



KES Co., Ltd.

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Report No.:
KES-EM-23T0244
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EMC TEST REPORT

Test Report No. : KES-EM-23T0244
Date of Issue : Mar. 16, 2023
Product name : Network Camera
Model/Type No. : XNP-C6403R
Variant Model : -
Applicant : Hanwha Vision Co., Ltd
Applicant Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si,
Gyeonggi-do, Republic of Korea
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 commune, Bac Ninh city, Bac Ninh province, Vietnam
2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do,
Korea (Suwon Industrial Complex)
Date of Receipt : Mar. 02, 2023
Test date : Mar. 06, 2023 ~ Mar. 09, 2023
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Jun Soo, Jung
EMC Test Engineer

Reviewed by

Hyo Jin, Kim
EMC Technical Manager

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

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REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Mar. 16, 2023	KES-EM-23T0244	Issued

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1.0 General Product Description

Main Specifications of EUT are:

Video	
Imaging Device	1/2.8" CMOS
Resolution	1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
Max. Framerate	H.265/H.264: Max. 60fps/50fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)
NETD	None
Pixel Size	None
Min. Illumination	Color: 0.05Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)
Video Out	None
Video Transmission Distance	None
Lens	
Focal Length (Zoom Ratio)	4.25~170mm(40x) zoom (digital 32x, total 1280x zoom)
Max. Aperture Ratio	F1.6(Wide)~F4.95(Tele)
Angular Field of View	H: 65.66°(Wide)~1.88°(Tele) / V: 39.4°(Wide)~1.09°(Tele)
Min. Object Distance	5m(16.4ft)
Focus Control	Oneshot AF, Focus save
Lens Type	DC auto iris
Mount Type	None
Optional Lens	None
Pan / Tilt / Rotate	
Pan / Tilt / Rotate Range	None
Pan Range	360° Endless
Pan Speed	Max. 700°/sec, Manual: 0.024°/sec~250°/sec
Tilt Range	110°(-20°~90°)
Tilt Speed	Max. 500°/sec, Manual: 0.024°/sec~250°/sec
Rotate Range	None
Sequence	Preset(300ea), Swing, Group(6ea), Trace, Tour, Auto Run, Schedule

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Preset Accuracy	Up to $\pm 0.1^\circ$, Pan/Tilt correction
Operational	
Camera Title	Displayed up to 85 characters
Direction Indicator	Support
Day & Night	Auto(ICR)/Color/BW/Schedule
Backlight Compensation	BLC, HLC, WDR, SSDR
Wide Dynamic Range	Extreme WDR(150dB)
Digital Noise Reduction	SSNR V
Digital Image Stabilization	Support(built-in gyro sensor)
Defog	Support
Motion Detection	8ea, 8point polygonal zones
Privacy Masking	32ea, Quadrangle Support - Color: Grey/Green/Red/Blue/Black/White - Mosaic
Gain Control	Manual / Max
White Balance	ATW /Narrow ATW /AWC /Manual /Indoor /Outdoor /Mercury /Sodium
LDC	None
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2~1/12,000sec)
Digital PTZ	None
Video Rotation	Flip, Mirror
Analytics	Classified object type : Person/Face/Vehicle/License plate Attributes : Vehicle(Type:car/bus/truck/motorcycle/bicycle) Support DetectionShot 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, Fog detection, Shock detection, Virtual area(Appear/Disappear) * Audio detection, Sound classification(with NW I/O Box)
Business Intelligence	None
Serial Interface	None
Alarm I/O	None

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Alarm Triggers	Analytics, Network disconnect * Alarm input(with NW I/O Box)
Alarm Events	File upload via FTP and e-mail Notification via e-mail SD/SDHC/SDXC or NAS recording at event triggers PTZ Preset Handover * Alarm output(with NW I/O Box)
Audio Streaming	None
Audio In	None
Audio Out	None
IR Viewable Length	200m(656.17ft), Wise IR
IR Illuminator (Optional)	None
IR Radiation angle	None
IR LED	None
IR Wavelength	None
IR Operation	None
Water Removal	Support(Spinning dry)
Auto Tracking	Object auto tracking(Person/Vehicle), Target lock tracking
Coaxial Protocol	None
Color Palettes	None
Radiometry	
Temperature Detect Range	None
Temperature Accuracy	None
Temperature Detection	None
Additional	None
Network	
Ethernet	Metal shielded RJ-45(10/100BASE-T)
Video Compression	H.265/H.264: Main/Baseline/High, MJPEG
Audio Compression	None
Smart Codec	Manual(5ea area), WiseStream II
Video Quality Adjustment	H.264/H.265: Target bitrate level control MJPEG: Target bitrate level control

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Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR
Streaming	Unicast(20 users) / Multicast (128 user) Multiple streaming(Up to 10 profiles)
Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour, LLDP, SRTP, NTCIP, MQTT
SIP support (VoIP, Peer-to-peer, SIP/PBX integration)	None
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access log 802.1X Authentication(EAP-TLS, EAP-LEAP) Device certificate(Hanwha Techwin Root CA)
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet open platform
General	
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	None
Edge Storage	Micro SD/SDHC/SDXC 2slot 1TB
Memory	4GB RAM, 512MB Flash
Environmental & Electrical	
Operating Temperature / Humidity	-40°C~+50°C(-40°F ~ +122°F) / +74°C(+165°F) (MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at above -30°C 0~95% RH(Non-condensing)
Storage Temperature / Humidity	-50°C ~ +60°C(-58°F ~ +140°F) / 0~90% RH
Certification	IP66, IK10, NEMA4X, NEMA-TS 2(2.2.8, 2.2.9)
Input Voltage	HPoE(IEEE802.3bt, Class6, Type3, Injector included)

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Power Consumption	Typical 24W, Max 40W
Mechanical	
Color / Material	Body : White / Aluminum Head : Black / Polycarbonate Hard-coated dome
RAL Code	White: RAL9003 / Black: RAL9005
Product Dimensions / Weight	ø158x293.3mm(6.22x11.55") / 3.2Kg(7.05lb)
Compatible Conduit hole / Gangbox	None
Hanging Mount (Dome)	None
Skin Cover	None
Skin Cover (Dome)	None
Weather Cap (Dome)	None
Power Module	None
Backbox	None
Certifications & Standards	
Network	None
EMC	None
Safety	None
Environment	None
Video	None
DORI (EN62676-4 standard)	
Detect (25PPM/ 8PPF)	Wide: 59.5m(195.3ft) / Tele: 2340.4m(7678.4ft)
Observe (63PPM/ 19PPF)	Wide: 23.8m(78.1ft) / Tele: 936.2m(3071.4ft)
Recognize (125PPM/ 38PPF)	Wide: 11.9m(39.1ft) / Tele: 468.1m(1535.7ft)
Identify (250PPM/ 76PPF)	Wide: 6.0m(19.5ft) / Tele: 234.0m(767.8ft)
LPR/ANPR/MMCR	
Speed Description	None
Speed limit	None
Min. Forward Distance	None
Max. Forward Distance	None
Max. Horizontal Angle	None
Max. Vertical Angle	None
Horizontal Offset	None
Camera Height	None

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Lane Coverage	None
Vehicle Recognition	None
Available Countries	None
Wisenet Road AI LPR/ANPR/MMCR	
Solution	None
Speed Description	None
Lane Coverage	None
Speed limit	None
Min. Forward Distance	None
Max. Forward Distance	None
Max. Horizontal Angle	None
Max. Vertical Angle	None
Horizontal Offset	None
Camera Height	None
Vehicle Recognition	None
Available Countries	None

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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	XNP-C6403R	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT
Fiber PoE Injector	PT-PSE106GBR-AH-S	PT2249210405	Dongguan PROCET Network Technology Co.,Ltd	-

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Fiber PoE Injector	PT-PSE109GBRO-AH-S	PT2023220053	Dongguan PROCET Network Technology Co.,Ltd	-
Notebook	9JM8HT2	8KM8HT2	DELL INC.	-
Notebook Adapter	HA65NM130	-	Chicony Power Technology(Suzhou)Co., Ltd.	-
Optical Module 1	NEXT-SFP10G-SR	-	Shenzhen yichen technology development Co., Ltd.	-
Optical Module 2	NEXT-SFP10G-SR	-	Shenzhen yichen technology development Co., Ltd.	-
Micro SD card 1	-	-	SanDisk	-
Micro SD card 2	-	-	SanDisk	-

1.6 External I/O Cabling

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
Network Camera (EUT)	LAN	Fiber PoE Injector (EUT)	PoE	2.5	U
	Micro SD card slot	Micro SD card 1	Micro SD card slot	-	-
	Micro SD card slot	Micro SD card 2	Micro SD card slot	-	-
Fiber PoE Injector (EUT)	Optical slot	Optical Module 1	Optical slot	-	-
	LAN	Notebook	LAN	3.1	U
	Ground	Ground	Ground	-	-
Optical Module 1	Optical	Optical Module 2	Optical	5.0	U
Optical Module 2	Optical slot	Fiber PoE Injector	Optical slot	-	-
Notebook	DC jack	Notebook Adapter	Line	1.5	U

* Unshielded=U, Shielded=S

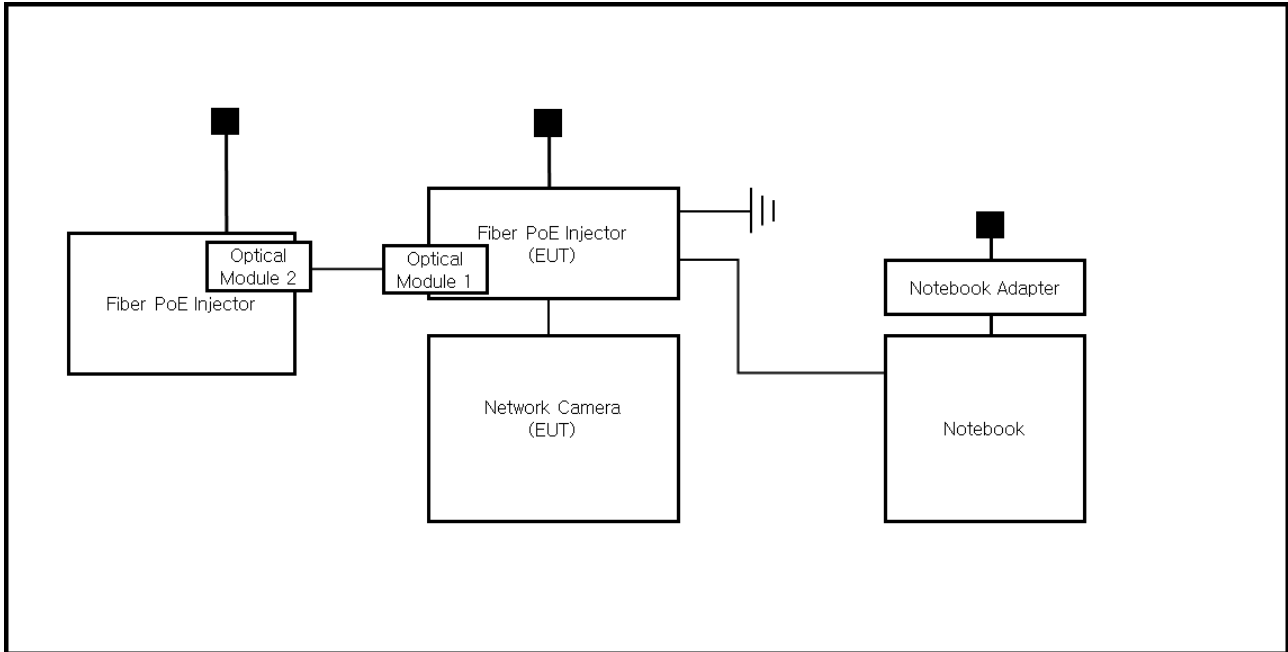
1.7 EUT Operating Mode(s)

Test Mode	operating
Operation	1. Check if the EUT image is output to the laptop normally. 2. Check if the network is operating normally through a ping test. 3. After the test, check if the EUT video has been recorded normally.

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

1.8 Configuration

■ AC Main
□ DC Main



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 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 0004

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

☒ EN 61000-3-2:2014

☒ EN 61000-3-3:2013

☒ **EMC – Regulations 2016**

☒ EN 55032:2015/A11:2020

☒ Class A

☐ Class B

☒ EN 50130-4:2011

☒ EN 61000-3-2:2014

☒ EN 61000-3-3:2013

2.1 Conducted Emissions at Mains Power Ports

Test Date

Mar. 07, 2023

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, 11, 2023
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101787	11, 10, 2023
<input checked="" type="checkbox"/>	LISN	ESH2-Z5	R & S	100450	11, 10, 2023
<input checked="" type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 10, 2023

Test Conditions

Temperature: (24,2 ± 0,1) °C

Relative Humidity: (43,2 ± 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

RemarksSee Appendix A for test data.

2.2 Conducted Emissions at Telecommunication Ports

Test Date

Mar. 07, 2023

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, 11, 2023
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101787	11, 10, 2023
<input checked="" type="checkbox"/>	LISN	ESH2-Z5	R & S	100450	11, 10, 2023
<input checked="" type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 10, 2023
<input checked="" type="checkbox"/>	8-WIRE ISN CAT3,5	ENY81	R & S	100174	11, 22, 2023
<input type="checkbox"/>	8-WIRE ISN CAT6	ENY81-CAT6	R & S	101665	11, 22, 2023

Test Conditions

Temperature: (24,2 ± 0,1) °C
Relative Humidity: (43,2 ± 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.
- For Ethernet interfaces, measurements are required at the highest data rate supported by the interface.

2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Mar. 06, 2023

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	03, 31, 2023
<input checked="" type="checkbox"/>	AMPLIFIER	SCU 01	R & S	100603	11, 10, 2023
<input checked="" type="checkbox"/>	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	11, 17, 2024
<input checked="" type="checkbox"/>	ATTENUATOR	8491A	HP	32173	03, 03, 2024

Test Conditions

Temperature: (23,1 ± 0,1) °C

Relative Humidity: (42,1 ± 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.

2.4 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Mar. 08, 2023

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	03, 31, 2023
<input checked="" type="checkbox"/>	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	11, 08, 2023
<input checked="" type="checkbox"/>	PREAMPLIFIER	8449B	HP	3008A00538	06, 02, 2023
<input checked="" type="checkbox"/>	ATTENUATOR	8491B	HP	23094	04, 21, 2023

Test Conditions

Temperature: (24,2 ± 0,1) °C

Relative Humidity: (42,9 ± 0,1) % R.H.

Frequency Range of Measurement

1 GHz to 6 GHz

Instrument Settings

IF Band Width: 1 MHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

- See Appendix A for test data.
- The Average of the test data is the cispr average result.

2.5 Harmonic Current Emissions

Test Date

Mar. 08, 2023

Test Location

Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	net.control	EM TEST	2.1.4	-
<input checked="" type="checkbox"/>	DIGITAL POWER ANALYZER	DPA 500N	EM TEST	V1024106759	04, 06, 2023
<input checked="" type="checkbox"/>	POWER SOURCE	ACS 500N6	EM TEST	V1024106760	-

Test Conditions

Temperature: (23,5 ± 0,1) °C

Relative Humidity: (44,4 ± 0,1) % 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

RemarksSee Appendix A for test data.

2.6 Voltage Fluctuations and Flicker

Test Date

Mar. 08, 2023

Test Location

Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test S/W	net.control	EM TEST	2.1.4	-
<input checked="" type="checkbox"/>	DIGITAL POWER ANALYZER	DPA 500N	EM TEST	V1024106759	04, 06, 2023
<input checked="" type="checkbox"/>	POWER SOURCE	ACS 500N6	EM TEST	V1024106760	-

Test ConditionsTemperature: (23,5 ± 0,1) °C
Relative Humidity: (44,4 ± 0,1) % R.H.**Test Results**

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

RemarksSee Appendix A for test data.

3.0 Criteria for compliance

Criteria for compliance was based on the following guidelines:

EN 50130-4:2011 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 $U = 130 \text{ dB}\mu\text{V}$.
For component of CCTV systems, where the status is monitored by observing the TV picture,
then deterioration of the picture is allowed at $U = 140 \text{ dB}\mu\text{V}$, 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 $U = 130 \text{ dB}\mu\text{V}$, 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 $U = 120 \text{ dB}\mu\text{V}$.

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

Mar. 07, 2023

Test Location

EMS-ESD: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	ESD SIMULATOR	ESS-2000	Noise Ken	ESS01Z0454	01, 31, 2024
<input checked="" type="checkbox"/>	HCP	-	KES	-	-
<input checked="" type="checkbox"/>	VCP	-	Noise Ken	-	-

Test Conditions

Temperature: (24,3 ± 0,1) °C
Relative Humidity: (43,8 ± 0,1) % R.H.
Atmospheric Pressure: (100,9 ± 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

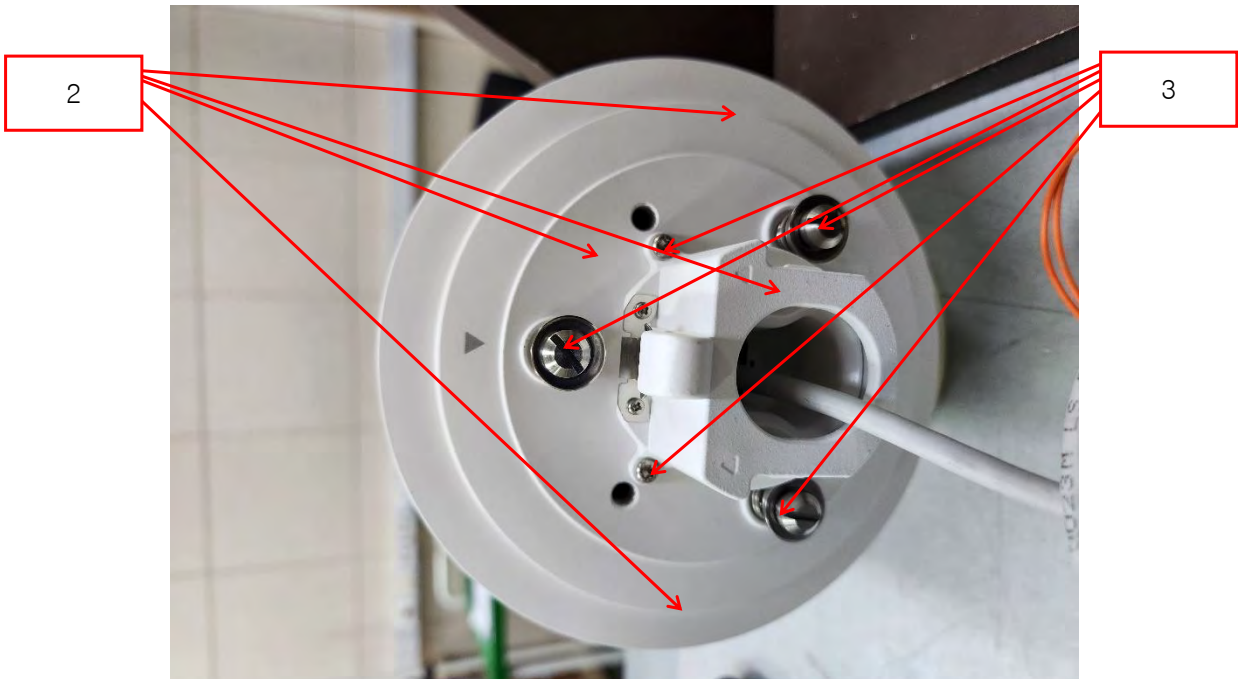
Discharge Voltage:	Contact	Air	HCP	VCP
	<input type="checkbox"/> 2 kV	<input checked="" type="checkbox"/> 2 kV	<input type="checkbox"/> 2 kV	<input type="checkbox"/> 2 kV
	<input type="checkbox"/> 4 kV	<input checked="" type="checkbox"/> 4 kV	<input type="checkbox"/> 4 kV	<input type="checkbox"/> 4 kV
	<input checked="" type="checkbox"/> 6 kV	<input type="checkbox"/> 6 kV	<input checked="" type="checkbox"/> 6 kV	<input checked="" type="checkbox"/> 6 kV
	<input type="checkbox"/> 8 kV	<input checked="" type="checkbox"/> 8 kV	<input type="checkbox"/> 8 kV	<input type="checkbox"/> 8 kV
	<input type="checkbox"/> 15 kV	<input type="checkbox"/> 15 kV	<input type="checkbox"/> 15 kV	<input type="checkbox"/> 15 kV

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

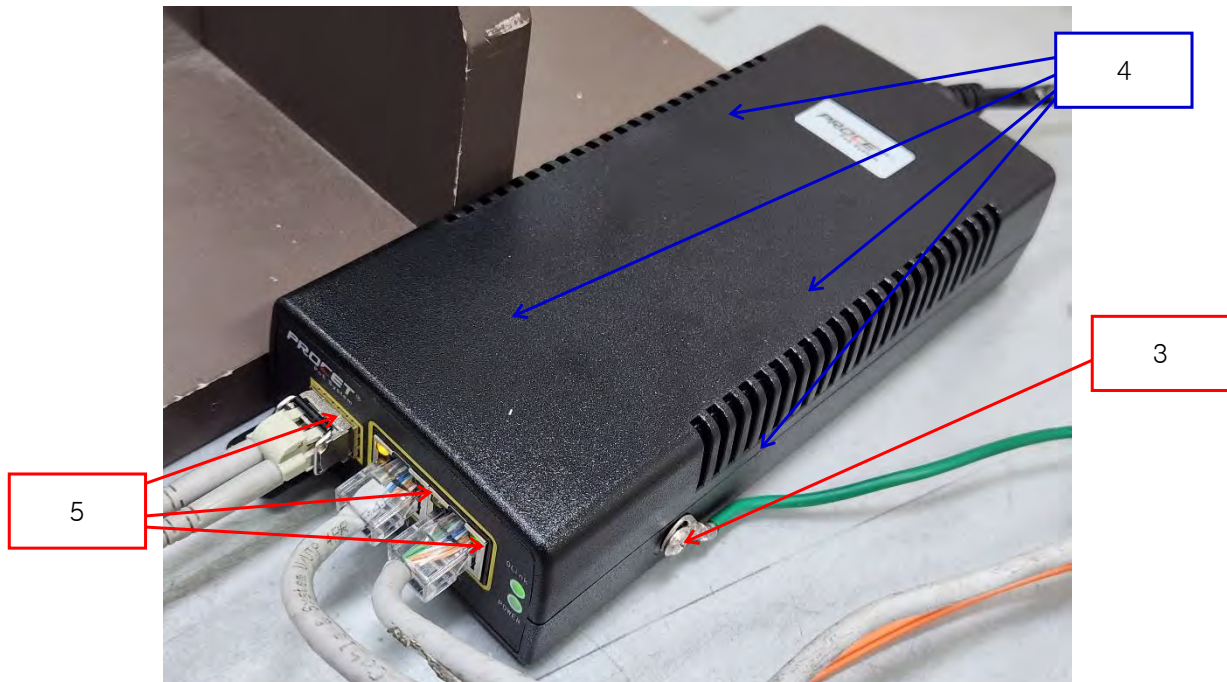
Required Performance Criteria: ☒ Complied

Location of Discharge:

Air
Contact



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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	Enclosure 1	Air Discharge	Complied	-
2	Enclosure 2	Contact Discharge	Complied	-
3	Screw	Contact Discharge	Complied	-
4	Injector Enclosure	Air Discharge	Complied	-
5	Around the 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

RemarksPASS Required Performance Criteria

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3.2 Radiated Electric Field Immunity

Reference Standard

EN IEC 61000-4-3:2020

Test Date

Mar. 09, 2023

Test Location

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

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	EMC32	R & S	10.10.02	-
<input checked="" type="checkbox"/>	SIGNAL GENERATOR	SMB 100A	Rohde & Schwarz	108252	08, 01, 2023
<input checked="" type="checkbox"/>	HIGH POWER DUAL AMP	SSA532	SUNGSAN	SSA532-001	-
<input checked="" type="checkbox"/>	POWER METER	E4419B	Agilent	GB40203000	03, 31, 2023
<input checked="" type="checkbox"/>	AVERAGE POWER SENSOR	E9301A	Agilent	MY52170007	04, 04, 2023
<input checked="" type="checkbox"/>	AVERAGE POWER SENSOR	E9301A	Agilent	MY41498669	04, 04, 2023
<input checked="" type="checkbox"/>	STACKED DOUBLE LOG-PER- ANTENNA	STPL9128 E	Schwarzbeck	9128ES-121	-
<input checked="" type="checkbox"/>	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM, INC	781	03, 06, 2024

Test Conditions

Temperature: (24,2 ± 0,1) °C
Relative Humidity: (43,0 ± 0,1) % R.H.
Atmospheric Pressure: (100,8 ± 0,0) kPa



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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

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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

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3.3 Electrical Fast Transients/Bursts

Reference Standard

EN 61000-4-4:2012

Test Date

Mar. 07, 2023

Test Location

EMS-EFT: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	iec.control	EM TEST	5.4.8	-
<input checked="" type="checkbox"/>	ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	11, 28, 2023
<input checked="" type="checkbox"/>	MOTOR VARIAC	MV2616	EM TEST	P1552169719	11, 29, 2023
<input checked="" type="checkbox"/>	CAPACITIVE COUPLING CLAMP	HFK	EM TEST	P1633183115	11, 28, 2023

Test Conditions

Temperature: (24,3 ± 0,1) °C
 Relative Humidity: (43,8 ± 0,1) % R.H.
 Atmospheric Pressure: (100,9 ± 0,0) kPa

Test Specifications

Pulse Amplitude & Polarity:
 (AC Power Lines) ☐ ± 1.0 kV ☒ ± 2.0 kV
☐ ± 4.0 kV

Pulse Amplitude & Polarity:
 (Other supply / Signal Lines) ☐ ± 0.5 kV ☒ ± 1.0 kV
☐ ± 2.0 kV

Burst Period: ☒ 300 ms ☐ 2 s

Repetition Rate: ☐ 5 kHz ☒ 100 kHz

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 (kV)	(-) Burst (kV)
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 (kV)	(-) Burst (kV)
-	-	-

☒ Signal ports and telecommunication ports – Coupling Clamp used

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

Mar. 07, 2023

Test Location

EMS-Surge: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	iec.control	EM TEST	5.4.8	-
<input checked="" type="checkbox"/>	ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	11, 28, 2023
<input checked="" type="checkbox"/>	MOTOR VARIAC	MV2616	EM TEST	P1552169719	11, 29, 2023
<input checked="" type="checkbox"/>	CDN	CNV 508N1	EM TEST	P1610176296	11, 29, 2023

Test Conditions

Temperature: (24,3 ± 0,1) °C
Relative Humidity: (43,8 ± 0,1) % R.H.
Atmospheric Pressure: (100,9 ± 0,0) kPa



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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 (kV)	(-) Surge (kV)
L – N	Complied	Complied

☒ Line to Earth – Common Mode

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

Signal Lines☒ Line to Earth – Common Mode

Mode of Application	Coupling Method	Observations	
		(+) Surge (kV)	(-) Surge (kV)
LAN (Injector)	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

Mar. 06, 2023

Test Location

EMS-CS: Electro wave Shieldroom #6

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	icd.control	EM TEST	5.3.12	-
<input checked="" type="checkbox"/>	CONTINUOUS WAVE SIMULATOR	CWS 500N1.4	EM TEST	P1602169880	11, 10, 2023
<input checked="" type="checkbox"/>	ATTENUATOR	ATT 6/80	EM TEST	P1614178148	11, 10, 2023
<input checked="" type="checkbox"/>	CDN	CDN M016	TESEQ	43694	11, 10, 2023
<input checked="" type="checkbox"/>	CDN	CDN M016	TESEQ	43697	11, 10, 2023
<input checked="" type="checkbox"/>	CDN	CDN T8RJ45	EM TEST	0909-09	08, 01, 2023
<input type="checkbox"/>	EM CLAMP	KEMZ 801A	TESEQ	44099	11, 14, 2023

Test Conditions

Temperature: (24,0 ± 0,1) °C
Relative Humidity: (42,8 ± 0,1) % R.H.
Atmospheric Pressure: (100,3 ± 0,0) kPa



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Test Specifications

Frequency range:

☒ 150 kHz to 100 MHz

☐ 150 kHz to 80 MHz

Voltage Level:

☐ 1 Vrms

☒ 10 Vrms

☐ 3 Vrms

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

Required Performance Criteria: ☒ Complied

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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
LAN (Injector)	CDN	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

RemarksPASS Required Performance Criteria

3.6 Voltage Dips and Short Interruptions

Reference Standard

EN IEC 61000-4-11:2020

Test Date

Mar. 07, 2023

Test Location

EMS-Voltage dip: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMS Test S/W	iec.control	EM TEST	5.4.8	-
<input checked="" type="checkbox"/>	ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	11, 29, 2023
<input checked="" type="checkbox"/>	MOTOR VARIAC	MV2616	EM TEST	P1552169719	11, 29, 2023

Test Conditions

Temperature: (24,3 ± 0,1) °C
Relative Humidity: (43,8 ± 0,1) % R.H.
Atmospheric Pressure: (100,9 ± 0,0) kPa



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Test Specifications & Observations/Remarks

- Voltage Dips and Short Interruptions

<u>Test Level</u>	<u>Duration [in period/ms (50 Hz)]</u>	<u>Results</u>
<input checked="" type="checkbox"/> 20 % dip	<input checked="" type="checkbox"/> 250 / 5 000	<u>Complied</u>
<input checked="" type="checkbox"/> 30 % dip	<input checked="" type="checkbox"/> 25 / 500	<u>Complied</u>
<input checked="" type="checkbox"/> 60 % dip	<input checked="" type="checkbox"/> 10 / 200	<u>Complied</u>
<input checked="" type="checkbox"/> 100 % dip	<input checked="" type="checkbox"/> 250 / 5 000	<u>Degradation</u>

- Voltage variations

<input checked="" type="checkbox"/> Unom + 10 %	<input checked="" type="checkbox"/> 253.0 V (ac)	<u>Complied</u>
<input checked="" type="checkbox"/> Unom - 15 %	<input checked="" type="checkbox"/> 195.5 V (ac)	<u>Complied</u>

Observations:

Complied – No degradation of function

Degradation - See "Remarks "

Test Results

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

Remarks

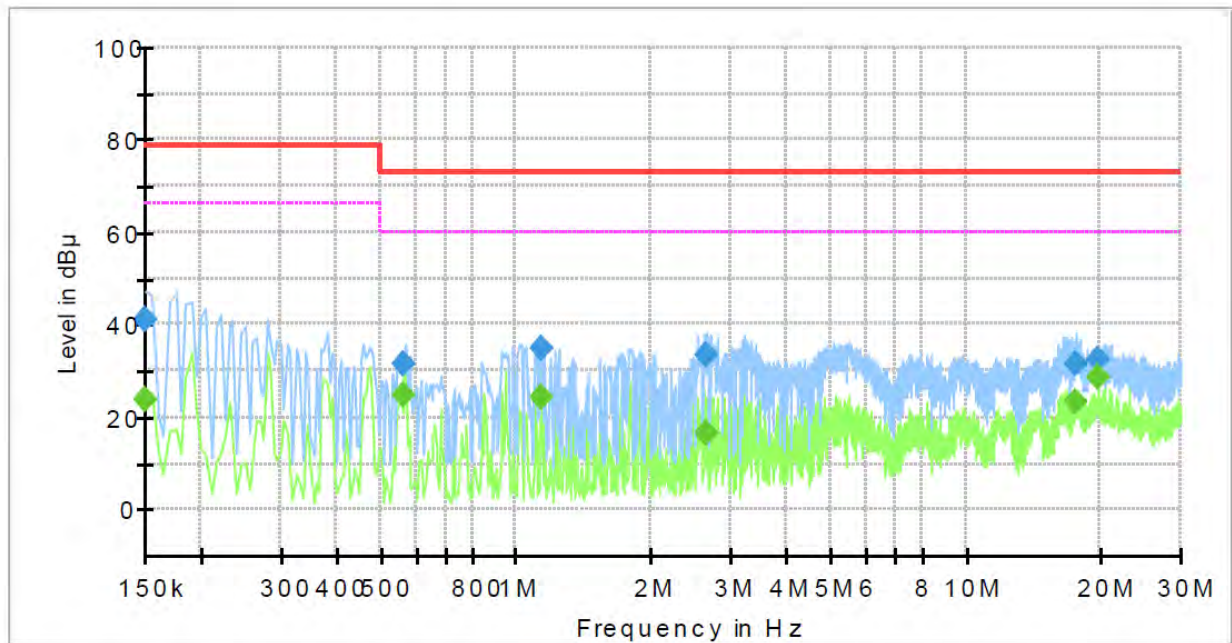
During the test(100%, 250cycle), EUT was turned off but after the test, it was recovered by no operator's intervention.

APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports [HOT]

Common Information

Test Description:	Conducted Emission
Model No.:	XNP-C6403R
Phase:	L1
Mode:	
Operator Name:	KES



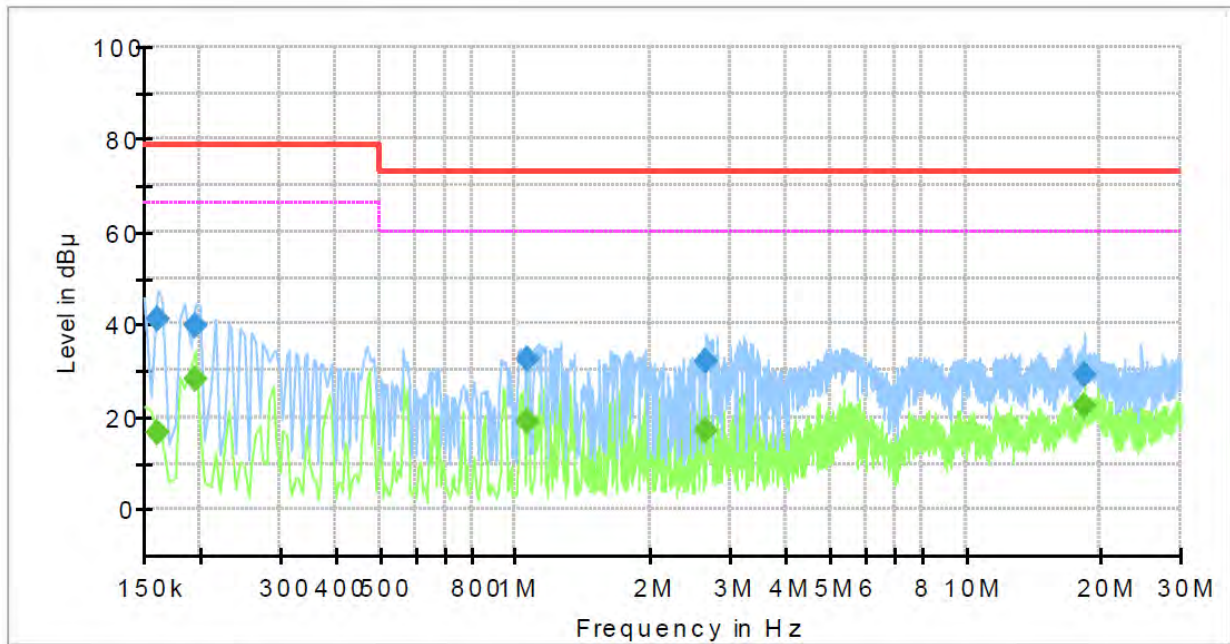
Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	23.92	66.00	42.08	1000.0	9.000	L1	19.5
0.150000	41.36	---	79.00	37.64	1000.0	9.000	L1	19.5
0.565000	---	24.60	60.00	35.40	1000.0	9.000	L1	19.8
0.565000	31.34	---	73.00	41.66	1000.0	9.000	L1	19.8
1.135000	---	24.43	60.00	35.57	1000.0	9.000	L1	20.2
1.135000	34.68	---	73.00	38.32	1000.0	9.000	L1	20.2
2.660000	---	16.69	60.00	43.31	1000.0	9.000	L1	20.2
2.660000	33.25	---	73.00	39.75	1000.0	9.000	L1	20.2
17.595000	---	23.28	60.00	36.72	1000.0	9.000	L1	20.0
17.595000	31.48	---	73.00	41.52	1000.0	9.000	L1	20.0
19.710000	---	28.46	60.00	31.54	1000.0	9.000	L1	20.2
19.710000	32.44	---	73.00	40.56	1000.0	9.000	L1	20.2

[NEUTRAL]

Common Information

Test Description:	Conducted Emission
Model No.:	XNP-C6403R
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	---	16.58	66.00	49.42	1000.0	9.000	N	19.4
0.160000	41.02	---	79.00	37.98	1000.0	9.000	N	19.4
0.195000	---	28.18	66.00	37.82	1000.0	9.000	N	19.5
0.195000	39.85	---	79.00	39.15	1000.0	9.000	N	19.5
1.065000	---	18.80	60.00	41.20	1000.0	9.000	N	20.1
1.065000	32.31	---	73.00	40.69	1000.0	9.000	N	20.1
2.660000	---	16.78	60.00	43.22	1000.0	9.000	N	20.2
2.660000	31.75	---	73.00	41.25	1000.0	9.000	N	20.2
18.430000	---	22.19	60.00	37.81	1000.0	9.000	N	20.1
18.430000	29.25	---	73.00	43.75	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))

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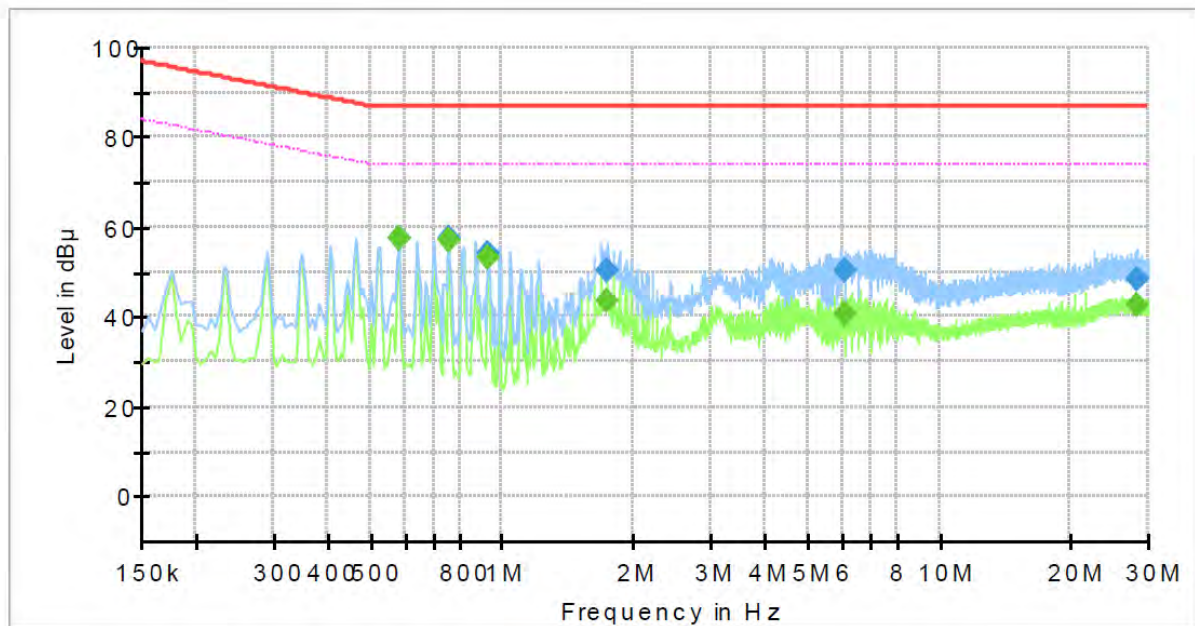
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Conducted Emissions at Telecommunication Ports [100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNP-C6403R
Mode :	LAN(Injector)
Speed :	100 Mbps
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.580000	---	57.31	74.00	16.69	1000.0	9.000	Single Line	19.8
0.580000	57.57	---	87.00	29.43	1000.0	9.000	Single Line	19.8
0.755000	---	56.84	74.00	17.16	1000.0	9.000	Single Line	19.9
0.755000	57.46	---	87.00	29.54	1000.0	9.000	Single Line	19.9
0.930000	---	53.33	74.00	20.67	1000.0	9.000	Single Line	20.0
0.930000	54.36	---	87.00	32.64	1000.0	9.000	Single Line	20.0
1.745000	---	43.54	74.00	30.46	1000.0	9.000	Single Line	20.1
1.745000	50.37	---	87.00	36.63	1000.0	9.000	Single Line	20.1
6.060000	---	40.80	74.00	33.20	1000.0	9.000	Single Line	19.3
6.060000	50.51	---	87.00	36.49	1000.0	9.000	Single Line	19.3
28.440000	---	42.60	74.00	31.40	1000.0	9.000	Single Line	20.4
28.440000	48.19	---	87.00	38.81	1000.0	9.000	Single Line	20.4

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

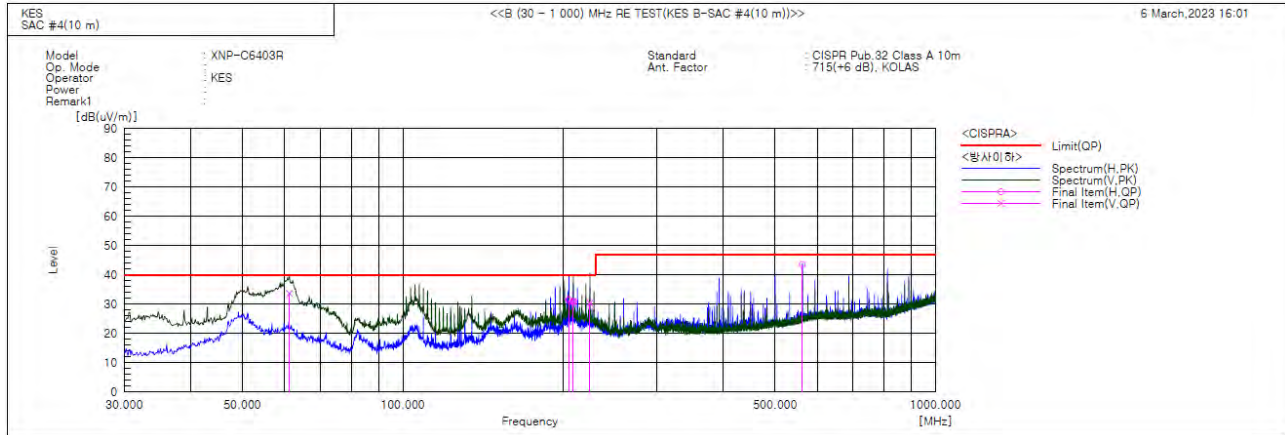
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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Radiated Electric Field Emissions(Below 1 GHz)



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	61.283	V	55.7	-22.1	33.6	40.0	6.4	100.0	279.0	
2	205.085	H	52.4	-20.9	31.5	40.0	8.5	388.0	68.0	
3	208.965	V	51.4	-20.6	30.8	40.0	9.2	109.0	250.0	
4	208.965	H	51.5	-20.6	30.9	40.0	9.1	391.0	166.0	
5	224.606	V	50.1	-19.8	30.3	40.0	9.7	105.0	60.0	
6	562.530	H	52.8	-9.3	43.5	47.0	3.5	389.0	101.0	

◆ Calculation – SEMI ANECHOIC CHAMBER #4(10 m)

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

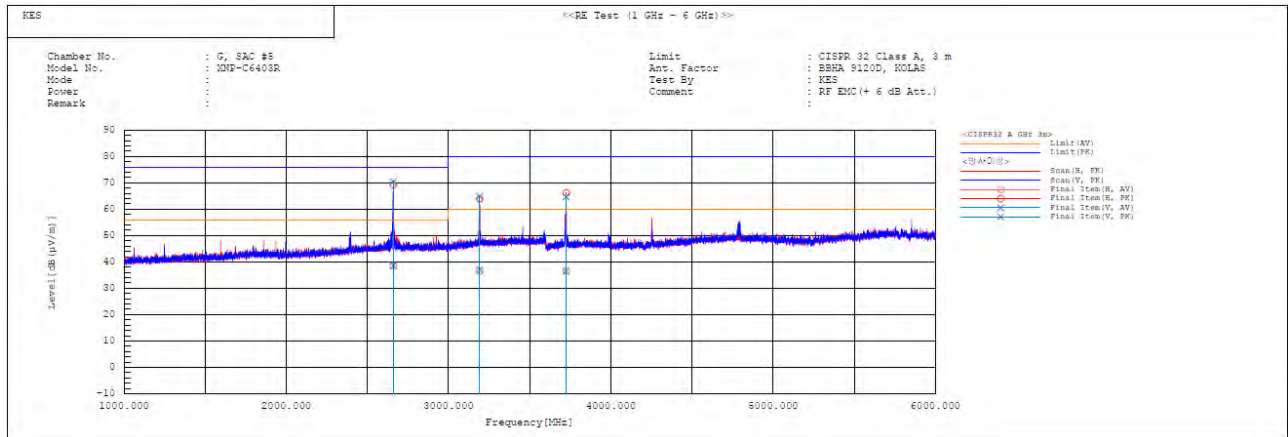
Margin(QP)[dB] = Limit[dB(μ V/m)] - Result(QP) [dB(μ V/m)]

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)



Final Result

No.	Frequency [MHz]	Pol	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c.f [dB(1/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	2659.197	H	34.3	65.1	4.2	38.5	69.3	56.0	76.0	17.5	6.7	100.0	160.3	
2	2660.865	V	34.4	66.2	4.2	38.6	70.4	56.0	76.0	17.4	5.6	100.0	53.4	
3	3192.027	V	31.1	58.9	5.9	37.0	64.8	60.0	80.0	23.0	15.2	100.0	152.4	
4	3192.777	H	30.7	58.0	5.9	36.6	63.9	60.0	80.0	23.4	16.1	100.0	238.6	
5	3725.216	V	29.8	58.1	6.6	36.4	64.7	60.0	80.0	23.6	15.3	100.0	100.4	
6	3726.678	H	30.1	59.6	6.6	36.7	66.2	60.0	80.0	23.3	13.8	100.0	130.7	

◆ Calculation

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

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

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

Limit(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	I _{eff} [A]	% of Limit	Limit [A]	Result
1	0.100			
2	0.003	0.285	1.080	n/a
3	0.091	3.939	2.300	PASS
4	0.005	1.047	0.430	n/a
5	0.088	7.680	1.140	PASS
6	0.004	1.211	0.300	n/a
7	0.084	10.935	0.770	PASS
8	0.003	1.323	0.230	n/a
9	0.079	19.759	0.400	PASS
10	0.004	1.903	0.184	n/a
11	0.073	22.148	0.330	PASS
12	0.003	1.901	0.153	n/a
13	0.067	31.994	0.210	PASS
14	0.002	1.842	0.131	n/a
15	0.061	40.365	0.150	PASS
16	0.002	1.953	0.115	n/a
17	0.053	40.266	0.132	PASS
18	0.002	1.828	0.102	n/a
19	0.046	38.599	0.118	PASS
20	0.001	1.559	0.092	n/a
21	0.038	23.671	0.161	PASS
22	0.001	1.470	0.084	n/a
23	0.031	21.132	0.147	PASS
24	0.001	1.392	0.077	n/a
25	0.025	18.158	0.135	PASS
26	0.001	1.366	0.071	n/a
27	0.018	14.736	0.125	PASS
28	0.001	1.783	0.066	n/a
29	0.013	10.924	0.116	PASS
30	0.001	1.850	0.061	n/a
31	0.008	7.333	0.109	PASS
32	0.001	1.923	0.058	n/a
33	0.005	4.409	0.102	n/a
34	0.001	1.997	0.054	n/a
35	0.003	2.840	0.096	n/a
36	0.001	1.902	0.051	n/a
37	0.004	4.009	0.091	n/a
38	0.001	1.900	0.048	n/a
39	0.005	5.541	0.087	n/a
40	0.001	1.815	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.

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KES-EM-23T0244
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Test Data - Harmonics (continued)

Maximum harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	0.100			
2	0.004	0.228	1.620	n/a
3	0.091	2.631	3.450	PASS
4	0.005	0.804	0.645	PASS
5	0.088	5.132	1.710	PASS
6	0.004	0.945	0.450	n/a
7	0.084	7.306	1.155	PASS
8	0.004	1.039	0.345	n/a
9	0.079	13.198	0.600	PASS
10	0.004	1.491	0.276	n/a
11	0.074	14.927	0.495	PASS
12	0.003	1.482	0.230	n/a
13	0.067	21.385	0.315	PASS
14	0.003	1.406	0.197	n/a
15	0.061	27.025	0.225	PASS
16	0.003	1.494	0.173	n/a
17	0.054	26.956	0.199	PASS
18	0.002	1.423	0.153	n/a
19	0.046	25.888	0.178	PASS
20	0.002	1.210	0.138	n/a
21	0.038	23.837	0.161	PASS
22	0.001	1.190	0.125	n/a
23	0.031	21.314	0.147	PASS
24	0.001	1.103	0.115	n/a
25	0.025	18.389	0.135	PASS
26	0.001	1.116	0.106	n/a
27	0.019	14.998	0.125	PASS
28	0.001	1.427	0.099	n/a
29	0.013	11.181	0.116	PASS
30	0.001	1.396	0.092	n/a
31	0.008	7.585	0.109	PASS
32	0.001	1.515	0.086	n/a
33	0.005	4.625	0.102	n/a
34	0.001	1.552	0.081	n/a
35	0.003	2.957	0.096	n/a
36	0.001	1.459	0.077	n/a
37	0.004	4.229	0.091	n/a
38	0.001	1.406	0.073	n/a
39	0.005	5.847	0.087	PASS
40	0.001	1.346	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.

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KES-EM-23T0244
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Test Data - Voltage Fluctuations

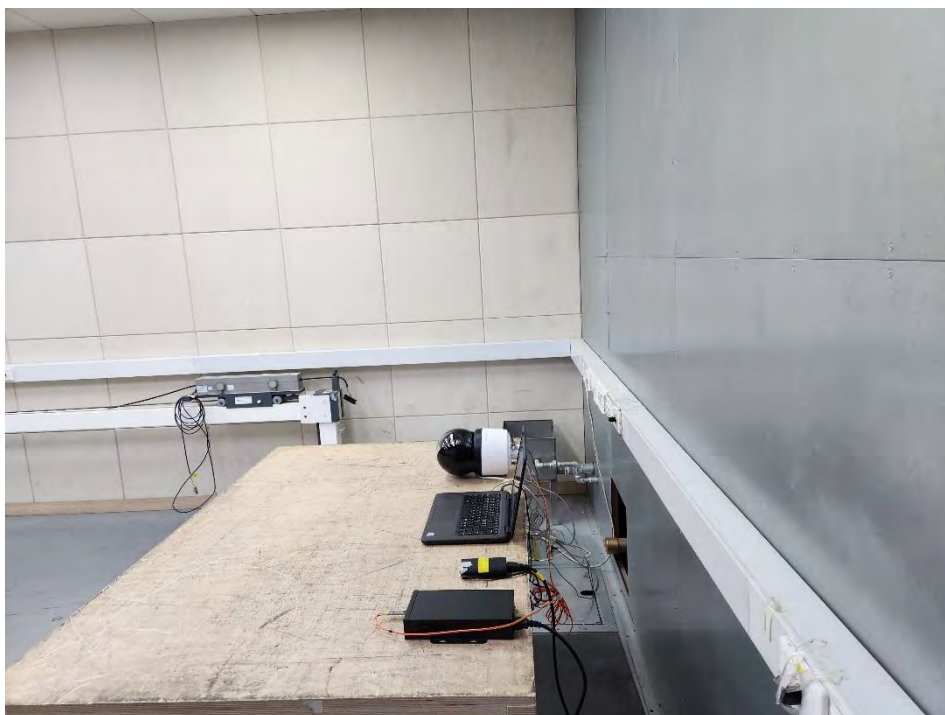
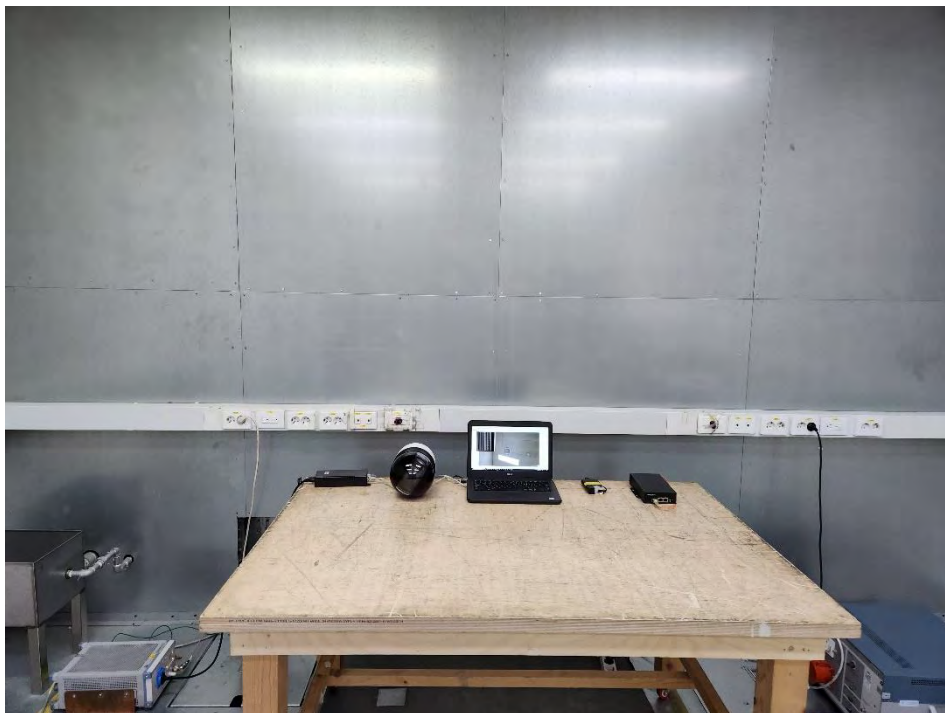
Maximum Flicker results

Flicker Measurements					
	P _{It}	Max P _{st}	Max D _c	Max D _{max}	Max T _{max}
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

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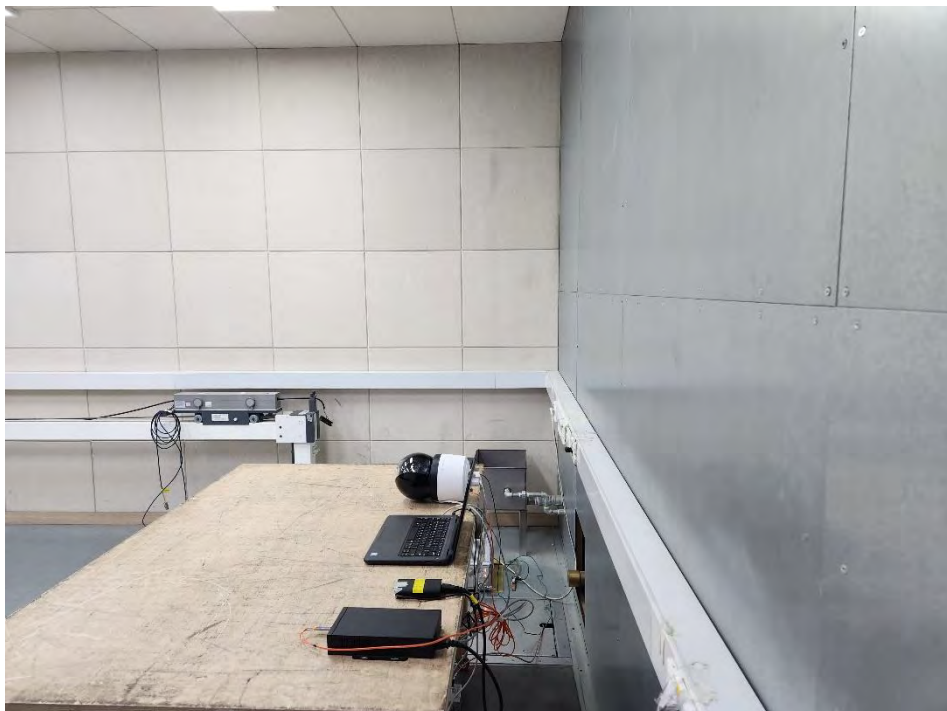
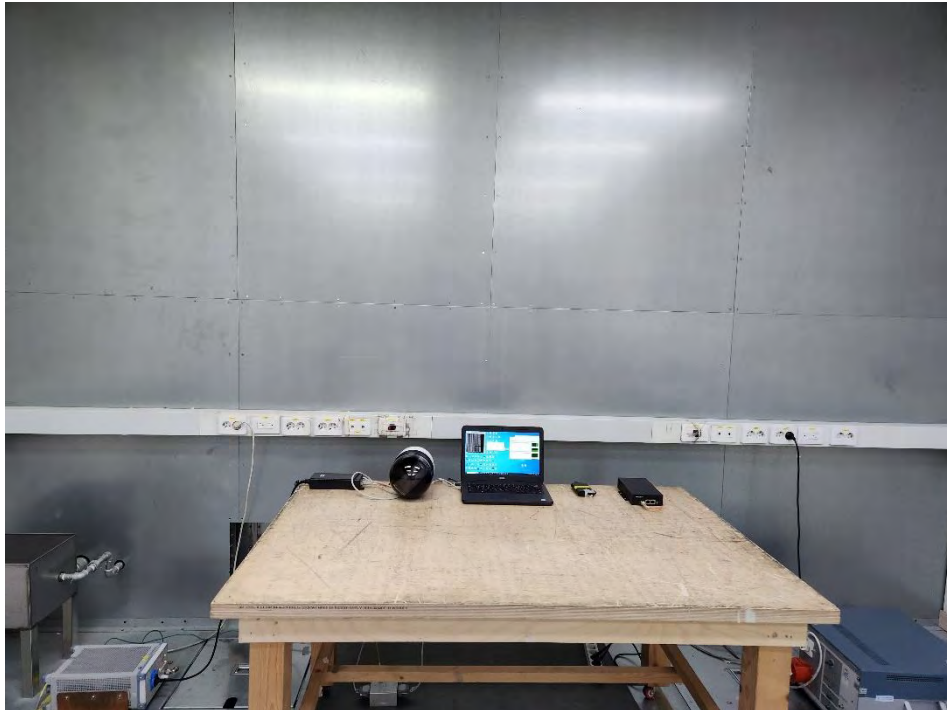
Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports



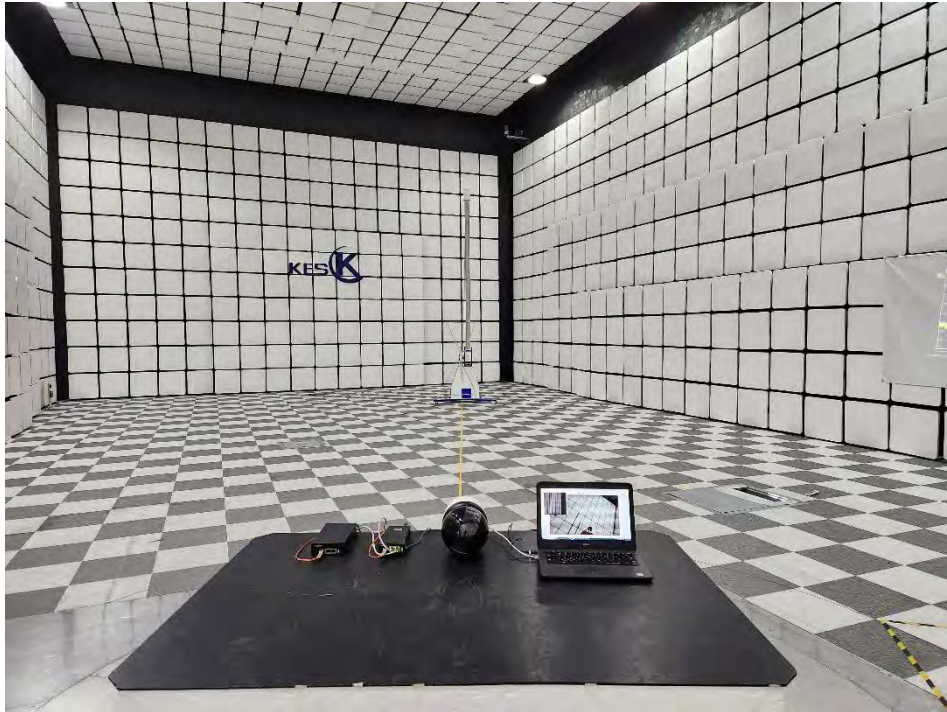
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Conducted Emissions at Telecommunication Ports



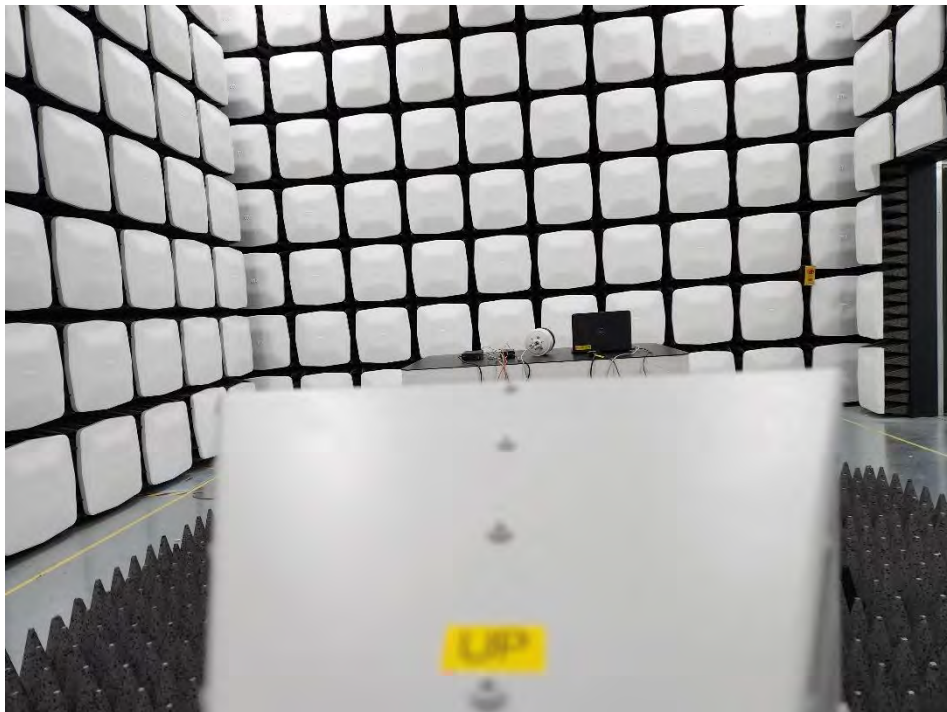
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



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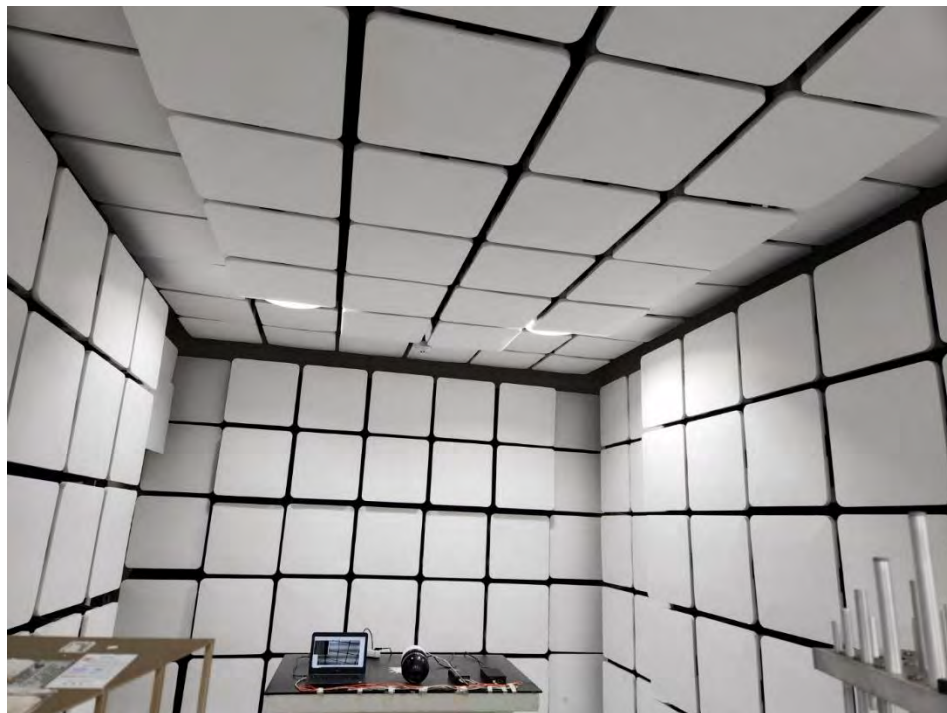
Harmonic Current Emissions and Voltage Fluctuations and Flicker



Electrostatic Discharge



Radiated Electric Field Immunity



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Electrical Fast Transients/Bursts



Surge Transients



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Conducted Disturbance



Voltage Dips and Short Interruptions



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EUT External Photographs

(Top)



(Bottom)



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EUT Internal Photographs

(Internal View)

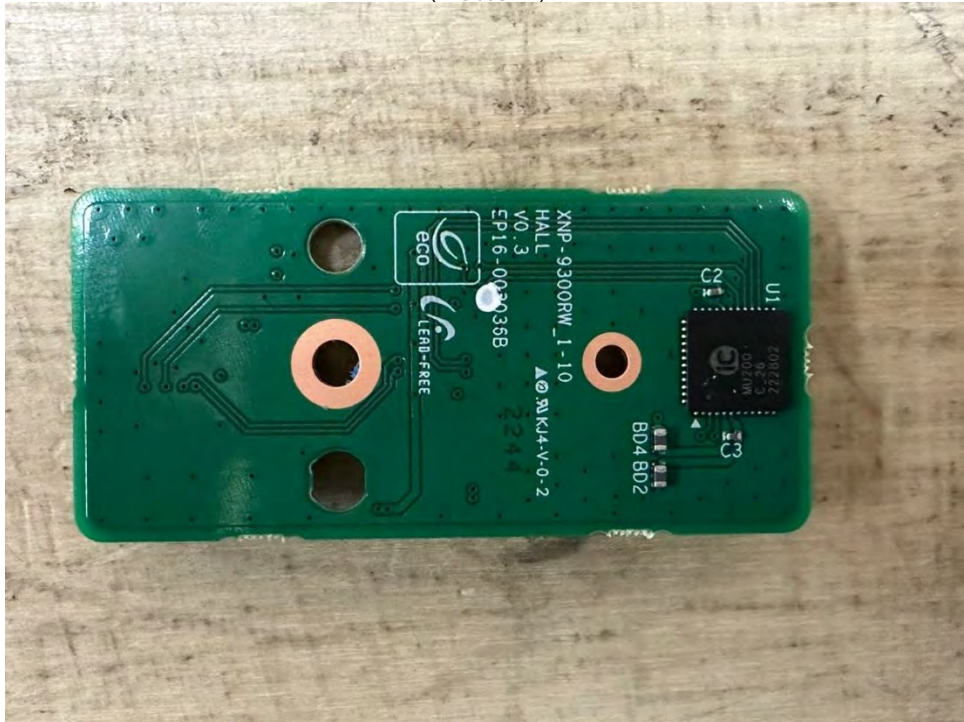


EUT Internal View – Board 1

(Top)



(Bottom)



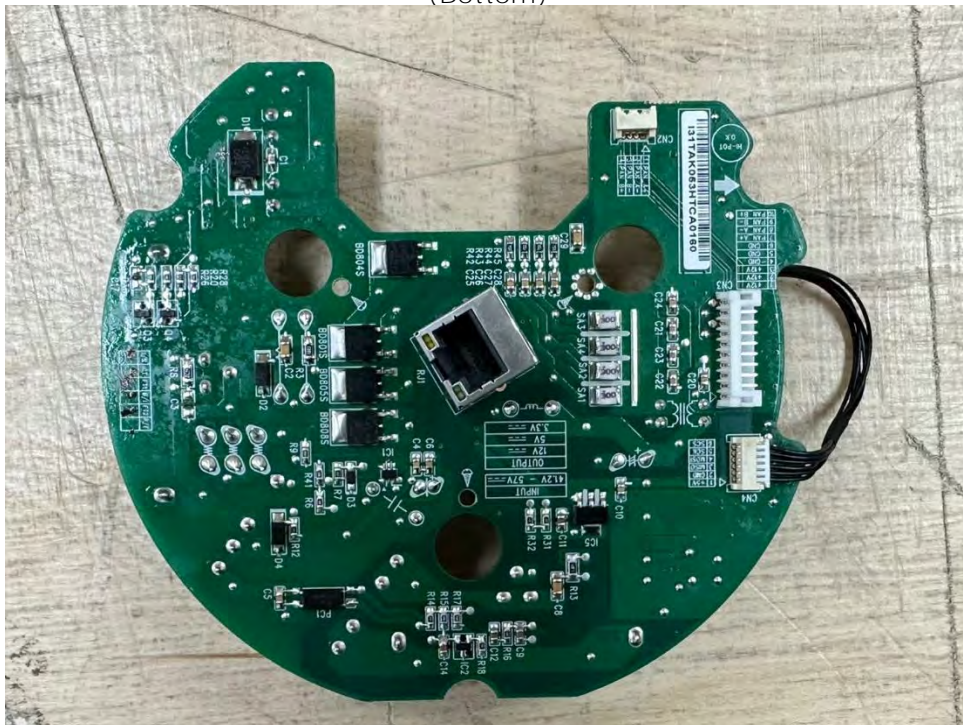
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EUT Internal View – Board 2

(Top)



(Bottom)



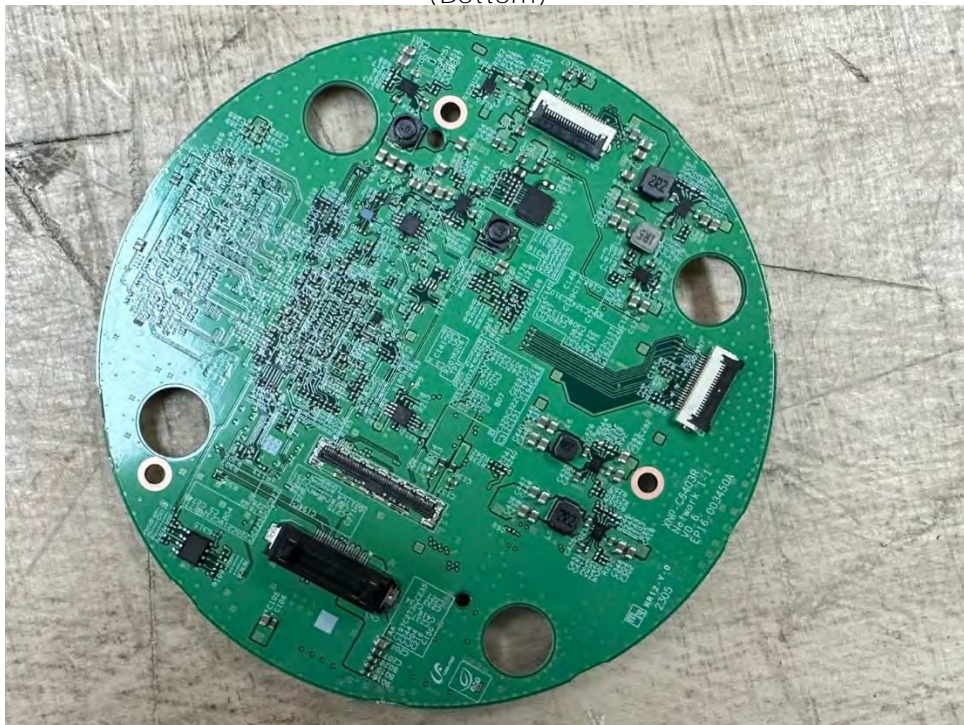
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EUT Internal View – Board 3

(Top)



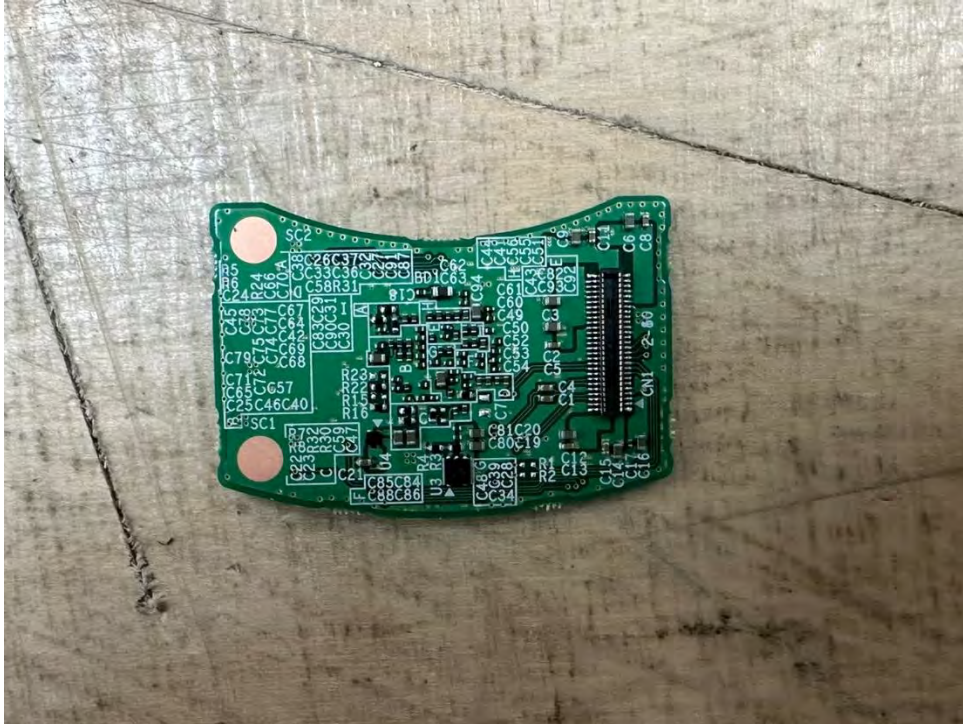
(Bottom)



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EUT Internal View – Board 4

(Top)



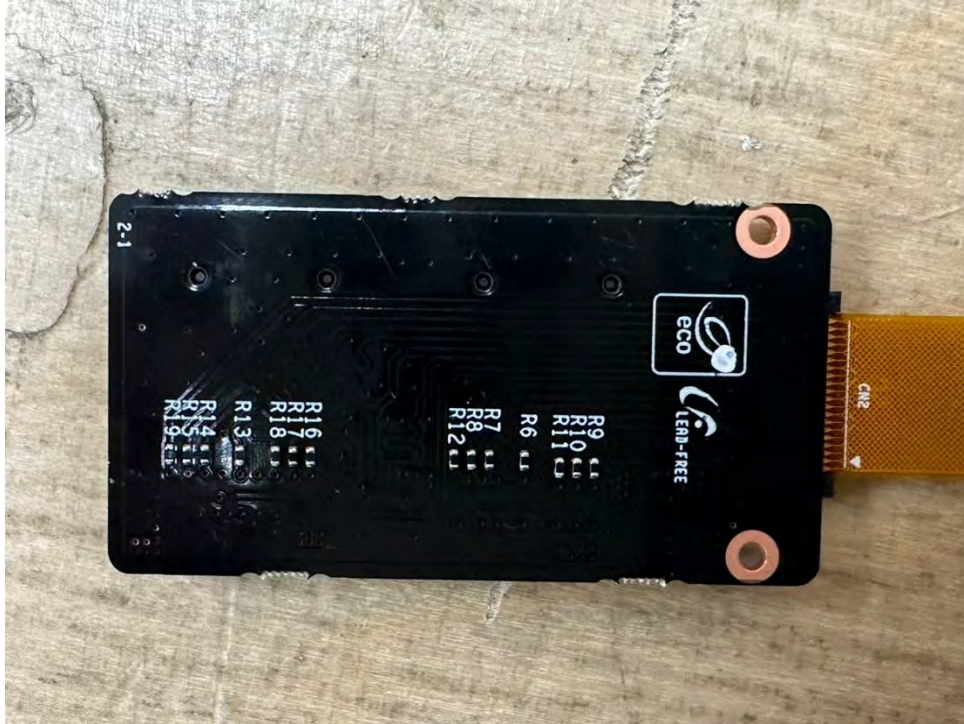
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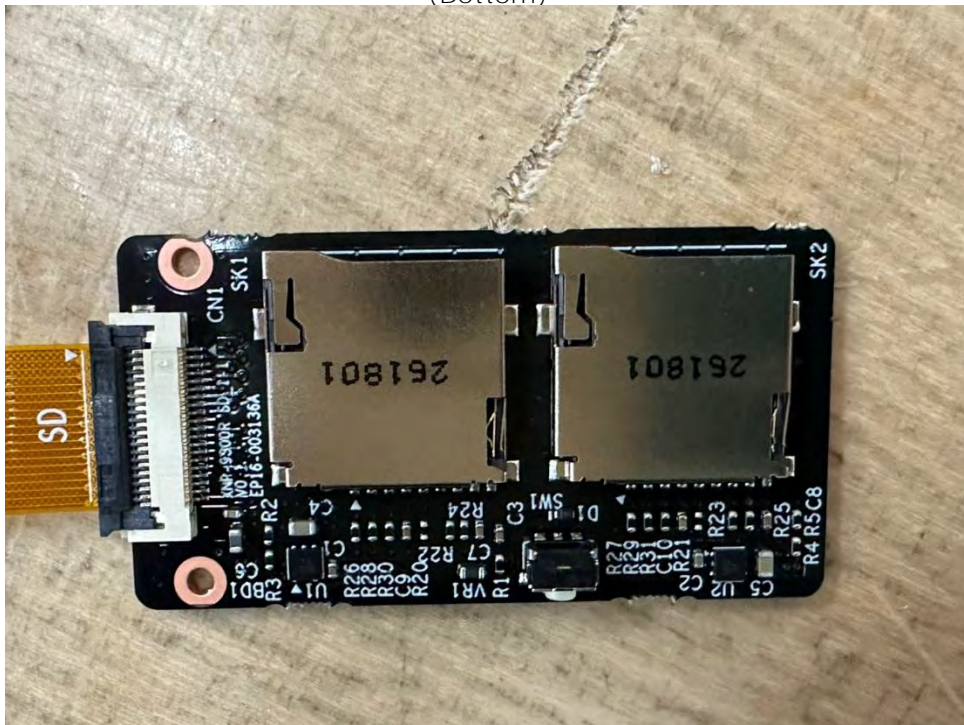
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EUT Internal View – Board 5

(Top)



(Bottom)



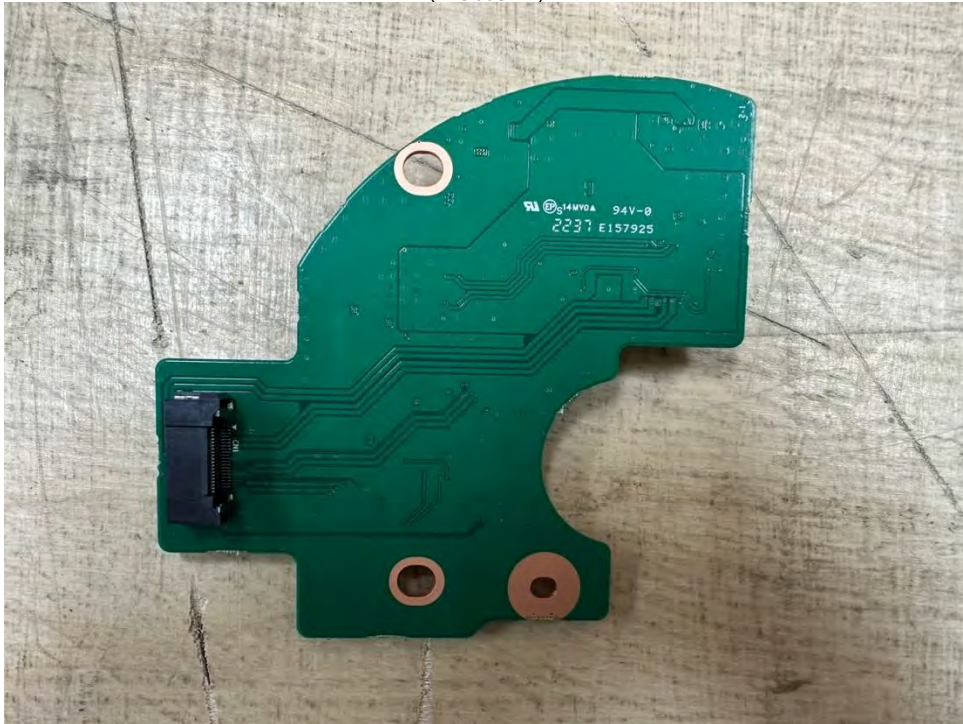
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EUT Internal View – Board 6

(Top)



(Bottom)



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EUT Internal View – Board 7

(Top)



(Bottom)

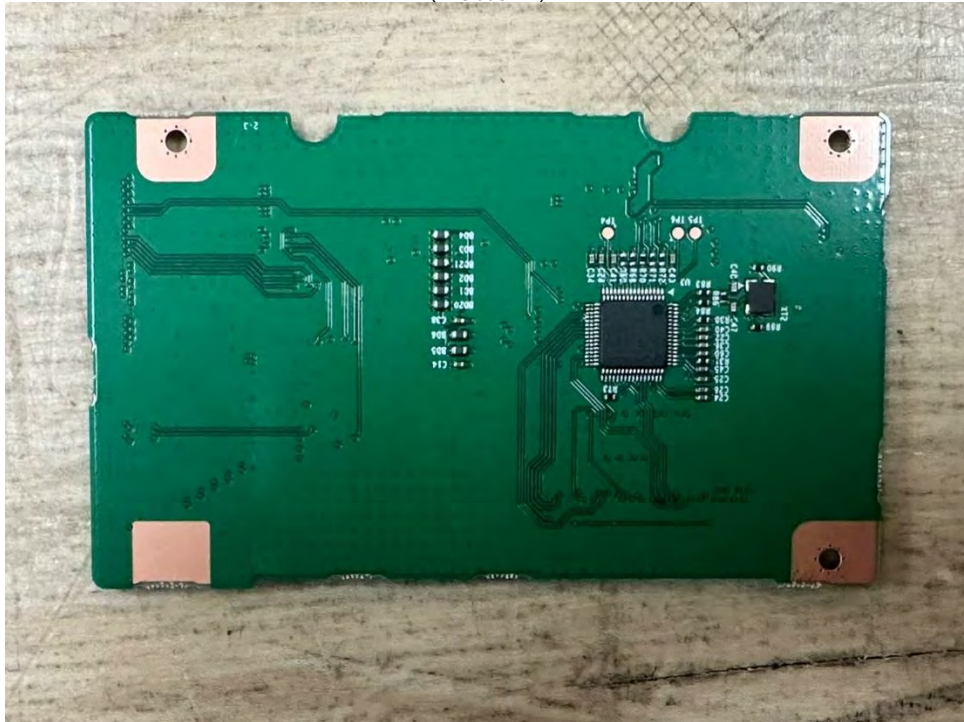


EUT Internal View – Board 8

(Top)



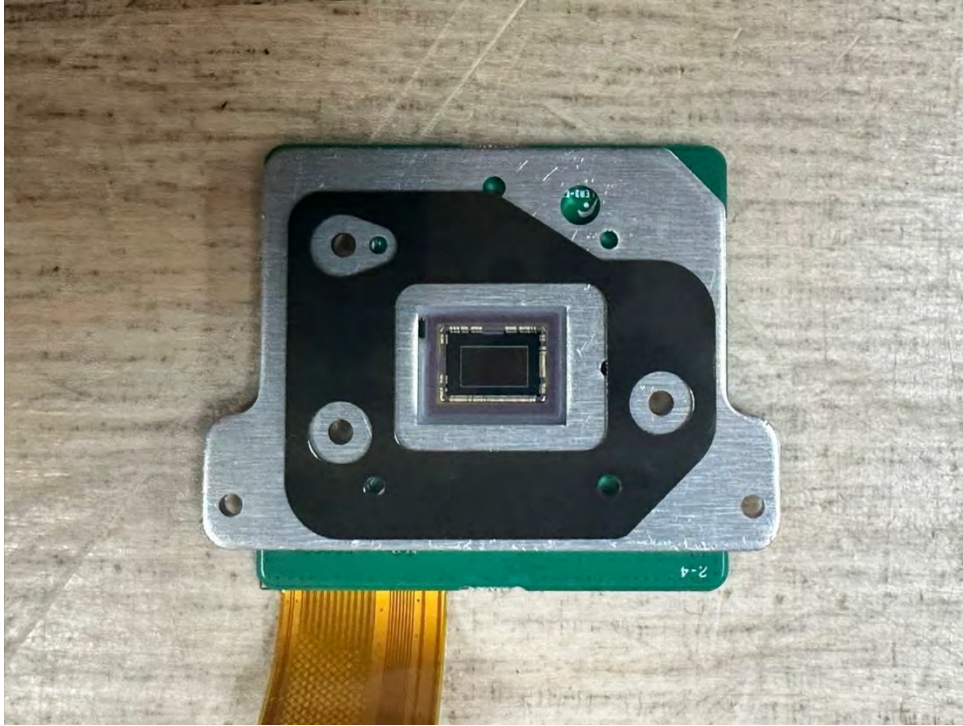
(Bottom)



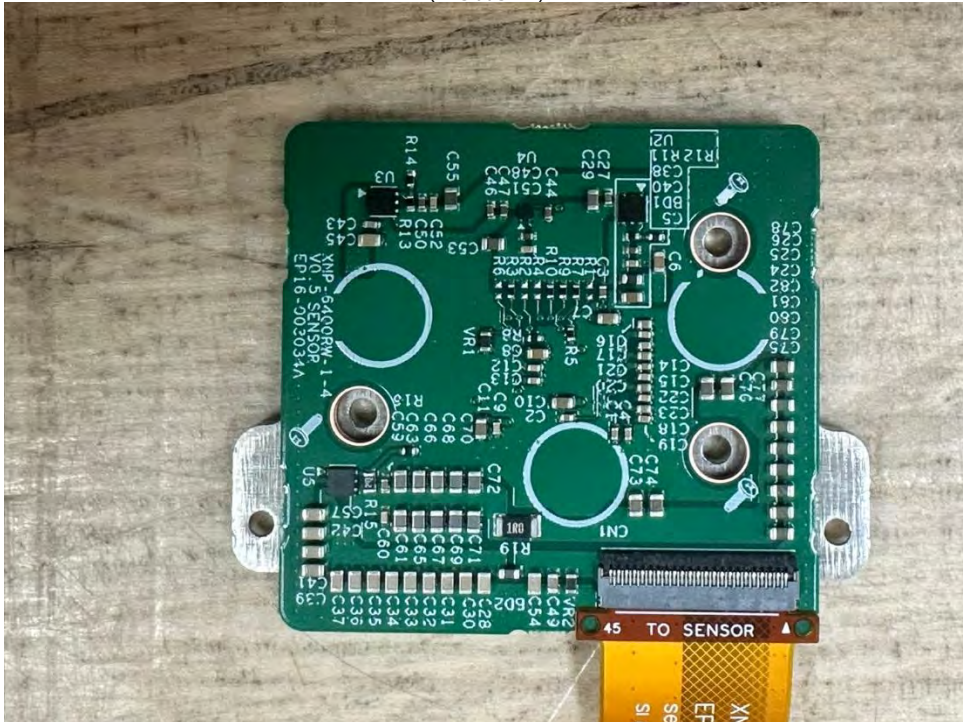
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EUT Internal View – Board 9

(Top)



(Bottom)



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EUT Internal View – Board 10

(Top)



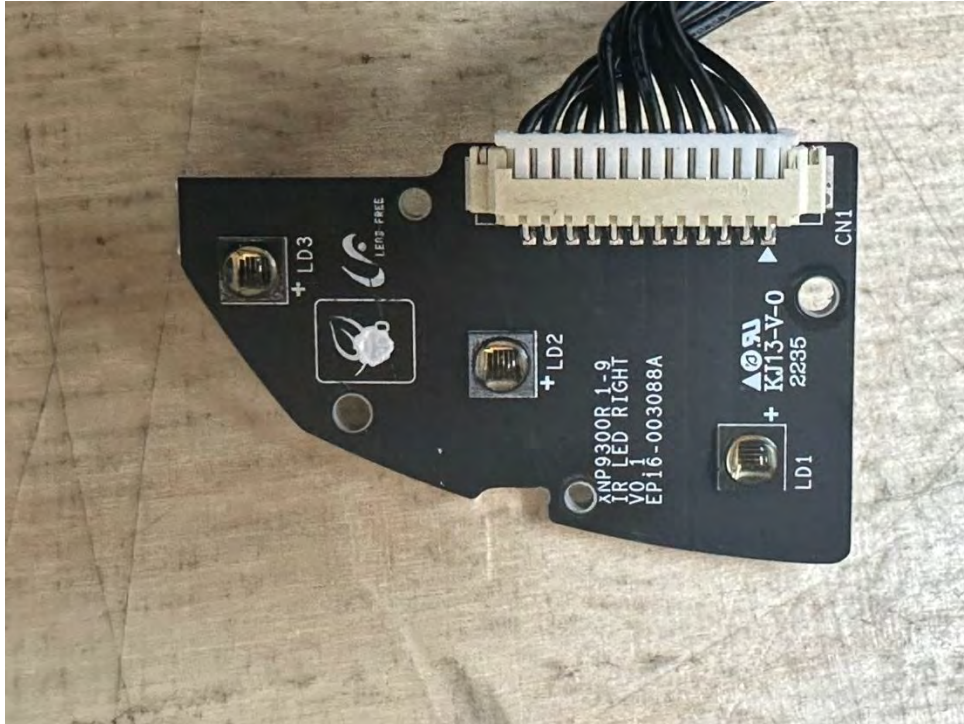
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EUT Internal View – Board 11

(Top)



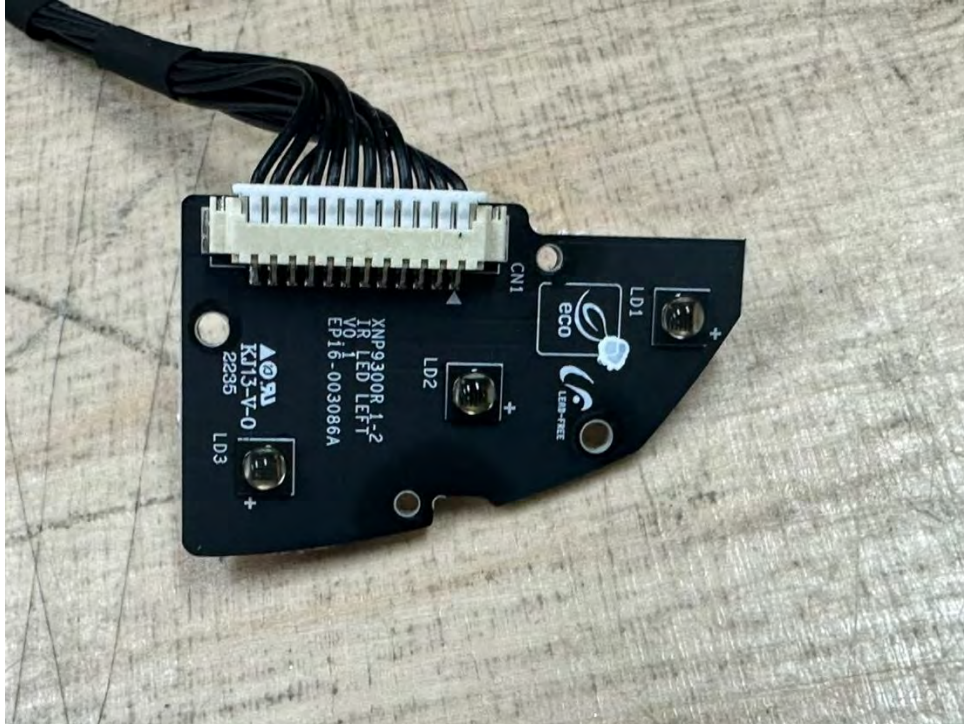
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EUT Internal View – Board 12

(Top)



(Bottom)



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EUT Internal View – Board 13

(Top)



(Bottom)



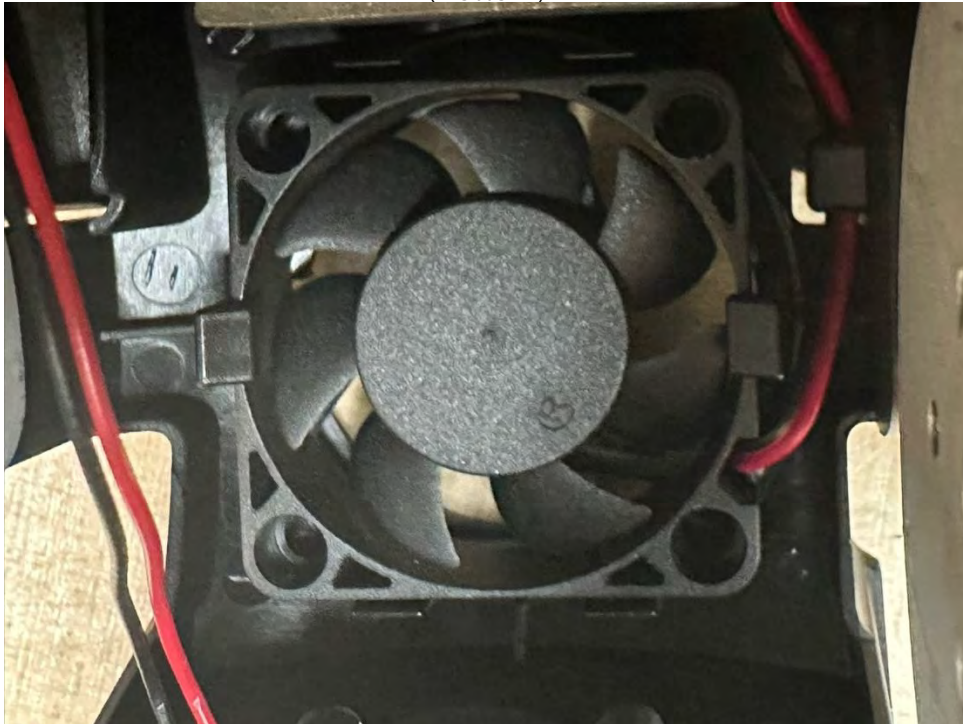
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EUT Internal View – Fan 1

(Top)



(Bottom)



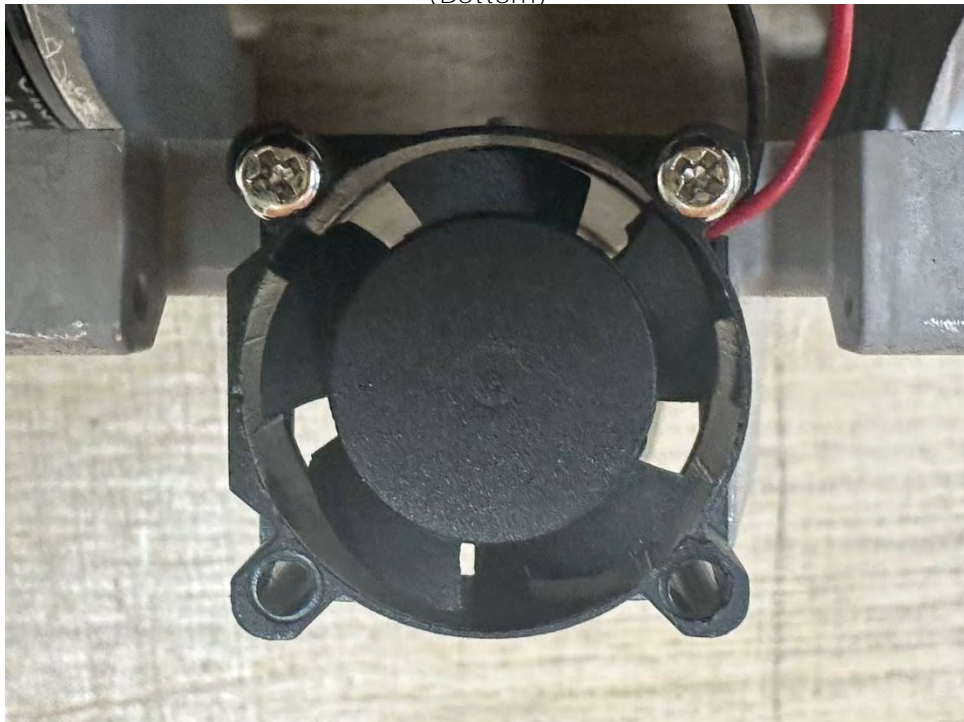
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EUT Internal View – Fan 2

(Top)



(Bottom)



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EUT Internal View – Injector

(Top)



(Bottom)



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EUT Internal View – Camera

(Top)



(Bottom)



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Label and Location



Network Camera

Model No : XNP-C6403R

Manufacturer : HANWHA VISION VIETNAM COMPANY LIMITED

Made in Vietnam

