TEST REPORT

KES Co., Ltd.
#3002, #3503, #3701, 40, Simin-daero365beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Republic of Korea
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. : QNP-6320HS

Variant Model : -

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 : Mar. 05, 2025

4. Test date : Mar. 16, 2025 ~ Mar. 18, 2025

5. Date of Issue : Mar. 31, 2025

6. Test Results : In Compliance

Tested by

[이거일]2025/03/31

Keo Il, Lee
EMC Test Engineer

Reviewed by

[최대중]2025/03/31

Dae Jung, 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
Mar. 31, 2025	KES-EM250813	Issued

TABLE OF CONTENTS

1.0 General Product Description

Main Specifications of EUT are:

Division		Specificity
Internal highest clock frequency		Above 108 ㎒
Power	Rated Power	PoE
	Test Power	AC 100 V, 60 ㎐
Ports	I/O Port	Micro SD Card Slot 1 EA, RJ-45 1 EA
	Unused Port / Service Port	Micro USB 1 EA
Components		Main Body 1 EA
Ethernet Speed		100 Mbps

Video	
Imaging Device	1/2.8" CMOS
Resolution	1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
Max. Framerate	H.265/H.264: Max. 60fps/50fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)
NETD	None
Pixel Size	None
Min. Illumination	Color: 0.05Lux(F1.6, 1/30sec) BW: 0.005Lux(F1.6, 1/30sec)
Video Out	None
Video Transmission Distance	None
Lens	
Focal Length (Zoom Ratio)	4.44~142.6mm(32x) zoom
Max. Aperture Ratio	F1.6(Wide)~F4.4(Tele)
Angular Field of View	H: 64.66°(Wide)~2.29°(Tele) / V: 38.08°(Wide)~1.30°(Tele)
Min. Object Distance	Wide: 1.5m(4.92ft), Tele: 2m(6.56ft)
Focus Control	Oneshot AF
Lens Type	DC auto iris
Mount Type	None
Optional Lens	None
Pan / Tilt / Rotate	
Pan / Tilt / Rotate Range	None
Pan Range	360° Endless
Pan Speed	Preset: 700°/sec, Manual: 0.024°/sec~200°/sec
Tilt Range	105°(-15°~90°)
Tilt Speed	Preset: 300°/sec, Manual: 0.024°/sec~200°/sec
Rotate Range	None
Sequence	Preset(300ea), Swing, Group(6ea), Trace, Tour, Auto Run, Schedule
Preset Accuracy	±0.2°

Operational	
Camera Title	Displayed up to 85 characters
Direction Indicator	Support
Day & Night	Auto(ICR)
Backlight Compensation	BLC, HLC, WDR, SSDR
Wide Dynamic Range	120dB
Digital Noise Reduction	SSNRV
Digital Image Stabilization	Support(built-in gyro sensor)
Defog	Support
Motion Detection	8ea, 8point polygonal zones
Privacy Masking	32ea, Quadrangle Support - Color: Grey/Green/Red/Blue/Black/White - Solid/Mosaic
Gain Control	OFF/ LOW/ MID/ HIGH
White Balance	ATW / AWC / Manual / Indoor / Outdoor / Mercury / Sodium
LDC	None
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2~1/12,000sec)
Digital PTZ	None
Video Rotation	Flip, Mirror
Analytics	Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line * Audio detection(with NW I/O Box)
Business Intelligence	None
Serial Interface	None
Alarm I/O	None
Alarm Triggers	Analytics, Network disconnect * Alarm input(with NW I/O Box)
Alarm Events	File upload via FTP and e-mail Notification via e-mail SD/SDHC/SDXC or NAS recording at event triggers PTZ Preset Handover * Alarm output(with NW I/O Box)

Network	
Ethernet	~~Metal shielded~~ RJ-45(10/100BASE-T)
Video Compression	H.265/H.264,MJPEG
Audio Compression	None
Smart Codec	Manual(5ea area), WiseStreamⅡ
Video Quality Adjustment	H.264/H.265: Target bitrate level control MJPEG: Target bitrate level control
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR
Streaming	Unicast(20 users) / Multicast (128 user)Multiple streaming(Up to 10 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, PIM-SM, UPnP, Bonjour, LLDP, SRTP
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, Hungarian, Greek
Web Viewer	None
Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB
Memory	1024MB RAM, 256MB Flash
Environmental & Electrical	
Operating Temperature / Humidity	Normal : -35°C~+55°(-31°F ~ +131°F) / Intermittent : -40°C~+60°C(-40°F ~ +140°F) * Start up should be done at above -25°C Less than 95% RH(Non-condensing)
Storage Temperature / Humidity	-50°C~+60°C (-58°F~+140°F) / Less than 95% RH(Non-condensing)
Certification	IP66/IP67, IK10, NEMA4X
Input Voltage	PoE+(IEEE802.3at, Class4)
Power Consumption(TBD)	Max. 23W, Typ. 14W (TBD)

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 100 V, 60 Hz

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	QNP-6320HS	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
PoE Injector	PT-PSE109GBRO-AH-S	-	Dongguan PROCET Network Technology Co., Ltd	-
Laptop	LG15N54	-	LG Electronics	-
Laptop Adapter	PA-1900-14	-	LITE-ON TECHNOLOGY (CHANGZHOU)CO., LTD	-
Micro SD Card	-	-	SanDisk	16 GB

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)	3.3	U
	Micro SD Slot	Micro SD Card	Micro SD Slot	-	-
PoE Injector	RJ-45 (LAN)	Laptop	RJ-45 (LAN)	2.8	U
Laptop	DC Jack	Laptop Adapter	DC Jack	1.6	U

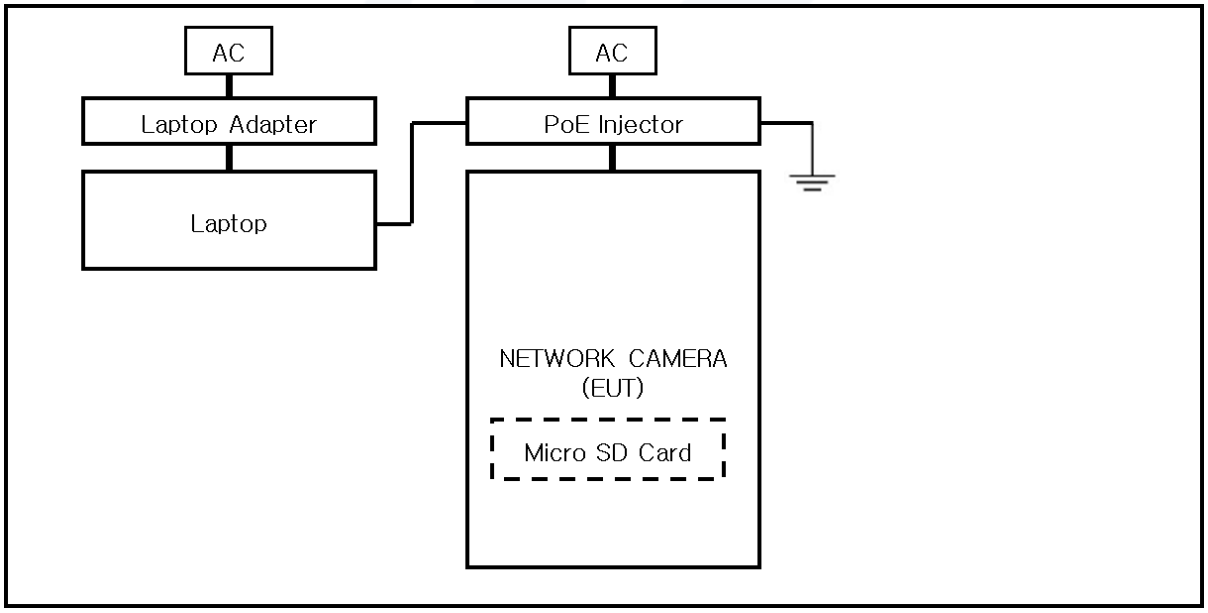
* Unshielded=U, Shielded=S

1.7 EUT Operating Mode(s)

Test mode	Normal operating
Operating	Checked the network status of the EUT with the laptop Ping test, and Checked the camera operation with watching streaming of through the Web Viewer. During the test, checked if EUT recognized Micro SD Cards insterted. After testing, check the data saving in Micro SD Cards.

EUT Test operating S/W		
Name	**Version**	**Manufacture Company**
Web Viewer	-	HANWHA VISION VIETNAM COMPANY LIMITED

1.8 Configuration



1.9 Remarks when standards applied

- USB ports are not used and have not been tested. (Port for service)

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, Yeoju-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:

☒ **VCCI-CISPR 32:2016** ☒ Class A ☐ Class B

2.1 Conducted Emissions Mains Power Ports

Test Date
N/A

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	11, 06, 2025
☐	LISN	ENV216	R & S	101786	01, 09, 2026
☐	ARTIFICIAL MAINS NETWORK	ESH2-Z5	R & S	100450	11, 06, 2025
☐	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 06, 2025

Test Conditions
Temperature: ℃
Relative Humidity: % R.H.

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

Test Results
The requirements are:

☐ PASS
☐ NOT PASS
☒ NOT APPLICABLE

Remarks
The LAN port is regarded as a wired communication network port and power-related ports are not tested.

2.2 Conducted Emissions at Telecommunication Ports

Test Date
Mar. 17, 2025

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	11, 06, 2025
☒	LISN	ENV216	R & S	101786	01, 09, 2026
☒	ARTIFICIAL MAINS NETWORK	ESH2-Z5	R & S	100450	11, 06, 2025
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 06, 2025
☒	8-WIRE ISN CAT3,5	ENY81	R & S	100174	11, 12, 2025

Test Conditions
Temperature: (23,4 ± 0,1) ℃
Relative Humidity: (46,2 ± 0,1) % R.H.

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

2.3 Radiated Electric Field Emissions(Below 1 ㎓)

Test Date
Mar. 16, 2025

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	ESR3	R & S	101781	01, 09, 2026
☒	AMPLIFIER	SCU 01	R & S	100603	11, 06, 2025
☒	BILOG ANTENNA	VULB 9168	SCHWARZBECK	9168-461	05, 09, 2026
☒	ATTENUATOR	6806.17.A	HUBER+SUHNER	-	02, 13, 2026

Test Conditions
Temperature: (23,3 ± 0,1) ℃
Relative Humidity: (46,3 ± 0,1) % R.H.

Frequency Range of Measurement
30 ㎒ to 1 ㎓

Instrument Settings
IF Band Width: 120 ㎑

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

2.4 Radiated Electric Field Emissions(Above 1 ㎓)

Test Date
Mar. 18, 2025

Test Location
SEMI ANECHOIC CHAMBER #3

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	02, 13, 2026
☒	PREAMPLIFIER	8449B	AGILENT	3008A01967	03, 05, 2026
☒	ATTENUATOR	8491A	HP	35496	02, 13, 2026
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 05, 2026

Test Conditions
Temperature: (23,4 ± 0,1) ℃
Relative Humidity: (46,3 ± 0,1) % R.H.

Frequency Range of Measurement
1 ㎓ to 6 ㎓

Instrument Settings
IF Band Width: 1 ㎒

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

HOT LINE

N/A

NEUTRAL LINE

N/A

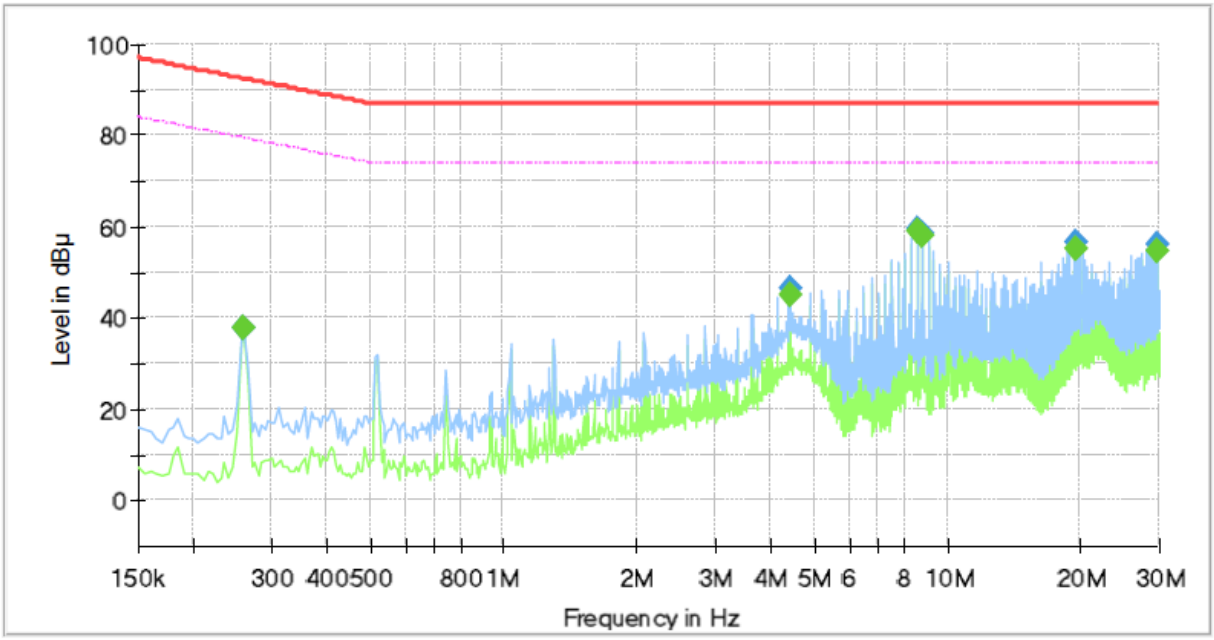
♦ Calculation
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.
Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

Conducted Emissions at Telecommunication Ports

[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Job No.:	KES-EM250813
Mode :	
Speed :	100 Mbps
Operator Name:	KES

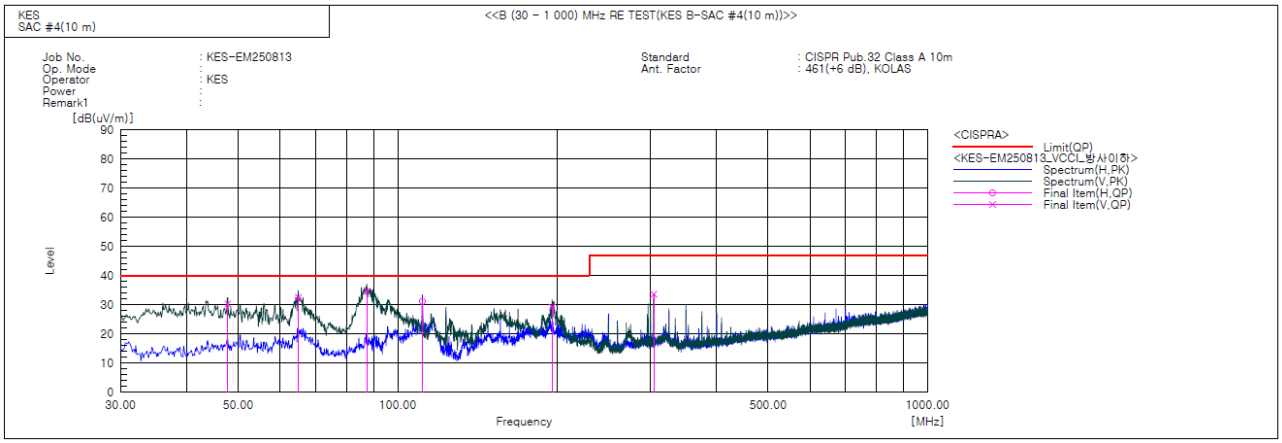


Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.260000	---	37.82	79.43	41.61	1000.0	9.000	Single Line	19.6
0.260000	37.81	---	92.43	54.62	1000.0	9.000	Single Line	19.6
4.400000	---	44.94	74.00	29.06	1000.0	9.000	Single Line	19.5
4.400000	46.23	---	87.00	40.77	1000.0	9.000	Single Line	19.5
8.540000	---	59.02	74.00	14.98	1000.0	9.000	Single Line	19.6
8.540000	59.31	---	87.00	27.69	1000.0	9.000	Single Line	19.6
8.800000	---	58.24	74.00	15.76	1000.0	9.000	Single Line	19.6
8.800000	58.40	---	87.00	28.60	1000.0	9.000	Single Line	19.6
19.410000	---	55.19	74.00	18.81	1000.0	9.000	Single Line	19.9
19.410000	56.37	---	87.00	30.63	1000.0	9.000	Single Line	19.9
29.765000	---	54.55	74.00	19.45	1000.0	9.000	Single Line	20.3
29.765000	56.13	---	87.00	30.87	1000.0	9.000	Single Line	20.3

♦ 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 (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

Radiated Electric Field Emissions(Below 1 ㎓)



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	47.824	V	51.3	-21.0	30.3	40.0	9.7	100.0	165.0	
2	64.920	V	54.3	-21.8	32.5	40.0	7.5	107.0	254.0	
3	87.473	V	60.8	-26.2	34.6	40.0	5.4	151.0	299.0	
4	111.359	H	54.5	-23.3	31.2	40.0	8.8	400.0	132.0	
5	195.628	V	51.0	-21.8	29.2	40.0	10.8	111.0	287.0	
6	304.268	V	50.4	-16.8	33.6	47.0	13.4	115.0	168.0	

♦ Calculation

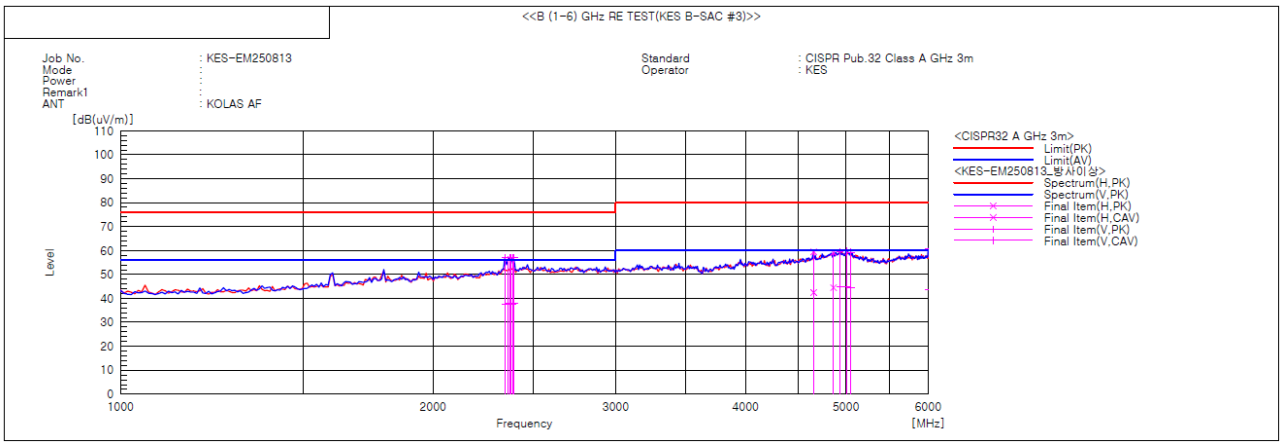
Result(QP) [dB(㎶/m)] = (Reading(QP)[dB(㎶)] + c.f[dB(1/m)]

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



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	2346.154	V	49.5	30.1	7.4	56.9	37.5	76.0	56.0	19.1	18.5	100.0	213.3	
2	2362.179	V	48.6	30.4	7.6	56.2	38.0	76.0	56.0	19.8	18.0	100.0	213.3	
3	2370.192	V	49.4	30.5	7.6	57.0	38.1	76.0	56.0	19.0	17.9	100.0	196.6	
4	2378.205	V	49.4	29.8	7.7	57.1	37.5	76.0	56.0	18.9	18.5	100.0	211.2	
5	2386.218	V	49.3	29.7	7.7	57.0	37.4	76.0	56.0	19.0	18.6	100.0	213.3	
6	2394.231	V	49.3	30.2	7.8	57.1	38.0	76.0	56.0	18.9	18.0	100.0	187.2	
7	4653.846	H	43.9	27.0	15.5	59.4	42.5	80.0	60.0	20.6	17.5	100.0	190.2	
8	4862.180	H	42.0	27.4	17.1	59.1	44.5	80.0	60.0	20.9	15.5	100.0	69.0	
9	4934.295	V	42.1	27.5	17.5	59.6	45.0	80.0	60.0	20.4	15.0	100.0	4.1	
10	5006.411	V	42.1	27.0	17.7	59.8	44.7	80.0	60.0	20.2	15.3	100.0	7.9	
11	5054.487	V	41.9	26.9	17.4	59.3	44.3	80.0	60.0	20.7	15.7	100.0	153.1	
12	6000.000	V	42.9	25.8	17.9	60.8	43.7	80.0	60.0	19.2	16.3	100.0	225.7	

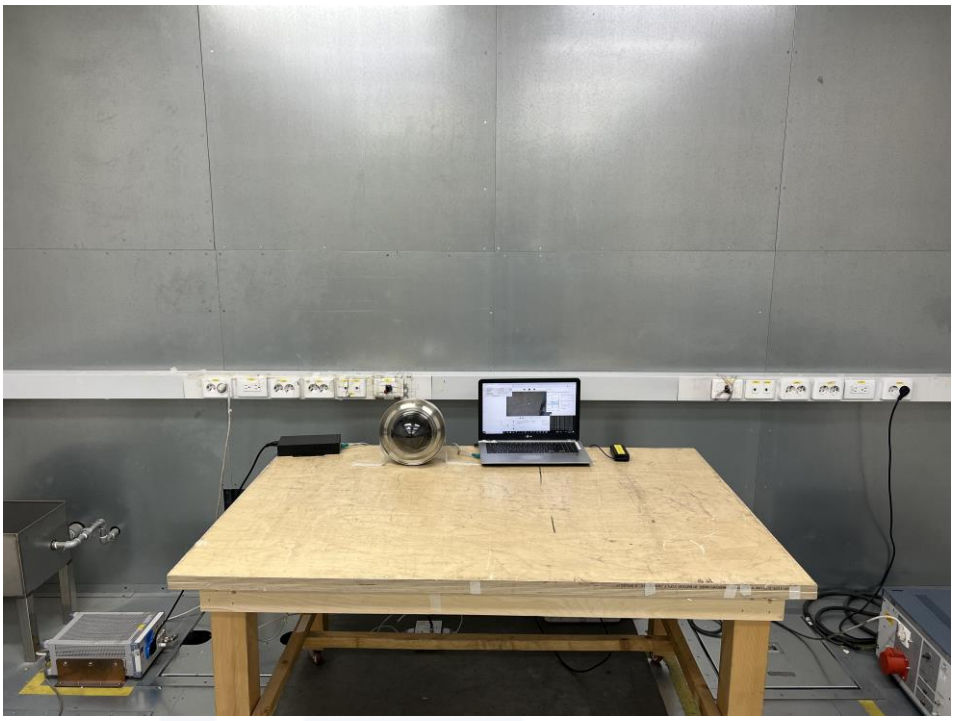
♦ Calculation
Result(PK/CAV) [dB(㎶/m)] = (Reading(PK/CAV)[dB(㎶)] + c.f[dB(1/m)]
Margin(PK/CAV)[dB] = Limit[dB(㎶/m)] - Result(PK/CAV) [dB(㎶/m)]
Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value
Limit(PK/CAV) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

Test Setup Photos and Configuration

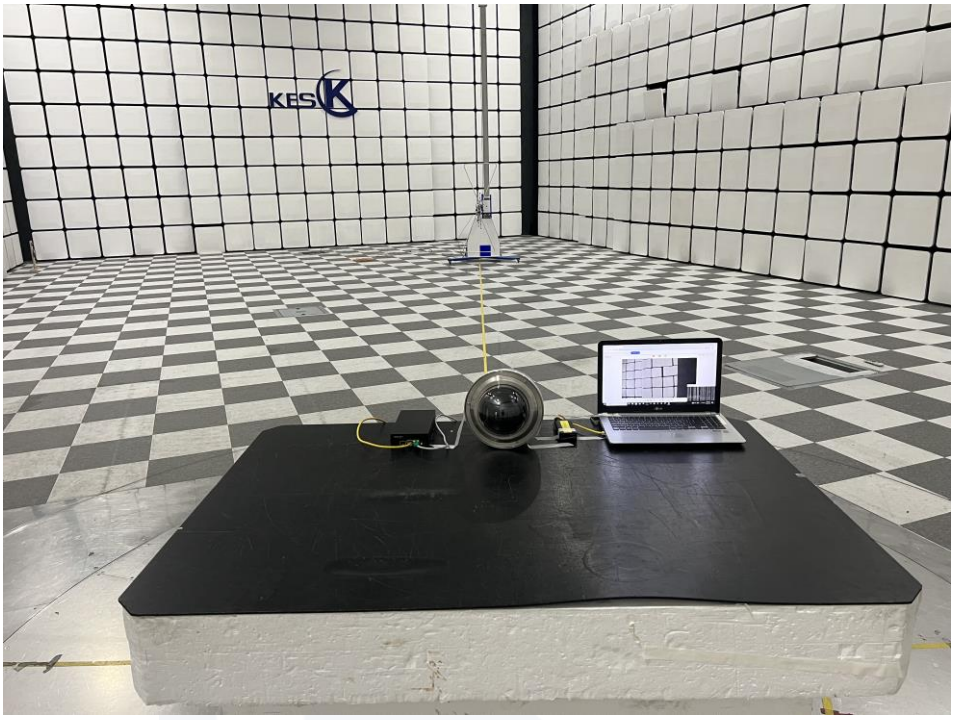
Conducted Emissions at Mains Power Ports

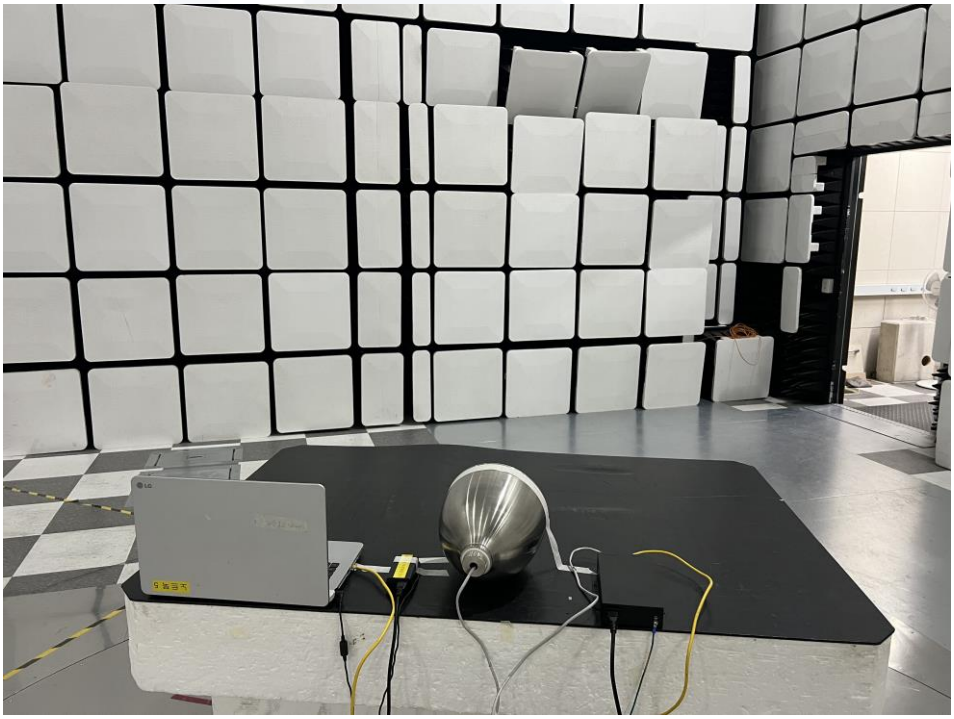
N/A

Conducted Emissions at Telecommunication Ports

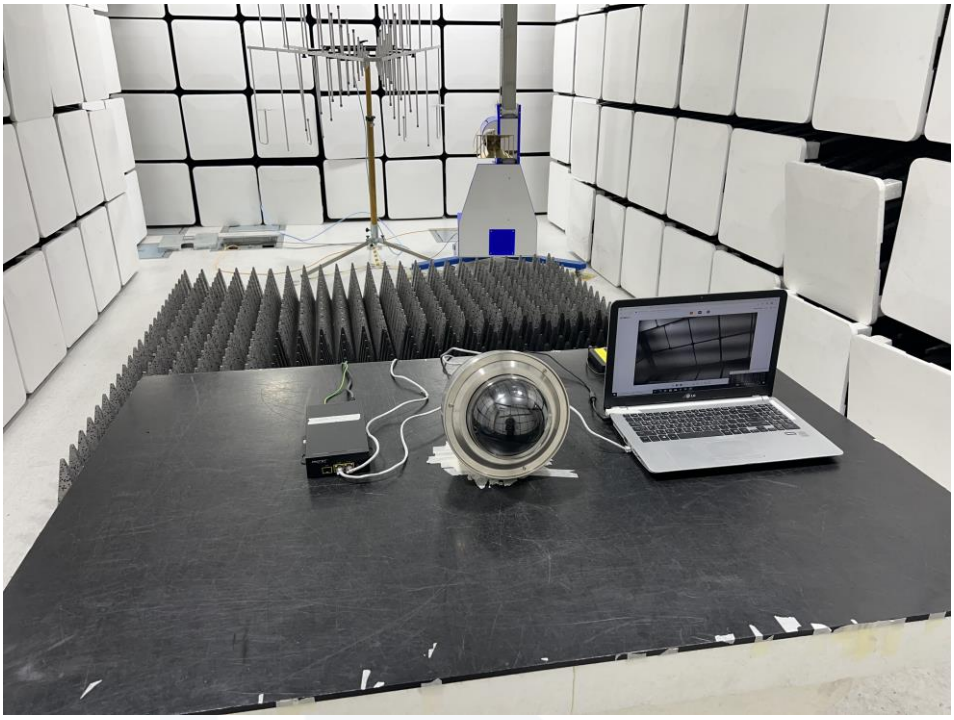


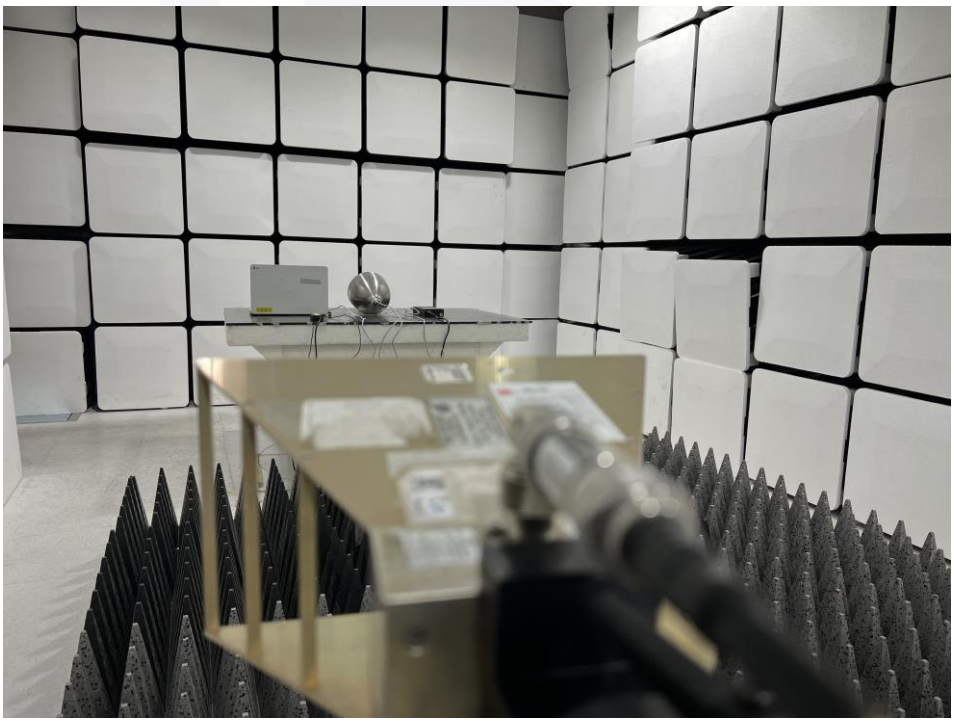
Radiated Electric Field Emissions(Below 1 ㎓)





Radiated Electric Field Emissions(Above 1 ㎓)

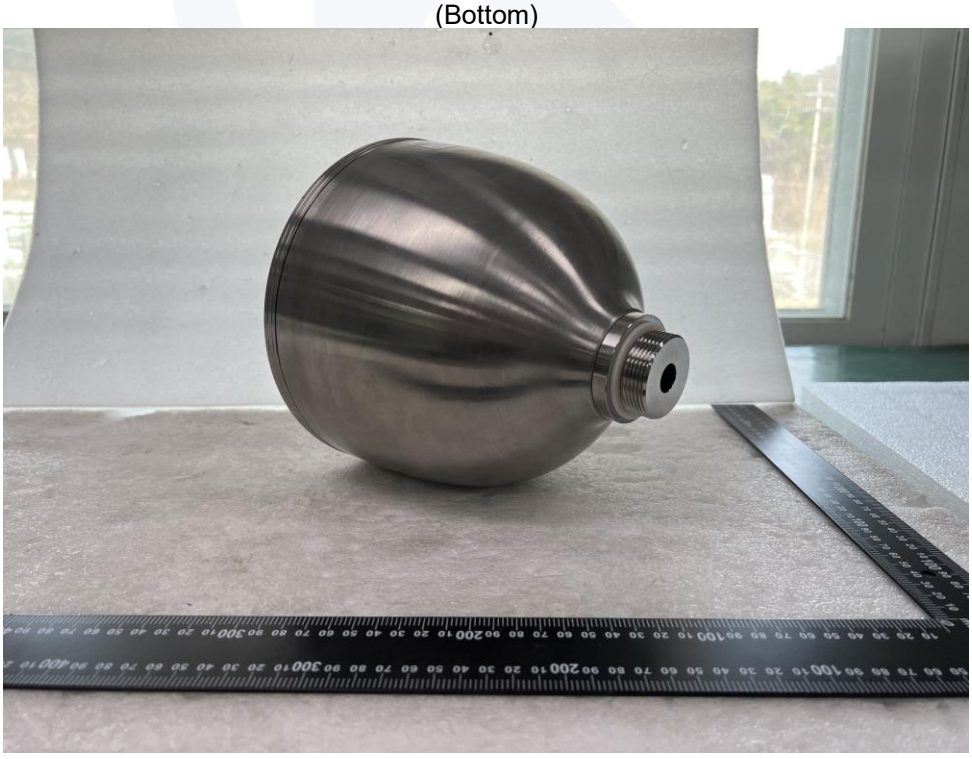




EUT External Photographs

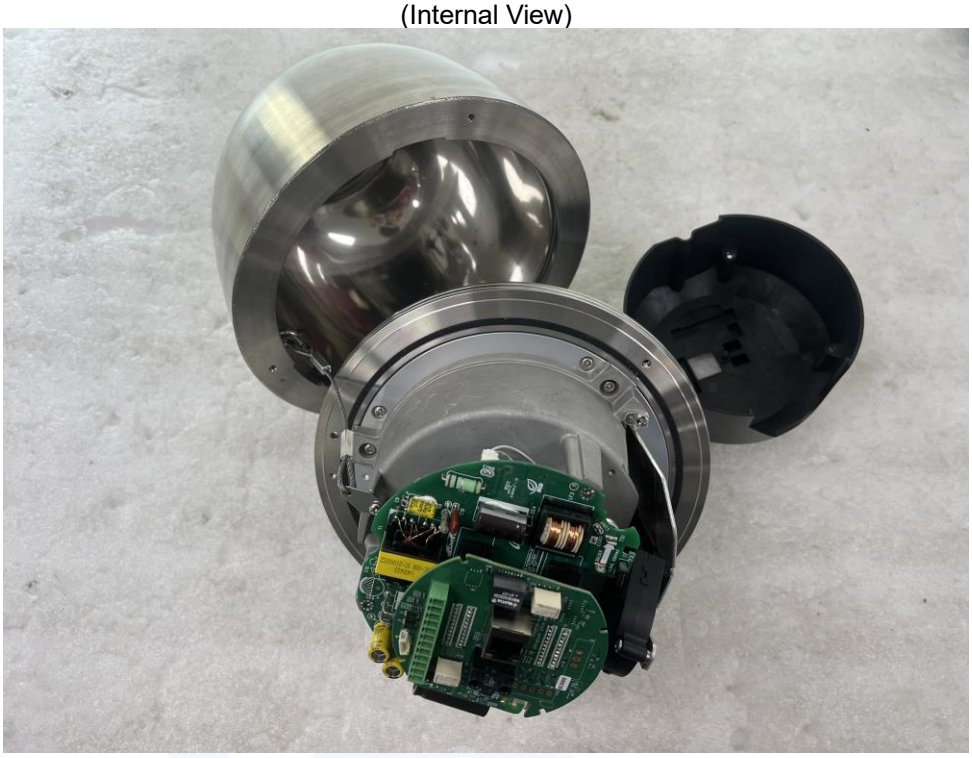
(Top)

(Bottom)



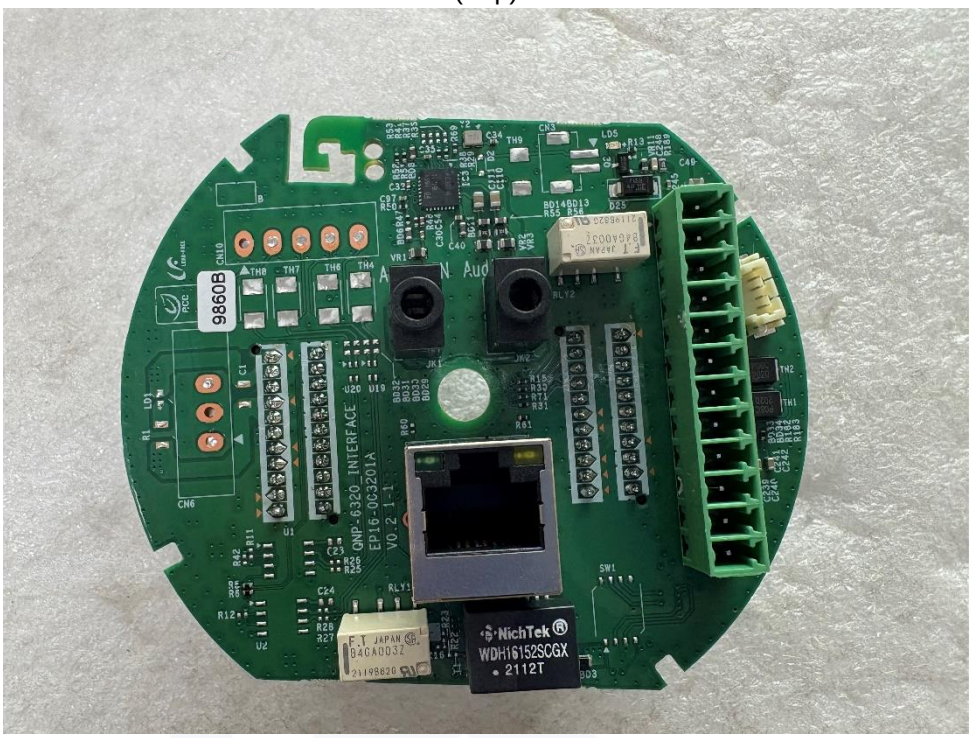
EUT Internal Photographs

(Internal View)

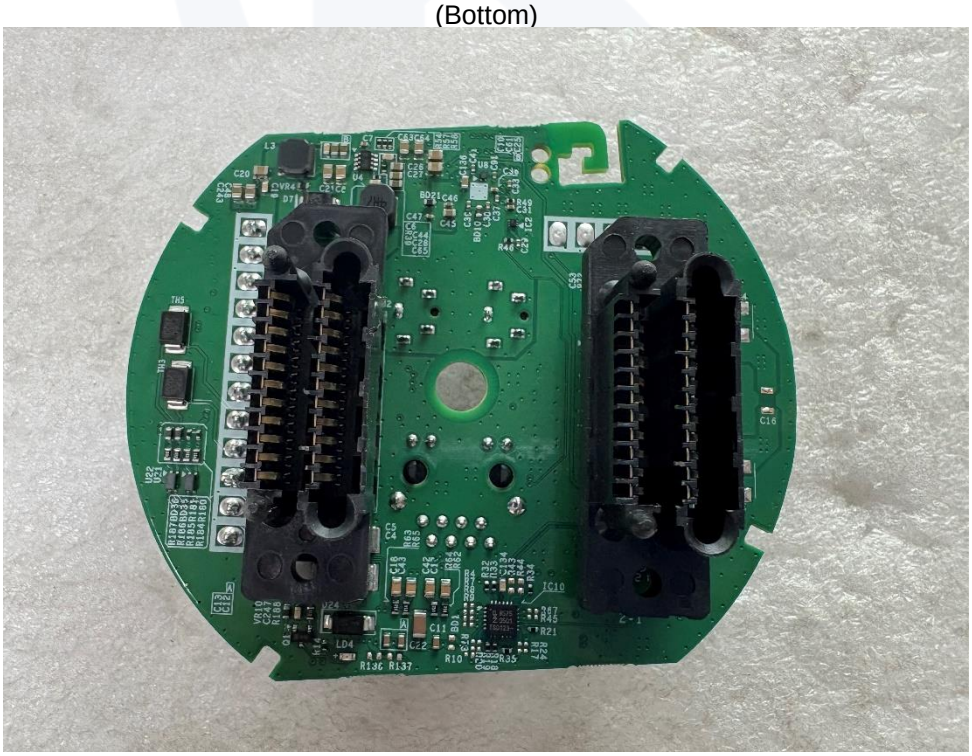


EUT Internal View – Board 1

(Top)

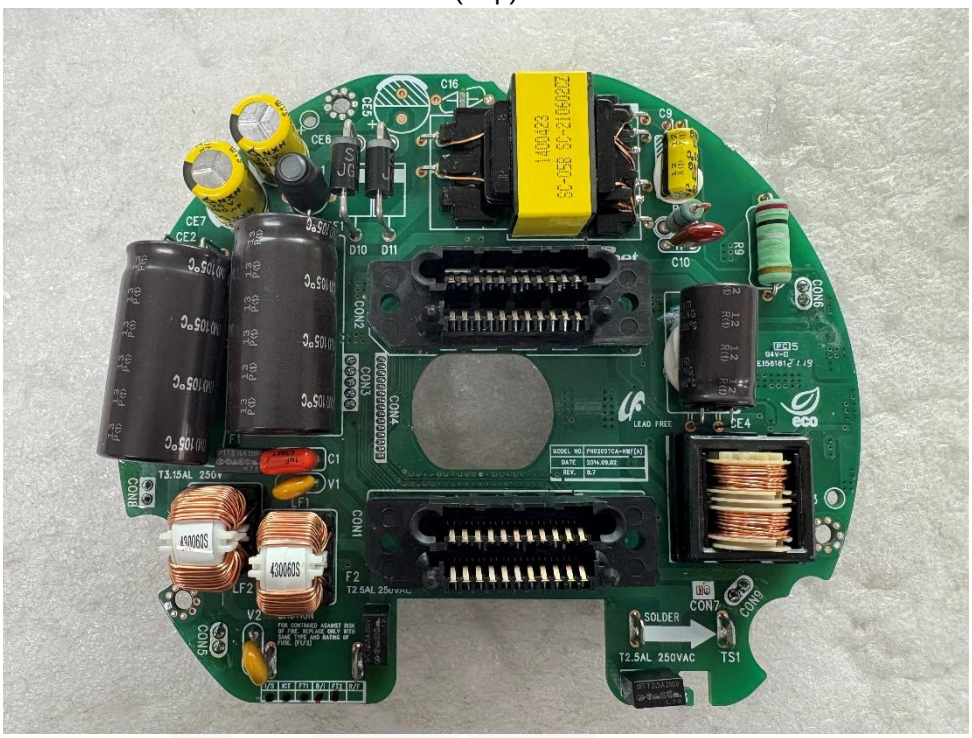


(Bottom)

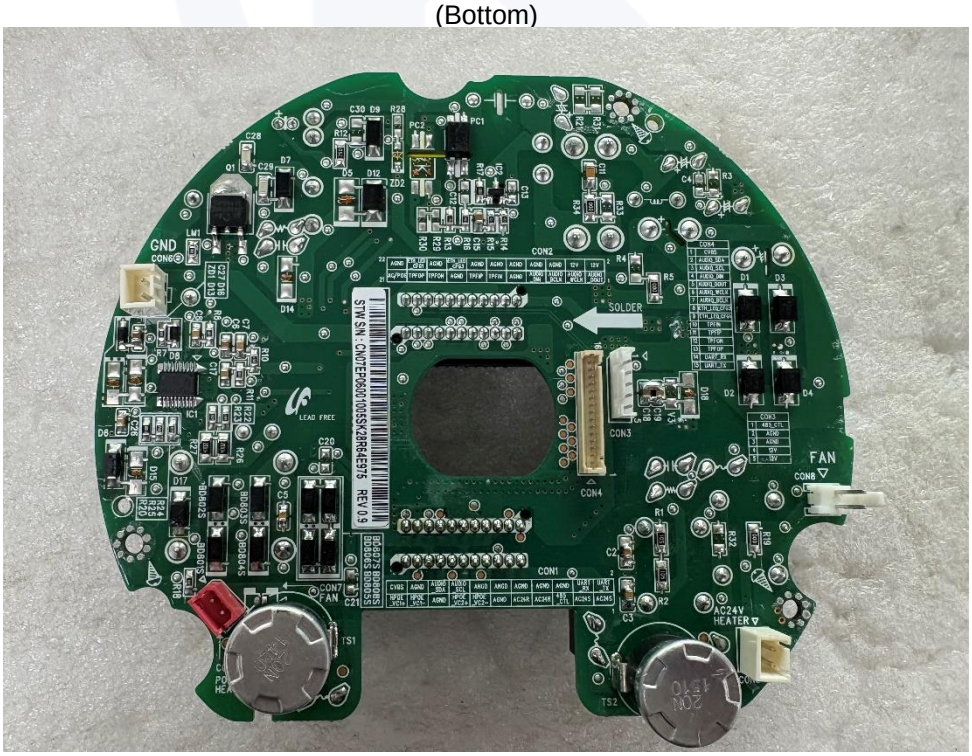


EUT Internal View – Board 2

(Top)



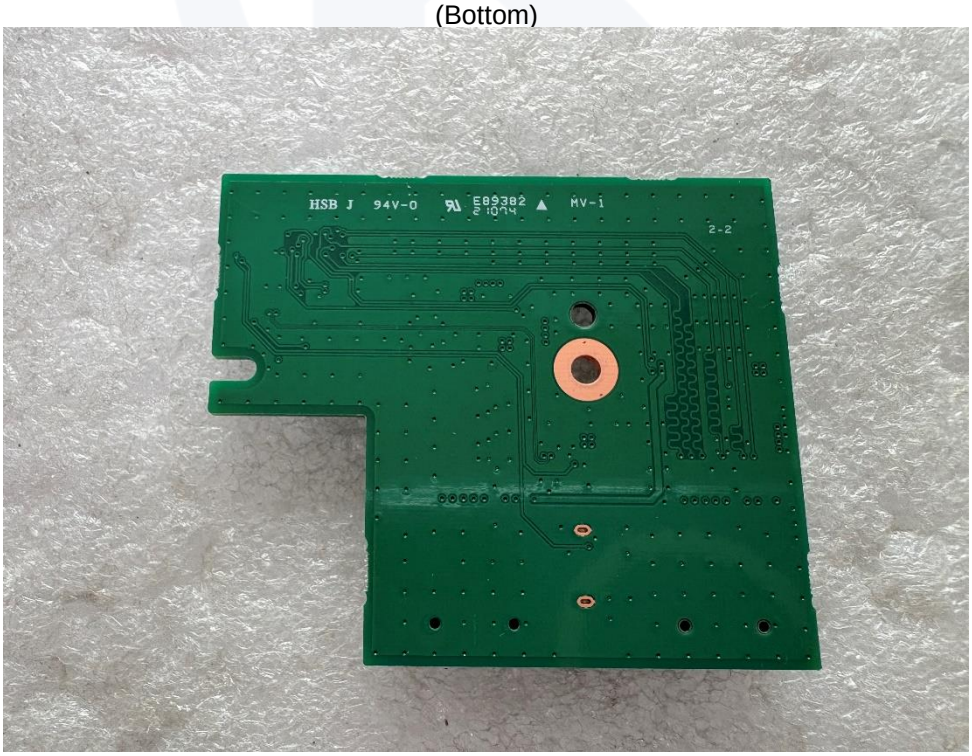
(Bottom)



EUT Internal View – Board 3

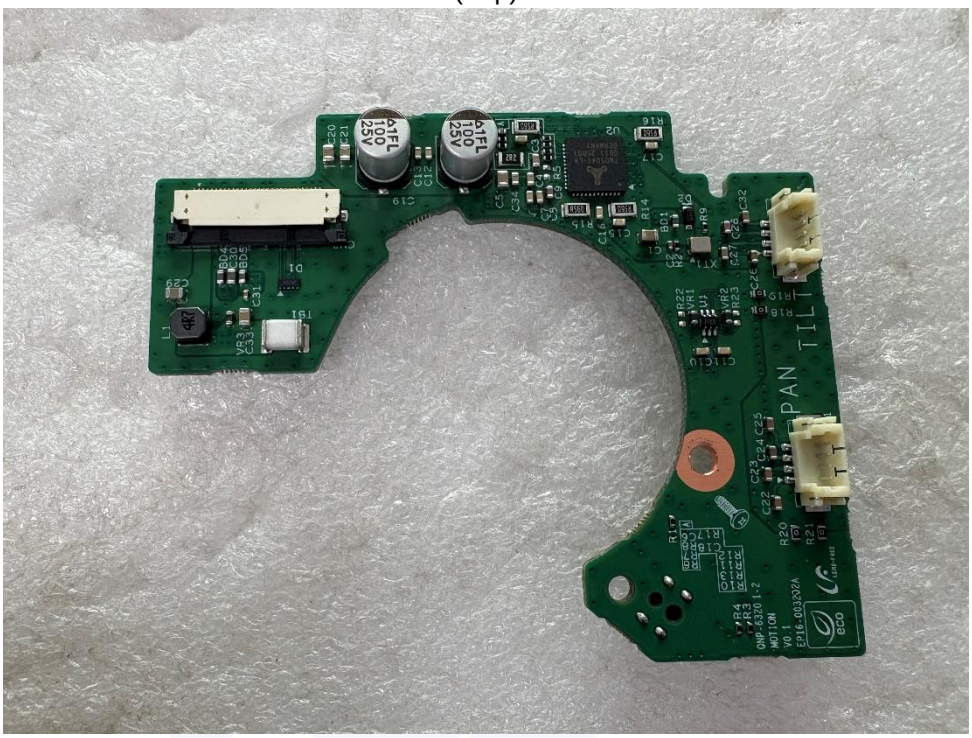
(Top)

(Bottom)

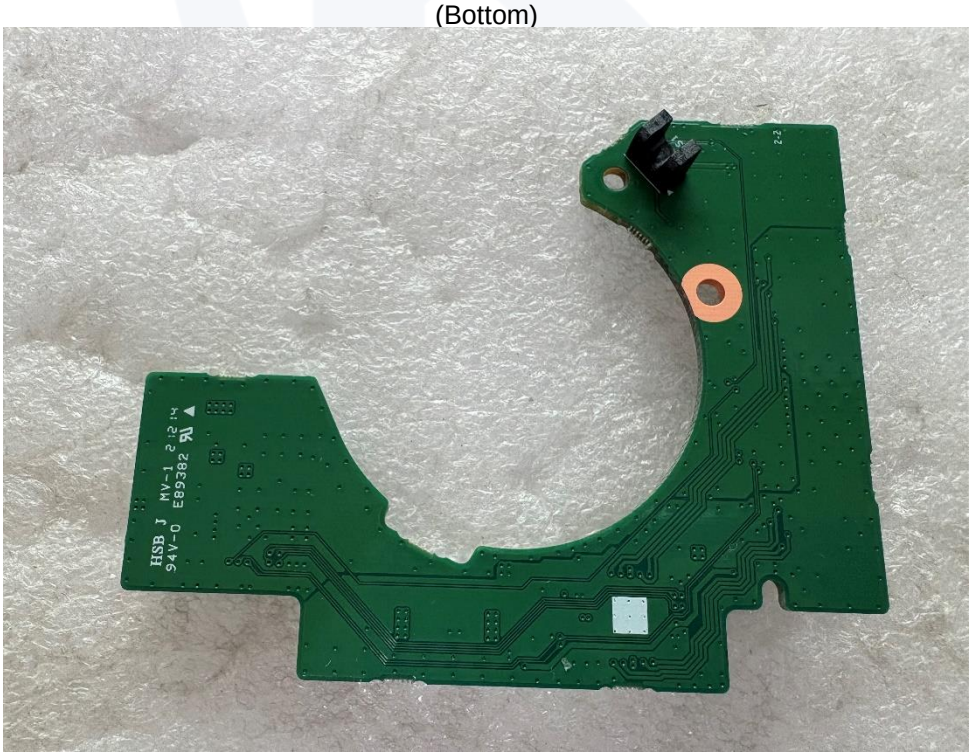


EUT Internal View – Board 4

(Top)

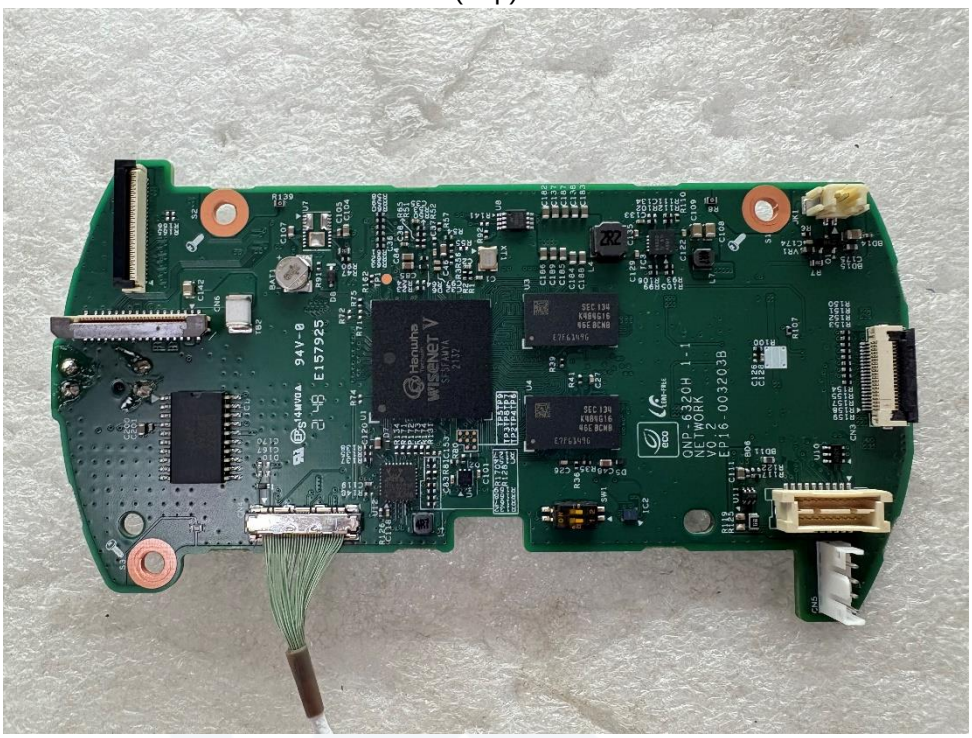


(Bottom)

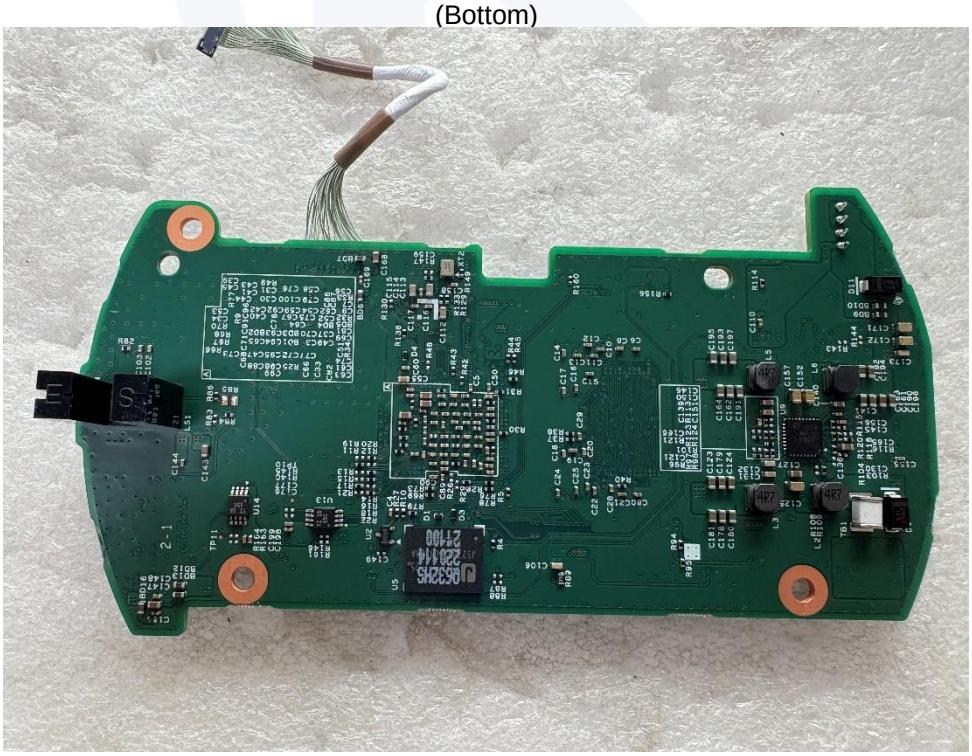


EUT Internal View – Board 5

(Top)



(Bottom)



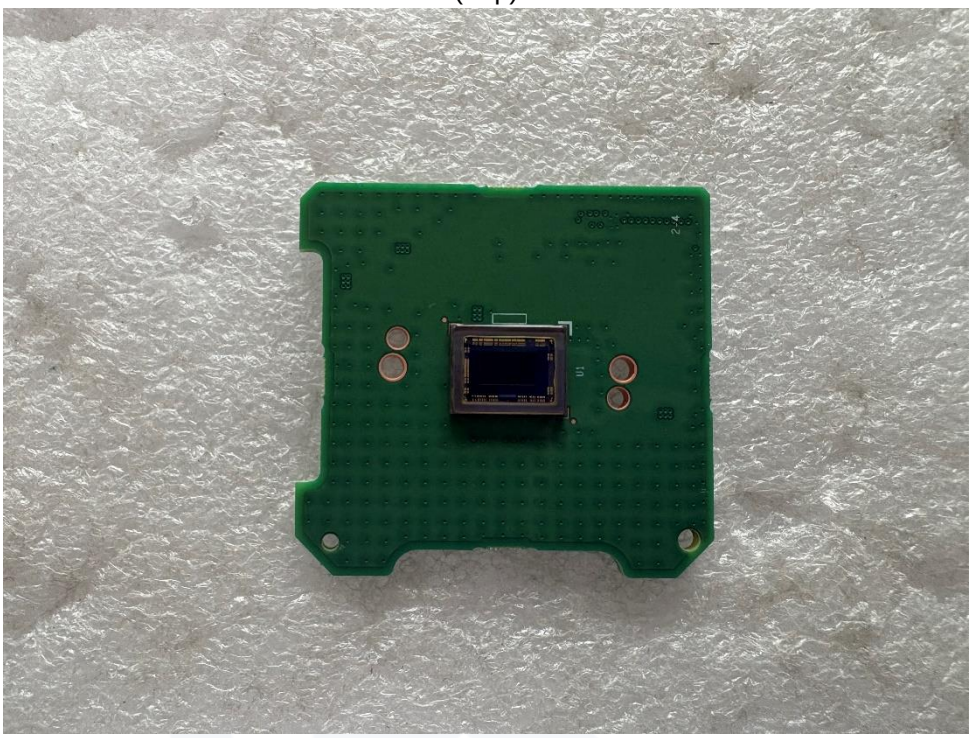
EUT Internal View – Board 6

(Top)

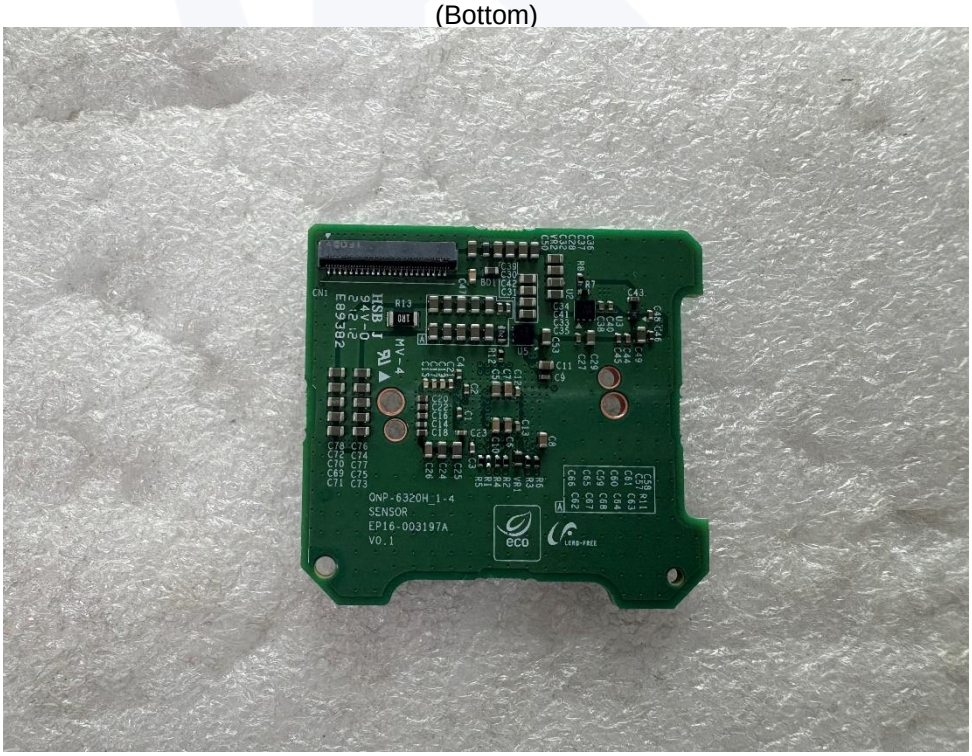
(Bottom)

EUT Internal View – Lens Board

(Top)

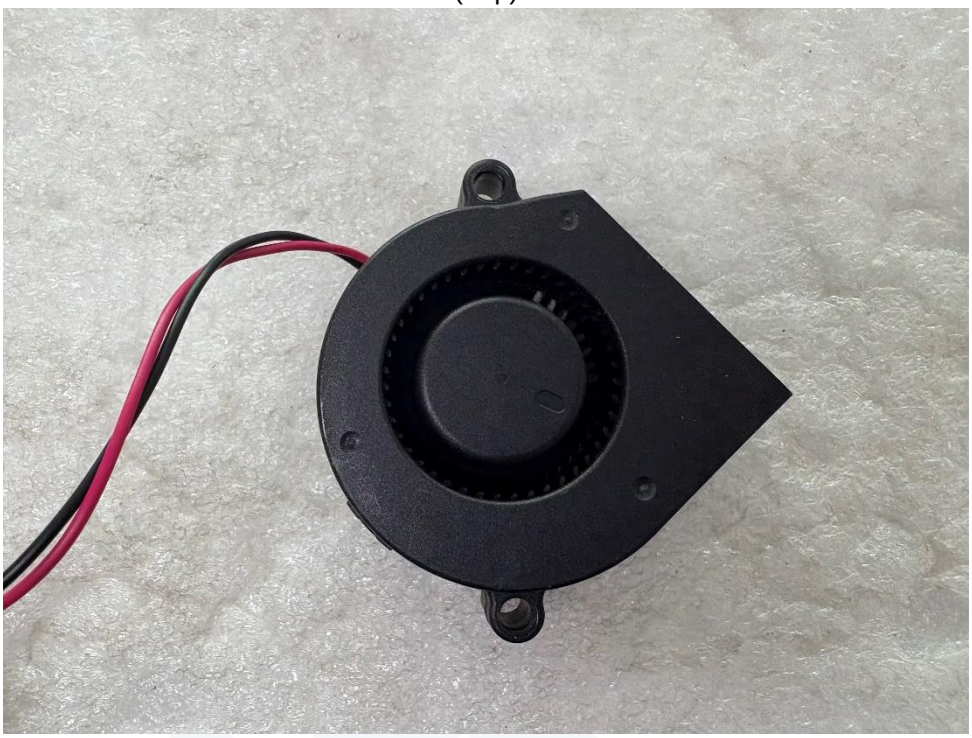


(Bottom)



EUT Internal View – FAN

(Top)



(Bottom)

EUT Internal View – Motor 1

EUT Internal View – Motor 2

EUT Internal View – Lens

Label Photographs

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI－A

The End.