



TEST REPORT



Report No. : KES-EM252056

Page 1 / 26

KES Co., Ltd.

#3002, #3503, #3701, 40, Simin-daero365beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Republic of Korea
Tel : +82-31-425-6200, Fax : +82-31-381-3838

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 : LENS MODULE

Model/Type No. : SLA-F2480VA

Variant Model : -

Manufacturer : 1. HANWHA VISION VIETNAM COMPANY LIMITED
2. D-TECH CO.,LTD.

Manufacturer Address : 1. Lot O-2, Que Vo Industrial Zone extended Area, Nam Son Ward, Bac Ninh City, Bac Ninh Province, Vietnam
2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do, Korea (Suwon Industrial Complex)

3. Date of Receipt : Jun. 09, 2025

4. Test date : Jun. 14, 2025 ~ Jun. 15, 2025

5. Date of Issue : Jun. 24, 2025

6. Test Results : In Compliance

Tested by

Reviewed by

Hyo Jin, Kim
EMC Test Engineer

Dong Hun, Jang
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
Jun. 24, 2025	KES-EM252062	Issued

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd. This document may be altered or revised by KES Co., Ltd. personnel only, and shall be noted in the revision section of the document. Any alteration of this document not carried out by KES Co., Ltd. will constitute fraud and shall nullify the document.



TABLE OF CONTENTS

1.0	General Product Description	4
1.1	Test Voltage & Frequency	6
1.2	Variant Model Differences	6
1.3	Device Modifications	6
1.4	Equipment Under Test	6
1.5	Support Equipments	6
1.6	External I/O Cabling	6
1.7	EUT Operating Mode(s)	7
1.8	Configuration	7
1.9	Remarks when standards applied	8
1.10	Calibration Details of Equipment Used for Measurement	8
1.11	Test Facility	8
1.12	Laboratory Accreditations and Listings	8
2.0	Test Regulations	9
2.1	Conducted Emissions at Mains Power Ports	10
2.2	Conducted Emissions at Telecommunication Ports	11
2.3	Radiated Electric Field Emissions(Below 1 GHz)	12
2.4	Radiated Electric Field Emissions(Above 1 GHz)	13
APPENDIX A – TEST DATA		14
Conducted Emissions at Mains Power Ports		14
Conducted Emissions at Telecommunication Ports		16
Radiated Electric Field Emissions(Below 1 GHz)		17
Radiated Electric Field Emissions(Above 1 GHz)		18
Test Setup Photos and Configuration		19
Conducted Emissions at Mains Power Ports		19
Conducted Emissions at Telecommunication Ports		20
Radiated Electric Field Emissions(Below 1 GHz)		20
Radiated Electric Field Emissions(Above 1 GHz)		21
EUT External Photographs		22
EUT Internal Photographs		25



1.0 General Product Description

Main Specifications of EUT are:

Division		Specificity
Internal highest operating frequency		3 000 MHz
Power	Rated Power	DC 5 V
	Test Power	AC 240 V, 50 Hz
Ports	I/O Port	RJ-12 1 EA
	Unused Port	N/A
Components		Main Body 1 EA, Cable 1 EA



Video	
Imaging Device	1/2.8" CMOS
Resolution	None
Max. Framerate	None
NETD	None
Pixel Size	None
Video Out	None
Video Transmission Distance	None
Lens	
Focal Length (Zoom Ratio)	2.45mm fixed focal
Optical Zoom	None
Max. Aperture Ratio	F2.0
Angular Field of View	H: 123°, V: 91°, D: 159°
Min. Object Distance	0.5m(1.64ft)
Focus Control	Fixed
Lens Type	None
Mount Type	RJ12 connected with main unit
Optional Lens	None
Environmental & Electrical	
Operating Temperature / Humidity	-10°C~+55°C(+14°F~+131°F) / 0~95%RH(non-condensing)
Storage Temperature / Humidity	-50°C~+60°C(-58°F~+140°F) / 0~90% RH
Wind Load	None
EPA(Effective Projected Area)	None
Certification	None
Input Voltage	DC 5V/0.25A
Power Consumption	1.25W
Mechanical	
Color / Material	Black / Plastic, Metal
RAL Code	RAL9005
Product Dimensions / Weight	Lens: 30(W)x24.7(H)x45mm(1.18x0.97x1.77"), 46.1g(0.1lb) Cable: 8m(26.2ft)
Compatible Conduit hole / Gang	None
Certifications & Standards	
Network	None
EMC	FCC 47 CFR 15 Subpart B Class A ICES-3(A)/NMB-3(A) CE/UKCA - EN 55032 Class A, EN 50130-4, EN 61000-3-2, EN 61000-3-3 VCCI CISPR 32 Class A RCM AS/NZS CISPR 32 Class A KS C 9832 Class A, KS C 9835
Safety	UL 62368-1, CAN/CSA C22.2 NO. 62368-1
Video	None



1.1 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

☒ AC 240 V, 50 Hz

1.2 Variant Model Differences

Not applicable

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
LENS MODULE	SLA-F2480VA	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA Adapter	2ACB022F	-	Channel Well Technology (Guangzhou) Co., Ltd.	-
NETWORK CAMERA	PNM-C20000QB	-	HANWHA VISION VIETNAM COMPANY LIMITED	-
Laptop	LG15U56	605NZ8J002174	LG Electronics Inc.	-
Laptop Adatper	ADS-65AI-19-3	EAY65689605	SHENZHEN HONOR ELECTRONIC CO.,LTD.	-

1.6 External I/O Cabling

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
LENS MODULE (EUT)	RJ-12	NETWORK CAMERA	RJ-12	8.0	S
Laptop	DC Jack	Laptop Apapter	DC Jack	1.4	S
	RJ-45	NETWORK CAMERA	RJ-45	1.5	U
NETWORK CAMERA	DC IN	NETWORK CAMERA Adapter	2 Pin	1.2	U

* Unshielded=U, Shielded=S

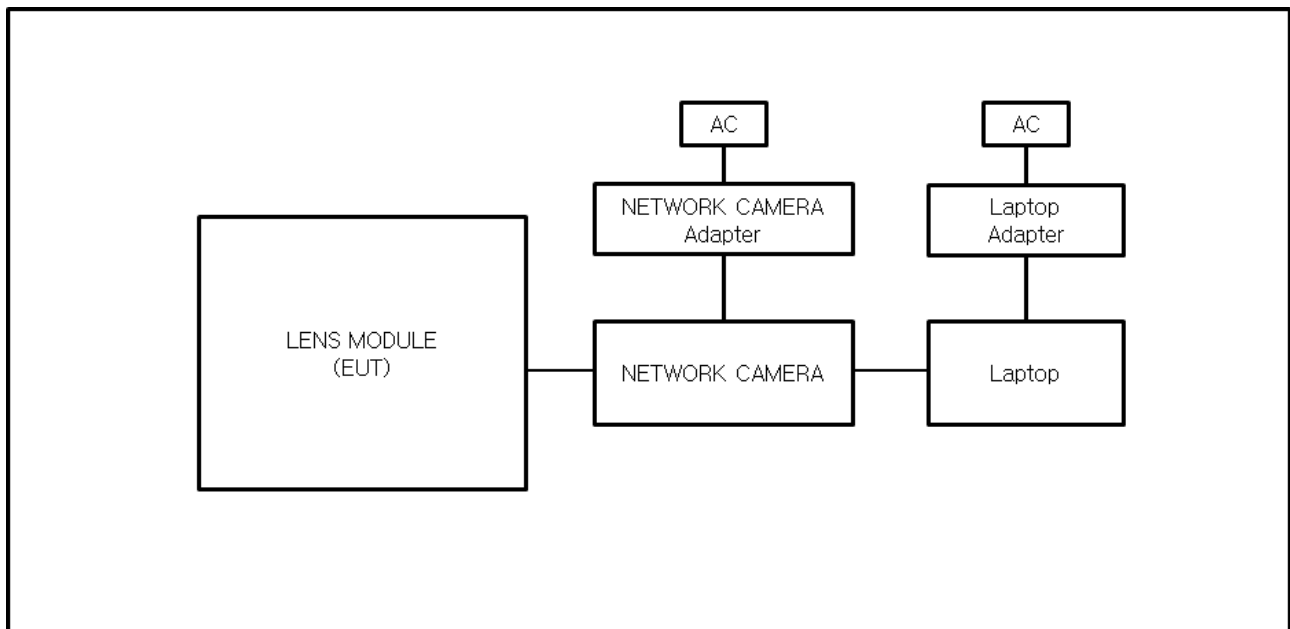


1.7 EUT Operating Mode(s)

- Check the network behavior of the EUT with the laptop's ping test.
- View images of the camera through the Web Viewer.

EUT Test operating S/W		
Name	Version	Manufacture Company
Web Viewer	-	HANWHA VISION VIETNAM COMPANY LIMITED

1.8 Configuration



**1.9 Remarks when standards applied**

N/A

1.10 Calibration Details of Equipment Used for Measurement

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

1.11 Test Facility

The measurement facility is located at 473-21, Gayeo-ro, 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 0008



2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ **AS/NZS CISPR 32:2015 AMD 1:2020**

☒ Class A

☐ Class B





2.1 Conducted Emissions at Mains Power Ports

Test Date

Jun. 14, 2025

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, 06, 2025
☒	LISN	ENV216	R & S	101786	01, 09, 2026
☒	ARTIFICIAL MAINS NETWORK	ESH2-Z5	R & S	100450	11, 06, 2025
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 06, 2025

Test Conditions

Temperature: (23,4 ± 0,1) °C
Relative Humidity: (46,5 ± 0,1) % R.H.

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

RemarksSee Appendix A for test data.



2.2 Conducted Emissions at Telecommunication Ports

Test Date

N/A

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, 06, 2025
☐	LISN	ENV216	R & S	101786	01, 09, 2026
☐	ARTIFICIAL MAINS NETWORK	ESH2-Z5	R & S	100450	11, 06, 2025
☐	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 06, 2025
☐	8-WIRE ISN CAT6	NTFM 8158	SCHWARZBECK	8158-0029	01, 09, 2026

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

RemarksNot tested because there is no communication port.



2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Jun. 14, 2025

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

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
☒	EMI TEST RECEIVER	ESU26	R & S	100551	02, 13, 2026
☒	AMPLIFIER	SCU 01	R & S	100603	11, 06, 2025
☒	BILOG ANTENNA	VULB 9168	SCHWARZBECK	9168-461	05, 09, 2026
☒	ATTENUATOR	6806.17.A	HUBER+SUHNER	-	02, 13, 2026

Test Conditions

Temperature: (23,4 ± 0,1) °C

Relative Humidity: (46,1 ± 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

Jun. 15, 2025

Test Location

SEMI ANECHOIC CHAMBER #5

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	ES10/RE	TOYO Corporation	2022.01.000	-
☒	EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100552	02, 13, 2026
☒	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	11, 04, 2025
☒	PREAMPLIFIER	8449B	HP	3008A00538	04, 30, 2025
☒	ATTENUATOR	8491B	HP	23094	02, 13, 2026

Test Conditions

Temperature: (23,1 ± 0,1) °C

Relative Humidity: (46,1 ± 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

Remarks

- See Appendix A for test data.
- The Average of the test data is the cispr average result.



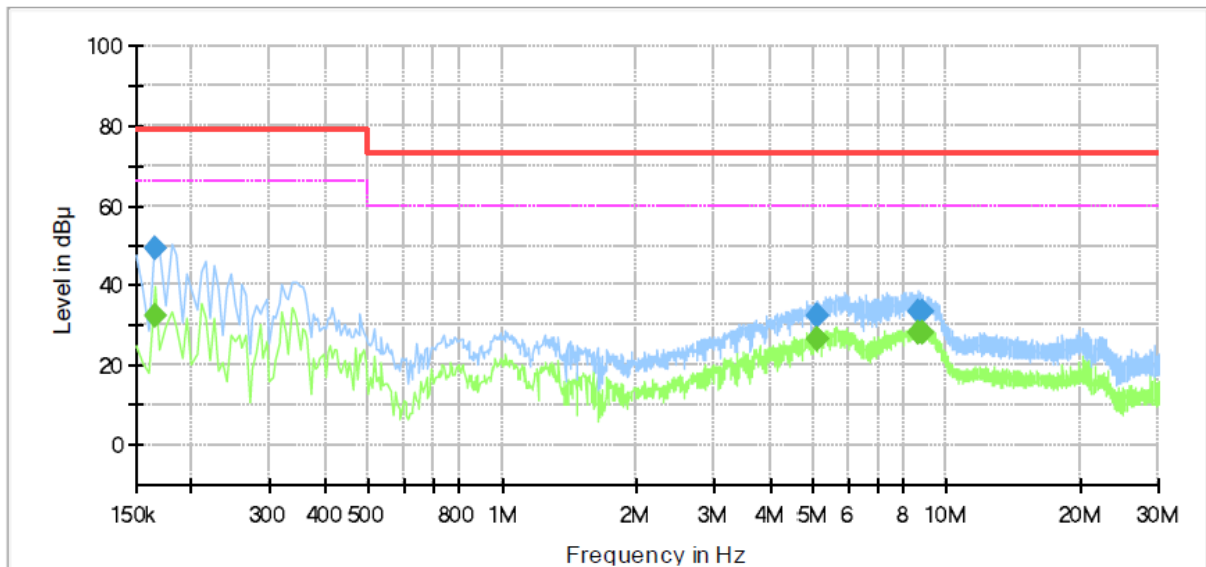
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

HOT LINE

Common Information

Test Description: Conducted Emission
Job No.: KES-EM252056
Phase: L
Mode:
Operator Name: KES



Final_Result

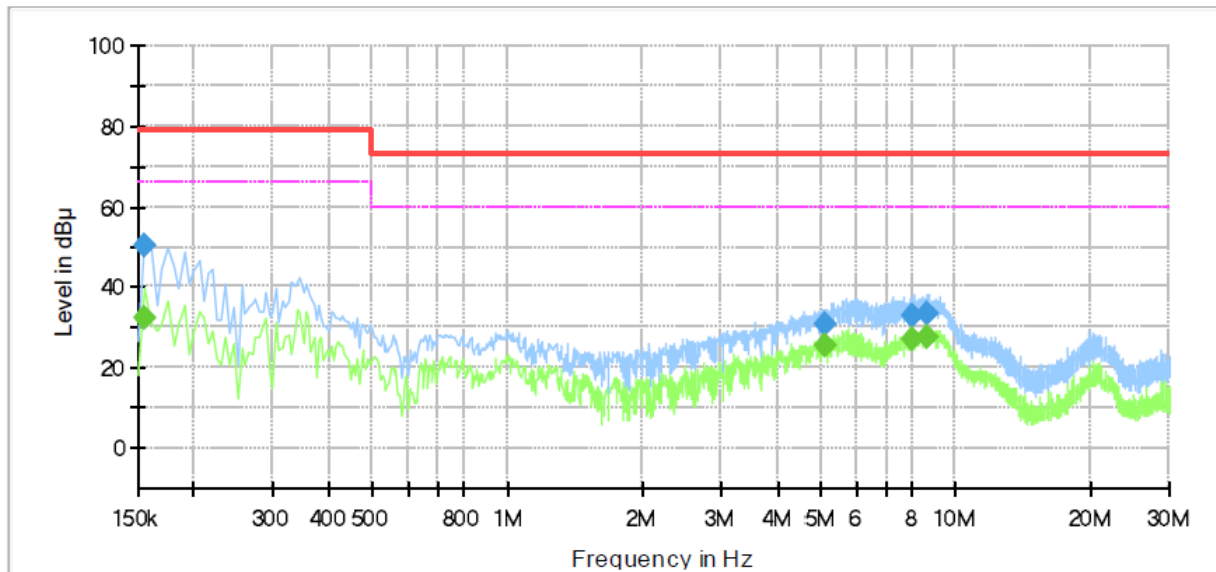
Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	---	32.06	66.00	33.94	1000.0	9.000	L1	19.5
0.165000	49.12	---	79.00	29.88	1000.0	9.000	L1	19.5
5.120000	---	26.50	60.00	33.50	1000.0	9.000	L1	19.9
5.120000	32.07	---	73.00	40.93	1000.0	9.000	L1	19.9
5.125000	---	26.61	60.00	33.39	1000.0	9.000	L1	19.9
5.125000	32.19	---	73.00	40.81	1000.0	9.000	L1	19.9
8.630000	---	27.84	60.00	32.16	1000.0	9.000	L1	20.0
8.630000	33.41	---	73.00	39.59	1000.0	9.000	L1	20.0
8.820000	---	27.93	60.00	32.07	1000.0	9.000	L1	20.0
8.820000	33.22	---	73.00	39.78	1000.0	9.000	L1	20.0



NEUTRAL LINE

Common Information

Test Description: Conducted Emission
Job No.: KES-EM252056
Phase: N
Mode:
Operator Name: KES



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	32.22	66.00	33.78	1000.0	9.000	N	19.5
0.155000	50.52	---	79.00	28.48	1000.0	9.000	N	19.5
5.105000	---	25.50	60.00	34.50	1000.0	9.000	N	19.9
5.105000	30.79	---	73.00	42.21	1000.0	9.000	N	19.9
8.040000	---	26.79	60.00	33.21	1000.0	9.000	N	20.0
8.040000	32.64	---	73.00	40.36	1000.0	9.000	N	20.0
8.610000	---	27.68	60.00	32.32	1000.0	9.000	N	20.0
8.610000	33.18	---	73.00	39.82	1000.0	9.000	N	20.0

◆ 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]

N/A

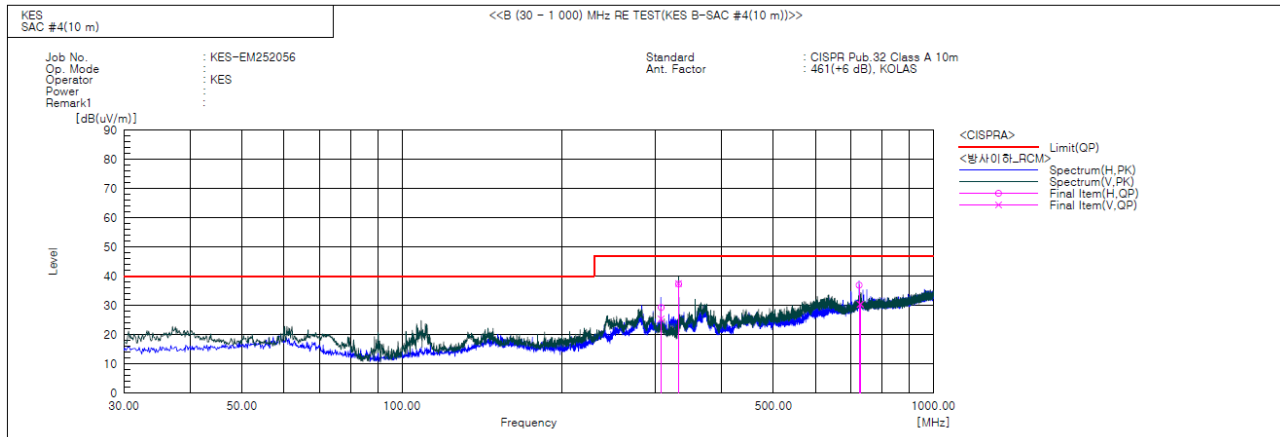
◆ Calculation

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

**Radiated Electric Field Emissions(Below 1 GHz)****Final Result**

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	307.178	V	42.1	-16.7	25.4	47.0	21.6	156.0	348.0	
2	307.412	H	46.0	-16.7	29.3	47.0	17.7	351.0	239.0	
3	331.451	V	53.5	-16.0	37.5	47.0	9.5	168.0	330.0	
4	331.791	H	53.3	-16.0	37.3	47.0	9.7	297.0	116.0	
5	725.045	H	41.2	-4.3	36.9	47.0	10.1	388.0	23.0	
6	728.251	V	34.6	-4.2	30.4	47.0	16.6	100.0	46.0	

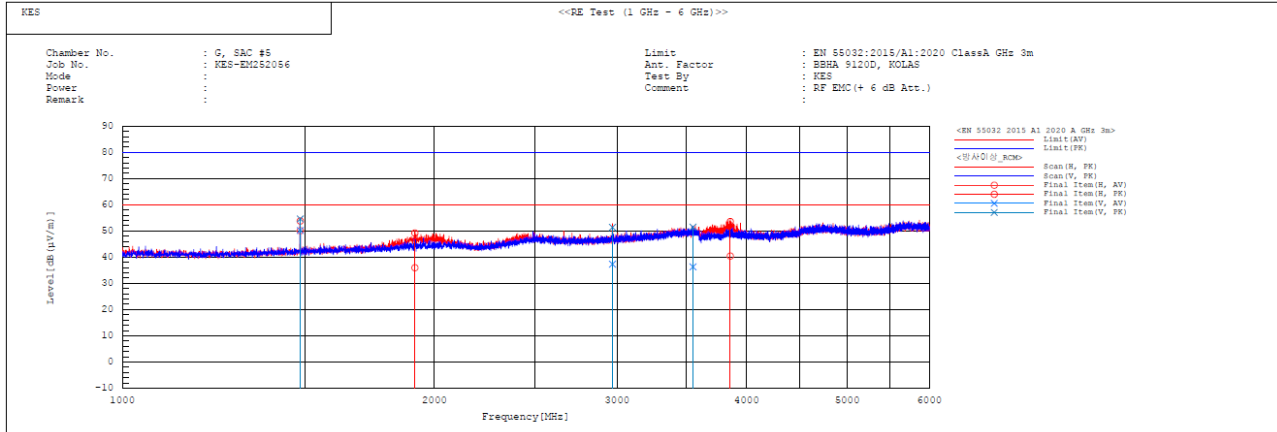
◆ Calculation

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	Pol	Reading AV	Reading PK	c.f	Result PK	Limit AV	Limit PK	Margin AV	Margin PK	Height	Angle	Remark
	[MHz]		[dB(μV)]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[dB]	[cm]	[deg]	
1	1484.502	V	49.2	53.6	1.0	54.6	60.0	60.0	9.8	25.4	100.0	327.4	
2	1484.541	H	49.1	52.8	1.0	53.8	60.0	60.0	9.9	26.2	100.0	336.6	
3	1915.475	H	33.4	46.6	2.6	49.2	60.0	60.0	24.0	30.8	100.0	92.9	
4	2969.126	V	31.0	45.1	6.3	51.4	60.0	60.0	22.7	28.6	100.0	121.5	
5	3551.612	V	28.9	44.1	7.4	51.5	60.0	60.0	23.7	28.5	100.0	188.3	
6	3858.155	H	31.9	45.1	8.5	53.6	60.0	60.0	19.6	26.4	100.0	190.7	

◆ 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)]

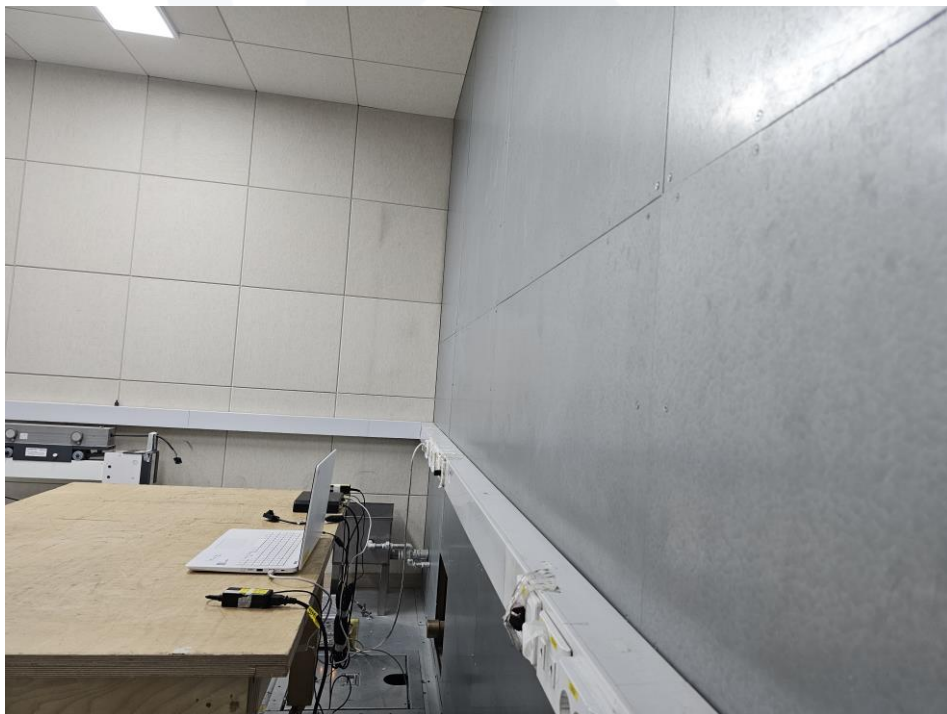
Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

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



Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports





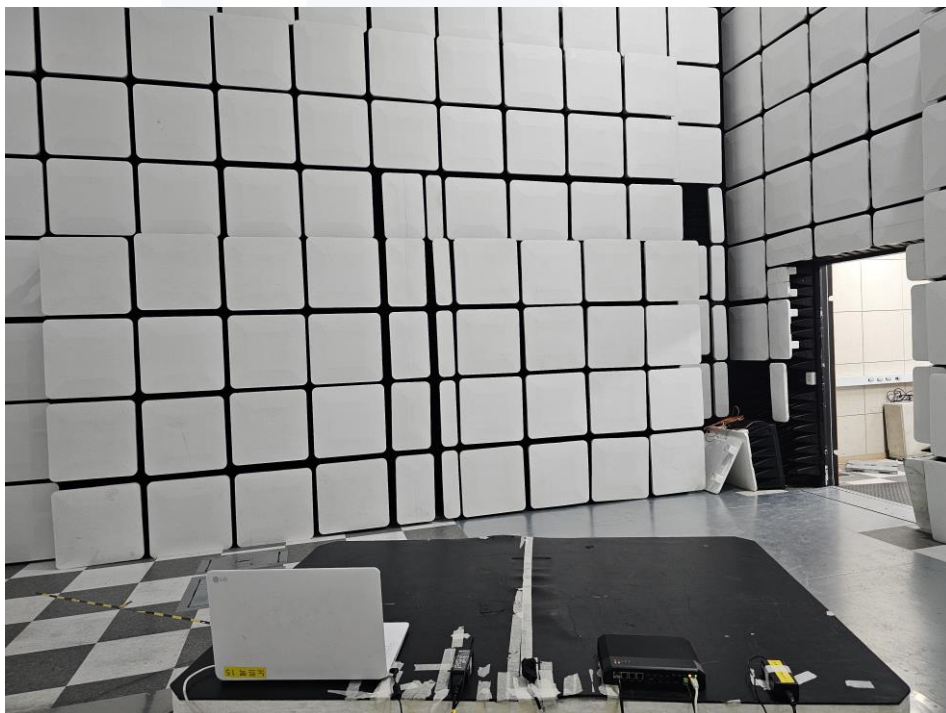
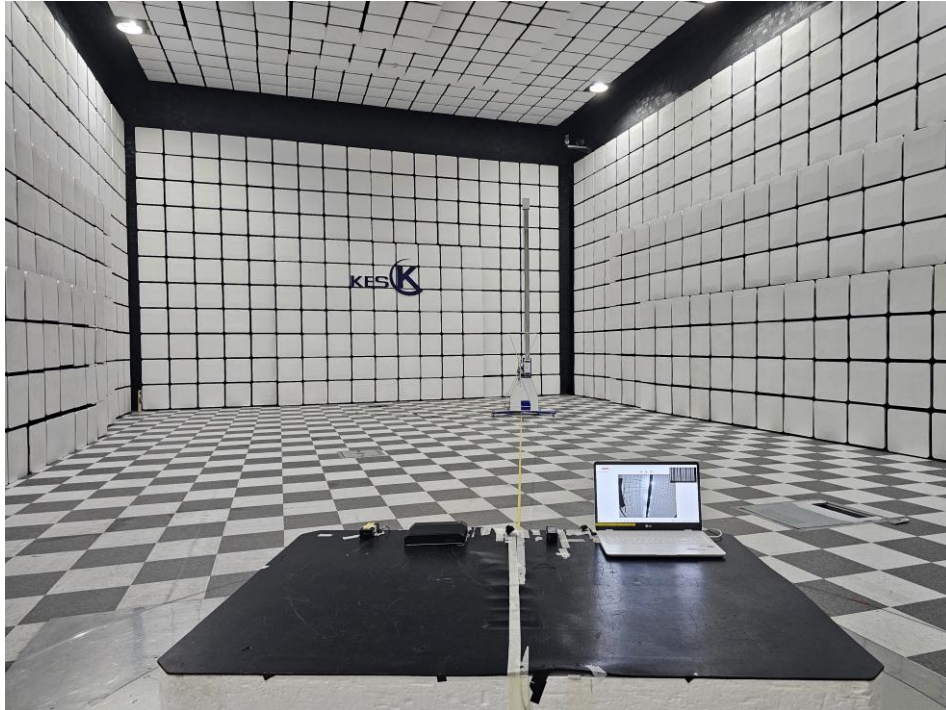
Conducted Emissions at Telecommunication Ports

N/A



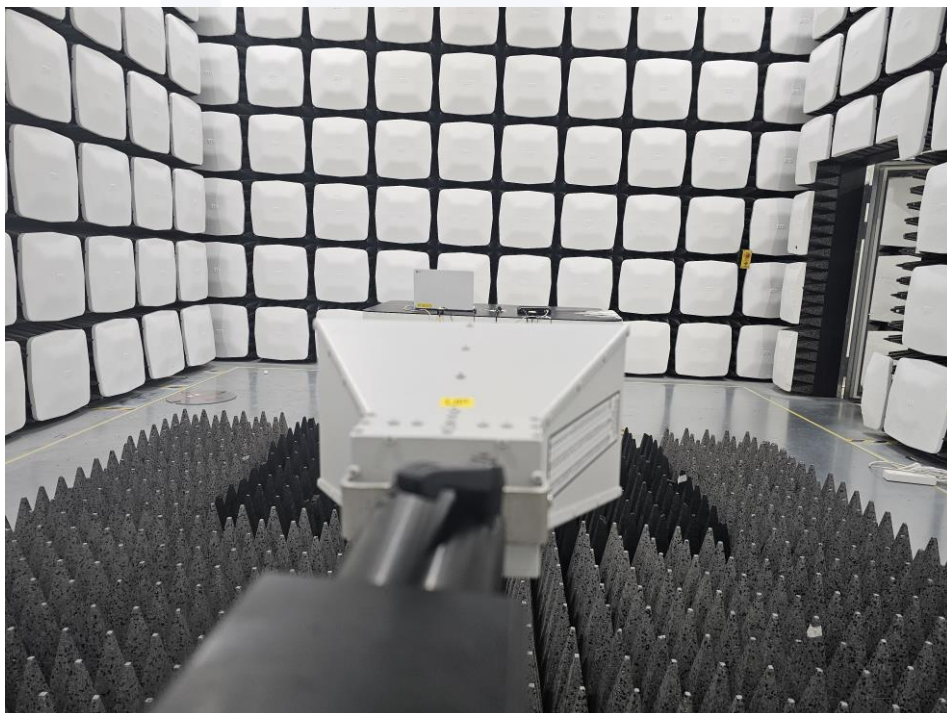
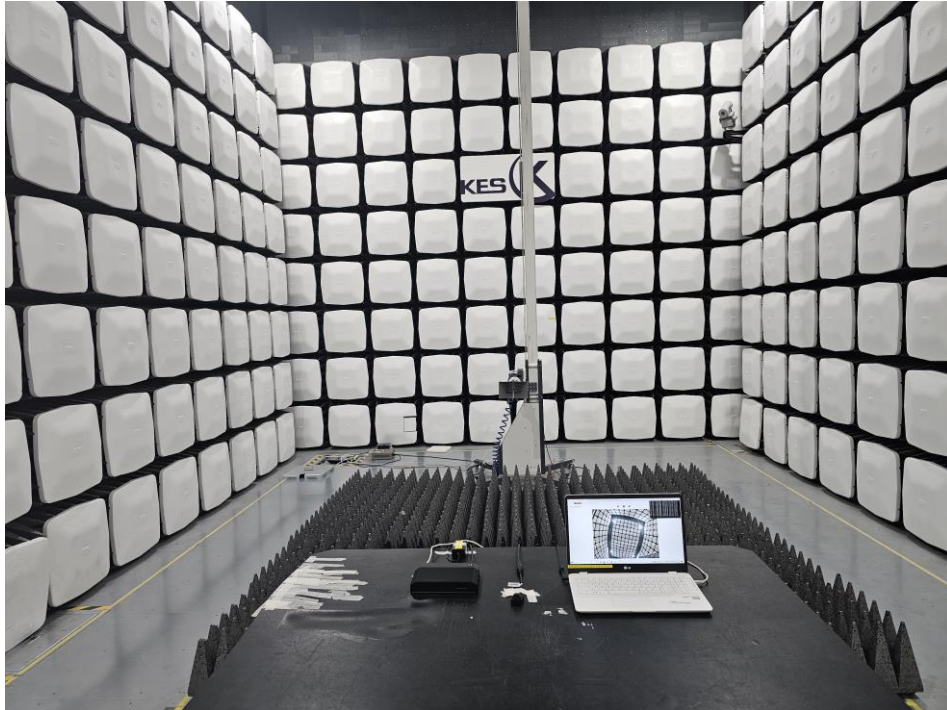


Radiated Electric Field Emissions(Below 1 GHz)





Radiated Electric Field Emissions(Above 1 GHz)





EUT External Photographs

(Top)



(Bottom)





(Component)





EUT Internal Photographs

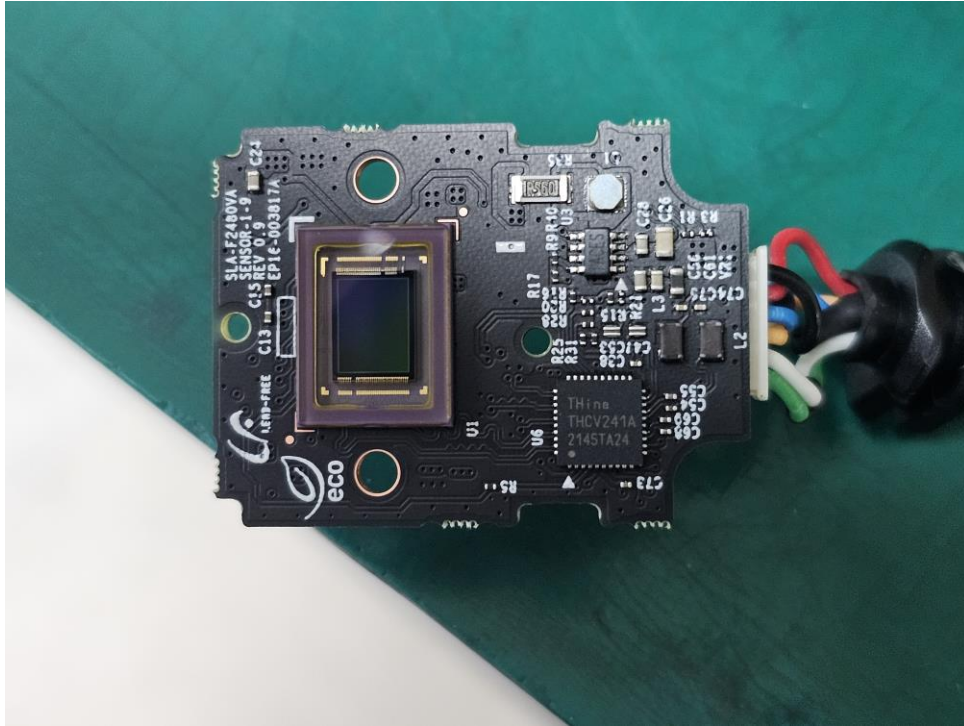
(Internal View)



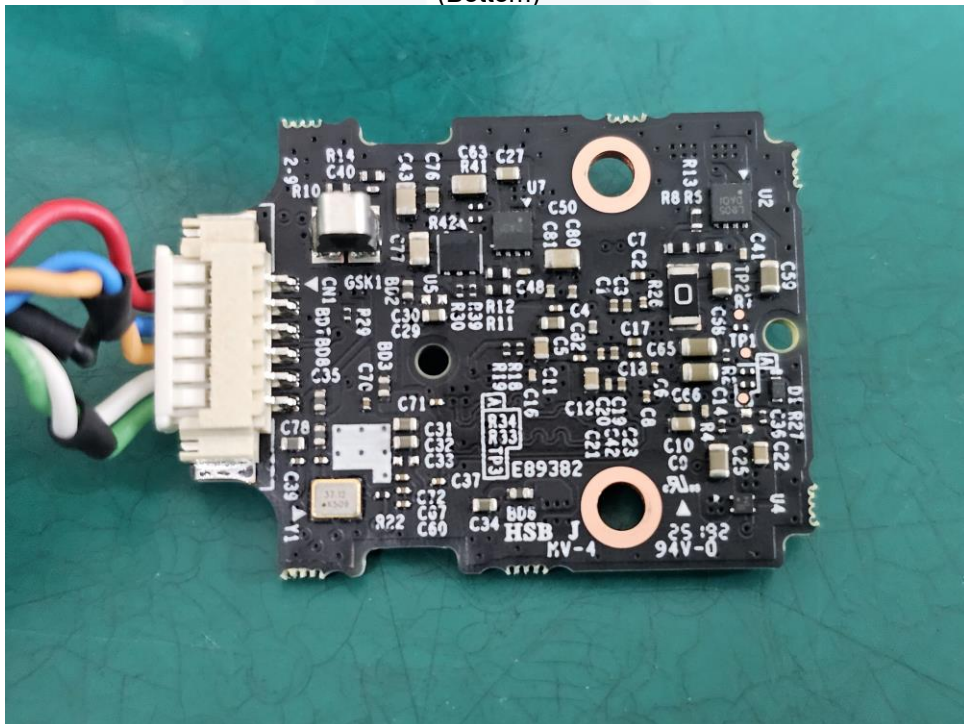


EUT Internal View – Board

(Top)



(Bottom)



The End.