



EMC TEST REPORT For VCCI

Test Report No. : KES-EM-22T0725-R1
Date of Issue : Feb. 24, 2023
Product name : NETWORK CAMERA
Model/Type No. : PNM-C9022RV
Variant Model : -
Applicant : Hanwha Vision Co., Ltd.
Applicant Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si,
Gyeonggi-do, Republic of Korea
Manufacturer : 1. HANWHA VISION VIETNAM COMPANY LIMITED
2. D-TECH CO.,LTD.
Manufacturer Address : 1. Lot O-2, Que Vo Industrial Zone extended area,
Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam
2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do,
Korea (Suwon Industrial Complex)
Date of Receipt : Aug. 17, 2022
Test date : Aug. 20, 2022 ~ Aug. 21, 2022
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Dae Hyun, 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
Aug. 24, 2022	KES-EM-22T0725	Issued
Feb. 24, 2023	KES-EM-22T0725-R1	Change the Applicant and manufacturer at the request of the customer

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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 ☒ PoE

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-C9022RV	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
DC 12 V Adapter	2ACB022F	-	ChAnnel Well Technology (Guangzhou) Co.,Ltd.	-
PoE Adapter	PT-PSE109GBRO-AH	-	Dongguan PROCET Network Technology Co.,Ltd	-
Notebook	Latitude 5300	8C47BE45C060	DELL INC.	-
Notebook Adapter	HA65NM130	-	Chicony Power Technology(Suzhou)Co., Ltd.	-
Micro SD Card	-	-	Sandisk	-
Button Alarm	-	-	-	-
LED Alarm	-	-	-	-
Headset	K550	-	Britz®	-

1.6 External I/O Cabling

■ DC 12 V Adapter Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (EUT)	Micro SD Card Slot	Micro SD Card	Micro SD Card Slot	-	-
	2 Pin (DC Power)	DC 12 V Adapter	2 Pin (DC Power)	1.0	U
	RJ-45 (LAN)	Notebook	RJ-45 (LAN)	3.0	S
	2 Pin (Alarm In)	Button Alarm	2 Pin (Alarm)	3.0	U
	2 Pin (Alarm Out)	LED Alarm	2 Pin (Alarm)	3.0	U
	3.5 mm (Audio In)	Headset	3.5 mm	1.8	U
	3.5 mm (Audio Out)	Headset	3.5 mm	1.8	U
Notebook	DC Jack	Notebook Adapter	DC Jack	1.5	U

* Unshielded=U, Shielded=S

■ PoE Adapter Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (EUT)	Micro SD Card Slot	Micro SD Card	Micro SD Card Slot	-	-
	RJ-45 (PoE)	PoE Adapter	RJ-45 (PoE)	3.0	S
	2 Pin (Alarm In)	Button Alarm	2 Pin (Alarm)	3.0	U
	2 Pin (Alarm Out)	LED Alarm	2 Pin (Alarm)	3.0	U
	3.5 mm (Audio In)	Headset	3.5 mm	1.8	U
	3.5 mm (Audio Out)	Headset	3.5 mm	1.8	U
PoE Adapter	RJ-45 (LAN)	Notebook	RJ-45 (LAN)	1.3	U
Notebook	DC Jack	Notebook Adapter	DC Jack	1.5	U

* Unshielded=U, Shielded=S

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1.7 EUT Operating Mode(s)

Test Mode	operating
DC 12 V Adapter	Check the Normal Operation status. after testing, check if the recording is normally done on the Micro SD Card
PoE Adapter	

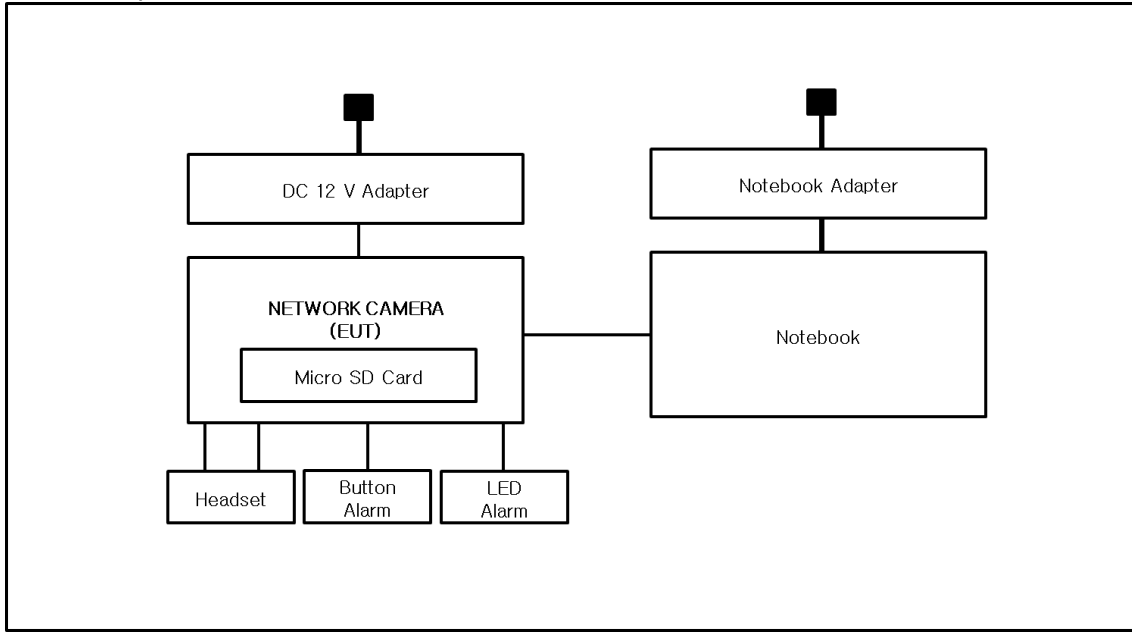
EUT Test operating S/W		
Name	Version	Manufacture Company
Web Viewer	-	Hanwha Vision Co., Ltd

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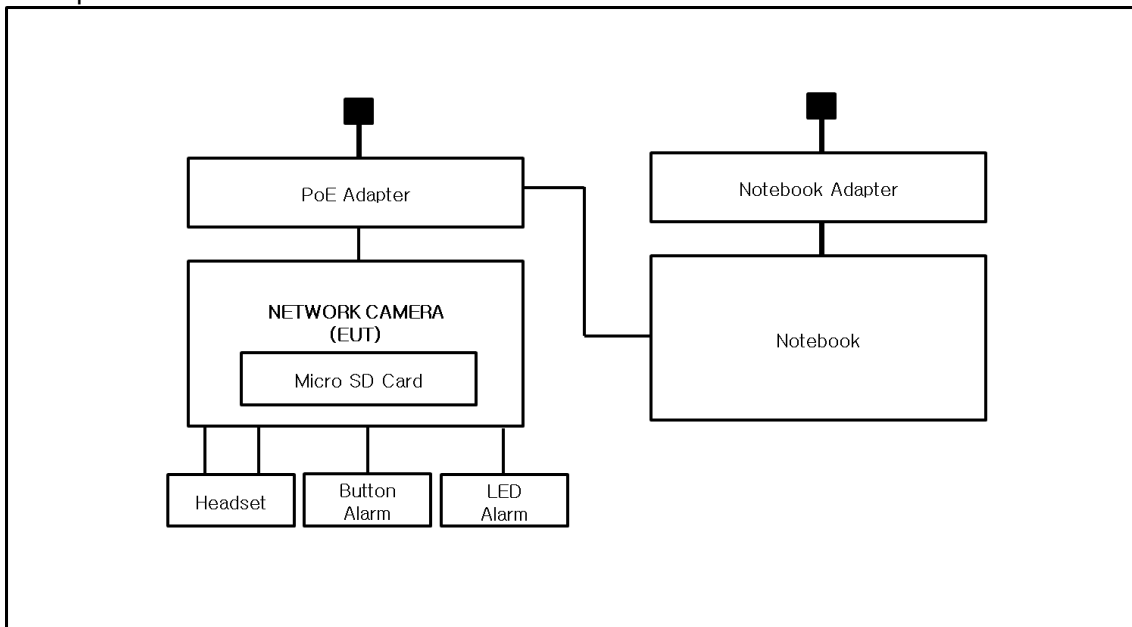
1.8 Configuration

■ AC Main
 □ DC Main

■ DC 12 V Adapter Mode



■ PoE Adapter Mode



1.9 Remarks when standards applied

N/A

1.10 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less.

1.11 Test Facility

The measurement facility is located at 473-21, Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea, Republic of. The sites are constructed in conformance with the requirements of ANSI C63.4a-2017 and CISPR 16-1-4:2019

1.12 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
KOREA	RRA	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KR0100
International	KOLAS	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KT489
USA	FCC	3 m & 10 m Semi-Anechoic Chamber Conducted test site to perform FCC Part 15/18 measurements.	 KR0100
Canada	ISED	3 m & 10 m Semi-Anechoic Chamber and Conducted test site	 23298
JAPAN	VCCI	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site)	 C-20136, T-20137, R-20181, G-20176
Europe	TÜV SÜD	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 CARAT 001633 0004



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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

Aug. 20, 2022

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	12, 28, 2022
☒	LISN	ENV216	R & S	101787	12, 27, 2022
☒	LISN	ESH2-Z5	R & S	100450	12, 27, 2022
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 27, 2022

Test Conditions

Temperature: (24,4 ± 0,1) °C
Relative Humidity: (47,5 ± 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

Remarks

See Appendix A for test data.

2.2 Conducted Emissions at Telecommunication Ports

Test Date

Aug. 20, 2022

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	12, 28, 2022
☒	LISN	ENV216	R & S	101787	12, 27, 2022
☒	LISN	ESH2-Z5	R & S	100450	12, 27, 2022
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 27, 2022
☒	ISN	ISN S8	SCHWARZBECK	ISN-S8-0019	03, 07, 2023
☐	CDN	CDNS502A	TESEQ	40431	12, 27, 2022

Test Conditions

Temperature: (24,4 ± 0,1) °C

Relative Humidity: (47,5 ± 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

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

Aug. 21, 2022

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, 31, 2023
☒	AMPLIFIER	SCU 01	R & S	100603	11, 24, 2022
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	12, 08, 2022
☒	ATTENUATOR	8491A	HP	32173	03, 08, 2023

Test Conditions

Temperature: (24,4 ± 0,1) °C
Relative Humidity: (45,8 ± 0,1) % R.H.

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

Test Results

The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

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2.4 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Aug. 21, 2022

Test Location

SEMI ANECHOIC CHAMBER #3

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	ESR7	R & S	101190	08, 01, 2023
☒	PREAMPLIFIER	8449B	AGILENT	3008A01967	04, 01, 2023
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 03, 2023

Test Conditions

Temperature: (24,6 ± 0,1) °C

Relative Humidity: (45,5 ± 0,1) % R.H.

Frequency Range of Measurement

1 GHz to 6 GHz

Instrument Settings

IF Band Width: 1 MHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

RemarksSee Appendix A for test data.

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APPENDIX A – TEST DATA

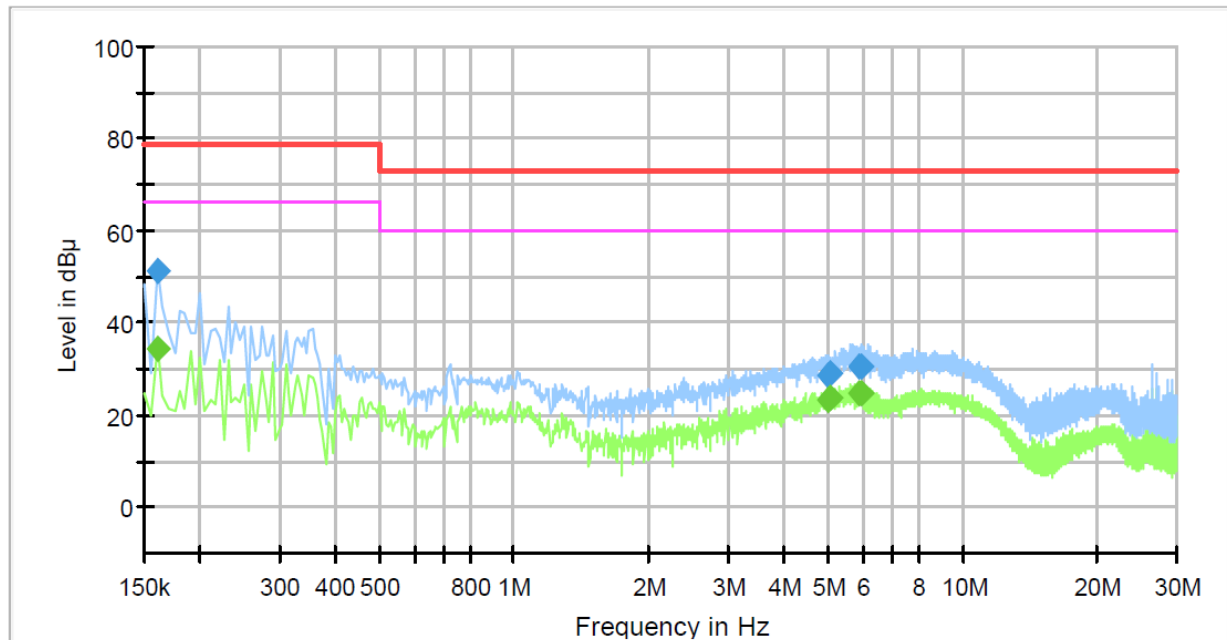
Conducted Emissions at Mains Power Ports

■ DC 12 V Adapter Mode

HOT LINE

Common Information

Test Description:	Conducted Emission
Model No.:	PNM-C9022RV
Phase:	
Mode:	DC 12 V Adapter
Operator Name:	KES



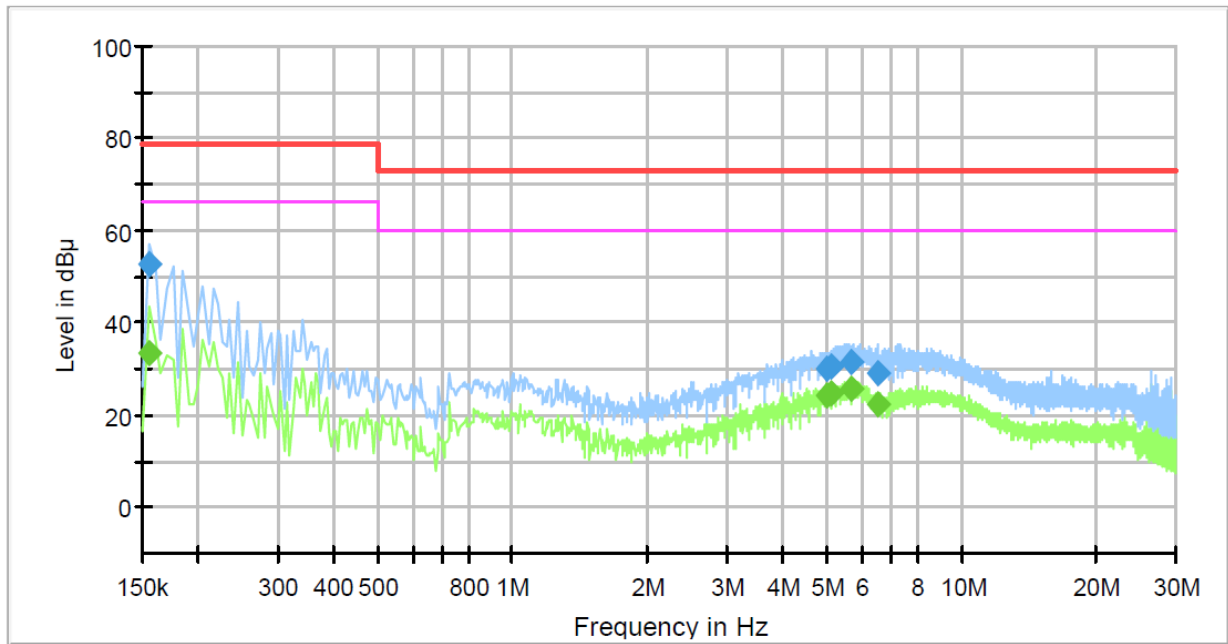
Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	34.40	66.00	31.60	1000.0	9.000	L1	19.4
0.160000	51.16	---	79.00	27.84	1000.0	9.000	L1	19.4
5.000000	---	23.32	60.00	36.68	1000.0	9.000	L1	19.6
5.000000	28.65	---	73.00	44.35	1000.0	9.000	L1	19.6
5.085000	---	23.58	60.00	36.42	1000.0	9.000	L1	19.6
5.085000	28.90	---	73.00	44.10	1000.0	9.000	L1	19.6
5.915000	---	24.52	60.00	35.48	1000.0	9.000	L1	19.5
5.915000	30.68	---	73.00	42.32	1000.0	9.000	L1	19.5
5.930000	---	24.53	60.00	35.47	1000.0	9.000	L1	19.5
5.930000	30.63	---	73.00	42.37	1000.0	9.000	L1	19.5

NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	PNM-C9022RV
Phase:	
Mode:	DC 12 V Adapter
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	---	33.50	66.00	32.50	1000.0	9.000	N	19.4
0.155000	52.86	---	79.00	26.14	1000.0	9.000	N	19.4
5.020000	---	24.37	60.00	35.63	1000.0	9.000	N	19.6
5.020000	30.16	---	73.00	42.84	1000.0	9.000	N	19.6
5.125000	---	24.69	60.00	35.31	1000.0	9.000	N	19.6
5.125000	30.43	---	73.00	42.57	1000.0	9.000	N	19.6
5.690000	---	25.58	60.00	34.42	1000.0	9.000	N	19.5
5.690000	31.44	---	73.00	41.56	1000.0	9.000	N	19.5
6.540000	---	22.35	60.00	37.65	1000.0	9.000	N	19.5
6.540000	29.21	---	73.00	43.79	1000.0	9.000	N	19.5

◆ 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 (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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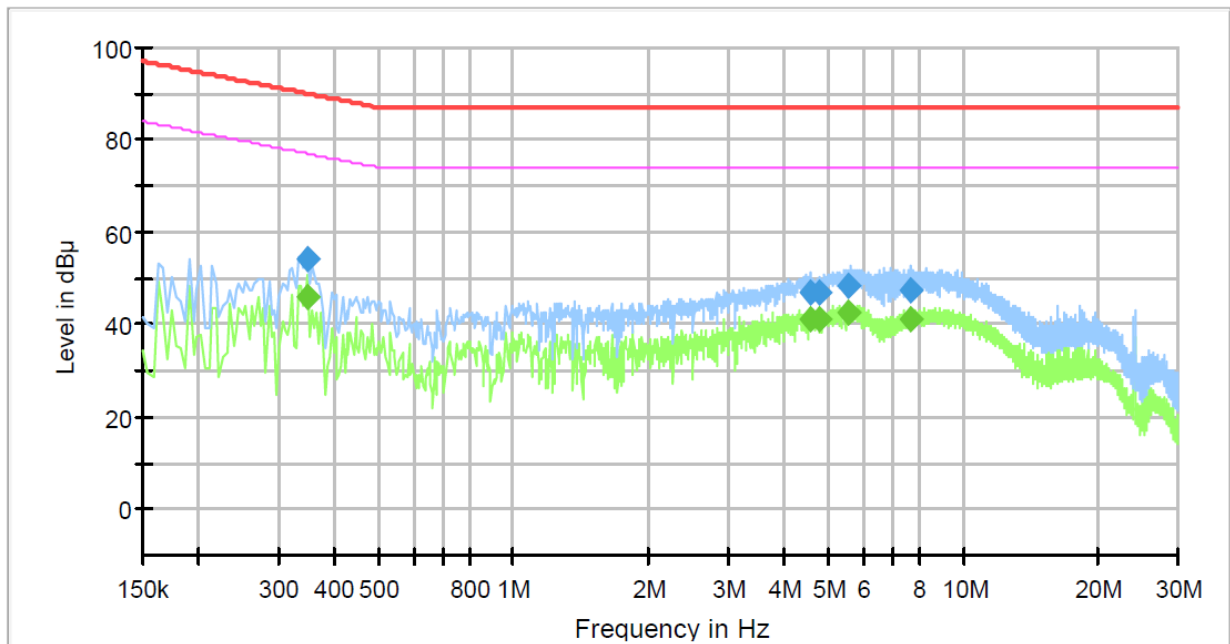
Conducted Emissions at Telecommunication Ports

■ DC 12 V Adapter Mode

[1 000 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	PNM-C9022RV
Mode :	DC 12 V Adapter
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)
0.350000	---	45.83	76.96	31.13	1000.0	9.000	Single Line	19.4
0.350000	54.12	---	89.96	35.84	1000.0	9.000	Single Line	19.4
4.562000	---	40.92	74.00	33.08	1000.0	9.000	Single Line	19.6
4.562000	46.95	---	87.00	40.05	1000.0	9.000	Single Line	19.6
4.778000	---	41.14	74.00	32.86	1000.0	9.000	Single Line	19.5
4.778000	47.10	---	87.00	39.90	1000.0	9.000	Single Line	19.5
5.562000	---	42.55	74.00	31.45	1000.0	9.000	Single Line	19.4
5.562000	48.32	---	87.00	38.68	1000.0	9.000	Single Line	19.4
7.646000	---	41.17	74.00	32.83	1000.0	9.000	Single Line	19.4
7.646000	47.25	---	87.00	39.75	1000.0	9.000	Single Line	19.4

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■ PoE Adapter Mode

[1 000 Mbps]**Common Information**

Test Description:

Model No.:

Mode :

Speed :

Operator Name:

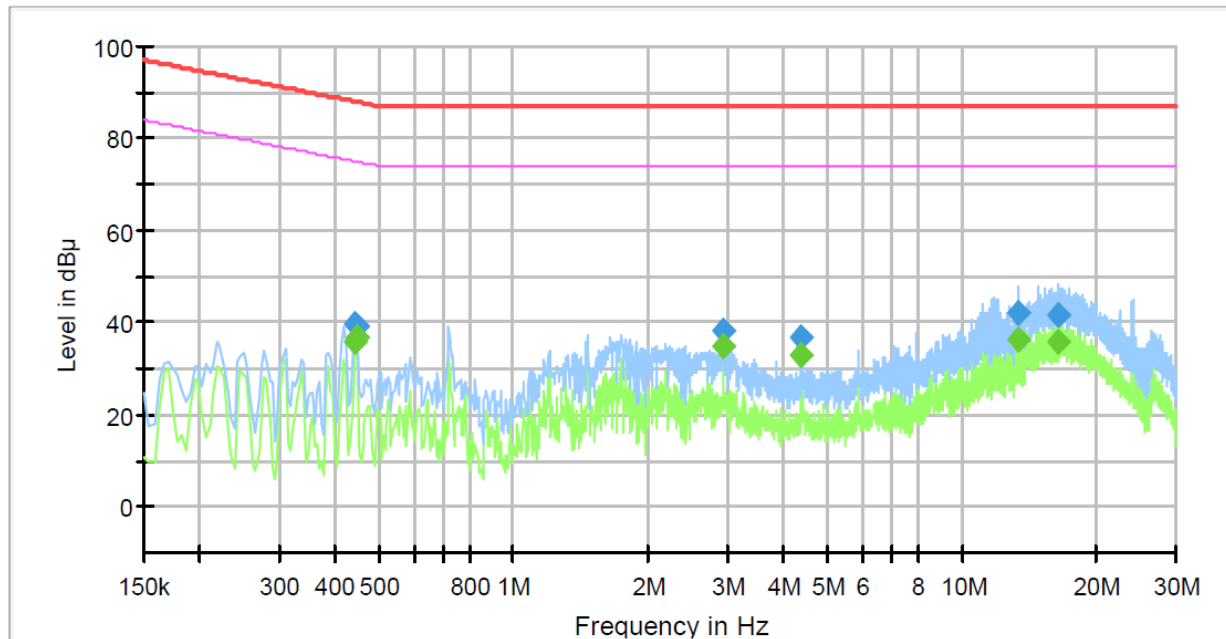
Telecommunication Emission

PNM-C9022RV

PoE Adapter

1 000 Mbps

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Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.442000	---	35.95	75.02	39.07	1000.0	9.000	Single Line	19.5
0.442000	39.78	---	88.02	48.24	1000.0	9.000	Single Line	19.5
0.446000	---	36.93	74.95	38.02	1000.0	9.000	Single Line	19.5
0.446000	39.45	---	87.95	48.50	1000.0	9.000	Single Line	19.5
2.930000	---	35.00	74.00	39.00	1000.0	9.000	Single Line	20.1
2.930000	38.13	---	87.00	48.87	1000.0	9.000	Single Line	20.1
4.398000	---	33.11	74.00	40.89	1000.0	9.000	Single Line	19.6
4.398000	36.82	---	87.00	50.18	1000.0	9.000	Single Line	19.6
13.418000	---	36.28	74.00	37.72	1000.0	9.000	Single Line	19.8
13.418000	41.92	---	87.00	45.08	1000.0	9.000	Single Line	19.8
16.438000	---	35.61	74.00	38.39	1000.0	9.000	Single Line	19.9
16.438000	41.63	---	87.00	45.37	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))

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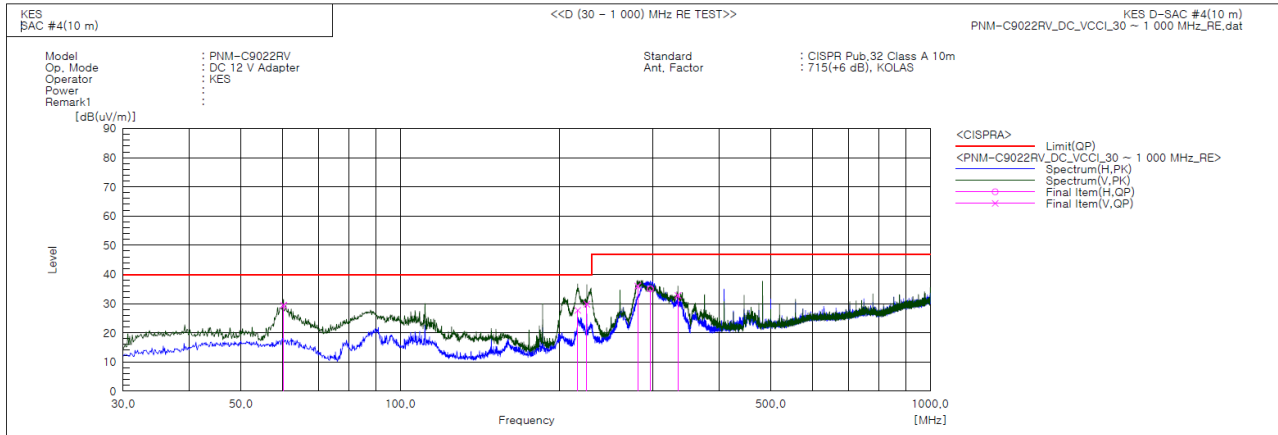
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Radiated Electric Field Emissions(Below 1 GHz)

■ DC 12 V Adapter Mode



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	60.186	V	51.4	-22.0	29.4	40.0	10.6	103.0	67.0	
2	216.128	V	48.2	-20.5	27.7	40.0	12.3	110.0	182.0	
3	224.970	V	50.0	-20.2	29.8	40.0	10.2	138.0	119.0	
4	280.381	V	54.6	-18.6	36.0	47.0	11.0	100.0	85.0	
5	296.508	H	53.1	-18.1	35.0	47.0	12.0	400.0	355.0	
6	334.095	V	48.7	-15.9	32.8	47.0	14.2	268.0	352.0	

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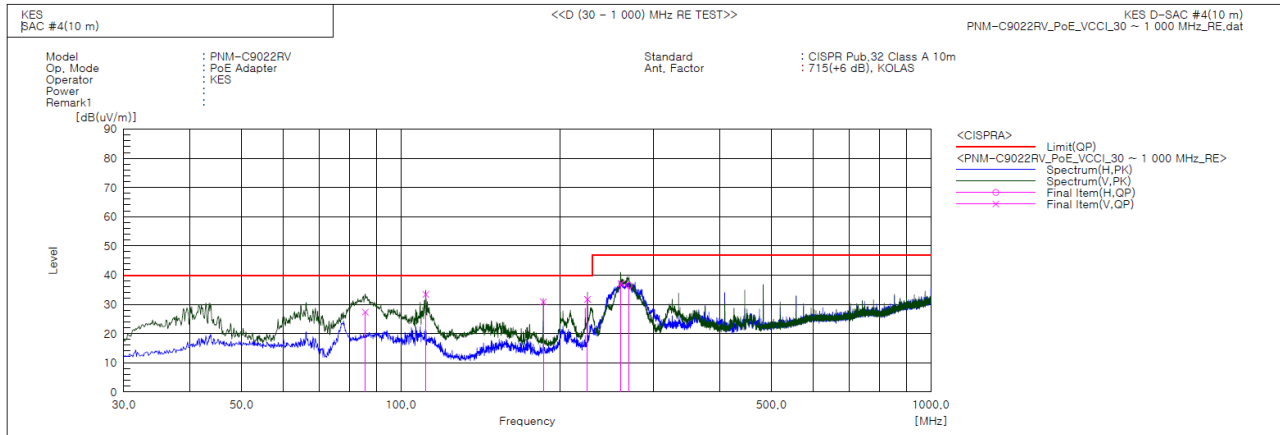
3701, 40, Simin-daero 365beon-gil,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
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Report No.:

KES-EM-22T0725-R1

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PoE Adapter Mode



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	85.654	V	53.2	-25.9	27.3	40.0	12.7	120.0	241.0	
2	111.350	V	55.8	-22.4	33.4	40.0	6.6	103.0	211.0	
3	185.599	V	53.7	-22.8	30.9	40.0	9.1	100.0	4.0	
4	224.952	V	51.9	-20.2	31.7	40.0	8.3	115.0	60.0	
5	259.932	V	56.1	-19.0	37.1	47.0	9.9	100.0	138.0	
6	269.473	H	55.3	-18.8	36.5	47.0	10.5	400.0	175.0	

◆ 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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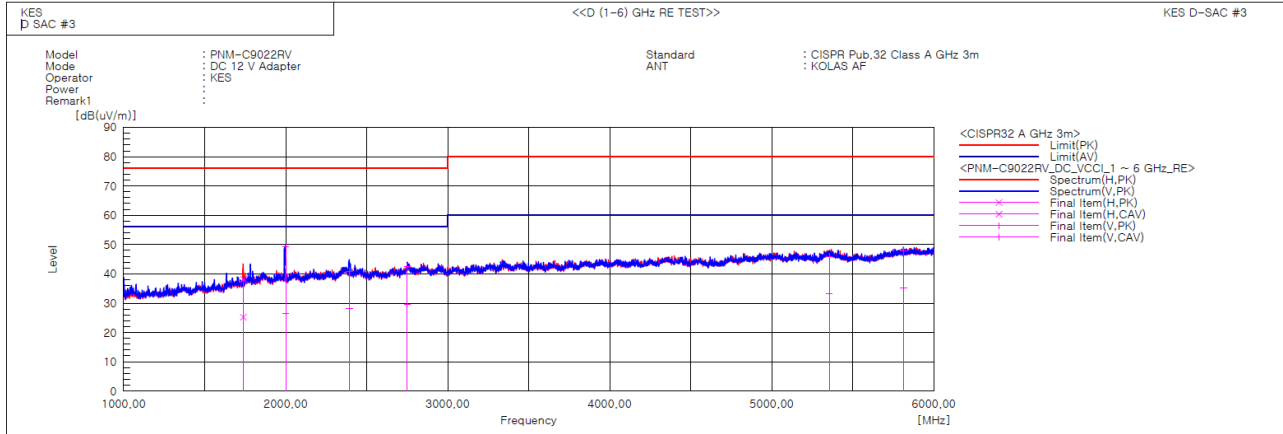
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Page (22) of (48)

Radiated Electric Field Emissions(Above 1 GHz)

■ DC 12 V Adapter Mode



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	1737.550	H	41.2	28.2	-3.0	38.2	25.2	76.0	56.0	37.8	30.8	100.0	32.0	
2	2000.021	V	50.2	27.6	-1.0	49.2	26.6	76.0	56.0	26.8	29.4	100.0	265.3	
3	2392.009	V	39.7	27.0	1.2	40.9	28.2	76.0	56.0	35.1	27.8	100.0	215.2	
4	2751.130	V	40.2	27.3	2.3	42.5	29.6	76.0	56.0	33.5	26.4	100.0	350.4	
5	5355.224	V	36.6	23.8	9.4	46.0	33.2	80.0	60.0	34.0	26.8	100.0	134.6	
6	5813.965	V	37.4	24.8	10.5	47.9	35.3	80.0	60.0	32.1	24.7	100.0	103.4	

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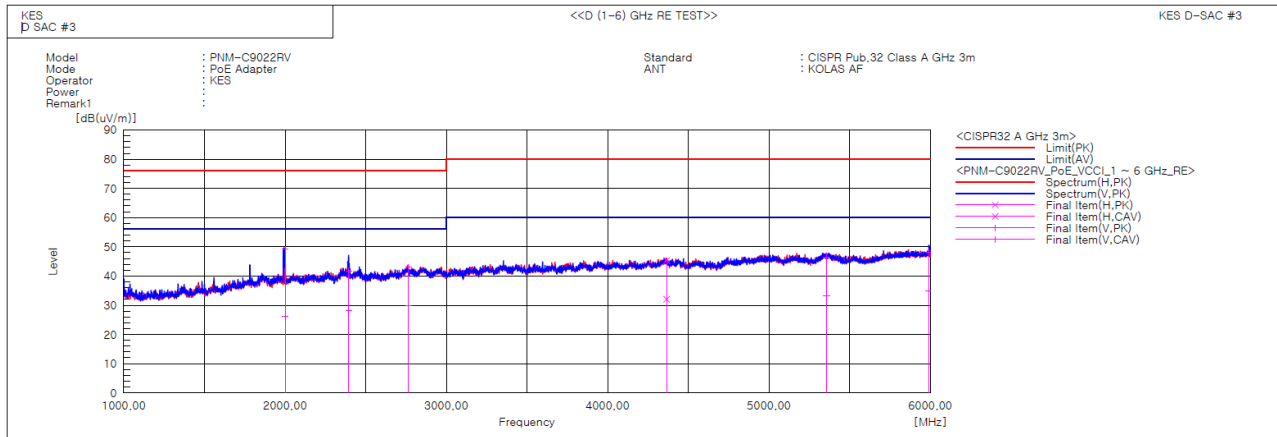


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Report No.:
KES-EM-22T0725-R1
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PoE Adapter Mode



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	2000.013	V	50.2	27.3	-1.0	49.2	26.3	76.0	56.0	26.8	29.7	100.0	241.7	
2	2394.402	V	40.5	27.0	1.2	41.7	28.2	76.0	56.0	34.3	27.8	100.0	217.7	
3	2763.994	V	40.6	27.3	2.4	43.0	29.7	76.0	56.0	33.0	26.3	100.0	210.4	
4	4365.128	H	38.3	25.0	7.1	45.4	32.1	80.0	60.0	34.6	27.9	100.0	8.2	
5	5355.760	V	37.1	23.8	9.4	46.5	33.2	80.0	60.0	33.5	26.8	100.0	113.8	
6	5991.533	V	37.0	23.6	11.2	48.2	34.8	80.0	60.0	31.8	25.2	100.0	317.2	

◆ 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

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Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports

■ DC 12 V Adapter Mode



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Conducted Emissions at Telecommunication Ports

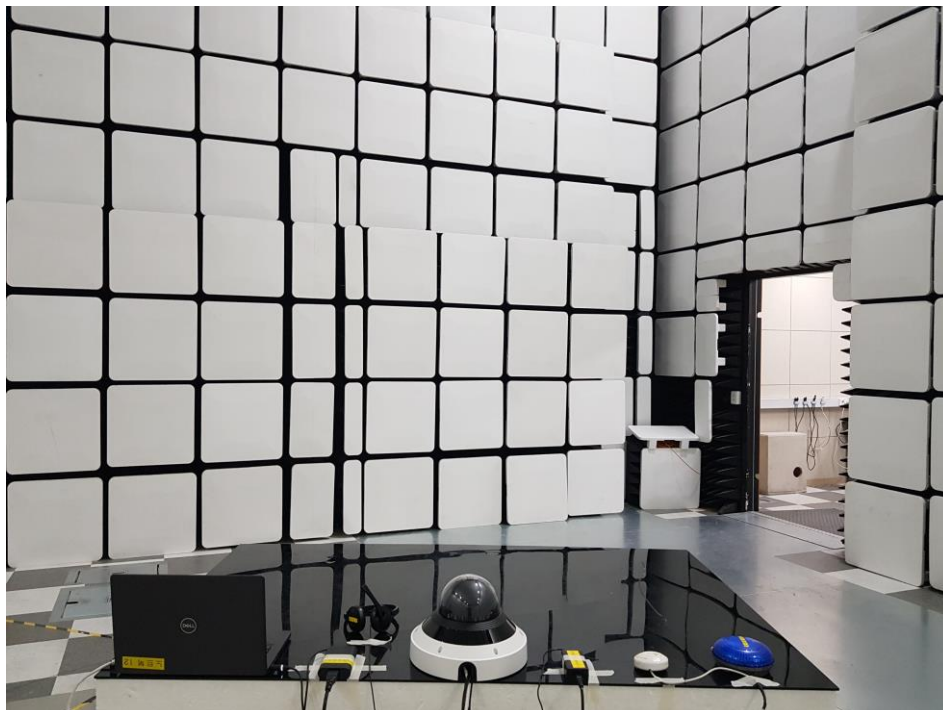
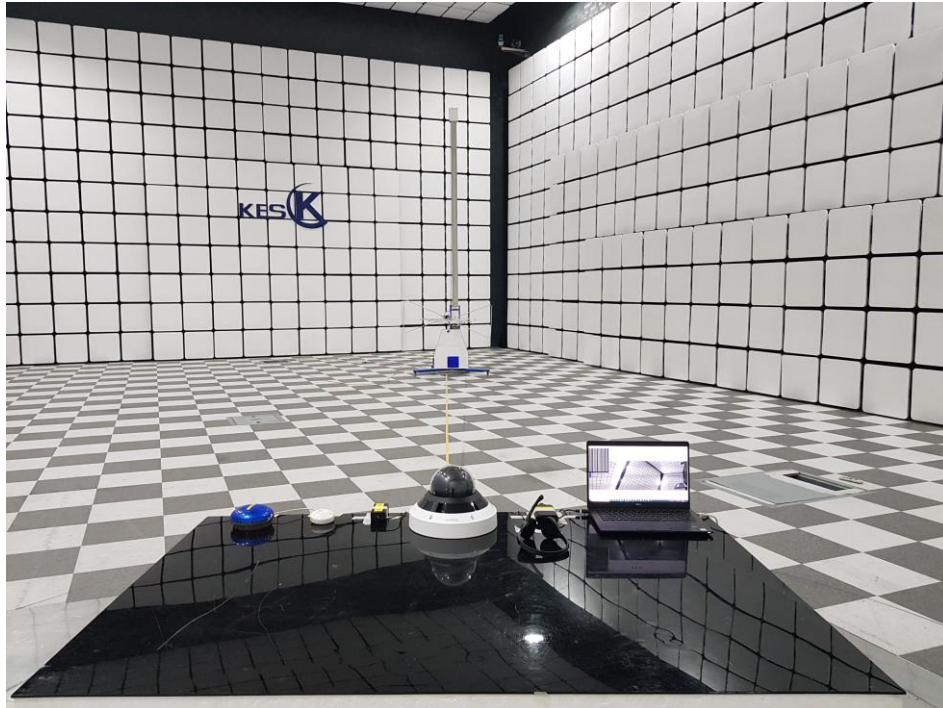
■ DC 12 V Adapter Mode



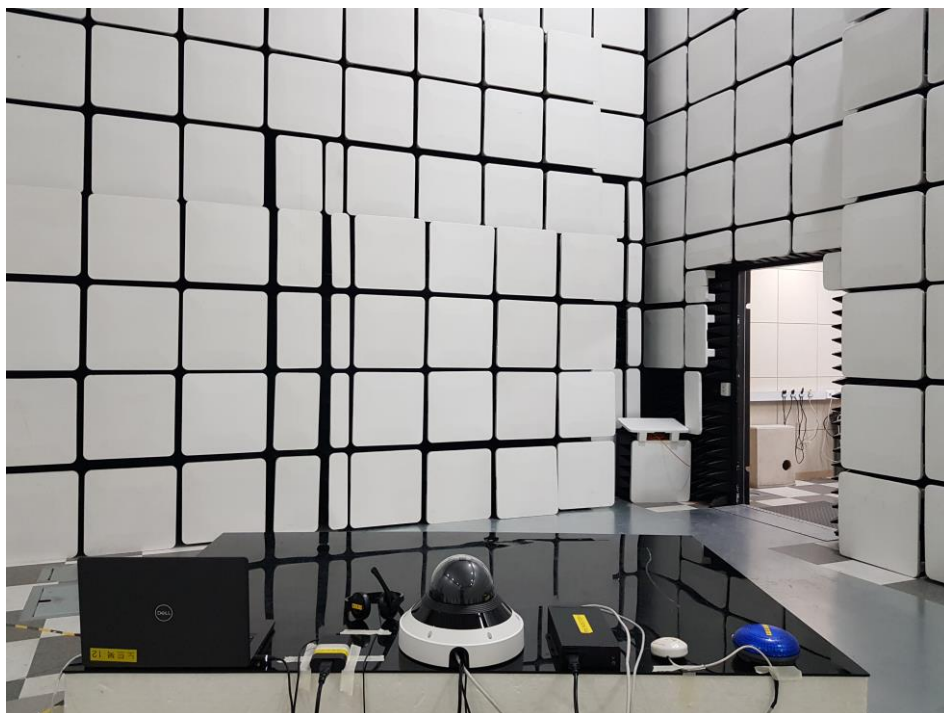
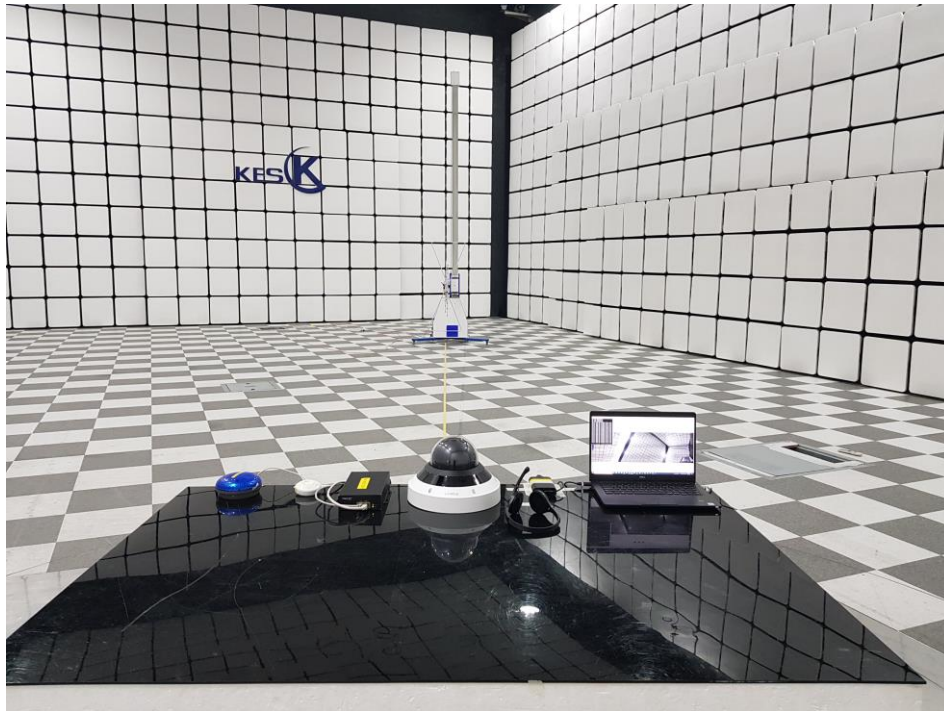
■ PoE Adapter Mode

Radiated Electric Field Emissions(Below 1 GHz)

■ DC 12 V Adapter Mode



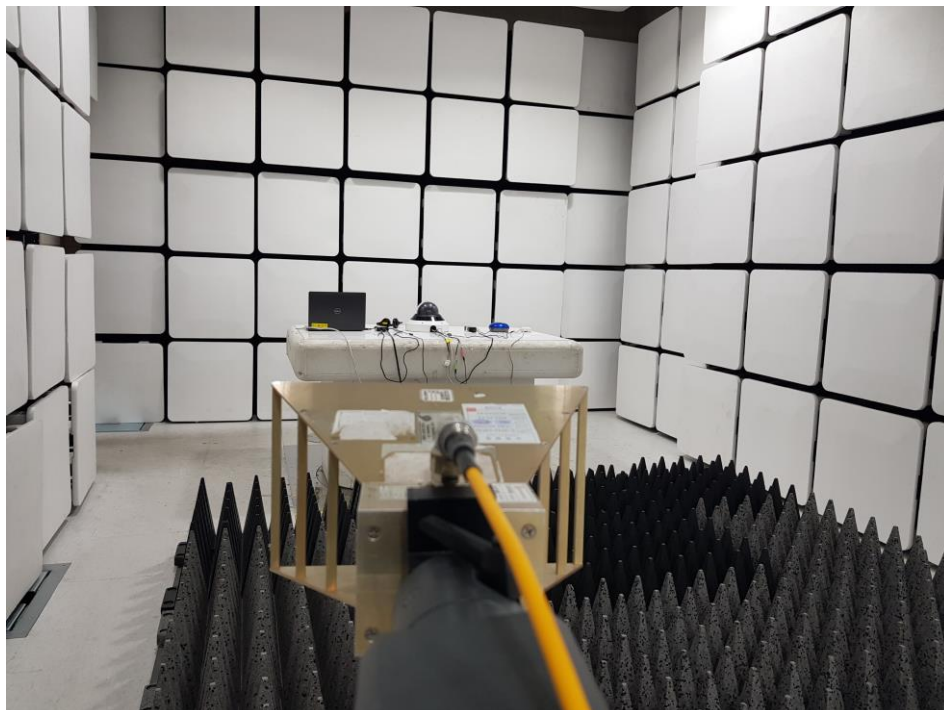
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■ PoE Adapter Mode

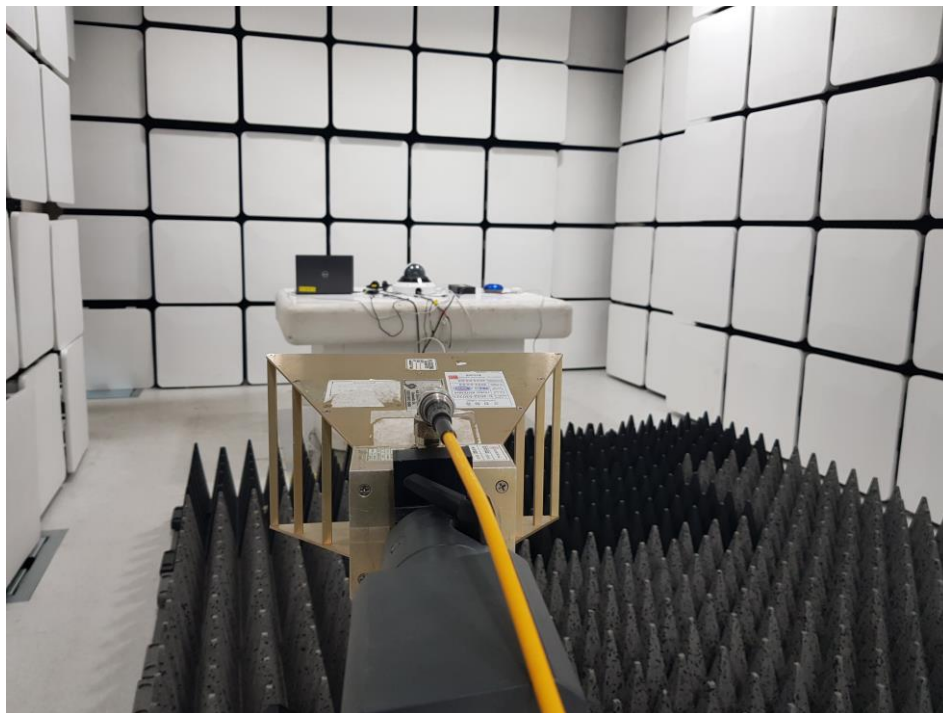
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Radiated Electric Field Emissions(Above 1 GHz)

■ DC 12 V Adapter Mode



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■ PoE Adapter Mode

EUT External Photographs

(Top)



(Bottom)



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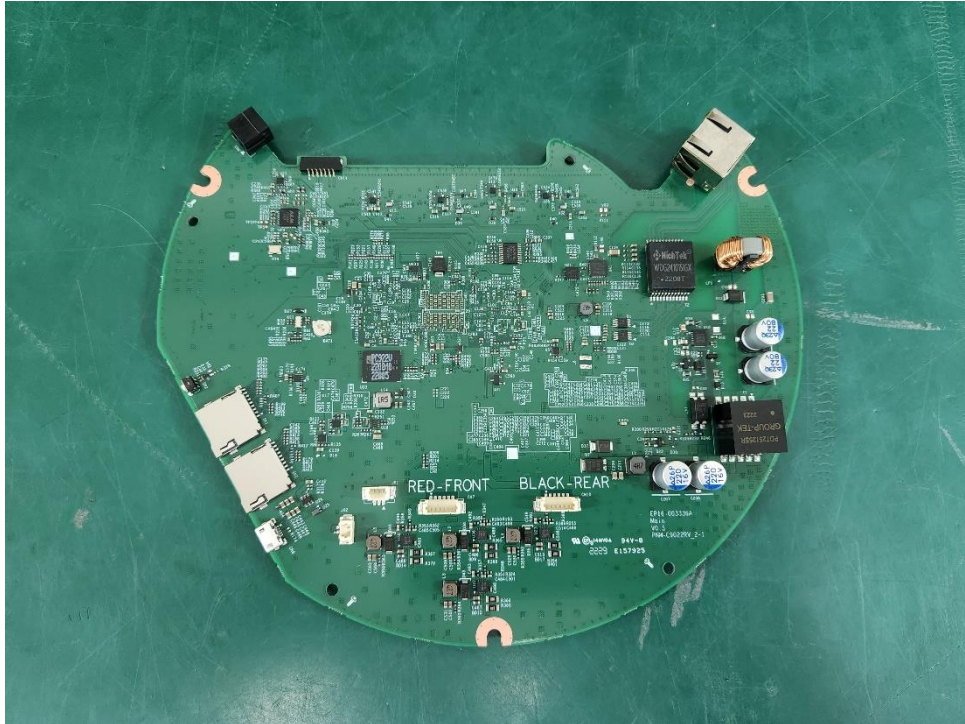
EUT Internal Photographs

(Internal View)

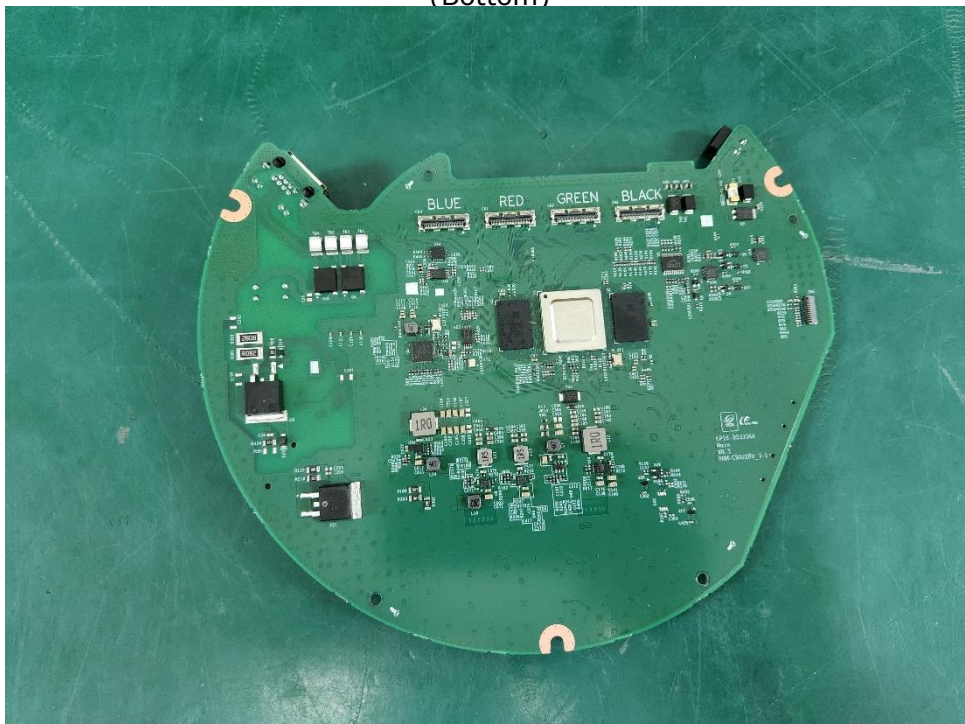


EUT Internal View – Main Board

(Top)



(Bottom)



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EUT Internal View – Sub Board 1

(Top)



(Bottom)



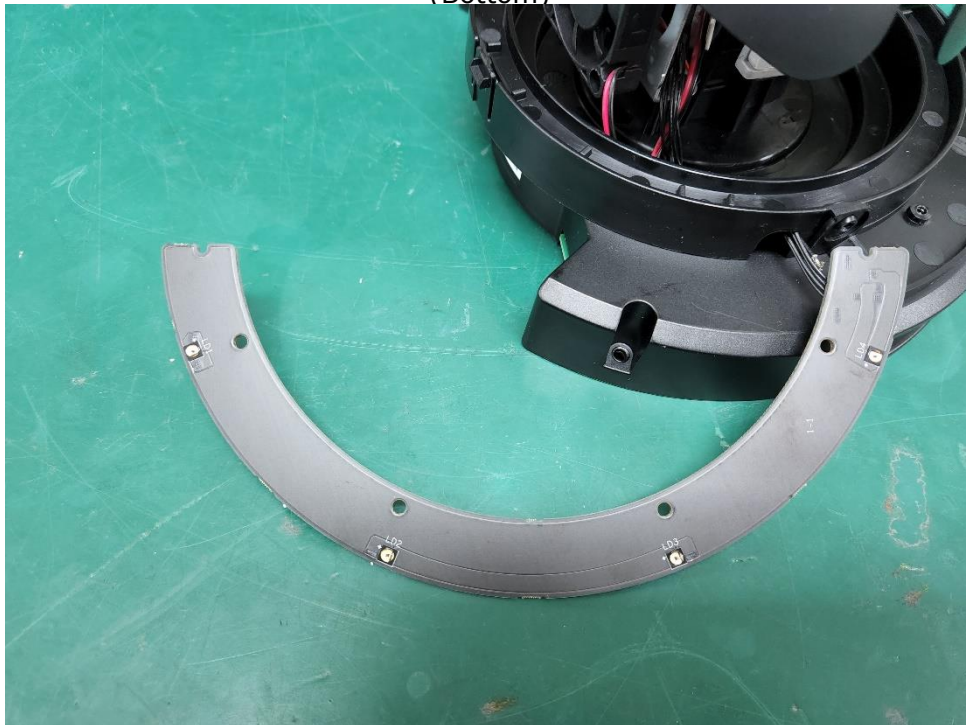
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EUT Internal View – Sub Board 2

(Top)



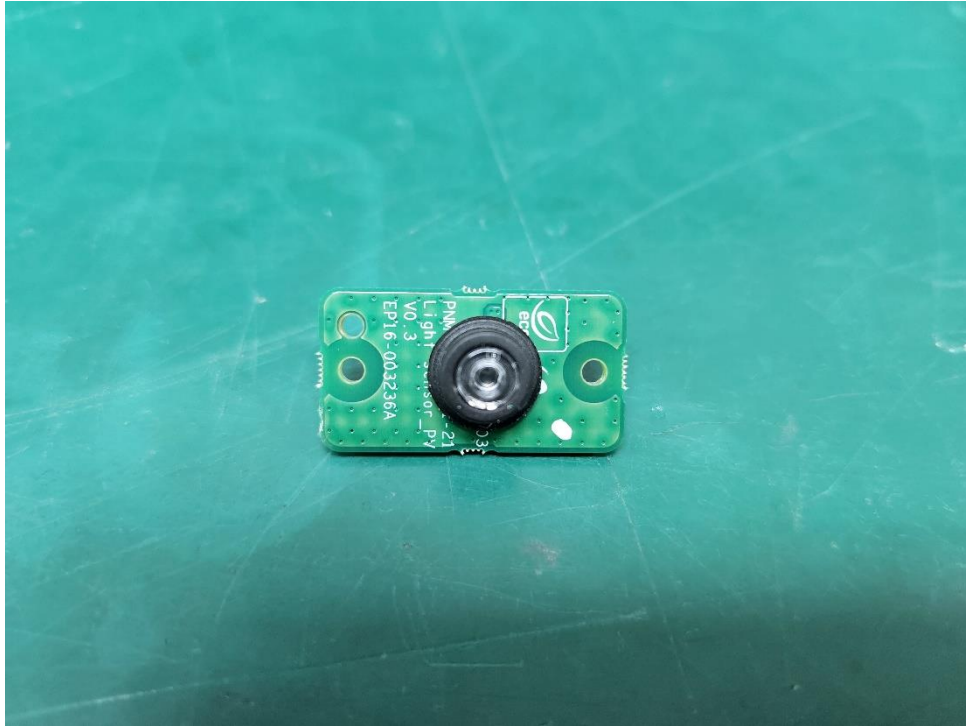
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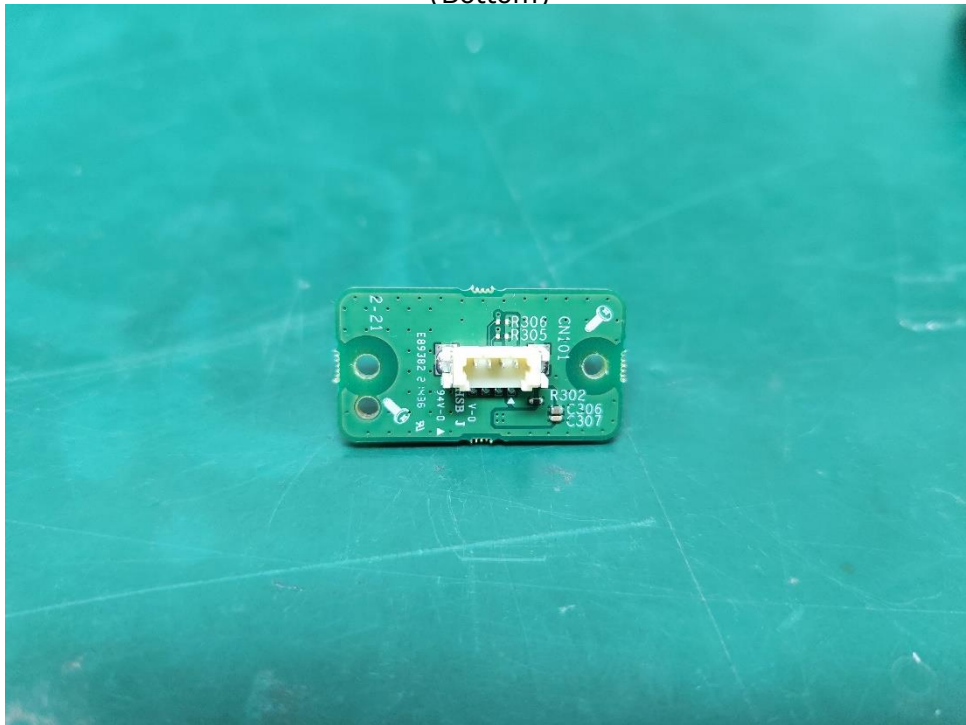
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EUT Internal View – Sub Board 3

(Top)



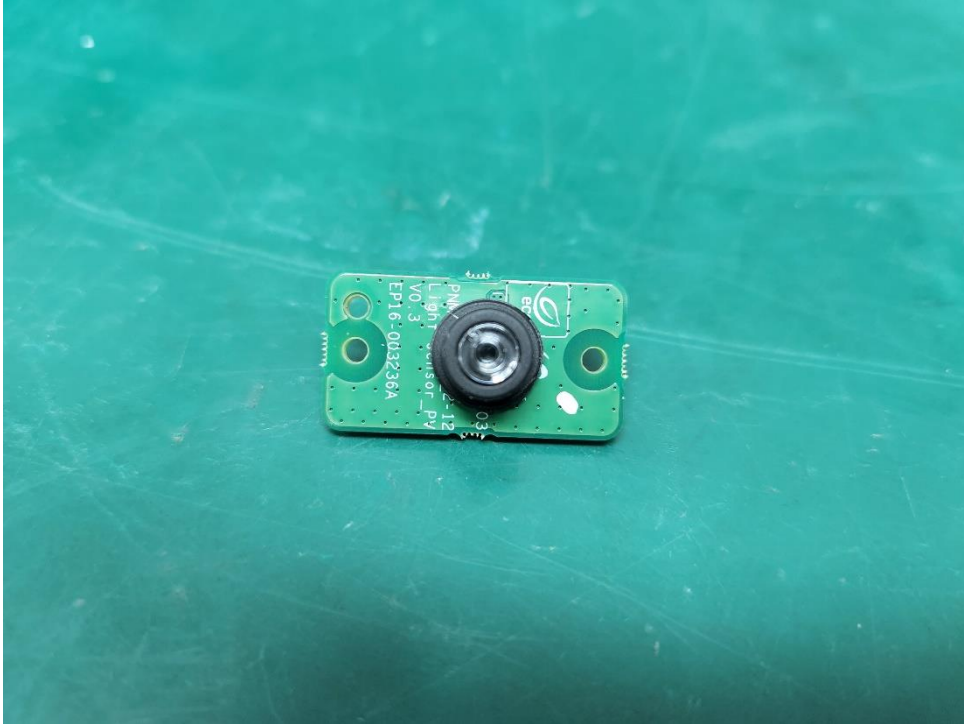
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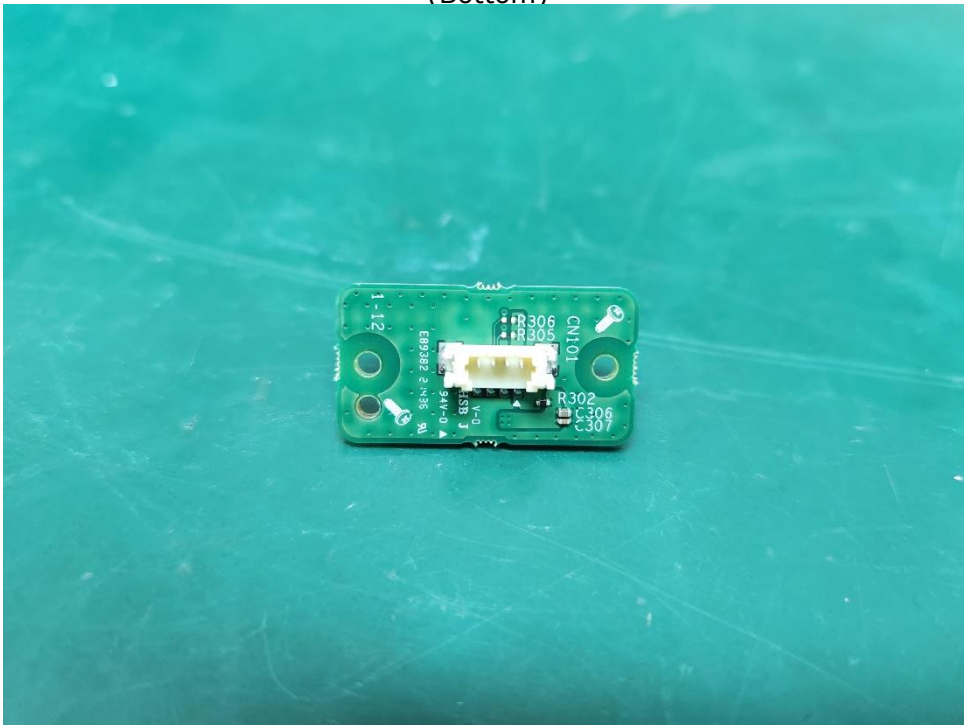
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EUT Internal View – Sub Board 4

(Top)



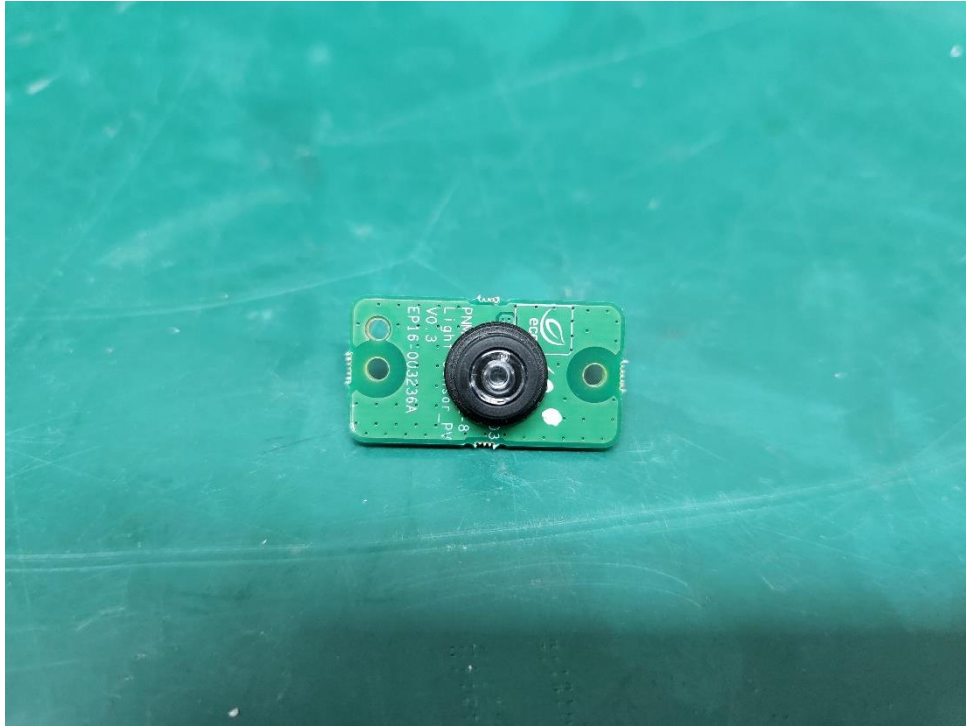
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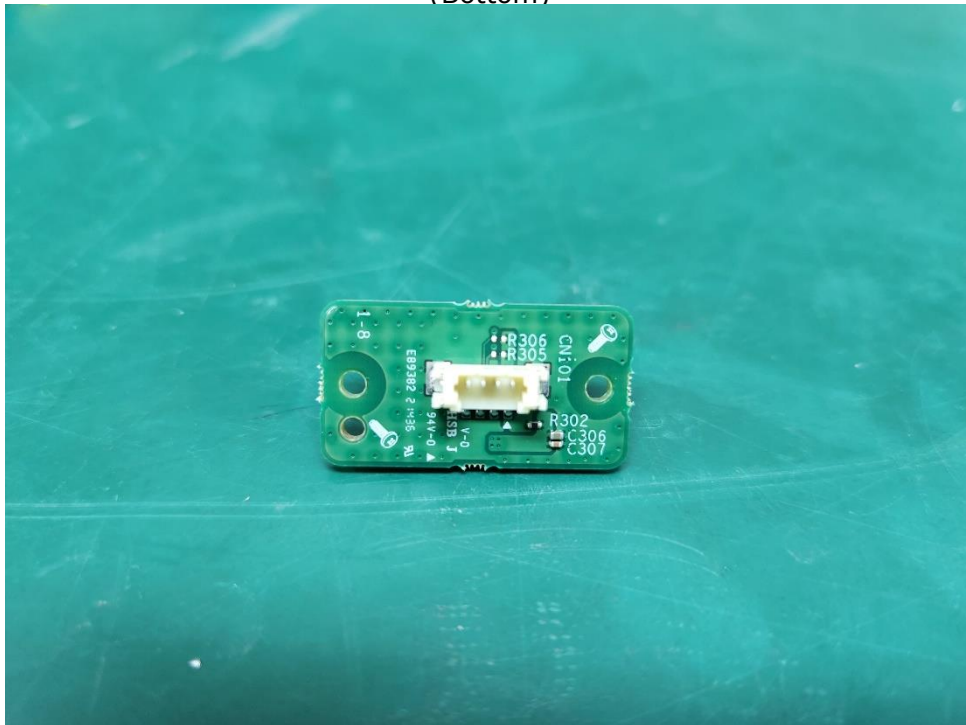
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EUT Internal View – Sub Board 5

(Top)



(Bottom)



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EUT Internal View – Sub Board 6

(Top)



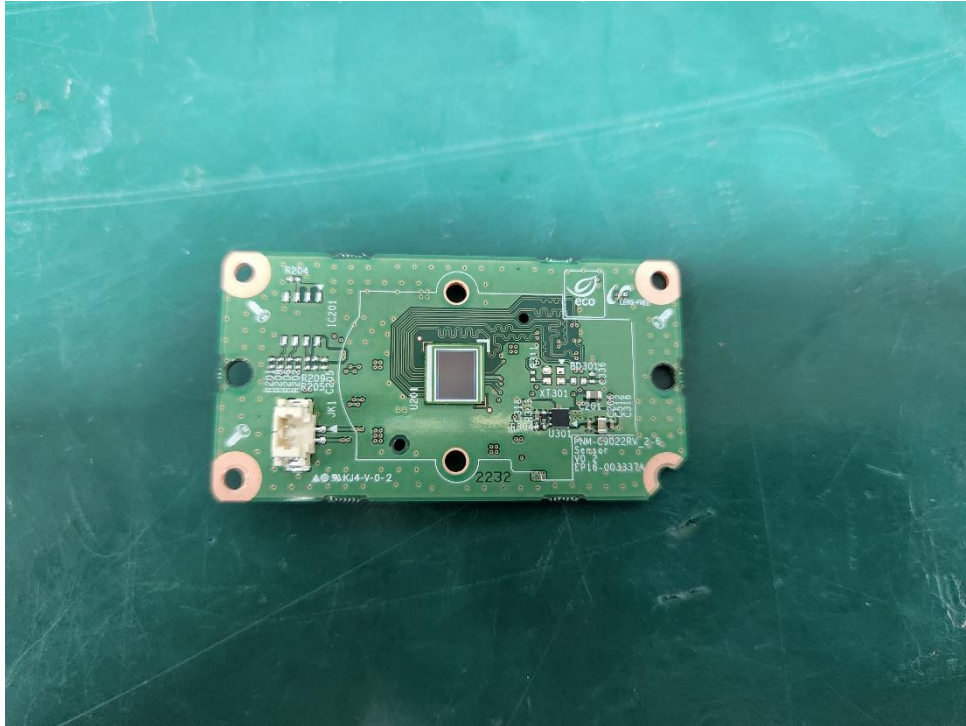
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EUT Internal View – Sub Board 7

(Top)



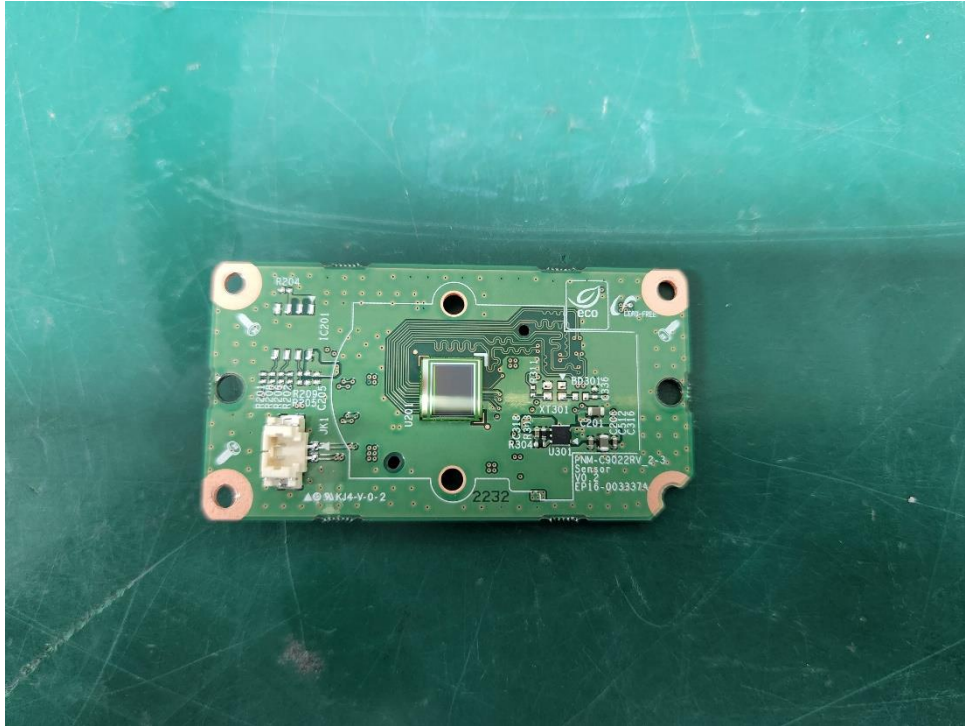
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EUT Internal View – Sub Board 8

(Top)



(Bottom)



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EUT Internal View – Sub Board 9

(Top)



(Bottom)



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EUT Internal View – Lens 1

(Top)



(Bottom)



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EUT Internal View – Lens 2

(Top)



(Bottom)



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EUT Internal View – Lens 3

(Top)



(Bottom)



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EUT Internal View – Lens 4

(Top)



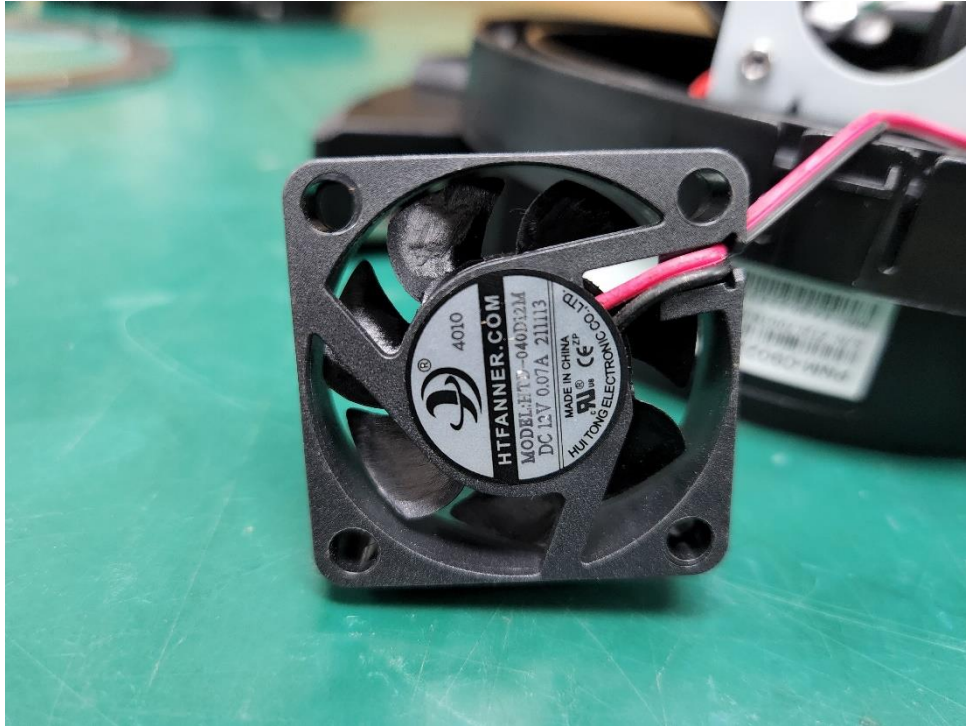
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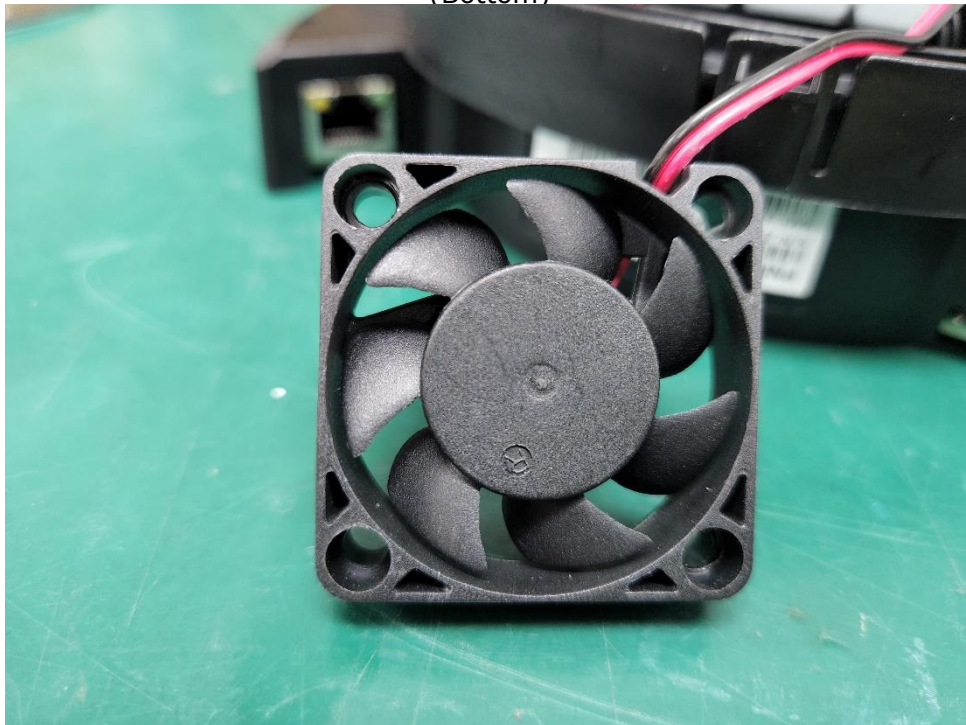
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EUT Internal View – FAN

(Top)

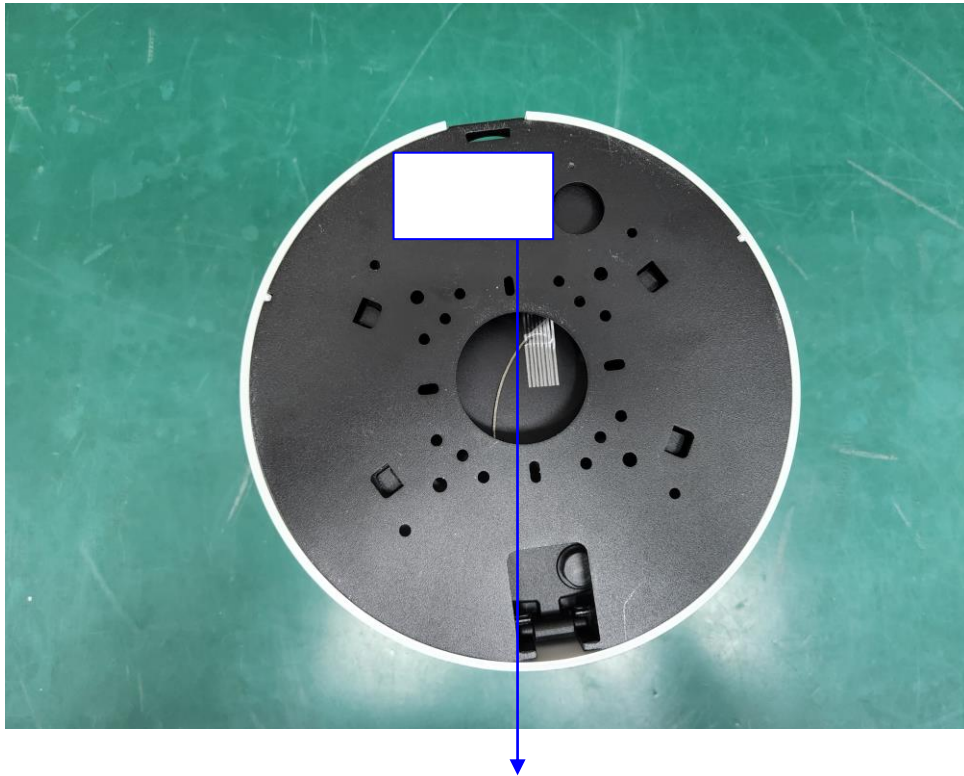


(Bottom)



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