

TEST REPORT



Report No. : KES-EM-23T0917

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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. : XNP-C9310R

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 commune,
Bac Ninh city, Bac Ninh province, Vietnam
2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do, Korea

3. Date of Receipt : Oct. 13, 2023

4. Test date : Oct. 23, 2023

5. Date of Issue : Oct. 26, 2023

6. Test Results : In Compliance

Tested by

김동인

Dong In, Kim
EMC Test Engineer

Reviewed by

이종일

Dong Il, Lee
EMC 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
Oct. 26, 2023	KES-EM-23T0917	Issued

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1.0 General Product Description

Main Specifications of EUT are:

Video	
Imaging Device	1/1.8" CMOS
Resolution	3840x2160, 2592x1944, 2592x1464, 1920x1080, 1600x1200, 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(@4K Max. 5fps)
NETD	None
Pixel Size	None
Min. Illumination	Color: 0.06 Lux(F1.36, 1/30sec, 30 IRE) BW: 0.006 Lux(F1.36, IR LED Off), 0Lux (IR LED On)
Video Out	None
Video Transmission Distance	None
Lens	
Focal Length (Zoom Ratio)	6.91 ~ 214.7mm(31x) zoom (digital 32x, total 992x zoom)
Max. Aperture Ratio	F1.36(Wide)~F4.6(Tele)
Angular Field of View	H : 60.6°(Wide)~2.59°(Tele) V : 35.1°(Wide)~1.45°(Tele) D : 68.8°(Wide)~2.97°(Tele)
Min. Object Distance	3m(9.84ft)
Focus Control	Oneshot AF, Focus save, Focus scan, Wise auto focus
Lens Type	P-iris(IR corrected)
Mount Type	None
Optional Lens	None
Pan / Tilt / Rotate	
Pan / Tilt / Rotate Range	None
Pan Range	360° Endless
Pan Speed	Preset: 550°/sec, Manual: 0.024°/sec~200°/sec
Tilt Range	110° (90° ~ -20°)
Tilt Speed	Preset: 550°/sec, Manual: 0.024°/sec~200°/sec
Rotate Range	None
Sequence	Preset(300ea), Swing, Group(6ea), Trace, Tour, Auto Run, Schedule
Preset Accuracy	±0.07° (±20°C by temperature at preset setting)

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Operational	
Camera Title	Displayed up to 85 characters
Direction Indicator	Support
Day & Night	Auto(ICR)
Backlight Compensation	BLC, HLC, WDR, SDR
Wide Dynamic Range	120dB
Digital Noise Reduction	WiseNR II (Based on AI engine), SSNR V
Digital Image Stabilization	Support (built-in gyro sensor)
Defog	Support
Motion Detection	8ea, 8point polygonal zones
Privacy Masking	32ea, 4point quadrangle zones - Color: Gray/Green/Red/Blue/Black/White - Mosaic
Gain Control	Off / Max gain / Manual
White Balance	ATW / NarrowATW / AWC / Manual / Indoor / Outdoor / Mercury / Sodium
LDC	None
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2~1/12,000sec) Prefer shutter control (Based on AI engine)
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 Detection Shot Analytics events based on AI engine - Object detection, Virtual line (Crossing/Direction), Virtual area (Loitering/Intrusion/Enter/Exit) Analytics events - Motion detection, Tampering, Fog detection, Shock detection, Virtual area (Appear/Disappear) * Audio detection, Sound classification (Via optional I/O box SPM-4210)
Business Intelligence	None
Serial Interface	None
Alarm I/O	None
Alarm Triggers	Analytics, Network disconnect * Alarm input (Via optional I/O box SPM-4210)
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 - Handover: PTZ preset, send message by HTTP/HTTPS/TCP - MQTT: publication * Alarm output / Audio clip playback (Via optional I/O box SPM-4210)
Audio Streaming	None
Audio In	None
Audio Out	None
Light Type	IR LED (850nm)
Light Viewable Length	None
IR Viewable Length	Wise IR 250m(820ft)
IR Illuminator (Optional)	None
IR Radiation angle	None
IR LED	None
IR Wavelength	None
IR Operation	None
Water Removal	Support (Spin dry)
Auto Tracking	Support 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

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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(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(20 users) / Multicast 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, UPnP, Bonjour, LLDP, CDP, SRTP(TCP, UDP Unicast), NTCIP 1205,
SIP support (VoIP, Peer-to-peer)	None
Security	None
Application Programming Interface	ONVIF Profile S/G/T/M SUNAPI(HTTP API) Wisenet open platform
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, SRTP, WSS(Websocket secure)
Access Control	Access control based on IP address
Data Protect	Authentication information encryption, ZIP compression encryption
Audit	User Access/System/Event log management
Device ID	Device Certificate(Hanwha Private Root CA)
Secure Storage	TPM(Trusted platform module), HTPM(Hanwha trusted platform module), SDcard partition encrypt
Security Certificate	TPM with FIPS 140-2 level 2
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 (512MBx2)
Memory	4GB RAM, 512MB Flash
Environmental & Electrical	
Operating Temperature / Humidity	Normal : -50°C~+55°C(-58°F ~ +131°F)/ +74°C(165°F)(Max) based on NEMA TS-2(2.2.7) * Start up should be done at above -30°C Less than 95%RH(Non-condensing)
Storage Temperature / Humidity	-50°C~+60°C(-58°F~+140°F) / 0~90% RH
Certification	IP66/IP67, IK10, NEMA4X Safety(UL, KC-SDOC), EMC(FCC, CE, VCCI, RCM, KC) NEMA-TS 2(2.2.7, 2.2.8, 2.2.9)
Input Voltage	HPoE(IEEE802.3bt type4, Class8, Injector included)
Power Consumption	HPoE: Max 62W, typical 23W
Mechanical	
Color / Material	White / Aluminum
RAL Code	RAL9003
Product Dimensions / Weight	ø188x264.9mm(ø7.40x10.47") / 4400g (9.70lb)
Compatible Conduit hole / Gang	None
Hanging Mount (Dome)	SBP-156HMMW
Skin Cover	None
Skin Cover (Dome)	None
Weather Cap (Dome)	None
Power Module	None
Backbox	None
Ceiling Mount (Assy)	SBP-156CMW, SBP-300CMTS, SBP-300CMW1/900CMW, SBP-150CMI/300CMI
Wall Mount	SBP-156WMW, SBP-390WMW2
Pole Mount	SBP-300PMW2
In-ceiling Mount	None
Parapet Mount	SBP-156LMW, SBP-300LMW
Corner Mount	SBP-156KMW, SBP-300KMW1
Tilt Mount	None
Housing (Box)	None
Cabinet	SBP-300NBW
Gang Plate	None
Conduit Adaptor	None
Other Compatible Models	None

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

KES Co., Ltd.

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Certifications & Standards	
Network	None
EMC	FCC 47 CFR 15 Subpart B Class A ICES-3(A)/NMB-3(A) CE/UKCA - EN 55032 Class A, EN 50130-4, EN 61000-3-2, EN 61000-3-3 VCCI CISPR 32 Class A RCM AS/NZS CISPR 32 Class A KS C 9832 Class A , KS C 9835
Safety	UL 62368-1, CAN/CSA C22.2 NO. 62368-1 IEC/EN 62471
Environment	IEC/EN 63000 IEC/EN 60529 IP66/IP67, IEC/EN 62262 IK10 NEMA TS 2-2013 (2.2.7, 2.2.8, 2.2.9) NEMA 250 type 4X
Video	None
DORI (EN62676-4 standard)	
Detect (25PPM/ 8PPF)	Wide: 131.4m(431.19ft) / Tele: 3397.3m(11146.16ft)
Observe (63PPM/ 19PPF)	Wide: 52.6m(172.48ft) / Tele: 1358.9m(4458.46ft)
Recognize (125PPM/ 38PPF)	Wide: 26.3m(86.24ft) / Tele: 679.5m(2229.23ft)
Identify (250PPM/ 76PPF)	Wide: 13.1m(43.12ft) / Tele: 339.7m(1114.62ft)
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
Lane Coverage	None
Vehicle Recognition	None
Available Countries	None
Wisenet Road AI LPR/ANPR/M	
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
Ver	
Ver	2311

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 100 V, 60 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-C9310R	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT
PoE Adapter	PT-PSE109GBRO-AH-S	PT2332221941	Dongguan PROCET Network Technology Co.,Ltd	R-R-LJ9-PSE109G BRO-A02

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Notebook 1	LG15N54	507NZET040180	LG	-
Notebook 1 Adapter	PA-1900-14	OF4A263348701J247	LITE-ON TECHNOLOGY COPORATION	-
Notebook 2	LG15N54	509NZSJ043910	LG	-
Notebook 2 Adapter	PA-1650-43(65W)	OF8DS63849302K347(1.2)	LITE-ON TECHNOLOGY (CHANGZHOU) CO.,LTD.	-
Optical Converter	SOL-SFC2000SFP(A)	S200150803588	Soltech Company	-
Optical Converter Adapter	FJ-SW1260502000DK	-	SHENZHEN FUJAI APPLIANCE CO., LTD.	-
Optical Module 1	TXC432-CU1M	-	-	-
Optical Module 2	TXC432-CU1M	-	-	-
Micro SD Card 1	-	-	Transcend	8GB
Micro SD Card 2	-	-	Snadisk	32GB

1.6 External I/O Cabling

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (EUT)	RJ-45 (PoE)	PoE Adapter (EUT)	RJ-45 (PoE)	2.0	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	-	-
Notebook 1 Adapter	DC Jack	Notebook 1	DC Jack	1.5	U
PoE Adapter (EUT)	RJ-45 (LAN)		RJ-45 (LAN)	3.1	U
	SFP		SFP	-	-
	Ground	Enclosure Ground	Ground	2.0	-
Optical Converter	SFP	Optical Module 2	SFP	-	-
	DC Jack	Optical Converter Adapter	DC Jack	1.4	U
	RJ-45 (LAN)	Notebook 2	RJ-45 (LAN)	2.0	U
Notebook 2 Adapter	DC Jack		DC Jack	1.5	U

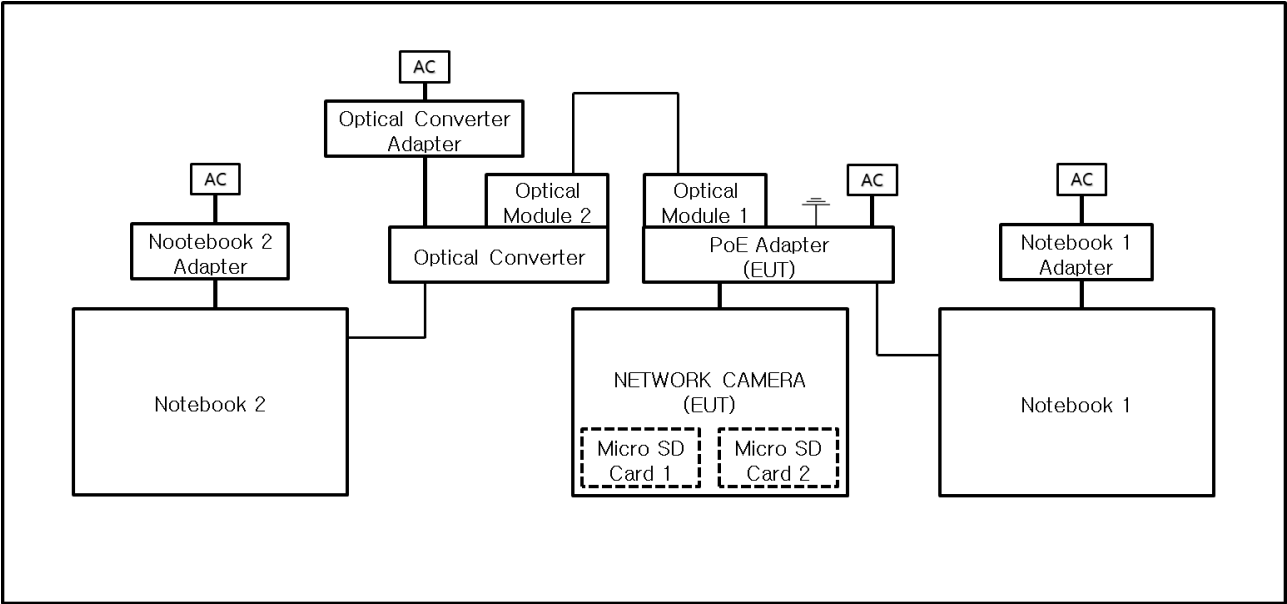
* Unshielded=U, Shielded=S

1.7 EUT Operating Mode(s)

Test mode	operating
Operating	1. Run the Web Viewer on your Notebook and check the camera video output 2. PingTest from your Notebook to check the network status 3. After the test, the Micro SD Card storage file was checked.

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

1.8 Configuration



1.9 Remarks when standards applied

The mains power ports were excluded tested, because the EUT operated by PoE powered.

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:

☒ **VCCI-CISPR 32:2016**

☒ Class A

☐ Class B

2.1 Conducted Emissions Mains Power Ports

Test Date

Oct. 23, 2023

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, 11, 2023
☒	LISN	ENV216	R & S	101787	11, 10, 2023
☒	LISN	ESH2-Z5	R & S	100450	11, 10, 2023
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 10, 2023

Test Conditions

Temperature: (22,8 ± 0,0) °C

Relative Humidity: (46,8 ± 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.

2.2 Conducted Emissions at Telecommunication Ports

Test Date

Oct. 23, 2023

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, 11, 2023
☒	LISN	ENV216	R & S	101787	11, 10, 2023
☒	LISN	ESH2-Z5	R & S	100450	11, 10, 2023
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 10, 2023
☐	8-WIRE ISN CAT3,5	ENY81	R & S	100174	11, 22, 2023
☒	8-WIRE ISN CAT6	ENY81-CAT6	R & S	101665	11, 22, 2023

Test Conditions

Temperature: (22,8 ± 0,0) °C

Relative Humidity: (46,8 ± 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

Oct. 23, 2023

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	03, 21, 2024
☒	AMPLIFIER	SCU 01	R & S	100603	11, 10, 2023
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	11, 17, 2024
☒	ATTENUATOR	8491A	HP	32173	03, 03, 2024

Test Conditions

Temperature: (22,5 ± 0,0) °C

Relative Humidity: (46,9 ± 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

Oct. 23, 2023

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, 06, 2024
☒	ATTENUATOR	8491A	HP	35496	03, 03, 2024
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 06, 2024

Test Conditions

Temperature: (22,9 ± 0,0) °C

Relative Humidity: (46,8 ± 0,2) % 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.

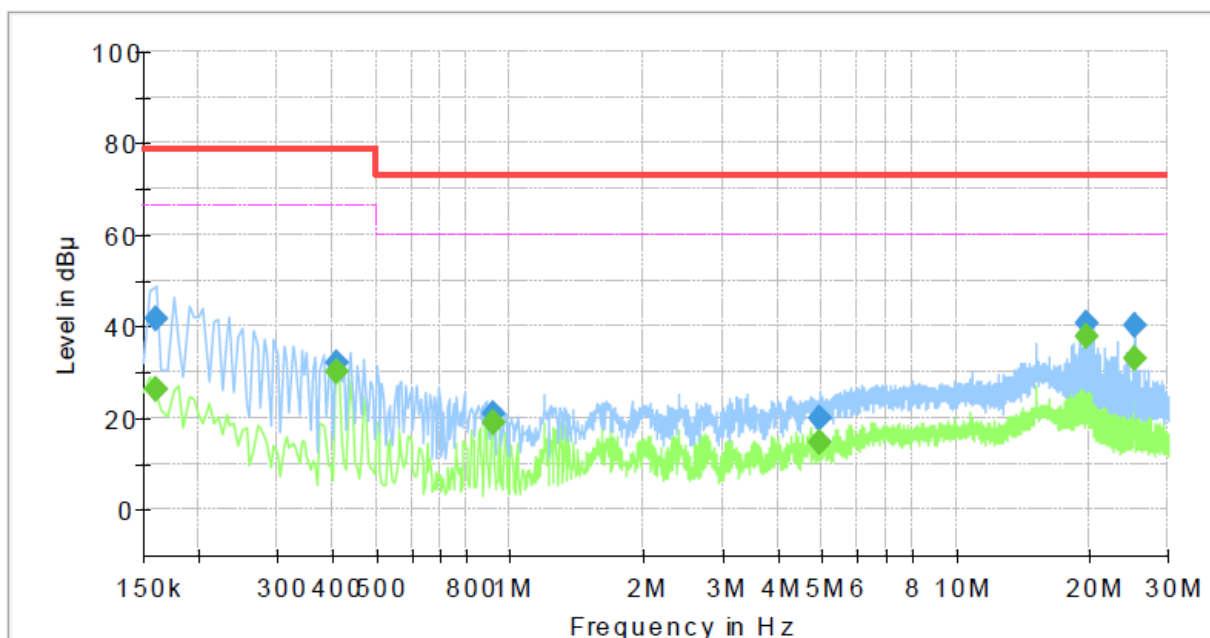
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

HOT LINE

Common Information

Test Description: Conducted Emission
 Model No.: XNP-C9310R
 Phase: L1
 Mode:
 Operator Name: KES



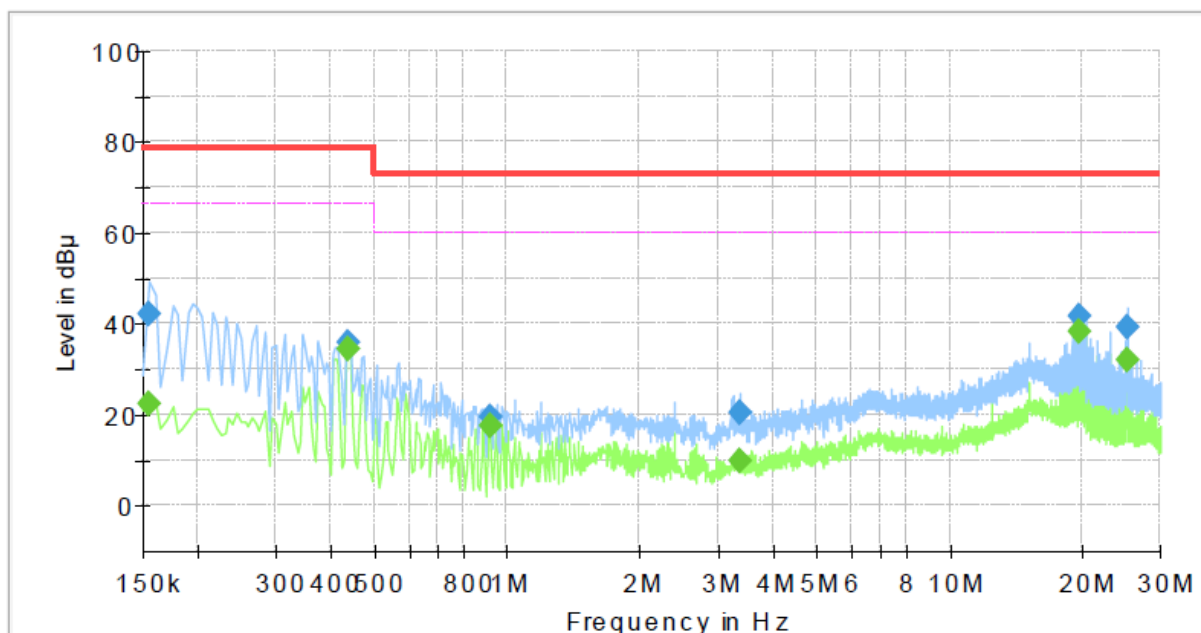
Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	26.41	66.00	39.59	1000.0	9.000	L1	19.4
0.160000	41.57	---	79.00	37.43	1000.0	9.000	L1	19.4
0.410000	---	30.03	66.00	35.97	1000.0	9.000	L1	19.4
0.410000	31.83	---	79.00	47.17	1000.0	9.000	L1	19.4
0.915000	---	19.16	60.00	40.84	1000.0	9.000	L1	19.5
0.915000	20.98	---	73.00	52.02	1000.0	9.000	L1	19.5
4.955000	---	14.52	60.00	45.48	1000.0	9.000	L1	19.7
4.955000	19.87	---	73.00	53.13	1000.0	9.000	L1	19.7
19.710000	---	37.55	60.00	22.45	1000.0	9.000	L1	20.2
19.710000	40.89	---	73.00	32.11	1000.0	9.000	L1	20.2
25.195000	---	33.14	60.00	26.86	1000.0	9.000	L1	20.3
25.195000	40.12	---	73.00	32.88	1000.0	9.000	L1	20.3

NEUTRAL LINE

Common Information

Test Description: Conducted Emission
 Model No.: XNP-C9310R
 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)
0.155000	---	22.48	66.00	43.52	1000.0	9.000	N	19.4
0.155000	42.22	---	79.00	36.78	1000.0	9.000	N	19.4
0.440000	---	34.62	66.00	31.38	1000.0	9.000	N	19.4
0.440000	35.79	---	79.00	43.21	1000.0	9.000	N	19.4
0.915000	---	17.34	60.00	42.66	1000.0	9.000	N	19.5
0.915000	19.38	---	73.00	53.62	1000.0	9.000	N	19.5
3.370000	---	9.84	60.00	50.16	1000.0	9.000	N	19.6
3.370000	20.26	---	73.00	52.74	1000.0	9.000	N	19.6
19.710000	---	38.23	60.00	21.77	1000.0	9.000	N	20.2
19.710000	41.53	---	73.00	31.47	1000.0	9.000	N	20.2
25.205000	---	31.98	60.00	28.02	1000.0	9.000	N	20.3
25.205000	39.25	---	73.00	33.75	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.

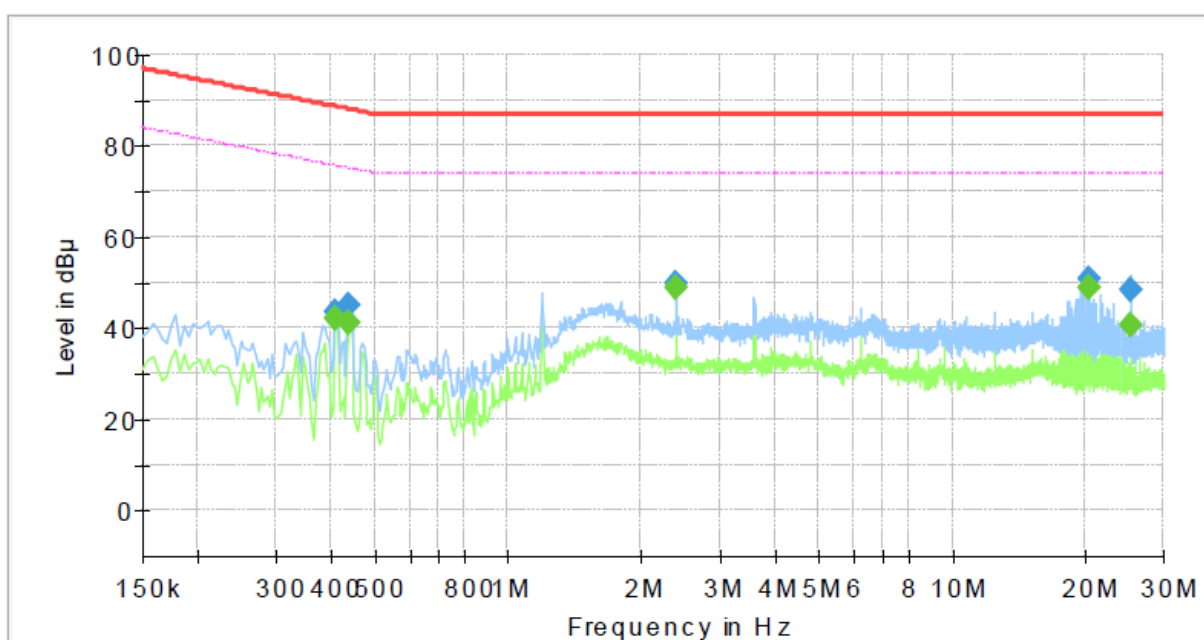
Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

Conducted Emissions at Telecommunication Ports

[1 000 Mbps]

Common Information

Test Description: Telecommunication Emission
 Model No.: XNP-C9310R
 Mode :
 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	---	42.23	75.65	33.42	1000.0	9.000	Single Line	19.1
0.410000	43.34	---	88.65	45.31	1000.0	9.000	Single Line	19.1
0.438000	---	40.91	75.10	34.19	1000.0	9.000	Single Line	19.1
0.438000	45.02	---	88.10	43.08	1000.0	9.000	Single Line	19.1
2.386000	---	48.79	74.00	25.21	1000.0	9.000	Single Line	19.3
2.386000	49.97	---	87.00	37.03	1000.0	9.000	Single Line	19.3
20.258000	---	48.91	74.00	25.09	1000.0	9.000	Single Line	20.1
20.258000	50.74	---	87.00	36.26	1000.0	9.000	Single Line	20.1
25.226000	---	40.64	74.00	33.36	1000.0	9.000	Single Line	20.3
25.226000	48.24	---	87.00	38.76	1000.0	9.000	Single Line	20.3

♦ Calculation

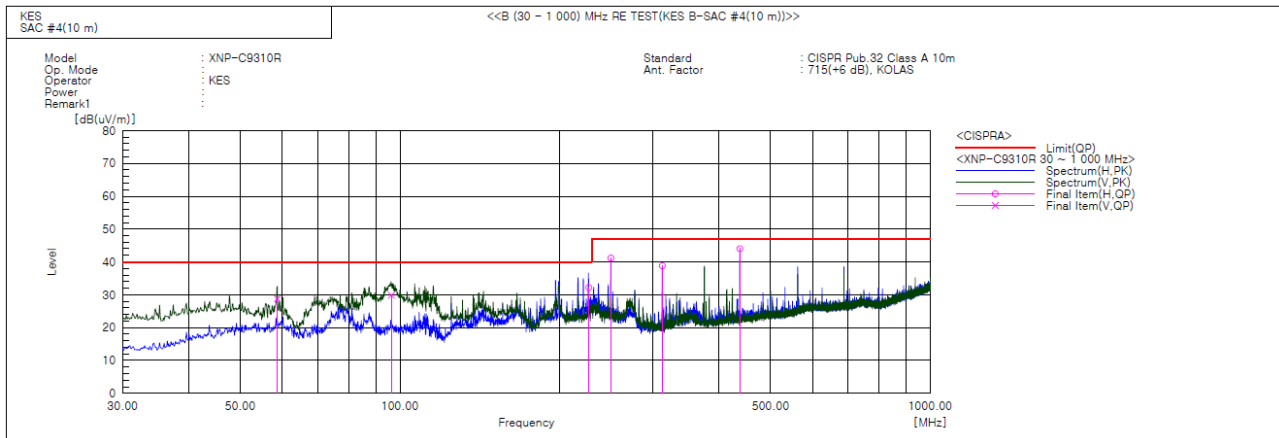
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

Corr. : Correction values (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	58.729	V	50.1	-21.3	28.8	40.0	11.2	105.0	262.0	
2	96.321	V	52.2	-22.3	29.9	40.0	10.1	111.0	82.0	
3	227.011	H	51.5	-19.3	32.2	40.0	7.8	390.0	199.0	
4	250.014	H	60.0	-18.8	41.2	47.0	5.8	383.0	214.0	
5	312.524	H	55.6	-16.8	38.8	47.0	8.2	388.0	243.0	
6	437.532	H	56.7	-12.7	44.0	47.0	3.0	384.0	329.0	

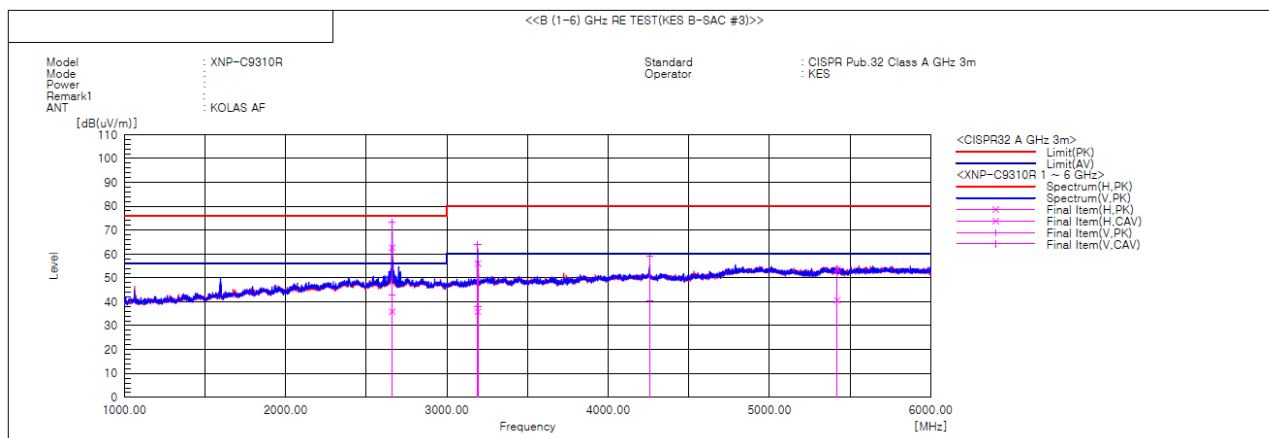
◆ Calculation

Corrected Amplitude [dBuV] = Amplitude[dBuV] + Correction Factor [dB]

Corrected Amplitude : The Final Value, Amplitude : Reading Value,

Correction Factor : ANT FACTOR + Cable loss

Radiated Electric Field Emissions(Above 1 GHz)



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	2660.340	V	66.5	35.8	6.9	73.4	42.7	76.0	56.0	2.6	13.3	100.0	293.0	
2	2661.000	H	55.8	29.0	6.9	62.7	35.9	76.0	56.0	13.3	20.1	100.0	6.2	
3	3191.090	V	55.4	29.2	8.6	64.0	37.8	80.0	60.0	16.0	22.2	100.0	290.8	
4	3192.130	H	47.4	27.3	8.6	56.0	35.9	80.0	60.0	24.0	24.1	100.0	162.7	
5	4256.070	V	47.0	28.2	12.0	59.0	40.2	80.0	60.0	21.0	19.8	100.0	287.9	
6	5419.676	H	37.7	24.8	15.8	53.5	40.6	80.0	60.0	26.5	19.4	100.0	102.6	

◆ 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

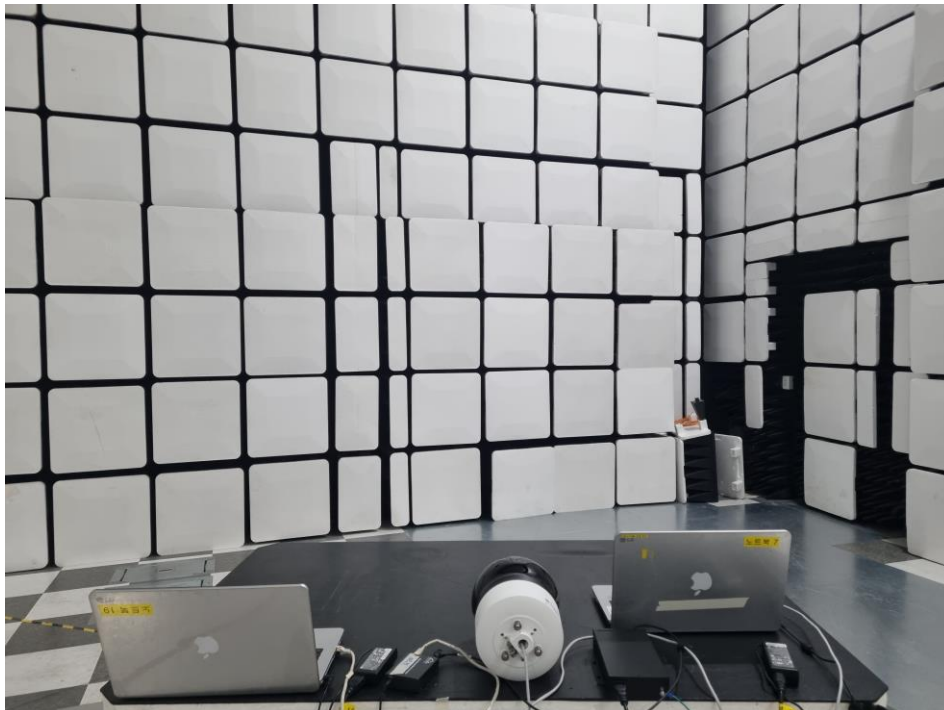
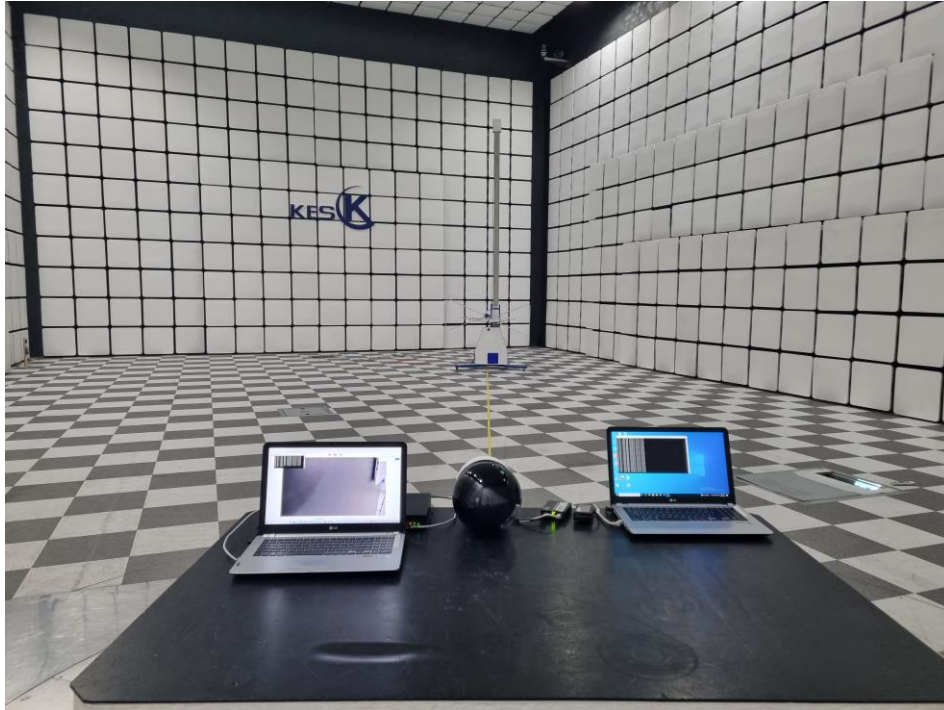
Conducted Emissions at Mains Power Ports



Conducted Emissions at Telecommunication Ports



Radiated Electric Field Emissions(Below 1 GHz)



Radiated Electric Field Emissions(Above 1 GHz)



EUT External Photographs

(Top)



(Bottom)



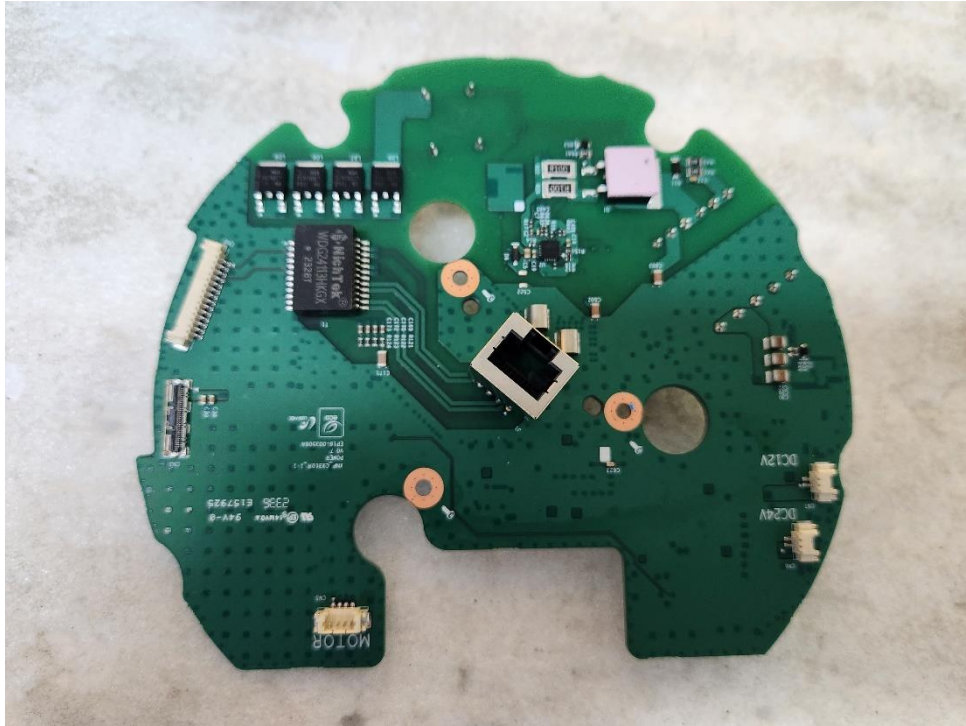
EUT Internal Photographs

(Internal View)

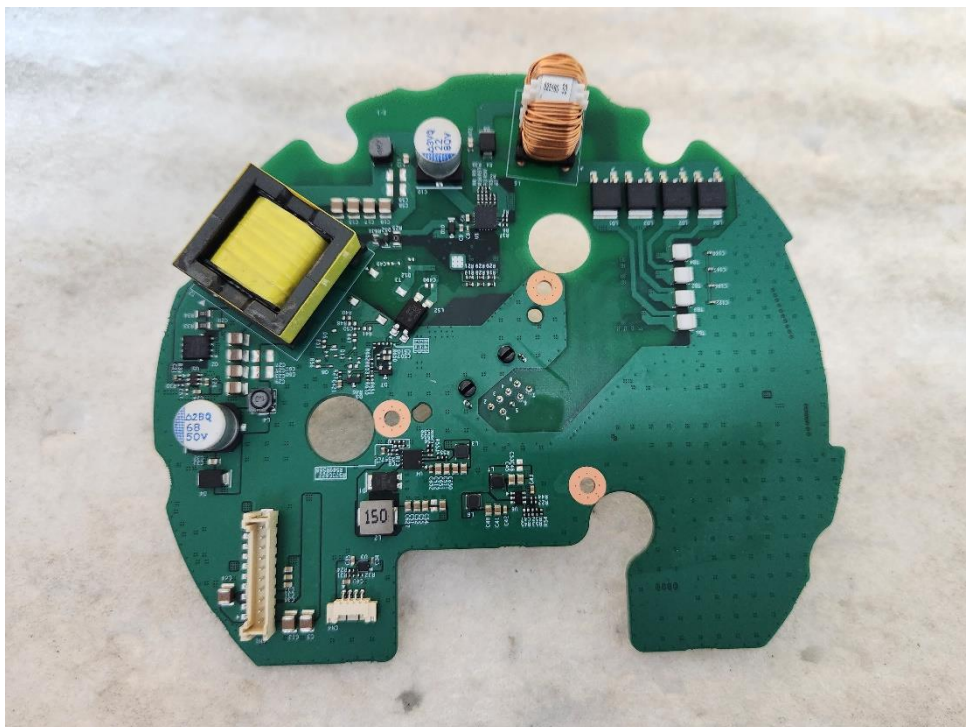


EUT Internal View – Main Board

(Top)

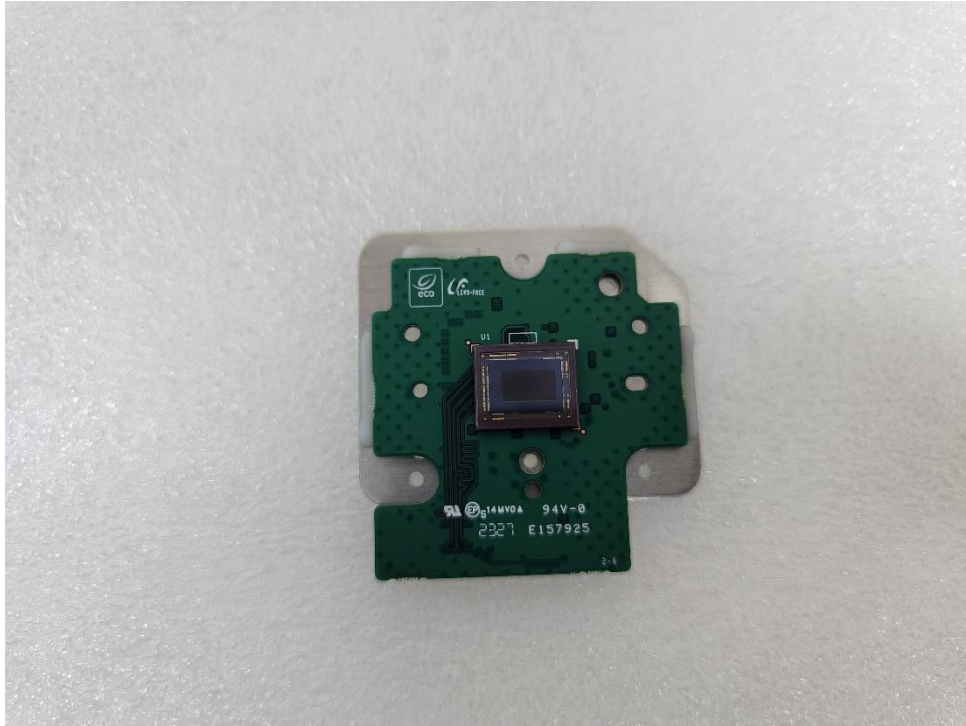


(Bottom)

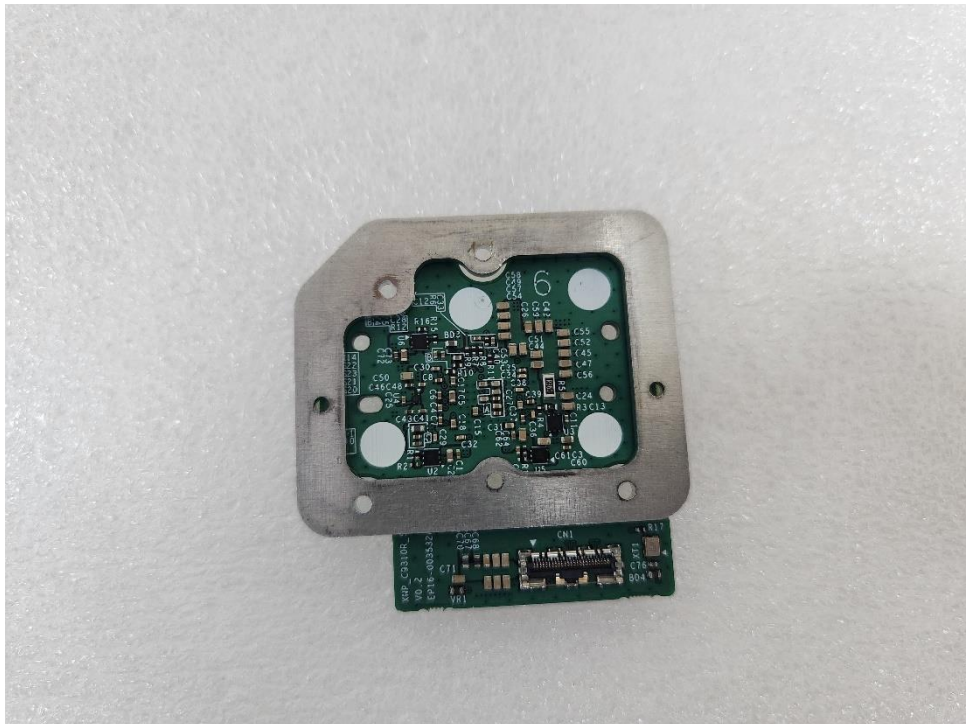


EUT Internal View – Lens Board

(Top)

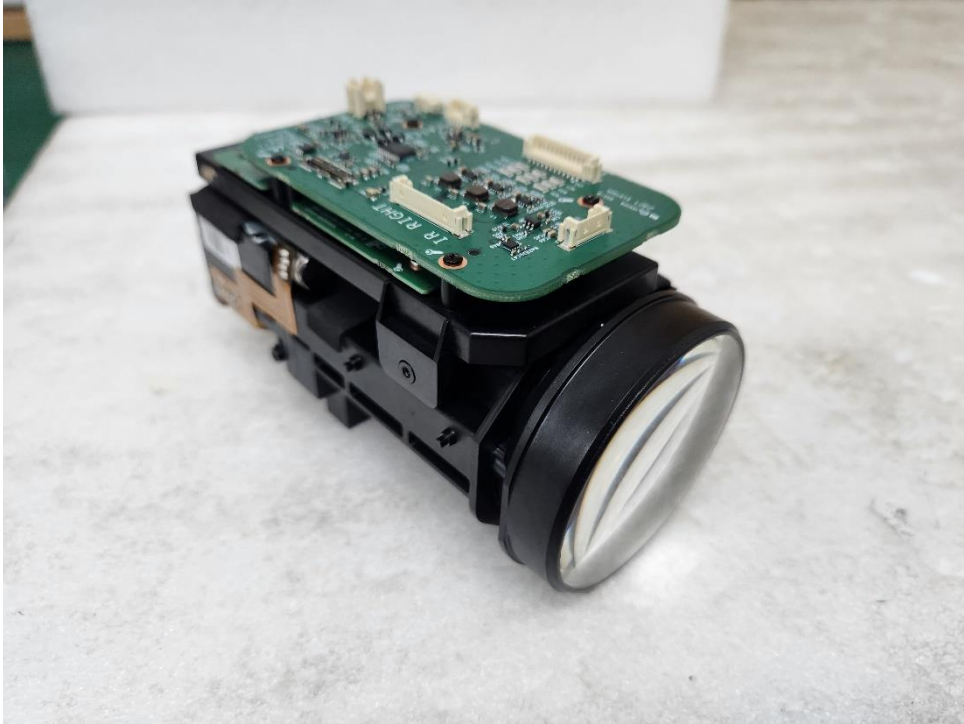


(Bottom)

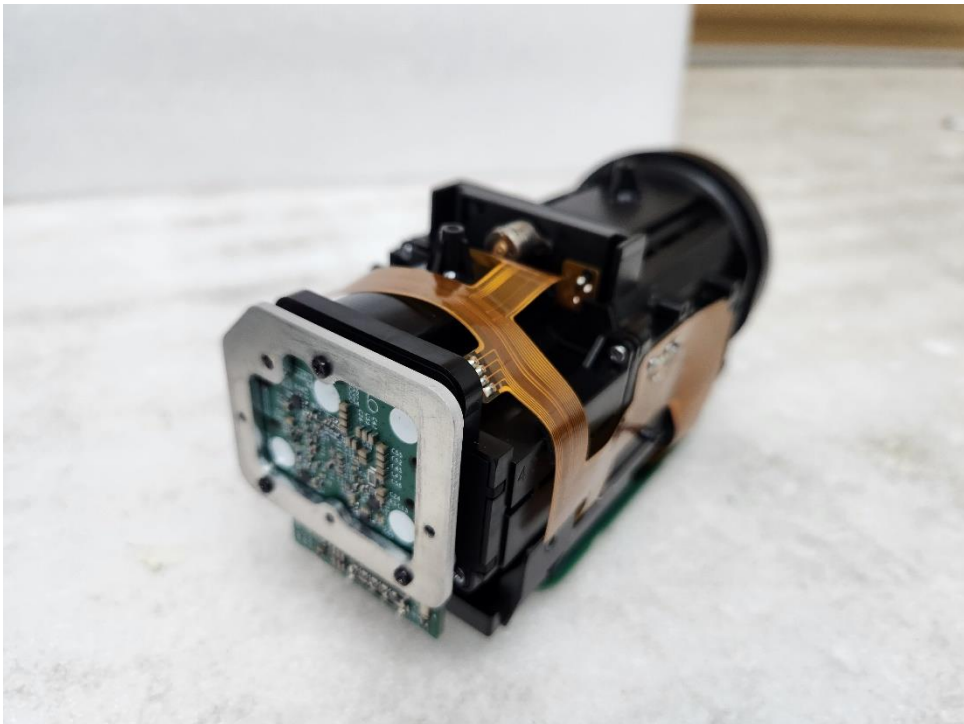


EUT Internal View – Lens

(Top)



(Bottom)

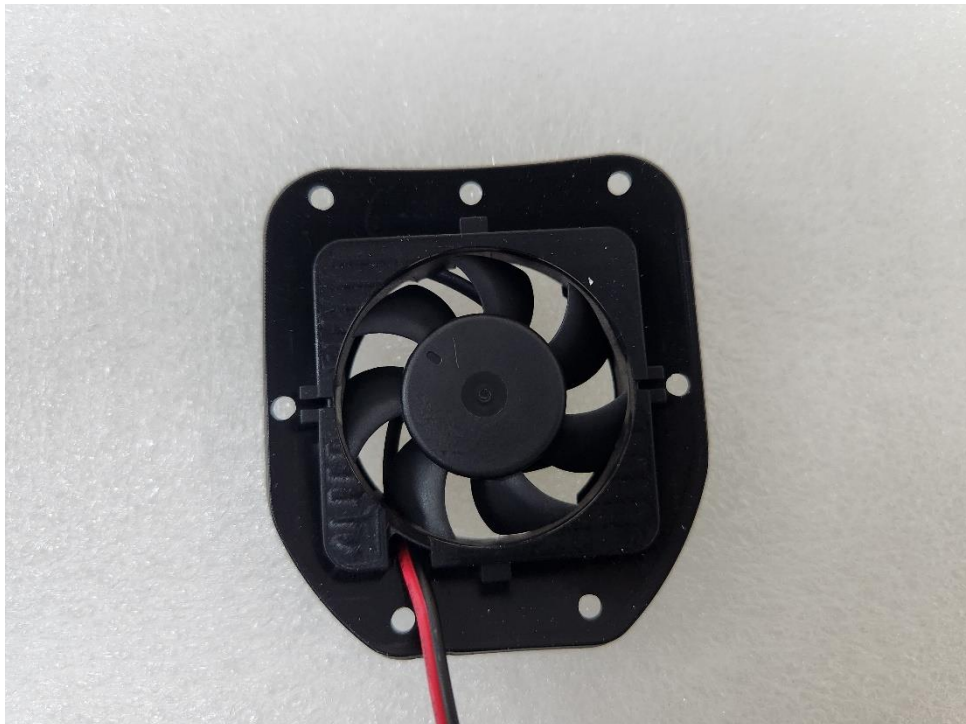


EUT Internal View – FAN 1

(Top)



(Bottom)



EUT Internal View – FAN 2

(Top)

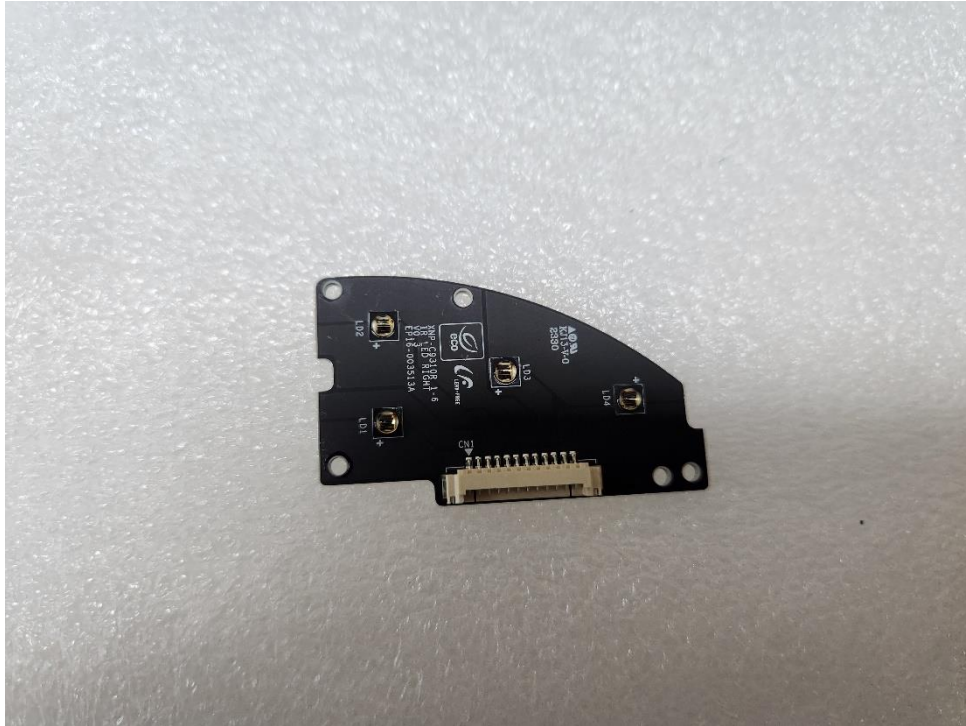


(Bottom)



EUT Internal View – IR Board 1

(Top)

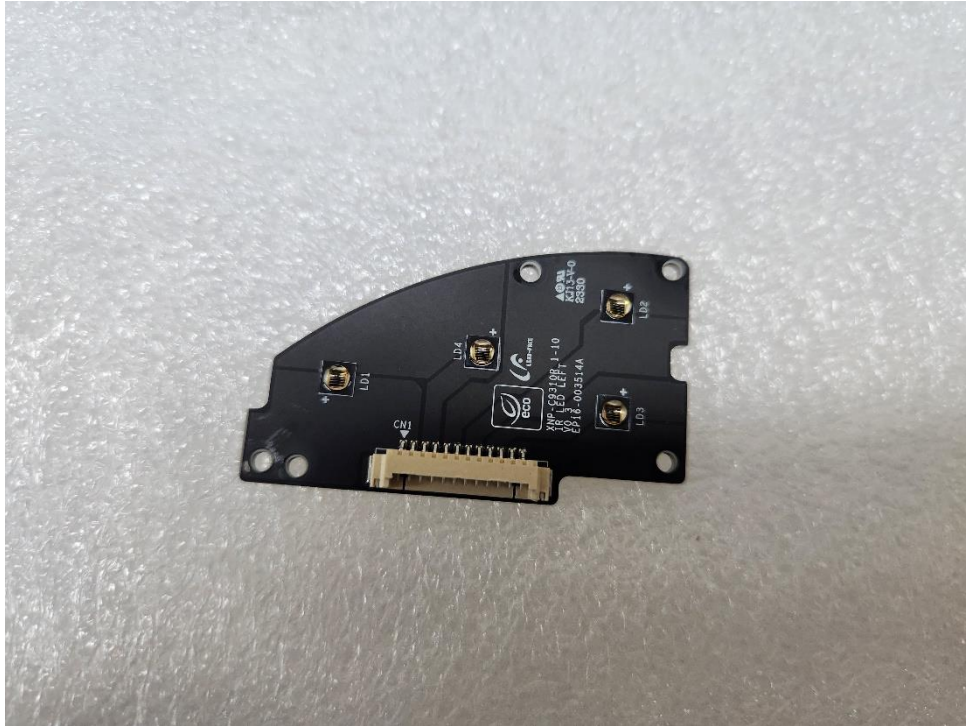


(Bottom)



EUT Internal View – IR Board 2

(Top)

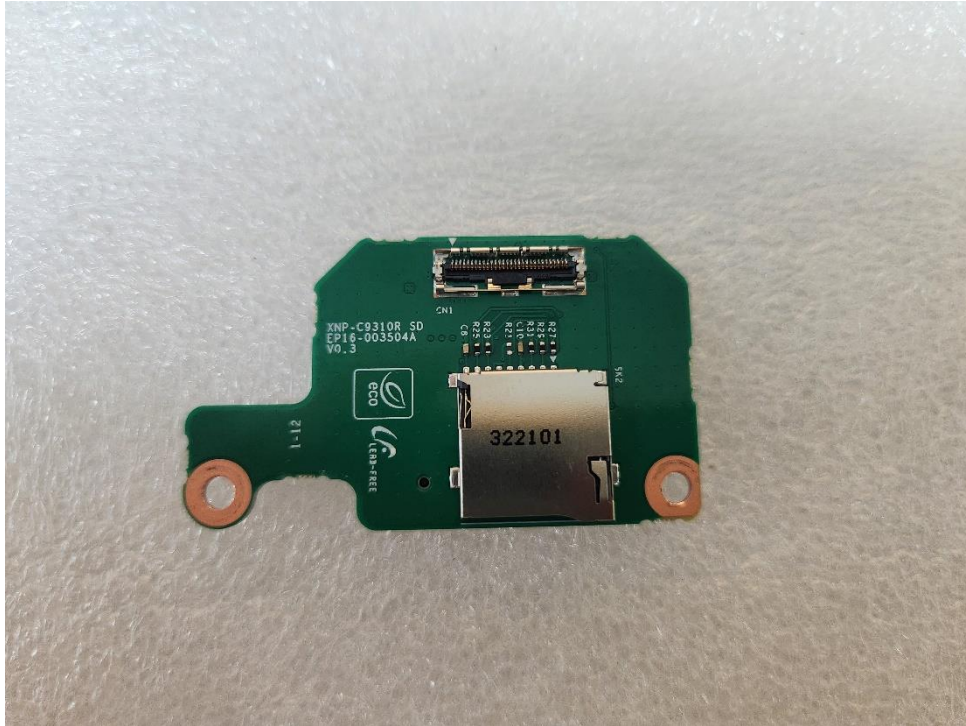


(Bottom)

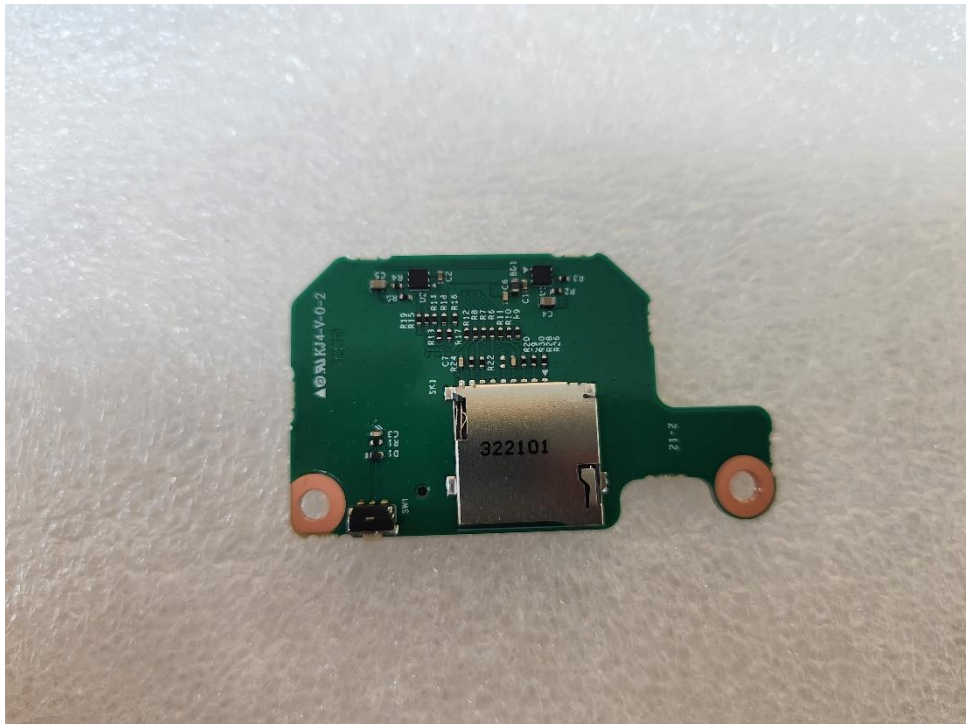


EUT Internal View – SD Card Board

(Top)

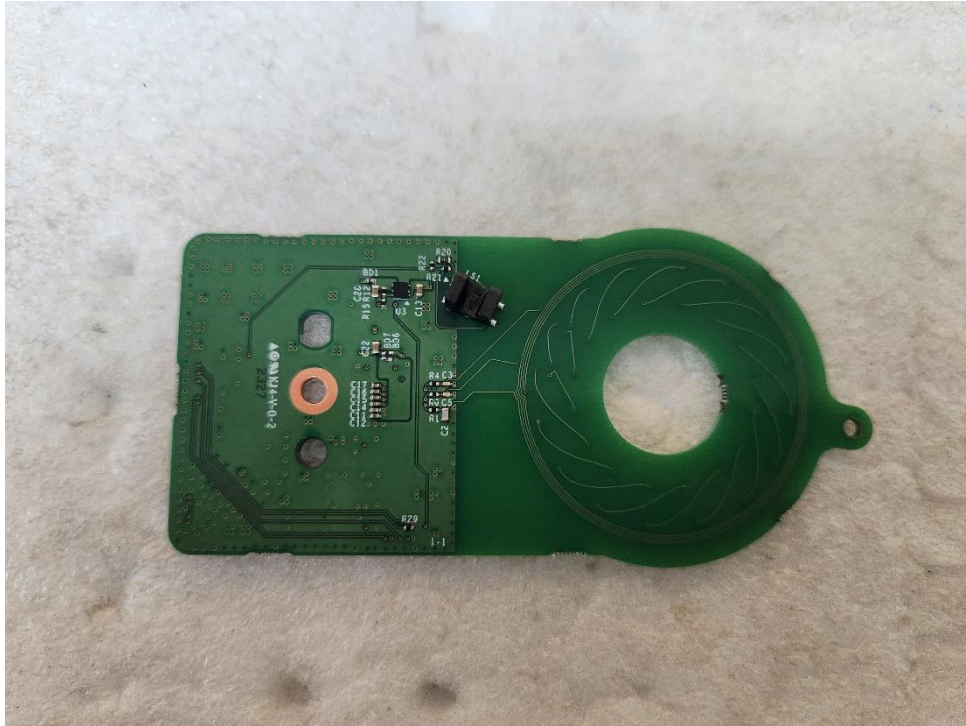


(Bottom)

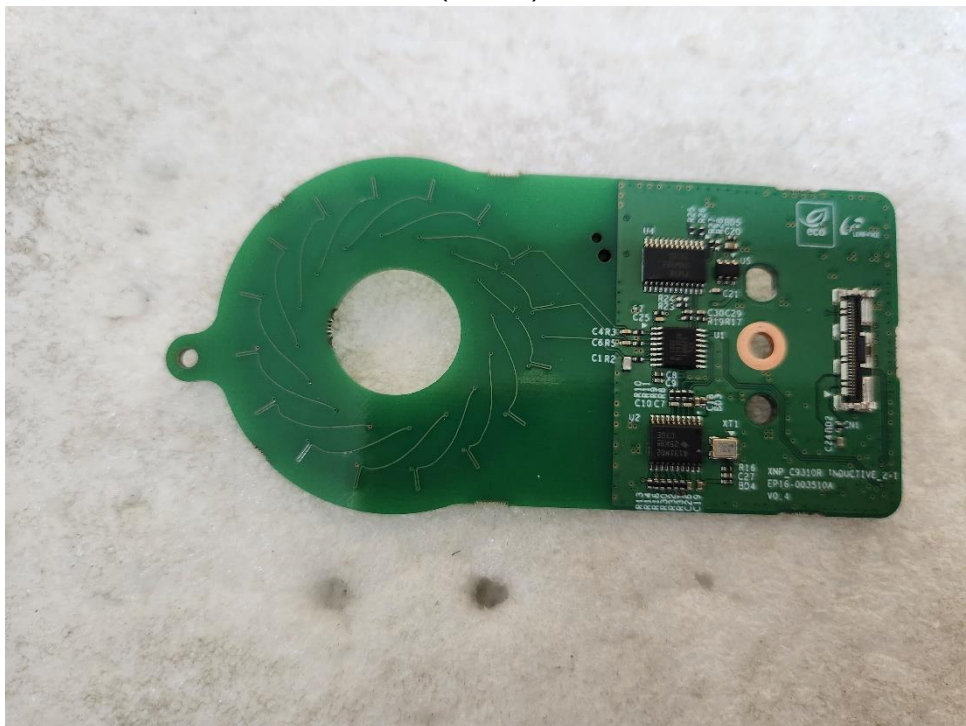


EUT Internal View – SUB Board 1

(Top)

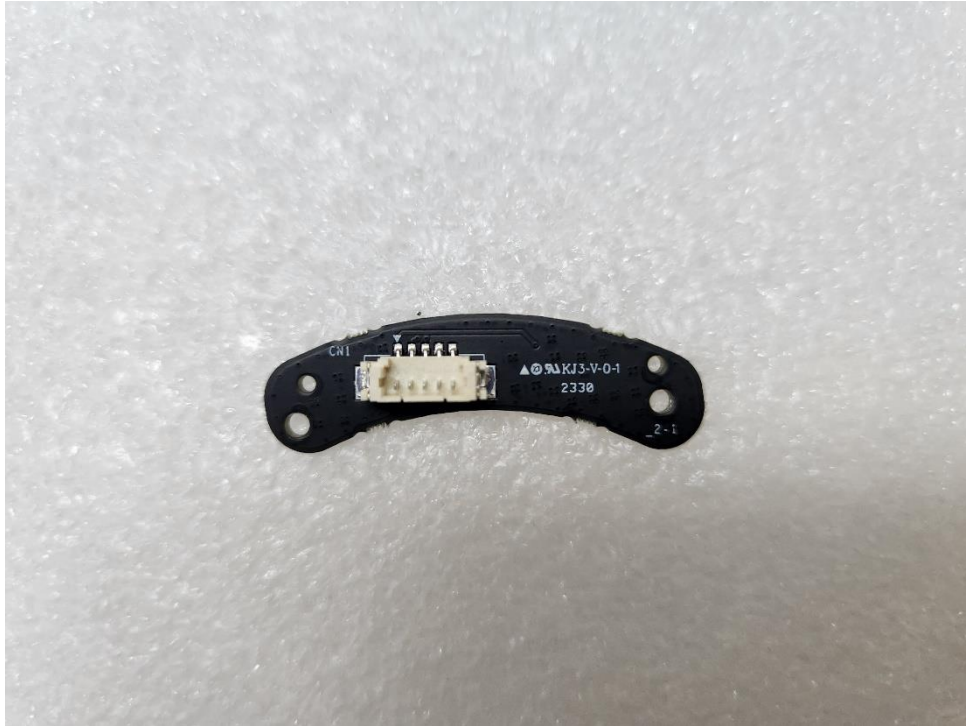


(Bottom)



EUT Internal View – SUB Board 2

(Top)



(Bottom)

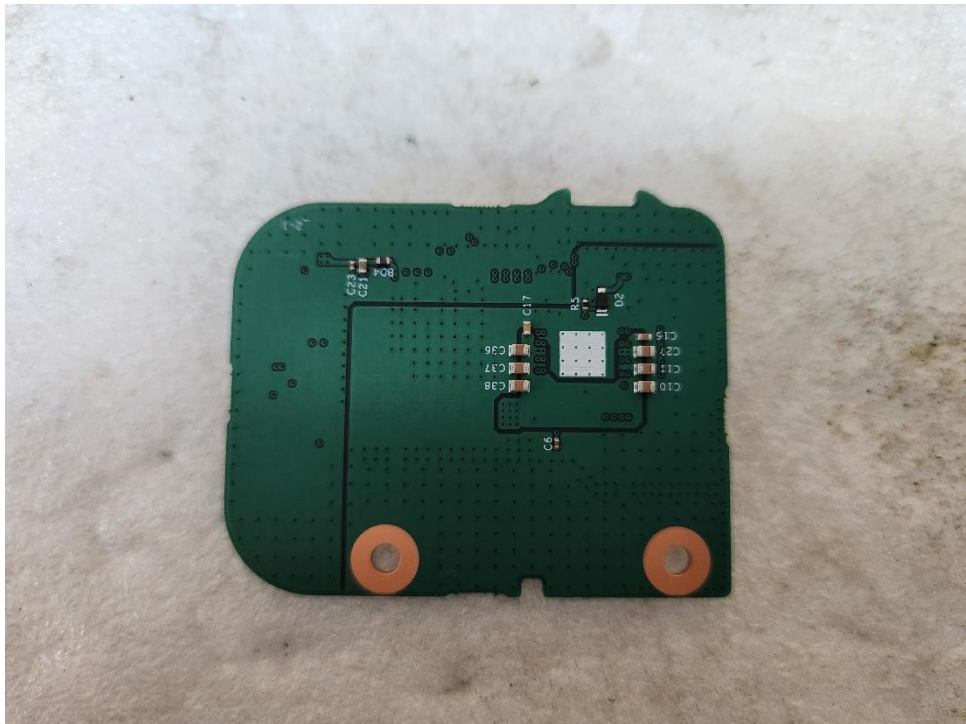


EUT Internal View – SUB Board 3

(Top)



(Bottom)



EUT Internal View – SUB Board 4

(Top)

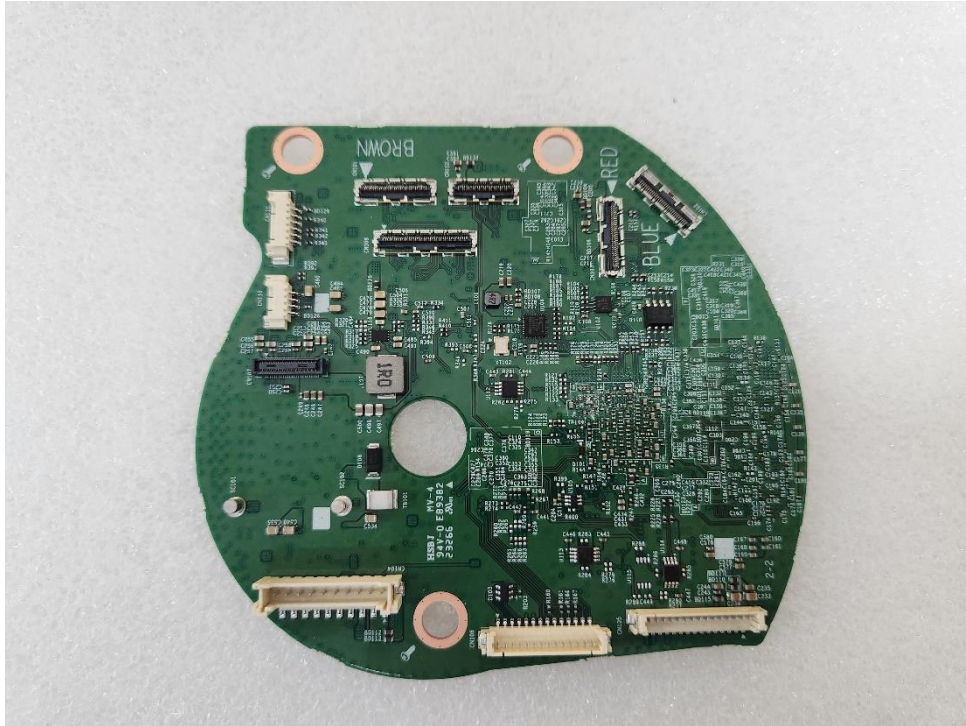


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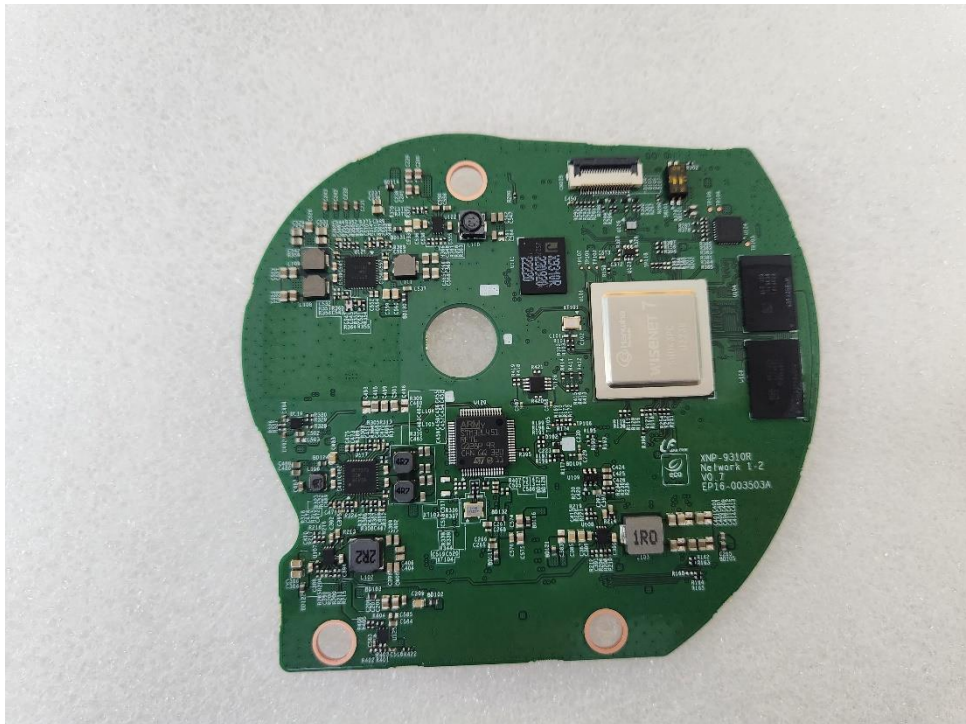


EUT Internal View – SUB Board 5

(Top)

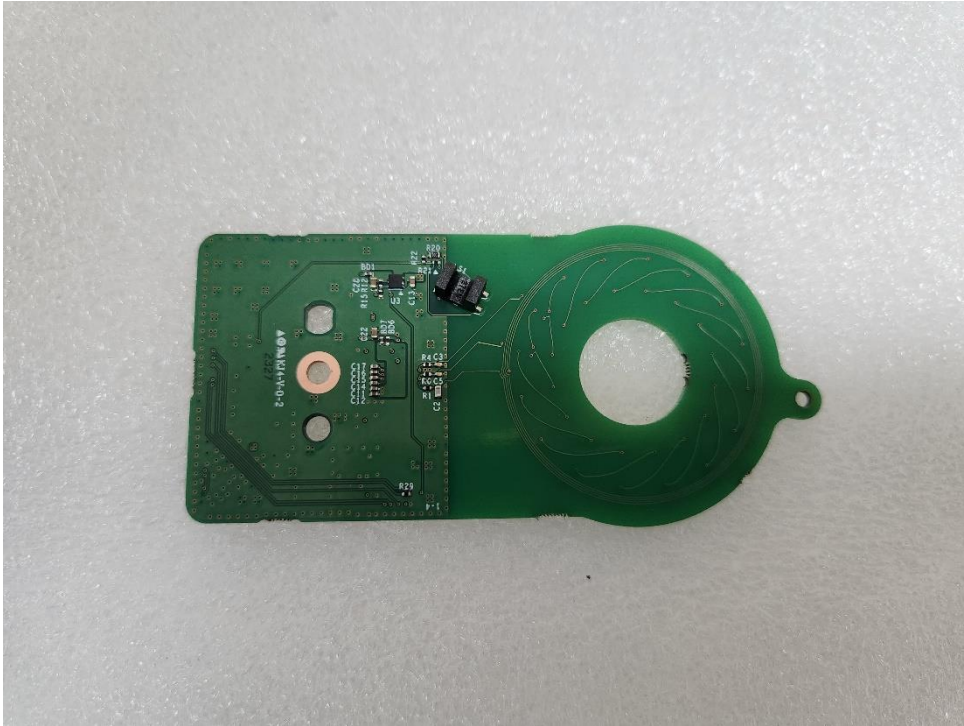


(Bottom)

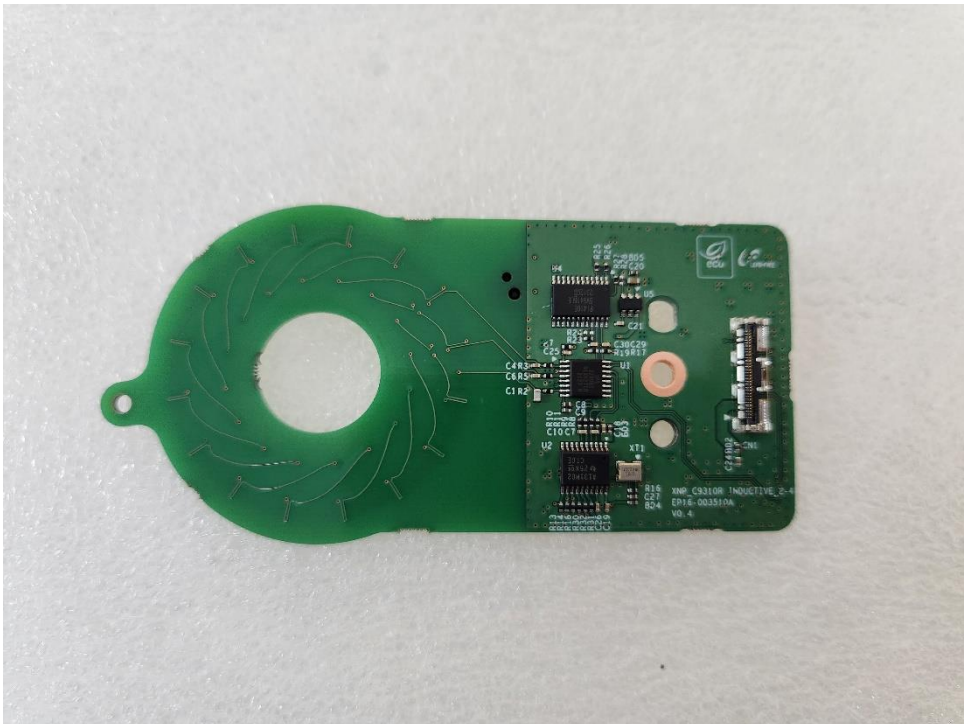


EUT Internal View – SUB Board 6

(Top)

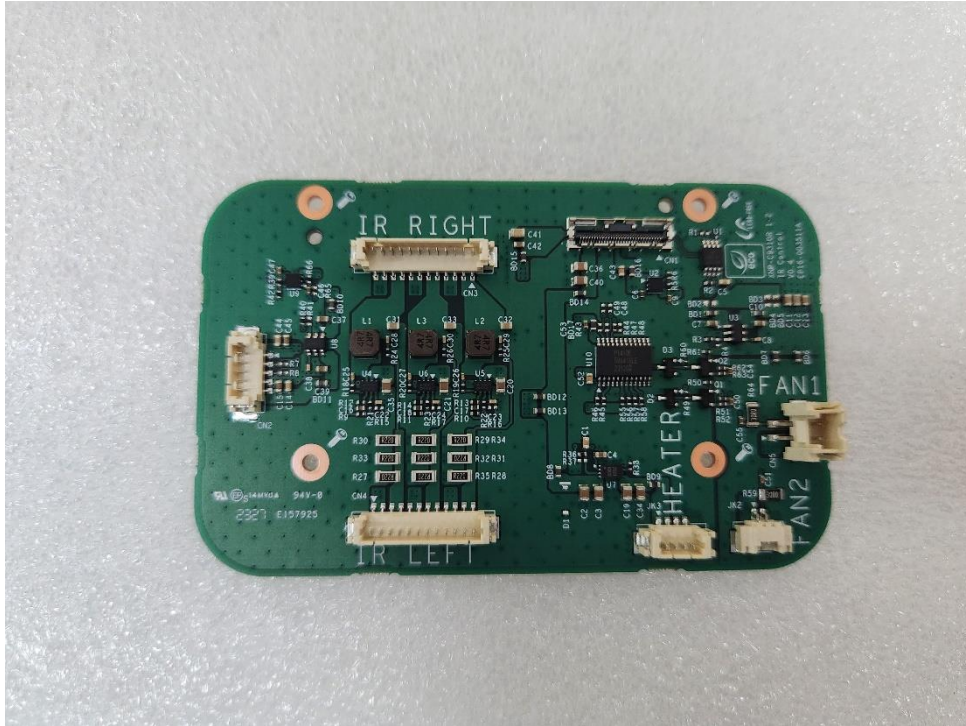


(Bottom)

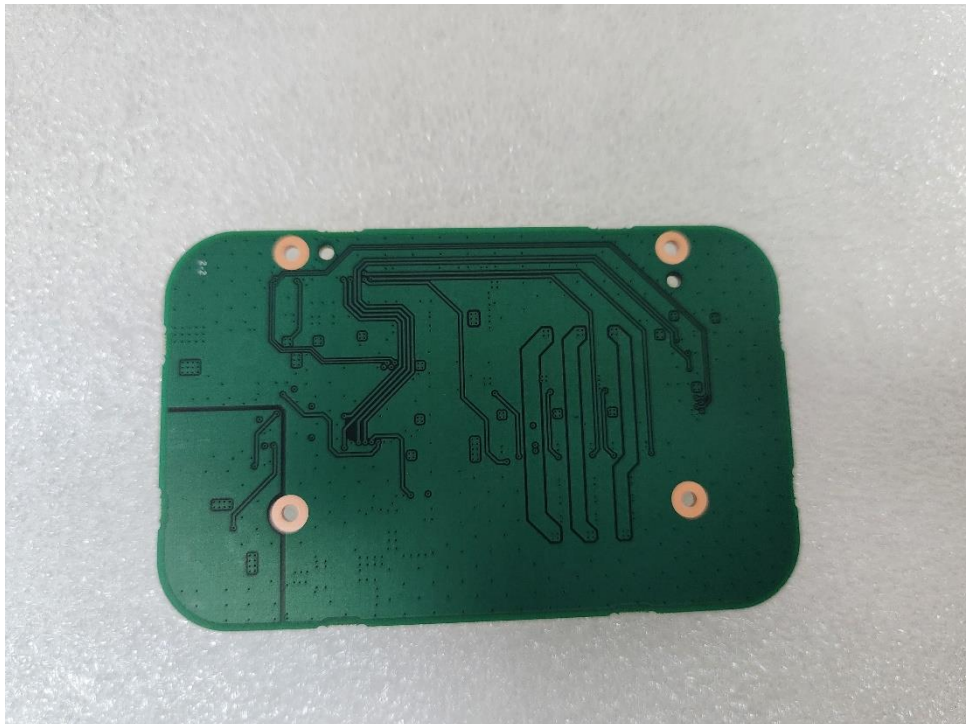


EUT Internal View – SUB Board 7

(Top)

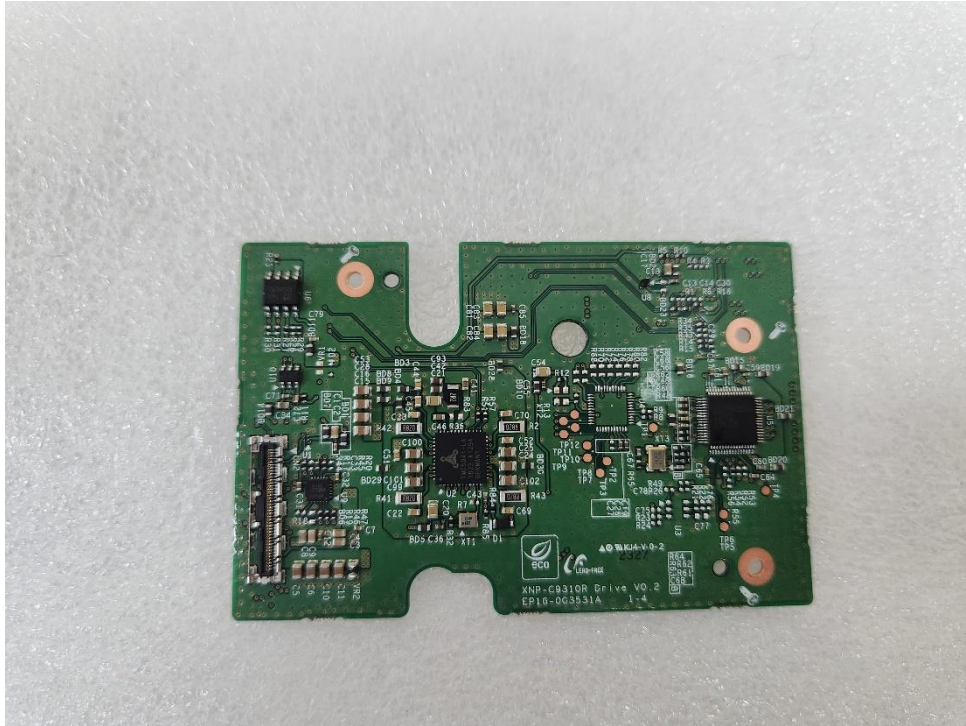


(Bottom)

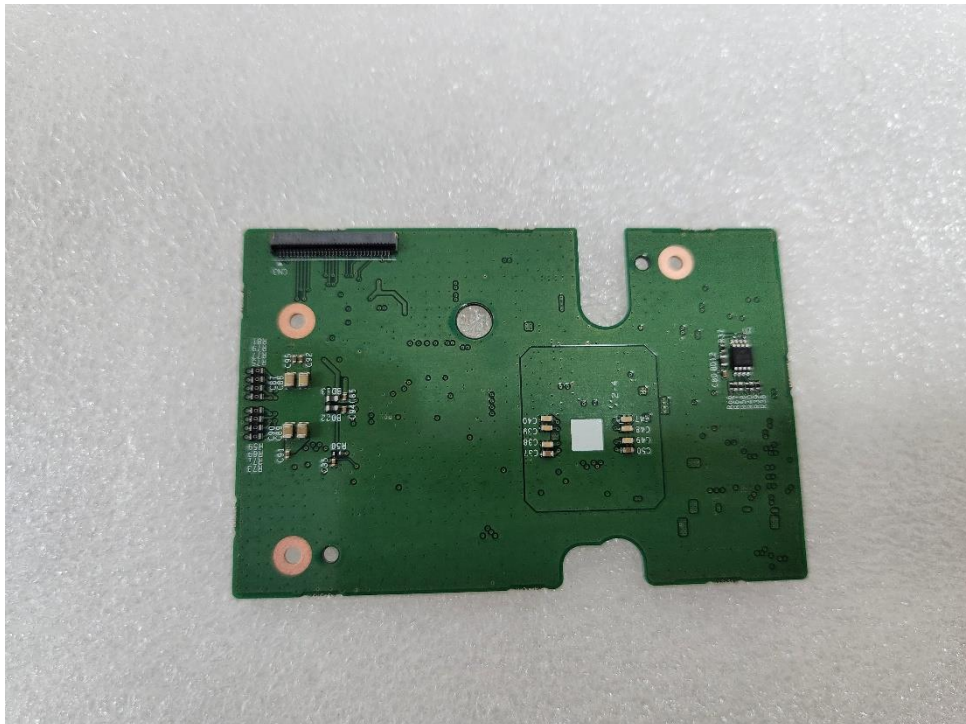


EUT Internal View – SUB Board 8

(Top)

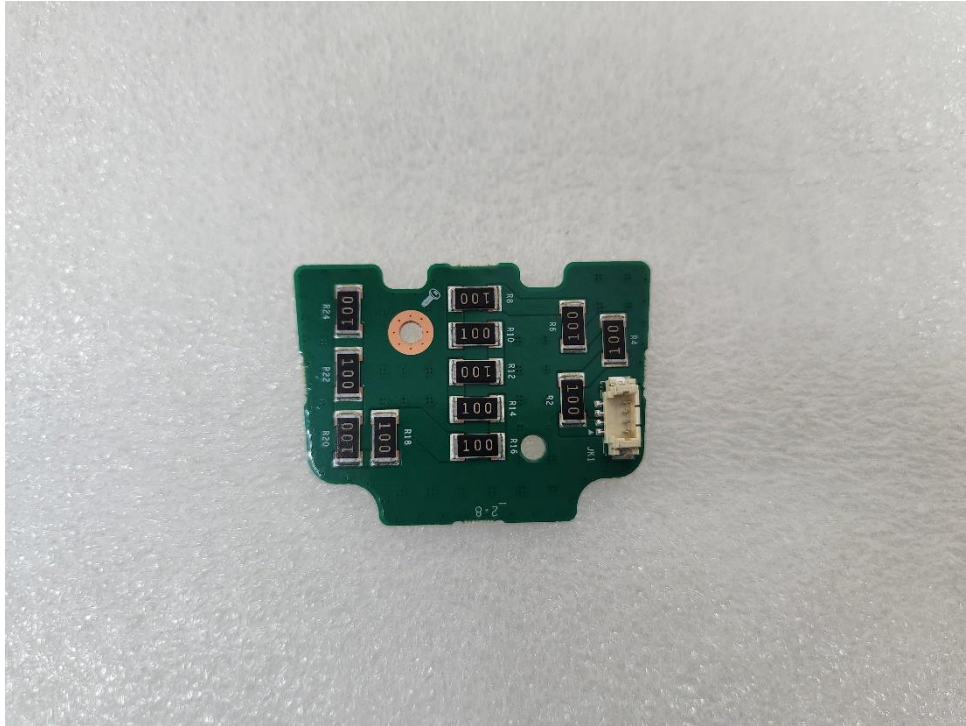


(Bottom)

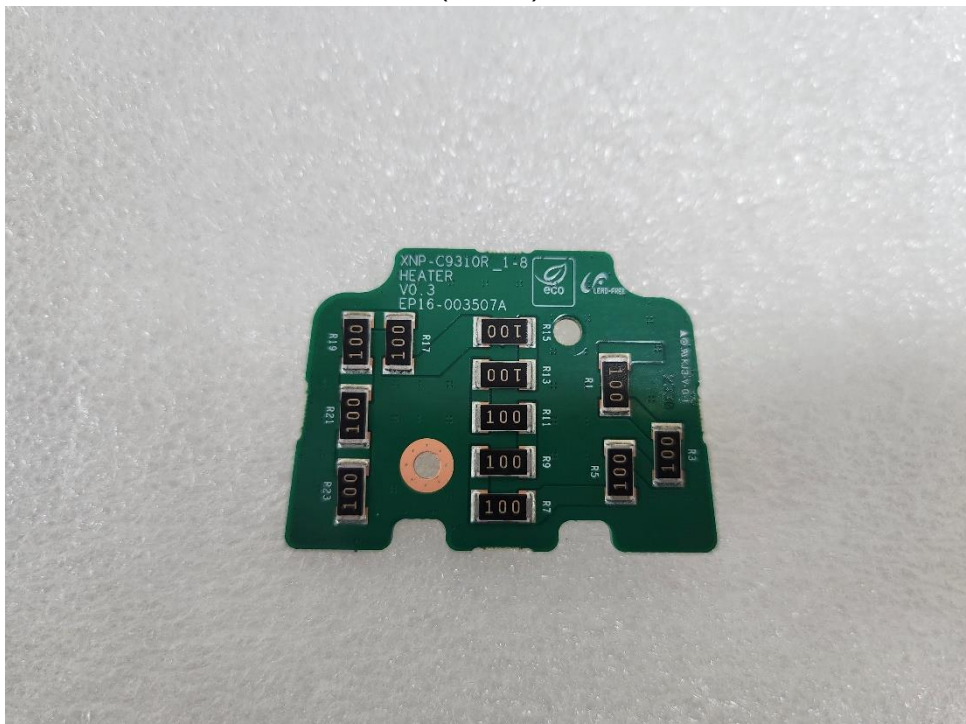


EUT Internal View – SUB Board 9

(Top)



(Bottom)



Label Photographs



この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A