

**KES Co., Ltd.**

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Report No.:

KES-EM-22T0140-R1

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EMC TEST REPORT For VCCI

Test Report No. : KES-EM-22T0140-R1
Date of Issue : Feb. 24, 2023
Product name : Network Camera
Model/Type No. : XNP-9250
Variant Model : XNP-8250
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 : Jan. 11, 2022
Test date : Jan. 18, 2022
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Dae Soo, 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
Jan. 27, 2022	KES-EM-22T0140	Issued
Feb. 24, 2023	KES-EM-22T0140-R1	Change the Applicant and Manufacturer at the request of the customer

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1.0 General Product Description

Main Specifications of EUT are:

Video	Network
Imaging Device	Ethernet
Effective Pixels	RJ-45(10/100BASE-T)
Min. Illumination	Video Compression
Color: 0.1Lux(F1.6, 1/30sec)	H.265/H.264, MJPEG
BW: TBD	Resolution
Video Out	3840x2160, 2592x1944, 2592x1464, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
None	Max. Framerate
Lens	H.265/H.264: Max. 60fps/50fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)
Focal Length (Zoom Ratio) TBD	Smart Codec
5~150mm(30x) zoom	Manual(Sea area), WiseStream II
Max. Aperture Ratio	Video Quality Adjustment
F1.6(Wide)	H.264/H.265: Target bitrate level control MJPEG: Target bitrate level control
Angular Field of View	Bitrate Control
H: 57.42°(Wide)~2.19°(Tele) / V: 33.54°(Wide)~1.25°(Tele)	H.264/H.265: CBR or VBR MJPEG: VBR
Min. Object Distance	Streaming
Wide: 1.5m(4.92ft), Tele: 3m(9.84ft)	Unicast(20 users) / Multicast (128 user) Multiple streaming(Up to 10 profiles)
Focus Control	Audio Compression
Oneshot AF, Focus save	None
Lens Type	Protocol
DC auto iris	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
Pan / Tilt / Rotate	Security
Pan Range	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)
360° Endless	Edge Storage
Pan Speed	Micro SD/SDHC/SDXC 2slot 1TB
Max. 700°/sec, Manual: 0.024°/sec~250°/sec	Application Programming Interface
Tilt Range	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet open platform
110°(-20°~90°)	Webpage Language
Tilt Speed	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Max. 500°/sec, Manual: 0.024°/sec~250°/sec	Web Viewer
Sequence	Supported OS: Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12 Recommended Browser: Google Chrome Supported Browser: MS Explore 11, MS Edge, Mozilla Firefox(Window 64bit only), Apple Safari(Mac OS X only)
Preset(300ea), Swing, Group(6ea), Trace, Tour, Auto Run, Schedule, Preset trace recording	Memory
Preset Accuracy	TBD
±0.1°	Environmental
Azimuth	Operating Temperature / Humidity
Support	-40°C~+60°C (-40°F ~ +140°F) / Less than 95% RH(Non-condensing) Maximum Temperature : +60°C(+140°F), □ □ □ within 8 hours Absolute maximum(According to NEMA TS2, 2.2.7):+74°C → TBD
Object auto tracking(Person/Vehicle)	Storage Temperature / Humidity
Operational	-50°C~+60°C (-58°F~+140°F) / Less than 95% RH(Non-condensing)
IR Viewable Length(TBD)	Certification(TBD)
None	IP66, IK10(TBD), NEMA4X
Camera Title	Electrical
Displayed up to 85 characters, Direction Indicator	Input Voltage
Day & Night	HPoE(IEEE802.3bt, Class7, Type3)
Auto(CR)/Color/BW/Schedule	Power Consumption
Backlight Compensation	TBD
BLC, HLC, WDR	Mechanical
Wide Dynamic Range(TBD)	Color / Material
100 dB	TBD
Digital Noise Reduction	RAL Code
SSNRV	None
Digital Image Stabilization	Product dimensions / weight
Support(built-in gyro sensor)	Ø180x270mm(TBD), 2.5Kg(TBD)
Defog	Conduit hole
Support	None
Motion Detection	Hanging mount(Dome)
8ea, 8point polygonal zones	None
Privacy Masking	Skin cover(Dome)
32ea, polygonal Support - Color: Grey/Green/Red/Blue/Black/White - Mosaic	None
Gain Control	Weather cap(Dome)
Low / Middle / High	None
White Balance	Power module
ATW / AWC / Manual / Indoor / Outdoor	None
LDC	Backbox
None	None
Electronic Shutter Speed	
Minimum / Maximum / Anti flicker (2~1/12,000sec)	
Video Rotation	
Flip, Mirror	
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	
Vibration dry, Heat film	

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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 100 V, 60 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-9250	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
PoE INJECTOR	PT-PSE109GBRO-AH	-	Dongguan PROCET Network Technology Co.,Ltd	-
LAPTOP	LG15N54	410NZGK015231	LG Electronics	-
LAPTOP ADAPTOR	ADP-90WH B	84ZW19F1663	DELTA ELECTRONICS (JIANGSU) LTD.	-
Micro SD Card	-	-	Transcend	16 GB



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 INJECTOR	RJ-45 (PoE)	3.0	U
	Micro SD Slot	Micro SD Card	Micro SD Slot	-	-
PoE INJECTOR	RJ-45 (LAN)	LAPTOP	RJ-45	2.5	U

* Unshielded=U, Shielded=S

1.7 EUT Operating Mode(s)

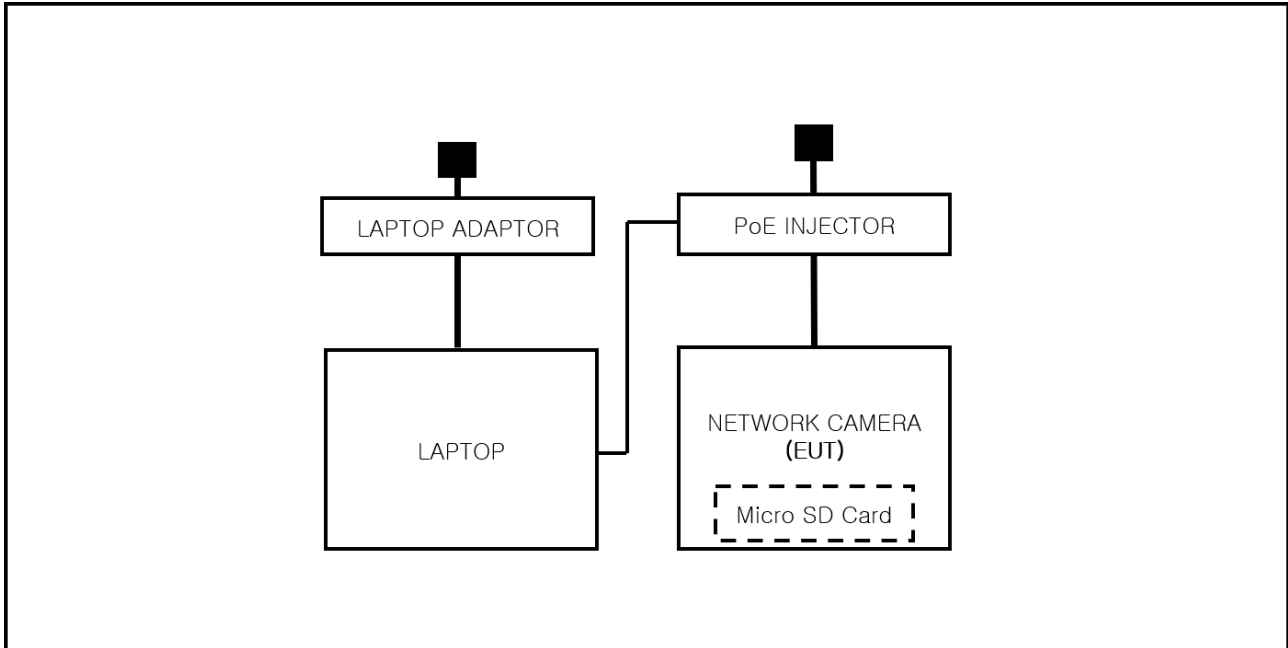
Test mode	operating
Operation Mode	EUT Monitoring, Ping Test micro sd card : after testing, check if the recording is normally done on the micro sd card

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

1.8 Configuration

■ AC Main

□ DC Main



1.9 Remarks when standards applied

In PoE mode, the LAN port is regarded as a wired communication network port and power-related ports are not tested.







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



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2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ **VCCI-CISPR 32:2016**

☒ Class A

☐ Class B

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2.1 Conducted Emissions Mains Power Ports

Test Date

N/A

Test Location

Electro wave Shieldroom #6

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input type="checkbox"/>	EMI Test S/W	EMC32	R & S	9.12.00	-
<input type="checkbox"/>	EMI TEST RECEIVER	ESR3	R & S	101783	12, 28, 2022
<input type="checkbox"/>	LISN	ENV216	R & S	101787	12, 27, 2022
<input type="checkbox"/>	LISN	ESH2-Z5	R & S	100450	12, 27, 2022
<input type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 27, 2022

Test Conditions

Temperature: (±) °C

Relative Humidity: (±) % 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

N/A

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2.2 Conducted Emissions at Telecommunication Ports

Test Date

Jan. 18, 2022

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	12, 28, 2022
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101787	12, 27, 2022
<input checked="" type="checkbox"/>	LISN	ESH2-Z5	R & S	100450	12, 27, 2022
<input checked="" type="checkbox"/>	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 27, 2022
<input checked="" type="checkbox"/>	8-WIRE ISN CAT3,5	ENY81	R & S	100174	12, 28, 2022
<input type="checkbox"/>	8-WIRE ISN CAT6	ENY81-CAT6	R & S	101665	12, 28, 2022
<input type="checkbox"/>	CDN	CDNS502A	TESEQ	40431	12, 29, 2021

Test Conditions

Temperature: (22,7 ± 0,2) °C

Relative Humidity: (42,7 ± 0,2) % 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.

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2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Jan. 18, 2022

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, 2022
<input checked="" type="checkbox"/>	AMPLIFIER	SCU 01	R & S	100603	11, 24, 2022
<input checked="" type="checkbox"/>	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	12, 08, 2022
<input checked="" type="checkbox"/>	ATTENUATOR	8491A	HP	32173	03, 10, 2022

Test Conditions

Temperature: (22,6 ± 0,0) °C
Relative Humidity: (43,2 ± 0,2) % 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

Jan. 18, 2021

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, 03, 2022
<input checked="" type="checkbox"/>	PREAMPLIFIER	8449B	AGILENT	3008A01967	04, 07, 2022
<input type="checkbox"/>	ATTENUATOR	8491A	HP	35496	03, 10, 2022
<input checked="" type="checkbox"/>	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 11, 2022

Test Conditions

Temperature: (22,4 ± 0,2) °C

Relative Humidity: (43,0 ± 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

Remarks

See Appendix A for test data.



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APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

HOT LINE

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NEUTRAL LINE

N/A

◆ 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))

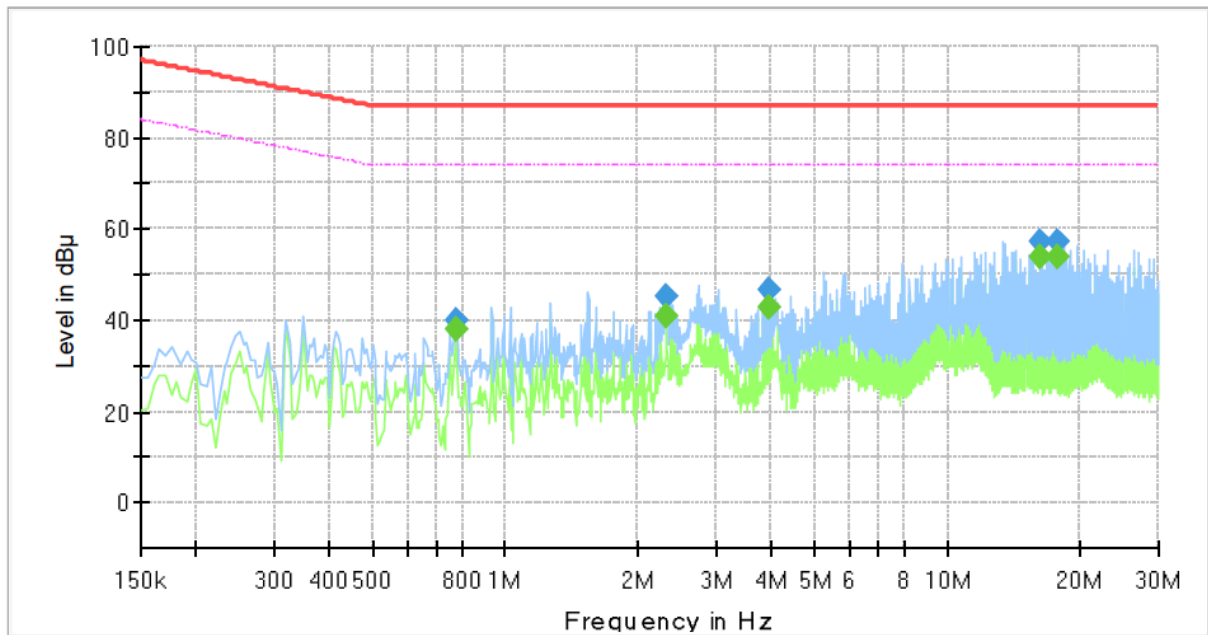
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Conducted Emissions at Telecommunication Ports

[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNP-9250
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)
0.770000	---	38.26	74.00	35.74	1000.0	9.000	Single Line	20.0
0.770000	39.93	---	87.00	47.07	1000.0	9.000	Single Line	20.0
2.315000	---	40.88	74.00	33.12	1000.0	9.000	Single Line	20.1
2.315000	45.26	---	87.00	41.74	1000.0	9.000	Single Line	20.1
3.955000	---	42.85	74.00	31.15	1000.0	9.000	Single Line	19.7
3.955000	46.51	---	87.00	40.49	1000.0	9.000	Single Line	19.7
16.230000	---	53.90	74.00	20.10	1000.0	9.000	Single Line	19.7
16.230000	57.19	---	87.00	29.81	1000.0	9.000	Single Line	19.7
17.695000	---	53.76	74.00	20.24	1000.0	9.000	Single Line	19.8
17.695000	57.12	---	87.00	29.88	1000.0	9.000	Single Line	19.8

◆ 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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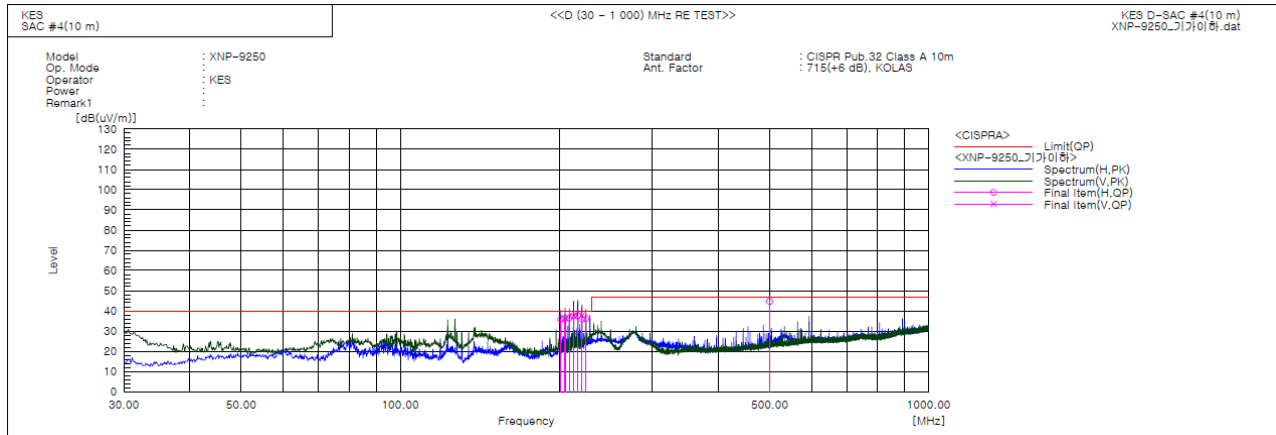
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Radiated Electric Field Emissions(Below 1 GHz)



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	201.205	H	56.7	-20.8	35.9	40.0	4.1	397.0	56.0	
2	204.964	H	57.0	-20.7	36.3	40.0	3.7	342.0	72.0	
3	205.085	V	56.8	-20.7	36.1	40.0	3.9	109.0	235.0	
4	208.965	H	57.1	-20.6	36.5	40.0	3.5	378.0	159.0	
5	212.845	H	58.1	-20.5	37.6	40.0	2.4	364.0	273.0	
6	212.845	V	57.9	-20.5	37.4	40.0	2.6	115.0	113.0	
7	216.725	H	58.2	-20.4	37.8	40.0	2.2	341.0	75.0	
8	220.605	V	57.9	-20.2	37.7	40.0	2.3	119.0	81.0	
9	220.726	H	56.1	-20.2	35.9	40.0	4.1	297.0	137.0	
10	224.606	H	56.3	-20.1	36.2	40.0	3.8	396.0	208.0	
11	499.965	H	56.0	-11.3	44.7	47.0	2.3	362.0	238.0	

◆ Calculation

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

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

Correction Factor : ANT FACTOR + Cable loss

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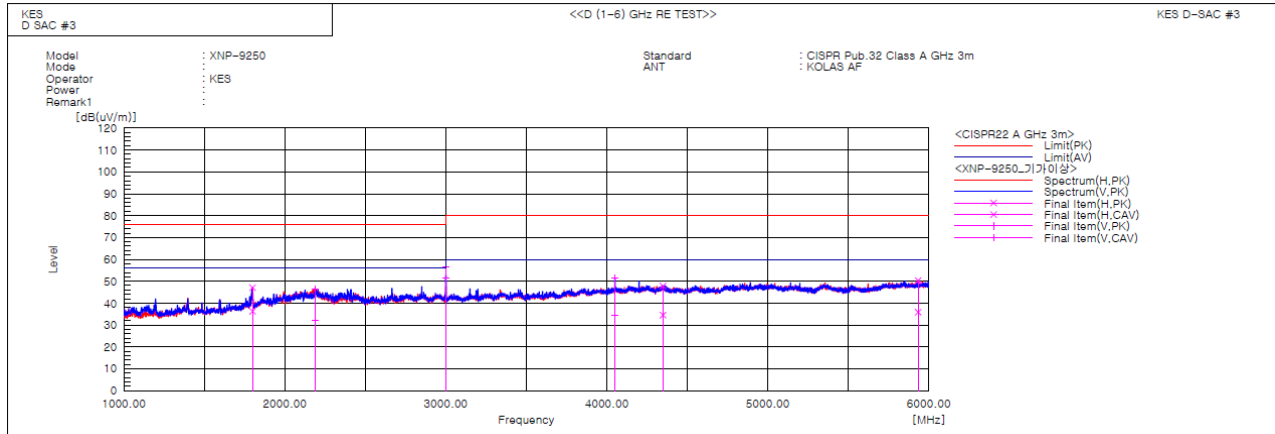
3701, 40, Simin-daero 365beon-gil,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
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Report No.:

KES-EM-22T0140-R1

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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	1798.495	H	50.2	39.3	-3.1	47.1	36.2	76.0	56.0	28.9	19.8	100.0	24.1	
2	2191.267	V	46.9	32.3	-0.4	46.5	31.9	76.0	56.0	29.5	24.1	100.0	180.5	
3	3000.027	V	55.1	49.8	1.6	56.7	51.4	80.0	60.0	23.3	8.6	100.0	159.5	
4	4051.224	V	45.2	28.2	6.2	51.4	34.4	80.0	60.0	28.6	25.6	100.0	253.0	
5	4348.761	H	40.9	27.5	7.0	47.9	34.5	80.0	60.0	32.1	25.5	100.0	86.5	
6	5933.127	H	40.2	25.8	10.1	50.3	35.9	80.0	60.0	29.7	24.1	100.0	255.6	

◆ 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

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Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports

N/A

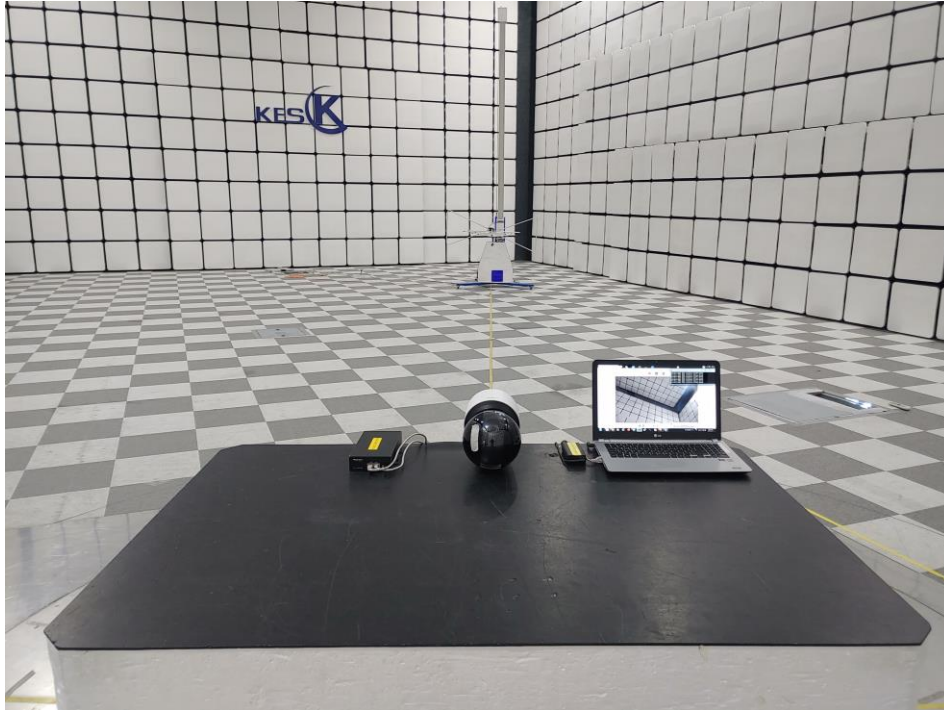
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Conducted Emissions at Telecommunication Ports



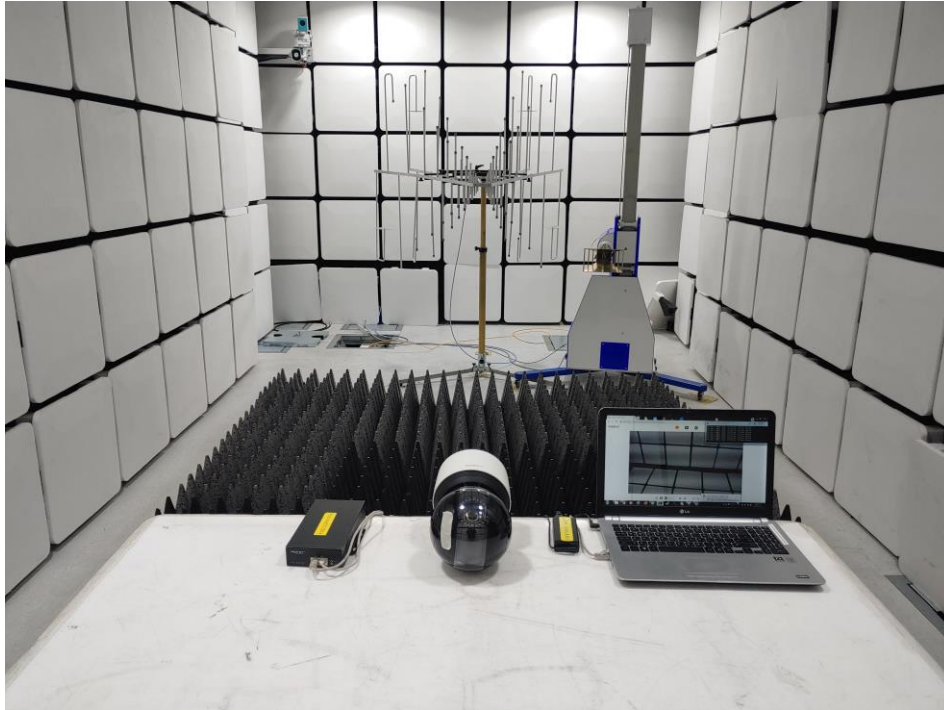
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



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EUT External Photographs

(Top)

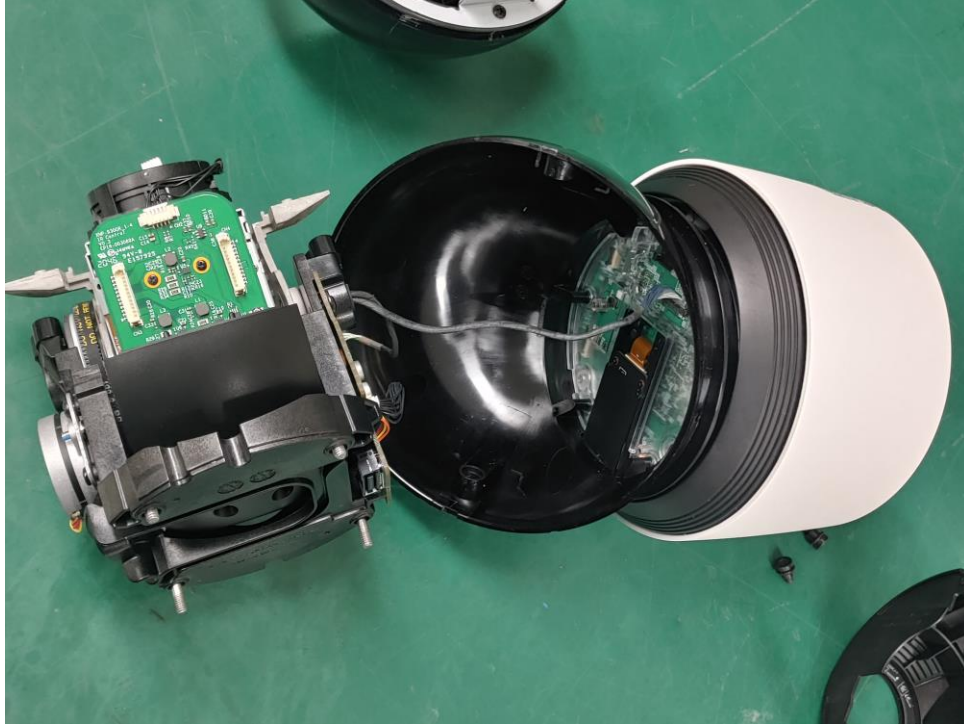


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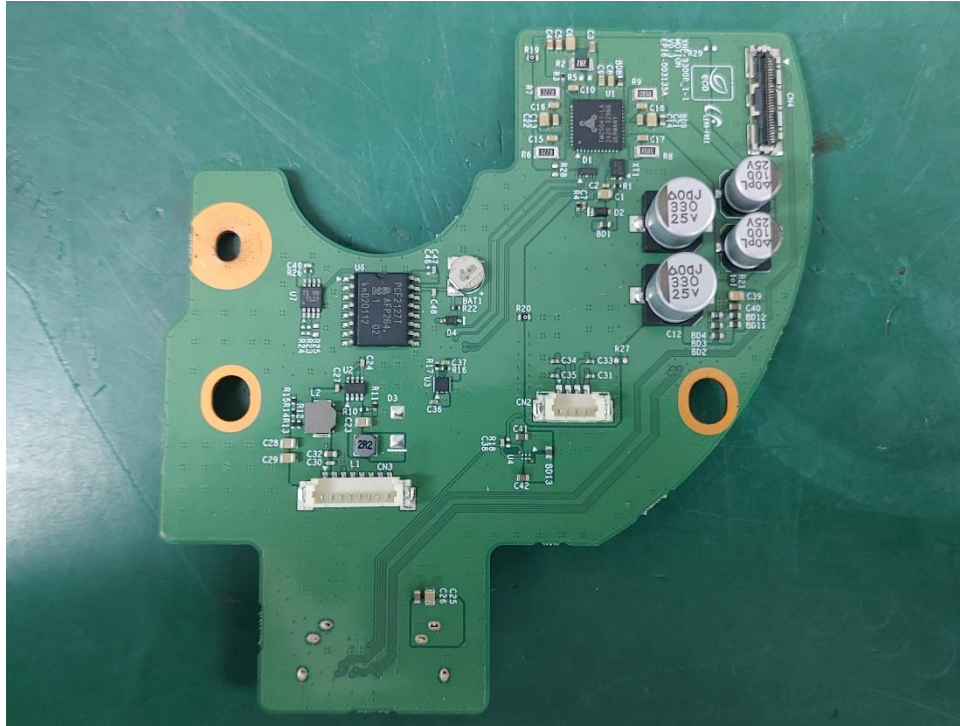
EUT Internal Photographs

(Internal View)



EUT Internal View – Board 1

(Top)



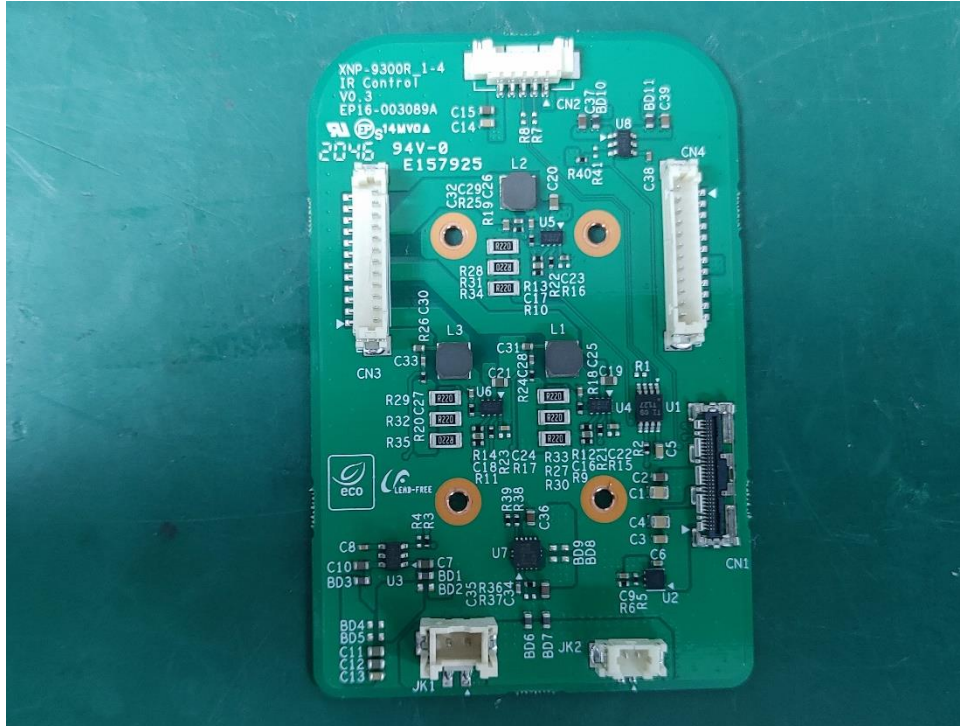
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EUT Internal View – Board 2

(Top)



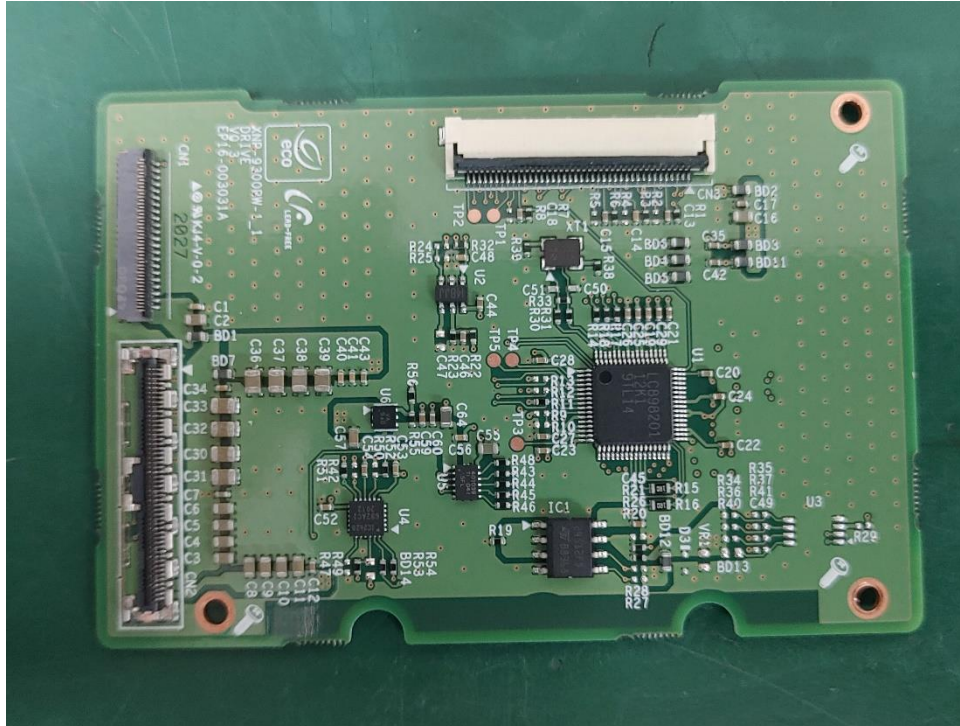
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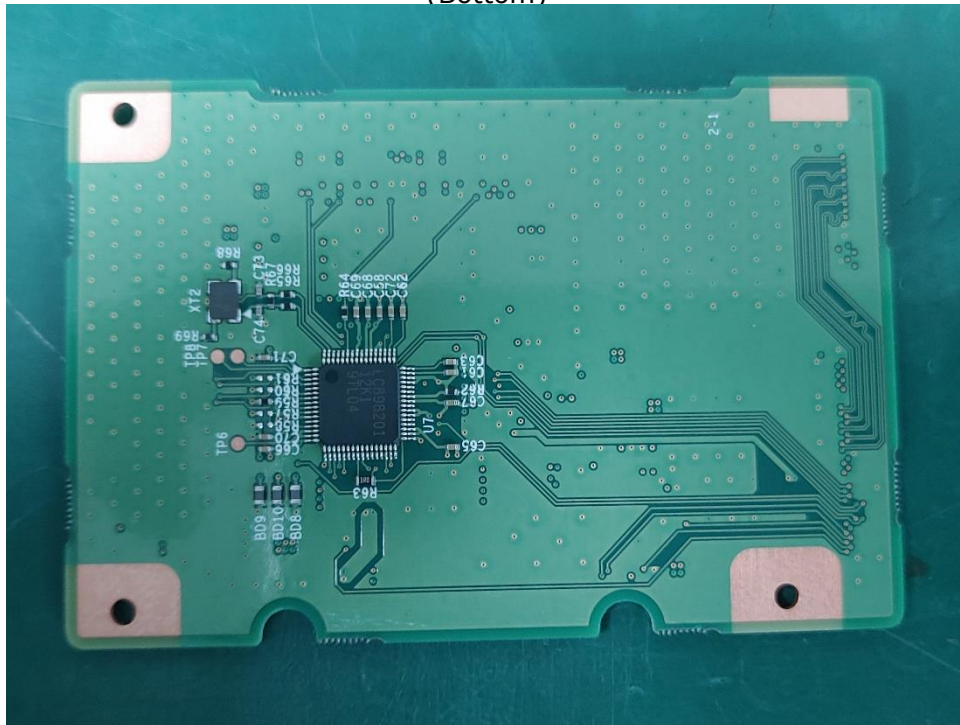
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EUT Internal View – Board 3

(Top)



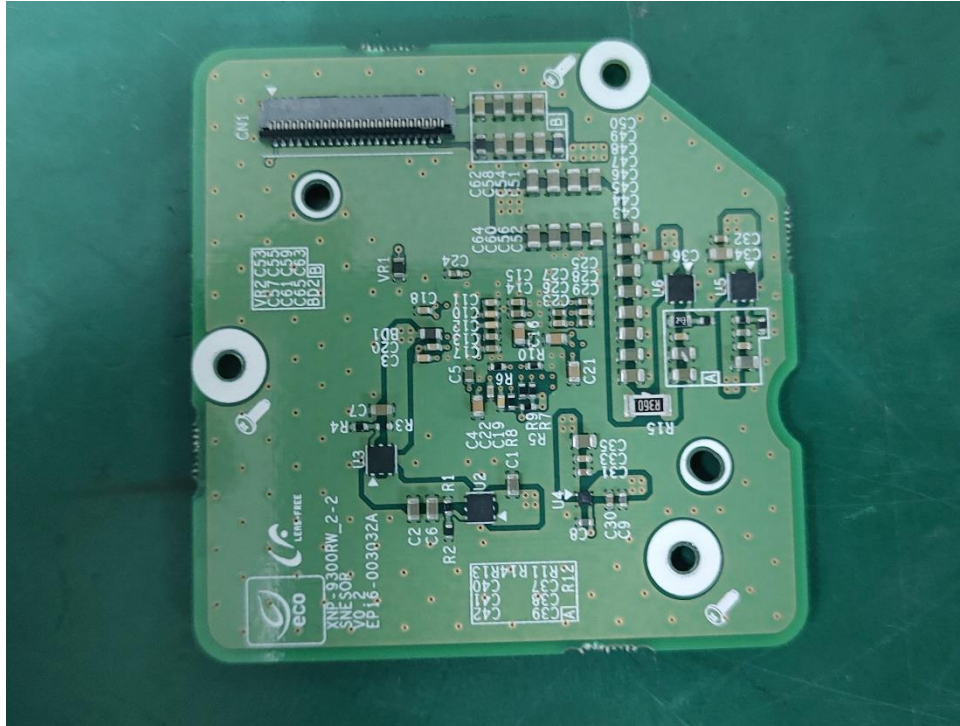
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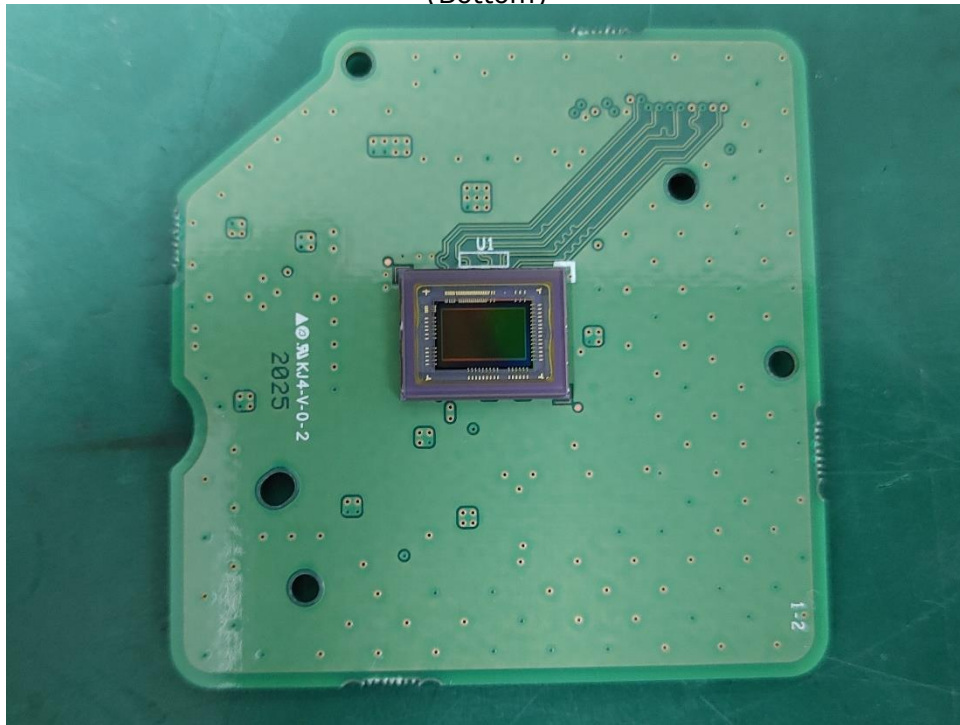
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EUT Internal View – Board 4

(Top)



(Bottom)



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EUT Internal View – Board 5

(Top)



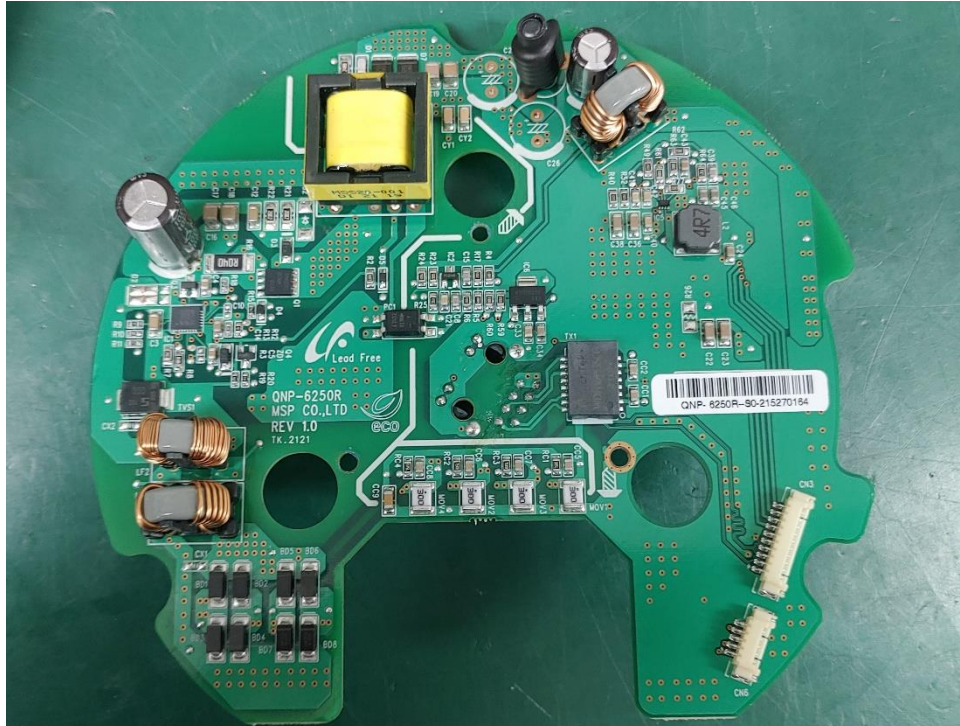
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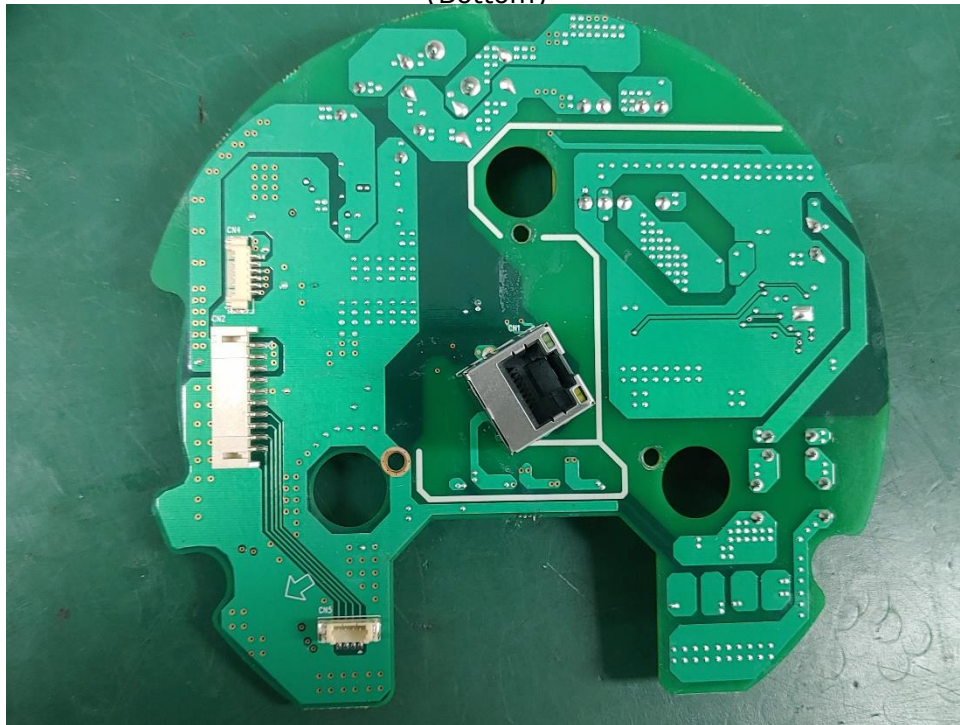
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EUT Internal View – Board 6

(Top)



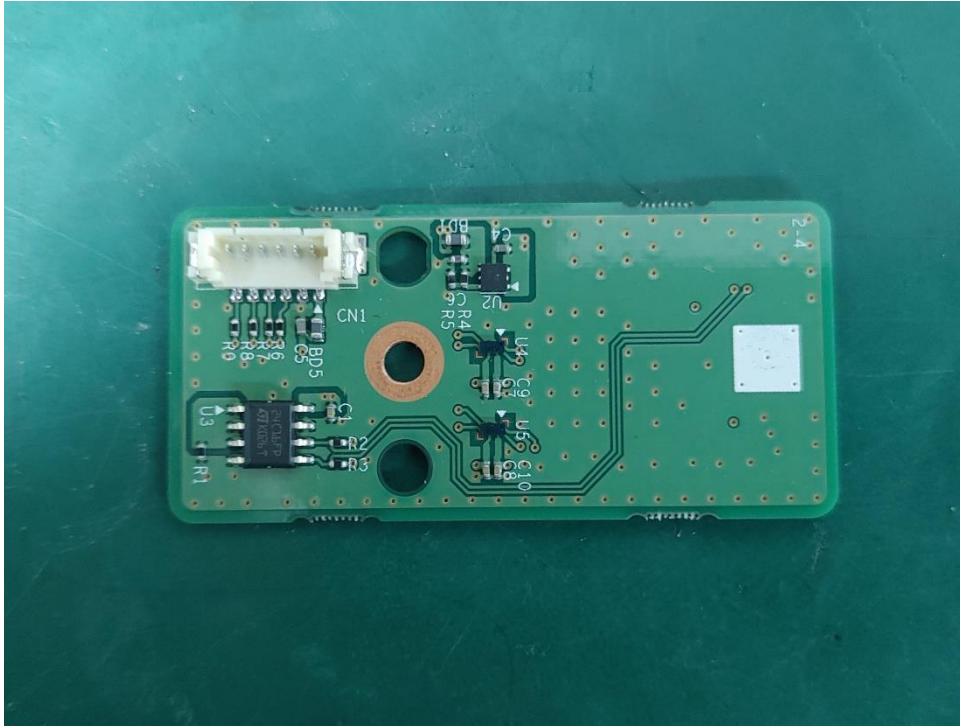
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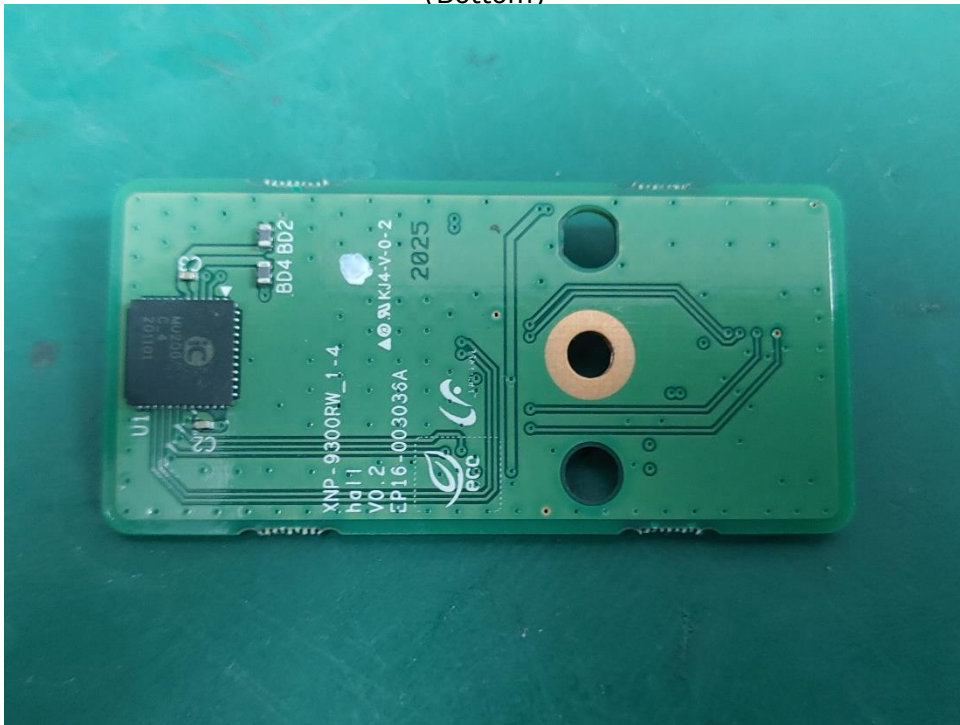
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EUT Internal View – Board 7

(Top)



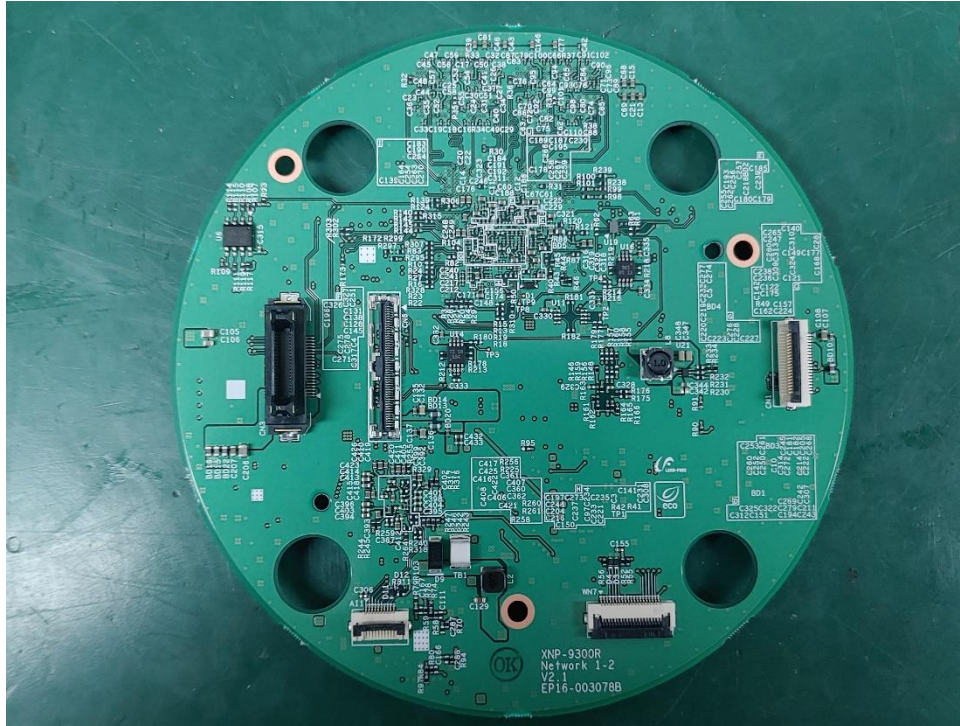
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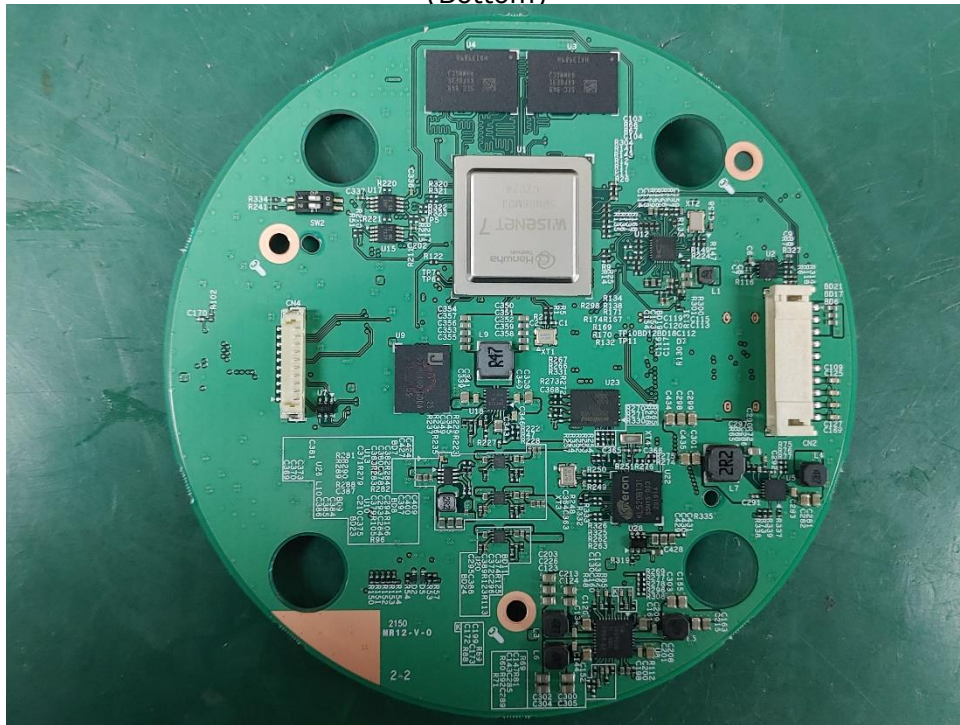
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EUT Internal View – Board 8

(Top)



(Bottom)



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EUT Internal View – Board 9

(Top)

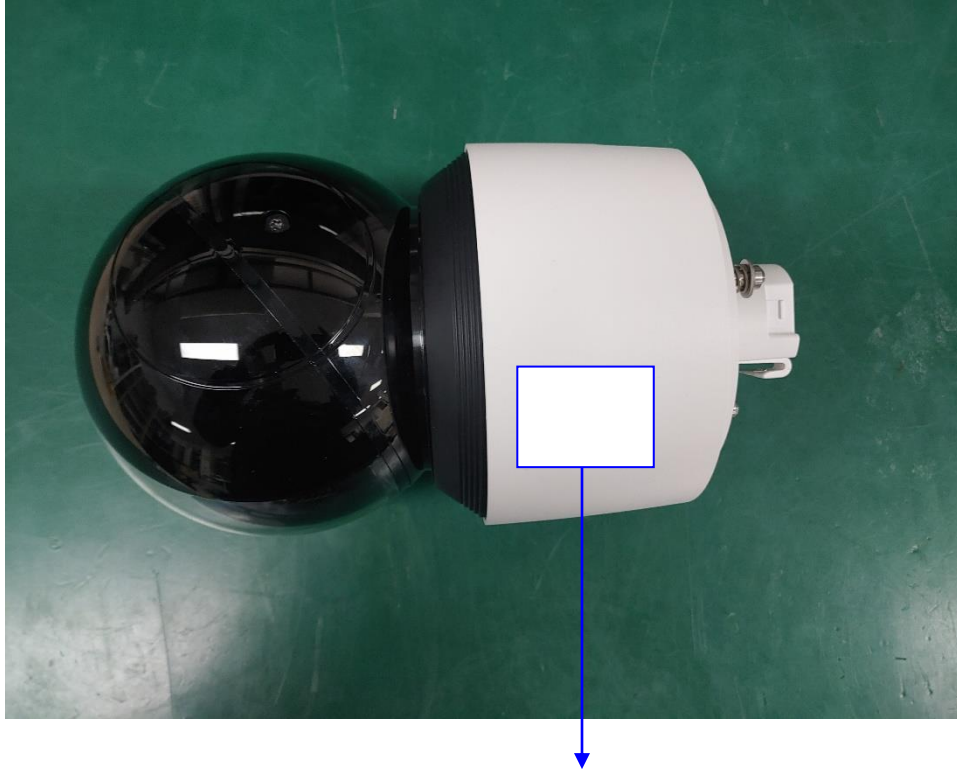


(Bottom)



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