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. : PNM-C16083RQZ

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. 29, 2024

4. Test date : May. 27, 2024 ~ May. 29, 2024

5. Date of Issue : Jun. 25, 2024

6. Test Results : In Compliance

Tested by

[김대수]2024/06/25

Dae Soo, Kim
EMC Test Engineer

Reviewed by

[최성민]2024/06/25

Seong Min, Choi
EMC Assistant 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
Jun. 25, 2024	KES-EM241383	Issued

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1.0 General Product Description

Main Specifications of EUT are:

Highest internal Frequency : 2.5 GHz

Video	
Imaging Device	1/2.8" CMOS x 4CH
Resolution	2592x1520, 1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
Max. Framerate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(@4MP Max. 5fps)
NETD	None
Pixel Size	None
Min. Illumination	Color: 0.01Lux(F1.6, 1/30sec, 30IRE) BW: 0Lux(IR LED on)
Video Out	**None**
Video Transmission Distance	None
Lens	
Focal Length (Zoom Ratio)	3.3~10.2mm(3.1x) motorized varifocal
Max. Aperture Ratio	F1.6(Wide)~F3.1(Tele)
Angular Field of View	H: 93°(Wide)~29.8°(Tele) V: 53°(Wide)~17.5°(Tele) D: 111°(Wide)~34.6°(Tele)
Min. Object Distance	1.2m (3.93ft)
Focus Control	Simple focus
Lens Type	P-Iris
Mount Type	None
Optional Lens	None
Pan / Tilt / Rotate	
Pan / Tilt / Rotate Range	Remote adjustment (Max. 200cycles) 0°~360° / 30°~90° / 0°~90°
Pan Range	None
Pan Speed	None
Tilt Range	None
Tilt Speed	None
Rotate Range	None
Sequence	None
Preset Accuracy	None
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/High, MJPEG
Audio Compression	None
Smart Codec	Manual(5ea area), WiseStreamⅡ, WiseStreamⅢ(Based on AI engine)
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(10 users) / Multicast Multiple streaming(Up to 3 profiles per CH)
Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, CDP, SRTP(TCP, UDP Unicast), MQTT
Security	OS / Firmware Protect: Secure boot, Signed firmware, Firmware encryption User authentication: Digest Authentication, Prevent brute-force attack Network authentication: 802.1X Authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2) Secure Communication: HTTPS, WSS(Websocket secure) Access Control: IP address filtering Data Protect: Authentication information encryption, ZIP compression encryption Audit: User Access/System/Event log Device ID: Device Certificate(Hanwha Vision Root CA, pre-installed) Secure Storage: TPM with FIPS 140-2 level2, Secure by default
SIP support (VoIP, Peer-to-peer, SIP/P	None
Application Programming Interface	ONVIF Profile S/T/M SUNAPI(HTTP API) Wisenet open platform
General	
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Portuguese, Czech, Polish, Turkish, Dutch, Greek, Hungarian
Web Viewer	None
Edge Storage	Micro SD/SDHC/SDXC 2slot Max. 1TB(512GBx2)
Memory	8GB RAM, 16GB eMMC
Environmental & Electrical	
Operating Temperature / Humidity	-40°C~+55°C(-40°F~+131°F) / 0~95% RH(non-condensing) * Start up should be done at above -35°C Humidity control /w AIR vent
Storage Temperature / Humidity	-50°C~+60°C(-58°F~+140°F) / 0~90% RH
Certification	IP66, NEMA 4X, IK10
Input Voltage	PoE++(IEEE802.3bt type3, Class6)
Power Consumption	Max. 41W

Operational	
Camera Title	Displayed up to 85 characters
Direction Indicator	None
Day & Night	Auto(ICR)
Backlight Compensation	BLC, WDR, SSDR
Wide Dynamic Range	120dB
Digital Noise Reduction	WiseNRⅡ(Based on AI engine), SSNR V
Digital Image Stabilization	None
Defog	Support
Motion Detection	8ea, 8point Polygonal zones
Privacy Masking	6ea, 4point Polygonal zones - Color: Gray/Black/White
Gain Control	Off / Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor
LDC	Support
Electronic Shutter Speed	Minimum / Maximum / Anti flicker(1/5~1/12,000sec) prefer shutter control(Based on AI engine)
Digital PTZ	None
Video Rotation	Flip, Mirror, Hallway view(90°/270°) - each CH separately
Analytics	Classified object type: Person/Face/Vehicle/License plate Attributes: Vehicle (Color and Type: Car/Bus/Truck/Motorcycle/Bicycle), Person (upper and bottom clothing color) Support BestShot Analytics events based on AI engine - Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit) Analytics events - Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Virtual area(Appear/Disappear)
Business Intelligence	Not Support
Serial Interface	None
Alarm I/O	2 configurable I/O ports * Support Alarm via optional SPM-4210 I/O box
Alarm Triggers	Analytics, Network disconnect, Alarm input, App event, Time schedule, MQTT subscription, Tampering
Alarm Events	When alarm trigger occurred - File upload(image): e-mail/FTP - Notification: e-mail - Recording: SD/SDHC/SDXC or NAS recording at event triggers - Alarm output - Handover: PTZ preset, send message by HTTP/HTTPS/TCP - MQTT: publication
Audio In	* Support Audio via optional SPM-4210 I/O box
Audio Out	* Support Audio via optional SPM-4210 I/O box
IR Viewable Length	WiseIR 25m(82.02ft)
IR Illuminator (Optional)	None
Water Removal	None
Auto Tracking	None
Coaxial Protocol	None
Color Palettes	None
Mechanical	
Color / Material	White / Aluminum + PC Hard-coated dome bubble
RAL Code	RAL9003
Product Dimensions / Weight	**ø312.7x145.9mm(ø12.31x5.74") / under 4400g(9.7lb)**
Compatible Conduit hole / Gangbox	19.1mm(3/4")(M25) single, double, 4" octagon, 4" square
Hanging Mount (Dome)	SBP-317HMW
Skin Cover (Dome)	None
Weather Cap (Dome)	None
Power Module	None
Backbox	None
Certifications & Standards	
Network	None
EMC	FCC 47 CFR 15 Subpart B Class A ICES-3(A)/NMB-3(A) CE/UKCA - EN 55032 Class A, EN 50130-4, EN 61000-3-2, EN 61000-3-3 VCCI CISPR 32 Class A RCM AS/NZS CISPR 32 Class A KS C 9832 Class A , KS C 9835
Safety	UL 62368-1, CAN/CSA C22.2 NO. 62368-1 IEC/EN 62471
Environment	IEC/EN 63000 IEC/EN 60529 IP66, IEC/EN 62262 IK10 NEMA 250 type 4X
Video	None
DORI (EN62676-4 standard)	
Detect (25PPM/ 8PPF)	Wide: 49.2m(161.40ft) / Tele: 194.8m(639.20ft)
Observe (63PPM/ 19PPF)	Wide: 19.7m(64.56ft) / Tele: 77.9m(255.68ft)
Recognize (125PPM/ 38PPF)	Wide: 9.8m(32.28ft) / Tele: 39.0m(127.84ft)
Identify (250PPM/ 76PPF)	Wide: 4.9m(16.14ft) / Tele: 19.5m(63.92ft)

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 230 V, 50 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	PNM-C16083RQZ	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT
PoE Injector 1	PT-PSE109GBRO-AH-S	PT2402228137	Dongguan PROCET Network Technology Co., Ltd	R-R-LJ9-PSE109GBRO-A02

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Laptop	LG15U56	605NZ8J002174	LG	-
Laptop Adapter	ADS-65AI-19-3	EAY65689605	SHENZHEN HONOR ELECTRONIC CO.,LTD.	-
LED Alarm	PRO-SL	-	SENSOR PRO	-
Button Alarm	-	-	-	-
Micro SD Card 1	-	-	SanDisk	-
PoE Injector 2	GS728TPP	-	NETGEAR	-

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	Micro SD Card	Micro SD Slot	-	-
	PoE	PoE Injector 1 (EUT)	RJ-45 (PoE)	2.0	S
	ALARM OUT	LED Alarm	Alarm IN	3.1	U
	ALARM IN	Button Alarm	Alarm OUT	3.1	U
	GROUND	GROUND	GROUND	2.0	U
PoE Injector 1 (EUT)	RJ-45 (DATA)	Laptop	RJ-45	3.1	S
	SFP	PoE Injector 2	SFP	10.0	U
Laptop	DC jack	Laptop Adapter	DC jack	1.5	U

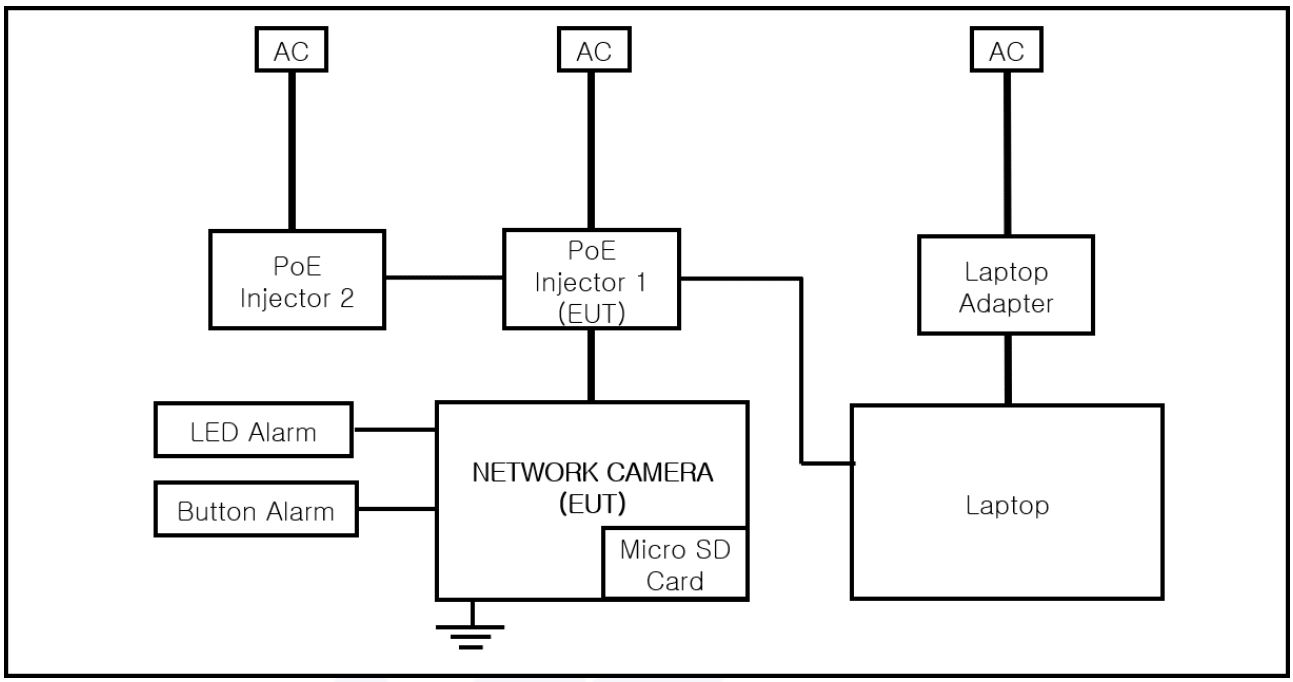
* Unshielded=U, Shielded=S

1.7 EUT Operating Mode(s)

Test mode	Normal operating	Test Voltages
Operating	Monitoring EUT Using Web Viewer, Ping Test	AC 230 V, 50 Hz

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

1.8 Configuration



1.9 Remarks when standards applied

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, 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:

☒ **EMC – Directive 2014/30/EU**

☒ EN 55032:2015/A11:2020 ☒ Class A ☐ Class B

☒ EN 50130-4:2011/A1:2014

☒ EN IEC 61000-3-2:2019

☒ EN 61000-3-3:2013/A2:2021

☒ **EMC – Regulations 2016**

☒ EN 55032:2015/A11:2020 ☒ Class A ☐ Class B

☒ EN 50130-4:2011/A1:2014

☒ EN IEC 61000-3-2:2019

☒ EN 61000-3-3:2013/A2:2021

2.1 Conducted Emissions at Mains Power Ports

Test Date
May. 28, 2024

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, 08, 2024
☒	LISN	ENV216	R & S	101787	11, 08, 2024
☒	LISN	ESH2-Z5	R & S	101137	01, 10, 2025
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 08, 2024

Test Conditions
Temperature: (21,9 ± 0,0) ℃
Relative Humidity: (45,8 ± 0,0) % 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.

2.2 Conducted Emissions at Telecommunication Ports

Test Date
May. 28, 2024

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, 08, 2024
☒	LISN	ENV216	R & S	101787	11, 08, 2024
☒	LISN	ESH2-Z5	R & S	101137	01, 10, 2025
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 08, 2024
☐	8-WIRE ISN CAT3,5	ENY81	R & S	100174	11, 09, 2024
☐	8-WIRE ISN CAT6	ENY81-CAT6	R & S	101666	03, 05, 2025
☒	ISN	ISN S8	SCHWARZBECK	ISN-S8-0019	03, 05, 2025

Test Conditions
Temperature: (21,9 ± 0,0) ℃
Relative Humidity: (45,8 ± 0,0) % 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
May. 28, 2024

Test Location
☒ 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	ESU26	R & S	100551	02, 13, 2025
☒	AMPLIFIER	SCU 01	R & S	100603	11, 08, 2024
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	11, 17, 2024
☒	ATTENUATOR	8491A	HP	32173	02, 13, 2025

Test Conditions
Temperature: (22,5 ± 0,1) ℃
Relative Humidity: (46,0 ± 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
May. 27, 2024

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	ESR7	R & S	101190	07, 31, 2024
☒	PREAMPLIFIER	8449B	AGILENT	3008A01967	03, 05, 2025
☒	ATTENUATOR	8491A	HP	35496	02, 13, 2025
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 05, 2025

Test Conditions
Temperature: (22,6 ± 0,1) ℃
Relative Humidity: (46,2 ± 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.

2.5 Harmonic Current Emissions

Test Date
May. 28, 2024

Test Location
Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	net.control	EM TEST	2.1.4	-
☒	DIGITAL POWER ANALYZER	DPA 500N	EM TEST	V1024106759	03, 28, 2025
☒	POWER SOURCE	ACS 500N6	EM TEST	V1024106760	-

Test Conditions

Temperature: (22,3 ± 0,0) ℃
Relative Humidity: (46,2 ± 0,0) % R.H.

Classification of Equipment for Harmonic Current Emissions

☒ Class A
☐ Class B
☐ Class C(Below 25 W)
☐ Class C(Above 25 W)
☐ Class D

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

2.6 Voltage Fluctuations and Flicker

Test Date
May. 28, 2024

Test Location
Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	net.control	EM TEST	2.1.4	-
☒	DIGITAL POWER ANALYZER	DPA 500N	EM TEST	V1024106759	03, 28, 2025
☒	POWER SOURCE	ACS 500N6	EM TEST	V1024106760	-

Test Conditions

Temperature: (22,3 ± 0,1) ℃
Relative Humidity: (46,2 ± 0,1) % R.H.

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

3.0 Criteria for compliance

Criteria for compliance was based on the following guidelines:
EN 50130-4:2011/A1 :2014 Alarm systems-Part 4: Electromagnetic compatibility Product family standard: Immunity requirements for components of fire, intruder and social alarm systems

The variety and the diversity of the apparatus within the scope of this document makes it difficult to define precise criteria for the evaluation of the immunity test results.

If as a result of the application of the tests defined in this standard, the apparatus

becomes dangerous or unsafe then the apparatus shall be deemed to have failed the test.

A functional description and a definition of performance by the manufacture and noted in the test

report, based on the following criteria:

Electrostatic discharge

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing that is no

residual change in the EUT or any change in outputs, which could be interpreted by associated

equipment as a change.

Radiated electromagnetic fields

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing

which could be interpreted by associated equipment as a change, and no such

Flickering of indicators occurs at a field strength of 3 V/m.

For components of CCTV systems, where the picture is allowed at 10 V/m, providing.

(a) there is no permanent damage or change to EUT

(e.g. no corruption of memory or changes to programmable setting etc.)

(b) at 3 V/m, any deterioration of the picture is so minor that the system could still be used; and

(c) there is no observable deterioration of the picture at 1 V/m.

Fast transient burst / slow high energy voltage surge

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing

That there is no residual is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change.

Conducted RF immunity

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing

That there is no residual is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change,

and no such flickering of indicators oeuvres at U = 130 $dB\mu V$.

For component of CCTV systems, where the status is monitored by observing the TV picture,

then deterioration of the picture is allowed at U = 140 $dB\mu V$, providing:

(a) there is no permanent damage or change to the EUT

(e.g. no corruption of memory or changes to programmable settings etc.)

(b) at U = 130 $dB\mu V$, any deterioration of the picture is so minor that the system could

still be used; and

(c) there in no observable deterioration of the picture at U = 120 $dB\mu V$.

Voltage dip/interruption / Voltage variation

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the conditioning is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change. The EUT shall meet the acceptance criteria for the functional test, after the conditioning.

3.1 Electrostatic Discharge

Reference Standard
EN 61000-4-2:2009

Test Date
May. 28, 2024

Test Location
EMS-ESD: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	ESD SIMULATOR	ESS-2000	Noise Ken	ESS01Z0454	01, 30, 2025
☒	HCP	-	KES	-	-
☒	VCP	-	Noise Ken	-	-

Test Conditions

Temperature: (21,9 ± 0,0) ℃
Relative Humidity: (49,3 ± 0,0) % R.H.
Atmospheric Pressure: (99,6 ± 0,0) kPa

Test Specifications

Discharge Factor: ≥ 1 s

Discharge Impedance: 330 ohm / 150 pF

Kind of Discharge: Air, Contact (direct and indirect)

Polarity: Positive and Negative

Number of Discharge: 10 at all locations for Air discharge
10 at all locations for Contact discharge

Discharge Voltage:	Contact	Air	HCP	VCP
	☐ 2 kV	☒ 2 kV	☐ 2 kV	☐ 2 kV
	☐ 4 kV	☒ 4 kV	☐ 4 kV	☐ 4 kV
	☒ 6 kV	☐ 6 kV	☒ 6 kV	☒ 6 kV
	☐ 8 kV	☒ 8 kV	☐ 8 kV	☐ 8 kV
	☐ 15 kV	☐ 15 kV	☐ 15 kV	☐ 15 kV

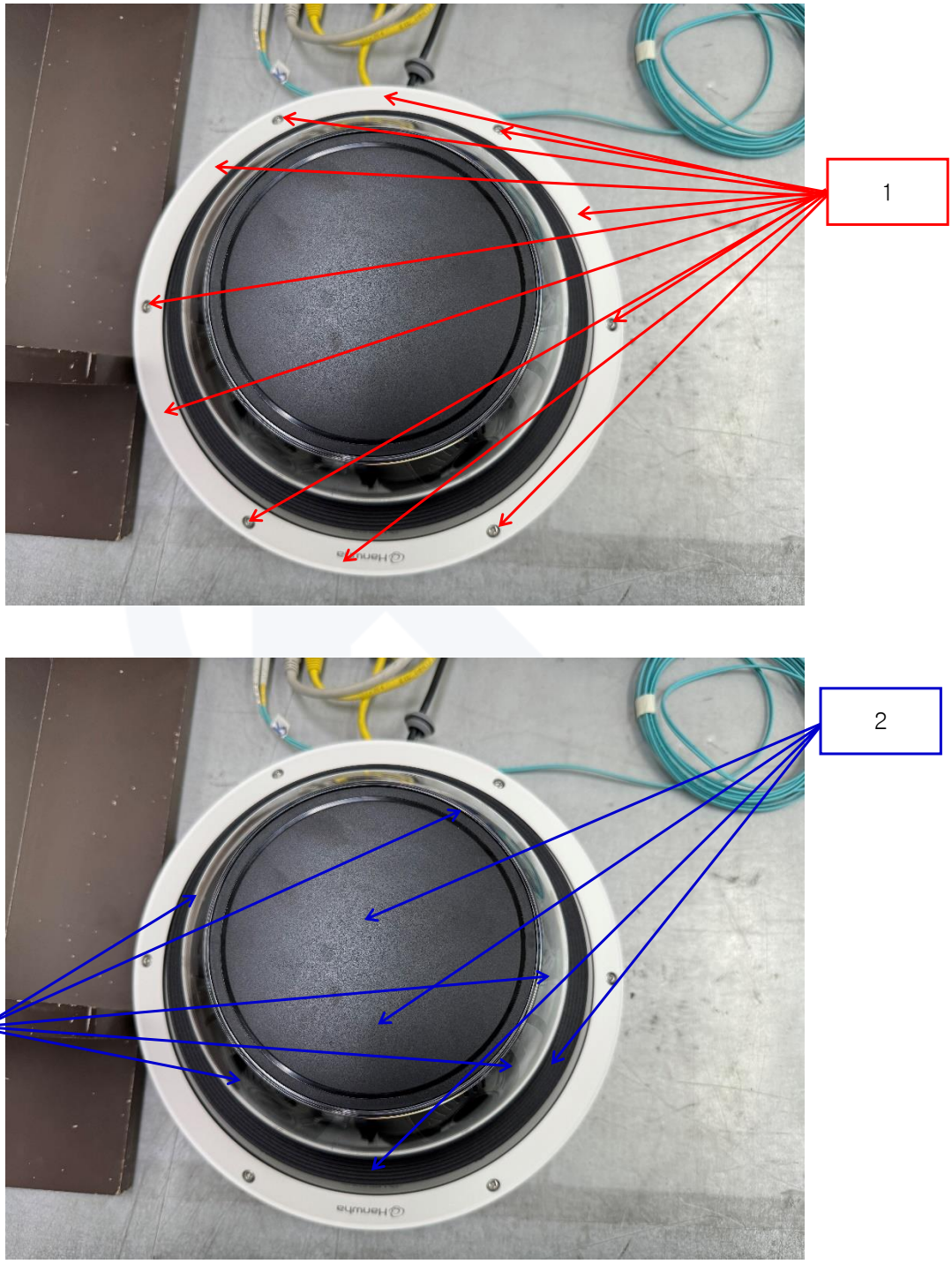
Notes: HCP: Horizontal coupling plane
VCP: Vertical coupling plane

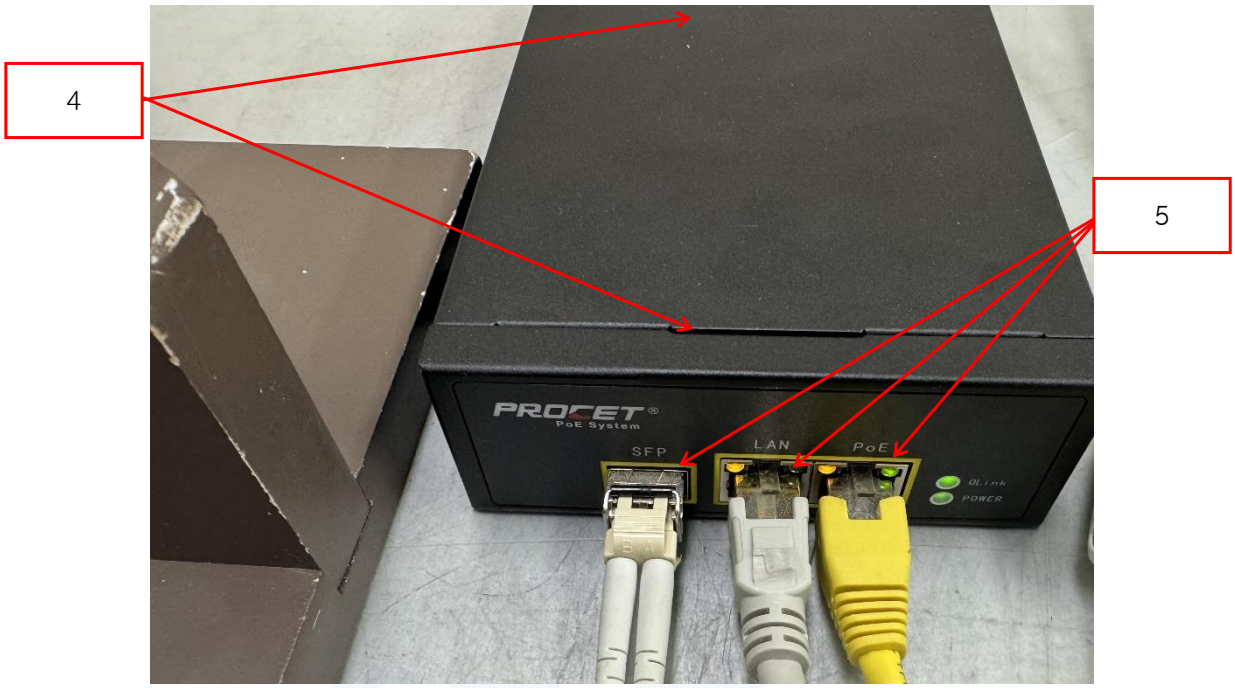
Required Performance Criteria: ☒ Complied

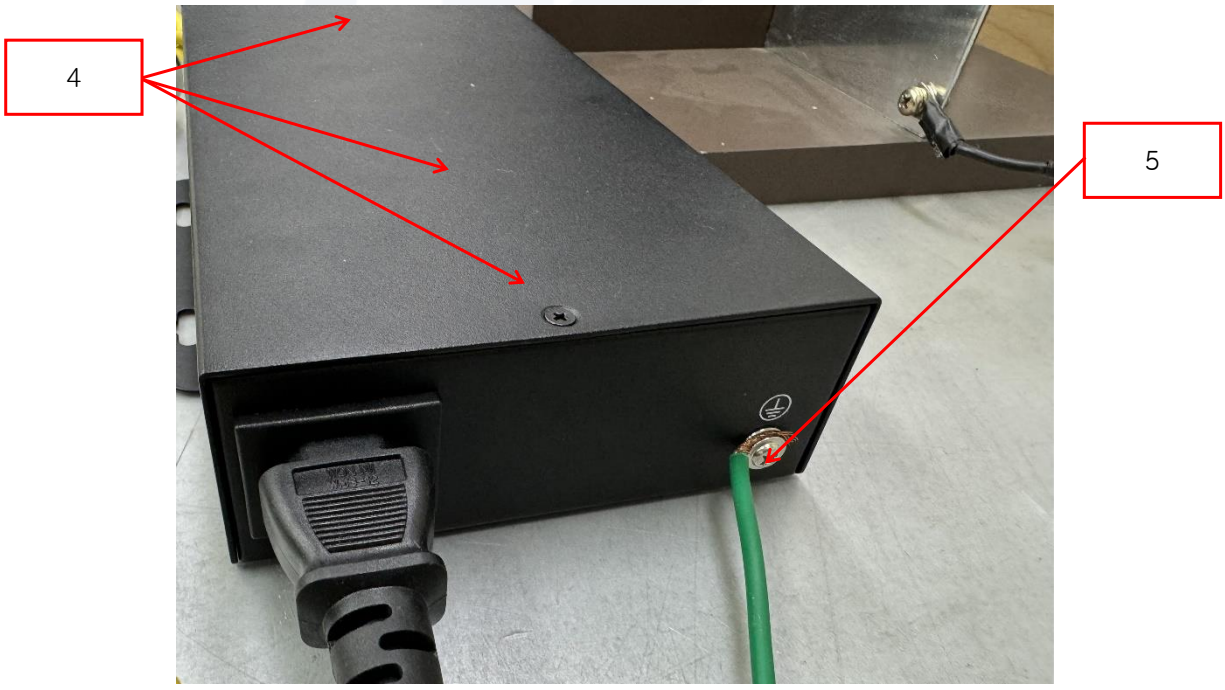
Location of Discharge:

Air

Contact







Test Data

No.	Test Point	Discharge Method	Observations	Remarks
1	HCP Contact	Contact Discharge	Complied	-
2	VCP Contact	Contact Discharge	Complied	-

Direct Discharge

No.	Test Point	Discharge Method	Observations	Remarks
1	CAMERA Enclosure, SCREW	Contact Discharge	Complied	-
2	CAMERA Enclosure (Noncontect)	Air Discharge	Complied	-
3	CAMERA LENZ	Air Discharge	Complied	-
4	PoE Injector Enclosure	Contact Discharge	Complied	-
5	PoE Injector PORT	Contact Discharge	Complied	-

Note: “Blank” = Not performed

Observations:
Complied – No degradation of function

Test Results

☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria

3.2 Radiated Electric Field Immunity

Reference Standard
EN IEC 61000-4-3:2020

Test Date
May. 27, 2024

Test Location
EMS-RS: ☐ SEMI ANECHOIC CHAMBER #2 ☒ SEMI ANECHOIC CHAMBER #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	EMC32	R & S	10.10.02	-
☒	SIGNAL GENERATOR	SMB 100A	Rohde & Schwarz	108252	07, 31, 2024
☒	HIGH POWER DUAL AMP	SSA532	SUNGSAN	SSA532-001	-
☒	POWER METER	E4419B	Agilent	GB40203000	02, 13, 2025
☒	AVERAGE POWER SENSOR	E9301A	Agilent	MY52170007	02, 13, 2025
☒	AVERAGE POWER SENSOR	E9301A	Agilent	MY41498669	02, 13, 2025
☒	STACKED DOUBLE LOG-PER- ANTENNA	STPL9128 E	Schwarzbeck	9128ES-121	-
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 05, 2025

Test Conditions
Temperature: (22,5 ± 0,1) ℃
Relative Humidity: (48,0 ± 0,1) % R.H.
Atmospheric Pressure: (100,1 ± 0,0) kPa

Test Specifications

Antenna Polarization:	Horizontal & vertical unless indicated otherwise
Antenna Distance:	☒ 3 m
Field Strength:	☐ 1 V/m ☐ 3 V/m ☒ 10 V/m
Frequency Range:	☐ 80 MHz to 1 GHz ☐ 1,4 GHz to 2,7 GHz ☒ 80 MHz to 2,7 GHz
Modulation:	☒ AM, 80 %, 1 kHz sine wave ☒ PM, 1 Hz (0,5 s ON : 0,5 s OFF)
Frequency step:	☒ 1 % step
Dwell Time:	☐ 1 s ☒ 3 s
# of Sides Radiated:	☒ 4
Required Performance Criteria:	☒ Complied

Test Data

Side Exposed	Observations	
	Horizontal	Vertical
Front	Complied	Complied
Right	Complied	Complied
Back	Complied	Complied
Left	Complied	Complied

Note: "Blank" = Not performed

Observations:
Complied – No degradation of function

Test Results

☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria

3.3 Electrical Fast Transients/Bursts

Reference Standard
EN 61000-4-4:2012

Test Date
May. 28, 2024

Test Location
EMS-EFT: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	iec.control	EM TEST	5.4.8	-
☒	ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	11, 09, 2024
☒	MOTOR VARIAC	MV2616	EM TEST	P1552169719	11, 09, 2024
☒	CAPACITIVE COUPLING CLAMP	HFK	EM TEST	P1633183115	11, 10, 2024

Test Conditions

Temperature: (21,9 ± 0,1) ℃
Relative Humidity: (49,3 ± 0,1) % R.H.
Atmospheric Pressure: (99,6 ± 0,0) ㎪

Test Specifications

Pulse Amplitude & Polarity: (AC Power Lines)	☐ ± 1.0 ㎸ ☐ ± 4.0 ㎸	☒ ± 2.0 ㎸
Pulse Amplitude & Polarity: (Other supply / Signal Lines)	☐ ± 0.5 ㎸ ☐ ± 2.0 ㎸	☒ ± 1.0 ㎸
Burst Period:	☒ 300 ㎳	☐ 2 s
Repetition Rate:	☐ 5 ㎑	☒ 100 ㎑
Duration of Test Voltage:	☒ ≥ 1 min	
Required Performance Criteria:	☒ Complied	

Test Data

☒ Input a.c. power ports – Coupling/Decoupling Network used

Mode of Application	Observations	
	(+) Burst (㎸)	(-) Burst (㎸)
L	Complied	Complied
N	Complied	Complied
PE	Complied	Complied
L − N	Complied	Complied
L − PE	Complied	Complied
N − PE	Complied	Complied
L − N − PE	Complied	Complied

☐ Input d.c. power ports – Coupling/Decoupling Network used

Mode of Application	Observations	
	(+) Burst (㎸)	(-) Burst (㎸)
-	-	-

☒ Signal ports and telecommunication ports – Coupling Clamp used

Mode of Application	Observations	
	(+) Burst (㎸)	(-) Burst (㎸)
RJ-45 (LAN)	Complied	Complied
Alarm In	Complied	Complied
Alarm Out	Complied	Complied

Note: "Blank" = Not performed
Observations:
Complied – No degradation of function

Test Results

☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria

3.4 Surge Transients

Reference Standard
EN 61000-4-5:2014/A1:2017

Test Date
May. 28, 2024

Test Location
EMS-Surge: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	iec.control	EM TEST	5.4.8	-
☒	ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	11, 09, 2024
☒	MOTOR VARIAC	MV2616	EM TEST	P1552169719	11, 09, 2024
☒	CDN	CNV 508N1	EM TEST	P1610176296	11, 10, 2024

Test Conditions

Temperature: (21,9 ± 0,2) ℃
Relative Humidity: (49,3 ± 0,2) % R.H.
Atmospheric Pressure: (99,6 ± 0,0) ㎪

Test Specifications

AC Power Lines

Source Impedance:	12 ohm for common Mode and 2 ohm for differential Mode
Surge Amplitude :	Common Mode ☒ (0,5 / 1,0 / 2,0) kV Differential Mode ☒ (0,5 / 1,0) kV
Number of Surges:	☒ 5 surges per angle
Angle:	☒ 0°, 90°, 180°, 270° (input a.c. power port)
Polarity:	☒ Positive & Negative
Repetition Rate:	☒ 1 surge per min ☐ 1 surge per 30 sec.
Required Performance Criteria:	☒ Complied

Other supply / Signal Lines

Source Impedance:	42 ohm for common Mode
Surge Amplitude:	Common Mode ☒ (0,5 / 1,0) kV
Number of Surges:	☒ 5 Surges
Polarity:	☒ Positive & Negative
Repetition Rate:	☒ 1 surge per min ☐ 1 surge per 30 sec.
Required Performance Criteria:	☒ Complied

Test Data

☒ Line to Line – Differential Mode

Mode of Application	Observations	
	(+) Surge (㎸)	(-) Surge (㎸)
L – N	Complied	Complied

☒ Line to Earth – Common Mode

Mode of Application	Observations	
	(+) Surge (㎸)	(-) Surge (㎸)
L – PE	Complied	Complied
N – PE	Complied	Complied

Signal Lines

☒ Line to Earth – Common Mode

Mode of Application	Coupling Method	Observations	
		(+) Surge (㎸)	(-) Surge (㎸)
RJ-45(LAN)	CDN	Complied	Complied
	LINE	Complied	Complied

Note:“Blank” = Not performed
Observations:
Complied – No degradation of function

Test Results

☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria

3.5 Conducted Disturbance

Reference Standard
EN 61000-4-6:2014

Test Date
May. 29, 2024

Test Location
EMS-CS: Electro wave Shieldroom #6

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	icd.control	EM TEST	5.3.12	-
☒	CONTINUOUS WAVE SIMULATOR	CWS 500N1.4	EM TEST	P1602169880	11, 08, 2024
☒	ATTENUATOR	ATT 6/80	EM TEST	P1614178148	11, 08, 2024
☒	CDN	CDN M016	TESEQ	43694	11, 08, 2024
☒	CDN	CDN M016	TESEQ	43697	11, 08, 2024
☒	CDN	CDN ST08A	TESEQ	43886	11, 08, 2024
☐	EM CLAMP	KEMZ 801A	TESEQ	44099	11, 09, 2024

Test Conditions

Temperature: (21,8 ± 0,3) ℃
Relative Humidity: (46,4 ± 0,3) % R.H.
Atmospheric Pressure: (100,4 ± 0,0) ㎪

Test Specifications

Frequency range: ☒ 150 ㎑ to 100 ㎒ ☐ 150 ㎑ to 80 ㎒

Voltage Level: ☐ 1 Vrms ☐ 3 Vrms
☒ 10 Vrms

Modulation: ☒ AM, 80 %, 1 ㎑ sine wave
☒ PM, 1 ㎐ (0,5 s ON : 0,5 s OFF)

Frequency step: ☒ 1 % step

Dwell Time: ☐ 1 s ☒ 3 s

Required Performance Criteria: ☒ Complied

Test Data

☒ Input a.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
L – N - PE	CDN	Complied

☐ Input d.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
-	-	-

☒ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45 (LAN)	CDN	Complied
Alarm In	Clamp	Complied
Alarm Out	Clamp	Complied

Notes: CDN = Coupling Decoupling Network
"blank" = Not performed

Observations:
Complied – No degradation of function

Test Results

☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria

3.6 Voltage Dips and Short Interruptions

Reference Standard
EN IEC 61000-4-11:2020

Test Date
May. 28, 2024

Test Location
EMS-Voltage dip: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	iec.control	EM TEST	5.4.8	-
☒	ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	11, 09, 2024
☒	MOTOR VARIAC	MV2616	EM TEST	P1552169719	11, 09, 2024

Test Conditions

Temperature: (21,9 ± 0,0) ℃
Relative Humidity: (49,3 ± 0,0) % R.H.
Atmospheric Pressure: (99,6 ± 0,0) kPa

Test Specifications & Observations/Remarks

- Voltage Dips and Short Interruptions

Test Level	Duration [in period/ms (50 ㎐)]	Results
☒ 20 % dip	☒ 250 / 5 000	Complied
☒ 30 % dip	☒ 25 / 500	Complied
☒ 60 % dip	☒ 10 / 200	Complied
☒ 100 % dip	☒ 250 / 5 000	Degradation

- Voltage variations

☒ Unom + 10 %	☒ 253.0 V (ac)	Complied
☒ Unom - 15 %	☒ 195.5 V (ac)	Complied

Observations:
Complied – No degradation of function
Degradation - See "Remarks "

Test Results

☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria
☐ NOT APPLICABLE

Remarks

PASS Required Performance Criteria
Complied : PASS Required Performance Criteria
Degradation : During the test, EUT was turned off but after the test, it was recovered without operator’s intervention.

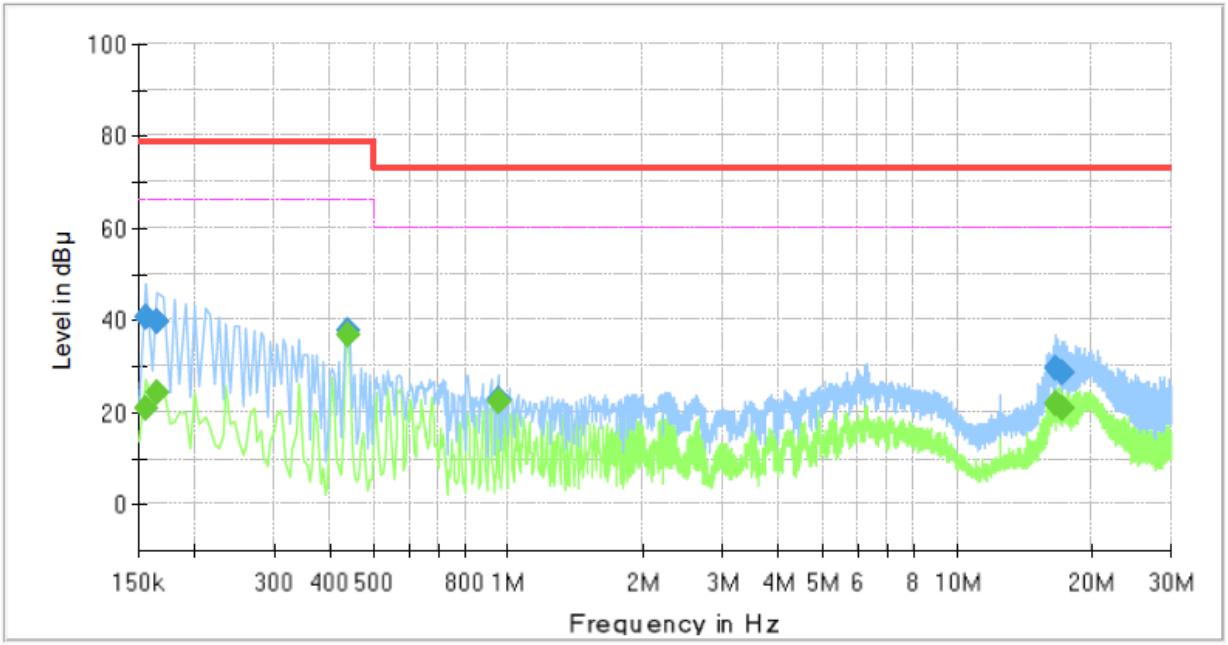
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

[HOT]

Common Information

Test Description:	Conducted Emission
Job No.:	KES-EM241383
Phase:	L
Mode:	
Operator Name:	KES



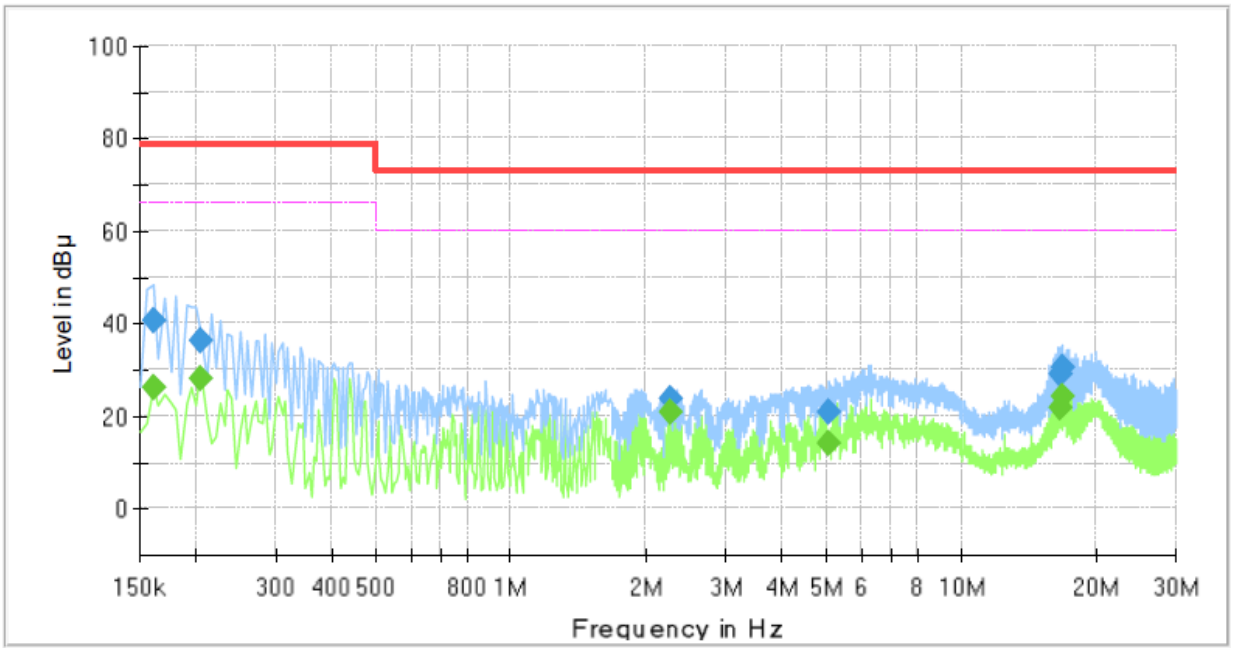
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	40.87	---	79.00	38.13	1000.0	9.000	L1	19.4
0.155000	---	20.64	66.00	45.36	1000.0	9.000	L1	19.4
0.165000	---	24.09	66.00	41.91	1000.0	9.000	L1	19.4
0.165000	39.82	---	79.00	39.18	1000.0	9.000	L1	19.4
0.440000	---	36.65	66.00	29.35	1000.0	9.000	L1	19.4
0.440000	37.67	---	79.00	41.33	1000.0	9.000	L1	19.4
0.945000	---	22.21	60.00	37.79	1000.0	9.000	L1	19.4
0.945000	22.94	---	73.00	50.06	1000.0	9.000	L1	19.4
16.575000	---	21.87	60.00	38.13	1000.0	9.000	L1	20.2
16.575000	29.79	---	73.00	43.21	1000.0	9.000	L1	20.2
17.175000	---	21.08	60.00	38.92	1000.0	9.000	L1	20.2
17.175000	28.64	---	73.00	44.36	1000.0	9.000	L1	20.2

[NEUTRAL]

Common Information

Test Description:	Conducted Emission
Job No.:	KES-EM241383
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)
0.160000	---	25.95	66.00	40.05	1000.0	9.000	N	19.3
0.160000	40.56	---	79.00	38.44	1000.0	9.000	N	19.3
0.205000	---	27.88	66.00	38.12	1000.0	9.000	N	19.3
0.205000	36.38	---	79.00	42.62	1000.0	9.000	N	19.3
2.265000	---	20.78	60.00	39.22	1000.0	9.000	N	19.5
2.265000	23.57	---	73.00	49.43	1000.0	9.000	N	19.5
5.100000	---	13.91	60.00	46.09	1000.0	9.000	N	19.8
5.100000	21.05	---	73.00	51.95	1000.0	9.000	N	19.8
16.515000	---	21.64	60.00	38.36	1000.0	9.000	N	20.2
16.515000	28.93	---	73.00	44.07	1000.0	9.000	N	20.2
16.725000	---	24.29	60.00	35.71	1000.0	9.000	N	20.2
16.725000	30.56	---	73.00	42.44	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))

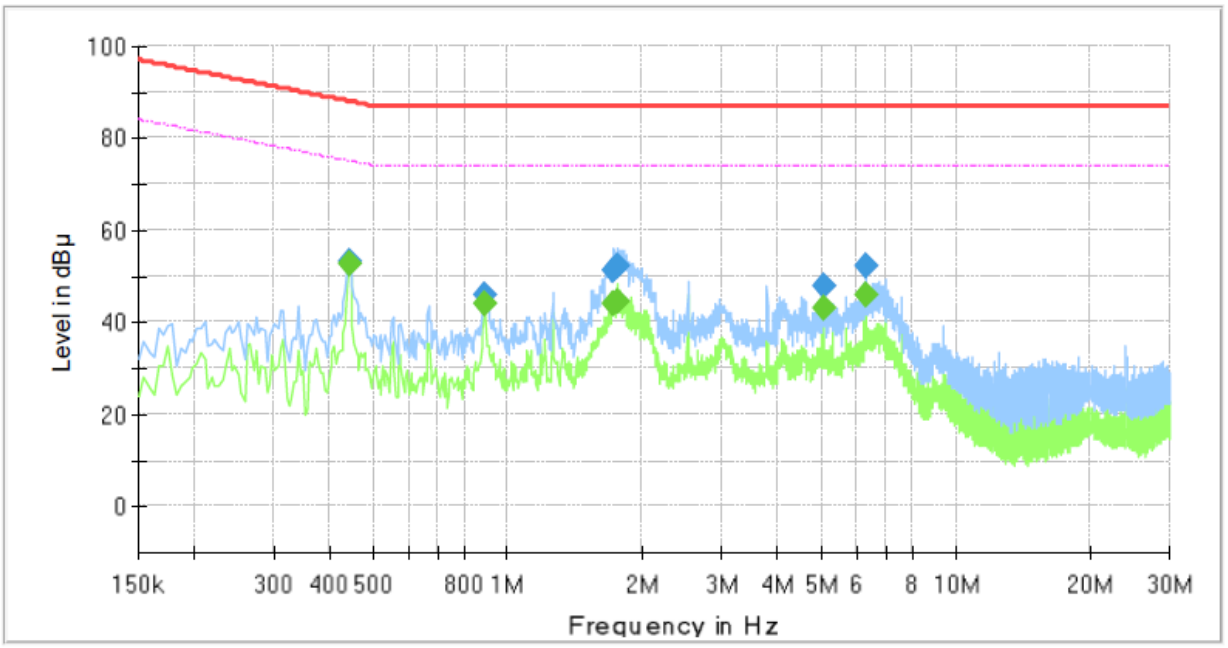
Conducted Emissions at Telecommunication Ports

■ LAN

[1 000 Mbps]

Common Information

Test Description:	Telecommunication Emission
Job No.:	KES-EM241383
Mode :	LAN
Speed :	1 000 Mbps
Operator Name:	KES



Final_Result

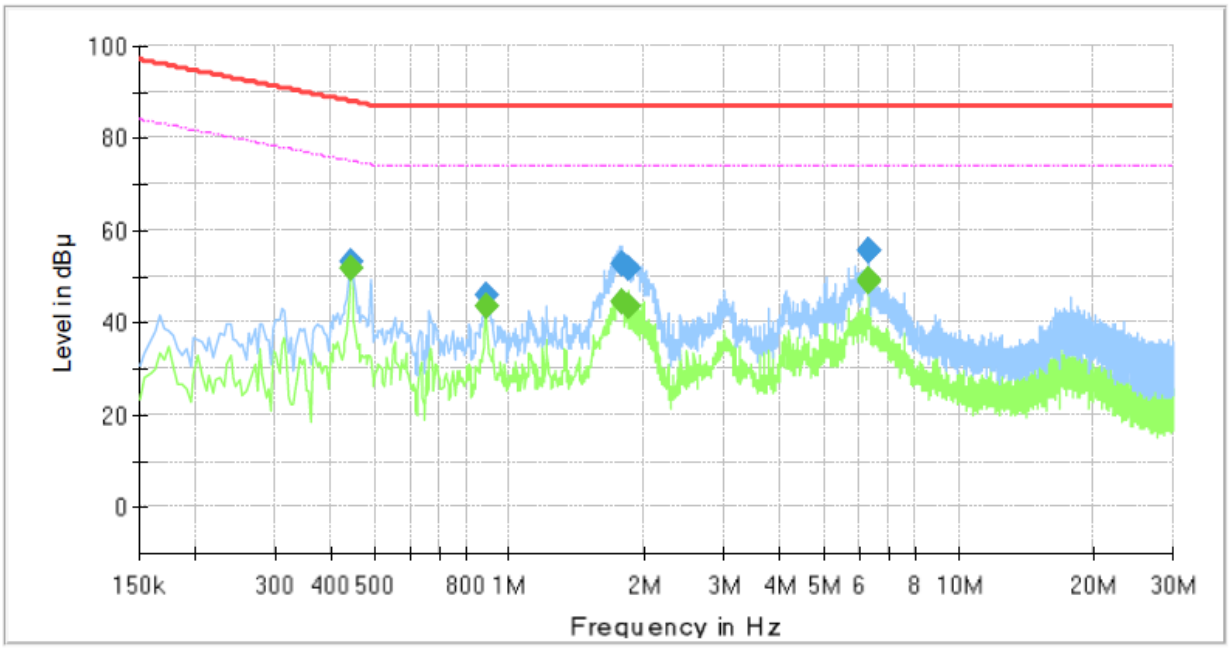
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.442000	53.38	---	88.02	34.64	1000.0	9.000	Single Line	19.2
0.442000	---	52.53	75.02	22.49	1000.0	9.000	Single Line	19.2
0.886000	---	43.89	74.00	30.11	1000.0	9.000	Single Line	19.3
0.886000	45.80	---	87.00	41.20	1000.0	9.000	Single Line	19.3
1.726000	---	43.98	74.00	30.02	1000.0	9.000	Single Line	19.3
1.726000	51.29	---	87.00	35.71	1000.0	9.000	Single Line	19.3
1.750000	52.29	---	87.00	34.71	1000.0	9.000	Single Line	19.3
1.750000	---	44.71	74.00	29.29	1000.0	9.000	Single Line	19.3
5.046000	47.83	---	87.00	39.17	1000.0	9.000	Single Line	19.5
5.046000	---	42.97	74.00	31.03	1000.0	9.000	Single Line	19.5
6.310000	52.32	---	87.00	34.68	1000.0	9.000	Single Line	19.6
6.310000	---	46.02	74.00	27.98	1000.0	9.000	Single Line	19.6

■ PoE

[1 000 Mbps]

Common Information

Test Description:	Telecommunication Emission
Job No.:	KES-EM241383
Mode :	PoE
Speed :	1 000 Mbps
Operator Name:	KES

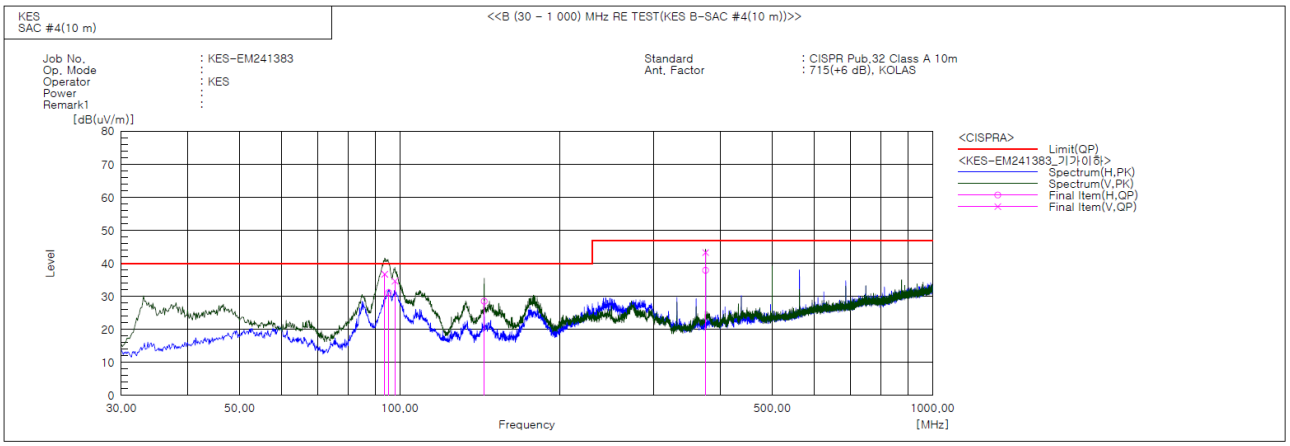


Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.442000	53.03	---	88.02	34.99	1000.0	9.000	Single Line	19.2
0.442000	---	51.88	75.02	23.14	1000.0	9.000	Single Line	19.2
0.886000	---	43.76	74.00	30.24	1000.0	9.000	Single Line	19.3
0.886000	45.74	---	87.00	41.26	1000.0	9.000	Single Line	19.3
1.774000	---	44.59	74.00	29.41	1000.0	9.000	Single Line	19.3
1.774000	52.60	---	87.00	34.40	1000.0	9.000	Single Line	19.3
1.830000	---	43.35	74.00	30.65	1000.0	9.000	Single Line	19.3
1.830000	51.62	---	87.00	35.38	1000.0	9.000	Single Line	19.3
6.306000	---	49.33	74.00	24.67	1000.0	9.000	Single Line	19.6
6.306000	55.60	---	87.00	31.40	1000.0	9.000	Single Line	19.6
6.310000	---	48.85	74.00	25.15	1000.0	9.000	Single Line	19.6
6.310000	55.42	---	87.00	31.58	1000.0	9.000	Single Line	19.6

♦ 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 ㎓)

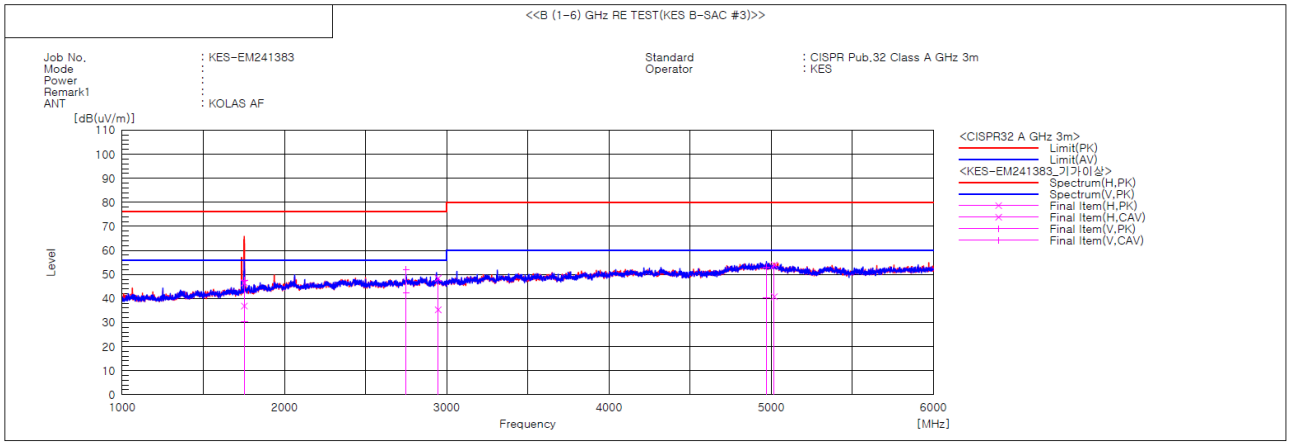


Final Result

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	93.656	V	59.8	-23.1	36.7	40.0	3.3	100.0	228.0	
2	95.233	H	53.9	-22.8	31.1	40.0	8.9	364.0	262.0	
3	97.900	V	57.1	-22.5	34.6	40.0	5.4	115.0	261.0	
4	143.975	H	53.7	-25.2	28.5	40.0	11.5	317.0	165.0	
5	374.956	V	57.7	-14.4	43.3	47.0	3.7	125.0	208.0	
6	374.956	H	52.3	-14.4	37.9	47.0	9.1	279.0	190.0	

♦ Calculation
Result(QP) [㏈(㎶/m)] = (Reading(QP)[㏈(㎶)] + c.f[㏈(1/m)]
Margin(QP)[㏈] = Limit[㏈(㎶/m)] - Result(QP) [㏈(㎶/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	1752.830	H	44.6	35.0	1.9	46.5	36.9	76.0	56.0	29.5	19.1	100.0	39.9	
2	1752.720	V	45.6	28.5	1.9	47.5	30.4	76.0	56.0	28.5	25.6	100.0	340.5	
3	2750.260	V	44.8	35.1	7.2	52.0	42.3	76.0	56.0	24.0	13.7	100.0	196.1	
4	2947.164	H	41.2	28.1	7.2	48.4	35.3	76.0	56.0	27.6	20.7	100.0	224.4	
5	4971.050	V	37.6	24.9	15.5	53.1	40.4	80.0	60.0	26.9	19.6	100.0	293.3	
6	5019.630	H	38.4	25.3	15.5	53.9	40.8	80.0	60.0	26.1	19.2	100.0	6.2	

♦ Calculation

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

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

Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

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

Harmonic Current Emissions and Voltage Fluctuations and Flicker

Average harmonic current results

Hn	Ieff [A]	% of Limit	Limit [A]	Result
1	0.121			
2	0.004	0.347	1.080	n/a
3	0.113	4.909	2.300	PASS
4	0.006	1.304	0.430	PASS
5	0.108	9.509	1.140	PASS
6	0.005	1.555	0.300	n/a
7	0.102	13.300	0.770	PASS
8	0.004	1.930	0.230	n/a
9	0.094	23.565	0.400	PASS
10	0.005	2.677	0.184	n/a
11	0.085	25.800	0.330	PASS
12	0.004	2.726	0.153	n/a
13	0.075	35.870	0.210	PASS
14	0.003	2.636	0.131	n/a
15	0.065	43.247	0.150	PASS
16	0.003	2.560	0.115	n/a
17	0.054	40.944	0.132	PASS
18	0.003	2.460	0.102	n/a
19	0.043	36.680	0.118	PASS
20	0.002	2.100	0.092	n/a
21	0.033	20.761	0.161	PASS
22	0.001	1.757	0.084	n/a
23	0.025	16.796	0.147	PASS
24	0.001	1.547	0.077	n/a
25	0.017	12.569	0.135	PASS
26	0.001	1.251	0.071	n/a
27	0.011	8.446	0.125	PASS
28	0.001	1.293	0.066	n/a
29	0.006	4.893	0.116	PASS
30	0.001	1.196	0.061	n/a
31	0.003	2.747	0.109	n/a
32	0.001	1.081	0.058	n/a
33	0.003	3.151	0.102	n/a
34	0.001	1.112	0.054	n/a
35	0.004	4.551	0.096	n/a
36	0.001	1.353	0.051	n/a
37	0.005	5.359	0.091	n/a
38	0.001	1.642	0.048	n/a
39	0.005	5.358	0.087	n/a
40	0.001	1.596	0.046	n/a

Note: Harmonic currents less than 0.6 % of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.

* Application of limits for average is 100% except for odd harmonics from 21 to 39, where 150% applies.

Test Data - Harmonics (continued)

Maximum harmonic current results

Hn	Ieff [A]	% of Limit	Limit [A]	Result
1	0.122			
2	0.004	0.262	1.620	n/a
3	0.114	3.292	3.450	PASS
4	0.006	0.982	0.645	PASS
5	0.109	6.376	1.710	PASS
6	0.005	1.172	0.450	PASS
7	0.103	8.915	1.155	PASS
8	0.005	1.429	0.345	n/a
9	0.095	15.794	0.600	PASS
10	0.006	1.999	0.276	PASS
11	0.086	17.304	0.495	PASS
12	0.005	2.048	0.230	n/a
13	0.076	24.032	0.315	PASS
14	0.004	1.987	0.197	n/a
15	0.065	28.982	0.225	PASS
16	0.003	1.937	0.173	n/a
17	0.054	27.429	0.199	PASS
18	0.003	1.857	0.153	n/a
19	0.044	24.575	0.178	PASS
20	0.002	1.572	0.138	n/a
21	0.034	20.868	0.161	PASS
22	0.002	1.347	0.125	n/a
23	0.025	16.931	0.147	PASS
24	0.001	1.167	0.115	n/a
25	0.017	12.637	0.135	PASS
26	0.001	1.027	0.106	n/a
27	0.011	8.527	0.125	PASS
28	0.001	0.994	0.099	n/a
29	0.006	5.055	0.116	PASS
30	0.001	0.934	0.092	n/a
31	0.003	2.900	0.109	n/a
32	0.001	0.816	0.086	n/a
33	0.003	3.275	0.102	n/a
34	0.001	0.867	0.081	n/a
35	0.005	4.681	0.096	n/a
36	0.001	1.022	0.077	n/a
37	0.005	5.544	0.091	PASS
38	0.001	1.218	0.073	n/a
39	0.005	5.495	0.087	n/a
40	0.001	1.160	0.069	n/a

Note: Harmonic currents less than 0.6 % of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.
* Application of limits for average is 100% except for odd harmonics from 21 to 39, where 150% applies.

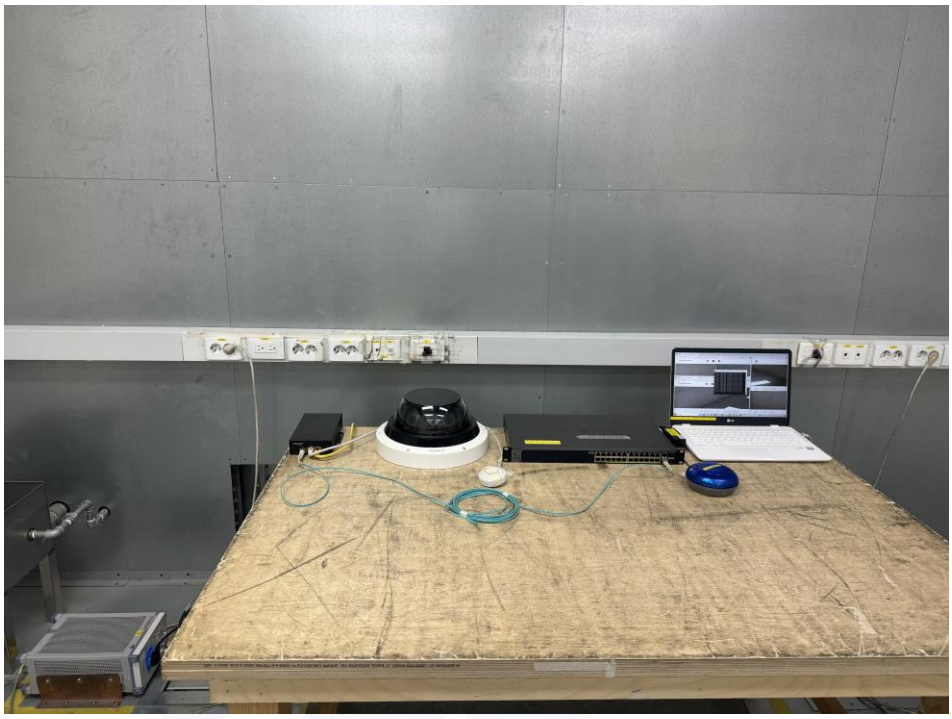
Test Data - Voltage Fluctuations

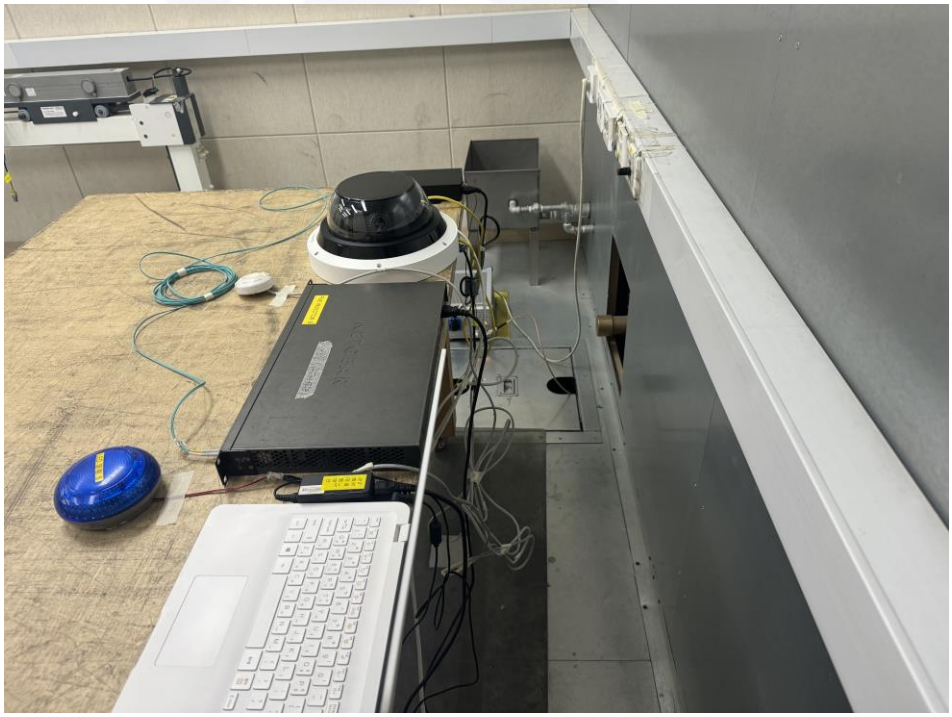
Maximum Flicker results

Flicker Measurements					
	Plt	**Max Pst**	**Max Dc**	**Max Dmax**	**Max Tmax**
Line 1:	0.028	0.028	0	< 0.2	0
Limits:	0.65	1	3.3	4	0.5
Results:	PASS	PASS	PASS	PASS	PASS

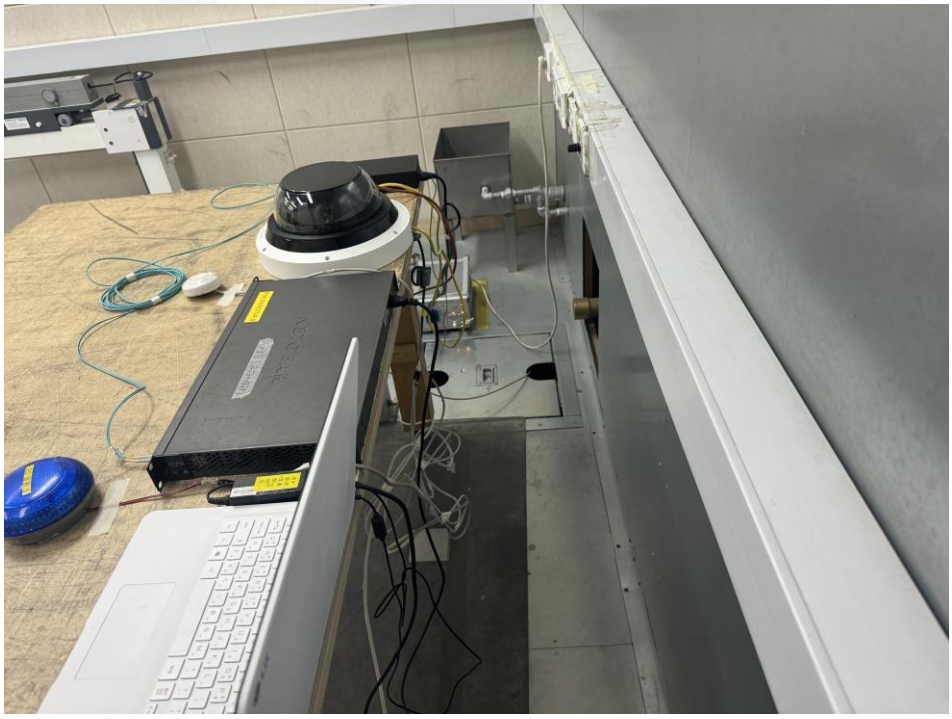
Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports

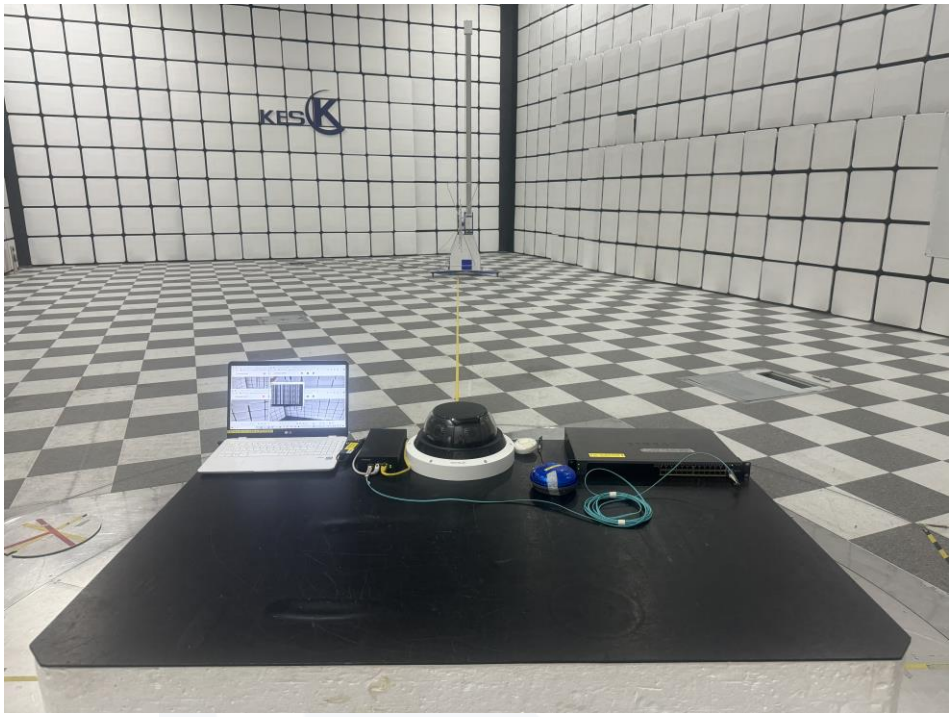


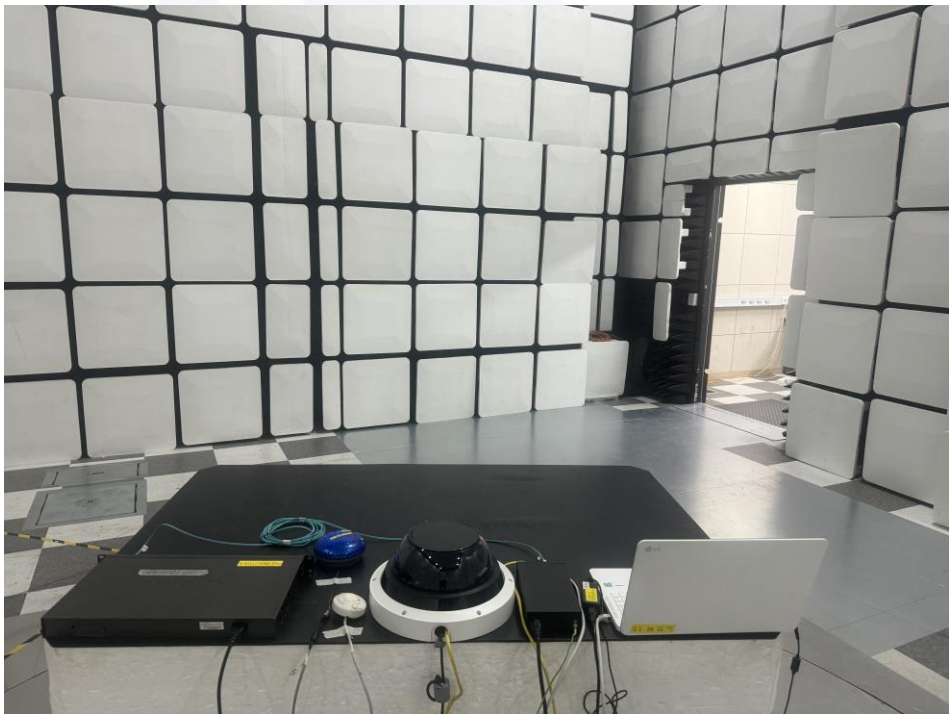


Conducted Emissions at Telecommunication Ports

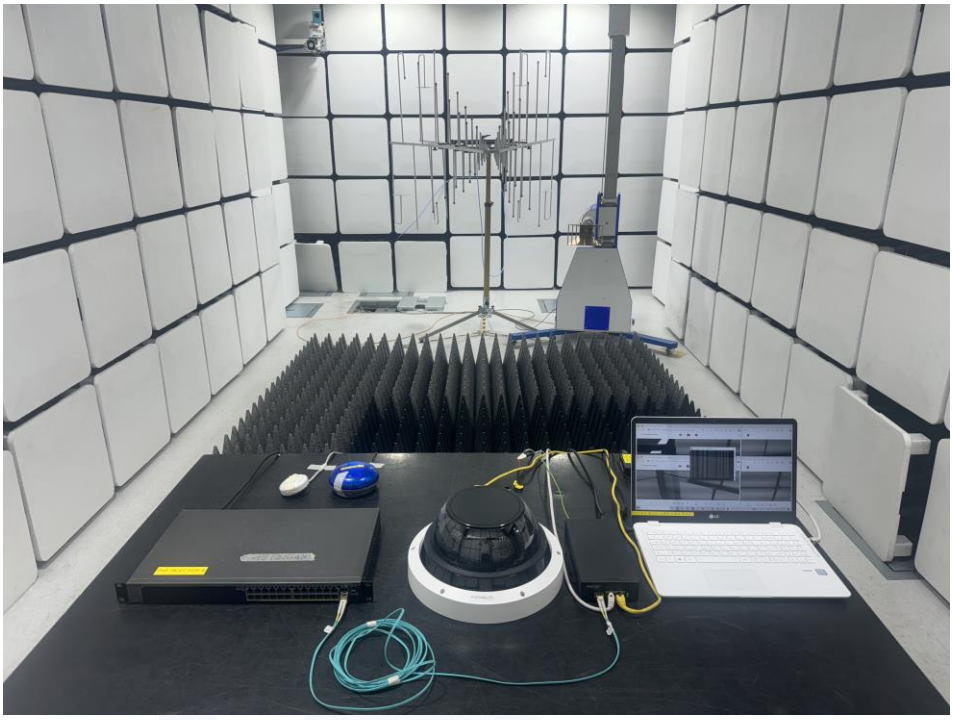


Radiated Electric Field Emissions(Below 1 ㎓)

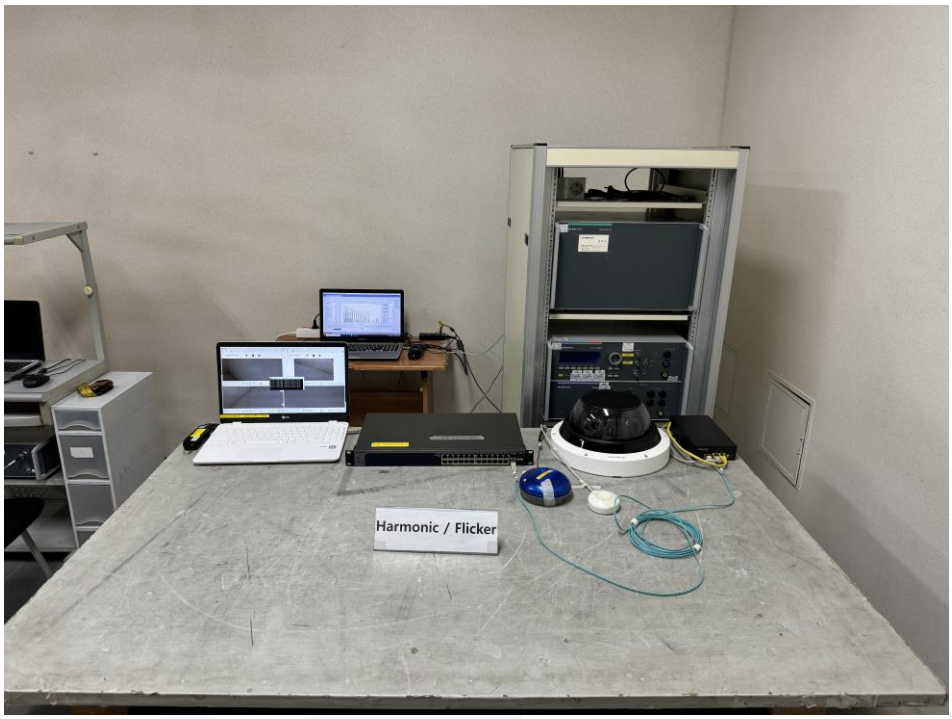




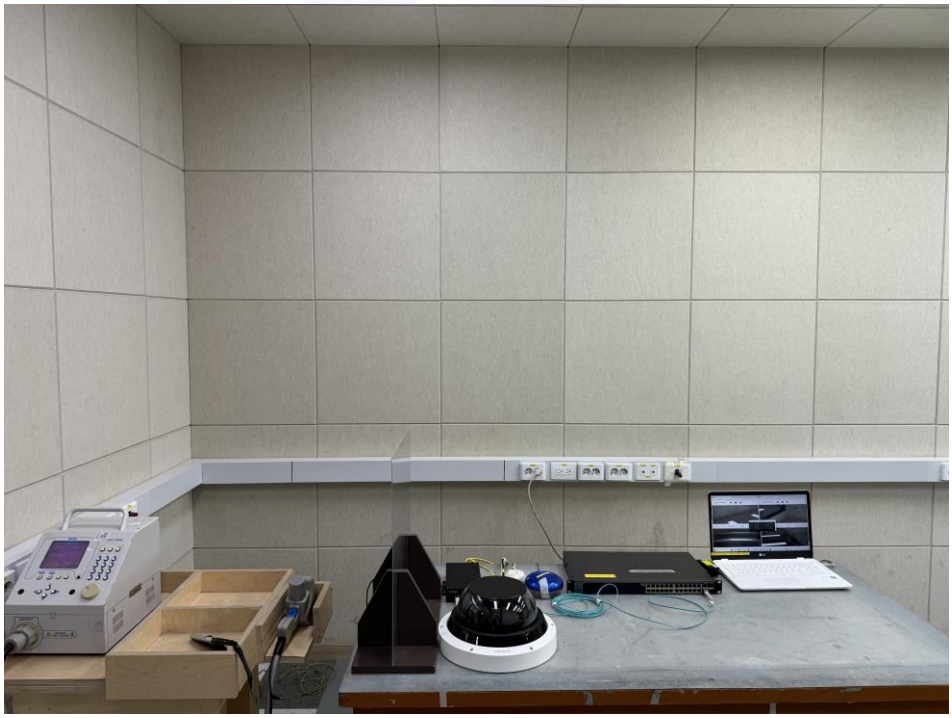
Radiated Electric Field Emissions(Above 1 ㎓)



Harmonic Current Emissions and Voltage Fluctuations and Flicker

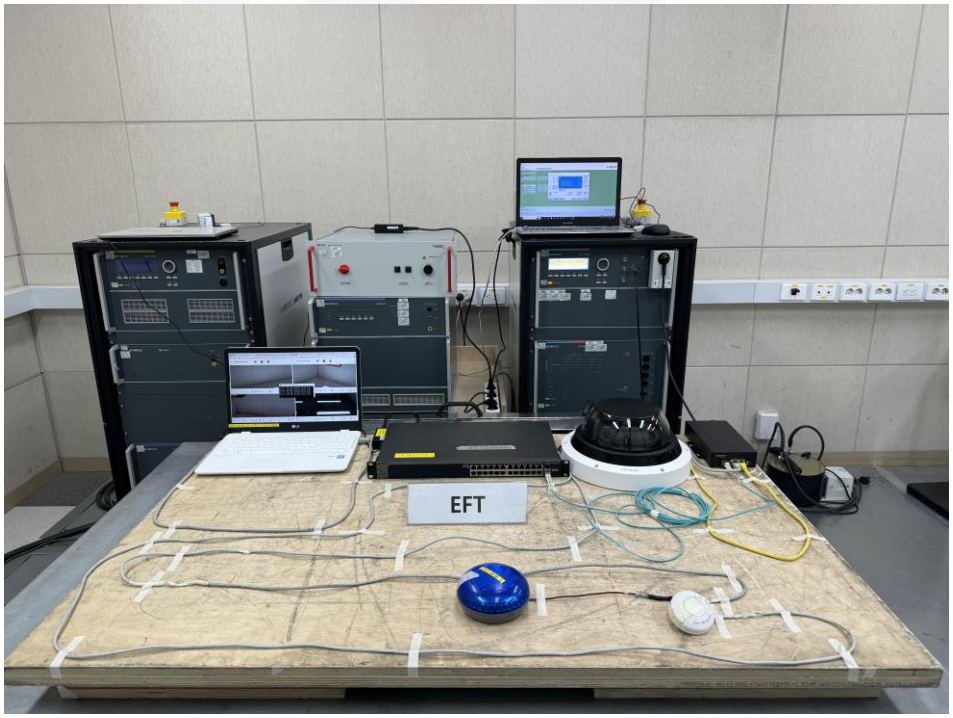


Electrostatic Discharge



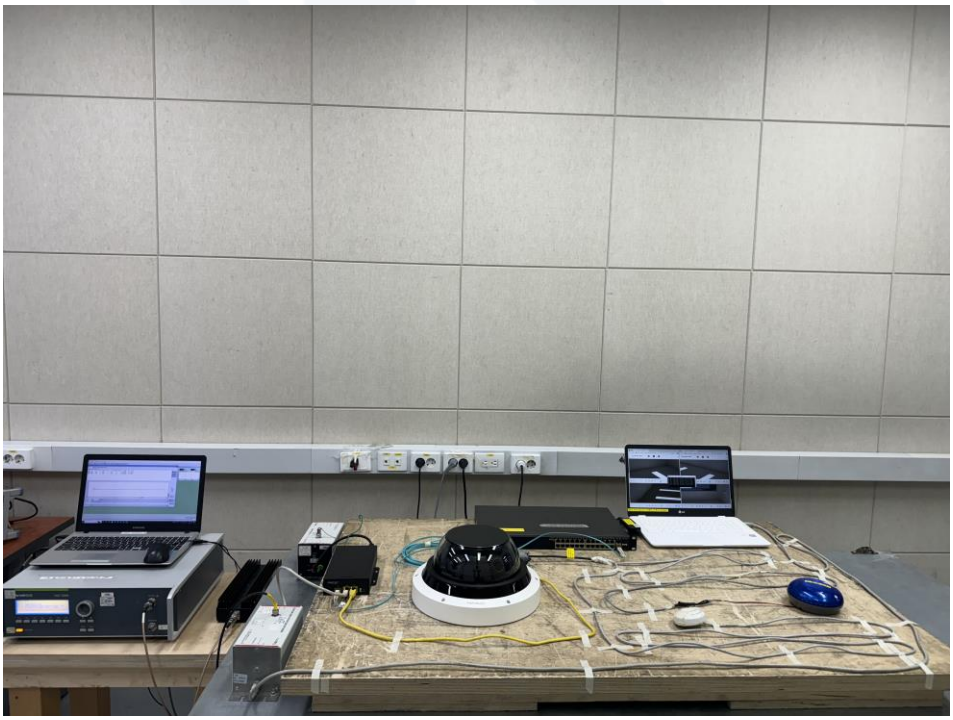
Radiated Electric Field Immunity

Electrical Fast Transients/Bursts



Surge Transients

Conducted Disturbance



Voltage Dips and Short Interruptions

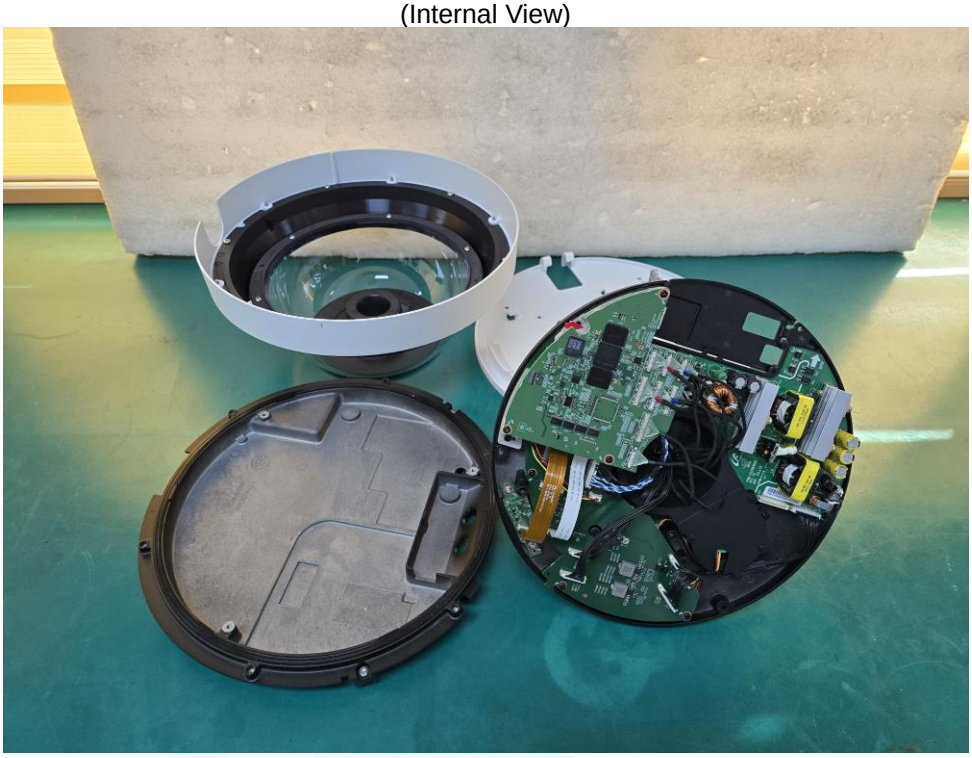
EUT External Photographs

(Top)

(Bottom)

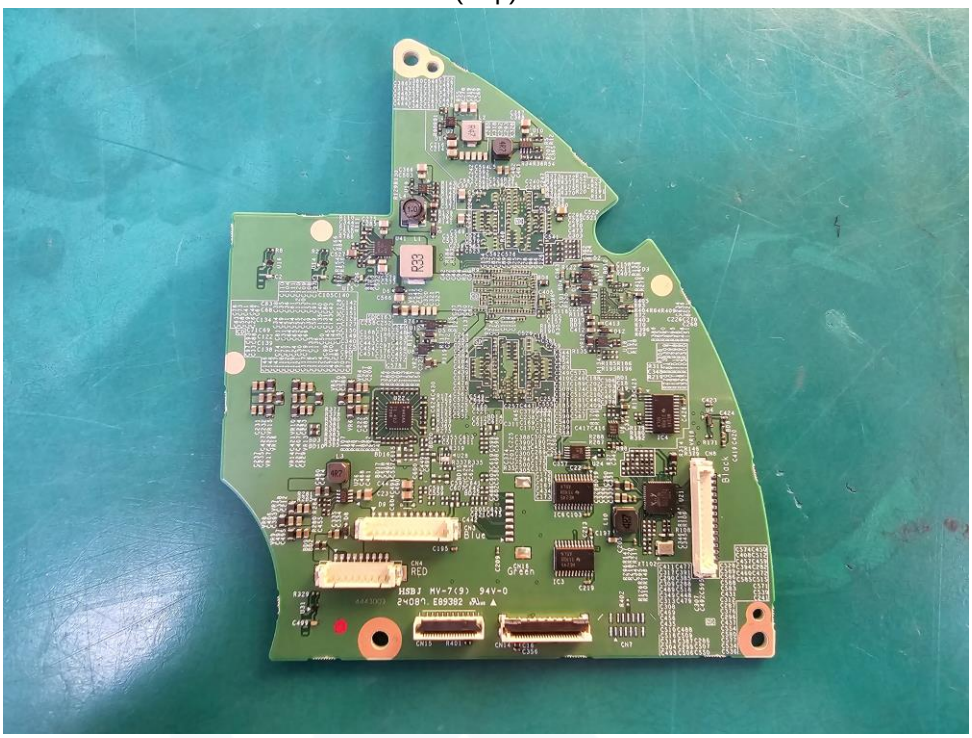
EUT Internal Photographs

(Internal View)

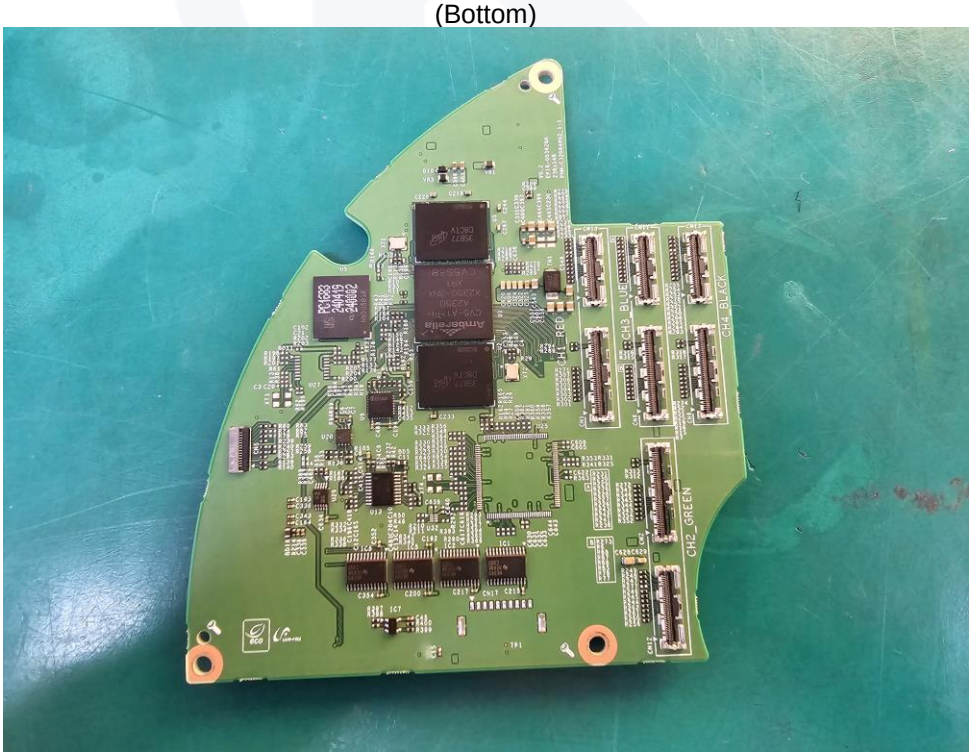


EUT Internal View – Board 1

(Top)

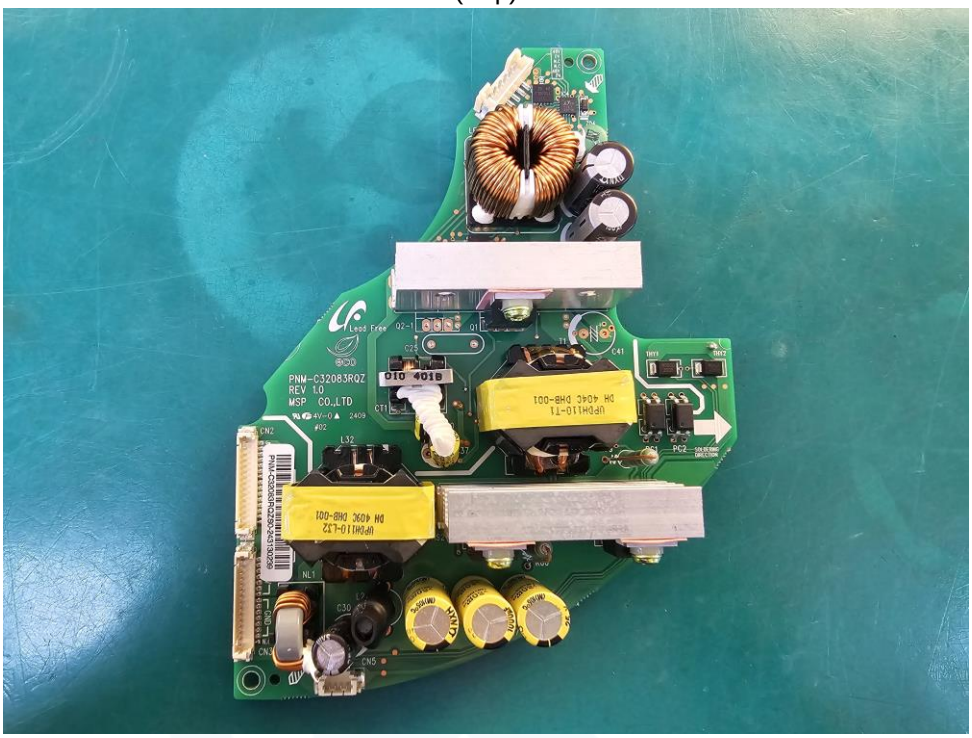


(Bottom)

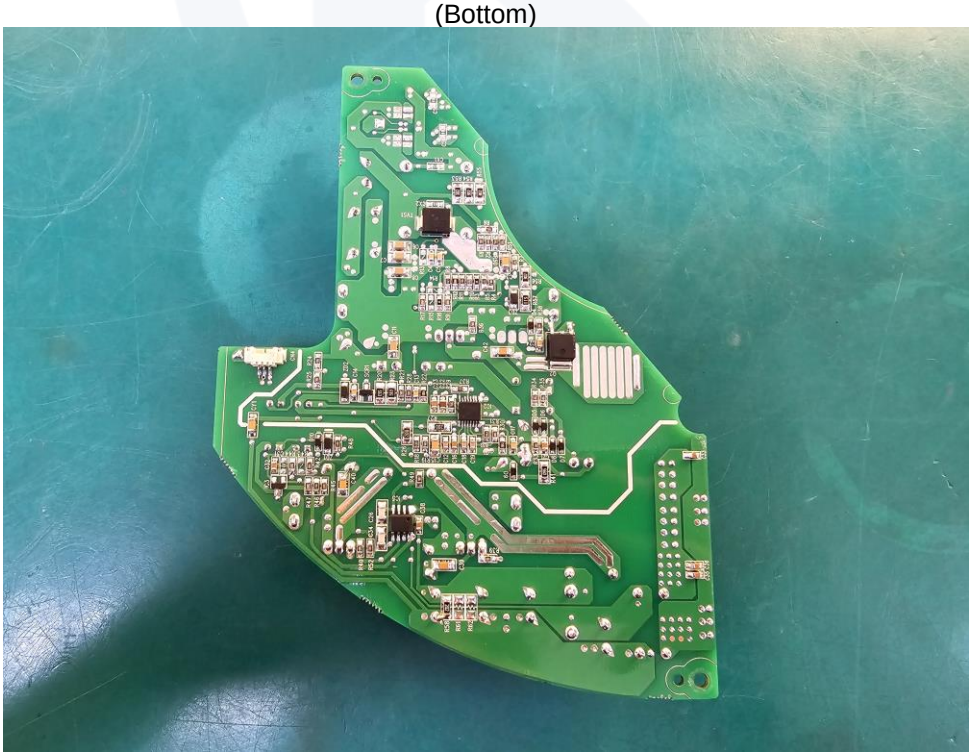


EUT Internal View – Board 2

(Top)



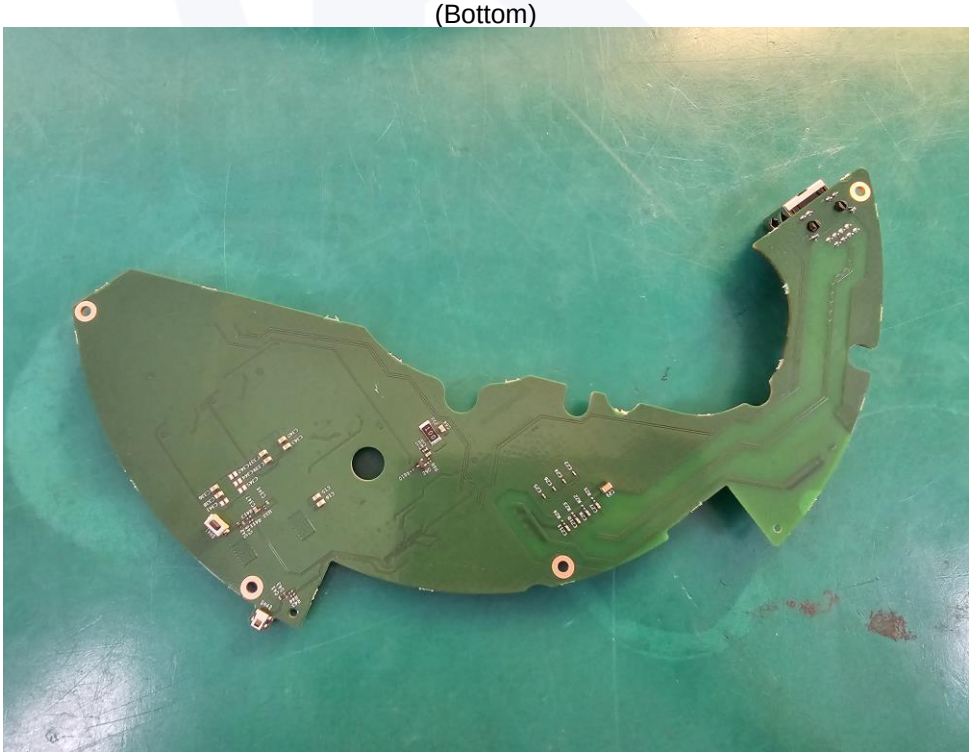
(Bottom)



EUT Internal View – Board 3

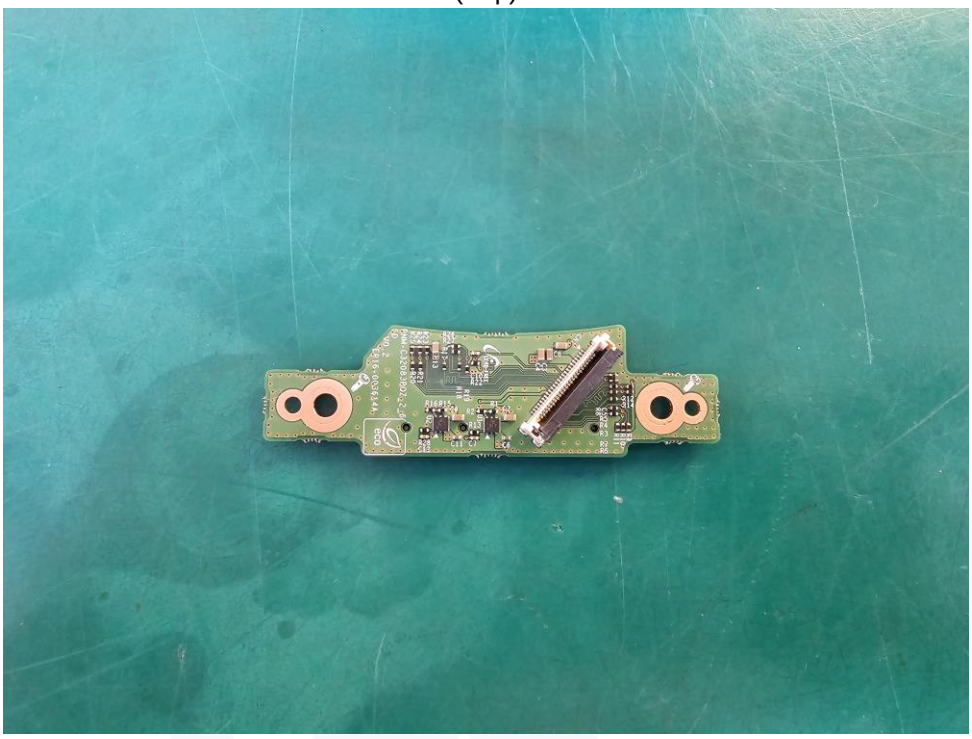
(Top)

(Bottom)

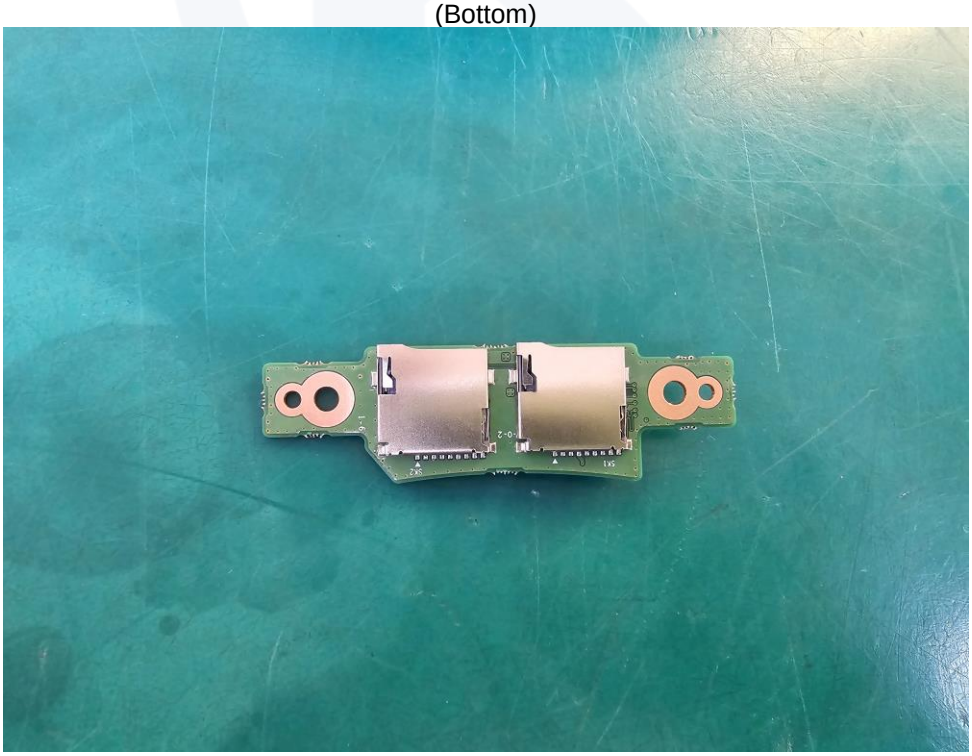


EUT Internal View – Board 4

(Top)

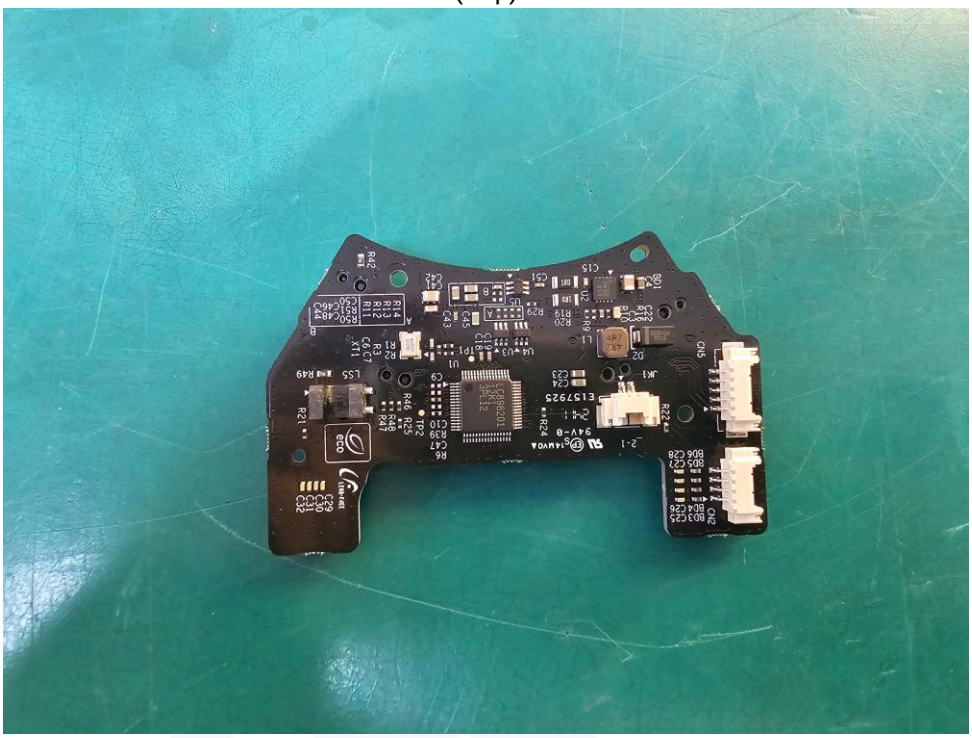


(Bottom)

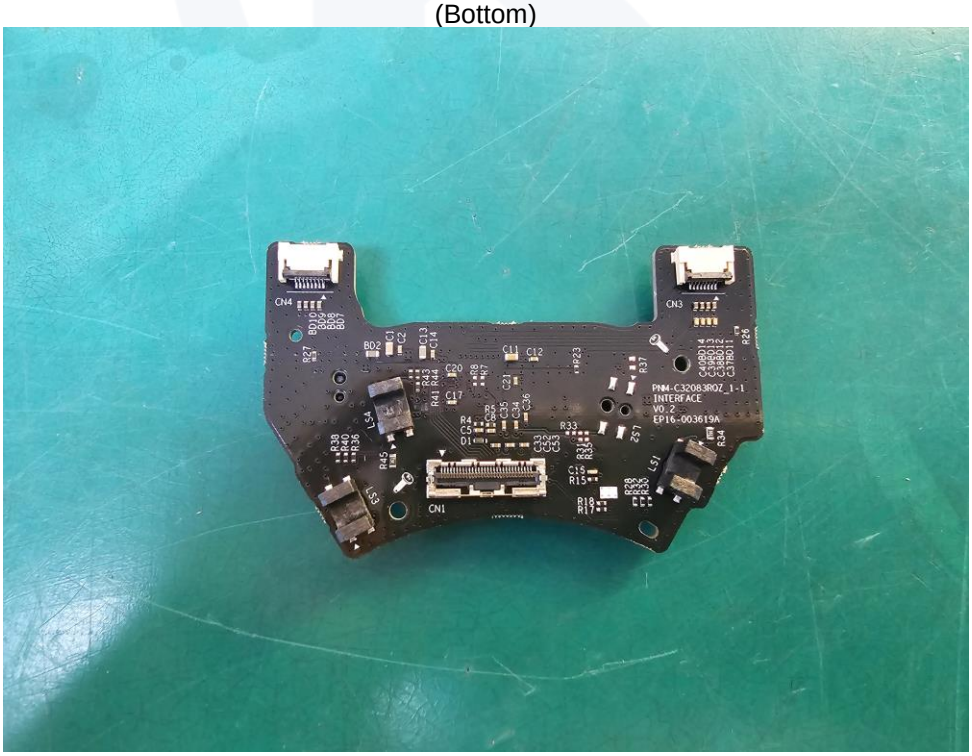


EUT Internal View – Board 5

(Top)



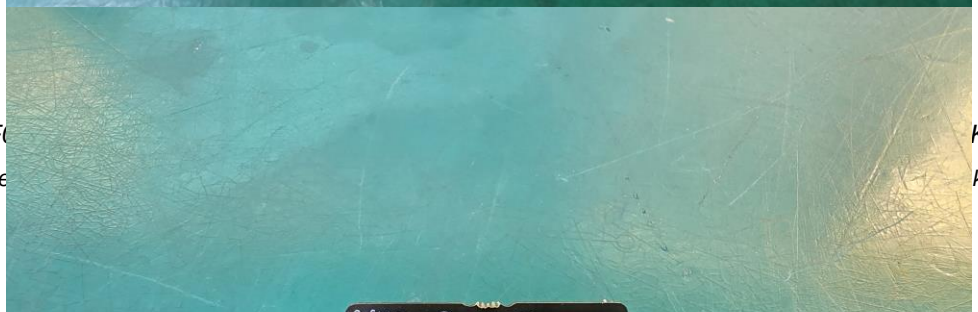
(Bottom)



EUT Internal View – Board 6

(Top)

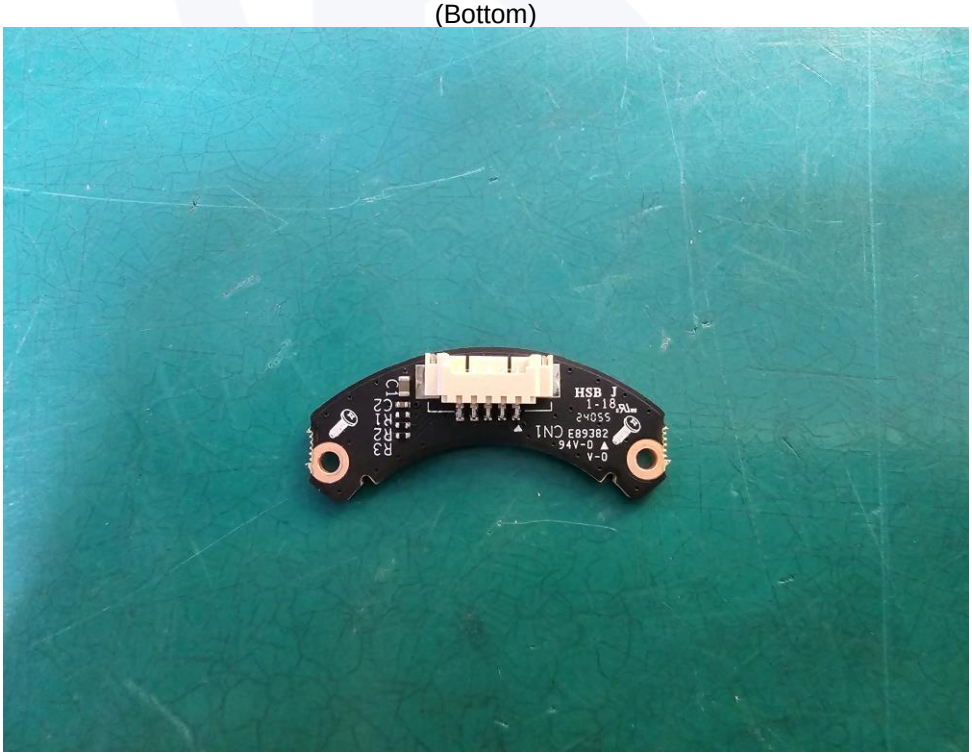
(Bottom)



EUT Internal View – Board 7

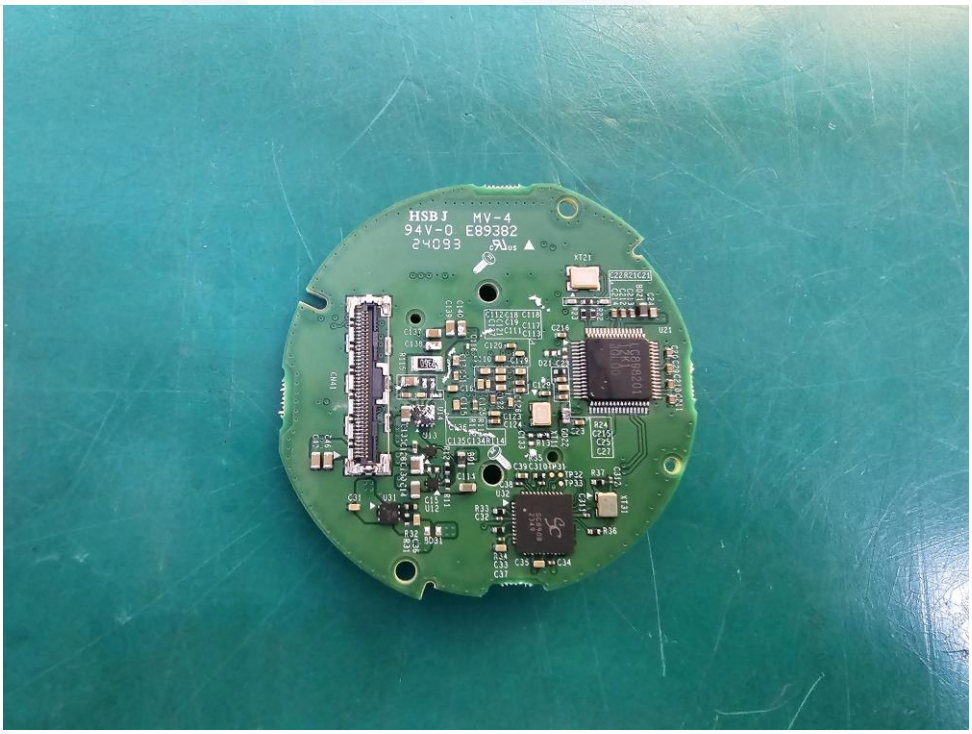
(Top)

(Bottom)



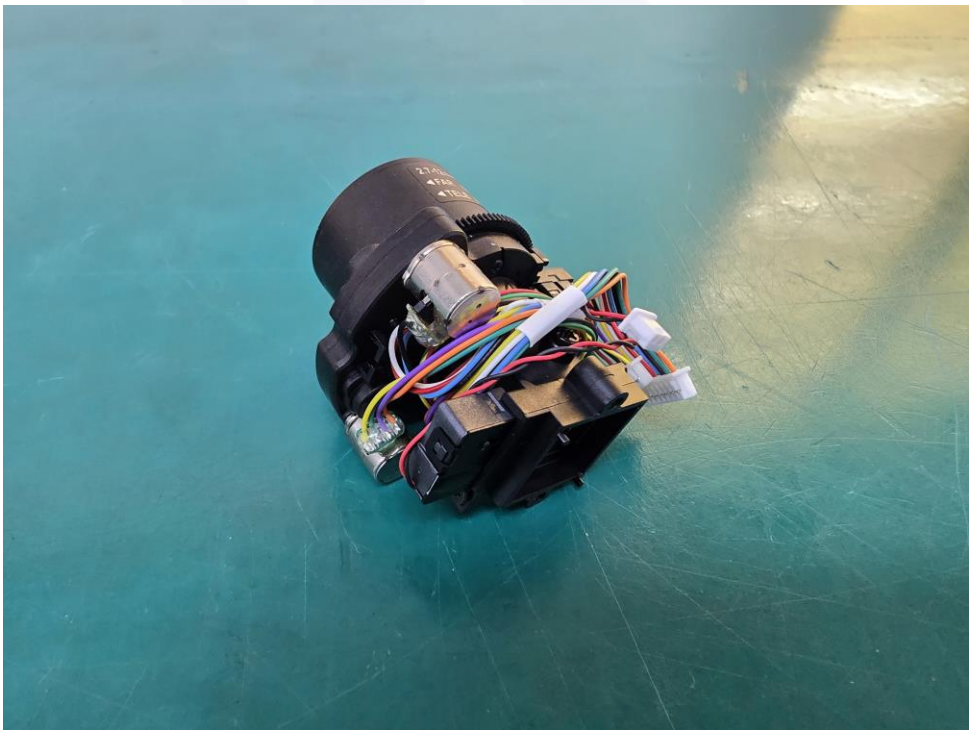
EUT Internal View – Board 8

(Top)



EUT Internal View – Board 9

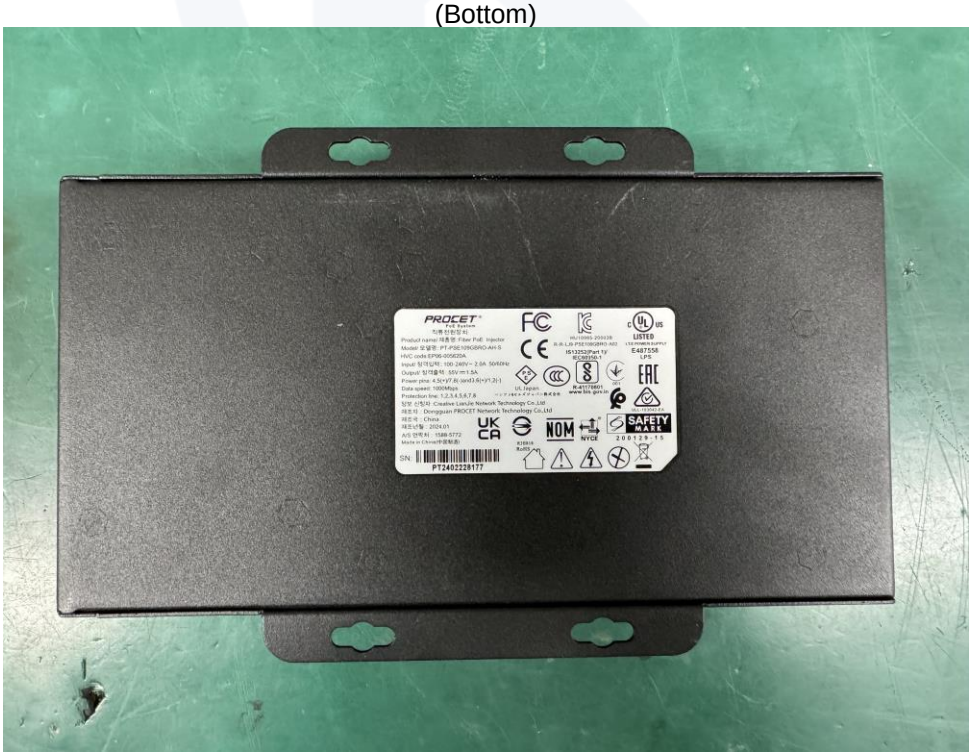
(Top)



EUT Internal View – PoE Injector

(Top)

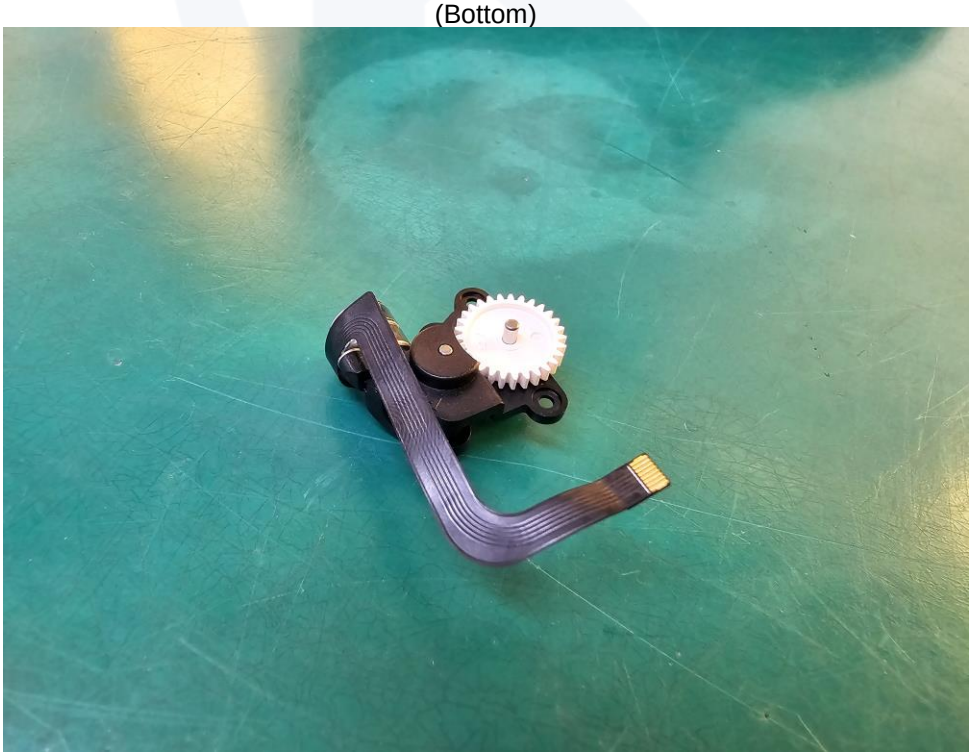
(Bottom)



EUT Internal View – Motor 1

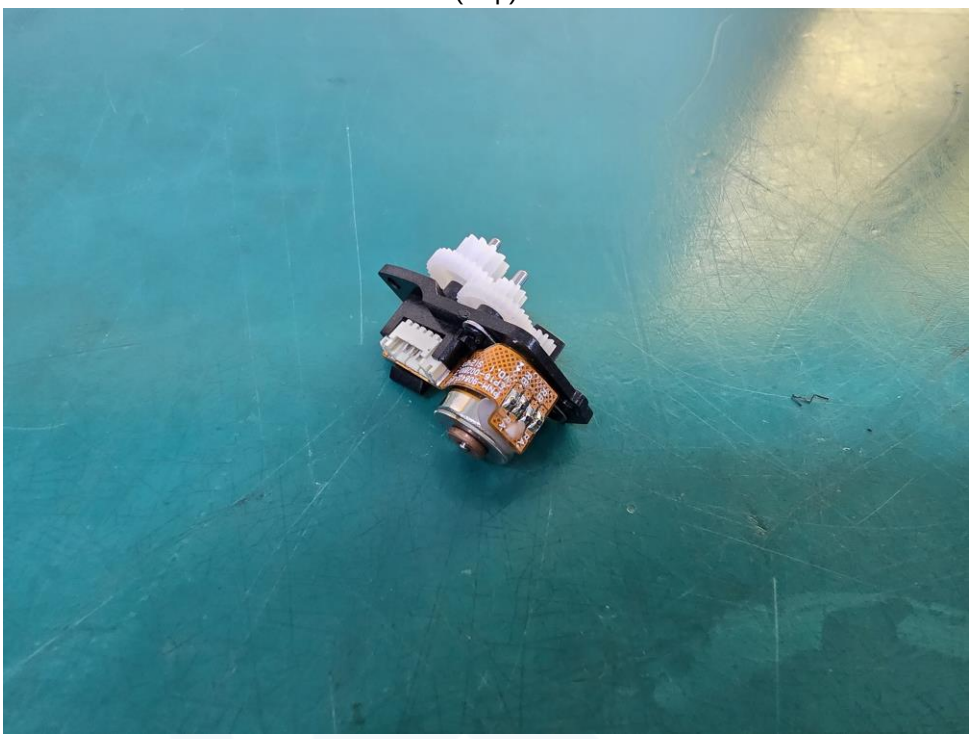
(Top)

(Bottom)

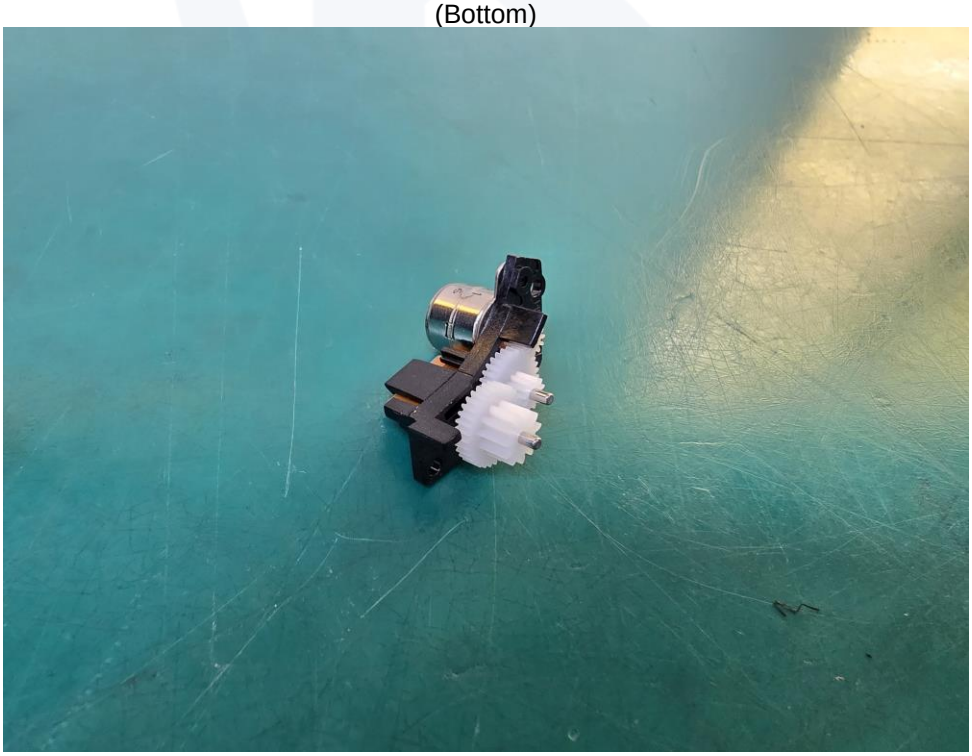


EUT Internal View – Motor 2

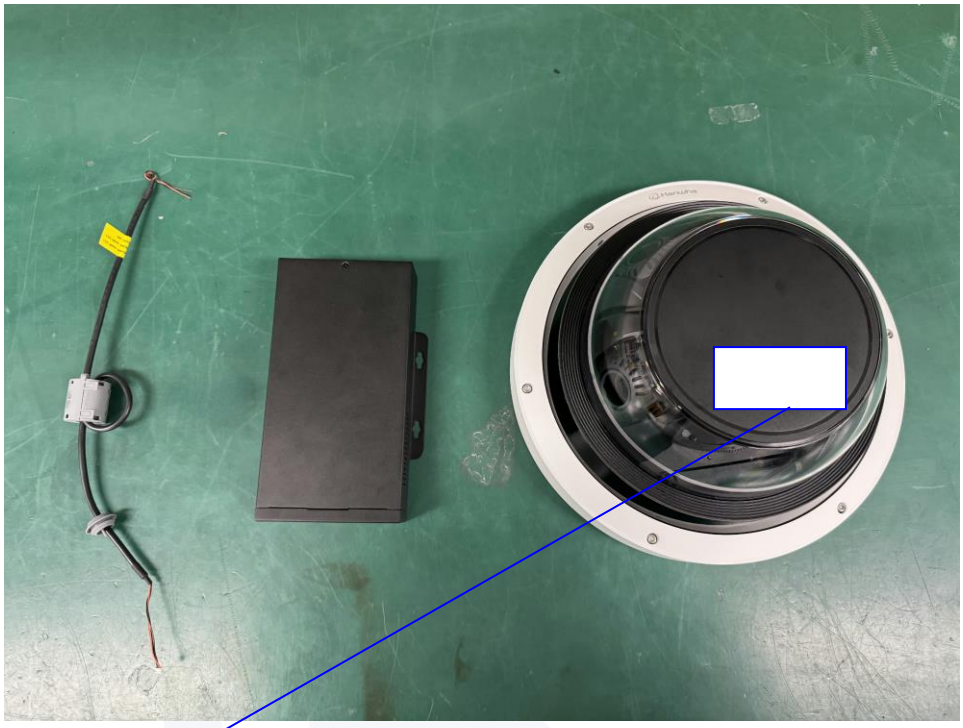
(Top)



(Bottom)



Label and Location



NETWORK CAMERA

Model No : PNM-C16083RQZ

Manufacturer : HANWHA VISION VIETNAM COMPANY LIMITED

Made in Vietnam