



TEST REPORT



Report No. : KES-EM251558

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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. : PND-A7082RV

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 : Apr. 28, 2025

4. Test date : May. 08, 2025 ~ May. 12, 2025

5. Date of Issue : May. 23, 2025

6. Test Results : In Compliance

Tested by

Reviewed by

Seong Jun, Park
EMC Test Engineer

Dong Hun, Jang
EMC Technical Manager

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

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

KES Co., Ltd.

The authenticity of this test report can be found on the verification page of our website (www.kes.co.kr)

**REPORT REVISION HISTORY**

Date	Test Report No.	Revision History
May. 23, 2025	KES-EM251558	Issued

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1.0 General Product Description

Main Specifications of EUT are:

Video		Gain Control	Off / Max Gain / Manual
Imaging Device	1/1.8" CMOS	White Balance	ATW / NarrowATW / AWC / Manual / Indoor / Outdoor
Resolution	2592x1520, 2560x1440, 1920x1080, 1600x1200, 1280x960, 1280x720, 1024x768, 800x600, 640x480, 640x360, 320x240, 320x180	LDC	Support(Fill/Stretch mode)
Max. Framerate	H.265/H.264: Max. 60fps/50fps(60Hz/50Hz) MJPEG: Max. 30fps(@4MP Max. 5fps)	Electronic Shutter Speed	Minimum / Maximum / Anti flicker(2~1/30,000sec) Prefer shutter control(Based on AI engine)
NETD	None	Digital PTZ	None
Pixel Size	None	Video Rotation	Flip, mirror, hallway view(90°/270°)
Video Out	USB: Micro USB Type C for installation		Classified object type: Person/Face/VehicleType: car/bus/truck/motorcycle/bicycle/License plate Attributes: Person(Gender, Clothing top/bottom color, Bag), Face(Age, Gender, Mask, Glasses), VehicleType: car/bus/truck/motorcycle/bicycle, Color)
Video Transmission Distance	None		Support BestShot Support Re-ID(Person)
Lens		Analytics	Analytics events based on AI engine - Motion detection, Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit/Appear/Disappear), Slip & fall detection, Face mask detection, Social distancing detection, Sound classification(To be released)
Focal Length (Zoom Ratio)	4.6~9.35mm(2.0x) motorized varifocal		Analytics events - Defocus detection, Tampering, Shock detection, Audio detection
Optical Zoom	None	Business Intelligence	Based on AI engine: People/Vehicle/Crowd counting, Queue management, Heatmap
Max. Aperture Ratio	F1.3(Wide)~F2.1(Tele)	Serial Interface	None
Angular Field of View	H: 105°(Wide)~47°(Tele) V: 58°(Wide)~27°(Tele) D: 128°(Wide)~55°(Tele)	Alarm I/O	2 configurable I/O ports, DC 12V output(Max. 50mA)
Min. Object Distance	1.5m(4.92ft)	Alarm Triggers	Analytics, Network disconnection, Alarm input, Time schedule, MQTT subscription, Day/Night, Storage disruption, Case tampering
Focus Control	Simple focus		When alarm trigger occurred - File upload(image): e-mail/FTP/SFTP - File upload(video clip): FTP/SFTP
Lens Type	P-iris(IR corrected)	Alarm Events	- 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(WAV, MP3) - MQTT: publication
Mount Type	None	Audio Streaming	None
Optional Lens	None	Audio In	Selectable(mic in/line in/built-in 3mics)
Pan / Tilt / Rotate		Audio Out	Line out
Pan / Tilt / Rotate Range	0°~360° / 0°~85° / 0°~355°	Light Type	IR LED
Pan Range	None	Light Viewable Length	WiseIR 60m(196.85ft)
Pan Speed	None	IR Viewable Length	None
Tilt Range	None	IR Illuminator (Optional)	None
Tilt Speed	None	IR Radiation angle	None
Rotate Range	None	IR LED	None
Sequence	None	IR Wavelength	850nm
Preset Accuracy	None	IR Operation	None
Operational		Water Removal	None
Camera Title	Displayed up to 85 characters	Auto Tracking	None
Direction Indicator	None	Coaxial Protocol	None
Day & Night	Auto(ICR)	Color Palettes	None
Backlight Compensation	BLC, HLC, WDR, SDDR	Radiometry	
Wide Dynamic Range	120dB	Temperature Detect Range	None
Digital Noise Reduction	SSNRV, WiseNRII(Based on AI engine)	Temperature Accuracy	None
Digital Image Stabilization	Support	Temperature Detection	None
Defog	Support	Additional	None
Motion Detection	8ea, 8point polygonal zones 32ea, 8point polygonal zones - Color: gray/green/red/blue/black/white/purple/yellow - Mosaic Dynamic Privacy Mask(Based on AI engine) - Color: gray/green/red/blue/black/white/purple/yellow - Mosaic		
Privacy Masking			



Report No. : KES-EM251558

Network		Mechanical	
Ethernet	Metal shielded RJ-45(10/100/1000BASE-T)	Color / Material	White / Aluminum
Video Compression	H.265/H.264: Main/Baseline/High MJPEG	Bubble: Hard-coated dome	
Audio Compression	G.711(PCM): 8kHz(64Kbps)	RAL Code	RAL9003
	G.726(ADPCM): 8kHz(16/24/32/40Kbps)	Product Dimensions / Weight	ø160x125mm(ø6.30x4.92"), 1550g(3.42lb)
	AAC-LC: 16kHz(48Kbps)	Compatible Conduit hole / Gar	12.7mm(1/2") (M20)
	OPUS: 48kHz(64Kbps)		single, double, 4" octagon, 4" square
Smart Codec	WiseStream(Based on AI engine)	Certifications & Standards	
Video Quality Adjustment	None	Network	None
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR	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
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 5 profiles, 3 virtual channel support)	Safety	UL 62368-1, CAN/CSA C22.2 NO. 62368-1 IEC/EN 62471
Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP/SFTP, SMTP(StartTLS), ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP(TCP, UDP Unicast), CDP, MQTT, Syslog	Environment	IEC/EN 63000 IEC/EN 60529 IP52, IEC/EN 62262 IK10 IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78
SIP support (VoIP, Peer-to-peer)	None	Video	None
Security	None	Compatible Models	
Application Programming Inter	ONVIF Profile S/G/T/M SUNAPI(HTTP API) Hanwha Vision Open Platform	Hanging Adaptor	SBP-160HMMW1
Security		Back Box	SBV-180BW, SBV-180WW
OS / Firmware Protect	Encrypted Firmware, Secure boot, Signed Firmware	Ceiling Mount (Assy)	SBP-150CMI, SBP-300CMI, SBP-300CMW1, SBP-900CMW, SBP-300CMTW, SBP-300CMTS
User authentication	Digest Authentication, Prevent brute-force attack	Ceiling Mount (Single Unit)	SBP-180CMB, SBP-140CMB, SBP-180CMS, SBP-900CMP, SBP-300CMP, SBP-150CMP, SBP-C15P, SBP-C15H
Network authentication	802.1X Authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2)	Wall Mount	SBP-160WMW1, SBP-400WMW, SBP-250WMW, SBP-300WMW, SBP-300WMW1
Secure Communication	HTTPS, SRTP, WSS(Websocket secure)	Wall Mount Adaptor	None
Access Control	IP-based access control, MAC-based access control, Auto logout	Pole Mount	SBD-180PMW
Data Protect	Encryption Credentials, Encrypt compress for live recording file export	In-ceiling Mount	SHD-1372FPW
Audit	Access / System / Event Log management	Corner Mount	SBD-180KMA
Device ID	Device Certificate(Hanwha vision Root CA)	Parapet Mount	SBP-156LMW1, SBP-300LMW
Secure Storage	Secure element, SDcard partition encrypt	Tilt Mount	SBP-160TMW1
Security Certificate	ETSI EN 303 645, Secure element(FIPS 140-3 level3, CC EAL6+)	Cabinet	SBP-150NBW, SBP-300NBW
General		Housing	None
Webpage Language	English, Korean, Simplified Chinese, Traditional Chinese, French, Italian, Spanish, German, Japanese, Russian, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek	Gang Plate	None
Web Viewer	None	Skin Cover	None
Edge Storage	Micro SD/SDHC/SDXC 2slots 2TB(1TBx2)	Weather Cap	SBV-161WCW
Memory	4GB RAM, 8GB eMMC	Dome Cover	SPB-IND87W
Environmental & Electrical		Conduit Adaptor	None
Operating Temperature / Humidity	-25°C~+50°C(-13°F~+122°F) / 0~100% RH Humidity control /w AIR vent	Power Module	None
Storage Temperature / Humidity	-50°C~+60°C(-58°F~+140°F) / 0~90% RH	Interface Box	SPM-4210
Wind Load	None	Other Compatible Models	SBP-115PFA
EPA(Effective Projected Area)	0.0148m²	DORI (EN62676-4 standard)	
Certification	IP52, IK10	Detect (25PPM/ 8PPF)	Wide: 39.8m(130.51ft) / Tele: 119.2m(391.15ft)
Input Voltage	PoE+(IEEE802.3at type2, Class4), 12VDC PoE: Max. 15.0W, typical 9.0W 12VDC: Max. 12.7W, typical 7.8W	Observe (63PPM/ 19PPF)	Wide: 15.9m(52.20ft) / Tele: 47.7m(156.46ft)
Power Consumption	Support Wisepower - Power monitoring(Max./Current/Avg.) - Power Redundance Failover	Recognize (125PPM/ 38PPF)	Wide: 8.0m(26.10ft) / Tele: 23.8m(78.23ft)
		Identify (250PPM/ 76PPF)	Wide: 4.0m(13.05ft) / Tele: 11.9m(39.12ft)



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 ☒ PoE

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	PND-A7082RV	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
AC/DC Adapter	FSP060-DIBAN2	-	FSP GROUP INC.	-
PoE Injector	PT-PSE106GBR-AH-S	-	Dongguan PROCET Network Technology Co., Ltd	-
Notebook	NT500R5W	-	Samsung Eelcotronics Co., Ltd.	-
Notebook Adapter	PA-1400-96	-	LITE-ON TECHNOLOGY CHANGZHOU CO.,LTD	-
Micro SD Card 1	-	-	SanDisk	-
Micro SD Card 2	-	-	SanDisk	-
LED Alarm	PRO-SL	-	SENSOR PRO	-
Button Alarm	-	-	-	-
Earphone	-	-	-	-
Smartphone	SM-N950N	-	Samsung Eelcotronics Co., Ltd.	-



1.6 External I/O Cabling

■ mode 1

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (EUT)	2 Pin	AC/DC Adapter	2 Pin	1.6	U
	Micro SD Card Slot	Micro SD Card 1	Micro SD Card Slot	-	-
	Micro SD Card Slot	Micro SD Card 2	Micro SD Card Slot	-	-
	RJ-45 (LAN)	Notebook	RJ-45 (LAN)	3.1	U
	Alarm IN (2 PIN)	Button Alarm	Alarm OUT	3.1	U
	Alarm OUT (2 PIN)	LED Alarm	Alarm IN	3.1	U
	Audio IN	Smartphone	3.5 mm	1.0	U
	Audio OUT	Earphone	3.5 mm	1.4	U
Notebook	DC Jack	Notebook Adapter	DC Jack	1.6	U

* Unshielded=U, Shielded=S

■ mode 2

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)	3.1	U
	Micro SD Card Slot	Micro SD Card 1	Micro SD Card Slot	-	-
	Micro SD Card Slot	Micro SD Card 2	Micro SD Card Slot	-	-
	Alarm IN (2 PIN)	Button Alarm	Alarm OUT	3.1	U
	Alarm OUT (2 PIN)	LED Alarm	Alarm IN	3.1	U
	Audio IN	Smartphone	3.5 mm	1.0	U
	Audio OUT	Earphone	3.5 mm	1.4	U
Notebook	DC Jack	Notebook Adapter	DC Jack	1.6	U

* Unshielded=U, Shielded=S



1.7 EUT Operating Mode(s)

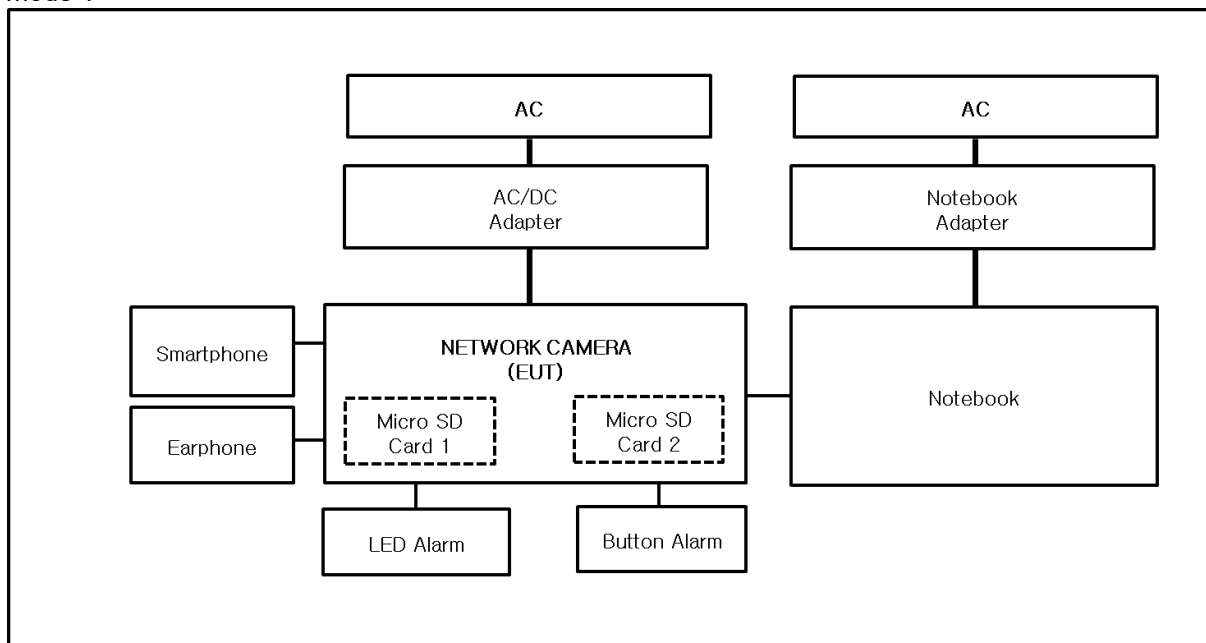
Test mode		Normal operating
mode 1	AC/DC Adapter	- IP from the test equipment to the laptop was tested by Ping Test on the laptop. - The test was conducted by checking whether the camera image was output normally in the Web Viewer. - After the test, I checked whether the video was recorded normally on the Micro SD Card.
mode 2	PoE	

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

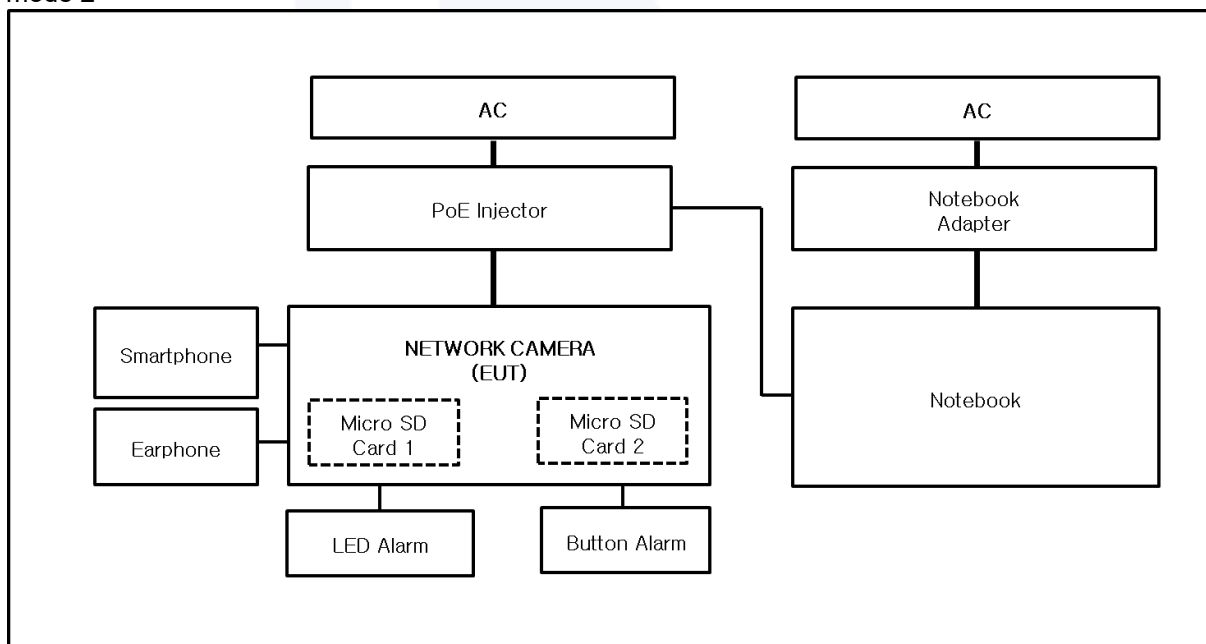


1.8 Configuration

■ mode 1



■ mode 2



**1.9 Remarks when standards applied**

USB C Type ports are not used and have not been 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 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

May. 08, 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
☒	LISN	ESH2-Z5	R & S	100450	11, 06, 2025
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 06, 2025

Test Conditions

Temperature: (23,3 ± 0,1) °C

Relative Humidity: (46,7 ± 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.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

May. 08, 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 CAT6	ENY81-CAT6	Rohde & Schwarz	101666	02, 27, 2026

Test Conditions

Temperature: (23,3 ± 0,1) °C
Relative Humidity: (46,7 ± 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.



2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

May. 12, 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	ESW8	R & S	101319	03, 24, 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) °C

Relative Humidity: (47,0 ± 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

RemarksSee Appendix A for test data.



2.4 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

May. 09, 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	100517	10, 07, 2025
☒	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) °C

Relative Humidity: (46,3 ± 0,1) % 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

RemarksSee Appendix A for test data.



APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

■ mode 1

HOT LINE

Test Description:

Job No.:

Phase:

Mode:

Operator Name:

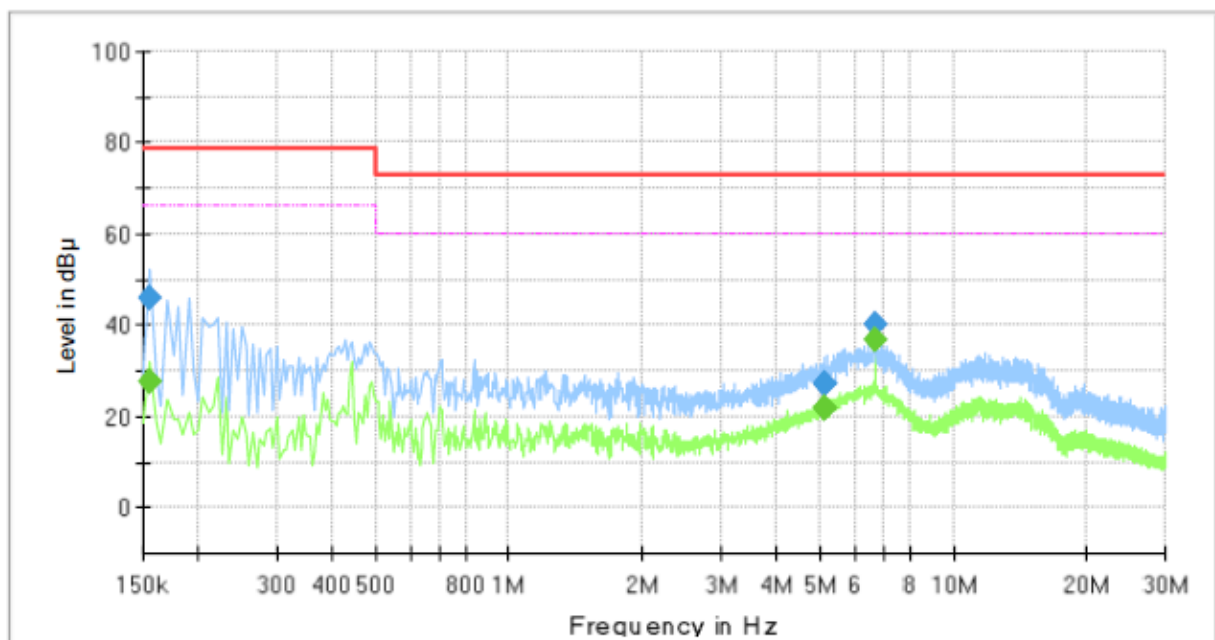
Conducted Emission

KES-EM251558

L

mode 1

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	27.50	66.00	38.50	1000.0	9.000	L1	19.5
0.155000	46.19	---	79.00	32.81	1000.0	9.000	L1	19.5
5.105000	---	21.76	60.00	38.24	1000.0	9.000	L1	19.9
5.105000	27.11	---	73.00	45.89	1000.0	9.000	L1	19.9
5.115000	---	21.78	60.00	38.22	1000.0	9.000	L1	19.9
5.115000	27.12	---	73.00	45.88	1000.0	9.000	L1	19.9
6.645000	---	36.56	60.00	23.44	1000.0	9.000	L1	20.0
6.645000	40.22	---	73.00	32.78	1000.0	9.000	L1	20.0



NEUTRAL LINE

Test Description:

Conducted Emission

Job No.:

KES-EM251558

Phase:

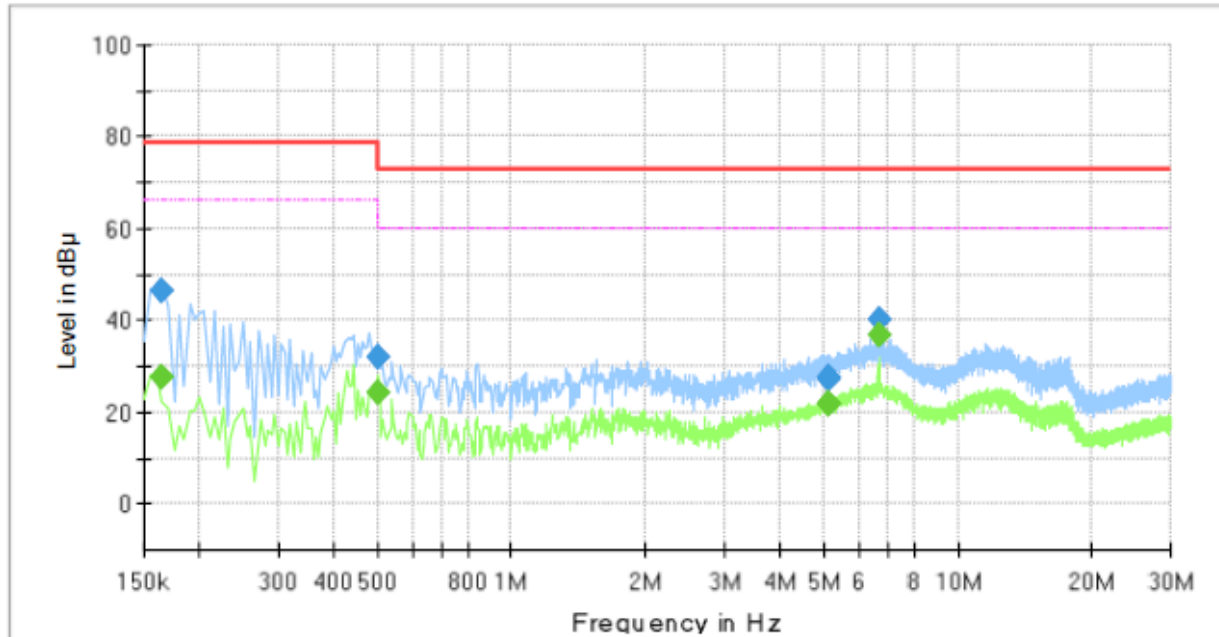
N

Mode:

mode 1

Operator Name:

KES

**Final Result**

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	---	27.71	66.00	38.29	1000.0	9.000	N	19.5
0.165000	46.42	---	79.00	32.58	1000.0	9.000	N	19.5
0.500000	---	24.49	66.00	41.51	1000.0	9.000	N	19.5
0.500000	32.19	---	73.00	40.81	1000.0	9.000	N	19.5
5.105000	---	21.91	60.00	38.09	1000.0	9.000	N	19.9
5.105000	27.43	---	73.00	45.57	1000.0	9.000	N	19.9
5.110000	---	21.91	60.00	38.09	1000.0	9.000	N	19.9
5.110000	27.32	---	73.00	45.68	1000.0	9.000	N	19.9
6.640000	---	36.88	60.00	23.12	1000.0	9.000	N	19.9
6.640000	40.22	---	73.00	32.78	1000.0	9.000	N	19.9

◆ 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))

**Conducted Emissions at Telecommunication Ports**

■ mode 1

[1 000 Mbps]

Test Description:

Telecommunication Emission

Job No.:

KES-EM251558

Mode :

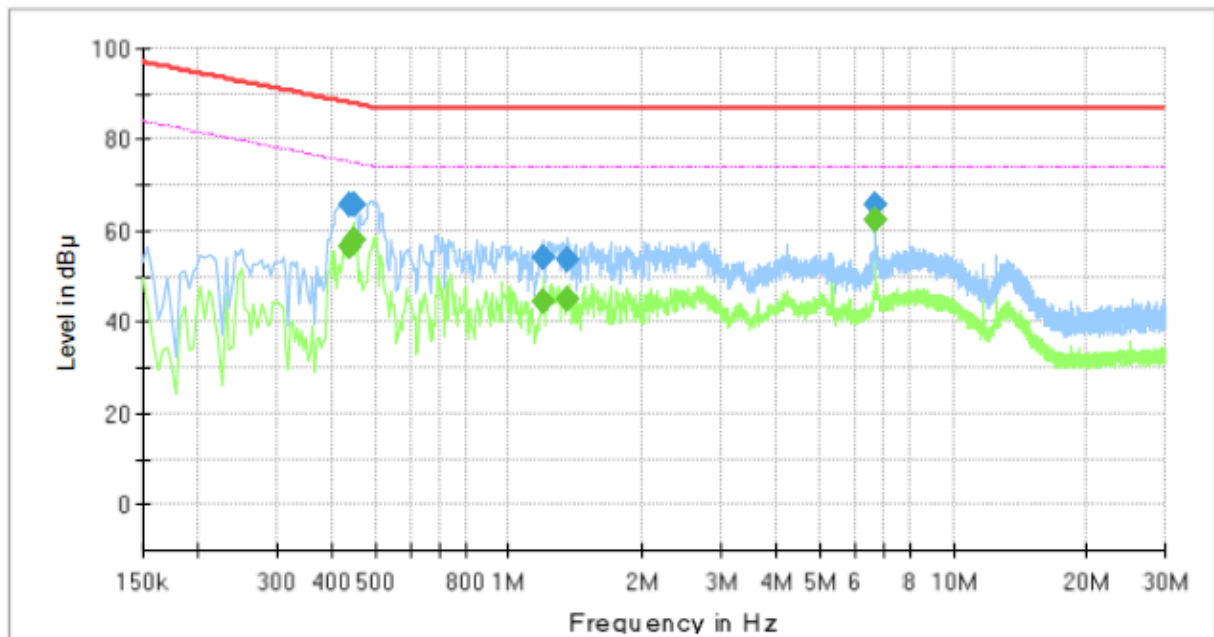
mode 1

Speed :

1 000

Operator Name:

KES

**Final Result**

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.438000	---	56.52	75.10	18.58	1000.0	9.000	Single Line	19.4
0.438000	65.62	---	88.10	22.48	1000.0	9.000	Single Line	19.4
0.446000	---	57.99	74.95	16.96	1000.0	9.000	Single Line	19.4
0.446000	65.80	---	87.95	22.15	1000.0	9.000	Single Line	19.4
1.198000	---	44.39	74.00	29.61	1000.0	9.000	Single Line	19.4
1.198000	53.99	---	87.00	33.01	1000.0	9.000	Single Line	19.4
1.358000	---	45.01	74.00	28.99	1000.0	9.000	Single Line	19.4
1.358000	53.75	---	87.00	33.25	1000.0	9.000	Single Line	19.4
6.654000	---	62.57	74.00	11.43	1000.0	9.000	Single Line	19.7
6.654000	65.75	---	87.00	21.25	1000.0	9.000	Single Line	19.7



■ mode 2

[1 000 Mbps]

Test Description:

Telecommunication Emission

Job No.:

KES-EM251558

Mode :

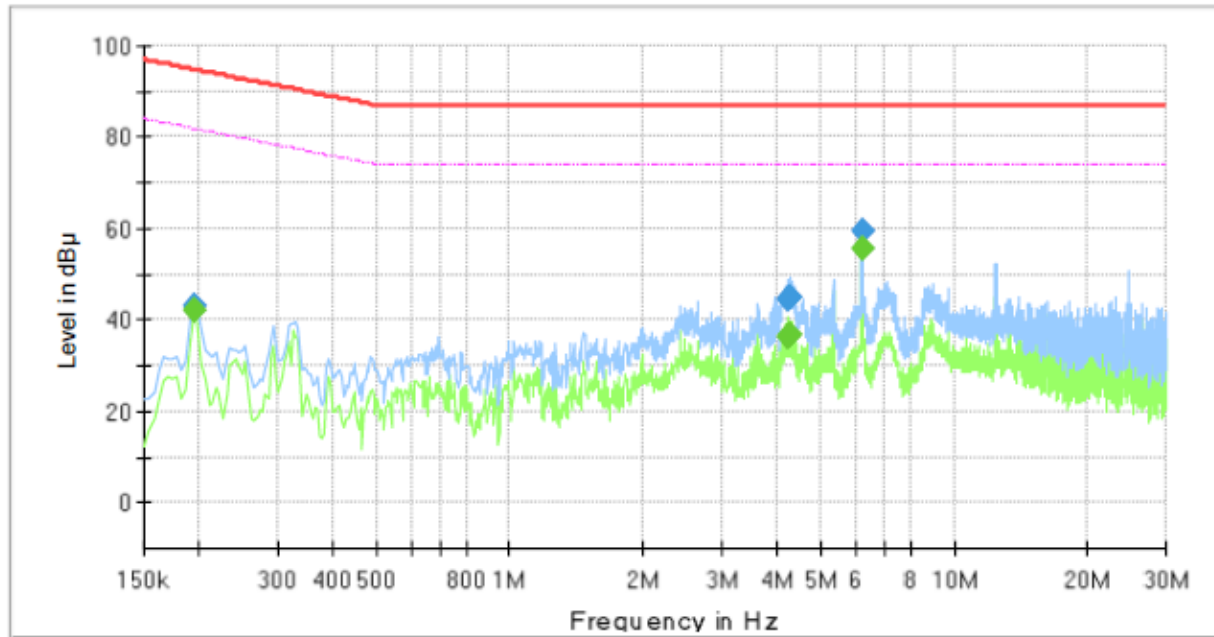
mode 2

Speed :

1 000

Operator Name:

KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.194000	---	41.95	81.86	39.91	1000.0	9.000	Single Line	19.4
0.194000	43.19	---	94.86	51.67	1000.0	9.000	Single Line	19.4
4.210000	---	36.46	74.00	37.54	1000.0	9.000	Single Line	19.5
4.210000	44.40	---	87.00	42.60	1000.0	9.000	Single Line	19.5
4.274000	---	36.72	74.00	37.28	1000.0	9.000	Single Line	19.6
4.274000	44.95	---	87.00	42.05	1000.0	9.000	Single Line	19.6
6.198000	---	55.68	74.00	18.32	1000.0	9.000	Single Line	19.7
6.198000	59.65	---	87.00	27.35	1000.0	9.000	Single Line	19.7

◆ Calculation

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

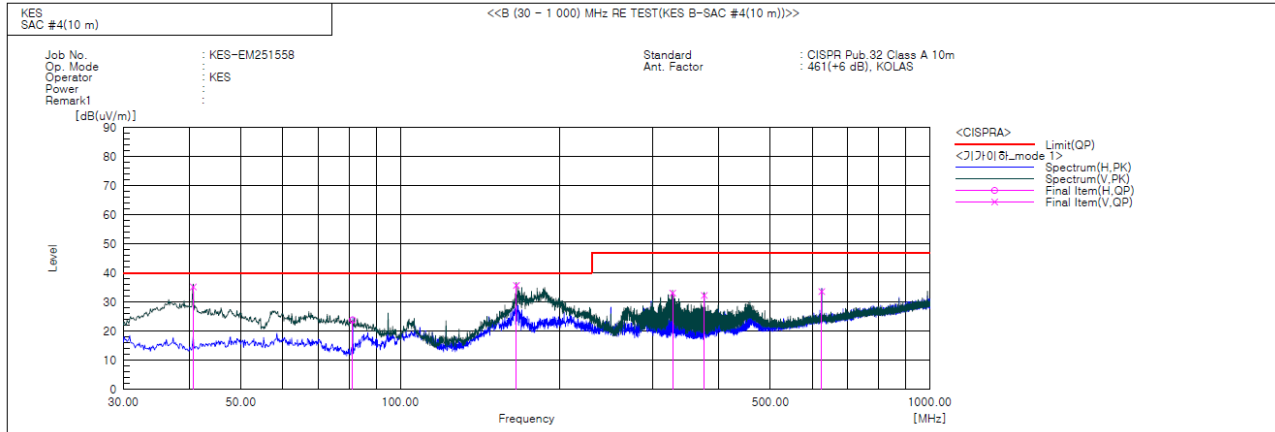
QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

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

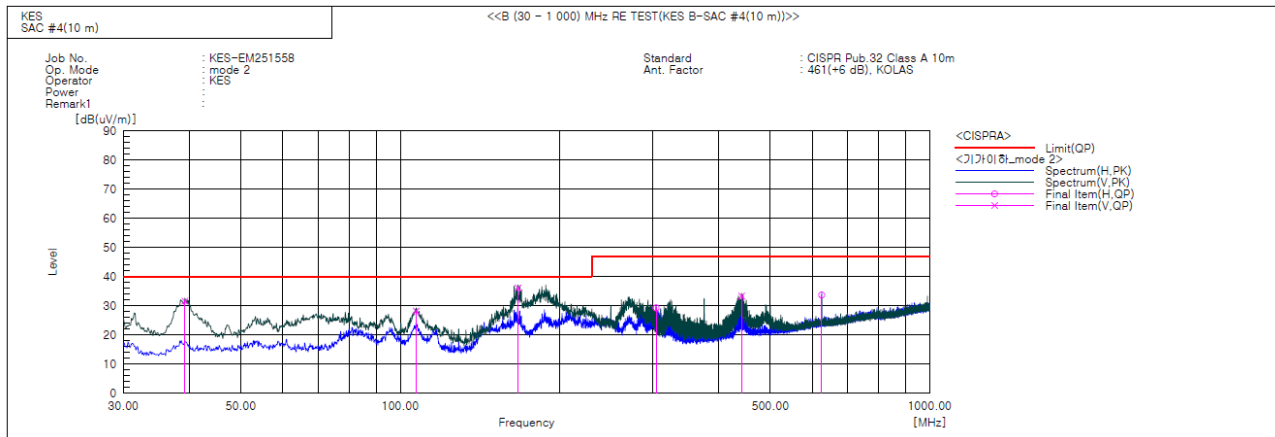
■ mode 1

**Final Result**

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	40.670	V	57.0	-21.8	35.2	40.0	4.8	165.0	112.0	
2	81.289	H	49.6	-25.7	23.9	40.0	16.1	327.0	96.0	
3	165.679	V	55.4	-19.7	35.7	40.0	4.3	164.0	265.0	
4	326.941	V	49.2	-16.1	33.1	47.0	13.9	198.0	3.0	
5	374.956	V	46.9	-14.6	32.3	47.0	14.7	197.0	139.0	
6	624.974	V	40.1	-6.5	33.6	47.0	13.4	197.0	178.0	



mode 2



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	39.215	V	53.5	-21.9	31.6	40.0	8.4	129.0	241.0	
2	107.236	V	52.0	-23.8	28.2	40.0	11.8	121.0	139.0	
3	166.891	V	55.9	-19.8	36.1	40.0	3.9	187.0	276.0	
4	304.268	H	46.1	-16.8	29.3	47.0	17.7	323.0	88.0	
5	441.280	V	45.1	-11.8	33.3	47.0	13.7	126.0	41.0	
6	624.974	H	40.2	-6.5	33.7	47.0	13.3	398.0	312.0	

◆ Calculation

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

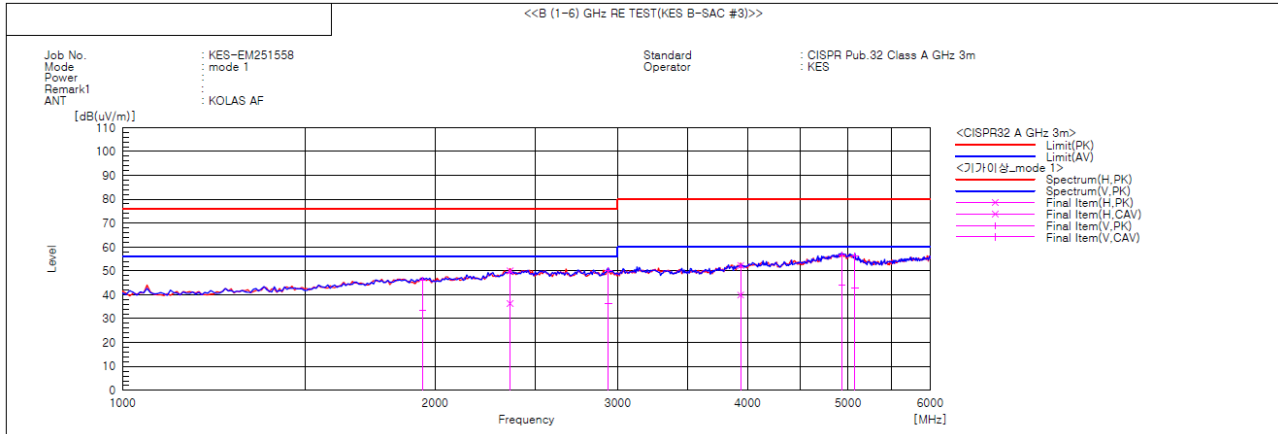
Margin(QP)[dB] = Limit[dB(μV/m)] - Result(QP) [dB(μV/m)]

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)**

■ mode 2

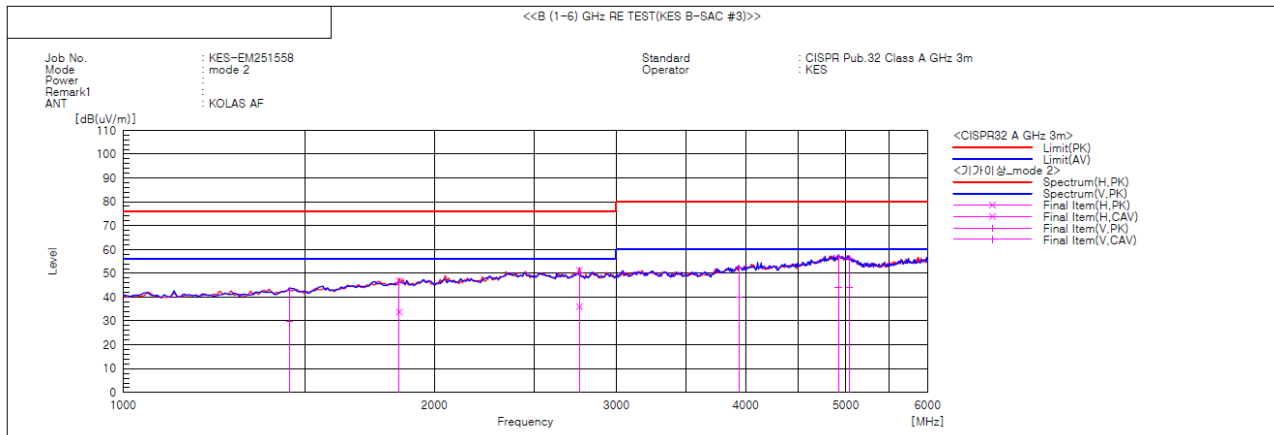


Final Result

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	1945.513	V	41.5	28.8	4.7	46.2	33.5	76.0	56.0	29.8	22.5	100.0	214.4	
2	2362.179	H	42.4	28.7	7.6	50.0	36.3	76.0	56.0	26.0	19.7	100.0	242.0	
3	2939.103	V	41.5	27.6	8.6	50.1	36.2	76.0	56.0	25.9	19.8	100.0	226.7	
4	3940.705	H	40.2	27.8	12.1	52.3	39.9	80.0	60.0	27.7	20.1	100.0	319.9	
5	4934.295	V	39.1	26.5	17.5	56.6	44.0	80.0	60.0	23.4	16.0	100.0	93.2	
6	5078.525	V	39.2	25.8	17.1	56.3	42.9	80.0	60.0	23.7	17.1	100.0	248.5	



mode 2



No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f	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	1448.718	V	42.9	29.9	-0.1	42.8	29.8	76.0	56.0	33.2	26.2	100.0	358.4	
2	1849.359	H	42.6	29.5	4.3	46.9	33.8	76.0	56.0	29.1	22.2	100.0	236.8	
3	2762.821	H	42.8	27.5	8.5	51.3	36.0	76.0	56.0	24.7	20.0	100.0	1.6	
4	3940.705	V	40.2	27.8	12.1	52.3	39.9	80.0	60.0	27.7	20.1	100.0	297.6	
5	4918.269	V	39.2	26.5	17.5	56.7	44.0	80.0	60.0	23.3	16.0	100.0	183.7	
6	5038.461	V	38.6	26.3	17.6	56.2	43.9	80.0	60.0	23.8	16.1	100.0	283.1	

◆ 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

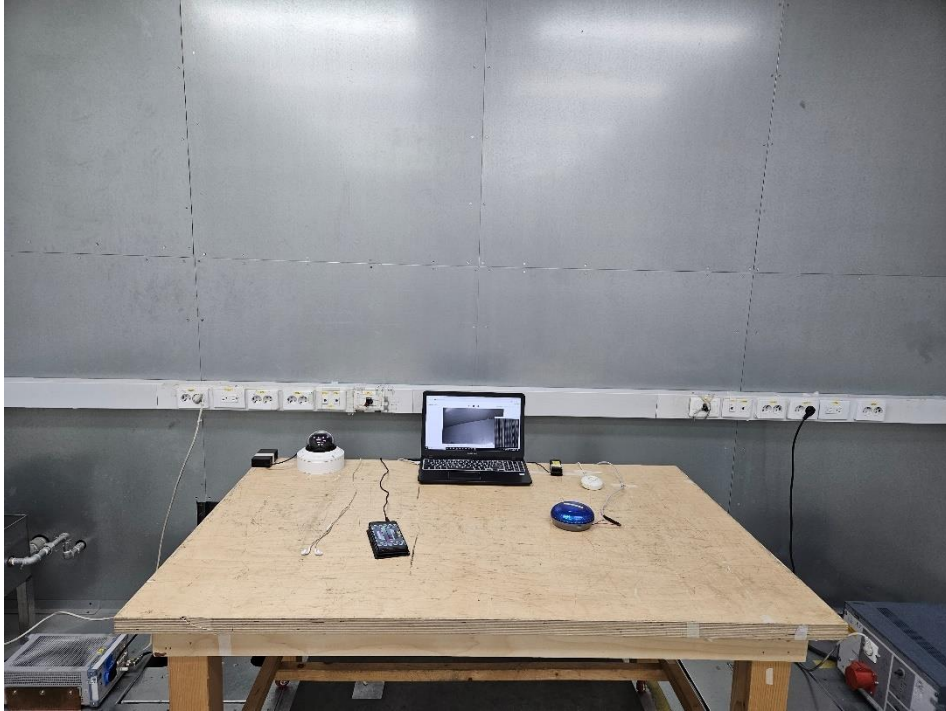
Limit(PK/CAV) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value



Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports

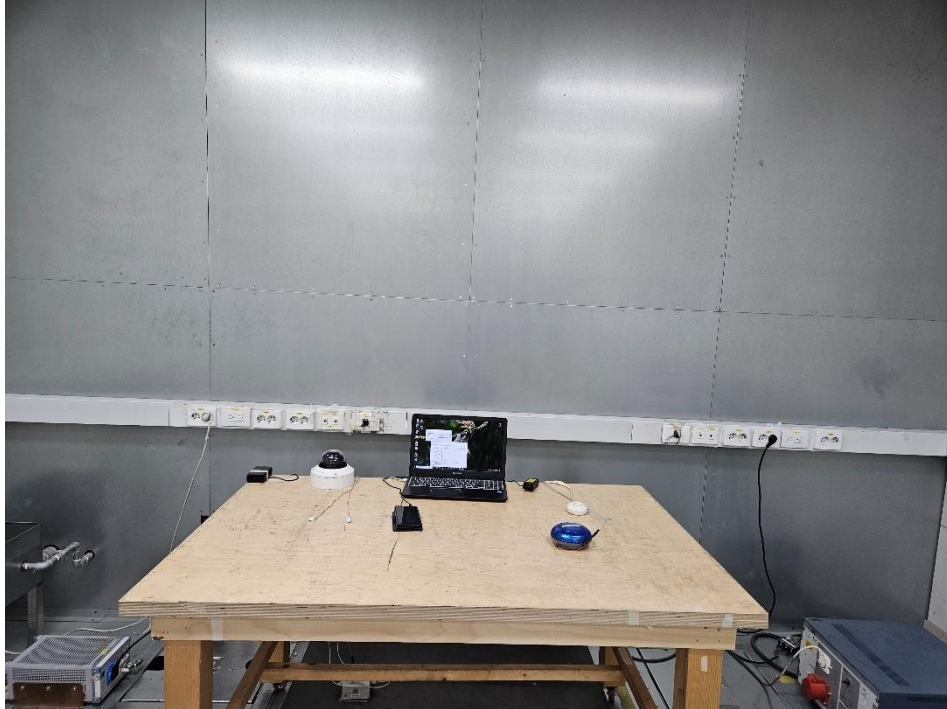
■ mode 1





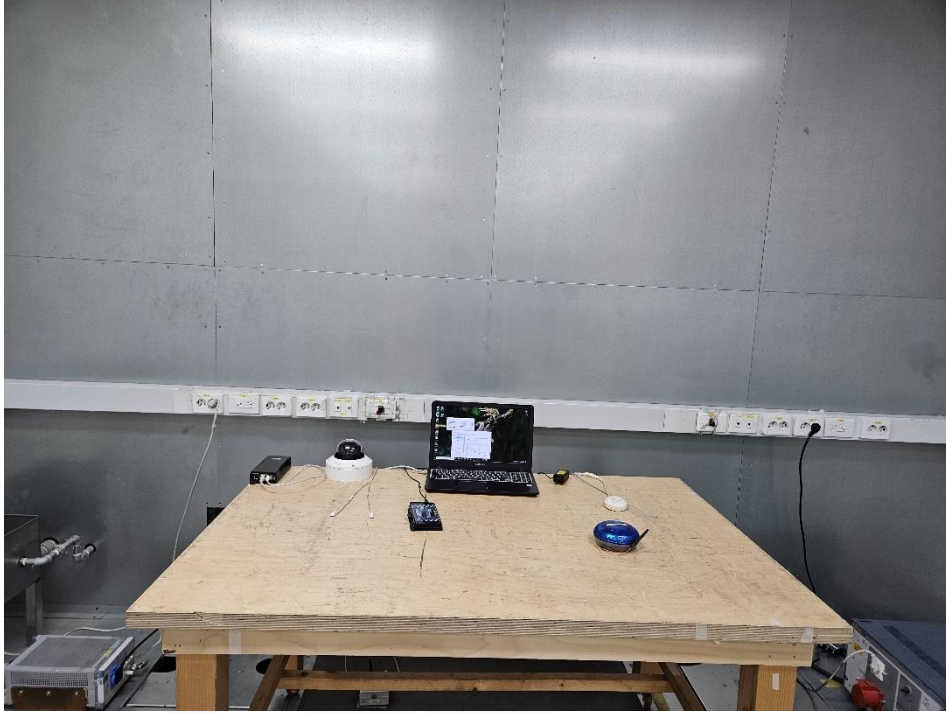
Conducted Emissions at Telecommunication Ports

■ mode 1





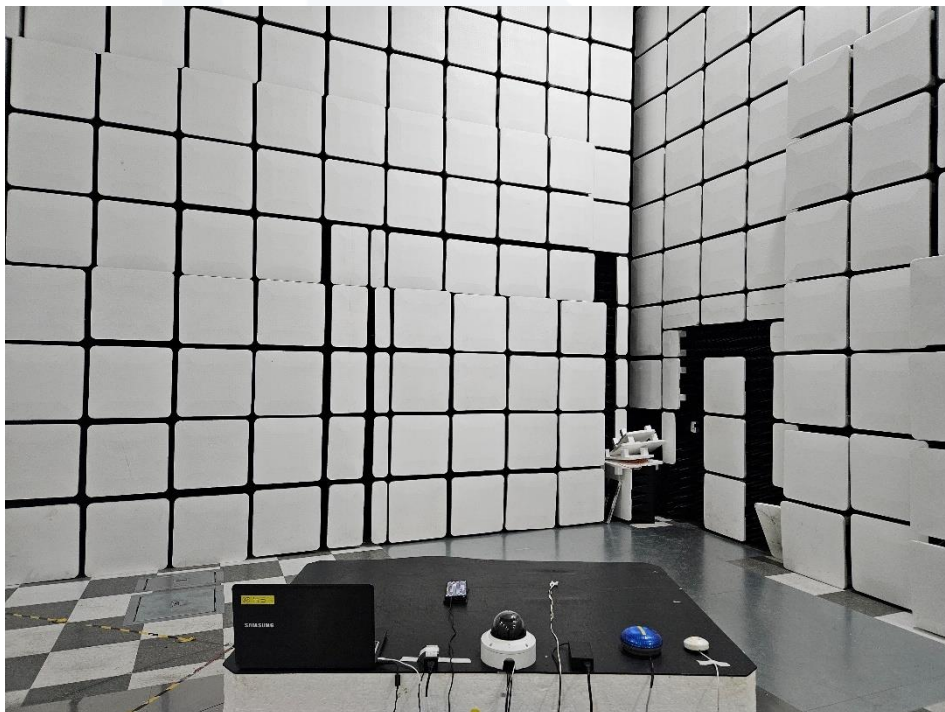
■ mode 2





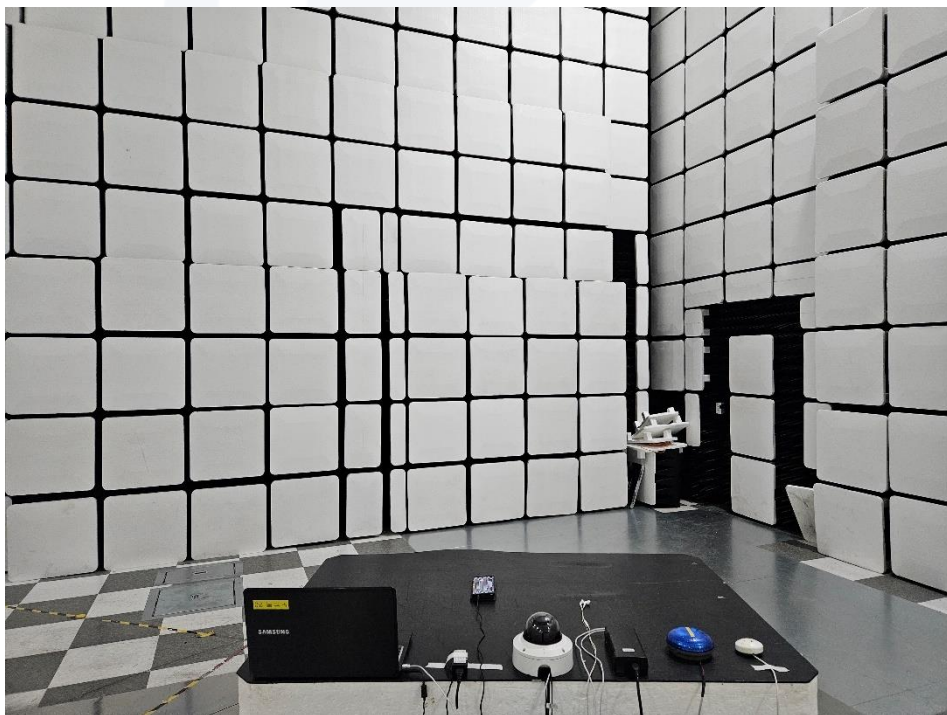
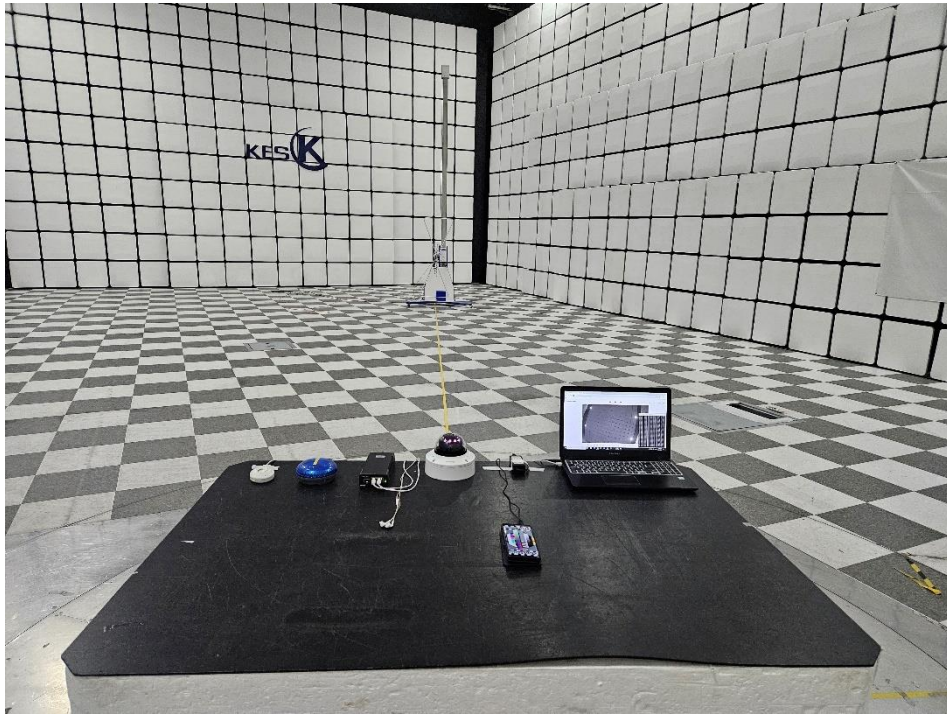
Radiated Electric Field Emissions(Below 1 GHz)

■ mode 1





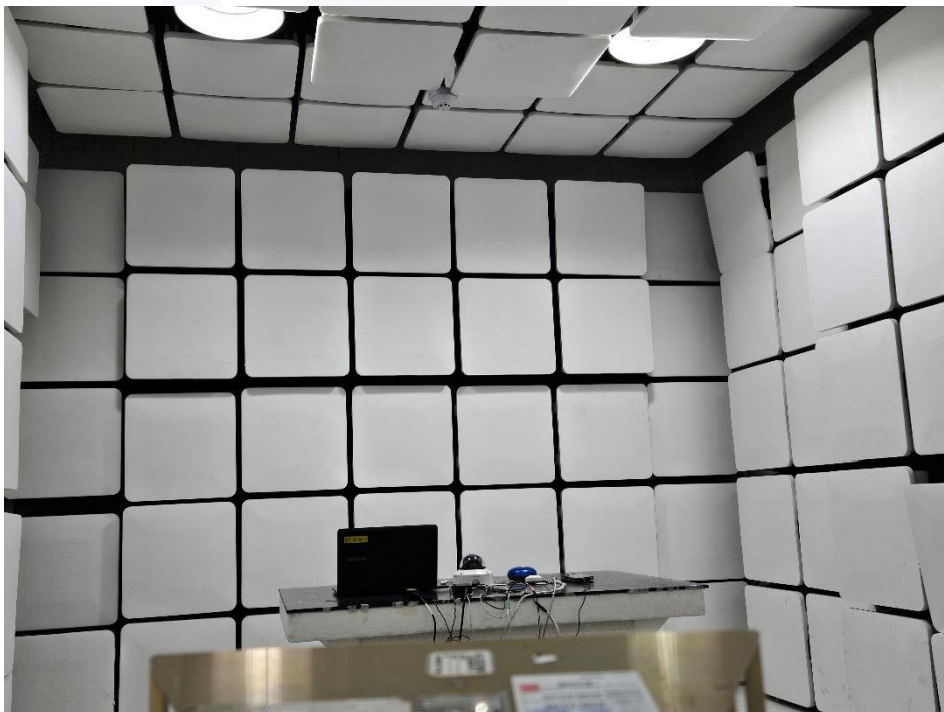
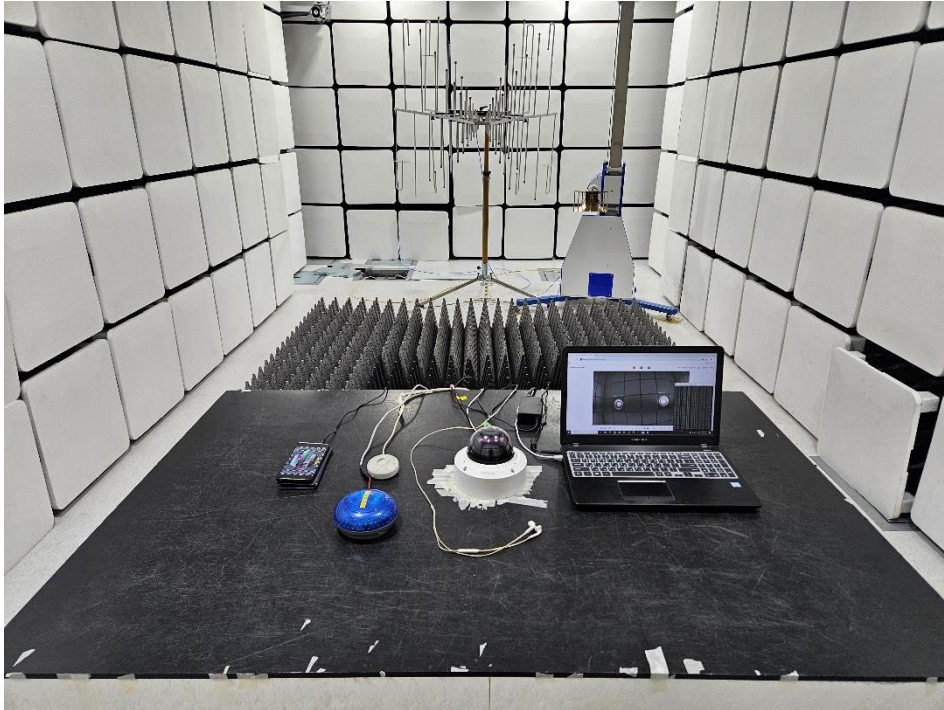
■ mode 2





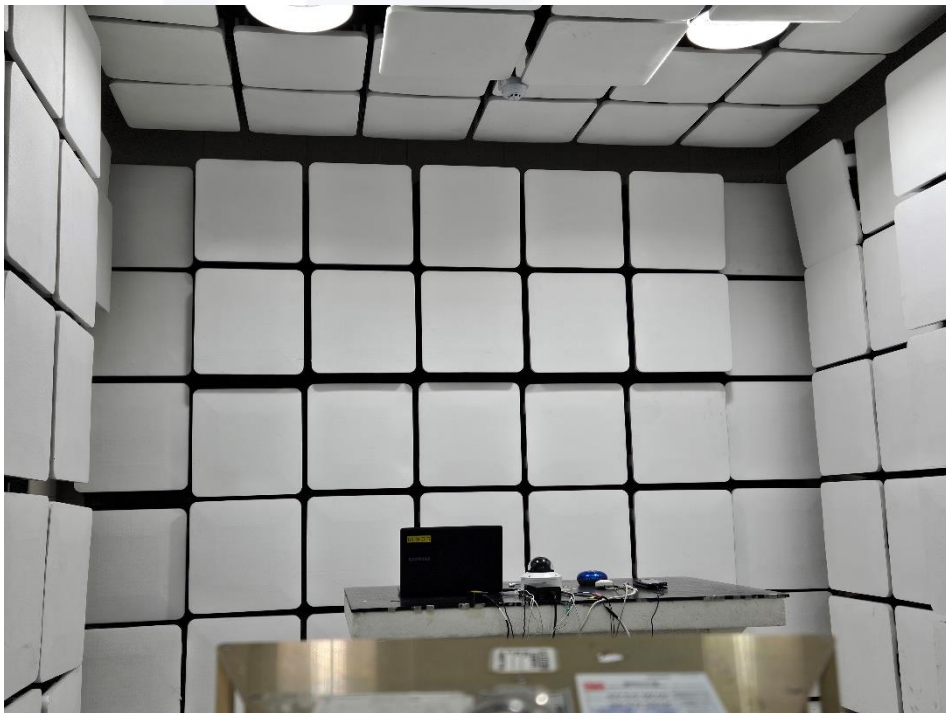
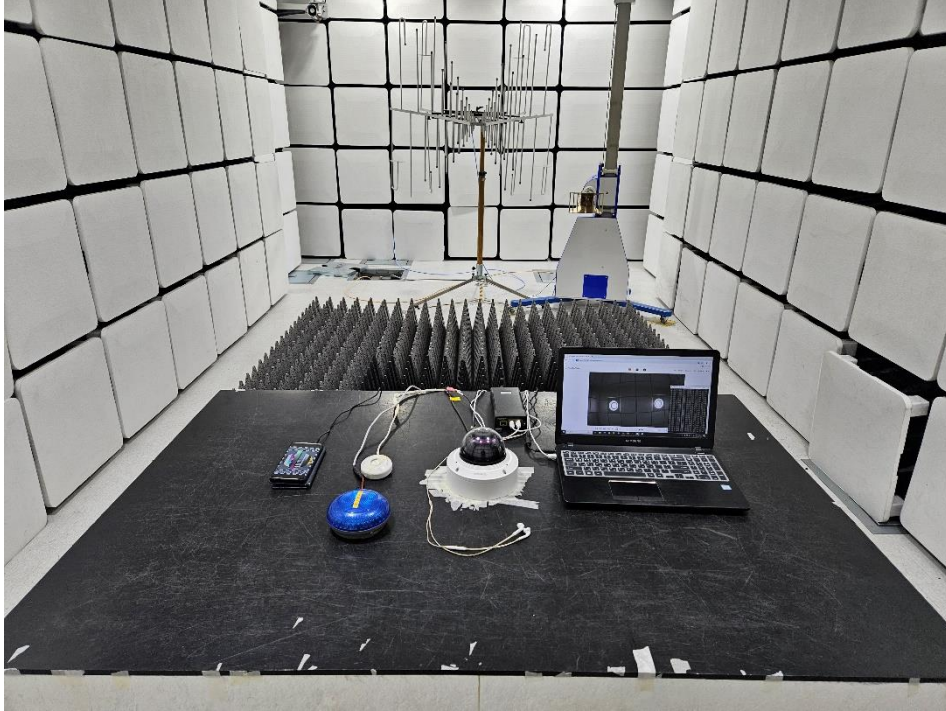
Radiated Electric Field Emissions(Above 1 GHz)

■ mode 1





■ mode 2



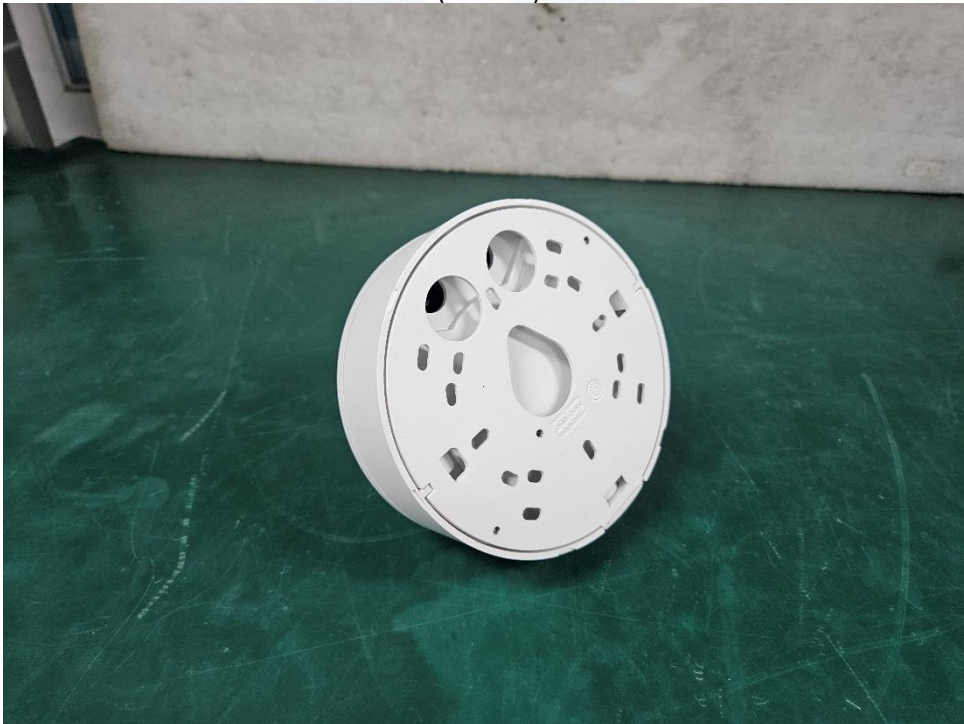


EUT External Photographs

(Top)



(Bottom)





EUT Internal Photographs

(Internal View)





EUT Internal View – Board 1

(Top)



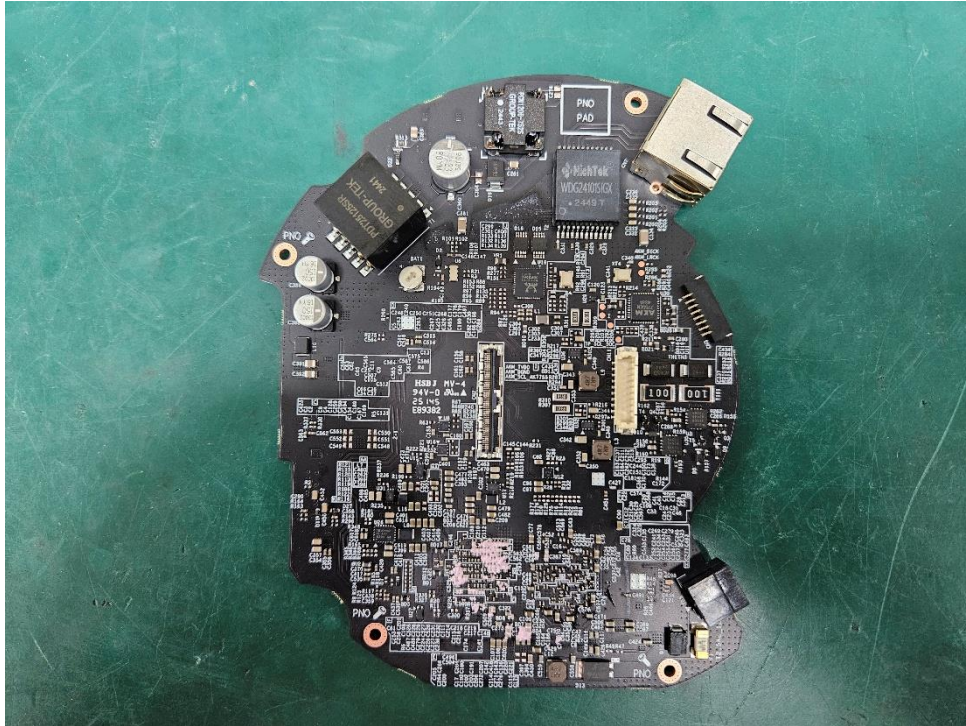
(Bottom)



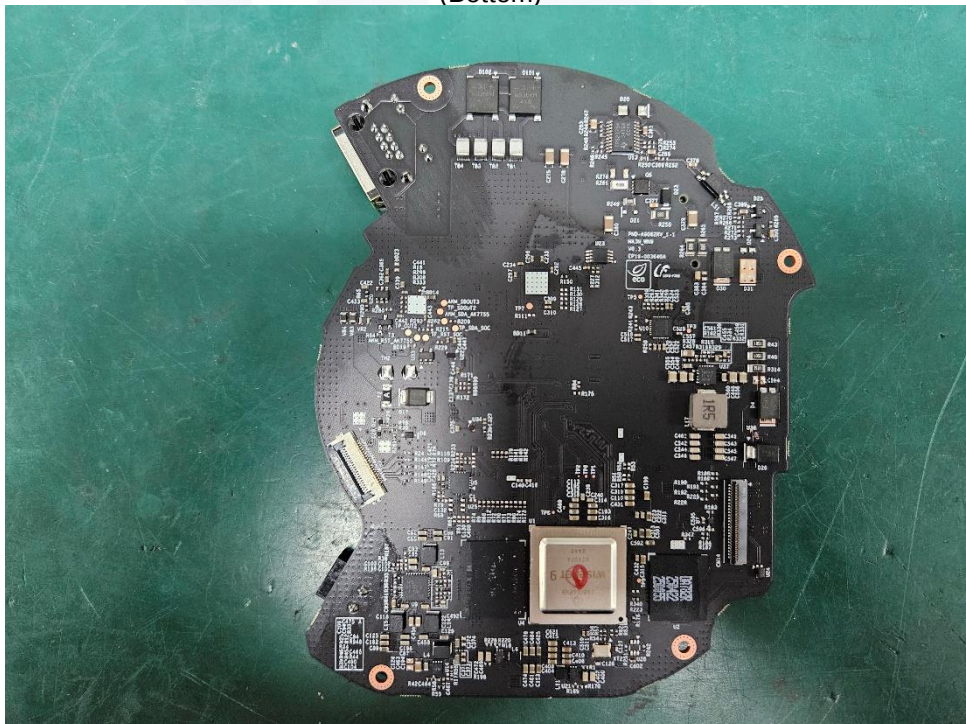


EUT Internal View – Board 2

(Top)



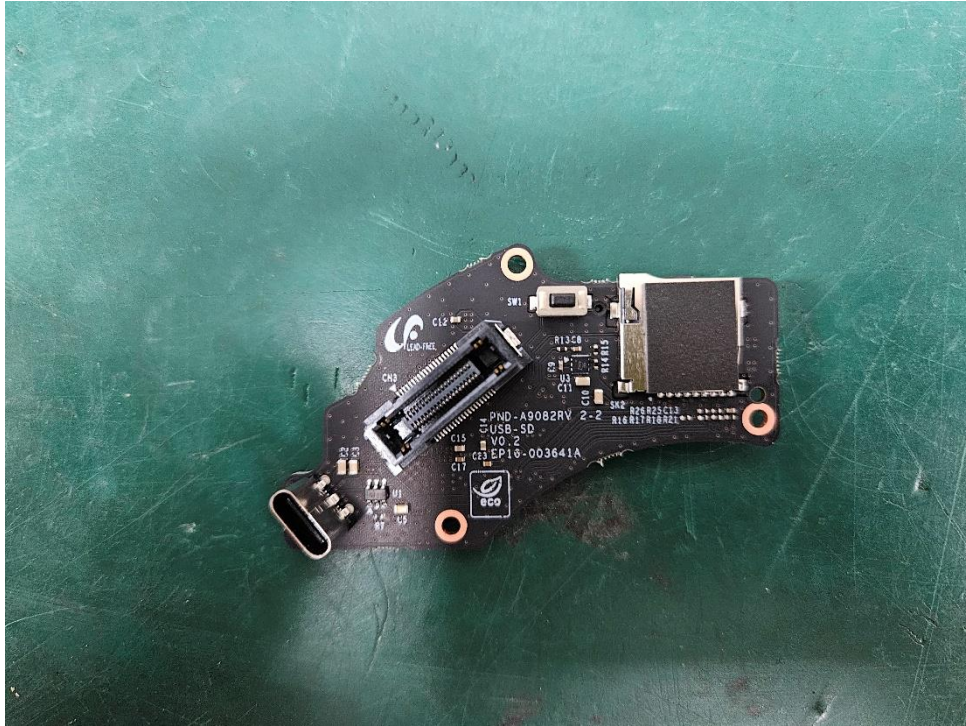
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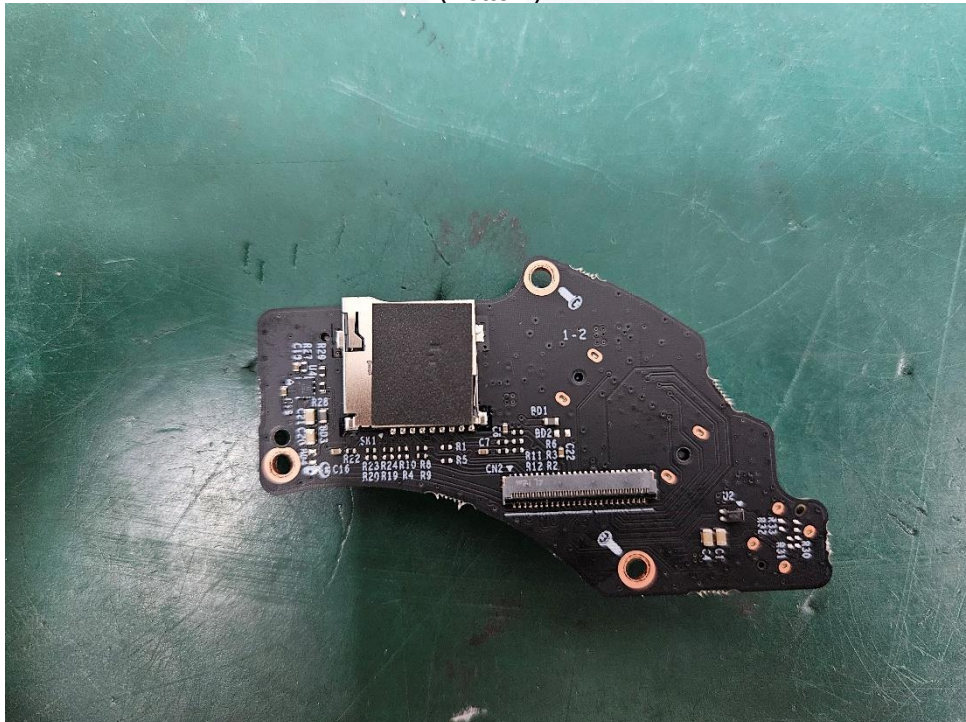


EUT Internal View – Board 3

(Top)



(Bottom)





EUT Internal View – Board 5

(Top)



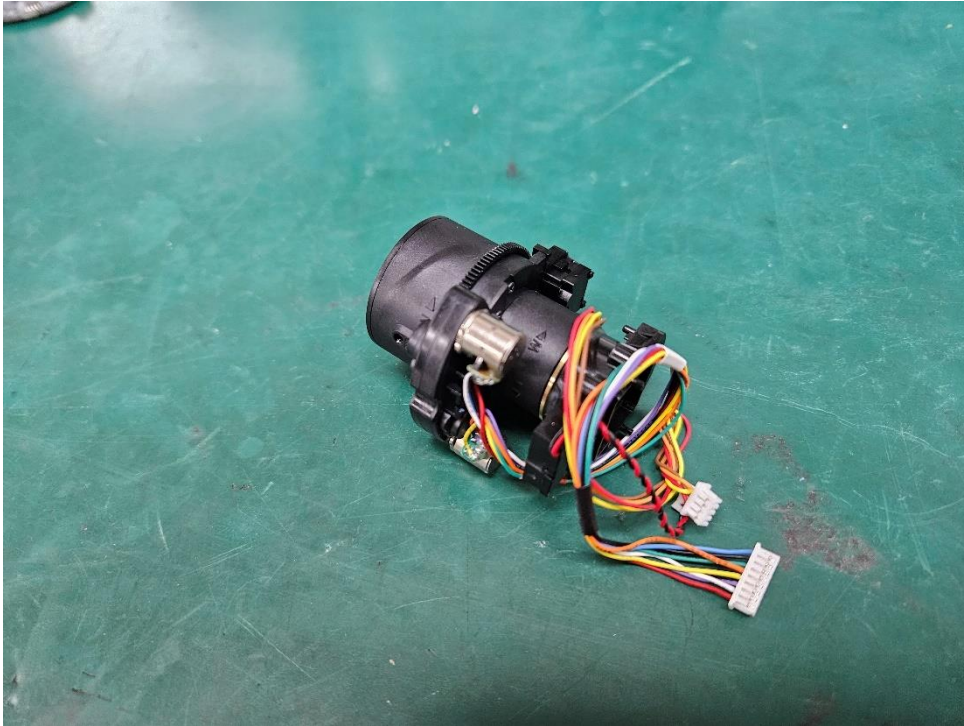
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EUT Internal View – Camera

(Top)

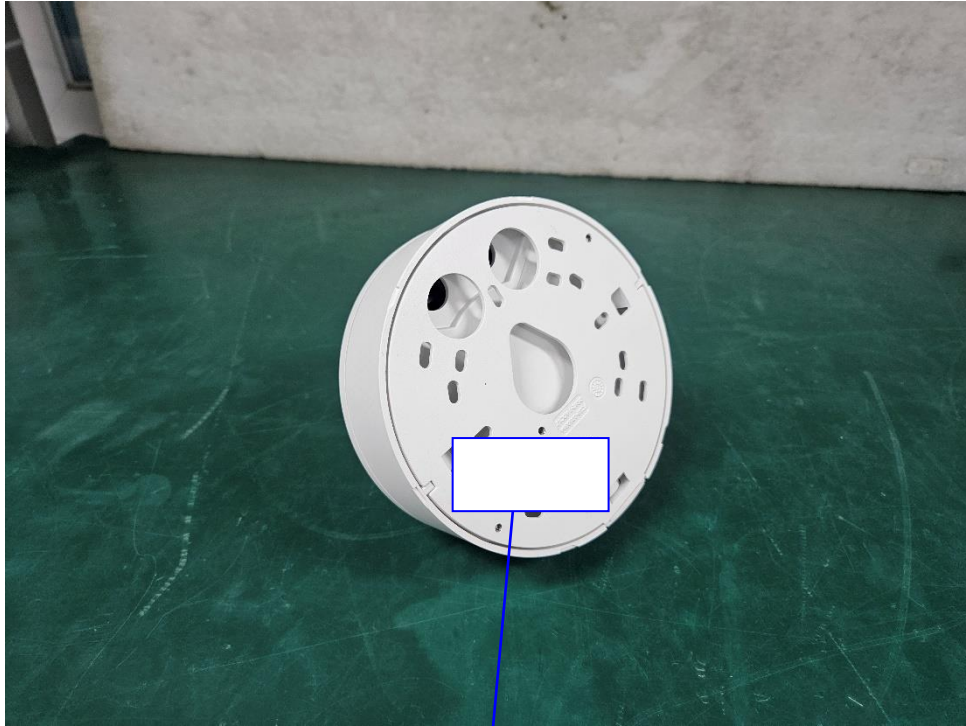


(Bottom)





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.