



TEST REPORT



Report No. : KES-EM253476

Page 1 / 36

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 : XNF-A9014RV
- Variant model : XNF-A8014RV
- 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 : 2025. 10. 09. ~ 2025. 10. 11.

4. Location of Test : Permanent Testing Lab

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

5. Test method used : EN 50498:2010

6. Test result : PASS

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

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

This test report is not related to KOLAS accreditation.

Affirmation	Tested by	Technical Manager by
	Name : SeongMin Jang	Name : DongHun Jang

2025. 11. 14.

KES Co., Ltd.

**REPORT REVISION HISTORY**

Date	Test Report No.	Revision History
2025. 11. 14.	KES-EM253476	Issued

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

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

■ No decision rule is specified by the 1 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	3
1.1	Test Location.....	3
1.2	Laboratory Accreditations and Listings	3
2	Test Summary	4
2.1	Class and Voltage.....	4
2.2	Summary of Test Results	4
2.3	Remarks when standards applied	5
2.4	Variant Model Differences	5
2.5	Device Modifications	5
3	General Product Description	6
4	EUT Setup and Operation Mode	10
4.1	EUT Configuration	10
4.2	System Configuration	10
4.3	External I/O Cabling	11
4.4	EUT Operating Mode(s).....	11
4.5	Test operating S/W	11
4.6	Configuration	12
5	General Performance Criteria	13
6	Test Item	14
6.1	Radiated disturbances(30 MHz ~ 1 000 MHz).....	14
6.2	Conducted transient disturbances.....	19
6.3	Conducted transient immunity	25
7	Test Setup Photos and EUT Photographs	27
7.1	Test Setup Photos	27
7.2	EUT Photographs	30
7.3	Label	35



1 Laboratory Information

1.1 Test Location

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

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

1.2 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
KOREA	RRA	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KR0100
International	KOLAS	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KT489
USA	FCC	3 m & 10 m Semi-Anechoic Chamber Conducted test site to perform FCC Part 15/18 measurements.	 KR0100
Canada	ISED	3 m & 10 m Semi-Anechoic Chamber and Conducted test site	 23298
JAPAN	VCCI	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site)	 C-20136, T-20137, R-20181, G-20176
Europe	TÜV SÜD	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 CARAT 001633 0008



2 Test Summary

2.1 Class and Voltage

Test Voltage
DC 12 V, DC 24 V

2.2 Summary of Test Results

Regulation
EMC Directive 2014/30/EU

Test Item	Test Standard	Test Result	Remark
Radiated disturbances(30 MHz ~ 1 000 MHz)	EN 50498:2010	PASS	-
Conducted transient disturbances		PASS	-
Conducted transient immunity		PASS	-
* N/A: Not Applicable			



2.3 Remarks when standards applied

N/A

2.4 Variant Model Differences

Simple derivations due to SW differences Add Model
(Basic models, circuits, hardware No changes. Same inside.)

2.5 Device Modifications

N/A





3 General Product Description

Division		Specificity
Internal maximum operating frequency		1.6 GHz
Power	Rated power supply	DC 12 V / 24 V(NETWORK SWITCH)
	Test Power	DC 12 V, DC 24 V
I/O Ports	User port	DC 12 V(Unused), MIC, SPEAKER, Alarm IN, Alarm OUT, PoE, Micro SD Card Slot
	Unused/Administrator Port	DC 12 V(Excluded from automotive)
function	Product features	NETWORK CAMERA
	Wireless function	N/A
Components		Main body 1 EA, Cable 2 EA
Others		Please refer to the specifications listed below.



	XNF-A9014RV
Video	
Imaging Device	1/1.6" CMOS
Resolution	Original view: 3536x3536, 3008x3008, 2560x2560, 1600x1600, 1280x1280, 800x800, 640x640, 480x480, 160x160 Double panorama: 3584x1792, 2560x1280, 1920x960, 1280x640, 1024x512, 640x320 Single panorama: 3584x896, 2560x640, 1920x480, 1280x320, 1024x256, 640x160 Quad view: 3584x2688, 2560x1920, 1792x1344, 1280x960, 1024x768, 800x600, 640x480 Q1/Q2/Q3/Q4: 1792x1344, 1280x960, 1024x768, 800x600, 640x480, 320x240
Max. Framerate	Original view: Max.30fps@3536x3536 Double panorama: Max.30fps@3584x1792 Single panorama: Max.30fps@3584x896 Quad view: Max.30fps@3584x2688 Q1/Q2/Q3/Q4(4:3): Max.30fps@1792x1344 MJPEG: Max.5fps
NETD	None
Pixel Size	None
Min. Illumination	Color: 0.02Lux (F1.8, 1/30sec) (TBD) BW: 0.001Lux (F1.8, 1/30sec) (TBD)
Video Out	None
Video Transmission Distance	None
Lens	
Focal Length (Zoom Ratio)	1.76mm fixed focal
Optical Zoom	None
Max. Aperture Ratio	F1.8
Angular Field of View	H: 185° / V: 185° / D: 185°
Min. Object Distance	0.5m(1.64ft)
Focus Control	None
Lens Type	None
Mount Type	None
Optional Lens	None
Pan / Tilt / Rotate	
Pan / Tilt / Rotate	Digital Rotation
Operational	
Camera Title	Displayed up to 85 characters
Direction Indicator	None
Day & Night	Auto(ICR)
Backlight Compensation	BLC, HLC, WDR, SSDR
Wide Dynamic Range	120dB
Digital Noise Reduction	SSNRV, WiseNRⅡ(Based on AI engine/AI-ISP)
Digital Image Stabilization	Support
Defog	Support
Motion Detection	8ea, 8point polygonal zones
Privacy Masking	32ea, 8point polygonal zones - 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(2~1/30,000sec) Prefer shutter control(Based on AI engine)
Digital PTZ	Support
Video Rotation	Flip, mirror



Analytics	Classified object type: Person/Vehicle Attributes: Person(Upper/lower clothes color), Vehicle(Color) Support BestShot Analytics events based on AI engine - Motion detection, Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit/Appear/Disappear), Sound classification(To be released) Analytics events - Defocus detection, Tampering, Shock detection, Audio detection
Business Intelligence	Based on AI engine: People/Vehicle/Crowd counting, Queue management, Heatmap
Serial Interface	None
Alarm I/O	2 configurable I/O ports *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 change, SD/NAS disruption, Case open tempering
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(TBD)
Audio Streaming	None
Audio In	Selectable(mic in/line in). Built-in 3 mic with noise reduction
Audio Out	Line out
Light Type	IR LED
Light Viewable Length	WiseIR up to 15m(49.21ft)
IR Viewable Length	None
IR Illuminator (Optional)	None
IR Radiation angle	None
IR LED	None
IR Wavelength	850nm
IR Operation	None
Water Removal	None
Auto Tracking	None
Coaxial Protocol	None
Color Palettes	None
Network	
Ethernet	Metal shielded RJ-45(10/100BASE-T)
Video Compression	H.265/H.264: Main/Baseline/High MJPEG
Audio Compression	G.711(PCM): 8kHz(64Kbps) G.726(ADPCM): 8kHz(16/24/32/40Kbps) AAC-LC: 16/32/44.1/48kHz(48Kbps) OPUS: 8/16/48kHz
Smart Codec	WiseStream(Based on AI engine)
Video Quality Adjustment	None
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR
Streaming	Unicast(20 users) / Multicast Multiple streaming (Up to 5 profiles)
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(TBD)
SIP support (VoIP, Peer-to-peer)	Support(TBD)



Security	None
Application Programming Interface	ONVIF Profile S/G/T/M SUNAPI(HTTP API) Hanwha Vision Open Platform - WiseAI application included - Cloud connector application included - Sound classification(Based on AI engine) application (To be released)
Security	
OS / Firmware Protect	Encrypted Firmware, Secure boot, Signed Firmware
User authentication	Digest Authentication, Prevent brute-force attack
Network authentication	802.1X Authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2), 802.1AE(MACsec)
Secure Communication	HTTPS, SRTP, WSS(Websocket secure)
Access Control	IP-based access control, MAC-based access control, Auto logout
Data Protect	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
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
Edge Storage(OnCloud)	Micro SD/SDHC/SDXC 1slot Max. 1TB * Hanwha Vision branded microSD cards have been certified and recommended for OnCloud edge recording.
Memory	4GB RAM, 8GB eMMC
Environmental & Electrical	
Operating Temperature / Humidity	-40°C~+55°C (-40°F ~ +131°F) 0~100%RH(Condensing) In PoE+ mode, IR illuminator will turn off if the temperature is higher than 50°C
Storage Temperature / Humidity	-50°C~+60°C(-58°F~+140°F) / 0~95% RH
Wind Load	None
EPA(Effective Projected Area)	0.009m ²
Input Voltage	WisePower(PoE(IEEE802.3af, class3)/PoE+(IEEE802.3at type2, Class4)), 12VDC
Power Consumption	PoE+: Max. 19.8W, typical 10.5W for 15m IR LED distance 12VDC: Max 20.0W, typical 10.9W PoE: Max. 11.2W, typical 7.7W for 10m IR LED distance 12VDC: Max 11.3W, typical 7.9W Support Wisepower - Power monitoring(Max./Current/Avg.) - Power logging
Mechanical	
RAL Code	RAL9003
Product Dimensions / Weight	Ø160x75mm(6.23x2.95") / 1020g
Compatible Conduit hole / Gang	single, double, 4" octagon, 4" square



4 EUT Setup and Operation Mode

4.1 EUT Configuration

Product Name	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	XNF-A9014RV	-	HANWHA VISION VIETNAM COMPANY LIMITED	EUT
NETWORK SWITCH	SPN-10080P	-	Hanwha Vision Co., Ltd.	-
LED Alarm	-	-	-	-
Button Alarm	-	-	-	-
Headset	K550	-	Britz®	-
Micro SD Card	-	-	Sandisk	8 GB
Laptop	LG15N54	506NZGK000615	LG	-
Laptop Adaptor	PA-1650-43(65W)	OF58U63849302Y609	LG	-

4.2 System Configuration

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



4.3 External I/O Cabling

Mode 1, Mode 2

Start		End		Cable Spec.	
Product Name	I/O Port	Product Name	Product Name	I/O Port	Product Name
NETWORK CAMERA (EUT)	PoE	NETWORK SWITCH	RJ-45	3.2	U
	Micro SD Card Slot	Micro SD Card	Micro SD Card Slot	-	-
	Alarm OUT	LED Alarm	Alarm IN	3.1	U
	Alarm IN	Button Alarm	Alarm OUT	3.3	U
	MIC	Headset	3.5 mm	2.0	U
	SPEAKER				
Laptop	DC Jack	Laptop Adaptor	DC Jack	1.5	U
	RJ-45	NETWORK SWITCH	RJ-45	3.1	U

* Unshielded=U, Shielded=S

4.4 EUT Operating Mode(s)

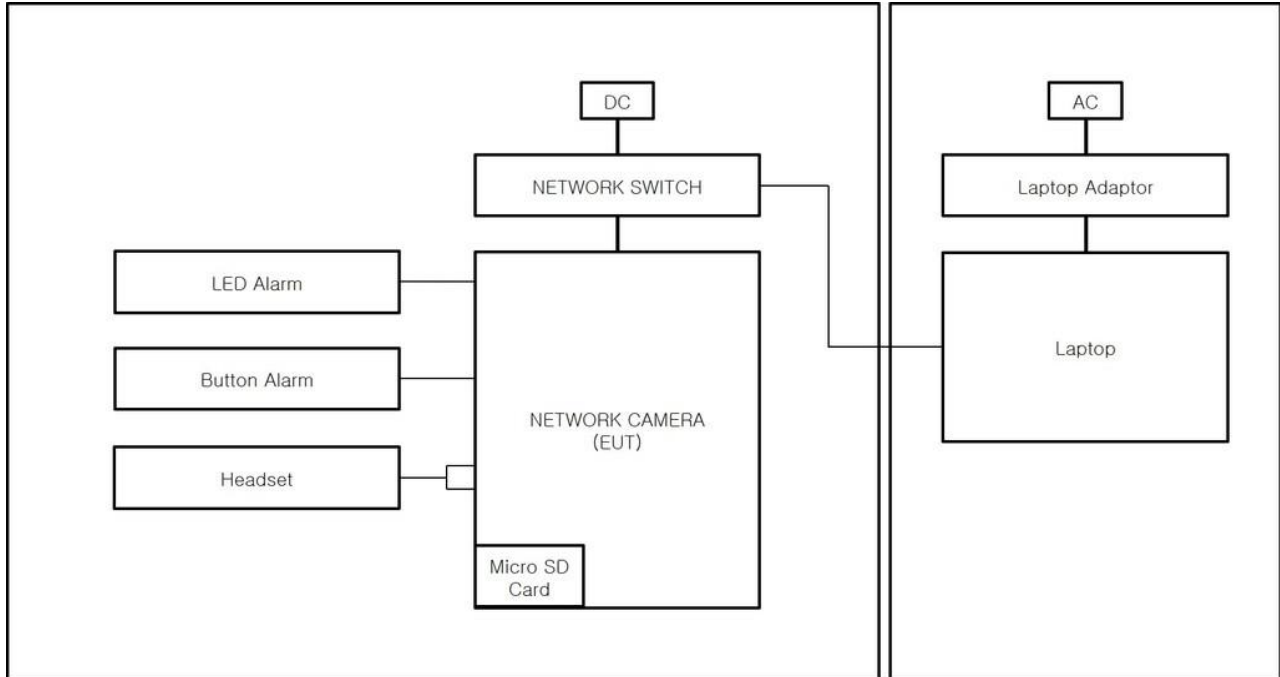
Category	Mode	Operating
Mode 1	DC 12 V	- Check the network behavior of the EUT with the laptop's ping test - View images of the camera through the Web Viewer - Play the 1 kHz tone through the Web Viewer to see the sound output with the headset - When the alarm is pressed, make sure the button alarm is working - After testing, check the recording with Micro SD Card
Mode 2	DC 24 V	

4.5 Test operating S/W

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



4.6 Configuration



Mode 1, Mode 2



5 General Performance Criteria

Test Items	Test Mode	Test Severity Level	FPSC	Result Pass/Fail
Radiated Disturbance	-	Average	Does not exceed the limit value	Pass
Conducted Transient Disturbance	-	Positive: +75 V / +150 V Negative: -100 V / -450 V	Does not exceed the limit value	Pass
Conducted Transient Immunity	-	Level III	Class C	Pass

Functional performance status classification

Class A: all functions of a device/system perform as designed during and after exposure to disturbance.

Class B: all functions of a device/system perform as designed during exposure. However, one or more of them can go beyond specified tolerance. All functions return automatically to within normal limits after exposure is removed. Memory functions shall remain class A.

Class C: one or more functions of a device/system do not perform as designed during exposure but return automatically to normal operation after exposure is removed.

Class D: one or more functions of a device/system do not perform as designed during exposure and do not return to normal operation until exposure is removed and the device/system is reset by simple "operator/use" action.

Class E: one or more functions of a device/system do not perform as designed during and after exposure and cannot be returned to proper operation without repairing or replacing the device/system.

◆ 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



6 Test Item

6.1 Radiated disturbances(30 MHz ~ 1 000 MHz)

6.1.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SEMI ANECHOIC CHAMBER #1	-	KES	-	-	-	■
EP5/RE Software	EP5/RE	TOYO	6.0.0	-	-	■
EMI TEST RECEIVER	ESR3	Rohde & Schwarz	101781	2025-01-09	2026-01-09	■
BICONICAL ANTENNA	VHBB 9124	Schwarzbeck	01051	2024-03-25	2026-03-25	■
LOG-PERIODIC ANTENNA	VULP 9118 A	Schwarzbeck	702	2024-03-25	2026-03-25	■
AMPLIFIER	8447F	HP	2634A02036	2025-02-13	2026-02-13	■
ATTENUATOR	6806.17.A	HUBER+SUHNER	-	2025-02-13	2026-02-13	■
LISN	NNBM8124	SCHWARZBECK	01816	2025-07-28	2026-07-28	■
LISN	NNBM8124	SCHWARZBECK	01820	2025-07-28	2026-07-28	■

6.1.2 Test Location : SEMI ANECHOIC CHAMBER #1 Measurement Distance : ■ 3 m, □ 10 m

6.1.3 Test Conditions :

Temperature	Relative Humidity
(24.3 ~ 24.4) °C	(58.0 ~ 58.1) % R.H.

6.1.4 Instrument Settings

IF Band Width: 120 kHz

Scan time : 100 ms/MHz

6.1.5 Test Limits

Frequency (MHz)	Level (dBuV/m)	
	Broadband	Narrowband
30 to 75	62 - 25.13 log (F/30)	52 - 25.13 log (F/30)
75 to 400	52 + 15.13 log (F/75)	42 + 15.13 log (F/75)
400 to 1 000	63	53

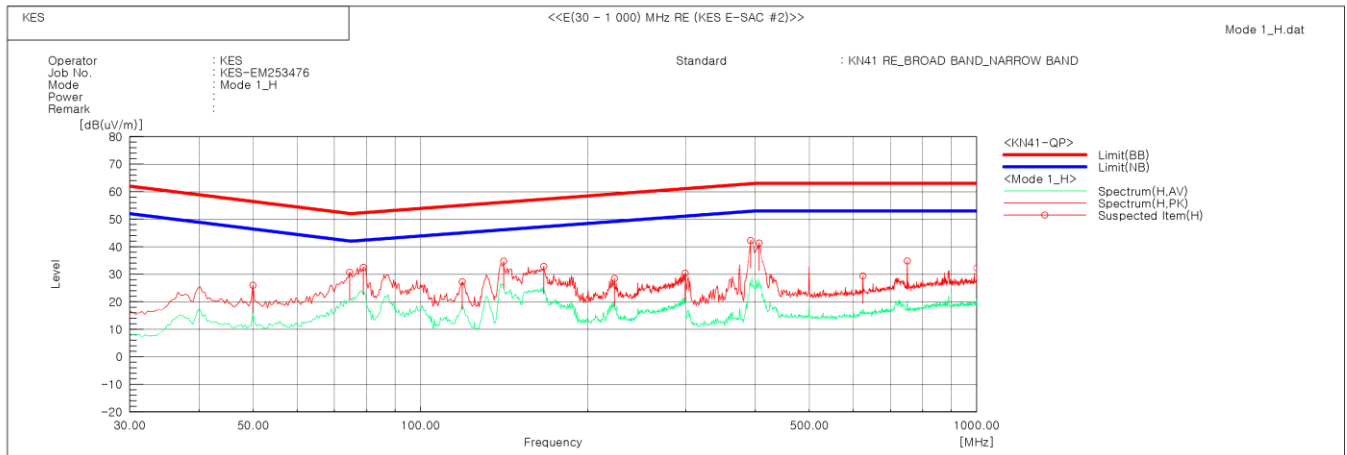


6.1.6 Test Result

○ Test Date : 2025-10-09

● Test Mode : Mode 1

H



Spectrum Selection

No.	Frequency [MHz]	(P)	Reading [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Margin AV [dB]	Height [cm]	Remark
1	49.957	H	36.6	-10.7	25.9	46.4	20.5	100.0	
2	74.609	H	41.9	-11.2	30.7	42.1	11.4	100.0	
3	78.913	H	44.0	-11.5	32.5	42.3	9.8	100.0	
4	118.826	H	36.2	-9.0	27.2	45.0	17.8	100.0	
5	141.130	H	43.5	-8.8	34.7	46.2	11.5	100.0	
6	166.565	H	40.9	-8.1	32.8	47.2	14.4	100.0	
7	223.304	H	34.3	-5.9	28.4	49.2	20.8	100.0	
8	299.217	H	28.1	2.2	30.3	51.1	20.8	100.0	
9	392.319	H	47.2	-4.9	42.3	52.9	10.6	100.0	
10	406.522	H	45.9	-4.6	41.3	53.0	11.7	100.0	
11	624.638	H	30.9	-1.5	29.4	53.0	23.6	100.0	
12	750.435	H	34.2	0.6	34.8	53.0	18.2	100.0	
13	1000.000	H	30.0	2.3	32.3	53.0	20.7	100.0	

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



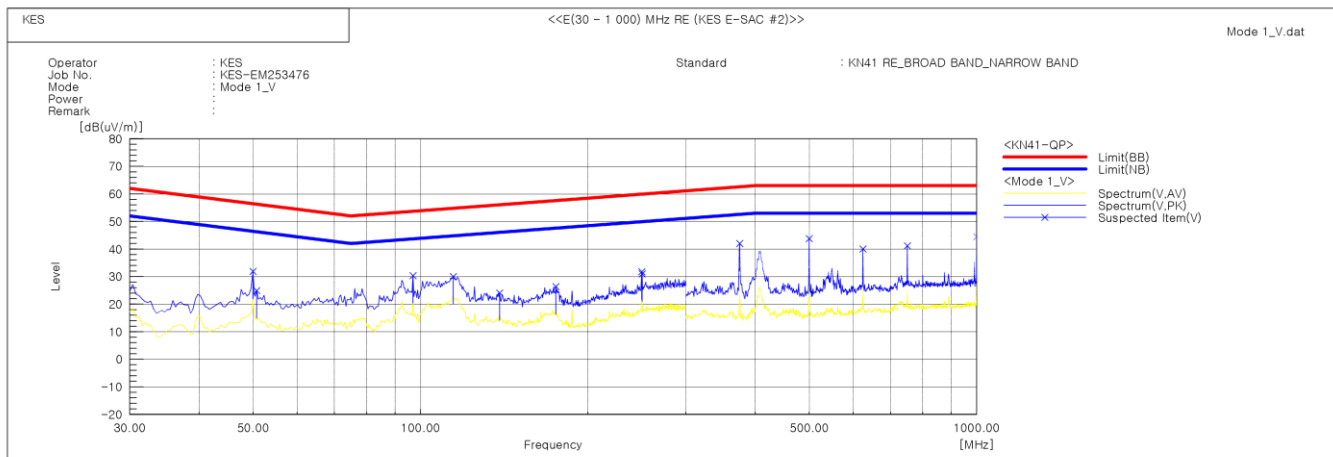
Report No. : KES-EM253476

Page 16 / 36

○ Test Date : 2025-10-09

● Test Mode : Mode 1

V



Spectrum Selection

No.	Frequency [MHz]	(P)	Reading [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin AV [dB]	Height [cm]	Remark
1	49.957	V	41.9	-10.0	31.9	46.4	14.5	100.0	
2	50.739	V	34.9	-10.0	24.9	46.3	21.4	100.0	
3	96.913	V	41.3	-11.0	30.3	43.7	13.4	100.0	
4	114.522	V	39.8	-9.8	30.0	44.8	14.8	100.0	
5	138.783	V	33.0	-8.9	24.1	46.0	21.9	100.0	
6	175.174	V	33.6	-7.2	26.4	47.6	21.2	100.0	
7	249.913	V	35.0	-3.2	31.8	49.9	18.1	100.0	
8	250.304	V	34.2	-3.2	31.0	49.9	18.9	100.0	
9	375.073	V	47.0	-5.0	42.0	52.6	10.6	100.0	
10	499.855	V	46.9	-3.1	43.8	53.0	9.2	100.0	
11	624.638	V	41.0	-1.0	40.0	53.0	13.0	100.0	
12	750.435	V	40.4	0.8	41.2	53.0	11.8	100.0	
13	1000.000	V	42.0	2.5	44.5	53.0	8.5	100.0	

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



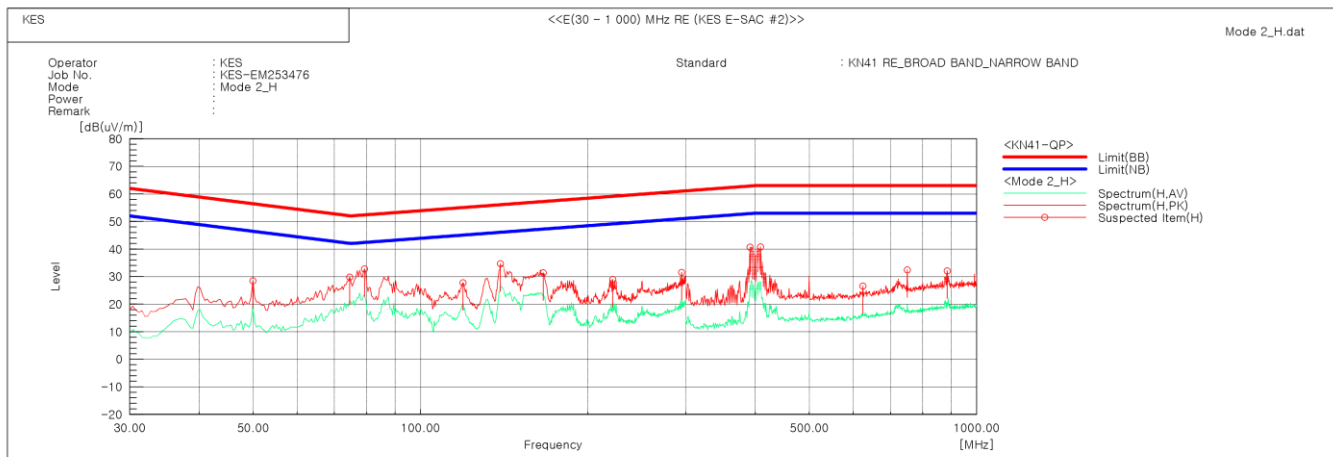
Report No. : KES-EM253476

Page 17 / 36

○ Test Date : 2025-10-09

● Test Mode : Mode 2

H



Spectrum Selection

No.	Frequency [MHz]	(P)	Reading [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Margin AV [dB]	Height [cm]	Remark
1	49.957	H	39.1	-10.7	28.4	46.4	18.0	100.0	
2	74.609	H	41.0	-11.2	29.8	42.1	12.3	100.0	
3	79.304	H	44.2	-11.5	32.7	42.4	9.7	100.0	
4	119.217	H	36.7	-9.0	27.7	45.0	17.3	100.0	
5	139.174	H	43.5	-8.8	34.7	46.1	11.4	100.0	
6	166.174	H	39.6	-8.2	31.4	47.2	15.8	100.0	
7	221.739	H	34.9	-6.0	28.9	49.1	20.2	100.0	
8	294.913	H	29.8	1.7	31.5	51.0	19.5	100.0	
9	391.304	H	45.6	-4.9	40.7	52.9	12.2	100.0	
10	408.551	H	45.3	-4.5	40.8	53.0	12.2	100.0	
11	624.638	H	28.1	-1.5	26.6	53.0	26.4	100.0	
12	750.435	H	31.8	0.6	32.4	53.0	20.6	100.0	
13	885.362	H	30.1	2.0	32.1	53.0	20.9	100.0	

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



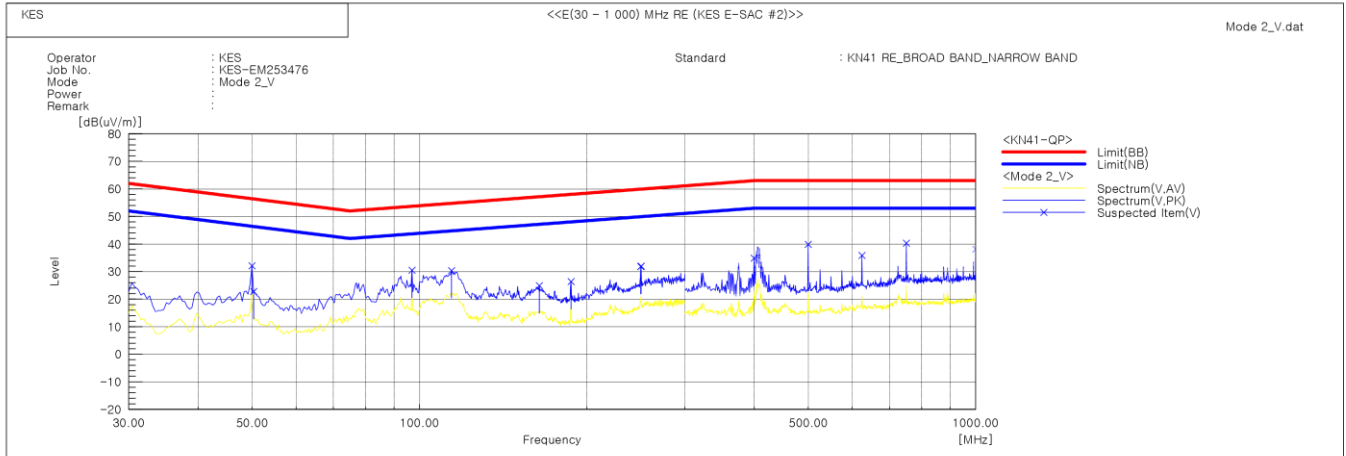
Report No. : KES-EM253476

Page 18 / 36

○ Test Date : 2025-10-09

● Test Mode : Mode 2

V



Spectrum Selection

No.	Frequency [MHz]	(P)	Reading [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin AV [dB]	Height [cm]	Remark
1	49.957	V	42.1	-10.0	32.1	46.4	14.3	100.0	
2	50.348	V	32.8	-10.0	22.8	46.3	23.5	100.0	
3	96.913	V	41.5	-11.0	30.5	43.7	13.2	100.0	
4	114.130	V	40.2	-9.8	30.4	44.8	14.4	100.0	
5	164.217	V	32.5	-7.6	24.9	47.1	22.2	100.0	
6	187.304	V	33.2	-6.8	26.4	48.0	21.6	100.0	
7	249.913	V	35.1	-3.2	31.9	49.9	18.0	100.0	
8	250.304	V	35.2	-3.2	32.0	49.9	17.9	100.0	
9	399.420	V	39.5	-4.6	34.9	53.0	18.1	100.0	
10	499.855	V	43.0	-3.1	39.9	53.0	13.1	100.0	
11	624.638	V	36.9	-1.0	35.9	53.0	17.1	100.0	
12	750.435	V	39.5	0.8	40.3	53.0	12.7	100.0	
13	1000.000	V	35.6	2.5	38.1	53.0	14.9	100.0	

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

6.1.7 Remark

The measurement value was satisfied compared to the disturbance limit.

- Since the peak measurement was below the narrowband limit, narrowband and wideband re-measurements were not performed.



6.2 Conducted transient disturbances

6.2.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #4	-	AONESHIELD	-	-	-	■
VOLTAGE DROP SIMULATOR	VDS 200N50	EM TEST	P1605171484	2024-11-06	2025-11-06	■
DIGITAL OSCILLOSCOPE	TDS7254B	Tektronix	B020418	2024-11-07	2025-11-07	■
HIGH VOLTAGE PROBE	P5100	Tektronix	-	2025-02-14	2026-02-14	■
SINGLE LINE ARTIFICIAL NETWORK	AN 2050N	EM TEST	P1614178324	2025-03-05	2026-03-05	■
ELECTRONIC SWITCH	BS 200N100	EM TEST	P1751211788	2025-03-07	2026-03-07	■
RS-BOX	RS-BOX	EM TEST	P1739204186	2025-03-07	2026-03-07	■

6.2.2 Test Location : SHIELD ROOM #4

6.2.3 Test Conditions :

Temperature	Relative Humidity
(24.0 ~ 24.1) °C	(56.7 ~ 56.8) % R.H.

6.2.4 Test Limits

Polarity	Maximum allowable pulse amplitude	
	12 V Systems	24 V Systems
+ (Positive)	+75 V	+150 V
- (Negative)	-100 V	-450 V



6.2.5 Test Result

- Test Date : 2025-10-10
- Test Mode : Mode 1, Mode 2

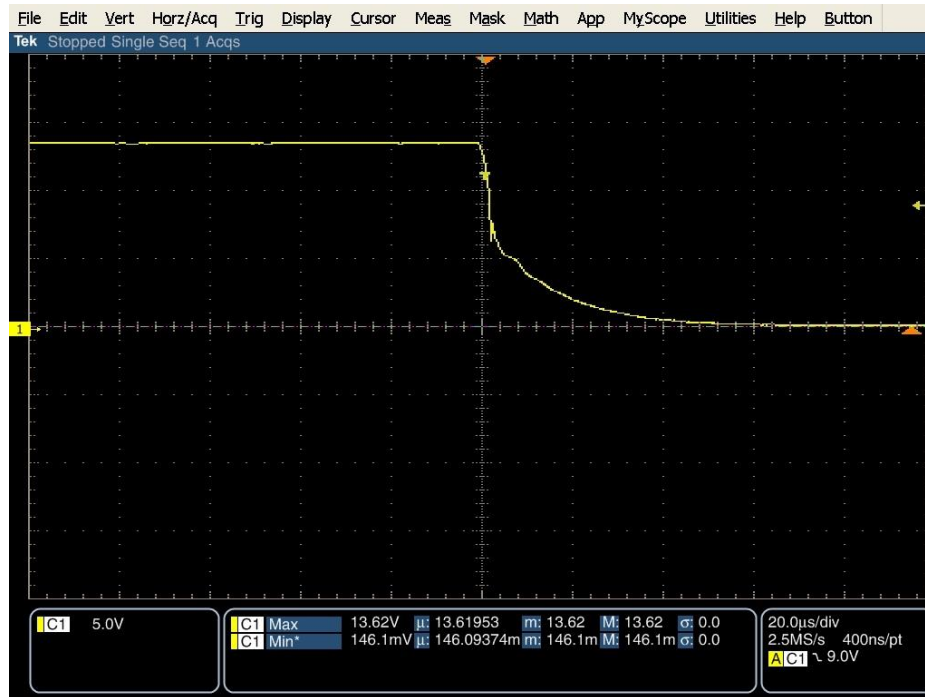
Test Mode	Result							
	Slow Pulse				Fast Pulse			
	12 V		24 V		12 V		24 V	
Peak amplitude(V) + (Positive)	7.29		0.5		4.74		1.82	
Peak amplitude(V) - (Negative)	-13.35		-30.58		-13.38		-31.10	
Sampling rate (MS/s)	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
	125.0	2.5	12.5	2.5	25.0	50.0	125.0	125.0
Trigger level (V)	OFF to ON	ON to OFF	OFF to ON	ON to OFF	OFF to ON	ON to OFF	OFF to ON	ON to OFF
	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0

6.2.6 Remark

The measurement value was satisfied compared to the disturbance limit.



Measurement graph



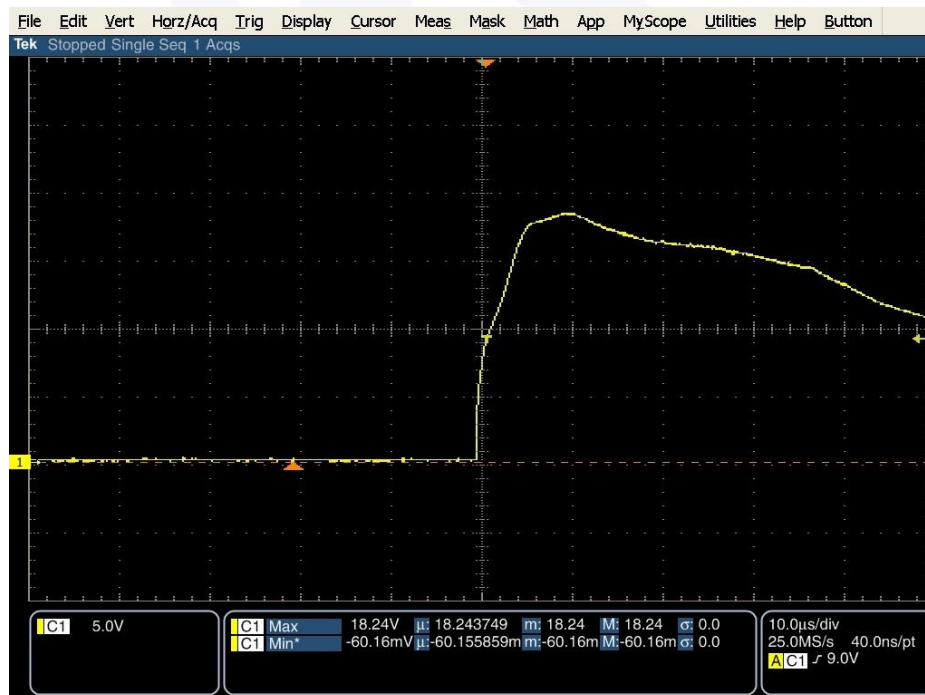
<Slow Pulse ON to OFF>_Mode 1



<Slow Pulse OFF to ON>_Mode 1



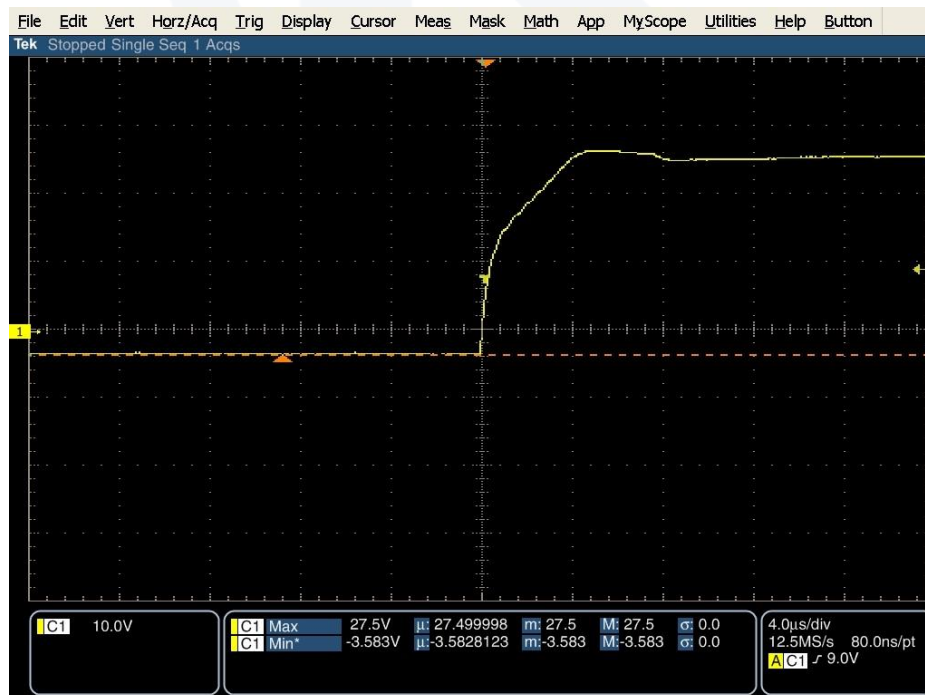
<Fast Pulse ON to OFF>_Mode 1



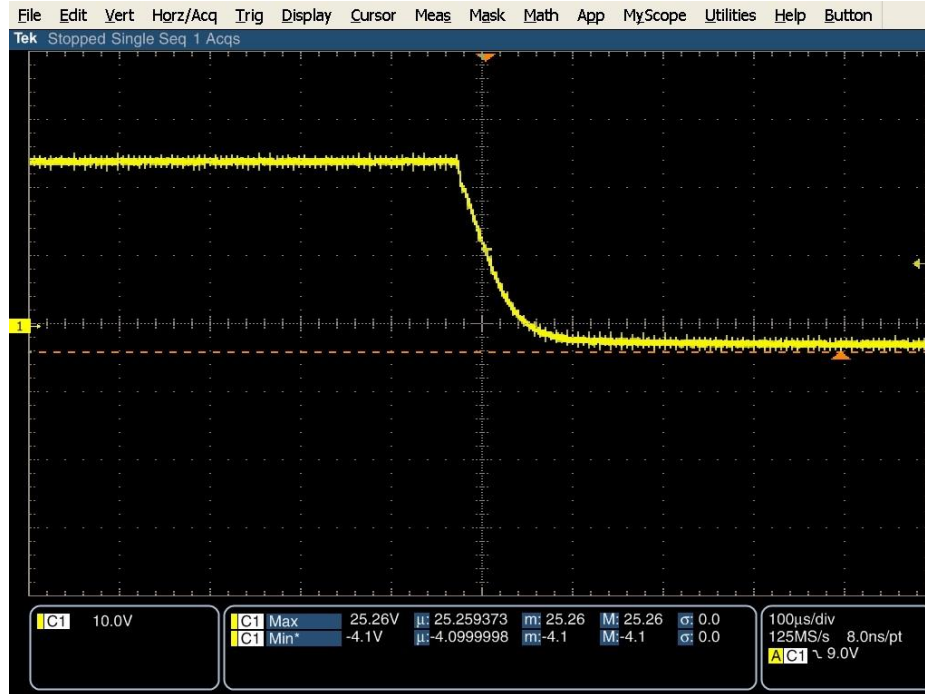
<Fast Pulse OFF to ON>_Mode 1



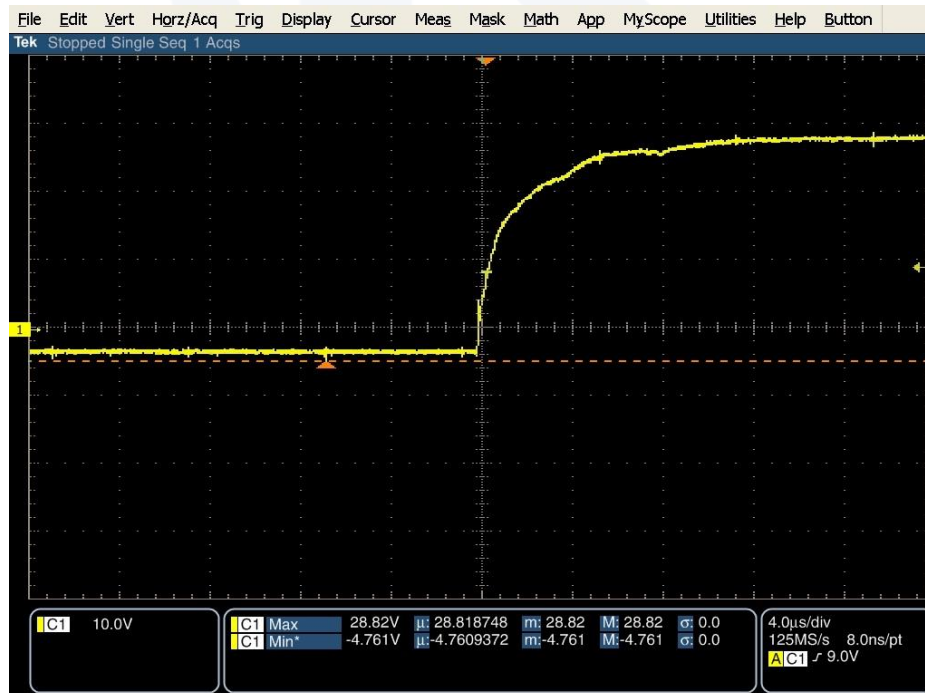
<Slow Pulse ON to OFF_Mode 2>



<Slow Pulse OFF to ON_Mode 2>



<Fast Pulse ON to OFF_Mode 2>



<Fast Pulse OFF to ON_Mode 2>



6.3 Conducted transient immunity

6.3.1 Test Equipment

Equipment Name	Model Number	Manufacturer	Serial No.	Cal. Date	Next Cal. Date	Used
SHIELD ROOM #4	-	AONESHIELD	-	-	-	■
iso.control Software	iso.control	EM TEST	5.5.3	-	-	■
ULTRA COMPACT SIMULATOR	UCS 200N50	EM TEST	P1610176206	2024-11-06	2025-11-06	■
VOLTAGE DROP SIMULATOR	VDS 200N50	EM TEST	P1605171484	2024-11-06	2025-11-06	■

6.3.2 Test Location : SHIELD ROOM #4

6.3.3 Test Conditions :

Temperature	Relative Humidity
(24.5 ~ 24.7) °C	(57.0 ~ 57.1) % R.H.

6.3.4 Test Specifications

Requirements				
Test pulse	Test severity level III US (V)		Functional status for systems	Minimum number of pulses or test time
	12 V system	24 V system		
1	-75	-450	D	5 000 pulses
2a	+37	+37	D	5 000 pulses
2b	+10	+20	D	10 pulses
3a	-112	-150	D	1 h
3b	+75	+150	D	1 h
4	-6	-12	D	1 pulse



6.3.5 Test Result

- Test Date : 2025-10-11
- Test Mode : Mode 1, Mode 2

Test pulse	Test Voltage [V]		Performance Criteria	pulses or test time	Performance Result	
	12 V system	24 V system			12 V system	24 V system
1	- 75 V	-450 V	D	5 000 pulses	C	C
2a	+ 37 V	+ 37 V	D	5 000 pulses	A	A
2b	+ 10 V	+ 20 V	D	10 pulses	C	C
3a	- 112 V	- 150 V	D	1 h	A	A
3b	+ 75 V	+ 150 V	D	1 h	A	A
4	- 6 V	- 12 V	D	1 pulses	C	C

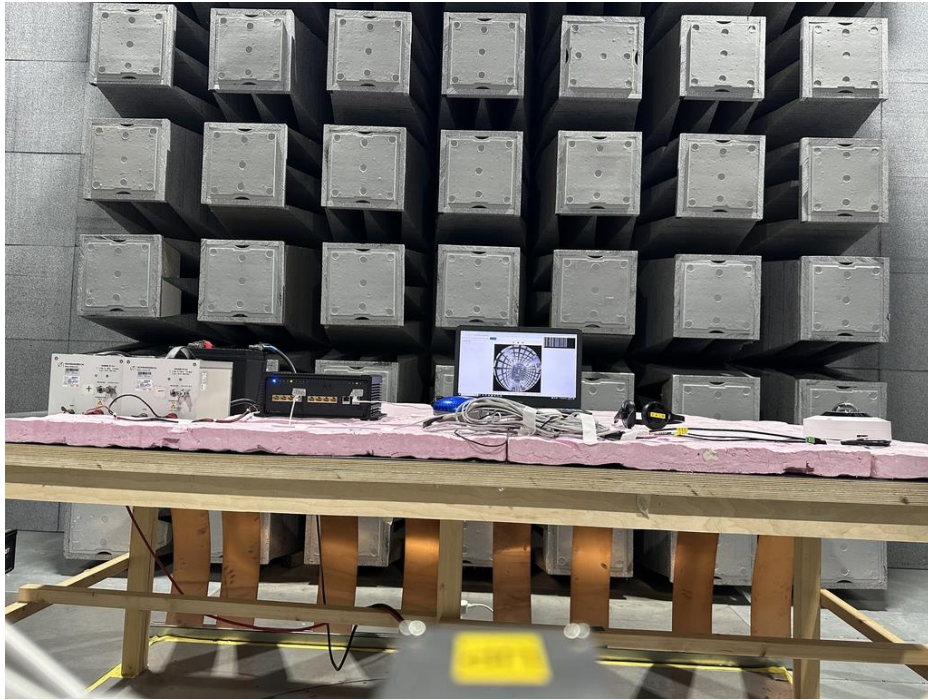
6.3.6 Remark

C: It turned on and off repeatedly during exposure, but automatically returned to normal operation after exposure.

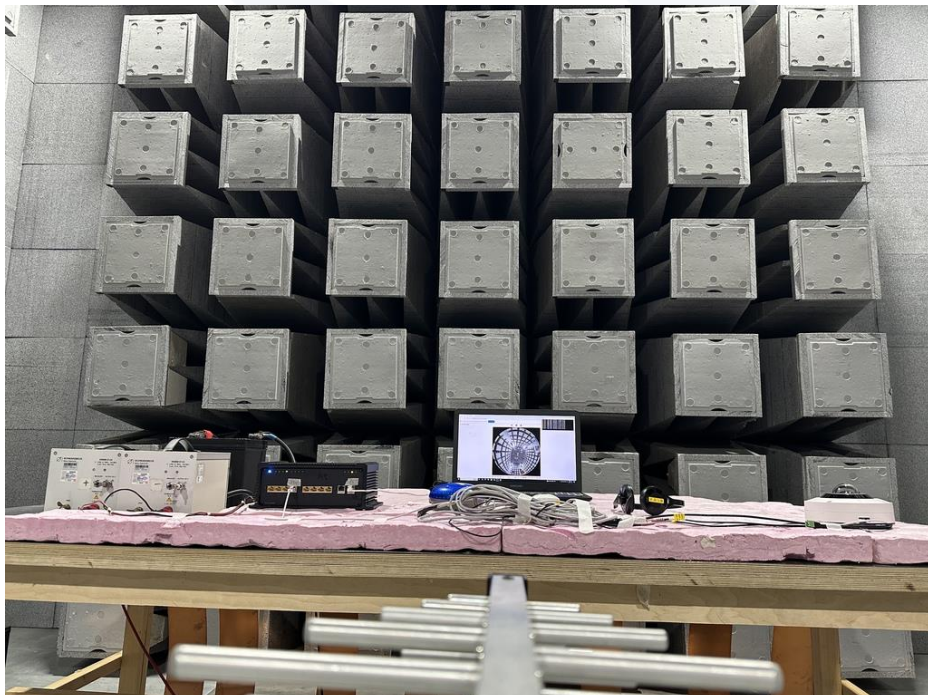


7 Test Setup Photos and EUT Photographs

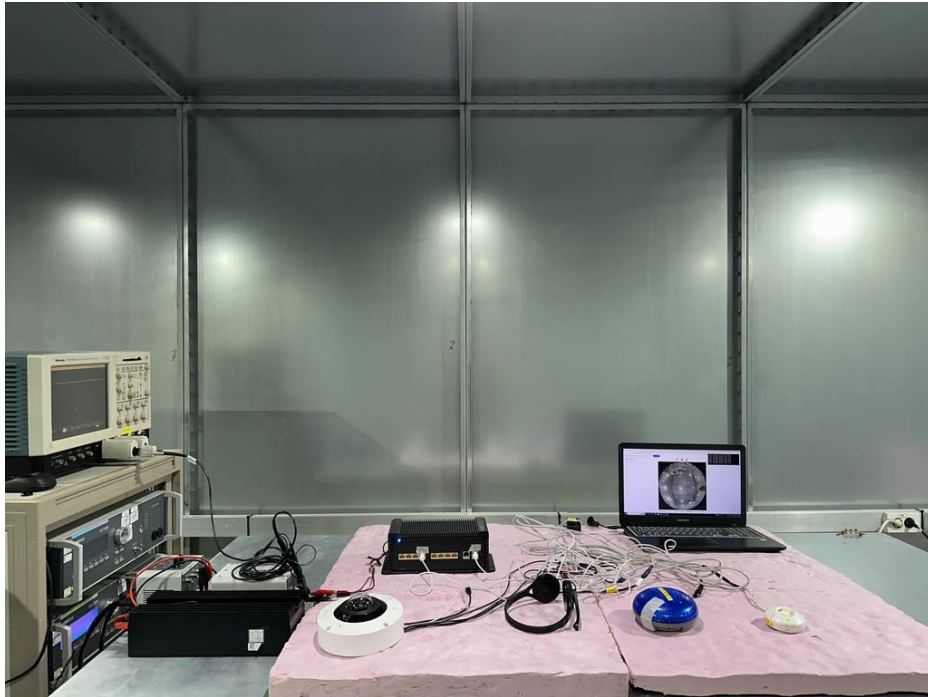
7.1 Test Setup Photos



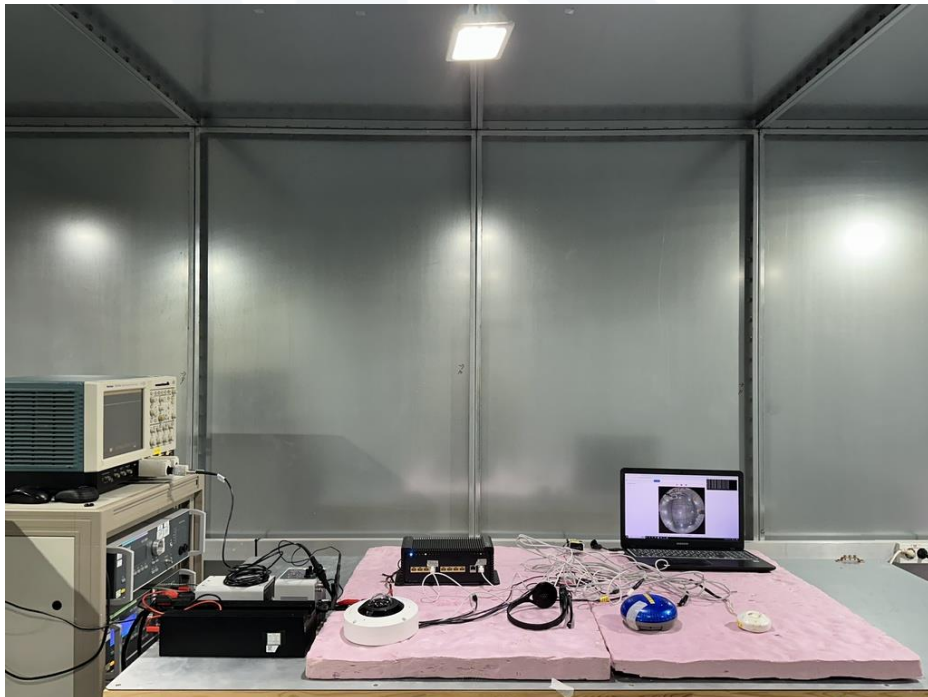
<Radiated disturbances - 30 MHz ~ 300 MHz>



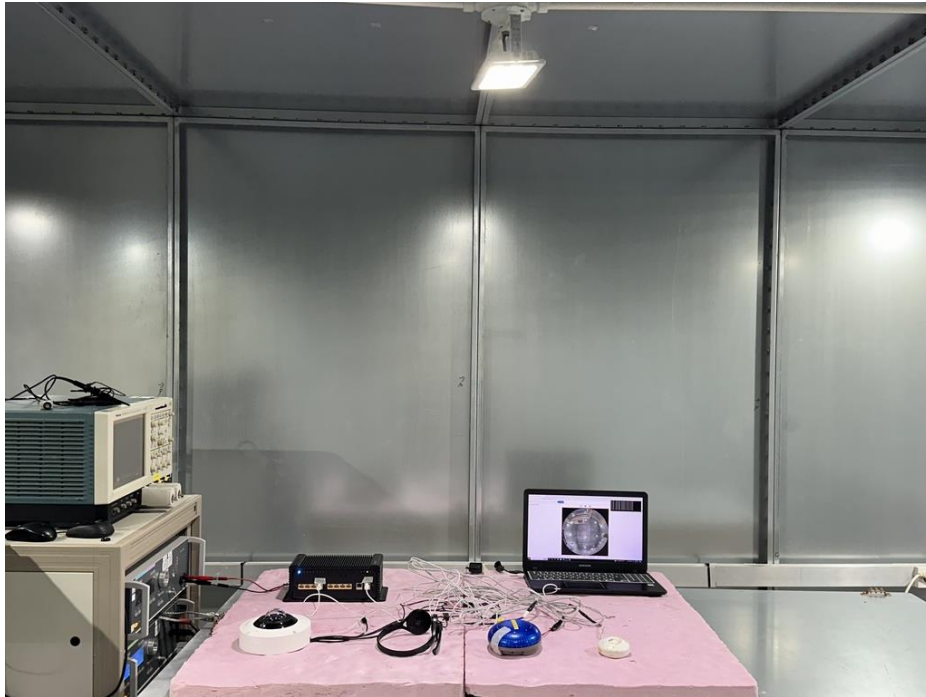
<Radiated disturbances - 300 MHz ~ 1 000 MHz>



<Conducted transient disturbances - Slow Pulse>



<Conducted transient disturbances - Fast Pulse>



<Conducted transient immunity>



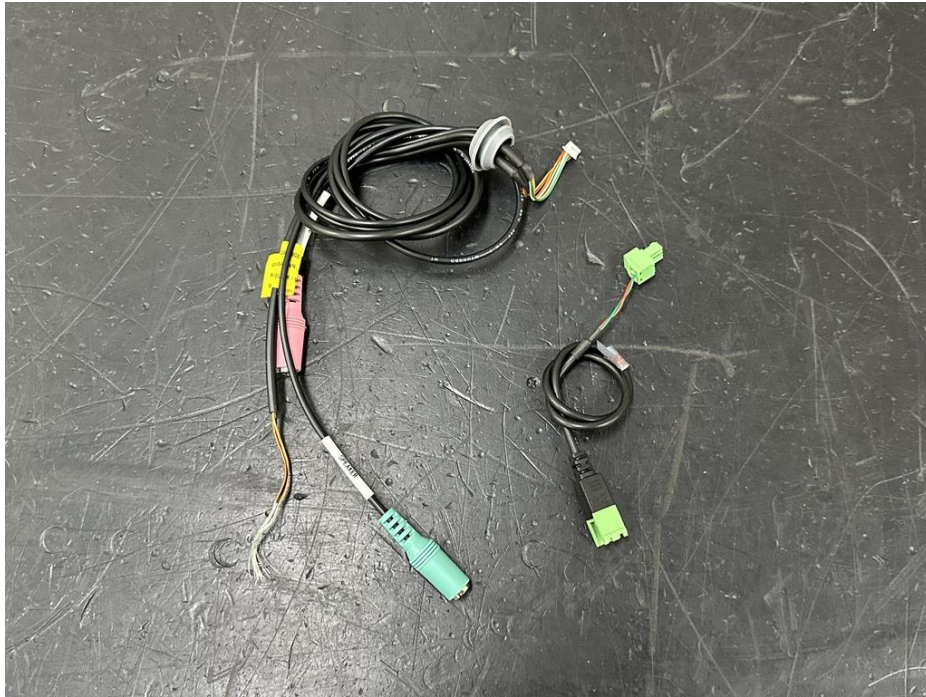
7.2 EUT Photographs



<EUT External Photographs - Top>



<EUT External Photographs - Bottom>



<Components>



<Port-1>



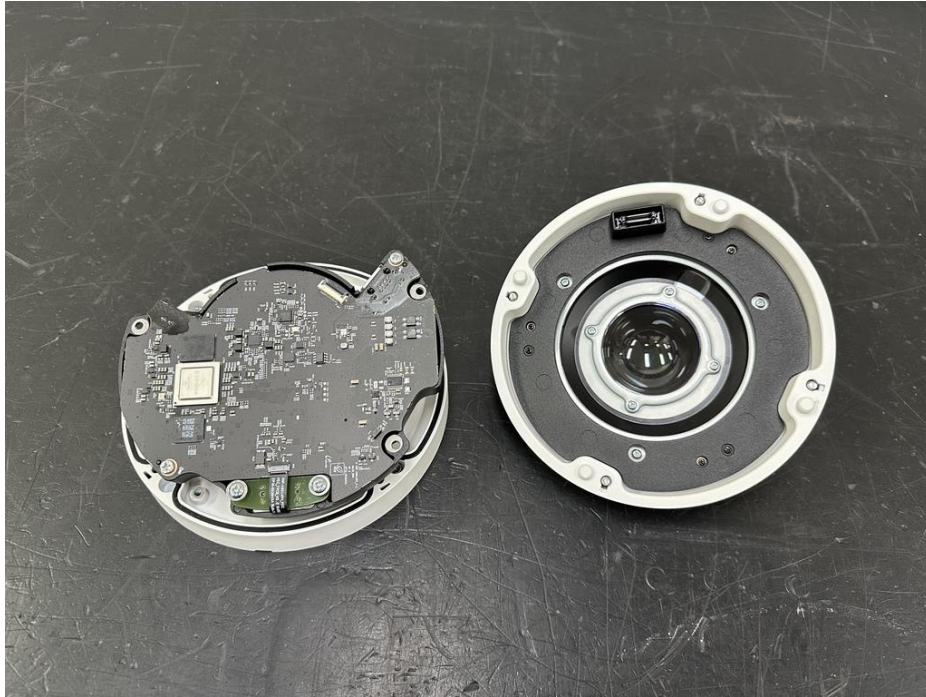
<Port-2>



<Port-3>



<Port-4>



<EUT Internal Photographs>



7.3 Label



Name : Hanwha Vision Co., Ltd.
Product item : NETWORK CAMERA
Model name : XNF-A9014RV

The End.

