

**KES Co., Ltd.**

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Report No.:

KES-EM-20T0802-R1

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EMC TEST REPORT For RCM

Test Report No. : KES-EM-20T0802-R1
Date of Issue : Jan. 07, 2021
Product name : NETWORK CAMERA
Model/Type No. : XNP-9250R
Variant Model : XNP-8250R
Applicant : Hanwha Techwin Co., Ltd.
Applicant Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si,
Gyeonggi-do, Republic of Korea
Manufacturer : 1. HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.
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 : Nov. 04, 2020
Test date : Nov. 06, 2020 ~ Nov. 07, 2020
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Min Seong, Kim
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
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
Nov. 20, 2020	KES-EM-20T0802	Issued
Jan. 07, 2021	KES-EM-20T0802-R1	Changed model name, variant model name and specification due to customer request.

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1.0 General Product Description

Main Specifications of EUT are:

	XNP-9250R
Video	
Imaging Device	1/2.8" 8MP CMOS
Effective Pixels	3864(H) x 2192(V)
Min. Illumination	Color: 0.1Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)
Video Out	None
Lens	
Focal Length (Zoom Ratio) TBD	5~125 mm (25x) zoom
Max. Aperture Ratio	F1.6(Wide)~F3.73(Tele)
Angular Field of View	H: 57.42°(Wide)~2.71°(Tele) / V: 33.54°(Wide)~1.55°(Tele)
Min. Object Distance	5m(16.4ft)
Focus Control	Oneshot AF, Focus save
Lens Type	DC auto iris
Pan / Tilt / Rotate	
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
Sequence	Preset(300 ea), Swing, Group(6 ea), Trace, Tour, Auto Run, Schedule, Preset trace recording
Preset Accuracy	±0.1°(±20°C by temperature at preset setting) / ±0.2°(other temperature)
Azimuth	Support
Auto Tracking	Object auto tracking(Person/Vehicle)
Operational	
IR Viewable Length	200 m(656.17 ft)
Camera Title	Displayed up to 85 characters, Direction Indicator
Day & Night	Auto(ICR)/Color/BW/Schedule
Backlight Compensation	BLC, HLC, WDR
Wide Dynamic Range	120 dB
Digital Noise Reduction	SSNR V
Digital Image Stabilization	Support(built-in gyro sensor)
Defog	Support
Motion Detection	8 ea, 8point polygonal zones 32 ea, polygonal Support
Privacy Masking	- Color: Grey/Green/Red/Blue/Black/White - Mosaic
Gain Control	Manual / Max
White Balance	ATW, NARROW ATW, Manual, AWC, OUTDOOR, INDOOR, MERCURY, SODIUM
LDC	None
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2~1/12,000 sec)
Video Rotation	Flip&Mirror

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Analytics	Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Shock detection * Audio detection, Sound classification(with NW I/O Box)
Business Intelligence	None
Serial Interface	None
Alarm I/O	None
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 * Alarm output(with NW I/O Box)
Audio In	None
Audio Out	None
Wiper / Waterdrop removal	Spinning Dry, Heat film
Network	
Ethernet	RJ-45(10/100BASE-T)
Video Compression	H.265/H.264,MJPEG
Resolution	3840 x 2160, 2592 x 1944, 2592 x 1464, 1920 x 1080, 1600 x 1200, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768, 800 x 600, 800 x 448, 720 x 576, 720 x 480, 640 x 480, 640 x 360, 320 x 240
Max. Framerate	H.265/H.264: Max. 30 fps / 25 fps(60 Hz / 50 Hz) MJPEG: Max. 30 fps / 25 fps(60 Hz / 50 Hz)
Smart Codec	Manual(5 ea area), WiseStreamII
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 (128 user) Multiple streaming(Up to 10 profiles)
Audio Compression	None
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
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)

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Edge Storage	Micro SD/SDHC/SDXC 2slot 1 TB
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet open platform
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	Supported OS: Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12 Recommended Browser: Google Chrome Supported Browser: MS Explore11, MS Edge, Mozilla Firefox(Window 64bit only), Apple Safari(Mac OS X only)
Memory	4 GB RAM, 512 MB Flash
Environmental	
Operating Temperature / Humidity	-40 °C ~ +55 °C (-40 °F ~ +131 °F) / Less than 95 % RH(Non-condensing) Start up should be done at above -30°C Maximum Temperature : +60°C(+140°F), intermittent Absolute maximum(According to NEMA TS2, 2.2.7) : +74°C
Storage Temperature / Humidity	-50°C~+60°C (-58°F~+140°F) / Less than 95% RH(Non-condensing)
Certification	IP66, IK10(Body only), NEMA4X, NEMA TS 2.2.9
Electrical	
Input Voltage	HPoE(IEEE802.3bt, Class6, Type 3)
Power Consumption	HPoE Max. 40 W, Typ. 20 W
Mechanical	
Color / Material	White / body(Aluminum),dome(PC)
RAL Code	None
Product dimensions / weight	Ø(158 x 293) mm, 3.1 kg
Conduit hole	None
Hanging mount(Dome)	None
Skin cover(Dome)	None
Weather cap(Dome)	None
Power module	None
Backbox	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.

Voltage ☒ 240 Vac ☐ 100 Vac ☐ 24 Vac ☐ 12 Vdc ☐ PoE

Frequency ☒ 50 Hz ☐ 60 Hz ☐ Hz

1.2 Variant Model Differences

Addition of derivative models for place of sale management

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	XNP-9250R	-	HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.	EUT
PoE Adapter	PT-PSE106GBR-AH-S	-	Dongguan PROCET Network Technology Co.,Ltd	-

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
PoE Switch	GS728TPP	-	NETGEAR	-
Notebook 1	HSN-Q07C	5CD8367KND	HP	-
Notebook 1 Adapter	HSTNN-CA40	WFTKU0ERLB4Q CH	HP	-
Notebook 2	ProBook4430s	-	HP	-
Notebook 2 Adapter	SeriesPPP0009H	-	CHICONY POWER TECHNOLOGY (SUZHOU) CO.,LTD,	-
Micro SD Card	-	-	SanDisk	16 GB

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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 Adapter (EUT)	PoE	1.0	U
	SLOT	Micro SD Card	SLOT	-	-
PoE Adapter (EUT)	SFP	PoE Switch	Optical	5.0	U
	LAN	Notebook 1	RJ-45	3.0	U
	Ground	Ground	Ground	2.0	U
PoE Switch	RJ-45	Notebook 2	RJ-45	2.0	U

* Unshielded=U, Shielded=S

1.7 EUT Operating Mode(s)

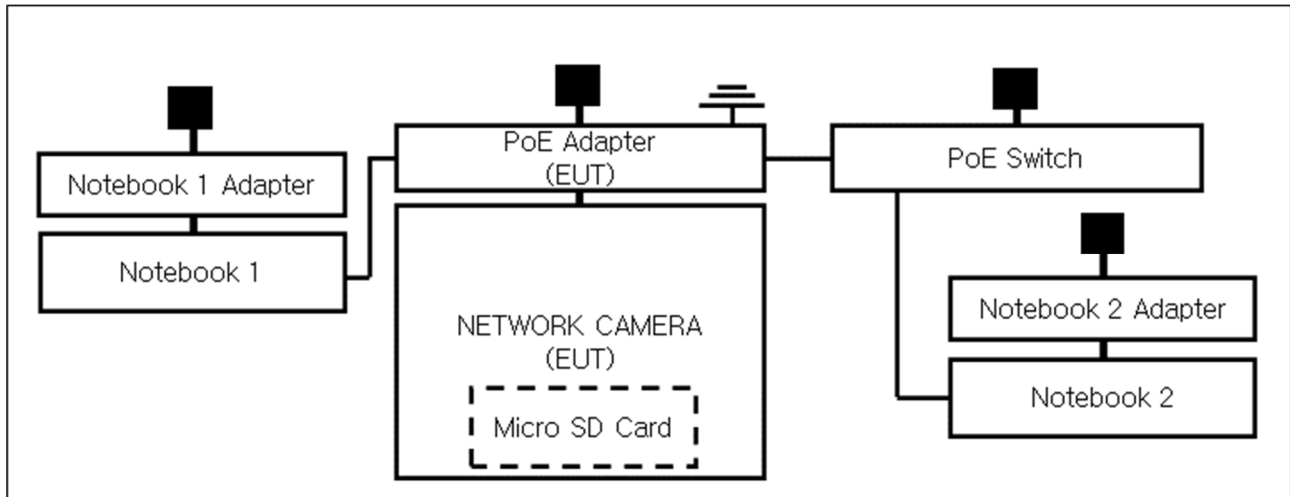
Test Mode	operating
Operating	Monitoring EUT Using Web Viewer, Ping Test

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

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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. The sites are constructed in conformance with the requirements of ANSI C63.4:2014 and CISPR 16-1-4:2012

1.12 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
KOREA	RRA	EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area 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, 10 m Open Area and Conducted test site to perform FCC Part 15/18 measurements.	 KR0100
Canada	ISED	3 m & 10 m Semi-Anechoic Chamber and Conducted test site	 23298-1
JAPAN	VCCI	Mains Ports Conducted Interference Measurement, Telecommunication Ports Conducted Disturbance Measurement and Radiation 10 meter site, Facility for measuring radiated disturbance above 1 GHz	 R-20056, C-20036, T-20040, G-20057
Europe	TÜV SÜD	EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area 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 61000-6-3:2011

☐ EN 61000-6-1:2007

☐ EN 61000-6-4:2007 +A1:2011

☐ EN 61000-6-2:2005

☐ EN 55011:2007 +A1:2010

☐ Group 1
☐ Class A

☐ Group 2
☐ Class B

☐ EN 55014-1:2006 +A2:2011

☐ EN 55014-2:1997 +A2:2008

☐ EN 55015:2013

☐ EN 55032:2015

☐ Class A

☐ Class B

☐ EN 55024:2010

☐ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013



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-
- | | | |
|--|---|----------------------------------|
| <input type="checkbox"/> VCCI-CISPR 32:2016 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input checked="" type="checkbox"/> AS/NZS CISPR32:2015 | <input checked="" type="checkbox"/> Class A | <input type="checkbox"/> Class B |
|
 | | |
| <input type="checkbox"/> 47 CFR Part 15, Subpart B | | |
| <input type="checkbox"/> CISPR 22:2009 +A1:2010 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> ANSI C63.4-2009 | | |
|
 | | |
| <input type="checkbox"/> IC Regulation ICES-003 : 2016 | | |
| <input type="checkbox"/> CAN/CSA CISPR 22-10 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> ANSI C63.4-2014 | | |
|
 | | |
| <input type="checkbox"/> RE- Directive 2014/53/EU | | |
|
 | | |
| <input type="checkbox"/> EN 301 489-1 V1.9.2 | | |
| <input type="checkbox"/> Equipment for fixed use | | |
| <input type="checkbox"/> Equipment for vehicular use | | |
| <input type="checkbox"/> Equipment for portable use | | |
|
 | | |
| <input type="checkbox"/> EN 301 489-3 V1.6.1 | | |
| <input type="checkbox"/> EN 301 489-17 V2.2.1 | | |
| <input type="checkbox"/> EN 60945:2002 | | |

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2.1 Conducted Emissions at Mains Power Ports

Test Date

Nov. 06, 2020

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	01, 20, 2021
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101787	12, 29, 2021
<input checked="" type="checkbox"/>	LISN	ESH2-Z5	R & S	100450	12, 29, 2021
<input checked="" type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 29, 2021

Test Conditions

Temperature: 21,8 °C
Relative Humidity: 46,1 % 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.

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2.2 Conducted Emissions at Telecommunication Ports

Test Date

Nov. 06, 2020

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	01, 20, 2021
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101787	12, 29, 2021
<input checked="" type="checkbox"/>	LISN	ESH2-Z5	R & S	100450	12, 29, 2021
<input checked="" type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 29, 2021
<input checked="" type="checkbox"/>	8-WIRE ISN CAT3,5	ENY81	R & S	100174	12, 30, 2021
<input type="checkbox"/>	8-WIRE ISN CAT6	ENY81-CAT6	R & S	101665	12, 30, 2021
<input type="checkbox"/>	CDN	CDNS502A	TESEQ	40431	12, 29, 2021

Test Conditions

Temperature: 21,8 °C
Relative Humidity: 46,1 % 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.

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2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Nov. 06, 2020

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	04, 01, 2021
<input checked="" type="checkbox"/>	AMPLIFIER	SCU 01	R & S	100603	11, 25, 2021
<input checked="" type="checkbox"/>	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	12, 08, 2022
<input checked="" type="checkbox"/>	ATTENUATOR	8491A	HP	32173	03, 10, 2021

Test Conditions

Temperature: 24,0 °C

Relative Humidity: 48,1 % 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.

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2.4 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Nov. 07, 2020

Test Location

SEMI ANECHOIC CHAMBER #3

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	ESR7	R & S	101190	08, 05, 2021
<input checked="" type="checkbox"/>	PREAMPLIFIER	8449B	AGILENT	3008A01967	04, 20, 2021
<input type="checkbox"/>	ATTENUATOR	8491A	HP	35496	03, 10, 2021
<input checked="" type="checkbox"/>	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 11, 2021

Test Conditions

Temperature:

23,9 °C

Relative Humidity:

48,4 % 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.

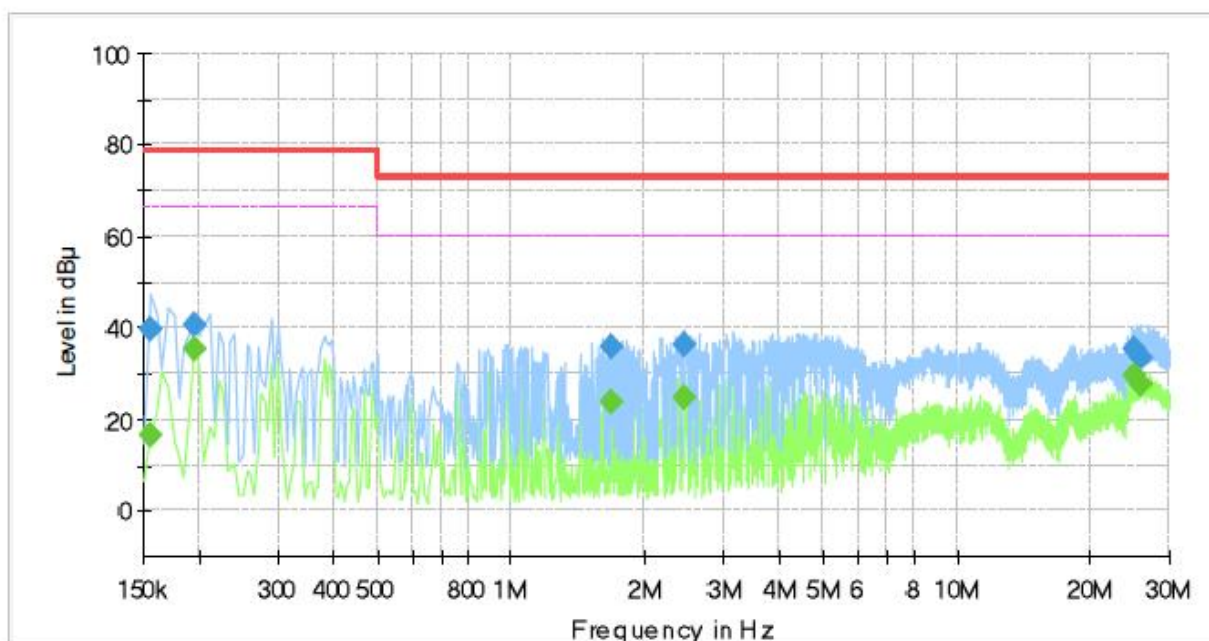
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APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports HOT LINE

Common Information

Test Description:	Conducted Emission
Model No.:	XNP-9250R
Phase:	H
Mode:	-
Operator Name:	KES



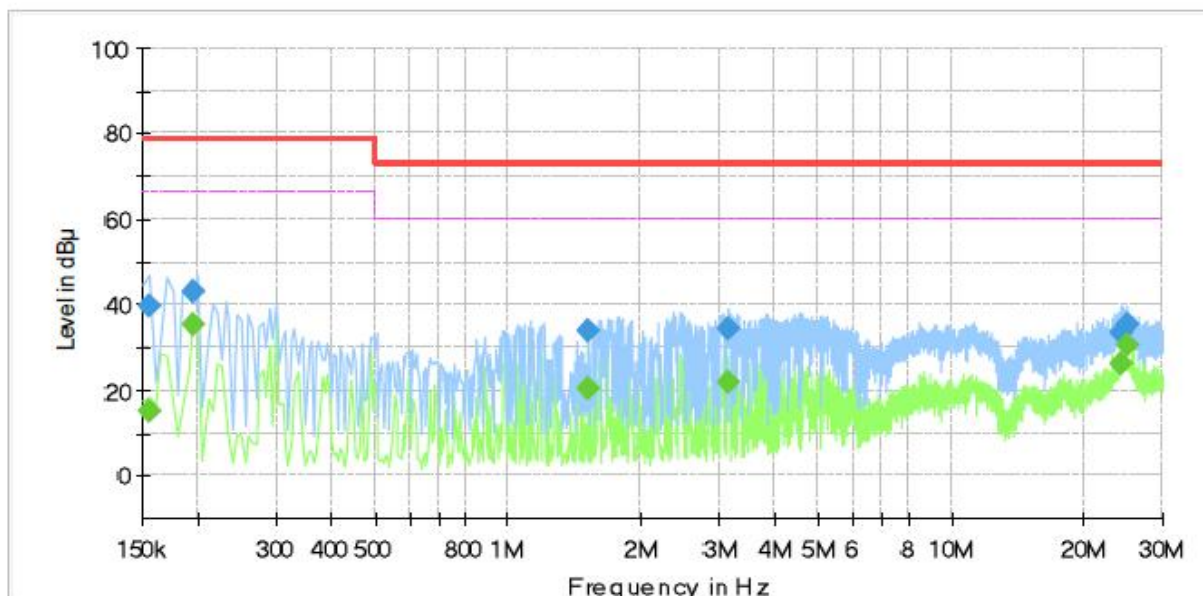
Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	16.60	66.00	49.40	1000.0	9.000	L1	19.5
0.155000	39.53	---	79.00	39.47	1000.0	9.000	L1	19.5
0.195000	---	35.45	66.00	30.55	1000.0	9.000	L1	19.5
0.195000	40.78	---	79.00	38.22	1000.0	9.000	L1	19.5
1.675000	---	23.92	60.00	36.08	1000.0	9.000	L1	20.2
1.675000	35.66	---	73.00	37.34	1000.0	9.000	L1	20.2
2.460000	---	24.59	60.00	35.41	1000.0	9.000	L1	20.2
2.460000	36.26	---	73.00	36.74	1000.0	9.000	L1	20.2
24.960000	---	29.69	60.00	30.31	1000.0	9.000	L1	20.3
24.960000	35.35	---	73.00	37.65	1000.0	9.000	L1	20.3
25.995000	---	27.55	60.00	32.45	1000.0	9.000	L1	20.4
25.995000	33.63	---	73.00	39.37	1000.0	9.000	L1	20.4

NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	XNP-9250R
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	---	15.20	66.00	50.80	1000.0	9.000	N	19.4
0.155000	39.83	---	79.00	39.17	1000.0	9.000	N	19.4
0.195000	---	35.39	66.00	30.61	1000.0	9.000	N	19.5
0.195000	43.14	---	79.00	35.86	1000.0	9.000	N	19.5
1.520000	---	20.56	60.00	39.44	1000.0	9.000	N	20.2
1.520000	33.75	---	73.00	39.25	1000.0	9.000	N	20.2
3.130000	---	22.08	60.00	37.92	1000.0	9.000	N	20.0
3.130000	34.51	---	73.00	38.49	1000.0	9.000	N	20.0
24.120000	---	26.30	60.00	33.70	1000.0	9.000	N	20.3
24.120000	33.25	---	73.00	39.75	1000.0	9.000	N	20.3
24.900000	---	30.34	60.00	29.66	1000.0	9.000	N	20.4
24.900000	35.27	---	73.00	37.73	1000.0	9.000	N	20.4

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

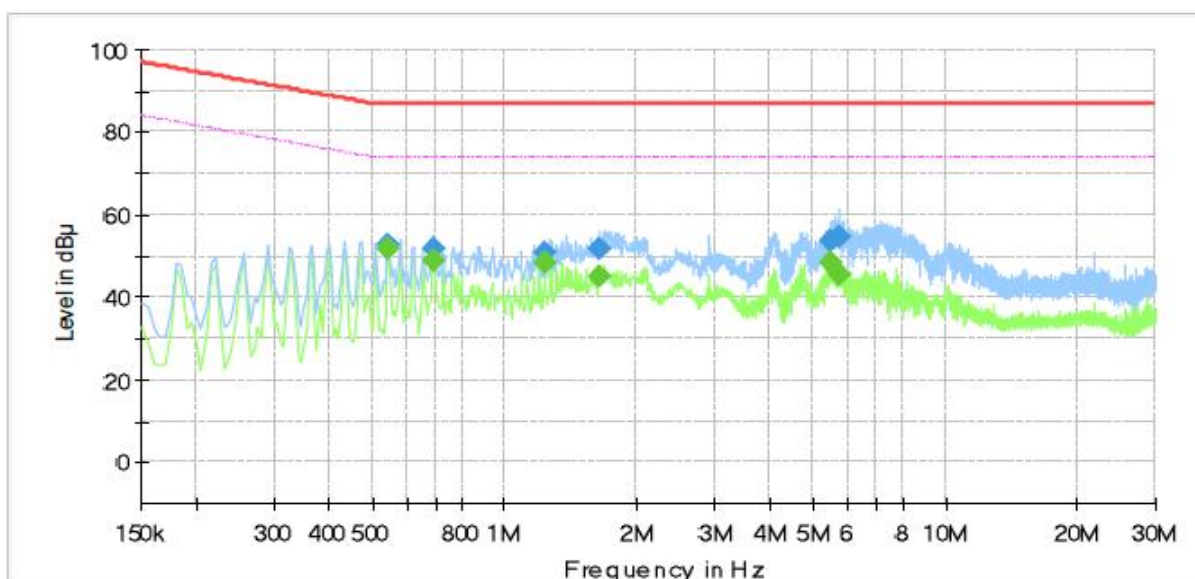
Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

Conducted Emissions at Telecommunication Ports

[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNP-9250R
Mode :	-
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)
0.545000	---	51.76	74.00	22.24	1000.0	9.000	Single Line	19.8
0.545000	52.57	---	87.00	34.43	1000.0	9.000	Single Line	19.8
0.690000	---	48.78	74.00	25.22	1000.0	9.000	Single Line	19.9
0.690000	51.73	---	87.00	35.27	1000.0	9.000	Single Line	19.9
1.235000	---	48.14	74.00	25.86	1000.0	9.000	Single Line	20.0
1.235000	50.89	---	87.00	36.11	1000.0	9.000	Single Line	20.0
1.640000	---	45.13	74.00	28.87	1000.0	9.000	Single Line	20.0
1.640000	51.84	---	87.00	35.16	1000.0	9.000	Single Line	20.0
5.490000	---	48.33	74.00	25.67	1000.0	9.000	Single Line	19.3
5.490000	53.70	---	87.00	33.30	1000.0	9.000	Single Line	19.3
5.760000	---	45.42	74.00	28.58	1000.0	9.000	Single Line	19.3
5.760000	54.63	---	87.00	32.37	1000.0	9.000	Single Line	19.3

◆ Calculation

$$\text{QuasiPeak [dBuV]} / \text{CAverage [dBuV]} = \text{Reading Value [dBuV]} + \text{Corr. [dB]}$$

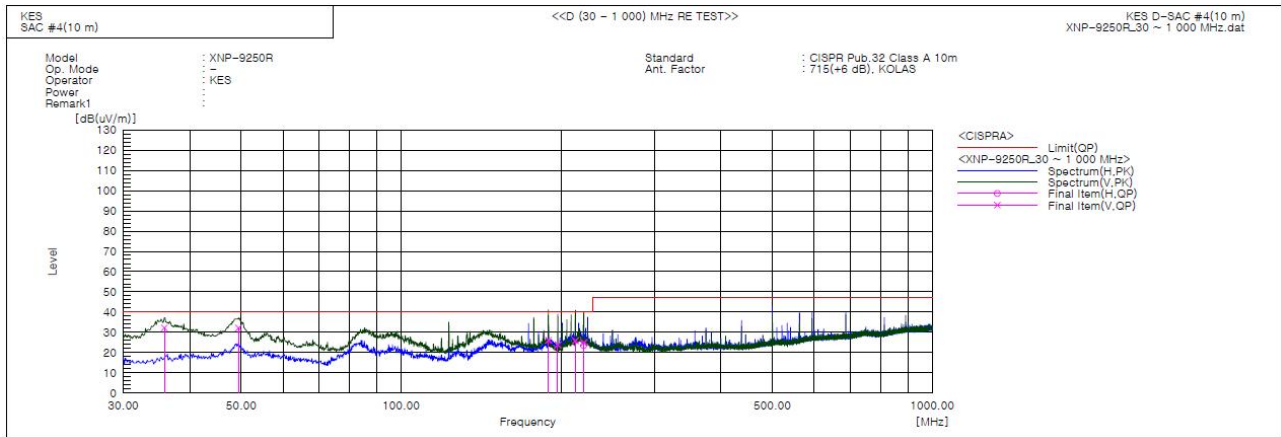
QuasiPeak / CAverage : The Final Value

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	35.820	V	56.9	-24.7	32.2	40.0	7.8	100.0	291.0	
2	49.400	V	53.6	-21.4	32.2	40.0	7.8	105.0	136.0	
3	189.444	V	49.0	-22.9	26.1	40.0	13.9	100.0	349.0	
4	197.204	V	45.9	-22.1	23.8	40.0	16.2	127.0	22.0	
5	212.845	V	46.8	-21.0	25.8	40.0	14.2	110.0	184.0	
6	220.605	H	44.0	-20.6	23.4	40.0	16.6	400.0	151.0	
7	220.726	V	45.4	-20.6	24.8	40.0	15.2	132.0	71.0	

◆ Calculation

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

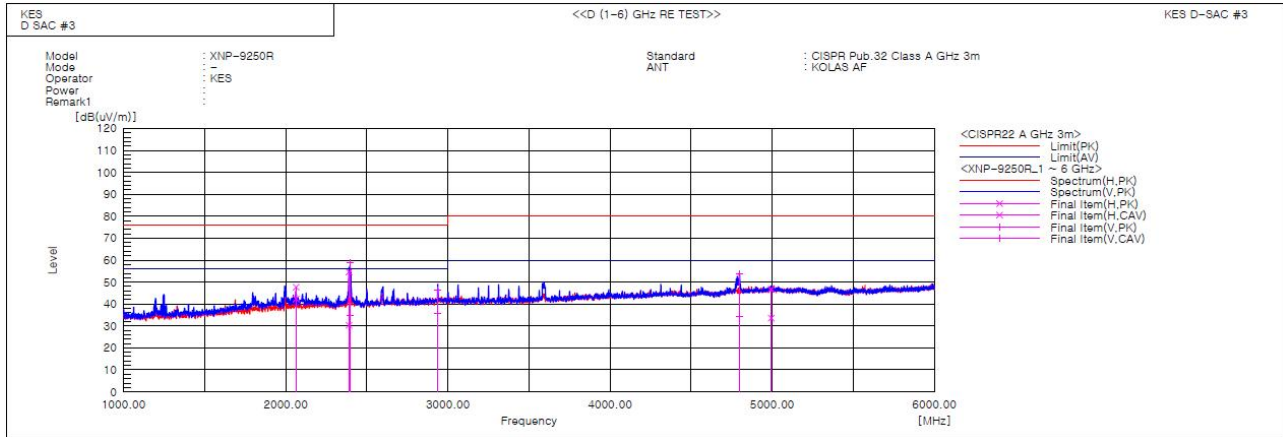
Margin(QP)[dB] = Limit[dB(μV/m)] - Result(QP) [dB(μV/m)]

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)



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	2062.940	H	49.6	44.3	-1.9	47.7	42.4	76.0	56.0	28.3	13.6	100.0	145.5	
2	2389.420	H	55.3	31.1	-0.7	54.6	30.4	76.0	56.0	21.4	25.6	100.0	344.3	
3	2397.350	V	59.8	35.3	-0.7	59.1	34.6	76.0	56.0	16.9	21.4	100.0	149.6	
4	2937.000	V	45.0	34.2	1.4	46.4	35.6	76.0	56.0	29.6	20.4	100.0	180.8	
5	4799.740	V	46.2	26.7	7.5	53.7	34.2	80.0	60.0	26.3	25.8	100.0	357.6	
6	4992.804	H	38.4	25.2	8.4	46.8	33.6	80.0	60.0	33.2	26.4	100.0	0.6	

◆ Calculation

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

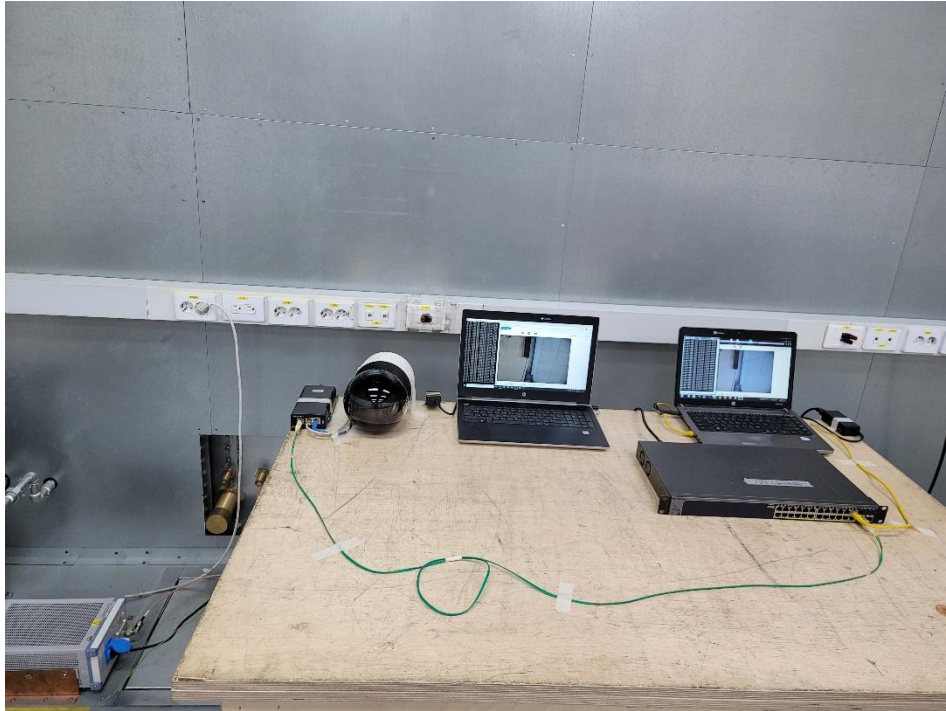
Margin(PK/CAV)[dB] = Limit[dB(μ V/m)] - Result(PK/CAV) [dB(μ V/m)]

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



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Conducted Emissions at Telecommunication Ports



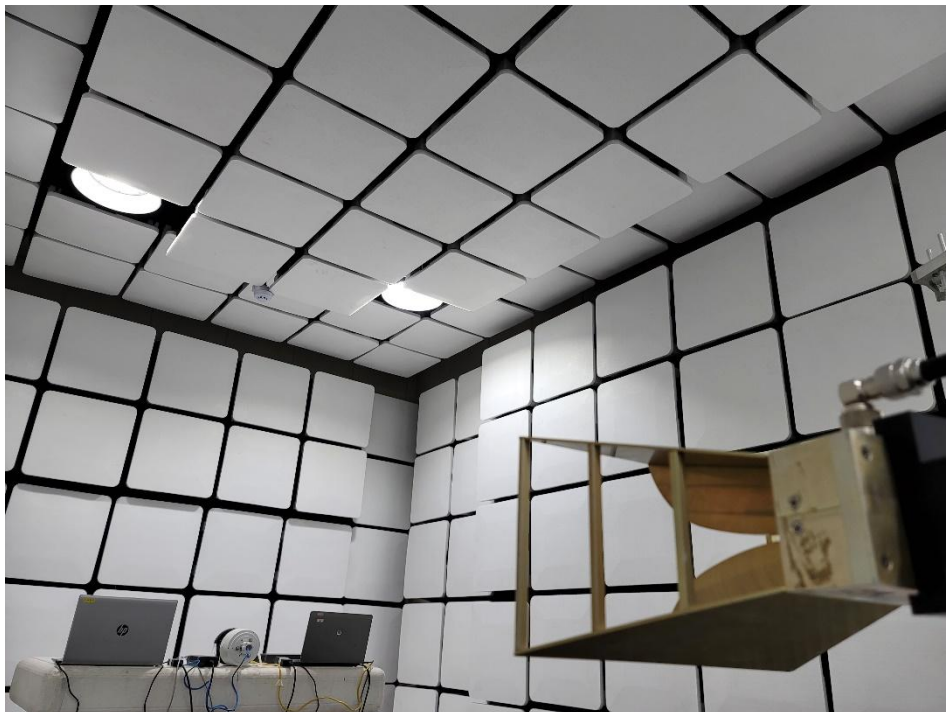
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



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EUT External Photographs

(Top)



(Bottom)



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EUT Internal Photographs

(Internal View)



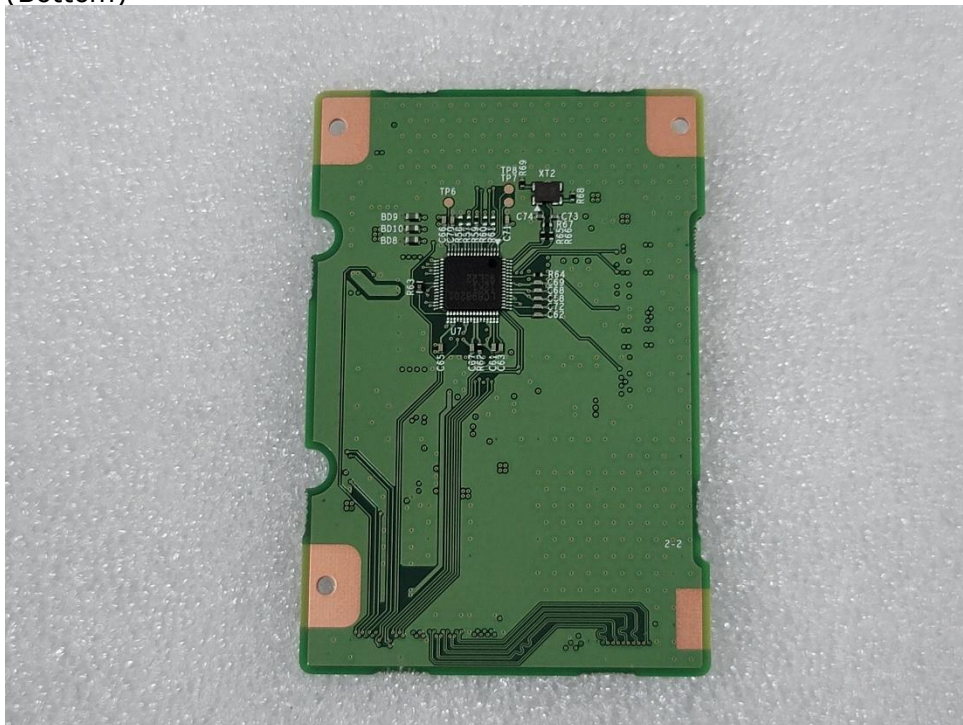
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EUT Internal View – DRIVE Board

(Top)



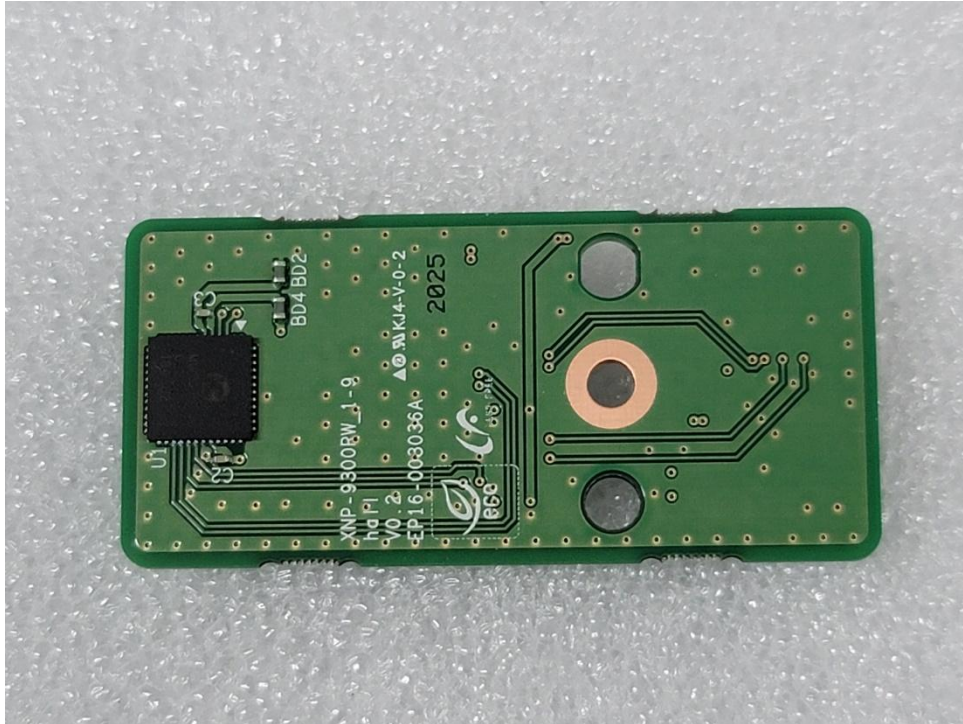
(Bottom)



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EUT Internal View – Hall Board

(Top)



(Bottom)



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EUT Internal View – Heater Board

(Top)

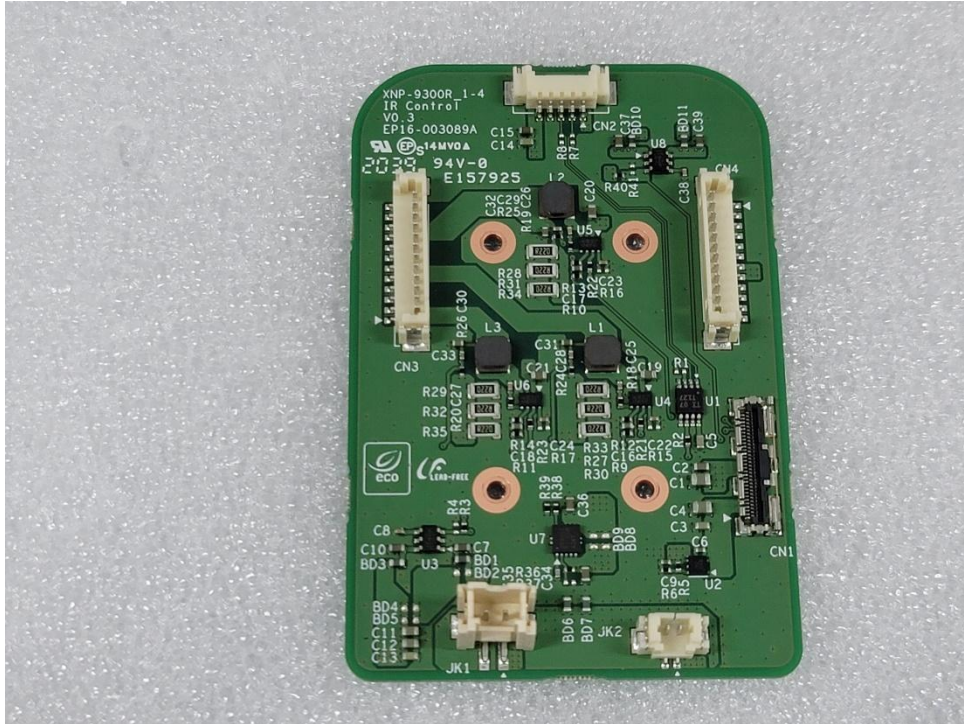


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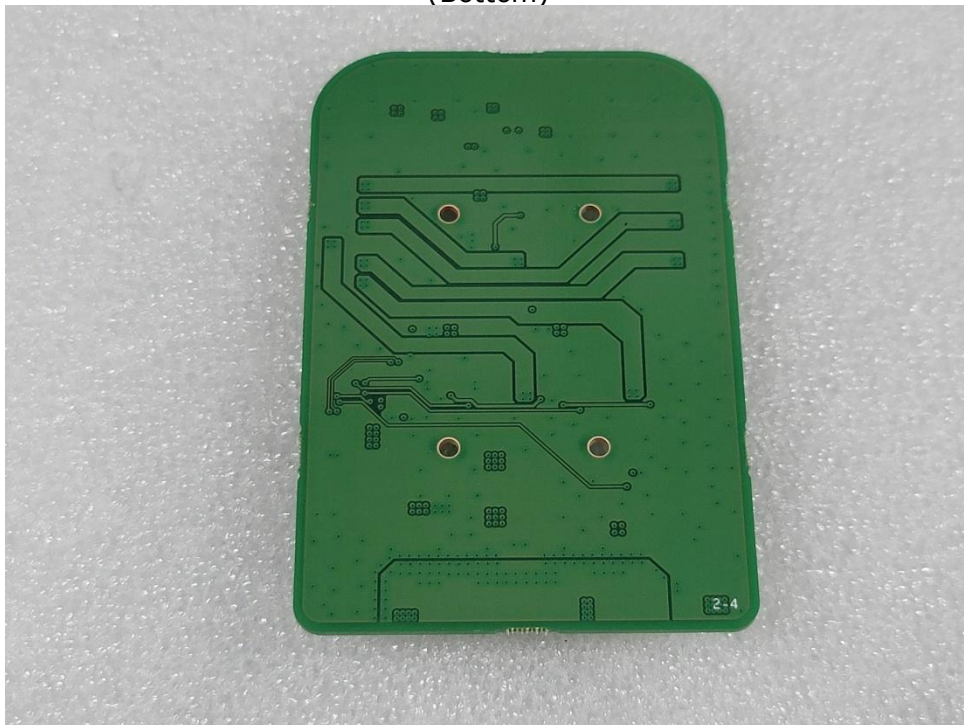


EUT Internal View – IR Control Board

(Top)



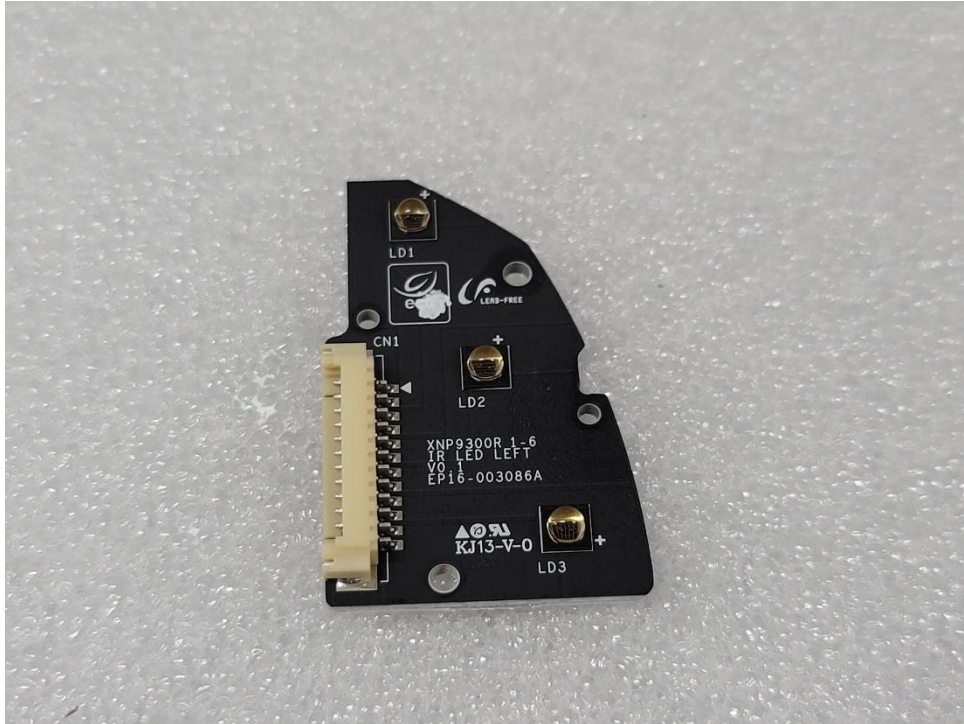
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EUT Internal View – IR LED LEFT Board

(Top)



(Bottom)



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EUT Internal View – IR LED RIGHT Board

(Top)



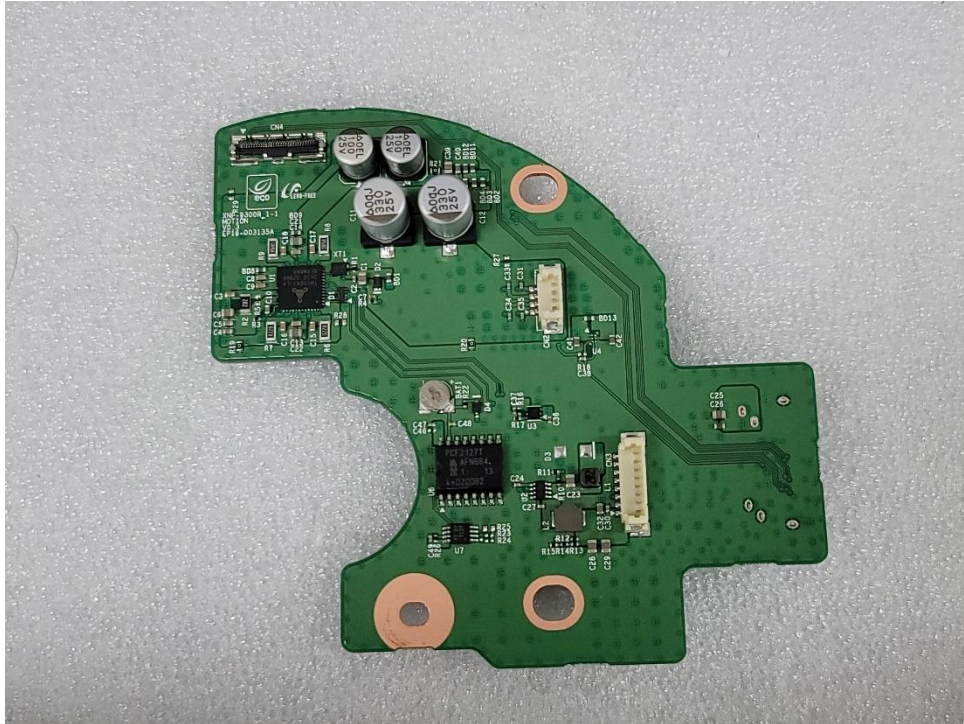
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EUT Internal View – MOTION Board

(Top)



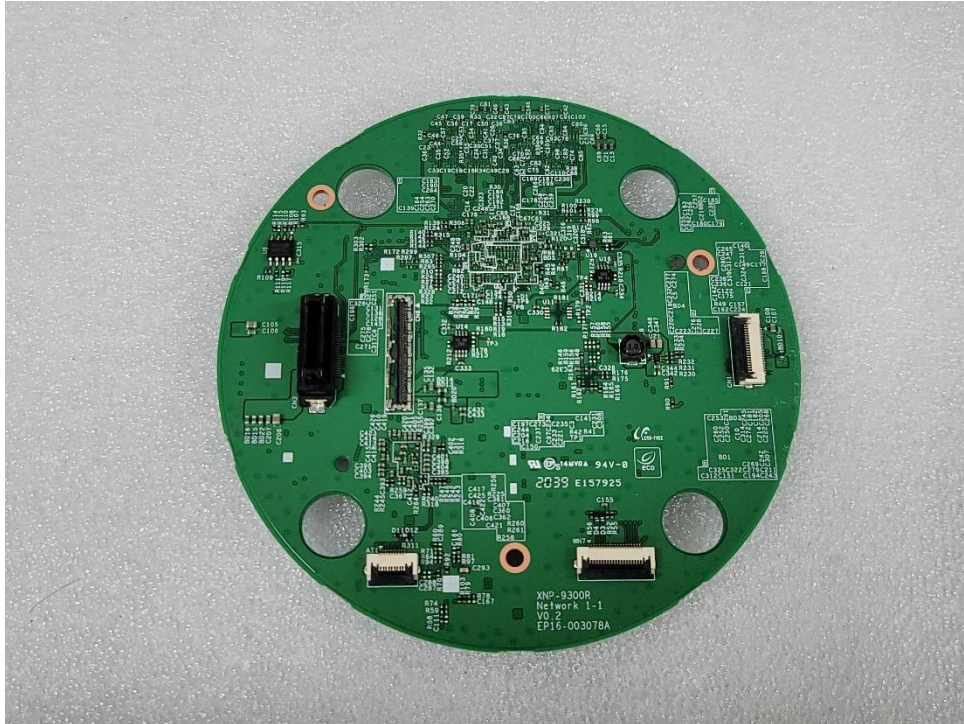
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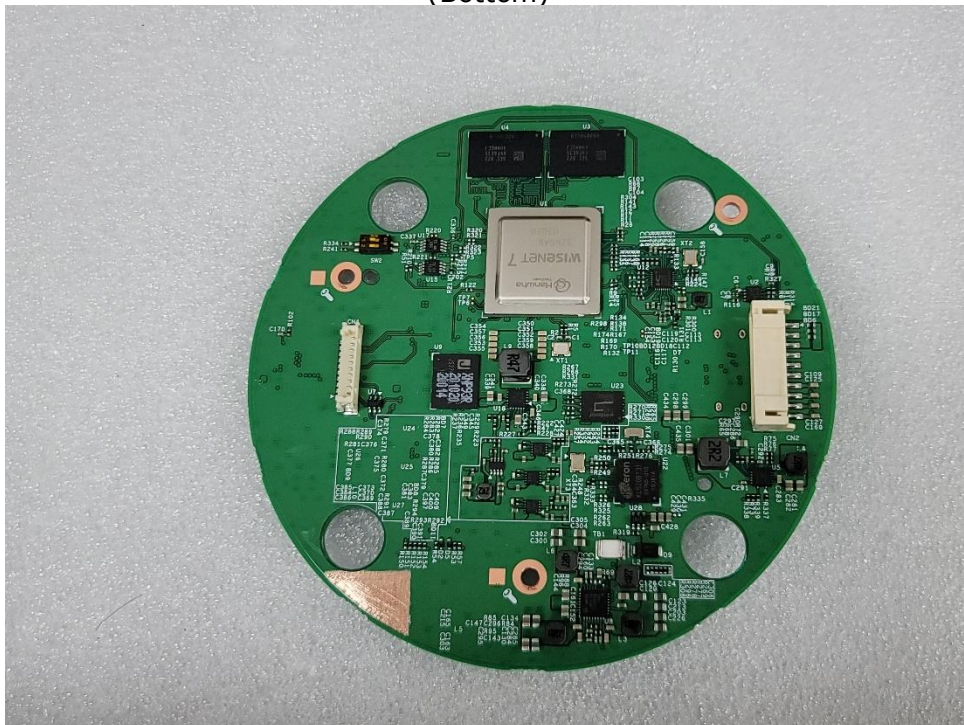
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EUT Internal View – Network Board

(Top)



(Bottom)



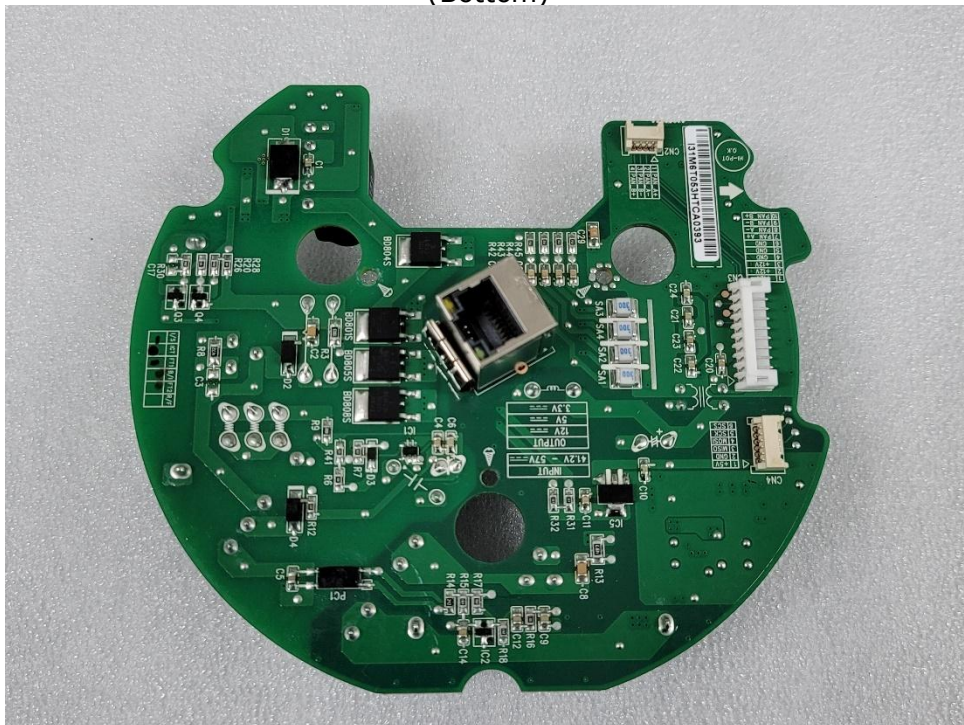
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EUT Internal View – Power Board

(Top)



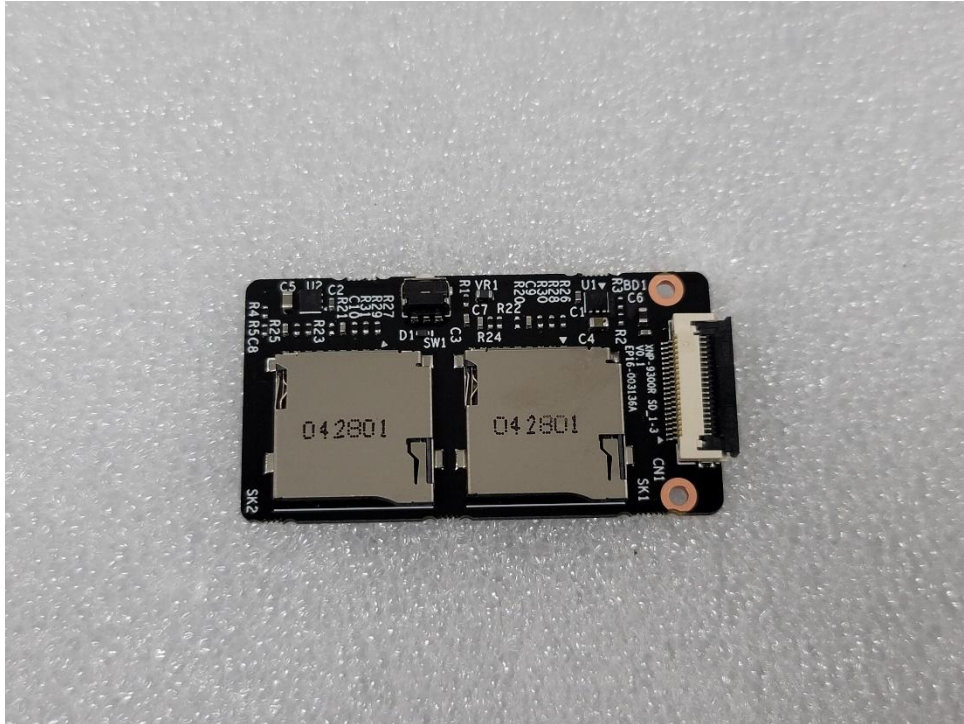
(Bottom)



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EUT Internal View – SD Board

(Top)



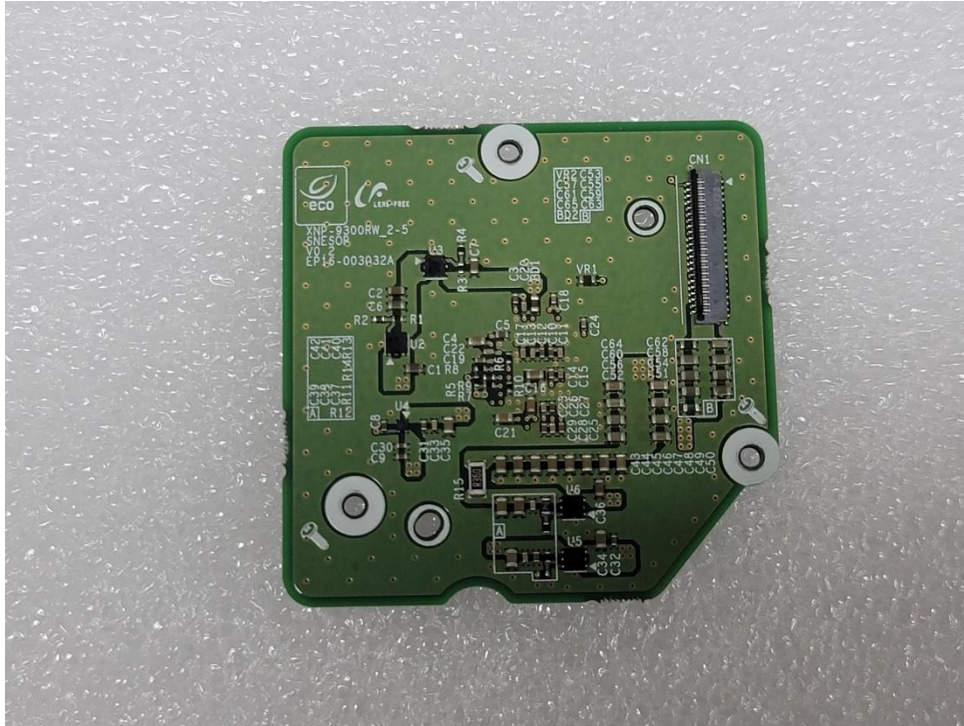
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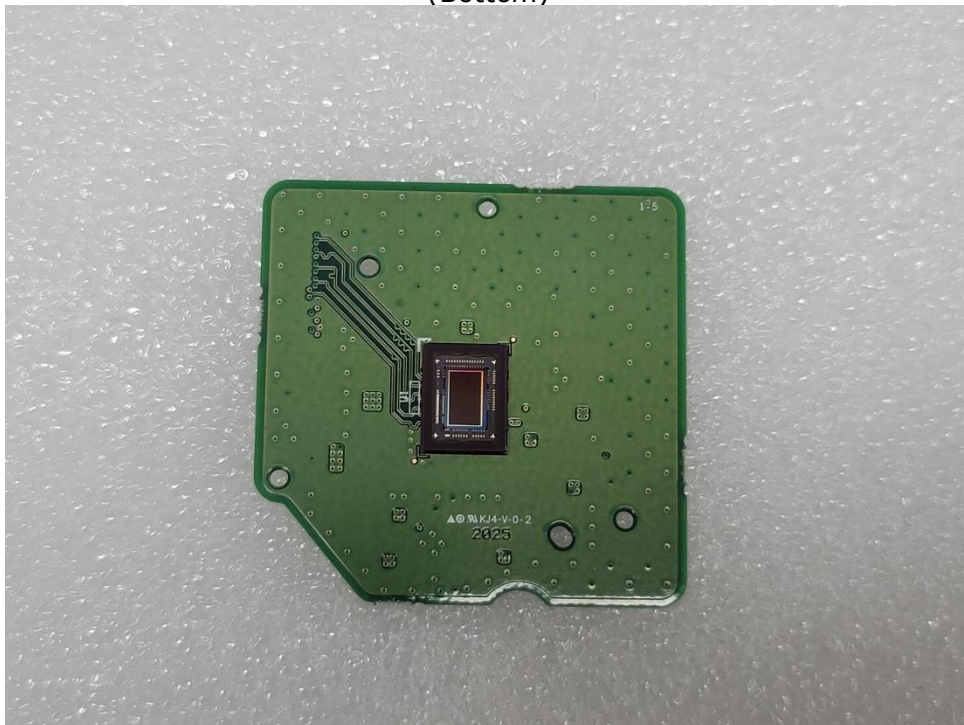
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EUT Internal View – SENSOR Board

(Top)



(Bottom)



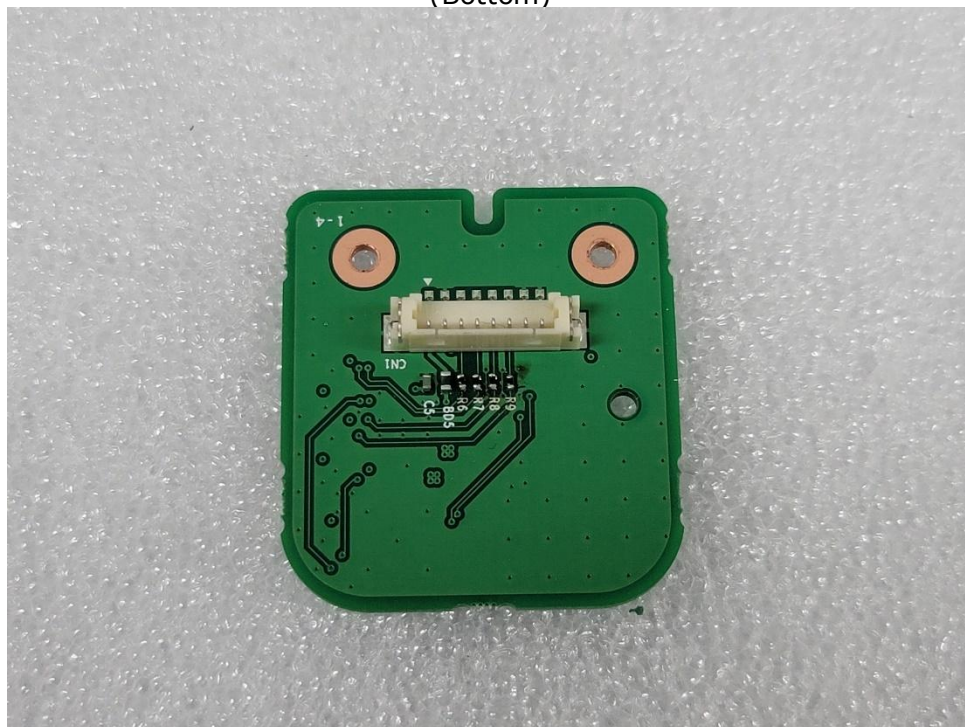
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EUT Internal View – TILT-HALL Board

(Top)



(Bottom)



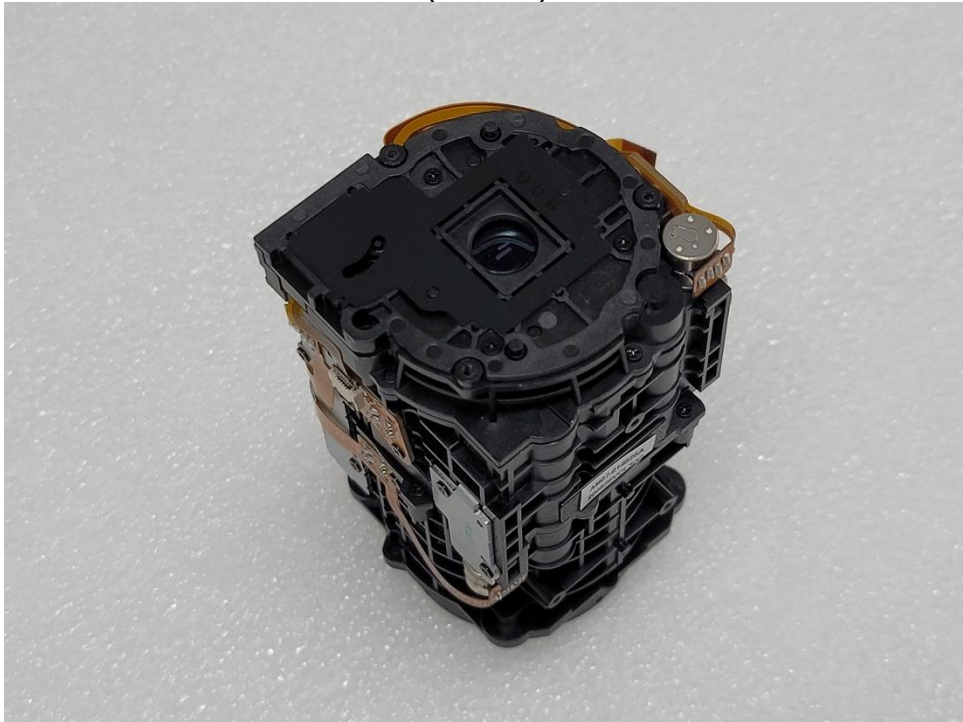
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EUT Internal View – LENS

(Top)



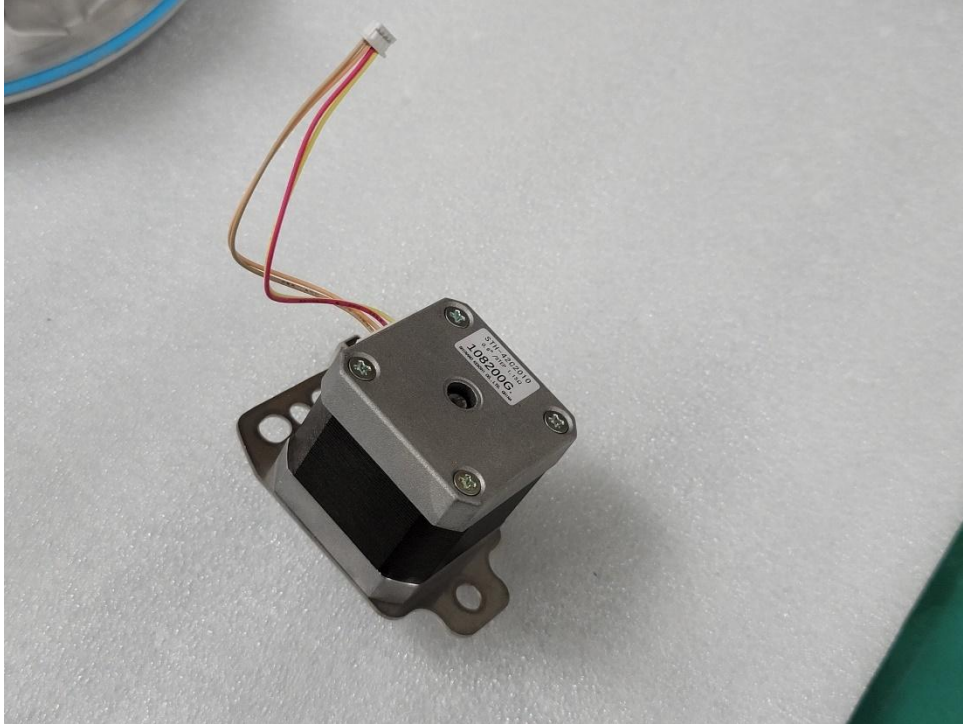
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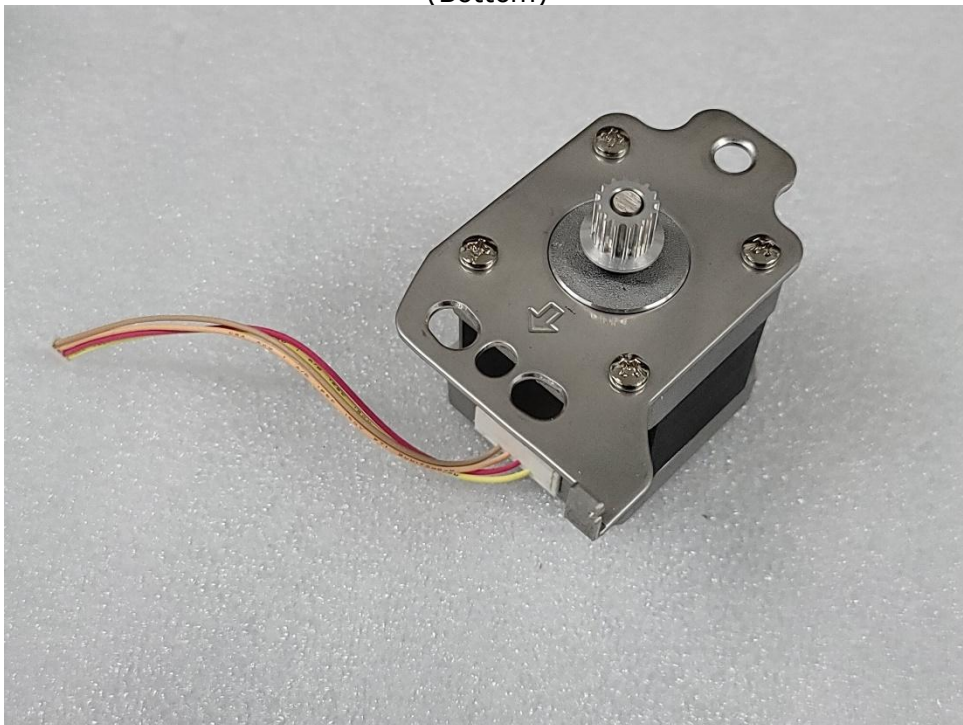
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EUT Internal View – MOTOR

(Top)



(Bottom)



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