000	---	28.02	66.00	37.98	1000.0	9.000	N	19.5
0.155000	44.62	---	79.00	34.38	1000.0	9.000	N	19.5
0.425000	---	29.88	66.00	36.12	1000.0	9.000	N	19.6
0.425000	37.03	---	79.00	41.97	1000.0	9.000	N	19.6
1.125000	---	15.94	60.00	44.06	1000.0	9.000	N	19.7
1.125000	21.95	---	73.00	51.05	1000.0	9.000	N	19.7
2.800000	---	15.26	60.00	44.74	1000.0	9.000	N	19.8
2.800000	20.27	---	73.00	52.73	1000.0	9.000	N	19.8
23.130000	---	39.85	60.00	20.15	1000.0	9.000	N	20.5
23.130000	42.59	---	73.00	30.41	1000.0	9.000	N	20.5
26.610000	---	39.77	60.00	20.23	1000.0	9.000	N	20.6
26.610000	41.87	---	73.00	31.13	1000.0	9.000	N	20.6

◆ Calculation

QuasiPeak[dBµV] / CAverage [dBµV] = Reading Value[dBµV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

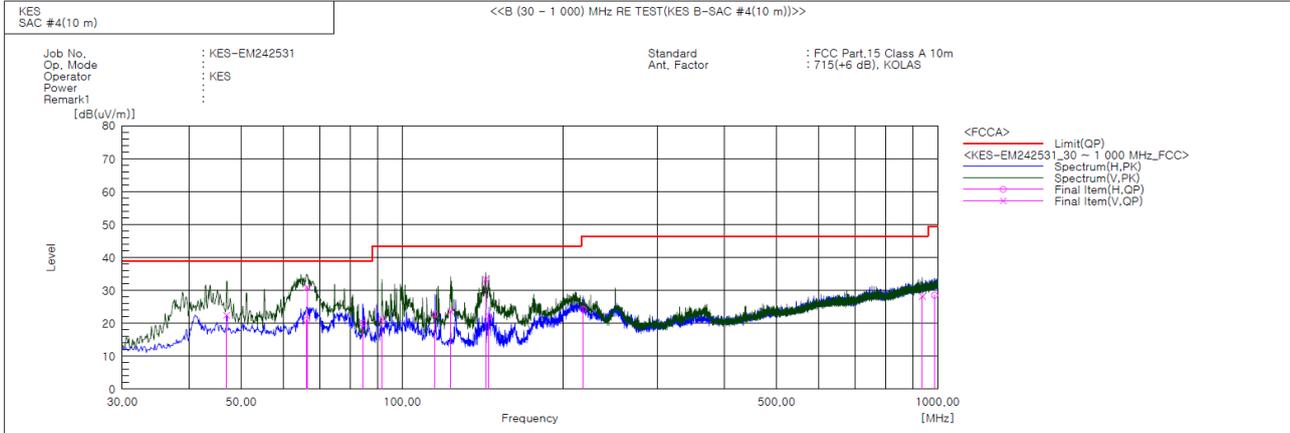
Reading Value : Not shown in the table.

Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))



### Radiated Electric Field Emissions(Below 1 GHz)

- 47 CFR Part 15, Subpart B

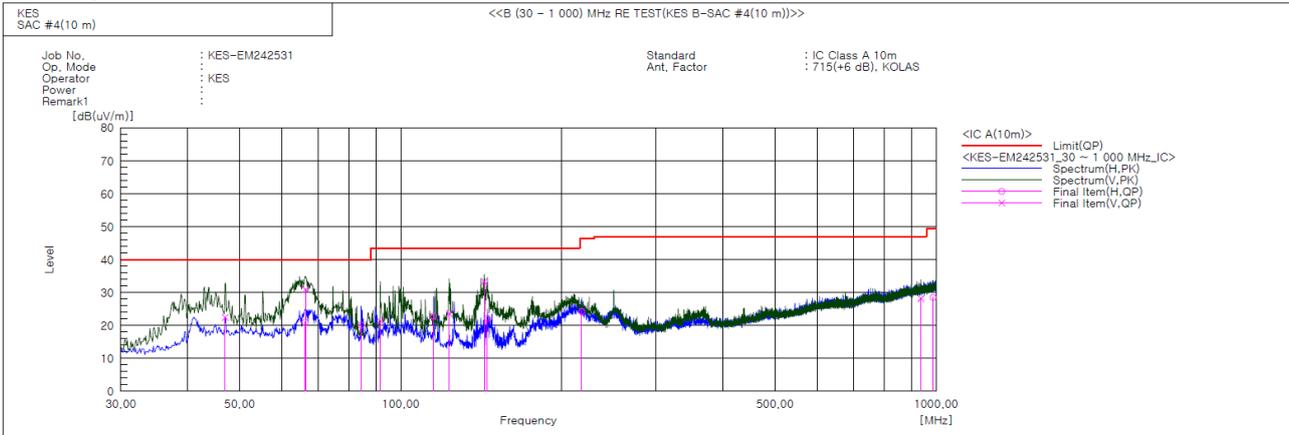


#### Final Result

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	46.975	V	43.7	-21.3	22.4	39.0	16.6	144.0	84.0	
2	66.254	H	44.7	-23.7	21.0	39.0	18.0	371.0	18.0	
3	66.375	V	54.6	-23.7	30.9	39.0	8.1	116.0	280.0	
4	84.320	H	46.6	-26.6	20.0	39.0	19.0	386.0	353.0	
5	91.595	V	44.9	-23.6	21.3	43.5	22.2	160.0	201.0	
6	115.118	H	46.2	-23.4	22.8	43.5	20.7	352.0	75.0	
7	123.120	V	48.0	-24.4	23.6	43.5	19.9	108.0	31.0	
8	143.248	V	58.5	-25.2	33.3	43.5	10.2	140.0	191.0	
9	145.188	H	47.3	-25.2	22.1	43.5	21.4	347.0	11.0	
10	217.695	H	43.8	-19.6	24.2	46.5	22.3	373.0	78.0	
11	936.829	V	30.9	-2.7	28.2	46.5	18.3	107.0	313.0	
12	987.148	H	30.5	-2.0	28.5	49.5	21.0	394.0	318.0	



- IC Regulation ICES-003 Issue 7



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	46.975	V	43.7	-21.3	22.4	40.0	17.6	144.0	84.0	
2	66.254	H	44.7	-23.7	21.0	40.0	19.0	371.0	18.0	
3	66.375	V	54.6	-23.7	30.9	40.0	9.1	116.0	280.0	
4	84.320	H	46.6	-26.6	20.0	40.0	20.0	386.0	353.0	
5	91.595	V	44.9	-23.6	21.3	43.5	22.2	160.0	201.0	
6	115.118	H	46.2	-23.4	22.8	43.5	20.7	352.0	75.0	
7	123.120	V	48.0	-24.4	23.6	43.5	19.9	108.0	31.0	
8	143.248	V	58.5	-25.2	33.3	43.5	10.2	140.0	191.0	
9	145.188	H	47.3	-25.2	22.1	43.5	21.4	347.0	11.0	
10	217.695	H	43.8	-19.6	24.2	46.4	22.2	373.0	78.0	
11	936.829	V	30.9	-2.7	28.2	47.0	18.8	107.0	313.0	
12	987.148	H	30.5	-2.0	28.5	49.5	21.0	394.0	318.0	

◆ Calculation

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)]

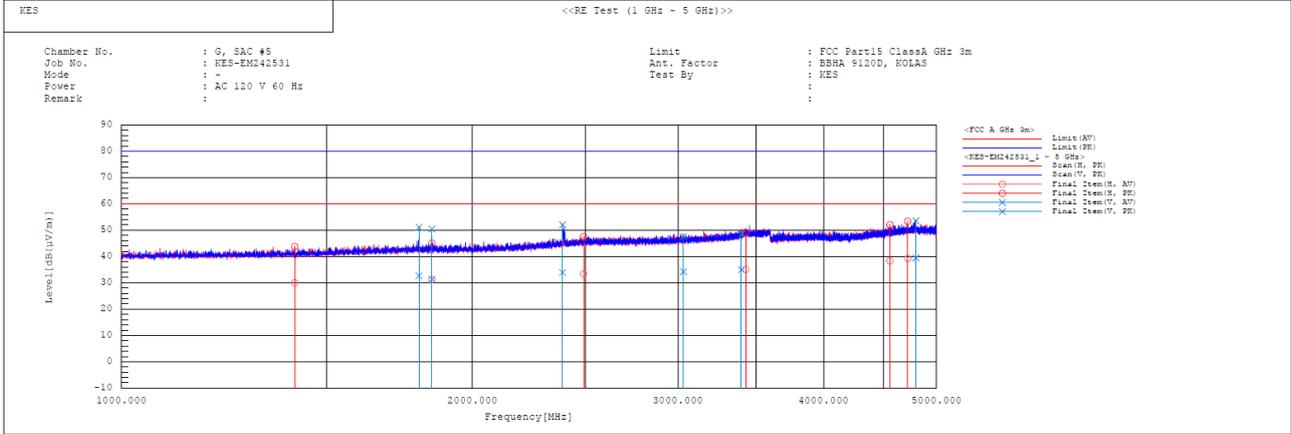
Reading(QP) : Reading value, Result(QP) : Reading value + Factor value

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



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

-( 1 ~ 5 ) GHz



Final Result

No.	Frequency [MHz]	Pol	Reading		c.f [dB(1/m)]	Result		Limit		Margin		Height [cm]	Angle [deg]	Remark
			AV [dB(μV)]	PK [dB(μV)]		AV [dB(μV/m)]	PK [dB(μV/m)]	AV [dB]	PK [dB]	AV [dB]	PK [dB]			
1	1408.000	H	29.7	43.5	0.3	30.0	43.8	60.0	80.0	30.0	36.2	369.5	302.3	
2	1799.200	V	30.7	49.1	2.0	32.7	51.1	60.0	80.0	27.3	28.9	116.7	223.6	
3	1844.800	H	29.0	42.9	2.2	31.2	45.1	60.0	80.0	28.8	34.9	347.6	207.9	
4	1845.600	V	29.1	48.2	2.2	31.3	50.4	60.0	80.0	28.7	29.6	133.6	128.5	
5	2388.400	V	29.6	47.7	4.3	33.9	52.0	60.0	80.0	26.1	28.0	110.8	119.3	
6	2490.800	H	28.7	42.9	4.7	33.4	47.6	60.0	80.0	26.6	32.4	327.8	326.3	
7	3032.400	V	27.9	41.3	6.3	34.2	47.6	60.0	80.0	25.8	32.4	122.2	263.9	
8	3401.200	V	28.2	41.6	6.8	35.0	48.4	60.0	80.0	25.0	31.6	171.4	278.7	
9	3429.600	H	28.3	42.3	6.8	35.1	49.1	60.0	80.0	24.9	30.9	293.0	171.8	
10	4559.200	H	27.7	41.5	10.6	38.3	52.1	60.0	80.0	21.7	27.9	329.5	103.8	
11	4721.600	H	28.0	42.1	11.3	39.3	53.4	60.0	80.0	20.7	26.6	398.1	133.7	
12	4799.200	V	27.8	42.0	11.6	39.4	53.6	60.0	80.0	20.6	26.4	149.8	238.5	



Report No. : KES-EM242531

- (5 ~ 18) GHz

- PK

Frequency (MHz)	Reading PK (dBuV)	Polarization	Height ( m )	ANT Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
5 738.400	41.000	H	1.000	32.950	8.500	33.730	48.720	80.000	31.280
8 962.400	41.100	V	1.000	38.930	10.710	34.590	56.150	80.000	23.850

- CISPR AV

Frequency (MHz)	Reading CISPR AV (dBuV)	Polarization	Height ( m )	ANT Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
5 738.400	27.000	H	1.000	32.950	8.500	33.730	34.720	60.000	25.280
8 962.400	26.400	V	1.000	38.930	10.710	34.590	41.450	60.000	18.550

## ◆ Calculation

$$\text{Result(QP)} [\text{dB}(\mu\text{V}/\text{m})] = (\text{Reading(QP)}[\text{dB}(\mu\text{V})] + \text{c.f}[\text{dB}(1/\text{m})])$$

$$\text{Margin(QP)}[\text{dB}] = \text{Limit}[\text{dB}(\mu\text{V}/\text{m})] - \text{Result(QP)} [\text{dB}(\mu\text{V}/\text{m})]$$

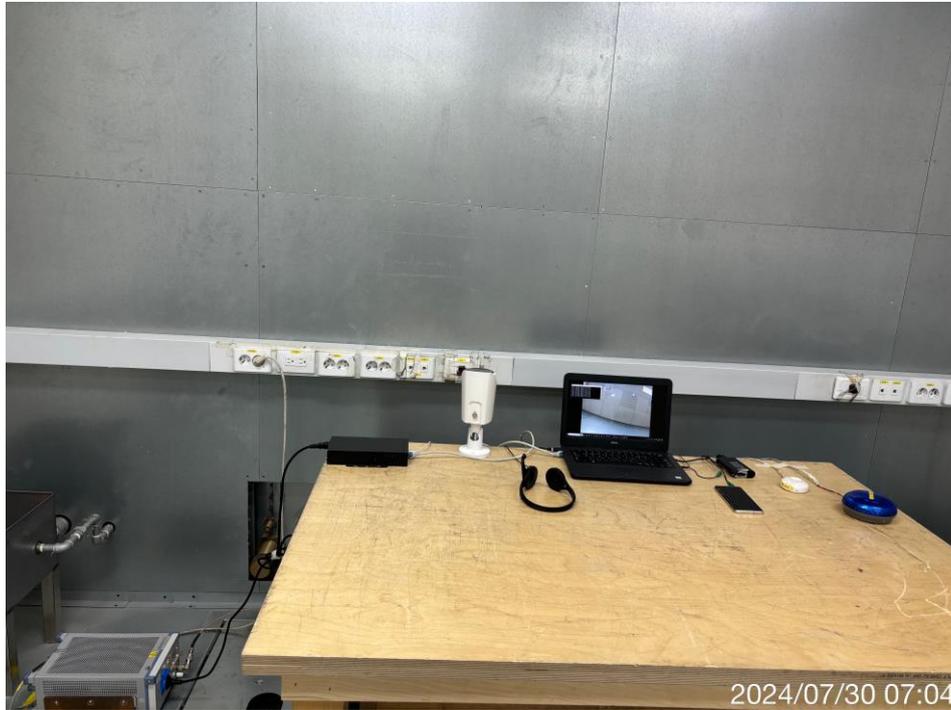
Reading(QP) : Reading value, Result(QP) : Reading value + Factor value

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



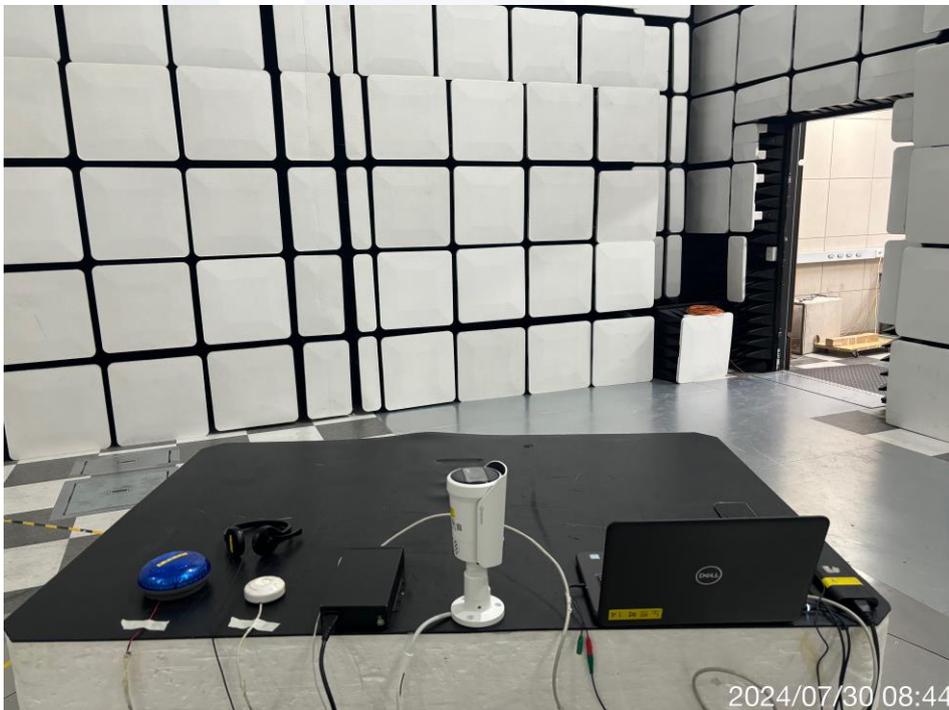
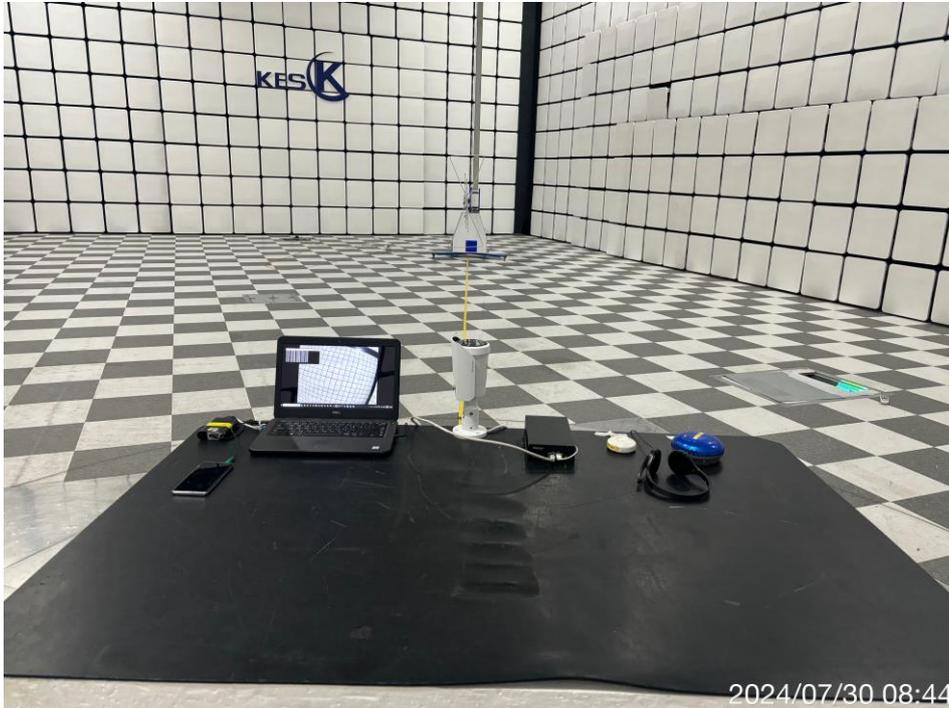
## Test Setup Photos and Configuration

### Conducted Emissions at Mains Power Ports



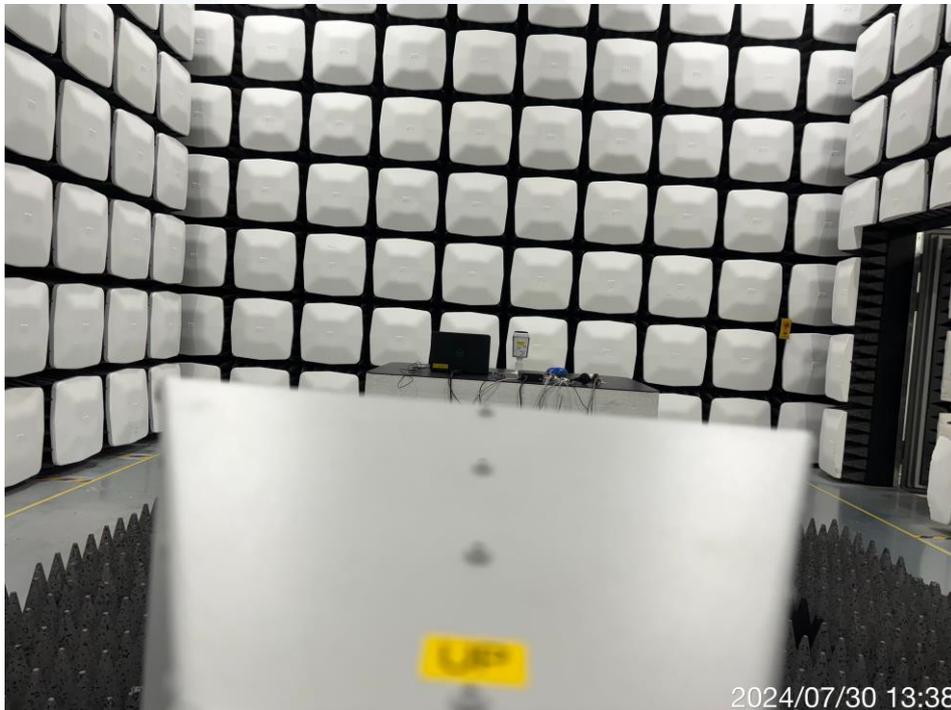


### Radiated Electric Field Emissions(Below 1 GHz)





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





### EUT External Photographs

(Top)



(Bottom)





## EUT Internal Photographs

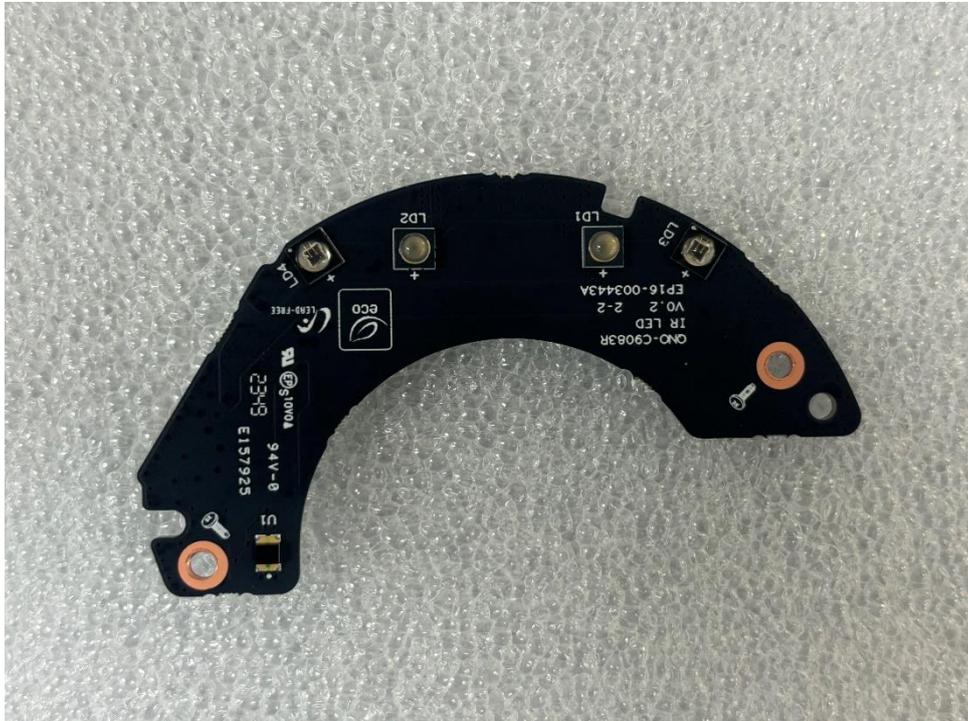
(Internal View)



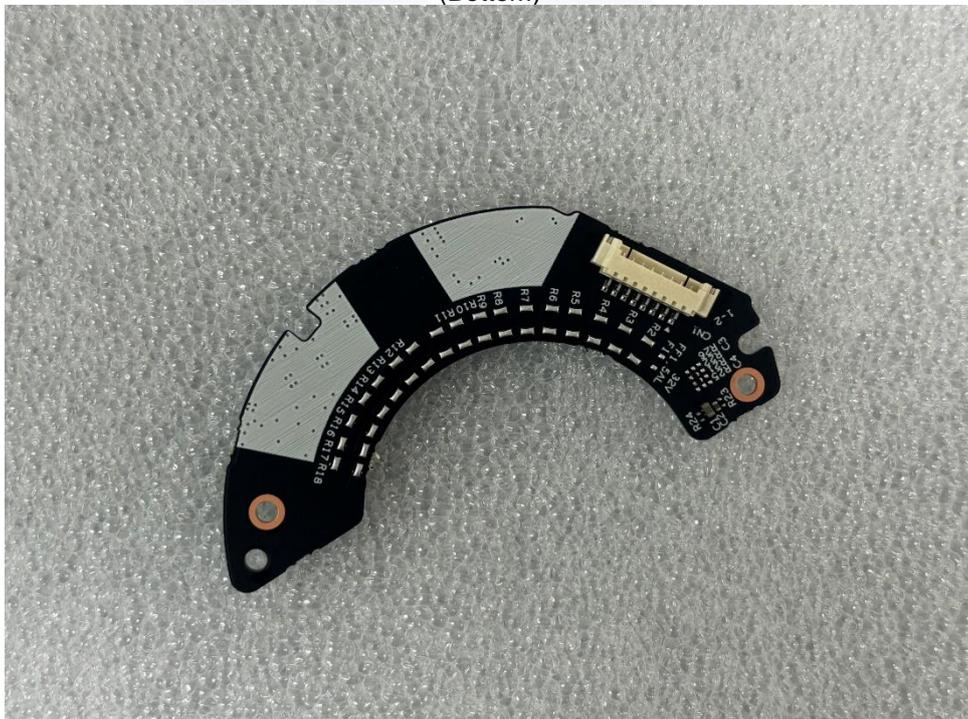


### EUT Internal View – Board 1

(Top)



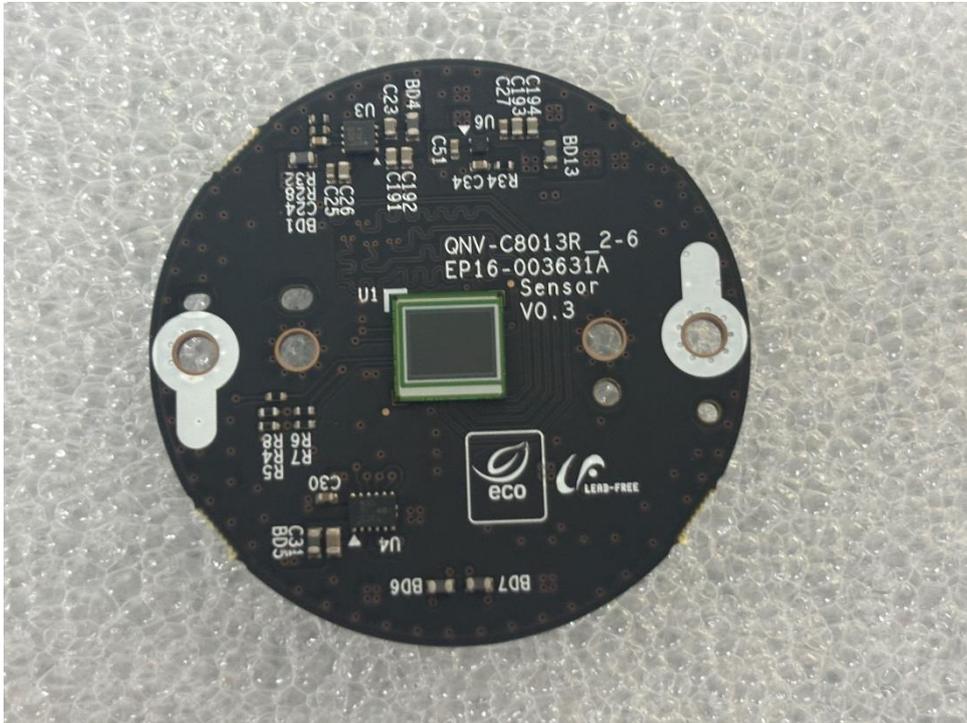
(Bottom)





### EUT Internal View – Board 2

(Top)



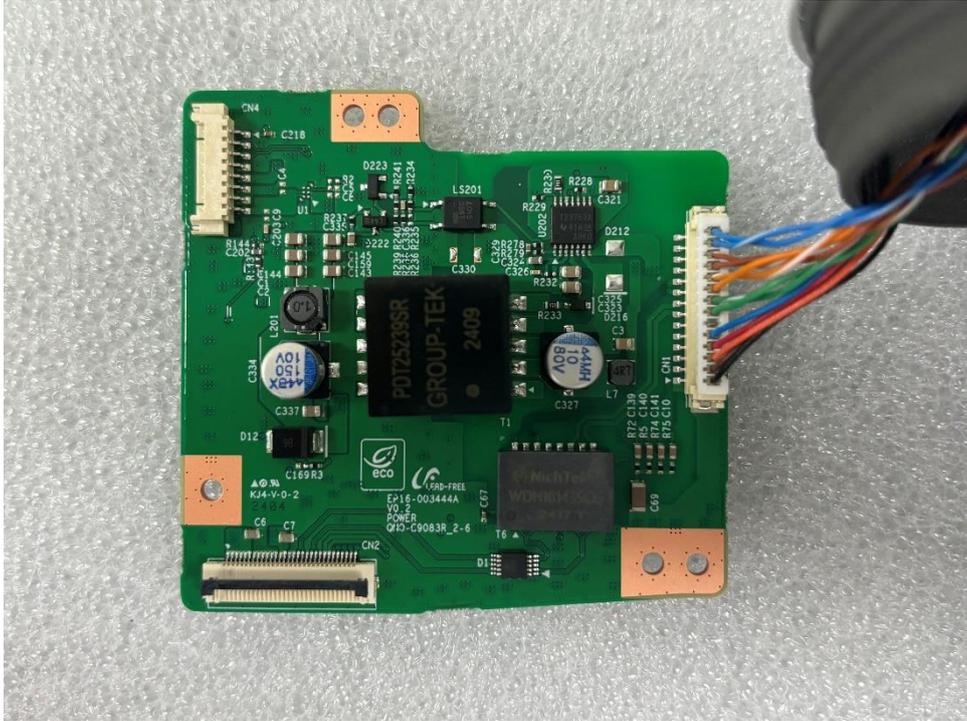
(Bottom)



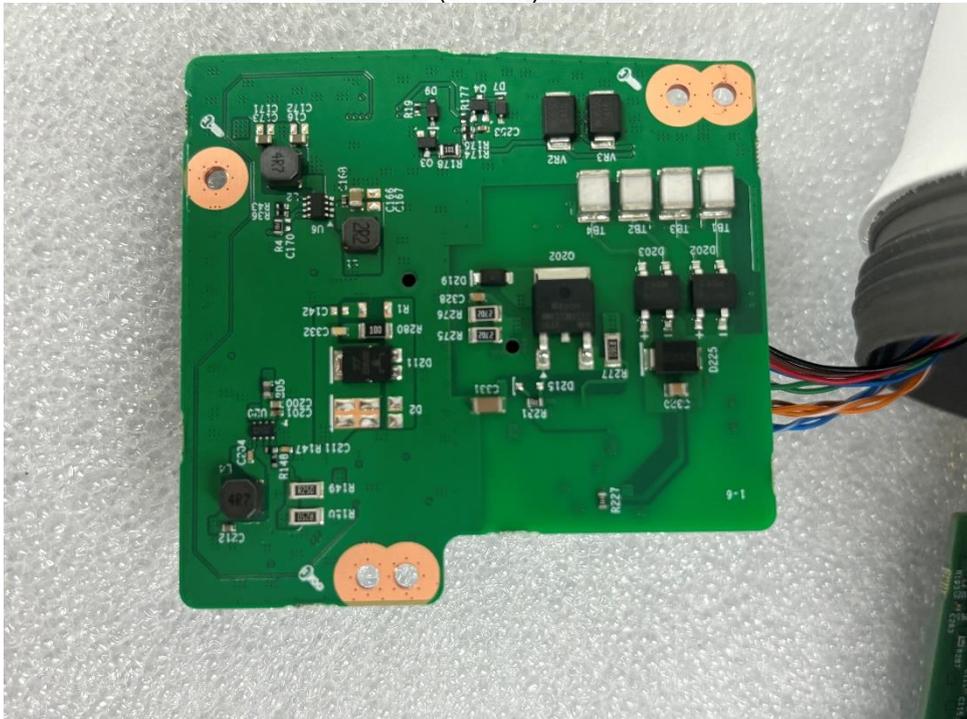


### EUT Internal View – Board 3

(Top)



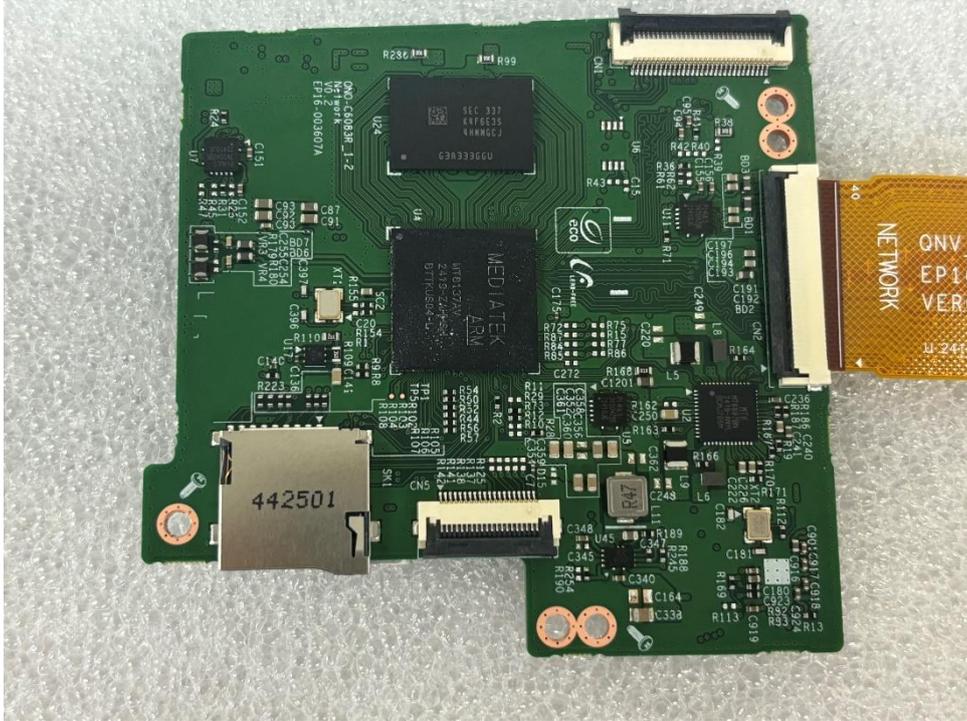
(Bottom)



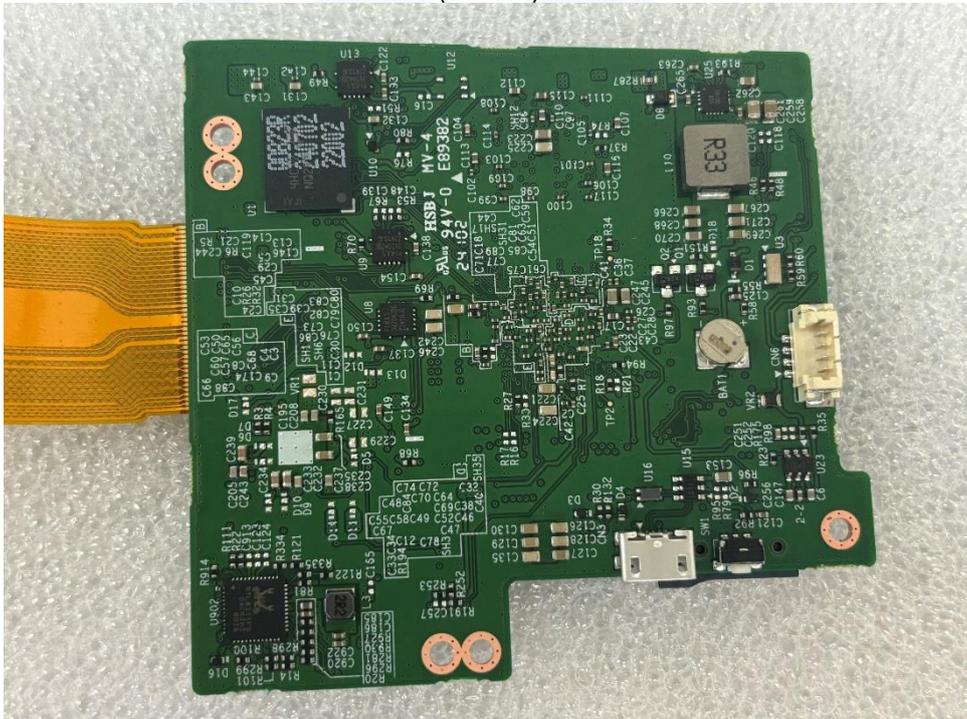


### EUT Internal View – Board 4

(Top)



(Bottom)





### EUT Internal View – Lens

(Top)



(Bottom)





## Label Photographs

### FCC Label



NETWORK CAMERA

QNO-C8023R

### IC Label

## CAN ICES-003(A) / NMB-003(A)

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.