TEST REPORT

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 INTERCOM
◯ Model name	:	TID-A800
◯ 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. 05. 19. ~ 2026. 05. 22.
4. Location of Test	:	Permanent Testing Lab
○ Address	:	473-21, Gayeo-ro, Yeoju-si, Gyeonggi-do, 12658, Republic of Korea
5. Test method used	:	EN 55032:2015+A1:2020, EN 50130-4:2011+A1:2014, EN IEC 61000-3-2:2019, EN 61000-3-3:2013+A2:2021
6. Test result	:	PASS

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
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This test report is not related to KOLAS accreditation.

Affirmation	Tested by	Technical Manager by
	Name : SeHeon Kim 김세헌 [김세헌]2026/05/28	Name : DongHun Jang [장동훈]2026/05/28

2026. 05. 28.

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REPORT REVISION HISTORY

Date	Test Report No.	Revision History
2026. 05. 28.	KES-EM261240	Issued

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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)

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1 Laboratory Information

1.1 Test Location

Category	Details
Addres	473-21, Gayeo-ro, Yeoju-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, Yeoju-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

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2 Test Summary

2.1 Class and Voltage

Test Class	Test Voltage
Class A	AC 230 V, 50 Hz, PoE

2.2 Summary of Test Results

Regulation
EMC Directive 2014/30/EU, EMC Regulations SI 2016/1091

Test Item	Test Standard		Test Result	Remark
Conducted Emissions at Mains Power Ports	EN 55032:2015+A1:2020		PASS	NOTE 1
Conducted Emissions at Telecommunication Ports			PASS	-
Radiated Emissions(Below 1 ㎓)			PASS	-
Radiated Emissions(Above 1 ㎓)			PASS	-
Harmonic Current Emissions	EN IEC 61000-3-2:2019		PASS	NOTE 1
Voltage Fluctuations and Flicker	EN 61000-3-3:2013+A2:2021		PASS	NOTE 1
Electrostatic Discharge	EN 50130-4:2011+A1:2014	EN 61000-4-2:2009	PASS	-
Continuous RF electromagnetic field disturbances		EN IEC 61000-4-3:2020	PASS	-
Electrical Fast Transients/Bursts		EN 61000-4-4:2012	PASS	NOTE 1
Surge		EN 61000-4-5 :2014+A1:2017	PASS	NOTE 1
Continuous Induced RF Disturbances		EN IEC 61000-4-6:2023	PASS	NOTE 1
Voltage Dips and Interruptions		EN IEC 61000-4-11:2020	PASS	NOTE 1

* N/A: Not Applicable

(NOTE 1) PoE Power Mode is powered by the PoE port, PoE port is considered to be wired network port, so power-related test items are excluded.

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2.3 Remarks when standards applied
N/A

2.4 Variant Model Differences
N/A

2.5 Device Modifications
N/A

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3 General Product Description

	TID-A800
Video	
Imaging Device	1/2.8" CMOS
Resolution	2592x1944, 2560x1440, 1920x1080, 1600x1200, 1280x960, 1280x720, 1024x768, 800x600, 640x480, 640x360, 320x240, 320x180
Max. Framerate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps(@5MP Max. 5fps)
Lens	
Focal Length (Zoom Ratio)	1.93mm fixed focal
Optical Zoom	None
Max. Aperture Ratio	F2.2
Angular Field of View	H: 166° / V: 117° / D: 180°
Min. Object Distance	0.3m(0.98ft)
Focus Control	Fixed
Operational	
Camera Title	Displayed up to 85 characters
Direction Indicator	None
Day & Night	Auto (Electric)
Backlight Compensation	BLC, HLC, WDR, SSDR
Wide Dynamic Range	120dB
Digital Noise Reduction	SSNRV, WiseNRⅡ(Based on AI engine)
Digital Image Stabilization	None
Defog	None
Motion Detection	8ea, 8point polygonal zones
Privacy Masking	32ea, 8point polygonal zones - Color: gray/green/red/blue/black/white - Mosaic Dynamic Privacy Mask (Based on AI engine) - Color: gray/green/red/blue/black/white - Mosaic
Gain Control	Off / Max Gain / Manual
White Balance	ATW / NarrowATW / AWC / Manual / Indoor / Outdoor
LDC	None
Electronic Shutter Speed	Minimum / Maximum / Anti flicker(1/5~1/30,000sec) Prefer shutter control(Based on AI engine)
Digital PTZ	Face zoom
Video Rotation	None
Analytics	Classified object type: Person/Vehicle(Type: car/bus/truck/motorcycle/bicycle)/Face/License Plate Attributes: Person(Clothing top/bottom color), Vehicle(Type: car/bus/truck/motorcycle/bicycle, Color), Face(Age, Gender, Face mask, Glasses) Support BestShot Support Similarity search **Analytics events based on AI engine** Object detection, Virtual line(Crossing/Direction), Motion detection, Face mask detection, Virtual area(Loitering/Intrusion/Enter/Exit/Appear/Disappear) **Analytics events** Defocus detection, Tampering, Audio detection, Shock detection
Business Intelligence	Based on AI engine: People counting, Vehicle counting, Crowd counting
Serial Interface	None
Alarm I/O	Input 2ea / Output 1ea , Relay out 1ea (12VDC Max. 550mA with 2A adapter) *Support extra alarm I/O via optional I/O box
Alarm Triggers	Analytics, Network disconnection, Alarm input, App event, Time schedule, MQTT subscription, Day/Night, Storage disruption, Case open tempering, **DTMF**
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 - SIP

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Audio Streaming	Two-way/one-way selectable, Full duplex, Echo cancellation and noise reduction
Audio In	Built-in MIC
Audio Out	DC12V: Max. 84dB at 1kHz/1m PoE: Max. 81dB at 1kHz/1m
Light Type	White light
Network	
Ethernet	RJ-45(10/100BASE-T)
Video Compression	H.265/H.264: Main/Baseline/High, MJPEG
Smart Codec	WiseStream(Based on AI engine)
Video Quality Adjustment	H.264/H.265: Target bitrate level control MJPEG: Quality Level control
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 5 profiles, 1 virtual channel support)
Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP/SFTP, SMTP(StartTLS), ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP(TCP, UDP Unicast), CDP, MQTT, Syslog, SIP
Security	None
Application Programming Interface	ONVIF Profile S/G/T/M SUNAPI (HTTP API) Hanwha Vision Open Platform
Direct Cloud Connection	Support
Security	
OS / Firmware Protect	Secure boot, Signed firmware, Firmware encryption
User authentication	Digest Authentication, Prevent brute-force attack
Access Control	IP-based access control, MAC-based access control, Auto logout
Data Protect	Encryption Credentials, Encrypt compress for live recording file export
Audit	Access / System / Event Log management
Device ID	Device Certificate(Hanwha vision Root CA)
Secure Storage	Secure element, SDcard partition encrypt
Supply Chain Security	SBOM
Security Certificate	ETSI EN 303 645, Secure element(FIPS 140-3 level3, CC EAL6+)
General	
Webpage Language	English, Korean, Simplified Chinese, Traditional Chinese, French, Italian, Spanish, German, Japanese, Russian, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	None
Edge Storage	Micro SD/SDHC/SDXC 1slot Max.1TB
Memory	4GB RAM, 8GB eMMC
Environmental & Electrical	
Operating Temperature / Humidity	-40°C~+55°C(-40°F~+131°F) * Start up should be done at above -30°C 0~100%RH (condensing)
Storage Temperature / Humidity	-50°C~+60°C(-58°F ~ +140°F) / 0~95% RH
Wind Load	None
EPA(Effective Projected Area)	None
Certification	IP65, IK08
Input Voltage	PoE(IEEE802.3af, Class3), 12VDC
Power Consumption	PoE: Max 12.95W, typical 6.8W 12VDC: Max 21.3W, typical 6.9W * 12VDC power consumption includes 12VDC/550mA relay out.
Mechanical	
Color / Material	Dark gray / Aluminium Bubble : Hard-coated dome
RAL Code	RAL7022
Product Dimensions / Weight	49(W)x199(H)x47.5(D)mm (BODY) 49(W)x199(H)x60.1(D)mm (with BUBBLE)
Compatible Conduit hole / Gangbox	None

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4 EUT Setup and Operation Mode

4.1 EUT Configuration

Product Name	Model Number	Serial Number	Manufacturer	Remarks
NETWORK INTERCOM	TID-A800	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT
AC/DC Adpater	2ACB022F	-	Chnnel Well Technology	-
PoE Injector	PT-PSE109GBRO-AH-S	-	Dongguan PROCET Network Technology Co.,Ltd	-
Laptop	NT550XDZ	-	Samsung Electronics	-
Laptop AC/DC Adapter	AD-4019A	-	Chicony	-
Alarm	PRO-SL	-	SENSOR PRO	-
Button Alarm	-	-	-	-
Door Lock Jig	-	-	-	-
Micro SD Card	-	-	SanDisk	-

4.2 System Configuration

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

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4.3 External I/O Cabling

Mode 1

Start		End		Cable Spec.	
Product Name	**I/O Port**	**Product Name**	**I/O Port**	**Length(m)**	**Shield**
EUT	DC IN	AC/DC Adpater	DC OUT	1.5	U
	RJ-45 (LAN)	Laptop	RJ-45 (LAN)	3.1	U
	7 Pin (Alarm OUT)	Alarm	Alarm IN	3.5	U
	7 Pin (Alarm IN)	Button Alarm	Alarm OUT	3.5	U
	7 Pin (+12V OUT)	Door Lock Jig	DC IN	0.5	U
	7 Pin (COM)		COM	0.5	U
	7 Pin (NO/NC)		NO/NC	0.5	U
	Micro SD Slot	Micro SD Card	Micro SD Slot	-	-
Laptop	DC Jack	Laptop AC/DC Adapter	DC Jack	1.5	U

Mode 2

Start		End		Cable Spec.	
Product Name	**I/O Port**	**Product Name**	**I/O Port**	**Length(m)**	**Shield**
EUT	RJ-45 (PoE)	PoE Injector	RJ-45 (PoE)	3.1	U
	7 Pin (Alarm OUT)	Alarm	Alarm IN	3.5	U
	7 Pin (Alarm IN)	Button Alarm	Alarm OUT	3.5	U
	7 Pin (+12V OUT)	Door Lock Jig	DC IN	0.5	U
	7 Pin (COM)		COM	0.5	U
	7 Pin (NO/NC)		NO/NC	0.5	U
	Micro SD Slot	Micro SD Card	Micro SD Slot	-	-
PoE Injector	RJ-45 (LAN)	Laptop	RJ-45 (LAN)	1.0	U
Laptop	DC Jack	Laptop AC/DC Adapter	DC Jack	1.5	U

* Unshielded=U, Shielded=S

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4.4 EUT Operating Mode(s)

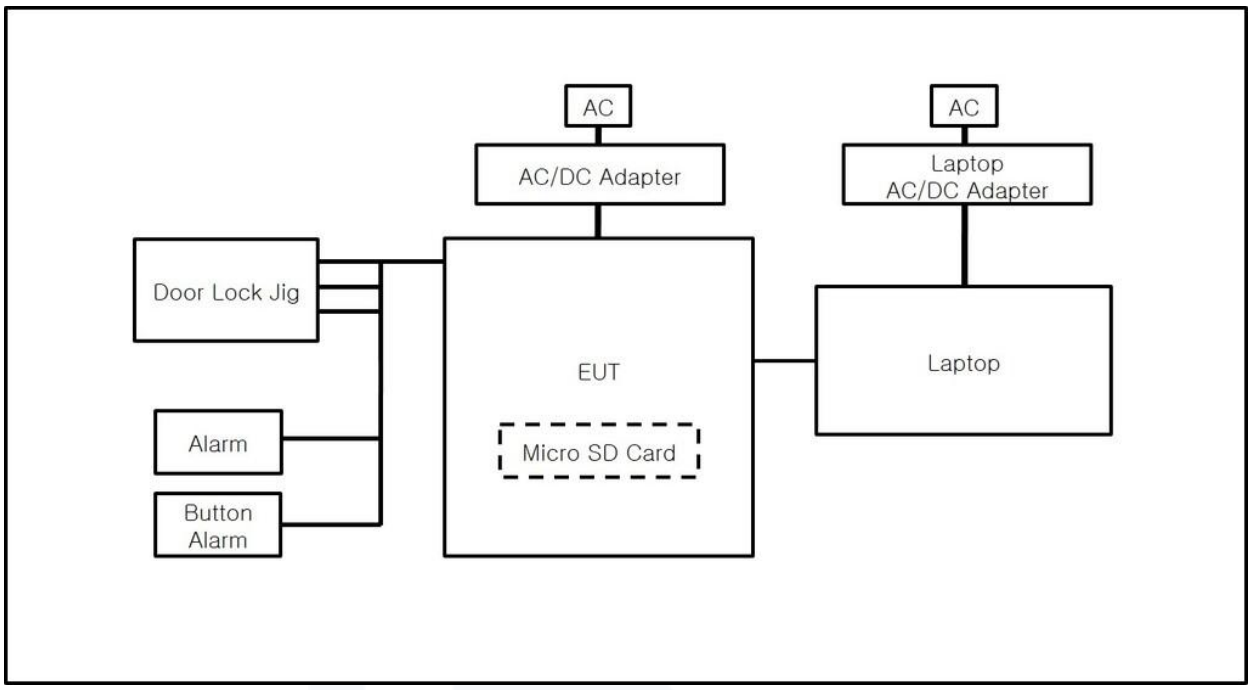
Category	Mode	Operating
Mode 1	DC Power	- Monitoring EUT Using Web Viewer, Ping Test - When the Button Alarm is pressed, make sure the Alarm is working - Uploaded the 1 ㎑ tone sound to the Web Viewer and checked if the sound is output to the EUT. - Checked the door lock function through the Door Lock Jig. - After the test, the recorded video stored on the Micro SD Card was checked and the microphone motion was also confirmed.
Mode 2	PoE Power	

4.5 Test operating S/W

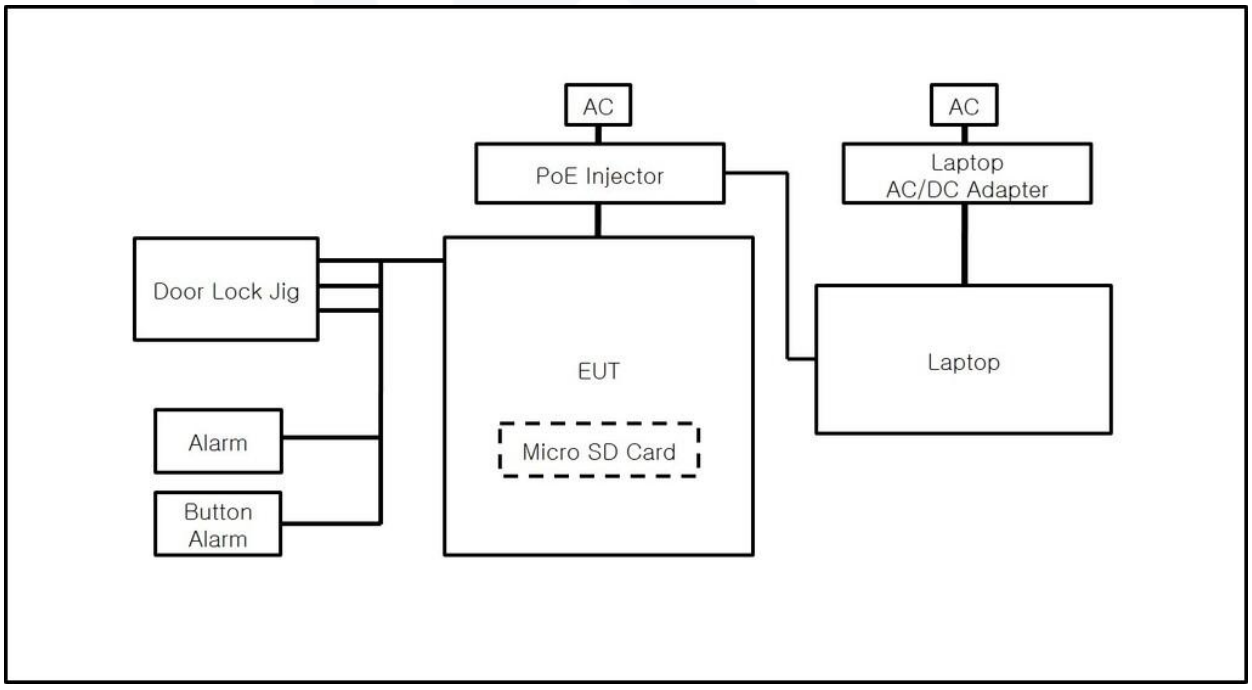
Name	Version	Manufacture Company
Web Viewer	-	Hanwha Vision Co., Ltd.

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4.6 Configuration



Mode 1



Mode 2

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5 General Performance Criteria

Criteria for compliance was based on the following guidelines:

EN 50130-4 Alarm systems-Part 4: Electromagnetic compatibility Product family standard: Immunity requirements for components of fire, intruder and social alarm systems

The variety and the diversity of the apparatus within the scope of this document makes it difficult to define precise criteria for the evaluation of the immunity test results.

If as a result of the application of the tests defined in this standard, the apparatus

becomes dangerous or unsafe then the apparatus shall be deemed to have failed the test.

A functional description and a definition of performance by the manufacture and noted in the test

report, based on the following criteria:

Electrostatic discharge

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing that is no

residual change in the EUT or any change in outputs, which could be interpreted by associated

equipment as a change.

Radiated electromagnetic fields

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing

which could be interpreted by associated equipment as a change, and no such

Flickering of indicators occurs at a field strength of 3 V/m.

For components of CCTV systems, where the picture is allowed at 10 V/m, providing.

(a) there is no permanent damage or change to EUT

(e.g. no corruption of memory or changes to programmable setting etc.)

(b) at 3 V/m, any deterioration of the picture is so minor that the system could still be used; and

(c) there is no observable deterioration of the picture at 1 V/m.

Fast transient burst / slow high energy voltage surge

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing

That there is no residual is permissible, providing that there is no residual change in the EUT or any

change in outputs, which could be interpreted by associated equipment as a change.

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Conducted RF immunity

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing

That there is no residual is permissible, providing that there is no residual change in the EUT or any

change in outputs, which could be interpreted by associated equipment as a change,

and no such flickering of indicators oeuvres at U = 130 dBμV.

For component of CCTV systems, where the status is monitored by observing the TV picture,

then deterioration of the picture is allowed at U = 140 dBμV, providing:

(a) there is no permanent damage or change to the EUT

(e.g. no corruption of memory or changes to programmable settings etc.)

(b) at U = 130 dBμV, any deterioration of the picture is so minor that the system could

still be used; and

(c) there in no observable deterioration of the picture at U = 120 dBμV.

Voltage dip/interruption / Voltage variation

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the conditioning is permissible, providing that there is no residual

change in the EUT or any change in outputs, which could be interpreted by associated equipment

as a change. The EUT shall meet the acceptance criteria for the functional test, after the conditioning.

♦ Calculation

- Conducted Emissions

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))

- Radiated Emissions(Below 1 GHz)

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 Emissions(Above 1 GHz)

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

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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
(24.8 ~ 24.8) °C	(40.9 ~ 40.9) % R.H.

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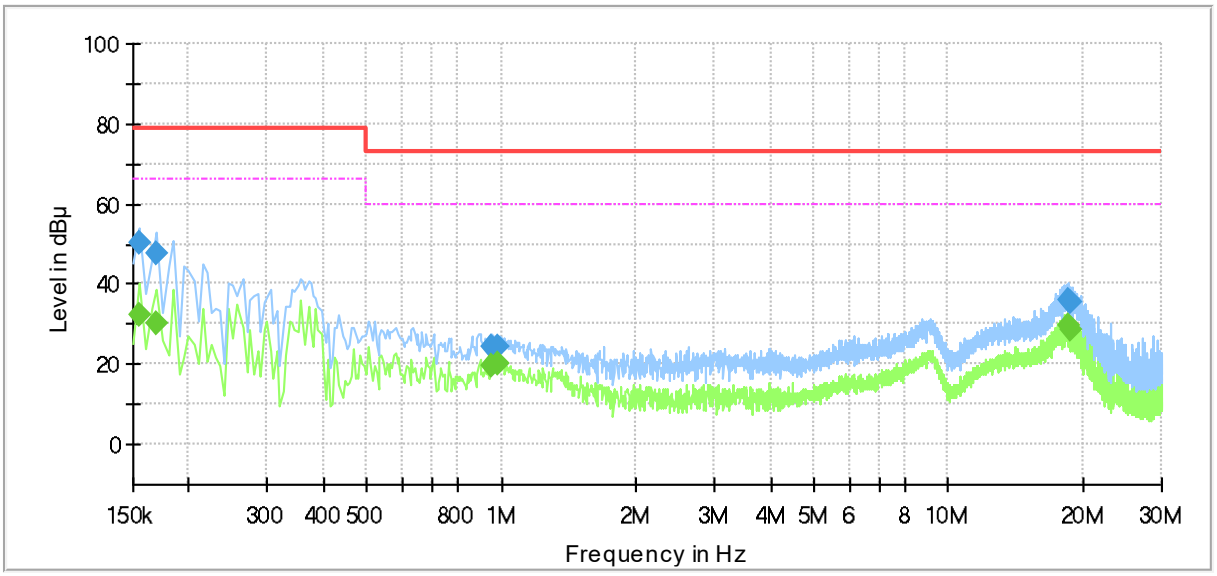
6.1.4 Test Result

○ Test Date : 2026-05-20

● Test Mode : Mode 1

Test Report

Test Description:	Conducted Emission
Job No.:	KES-EM261240
Phase:	L
Mode:	Mode 1
Operator Name:	KES



Final_Result

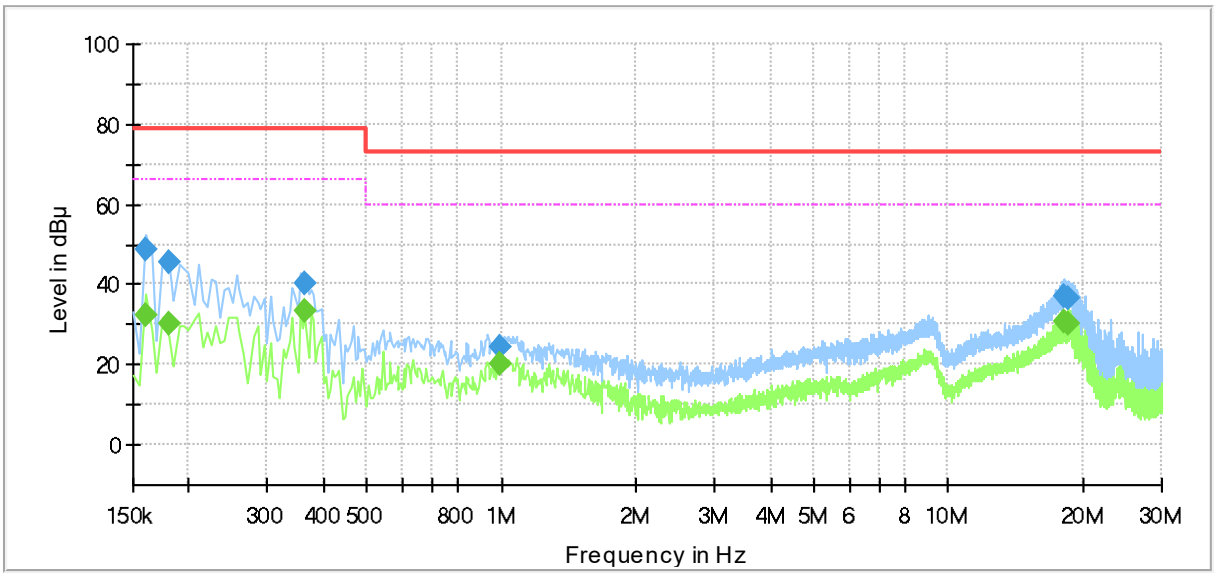
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	32.42	66.00	33.58	1000.0	9.000	L1	19.4
0.155000	50.06	---	79.00	28.94	1000.0	9.000	L1	19.4
0.170000	---	30.07	66.00	35.93	1000.0	9.000	L1	19.4
0.170000	47.81	---	79.00	31.19	1000.0	9.000	L1	19.4
0.950000	---	19.61	60.00	40.39	1000.0	9.000	L1	19.5
0.950000	24.27	---	73.00	48.73	1000.0	9.000	L1	19.5
0.985000	---	20.16	60.00	39.84	1000.0	9.000	L1	19.5
0.985000	24.49	---	73.00	48.51	1000.0	9.000	L1	19.5
18.485000	---	29.45	60.00	30.55	1000.0	9.000	L1	20.2
18.485000	35.85	---	73.00	37.15	1000.0	9.000	L1	20.2
18.785000	---	28.73	60.00	31.27	1000.0	9.000	L1	20.2
18.785000	35.24	---	73.00	37.76	1000.0	9.000	L1	20.2

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○ Test Date : 2026-05-20
● Test Mode : Mode 1

Test Report

Test Description:	Conducted Emission
Job No.:	KES-EM261240
Phase:	N
Mode:	Mode 1
Operator Name:	KES



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	32.27	66.00	33.73	1000.0	9.000	N	19.4
0.160000	48.49	---	79.00	30.51	1000.0	9.000	N	19.4
0.180000	---	30.20	66.00	35.80	1000.0	9.000	N	19.4
0.180000	45.64	---	79.00	33.36	1000.0	9.000	N	19.4
0.365000	---	33.36	66.00	32.64	1000.0	9.000	N	19.5
0.365000	40.32	---	79.00	38.68	1000.0	9.000	N	19.5
0.990000	---	20.07	60.00	39.93	1000.0	9.000	N	19.5
0.990000	24.23	---	73.00	48.77	1000.0	9.000	N	19.5
18.240000	---	30.75	60.00	29.25	1000.0	9.000	N	20.3
18.240000	37.07	---	73.00	35.93	1000.0	9.000	N	20.3
18.635000	---	30.04	60.00	29.96	1000.0	9.000	N	20.3
18.635000	36.57	---	73.00	36.43	1000.0	9.000	N	20.3

6.1.5 Remark

Complies with the test requirements.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.2 Conducted Emissions at Telecommunication Ports

6.2.1 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	■
8-WIRE ISN CAT6	ENY81-CAT6	Rohde & Schwarz	101666	2026-02-24	2027-02-24	■

6.2.2 Test Location : SHIELD ROOM #6

6.2.3 Test Conditions :

Temperature	Relative Humidity
(24.8 ~ 24.8) °C	(40.9 ~ 40.9) % R.H.

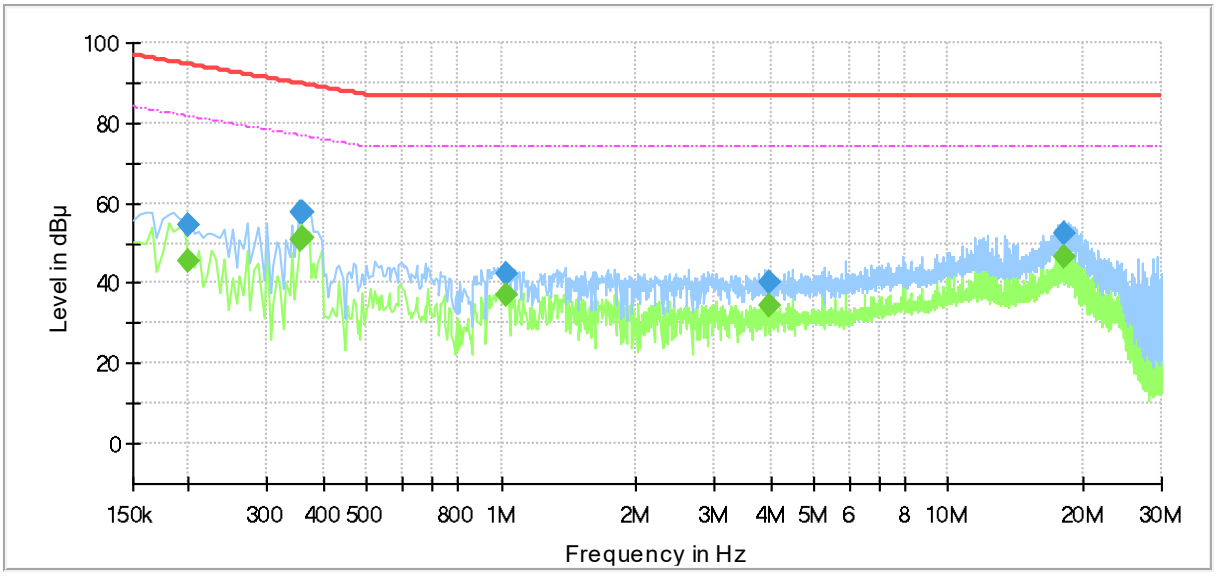
You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.2.4 Test Result

○ Test Date : 2026-05-20
● Test Mode : Mode 1

Test Report

Test Description:	Telecommunication Emission
Job No.:	KES-EM261240
Mode :	Mode 1
Speed :	100 Mbps
Operator Name:	KES



Final_Result

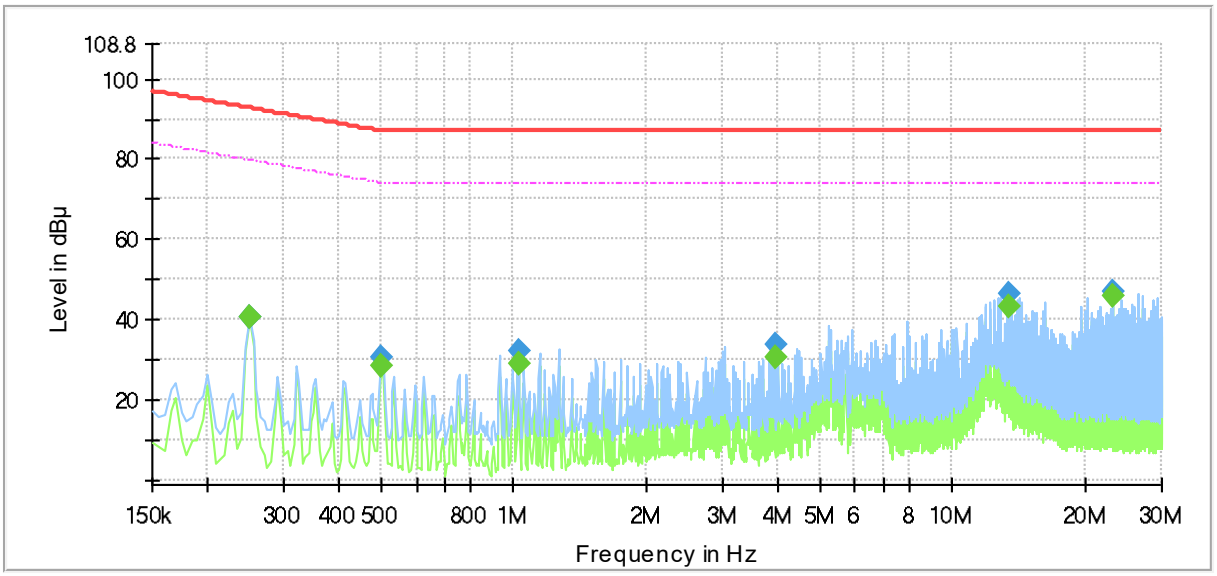
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.200000	---	45.74	81.61	35.87	1000.0	9.000	Single Line	19.6
0.200000	54.78	---	94.61	39.83	1000.0	9.000	Single Line	19.6
0.355000	---	50.84	76.84	26.00	1000.0	9.000	Single Line	19.4
0.355000	57.60	---	89.84	32.24	1000.0	9.000	Single Line	19.4
0.360000	---	51.51	76.73	25.22	1000.0	9.000	Single Line	19.4
0.360000	57.88	---	89.73	31.85	1000.0	9.000	Single Line	19.4
1.025000	---	37.00	74.00	37.00	1000.0	9.000	Single Line	19.3
1.025000	42.41	---	87.00	44.59	1000.0	9.000	Single Line	19.3
3.955000	---	34.53	74.00	39.47	1000.0	9.000	Single Line	19.4
3.955000	40.07	---	87.00	46.93	1000.0	9.000	Single Line	19.4
18.245000	---	46.48	74.00	27.52	1000.0	9.000	Single Line	19.8
18.245000	52.64	---	87.00	34.36	1000.0	9.000	Single Line	19.8

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

○ Test Date : 2026-05-20
● Test Mode : Mode 2

Test Report

Test Description:	Telecommunication Emission
Job No.:	KES-EM261240
Mode :	Mode 2
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)
0.250000	---	40.38	79.76	39.38	1000.0	9.000	Single Line	19.5
0.250000	40.32	---	92.76	52.44	1000.0	9.000	Single Line	19.5
0.500000	---	28.23	74.00	45.77	1000.0	9.000	Single Line	19.4
0.500000	30.29	---	87.00	56.71	1000.0	9.000	Single Line	19.4
1.025000	---	28.70	74.00	45.30	1000.0	9.000	Single Line	19.3
1.025000	31.96	---	87.00	55.04	1000.0	9.000	Single Line	19.3
3.955000	---	30.65	74.00	43.35	1000.0	9.000	Single Line	19.4
3.955000	33.80	---	87.00	53.20	1000.0	9.000	Single Line	19.4
13.420000	---	43.11	74.00	30.89	1000.0	9.000	Single Line	19.6
13.420000	46.44	---	87.00	40.56	1000.0	9.000	Single Line	19.6
23.130000	---	46.09	74.00	27.91	1000.0	9.000	Single Line	19.9
23.130000	46.88	---	87.00	40.12	1000.0	9.000	Single Line	19.9

6.2.5 Remark

Complies with the test requirements.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.3 Radiated Emissions(Below 1 ㎓)

6.3.1 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	■

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

6.3.3 Test Conditions :

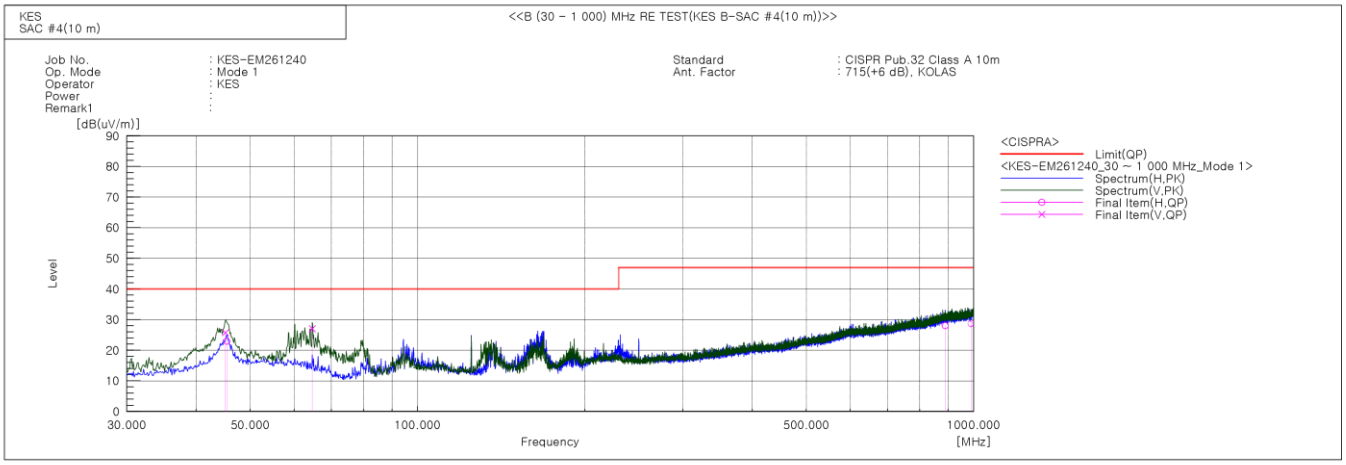
Temperature	Relative Humidity
(22.5 ~ 22.6) °C	(36.8 ~ 36.8) % R.H.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.3.4 Test Result

○ Test Date : 2026-05-19

● Test Mode : Mode 1



Final Result

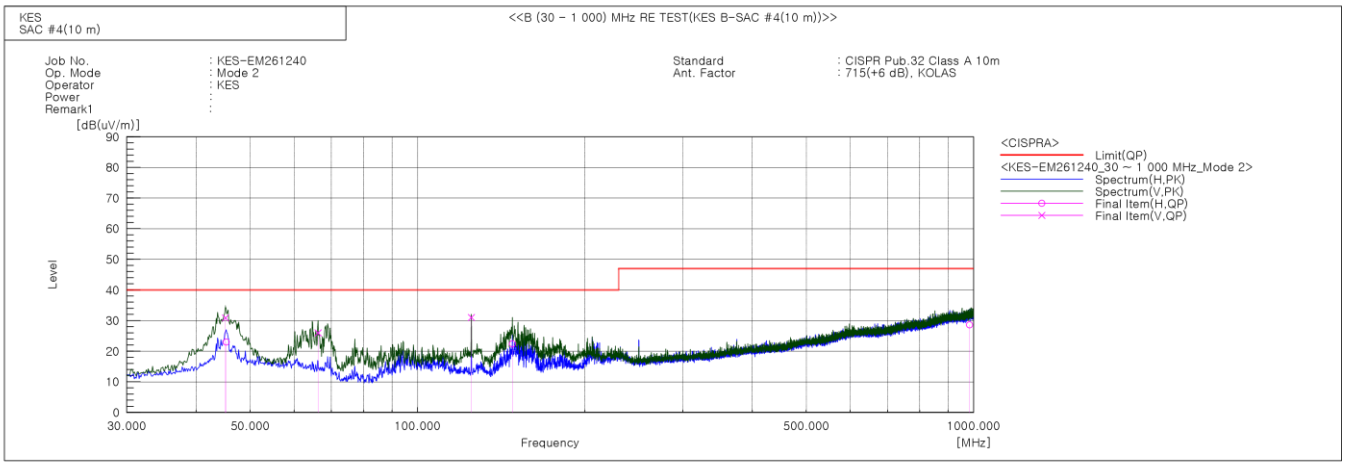
No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	45.156	V	47.1	-21.4	25.7	40.0	14.3	149.0	129.0	
2	45.399	H	44.2	-21.3	22.9	40.0	17.1	348.0	119.0	
3	64.678	V	50.3	-23.3	27.0	40.0	13.0	117.0	90.0	
4	888.693	H	30.6	-2.6	28.0	47.0	19.0	391.0	37.0	
5	988.603	H	30.3	-1.6	28.7	47.0	18.3	360.0	169.0	
6	999.879	V	29.8	-1.3	28.5	47.0	18.5	155.0	166.0	

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

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

○ Test Date : 2026-05-19

● Test Mode : Mode 2



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	45.156	V	52.3	-21.4	30.9	40.0	9.1	153.0	147.0	
2	45.278	H	44.3	-21.3	23.0	40.0	17.0	370.0	325.0	
3	66.254	V	49.6	-23.6	26.0	40.0	14.0	100.0	219.0	
4	124.939	V	55.1	-24.1	31.0	40.0	9.0	129.0	249.0	
5	148.098	H	47.5	-25.1	22.4	40.0	17.6	362.0	134.0	
6	982.904	H	30.3	-1.7	28.6	47.0	18.4	354.0	180.0	

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

6.3.5 Remark

Complies with the test requirements.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.4 Radiated Emissions(Above 1 ㎓)

6.4.1 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	SCHWARZBECK	9120D-1802	2025-11-05	2026-11-05	■
ATTENUATOR	8491B	HP	23094	2026-02-12	2027-02-12	■

6.4.2 Test Location : SEMI ANECHOIC CHAMBER #5

6.4.3 Test Conditions :

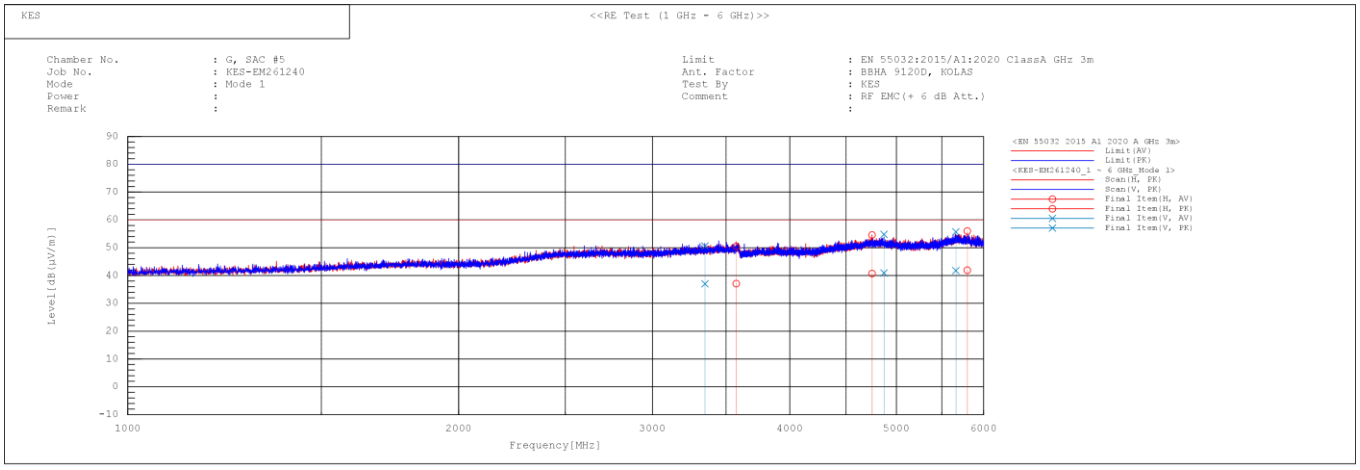
Temperature	Relative Humidity
(22.9 ~ 23.0) °C	(39.4 ~ 39.5) % R.H.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.4.4 Test Result

○ Test Date : 2026-05-19

● 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]	Angle [deg]	Remark
1	3348.960	V	29.6	43.2	7.4	37.0	50.6	60.0	80.0	23.0	29.4	244.8	
2	3575.296	H	29.5	42.9	7.6	37.1	50.5	60.0	80.0	22.9	29.5	270.2	
3	4751.443	H	28.7	42.6	12.0	40.7	54.6	60.0	80.0	19.3	25.4	359.4	
4	4872.821	V	28.4	42.3	12.5	40.9	54.8	60.0	80.0	19.1	25.2	1.4	
5	5663.623	V	28.1	42.0	13.7	41.8	55.7	60.0	80.0	18.2	24.3	0.0	
6	5798.547	H	27.8	41.9	14.1	41.9	56.0	60.0	80.0	18.1	24.0	102.5	

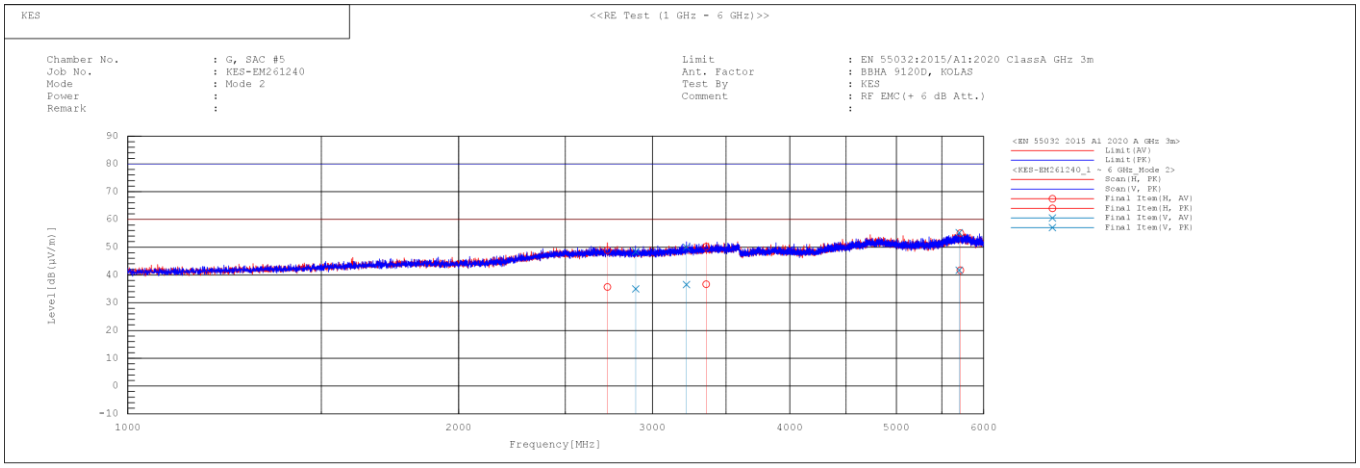
※ The data is the result of measured by the detector in PK and CISPR Average on the Peak graph.

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

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

○ Test Date : 2026-05-19

● 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]	Angle [deg]	Remark
1	2730.087	H	29.5	42.7	6.2	35.7	48.9	60.0	80.0	24.3	31.1	135.0	
2	2896.804	V	28.3	41.7	6.7	35.0	48.4	60.0	80.0	25.0	31.6	0.3	
3	3221.928	V	29.3	42.8	7.2	36.5	50.0	60.0	80.0	23.5	30.0	2.3	
4	3357.265	H	29.3	42.8	7.4	36.7	50.2	60.0	80.0	23.3	29.8	0.1	
5	5703.336	V	27.9	41.4	13.8	41.7	55.2	60.0	80.0	18.3	24.8	175.9	
6	5717.452	H	27.8	41.2	13.9	41.7	55.1	60.0	80.0	18.3	24.9	135.0	

※ 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.

6.4.5 Remark

Complies with the test requirements.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.5 Harmonic Current Emissions

6.5.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #7	-	DYMSTEC	-	-	-	■
net.control Software	net.control	EM TEST	2.1.4	-	-	■
DIGITAL POWER ANALYZER (Harmonic)	DPA 500N	EM TEST	V1024106759	2026-04-06	2027-04-06	■
POWER SOURCE	ACS 500N6	EM TEST	V1024106760	-	-	■

6.5.2 Test Location : SHIELD ROOM #7

6.5.3 Test Conditions :

Temperature	Relative Humidity
(23.6 ~ 23.6) °C	(38.7 ~ 38.7) % R.H.

6.5.4 Classification of Equipment for Harmonic Current Emissions

■ Limits for Class A equipment
□ Limits for Class B equipment
□ Limits for Class C equipment(Rated Power > 25 W)
□ Limits for Class C equipment(Rated Power ≥ 5 W and ≤ 25 W)
□ Limits for Class D equipment

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.5.5 Test Result

○ Test Date : 2026-05-19

● Test Mode : Mode 1

Maximum harmonic current results

Hn	Ieff [A]	% of Limit	Limit [A]	Result
1	0.031			
2	0.003	0.158	1.620	n/a
3	0.024	0.698	3.450	PASS
4	0.003	0.399	0.645	n/a
5	0.025	1.442	1.710	PASS
6	0.002	0.518	0.450	n/a
7	0.025	2.132	1.155	PASS
8	0.002	0.658	0.345	n/a
9	0.023	3.888	0.600	PASS
10	0.002	0.797	0.276	n/a
11	0.022	4.511	0.495	PASS
12	0.002	0.988	0.230	n/a
13	0.021	6.795	0.315	PASS
14	0.002	1.183	0.197	n/a
15	0.020	8.977	0.225	PASS
16	0.002	1.222	0.173	n/a
17	0.019	9.678	0.199	PASS
18	0.002	1.383	0.153	n/a
19	0.018	10.208	0.178	PASS
20	0.002	1.521	0.138	n/a
21	0.017	10.423	0.161	PASS
22	0.002	1.595	0.125	n/a
23	0.015	10.445	0.147	PASS
24	0.002	1.739	0.115	n/a
25	0.014	10.409	0.135	PASS
26	0.002	1.887	0.106	n/a
27	0.013	10.315	0.125	PASS
28	0.002	2.020	0.099	n/a
29	0.011	9.742	0.116	PASS
30	0.002	1.948	0.092	n/a
31	0.010	9.216	0.109	PASS
32	0.002	2.021	0.086	n/a
33	0.009	8.829	0.102	PASS
34	0.002	2.162	0.081	n/a
35	0.008	7.798	0.096	PASS
36	0.002	2.089	0.077	n/a
37	0.007	7.181	0.091	PASS
38	0.002	2.277	0.073	n/a
39	0.006	6.406	0.087	PASS
40	0.002	2.268	0.069	n/a

Harmonic currents less than 0.6% of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

Test Data - Harmonics (continued)

Average harmonic current results

Hn	Ieff [A]	% of Limit	Limit [A]	Result
1	0.030			
2	0.002	0.187	1.080	n/a
3	0.023	0.996	2.300	PASS
4	0.002	0.536	0.430	n/a
5	0.023	2.060	1.140	PASS
6	0.002	0.673	0.300	n/a
7	0.023	3.046	0.770	PASS
8	0.002	0.848	0.230	n/a
9	0.022	5.545	0.400	PASS
10	0.002	1.055	0.184	n/a
11	0.021	6.473	0.330	PASS
12	0.002	1.250	0.153	n/a
13	0.021	9.763	0.210	PASS
14	0.002	1.528	0.131	n/a
15	0.019	12.913	0.150	PASS
16	0.002	1.607	0.115	n/a
17	0.018	13.971	0.132	PASS
18	0.002	1.772	0.102	n/a
19	0.017	14.688	0.118	PASS
20	0.002	1.948	0.092	n/a
21	0.016	10.000	0.161	PASS
22	0.002	2.057	0.084	n/a
23	0.015	10.132	0.147	PASS
24	0.002	2.285	0.077	n/a
25	0.014	10.095	0.135	PASS
26	0.002	2.353	0.071	n/a
27	0.012	9.988	0.125	PASS
28	0.002	2.547	0.066	n/a
29	0.011	9.490	0.116	PASS
30	0.002	2.543	0.061	n/a
31	0.010	9.018	0.109	PASS
32	0.001	2.566	0.058	n/a
33	0.009	8.638	0.102	PASS
34	0.001	2.763	0.054	n/a
35	0.007	7.656	0.096	PASS
36	0.001	2.675	0.051	n/a
37	0.006	7.029	0.091	PASS
38	0.001	2.844	0.048	n/a
39	0.005	6.258	0.087	PASS
40	0.001	2.830	0.046	n/a

Note: Harmonic currents less than 0.6 % of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.
* Application of limits for average is 100% except for odd harmonics from 21 to 39, where 150% applies.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.5.6 Remark

Complies with the test requirements.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.6 Voltage Fluctuations and Flicker

6.6.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #7	-	DYMSTEC	-	-	-	■
net.control Software	net.control	EM TEST	2.1.4	-	-	■
DIGITAL POWER ANALYZER (Flicker)	DPA 500N	EM TEST	V1024106759	2026-04-06	2027-04-06	■
POWER SOURCE	ACS 500N6	EM TEST	V1024106760	-	-	■

6.6.2 Test Location : SHIELD ROOM #7

6.6.3 Test Conditions :

Temperature	Relative Humidity
(23.6 ~ 23.9) °C	(38.7 ~ 38.9) % R.H.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.6.4 Test Result

○ Test Date : 2026-05-19

● Test Mode : Mode 1

Flicker Measurements					
	P_{lt}	Max P_{st}	Max D_c	Max D_{max}	Max T_{max}
Line 1:	0.028	0.028	0	< 0.2	0
Limits:	0.65	1	3.3	4	0.5
Results:	PASS	PASS	PASS	PASS	PASS

6.6.5 Remark

Complies with the test requirements.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.7 Electrostatic Discharge

6.7.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #6	-	DYMSTEC	-	-	-	■
ESD SIMULATOR	ESS-2000	NoiseKen	ESS01Z0454	2026-01-13	2027-01-13	■
HCP	-	KES	-	-	-	■
VCP	-	Noise Ken	-	-	-	■

6.7.2 Test Location : SHIELD ROOM #6

6.7.3 Test Conditions :

Temperature	Relative Humidity
Temperature(15 ~ 35) °C	(24.8 ~ 24.8) °C
Relative Humidity(30 ~ 60) % R.H.	(40.9 ~ 40.9) % R.H.
Atmospheric Pressure(86 ~ 106) kPa	(100.1 ~ 100.1) kPa

6.7.4 Test Specifications :

Discharge Factor : 1 s

Discharge Impedance : 330 Ω / 150 pF

Kind of Discharge : Direct Discharge - Contact Discharge, Air Discharge
Indirect Discharge - HCP, VCP

Polarity : Positive and Negative

Number of Discharge : 10 at all locations for Contact Discharge,
10 at all locations for Air Discharge

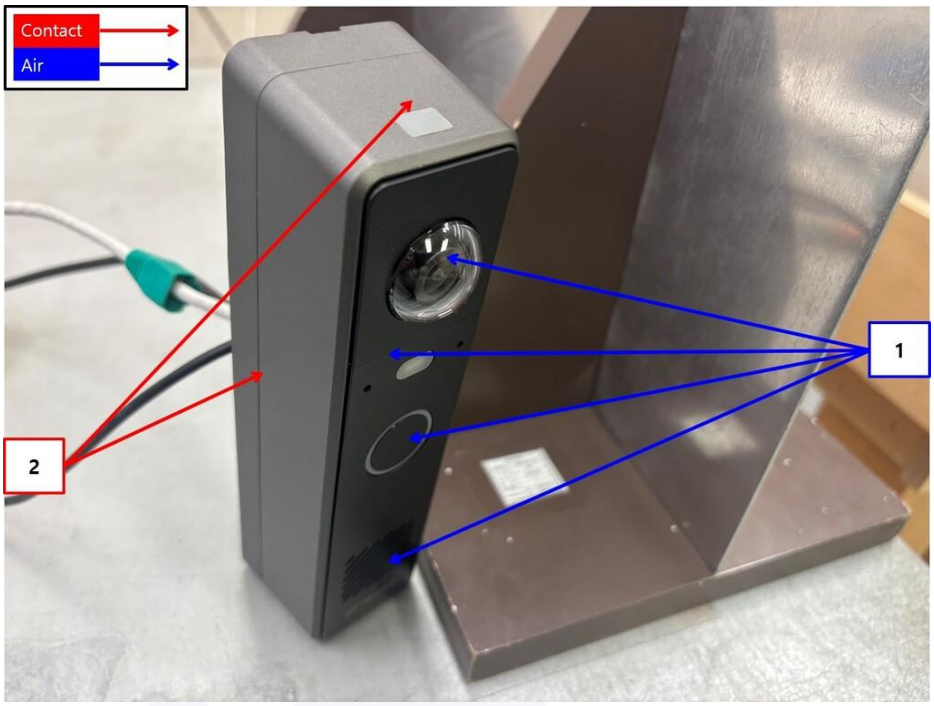
Performance Criteria : Complied

Discharge Voltage :

Type	Direct Discharge		Indirect Discharge	
	Contact Discharge	Air Discharge	Horizontal Coupling Plane	Vertical Coupling Plane
Test Voltage	-	± 2 kV	-	-
	± 6 kV	± 4 kV	± 6 kV	± 6 kV
	-	± 8 kV	-	-

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.7.5 Location of Discharge



<Location of Discharge-1>

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.7.6 Test Result

○ Test Date : 2026-05-20
● Test Mode : Mode 1

○ **Indirect Discharge**

No.	Test Point	Discharge Method	Observations	Remarks
1	HCP Contact	Contact Discharge	Complied	-
2	VCP Contact	Contact Discharge	Complied	-

○ **Direct Discharge**

No.	Test Point	Discharge Method	Observations	Remarks
1	Enclosure 1	Air Discharge	Complied	-
2	Enclosure 2	Contact Discharge	Complied	-

○ Test Date : 2026-05-20
● Test Mode : Mode 2

○ **Indirect Discharge**

No.	Test Point	Discharge Method	Observations	Remarks
1	HCP Contact	Contact Discharge	Complied	-
2	VCP Contact	Contact Discharge	Complied	-

○ **Direct Discharge**

No.	Test Point	Discharge Method	Observations	Remarks
1	Enclosure 1	Air Discharge	Complied	-
2	Enclosure 2	Contact Discharge	Complied	-

6.7.7 Remark

No loss of performance of function.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.8 Continuous RF electromagnetic field disturbances

6.8.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SEMI ANECHOIC CHAMBER #3	-	DYMSTEC	-	-	-	■
TEPTO-EMS-X	TEPTO-EMS-X	Tsj	1.1.0.39	-	-	■
SIGNAL GENERATOR	SMCV100B	Rohde & Schwarz	108002	2026-04-07	2027-04-07	■
BROADBAND AMPLIFIER	HDR1000-80M1GAIII	RAD Co.,Ltd	260352-00	-	-	■
BROADBAND AMPLIFIER	SX250	PRANA	2511-02705	-	-	■
POWER METER	LSPM 1.0+	LUMILOOP	179	2026-04-08	2027-04-08	■
DIRECTIONAL COUPLER	C5027-727	WERLATONE	139036	2026-04-07	2027-04-07	■
DIRECTIONAL COUPLER	C10761-20	WERLATONE	139080	2026-04-07	2027-04-07	■
STACKED DOUBLE LOG-PER- ANTENNA	STPL9128 E	SCHWARZBECK	9128ES-121	-	-	■
DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H. SYSTEM,INC	781	2026-03-06	2027-03-06	■

6.8.2 Test Location : SEMI ANECHOIC CHAMBER #3

6.8.3 Test Conditions :

Temperature	Relative Humidity
(21.3 ~ 22.2) °C	(36.4 ~ 37.1) % R.H.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.8.4 Test Specifications :

Antenna Polarization	:	Horizontal & Vertical unless indicated otherwise
Antenna Distance	:	3 m
Field Strength	:	10 V/m (rms)
Frequency Range	:	80 MHz ~ 2.7 GHz
Modulation	:	AM 80 %, 1 kHz, Sine wave
		PM 1 Hz (0.5 s ON : 0.5 s OFF)
Dwell Time	:	3 s
Frequency Step	:	1 %
Application method	:	4
Performance Criteria	:	Complied

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.8.5 Test Result

○ Test Date : 2026-05-20
● Test Mode : Mode 1

○ Enclosure Port

Side Exposed	Observations	
	Horizontal	Vertical
Front	Complied	Complied
Rear	Complied	Complied
Right	Complied	Complied
Left	Complied	Complied

○ Test Date : 2026-05-20
● Test Mode : Mode 2

○ Enclosure Port

Side Exposed	Observations	
	Horizontal	Vertical
Front	Complied	Complied
Rear	Complied	Complied
Right	Complied	Complied
Left	Complied	Complied

6.8.6 Remark

No loss of performance of function.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.9 Electrical Fast Transients/Bursts

6.9.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #7	-	DYMSTEC	-	-	-	■
iec.control Software	iec.control	EM TEST	5.4.8	-	-	■
ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	2025-11-05	2026-11-05	■
MOTOR VARIAC	MV 2616	EM TEST	P1552169719	2025-11-05	2026-11-05	■
CAPACITIVE COUPLING CLAMP	HFK	EM TEST	P1633183115	2025-11-05	2026-11-05	■

6.9.2 Test Location : SHIELD ROOM #7

6.9.3 Test Conditions :

Temperature	Relative Humidity
(24.9 ~ 24.9) °C	(50.0 ~ 50.1) % R.H.

6.9.4 Test Specifications :

Pulse Amplitude & Polarity	:	Input a.c power ports ± 2.0 kV
		Other supply and Signal ports ± 1 kV
Repetition Rate	:	100 kHz
Impulse Rise Time	:	5 ns ± 30 %
Impulse Period	:	50 ns ± 30 %
Burst Duration	:	15 ms ± 20 %
Burst Period	:	300 ms ± 20 %
Duration of Test Voltage	:	1 min
Application Method	:	a.c / d.c power ports (Coupling / Decoupling Network)
		Other than a.c / d.c power poerts (Capacitive Coupling Clamp)
Performance Criteria	:	Complied

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.9.5 Test Result

○ Test Date : 2026-05-22
● Test Mode : Mode 1

○ Input a.c power ports

Mode of Application	Observations	
	(+) Burst	(-) Burst
L	Complied	Complied
N	Complied	Complied
L-N	Complied	Complied

○ Input d.c power ports

Mode of Application	Observations	
	(+) Burst	(-) Burst
N/A	-	-

○ Signal ports and telecommunication ports

Mode of Application	Observations	
	(+) Burst	(-) Burst
RJ-45 (LAN)	Complied	Complied
7 Pin (Alarm OUT)	Complied	Complied
7 Pin (Alarm IN)	Complied	Complied

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

○ Test Date : 2026-05-22
● Test Mode : Mode 2

○ Input a.c power ports

Mode of Application	Observations	
	(+) Burst	(-) Burst
N/A	-	-

○ Input d.c power ports

Mode of Application	Observations	
	(+) Burst	(-) Burst
N/A	-	-

○ Signal ports and telecommunication ports

Mode of Application	Observations	
	(+) Burst	(-) Burst
RJ-45 (PoE)	Complied	Complied
7 Pin (Alarm OUT)	Complied	Complied
7 Pin (Alarm IN)	Complied	Complied

6.9.6 Remark

No loss of performance of function.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.10 Surge

6.10.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #7	-	DYMSTEC	-	-	-	■
iec.control Software	iec.control	EM TEST	5.4.8	-	-	■
ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	2025-11-05	2026-11-05	■
MOTOR VARIAC	MV 2616	EM TEST	P1552169719	2025-11-05	2026-11-05	■
CDN	CNV 508N1	EM TEST	P1610176296	2025-11-05	2026-11-05	■

6.10.2 Test Location : SHIELD ROOM #7

6.10.3 Test Conditions :

Temperature	Relative Humidity
(24.4 ~ 25.0) °C	(49.8 ~ 50.3) % R.H.

6.10.4 Test Specifications :

Surge	: Input a.c power ports	Line to Line	±0.5 kV, ±1.0 kV
		Line to Ground	±0.5 kV, ±1.0 kV, ±2.0 kV
	Other supply / Signal lines	Line to Ground	±0.5 kV, ±1.0 kV

Input a.c / Other supply / Signal lines

Open-Circuit Voltage Waveform : 1.2/50 μs

Short-Circuit Current Waveform : 8/20 μs

Number of Applications : Apply 5 surges for each polarity

Phase Angle : 0˚ ~ 270˚ (input a.c. power port)

Polarity : Positive and Negative

Repetition Rate : 1 surge per 30 s

Performance Criteria : Complied

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.10.5 Test Result

○ Test Date : 2026-05-22
● Test Mode : Mode 1

○ Input a.c power ports

Mode of Application	Observations	
	(+) Surge	(-) Surge
L-N	Complied	Complied

○ Signal ports and telecommunication ports

Mode of Application	Coupling Method	Observations	
		(+) Surge	(-) Surge
RJ-45 (LAN)	CDN	Complied	Complied
	LINE	Complied	Complied

○ Test Date : 2026-05-22
● Test Mode : Mode 2

○ Input a.c power ports

Mode of Application	Observations	
	(+) Surge	(-) Surge
N/A	-	-

○ Signal ports and telecommunication ports

Mode of Application	Coupling Method	Observations	
		(+) Surge	(-) Surge
RJ-45 (PoE)	CDN	Complied	Complied
	LINE	Complied	Complied

6.10.6 Remark

No loss of performance of function.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.11 Continuous Induced RF Disturbances

6.11.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #7	-	DYMSTEC	-	-	-	■
icd.control Software	icd.control	EM TEST	8.0.0	-	-	■
TEST SYSTEM FOR CONDUCTED AND RADIATED	NSG4070	TESEQ	65585	2025-11-03	2026-11-03	■
ATTENUATOR	ATT 6/80	EM TEST	P1614178148	2025-11-03	2026-11-03	■
CDN	CDN M016	TESEQ	43694	2025-11-03	2026-11-03	■
CDN	CDN M016	TESEQ	43697	2025-11-03	2026-11-03	■
CDN	CDN T8 RJ45	SCHWARZBECK	00103	2025-07-07	2026-07-07	■
EM CLAMP	KEMZ 801A	TESEQ	44099	2025-11-05	2026-11-05	■

6.11.2 Test Location : SHIELD ROOM #7

6.11.3 Test Conditions :

Temperature	Relative Humidity
(22.3 ~ 23.0)°C	(38.0 ~ 38.4) % R.H.

6.11.4 Test Specifications

Frequency range and Voltage Level	:	0.15 MHz ~ 100 MHz : 10 V(r.m.s)
Modulation	:	AM 80 %, 1 kHz, Sine wave
		PM 1 Hz (0.5 s ON : 0.5 s OFF)
Dwell Time	:	3 s
Frequency Step	:	1 %
Performance Criteria	:	Complied

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.11.5 Test Result

○ Test Date : 2026-05-21

● Test Mode : Mode 1

○ Input a.c power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
L-N	CDN	Complied

○ Input d.c power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
N/A	-	-

○ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45 (LAN)	CDN	Complied
7 Pin (Alarm OUT)	Clamp	Complied
7 Pin (Alarm IN)	Clamp	Complied

○ Test Date : 2026-05-21

● Test Mode : Mode 2

○ Input a.c power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
N/A	-	-

○ Input d.c power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
N/A	-	-

○ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45 (PoE)	CDN	Complied
7 Pin (Alarm OUT)	Clamp	Complied
7 Pin (Alarm IN)	Clamp	Complied

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.11.6 Remark

No loss of performance of function.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.12 Voltage Dips and Interruptions

6.12.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #7	-	DYMSTEC	-	-	-	■
iec.control Software	iec.control	EM TEST	5.4.8	-	-	■
ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	2025-11-05	2026-11-05	■
MOTOR VARIAC	MV 2616	EM TEST	P1552169719	2025-11-05	2026-11-05	■

6.12.2 Test Location : SHIELD ROOM #7

6.12.3 Test Conditions :

Temperature	Relative Humidity
(24.9 ~ 24.9) °C	(50.1 ~ 50.1) % R.H.

6.12.4 Test Specifications

Instantaneous peak overshoot/undershoot of the actual voltage	:	Less than 5 %
Voltage Rise Time, Voltage Fall Time	:	Between 1 μs and 5 μs
Test Voltage Frequency Deviation for Voltage Dips	:	with in ± 2 %
EUT Voltage	:	AC 230 V, 50 Hz
Number of Applications	:	3 cycles
Test Interval	:	10 s
Performance Criteria	:	Complied

Voltage Dips and Interruptions	Duration [in period]
20 % Voltage reduction	250 T
30 % Voltage reduction	25 T
60 % Voltage reduction	10 T
100 % Voltage reduction	250 T

Voltage Variations	Supply Voltage
Supply Voltage max (Umax)	Unom a + 10 %
Supply Voltage min (Umin)	Unom a - 15 %

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

6.12.5 Test Result

○ Test Date: 2026-05-22
● Test Mode: Mode 1

○ Voltage Dips and Short Interruptions

Depth	Duration [in period]	Observations
20 % Voltage reduction	250 T	Complied
30 % Voltage reduction	25 T	Complied
60 % Voltage reduction	10 T	Complied
100 % Voltage reduction	250 T	Degradation

○ Voltage variations

Voltage Variations	Supply Voltage	Observations
Supply voltage max (Umax = Unom a + 10 %)	253 V	Complied
Supply voltage min (Umin = Unom a - 15 %)	195.5 V	Complied

U_{nom} = Nominal mains voltage, U_{max} = (Maximum U_{nom}) + 10 %, U_{min} = (Minimum U_{nom}) – 15 %.

○ Test Date: 2026-05-22
● Test Mode: Mode 2

○ Voltage Dips and Short Interruptions

Depth	Duration [in period]	Observations
20 % Voltage reduction	250 T	Complied
30 % Voltage reduction	25 T	Complied
60 % Voltage reduction	10 T	Complied
100 % Voltage reduction	250 T	Degradation

○ Voltage variations

Voltage Variations	Supply Voltage	Observations
Supply voltage max (Umax = Unom a + 10 %)	253 V	Complied
Supply voltage min (Umin = Unom a - 15 %)	195.5 V	Complied

U_{nom} = Nominal mains voltage, U_{max} = (Maximum U_{nom}) + 10 %, U_{min} = (Minimum U_{nom}) – 15 %.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

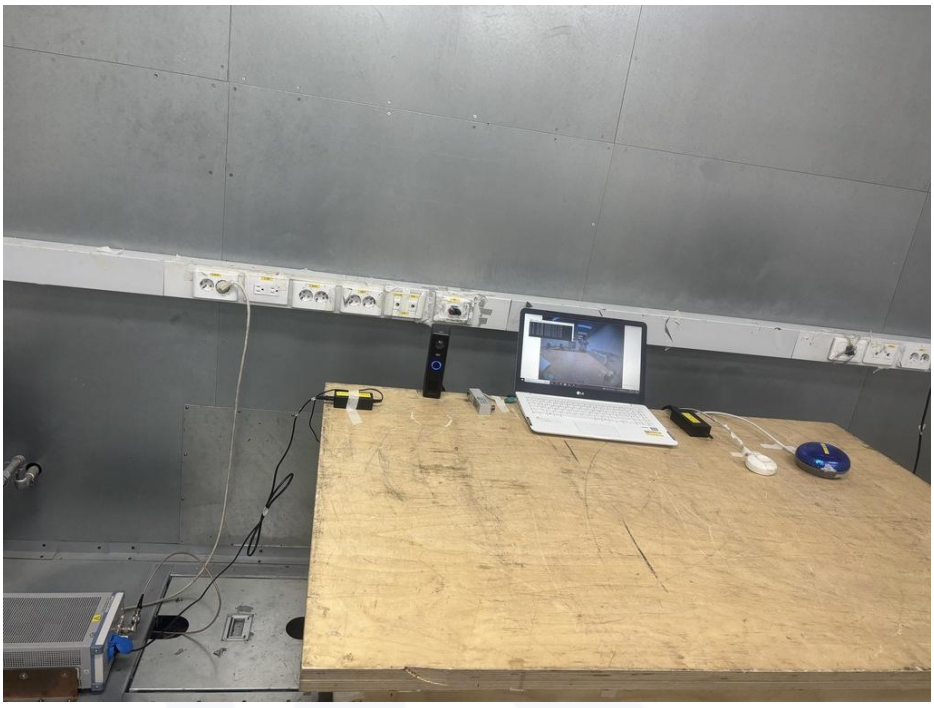
6.12.6 Remark

Degradation : During the test(100%, 250cycle), EUT was turned off but after the test, it was recovered without operator’s intervention

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

7 Test Setup Photos and EUT Photographs

7.1 Test Setup Photos

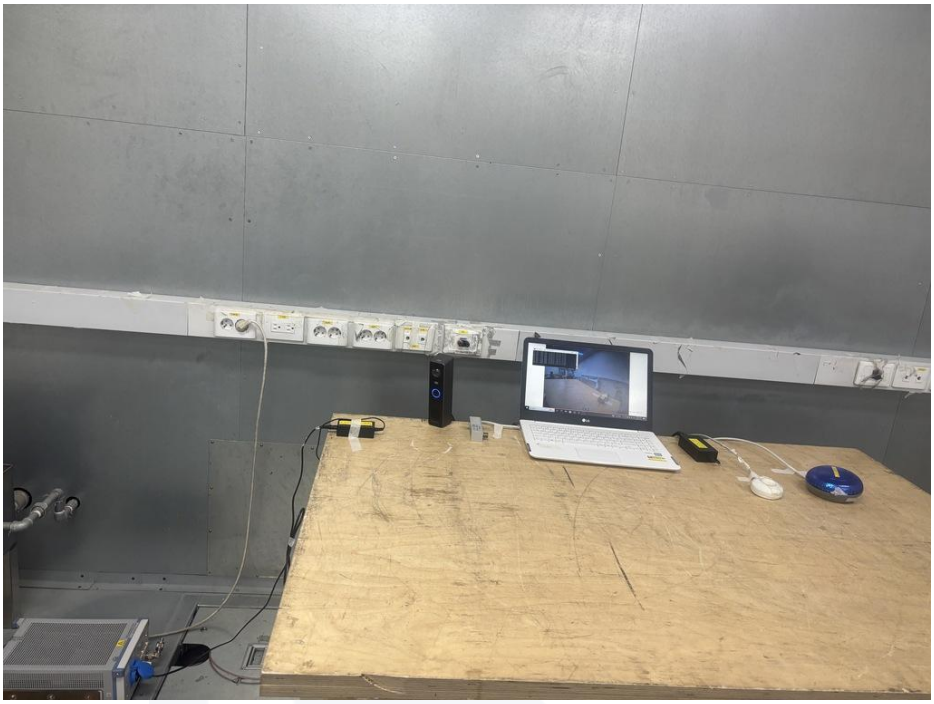


<Conducted Emissions at Mains Power Ports - Front> Mode 1



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

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

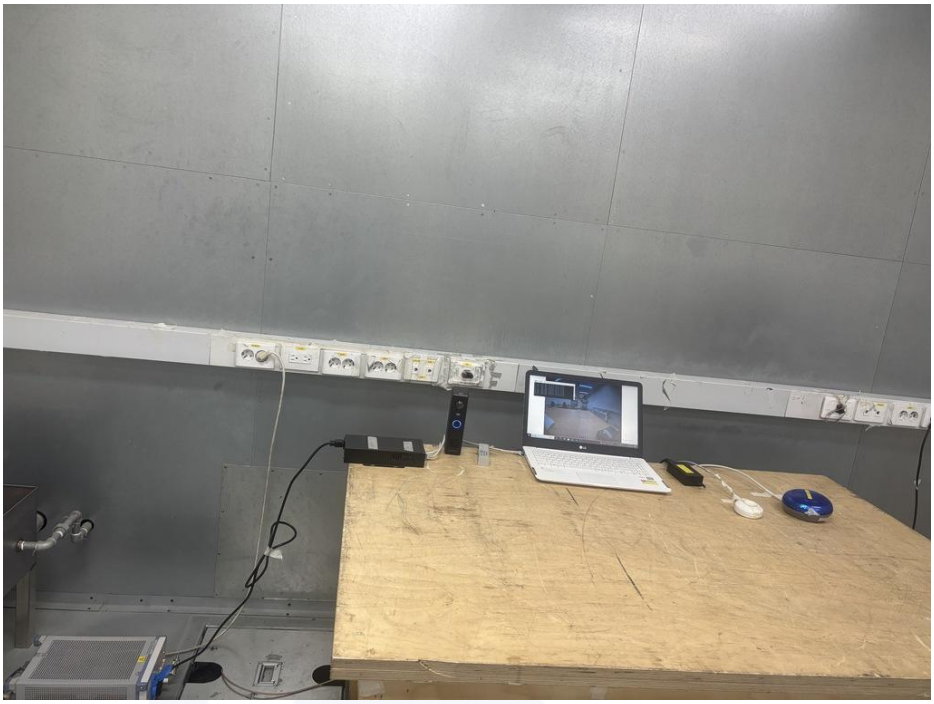


<Conducted Emissions at Telecommunication Ports - Front>Mode 1



<Conducted Emissions at Telecommunication Ports - Rear> Mode 1

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

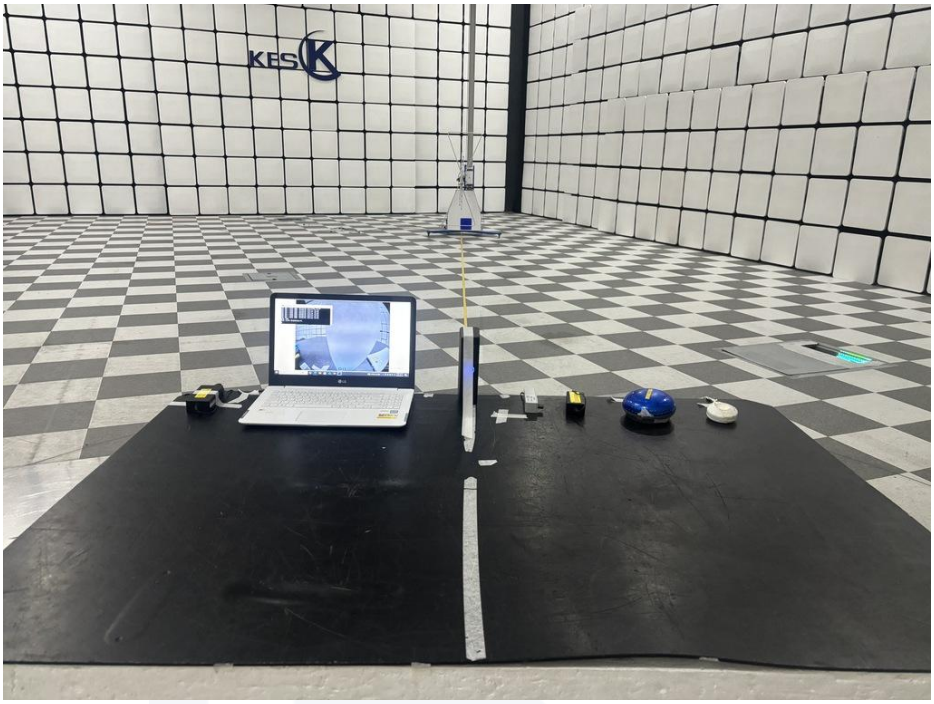


<Conducted Emissions at Telecommunication Ports - Front>Mode 2

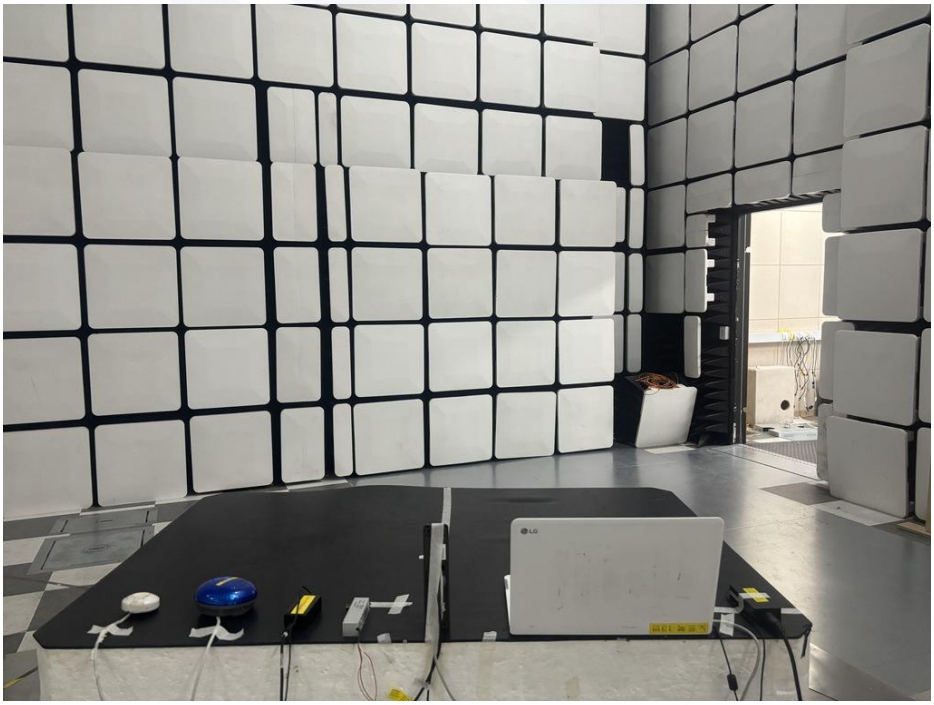


<Conducted Emissions at Telecommunication Ports - Rear> Mode 2

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

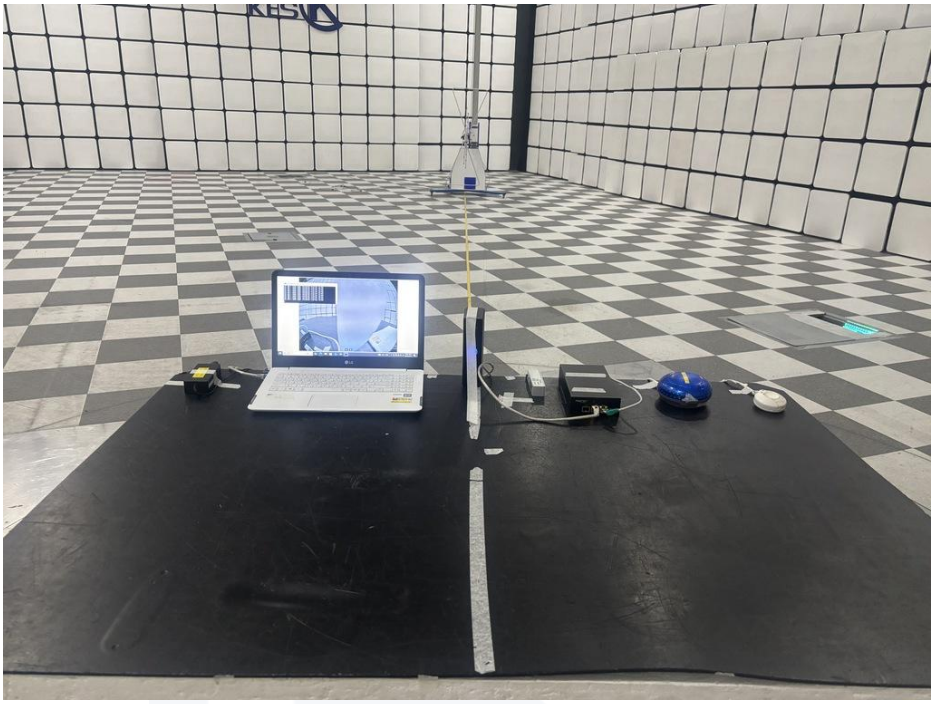


<Radiated Emissions(Below 1 ㎓) - Front> Mode 1

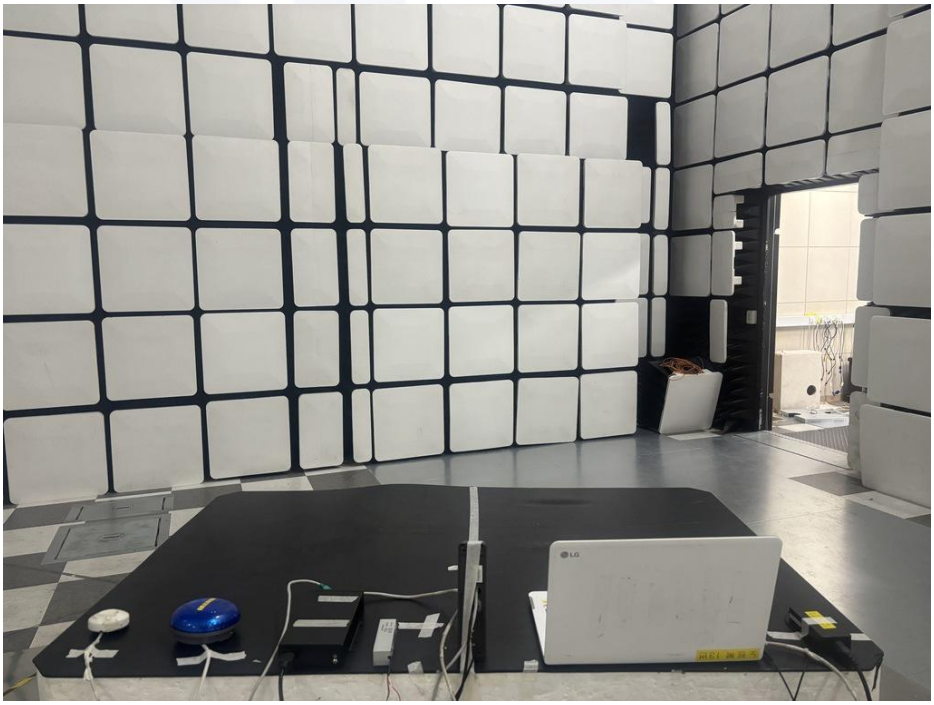


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You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

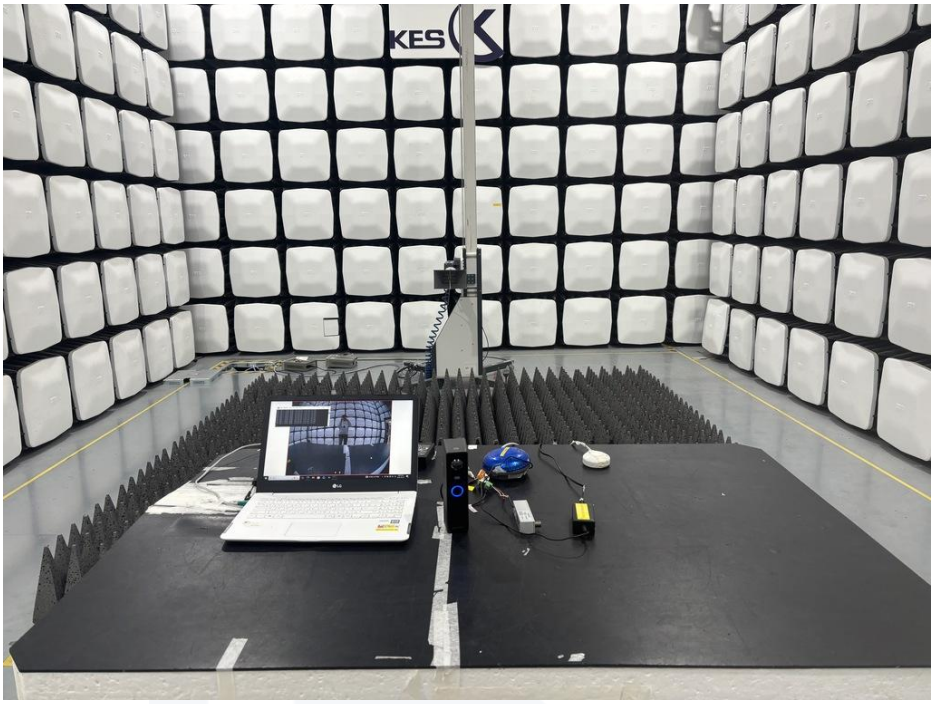


<Radiated Emissions(Below 1 ㎓) - Front> Mode 2

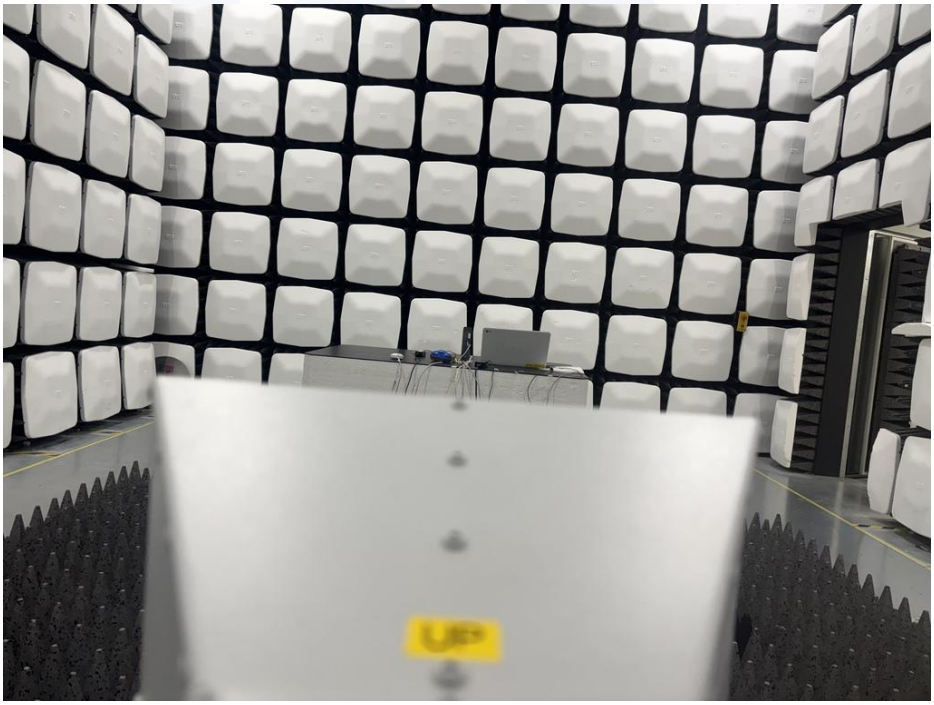


<Radiated Emissions(Below 1 ㎓) - Rear> Mode 2

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

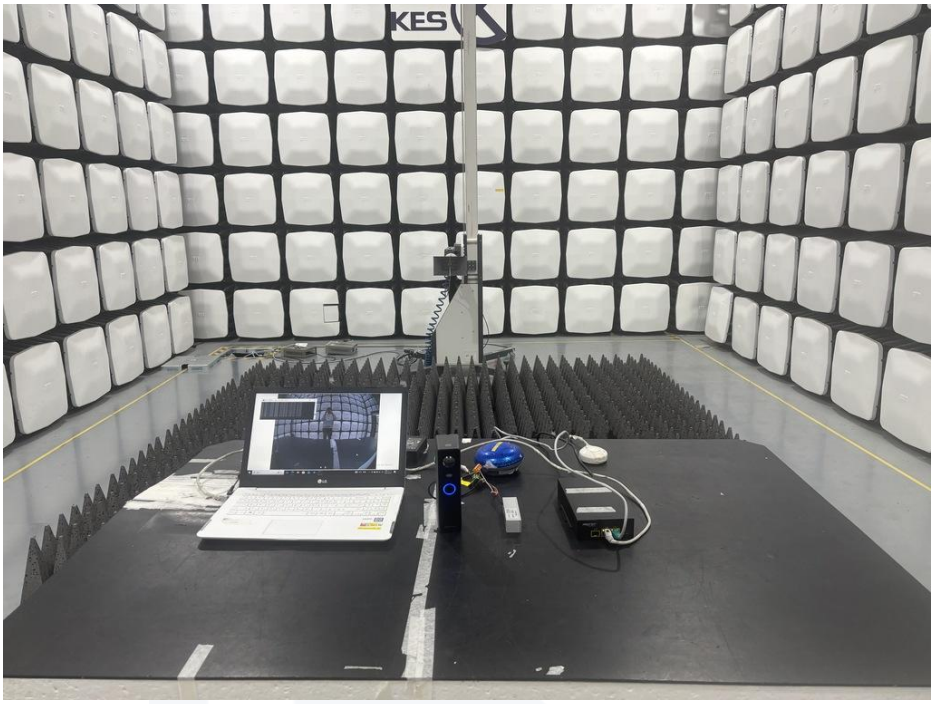


<Radiated Emissions(Above 1 ㎓) - Front> Mode 1

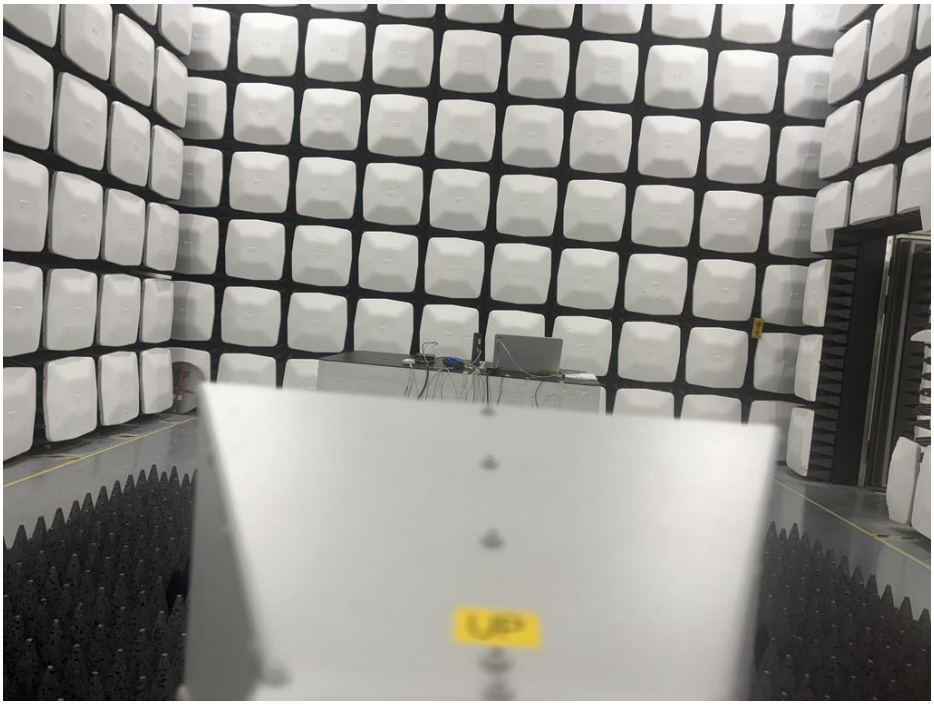


<Radiated Emissions(Above 1 ㎓) - Rear> Mode 1

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

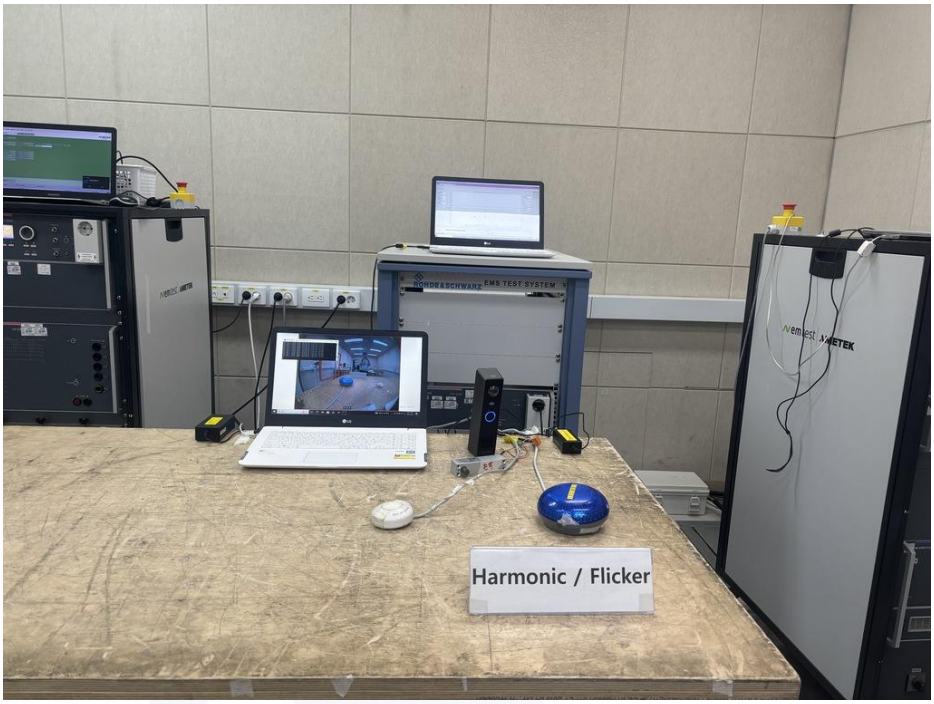


<Radiated Emissions(Above 1 ㎓) - Front> Mode 2



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

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

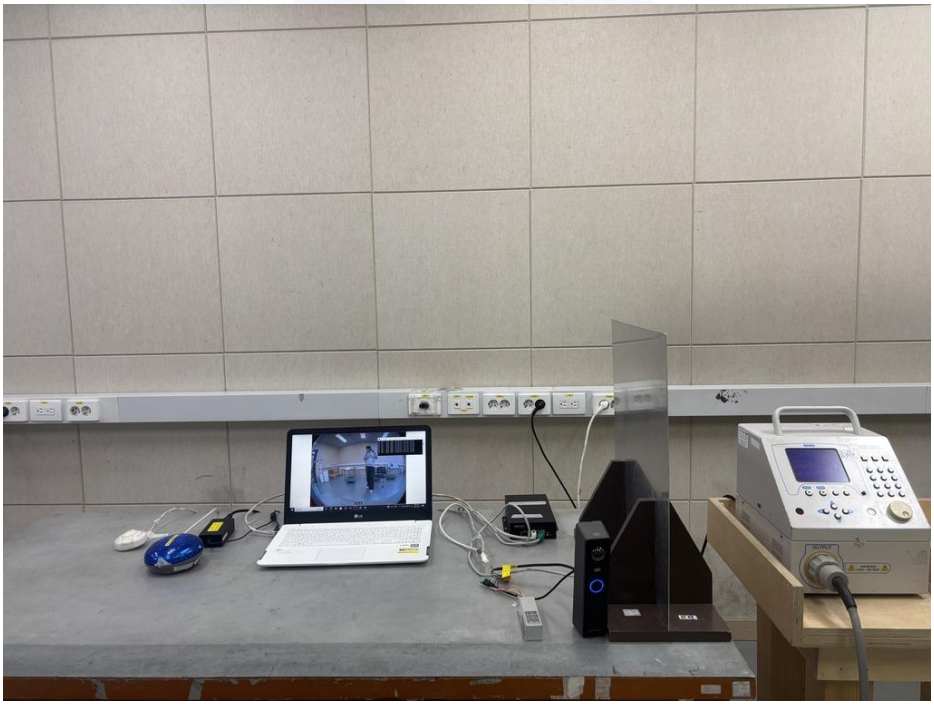


<Harmonic Current Emissions and Voltage Fluctuations and Flicker> Mode 1

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

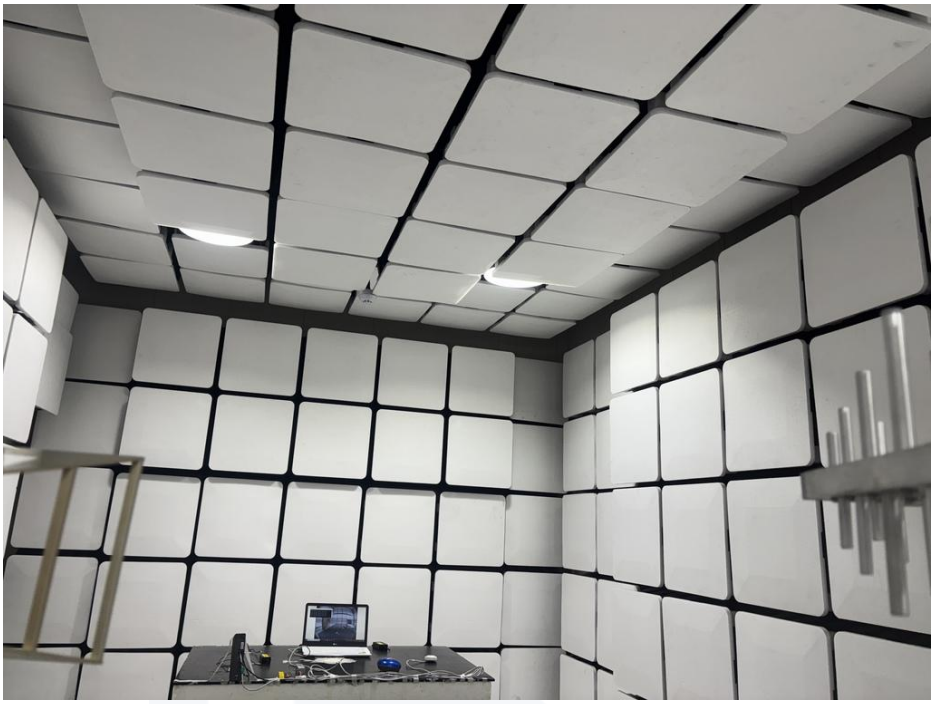


<Electrostatic Discharge> Mode 1

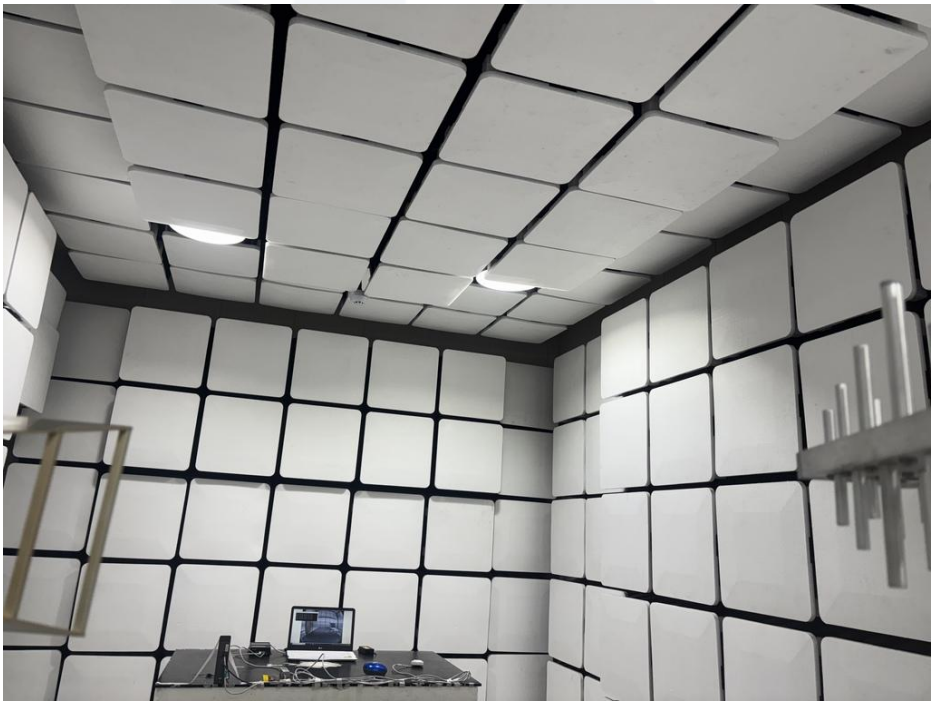


<Electrostatic Discharge> Mode 2

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).



<Continuous RF electromagnetic field disturbances> Mode 1



<Continuous RF electromagnetic field disturbances> Mode 2

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).



<Electrical Fast Transients/Bursts> Mode 1



<Electrical Fast Transients/Bursts> Mode 2

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

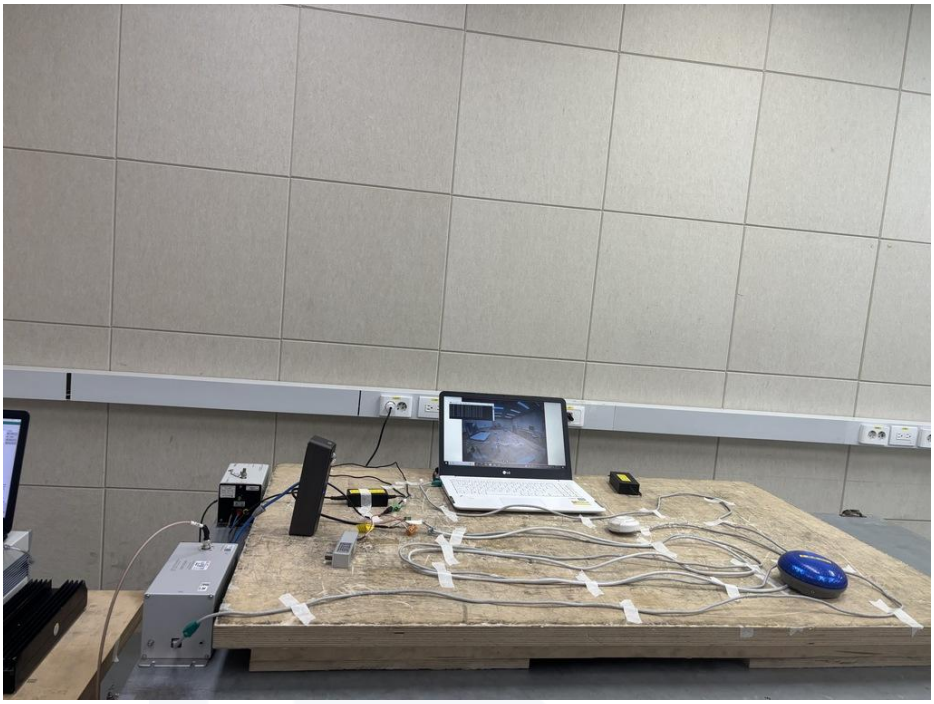


<Surge> Mode 1

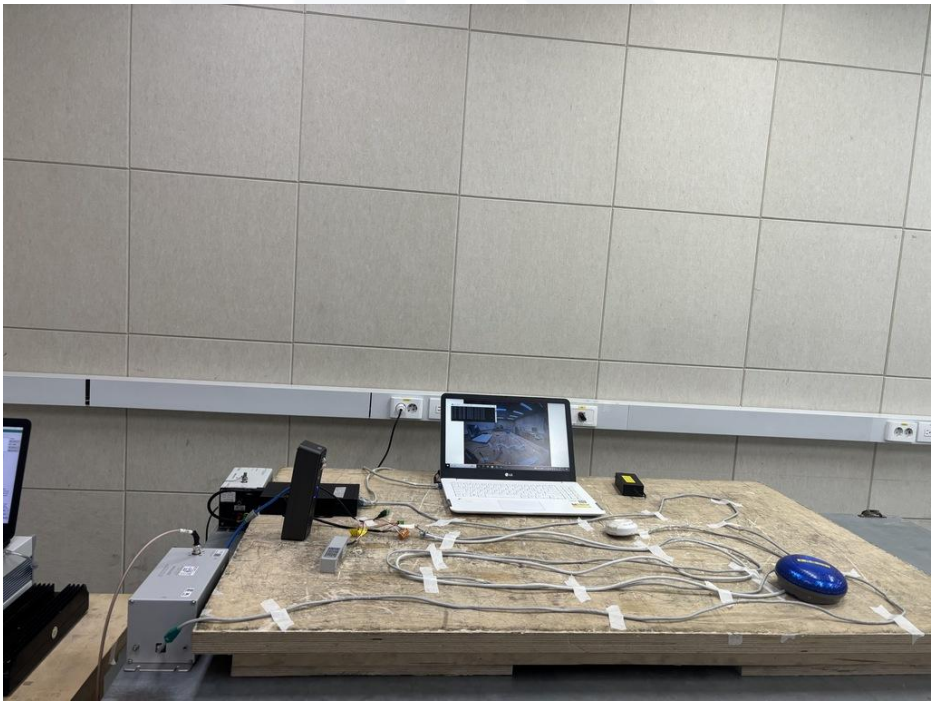


<Surge> Mode 2

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).



<Continuous Induced RF Disturbances> Mode 1



<Continuous Induced RF Disturbances> Mode 2

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).



<Voltage Dips and Interruptions> Mode 1

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

7.2 EUT Photographs



<EUT External Photographs - Top>

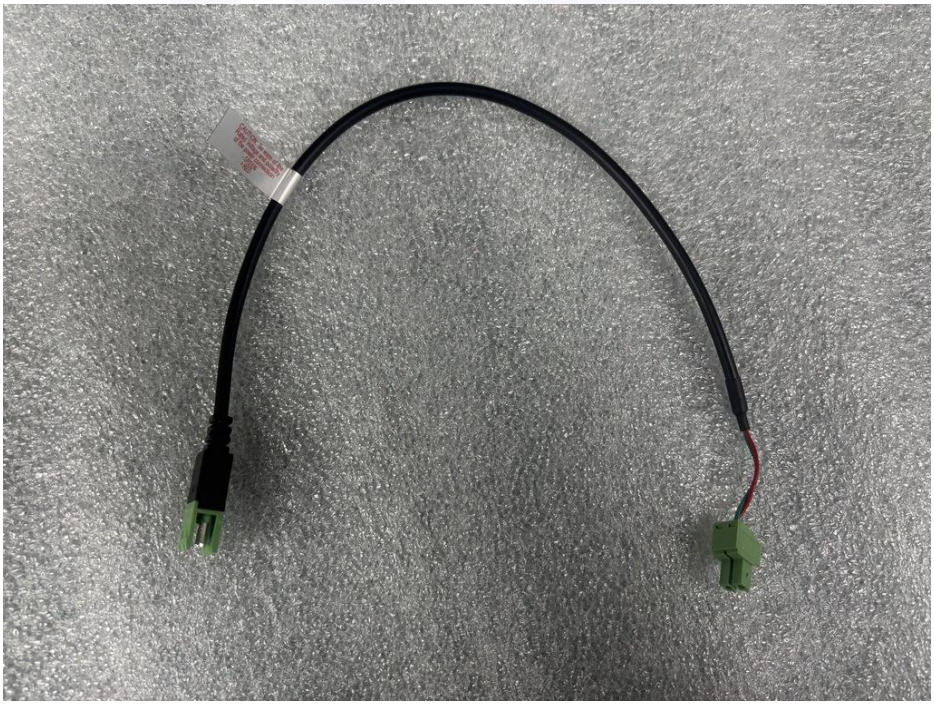


<EUT External Photographs - Bottom>

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).



<Components-1>



<Components-2>

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

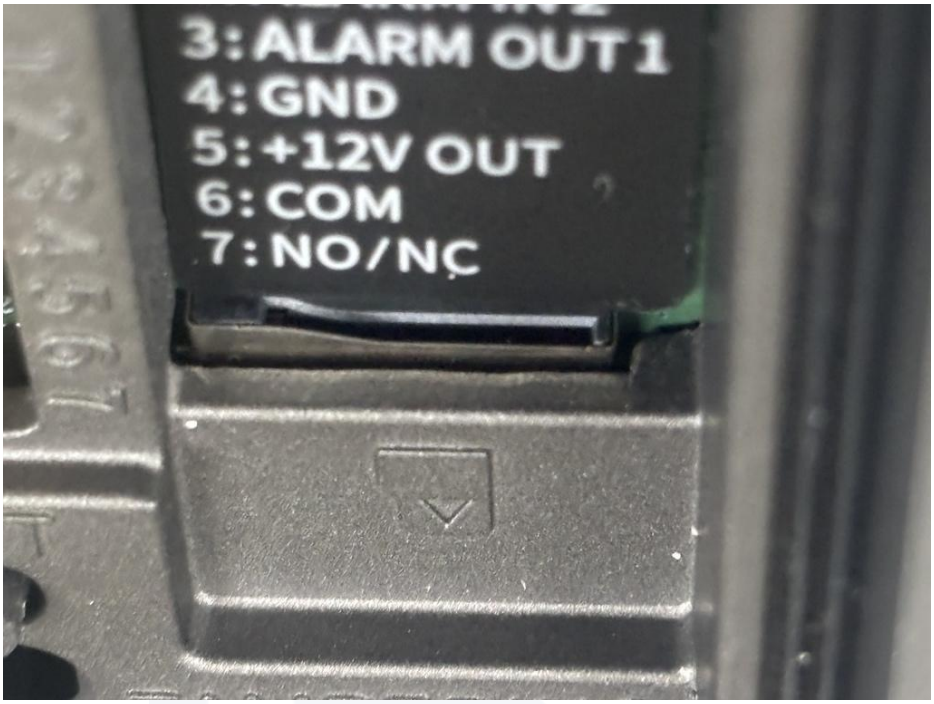


<Port-1>



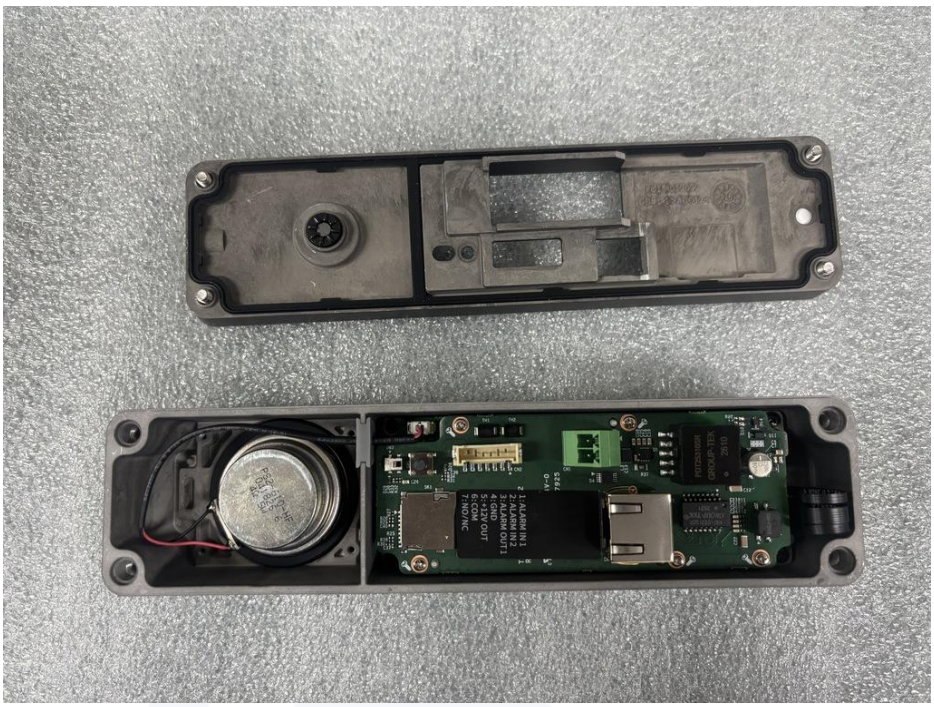
<Port-2>

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).



<Port-3>

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).



<EUT Internal Photographs>

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).

7.3 Label

Name	:	Hanwha Vision Co., Ltd.
Product item	:	NETWORK INTERCOM
Model name	:	TID-A800

The End.

You can check the authenticity of this test report on the authenticity verification page on our website (www.kes.co.kr).