



TEST REPORT



Report No. : KES-EM251789

Page 1 / 44

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. : PNV-A9082RZ

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

3. Date of Receipt : May. 15, 2025

4. Test date : Jul. 17, 2025 ~ Jul. 22, 2025

5. Date of Issue : Jul. 29 2025

6. Test Results : In Compliance

Tested by

Reviewed by

Keo Il, 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 No. : KES-EM251789

REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Jul. 29, 2025	KES-EM251789	Issued

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd. This document may be altered or revised by KES Co., Ltd. personnel only, and shall be noted in the revision section of the document. Any alteration of this document not carried out by KES Co., Ltd. will constitute fraud and shall nullify the document.



Report No. : KES-EM251789

TABLE OF CONTENTS

1.0	General Product Description.....	4
1.1	Test Voltage & Frequency	9
1.2	Variant Model Differences	9
1.3	Device Modifications	9
1.4	Equipment Under Test	9
1.5	Support Equipments	9
1.6	External I/O Cabling.....	10
1.7	EUT Operating Mode(s).....	10
1.8	Configuration.....	11
1.9	Remarks when standards applied	12
1.10	Calibration Details of Equipment Used for Measurement	12
1.11	Test Facility	12
1.12	Measurement Procedure	12
1.13	Laboratory Accreditations and Listings	13
2.0	Test Regulations	14
2.1	Conducted Emissions at Mains Power Ports.....	15
2.2	Radiated Electric Field Emissions(Below 1 GHz).....	17
2.3	Radiated Electric Field Emissions(Above 1 GHz)	19
APPENDIX A – TEST DATA		21
Conducted Emissions at Mains Power Ports		21
Radiated Electric Field Emissions(Below 1 GHz)		23
Radiated Electric Field Emissions(Above 1 GHz).....		25
Test Setup Photos and Configuration.....		27
Conducted Emissions at Mains Power Ports		27
Radiated Electric Field Emissions(Below 1 GHz)		28
Radiated Electric Field Emissions(Above 1 GHz).....		29
EUT External Photographs.....		30
EUT Internal Photographs.....		31



Report No. : KES-EM251789

1.0 General Product Description

Main Specifications of EUT are:

Division		Specificity
Internal highest operating frequency		1.6 GHz
Power	Rated Power	PoE
	Test Power	AC 120 V, 60 Hz
Ports	I/O Port	Micro SD Card Slot 2 EA, RJ-45(PoE) 1 EA
Components		Camera 1 EA
Ethernet Speed		1 000 Mbps

	PNV-A9082RZ
Video	
Imaging Device	1/1.2" CMOS
Resolution	3840x2160, 3328x1872, 3072x1728, 2592x1944, 2592x1520, 2560x1440, 1920x1080, 1600x1200, 1280x960, 1280x720, 1024x768, 800x600, 640x480, 640x360, 320x240, 320x180
Max. Framerate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps(@8MP Max. 5fps)
NETD	None
Pixel Size	None
Video Out	None
Video Transmission Distance	None
Lens	
Focal Length (Zoom Ratio)	5.9~13.3mm(2.25x) motorized varifocal
Optical Zoom	None
Max. Aperture Ratio	F1.5(Wide)~F2.9(Tele)
Angular Field of View	H: 109°(Wide)~49°(Tele) V: 59°(Wide)~27°(Tele) D: 128°(Wide)~56°(Tele)
Focus Control	Simple focus
Lens Type	P-iris(IR corrected)
Mount Type	None
Optional Lens	None
Pan / Tilt / Rotate	
Pan Range	None
Pan Speed	None
Tilt Range	None
Tilt Speed	None
Rotate Range	None
Sequence	None
Preset Accuracy	None



Report No. : KES-EM251789

Operational	
Camera Title	Displayed up to 85 characters
Direction Indicator	None
Day & Night	Auto(ICR)
Backlight Compensation	BLC, HLC, WDR , SDR
Wide Dynamic Range	120dB
Digital Noise Reduction	SSNRV, WiseNRII(Based on AI engine)
Digital Image Stabilization	Support
Defog	Support
Motion Detection	8ea, 8point polygonal zones
Privacy Masking	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
Gain Control	Off / Max Gain / Manual
White Balance	ATW / NarrowATW / AWC / Manual / Indoor / Outdoor
LDC	Support(Fill/Stretch mode)
Electronic Shutter Speed	Minimum / Maximum / Anti flicker(2~1/30,000sec) Prefer shutter control(Based on AI engine)
Digital PTZ	None
Video Rotation	Flip, mirror, hallway view(90°/270°)
Analytics	Classified object type: Person/Face/Vehicle(Type: car/bus/truck/motorcycle/bicycle)/License plate Attributes: Person(Gender, Clothing top/bottom color, Bag), Face(Age, Gender, Mask, Glasses), Vehicle(Type: car/bus/truck/motorcycle/bicycle, Color) Support BestShot Support Re-ID(Person) 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) Analytics events - Defocus detection, Tampering, Shock detection, Audio detection
Business Intelligence	Based on AI engine: People/Vehicle/Crowd counting, Queue management, Heatmap
Serial Interface	None
Alarm I/O	None
Alarm Triggers	Analytics, Network disconnection, Alarm input, Time schedule, MQTT subscription, Day/Night, Storage disruption, Case tampering * Alarm input(with NW I/O Box SPM-4210)
Alarm Events	When alarm trigger occurred - File upload(image): e-mail/FTP/SFTP - File upload(video clip): FTP/SFTP - 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
Audio Streaming	None
Audio In	None
Audio Out	None
Light Type	IR LED
IR Viewable Length	None
IR Illuminator (Optional)	None
IR Radiation angle	None
IR LED	None
IR Wavelength	850nm
IR Operation	None
Water Removal	None
Auto Tracking	None
Coaxial Protocol	None
Color Palettes	None



Report No. : KES-EM251789

Radiometry	
Temperature Detect Range	None
Temperature Accuracy	None
Temperature Detection	None
Additional	None
Network	
Ethernet	Metal shielded RJ-45(10/100/1000BASE-T)
Video Compression	H.265/H.264: Main/Baseline/High MJPEG
Audio Compression	None
Smart Codec	WiseStream(Based on AI engine)
Video Quality Adjustment	None
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 5 profiles, 3 virtual channel support)
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
SIP support (VoIP, Peer-to-peer,	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	802.1X Authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2)
Secure Communication	HTTPS, SRTP, WSS(Websocket secure)
Access Control	IP-based access control, MAC-based access control, Auto logout
Data Protect	Encryption Credentials, Encrypt compress for live recording file export
Audit	Access / System / Event Log management
Device ID	Device Certificate(Hanwha vision Root CA)
Secure Storage	Secure element, SDcard partition encrypt
Security Certificate	ETSI EN 303 645, Secure element(FIPS 140-3 level3, CC EAL6+)
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 2slots 2TB(1TBx2)
Memory	4GB RAM, 8GB eMMC



Report No. : KES-EM251789

Environmental & Electrical	
Operating Temperature / Humidity	-50°C~+55°C(-58°F~+131°F) / 0~100% RH +74°C(+165°F)(MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at above -30°C Humidity control /w AIR vent
Storage Temperature / Humidity	-50°C~+60°C(-58°F~+140°F) / 0~90% RH
Wind Load	None
EPA(Effective Projected Area)	0.017m ²
Certification	IP66/IP67/IP6K9K, NEMA4X, IK11, NEMA-TS 2(2.2.7.2-8, 2.2.8, 2.2.9)
Input Voltage	PoE+(IEEE802.3at type2, Class4)
Power Consumption	PoE: Max. 17.5W, typical 11.0W Support Wisepower - Power monitoring(Max./Current/Avg.)
Mechanical	
Color / Material	White / Aluminum Bubble: Hard-coated dome
RAL Code	RAL9003
Product Dimensions / Weight	ø180x135mm(ø7.09x5.31"), 2,100g(4.63lb)
Compatible Conduit hole / Gang	19.1mm(3/4")(M25) single, double, 4" octagon, 4" square
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/IP67/IP6K9K, IEC/EN 62262 IK11, NEMA 250 Type 4X, NEMA-TS 2(2.2.7.2-8, 2.2.8, 2.2.9) IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78
Video	None



Report No. : KES-EM251789

Compatible Models	
Hanging Adaptor	SBP-180HMMW1
Back Box	SBV-180BW, SBV-180WW
Ceiling Mount (Assy)	SBP-150CMI, SBP-300CMI, SBP-300CMW1, SBP-900CMW, SBP-300CMTW, SBP-300CMTS, SBP-156CMW
Ceiling Mount (Single Unit)	SBP-180CMB, SBP-140CMB, SBP-180CMS, SBP-900CMP, SBP-300CMP, SBP-150CMP, SBP-C15P, SBP-C15H
Wall Mount	SBP-400WMW, SBP-250WMW, SBP-156WMW
Wall Mount Adaptor	None
Pole Mount	SBD-180PMW
In-ceiling Mount	SHD-1370FPW
Corner Mount	SBD-180KMA
Parapet Mount	SBP-156LMW1, SBP-300LMW
Tilt Mount	None
Cabinet	SBP-150NBW, SBP-300NBW
Housing	None
Gang Plate	None
Skin Cover	None
Weather Cap	None (included)
Dome Cover	SPB-VAN87W
Conduit Adaptor	None
Power Module	None
Interface Box	SPM-4210
Other Compatible Models	SPB-VAN88W, SBP-115PFA
DORI (EN62676-4 standard)	
Detect (25PPM/ 8PPF)	Wide: 54.8m(179.73ft) / Tele: 168.5m(552.89ft)
Observe (63PPM/ 19PPF)	Wide: 21.9m(71.89ft) / Tele: 67.4m(221.16ft)
Recognize (125PPM/ 38PPF)	Wide: 11.0m(35.95ft) / Tele: 33.7m(110.58ft)
Identify (250PPM/ 76PPF)	Wide: 5.5m(17.97ft) / Tele: 16.9m(55.29ft)



Report No. : KES-EM251789

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

Add Color Change Derivatives

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	PNV-A9082RZ	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Micro SD Card 1	-	-	SanDisk	16 GB
Micro SD Card 2	-	-	SanDisk	32 GB
Laptop	P95G001	9JM8HT2	DELL INC.	-
Laptop Adapter	HA65NM130	-	Chicony Power Technology(Suzhou)Co.,Ltd.	-
PoE Injector	PT-PSE109GBRO-D	-	Creative Lianjie Network Technology Co.Ltd	-



Report No. : KES-EM251789

1.6 External I/O Cabling

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
Network Camera (EUT)	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 (PoE)	PoE Injector	RJ-45 (PoE)	3.5	U
PoE Injector	RJ-45 (LAN)	Laptop	RJ-45 (LAN)	4.0	U
Laptop	DC Jack	Laptop Adapter	DC Jack	1.6	U

* Unshielded=U, Shielded=S

1.7 EUT Operating Mode(s)

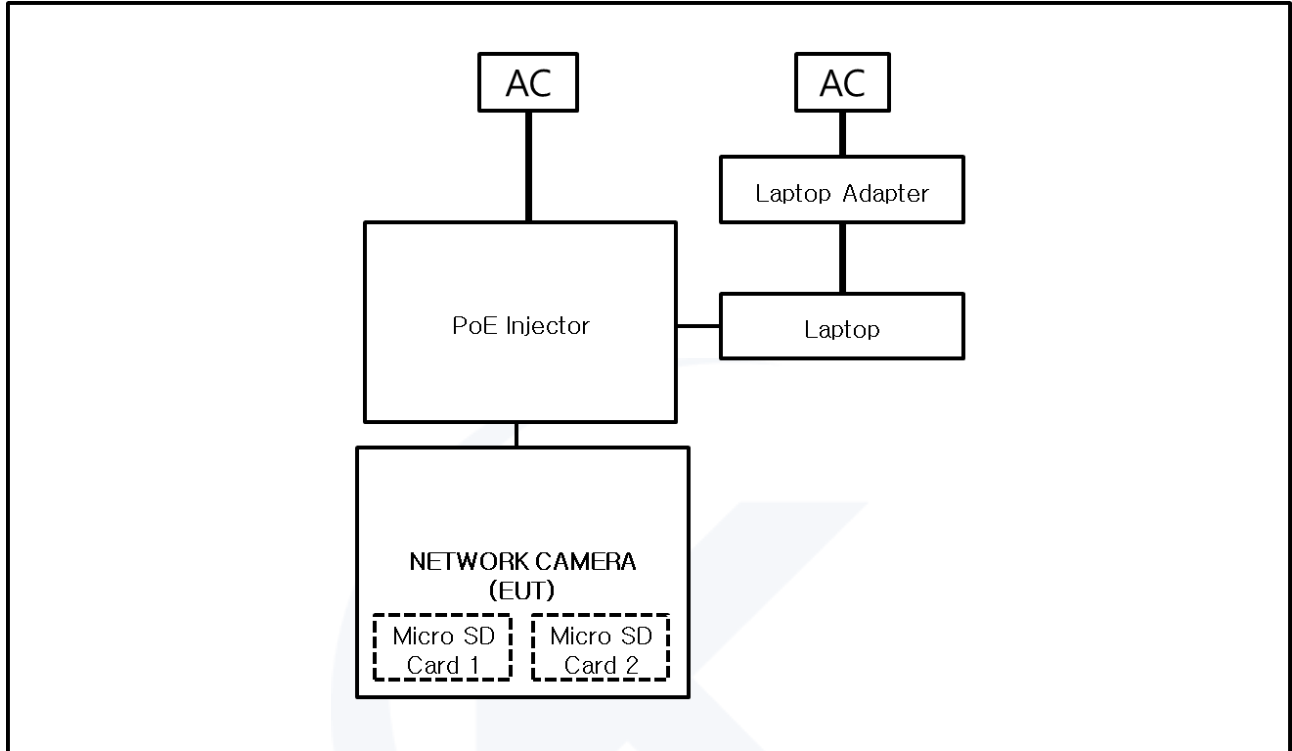
Test mode	Normal operating
Operating	Checked the network status of the EUT with the laptop Ping Test, and Checked the camera operation with watching streaming of through the Web Viewer. During the test, checked IR sensor operating and whether EUT recognized Micro SD Cards insterted. After testing, check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

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



Report No. : KES-EM251789

1.8 Configuration





Report No. : KES-EM251789

1.9 Remarks when standards applied

N/A

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 Measurement Procedure

- Conducted Emissions

The conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak mode (or peak mode if applicable). The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. If the conducted emission exceed the average limit with the instrument set to the quasi-peak mode, the measurements are made in the average mode. The emission spectrum was scanned from 150 kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limits were measured and have been recorded. Quasi-peak readings are distinguished with a "QP".

- Radiated Electric Field Emissions

The test was done at a SEMI ANECHOIC CHAMBER with quasi-peak detector. The final test data was measured using a Quasi-Peak detector below 1 GHz at 10 m or 3 m distance and a Peak and Average detector above 1 GHz at 3 m distance. Test was proceeded worst case test mode and cable configuration.

Measurements were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height was varied from 1 m to 4 m and the EUT was rotated 360° to find the maximum emitting point for each frequency.

Measurement procedures was In accordance with ANSI C63.4-2014 7.3.3, 7.3.4, 8.3.1.1, 8.3.1.2, 8.3.2.1, 8.3.2.2



Report No. : KES-EM251789

1.13 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



Report No. : KES-EM251789

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

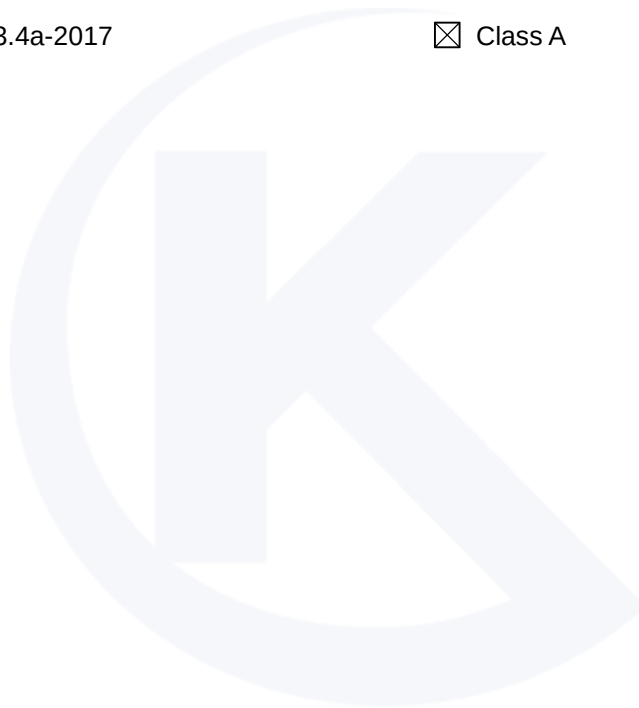
☐ Class A

☐ Class B

☒ ANSI C63.4a-2017

☒ Class A

☐ Class B





Report No. : KES-EM251789

2.1 Conducted Emissions at Mains Power Ports

Test Date

Jul. 17, 2025

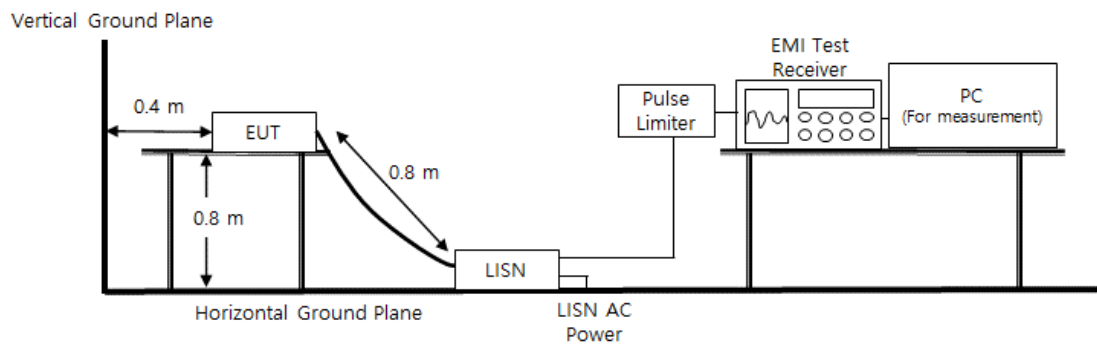
Test Location

Electro wave Shieldroom #6

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due	calibration interval
☒	EMI Test S/W	EMC32	R & S	9.12.00	-	-
☒	EMI TEST RECEIVER	ESR3	R & S	101783	11, 06, 2025	1 Year
☒	LISN	ENV216	R & S	101786	01, 09, 2026	1 Year
☒	ARTIFICIAL MAINS NETWORK	ESH2-Z5	R & S	100450	11, 06, 2025	1 Year
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 06, 2025	1 Year

Diagram of test setup





Report No. : KES-EM251789

Test Conditions

Temperature: (23,8 ± 0,1) °C

Relative Humidity: (48,2 ± 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.





Report No. : KES-EM251789

2.2 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Jul. 22, 2025

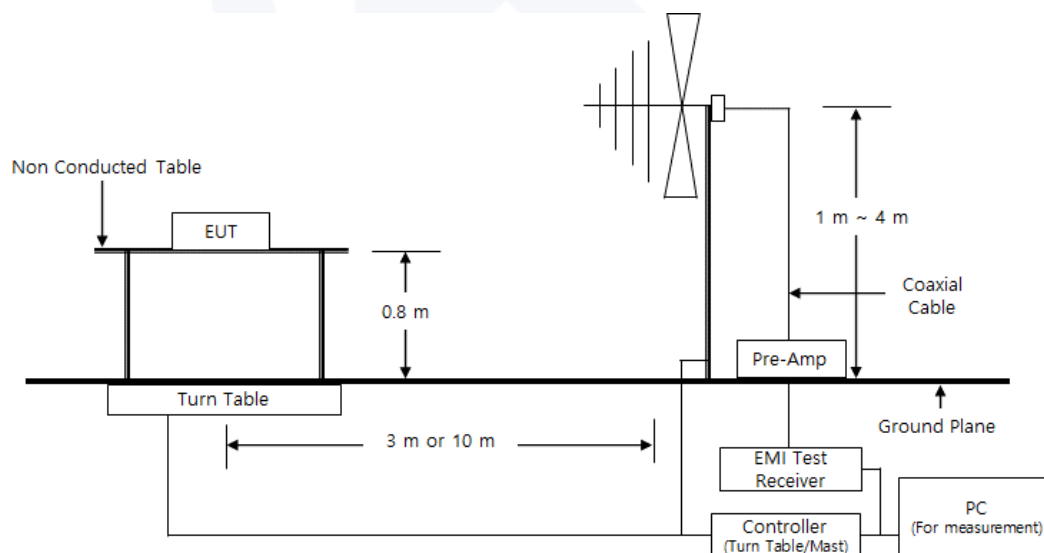
Test Location

☐ OPEN AREA TEST SITE #2☒ SEMI ANECHOIC CHAMBER #4(10m)

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due	calibration interval
☒	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-	-
☒	EMI TEST RECEIVER	ESU26	R & S	100551	02, 13, 2026	1 Year
☒	AMPLIFIER	SCU 01	R & S	100603	11, 06, 2025	1 Year
☒	BILOG ANTENNA	VULB 9168	SCHWARZBECK	9168-461	05, 09, 2026	2 Year
☒	ATTENUATOR	6806.17.A	HUBER+SUHNER	-	02, 13, 2026	1 Year

Diagram of test setup





Report No. : KES-EM251789

Test Conditions

Temperature: (25,3 ± 0,1) °C

Relative Humidity: (51,3 ± 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.



Report No. : KES-EM251789

2.3 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Jul. 17, 2025

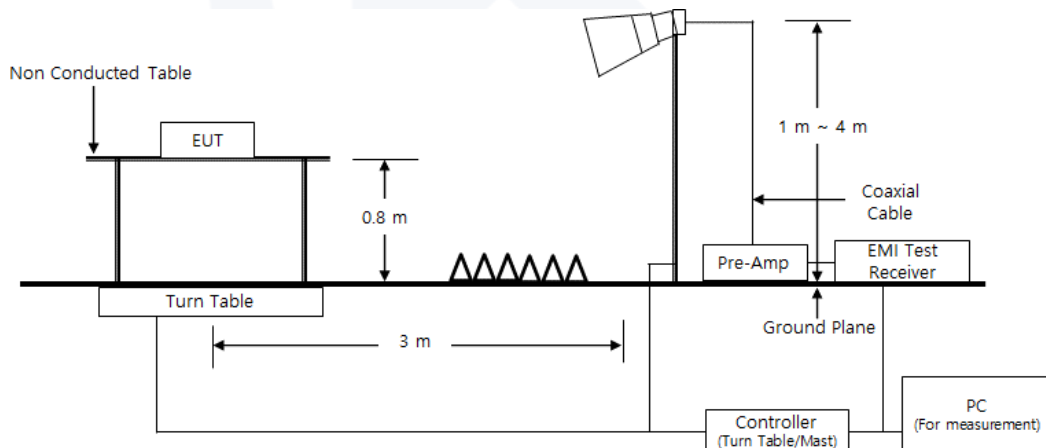
Test Location

SEMI ANECHOIC CHAMBER #5

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due	calibration interval
☒	EMI Test S/W	ES10/RE	TOYO Corporation	2022.01.000	-	-
☒	EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100552	02, 13, 2026	1 Year
☒	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	11, 04, 2025	1 Year
☒	PREAMPLIFIER	8449B	HP	3008A00538	04, 30, 2026	1 Year
☒	ATTENUATOR	8491B	HP	23094	02, 13, 2026	1 Year

Diagram of test setup





Report No. : KES-EM251789

Test Conditions

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

Frequency Range of Measurement

1 GHz to 8 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.



Report No. : KES-EM251789

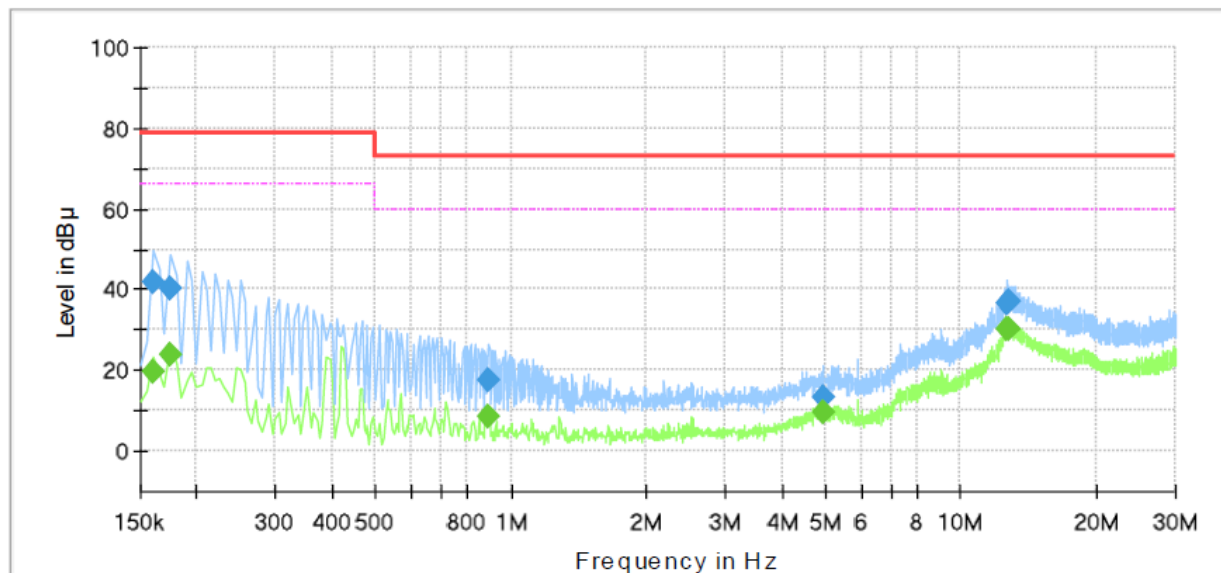
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

HOT LINE

Common Information

Test Description: Conducted Emission
Job No.: KES-EM251789
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)
0.160000	---	19.47	66.00	46.53	1000.0	9.000	L1	19.5
0.160000	41.98	---	79.00	37.02	1000.0	9.000	L1	19.5
0.175000	---	23.82	66.00	42.18	1000.0	9.000	L1	19.5
0.175000	40.28	---	79.00	38.72	1000.0	9.000	L1	19.5
0.890000	---	8.67	60.00	51.33	1000.0	9.000	L1	19.6
0.890000	17.42	---	73.00	55.58	1000.0	9.000	L1	19.6
4.970000	---	9.70	60.00	50.30	1000.0	9.000	L1	19.9
4.970000	13.20	---	73.00	59.80	1000.0	9.000	L1	19.9
12.600000	---	30.04	60.00	29.96	1000.0	9.000	L1	20.2
12.600000	36.52	---	73.00	36.48	1000.0	9.000	L1	20.2
12.745000	---	30.40	60.00	29.60	1000.0	9.000	L1	20.2
12.745000	36.84	---	73.00	36.16	1000.0	9.000	L1	20.2

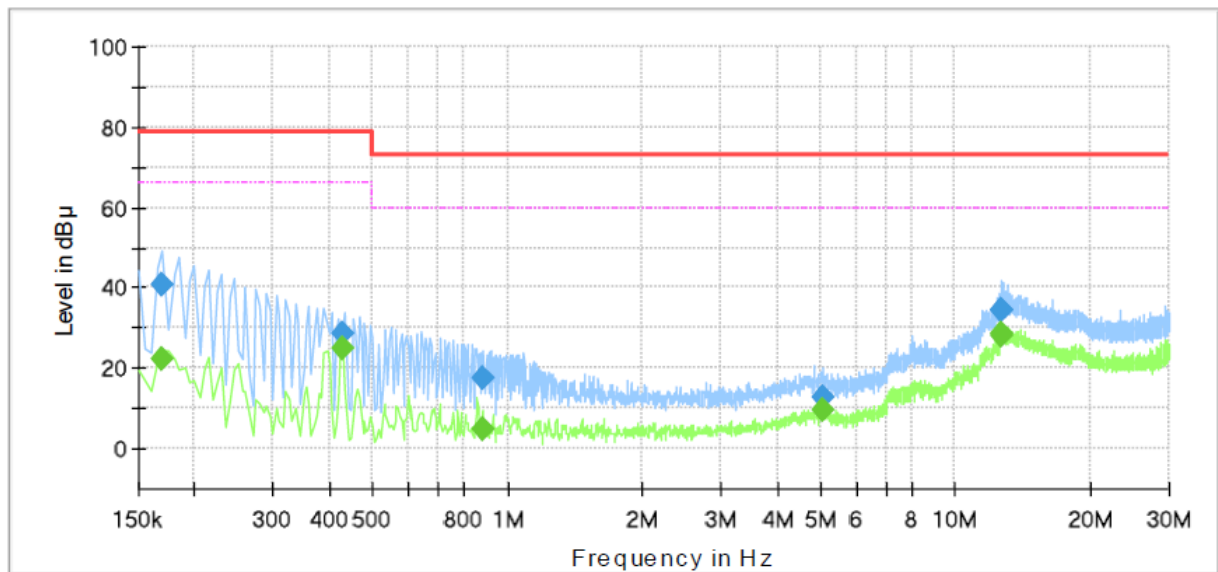


Report No. : KES-EM251789

NEUTRAL LINE

Common Information

Test Description: Conducted Emission
Job No.: KES-EM251789
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)
0.170000	---	22.07	66.00	43.93	1000.0	9.000	N	19.5
0.170000	40.87	---	79.00	38.13	1000.0	9.000	N	19.5
0.430000	---	24.66	66.00	41.34	1000.0	9.000	N	19.5
0.430000	28.42	---	79.00	50.58	1000.0	9.000	N	19.5
0.880000	---	5.02	60.00	54.98	1000.0	9.000	N	19.6
0.880000	17.26	---	73.00	55.74	1000.0	9.000	N	19.6
5.040000	---	9.34	60.00	50.66	1000.0	9.000	N	19.9
5.040000	12.95	---	73.00	60.05	1000.0	9.000	N	19.9
12.605000	---	28.05	60.00	31.95	1000.0	9.000	N	20.1
12.605000	34.41	---	73.00	38.59	1000.0	9.000	N	20.1
12.635000	---	28.43	60.00	31.57	1000.0	9.000	N	20.1
12.635000	34.62	---	73.00	38.38	1000.0	9.000	N	20.1

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

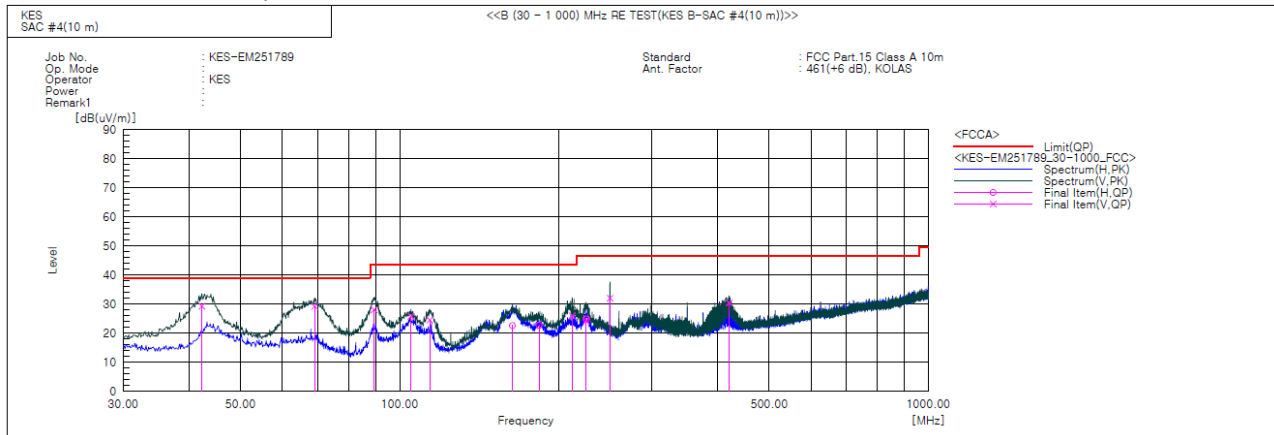
Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))



Report No. : KES-EM251789

Radiated Electric Field Emissions(Below 1 GHz)

- 47 CFR Part 15, Subpart B

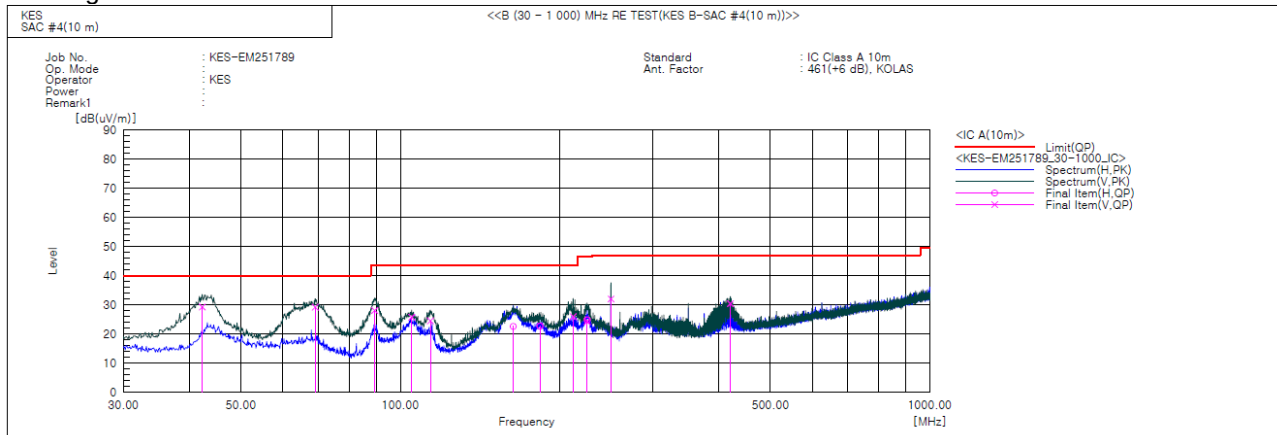
**Final Result**

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	42.246	V	50.9	-21.6	29.3	39.0	9.7	103.0	90.0	
2	69.043	V	51.7	-22.5	29.2	39.0	9.8	100.0	301.0	
3	89.413	V	54.2	-26.1	28.1	43.5	15.4	101.0	68.0	
4	105.054	V	49.9	-24.1	25.8	43.5	17.7	100.0	146.0	
5	114.026	V	47.5	-23.0	24.5	43.5	19.0	105.0	131.0	
6	163.496	H	42.2	-19.6	22.6	43.5	20.9	361.0	8.0	
7	183.503	H	43.8	-21.1	22.7	43.5	20.8	364.0	216.0	
8	212.118	V	47.6	-21.6	26.0	43.5	17.5	106.0	169.0	
9	225.213	V	45.2	-20.9	24.3	46.5	22.2	102.0	207.0	
10	225.455	H	45.7	-20.9	24.8	46.5	21.7	380.0	317.0	
11	249.948	V	51.4	-19.4	32.0	46.5	14.5	107.0	240.0	
12	420.183	V	43.1	-12.7	30.4	46.5	16.1	110.0	45.0	



Report No. : KES-EM251789

- IC Regulation ICES-003 Issue 7



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	42.246	V	50.9	-21.6	29.3	40.0	10.7	103.0	90.0	
2	69.043	V	51.7	-22.5	29.2	40.0	10.8	100.0	301.0	
3	89.413	V	54.2	-26.1	28.1	43.5	15.4	101.0	68.0	
4	105.054	V	49.9	-24.1	25.8	43.5	17.7	100.0	146.0	
5	114.026	V	47.5	-23.0	24.5	43.5	19.0	105.0	131.0	
6	163.496	H	42.2	-19.6	22.6	43.5	20.9	361.0	8.0	
7	183.503	H	43.8	-21.1	22.7	43.5	20.8	364.0	216.0	
8	212.118	V	47.6	-21.6	26.0	43.5	17.5	106.0	169.0	
9	225.213	V	45.2	-20.9	24.3	46.4	22.1	102.0	207.0	
10	225.455	H	45.7	-20.9	24.8	46.4	21.6	380.0	317.0	
11	249.948	V	51.4	-19.4	32.0	47.0	15.0	107.0	240.0	
12	420.183	V	43.1	-12.7	30.4	47.0	16.6	110.0	45.0	

◆ Calculation

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

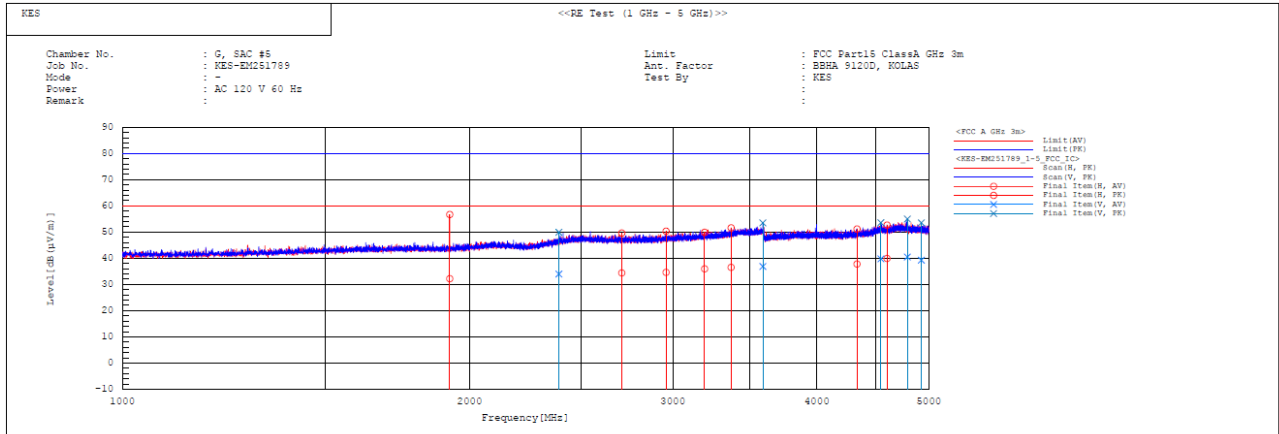
Reading(QP) : Reading value, Result(QP) : Reading value + Factor value

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



Report No. : KES-EM251789

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(1/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	1922.415	H	29.5	54.0	2.7	56.7	60.0	80.0	27.8	23.3	400.0	201.1	
2	2390.382	V	29.4	45.3	4.6	49.9	60.0	80.0	26.0	30.1	158.0	194.1	
3	2710.182	H	28.8	44.0	5.6	49.6	60.0	80.0	25.6	30.4	201.0	46.8	
4	2960.190	H	28.3	44.0	6.3	50.3	60.0	80.0	25.4	29.7	220.0	157.5	
5	3196.852	H	29.3	43.2	6.7	49.9	60.0	80.0	24.0	30.1	394.0	33.6	
6	3371.640	H	29.4	44.5	7.1	51.6	60.0	80.0	23.5	28.4	320.0	312.3	
7	3591.248	V	29.4	46.0	7.5	53.5	60.0	80.0	23.1	26.5	108.0	130.3	
8	4334.182	H	27.6	41.0	10.2	51.2	60.0	80.0	22.2	28.8	100.0	68.4	
9	4546.382	V	28.7	42.5	11.1	53.6	60.0	80.0	20.2	26.4	394.0	354.5	
10	4602.178	H	28.6	41.4	11.3	52.7	60.0	80.0	20.1	27.3	352.0	6.7	
11	4792.447	V	28.8	43.3	11.7	55.0	60.0	80.0	19.5	25.0	109.0	145.3	
12	4927.200	V	27.0	41.2	12.3	53.5	60.0	80.0	20.7	26.5	149.0	336.3	



Report No. : KES-EM251789

(5-8 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)
5 336.782	39.300	V	1.000	32.270	8.790	33.880	46.480	80.000	33.520
5 588.986	26.300	H	1.000	32.360	8.830	33.950	33.540	80.000	46.460
7 637.165	40.000	V	1.000	36.610	11.550	33.450	54.710	80.000	25.290
7 748.084	40.500	H	1.000	36.700	11.690	33.660	55.230	80.000	24.770

- 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)
5 336.782	25.700	V	1.000	32.270	8.790	33.880	32.880	60.000	27.120
5 588.986	39.900	H	1.000	32.360	8.830	33.950	47.140	60.000	12.860
7 637.165	26.400	V	1.000	36.610	11.550	33.450	41.110	60.000	18.890
7 748.084	27.200	H	1.000	36.700	11.690	33.660	41.930	60.000	18.070

◆ Calculation

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

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



Report No. : KES-EM251789

Test Setup Photos and Configuration

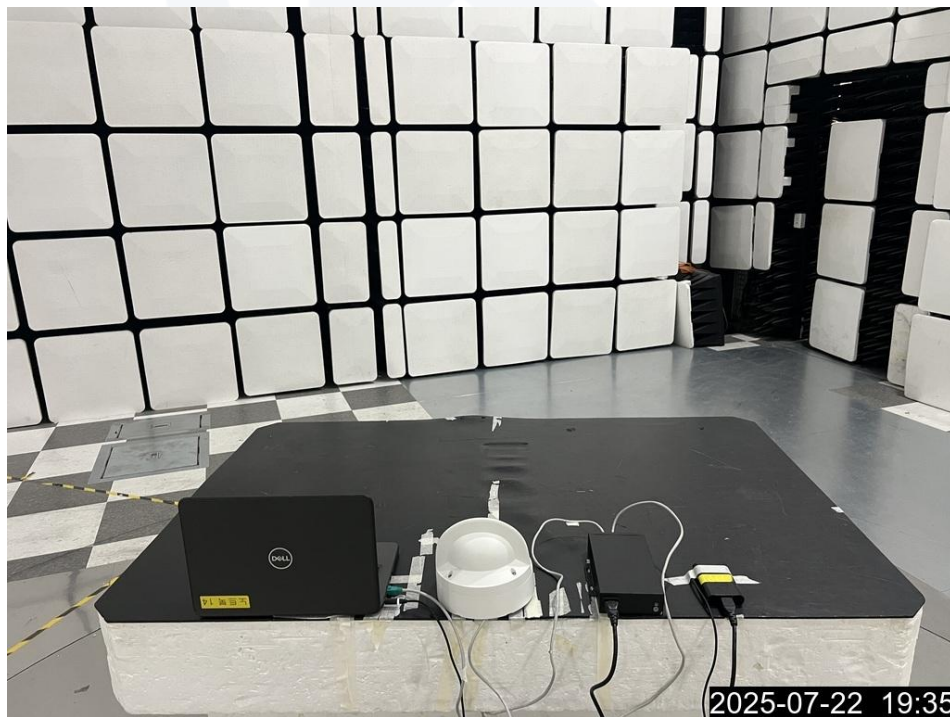
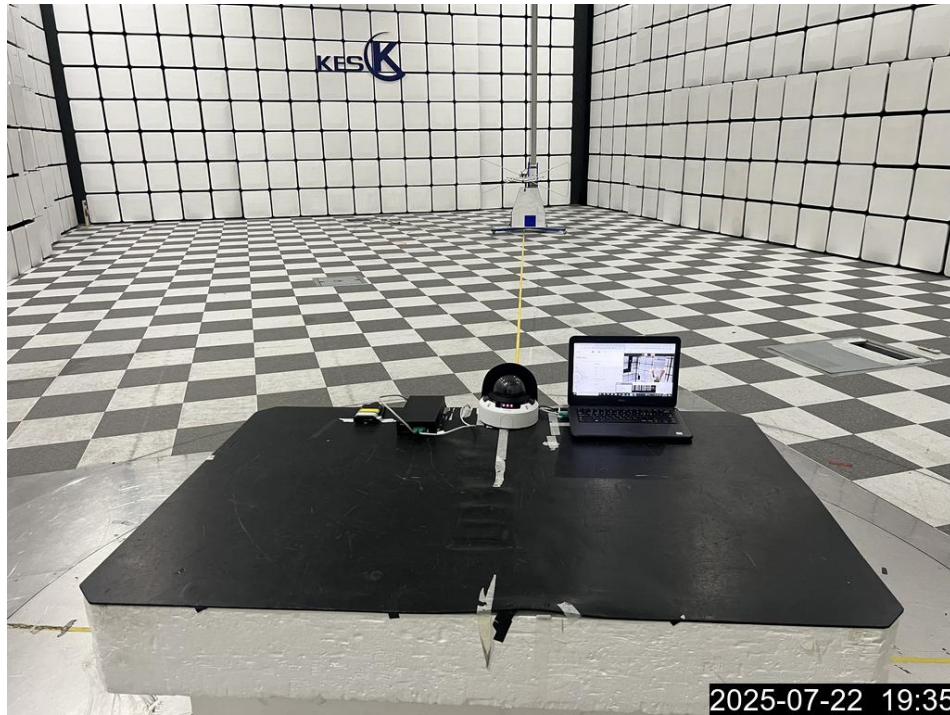
Conducted Emissions at Mains Power Ports





Report No. : KES-EM251789

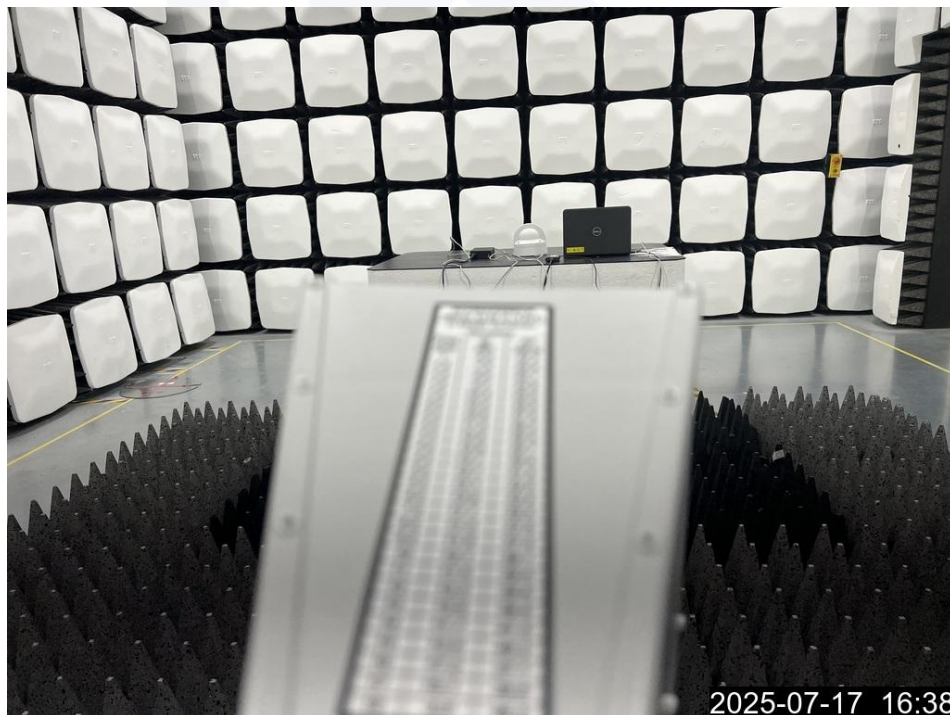
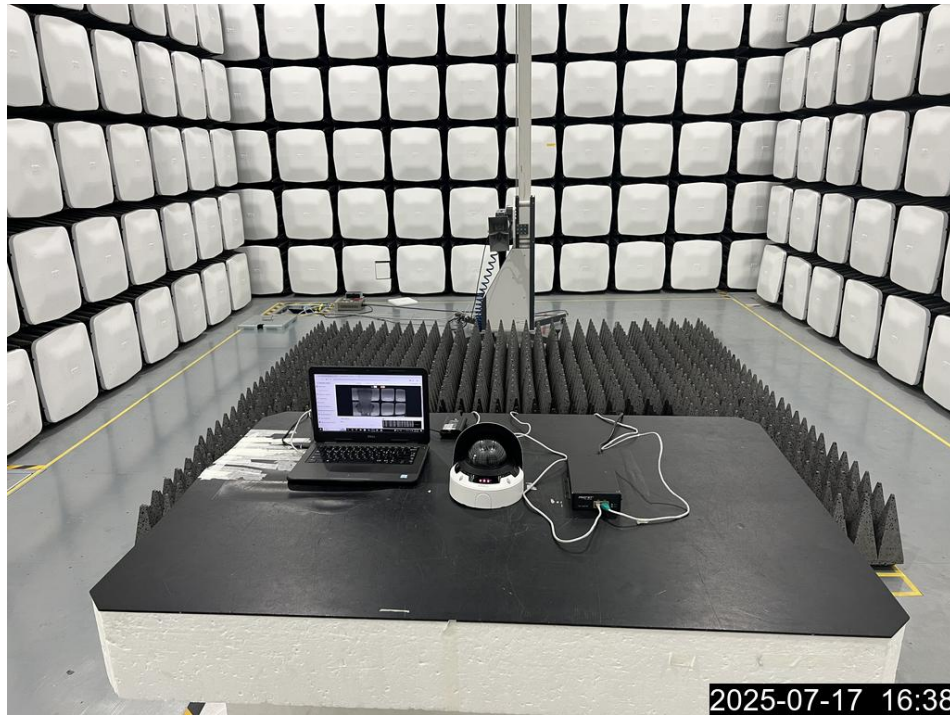
Radiated Electric Field Emissions(Below 1 GHz)





Report No. : KES-EM251789

Radiated Electric Field Emissions(Above 1 GHz)





Report No. : KES-EM251789

EUT External Photographs

(Top)



(Bottom)





Report No. : KES-EM251789

EUT Internal Photographs

(Internal View)

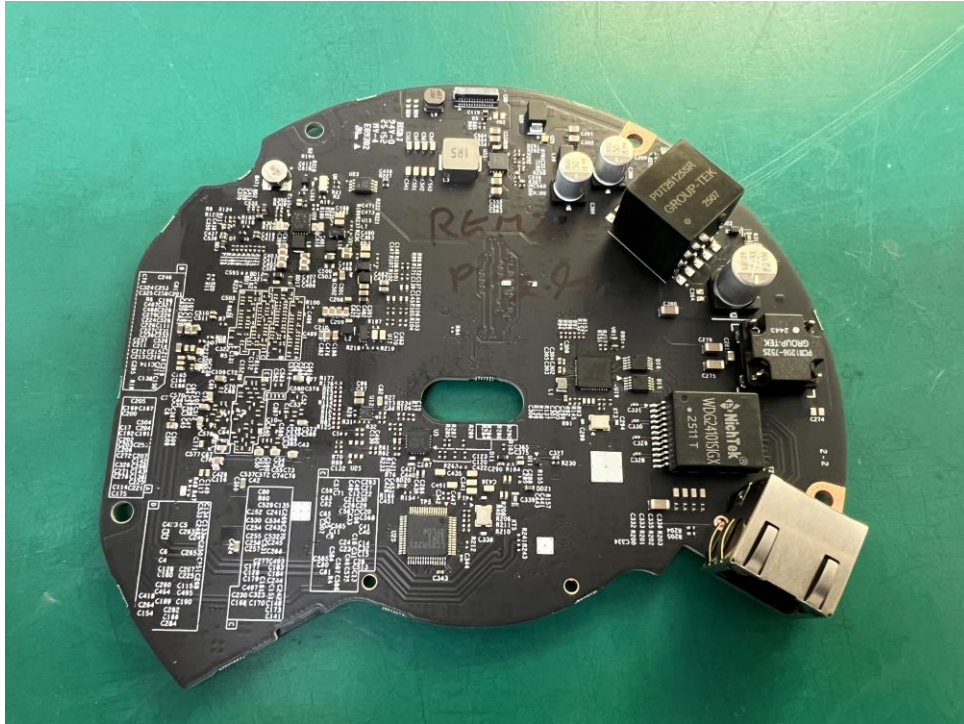




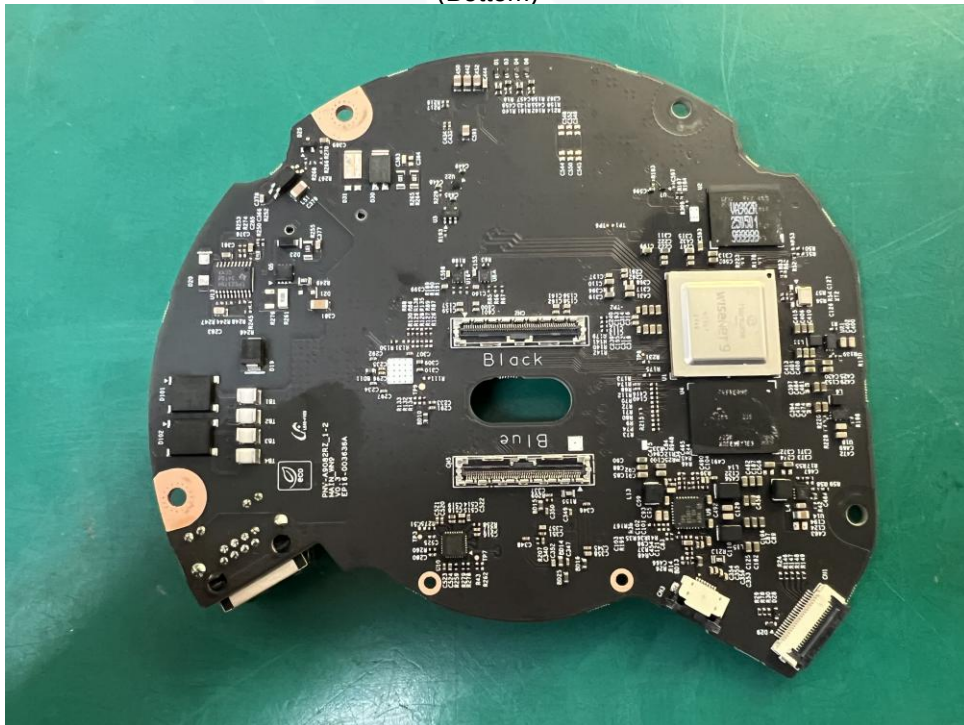
Report No. : KES-EM251789

EUT Internal View – Main Board

(Top)



(Bottom)





Report No. : KES-EM251789

EUT Internal View – CDS Board

(Top)



(Bottom)

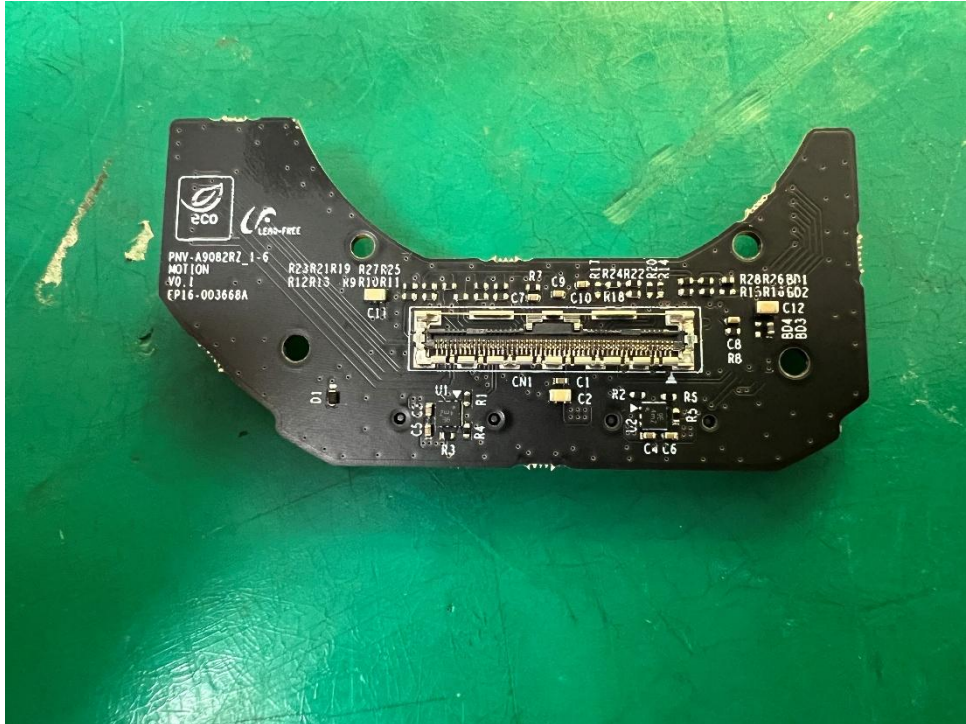




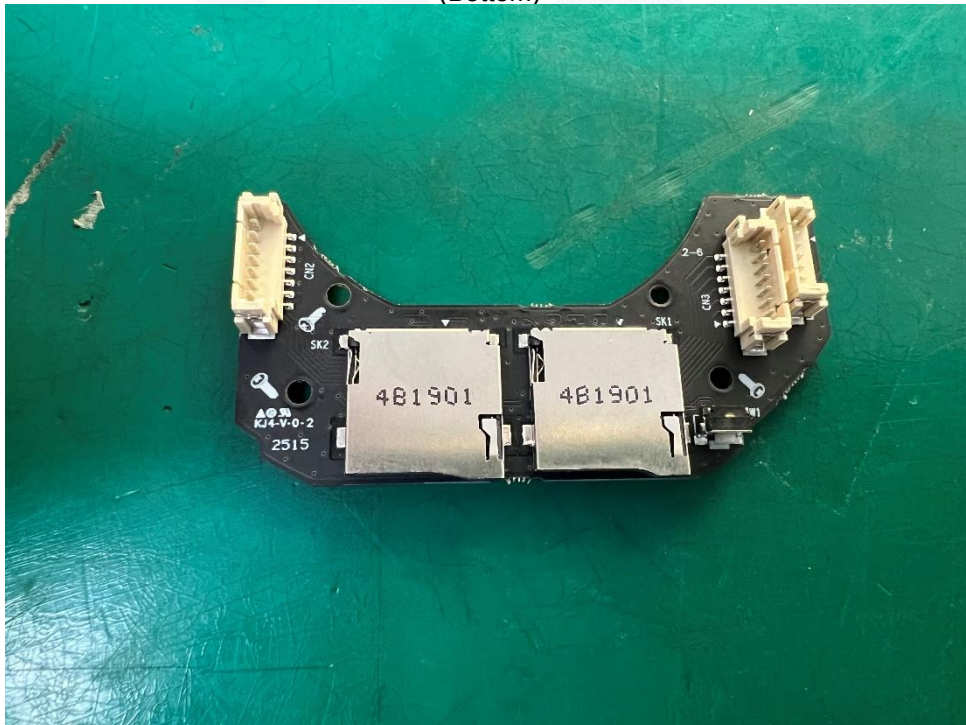
Report No. : KES-EM251789

EUT Internal View – Motion Board

(Top)



(Bottom)





Report No. : KES-EM251789

EUT Internal View – OUTDOOR IR_1-6

(Top)



(Bottom)





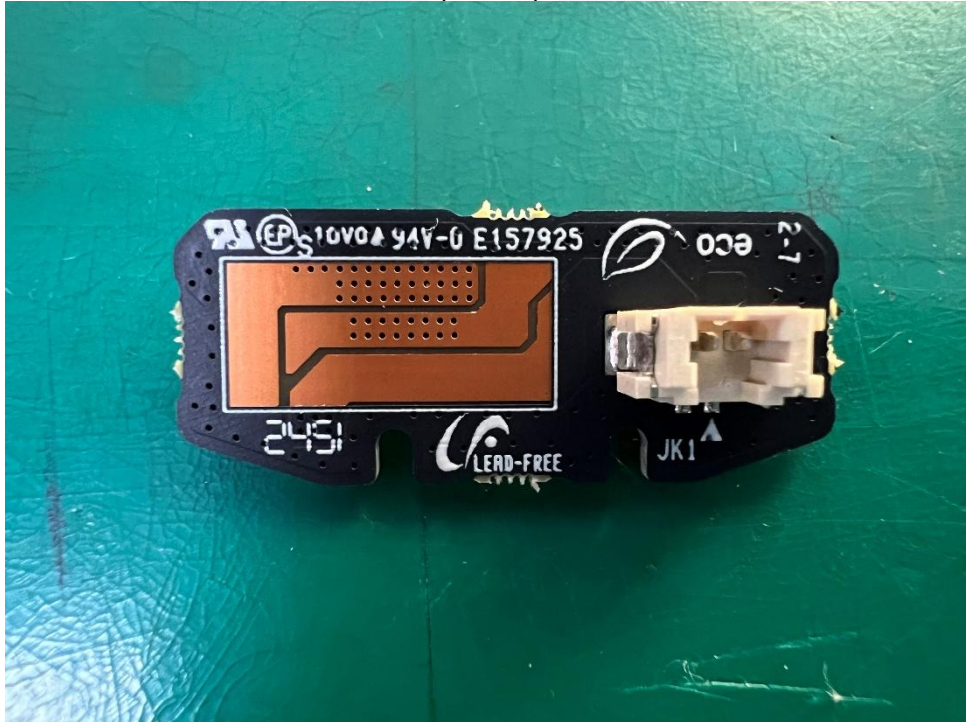
Report No. : KES-EM251789

EUT Internal View – OUTDOOR IR_1-7

(Top)



(Bottom)

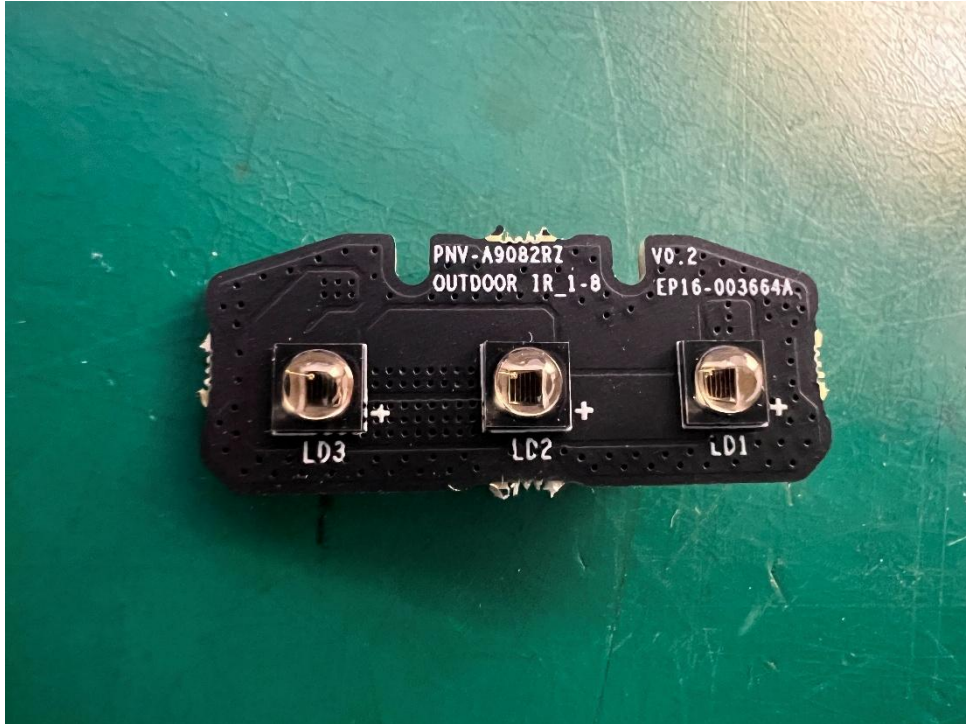




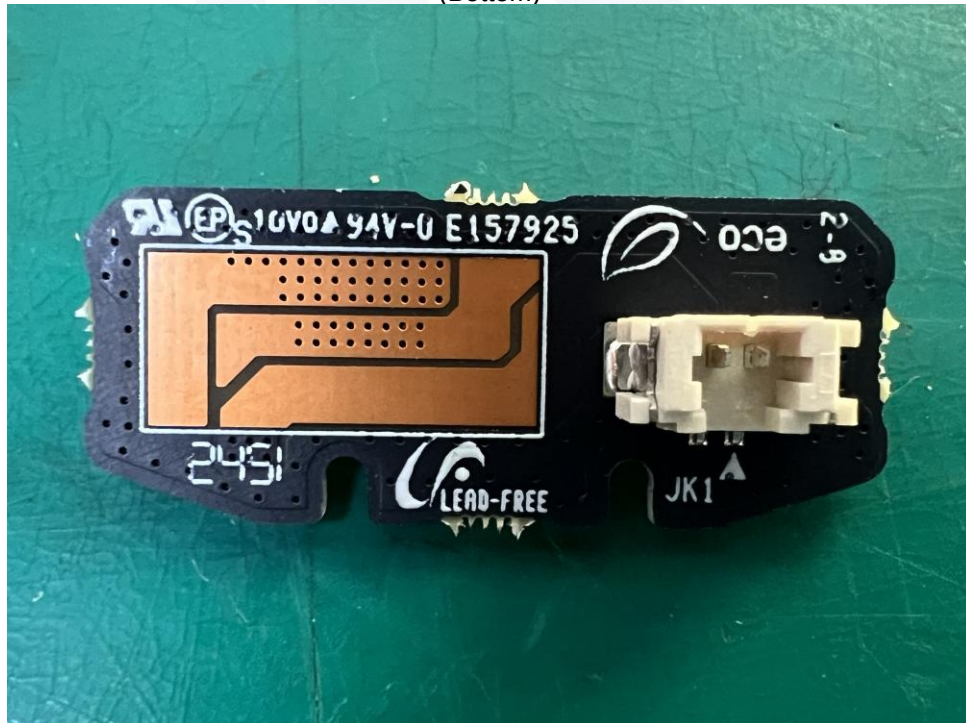
Report No. : KES-EM251789

EUT Internal View – OUTDOOR IR_1-8

(Top)



(Bottom)





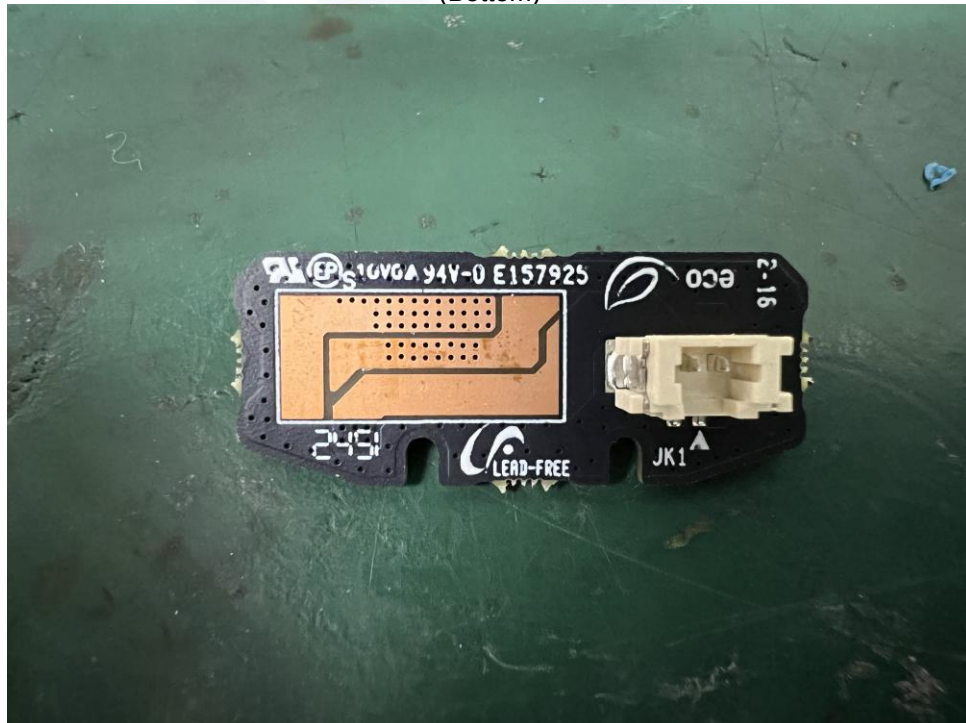
Report No. : KES-EM251789

EUT Internal View – OUTDOOR IR-1-18

(Top)



(Bottom)

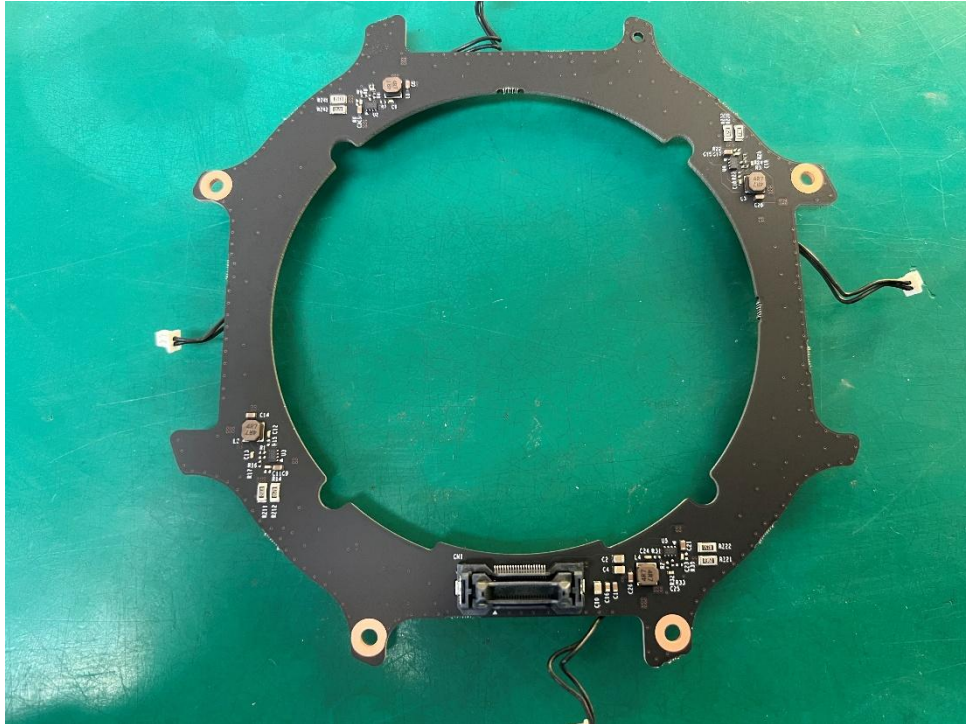




Report No. : KES-EM251789

EUT Internal View – OUTDOOR IR-ITFC Board

(Top)



(Bottom)

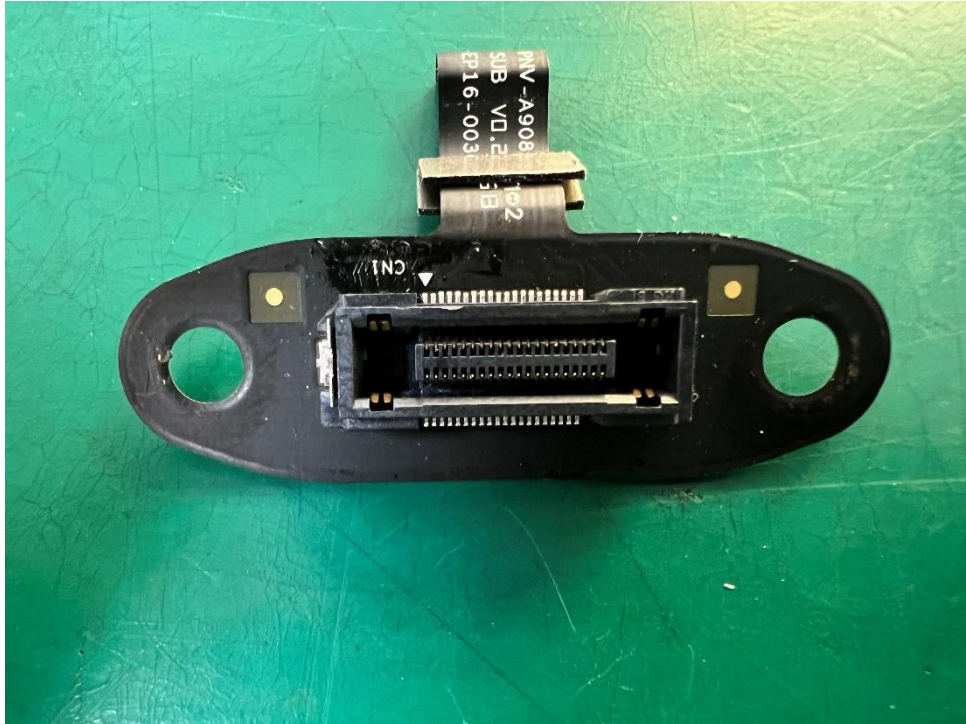




Report No. : KES-EM251789

EUT Internal View – SUB Board

(Top)



(Bottom)





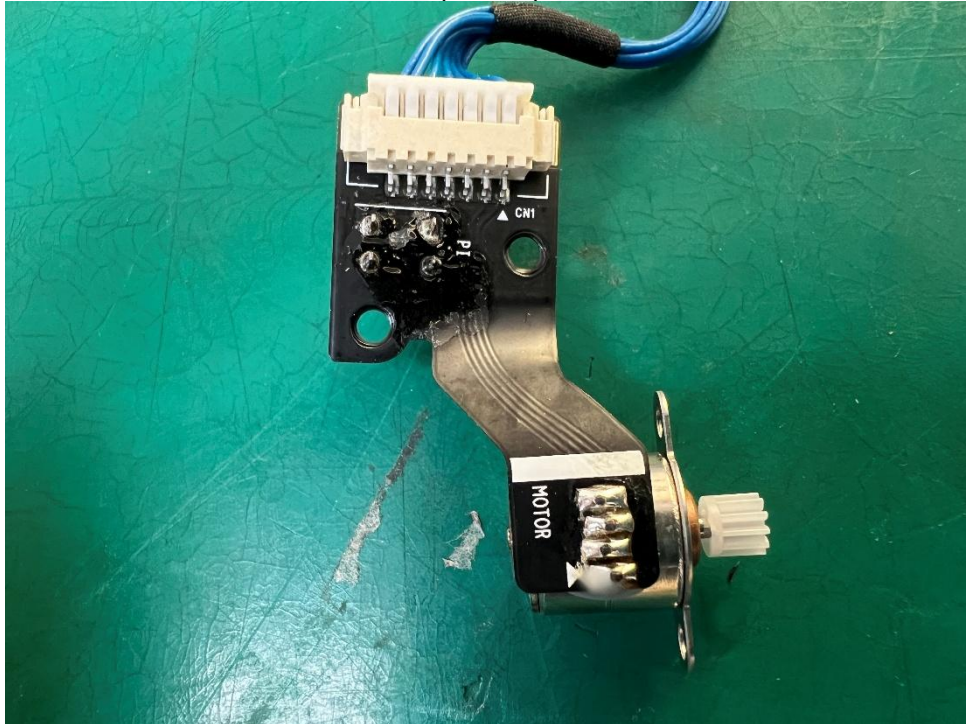
Report No. : KES-EM251789

EUT Internal View – Motor 1

(Top)



(Bottom)

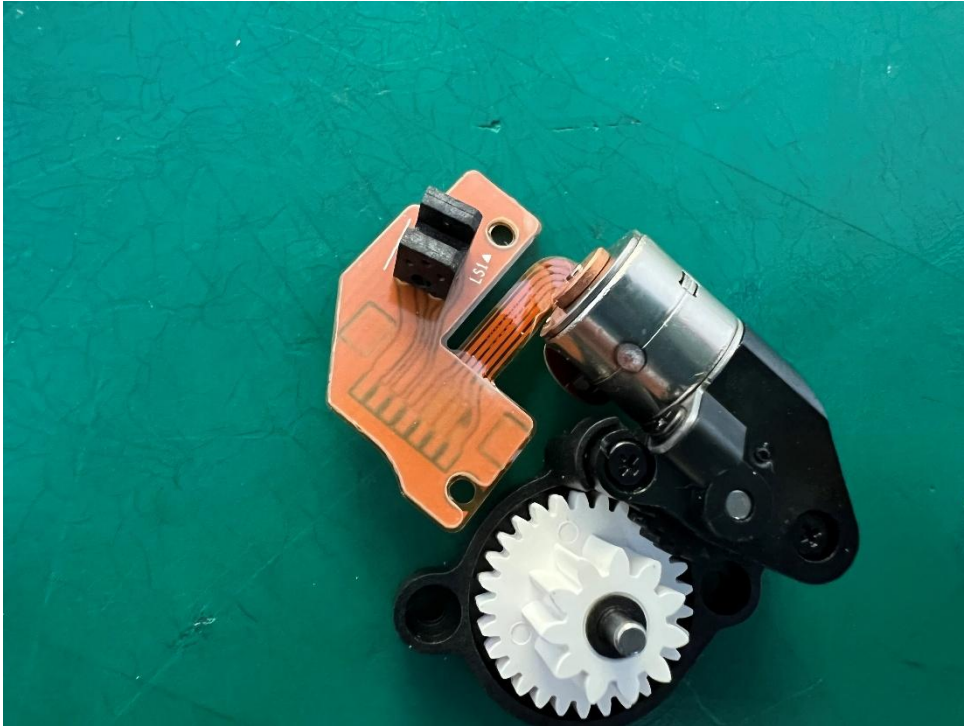




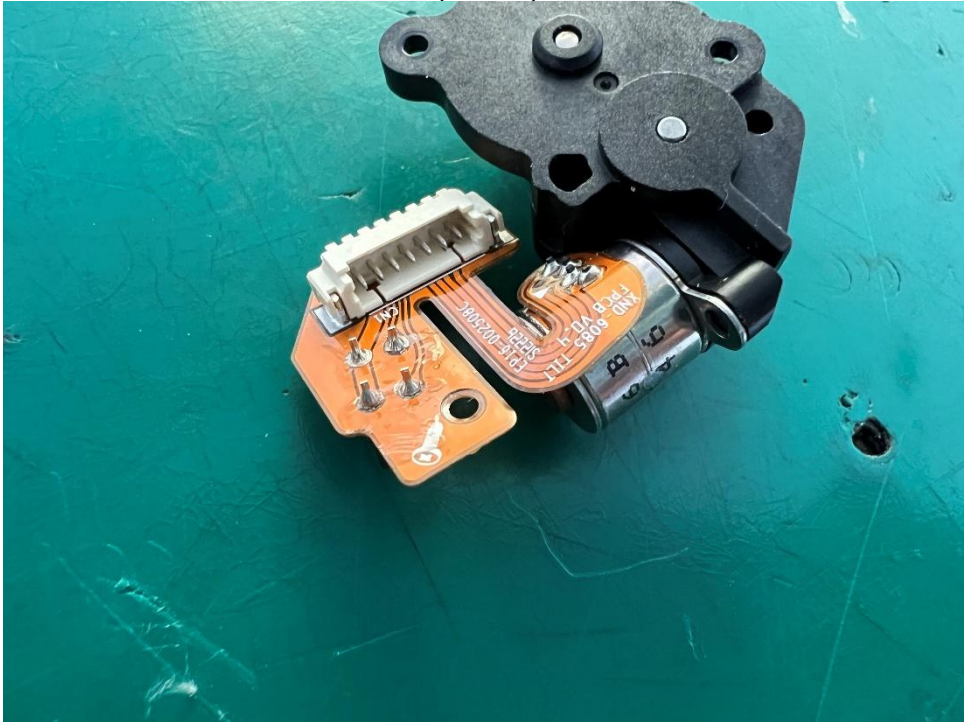
Report No. : KES-EM251789

EUT Internal View – Motor 2

(Top)



(Bottom)

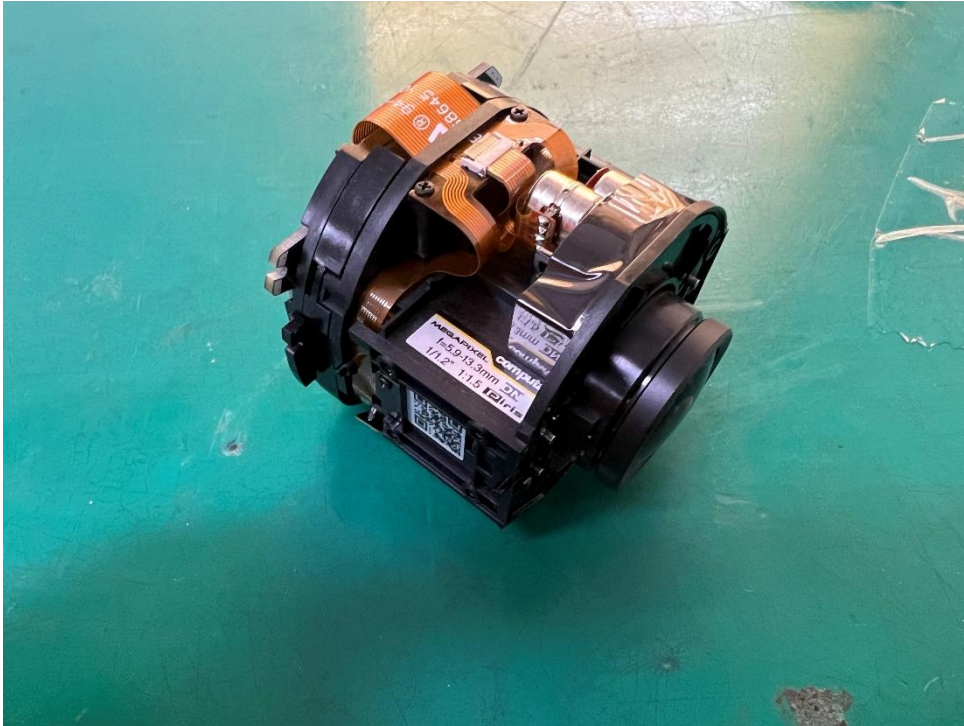




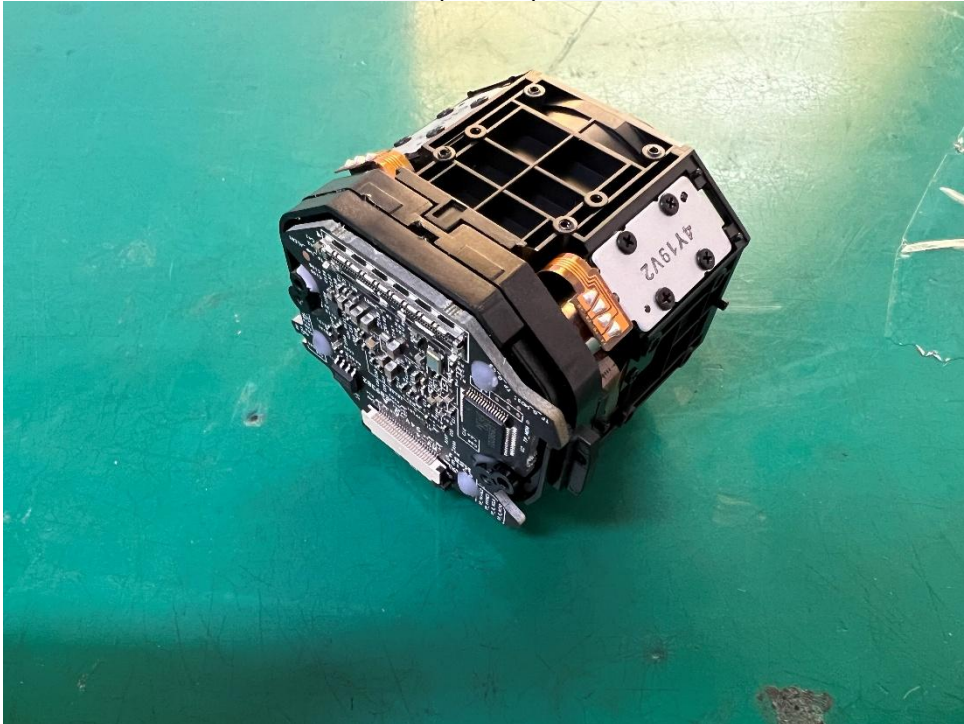
Report No. : KES-EM251789

EUT Internal View – Camera module

(Top)



(Bottom)





Report No. : KES-EM251789

Label Photographs

FCC Label



NETWORK CAMERA

PNV-A9082RZ

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.