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 CAMERA
◯ Model name	:	PNM-A20084RQZ
◯ 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. 08. 15. ~ 2026. 08. 17.

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

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 : SeongMin Jang [장성민]2026/09/15	Name : DongHun Jang [장동훈]2026/09/15

2026. 09. 15.

KES Co., Ltd.

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REPORT REVISION HISTORY

Date	Test Report No.	Revision History
2026. 09. 15.	KES-EM262836	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)

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 6
2.4 Variant Model Differences 6
2.5 Device Modifications 6
3 General Product Description 7
4 EUT Setup and Operation Mode 11
4.1 EUT Configuration 11
4.2 System Configuration 11
4.3 External I/O Cabling 11
4.4 EUT Operating Mode(s) 12
4.5 Test operating S/W 12
4.6 Configuration 12
5 General Performance Criteria 13
6 Test Item 15
6.1 Conducted Emissions at Telecommunication Ports 15
6.2 Radiated Emissions(Below 1 ㎓) 17
6.3 Radiated Emissions(Above 1 ㎓) 19
6.4 Electrostatic Discharge 21
6.5 Continuous RF electromagnetic field disturbances 24
6.6 Electrical Fast Transients/Bursts 27
6.7 Surge 29
6.8 Continuous Induced RF Disturbances 31
7 Test Setup Photos and EUT Photographs 33
7.1 Test Setup Photos 33
7.2 EUT Photographs 39
7.3 Label 43

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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	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		N/A	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		N/A	NOTE 1
Voltage Fluctuations and Flicker	EN 61000-3-3:2013+A2:2021		N/A	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	N/A	NOTE 1

* N/A: Not Applicable

(NOTE 1) PoE port is considered a 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

Video		
Imaging Device	Size	1/2.8"
	Type	CMOS
Resolution		2560x1920, 2560x1440, 1920x1080, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 640x480, 640x360, 320x240, 320x180
Max. Framerate	H.265/H.264	30fps/25fps(60Hz/50Hz) * PNM-A20084RQZ PoE+ Mode : 20fps(60Hz/50Hz)
	MJPEG	30fps(@5MP Max. 5fps) * PNM-A20084RQZ PoE+ Mode : 20fps(@5MP Max. 5fps)
Min. Illumination (Lux)	Color(1/30sec, 30IRE)	0.06
	BW(1/30sec, 30IRE)	0.006
Lens		
Focal Length (mm)		3.18~7.42
Zoom Ratio	Optical	2.33x
	Digital	None
Max Aperture Ratio (F number)	Wide	1.6
	Tele	2.7
Angular Field of View	Horizontal	99.8°~39.9°
	Vertical	72.3°~29.9°
	Diagonal	133.6°~49.9°
iFoV		None
Min. Object Distance		1.5m(1.64ft)
Focus Control		Simple focus
Lens Type		Fixed iris
Mount Type		None
Optional Lens		None
Pan / Tilt / Rotate		
Pan / Tilt / Rotate Range	Pan	0°~360°
	Tilt	15°~100°
	Rotate	-10°~100°

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Operational		
Direction Indicator		None
Day & Night		Auto(ICR)
Backlight Compensation		BLC, HLC, WDR, SSDR
Wide Dynamic Range (dB)		120
Digital Noise Reduction		WiseNRⅡ(Based on AI engine), SSNRV
Digital Image Stabilization		Support
Defog		None
Motion Detection	Quantity	8ea
	Shape	8point Polygonal zones
Privacy Masking	Quantity	32ea
	Shape	8point Polygonal zones
	Color / Option	Gray, Green, Red, Blue, Black, White, Mosaic, Purple, Yellow
	Dynamic Privacy Masking: Color / Option	Gray, Green, Red, Blue, Black, White, Mosaic, Purple, Yellow
Gain Control		Off, Max gain, Manual
White Balance		ATW, NarrowATW, AWC, Manual, Indoor, Outdoor
LDC		Support(Fill/stretch mode)
Electronic Shutter	Mode	Minimum, Maximum, Anti flicker
	Speed Range	2~1/30,000sec
Digital PTZ		None
Video Rotation		Flip, Mirror, Hallway view(90°/270°) - Each channel separately
Serial Interface		None
Alarm Interface	In/Out	Selectable I/O 2 Port
	Others	Support alarm I/O via optional I/O box
Alarm Triggers		Analytics, Network disconnect, Alarm input, Time schedule, MQTT subscription, Case tampering, Day/Night, Storage disruption
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, MQTT: publication
Audio Streaming		None
Audio In		Support via optional I/O box
Audio Out		Support via optional I/O box
Light Type		IR LED
Light Viewable Length	Warm Light	None
	IR	PoE++ : WiseIR 25m(82.02ft) PoE+ : WiseIR 15m(49.21ft)
IR Wavelength		850nm
Analytics		
Classified Object Type		Person, Face, Vehicle, License plate
Attributes	Person	Upper/Lower clothes color, Gender, Bag
	Vehicle	Type(car, bus, truck, motorcycle, bicycle), Color
	Face	Age, Gender, Face mask, Glasses
Re-ID		Person, Vehicle
Thumbnail		BestShot
Analytics Events	Based on AI Engine	Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit), Motion detection, Face mask detection, Social distancing detection, Slip & fall detection, Virtual area(Loitering/Intrusion/Enter/Exit/Appear/Disappear)
	Normal	Defocus detection, Tampering, Audio detection, Shock detection
Business Intelligence	Based on AI Engine	People counting, Queue management, Heatmap, Vehicle counting, Crowd counting
	Normal	None

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Network		
Ethernet		Metal shielded RJ-45(10/100/1000BASE-T)
Video Compression		H.265/H.264: Main/Baseline/High, MJPEG
Audio Compression		None
Smart Codec		WiseStream(Based on AI engine)
Bitrate Control		H.265/H.264: CBR or VBR, MJPEG: VBR
Streaming	Unicast	Up to 20 users
	Multicast	Support
	Multiple Streaming	Up to 5 profiles - 4K 2 Profiles - FHD 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, CDP, SRTP(TCP, UDP Unicast), MQTT, SMTP(StartTLS), Syslog
SIP support (VoIP, Peer-to-peer, SIP/PBX integration)		None
Application Programming Interface	ONVIF	S, G, T, M
	Others	SUNAPI(HTTP API), Hanwha Vision Open Platform
Direct Cloud Connection		Support
Security		
OS / Firmware Protect		Encrypted firmware, Secure boot, Signed firmware
User authentication		Digest authentication, Prevent brute-force attack, LDAP authentication
Network authentication		IEEE 802.1X(EAP-TLS, EAP-LEAP, EAP-PEAP, MSCHAPv2)
Secure Communication		HTTPS, WSS(WebSocket Secure), SRTP, 802.1AE(MACsec)
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		SDcard partition encrypt(AES-256), Secure element
Supply Chain Security		SBOM
Security Certificate		Secure element(FIPS 140-3 level3, CC EAL6+), Consumer IoT Security Standard (ETSI EN 303 645), Security Built-in Process Certification (IEC 62443-4-1)
General		
Memory	RAM	8GB (4GB X 2)
	Flash	8GB eMMC (4GB X 2)
Edge Storage	Micro SD/SDHC/SDXC	Max. 1TB x 2slot(Total 2TB)
	SSD	None

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Environmental & Electrical		
Operating Condition	Temperature	-40°C~+55°C(-40°F~+131°F)
	Humidity	0~100% RH(condensing)
	Others	+74°C(+165°F)(Max) based on NEMA-TS 2(2.2.7), Start up should be done at above -20°C
Storage Condition	Temperature	-50°C~+60°C(-58°F~+140°F)
	Humidity	0~100% RH(condensing)
Wind Load		None
EPA(Effective Projected Area)		None
Input Voltage		PoE+(IEEE802.3at, Class4), PoE++(IEEE802.3bt type3, Class5)
Power Consumption	PoE	PNM-A24084RTZ : Max. 28.9W, typical 20.0W PNM-A15084RTZ : Max. 30.5W, typical 21.0W
Wisepower		Power mode, Power monitoring,
Power Redundance Failover		None
Mechanical		
Color		White
Material		Aluminum, Hard-coated dome
Material Management	Declaration	RoHS(EU RoHS directive 2011/65/EU and IEC/EN 63000:2018), REACH(Regulation (EC) No. 1907/2006), Conflict mineral policy(Section 1502 of US Dodd Frank Act)
RAL Code		RAL9003
Product Dimensions		Φ315x129.5(H)mm
Product Weight		PNM-A20084RQZ(4CH) : 3.8kg PNM-A15084RTZ(3CH) : 3.6kg
Compatible Conduit Hole		19.1mm(3/4")(M25)
Compatible Gang Box		Single, Double, 4" Octagon, Square
Status LED		Support

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4 EUT Setup and Operation Mode

4.1 EUT Configuration

Product Name	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	PNM-A20084RQZ	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT
Fiber PoE Injector	PT-PSE109GBRO-AH-S	-	Dongguan PROCET Network Technology Co.,Ltd	R-R-LJ9-PSE109GBRO-A02
Button Alarm	-	-	-	-
LED Alarm	PRO-SL	-	SENSOR PRO	-
Laptop	P95G001	9JM8HT2	DELL INC.	-
Laptop Adaptor	HA65NM130	-	Chicony Power Technology(Suzhou) Co.,Ltd.	-
Micro SD Card #1	-	-	SanDisk	-
Micro SD Card #2	-	-	SanDisk	-

4.2 System Configuration

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

4.3 External I/O Cabling

Start		END		Cable Spec	
Description	**I/O Port**	**Description**	**I/O Port**	**Length**	**Shield**
EUT	PoE++	Fiber PoE Injector	RJ-45(PoE)	5.0	U
	ALARM	Button Alarm	Alarm IN	3.1	U
		LED Alarm	Alarm OUT	3.2	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	-	-
Fiber PoE Injector	RJ-45(LAN)	Laptop	RJ-45(LAN)	5.0	U
Laptop Adaptor	DC Jack		DC Jack	1.5	U

* Unshielded=U, Shielded=S

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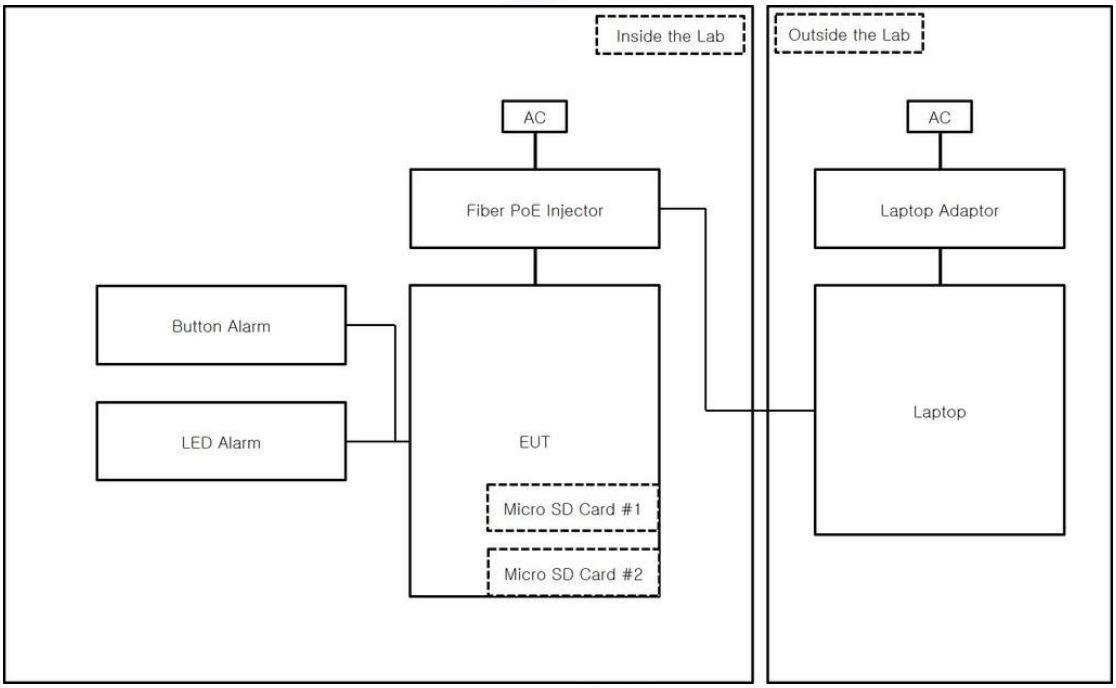
4.4 EUT Operating Mode(s)

Category	Mode	Operating
Mode 1	PoE	1. Monitoring EUT Using Web Viewer, Ping Test 2. After testing, checked the files stored on Micro SD card #1, #2.

4.5 Test operating S/W

Name	Version	Manufacture Company
Web Viewer	-	HANWHA VISION VIETNAM COMPANY LIMITED

4.6 Configuration



Mode 1

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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 Telecommunication 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	2026-07-27	2027-07-27	■
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	■

6.1.2 Test Location : SHIELD ROOM #6

6.1.3 Test Conditions :

Temperature	Relative Humidity
(24.7 ~ 24.8) °C	(52.2 ~ 52.4) % R.H.

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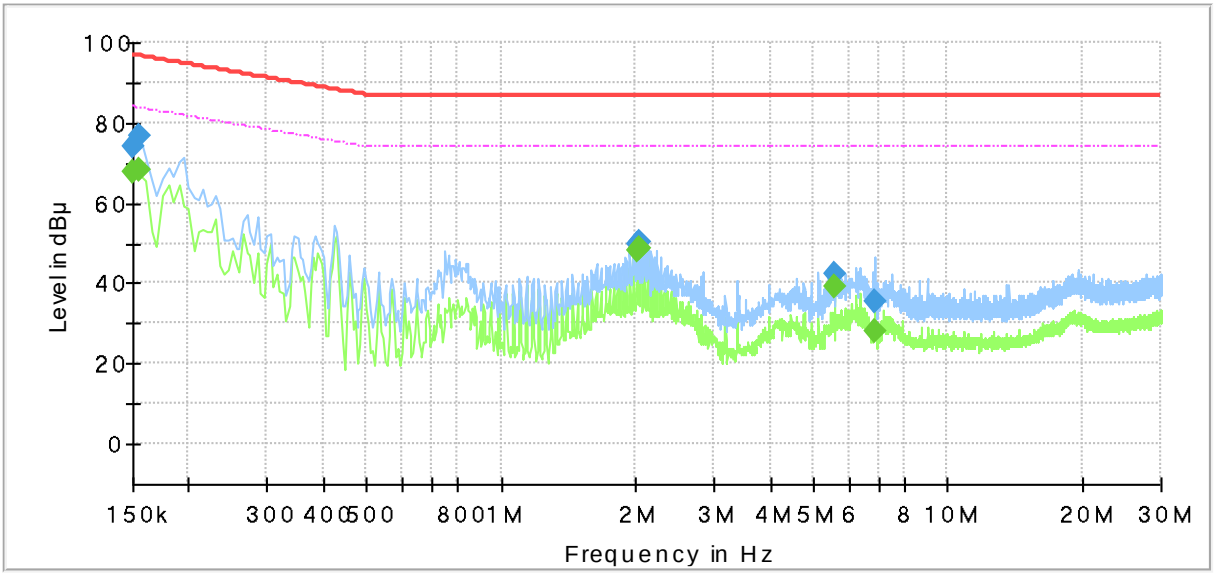
6.1.4 Test Result

○ Test Date : 2026-08-15
● Test Mode : Mode 1

Test Report

1 / 1

Test Description:	Telecommunication Emission
Job No.:	KES-EM262836
Mode :	
Speed :	1 000 Mbps
Operator Name:	KES



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	67.61	84.00	16.39	1000.0	9.000	Single Line	19.8
0.150000	73.94	---	97.00	23.06	1000.0	9.000	Single Line	19.8
0.155000	---	68.34	83.73	15.39	1000.0	9.000	Single Line	19.8
0.155000	76.49	---	96.73	20.24	1000.0	9.000	Single Line	19.8
2.015000	---	48.28	74.00	25.72	1000.0	9.000	Single Line	19.3
2.015000	49.91	---	87.00	37.09	1000.0	9.000	Single Line	19.3
2.050000	---	48.46	74.00	25.54	1000.0	9.000	Single Line	19.3
2.050000	50.26	---	87.00	36.74	1000.0	9.000	Single Line	19.3
5.555000	---	39.26	74.00	34.74	1000.0	9.000	Single Line	19.4
5.555000	42.52	---	87.00	44.48	1000.0	9.000	Single Line	19.4
6.885000	---	28.05	74.00	45.95	1000.0	9.000	Single Line	19.4
6.885000	35.24	---	87.00	51.76	1000.0	9.000	Single Line	19.4

6.1.5 Remark

Complies with the test requirements.

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6.2 Radiated Emissions(Below 1 ㎓)

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 :

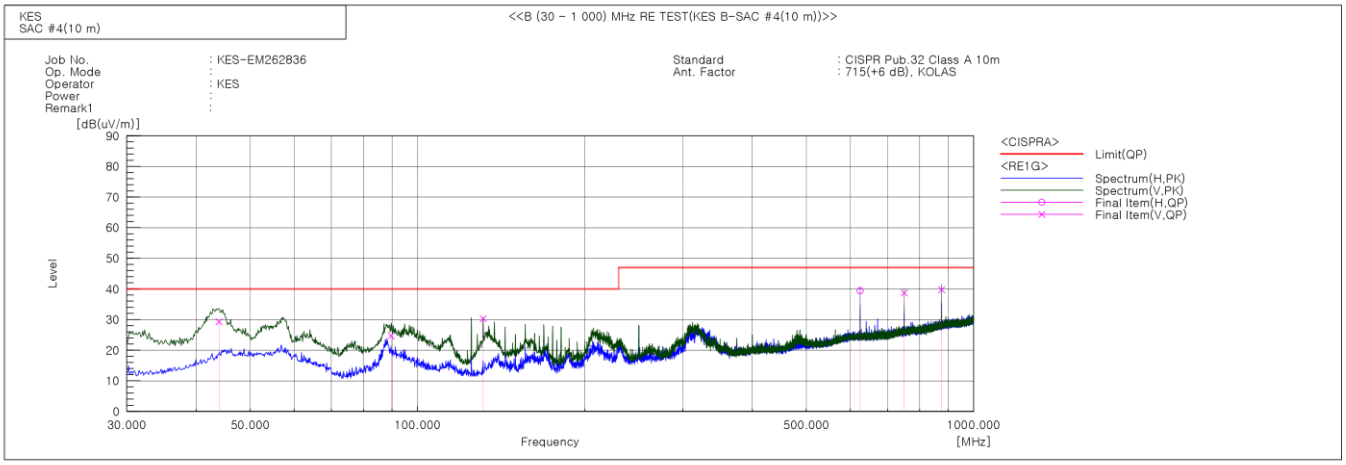
Temperature	Relative Humidity
(25.4 ~ 25.6) °C	(55.8 ~ 55.9) % R.H.

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 : 2026-08-15

● 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	43.944	V	51.2	-21.9	29.3	40.0	10.7	113.0	186.0	
2	89.655	V	49.3	-24.6	24.7	40.0	15.3	177.0	272.0	
3	131.244	V	55.8	-25.5	30.3	40.0	9.7	104.0	152.0	
4	624.974	H	48.7	-9.3	39.4	47.0	7.6	101.0	190.0	
5	749.983	V	46.2	-7.5	38.7	47.0	8.3	106.0	198.0	
6	875.113	V	45.1	-5.3	39.8	47.0	7.2	142.0	160.0	

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

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(Above 1 ㎓)

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	SCHWARZBECK	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 :

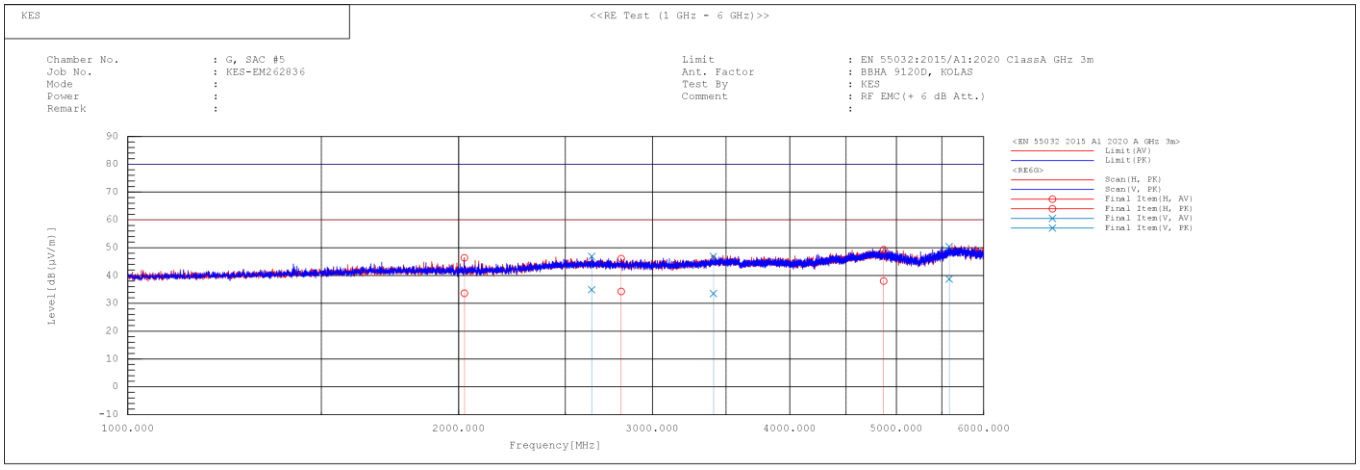
Temperature	Relative Humidity
(25.3 ~ 25.6) °C	(56.2 ~ 56.3) % R.H.

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 : 2026-08-17

● 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]	Angle [deg]
1	2023.387	H	31.2	44.0	2.4	33.6	46.4	60.0	80.0	26.4	33.6	117.3
2	2641.358	V	30.1	42.1	4.8	34.9	46.9	60.0	80.0	25.1	33.1	80.9
3	2809.789	H	29.0	40.8	5.3	34.3	46.1	60.0	80.0	25.7	33.9	232.9
4	3409.178	V	27.3	40.7	6.2	33.5	46.9	60.0	80.0	26.5	33.1	280.8
5	4868.289	H	26.8	38.1	11.2	38.0	49.3	60.0	80.0	22.0	30.7	262.5
6	5585.026	V	26.3	38.0	12.4	38.7	50.4	60.0	80.0	21.3	29.6	0.8

※ 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.

6.3.5 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 Electrostatic Discharge

6.4.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #6	-	DYMSTEC	-	-	-	■
ESD SIMULATOR	ESS-S3011A	NoiseKen	ESS2589132	2026-05-22	2027-05-22	■
HCP	-	KES	-	-	-	■
VCP	-	Noise Ken	-	-	-	■

6.4.2 Test Location : SHIELD ROOM #6

6.4.3 Test Conditions :

Temperature	Relative Humidity
Temperature(15 ~ 35) °C	(24.7 ~ 24.9) °C
Relative Humidity(30 ~ 60) % R.H.	(52.2 ~ 52.3) % R.H.
Atmospheric Pressure(86 ~ 106) kPa	(100.2 ~ 100.3) kPa

6.4.4 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

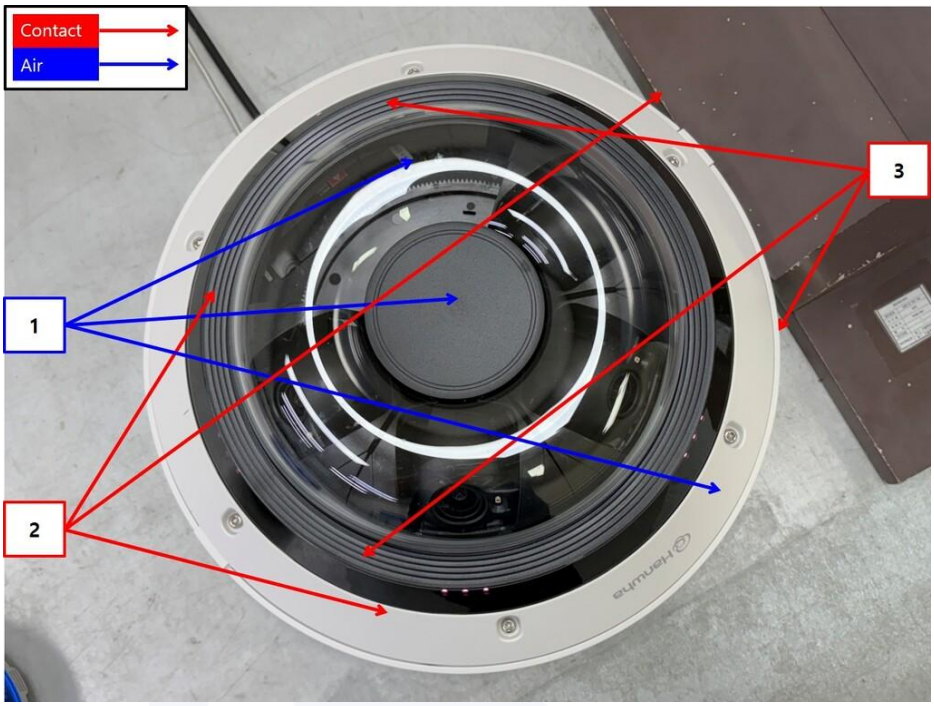
Performance Criteria : Complied

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).

6.4.5 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).

6.4.6 Test Result

○ Test Date : 2026-08-15
● 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	-
3	Screws	Contact Discharge	Complied	-

6.4.7 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).

6.5 Continuous RF electromagnetic field disturbances

6.5.1 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	■
DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H. SYSTEM,INC	781	2026-03-06	2027-03-06	■
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	-	-	■

6.5.2 Test Location : SEMI ANECHOIC CHAMBER #3

6.5.3 Test Conditions :

Temperature	Relative Humidity
(25.0 ~ 25.3) °C	(55.7 ~ 55.9) % R.H.

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

6.5.4 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).

6.5.5 Test Result

○ Test Date : 2026-08-17

● Test Mode : Mode 1

○ Enclosure Port

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

6.5.6 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).

6.6 Electrical Fast Transients/Bursts

6.6.1 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	■

6.6.2 Test Location : SHIELD ROOM #7

6.6.3 Test Conditions :

Temperature	Relative Humidity
(25.8 ~ 26.0) °C	(55.8 ~ 55.9) % R.H.

6.6.4 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).

6.6.5 Test Result

○ Test Date : 2026-08-15
● Test Mode : Mode 1

○ 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
PoE++	Complied	Complied
ALARM(Button)	Complied	Complied
ALARM(LED)	Complied	Complied

6.6.6 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).

6.7 Surge

6.7.1 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	■

6.7.2 Test Location : SHIELD ROOM #7

6.7.3 Test Conditions :

Temperature	Relative Humidity
(25.8 ~ 26.0) °C	(55.8 ~ 55.9) % R.H.

6.7.4 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).

6.7.5 Test Result

○ Test Date : 2026-08-15
● Test Mode : Mode 1

○ 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
PoE++	CDN	Complied	Complied
	LINE	Complied	Complied

6.7.6 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).

6.8 Continuous Induced RF Disturbances

6.8.1 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	43697	2025-11-03	2026-11-03	■
CDN	CDN T8 RJ45	SCHWARZBECK	00103	2026-07-06	2027-07-06	■
EM CLAMP	KEMZ 801A	TESEQ	44099	2025-11-05	2026-11-05	■

6.8.2 Test Location : SHIELD ROOM #7

6.8.3 Test Conditions :

Temperature	Relative Humidity
(25.8 ~ 26.1)°C	(55.8 ~ 55.9) % R.H.

6.8.4 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).

6.8.5 Test Result

○ Test Date : 2026-08-15

● Test Mode : Mode 1

○ Input a.c power ports

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

○ 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
PoE++	CDN	Complied
ALARM(Button)	Clamp	Complied
ALARM(LED)	Clamp	Complied

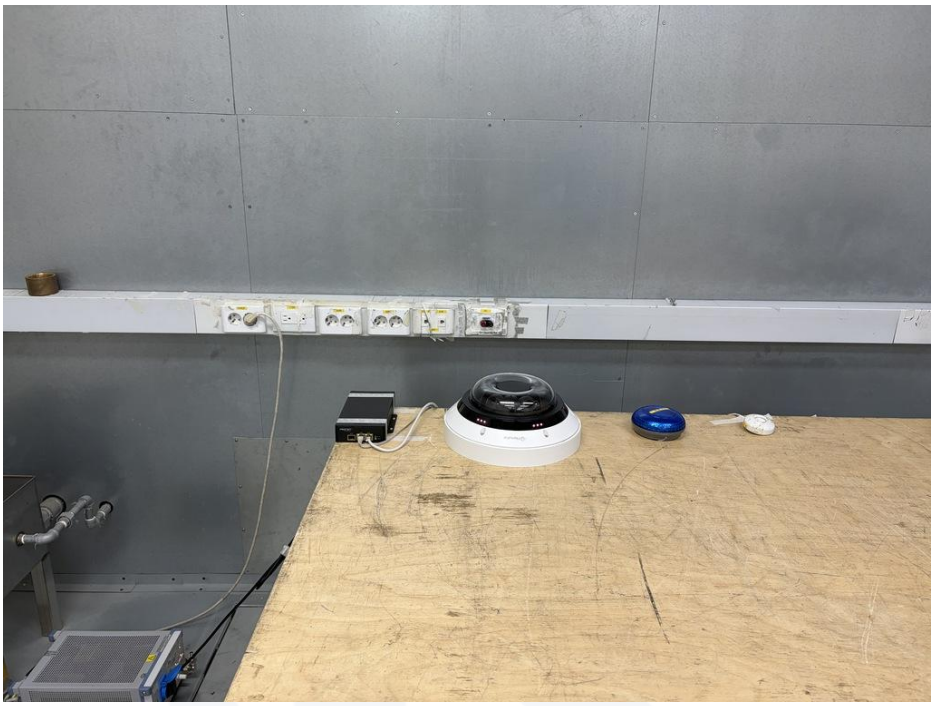
6.8.6 Remark

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).

7 Test Setup Photos and EUT Photographs

7.1 Test Setup Photos

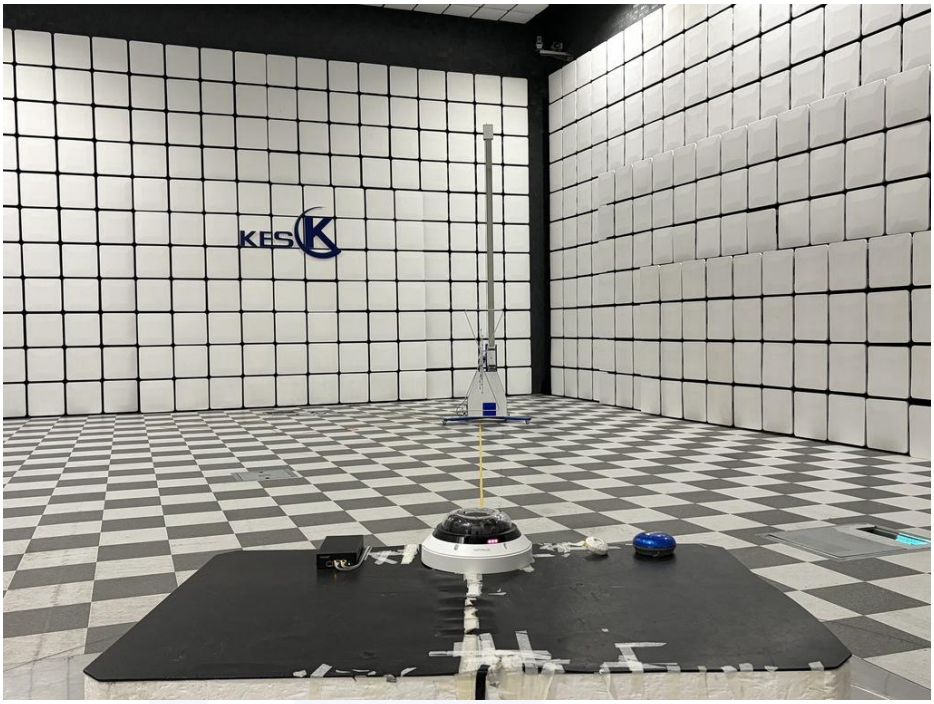


<Conducted Emissions at Telecommunication Ports - Front>

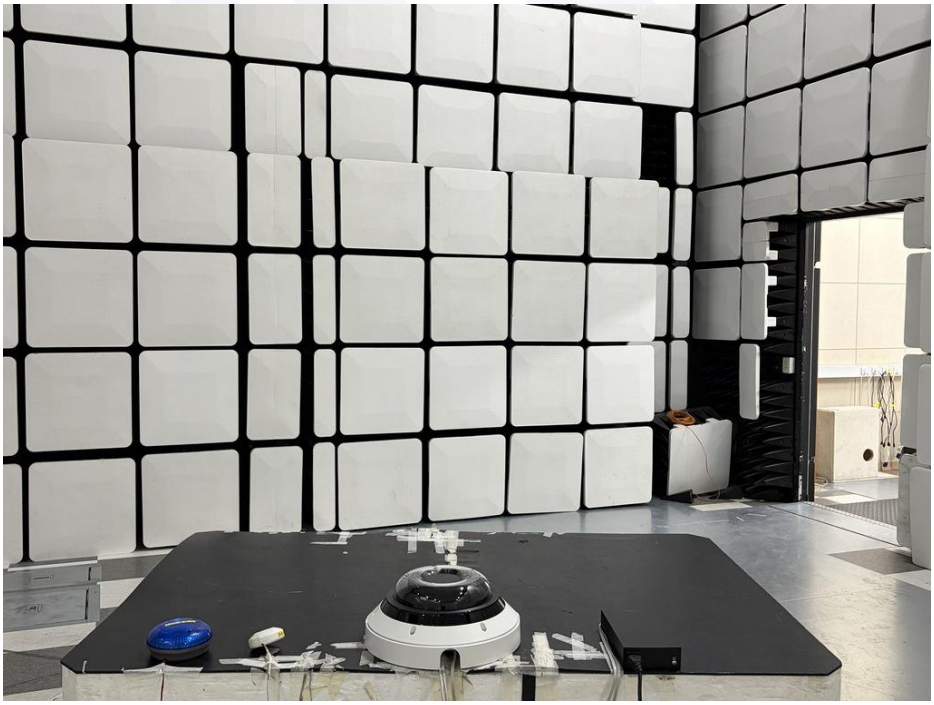


<Conducted Emissions at Telecommunication Ports - Rear>

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

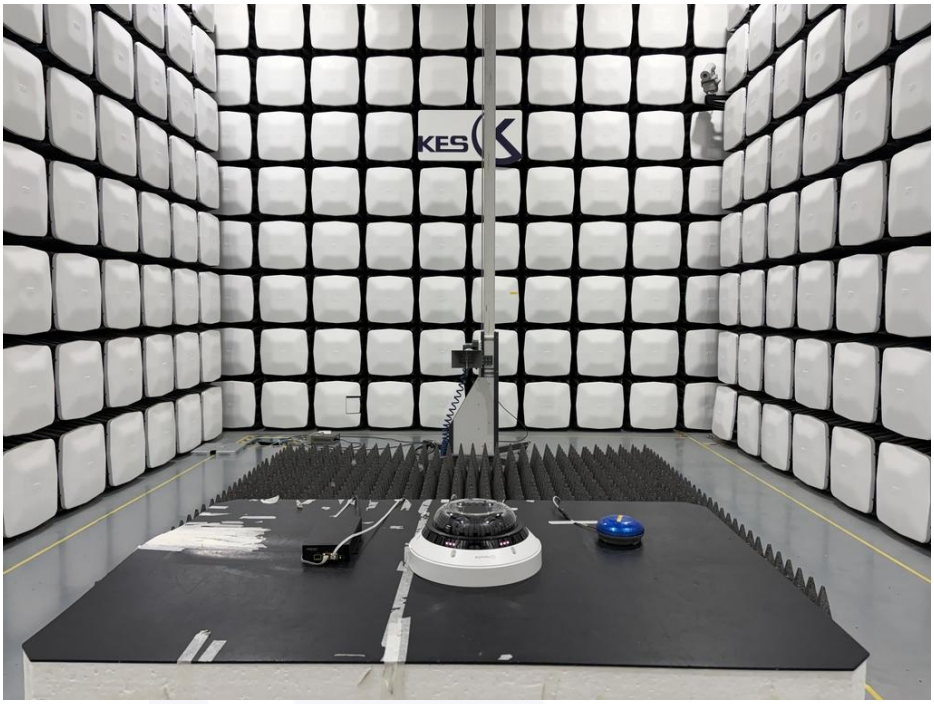


<Radiated Emissions(Below 1 ㎓) - Front>

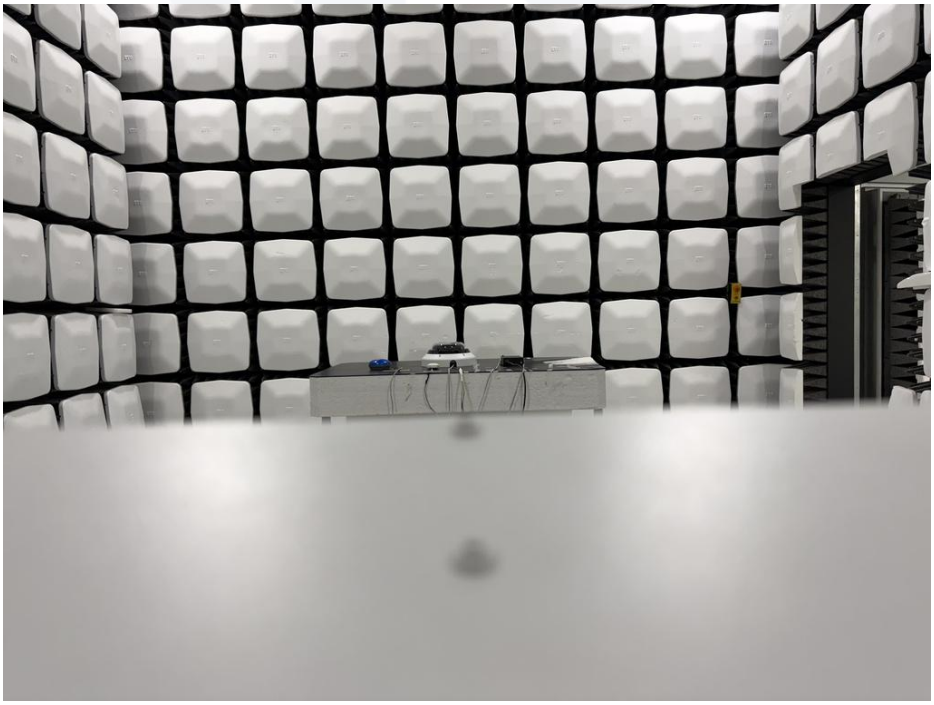


<Radiated Emissions(Below 1 ㎓) - Rear>

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

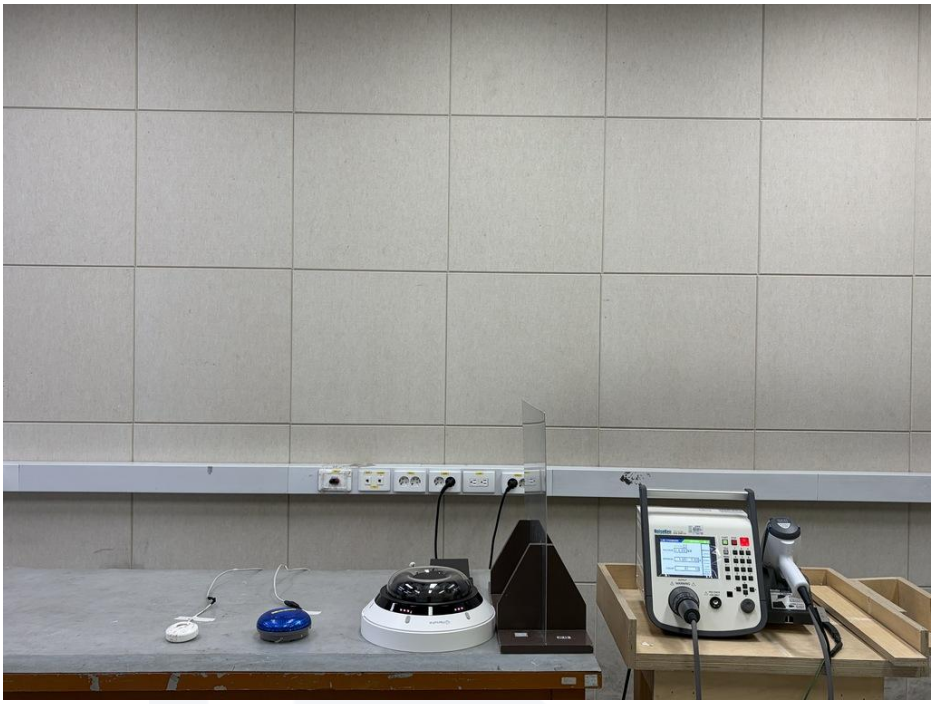


<Radiated Emissions(Above 1 ㎓) - Front>



<Radiated Emissions(Above 1 ㎓) - Rear>

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

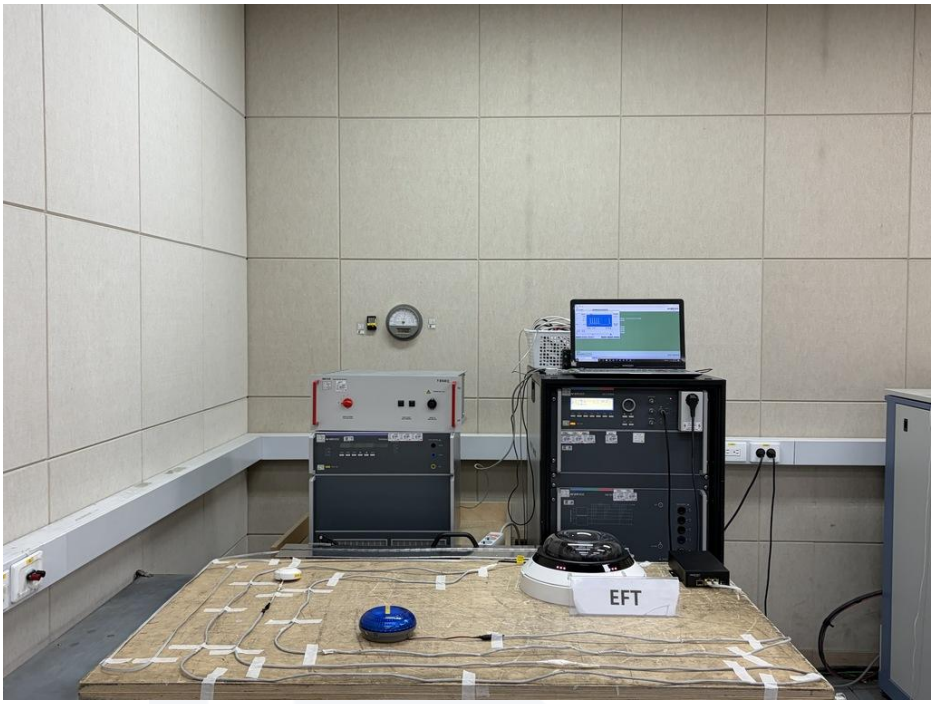


<Electrostatic Discharge>



<Continuous RF electromagnetic field disturbances>

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

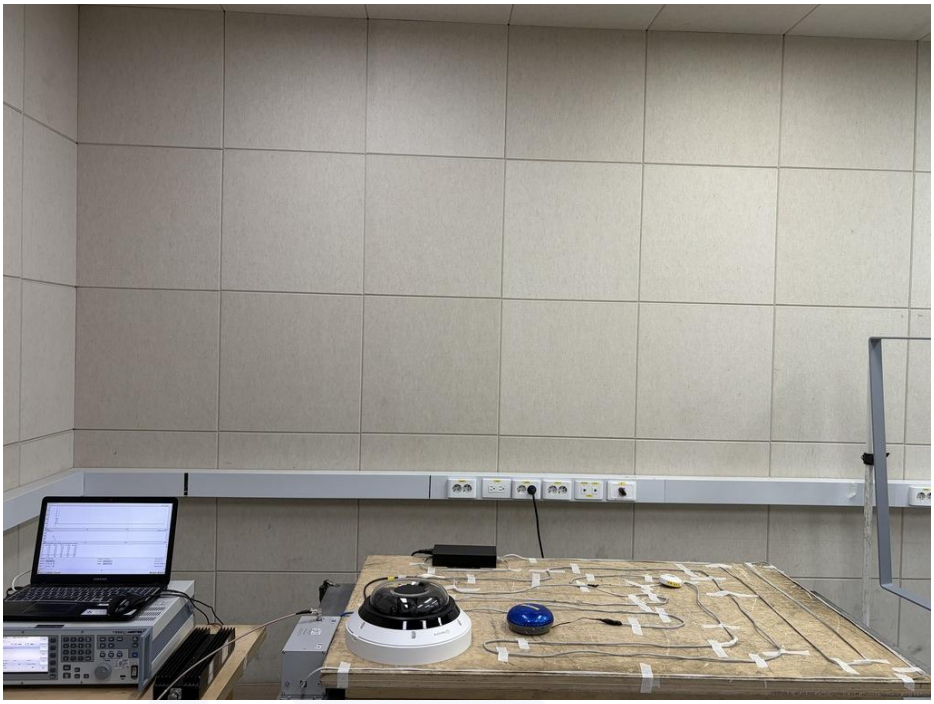


<Electrical Fast Transients/Bursts>



<Surge>

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



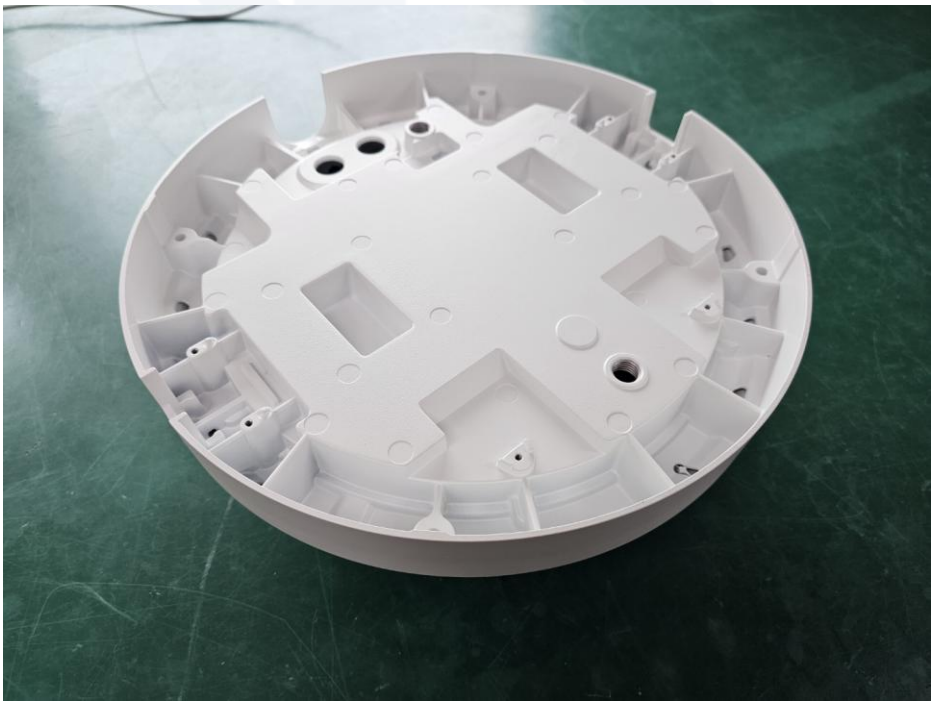
<Continuous Induced RF Disturbances>

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

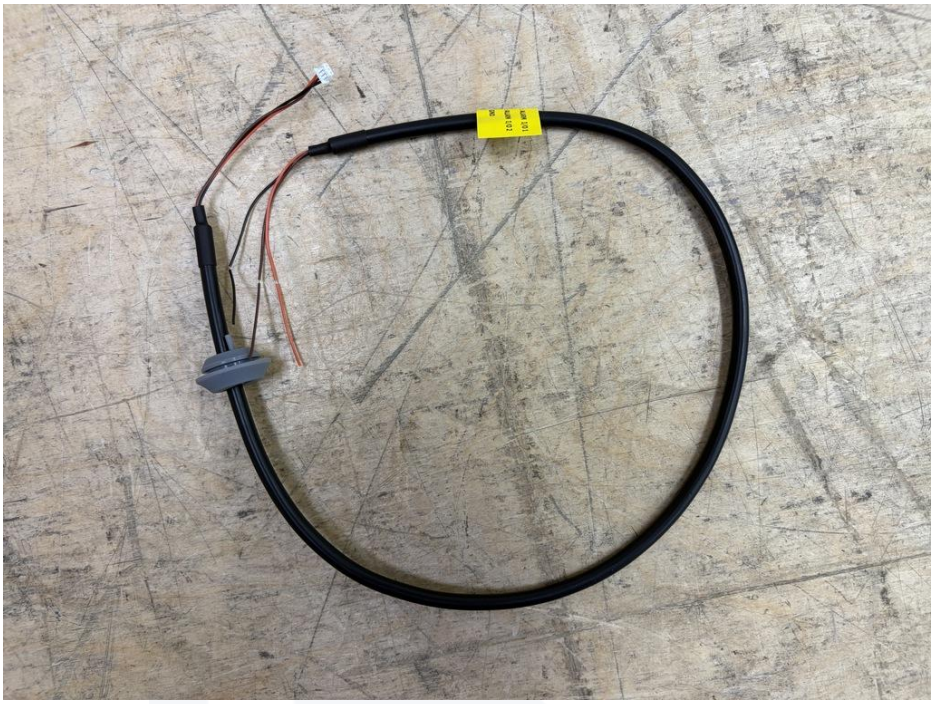


<EUT External Photographs - Top>



<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>

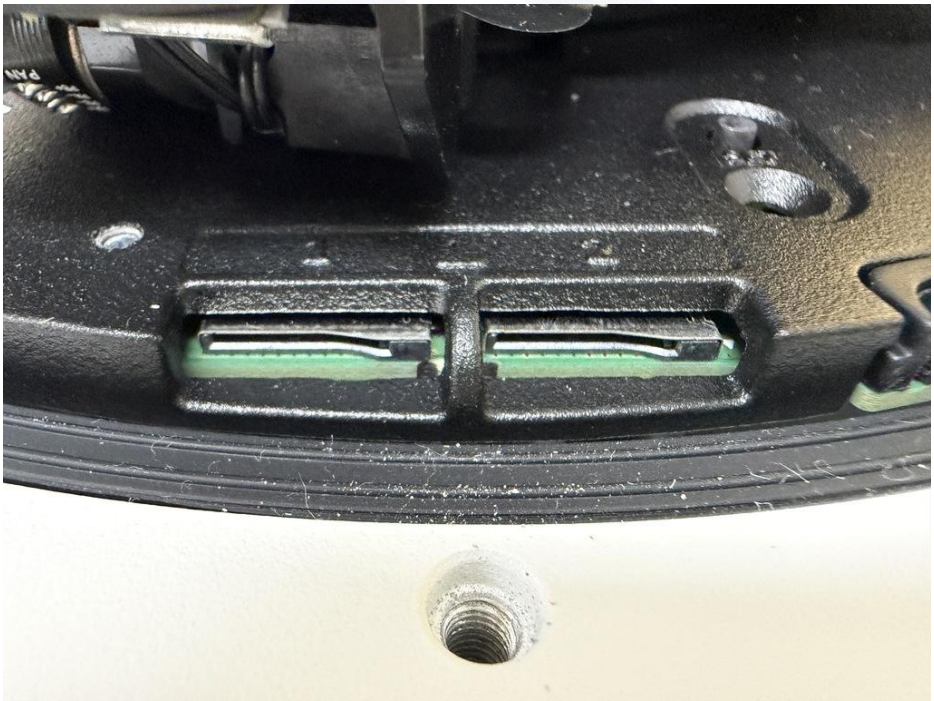


<Port-1>

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

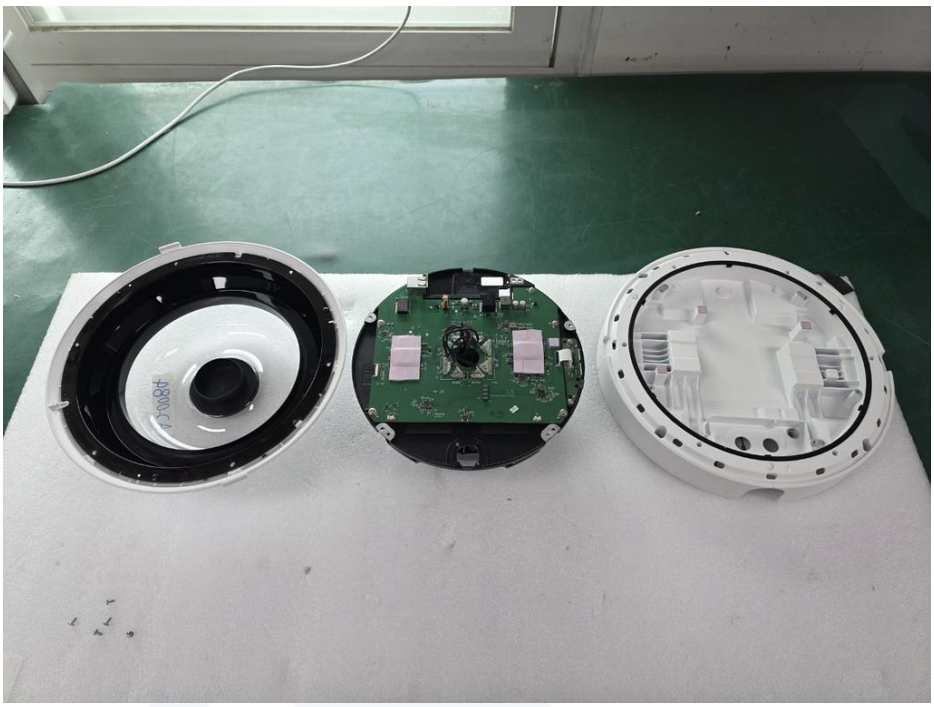


<Port-2>



<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 CAMERA
Model name	:	PNM-A20084RQZ

The End.

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