



TEST REPORT



Report No. : EM-234363

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1. Client

Applicant : Hanwha Vision Co., Ltd

Applicant Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do,
Republic of Korea

2. Sample Description

Product name : Public View Monitor

Model/Type No. : SMT-1031PVW

Variant Model : SMT-1031PV

Manufacturer : OIC KOREA Co., Ltd.

Manufacturer Address : 5F, 12, Annam-ro 369beon-gil, Bupyeong-gu, Incheon, 21312, Korea

3. Date of Receipt : Dec. 22, 2023

4. Test date : Dec. 26, 2023 ~ Dec. 28, 2023

5. Date of Issue : Jan. 05, 2024

6. Test Results : In Compliance

Tested by

Reviewed by

Seong Min Jang
EMC Test Engineer

Hyo Jin Kim
EMC Assistant 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
Jan. 05, 2024	EM-234363	Issued

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1.0 General Product Description

Main Specifications of EUT are:

SMT-1031PVW			Camera			
Brightness		500cd/m²	Video	Imaging Device	1/2.8" 2MP CMOS	
Contrast Ratio		500:1		Max. Framerate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 15fps/12fps(60Hz/50Hz)	
Aspect Ratio		16:9		Min. Illumination	Color: 0.03Lux (F1.6, 1/30sec) (TBD)	
Viewing Angle (H/V)		140° / 120°				
Display Color		16.7M Colors	Lens	Focal Length (Zoom Ratio)	3.06mm fixed focal	
Response Time		20ms		Max. Aperture Ratio	F1.6	
Video System		None		Angular Field of View	H: 107.7° / V: 59.0° / D: 126.7°	
Panel Life		50,000 hours	Operational	Backlight Compensation	BLC, WDR, SSSDR	
Filter Type		None		Wide Dynamic Range	120dB	
Interface				Digital Noise Reduction	SSNRV, WiseNRⅡ(Based on AI engine)	
Video	Connectors	Camera(Internal)		Motion Detection	8ea, 8point Polygonal zones	
Composite Video	Input	None		Privacy Masking	32ea, 4point Quadrangle zones	
VGA	Connector	None		Gain Control	Low / Middle / High	
	Input Signal	None		White Balance	ATW / AWC / Manual / Indoor / Outdoor	
	Available Format	None		LDC	Support	
HDMI	Connector	None		Electronic Shutter Speed	Minimum / Maximum / Anti flicker (1/5~1/12,000sec)	
	Available Format	None		Digital PTZ	Support	
DP	Connector	None		Video Rotation	Flip, Mirror, Hallway view(90°/270°)	
	Available Format	None		Analytics	Classified object type: Person/Face Attributes: Not support Support DetectionShot Analytics events based on AI engine - Motion detection, Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit) Analytics events - Defocus detection, Tampering, Virtual area(Appear/Disappear)	
Audio	Connector	None			Business Intelligence	People counting, Queue management, Heatmap based on AI engine
	Output Signal	Speakers : 8Ω 1Wx 2				Alarm Triggers
Alarm	Alarm I/O	Input 1ea / Output 1ea			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)
Network	Ethernet	1 RJ-45 10/100BASE-T	Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access Log 802.1X Authentication(EAP-TLS, EAP-LEAP) Device Certificate(Hanwha Techwin Root CA, pre-installed)		
General	Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB		Application Programming Interface		ONVIF Profile S/G/T/M SUNAPI(HTTP API)
Application Support		None				Memory
On Screen Display						
Functions		VESA™ DPM Compatible				
Language		English, Spanish, French				
General						
Electrical	Input Voltage	DC24V, POE+ 802.3at				
	Power Consumption	14W				
Environmental	Operating Temperature	0 ~ +40°C (+32°F ~ +104°F)				
	Operating Humidity	10% ~ 80% (non-condensing)				
Mechanical	Dimensions with Stand (WxHxD)	None				
	Dimensions without Stand (WxHxD)	245.5mm(W) x 178.2mm(H) x 35.5mm(D)				
	Weight with Packing	1.25Kg				
	Weight without Packing	900g				
	Protection Glass	None				
	Cabinet Color	White				
	Wall Mounts	None				
	VESA Mounts Interface	VESA 75 x 75mm				



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 230 V / 50 Hz(Adpater) ☒ PoE

1.2 Variant Model Differences

Adding derivatives due to color differences

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
Public view monitor	SMT-1031PVW	-	OIC KOREA Co., Ltd.	EUT
remote controller	-	-	-	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Micro SD Card	-	-	SanDisk	-
Adapter	GFD-2401000K	-	-	-
Laptop	LG15N54	506NZGK000615	LG ELECTRONICS NANJING NEW TECHNOLOGY CO., LTD	-
Laptop Adapter	PA-1650-43(65W)	OF58U63849302Y6 09	LITE-ON TECHNOLOGY (CHANGZHOU)CO., LTD	-
PoE Injector	PT-PSE109GBRO-AH	-	Dongguan PROCET Network Technology Co., Ltd	-
LED Alarm	PRO-SL	-	SENSOR PRO	-
Button Alarm	-	-	-	-



1.6 External I/O Cabling

■ DC Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
Public view monitor (EUT)	Micro SD Slot	Micro SD Card	Micro SD Slot	-	-
	DC Jack	Adapter	DC Jack	1.0	U
	2 Pin	Button Alarm	2 Pin	3.1	U
	2 Pin	LED Alarm	2 Pin	3.1	U
	IR	remote controller	IR	-	-
	RJ-45	Laptop	RJ-45	3.3	U
Laptop	DC jack	Laptop Adapter	DC jack	1.5	U

* Unshielded=U, Shielded=S

■ PoE Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
Public view monitor (EUT)	Micro SD Slot	Micro SD Card	Micro SD Slot	-	-
	PoE	PoE Injector	RJ-45 (PoE)	3.3	S
	2 Pin	Button Alarm	2 Pin	3.1	U
	2 Pin	LED Alarm	2 Pin	3.1	U
	IR	remote controller	IR	-	-
PoE Injector	RJ-45	Laptop	RJ-45	2.6	U
Laptop	DC jack	Laptop Adapter	DC jack	1.5	U

* Unshielded=U, Shielded=S

1.7 EUT Operating Mode(s)

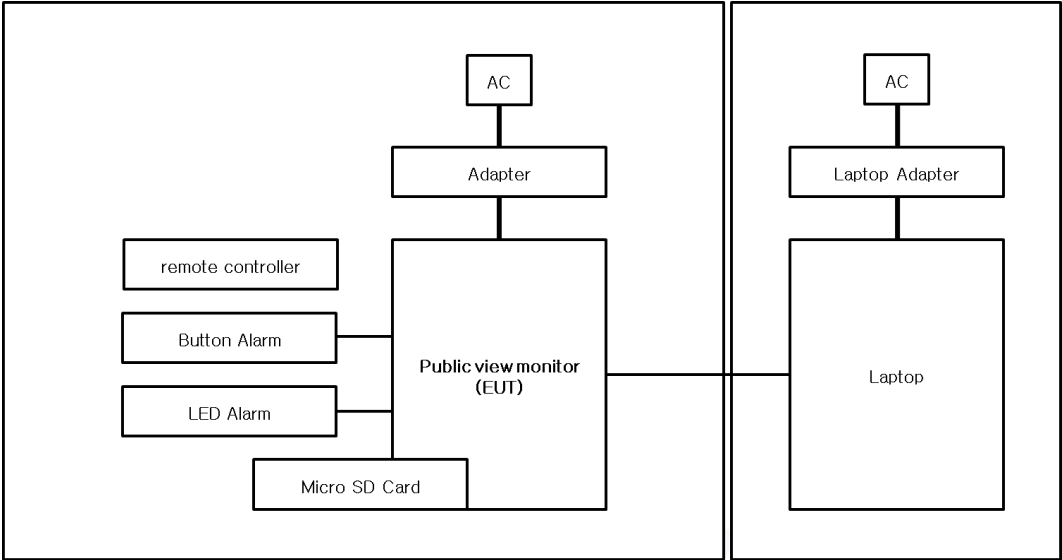
Test mode	operating
Operation MODE (DC, PoE)	1. Monitoring EUT Using Web Viewer, 2. Ping Test Mode 3. After the test, check if the EUT video has been recorded normally.

EUT Test operating S/W		
Name	Version	Manufacture Company
Web Viewer	-	Hanwha Vision Co., Ltd.

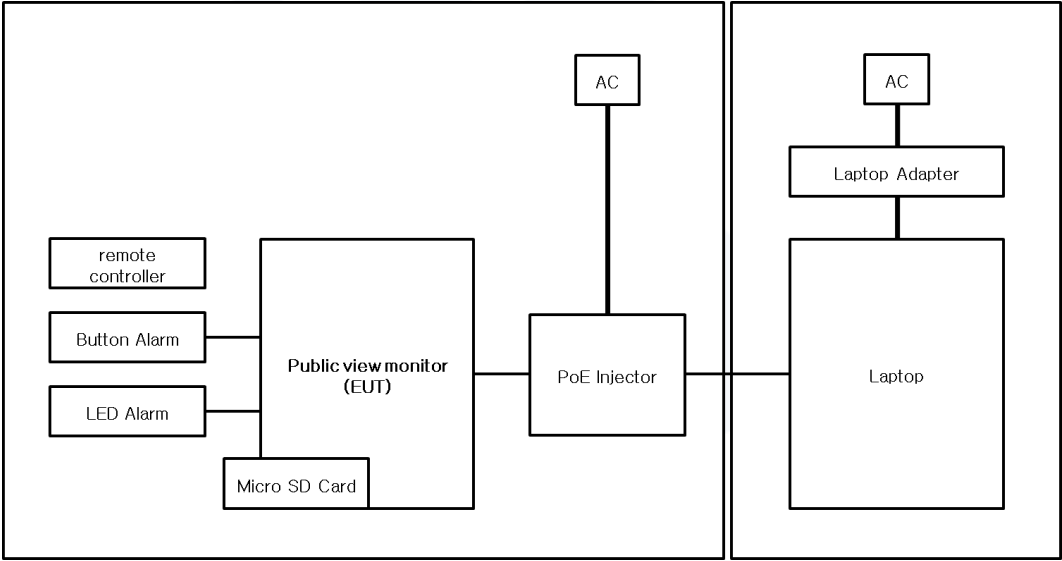


1.8 Configuration

■ DC Mode



■ PoE Mode





1.9 Remarks when standards applied

The USB port was excluded from the test because it was for administrators.

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, 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

1.12 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 0004



2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ **EMC – Directive 2014/30/EU**

☒ EN 55032:2015/A11:2020

☒ Class A

☐ Class B

☒ EN 50130-4:2011/A1:2014

☒ EN 61000-3-2:2014

☒ EN 61000-3-3:2013

☒ **EMC – Regulations 2016**

☒ EN 55032:2015/A11:2020

☒ Class A

☐ Class B

☒ EN 50130-4:2011/A1:2014

☒ EN 61000-3-2:2014

☒ EN 61000-3-3:2013



2.1 Conducted Emissions at Mains Power Ports

Test Date

Dec. 26, 2023

Test Location

Electro wave Shieldroom #6

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test SW	EMC32	R & S	9.12.00	-
☒	EMI TEST RECEIVER	ESR3	R & S	101783	11, 08, 2024
☒	LISN	ENV216	R & S	101787	11, 08, 2024
☒	LISN	ESH2-Z5	R & S	100450	11, 08, 2024
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 08, 2024

Test Conditions

Temperature: (21,6 ± 0,1) °C

Relative Humidity: (46,7 ± 0,1) % R.H.

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

RemarksSee Appendix A for test data.



2.2 Conducted Emissions at Telecommunication Ports

Test Date

Dec. 26, 2023

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	11, 08, 2024
☒	LISN	ENV216	R & S	101787	11, 08, 2024
☒	LISN	ESH2-Z5	R & S	100450	11, 08, 2024
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 08, 2024
☒	8-WIRE ISN CAT3,5	ENY81	R & S	100174	11, 09, 2024
☐	8-WIRE ISN CAT6	ENY81-CAT6	R & S	101665	11, 09, 2024

Test Conditions

Temperature: (21,6 ± 0,2) °C

Relative Humidity: (46,7 ± 0,1) % R.H.

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

RemarksSee Appendix A for test data.



2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Dec. 26, 2023

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, 21, 2024
☒	AMPLIFIER	SCU 01	R & S	100603	11, 08, 2024
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	11, 17, 2024
☒	ATTENUATOR	8491A	HP	32173	03, 03, 2024

Test Conditions

Temperature: (21,9 ± 0,2) °C

Relative Humidity: (46,0 ± 0,2) % R.H.

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

RemarksSee Appendix A for test data.



2.4 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Dec. 26, 2023

Test Location

SEMI ANECHOIC CHAMBER #5

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test SW	ES10/RE	TOYO Corporation	2022.01.000	-
☒	EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100552	03, 21, 2024
☒	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	11, 03, 2024
☒	PREAMPLIFIER	8449B	HP	3008A00538	05, 31, 2024
☒	ATTENUATOR	8491B	HP	23094	03, 21, 2024

Test Conditions

Temperature: (22,4 ± 0,2) °C

Relative Humidity: (45,3 ± 0,1) % R.H.

Frequency Range of Measurement

1 GHz to 6 GHz

Instrument Settings

IF Band Width: 1 MHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

RemarksSee Appendix A for test data.



2.5 Harmonic Current Emissions

Test Date

Dec. 26, 2023

Test Location

Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test SW	net.control	EM TEST	2.1.4	-
☒	DIGITAL POWER ANALYZER	DPA 500N	EM TEST	V1024106759	03, 27, 2024
☒	POWER SOURCE	ACS 500N6	EM TEST	V1024106760	-

Test Conditions

Temperature: (22,5 ± 0,2) °C

Relative Humidity: (46,4 ± 0,2) % R.H.

Classification of Equipment for Harmonic Current Emissions

- ☒ Class A
☐ Class B
☐ Class C(Below 25 W)
☐ Class C(Above 25 W)
☐ Class D

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

RemarksSee Appendix A for test data.



2.6 Voltage Fluctuations and Flicker

Test Date

Dec. 26, 2023

Test Location

Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test SW	net.control	EM TEST	2.1.4	-
☒	DIGITAL POWER ANALYZER	DPA 500N	EM TEST	V1024106759	03, 27, 2024
☒	POWER SOURCE	ACS 500N6	EM TEST	V1024106760	-

Test Conditions

Temperature: (22,5 ± 0,2) °C
Relative Humidity: (46,4 ± 0,2) % R.H.

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

RemarksSee Appendix A for test data.



3.0 Criteria for compliance

Criteria for compliance was based on the following guidelines:

EN 50130-4:2011/A1 :2014 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.

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 $U = 130 \text{ dB}\mu\text{V}$.

For component of CCTV systems, where the status is monitored by observing the TV picture, then deterioration of the picture is allowed at $U = 140 \text{ dB}\mu\text{V}$, 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 $U = 130 \text{ dB}\mu\text{V}$, 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 $U = 120 \text{ dB}\mu\text{V}$.

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.



3.1 Electrostatic Discharge

Reference Standard

EN 61000-4-2:2009

Test Date

Dec. 27, 2023

Test Location

EMS-ESD: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	ESD SIMULATOR	ESS-2000	Noise Ken	ESS01Z0454	01, 31, 2024
☒	HCP	-	KES	-	-
☒	VCP	-	Noise Ken	-	-

Test Conditions

Temperature: (22,0 ± 0,1) °C
Relative Humidity: (45,8 ± 0,1) % R.H.
Atmospheric Pressure: (100,8 ± 0,1) kPa

Test Specifications

Discharge Factor: ≥ 1 s

Discharge Impedance: 330 ohm / 150 pF

Kind of Discharge: Air, Contact (direct and indirect)

Polarity: Positive and Negative

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

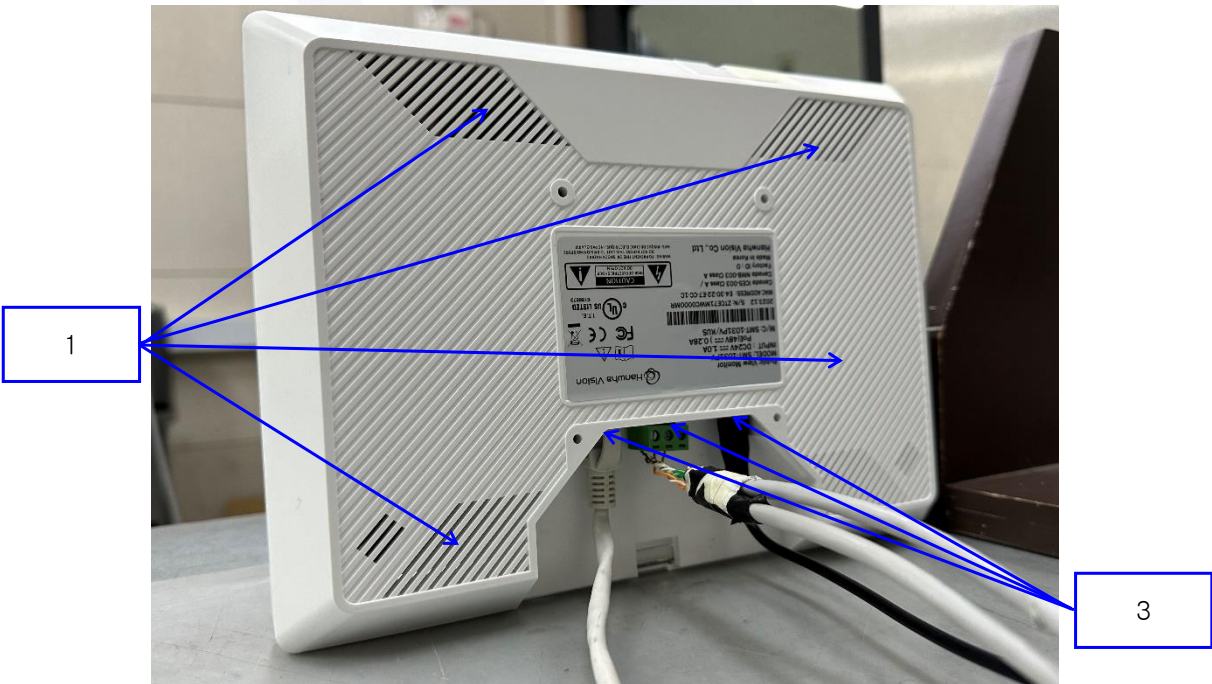
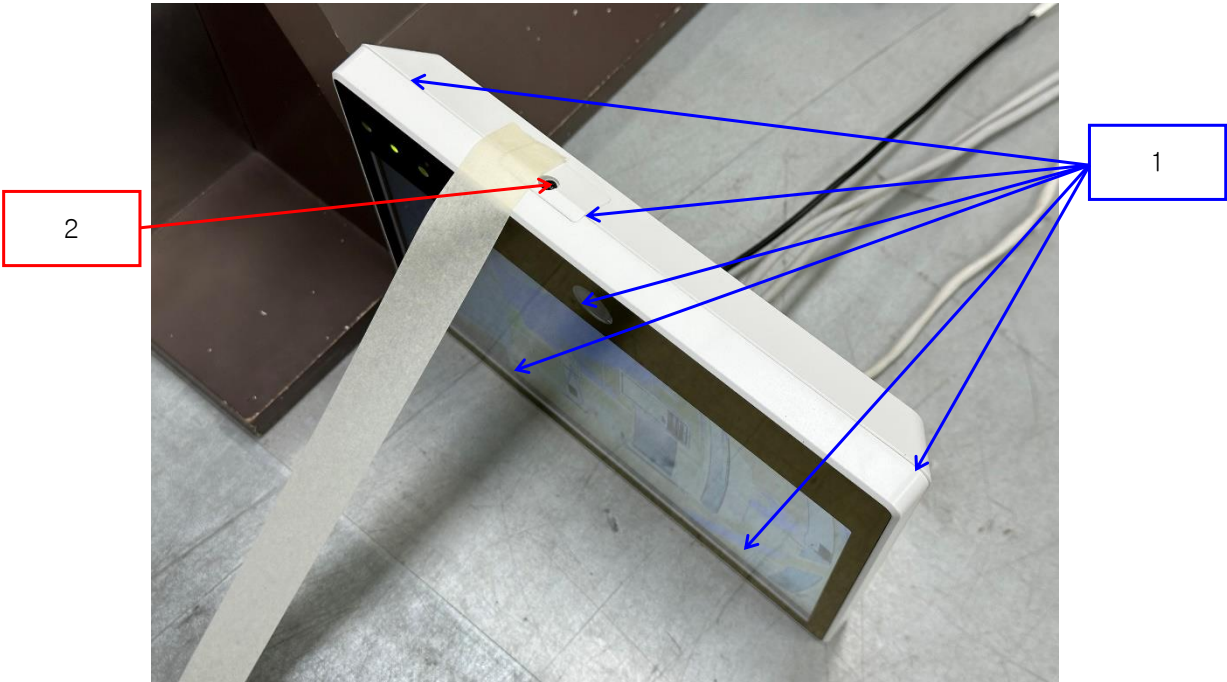
Discharge Voltage:	Contact	Air	HCP	VCP
	☐ 2 kV	☒ 2 kV	☐ 2 kV	☐ 2 kV
	☐ 4 kV	☒ 4 kV	☐ 4 kV	☐ 4 kV
	☒ 6 kV	☐ 6 kV	☒ 6 kV	☒ 6 kV
	☐ 8 kV	☒ 8 kV	☐ 8 kV	☐ 8 kV
	☐ 15 kV	☐ 15 kV	☐ 15 kV	☐ 15 kV

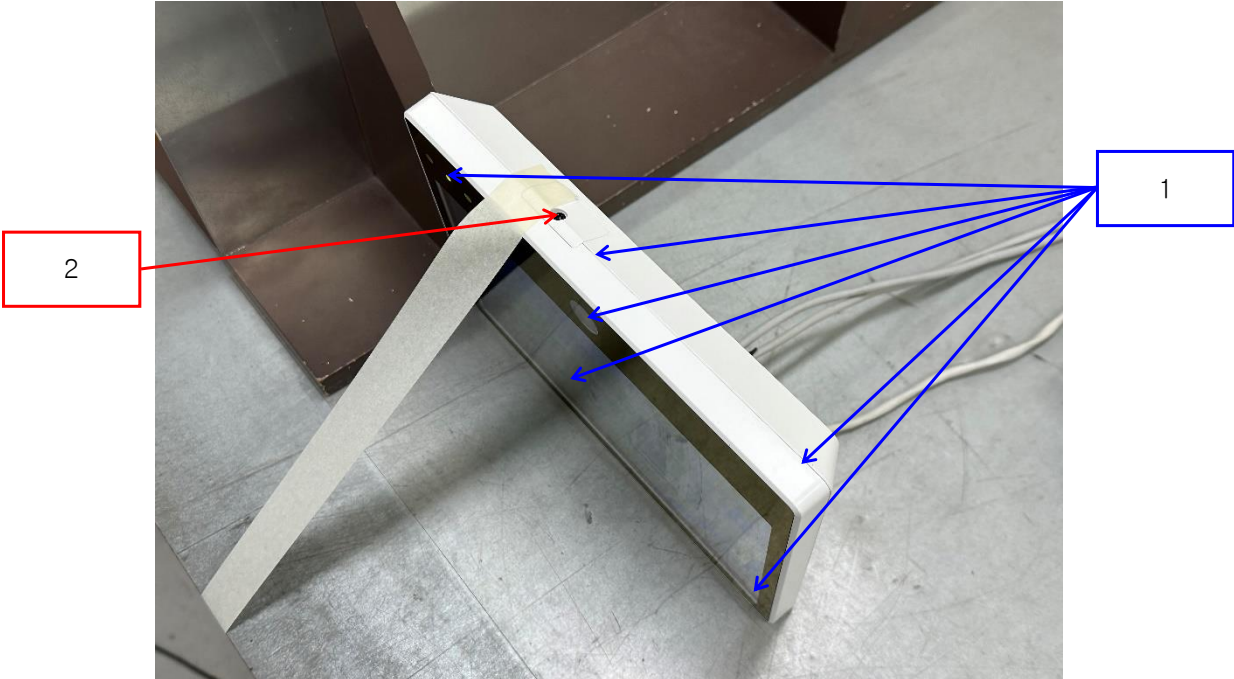
Notes: HCP: Horizontal coupling plane
VCP: Vertical coupling plane

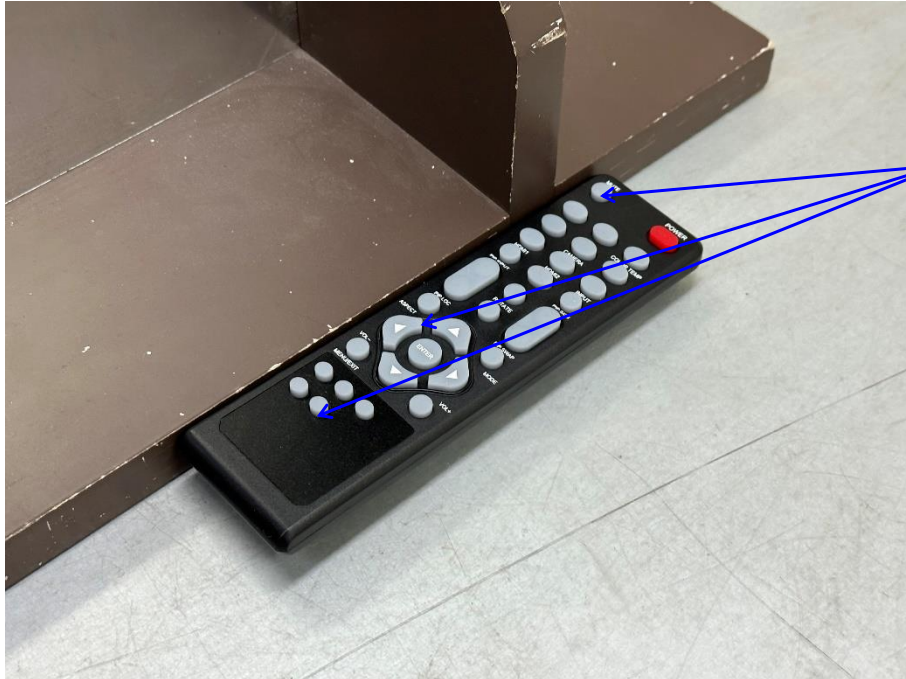
Required Performance Criteria: ☒ Complied



Location of Discharge:







4

**Test Data****■ DC Mode**

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	Air Discharge	Complied	-
2	Screw	Contact Discharge	Complied	-
3	Port	Air Discharge	Complied	-
4	remote controller	Air Discharge	Complied	-

■ PoE Mode

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	Air Discharge	Complied	-
2	Screw	Contact Discharge	Complied	-
3	Port	Air Discharge	Complied	-
4	remote controller	Air Discharge	Complied	-

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria



3.2 Radiated Electric Field Immunity

Reference Standard

EN IEC 61000-4-3:2020

Test Date

Dec. 28, 2023

Test LocationEMS-RS: ☐ SEMI ANECHOIC CHAMBER #2☒ SEMI ANECHOIC CHAMBER #3**Test Equipment**

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	EMC32	R & S	10.10.02	-
☒	SIGNAL GENERATOR	SMB 100A	Rohde & Schwarz	108252	07, 31, 2024
☒	HIGH POWER DUAL AMP	SSA532	SUNGSAN	SSA532-001	-
☒	POWER METER	E4419B	Agilent	GB40203000	03, 21, 2024
☒	AVERAGE POWER SENSOR	E9301A	Agilent	MY52170007	03, 21, 2024
☒	AVERAGE POWER SENSOR	E9301A	Agilent	MY41498669	03, 21, 2024
☒	STACKED DOUBLE LOG-PER- ANTENNA	STPL9128 E	Schwarzbeck	9128ES-121	-
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 06, 2024

Test Conditions

Temperature: (21,2 ± 0,2) °C
Relative Humidity: (46,7 ± 0,2) % R.H.
Atmospheric Pressure: (100,5 ± 0,1) kPa



Test Specifications

Antenna Polarization: Horizontal & vertical unless indicated otherwise

Antenna Distance: ☒ 3 m

Field Strength: ☐ 1 V/m ☐ 3 V/m
☒ 10 V/m

Frequency Range: ☐ 80 MHz to 1 GHz ☐ 1,4 GHz to 2,7 GHz
☒ 80 MHz to 2,7 GHz

Modulation: ☒ AM, 80 %, 1 kHz sine wave
☒ PM, 1 Hz (0,5 s ON : 0,5 s OFF)

Frequency step: ☒ 1 % step

Dwell Time: ☒ 1 s ☐ 3 s

of Sides Radiated: ☒ 4

Required Performance Criteria: ☒ Complied

**Test Data**

■ DC Mode

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

■ PoE Mode

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

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria



3.3 Electrical Fast Transients/Bursts

Reference Standard

EN 61000-4-4:2012

Test Date

Dec. 27, 2023

Test Location

EMS-EFT: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	iec.control	EM TEST	5.4.8	-
☒	ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	11, 09, 2024
☒	MOTOR VARIAC	MV2616	EM TEST	P1552169719	11, 09, 2024
☒	CAPACITIVE COUPLING CLAMP	HFK	EM TEST	P1633183115	11, 10, 2024

Test Conditions

Temperature: (22,0 ± 0,1) °C
Relative Humidity: (45,8 ± 0,1) % R.H.
Atmospheric Pressure: (100,8 ± 0,1) kPa

Test Specifications

Pulse Amplitude & Polarity: ☐ ± 1.0 kV ☒ ± 2.0 kV
(AC Power Lines) ☐ ± 4.0 kV

Pulse Amplitude & Polarity: ☐ ± 0.5 kV ☒ ± 1.0 kV
(Other supply / Signal Lines) ☐ ± 2.0 kV

Burst Period: ☒ 300 ms ☐ 2 s

Repetition Rate: ☐ 5 kHz ☒ 100 kHz

Duration of Test Voltage: ☒ ≥ 1 min

Required Performance Criteria: ☒ Complied

**Test Data**

■ DC Mode

☒ Input a.c. power ports – Coupling/Decoupling Network used

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

☐ Input d.c. power ports – Coupling/Decoupling Network used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
-	-	-

☒ Signal ports and telecommunication ports – Coupling Clamp used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
RJ-45	Complied	Complied
2 Pin(Alarm In), 2 Pin(Alarm Out)	Complied	Complied

■ PoE Mode

☐ Input a.c. power ports – Coupling/Decoupling Network used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
-	-	-

☐ Input d.c. power ports – Coupling/Decoupling Network used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
-	-	-

☒ Signal ports and telecommunication ports – Coupling Clamp used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
RJ-45	Complied	Complied
2 Pin(Alarm In), 2 Pin(Alarm Out)	Complied	Complied

Note: “Blank” = Not performed

Observations:

Complied – No degradation of function

Test Results☒ PASS Required Performance Criteria☐ NOT PASS Required Performance Criteria**Remarks**PASS Required Performance Criteria



3.4 Surge Transients

Reference Standard

EN 61000-4-5:2014/A1:2017

Test Date

Dec. 27, 2023

Test Location

EMS-Surge: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test SW	iec.control	EM TEST	5.4.8	-
☒	ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	11, 09, 2024
☒	MOTOR VARIAC	MV2616	EM TEST	P1552169719	11, 09, 2024
☒	CDN	CNV 508N1	EM TEST	P1610176296	11, 10, 2024

Test Conditions

Temperature: (22,0 ± 0,2) °C
Relative Humidity: (45,8 ± 0,1) % R.H.
Atmospheric Pressure: (100,8 ± 0,1) kPa

**Test Specifications****AC Power Lines**

Source Impedance: 12 ohm for common Mode and 2 ohm for differential Mode

Surge Amplitude :

Common Mode☐ (0,5 / 1,0 / 2,0) kVDifferential Mode☒ (0,5 / 1,0) kV

Number of Surges:

☒ 5 surges per angle

Angle:

☒ 0°, 90°, 180°, 270° (input a.c. power port)

Polarity:

☒ Positive & Negative

Repetition Rate:

☒ 1 surge per min ☐ 1 surge per 30 sec.

Required Performance Criteria:

☒ Complied**Other supply / Signal Lines**

Source Impedance:

42 ohm for common Mode

Surge Amplitude:

Common Mode☒ (0,5 / 1,0) kV

Number of Surges:

☒ 5 Surges

Polarity:

☒ Positive & Negative

Repetition Rate:

☒ 1 surge per min ☐ 1 surge per 30 sec.

Required Performance Criteria:

☒ Complied

**Test Data**☒ DC Mode☒ Line to Line – Differential Mode

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

☐ Line to Earth – Common Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
L – PE	-	-
N – PE	-	-

Signal Lines☒ Line to Earth – Common Mode

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

☒ PoE Mode☐ Line to Line – Differential Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
L – N	-	-

☐ Line to Earth – Common Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
L – PE	-	-
N – PE	-	-

Signal Lines☒ Line to Earth – Common Mode

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

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results☒ PASS Required Performance Criteria☐ NOT PASS Required Performance Criteria**Remarks**PASS Required Performance Criteria



3.5 Conducted Disturbance

Reference Standard

EN 61000-4-6:2014

Test Date

Dec. 27, 2023

Test Location

EMS-CS: Electro wave Shieldroom #6

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	icd.control	EM TEST	5.3.12	-
☒	CONTINUOUS WAVE SIMULATOR	CWS 500N1.4	EM TEST	P1602169880	11, 08, 2024
☒	ATTENUATOR	ATT 6/80	EM TEST	P1614178148	11, 08, 2024
☒	CDN	CDN M016	TESEQ	43694	11, 08, 2024
☒	CDN	CDN M016	TESEQ	43697	11, 08, 2024
☒	CDN	CDN T800	TESEQ	42800	11, 08, 2024
☒	EM CLAMP	KEMZ 801A	TESEQ	44099	11, 09, 2024

Test Conditions

Temperature: (21,5 ± 0,2) °C
Relative Humidity: (46,0 ± 0,1) % R.H.
Atmospheric Pressure: (100,3 ± 0,1) kPa

Test Specifications

Frequency range: ☒ 150 kHz to 100 MHz ☐ 150 kHz to 80 MHz

Voltage Level: ☐ 1 Vrms ☐ 3 Vrms
☒ 10 Vrms

Modulation: ☒ AM, 80 %, 1 kHz sine wave
☒ PM, 1 Hz (0,5 s ON : 0,5 s OFF)

Frequency step: ☒ 1 % step

Dwell Time: ☐ 1 s ☒ 3 s

Required Performance Criteria: ☒ Complied

**Test Data**☒ DC Mode☒ Input a.c. power ports

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

☐ Input d.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
-	-	-

☒ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45	CDN	Complied
2 Pin(Alarm In), 2 Pin(Alarm Out)	Clamp	Complied

☒ PoE Mode☐ Input a.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
-	-	-

☐ Input d.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
-	-	-

☒ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
RJ-45	CDN	Complied
2 Pin(Alarm In), 2 Pin(Alarm Out)	Clamp	Complied

Notes: CDN = Coupling Decoupling Network
"blank" = Not performed

Observations:

Complied – No degradation of function

Test Results☒ PASS Required Performance Criteria☐ NOT PASS Required Performance Criteria**Remarks**PASS Required Performance Criteria



3.6 Voltage Dips and Short Interruptions

Reference Standard

EN IEC 61000-4-11:2020

Test Date

Dec. 27, 2023

Test Location

EMS-Voltage dip: Electro wave Shieldroom #7

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMS Test S/W	iec.control	EM TEST	5.4.8	-
☒	ULTRA COMPACT SIMULATOR	UCS 500N7	EM TEST	P1608172950	11, 09, 2024
☒	MOTOR VARIAC	MV2616	EM TEST	P1552169719	11, 09, 2024

Test Conditions

Temperature: (22,0 ± 0,1) °C
Relative Humidity: (45,8 ± 0,1) % R.H.
Atmospheric Pressure: (100,8 ± 0,1) kPa

**Test Specifications & Observations/Remarks****- Voltage Dips and Short Interruptions**

<u>Test Level</u>	<u>Duration [in period/ms (50 Hz)]</u>	<u>Results</u>
☒ 20 % dip	☒ 250 / 5 000	<u>Complied</u>
☒ 30 % dip	☒ 25 / 500	<u>Complied</u>
☒ 60 % dip	☒ 10 / 200	<u>Complied</u>
☒ 100 % dip	☒ 250 / 5 000	<u>Degradation</u>

- Voltage variations

☒ Unom + 10 %	☒ 253.0 V (ac)	<u>Complied</u>
☒ Unom - 15 %	☒ 195.5 V (ac)	<u>Complied</u>

Observations:

Complied – No degradation of function

Degradation - See "Remarks "

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria
☐ NOT APPLICABLE

RemarksPASS Required Performance Criteria.



APPENDIX A – TEST DATA

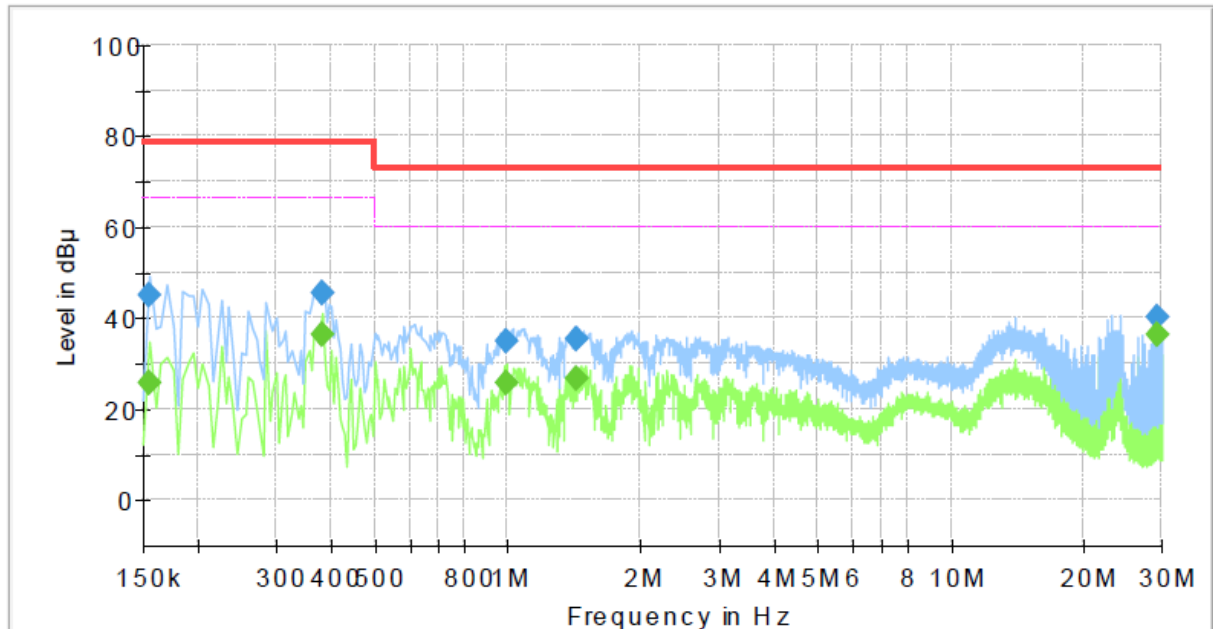
Conducted Emissions at Mains Power Ports

■ DC Mode

[HOT]

Common Information

Test Description:	Conducted Emission
Model No.:	SMT-1031PVW
Phase:	L1
Mode:	DC
Operator Name:	KES



Final Result

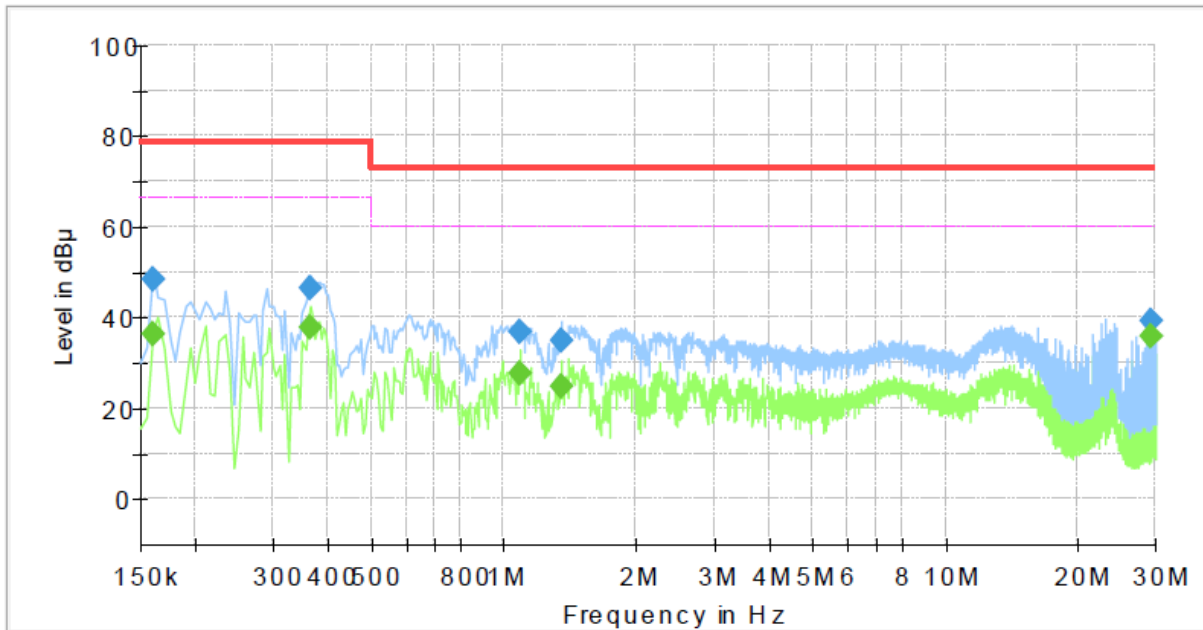
Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	25.89	66.00	40.11	1000.0	9.000	L1	19.4
0.155000	44.81	---	79.00	34.19	1000.0	9.000	L1	19.4
0.380000	---	36.13	66.00	29.87	1000.0	9.000	L1	19.4
0.380000	45.41	---	79.00	33.59	1000.0	9.000	L1	19.4
0.990000	---	25.82	60.00	34.18	1000.0	9.000	L1	19.5
0.990000	34.98	---	73.00	38.02	1000.0	9.000	L1	19.5
1.435000	---	26.55	60.00	33.45	1000.0	9.000	L1	19.5
1.435000	35.47	---	73.00	37.53	1000.0	9.000	L1	19.5
29.235000	---	36.35	60.00	23.65	1000.0	9.000	L1	20.4
29.235000	40.08	---	73.00	32.92	1000.0	9.000	L1	20.4



[NEUTRAL]

Common Information

Test Description: Conducted Emission
Model No.: SMT-1031P/VW
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	---	36.51	66.00	29.49	1000.0	9.000	N	19.3
0.160000	48.40	---	79.00	30.60	1000.0	9.000	N	19.3
0.365000	---	37.64	66.00	28.36	1000.0	9.000	N	19.4
0.365000	46.64	---	79.00	32.36	1000.0	9.000	N	19.4
1.090000	---	27.47	60.00	32.53	1000.0	9.000	N	19.5
1.090000	36.74	---	73.00	36.26	1000.0	9.000	N	19.5
1.350000	---	24.83	60.00	35.17	1000.0	9.000	N	19.5
1.350000	34.97	---	73.00	38.03	1000.0	9.000	N	19.5
29.235000	---	35.77	60.00	24.23	1000.0	9.000	N	20.4
29.235000	39.44	---	73.00	33.56	1000.0	9.000	N	20.4

◆ Calculation

QuasiPeak[dBμV] / CAverage [dBμV] = Reading Value[dBμV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

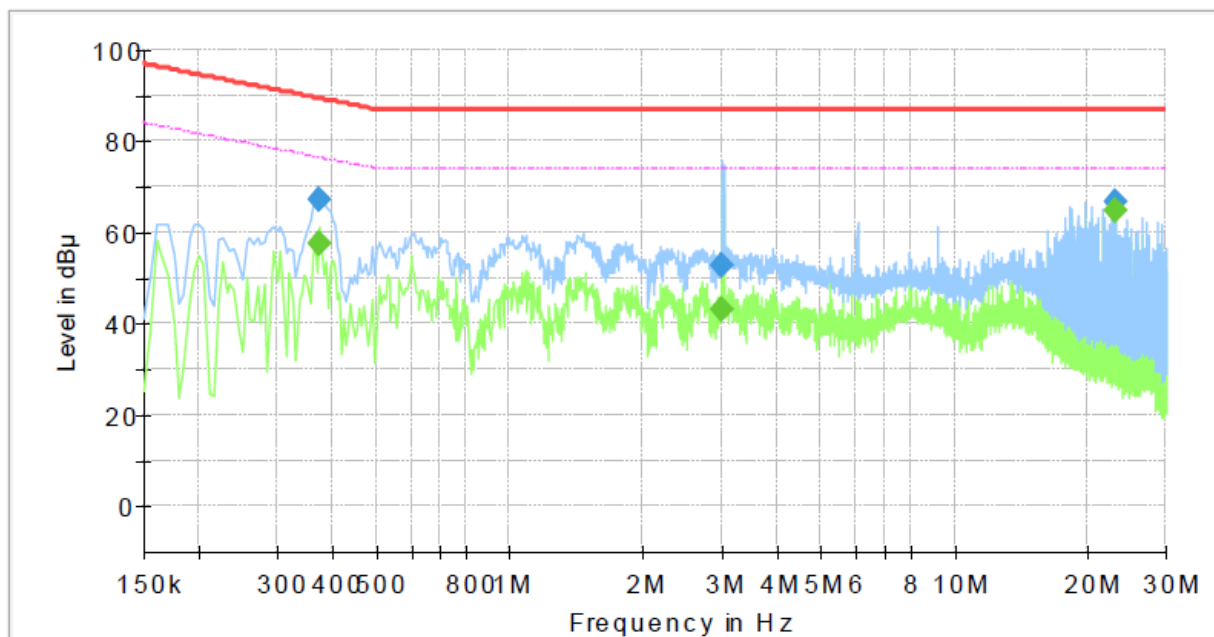
**Conducted Emissions at Telecommunication Ports**

■ DC Mode

[100 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: SMT-1031PVW
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)
0.375000	---	57.72	76.39	18.67	1000.0	9.000	Single Line	19.5
0.375000	67.05	---	89.39	22.34	1000.0	9.000	Single Line	19.5
3.000000	---	43.23	74.00	30.77	1000.0	9.000	Single Line	19.3
3.000000	52.66	---	87.00	34.34	1000.0	9.000	Single Line	19.3
23.130000	---	64.72	74.00	9.28	1000.0	9.000	Single Line	20.1
23.130000	66.65	---	87.00	20.35	1000.0	9.000	Single Line	20.1

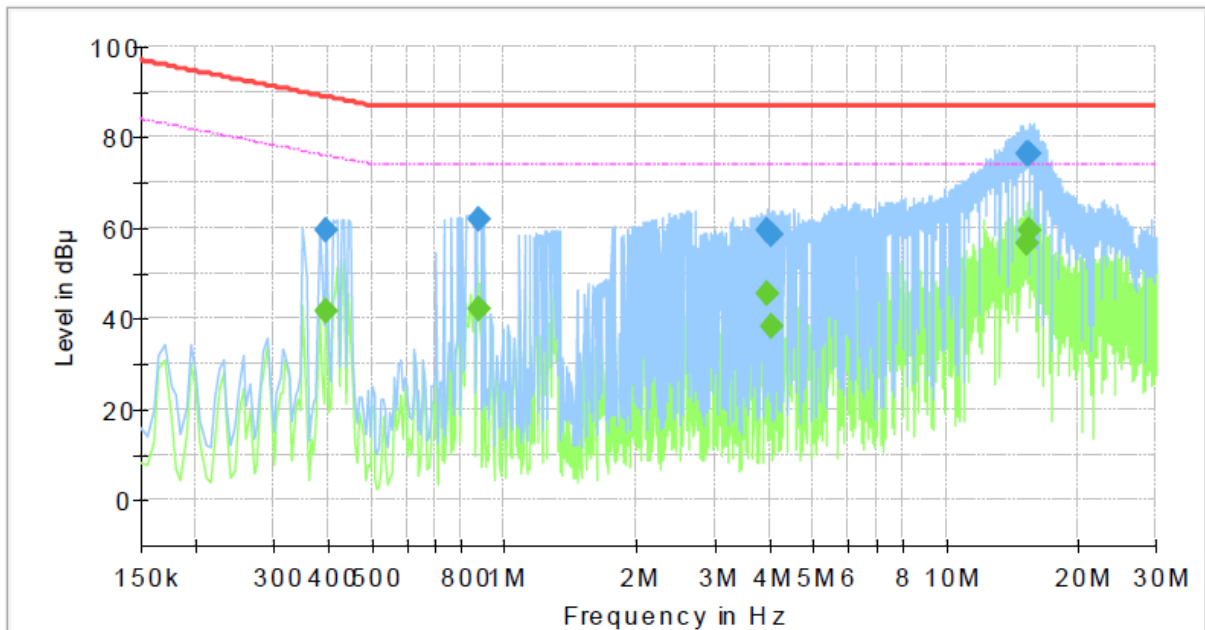


■ PoE Mode

[100 Mbps]

Common Information

Test Description: Telecommunication Emission
Model No.: SMT-1031PVW
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)
0.395000	---	41.83	75.96	34.13	1000.0	9.000	Single Line	19.4
0.395000	59.25	---	88.96	29.71	1000.0	9.000	Single Line	19.4
0.875000	---	41.98	74.00	32.02	1000.0	9.000	Single Line	19.4
0.875000	61.65	---	87.00	25.35	1000.0	9.000	Single Line	19.4
3.955000	---	45.31	74.00	28.69	1000.0	9.000	Single Line	19.4
3.955000	59.62	---	87.00	27.38	1000.0	9.000	Single Line	19.4
4.020000	---	38.46	74.00	35.54	1000.0	9.000	Single Line	19.4
4.020000	58.48	---	87.00	28.52	1000.0	9.000	Single Line	19.4
15.360000	---	56.80	74.00	17.20	1000.0	9.000	Single Line	19.8
15.360000	76.36	---	87.00	10.64	1000.0	9.000	Single Line	19.8
15.430000	---	59.62	74.00	14.38	1000.0	9.000	Single Line	19.8
15.430000	76.22	---	87.00	10.78	1000.0	9.000	Single Line	19.8

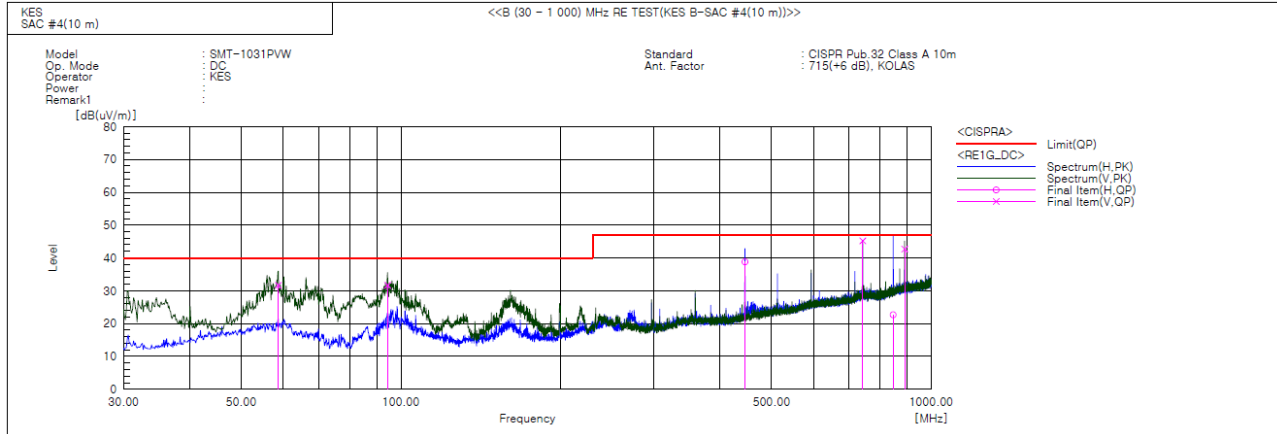
◆ Calculation

QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

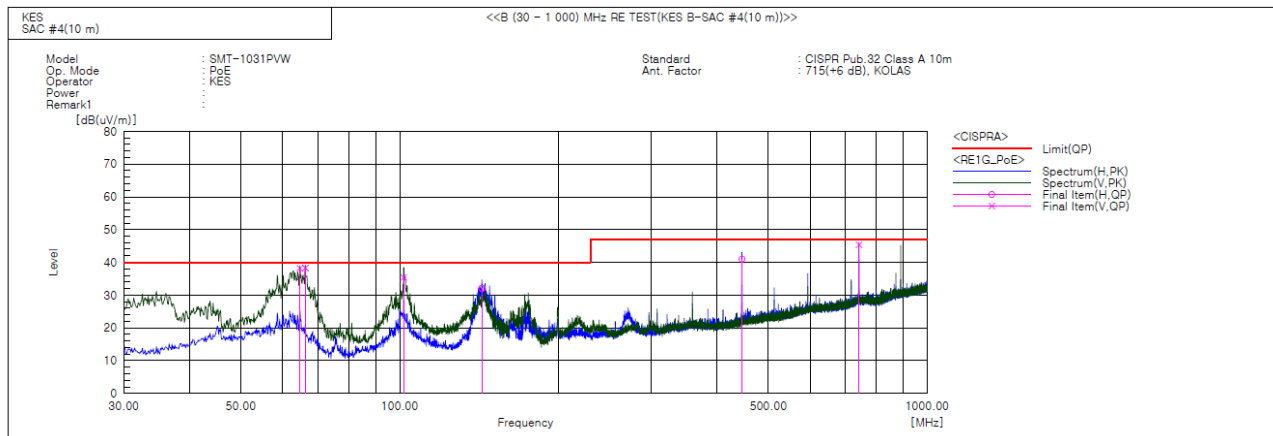
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

**Radiated Electric Field Emissions(Below 1 GHz)****■ 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	58.736	V	53.5	-21.8	31.7	40.0	8.3	100.0	72.0	
2	94.384	V	54.6	-22.9	31.7	40.0	8.3	115.0	204.0	
3	445.524	H	51.7	-12.9	38.8	47.0	8.2	207.0	200.0	
4	742.586	V	50.4	-5.2	45.2	47.0	1.8	166.0	306.0	
5	847.831	H	26.8	-4.1	22.7	47.0	24.3	397.0	349.0	
6	890.996	V	45.9	-3.2	42.7	47.0	4.3	119.0	306.0	



■ PoE Mode



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	64.678	V	61.4	-23.2	38.2	40.0	1.8	111.0	316.0	
2	66.254	V	62.0	-23.7	38.3	40.0	1.7	100.0	324.0	
3	101.780	V	57.7	-22.3	35.4	40.0	4.6	137.0	272.0	
4	143.248	H	57.2	-25.2	32.0	40.0	8.0	384.0	186.0	
5	445.524	H	53.9	-12.9	41.0	47.0	6.0	388.0	202.0	
6	742.586	V	50.6	-5.2	45.4	47.0	1.6	150.0	5.0	

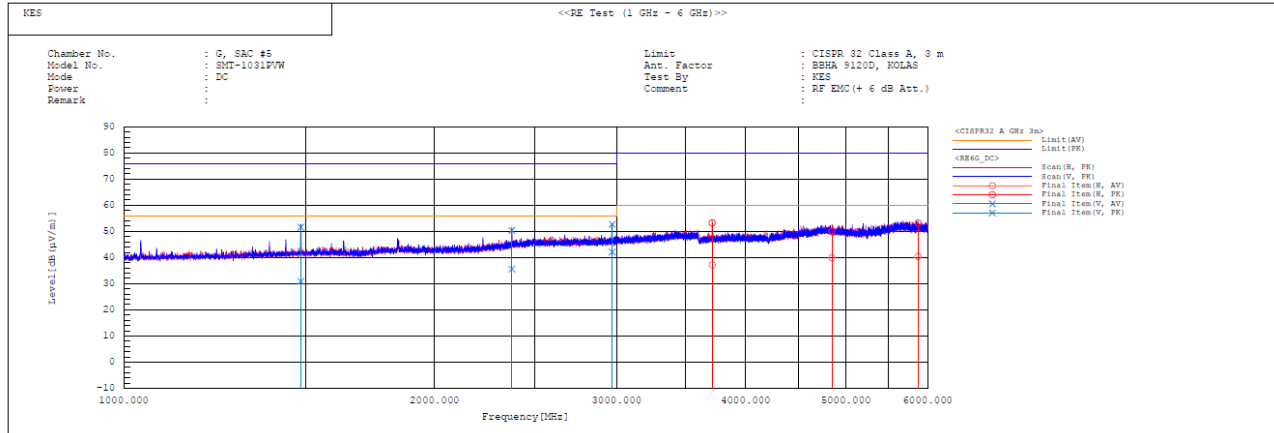
◆ Calculation

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

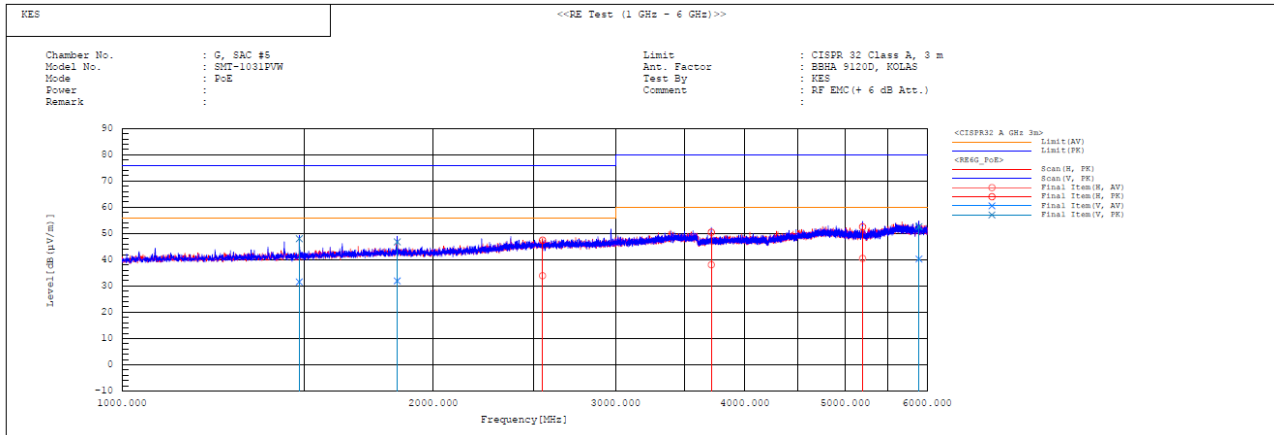
Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

**Radiated Electric Field Emissions(Above 1 GHz)****DC Mode****Final Result**

No.	Frequency [MHz]	Pol	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [deg]	Remark
1	1484.317	V	30.4	51.1	0.5	30.9	51.6	56.0	76.0	25.1	24.4	100.0	309.0	
2	2375.319	V	31.4	46.1	4.2	35.6	50.3	56.0	76.0	20.4	25.7	100.0	208.6	
3	2970.447	V	35.9	46.5	6.2	42.1	52.7	56.0	76.0	13.9	23.3	100.0	310.8	
4	3712.675	H	29.7	45.7	7.5	37.2	53.2	60.0	80.0	22.8	26.8	100.0	330.6	
5	4848.275	H	28.1	38.2	11.8	39.9	50.0	60.0	80.0	20.1	30.0	100.0	292.1	
6	5873.388	H	26.6	39.4	13.8	40.4	53.2	60.0	80.0	19.6	26.8	100.0	212.9	



■ PoE Mode



◆ Calculation

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

**Harmonic Current Emissions and Voltage Fluctuations and Flicker**

■ DC Mode

Average harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	0.040			
2	0.002	0.157	1.080	n/a
3	0.034	1.458	2.300	PASS
4	0.002	0.396	0.430	n/a
5	0.034	3.006	1.140	PASS
6	0.002	0.553	0.300	n/a
7	0.033	4.335	0.770	PASS
8	0.002	0.668	0.230	n/a
9	0.031	7.682	0.400	PASS
10	0.001	0.785	0.184	n/a
11	0.029	8.776	0.330	PASS
12	0.001	0.935	0.153	n/a
13	0.027	12.815	0.210	PASS
14	0.002	1.161	0.131	n/a
15	0.024	16.244	0.150	PASS
16	0.001	1.147	0.115	n/a
17	0.022	16.656	0.132	PASS
18	0.001	1.244	0.102	n/a
19	0.020	16.510	0.118	PASS
20	0.001	1.319	0.092	n/a
21	0.017	10.625	0.161	PASS
22	0.001	1.429	0.084	n/a
23	0.014	9.865	0.147	PASS
24	0.001	1.502	0.077	n/a
25	0.012	9.048	0.135	PASS
26	0.001	1.584	0.071	n/a
27	0.010	8.188	0.125	PASS
28	0.001	1.838	0.066	n/a
29	0.008	6.913	0.116	PASS
30	0.001	1.748	0.061	n/a
31	0.007	6.138	0.109	PASS
32	0.001	1.901	0.058	n/a
33	0.005	5.283	0.102	PASS
34	0.001	1.933	0.054	n/a
35	0.005	4.900	0.096	n/a
36	0.001	2.032	0.051	n/a
37	0.004	4.698	0.091	n/a
38	0.001	2.139	0.048	n/a
39	0.004	4.803	0.087	n/a
40	0.001	2.101	0.046	n/a

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

* Application of limits for average is 100% except for odd harmonics from 21 to 39, where 150% applies.



Test Data - Harmonics (continued)

Maximum harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	0.041			
2	0.002	0.153	1.620	n/a
3	0.035	1.004	3.450	PASS
4	0.002	0.313	0.645	n/a
5	0.035	2.071	1.710	PASS
6	0.002	0.437	0.450	n/a
7	0.035	2.987	1.155	PASS
8	0.002	0.503	0.345	n/a
9	0.032	5.281	0.600	PASS
10	0.002	0.628	0.276	n/a
11	0.030	6.037	0.495	PASS
12	0.002	0.722	0.230	n/a
13	0.028	8.826	0.315	PASS
14	0.002	0.931	0.197	n/a
15	0.025	11.149	0.225	PASS
16	0.002	0.902	0.173	n/a
17	0.023	11.446	0.199	PASS
18	0.002	0.990	0.153	n/a
19	0.020	11.350	0.178	PASS
20	0.001	1.057	0.138	n/a
21	0.018	10.930	0.161	PASS
22	0.001	1.147	0.125	n/a
23	0.015	10.120	0.147	PASS
24	0.001	1.179	0.115	n/a
25	0.013	9.305	0.135	PASS
26	0.001	1.205	0.106	n/a
27	0.011	8.488	0.125	PASS
28	0.001	1.446	0.099	n/a
29	0.008	7.133	0.116	PASS
30	0.001	1.316	0.092	n/a
31	0.007	6.343	0.109	PASS
32	0.001	1.429	0.086	n/a
33	0.006	5.550	0.102	PASS
34	0.001	1.460	0.081	n/a
35	0.005	5.184	0.096	n/a
36	0.001	1.513	0.077	n/a
37	0.005	4.937	0.091	n/a
38	0.001	1.593	0.073	n/a
39	0.004	5.122	0.087	n/a
40	0.001	1.524	0.069	n/a

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

* Application of limits for average is 100% except for odd harmonics from 21 to 39, where 150% applies.



Test Data - Voltage Fluctuations

Maximum Flicker results

■ DC Mode

Flicker Measurements					
	Plt	Max Pst	Max Dc	Max Dmax	Max Tmax
Line 1:	0.028	0.028	0	< 0.2	0
Limits:	0.65	1	3.3	4	0.5
Results:	PASS	PASS	PASS	PASS	PASS

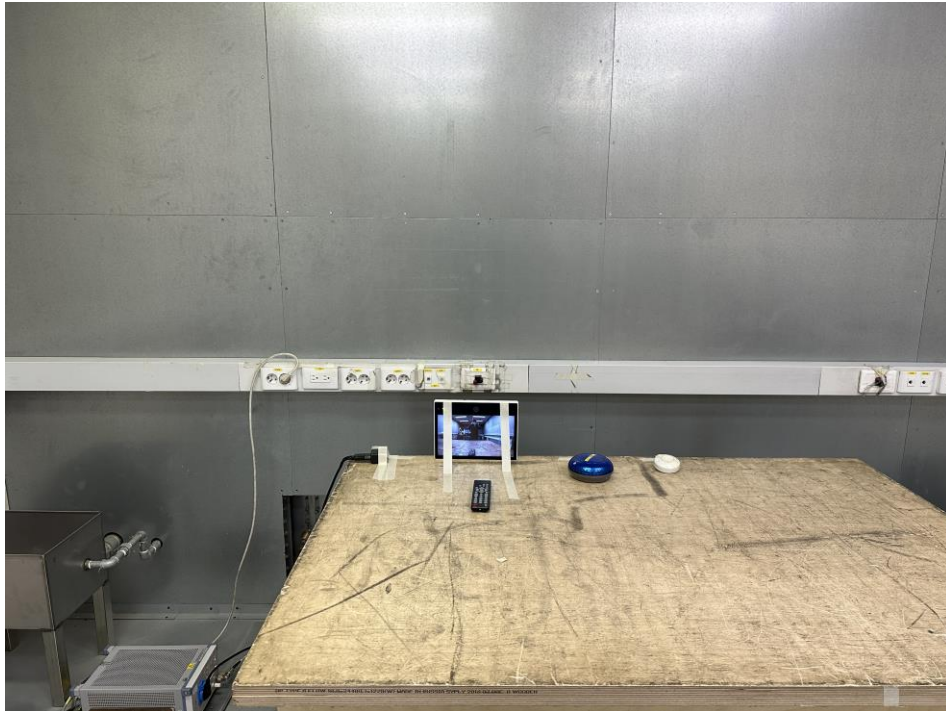




Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports

■ DC Mode





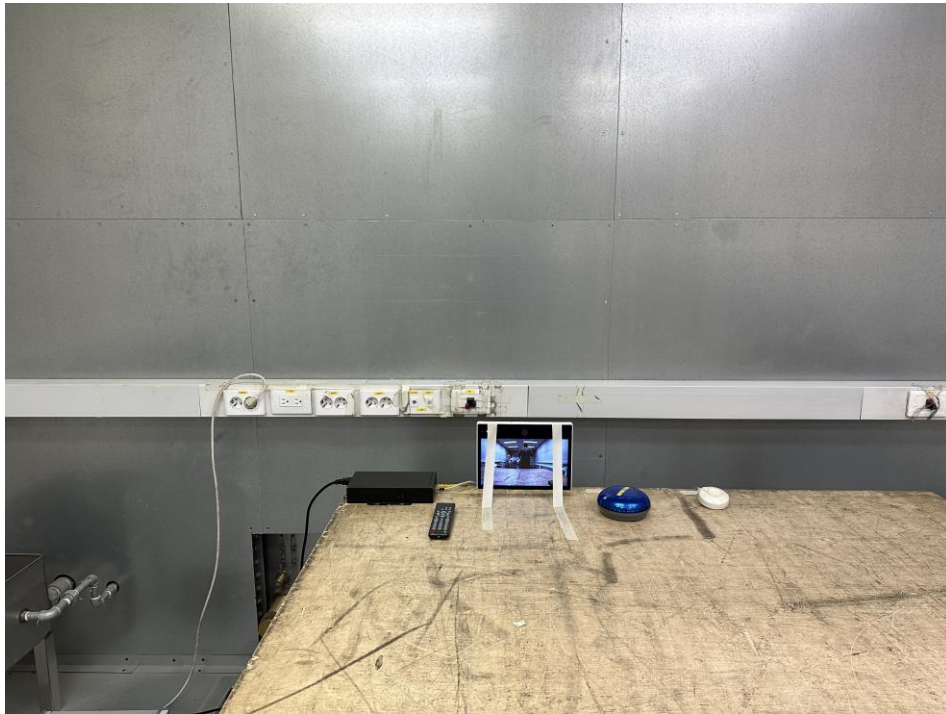
Conducted Emissions at Telecommunication Ports

■ DC Mode





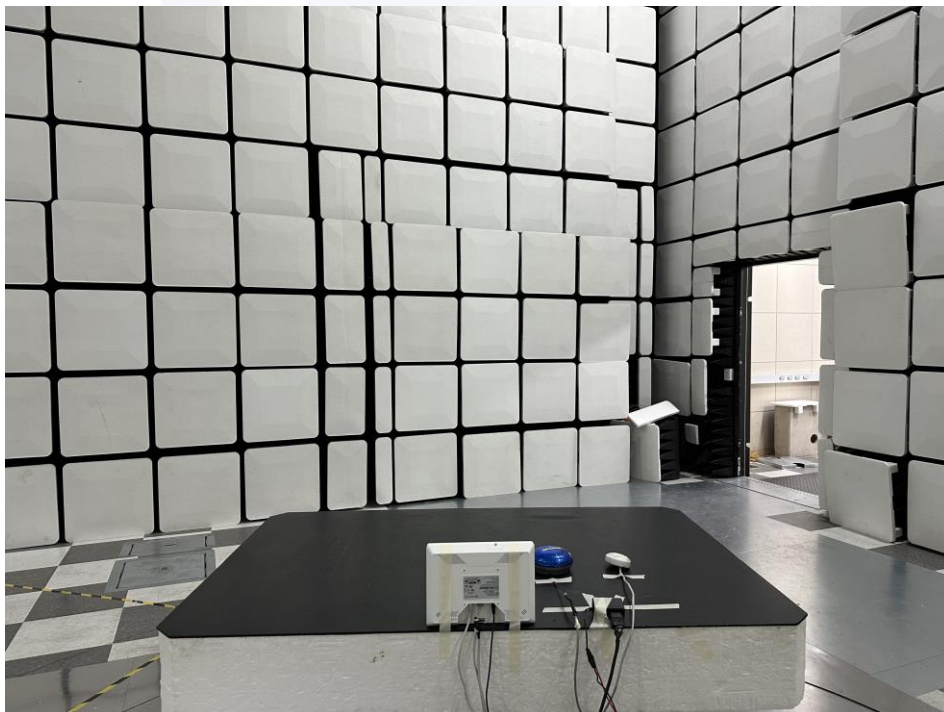
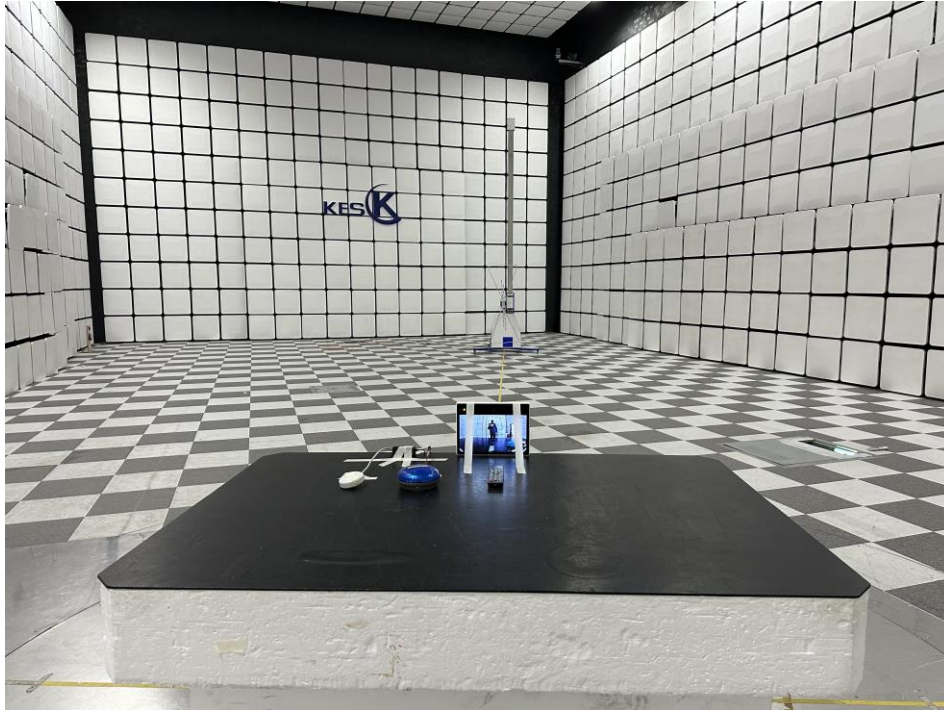
■ PoE Mode





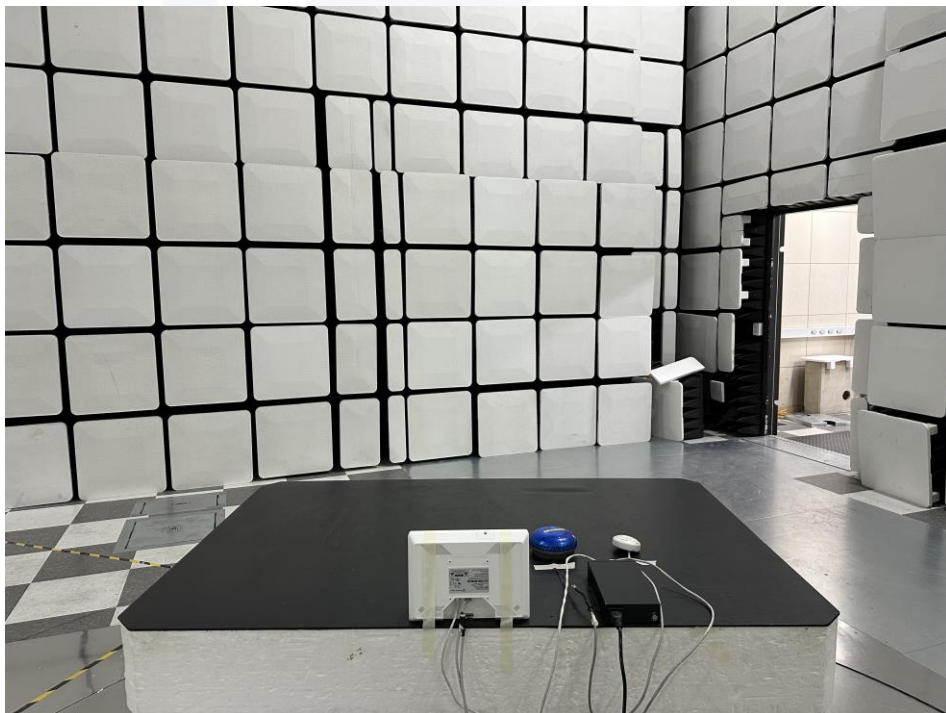
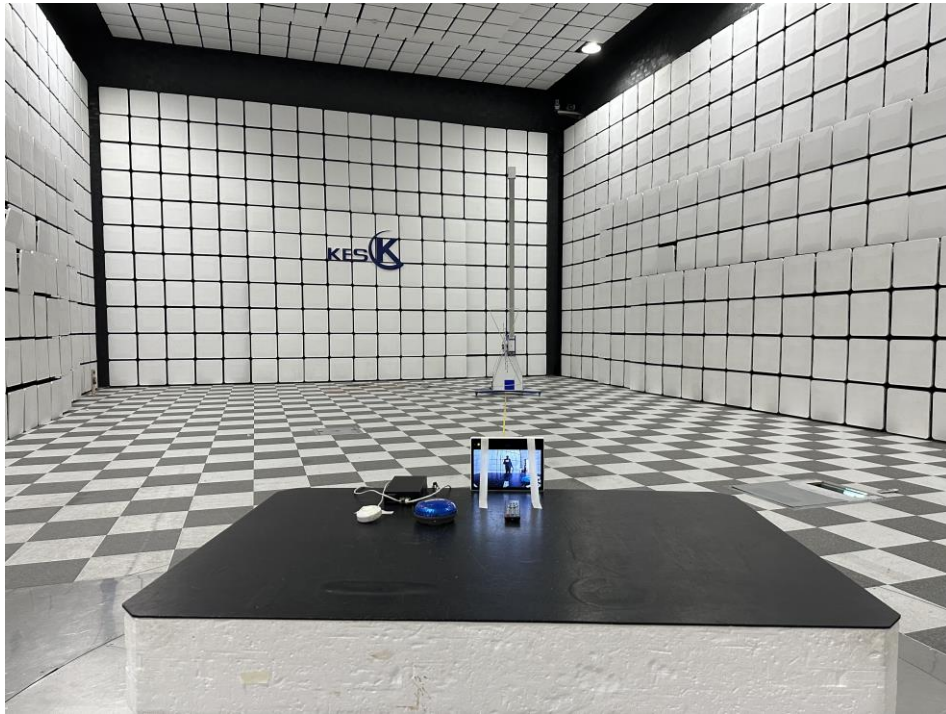
Radiated Electric Field Emissions(Below 1 GHz)

■ DC Mode





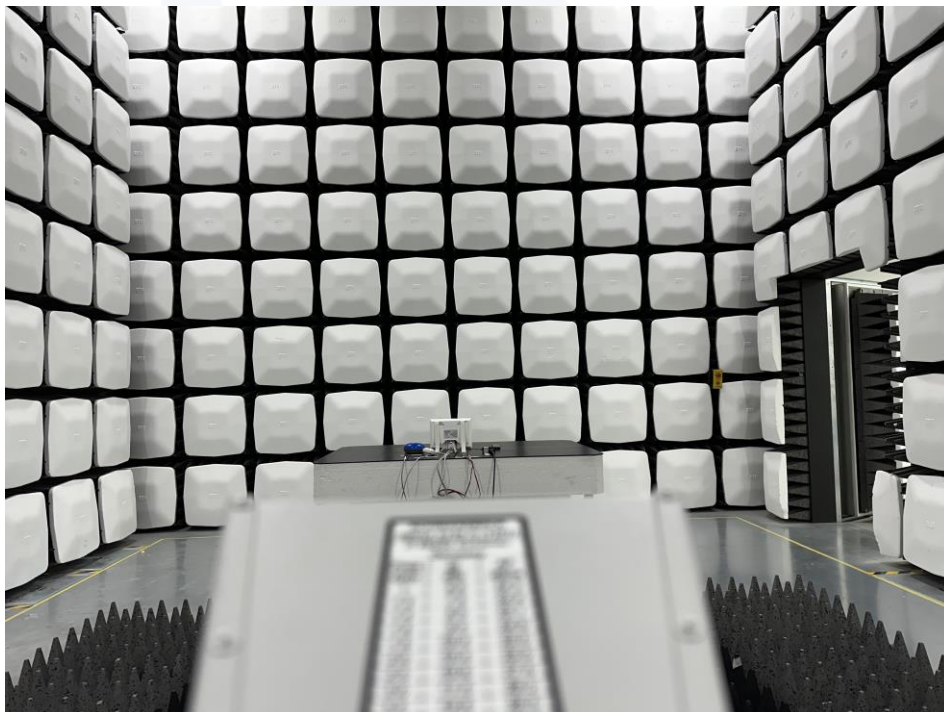
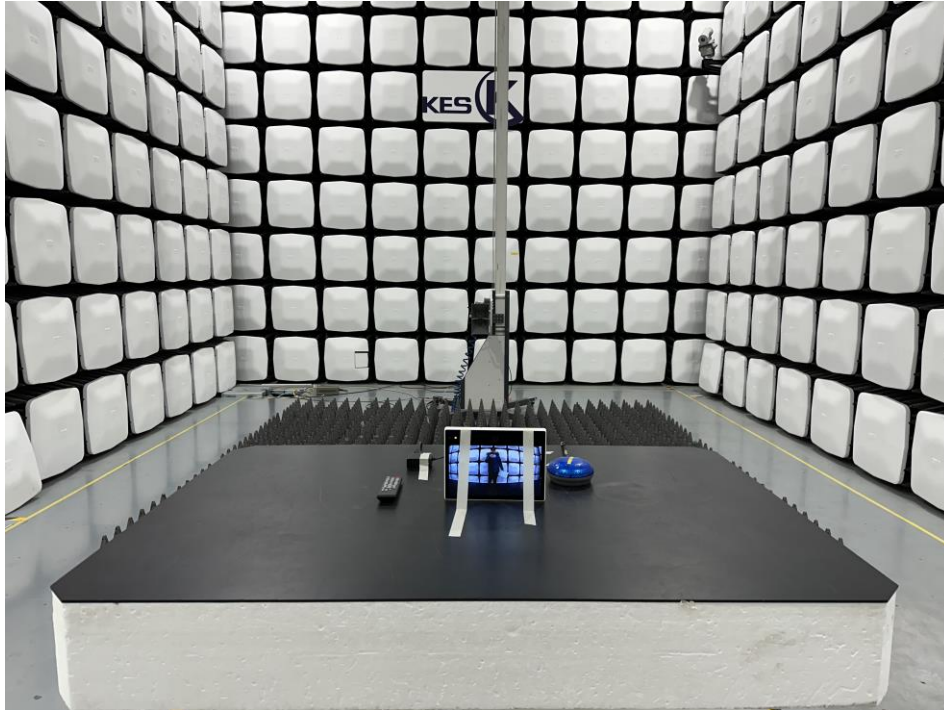
■ PoE Mode





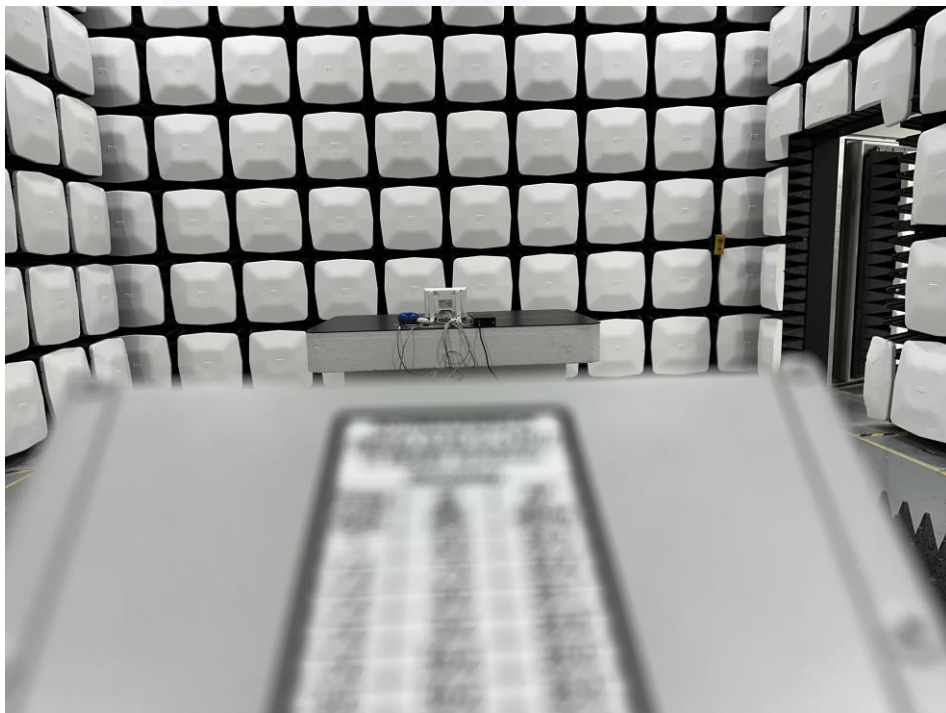
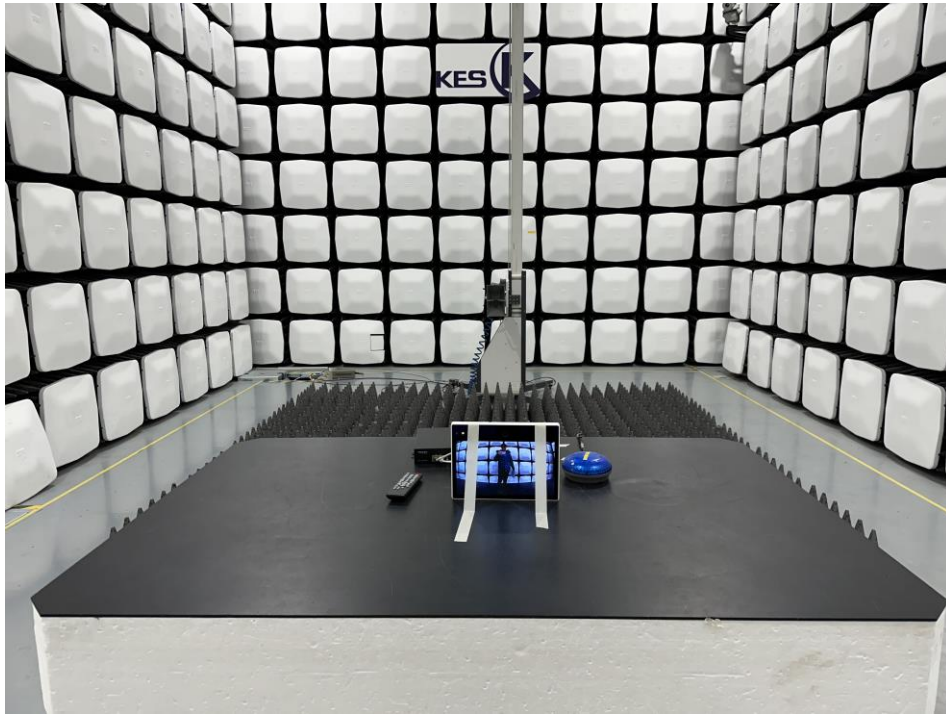
Radiated Electric Field Emissions(Above 1 GHz)

■ DC Mode





■ PoE Mode





Harmonic Current Emissions and Voltage Fluctuations and Flicker

■ DC Mode





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Electrostatic Discharge

■ DC Mode



■ PoE Mode



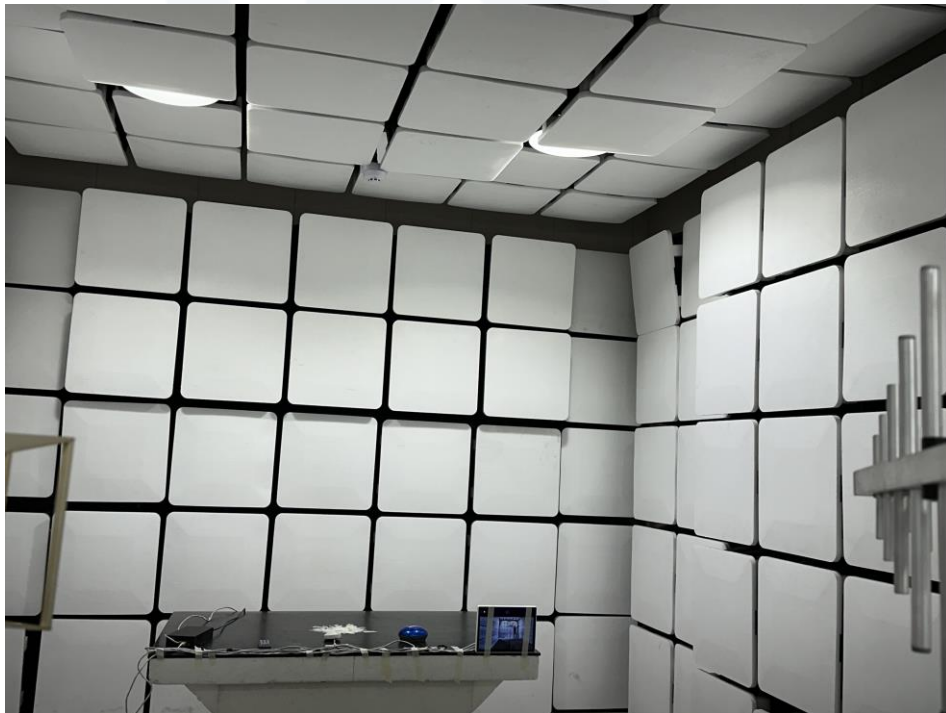


Radiated Electric Field Immunity

■ DC Mode



■ PoE Mode





Electrical Fast Transients/Bursts

■ DC Mode



■ PoE Mode





Surge Transients

■ DC Mode



■ PoE Mode



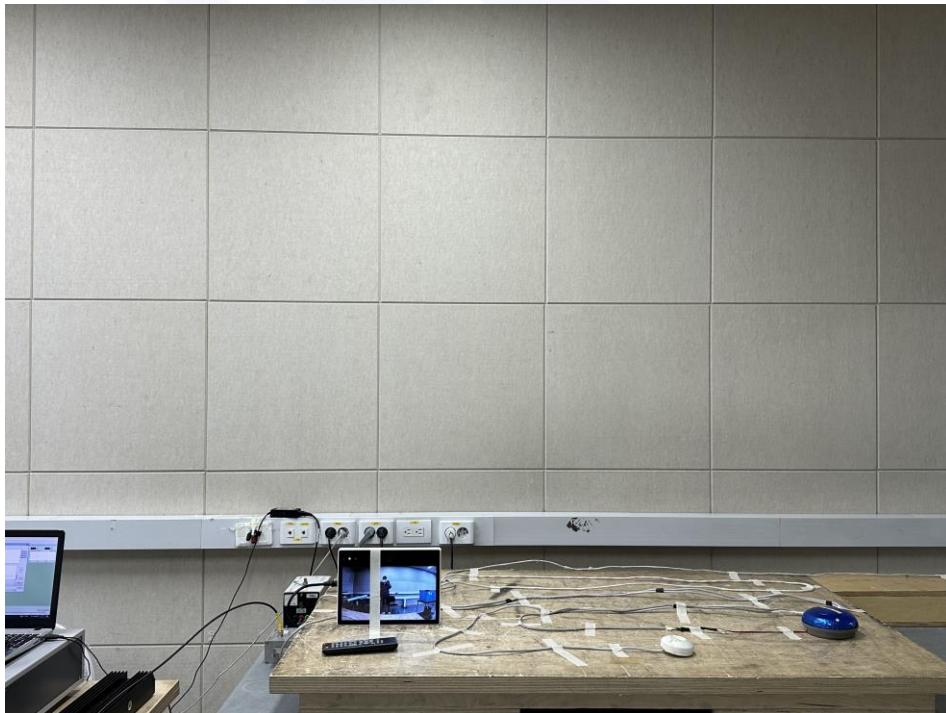


Conducted Disturbance

■ DC Mode



■ PoE Mode





Voltage Dips and Short Interruptions

■ DC Mode





EUT External Photographs

(Top)



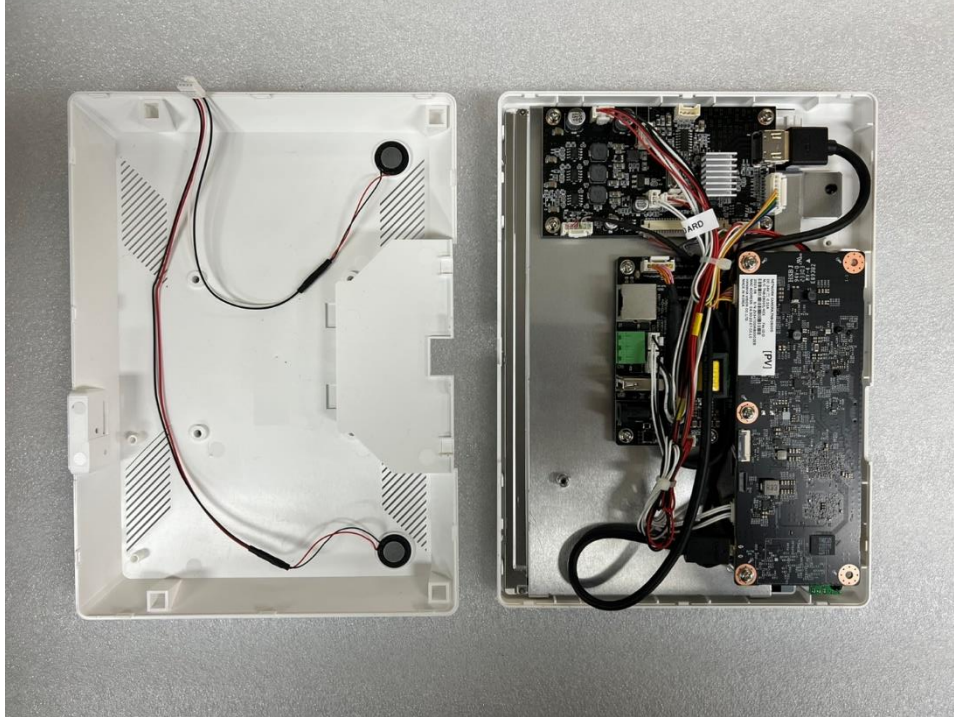
(Bottom)





EUT Internal Photographs

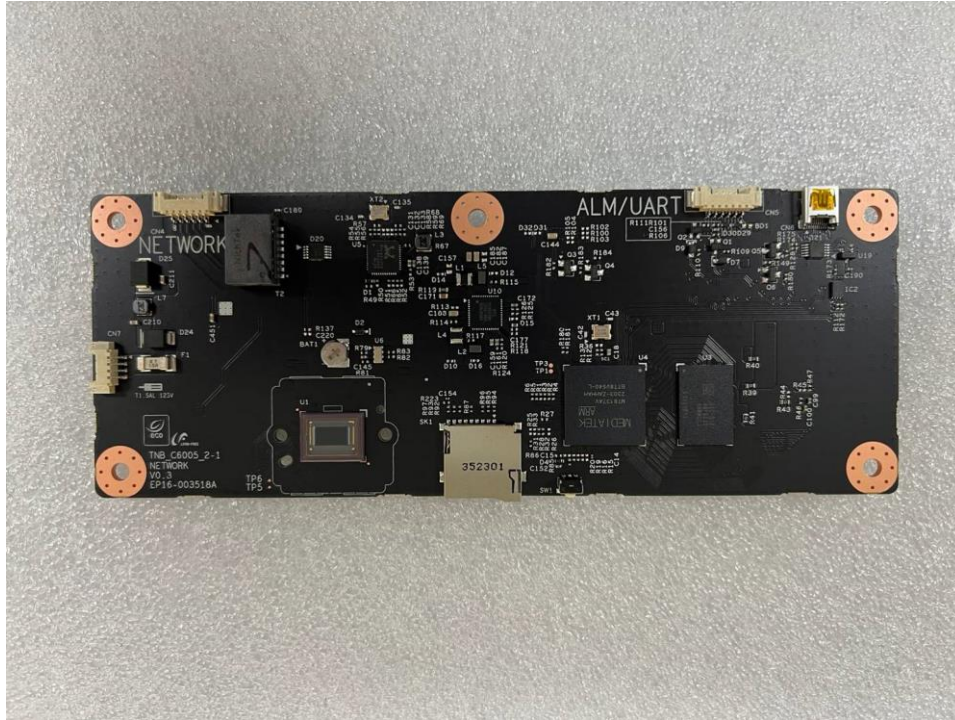
(Internal View)



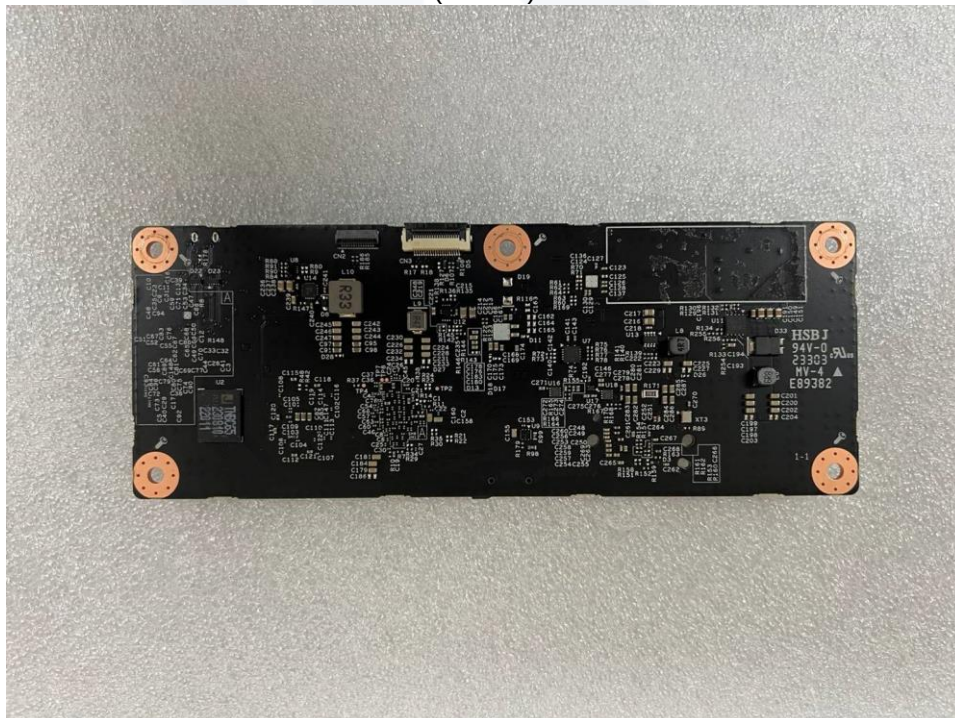


EUT Internal View – Board 1

(Top)



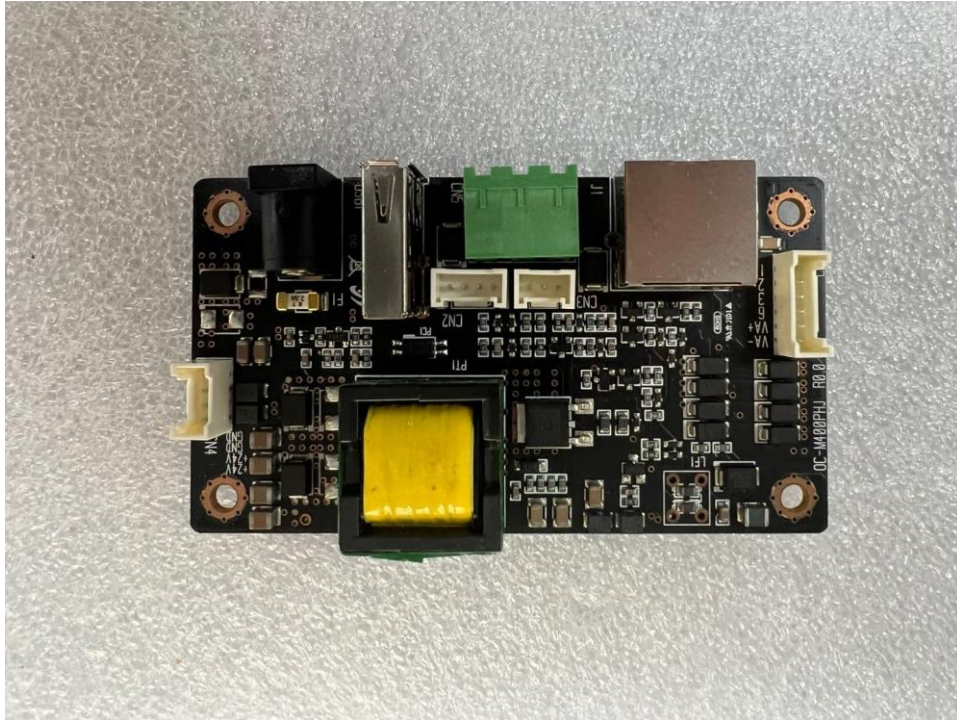
(Bottom)



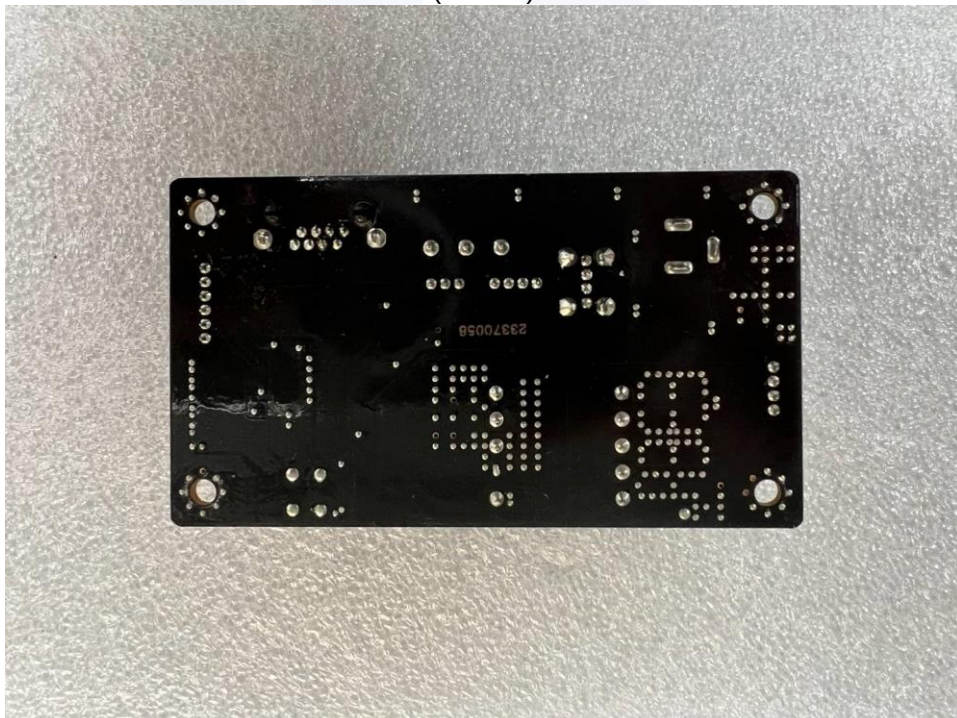


EUT Internal View – Board 2

(Top)



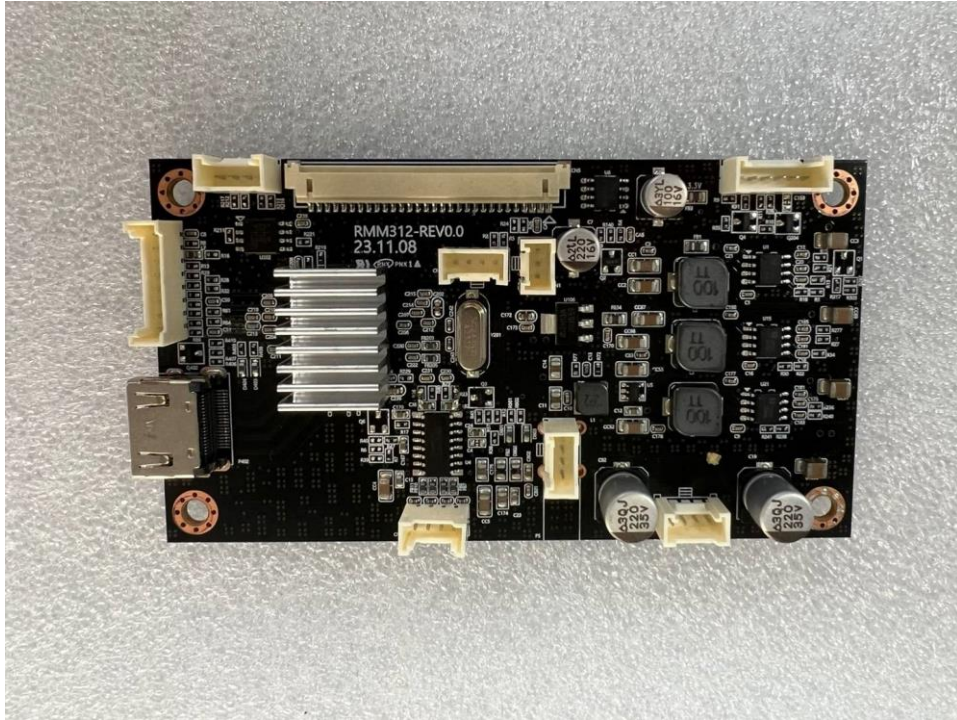
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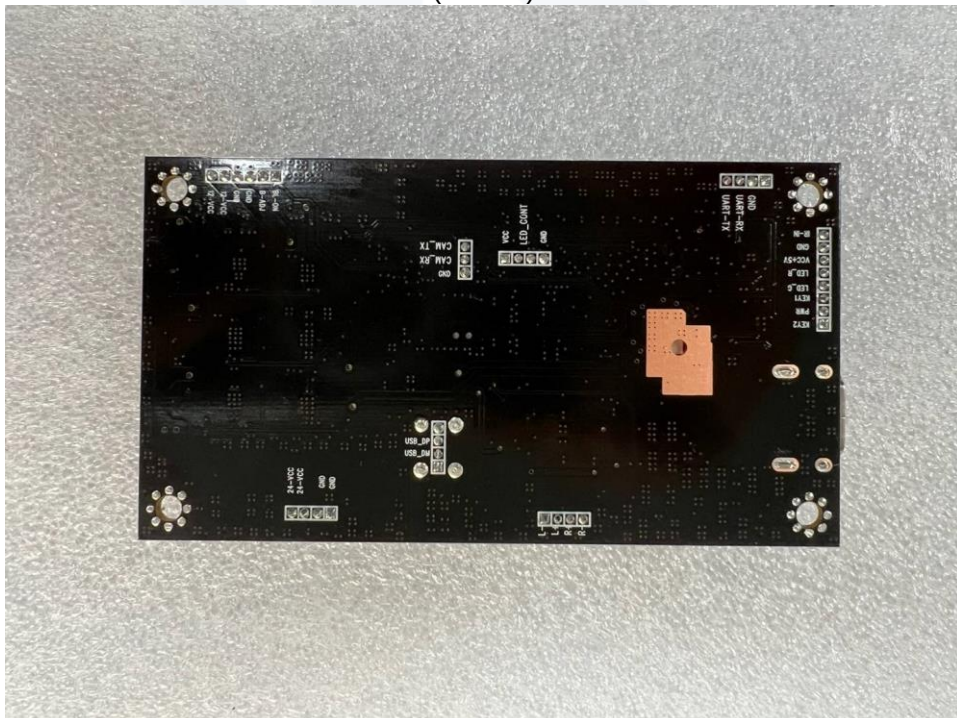


EUT Internal View – Board 3

(Top)



(Bottom)



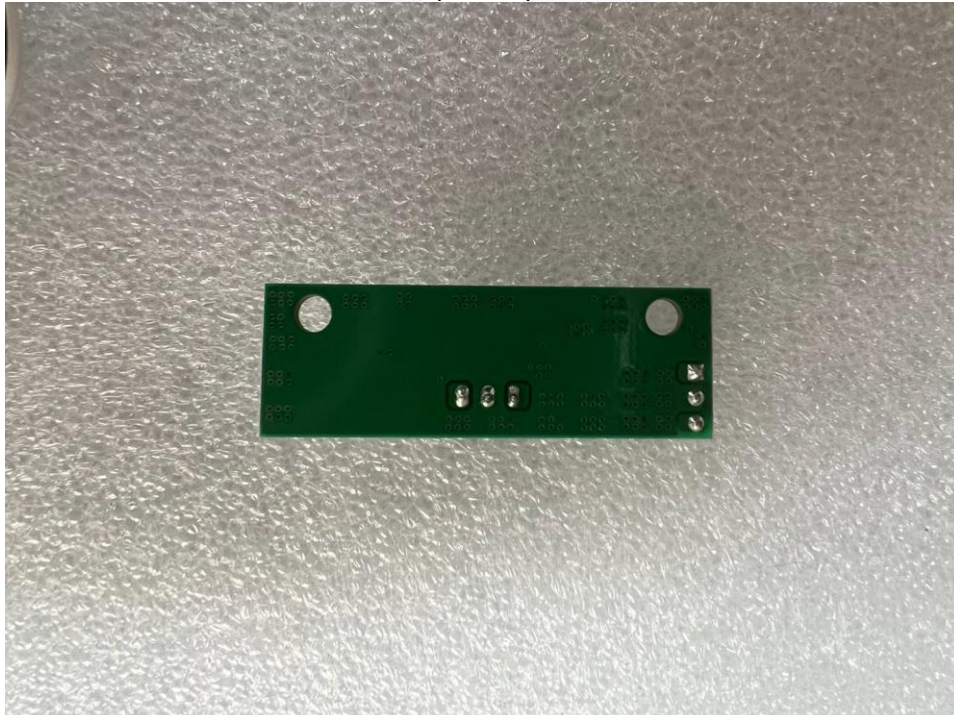


EUT Internal View – Board 4

(Top)



(Bottom)





EUT Internal View – LCD

(Top)

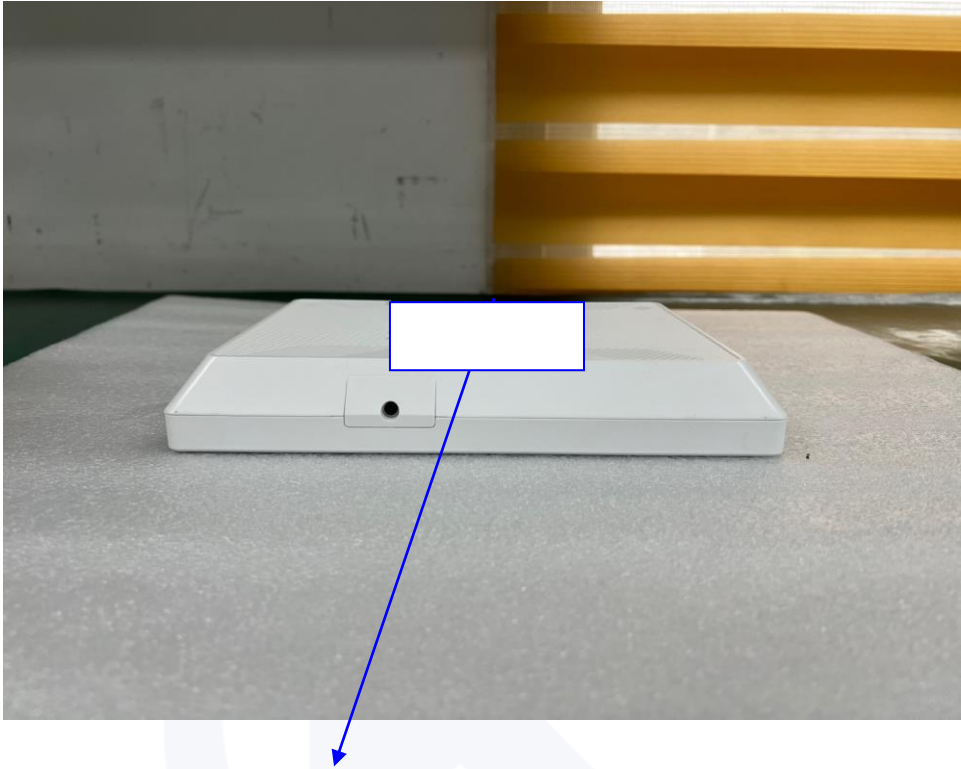


(Bottom)





Label and Location



<u>Public View Monitor</u> Model No : SMT-1031PVW Manufacturer : OIC KOREA Co., Ltd. Made in Korea	UK CA CE
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