



TEST REPORT



Report No. : KES-EM262108

Page 1 / 38

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 : +82-31-341-3838

1. Client

- Name : Hanwha Vision Co., Ltd.
- Address : 6, Pangyo-ro 319beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

2. Sample Description

- Product item : NETWORK CAMERA
- Model name : TNO-A45080R
- Variant model : -
- Manufacturer etc. : HANWHA VISION VIETNAM COMPANY LIMITED
- Manufacturer address : Lot O-2, Que Vo Industrial Zone Extended Area, Nam Son Ward, Bac Ninh Province, Vietnam
- Manufacturer etc. : D-TECH CO.,LTD.
- Manufacturer address : 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi-do, Korea (Suwon Industrial Complex)

3. Date of test : 2026. 06. 16. ~ 2026. 06. 17.

4. Location of Test : Permanent Testing Lab

- Address : 473-21, Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Republic of Korea

5. Test method used : FCC 47 CFR Part 15, Subpart B (ANSI C63.4a-2017),
IC ICES-003 Issue 7 (ANSI C63.4a-2017)

6. Test result : PASS

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

This test report cannot be reproduced and copied without permission without the written consent of KES Co., Ltd.

This laboratory is not accredited for the test results marked *.

This test report is not related to KOLAS accreditation.

Affirmation	Tested by	Technical Manager by
	Name : SeongMin Jang [장성민]2026/07/03	Name : DongHun Jang [장동훈]2026/07/03

2026. 07. 03.

KES Co., Ltd.

**REPORT REVISION HISTORY**

Date	Test Report No.	Revision History
2026. 07. 03.	KES-EM262108	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.

Use of uncertainty of measurement for decisions on conformity (decision rule):

- ☒ No decision rule is specified by the standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty("simple acceptance" decision rule, previously known as "accuracy method").
- ☐ Other (to be specified, for example when required by the standard or client)



TABLE OF CONTENTS

1	Laboratory Information	4
1.1	Test Location	4
1.2	Laboratory Accreditations and Listings	4
2	Test Summary	5
2.1	Class and Voltage	5
2.2	Summary of Test Results	5
2.3	Remarks when standards applied	5
2.4	Variant Model Differences	5
2.5	Device Modifications	5
3	General Product Description	6
4	EUT Setup and Operation Mode	8
4.1	EUT Configuration	8
4.2	System Configuration	8
4.3	External I/O Cabling	9
4.4	EUT Operating Mode(s)	10
4.5	Test operating S/W	10
4.6	Configuration	11
5	Measurement Procedure	12
6	Test Item	13
6.1	Conducted Emissions at Mains Power Ports	13
6.2	Radiated Emissions(Below 1 GHz).....	18
6.3	Radiated Emissions(Above 1 GHz)	23
7	Test Setup Photos and EUT Photographs.....	28
7.1	Test Setup Photos	28
7.2	EUT Photographs.....	34
7.3	Label.....	38



1 Laboratory Information

1.1 Test Location

Category	Details
Address	473-21, Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Republic of Korea
Telephone Number	031-883-5092
Facsimile Number	031-883-5169

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

1.2 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 Test Summary

2.1 Class and Voltage

Test Class	Test Voltage
Class A	AC 120 V, 60 Hz, PoE(AC 120 V, 60 Hz)

2.2 Summary of Test Results

Regulation
47 CFR Part 15, Subpart B, ICES-003 Issue 7

Test Item	Test Standard	Test Result	Remark
Conducted Emissions at Mains Power Ports	ANSI C63.4a-2017	PASS	-
Radiated Emissions(Below 1 GHz)		PASS	-
Radiated Emissions(Above 1 GHz)		PASS	-
* N/A: Not Applicable			

2.3 Remarks when standards applied

- When the SFP port was connected during the Mode 2 test, the RJ-45 (Data) port did not operate, so the port was excluded during the test.

2.4 Variant Model Differences

N/A

2.5 Device Modifications

N/A



3 General Product Description

Division		Specificity
Internal maximum operating frequency		1 400 MHz
Video		
Imaging Device	Size	Diagonal 28.3mm 1.8"
	Type	CMOS
Resolution		8192x5552, 7792x5280, 7392x5008, 6752x4576, 5936x4024, 4512x3056, 4096x2776, 3456x2344, 2880x1952, 2240x1520, 1440x976, 1216x824, 800x544
		32M Mode : 7680x4320, 7424x4176, 7680x3840, 6400x4800, 6144x3456, 5120x2880, 4096x3072, 3840x2160, 3200x2400, 3328x1872, 2688x1512, 2560x1440, 1920x1080, 1600x1080, 1280x1080
Max. Resolution		8192x5552(45MP)
Max. Resolution(MP)		45.48MP
Max. Framerate	H.265/H.264	Max 25fps(Max 15fps@45MP, Max 25fps@33.2MP)
	MJPEG	Max 25fps(Max 1fps@45fps, 1fps@8K)
Min. Illumination(Lux)	Color(1/30sec, 30IRE)	0.08
	BW(1/30sec, 30IRE)	0.008
Lens		
Focal Length (Zoom Ratio)		12-51mm(4.2x)
Zoom Ratio	Optical	4.2x
Max. Focal Length		51mm
Min. Focal Length		12mm
Zoom Ratio		4.2x
Focal Type		Motorized varifocal
Max. Aperture Ratio	Wide	1.6
	Tele	3.8
Angular Field of View	Horizontal	89.6°~21.1°
	Vertical	61.1°~14.2°
	Diagonal	107.3°~25.4°
Min. Object Distance		1.8m(Wide)~2.2m(Tele)
Focus Control		Simple focus
Lens Type		P-iris
Pan / Tilt / Rotate		
Pan / Tilt / Rotate Range	Pan	±180°
	Tilt	0~90°
	Rotate	-90~270°
Operational		
Day & Night		Auto(ICR)
Backlight Compensation		BLC, SSDR, DWDR
Digital Noise Reduction		SSNR V., WiseNR II (Based on AI engine)(revision)
Digital Image Stabilization		Support
Defog		Support
Motion Detection	Quantity	8ea
	Shape	8point polygonal zones
Privacy Masking	Quantity	16ea
	Shape	4point polygonal zones
	Color/Option	gray/green/red/blue/black/white/purple/yellow
Gain Control		Low / Middle / High
White Balance		ATW / AWC / Manual / Indoor / Outdoor
LDC		Support
Electronic Shutter Speed	Mode	Minimum, Maximum, Anti flicker, Prefer shutter control(Based on AI engine)
	Speed Range	1/5~1/12,000sec
Video Rotation		Flip, Mirror, Hallway view(90°/270°)
Alarm Interface	In/Out	2 configurable I/O ports
Alarm Triggers		Analytics, Network disconnection, Alarm input, Time schedule, MQTT subscription, Day/Night, Storage disruption, Case tampering
Alarm Events When Alarm Trigger Occurred		- File upload(image): e-mail/FTP/SFTP - File upload(video clip): FTP/SFTP - Notification: e-mail - Recording: SD/SDHC/SDXC or NAS recording at event triggers - Alarm output - Handover: PTZ preset, send message by HTTP/HTTPS/TCP - Audio clip playback(WAV, MP3) - MQTT: publication
Audio In		Selectable(mic in/line in)
Audio Out		Line out
Light Type		IR LED
Light Viewable Length	IR	WiseIR 60m
IR Wavelength		850nm



Analytics		
Classified Object Type		Person, Face, Vehicle, License plate
Attributes	Person	Gender, Clothing top/bottom color, Bag
	Vehicle	Type(car/bus/truck/motorcycle/bicycle), Color
	Face	Age, Gender, Mask, Glasses
Sunukaruty Search		IP-based access control, MAC-based access control, Auto logout
Thumbnail		BestShot
Analytics Events	Based on AI Engine	Motion detection, Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/ Enter/Exit/Appear/Disappear)
	Normal	Defocus detection, Tampering, Shock detection, Virtual area(Appear/Disappear)
Business Intelligence		People/Vehicle/Crowd counting, Queue management, Heatmap
Network		
Ethernet		Metal shielded RJ-45(10/100/1000 BASE-T), SFP slot(100/1000Mbps)
Video Compression		H.265/H.264: Main/High, MJPEG
Audio Compression		G.711(PCM): 8kHz(64kbps)
		G.726(ADPCM): 8kHz(16/24/32/40kbps)
		AAC-LC: 16kHz(48kbps) OPUS: 16kHz(64kbps)
Smart Codec		Manual(Sea area), WiseStream(Based on AI engine)
Bitrate Control		H.264/H.265: CBR or VBR
		MJPEG: VBR
Streaming	Unicast	Up to 20 users
	Multicast	Support
	Multiple Streaming	Up to 3 profiles
Protocol		IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP/SFTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP(TCP, UDP Unicast), CDP, MQTT, Syslog
Application Programming Interface	ONVIF	S, G, T, M
	Others	SUNAPI(HTTP API), Hanwha Vision Open Platform
Security		
OS / Firmware Protect		Secure boot, Signed firmware, Firmware encryption
User authentication		Digest Authentication, Prevent brute-force attack
Network authentication		802.1X Authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2), 802.1AE(MACsec)
Secure Communication		HTTPS, SRTP, WSS(Websocket secure)
Access Control		IP-based access control, MAC-based access control, Auto logout
Data Protect		Authentication information encryption, ZIP compression encryption
Audit		User Access/System/Event log management
Device ID		Device Certificate(Hanwha vision Root CA)
Secure Storage		Secure element, SDcard partition encrypt
Security Certificate		ETSI EN 303 645, Secure element/FIPS 140-3 level3, CC EAL6+
General		
Edge Storage	Micro SD/SDHC/SDXC	Max 1TB x 1slot
Memory	RAM	8GB
	FLASH	16GB
Environmental & Electrical		
Operating Condition	Temperature	-40°C~+55°C(-40°F~+131°F)
	Humidity	0~100%RH(Condensing)
	Others	Humidity control with AIR vent
Storage Condition	Temperature	-50°C~+60°C(-58°F~+140°F)
	Humidity	0~95% RH (non-condensing)
Input Voltage		PoE+ (IEEE802.3at, Class4)
		PoE++(IEEE802.3bt, Class6)
		12VDC
Power Consumption	PoE++	Max. 39.4W, typical 19.0W
	12VDC	Max. 37.3W, typical 18.4W
WisePower		Support
Mechanical		
Color		White/Black
Material		Aluminum/Plastic
RAL Code		RAL9003
Product Dimensions		120mm * 120mm * 350mm
Product Weight		4.05Kg



4 EUT Setup and Operation Mode

4.1 EUT Configuration

Product Name	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	TNO-A45080R	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT
PoE Injector	PT-PSE109GBRO- AH-S	-	Dongguan PROCET Network Technology Co.,Ltd	-
AC/DC Adaptor	FJ-SW1205000	-	SHENZHEN FUJIA APPLIANCE CO., LTD.	-
Laptop	NT350XCR	-	Samsung Electronics Vietnam Co., Ltd.	-
Laptop Adaptor	A13-040N2A	-	Chicony Power Technology Co., Ltd.	-
Micro SD card #1	-	-	SanDisk	32 GB
Micro SD card #2	-	-	SanDisk	32 GB
Earphone	-	-	-	-
LED Alarm	PRO-SL	-	SENSOR PRO	-
Button Alarm	-	-	-	-
Smartphone	SM-N960N	-	SAMSUNG	-
Optical module #1	FTRJ8519P1BNL	-	Finisar	-
Optical module #2	FTRJ8519P1BNL	-	Finisar	-

4.2 System Configuration

Product Name	Model Number	Serial Number	Manufacturer	Remarks
-	-	-	-	-



4.3 External I/O Cabling

Mode 1

Start		End		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
EUT	RJ-45(PoE)	PoE Injector	RJ-45(PoE)	3.5	U
	Micro SD card slot	Micro SD Card #1	Micro SD card slot	-	-
	Micro SD card slot	Micro SD Card #2	Micro SD card slot	-	-
	Alarm OUT	LED Alarm	Alarm IN	3.2	U
	Alarm IN	Button Alarm	Alarm OUT	3.5	U
	SPEAKER	Earphone	Line	1.2	U
	MIC	Smartphone	3.5 mm	1.7	U
	SFP	Optical module #2	SFP	-	-
Optical module #2	SFP	Optical module #1	SFP	2.9	U
Optical module #1	SFP	PoE Injector	SFP	-	-
PoE Injector	RJ-45(LAN)	Laptop	RJ-45	1.3	U
Laptop	DC Jack	Laptop Adaptor	Line	1.5	U

Mode 2

Start		End		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
EUT	DC IN	AC/DC Adaptor	Line	1.5	U
	RJ-45(LAN)	Laptop	RJ-45(LAN)	3.5	U
	Micro SD card slot	Micro SD Card #1	Micro SD card slot	-	-
	Micro SD card slot	Micro SD Card #2	Micro SD card slot	-	-
	Alarm OUT	LED Alarm	Alarm IN	3.2	U
	Alarm IN	Button Alarm	Alarm OUT	3.5	U
	SPEAKER	Earphone	Line	1.2	U
	MIC	Smartphoen	3.5 mm	1.7	U
Laptop	DC Jack	Laptop Adaptor	Line	1.5	U

* Unshielded=U, Shielded=S



4.4 EUT Operating Mode(s)

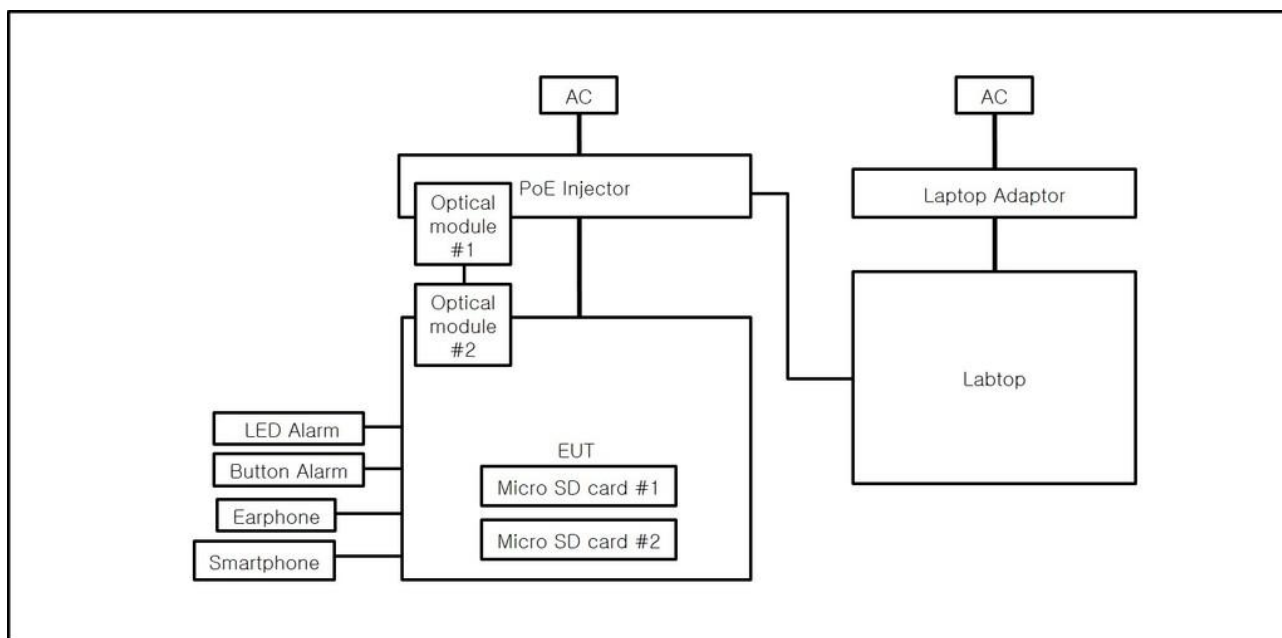
Category	Mode	Operating
Mode 1	PoE	1. After accessing the webpage of the Laptop, check whether the image of the EUT is output normally and verify that the network is operating normally through the ping test. 2. Press Button Alarm to verify that LED Alarm is operating normally. 3. Checked if the 1 kHz tone sound played on the smartphone is output to the earphone normally. 4. Checked the LINK LED on the PoE Injector connected to the EUT for the SFP connection to function properly. 5. After the test, I checked if it was recorded normally on Micro SD cards #1 and #2.
Mode 2	DC 12 V	1. After accessing the webpage of the Laptop, check whether the image of the EUT is output normally and verify that the network is operating normally through the ping test. 2. Press Button Alarm to verify that LED Alarm is operating normally. 3. Checked if the 1 kHz tone sound played on the smartphone is output to the earphone normally. 4. After the test, I checked if it was recorded normally on Micro SD cards #1 and #2.

4.5 Test operating S/W

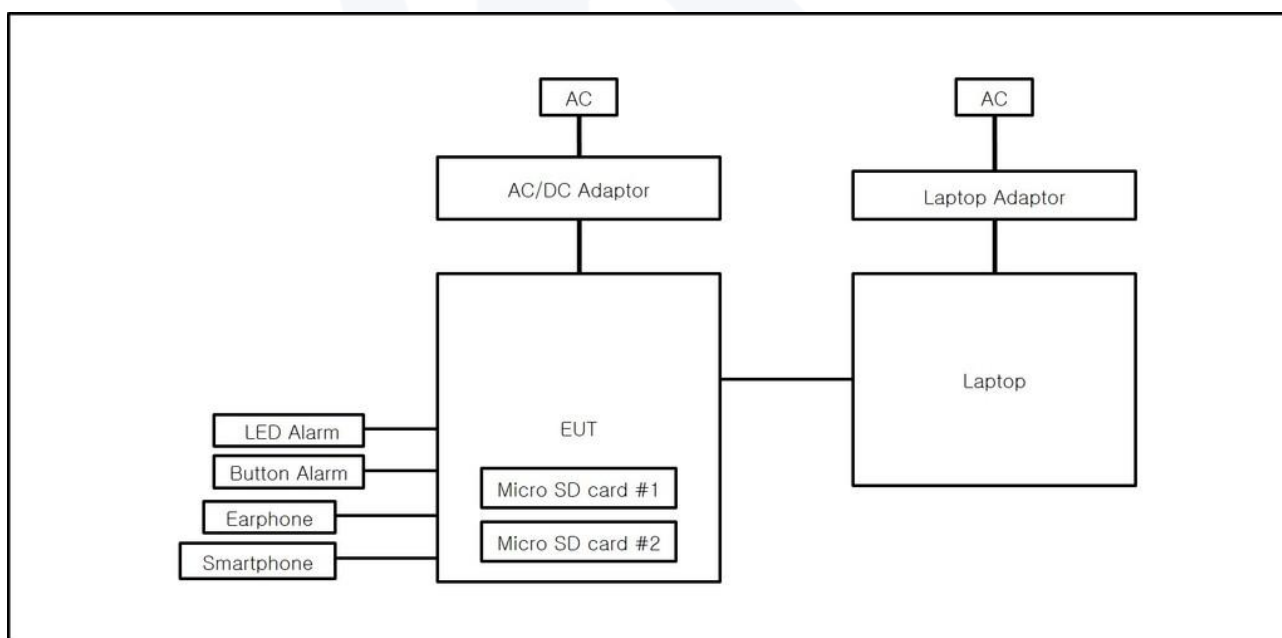
Name	Version	Manufacture Company
Web Page	-	Hanwha Vision Co., Ltd.



4.6 Configuration



Mode 1



Mode 2



5 Measurement Procedure

- Conducted Emissions

The conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak mode (or peak mode if applicable). The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. If the conducted emission exceed the average limit with the instrument set to the quasi-peak mode, the measurements are made in the average mode. The emission spectrum was scanned from 150 kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limits were measured and have been recorded. Quasi-peak readings are distinguished with a "QP".

- Radiated Electric Field Emissions

The test was done at a SEMI ANECHOIC CHAMBER with quasi-peak detector. The final test data was measured using a Quasi-Peak detector below 1 GHz at 10 m or 3 m distance and a Peak and Average detector above 1 GHz at 3 m distance. Test was proceeded worst case test mode and cable configuration. Measurements were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height was varied from 1 m to 4 m and the EUT was rotated 360° to find the maximum emitting point for each frequency.

Measurement procedures was In accordance with ANSI C63.4 or CISPR 32.

◆ Calculation

- Conducted Emissions

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

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

- Radiated Emissions(Below 1 GHz)

$\text{Result(QP) [dB(}\mu\text{V/m)]} = (\text{Reading(QP)[dB(}\mu\text{V)]} + \text{c.f[dB(1/m)]}$

$\text{Margin(QP)[dB]} = \text{Limit[dB(}\mu\text{V/m)]} - \text{Result(QP) [dB(}\mu\text{V/m)]}$

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 Emissions(Above 1 GHz)

$\text{Result(PK/CAV) [dB(}\mu\text{V/m)]} = (\text{Reading(PK/CAV)[dB(}\mu\text{V)]} + \text{c.f[dB(1/m)]}$

$\text{Margin(PK/CAV)[dB]} = \text{Limit[dB(}\mu\text{V/m)]} - \text{Result(PK/CAV) [dB(}\mu\text{V/m)]}$

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



6 Test Item

6.1 Conducted Emissions at Mains Power Ports

6.1.1 Test Equipment

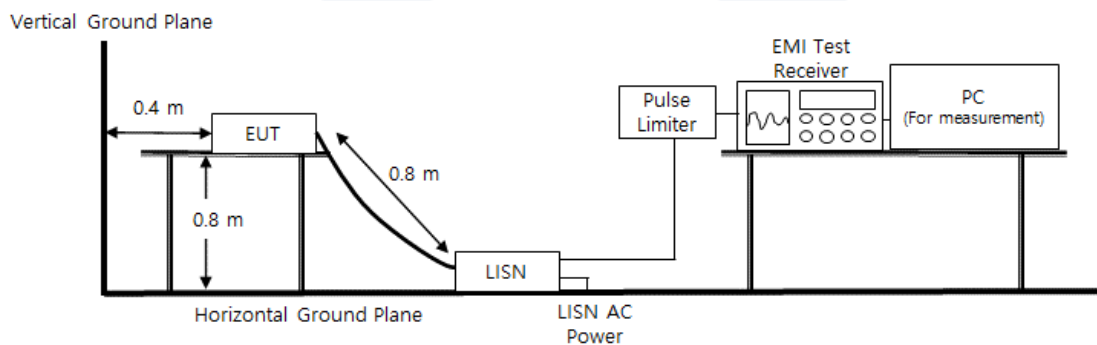
Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #6	-	DYMSTEC	-	-	-	■
EMC32 Measurement Software	EMC32	R&S	9.12.00	-	-	■
EMI TEST RECEIVER	ESR3	Rohde & Schwarz	101783	2025-11-03	2026-11-03	■
LISN	ENV216	Rohde & Schwarz	101787	2025-09-04	2026-09-04	■
ARTIFICIAL MAINS NETWORK	ESH2-Z5	Rohde & Schwarz	100450	2025-11-03	2026-11-03	■
PULSE LIMITER	ESH3-Z2	Rohde & Schwarz	101915	2025-11-03	2026-11-03	■

6.1.2 Test Location : SHIELD ROOM #6

6.1.3 Test Conditions :

Temperature	Relative Humidity
(24.1 ~ 24.3) °C	(49.8 ~ 50.8) % R.H.

6.1.4 Diagram of test setup





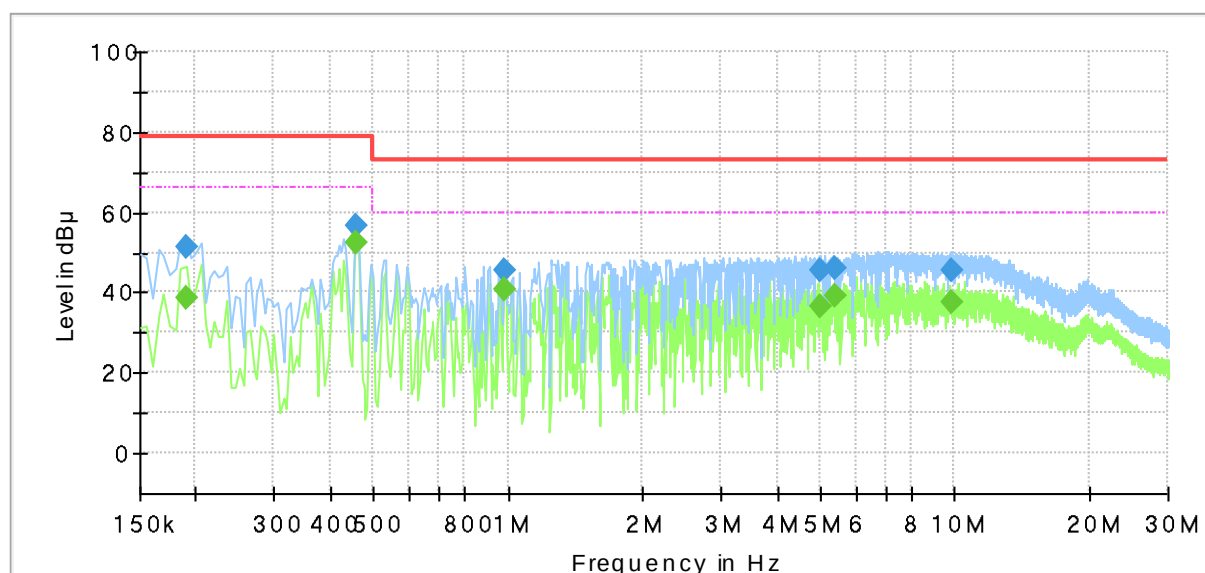
6.1.5 Test Result

- Test Date : 2026-06-16
- Test Mode : Mode 1

Test Report

1 / 1

Test Description: Conducted Emission
Job No.: KES-EM262108
Phase: L
Mode: Mode 1
Operator Name: KES



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.190000	51.28	—	79.00	27.72	1000.0	9.000	L1	19.4
0.190000	—	38.80	66.00	27.20	1000.0	9.000	L1	19.4
0.455000	—	52.33	66.00	13.67	1000.0	9.000	L1	19.5
0.455000	56.64	—	79.00	22.36	1000.0	9.000	L1	19.5
0.985000	—	40.69	60.00	19.31	1000.0	9.000	L1	19.5
0.985000	45.31	—	73.00	27.69	1000.0	9.000	L1	19.5
5.010000	—	36.71	60.00	23.29	1000.0	9.000	L1	19.8
5.010000	45.64	—	73.00	27.36	1000.0	9.000	L1	19.8
5.400000	—	39.06	60.00	20.94	1000.0	9.000	L1	19.8
5.400000	46.12	—	73.00	26.88	1000.0	9.000	L1	19.8
9.830000	—	37.81	60.00	22.19	1000.0	9.000	L1	20.0
9.830000	45.75	—	73.00	27.25	1000.0	9.000	L1	20.0



Report No. : KES-EM262108

Page 15 / 38

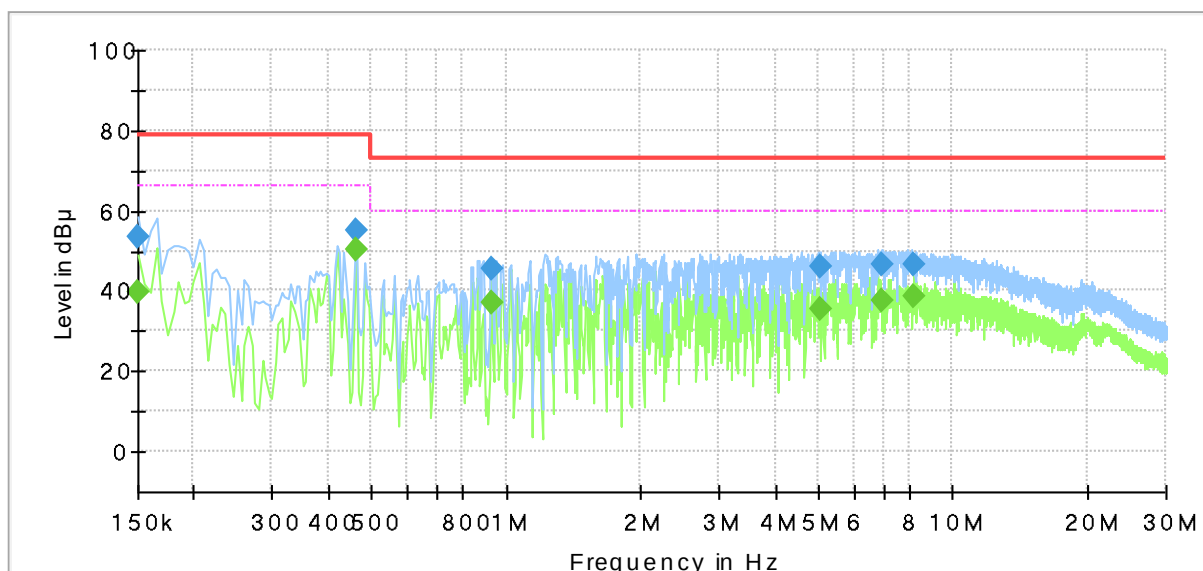
○ Test Date : 2026-06-16

● Test Mode : Mode 1

Test Report

1 / 1

Test Description: Conducted Emission
Job No.: KES-EM262108
Phase: N
Mode: Mode 1
Operator Name: KES



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	—	39.89	66.00	26.11	1000.0	9.000	N	19.4
0.150000	53.49	—	79.00	25.51	1000.0	9.000	N	19.4
0.460000	—	50.25	66.00	15.75	1000.0	9.000	N	19.5
0.460000	54.82	—	79.00	24.18	1000.0	9.000	N	19.5
0.925000	—	37.23	60.00	22.77	1000.0	9.000	N	19.5
0.925000	45.66	—	73.00	27.34	1000.0	9.000	N	19.5
5.070000	—	35.61	60.00	24.39	1000.0	9.000	N	19.8
5.070000	46.09	—	73.00	26.91	1000.0	9.000	N	19.8
6.925000	—	37.69	60.00	22.31	1000.0	9.000	N	19.9
6.925000	46.77	—	73.00	26.23	1000.0	9.000	N	19.9
8.205000	—	38.63	60.00	21.37	1000.0	9.000	N	19.9
8.205000	46.55	—	73.00	26.45	1000.0	9.000	N	19.9



Report No. : KES-EM262108

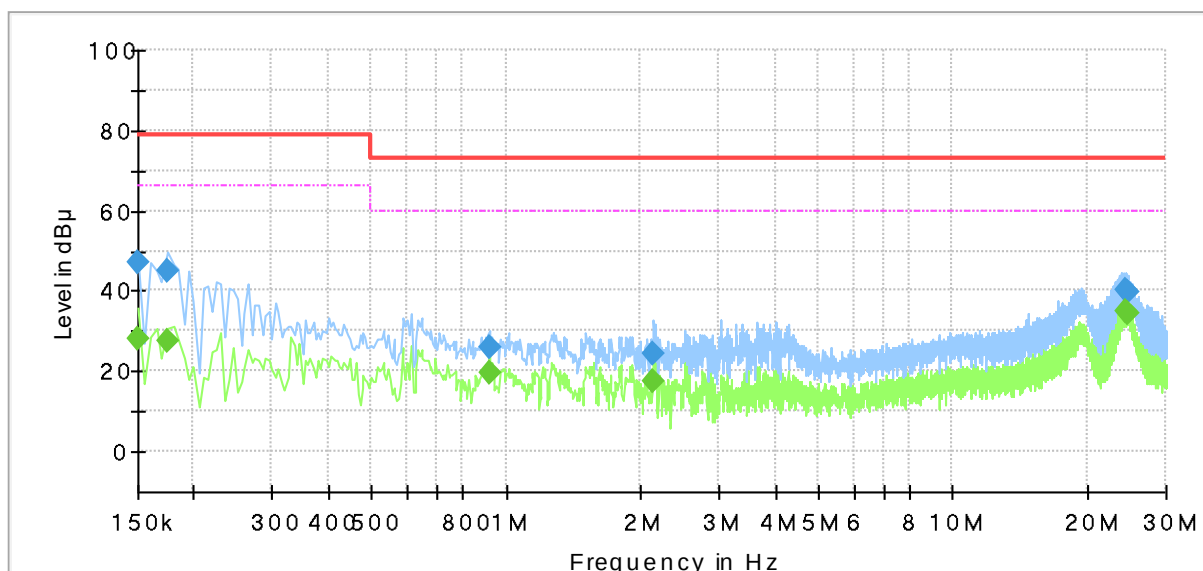
Page 16 / 38

- Test Date : 2026-06-16
- Test Mode : Mode 2

Test Report

1 / 1

Test Description: Conducted Emission
Job No.: KES-EM262108
Phase: L
Mode: Mode 2
Operator Name: KES



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	—	28.02	66.00	37.98	1000.0	9.000	L1	19.4
0.150000	46.87	—	79.00	32.13	1000.0	9.000	L1	19.4
0.175000	—	27.45	66.00	38.55	1000.0	9.000	L1	19.4
0.175000	44.91	—	79.00	34.09	1000.0	9.000	L1	19.4
0.915000	—	19.53	60.00	40.47	1000.0	9.000	L1	19.5
0.915000	25.72	—	73.00	47.28	1000.0	9.000	L1	19.5
2.140000	—	17.37	60.00	42.63	1000.0	9.000	L1	19.6
2.140000	24.46	—	73.00	48.54	1000.0	9.000	L1	19.6
24.310000	—	34.80	60.00	25.20	1000.0	9.000	L1	20.3
24.310000	40.45	—	73.00	32.55	1000.0	9.000	L1	20.3
24.615000	—	34.29	60.00	25.71	1000.0	9.000	L1	20.4
24.615000	39.51	—	73.00	33.49	1000.0	9.000	L1	20.4



Report No. : KES-EM262108

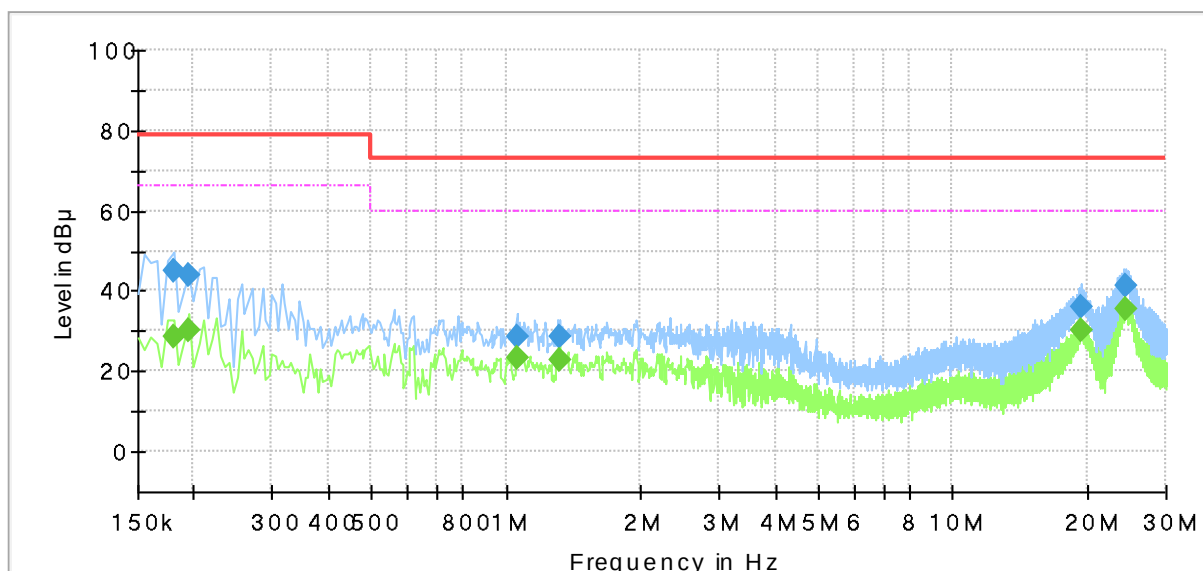
Page 17 / 38

- Test Date : 2026-06-16
- Test Mode : Mode 2

Test Report

1 / 1

Test Description: Conducted Emission
Job No.: KES-EM262108
Phase: N
Mode: Mode 2
Operator Name: KES



Final_Result

Frequency (MHz)	QuasiPeak (dB μV)	CAverage (dB μV)	Limit (dB μV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.180000	44.88	—	79.00	34.12	1000.0	9.000	N	19.4
0.180000	—	28.77	66.00	37.23	1000.0	9.000	N	19.4
0.195000	44.02	—	79.00	34.98	1000.0	9.000	N	19.4
0.195000	—	30.26	66.00	35.74	1000.0	9.000	N	19.4
1.060000	28.67	—	73.00	44.33	1000.0	9.000	N	19.5
1.060000	—	23.10	60.00	36.90	1000.0	9.000	N	19.5
1.320000	28.37	—	73.00	44.63	1000.0	9.000	N	19.5
1.320000	—	22.55	60.00	37.45	1000.0	9.000	N	19.5
19.415000	36.08	—	73.00	36.92	1000.0	9.000	N	20.3
19.415000	—	29.98	60.00	30.02	1000.0	9.000	N	20.3
24.360000	—	35.64	60.00	24.36	1000.0	9.000	N	20.5
24.360000	41.16	—	73.00	31.84	1000.0	9.000	N	20.5

6.1.6 Remark

Complies with the test requirements.



6.2 Radiated Emissions(Below 1 GHz)

6.2.1 Test Equipment

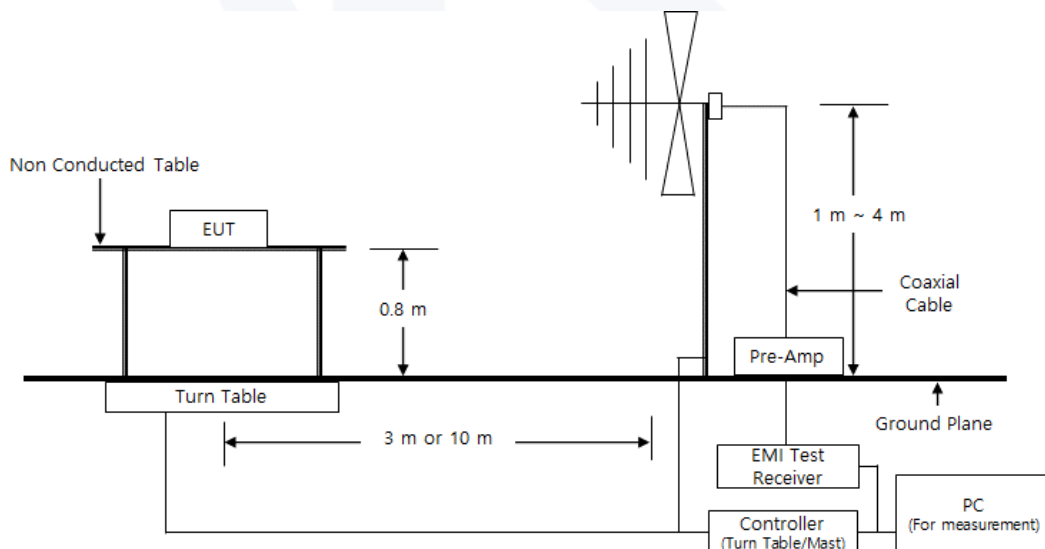
Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SEMI ANECHOIC CHAMBER #4(10 m)	-	DYMSTEC	-	-	-	■
EP5/RE Software	EP5/RE	TOYO	6.0.0	-	-	■
EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100551	2026-02-12	2027-02-12	■
AMPLIFIER	SCU 01	Rohde & Schwarz	100574	2026-04-24	2027-04-24	■
TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	2024-11-08	2026-11-08	■

6.2.2 Test Location : SEMI ANECHOIC CHAMBER #4(10 m) Measurement Distance : □ 3 m, ■ 10 m

6.2.3 Test Conditions :

Temperature	Relative Humidity
(24.4 ~ 24.6) °C	(57.7 ~ 57.9) % R.H.

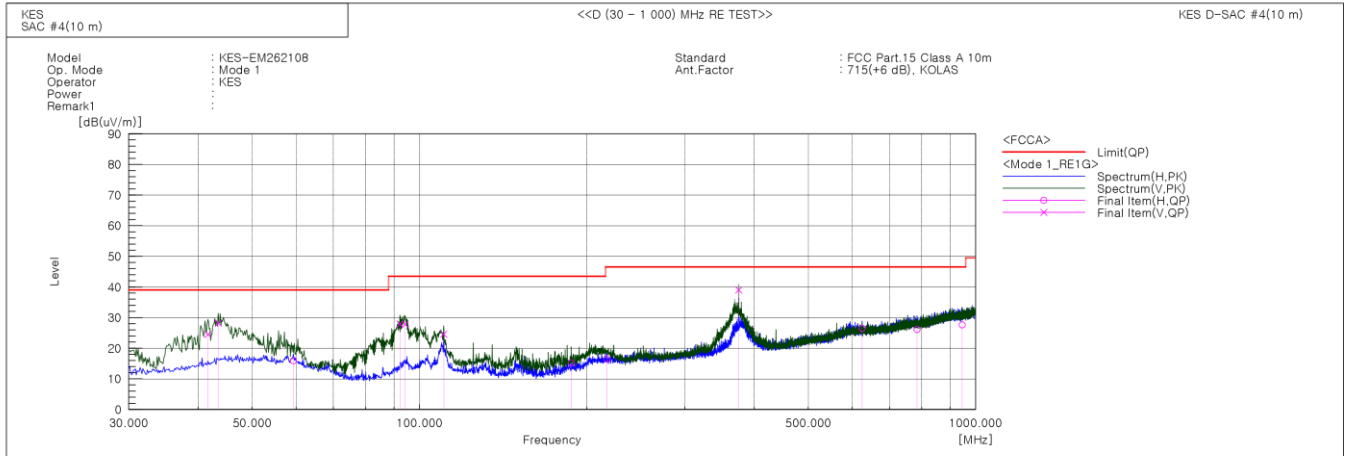
6.2.4 Diafram of test setup





6.2.5 Test Result

- Test Date : 2026-06-16
- Test Mode : Mode 1_FCC



Final Result

No.	Frequency [MHz]	(P)	Reading [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	41.640	V	46.5	-22.0	24.5	39.0	14.5	121.0	287.0	
2	43.459	V	49.8	-21.6	28.2	39.0	10.8	102.0	5.0	
3	59.343	H	38.0	-22.1	15.9	39.0	23.1	367.0	125.0	
4	92.201	V	51.1	-23.2	27.9	43.5	15.6	100.0	303.0	
5	94.141	V	50.6	-22.8	27.8	43.5	15.7	104.0	104.0	
6	110.510	V	47.2	-22.6	24.6	43.5	18.9	103.0	333.0	
7	187.504	H	37.4	-22.2	15.2	43.5	28.3	379.0	60.0	
8	217.453	H	36.4	-20.0	16.4	46.5	30.1	369.0	237.0	
9	374.956	V	53.5	-14.5	39.0	46.5	7.5	246.0	3.0	
10	625.095	H	33.9	-7.4	26.5	46.5	20.0	374.0	68.0	
11	784.781	H	31.2	-5.1	26.1	46.5	20.4	385.0	334.0	
12	946.044	H	29.9	-2.3	27.6	46.5	18.9	399.0	158.0	

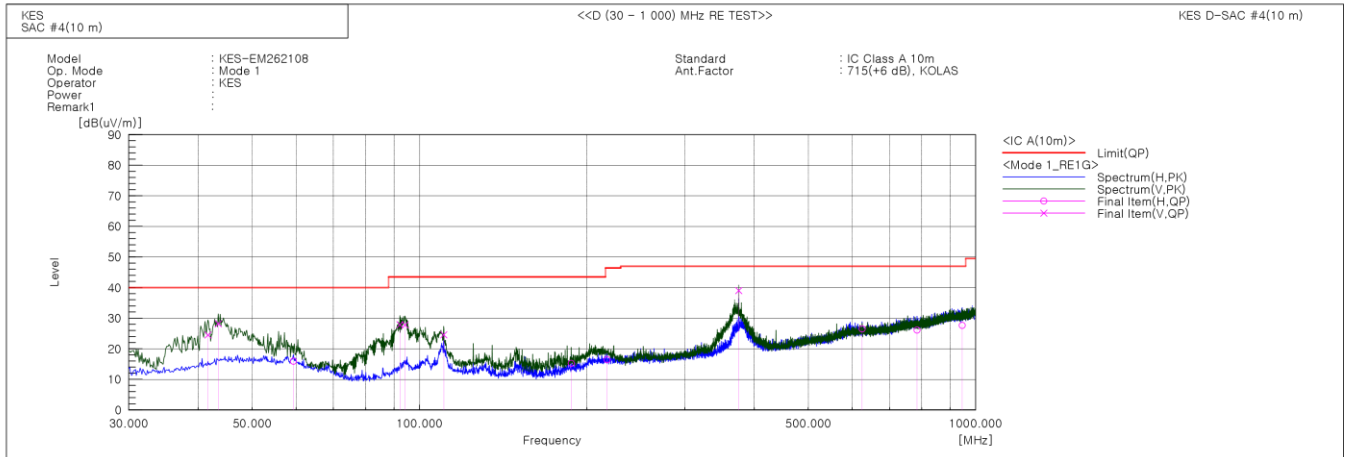
※ The data is the result measured by the detector in Quasi-Peak mode on the Peak graph.



Report No. : KES-EM262108

Page 20 / 38

- Test Date : 2026-06-16
- Test Mode : Mode 1_IC



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	41.640	V	46.5	-22.0	24.5	40.0	15.5	121.0	287.0	
2	43.459	V	49.8	-21.6	28.2	40.0	11.8	102.0	5.0	
3	59.343	H	38.0	-22.1	15.9	40.0	24.1	367.0	125.0	
4	92.201	V	51.1	-23.2	27.9	43.5	15.6	100.0	303.0	
5	94.141	V	50.6	-22.8	27.8	43.5	15.7	104.0	104.0	
6	110.510	V	47.2	-22.6	24.6	43.5	18.9	103.0	333.0	
7	187.504	H	37.4	-22.2	15.2	43.5	28.3	379.0	60.0	
8	217.453	H	36.4	-20.0	16.4	46.4	30.0	369.0	237.0	
9	374.956	V	53.5	-14.5	39.0	47.0	8.0	246.0	3.0	
10	625.095	H	33.9	-7.4	26.5	47.0	20.5	374.0	68.0	
11	784.781	H	31.2	-5.1	26.1	47.0	20.9	385.0	334.0	
12	946.044	H	29.9	-2.3	27.6	47.0	19.4	399.0	158.0	

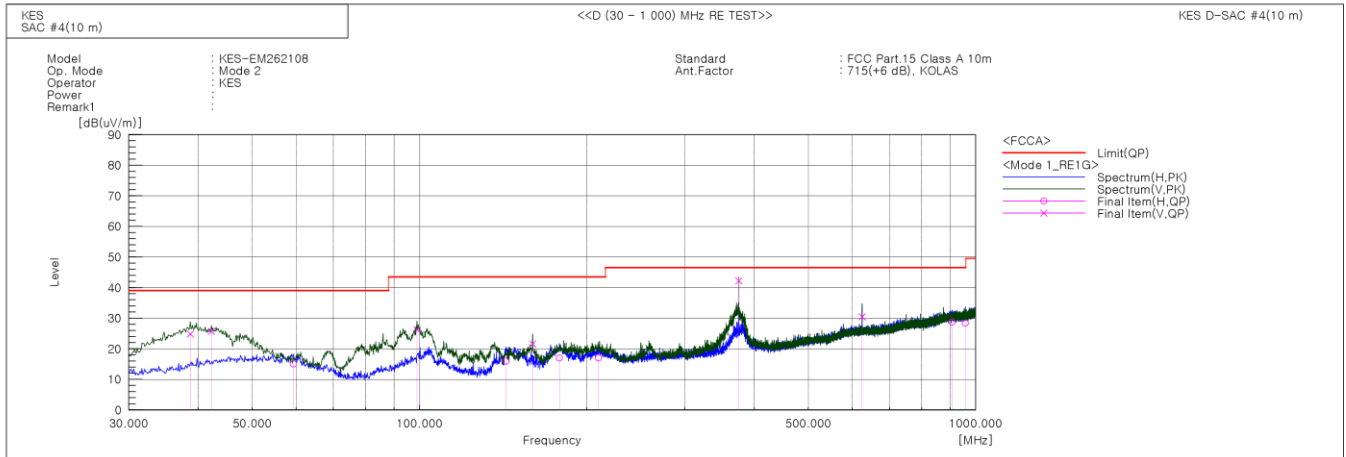
※ The data is the result measured by the detector in Quasi-Peak mode on the Peak graph.



Report No. : KES-EM262108

Page 21 / 38

- Test Date : 2026-06-16
- Test Mode : Mode 2_FCC



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	38.730	V	47.8	-23.0	24.8	39.0	14.2	102.0	263.0	
2	42.246	V	47.6	-21.9	25.7	39.0	13.3	105.0	192.0	
3	59.343	H	37.1	-22.1	15.0	39.0	24.0	354.0	102.0	
4	98.991	V	48.6	-22.4	26.2	43.5	17.3	110.0	300.0	
5	143.126	H	41.1	-25.1	16.0	43.5	27.5	358.0	177.0	
6	159.738	V	46.3	-24.7	21.6	43.5	21.9	121.0	54.0	
7	178.410	H	40.1	-23.1	17.0	43.5	26.5	369.0	125.0	
8	209.814	H	37.4	-20.4	17.0	43.5	26.5	385.0	203.0	
9	374.956	V	56.7	-14.5	42.2	46.5	4.3	102.0	348.0	
10	625.095	V	37.8	-7.4	30.4	46.5	16.1	103.0	129.0	
11	907.123	H	31.1	-2.3	28.8	46.5	17.7	364.0	359.0	
12	958.048	H	30.6	-2.2	28.4	46.5	18.1	378.0	113.0	

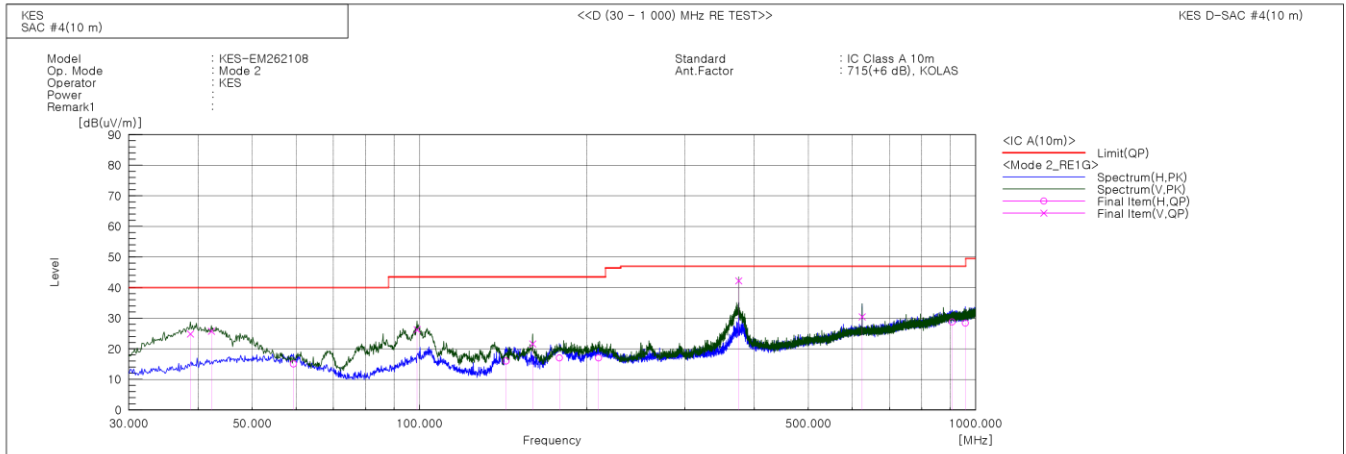
※ The data is the result measured by the detector in Quasi-Peak mode on the Peak graph.



Report No. : KES-EM262108

Page 22 / 38

- Test Date : 2026-06-16
- Test Mode : Mode 2_IC



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	38.730	V	47.8	-23.0	24.8	40.0	15.2	102.0	263.0	
2	42.246	V	47.6	-21.9	25.7	40.0	14.3	105.0	192.0	
3	59.343	H	37.1	-22.1	15.0	40.0	25.0	354.0	102.0	
4	98.991	V	48.6	-22.4	26.2	43.5	17.3	110.0	300.0	
5	143.126	H	41.1	-25.1	16.0	43.5	27.5	358.0	177.0	
6	159.738	V	46.3	-24.7	21.6	43.5	21.9	121.0	54.0	
7	178.410	H	40.1	-23.1	17.0	43.5	26.5	369.0	125.0	
8	209.814	H	37.4	-20.4	17.0	43.5	26.5	385.0	203.0	
9	374.956	V	56.7	-14.5	42.2	47.0	4.8	102.0	348.0	
10	625.095	V	37.8	-7.4	30.4	47.0	16.6	103.0	129.0	
11	907.123	H	31.1	-2.3	28.8	47.0	18.2	364.0	359.0	
12	958.048	H	30.6	-2.2	28.4	47.0	18.6	378.0	113.0	

※ The data is the result measured by the detector in Quasi-Peak mode on the Peak graph.

6.2.6 Remark

Complies with the test requirements.



6.3 Radiated Emissions(Above 1 GHz)

6.3.1 Test Equipment

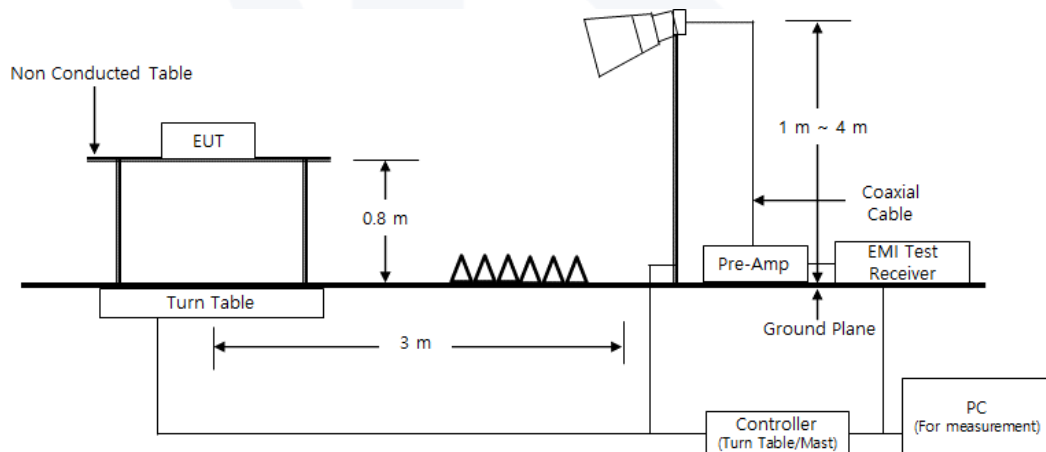
Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SEMI ANECHOIC CHAMBER #5	-	SY Corporation	-	-	-	■
ES10/RE Software	ES10/RE	TOYO	2022.01.000	-	-	■
EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100552	2026-02-12	2027-02-12	■
PREAMPLIFIER	8449B	HP	3008A00538	2026-04-29	2027-04-29	■
HORN ANTENNA	BBHA 9120D	SCHWARZBEC K	9120D-1802	2025-11-05	2026-11-05	■
ATTENUATOR	8491B	HP	23094	2026-02-12	2027-02-12	■

6.3.2 Test Location : SEMI ANECHOIC CHAMBER #5

6.3.3 Test Conditions :

Temperature	Relative Humidity
(25.4 ~ 25.7) °C	(47.0 ~ 47.2) % R.H.

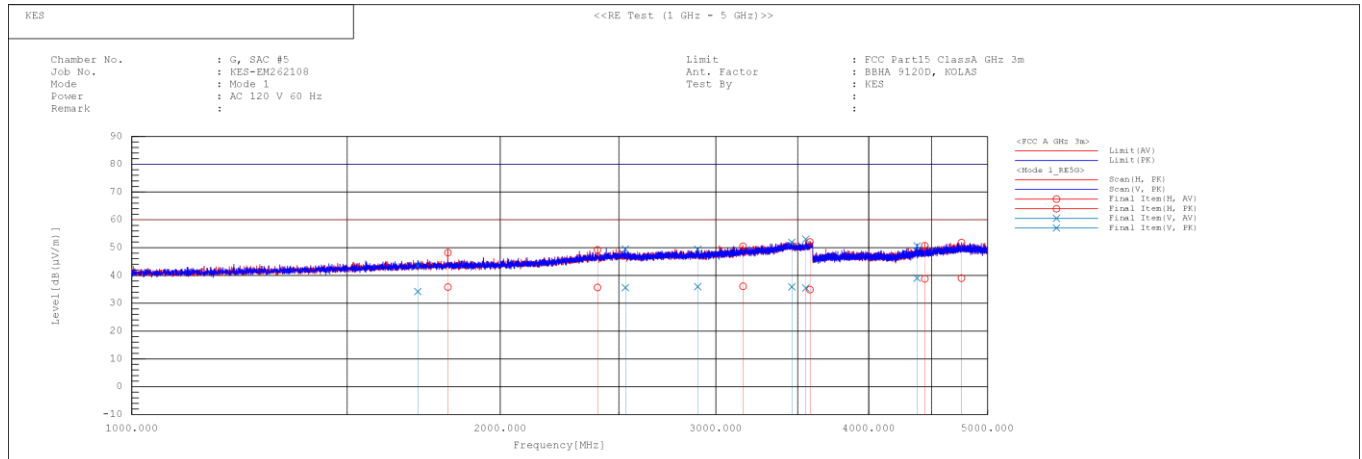
6.3.4 Diagram of test setup





6.3.5 Test Result

- Test Date : 2026-06-17
- Test Mode : Mode 1



Final Result

No.	Frequency [MHz]	Pol	Reading AV [dB (μV)]	Reading PK [dB (μV)]	c.f. [dB (1/m)]	Result AV [dB (μV/m)]	Result PK [dB (μV/m)]	Limit AV [dB (μV/m)]	Limit PK [dB (μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [deg]	Remark
1	1712.715	V	31.9	41.2	2.3	34.2	43.5	60.0	80.0	25.8	36.5	114.0	94.4	
2	1812.877	H	33.1	45.5	2.7	35.8	48.2	60.0	80.0	24.2	31.8	348.0	10.6	
3	2401.143	H	30.4	43.9	5.3	35.7	49.2	60.0	80.0	24.3	30.8	159.0	184.3	
4	2530.397	V	30.0	43.9	5.6	35.6	49.5	60.0	80.0	24.4	30.5	104.0	314.3	
5	2900.142	V	29.3	42.7	6.7	36.0	49.4	60.0	80.0	24.0	30.6	100.0	146.4	
6	3156.778	H	29.0	43.4	7.1	36.1	50.5	60.0	80.0	23.9	29.5	349.0	271.4	
7	3460.473	V	28.4	44.4	7.5	35.9	51.9	60.0	80.0	24.1	28.1	116.0	357.0	
8	3552.734	V	27.9	45.4	7.6	35.5	53.0	60.0	80.0	24.5	27.0	121.0	63.2	
9	3580.864	H	27.2	44.3	7.7	34.9	52.0	60.0	80.0	25.1	28.0	116.0	110.8	
10	4380.400	V	28.3	39.9	10.7	39.0	50.6	60.0	80.0	21.0	29.4	100.0	342.3	
11	4444.763	H	27.8	39.7	11.0	38.8	50.7	60.0	80.0	21.2	29.3	119.0	34.3	
12	4760.251	H	27.0	39.8	12.0	39.0	51.8	60.0	80.0	21.0	28.2	345.0	47.9	

- ※ The data is the result of measured by the detector in PK and CISPR Average on the Peak graph.
- ※ The Average of the test data is the cispr average result.



Report No. : KES-EM262108

Page 25 / 38

○ Test Date : 2026-06-17

● Test Mode : Mode 1

(5 ~ 7) GHz

PK

Frequency (MHz)	Reading PK (dBuV)	Polarization	Height (m)	ANT Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
6 574.595	39.900	H	1.000	34.440	8.910	34.830	48.420	80.000	31.580
6 899.449	39.400	V	1.000	35.940	9.850	34.690	50.500	80.000	29.500

Cispr-AV

Frequency (MHz)	Reading CISPR AV (dBuV)	Polarization	Height (m)	ANT Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
6 574.595	25.700	H	1.000	34.440	8.910	34.830	34.220	60.000	25.780
6 899.449	26.200	V	1.000	35.940	9.850	34.690	37.300	60.000	22.700

※ No spurious emission were detected above 7 GHz

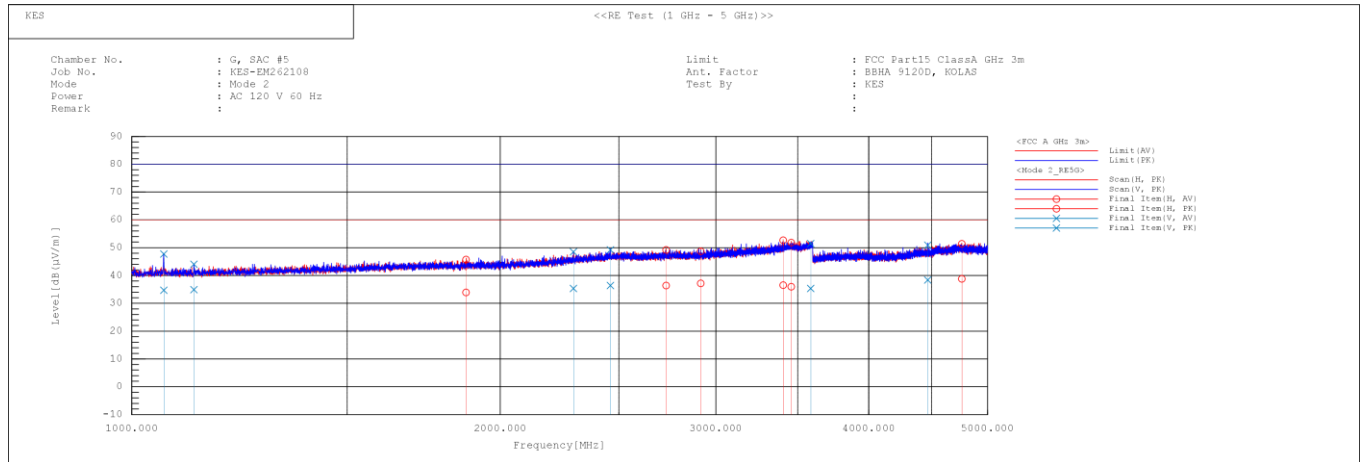


Report No. : KES-EM262108

Page 26 / 38

○ Test Date : 2026-06-17

● Test Mode : Mode 2



Final Result

No.	Frequency [MHz]	Pol	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [deg]	Remark
1	1062.493	V	35.7	48.7	-1.0	34.7	47.7	60.0	80.0	25.3	32.3	103.0	286.9	
2	1124.436	V	35.6	44.7	-0.7	34.9	44.0	60.0	80.0	25.1	36.0	102.0	295.4	
3	1875.316	H	31.0	42.8	2.9	33.9	45.7	60.0	80.0	26.1	34.3	192.0	350.3	
4	2294.742	V	30.6	43.8	4.7	35.3	48.5	60.0	80.0	24.7	31.5	103.0	359.7	
5	2460.454	V	31.0	43.8	5.4	36.4	49.2	60.0	80.0	23.6	30.8	105.0	77.0	
6	2732.147	H	30.2	43.0	6.2	36.4	49.2	60.0	80.0	23.6	30.8	196.0	140.6	
7	2916.175	H	30.5	42.0	6.7	37.2	48.7	60.0	80.0	22.8	31.3	197.0	20.4	
8	3404.472	H	29.1	45.3	7.4	36.5	52.7	60.0	80.0	23.5	27.3	198.0	76.4	
9	3456.762	H	28.5	44.3	7.5	36.0	51.8	60.0	80.0	24.0	28.2	199.0	160.7	
10	3586.441	V	27.6	43.8	7.7	35.3	51.5	60.0	80.0	24.7	28.5	144.0	10.4	
11	4468.763	V	27.3	39.8	11.1	38.4	50.9	60.0	80.0	21.6	29.1	167.0	321.9	
12	4763.544	H	26.8	39.4	12.0	38.8	51.4	60.0	80.0	21.2	28.6	196.0	320.6	

※ The data is the result of measured by the detector in PK and CISPR Average on the Peak graph.

※ The Average of the test data is the cispr average result.



Report No. : KES-EM262108

Page 27 / 38

○ Test Date : 2026-06-17

● Test Mode : Mode 2

(5 ~ 7) GHz

PK

Frequency (MHz)	Reading PK (dBuV)	Polarization	Height (m)	ANT Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
5 565.057	38.900	H	1.000	32.190	8.980	33.940	46.130	80.000	33.870
6 721.401	40.300	V	1.000	35.120	9.600	34.770	50.250	80.000	29.750

Cispr-AV

Frequency (MHz)	Reading CISPR AV (dBuV)	Polarization	Height (m)	ANT Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
5 565.057	25.600	H	1.000	32.190	8.980	33.940	32.830	60.000	27.170
6 721.401	26.300	V	1.000	35.120	9.600	34.770	36.250	60.000	23.750

※ No spurious emission were detected above 7 GHz

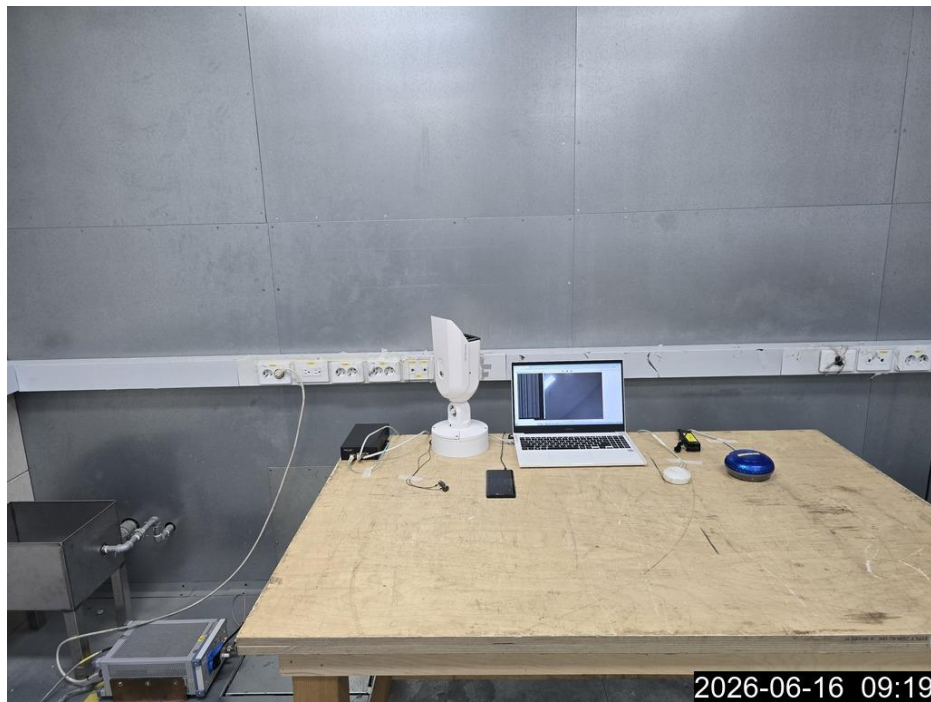
6.3.6 Remark

Complies with the test requirements.

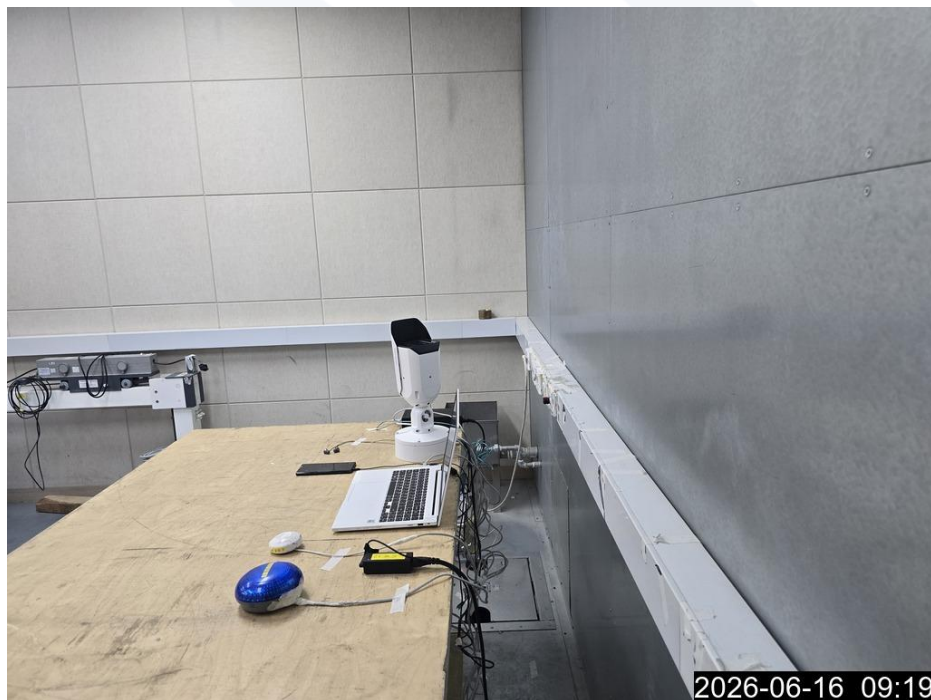


7 Test Setup Photos and EUT Photographs

7.1 Test Setup Photos



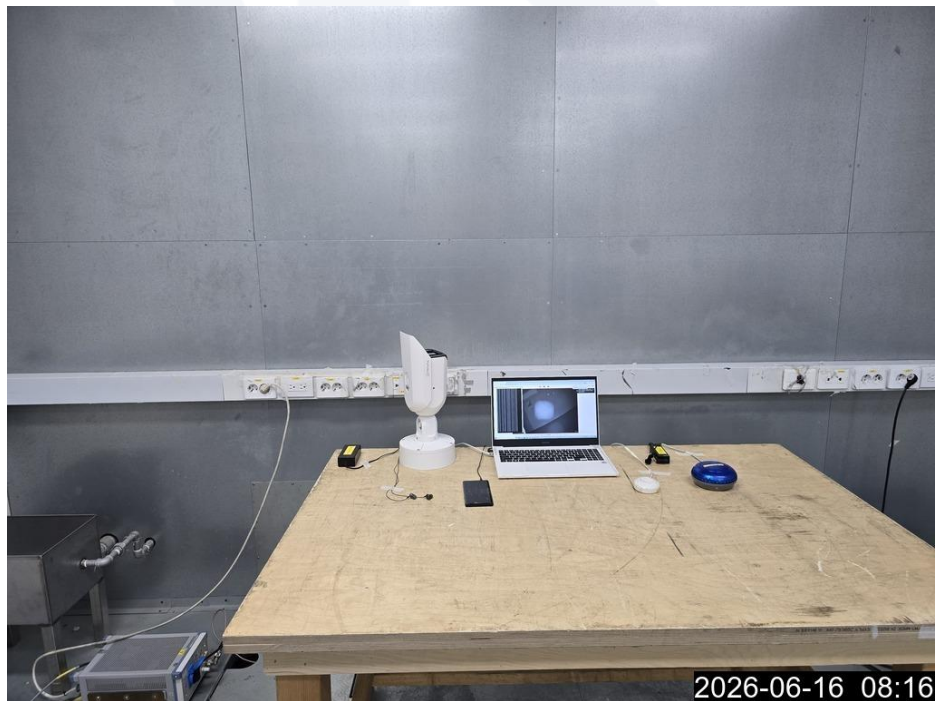
<Conducted Emissions at Mains Power Ports - Front> Mode 1



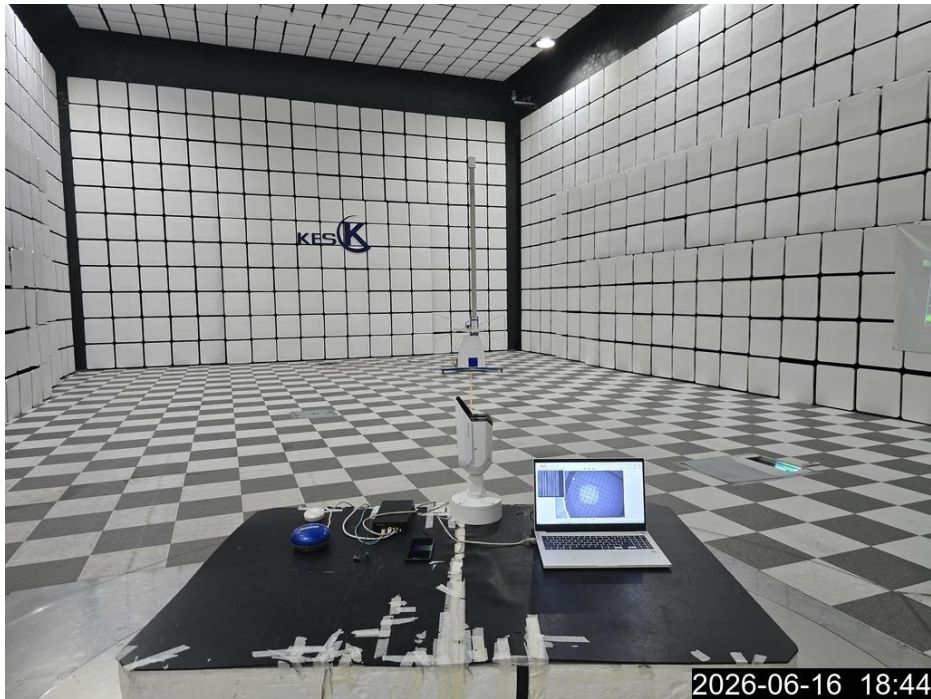
<Conducted Emissions at Mains Power Ports - Rear> Mode 1



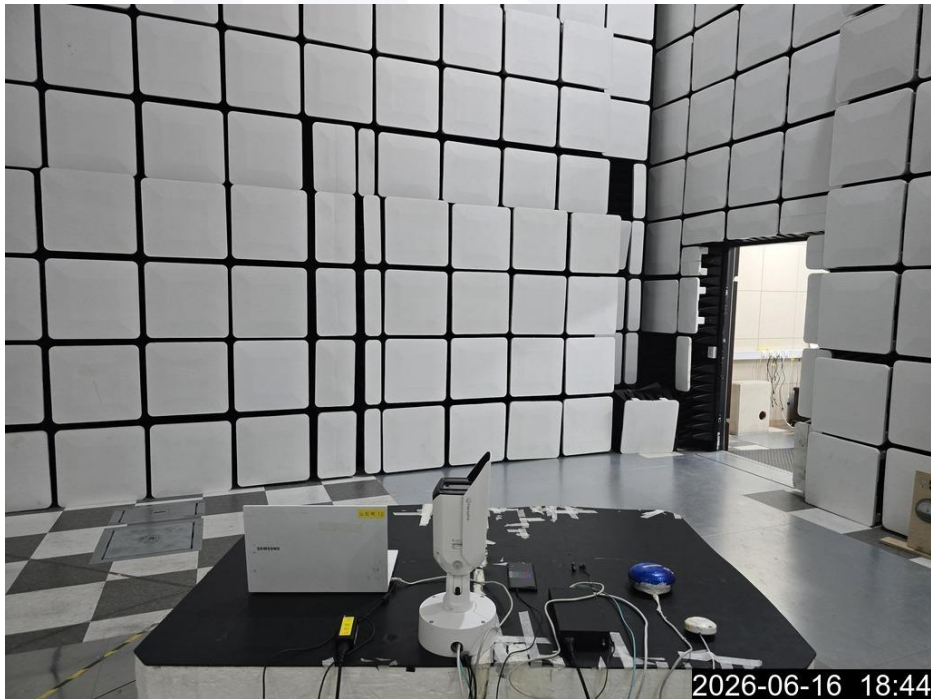
<Conducted Emissions at Mains Power Ports - Front> Mode 2



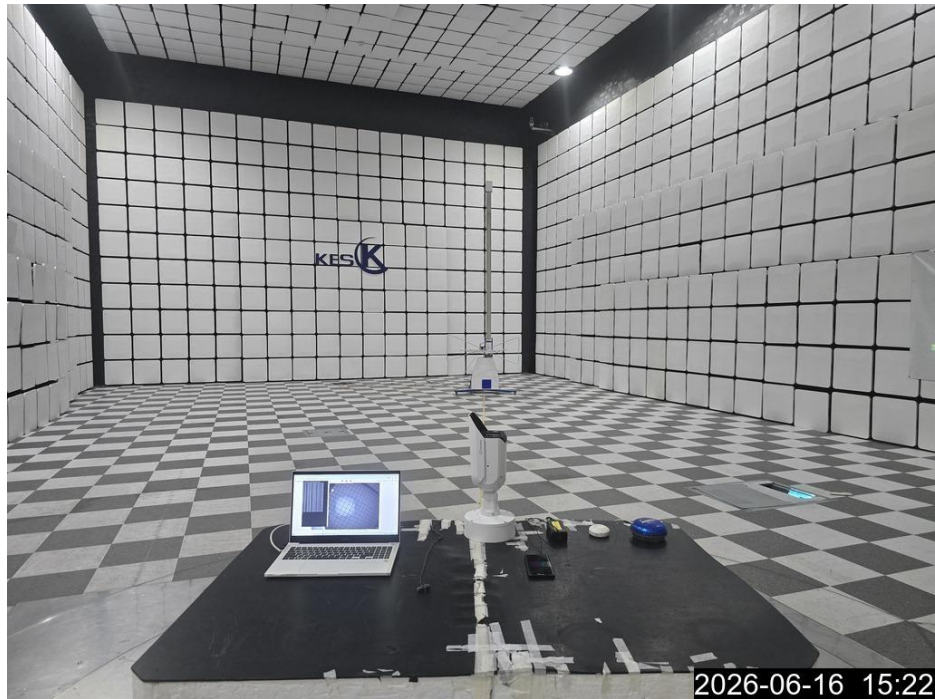
<Conducted Emissions at Mains Power Ports - Rear> Mode 2



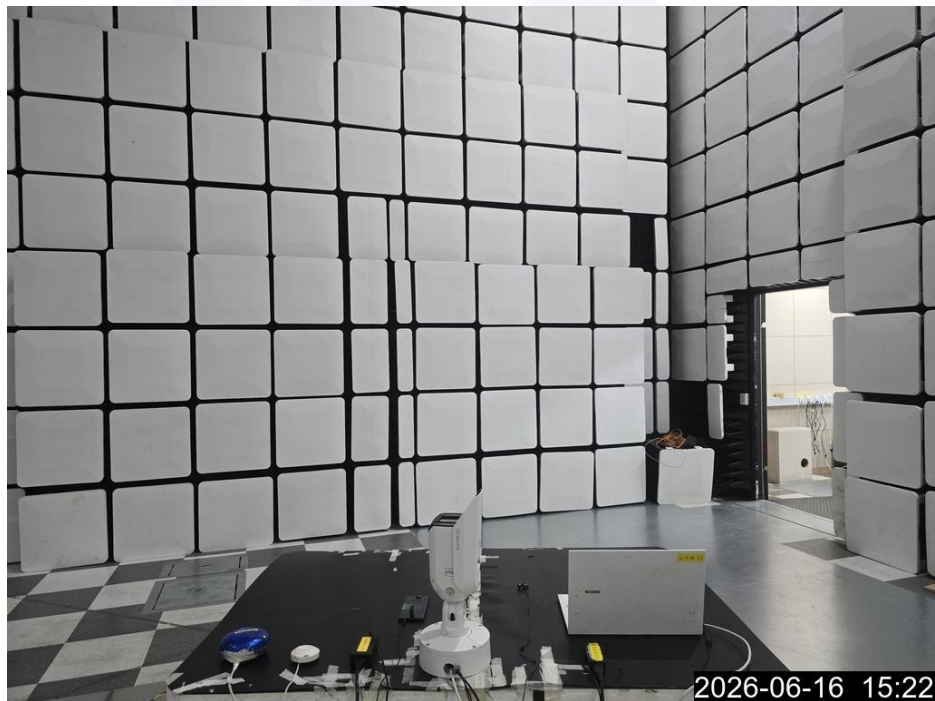
<Radiated Emissions(Below 1 GHz) - Front> Mode 1



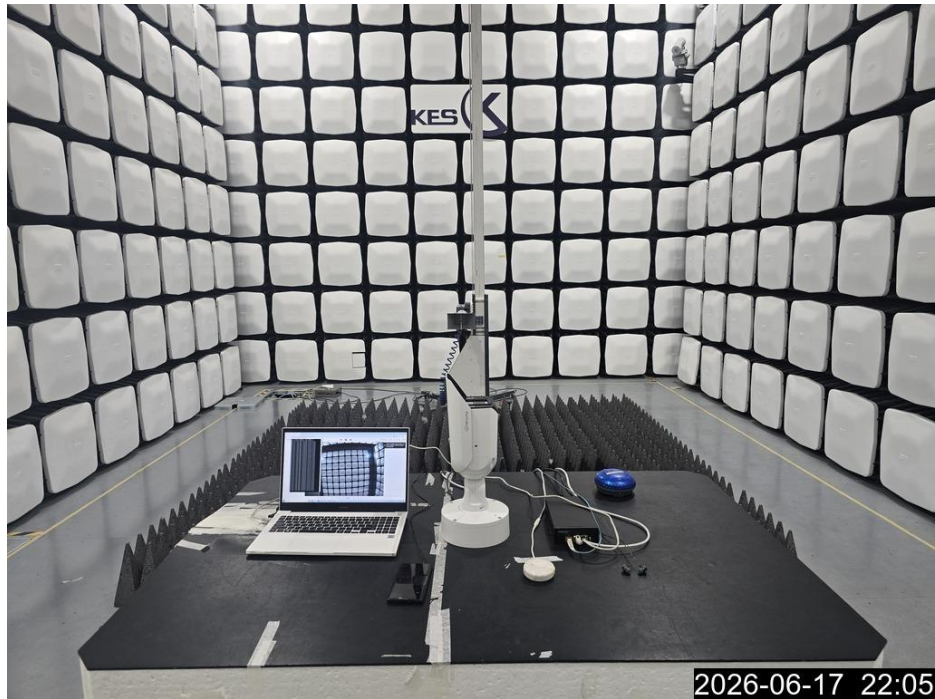
<Radiated Emissions(Below 1 GHz) - Rear> Mode 1



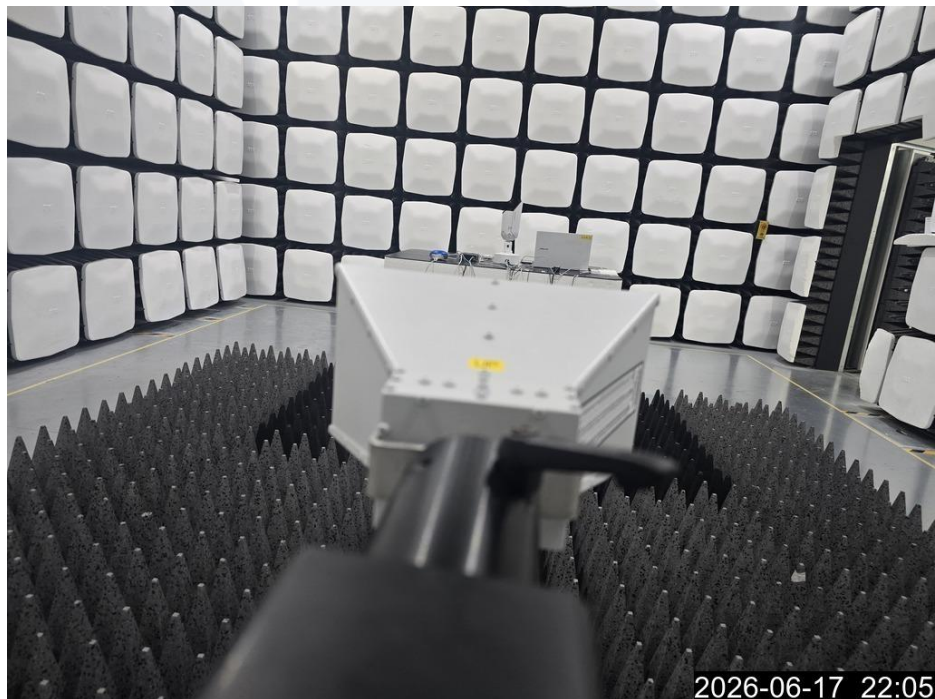
<Radiated Emissions(Below 1 GHz) - Front> Mode 2



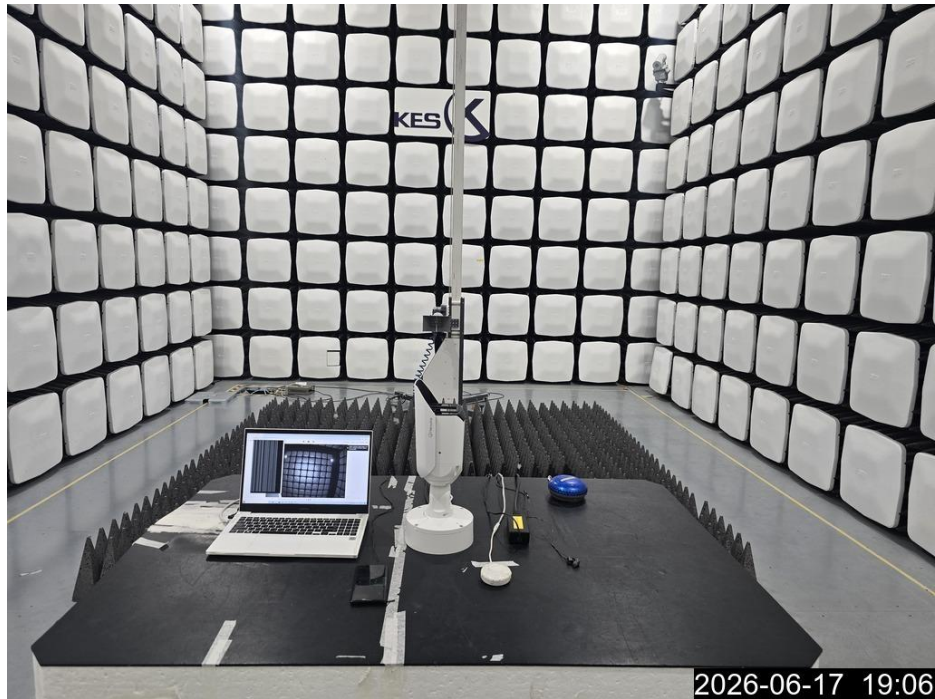
<Radiated Emissions(Below 1 GHz) - Rear> Mode 2



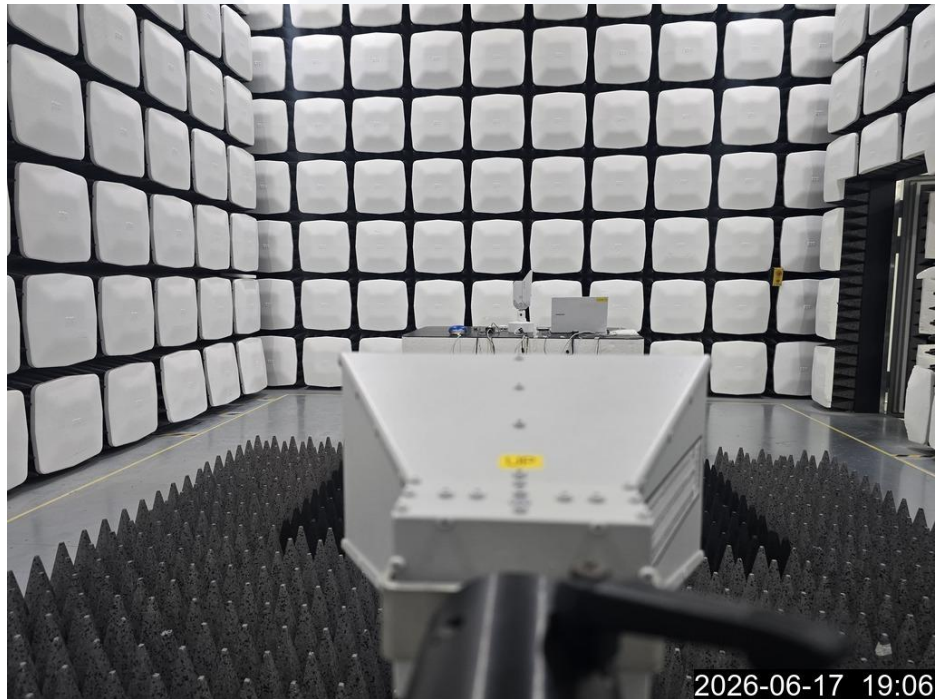
<Radiated Emissions(Above 1 GHz) - Front> Mode 1



<Radiated Emissions(Above 1 GHz) - Rear> Mode 1



<Radiated Emissions(Above 1 GHz) - Front> Mode 2



<Radiated Emissions(Above 1 GHz) - Rear> Mode 2



7.2 EUT Photographs



<EUT External Photographs - Top>



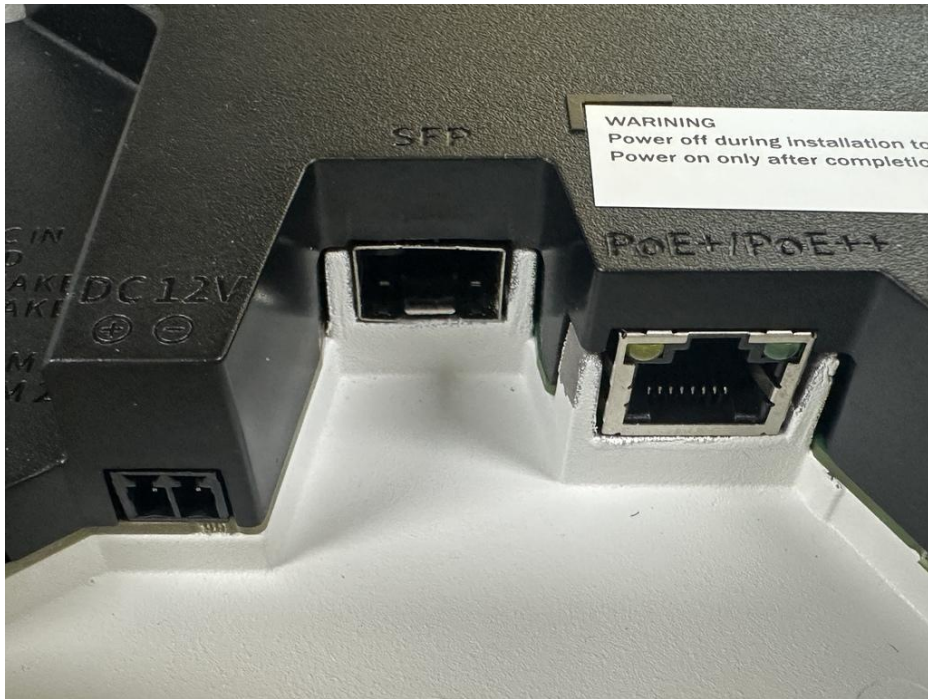
<EUT External Photographs - Bottom>



<Components>



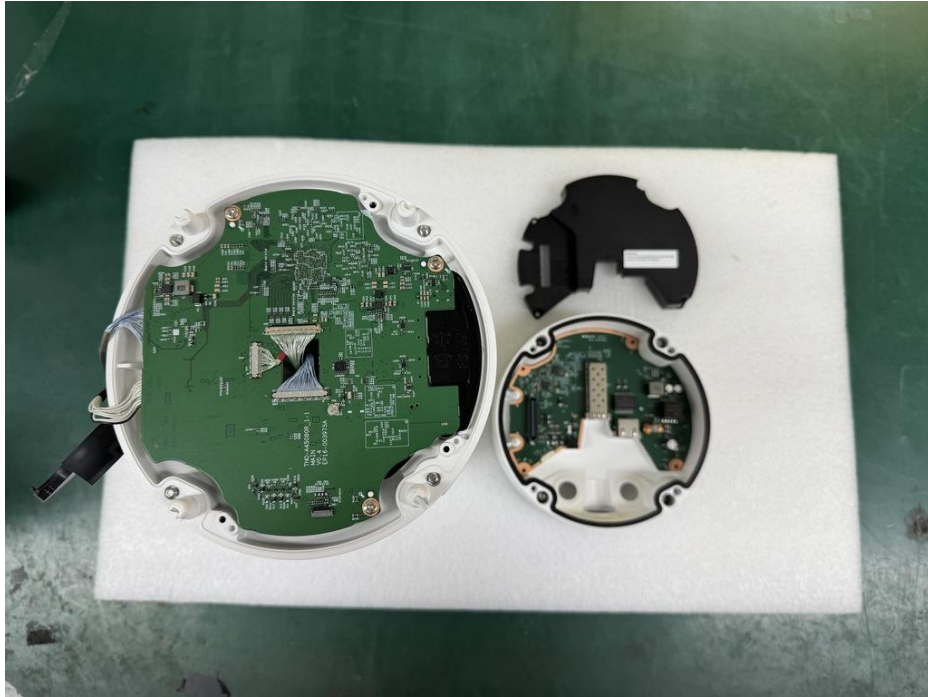
<Port-1>



<Port-2>



<Port-3>



<EUT Internal Photographs>



7.3 Label

	Name : Hanwha Vision Co., Ltd. Product item : NETWORK CAMERA Model name : TNO-A45080R
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.	
The above label is only an example. The specific format is left to the manufacturer to decide, as long as the label includes the required information, in accordance with ICES-Gen. The requirements specified in ICES-Gen shall apply. An example ISED compliance label, to be placed on each unit of an equipment model (or in the user manual, if allowed), is given below:	
CAN ICES-003(A) / NMB-003(A)	

The End.