EMC TEST REPORT For RCM

Test Report No.	:	KES-EM-22T0795
Date of Issue	:	Sep. 22, 2022
Product name	:	NETWORK CAMERA
Model/Type No.	:	XNB-6002
Variant Model	:	-
Applicant	:	Hanwha Techwin Co., Ltd.
Applicant Address	:	6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea
Manufacturer	:	1. HANWHA TECHWIN SECURITY VIETNAM CO.,LTD. 2. D-TECH CO.,LTD.
Manufacturer Address	:	1. Lot O-2, Que Vo Industrial Zone extended area, Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam 2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do, Korea (Suwon Industrial Complex)
Date of Receipt	:	Sep. 06, 2022
Test date	:	Sep. 09, 2022 ~ Sep. 10, 2022
Test Results	:	☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Min Seong, Kim
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

This test report is not related to KS Q ISO/IEC 17025 and KOLAS.

REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Sep. 22, 2022	KES-EM-22T0795	Issued

TABLE OF CONTENTS

1.0 General Product Description

Main Specifications of EUT are:

Video	
Imaging Device	None
Resolution	1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
Max. Framerate	H.265/H.264: 2MP Max. 60fps/50fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)
NETD	None
Pixel Size	None
Min. Illumination	None
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation
Video Transmission Distance	None
Lens	
Focal Length (Zoom Ratio)	None
Max. Aperture Ratio	None
Angular Field of View	None
Min. Object Distance	None
Focus Control	None
Lens Type	None
Mount Type	None
Optional Lens	SLA-T1080FA, SLA-T2480A, SLA-T2480VA, SLA-T4680A, SLA-T4680VA
Pan / Tilt / Rotate	
Pan / Tilt / Rotate Range	None
Pan Range	None
Pan Speed	None
Tilt Range	None
Tilt Speed	None
Rotate Range	None
Sequence	None
Preset Accuracy	None

Operational	
Camera Title	Displayed up to 85 characters
Direction Indicator	None
Day & Night	Auto(Electrical)
Backlight Compensation	BLC, HLC, WDR, SSDR
Wide Dynamic Range	extremeWDR (120dB)
Digital Noise Reduction	SSNRV, WiseNR
Digital Image Stabilization	Support
Defog	Support
Motion Detection	8ea, 8point Polygonal zones
Privacy Masking	32ea, 4point Quadrangle zones - Color : Gray, Green, Red, Blue, Black, White - Mosaic
Gain Control	Off / Max Gain / Manual
White Balance	ATW / Narrow ATW / AWC / Manual / Indoor / Outdoor
LDC	Support(Not support for fisheye lens)
Electronic Shutter Speed	Minimum / Maximum / Prefer / Anti flicker (2~1/12,000sec)
Digital PTZ	None
Video Rotation	Flip, Mirror, Hallway view(90°/270°)
Analytics	Analytic events - Defocus detection, Motion detection, Tampering, Fog detection, Audio detection, Sound classification, Face detection, Virtual area(Loitering/Intrusion/Enter/Exit/Appear/Disappear), Virtual line(Crossing/Direction)
Business Intelligence	People counting, Queue management, Heatmap
Serial Interface	None
Alarm I/O	Input 1ea / Output 1ea
Alarm Triggers	Analytics, Network disconnect, Alarm input, App event, Time schedule
Alarm Events	When alarm trigger occurred - File upload(image) : e-mail/FTP - 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
Audio Streaming	None
Audio In	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm
Audio Out	Line out, Max.output level: 1Vrms
IR Viewable Length	None
IR Illuminator (Optional)	None
IR Radiation angle	None
IR LED	None
IR Wavelength	None
IR Operation	None
Water Removal	None
Auto Tracking	None
Coaxial Protocol	None
Color Palettes	None
Radiometry	
Temperature Detect Range	None
Temperature Accuracy	None
Temperature Detection	None
Additional	None

Network	
Ethernet	RJ-45(10/100BASE-T)
Video Compression	H.265/H.264: Main/Baseline/High, MJPEG
Audio Compression	G.711 u-law /G.726 Selectable G.726(ADPCM) 8KHz, G.711 8KHz G.726: 16Kbps, 24Kbps, 32Kbps, 40Kbps AAC-LC: 48Kbps at 16KHz
Smart Codec	Manual(5ea area), WiseStreamⅡ
Video Quality Adjustment	H.264/H.265: Target bitrate level control MJPEG: Target bitrate level control
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)
Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)
SIP support (VoIP, Peer-to-peer, SIP/PBX integration)	None
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access log 802.1X Authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2) Device Certificate(Hanwha Techwin Root CA, pre-installed) Secure by default certificate HTPM (Hanwha Trusted platform module) Secure OS/Boot/Storage, Verify firmware forgery TPM 2.0 with FIPS 140-2 level2
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet open platform
General	
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Portuguese, Czech, Polish, Turkish, Dutch, Greek, Hungarian
Web Viewer	None
Edge Storage	Micro SD/SDHC/SDXC 1slot Max. 1TB(TBD)
Memory	2GB RAM, 512MB Flash
Environmental & Electrical	
Operating Temperature / Humidity	-10°C ~ +55°C(+14°F ~ +131°F)/ 0~90% RH(non-condensing)
Storage Temperature / Humidity	-30°C ~ +60°C(-22°F ~ +140°F)/ 0~90% RH
Certification	None
Input Voltage	PoE(IEEE802.3af, Class3), , 12VDC
Power Consumption	PoE: Max 10.5W, typical 7.4W 12VDC: Max 8.6W, typical 5.8W Power redundancy failover
Mechanical	
Color / Material	Black / Plastic, Metal
RAL Code	RAL9005
Product Dimensions / Weight	131.1(W)x33(H)x86(D)mm(5.16x1.30x3.39") / 420g
Compatible Conduit hole / Gangbox	None
Hanging Mount (Dome)	None
Skin Cover	None
Skin Cover (Dome)	None
Weather Cap (Dome)	None
Power Module	None
Backbox	None

1.1 Test Voltage & Frequency

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

☒ AC 240 V, 50 Hz ☒ PoE

1.2 Variant Model Differences

Not applicable

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	XNB-6002	-	HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
LENS MODULE	SLA-T2480A	-	HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.	-
AC/DC Adapter	2ACB022F	-	ChAnnel Well Technology (Guangzhou) Co.,Ltd.	-
PoE Adapter	POE 36U-1AT-R	-	PHIHONG	-
Notebook	LG15N54	410NZGK015231	LG	-
Notebook Adapter	ADP-90WH B	84ZW19F1663	DELTA ELECTRONICS(JIANGSU) LTD.	-
Micro SD Card	-	-	SanDisk	32 GB
Headset	K550	-	Britz®	-
Alarm	PRO-SL	-	SENSOR PRO	-
Button Alarm	-	-	-	-
Smart Phone	SM-N950N	R39JB0C3FB	SAMSUNG	-

1.6 External I/O Cabling

■ DC Mode

Start		END		Cable Spec.	
Description	**I/O Port**	**Description**	**I/O Port**	**Length**	**Shield**
NETWORK CAMERA (EUT)	DC (2 Pin)	AC/DC Adapter	Line-Out (2 Pin)	1.0	U
	CAM	LENS MODULE	Line-Out	8.0	S
	RJ-45	Notebook	RJ-45	3.0	U
	SLOT	Micro SD Card	SLOT	-	-
	MIC (3.5 ㎜)	Headset	Line-Out (3.5 ㎜)	2.0	U
	Speaker (3.5 ㎜)				
	Alarm Out (2 Pin)	Alarm	Line-Out (2 Pin)	3.0	U
	Alarm In (2 Pin)	Button Alarm	Line-Out (2 Pin)	3.0	U
Notebook	DC Jack	Notebook Adapter	Line-Out (DC Jack)	1.0	U
	3.5 ㎜	Smart Phone	3.5 ㎜	1.0	U

* Unshielded=U, Shielded=S

■ PoE Mode

Start		END		Cable Spec.	
Description	**I/O Port**	**Description**	**I/O Port**	**Length**	**Shield**
NETWORK CAMERA (EUT)	RJ-45 (PoE)	PoE Adapter	RJ-45 (PoE)	3.0	U
	CAM	LENS MODULE	Line-Out	8.0	S
	SLOT	Micro SD Card	SLOT	-	-
	MIC (3.5 ㎜)	Headtset	Line-Out (3.5 ㎜)	2.0	U
	Speaker (3.5 ㎜)				
	2 Pin	Alarm	Line-Out (2 Pin)	3.0	U
	2 Pin	Button Alarm	Line-Out (2 Pin)	3.0	U
Notebook	RJ-45	PoE Adapter	RJ-45 (DATA)	1.0	U
	DC Jack	Notebook Adapter	Line-Out (DC Jack)	1.0	U
	3.5 ㎜	Smart Phone	3.5 ㎜	1.0	U

* Unshielded=U, Shielded=S

1.7 EUT Operating Mode(s)

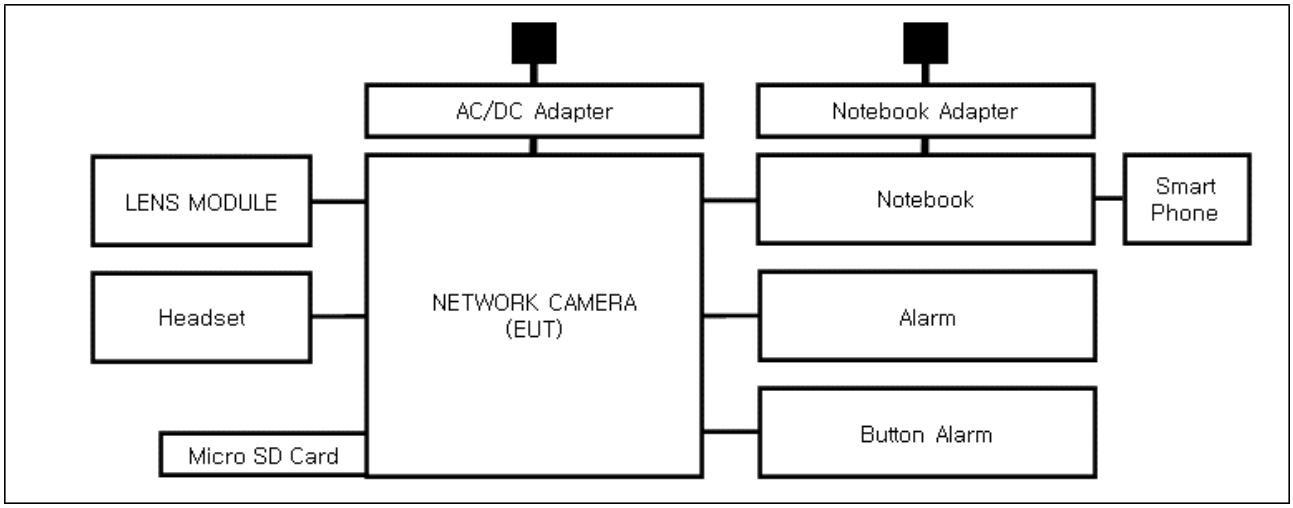
Test Mode	operating
Operation	- By connecting to the Web Viewer, checking the video output of EUT and performing a ping test, it was confirmed that the network function is operating normally. - After the test, the Micro SD Card was checked to see if it was recorded normally.

EUT Test operating S/W		
Name	**Version**	**Manufacture Company**
Web Viewer	-	-

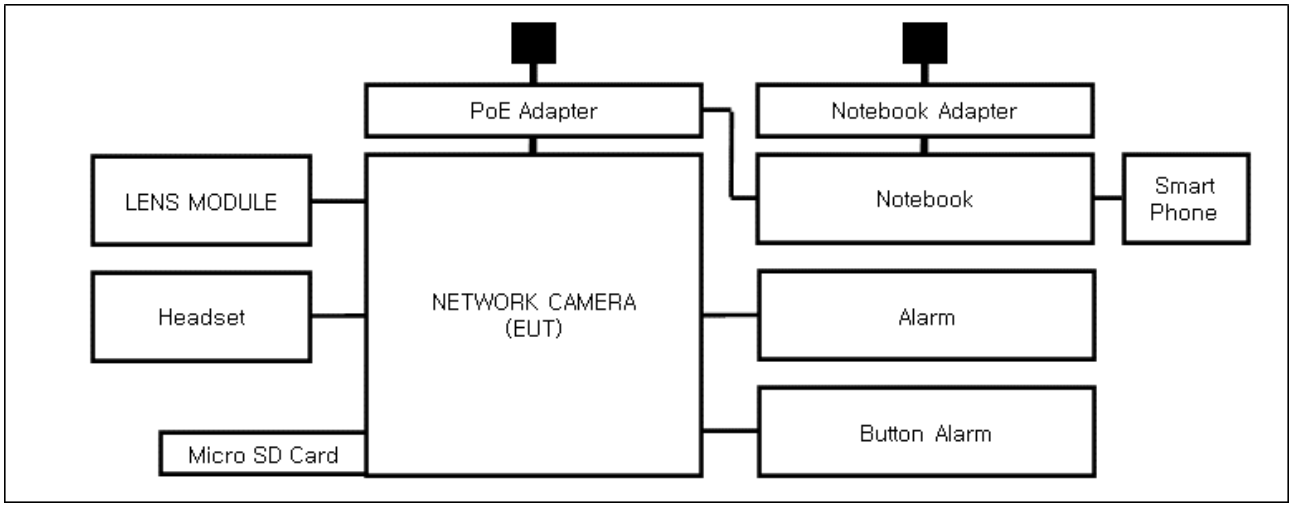
1.8 Configuration

■ AC Main
□ DC Main

■ DC Mode



■ PoE Mode



1.9 Remarks when standards applied

- VIDEO port and USB port were excluded from testing because it is the management port.
- PoE port is considered to be wired network port, so power-related test items are excluded.

1.10 Calibration Details of Equipment Used for Measurement

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

1.11 Test Facility

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

1.12 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
KOREA	**RRA**	EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area 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, 10 m Open Area and 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**	Mains Ports Conducted Interference Measurement, Telecommunication Ports Conducted Disturbance Measurement and Radiation 10 meter site, Facility for measuring radiated disturbance above 1 GHz	R-20056, C-20036, T-20040, G-20057
Europe	**TÜV SÜD**	EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	CARAT 001633 0004

2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ **AS/NZS CISPR 32:2015 AMD 1:2020** ☒ Class A ☐ Class B

2.1 Conducted Emissions at Mains Power Ports

Test Date
Sep. 09, 2022

Test Location
Electro wave Shieldroom #6

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EMC32	R & S	9.12.00	-
☒	EMI TEST RECEIVER	ESR3	R & S	101783	12, 28, 2022
☒	LISN	ENV216	R & S	101787	12, 27, 2022
☒	LISN	ESH2-Z5	R & S	100450	12, 27, 2022
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 27, 2022

Test Conditions
Temperature: (23,8 ± 0,1) ℃
Relative Humidity: (45,6 ± 0,3) % R.H.

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

2.2 Conducted Emissions at Telecommunication Ports

Test Date
Sep. 09, 2022

Test Location
Electro wave Shieldroom #6

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EMC32	R & S	9.12.00	-
☒	EMI TEST RECEIVER	ESR3	R & S	101783	12, 28, 2022
☒	LISN	ENV216	R & S	101787	12, 27, 2022
☒	LISN	ESH2-Z5	R & S	100450	12, 27, 2022
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 27, 2022
☒	8-WIRE ISN CAT3,5	ENY81	R & S	100174	12, 28, 2022
☐	CDN	CDNS502A	TESEQ	40431	12, 27, 2022

Test Conditions
Temperature: (23,8 ± 0,1) ℃
Relative Humidity: (45,6 ± 0,3) % R.H.

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
- See Appendix A for test data.
- For Ethernet interfaces, measurements are required at the highest data rate supported by the interface.

2.3 Radiated Electric Field Emissions(Below 1 ㎓)

Test Date
Sep. 09, 2022

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

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
☒	EMI TEST RECEIVER	ESU26	R & S	100551	03, 31, 2023
☒	AMPLIFIER	SCU 01	R & S	100603	11, 24, 2022
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	12, 08, 2022
☒	ATTENUATOR	8491A	HP	32173	03, 08, 2023

Test Conditions
Temperature: (23,1 ± 0,2) ℃
Relative Humidity: (46,9 ± 0,4) % R.H.

Frequency Range of Measurement
30 ㎒ to 1 ㎓

Instrument Settings
IF Band Width: 120 ㎑

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

2.4 Radiated Electric Field Emissions(Above 1 ㎓)

Test Date
Sep. 10, 2022

Test Location
SEMI ANECHOIC CHAMBER #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
☒	EMI TEST RECEIVER	ESR7	R & S	101190	08, 03, 2022
☒	PREAMPLIFIER	8449B	AGILENT	3008A01967	04, 01, 2023
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 03, 2023

Test Conditions
Temperature: (23,9 ± 0,1) ℃
Relative Humidity: (45,8 ± 0,2) % R.H.

Frequency Range of Measurement
1 ㎓ to 6 ㎓

Instrument Settings
IF Band Width: 1 ㎒

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

APPENDIX A – TEST DATA

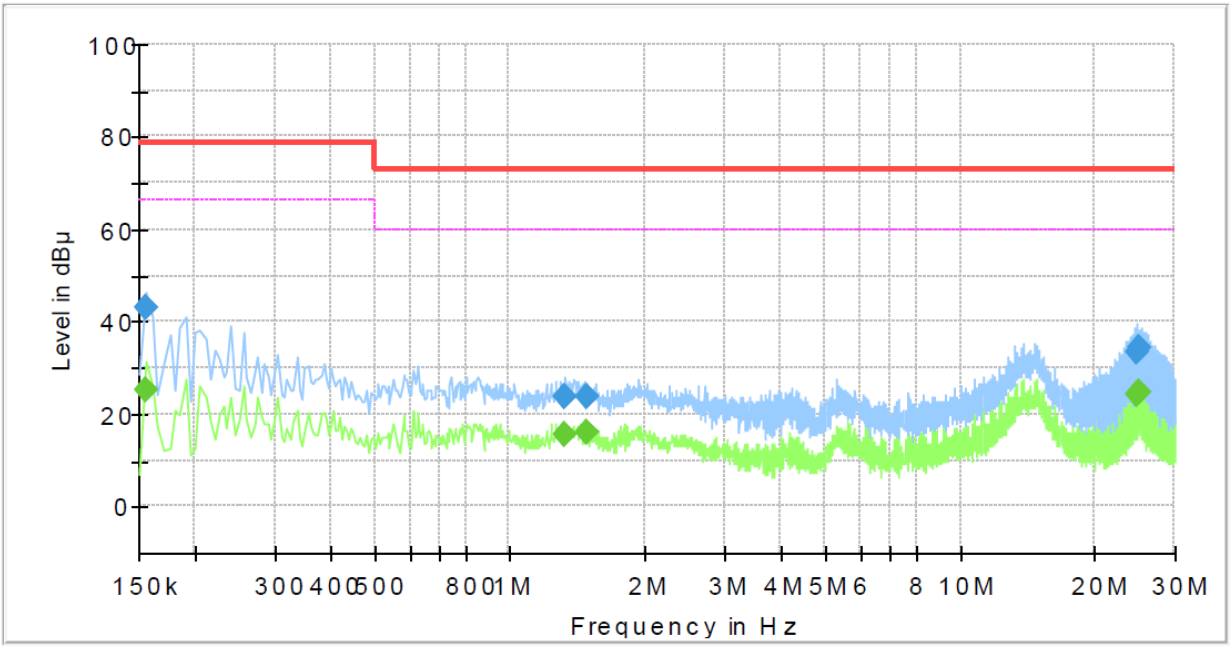
Conducted Emissions at Mains Power Ports

■ DC Mode

HOT LINE

Common Information

Test Description:	Conducted Emission
Model No.:	XNB-6002
Phase:	L1
Mode:	DC
Operator Name:	KES



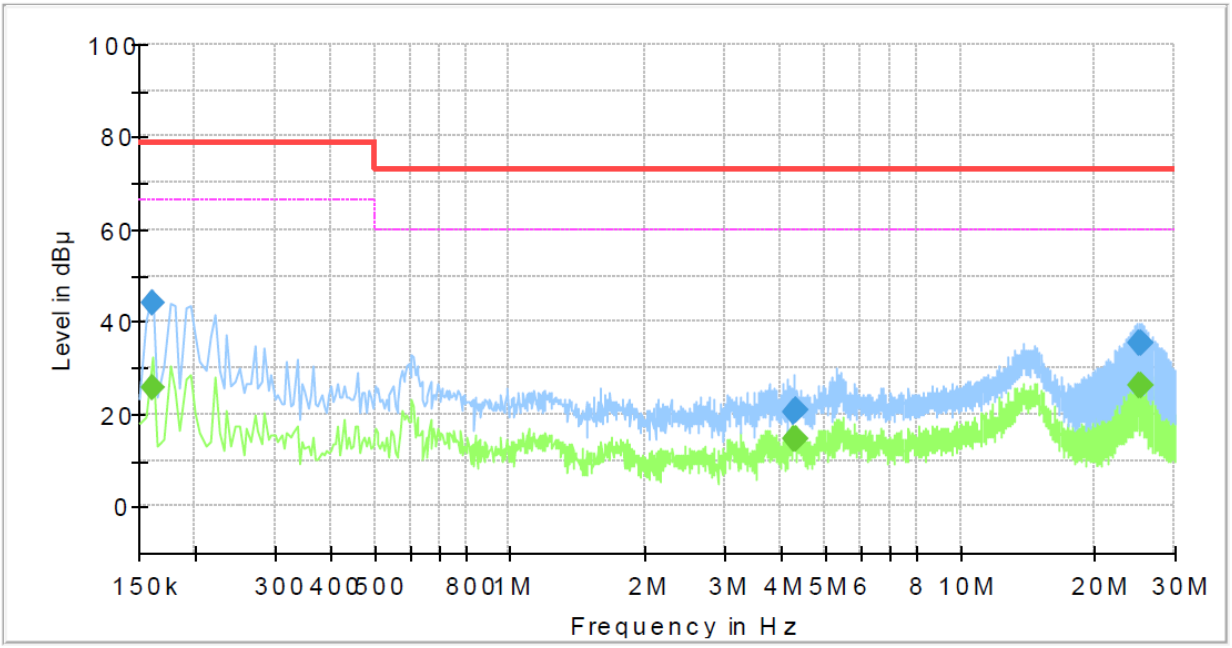
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	25.12	66.00	40.88	1000.0	9.000	L1	19.4
0.155000	42.91	---	79.00	36.09	1000.0	9.000	L1	19.4
1.325000	---	15.69	60.00	44.31	1000.0	9.000	L1	20.1
1.325000	23.86	---	73.00	49.14	1000.0	9.000	L1	20.1
1.485000	---	16.12	60.00	43.88	1000.0	9.000	L1	20.2
1.485000	23.57	---	73.00	49.43	1000.0	9.000	L1	20.2
24.795000	---	24.10	60.00	35.90	1000.0	9.000	L1	20.1
24.795000	33.57	---	73.00	39.43	1000.0	9.000	L1	20.1
25.085000	---	24.55	60.00	35.45	1000.0	9.000	L1	20.1
25.085000	34.22	---	73.00	38.78	1000.0	9.000	L1	20.1

NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	XNB-6002
Phase:	N
Mode:	DC
Operator Name:	KES



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	25.60	66.00	40.40	1000.0	9.000	N	19.4
0.160000	44.13	---	79.00	34.87	1000.0	9.000	N	19.4
4.290000	---	14.39	60.00	45.61	1000.0	9.000	N	19.8
4.290000	20.33	---	73.00	52.67	1000.0	9.000	N	19.8
4.300000	---	14.60	60.00	45.40	1000.0	9.000	N	19.8
4.300000	20.81	---	73.00	52.19	1000.0	9.000	N	19.8
25.030000	---	26.29	60.00	33.71	1000.0	9.000	N	20.2
25.030000	35.46	---	73.00	37.54	1000.0	9.000	N	20.2
25.175000	---	26.36	60.00	33.64	1000.0	9.000	N	20.2
25.175000	35.41	---	73.00	37.59	1000.0	9.000	N	20.2

♦ Calculation
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.
Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

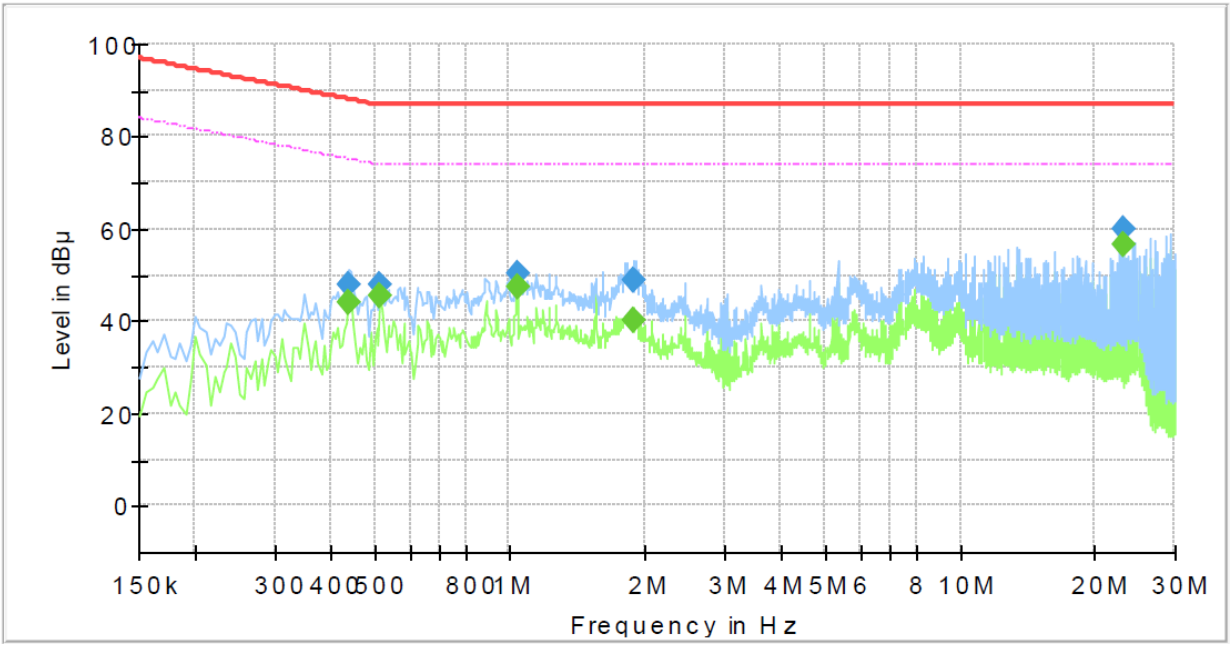
Conducted Emissions at Telecommunication Ports

■ DC Mode

[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNB-6002
Mode :	DC
Speed :	100 Mbps
Operator Name:	KES



Final_Result

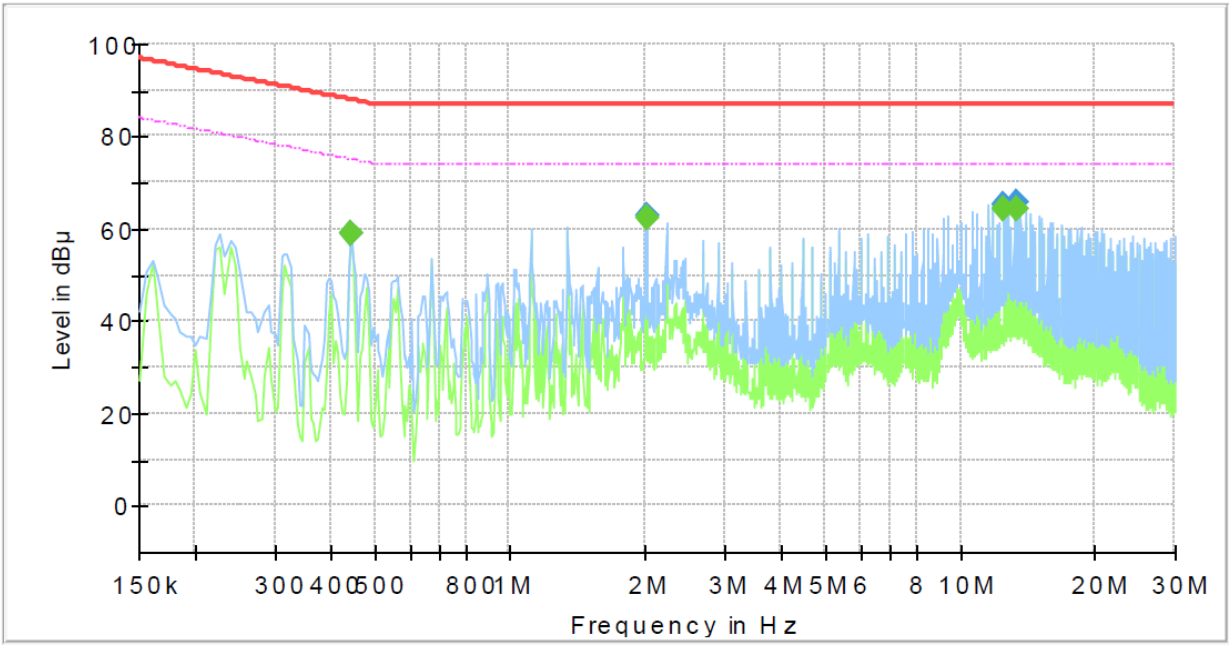
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.440000	---	44.24	75.06	30.82	1000.0	9.000	Single Line	19.7
0.440000	48.00	---	88.06	40.06	1000.0	9.000	Single Line	19.7
0.515000	---	45.28	74.00	28.72	1000.0	9.000	Single Line	19.8
0.515000	47.73	---	87.00	39.27	1000.0	9.000	Single Line	19.8
1.035000	---	47.47	74.00	26.53	1000.0	9.000	Single Line	20.0
1.035000	50.28	---	87.00	36.72	1000.0	9.000	Single Line	20.0
1.885000	---	39.99	74.00	34.01	1000.0	9.000	Single Line	20.1
1.885000	49.09	---	87.00	37.91	1000.0	9.000	Single Line	20.1
23.130000	---	56.57	74.00	17.43	1000.0	9.000	Single Line	20.1
23.130000	59.97	---	87.00	27.03	1000.0	9.000	Single Line	20.1

■ PoE Mode

[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	XNB-6002
Mode :	PoE
Speed :	100 Mbps
Operator Name:	KES



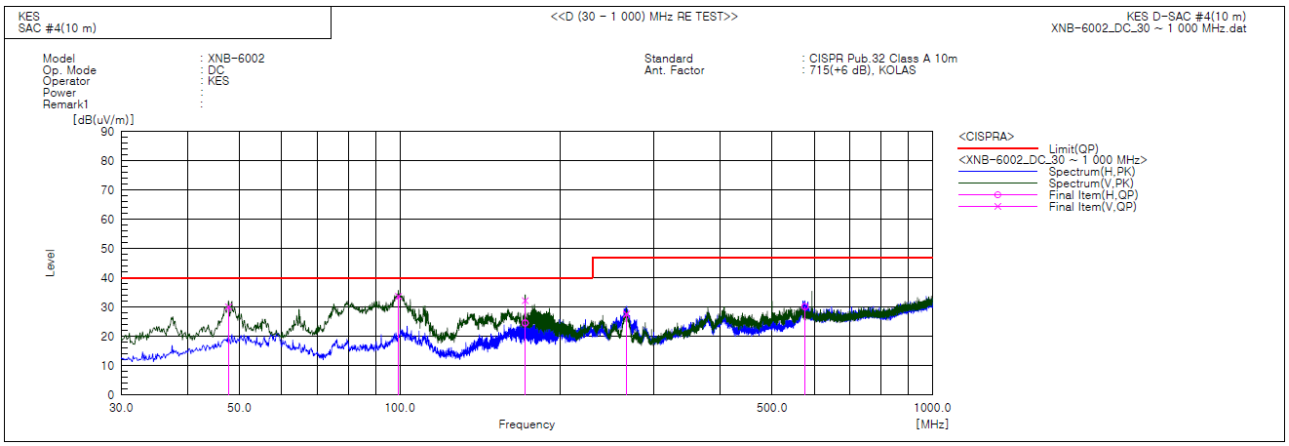
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.445000	---	58.97	74.97	16.00	1000.0	9.000	Single Line	19.7
0.445000	59.03	---	87.97	28.94	1000.0	9.000	Single Line	19.7
2.005000	---	62.50	74.00	11.50	1000.0	9.000	Single Line	20.2
2.005000	62.85	---	87.00	24.15	1000.0	9.000	Single Line	20.2
12.470000	---	64.50	74.00	9.50	1000.0	9.000	Single Line	19.7
12.470000	65.43	---	87.00	21.57	1000.0	9.000	Single Line	19.7
13.360000	---	64.47	74.00	9.53	1000.0	9.000	Single Line	19.7
13.360000	65.93	---	87.00	21.07	1000.0	9.000	Single Line	19.7

♦ Calculation
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

Radiated Electric Field Emissions(Below 1 ㎓)

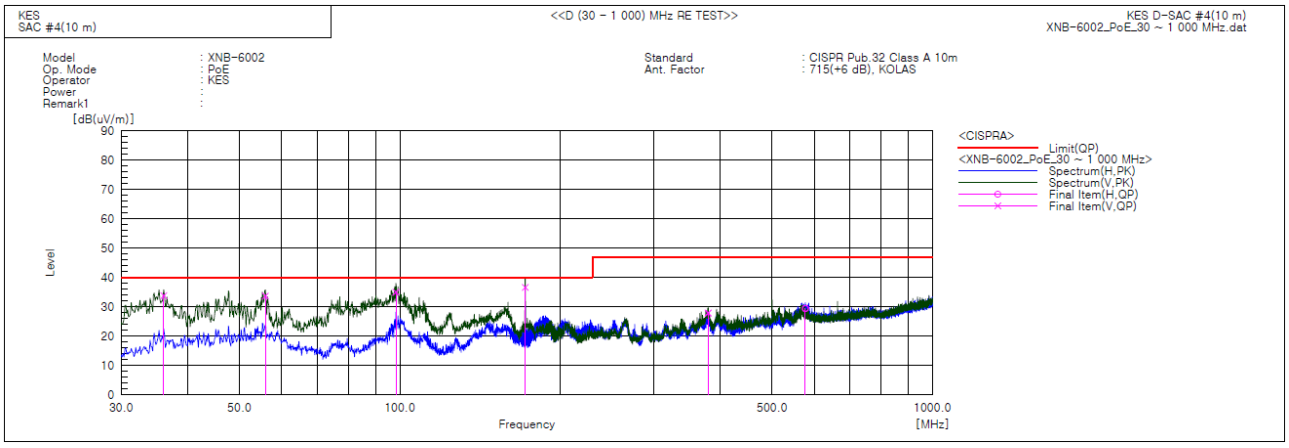
■ DC Mode



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	47.703	V	51.1	-21.0	30.1	40.0	9.9	132.0	274.0	
2	99.355	V	56.0	-22.3	33.7	40.0	6.3	100.0	279.0	
3	171.980	V	56.1	-23.9	32.2	40.0	7.8	151.0	166.0	
4	171.984	H	48.5	-23.9	24.6	40.0	15.4	371.0	261.0	
5	266.438	V	46.2	-18.6	27.6	47.0	19.4	100.0	338.0	
6	576.353	H	39.0	-8.8	30.2	47.0	16.8	389.0	120.0	

■ PoE Mode



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	36.063	V	58.2	-24.4	33.8	40.0	6.2	100.0	87.0	
2	55.948	V	55.0	-21.3	33.7	40.0	6.3	146.0	292.0	
3	98.385	V	57.5	-22.5	35.0	40.0	5.0	100.0	80.0	
4	171.984	V	60.5	-23.9	36.6	40.0	3.4	147.0	226.0	
5	379.200	V	42.2	-14.3	27.9	47.0	19.1	105.0	27.0	
6	577.201	H	38.2	-8.8	29.4	47.0	17.6	400.0	147.0	

♦ Calculation

Result(QP) [dB(μV/m)] = (Reading(QP)[dB(μV)] + c.f[dB(1/m)]

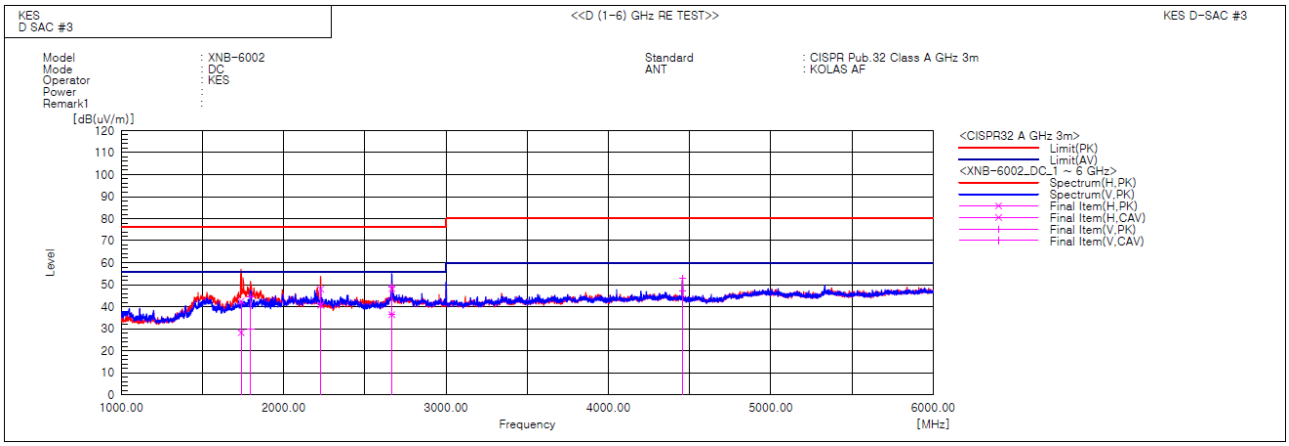
Margin(QP)[dB] = Limit[dB(μV/m)] - Result(QP) [dB(μV/m)]

Reading(QP) : Reading value, Result(QP) : Reading value + Factor value

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

Radiated Electric Field Emissions(Above 1 ㎓)

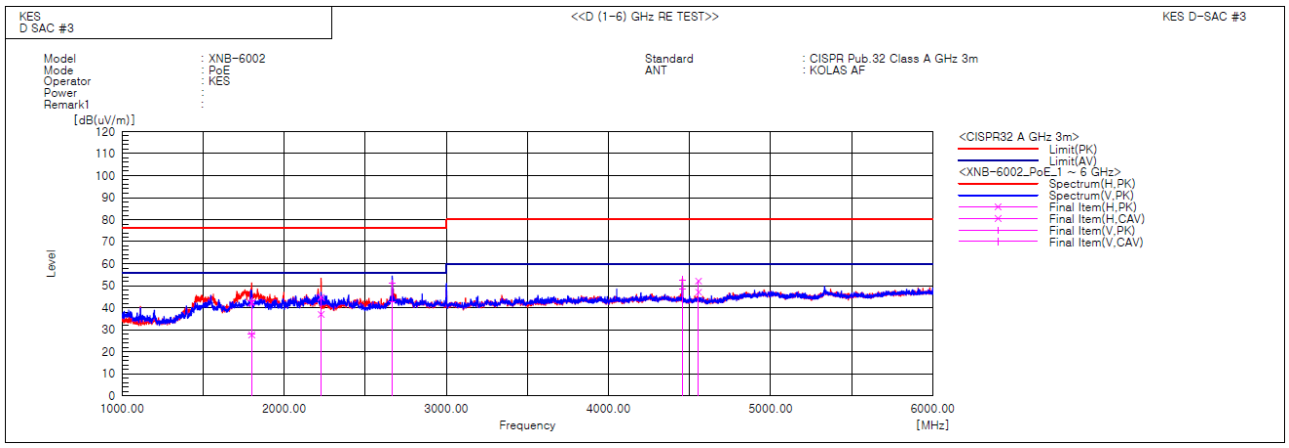
■ DC Mode



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1738.343	H	46.1	31.8	-3.5	42.6	28.3	76.0	56.0	33.4	27.7	100.0	181.2	
2	1796.513	V	47.4	32.7	-2.8	44.6	29.9	76.0	56.0	31.4	26.1	100.0	127.8	
3	2227.500	H	48.5	41.2	-0.5	48.0	40.7	76.0	56.0	28.0	15.3	100.0	47.8	
4	2666.089	H	47.4	35.6	0.8	48.2	36.4	76.0	56.0	27.8	19.6	100.0	42.7	
5	2666.370	V	48.0	35.5	0.8	48.8	36.3	76.0	56.0	27.2	19.7	100.0	306.4	
6	4456.740	V	47.0	41.1	5.9	52.9	47.0	80.0	60.0	27.1	13.0	100.0	355.9	

■ PoE Mode



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1797.860	V	45.9	30.7	-2.7	43.2	28.0	76.0	56.0	32.8	28.0	100.0	164.2	
2	1799.361	H	45.0	30.4	-2.7	42.3	27.7	76.0	56.0	33.7	28.3	100.0	51.0	
3	2227.730	H	45.2	37.5	-0.5	44.7	37.0	76.0	56.0	31.3	19.0	100.0	38.0	
4	2666.020	V	50.2	41.7	0.8	51.0	42.5	76.0	56.0	25.0	13.5	100.0	307.2	
5	4454.990	V	46.7	42.3	6.0	52.7	48.3	80.0	60.0	27.3	11.7	100.0	294.2	
6	4555.150	H	46.7	41.7	5.4	52.1	47.1	80.0	60.0	27.9	12.9	100.0	180.7	

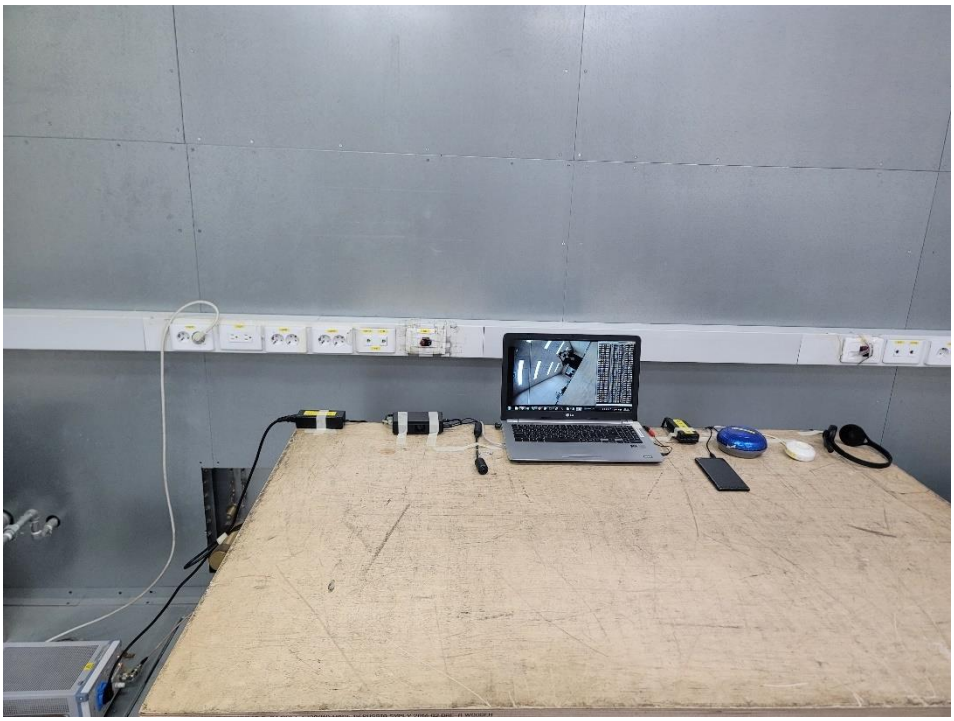
♦ Calculation

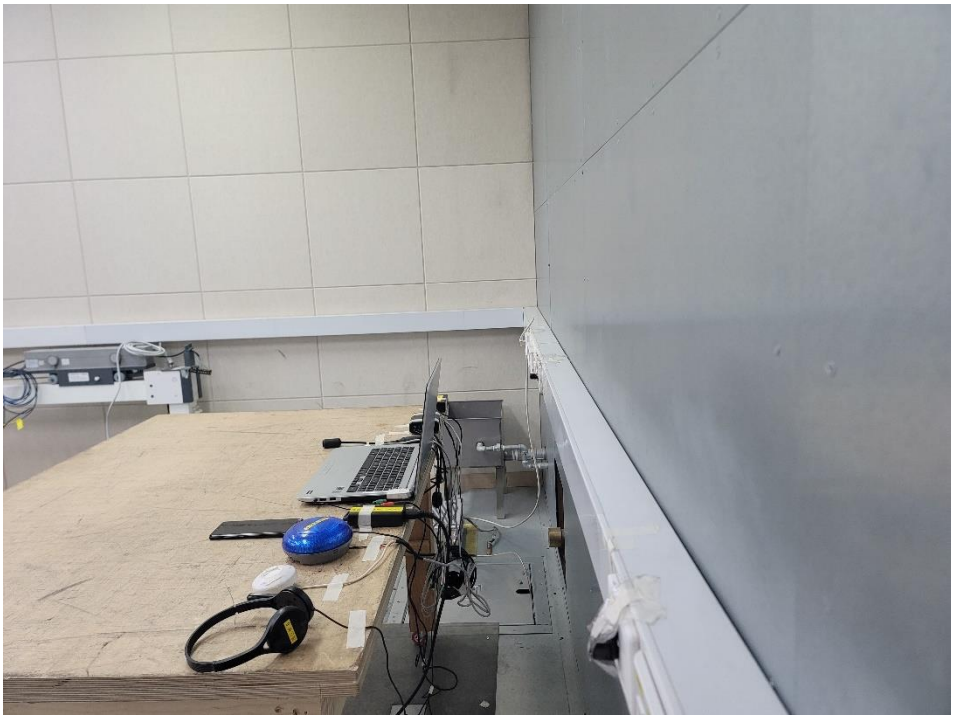
Result(PK/CAV) [dB(㎶/m)] = (Reading(PK/CAV)[dB(㎶)] + c.f[dB(1/m)]
Margin(PK/CAV)[dB] = Limit[dB(㎶/m)] - Result(PK/CAV) [dB(㎶/m)]
Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value
Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports

■ DC Mode

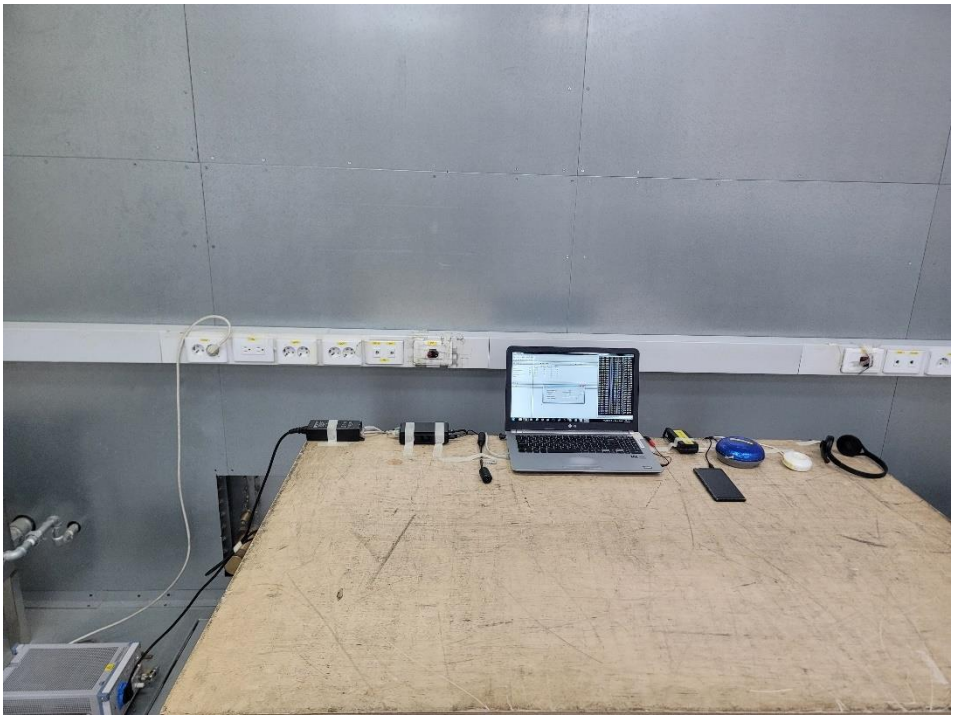




Conducted Emissions at Telecommunication Ports

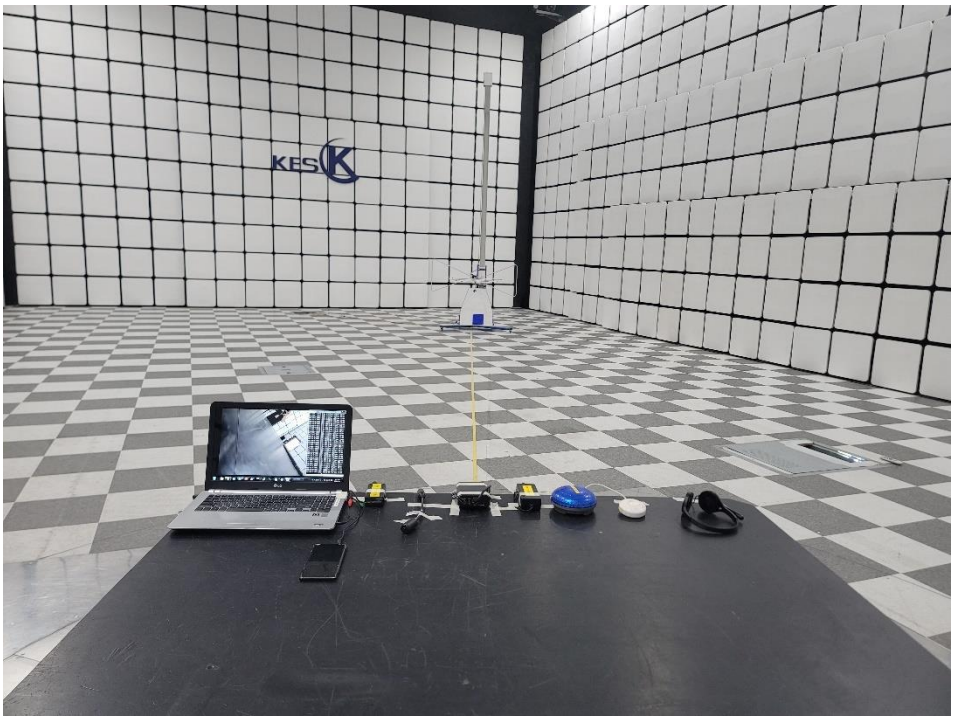
■ DC Mode

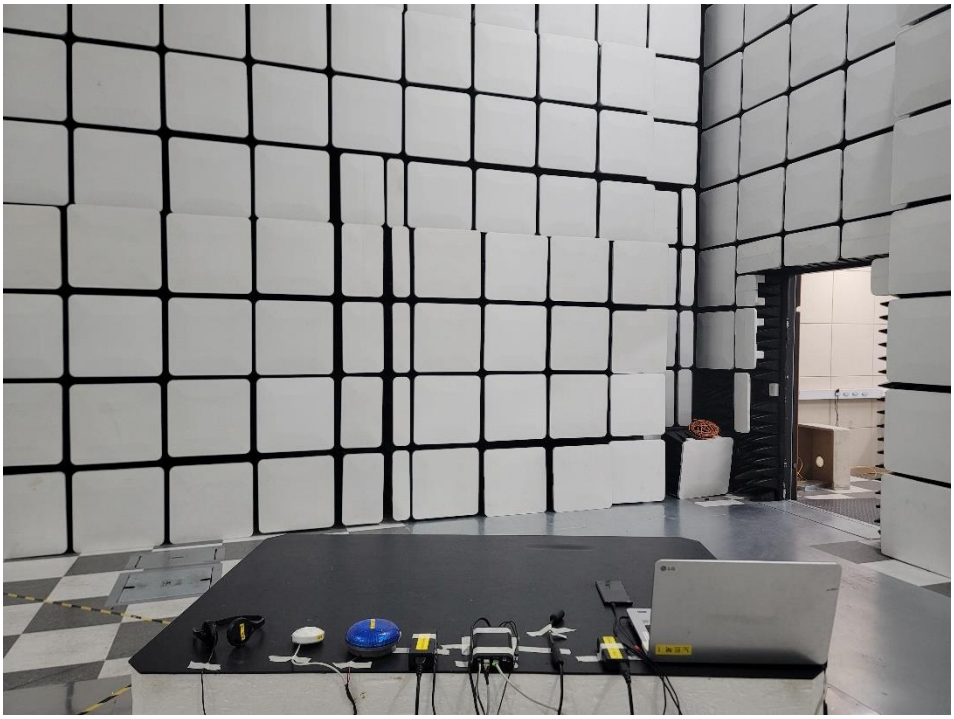
■ PoE Mode



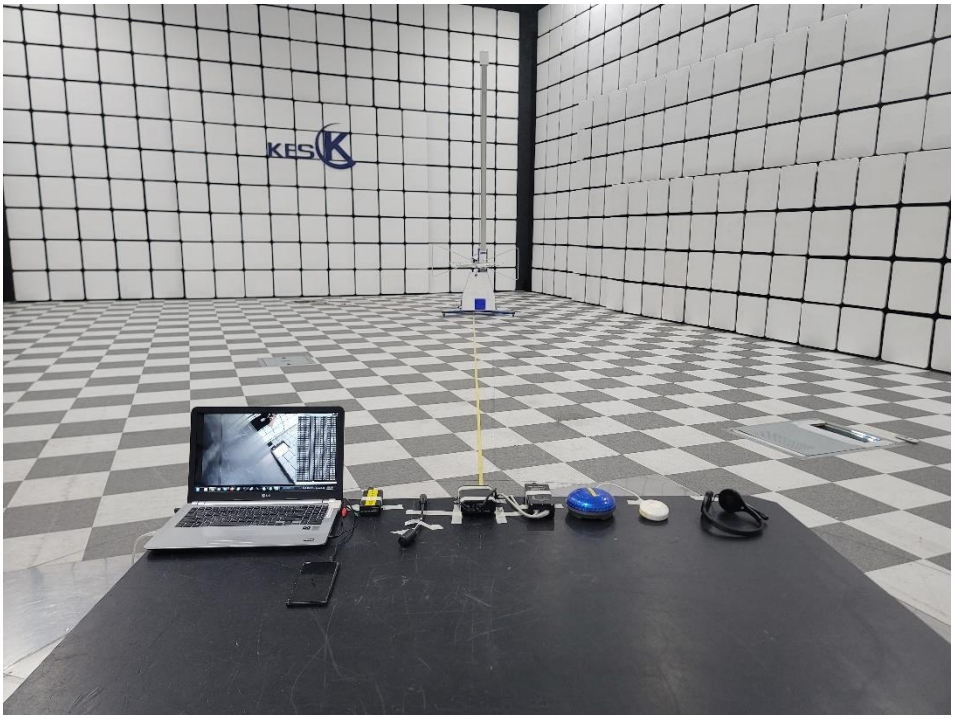
Radiated Electric Field Emissions(Below 1 ㎓)

■ DC Mode



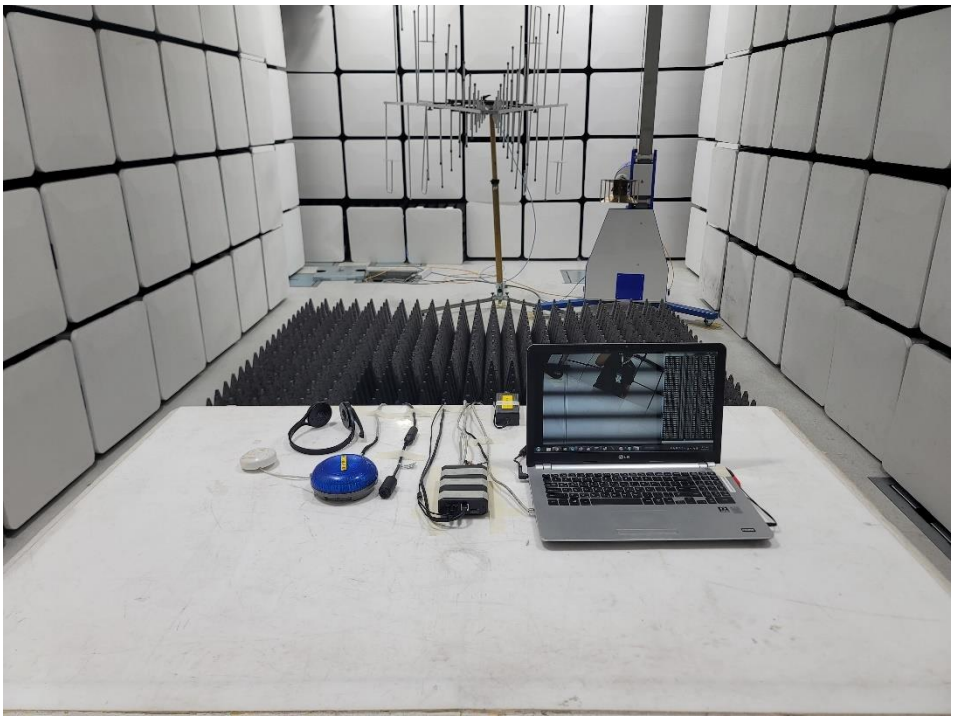


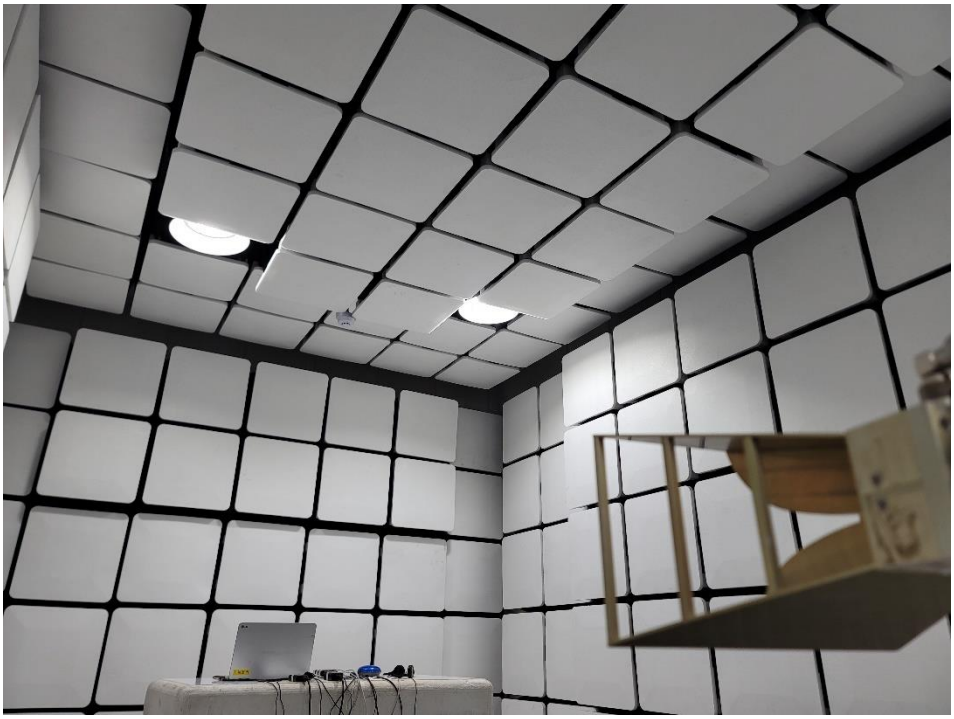
■ PoE Mode



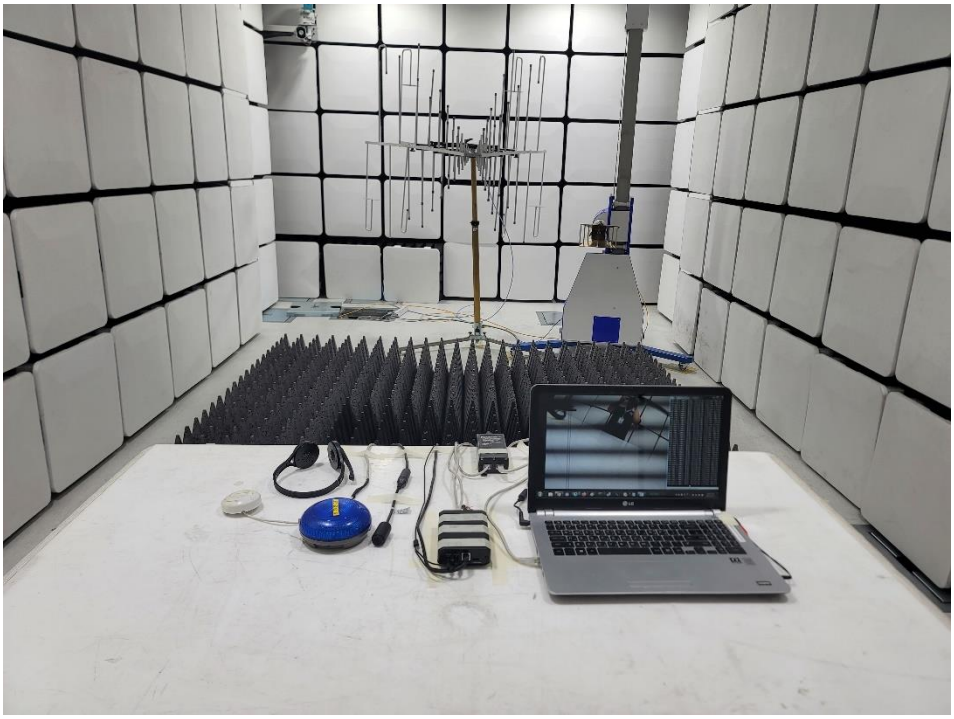
Radiated Electric Field Emissions(Above 1 ㎓)

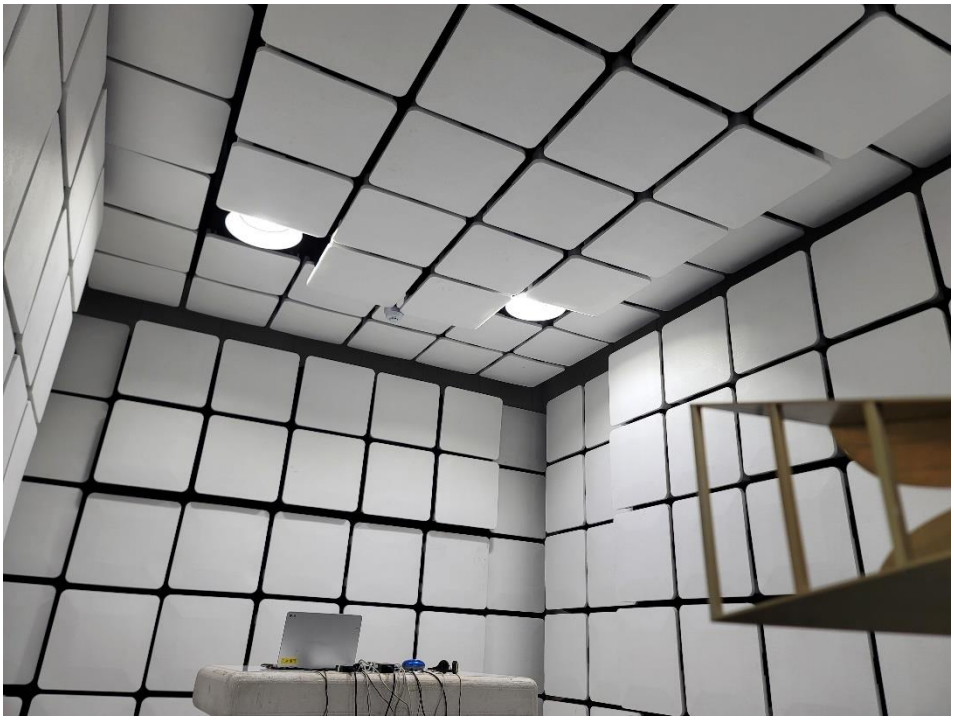
■ DC Mode





■ PoE Mode





EUT External Photographs

(Top)

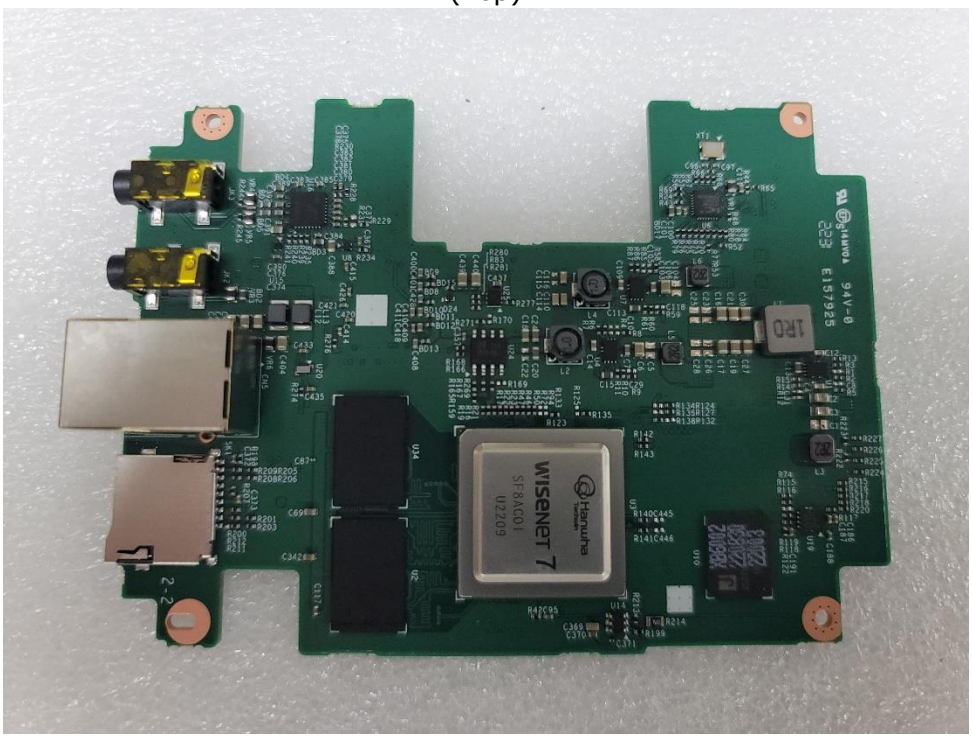
(Bottom)

EUT Internal Photographs

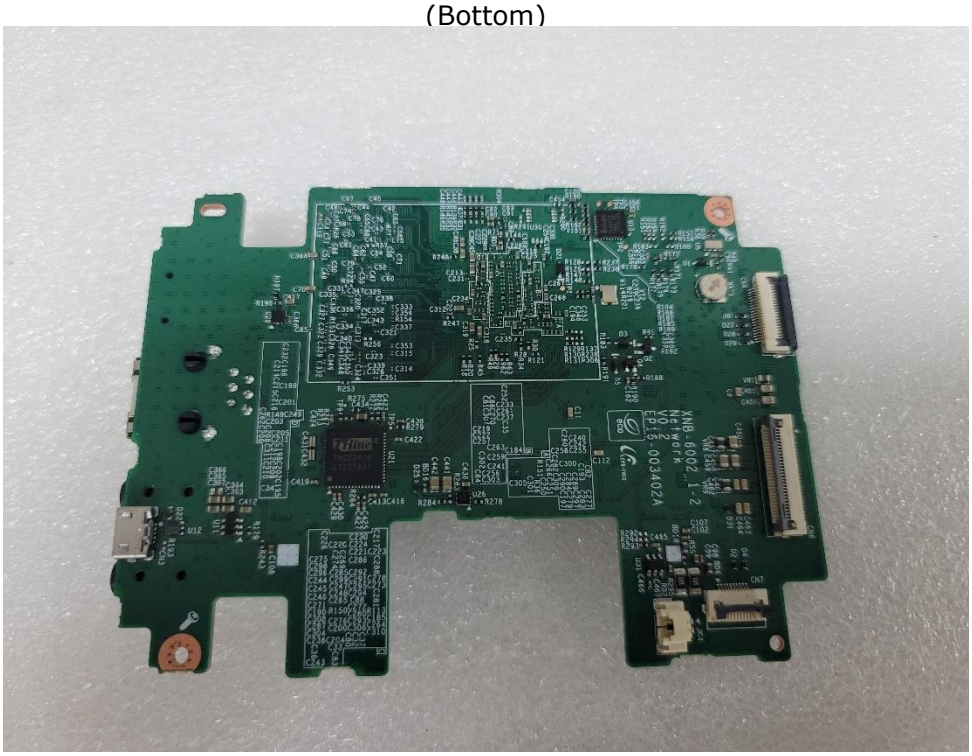
(Internal View)

EUT Internal View – Network Board

(Top)

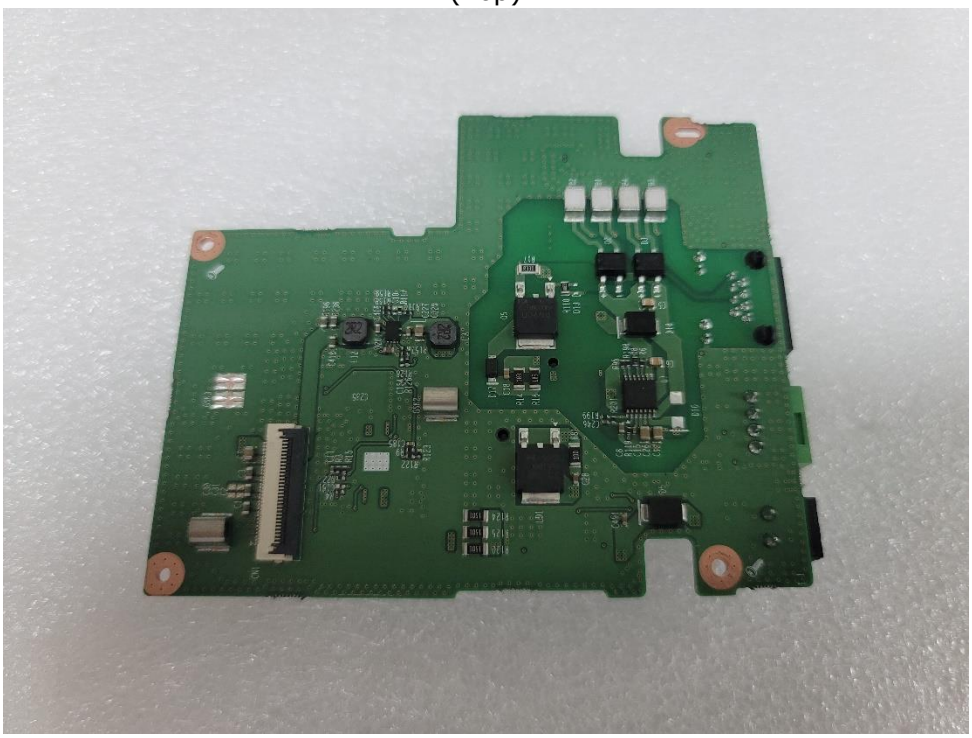


(Bottom)



EUT Internal View – Power Board

(Top)



(Bottom)