



TEST REPORT



Report No. : KES-EM241390

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KES Co., Ltd.

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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-C32083RQZ

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. 13, 2024

5. Date of Issue : Jun. 25, 2024

6. Test Results : In Compliance

Tested by

Reviewed by

Dae Soo, Kim
EMC Test Engineer

Seong Min, Choi
EMC Assistant Technical Manager

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

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

KES Co., Ltd.

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



REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Jun. 25, 2024	KES-EM241390	Issued

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1.0 General Product Description

Main Specifications of EUT are:

Video	
Imaging Device	1/1.8" CMOS x 4CH
Resolution	3840x2160, 1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360
Max. Framerate	[AI On] H.265/H.264: Max. 15fps/15fps(60Hz/50Hz) MJPEG: Max. 15fps/15fps@8MP Max. 5fps [AI Off] H.265/H.264: Max. 20fps/20fps(60Hz/50Hz) MJPEG: Max. 20fps/20fps@8MP Max. 5fps
NETD	None
Pixel Size	None
Min. Illumination	Color: 0.07Lux(F1.3, 1/30sec, 30IRE) BW: 0Lux(IR LED on)
Video Out	None
Video Transmission Distance	None
Lens	
Focal Length (Zoom Ratio)	4.38~9.33mm(2.13x) motorized varifocal
Max. Aperture Ratio	F1.3(Wide) ~F2.1(Tele)
Angular Field of View	H: 112.1°(Wide)~47.5°(Tele) V: 58.0°(Wide)~26.6°(Tele) D: 137.5°(Wide)~54.6°(Tele)
Min. Object Distance	1.3m(4.27ft)
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(Sea 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), RTSP, RTP, 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 2.0 (FIPS 140-2 level 2)
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

Operational	
Camera Title	Displayed up to 85 characters
Direction Indicator	None
Day & Night	Auto(ICR)
Backlight Compensation	BLC, WDR, SDR
Wide Dynamic Range	120dB
Digital Noise Reduction	WiseNR II(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, Halfway 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(Litering/Intrusion/Enter/Exit) Analytics events - Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Virtual area(Appears/Disappears)
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

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
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
Hanging Mount (Dome)	single, double, 4" octagon, 4" square
Skin Cover (Dome)	58P-317HMMW
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/ BPFF)	Wide: 51.7m(169.64ft) / Tele: 174.5m(572.64ft)
Observe (63PPM/ 19PPF)	Wide: 20.7m(67.85ft) / Tele: 69.8m(229.06ft)
Recognize (125PPM/ 38PPF)	Wide: 10.3m(33.93ft) / Tele: 34.9m(114.53ft)
Identify (250PPM/ 76PPF)	Wide: 5.2m(16.96ft) / Tele: 17.5m(57.26ft)

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

KES Co., Ltd.

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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 240 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-C32083RQZ	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT
PoE Injector 1	PT-PSE109GBRO-AH-S	PT2402228137	Dongguan PROCET Network Technology Co., Ltd	R-R-LJ9-PSE109G BRO-A02

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Laptop	P95G001	9JM8HT2	DELL INC.	-
Laptop Adapter	HA65NM130	-	Chicony Power Technology(Suzhou)Co.,Ltd.	-
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
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

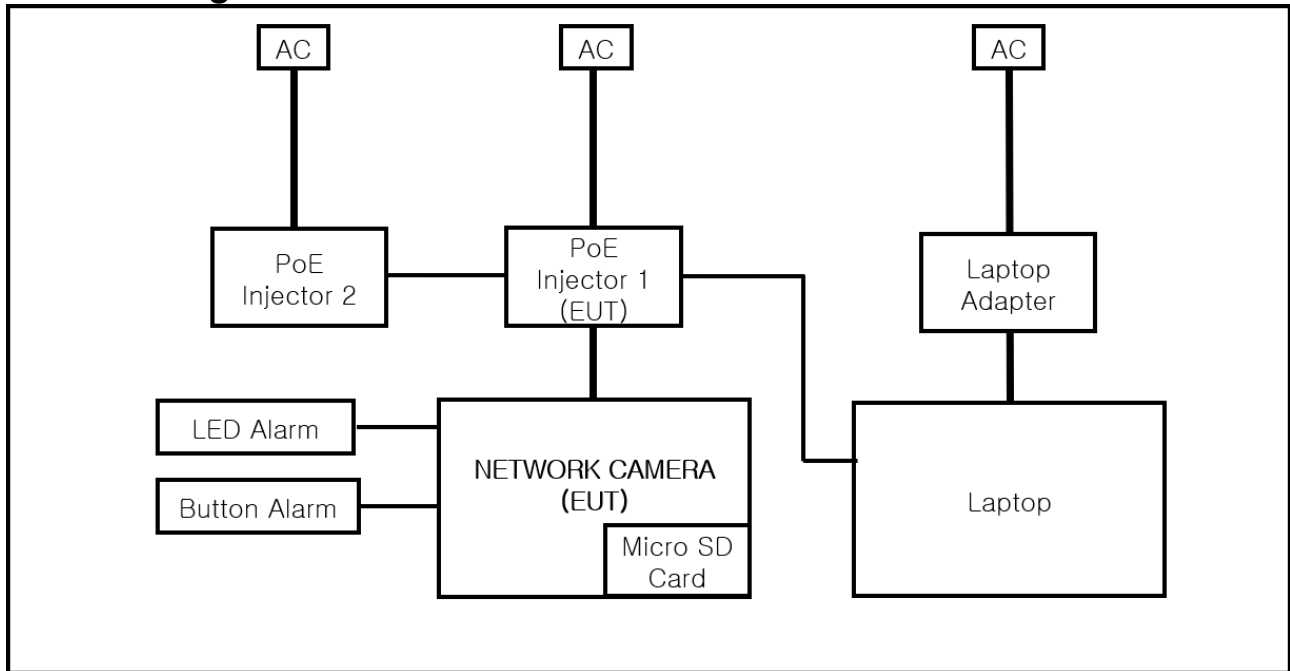
1.7 EUT Operating Mode(s)

Test mode	Normal operating	Test Voltages
Operating	Monitoring EUT Using Web Viewer, Ping Test	AC 240 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:

☒ **AS/NZS CISPR 32:2015 AMD 1:2020**

☒ Class A

☐ Class B





2.1 Conducted Emissions at Mains Power Ports

Test Date

May. 13, 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	100450	11, 08, 2024
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 08, 2024

Test Conditions

Temperature: (22,4 ± 0,1) °C

Relative Humidity: (48,6 ± 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

May. 13, 2024

Test Location

Electro wave Shieldroom #6

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test SW	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	100450	11, 08, 2024
☒	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: (22,4 ± 0,0) °C

Relative Humidity: (48,6 ± 0,0) % R.H.

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

RemarksSee Appendix A for test data.



2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

May. 13, 2024

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

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
☒	EMI TEST RECEIVER	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: (21,7 ± 0,1) °C

Relative Humidity: (47,2 ± 0,1) % R.H.

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

RemarksSee Appendix A for test data.



2.4 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

May. 13, 2024

Test Location

SEMI ANECHOIC CHAMBER #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test SW	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: (21,5 ± 0,1) °C

Relative Humidity: (49,4 ± 0,0) % R.H.

Frequency Range of Measurement

1 GHz to 6 GHz

Instrument Settings

IF Band Width: 1 MHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

RemarksSee Appendix A for test data.



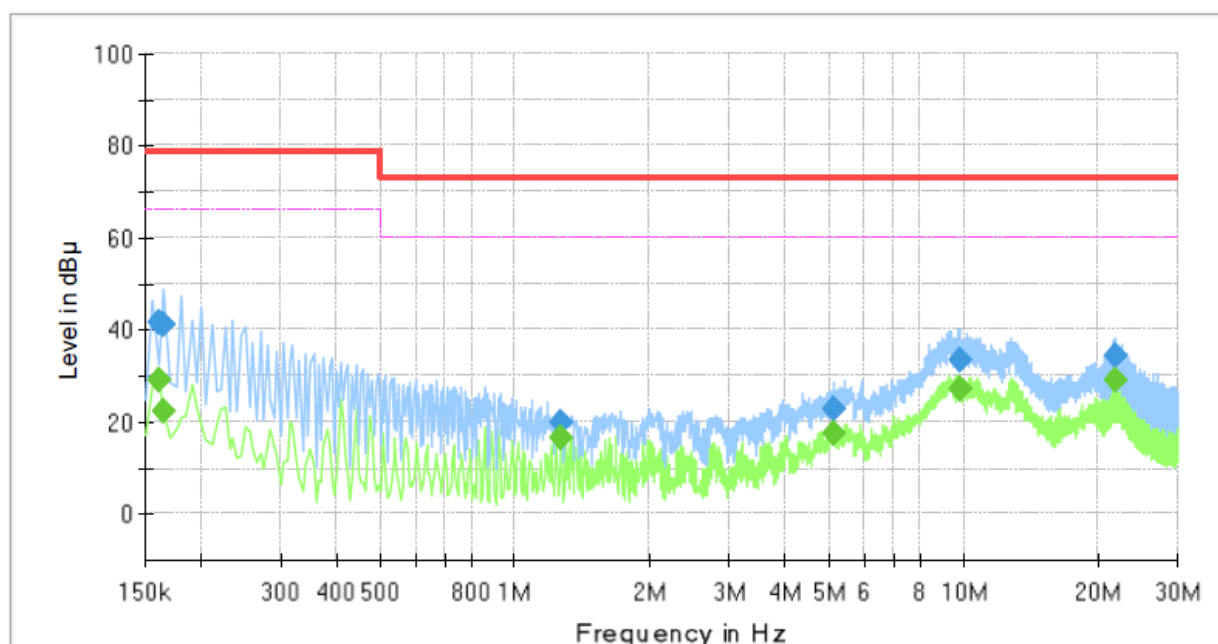
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

HOT LINE

Common Information

Test Description: Conducted Emission
Job No.: PNM-C32083RQZ
Phase: L
Mode:
Operator Name: KES



Final Result

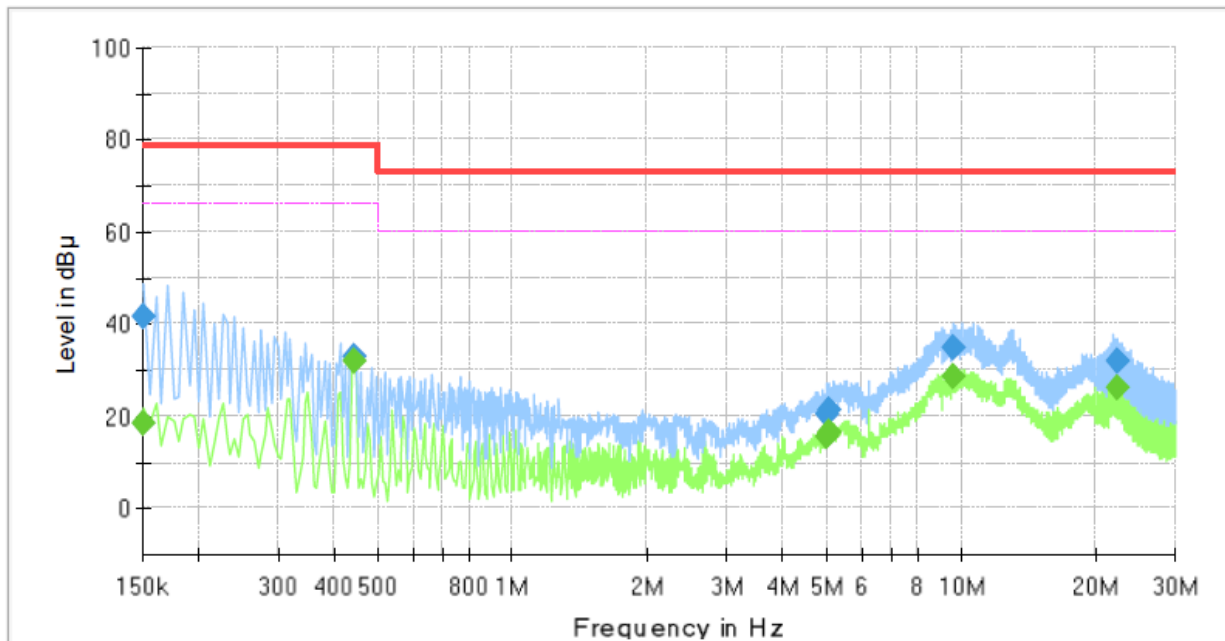
Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	28.92	66.00	37.08	1000.0	9.000	L1	19.4
0.160000	41.72	---	79.00	37.28	1000.0	9.000	L1	19.4
0.165000	---	22.18	66.00	43.82	1000.0	9.000	L1	19.4
0.165000	41.04	---	79.00	37.96	1000.0	9.000	L1	19.4
1.265000	---	16.72	60.00	43.28	1000.0	9.000	L1	19.5
1.265000	19.85	---	73.00	53.15	1000.0	9.000	L1	19.5
5.125000	---	17.51	60.00	42.49	1000.0	9.000	L1	19.8
5.125000	22.67	---	73.00	50.33	1000.0	9.000	L1	19.8
9.770000	---	27.33	60.00	32.67	1000.0	9.000	L1	20.0
9.770000	33.58	---	73.00	39.42	1000.0	9.000	L1	20.0
21.835000	---	29.26	60.00	30.74	1000.0	9.000	L1	20.3
21.835000	34.24	---	73.00	38.76	1000.0	9.000	L1	20.3



NEUTRAL LINE

Common Information

Test Description: Conducted Emission
Job No.: PNM-C32083RQZ
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)
0.150000	---	18.67	66.00	47.33	1000.0	9.000	N	19.3
0.150000	41.72	---	79.00	37.28	1000.0	9.000	N	19.3
0.445000	---	31.99	66.00	34.01	1000.0	9.000	N	19.4
0.445000	32.73	---	79.00	46.27	1000.0	9.000	N	19.4
4.995000	---	15.58	60.00	44.42	1000.0	9.000	N	19.7
4.995000	20.54	---	73.00	52.46	1000.0	9.000	N	19.7
5.100000	---	16.69	60.00	43.31	1000.0	9.000	N	19.8
5.100000	21.60	---	73.00	51.40	1000.0	9.000	N	19.8
9.565000	---	28.43	60.00	31.57	1000.0	9.000	N	20.0
9.565000	34.64	---	73.00	38.36	1000.0	9.000	N	20.0
22.200000	---	26.26	60.00	33.74	1000.0	9.000	N	20.3
22.200000	32.18	---	73.00	40.82	1000.0	9.000	N	20.3

◆ 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))

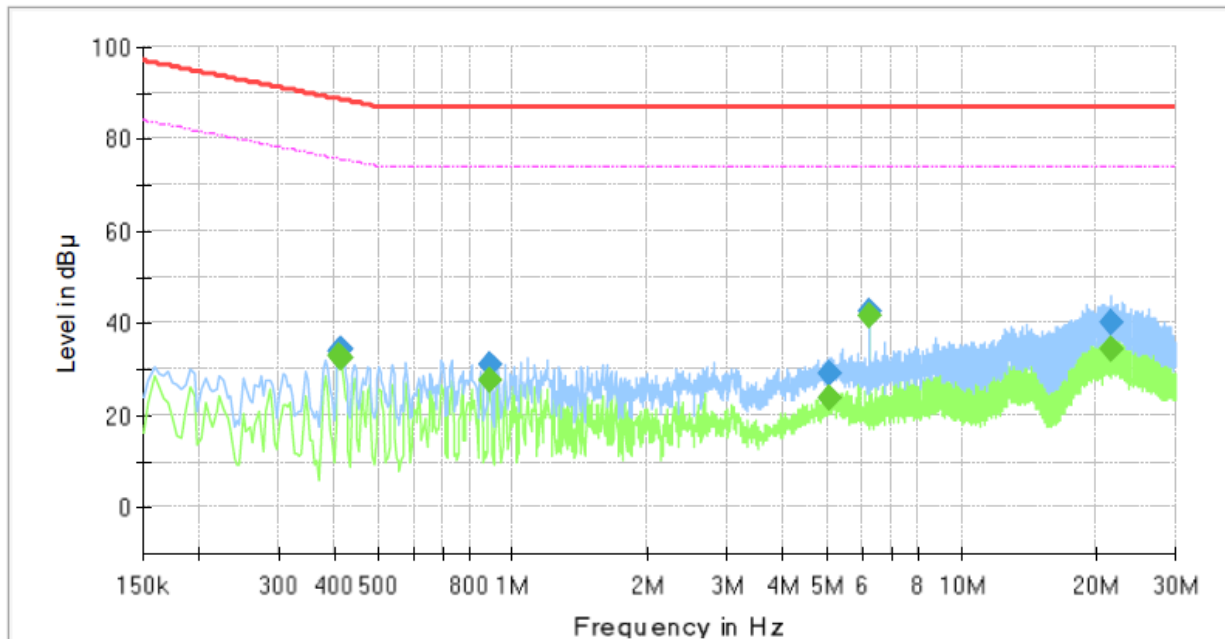
**Conducted Emissions at Telecommunication Ports**

■ LAN

[1 000 Mbps]

Common Information

Test Description: Telecommunication Emission
Job No.: PNM-C32083RQZ
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)
0.410000	---	32.97	75.65	42.68	1000.0	9.000	Single Line	19.2
0.410000	34.11	---	88.65	54.54	1000.0	9.000	Single Line	19.2
0.414000	---	32.22	75.57	43.35	1000.0	9.000	Single Line	19.2
0.414000	34.42	---	88.57	54.15	1000.0	9.000	Single Line	19.2
0.886000	---	27.53	74.00	46.47	1000.0	9.000	Single Line	19.3
0.886000	30.96	---	87.00	56.04	1000.0	9.000	Single Line	19.3
5.078000	---	24.00	74.00	50.00	1000.0	9.000	Single Line	19.5
5.078000	29.15	---	87.00	57.85	1000.0	9.000	Single Line	19.5
6.250000	---	41.69	74.00	32.31	1000.0	9.000	Single Line	19.6
6.250000	42.65	---	87.00	44.35	1000.0	9.000	Single Line	19.6
21.466000	---	34.24	74.00	39.76	1000.0	9.000	Single Line	20.2
21.466000	40.24	---	87.00	46.76	1000.0	9.000	Single Line	20.2

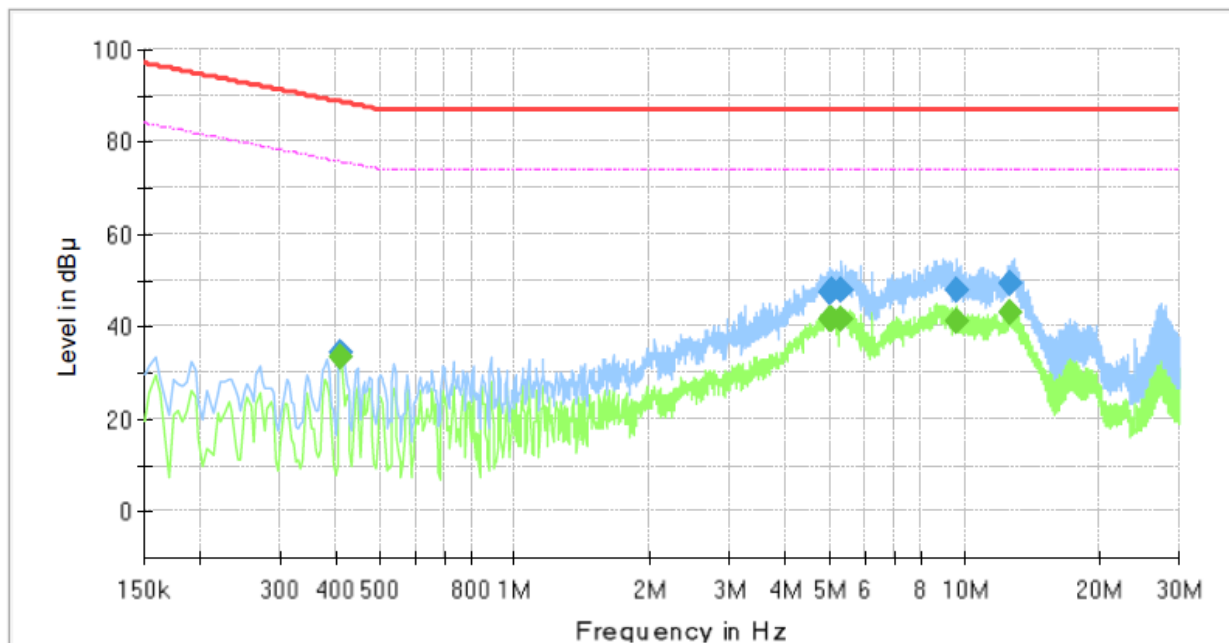


■ PoE

[1 000 Mbps]

Common Information

Test Description: Telecommunication Emission
Job No.: PNM-C32083RQZ
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)
0.410000	34.50	---	88.65	54.15	1000.0	9.000	Single Line	19.2
0.410000	---	33.46	75.65	42.19	1000.0	9.000	Single Line	19.2
5.038000	47.49	---	87.00	39.51	1000.0	9.000	Single Line	19.5
5.038000	---	41.71	74.00	32.29	1000.0	9.000	Single Line	19.5
5.062000	47.71	---	87.00	39.29	1000.0	9.000	Single Line	19.5
5.062000	---	41.86	74.00	32.14	1000.0	9.000	Single Line	19.5
5.310000	---	41.76	74.00	32.24	1000.0	9.000	Single Line	19.5
5.310000	47.72	---	87.00	39.28	1000.0	9.000	Single Line	19.5
9.630000	---	41.24	74.00	32.76	1000.0	9.000	Single Line	19.7
9.630000	47.75	---	87.00	39.25	1000.0	9.000	Single Line	19.7
12.678000	---	42.90	74.00	31.10	1000.0	9.000	Single Line	19.9
12.678000	49.28	---	87.00	37.72	1000.0	9.000	Single Line	19.9

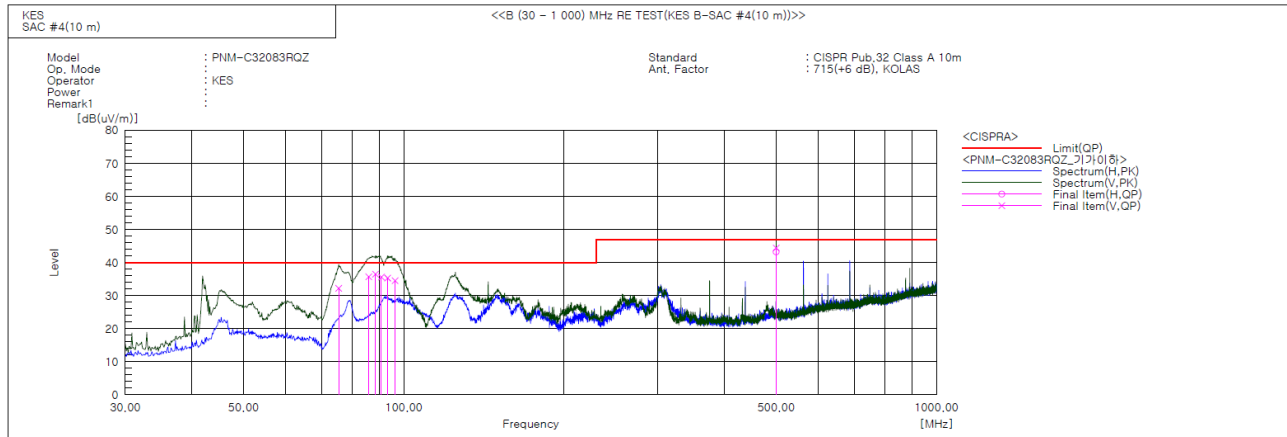
◆ Calculation

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 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	75.469	V	59.2	-27.0	32.2	40.0	7.8	111.0	273.0	
2	85.896	V	61.7	-26.0	35.7	40.0	4.3	120.0	297.0	
3	88.443	V	61.3	-24.8	36.5	40.0	3.5	100.0	223.0	
4	90.746	V	59.5	-23.9	35.6	40.0	4.4	108.0	130.0	
5	93.171	V	58.5	-23.2	35.3	40.0	4.7	100.0	254.0	
6	96.203	V	57.1	-22.6	34.5	40.0	5.5	115.0	270.0	
7	499.965	V	55.5	-11.1	44.4	47.0	2.6	106.0	72.0	
8	500.086	H	54.3	-11.1	43.2	47.0	3.8	400.0	257.0	

◆ Calculation

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

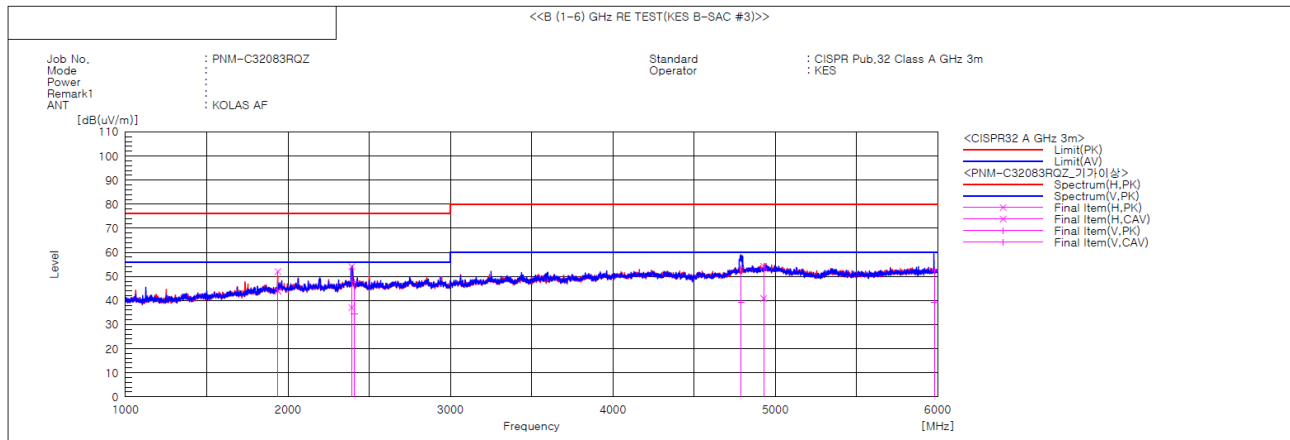
Margin(QP)[dB] = Limit[dB(μV/m)] - Result(QP) [dB(μV/m)]

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

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



Radiated Electric Field Emissions(Above 1 GHz)



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	1937.600	H	47.8	39.6	4.3	52.1	43.9	76.0	56.0	23.9	12.1	100.0	222.3	
2	2391.539	H	48.2	31.1	5.9	54.1	37.0	76.0	56.0	21.9	19.0	100.0	318.0	
3	2407.838	V	41.9	28.4	5.9	47.8	34.3	76.0	56.0	28.2	21.7	100.0	282.2	
4	4789.909	V	39.4	25.1	14.2	53.6	39.3	80.0	60.0	26.4	20.7	100.0	193.6	
5	4929.141	H	38.9	25.5	15.3	54.2	40.8	80.0	60.0	25.8	19.2	100.0	14.8	
6	5981.549	V	36.5	23.5	15.8	52.3	39.3	80.0	60.0	27.7	20.7	100.0	213.6	

◆ 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)]

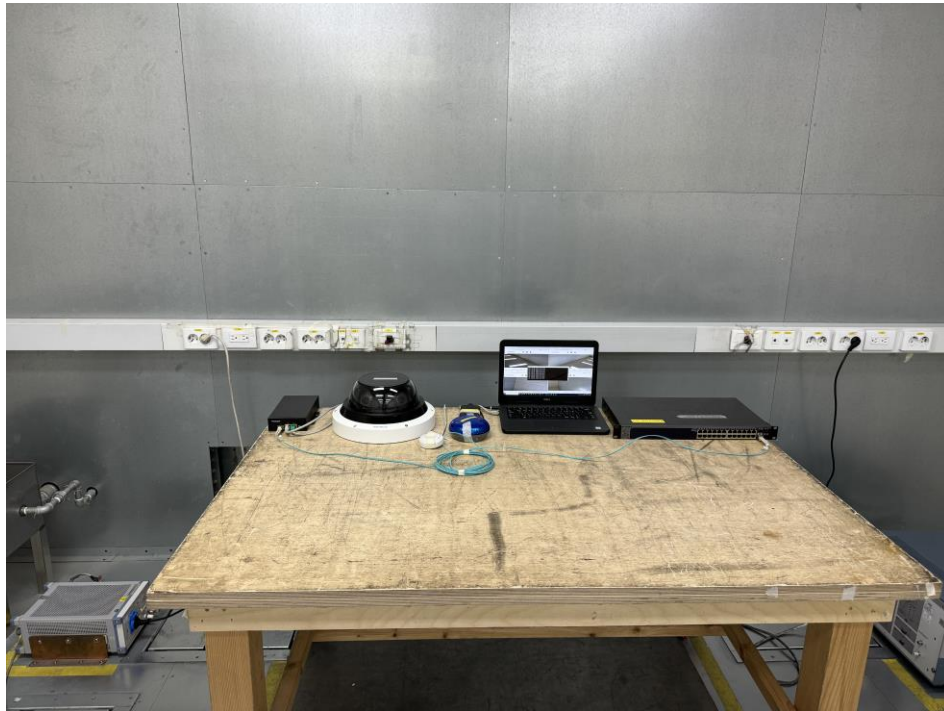
Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

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



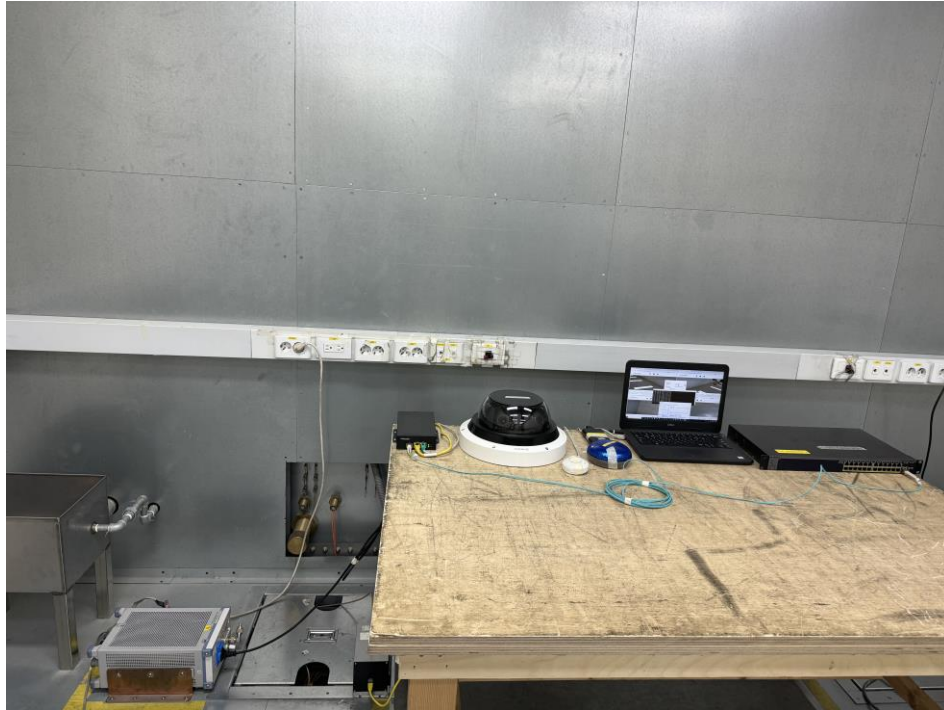
Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports



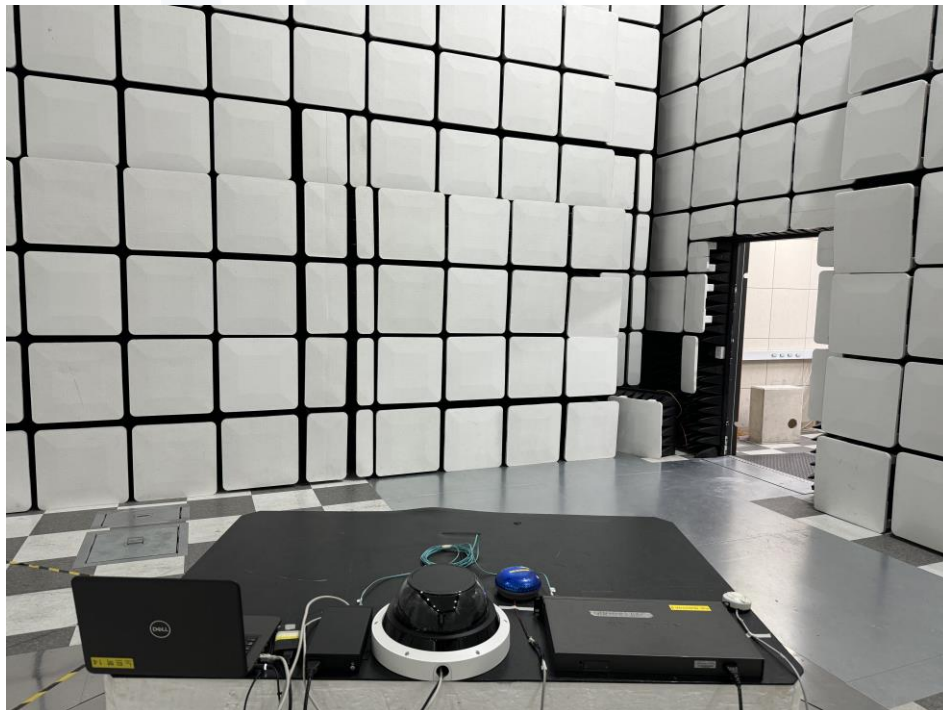
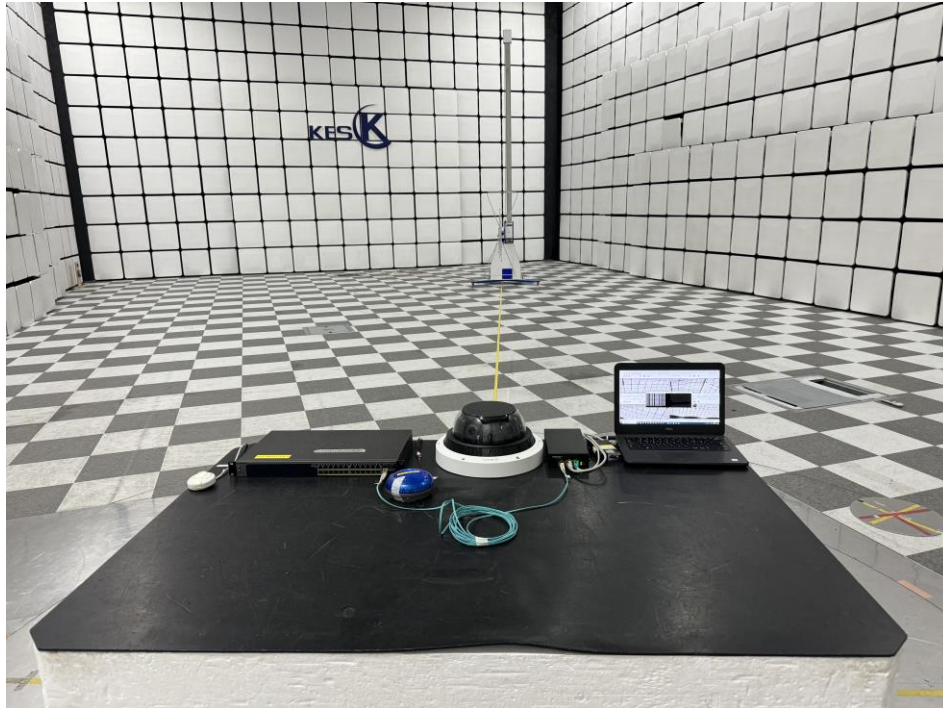


Conducted Emissions at Telecommunication Ports



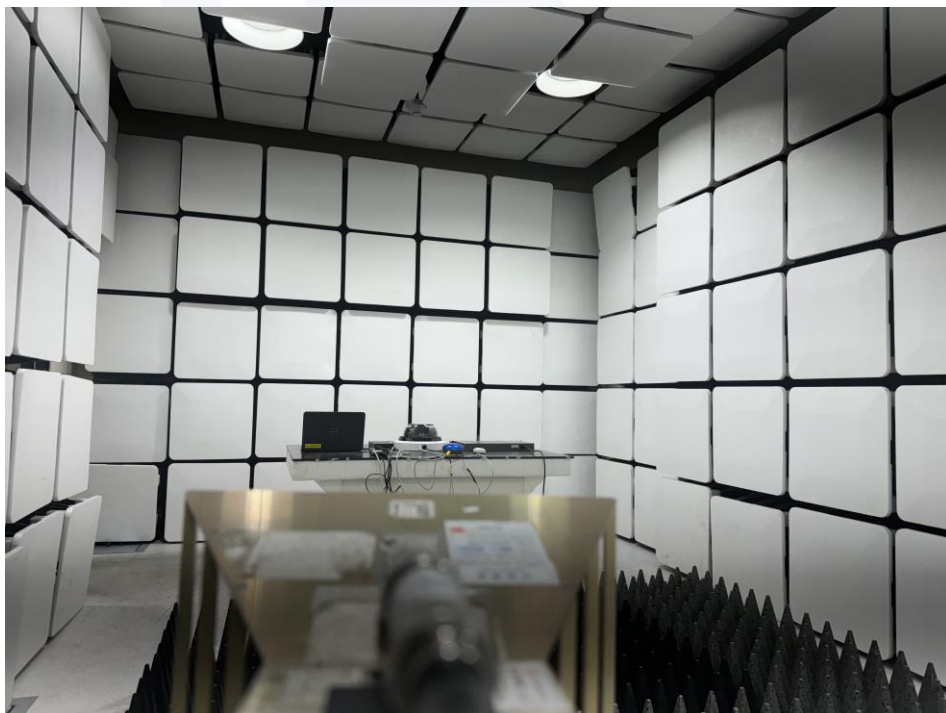


Radiated Electric Field Emissions(Below 1 GHz)





Radiated Electric Field Emissions(Above 1 GHz)



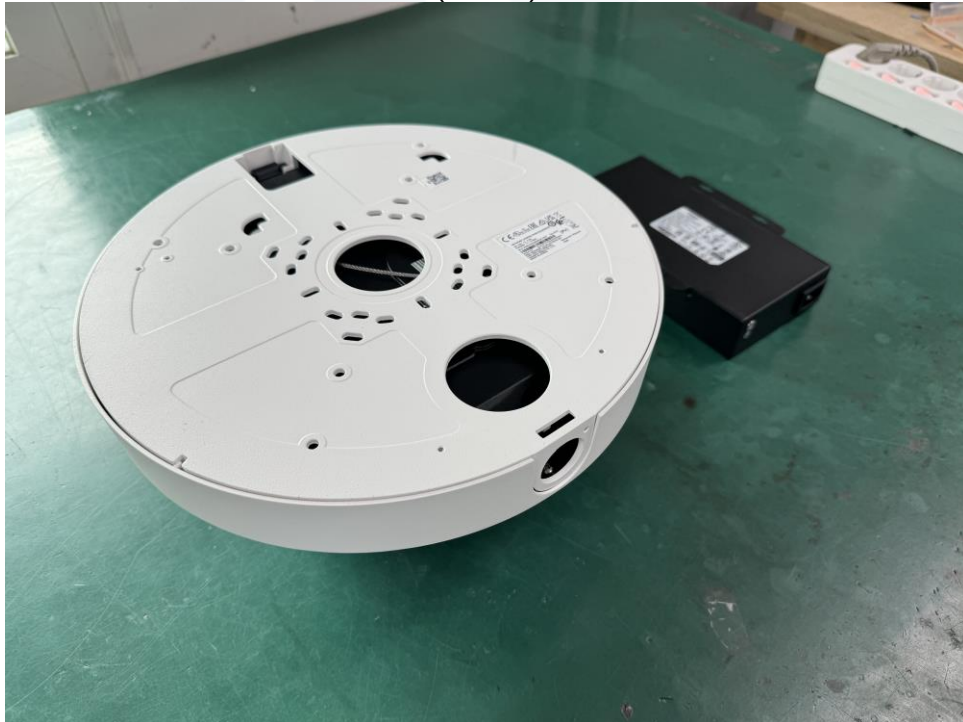


EUT External Photographs

(Top)



(Bottom)





EUT Internal Photographs

(Internal View)





EUT Internal View – Board 1

(Top)



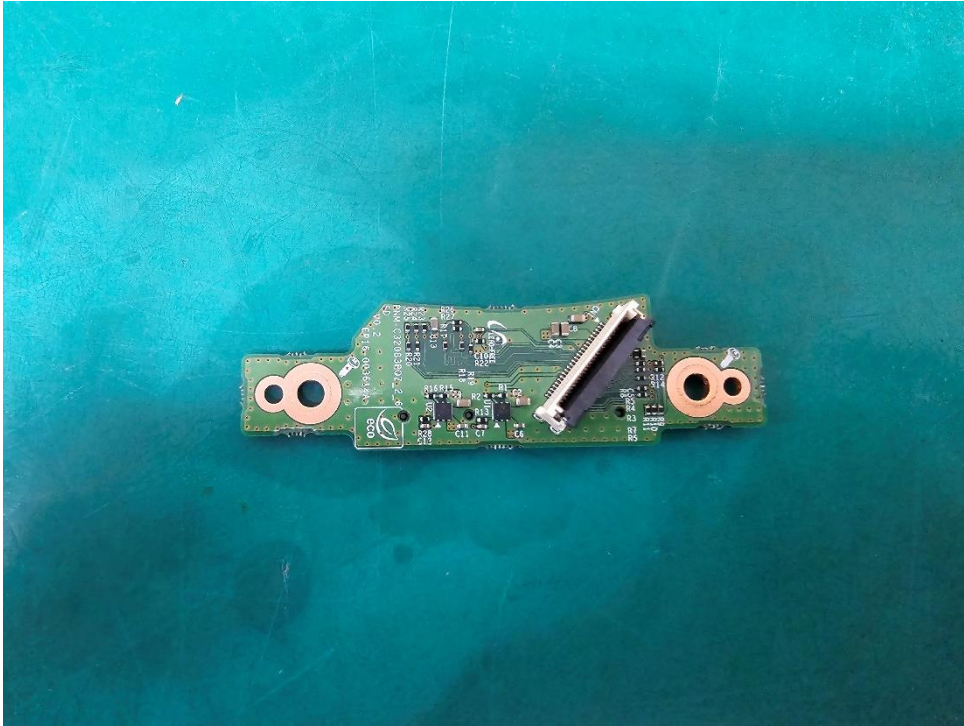
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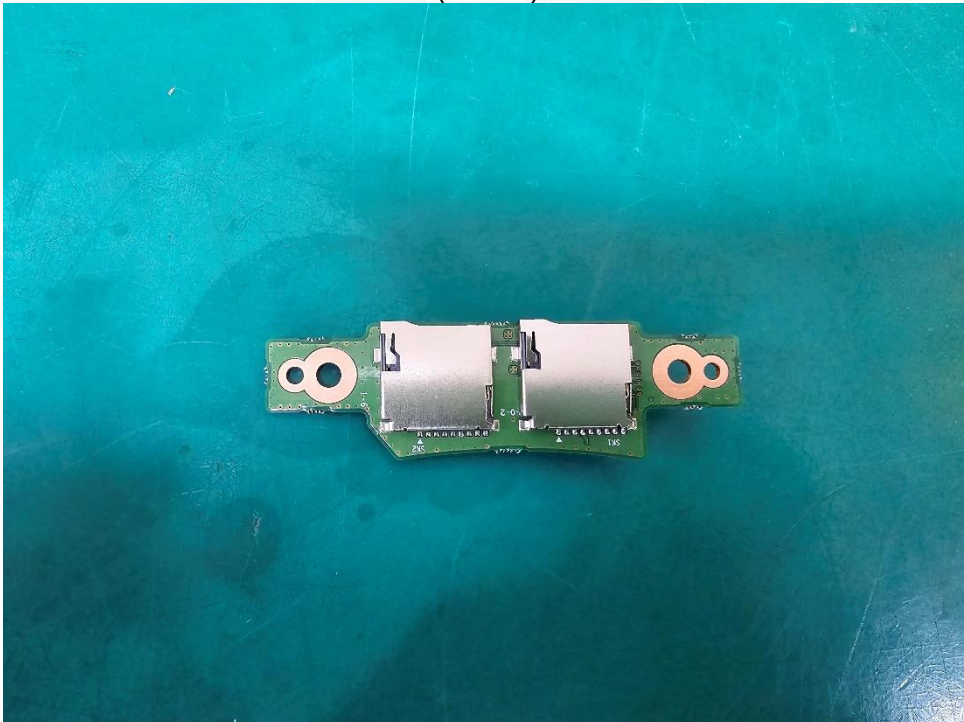


EUT Internal View – Board 2

(Top)



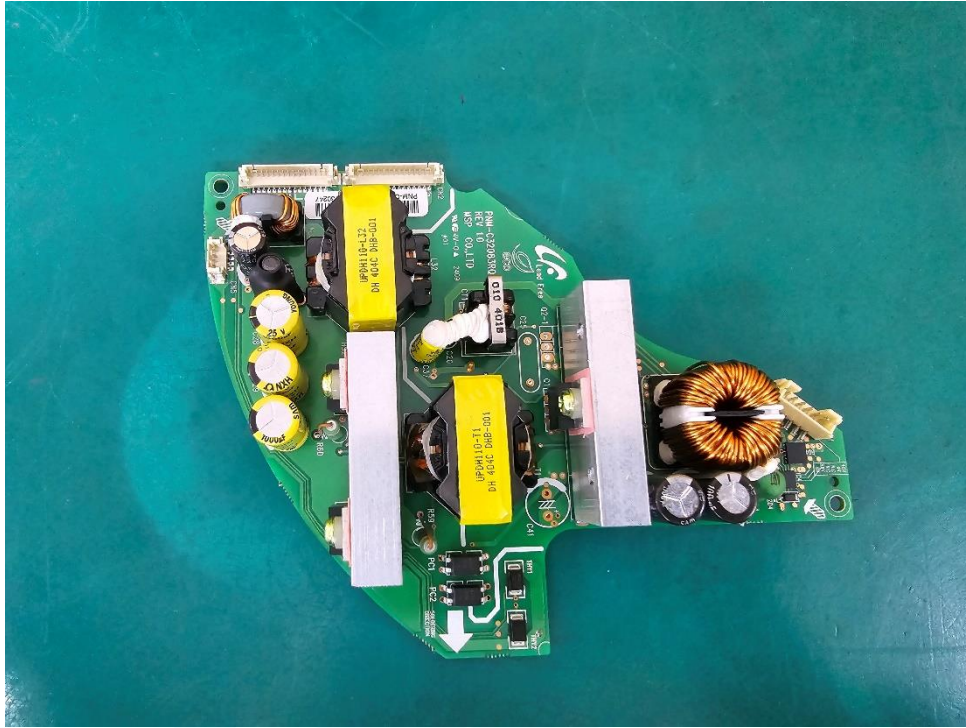
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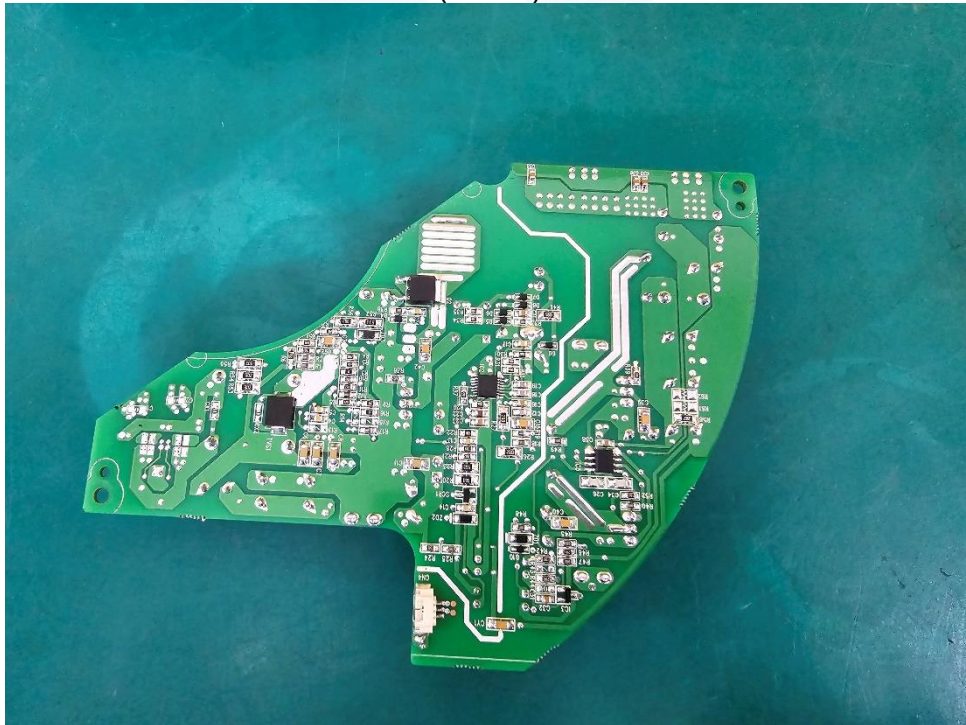


EUT Internal View – Board 3

(Top)



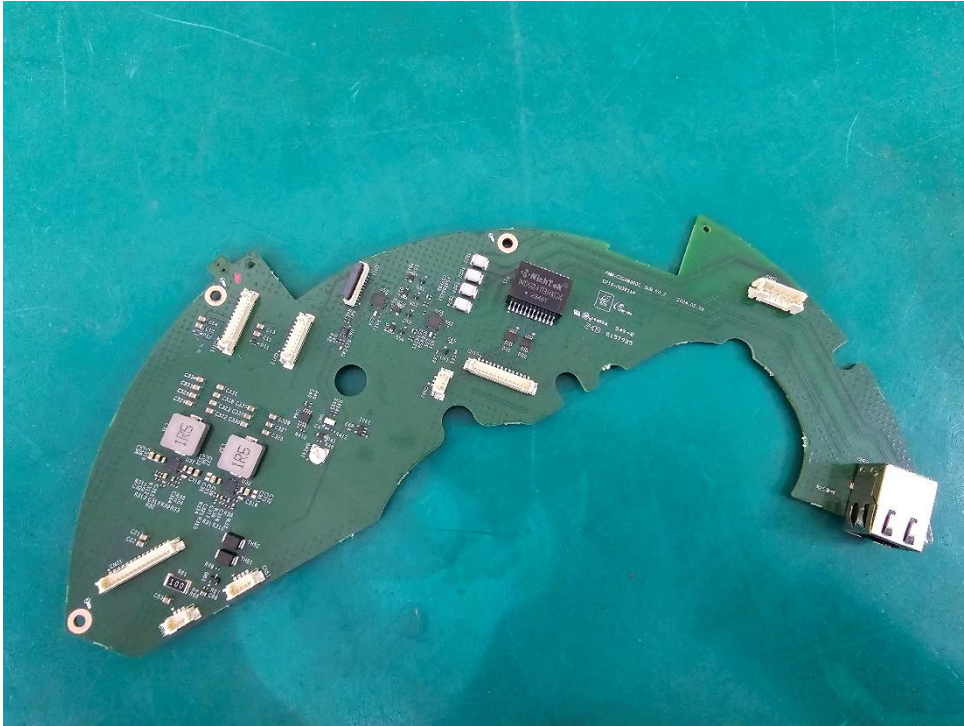
(Bottom)





EUT Internal View – Board 4

(Top)



(Bottom)





EUT Internal View – Board 5

(Top)



(Bottom)



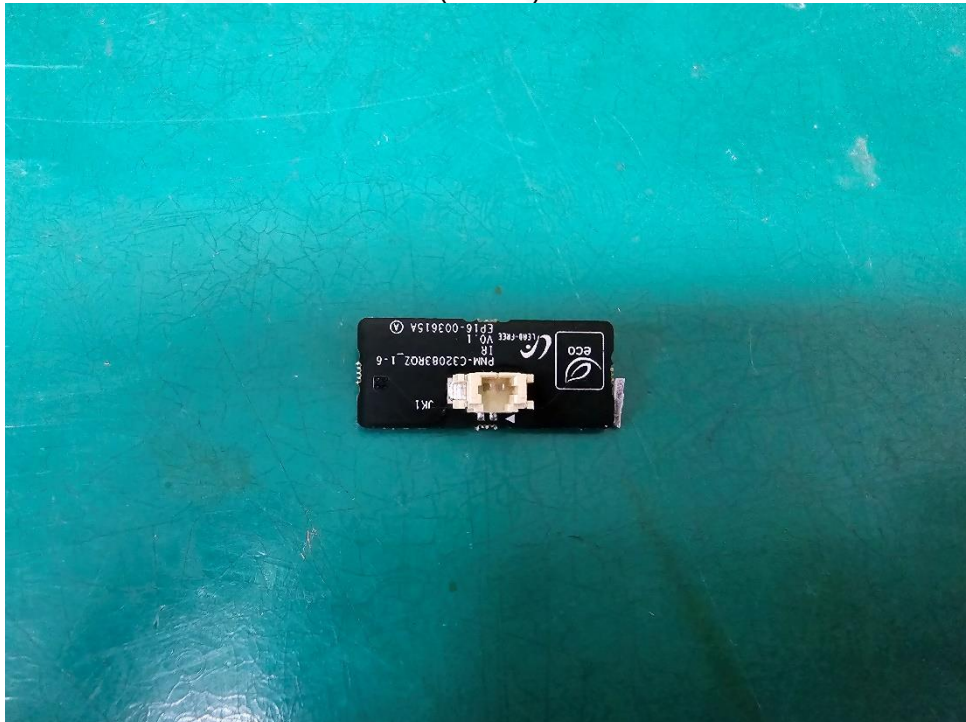


EUT Internal View – Board 6

(Top)



(Bottom)





EUT Internal View – Board 7

(Top)



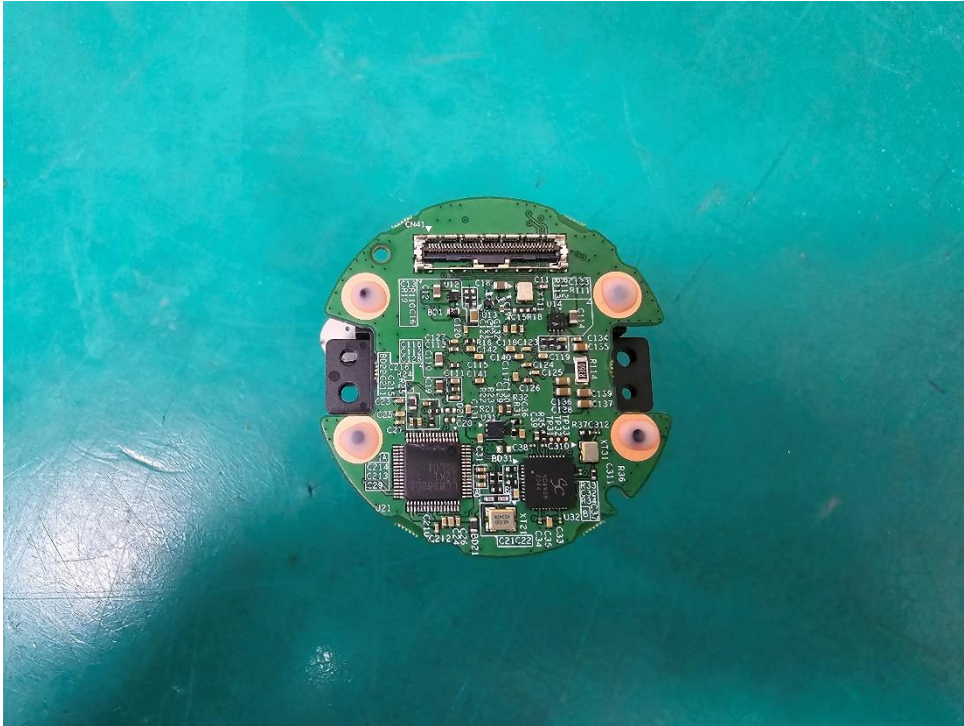
(Bottom)





EUT Internal View – Board 8

(Top)





EUT Internal View – PoE Injector

(Top)



(Bottom)





EUT Internal View – Lens

(Top)



(Bottom)





EUT Internal View – Fan 1

(Top)



(Bottom)





EUT Internal View – Fan 2

(Top)



(Bottom)

