



TEST REPORT



Report No. : KES-EM243526

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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. : TNV-C8014RM

Variant Model : TNV-C8034RM, SPG-VAN23W

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. Equipment authorization : Supplier's Declaration of Conformity

4. Date of Receipt : Oct. 15, 2024

5. Test date : Oct. 24, 2024 ~ Nov. 03, 2024

6. Date of Issue : Nov. 14, 2024

7. Test Results : In Compliance

Tested by

Reviewed by

Jae Won, Lee
EMC Test Engineer

Dae Jung, Choi
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
Nov. 14, 2024	KES-EM243526	Issued

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1.0 General Product Description

Main Specifications of EUT are:

Internal highest operating frequency : 1.866 MHz

Mechanical	
Color / Material	White / Aluminum
RAL Code	RAL9003
Product Dimensions / Weight	106x105x55mm(4.17x4.13x2.17"), 466g(1.03 lb)
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 Railway/Vehicle Application EN50121-4, EN50121-3-2
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 Railway/Vehicle Application JIS E 5006, IEC62236-3-2, IEC62236-4, EN50121-4, , JIS E 4031, EN50498, EN50155, IEC/EN61373, EN45545-2 HL3,
Video	None
Compatible Models	
Dome Cover	SPB-VAN23W, SPG-VAN23W
Other Compatible Models	SBD-110GPA
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)



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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/ SFTP , SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, CDP, SRTP(TCP, UDP Unicast), MQTT
SIP support (VoIP, Peer-to-peer, SIP/PB)	None
Security	None
Application Programming Interface	ONVIF Profile S/G/T/M SUNAPI(HTTP API) Hanwha Vision Open Platform
Security	
OS / Firmware Protect	Encrypted firmware, Secure boot, Signed firmware
User authentication	Digest authentication, Prevent brute-force attack
Network authentication	IEEE 802.1X(EAP-TLS, EAP-LEAP, EAP-PEAP, MSCHAPv2)
Secure Communication	HTTPS, WSS(WebSocket Secure)
Access Control	IP-based access control
Data Protect	Encryption credentials, Encrypt compress for live recording file
Audit	Access / System / Event Log management
Device ID	Device certificate(Hanwha Vision Root CA)
Secure Storage	SDcard partition encrypt
Security Certificate	None
General	
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
Environmental & Electrical	
Operating Temperature / Humidity	-40°C~+55°C(-40°F~+131°F) / 0~100% RH(Condensing) * Start up should be done at above -30°C Humidity control /w Air vapor control
Storage Temperature / Humidity	-40°C~+55°C(-40°F~+131°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 7.2W, typical 4.2W



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Digital PTZ	Support
Video Rotation	Flip, Mirror, Hallway view(90°/270°)
Analytics	<p>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 BestShot 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, Shock detection, Virtual area(Appear/Disappear)</p> <p>* Some of the video analytics only works with people and vehicle detection</p>
Business Intelligence	Based on AI engine: People counting, Vehicle counting, Queue management, Heatmap
Serial Interface	None
Alarm I/O	None
Alarm Triggers	Analytics, Network disconnect, MQTT subscription
Alarm Events	<p>When alarm trigger occurred - File upload(image) : e-mail/FTP/SFTP - Notification : e-mail - Recording : SD/SDHC/SDXC or NAS recording at event triggers - Handover(PTZ preset, Send message by HTTP/HTTPS/TCP/Custom String) - Audio clip playback - MQTT: publication</p>
Audio Streaming	None
Audio In	Selectable(Mic in/Line in/Built-in mic)
Audio Out	Line out
Light Type	IR LED (850nm)
Light Viewable Length	20m(65.62ft) (QA현장대기중)
Network	
Ethernet	M12(10/100BASE-T)
Video Compression	H.265/H.264: Main/High, MJPEG
Audio Compression	<p>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</p>
Smart Codec	Manual(5ea area), WiseStreamⅢ(Based on AI engine)
Video Quality Adjustment	<p>H.264/H.265: Target bitrate level control MJPEG: Quality Level control</p>



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Video	
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)
Min. Illumination	Color: 0.03Lux (F1.6, 1/30sec) BW: 0.003Lux (F1.6, 1/30sec, 30IRE), 0Lux(IR LED on)
Video Out	USB: Micro USB Type B, 1280x720 for installation
Lens	
Focal Length (Zoom Ratio)	3.0mm fixed focal
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
Pan / Tilt / Rotate	
Pan / Tilt / Rotate Range	±5° / 0°~67° / ±90°
Operational	
Camera Title	Displayed up to 85 characters
Day & Night	Auto(ICR)
Backlight Compensation	BLC, WDR, SSDR, Clear HDR
Wide Dynamic Range	120dB
Digital Noise Reduction	WiseNRⅡ(Based on AI engine) SSNRV
Digital Image Stabilization	Support(built-in gyro sensor)
Defog	Support : Manual
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)



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

- TNV-C8034RM : Fixed Lens Difference
- SPG-VAN23W : Add derivative model for vendor management

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	TNV-C8014RM	-	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.	-
PoE Injector	PT-PSE109GBRO-AH	-	Dongguan PROCET Network Technology Co.,Ltd	-
Headset	K550	-	Britz®	-
Smartphone	-	-	SAMSUNG	-
4 Pin to RJ-45 Gender	-	-	-	-
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)	4 Pin	4 Pin to RJ-45 Gender	4 Pin	-	-
	Audio IN	Headset	Audio OUT	1.5	U
	Audio OUT		Audio IN	1.5	U
	Micro SD Card Slot	Micro SD Card	Micro SD Card Slot	-	-
4 Pin to RJ-45 Gender	RJ-45(PoE)	PoE Injector	RJ-45(PoE)	3.5	U
PoE Injector	RJ-45(LAN)	Laptop	RJ-45(LAN)	2.0	U
Laptop	DC Jack	Laptop Adapter	DC Jack	1.6	U
Laptop	3.5 mm	Smartphone	3.5 mm	1.0	U

* Unshielded=U, Shielded=S

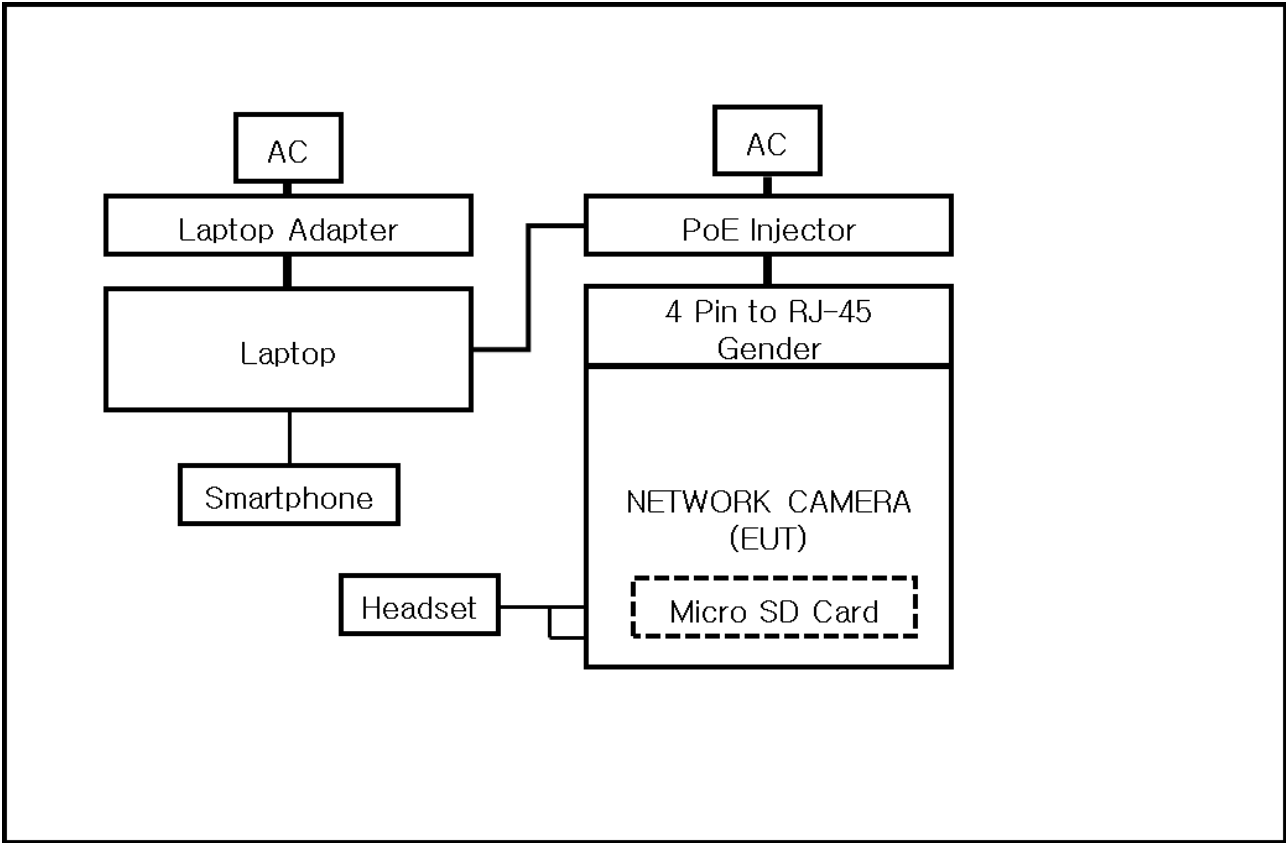
1.7 EUT Operating Mode(s)

Test mode	Normal operating
Operating	<ol style="list-style-type: none">1. Connect to the web viewer and test while checking the video output of the test equipment.2. Run the Ping Test to check whether the network of the test equipment is operating normally.3. Confirm normal output from the headset by outputting 1 kHz Tone.4. Activate the microphone in the web viewer to check if the microphone is in normal condition.5. Check whether the recording file is saved on the Micro SD Card before/after the test.

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 Micro 5 Pin port is not tested as it is for administrator use.

- Administrator port photo



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

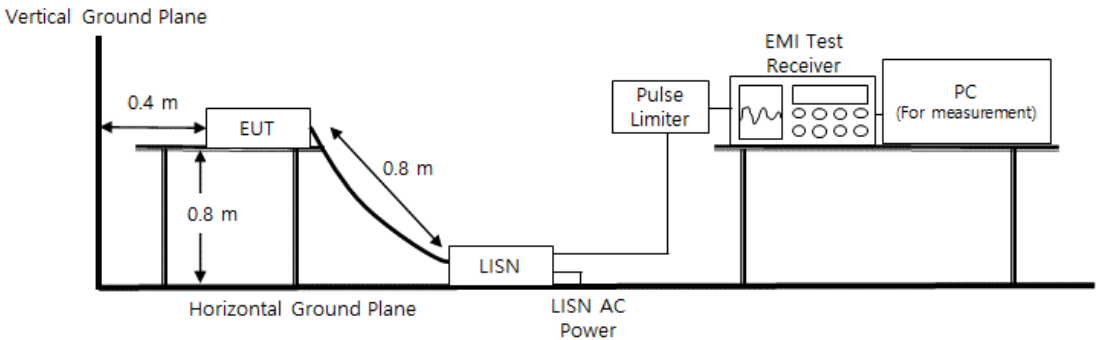
Test Date
Oct. 24, 2024

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: (24,1 ± 0,1) °C
Relative Humidity: (47,0 ± 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)

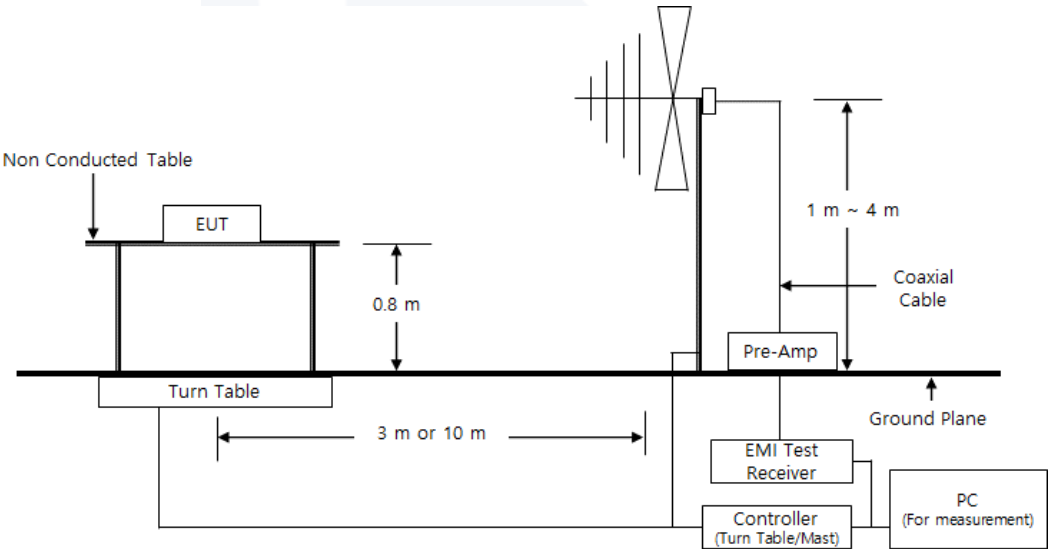
Test Date
Nov. 03, 2024

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"/>	BILOG ANTENNA	VULB 9168	SCHWARZBECK	9168-461	05, 09, 2026
<input checked="" type="checkbox"/>	ATTENUATOR	6806.17.A	HUBER+SUHNER	-	02, 13, 2025

Diagram of test setup





Test Conditions

Temperature: (23,4 ± 0,1) °C
Relative Humidity: (45,0 ± 0,1) % R.H.

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

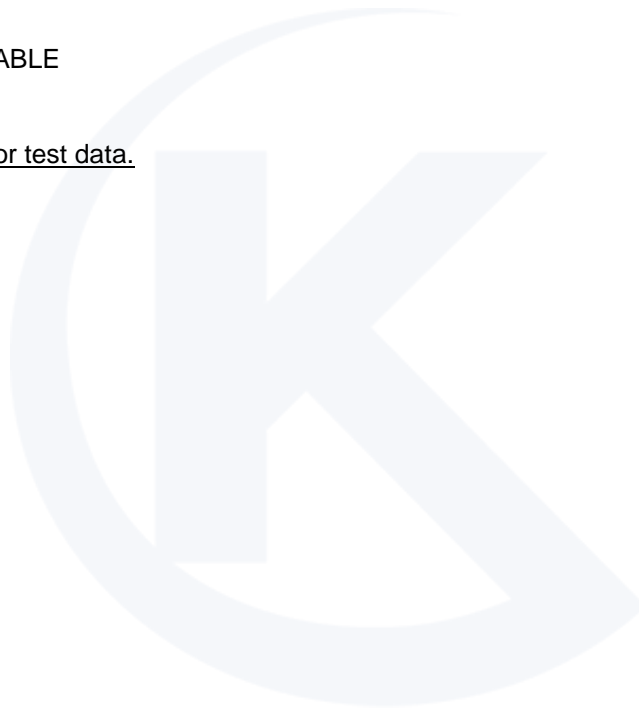
Test Results

The requirements are:

- ☒ PASS
- ☐ NOT PASS
- ☐ NOT APPLICABLE

Remarks

See Appendix A for test data.





2.3 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Oct. 25, 2024

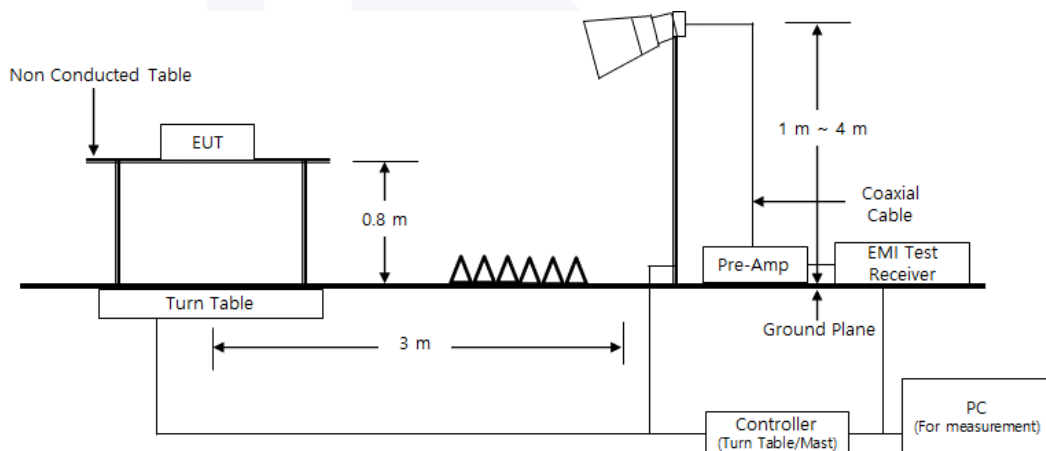
Test Location

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: $(22,8 \pm 0,1)^{\circ}\text{C}$
Relative Humidity: $(46,2 \pm 0,1) \% \text{ R.H.}$

Frequency Range of Measurement

1 GHz to 10 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.



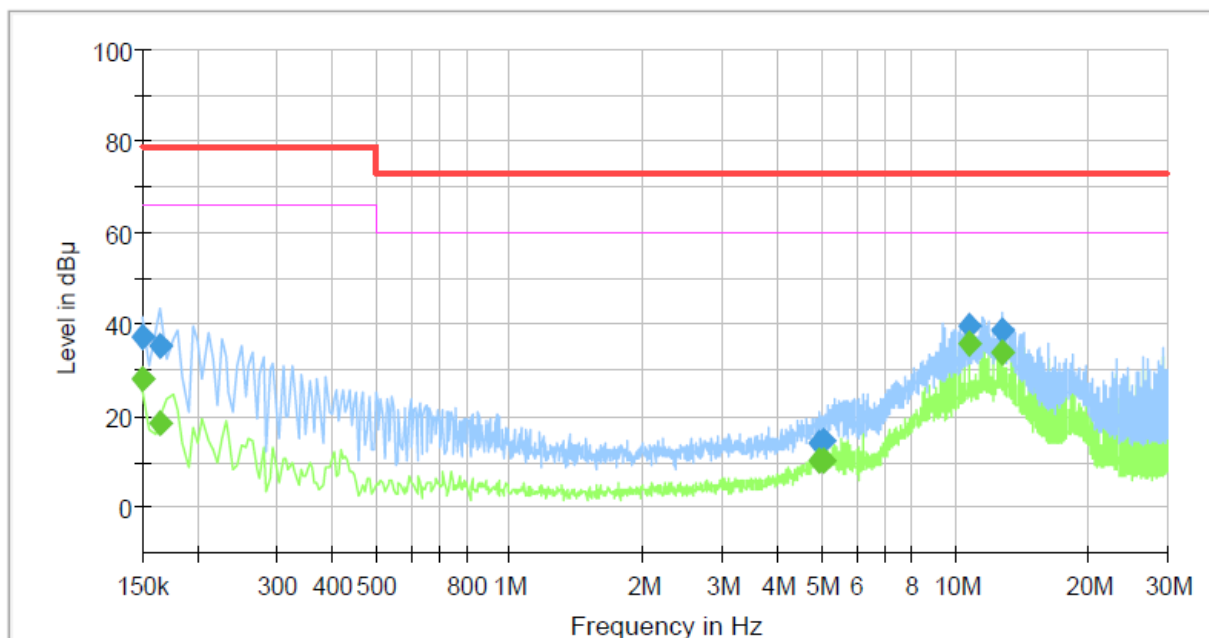
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

HOT LINE

Common Information

Test Description: Conducted Emission
Job No.: KES-EM243526
Phase: L
Mode:
Operator Name: KES



Final Result

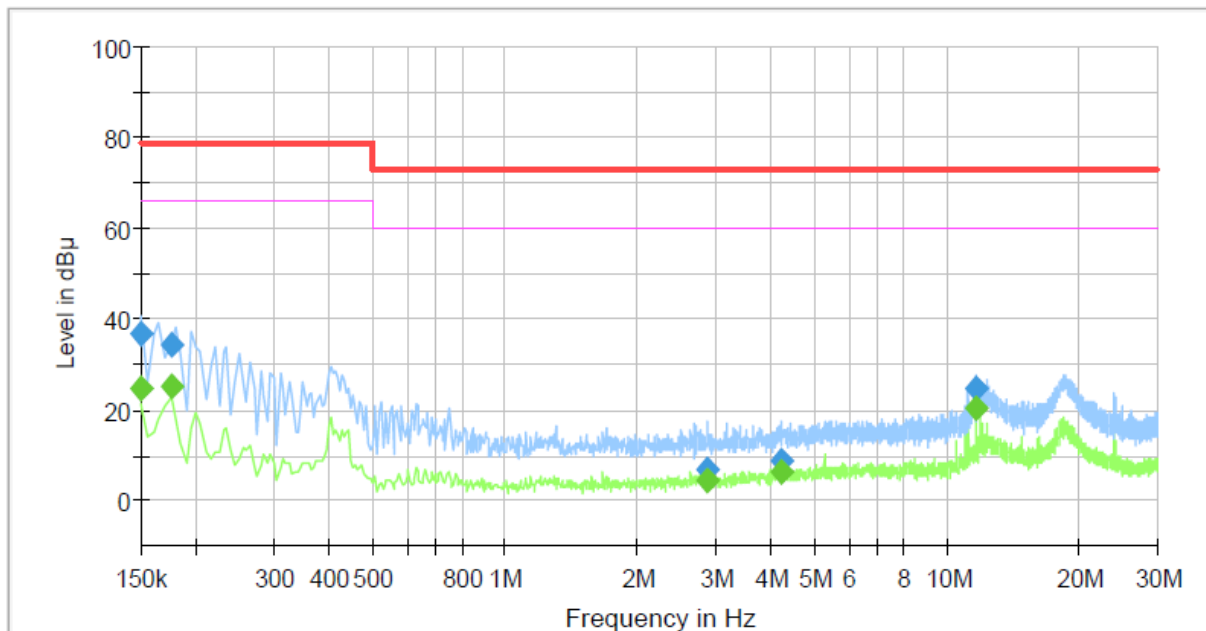
Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	27.88	66.00	38.12	1000.0	9.000	L1	19.6
0.150000	37.36	---	79.00	41.64	1000.0	9.000	L1	19.6
0.165000	---	18.49	66.00	47.51	1000.0	9.000	L1	19.6
0.165000	35.23	---	79.00	43.77	1000.0	9.000	L1	19.6
4.975000	---	10.21	60.00	49.79	1000.0	9.000	L1	20.0
4.975000	14.05	---	73.00	58.95	1000.0	9.000	L1	20.0
5.095000	---	10.43	60.00	49.57	1000.0	9.000	L1	20.0
5.095000	14.71	---	73.00	58.29	1000.0	9.000	L1	20.0
10.795000	---	36.04	60.00	23.96	1000.0	9.000	L1	20.2
10.795000	39.92	---	73.00	33.08	1000.0	9.000	L1	20.2
12.745000	---	33.89	60.00	26.11	1000.0	9.000	L1	20.2
12.745000	38.49	---	73.00	34.51	1000.0	9.000	L1	20.2



NEUTRAL LINE

Common Information

Test Description: Conducted Emission
Job No.: KES-EM243526
Phase: N
Mode:
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)
0.150000	---	24.80	66.00	41.20	1000.0	9.000	N	19.5
0.150000	36.57	---	79.00	42.43	1000.0	9.000	N	19.5
0.175000	---	25.09	66.00	40.91	1000.0	9.000	N	19.5
0.175000	34.56	---	79.00	44.44	1000.0	9.000	N	19.5
2.860000	---	4.57	60.00	55.43	1000.0	9.000	N	19.8
2.860000	6.72	---	73.00	66.28	1000.0	9.000	N	19.8
4.230000	---	6.31	60.00	53.69	1000.0	9.000	N	19.9
4.230000	8.68	---	73.00	64.32	1000.0	9.000	N	19.9
11.650000	---	20.40	60.00	39.60	1000.0	9.000	N	20.2
11.650000	24.55	---	73.00	48.45	1000.0	9.000	N	20.2

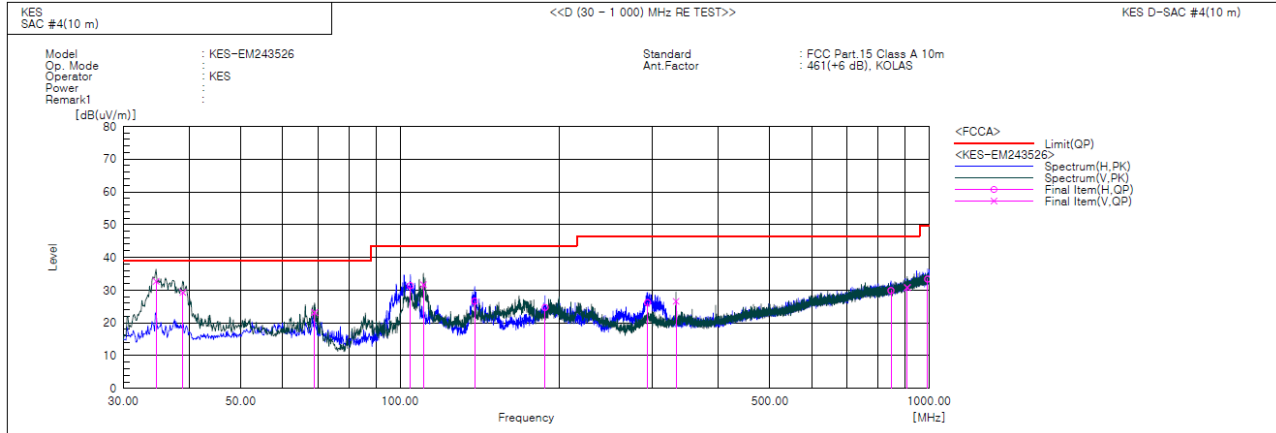
◆ Calculation

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))

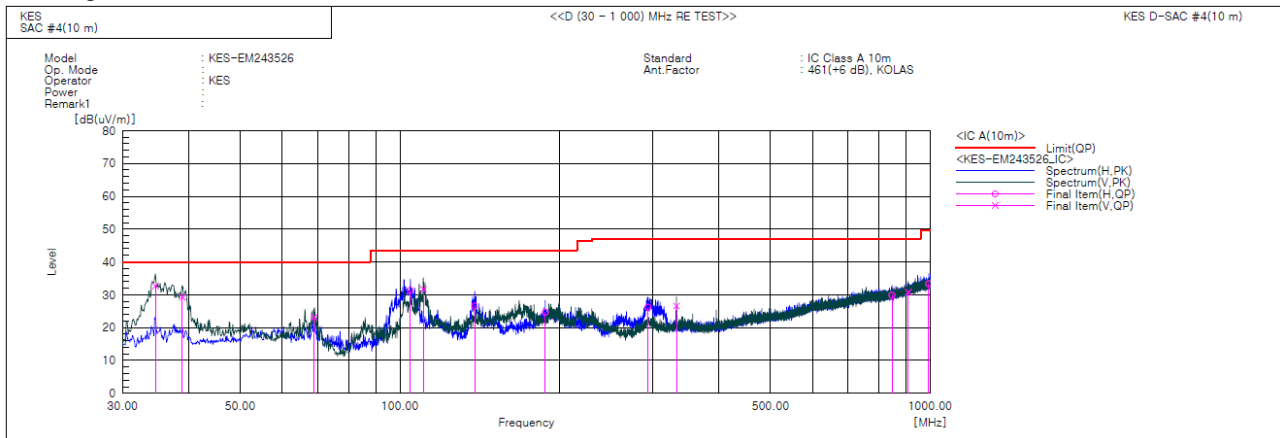
**Radiated Electric Field Emissions(Below 1 GHz)****- 47 CFR Part 15, Subpart B****Final Result**

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	34.608	V	55.1	-22.4	32.7	39.0	6.3	114.0	322.0	
2	38.851	V	51.4	-22.1	29.3	39.0	9.7	146.0	122.0	
3	68.921	V	45.8	-22.6	23.2	39.0	15.8	142.0	25.0	
4	104.690	H	55.7	-24.3	31.4	43.5	12.1	195.0	112.0	
5	110.753	V	55.2	-23.5	31.7	43.5	11.8	106.0	118.0	
6	138.398	H	47.0	-20.4	26.6	43.5	16.9	396.0	312.0	
7	187.989	H	46.3	-21.6	24.7	43.5	18.8	195.0	245.0	
8	293.598	H	43.6	-17.4	26.2	46.5	20.3	199.0	227.0	
9	332.398	V	42.7	-16.1	26.6	46.5	19.9	106.0	137.0	
10	847.225	H	32.9	-3.0	29.9	46.5	16.6	106.0	304.0	
11	908.941	V	32.4	-1.6	30.8	46.5	15.7	114.0	248.0	
12	993.816	H	33.4	0.0	33.4	49.5	16.1	398.0	241.0	



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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	34.608	V	55.1	-22.4	32.7	40.0	7.3	114.0	322.0	
2	38.851	V	51.4	-22.1	29.3	40.0	10.7	146.0	122.0	
3	68.921	V	45.8	-22.6	23.2	40.0	16.8	142.0	25.0	
4	104.690	H	55.7	-24.3	31.4	43.5	12.1	195.0	112.0	
5	110.753	V	55.2	-23.5	31.7	43.5	11.8	106.0	118.0	
6	138.398	H	47.0	-20.4	26.6	43.5	16.9	396.0	312.0	
7	187.989	H	46.3	-21.6	24.7	43.5	18.8	195.0	245.0	
8	293.598	H	43.6	-17.4	26.2	47.0	20.8	199.0	227.0	
9	332.398	V	42.7	-16.1	26.6	47.0	20.4	106.0	137.0	
10	847.225	H	32.9	-3.0	29.9	47.0	17.1	106.0	304.0	
11	908.941	V	32.4	-1.6	30.8	47.0	16.2	114.0	248.0	
12	993.816	H	33.4	0.0	33.4	49.5	16.1	398.0	241.0	

◆ Calculation

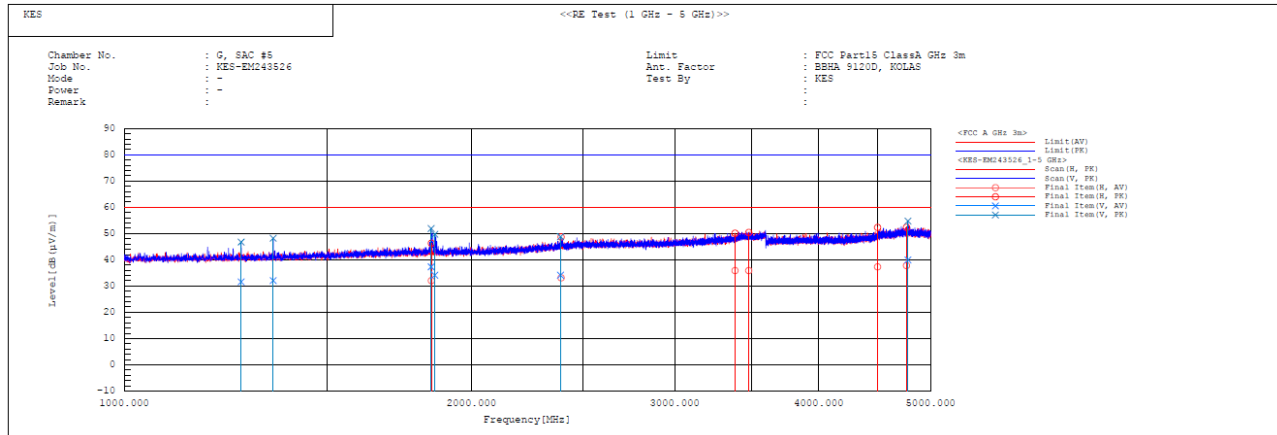
$$\text{Result(QP)} [\text{dB}(\mu\text{V/m})] = (\text{Reading(QP)} [\text{dB}(\mu\text{V})] + \text{c.f} [\text{dB}(1/\text{m})])$$
$$\text{Margin(QP)} [\text{dB}] = \text{Limit} [\text{dB}(\mu\text{V/m})] - \text{Result(QP)} [\text{dB}(\mu\text{V/m})]$$

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

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

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

- (1 ~ 5) GHz

**Final Result**

No.	Frequency [MHz]	Pol	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c.f [dB(l/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [deg]	Remark
1	1263.218	V	32.0	47.1	-0.4	31.6	46.7	60.0	80.0	28.4	33.3	148.0	338.9	
2	1346.785	V	32.1	48.2	0.0	32.1	48.2	60.0	80.0	27.9	31.8	104.0	91.7	
3	1845.528	V	35.1	49.7	2.2	37.3	51.9	60.0	80.0	22.7	28.1	101.0	160.7	
4	1846.577	H	29.9	44.1	2.2	32.1	46.3	60.0	80.0	27.9	33.7	197.0	204.1	
5	1859.597	V	31.9	47.5	2.2	34.1	49.7	60.0	80.0	25.9	30.3	104.0	160.7	
6	2389.293	V	29.8	44.5	4.3	34.1	48.8	60.0	80.0	25.9	31.2	101.0	319.6	
7	2392.408	H	28.8	44.4	4.3	33.1	48.7	60.0	80.0	26.9	31.3	397.0	285.3	
8	3385.209	H	29.2	43.4	6.7	35.9	50.1	60.0	80.0	24.1	29.9	197.0	46.6	
9	3478.885	H	29.0	43.5	6.9	35.9	50.4	60.0	80.0	24.1	29.6	197.0	15.8	
10	4498.448	H	26.9	41.9	10.4	37.3	52.3	60.0	80.0	22.7	27.7	397.0	353.1	
11	4766.548	H	26.3	40.9	11.5	37.8	52.4	60.0	80.0	22.2	27.6	397.0	192.4	
12	4779.687	V	28.4	43.2	11.5	39.9	54.7	60.0	80.0	20.1	25.3	147.0	139.7	



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- (5 ~ 10) 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)
6 640.687	41.200	V	1.000	34.700	9.240	34.760	50.380	80.000	29.620
8 854.397	40.800	H	1.000	38.460	10.710	34.270	55.700	80.000	24.300

- 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)
6 640.687	27.600	V	1.000	34.700	9.240	34.760	36.780	60.000	23.220
8 854.397	27.000	H	1.000	38.460	10.710	34.270	41.900	60.000	18.100

◆ 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



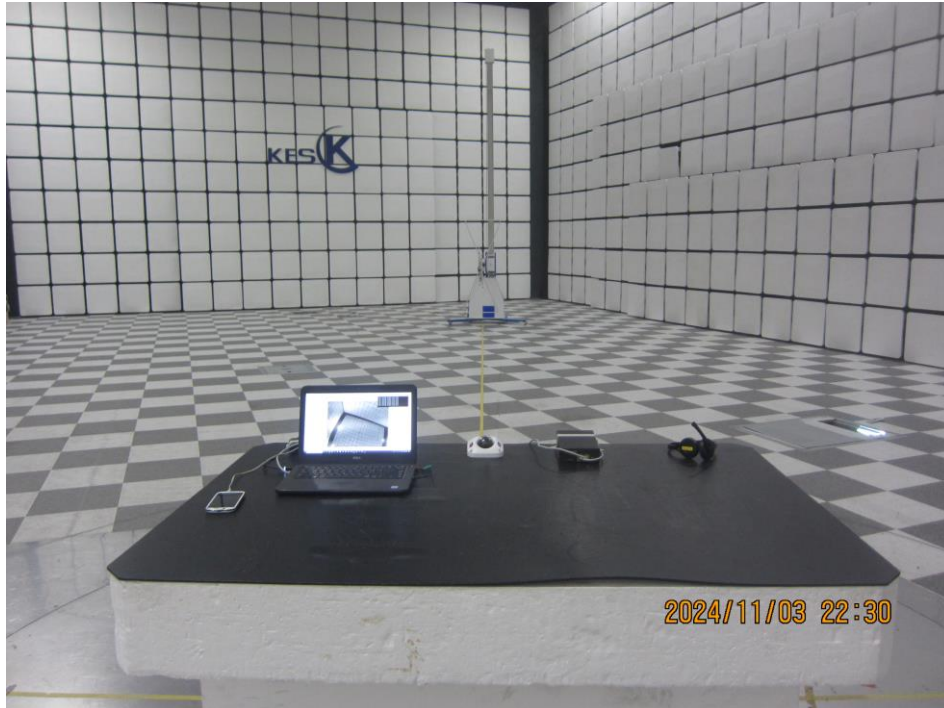
Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports



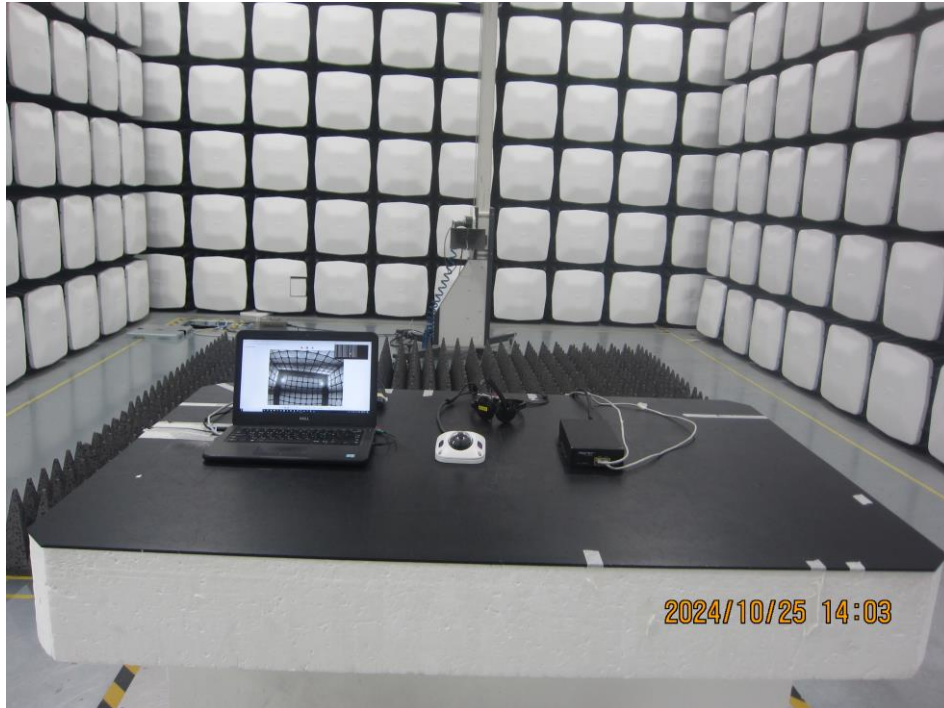


Radiated Electric Field Emissions(Below 1 GHz)





Radiated Electric Field Emissions(Above 1 GHz)





EUT External Photographs

(Top)



(Bottom)





EUT Internal Photographs

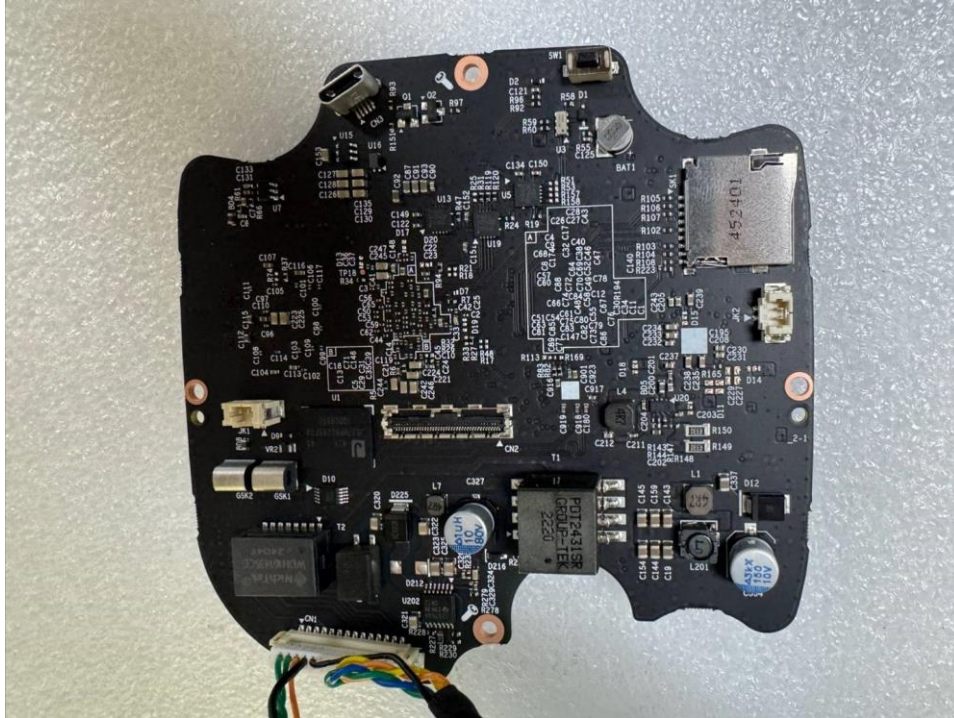
(Internal View)



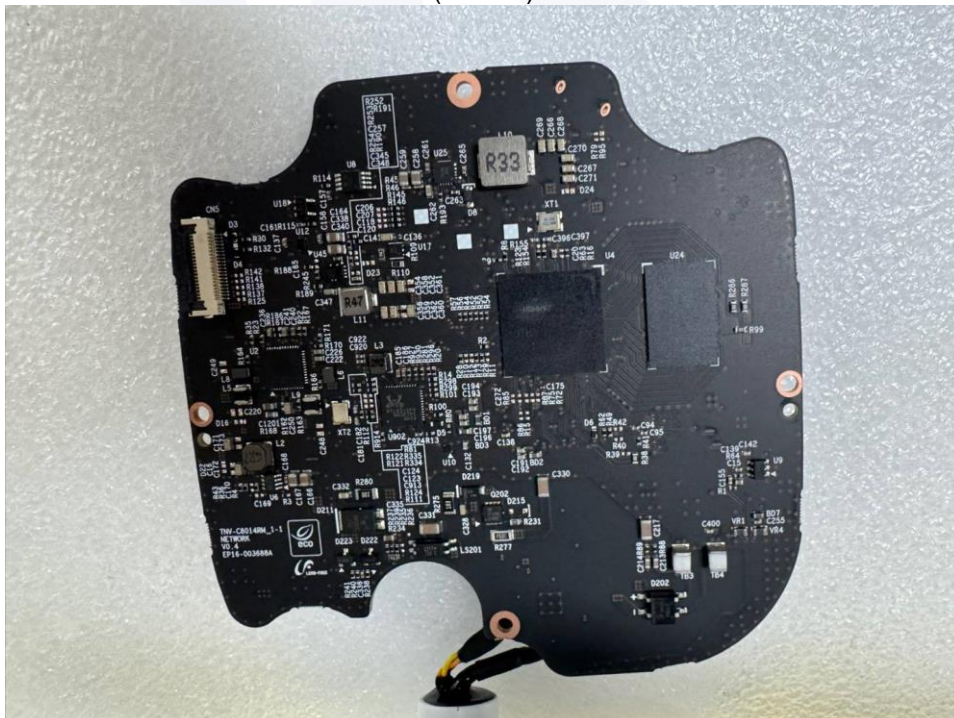


EUT Internal View – Main Board

(Top)



(Bottom)



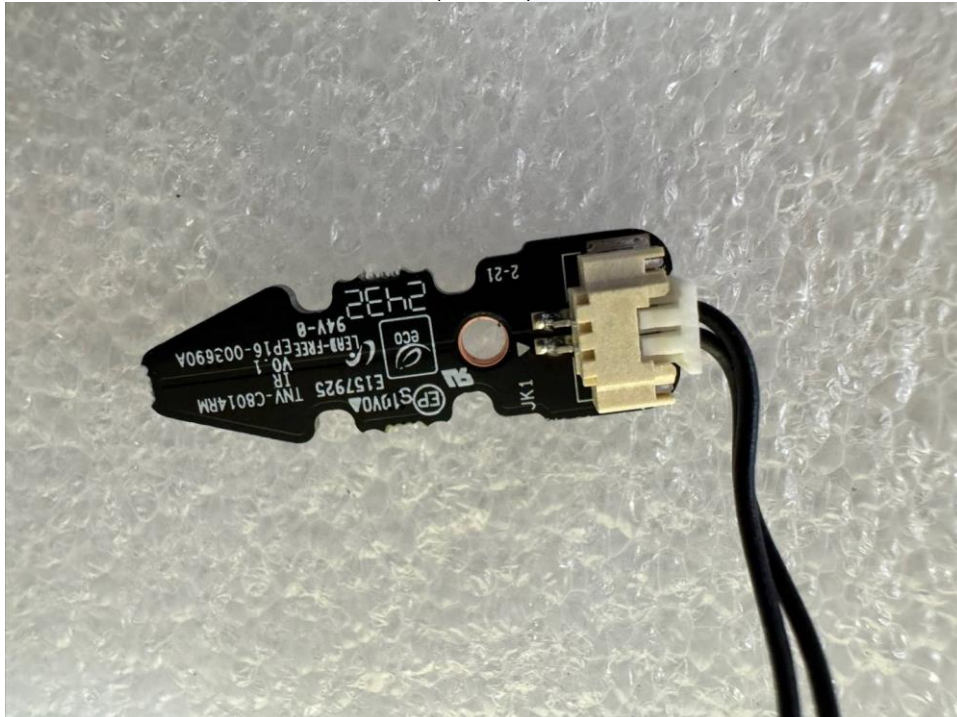


EUT Internal View – SUB Board 1

(Top)



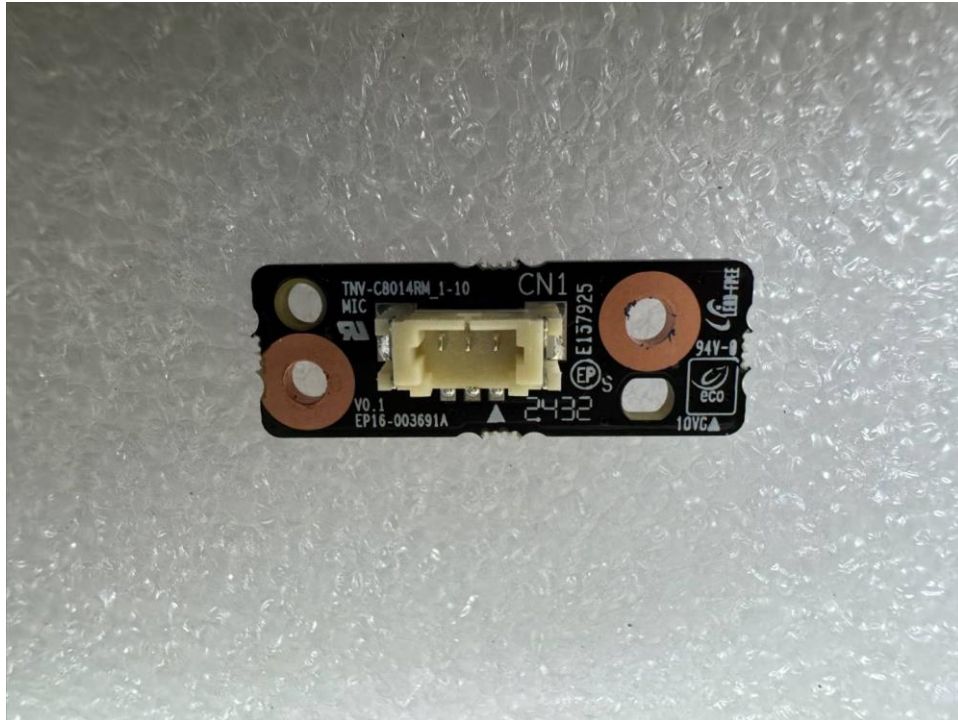
(Bottom)



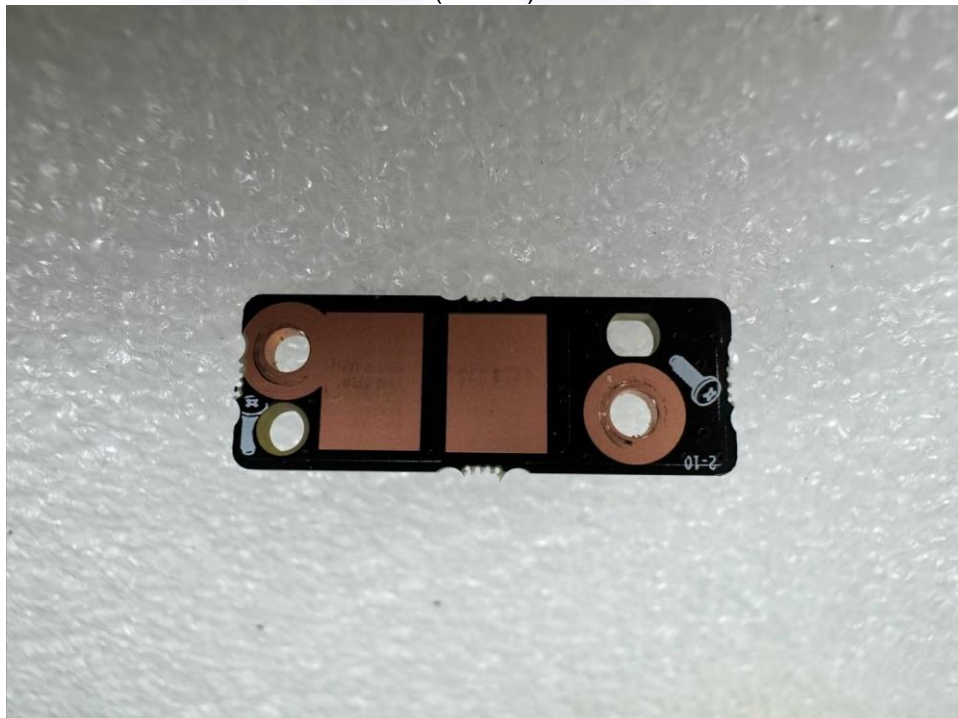


EUT Internal View – SUB Board 3

(Top)



(Bottom)



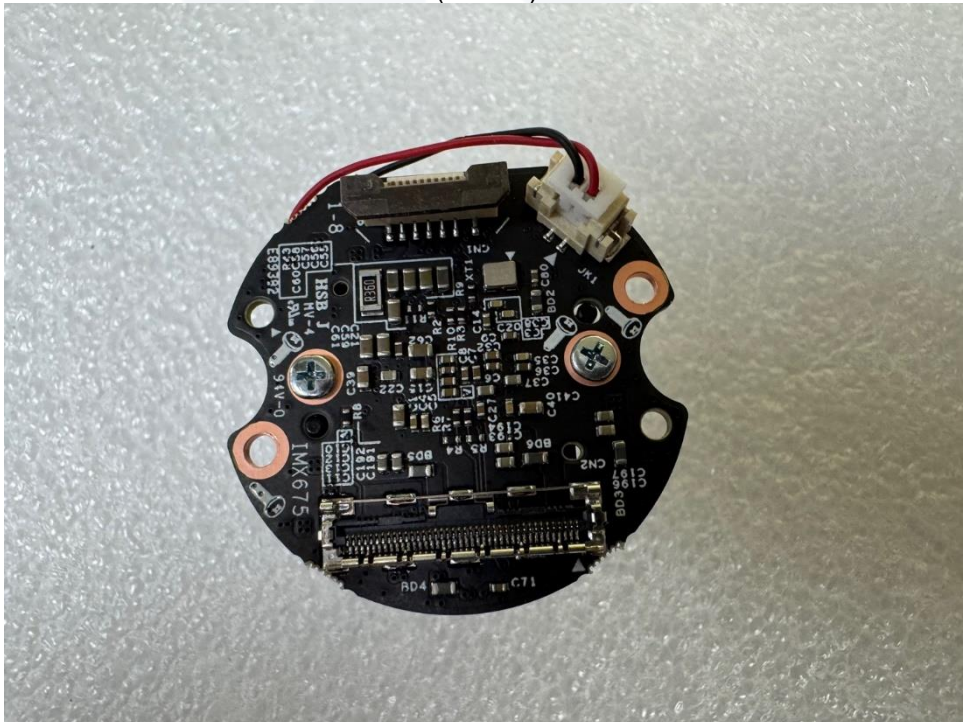


EUT Internal View – Lens Board

(Top)



(Bottom)





EUT Internal View – Microphone

(Top)



(Bottom)





Label Photographs

FCC Label



NETWORK CAMERA

TNV-C8014RM

IC Label

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

This device complies with ICES-003 Canada Rules 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.

The End.